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THE

GARDENERS' CHRONICLE

AND

AGRICULTURAL GAZETTE

FOR

1850.

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GARDENERS' CHRONICLE AND AGRICULTURAL GAZETTE,

FOR 1850.

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THE GARDENERS' CHRONICLE
AND
AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

[No. 1—1850.] SATURDAY, JANUARY 5. [PRICE 6*d.*

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MITCHELL'S ROYAL ALBERT RHUBARB still has its supremacy over all other kinds for its extraordinary earliness, delicious flavour, and splendid red colour; also a most prolific bearer and free grower, with large stalks. For early forcing it far surpasses every other variety. For making wines, preserves, and all culinary purposes, it is an inestimable production. Strong one-year planted roots 1*s.* 6*d.* each; also Myatt's Linnæus, 1*s.* 6*d.*; and Victoria, 9*d.* The usual allowance to the trade. Post-office orders made payable to WILLIAM MITCHELL, Enfield Highway, Middlesex, will meet with prompt attention. N.B. The above is from four to five weeks earlier than the well-known Victoria.

CUCUMBERS.

THE THREE BEST CUCUMBERS EVER YET SENT OUT.

EDWARD TILEY begs to remind the public generally, that he has now ready to dispose of good sound seed of his VICTORY OF BATH, GORDON'S WHITE SPINE, and LORD KEYNON'S FAVOURITE (this last is the best for winter cultivation). These CUCUMBERS have been thoroughly proved to the satisfaction of hundreds of growers, and need no comment on their superiority. Victory of Bath, 2*s.* per packet; Gordon's White Spine, 1*s.* 6*d.* do.; Lord Keynon's Favourite, or Winter Cucumber, 2*s.* 6*d.* do., or one packet of each of the above Cucumbers, 5*s.*

E. T. begs to mention that he has the whole stock of the seed of that unequalled Melon, "Brougham Hall," Green-flesh; it has surpassed all others this season at the London exhibitions. It is as much superior in flavour to all other Melons as the Green-gage is to all other Plums. Sold in packets of 7 seeds, 2*s.* 6*d.* each.—Sold by EDWARD TILEY, Nurseryman, Seedsman, and Florist, 16, Pulteney-bridge, Bath. A remittance (either in cash or in postage stamps) must accompany the order.

DAHLIAS.

CHARLES TURNER has much pleasure in offering the following beautiful new DAHLIAS, plants of which will be ready in May next.

QUEEN OF THE ISLES (Skynner).—White, distinctly tipped with deep crimson, very striking and beautiful; the petals being smooth and well arranged. It was exhibited at Cambridge and Norwich, 12 blooms on each occasion, and received the highest award and commendation. Warranted the finest Dahlia ever offered by C. TURNER. 3 to 4 feet—10*s.* 6*d.*

MRS. SELDON (Turner).—Bright pure yellow, good petal, flower very circular and full size, extra fine. It was awarded a first-class Certificate at Birmingham for six blooms; the only place exhibited at, the stock being short. 5 feet—10*s.* 6*d.*

THAMES BANK HERO (Robinson).—Deep crimson, full size and constant, good form. 4 feet—10*s.* 6*d.*

SERAPH (Fellows.)—Bright novel orange, compact, fine form, a very constant flower for exhibition. Received first class Certificate at Norwich. 3 feet—10*s.* 6*d.*

DUKE OF CAMBRIDGE (Fellows).—Silvery lilac, very constant, and good habit. 3 feet—7*s.* 6*d.*

QUEEN OF LILACS (Turner).—Pale lilac, full size, fine form, and noble show flower. 4 feet—7*s.* 6*d.*

UNIQUE (Turner).—Fancy, dull red with white tip, a fine form. 2 to 3 feet—7*s.* 6*d.*

MRS. LABOUCHERE (Turner).—Fancy, scarlet, white tip, a sweet variety; being very bright, constant, and not more than 18 inches high. 7*s.* 6*d.*

PURITY (Turner).—The finest white raised, when caught very beautiful, but being uncertain will not be charged for. Purchasers of the others may have plants gratis.

A Descriptive Catalogue ready in January, comprising all the novelties.—Royal Nursery, Slough.

SUTTON'S EARLY CHAMPION, 2 to 3 feet, the forwardest PEA known, and SUTTON'S EARLY GOLIAH, 3 to 4 feet, the best for second crop. Price of either sort, 10*d.* per quart, 3*s.* per gallon, or 21*s.* per bushel. The above Peas took nearly every prize at the Newbury, Henley, and other horticultural shows, where they were exhibited last season.

JOHN SUTTON and SONS confidently recommend the above Peas.—Reading Seed Warehouse, Reading, Berks.

CHEAP DAHLIAS, FUCHSIAS, AND VERBENAS, FOR 1850, warranted true to name.

J. COURCHA can supply most of the new Dahlias of last year at 7*s.* per dozen; older varieties at 3*s.* per dozen.—A Catalogue may be had on application to JOSEPH COURCHA, Florist, 8½, Wellington-row, Hart's-lane, Bethnal-green-road, London.

RANUNCULUSES, ANEMONES, GERANIUMS, LILIUM LANCIFOLIUM, AND AURICULAS.

HENRY GROOM, CLAPHAM RISE, NEAR LONDON, by appointment FLORIST TO HER MAJESTY THE QUEEN AND TO HIS MAJESTY THE KING OF SAXONY, begs to recommend to the notice of the Nobility, Gentry, and Amateurs the above Flowers, which he can supply, of the best quality, at the following very moderate prices:

	£	*s.*	*d.*
100 RANUNCULUSES, in 100 superfine sorts, named	2	10	0
Superfine Mixtures, per 100, from 5*s.* to 21*s.*			
100 DOUBLE ANEMONES, in 50 superfine sorts, named (New Collection)	2	2	0
Superfine Mixtures (Double), per 100, 7*s.* 6*d.* and 10*s.* 6*d.*			
25 GERANIUMS, in 25 superfine sorts, named ...	3	3	0
Ditto, good varieties, from 12*s.* to 18*s.* per dozen.			
25 AURICULAS, in 25 superfine sorts, named ...	2	10	0
Ditto, good varieties, 18*s.* per dozen.			
LILIUM LANCIFOLIUM ALBUM, for planting in Shrubberies, per 100	3	6	0
LILIUM LANCIFOLIUM ALBUM, 1*s.* each, or 9*s.* per dozen.			
,, ,, PUNCTATUM, each, from 3*s.* to 10*s.* 6*d.*			
,, ,, ROSEUM, each, from 3*s.* 6*d.* to 10*s.* 6*d.*			
,, ,, RUBRUM, true, or SPECIOSUM, each, from 2*s.* 6*d.* to 15*s.*			
,, ,, CRUENTUM, each, from 5*s.* to 10*s.* 6*d.*			
A NEW COLLECTION OF HYBRID SEEDLING LILIES, 6 sorts, for 18*s.*			

*** The usual discount to the Trade.

BASS AND BROWN'S GENERAL SPRING CATALOGUE, for 1850, of SEEDS AND PLANTS, will be supplied free by post on application.

In their Catalogue will be found a rich assortment of the newest and best articles which can be procured, and contains the usual descriptive and useful information, both of seeds and plants, provided in their previous annual Spring Catalogues.

CHOICE VEGETABLE SEEDS.

Complete Collections of the best and newest sorts, in proportionate quantities of each, for large and small gardens, at per collection, 1*l.*, 2*l.*, and 3*l.* If any sorts are not required, enlarged quantities of others will be sent.

A Collection may be had of good sorts for a small garden, for 10*s.* 6*d.*

SELECT AND CHOICE FLOWER SEEDS,

Free by post, with full instructions for sowing, heights, colours, &c.

	s.	*d.*
100 varieties best and newest Annuals	15	0
50 varieties for 8*s.* 6*d.*, 30 for 5*s.* 6*d.*, 20 for	4	0
20 varieties best dwarf kinds, in larger packets, suited for filling beds on lawns, 7*s.* 6*d.*, or 12 do. for ..	5	0
20 varieties best Greenhouse Annuals, 7*s.* 6*d.*, 12 for ..	5	0
20 varieties choice Greenhouse Perennials, 10*s.* 6*d.*, 12 for	7	6
20 vars. choice hardy Biennials and Perennials, 7*s.* 6*d.*, 12	5	0
30 varieties imported German Stocks	5	0
20 ditto ditto, 3*s.* 6*d.*, 12 for	2	6

SUPERB NEW RANUNCULUSES,

Free by post, with printed instructions for planting and culture.

50 choice new varieties, named	40*s.*	0*d*	
25 ditto ditto	22	6	
50 fine older varieties, named	15	0	
100 finest mixed, 10*s.*; 100 fine (free by post, 6*s*) ..	5	0	

GLADIOLUS, EARLY VARIETIES,

To flower in the open air from June to August, and should be planted without delay.

12 splendid named, 10*s.* 6*d.*, or post free, 11*s.* 6*d.*
12 vars. beautiful hybrids, 6*s.*, or post free, 7*s.*
Beautiful mixed hybrids, 3*s.* 6*d.* per doz., or post free, 4*s.* 3*d.*

GLADIOLUS, LATE VARIETIES,

To flower in the open ground from August to November.

Gandavensis, large roots, 9*d.* each, or 7*s.* 6*d.* per dozen; Brenchleyensis, each, 5*s.*; autumnalis, 1*s.* 6*d.*; formosissimus, 1*s.* 6*d.*; psittacinus sanguineus, 9*d.*, or 7*s.* 6*d.* per dozen; ramosus, 9*d.*; rosa mundi, 1*s.*; Splendens, extra superb, 3*s.* 6*d.*; Queen Victoria, 2*s.* 6*d.*; Prince of Wales, superb, 2*s.* 6*d.*; vitellinus, 2*s.* 6*d.*; speciosus, 2*s.* 6*d.* The above are all superior varieties, including very superior splendid new. The 12 for 21*s.*

MISCELLANEOUS.

GERANIUMS, 12 new vars. of last season, strong ..	42*s.*	0*d*	
,, 12 first-rate older kinds	15	0	
,, 20 ditto ditto	25	0	
,, fine older vars., per doz.	6*s.* to	9	0
,, 12 choice fancy varieties	15	0	
CARNATIONS, 12 pair choice show varieties	20	0	
PICOTEES, 12 pair choice show varieties	20	0	
PINKS, 12 pair choice varieties	10	0	
ROSES, STANDARDS, 12 splendid varieties	20	0	
,, DWARFS, 12 fine, 9*s.*; 12 superior ditto ..	12	0	
,, ,, 12 choice Autumnal vars.	18	0	
,, CLIMBING, 12 fine varieties	9	0	
HARDY HERBACEOUS PLANTS, 100 showy varieties	30	0	
,, ,, ,, 50 ditto	18	0	
,, ,, ,, 100 ditto, including new and superior sorts	50	0	
,, ,, ,, 50 ditto ditto	32	0	
HARDY ROCK PLANTS, 25 fine varieties	12	0	
HARDY FLOWERING SHRUBS, 20 ditto	12	0	
HOLLYHOCKS, 20 proved fine double vars.	12	0	
ANTIRRHINUMS, 12 fine vars., 6*s.*; 12 superior do. ..	10	0	
PHLOX, 12 fine vars., 6*s.*; 12 superior do.	9	0	
GREENHOUSE PLANTS, 50 select and showy vars. ..	50	0	
,, 25 do., 28*s.*; 12 do., 15*s.*; 12 extra choice	25	0	
RHUBARB, Mitchell's Royal Albert, each	1	6	
,, Myatt's Linnæus, each	1	6	
,, ,, Victoria, per doz., 9*s.*; each ..	1	0	
,, Rutford's Giant and Youell's Tobolsk, p. doz.	5	0	
GOOSEBERRIES, 20 finest prize named vars., 15*s.*; 12 do.	9	0	
,, fine varieties, named, per doz.	4	6	
CURRANTS, finest sorts, per doz.	3*s.* to	4	0
ASPARAGUS, fine Giant, per 100	3	0	

CATALOGUES OF ROOTS free by post, on application, comprising our superb new Ranunculuses, Gladioluses, &c.

☞ *The Branch Railway being now open to Sudbury, and the Eastern Union continued through to Norwich, we shall now deliver goods carriage free to London, Norwich, or any station on the line. With goods amounting to not less than 40s., plants or seeds presented gratis.*

Post-office orders payable to either BASS and BROWN or STEPHEN BROWN. Remittances requested from unknown correspondents.

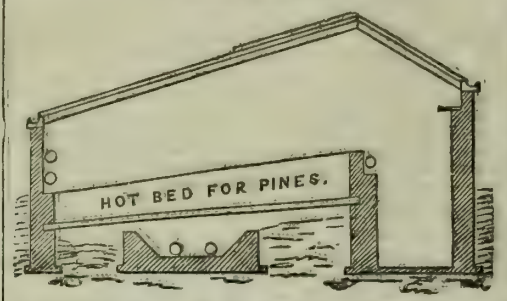
Seed and Horticultural Establishment, Sudbury, Suffolk.

HEATING BY HOT WATER.

J. WEEKS AND CO., King's-road, Chelsea, Patentees and Manufacturers of HOT-WATER APPARATUS, warrant their Boilers to be the most efficient and economical of any yet invented, at prices from 3*l.* to 15*l.*; the fire warranted to last 15 hours without attention. To be seen in extensive operation at their Show Establishment, King's-road, Chelsea; and also at most of the Nobility and Gentlemen's Seats in the country, the London Nurseries, &c.

HORTICULTURAL BUILDING AND HEATING BY HOT WATER.

ALSO THE CULTIVATION OF THE CHOICEST PLANTS, VINES, FERNS, &c.



J. WEEKS AND CO., King's-road, Chelsea, HORTICULTURAL ARCHITECTS, HOTHOUSE BUILDERS, and HOT-WATER APPARATUS MANUFACTURERS, solicit an inspection of their various Works now in progress, which will attest as to quality of materials and workmanship. They have now erected on their Premises, for inspection, a great variety of Hothouses, Greenhouses, Conservatories, Forcing-pits, &c., all heated by HOT WATER in various forms, showing the most improved methods of Building, Heating, and Ventilating all Horticultural Erections. By means of these houses, they are enabled to grow Stove, Greenhouse, Ferns, and other Plants, in such immense numbers, that they are sold at LESS THAN HALF-PRICE. Mats, Mushroom Spawn, and everything connected with the Nursery and Seed departments; Plans, Estimates, and Catalogues forwarded on application.

SHEET-GLASS.

JAMES PHILLIPS AND CO., 116, Bishopsgate-street Without, London, have on SALE 30,000 feet of 16-oz. SHEET-GLASS, in 100-feet boxes, at 12*s.* 6*d.* per box. Sizes varying from 6 inches by 3 to 9 inches by 6. Also a large quantity of 26 ounce sheet, in panes of 12 inches by 8, at 27*s.* per 100 feet; an allowance on 1000 feet. The above is well worthy the attention of Nurserymen, or for shipping.

GLASS FOR CONSERVATORIES.

JAMES PHILLIPS AND CO. have the pleasure to hand their New List of Prices of GLASS for Cash.

CUT TO SIZE.

16 oz. from 2*d.* to 3½*d.* per foot.

21	,,	3½	,,	5	,,
26	,,	3½	,,	7½	,,
32	,,	4	,,	9½	,,

SHEET SQUARES.

In boxes of 100 feet. *s.* *d.*

Under	6 by 4	...	12 6
6 by 4 and under	7 by 5	...	16 6
7 by 5	,,	8 by 6	... 18 6
8 by 6	,,	10 by 8	... 20 6

100 feet and 200 feet cases of large Sheet Glass, for cutting up, at 2½*d.* per foot. British Plate Glass, from 1*s.* 2*d.* to 2*s.* per foot, according to size.

HARTLEY'S PATENT ROUGH PLATE, packed in boxes of 50 feet each:

6 by 4 and 6½ by 4½	... 10*s.* 6*d.*	7 by 5 and 7½ by 5½	... 12*s.* 0*d.*
8 by 6 ,, 8½ by 6½	... 13 6	9 by 7 ,, 10 by 8	... 15 0

SHADES FOR ORNAMENTS.

MITCHELL'S MINERAL ANTISEPTIC BLACK PAINT. (Sole Agent for same.)

PATENT GLASS PENS.

ALABASTER VASES, WAX FLOWERS, &c.

ROUGH PLATE GLASS FOR WINDOWS, SKYLIGHTS, AND FLOORS.

⅛-inch thick ... per foot	1*s.* 0*d.*	¼-inch ..... per foot	2*s.* 6*d.*
⅜-inch	1 1	1-inch	4 0
½-inch	1 6		

PATENT ROUGH PLATE TILES.

⅛-inch thick ..... each	0*s.* 11*d.*	⅜-inch ..... each	7*s.* 7*d.*
¼-inch	1 3	½-inch	2 0

SHEET GLASS TILES AND SLATES.

	16-oz.	21-oz.	26-oz.	32-oz.
Tiles made of Sheet Glass ...	8*d.*	10*d.*	1*s.*	1*s.* 4*d.*
Slates, 20 inches by 10	10*d.*	1*s.*	1*s.* 4*d.*	1*s.* 8*d.*

Slates are kept in stock of the usual sizes, and made to any dimension and substance.

GLASS MILK PANS, from 2*s.* to 6*s.* each; METAL HAND-FRAMES, Propagating and Bee Glasses from 2*d.* each; Grape Glasses; Cucumber Tubes, 1*d.* per inch; Peach Glasses, 10*d.* each; Wasp Traps, 3*s.* 6*d.* per dozen; Pastry Slabs, Hyacinth Glasses and Dishes, Fish Globes, Plate and Window Glass of every description. Lamp Shades. LACTOMETERS for trying the quality of Milk, 4 tubes, 7*s.* 6*d.*; 6 tubes, 10*s.* Self-Registering Thermometers for Greenhouses.

Estimates and List of Prices forwarded on application to their Warehouse, 116, Bishopsgate-street Without, London.

GLASS FOR CONSERVATORIES AND HORTICULTURAL PURPOSES, &c.



T. MILLINGTON'S SHEET GLASS, which is of the best description, varying from 16 to 32 ounces, at from 2*d.* per foot and upwards; 100 feet and 200 feet cases of large Sheet Glass, for cutting up, at 2½*d.* per foot. British Plate Glass, from 1*s.* 2*d.* to 2*s.* per foot, according to size. Patent Rough Plate Glass, from ⅛ to 1 inch in thickness, from 4*d.* per foot upwards. Glass Slates and Tiles. Milk Pans from 12 to 24 inches diameter, from 2*s.* to 5*s.* each. Cucumber Tubes, from 12 to 24 inches long, at 1*d.* per inch. Lactometers, 7*s.* 6*d.* each. Wasp Traps.—Lists may be had, on application at the Warehouse, 87, Bishopsgate-street Without, same side as the Eastern Counties Railway.

COLES' SUPERB DWARF RED CELERY.

W. P. AYRES begs to intimate to his friends and the trade, that he possesses the entire stock of this splendid CELERY, which can only be had genuine in sealed packets bearing his name. 1*s.* 6*d.* per packet, post free. The trade supplied at half the price of last season.

CAUTION.—W. P. A. having heard that one of the wholesale London seedsmen is offering Coles' Celery, considers it right to state that it can only be had genuine from him or his agents.

Brooklands' Nursery, Blackheath.

NEW RANUNCULUSES, ANEMONES, &c.

CAREY TYSO, Wallingford, Berks, begs to announce that he has selected Twenty splendid SEEDLING RANUNCULUSES, raised in 1848 and 1849, with which he obtained several first prizes, and which he can recommend for exhibition. Descriptions and prices will be forwarded in a general Catalogue for 1849-50 on receipt of two postage stamps. Selections of 100 named Ranunculuses, 50*s.* to 5*l.* Mixtures, 8*s.* to 20*s.* per 100. Double Anemones, 50 sorts, 20*s.* to 30*s.*

Imported German Seeds: Asters, Stocks, Larkspurs, &c., 20 varieties, per post, 2*s.* 6*d.*

TYSO'S "Treatise on the Ranunculus" can be had of all booksellers, price 6*d.*; or direct per post for eight stamps.

GLASS FOR CONSERVATORIES,

GREENHOUSES, PIT FRAMES, &c.

HETLEY AND CO. are supplying 16-oz. Sheet Glass, of British Manufacture, packed in boxes containing 100 square feet each, at the following REDUCED PRICES for cash. A reduction made on 1000 feet.

Sizes. Inches.				Inches.			Per foot.	Per 100 feet.
			Under	6	by	4	at 1½*d.*	is £0 12 6
From 6	,,	4	,,	7	,,	5	,, 2*d.*	,, 0 16 8
7	,,	5	,,	8	,,	6	,, 2½*d.*	,, 0 18 9
8	,,	6	,,	10	,,	8	,, 2½*d.*	,, 1 0 10
10	,,	8	,,	12	,,	9	,, 2¾*d.*	,, 1 2 11

Larger sizes, not exceeding 40 inches long.

16 oz. from 3*d.* to 3½*d.* per square foot, according to size.
21 oz. ,, 3½*d.* 5*d.* ,, ,, ,,
26 oz. ,, 3½*d.* 7½*d.* ,, ,, ,,

PATENT ROUGH PLATE, THICK CROWN GLASS, and PATENT PLATE GLASS for Horticultural purposes, at reduced prices, by the 100 square feet.

GLASS TILES AND SLATES made to any size or pattern, either in Sheet or Rough Plate Glass.

Propagating Glasses, Bee-hive Glasses, Cucumber Tubes, Glass-Milk Pans, Glass Water Pipes, and various other articles not hitherto manufactured in glass.

PATENT PLATE GLASS.—The present extremely moderate price of this superior article should cause it to supersede all other inferior window glass in a gentleman's residence. No alteration connected with the sash is required.

GLASS SHADES, as ornamental to, and for the preservation of every description of goods susceptible of injury by exposure. Prices, since the removal of the Excise duty, reduced one-half. List of Prices and Estimates forwarded on application to JAMES HETLEY and Co., 35, Soho-square, London.

HARTLEY'S PATENT ROUGH PLATE GLASS FOR CONSERVATORIES, &c.

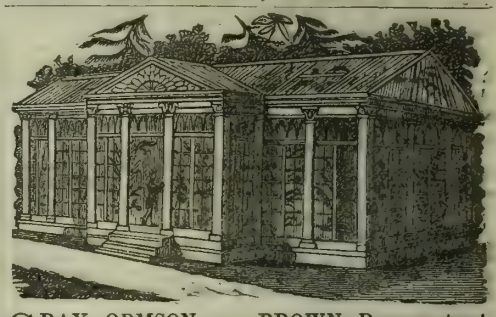
See Article in THE GARDENERS' CHRONICLE of Saturday, December 8, 1849.

"Continued experience leaves us no room to doubt that this is the best material yet produced, and that it will in time supersede glass of all other kinds for the greater part of Gardening purposes." . . . "As for the article substituted for Rough Plate . . . it is wholly unfit for any horticultural purpose." . . . "The best sample of it which we have yet seen was Manufactured by Messrs. HARTLEYS, AND SOLD BY MESSRS. JAMES PHILLIPS & CO., 116, BISHOPSGATE STREET."

POLMAISE HEATING.

J. LEWIS'S IMPROVED POLMAISE STOVES are delivered to the Railways in London, with Plans for fixing. For a Greenhouse: 20 feet by 12, 6*l.* 10*s.*; 30 feet by 14, 8*l.* 10*s.*; 60 feet by 18, 10*l.* 10*s.* Stoves for Churches, Schools, and Halls, according to size.

Hothouse Works, Stamford-hill, Middlesex.



GRAY, ORMSON, AND BROWN, Danvers-street, Chelsea, solicit the attention of the Nobility, Gentry, and Gardeners, to their superior manner of Erecting and Heating every description of Building connected with Horticulture. The work done by them at the Right Hon. the Earl of Kilmorey's, to which they have had the honour of referring so long, still continues to give perfect satisfaction. Mr. Kinghorn will be happy to show the work and give any information.

They also beg to refer to the houses built by them during the past season, for the Worshipful Apothecaries' Company of London, in their Botanic Garden at Chelsea. Mr. Moore, the Curator, will kindly show the work, and answer any enquiries. They beg also to say the building only is referred to, as the Heating Apparatus was not erected by them.

GRAY, ORMSON, and BROWN, have also the honour of referring to many of the nobility and gentry in the country, and to several of the London Nurseries.

N.B. Plans and Estimates furnished free.

STEPHENSON AND CO., 61, Gracechurch-street, London, and 17, New Park-street, Southwark, Inventors and Manufacturers of the Improved CONICAL and DOUBLE CYLINDRICAL BOILERS, respectfully solicit the attention of scientific Horticulturists to their much improved method of applying the Tank System to Pineries, Propagating Houses, &c., by which atmospheric heat as well as bottom-heat is secured to any required degree, without the aid of pipes or flues. S. and Co. have also to state that at the request of numerous friends they are now making their Boilers of Iron, as well as Copper, by which the cost is reduced. These Boilers, which are now so well known, scarcely require description, but to those who have not seen them in operation, prospectuses will be forwarded, as well as reference of the highest authority; or they may be seen at most of the Nobility's seats and principal Nurseries throughout the kingdom.

S. and Co. beg to inform the Trade that at their Manufactory, 17, New Park-street, every article required for the construction of Horticultural Buildings, as well as for heating them, may be obtained upon the most advantageous terms.

Conservatories, &c., of Iron or Wood, erected upon the most ornamental designs. Balconies, Palisading, Field and Garden Fences, Wire-work, &c.

NEW DARK FUCHSIA, "SIR JOHN FALSTAFF."

C. TURNER intends sending out this approved noble variety in spring. For price, &c., see Catalogue, which will be ready in January.—Royal Nursery, Slough.

The Gardeners' Chronicle.

SATURDAY, JANUARY 5, 1850.

MEETINGS FOR THE ENSUING WEEK.

MONDAY,	Jan. 7	Entomological	8 P.M.
		Pathological	8 P.M.
		Medical	8 P.M.
		British Architects	8 P.M.
TUESDAY,	— 8	Syro Egyptian	7½P.M.
		Civil Engineers	8 P.M.
		Medical and Chirurgical	8½P.M.
		Zoological	9 P.M.
WEDNESDAY,	— 9	Literary Fund	3 P.M.
		London Institution	7 P.M.
		Graphic	8 P.M.
		Ethnological	8 P.M.
		Geological	8½P.M.
		Pharmaceutical	9 P.M.

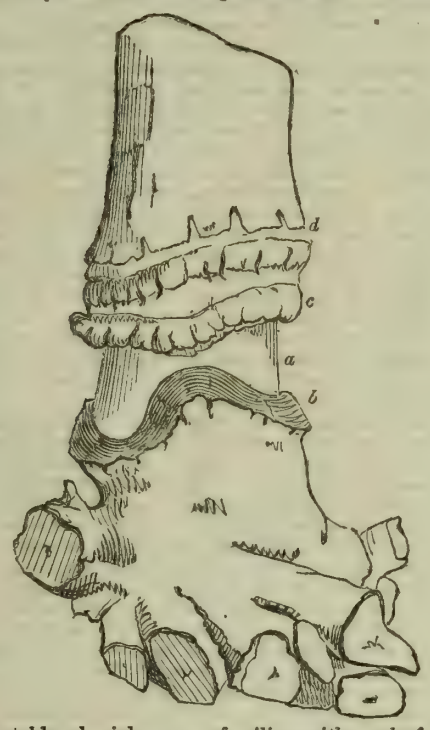
In our last volume (p. 708) we drew attention to the state of some CAMELLIA PLANTS which had died in a mysterious way, in the garden of one of our correspondents. It will be remembered that the stems of these plants were deprived of a ring of their bark just below the ground level, and when taken up were found to present the appearance shown in the annexed cut. For the cause of this we referred to the gardener who had had the charge of the plants. We entertained no doubt that the ringing had been done intentionally. Mr. DUNCAN, however, the very experienced and intelligent gardener at Basing Park, in a subsequent Number questioned the justice of this view, and suggested that the injury might have been owing to low temperature. As this is a case of some importance in itself, as well as with reference to Mr. DUNCAN's suggestion, we make no excuse for referring to it once more.

The wound on the specimen sent us was about half an inch wide in one place, and not much more than one-eighth in another: the lips approaching each other at one point of the circumference. But it had originally been from ½ to ¾ inch wide, the difference in the original and present dimensions being owing to after-growth. The upper lip had grown downwards from *d* to *c*, and the lower had slightly advanced, as is shown at *b*. We conceive this to be irreconcileable with injury from frost; the two lips of the wound were originally *even*, and approached each other exactly in the manner which is commonly observed when a ring of bark is removed awkwardly by a pruning knife. Had frost been the cause, the lips of the wound would have been at very irregular distances from each other, and rugged instead of even. This we look upon as conclusive as to the manner in which the wound was not produced. It was no doubt caused by some cutting instrument. It may be said that a rat or some such animal might have gnawed the stems all around; but that also is, we think, an inadmissible explanation of the appearance in question. Because, had gnawing been the cause, there must have been traces of teeth upon the wood; but, on the contrary, the surface *a* was perfectly smooth. Moreover, it (*a*) had unmistakeable marks of the edge of a knife; so that no doubt can remain of the origin of the wound. The stems had been ringed.

It is possible that this ringing may have been practised in the fair exercise of a gardener's art, for the purpose of throwing the Camellias into flower. We need not say that this is a common operation; it being found that, if the elaborated sap is not allowed to disperse itself downwards, it will collect in all the parts above the wound, and expend itself in the formation of flower buds. But although we must concede this, we think it necessary to add that if such was the gardener's intention he exhibited a lamentable want of knowledge of his business. He ought to have been aware of several things here overlooked. In the first place he should have known that in the operation of ringing it is indispensibly necessary that the wound should be so narrow that the two lips may reunite in the course of a few months, so as to re-establish the natural communications. Here, on the contrary, the wound was so wide that although the upper lip had actually advanced downwards nearly half an inch in one place, yet the communication had not been nearly re-established.

In the next place the wound should not, on any account, have been inflicted on the main stem. The operation is apt to cause the eventual death of the limb, be the skill employed what it may. To commit then so serious a mutilation of the trunk, at the very ground level, was to do the most dangerous thing that perverse ingenuity could have suggested; it caused the death of the whole tree—as was to have been expected. Finally, if for any reason it was necessary to perform the operation in the dangerous place and manner in question, this, at least should have been attended to—to close the wound with grafting clay, or some such substance, and to cover the whole with damp Moss, in order to promote the rapid formation of the granulations which appear under such circumstances, and which replace the part removed. Nothing of the kind seems to have been thought of by the gardener, and the consequence has been the destruction of his master's Camellias.

The subject being now before us, we may as well advert to another point, which this woodcut illustrates. It is an axiom among Vegetable Physiologists that sap rises in a crude state through the stem of a plant, thence is propelled into the leaves, where it undergoes certain changes, after which it returns to the stem in its altered condition and is dispersed downwards over the system, very much through the agency of the bark. This sap is commonly called the descending sap. One of the proofs of this being true is the well-known fact that if a ring of bark is removed, the upper lip is soon covered with drops of elaborated fluid, while the lower lip remains comparatively dry; and that new growth also takes place at the upper lip where the elaborated sap (or organisable matter) collects, in a much greater degree than on the lower lip. The case now under consideration entirely confirms this opinion; it will be seen by the figure that a great growth had taken place from *d* to *c*; but that at *b* the wound was in much the same state as it was left in by the knife. All persons who have studied



vegetable physiology are familiar with such facts. Nevertheless we find that Professor SCHLEIDEN, in the following passage of the book we lately reviewed, flatly contradicts the statement:

"Yet the stock must always exert a greater or less influence on the eye or graft, as the sap brought to it must pass through the cells of the stock, and become changed there. In this case the relations are too complicated to enable us to offer an explanation. All that is known on the subject is detailed in manuals of horticulture. I will mention one case. If a branch of a quick-growing plant is grafted upon a very slow-growing one, as, for instance, the branch of a Plum upon a Sloe-stock, the graft will grow rapidly, but not so the stock, which retains its slow-growing character*, —a striking example of the permanency of the specific life of the stock, and, as it appears to me, affording a fatal argument *against the pretended descent of the sap. If a descending bark sap existed,* the Sloe-stock would be naturally covered with annual rings of Plum-wood from the graft, and it would grow in proportion to the growth of the graft; but this is by no means the case, for the new annual rings are formed, not out of a descending bark-sap, but out of a cell development of the cambium already existing in the stock, and having essentially the same characters. The formation of new wood of the nature of the graft has always been taken for granted, in order to prove the descent of the bark-sap; but we find that this wood does not partake of the nature of the graft, and that it must therefore be formed independently of any descending juices." P. 535.

For the moment we want space to reply to this speculation, which after all is only an old one in a new dress; and we the more willingly defer our own remarks, in the hope that some of our talented correspondents will say how far they agree with Professor SCHLEIDEN in his belief that descending sap has no existence!

THE cause of the PUBLIC *versus* the GLASS DEALERS has found an advocate for the defence in the person of a Mr. BARWELL JONES, who, in a letter from Kidderminster (?) complains of what he calls libellous imputations upon the character of respectable tradesmen who "are not to be gibbeted because they honestly state before an arbitrator that they do what is known to be the universal practice of the trade." Upon this particular point we will admit that we spoke more strongly than we should have done had we been aware of some circumstances that have since come to our knowledge. Since our article of Dec. 8 was published, we have referred to various old tariffs and Acts of Parliament, from which we find that the term rough plate was applied to unfinished blown plate glass before the time that cast plate was made in this country, and that the term has continued to be employed among dealers in glass, in the same sense, until this day. We are, therefore, bound in fairness to recall any expression that the fastidious reader may suppose implied a deliberate want of honourable intention in the use of that term on the part of Mr. CHATER and others. We acquit them of having done any thing contrary to the usage of the trade.

But while we freely admit thus much, we do not the less emphatically condemn the system to which custom has given a sort of sanction, the *effect* of which is undoubtedly to impose upon the public, whatever the intention of the vendor may be. That vicious code of morality, which unfortunately runs through so many trades and professions, we trust we shall always continue to feel it our public duty to expose whenever it interferes with the interests of those who look to our columns for protection.

Disclaiming, then, all intention of applying our remarks in a personal sense we proceed to notice the very small kernel which Mr. BARWELL JONES has enclosed within a rather bulky husk.

We say that it is as great a wrong to the public now to sell sheet glass under the name of rough plate, as to sell Cape wine under the name of Madeira, or base hardware washed with silver under the name of plated goods. Our correspondent justifies the glass dealers in the course they have taken, upon two grounds. The first is, that as blown glass was invented before cast glass, therefore plate glass must have been in the first instance blown, and consequently the dealer is clearly authorised to call blown glass plate glass. So far as the custom of the trade is concerned, we have already conceded this point. But the public question is *not* what plate glass once was, but what it now is. It is a bad apology for selling goods under names that the buyer no longer knows them by, to say that some time or other, within legal memory, such names were borne by them. A man might as well justify himself in calling his neighbour a villain, upon the plea that in former times the word was inoffensive, and merely expressed a particular social position. Goods sold in 1849 ought to bear the names by which they are known to the public in 1849, and not what they bore in 1780. In trade mysteries buyers cannot be expected to be proficients, and we suppose that sellers are not over anxious that they should become so.

Mr BARWELL JONES's second and great point is, that because blown glass is known in the trade as plate glass, and sold as such, dealers are therefore justified in selling rough sheet as rough plate. It is of this very practice that we complain. And we maintain that the public is unfairly treated by not being informed of a custom which continues to exist, although great manufacturers profess their ignorance of it. Let us ask the glass trade whether they state the fact in their "tariffs," as their price-lists are called; and, as the lawyers say, *if not, why not?* We have now before us four such lists (for 1849) from four great houses, which we shall designate as A, B, C, and D. In A we have the following kinds of glass offered for sale: crown, double crown, *patent* plate, sheet, and rough plate, with some minor qualities which need not be quoted. In B, we have polished plate, rough plate, horticultural plate cast, &c. In C, the kinds are crown, patent plate, sheet, rough plate, polished plate, &c. In D are offered horticultural sheet, HARTLEY's patent rough plate, crown, sheet, and rough plate. Now, in all these cases, and we believe in every other case, a clear distinction is made between crown or sheet (that is blown) glass, plate (or cast), and patent plate (we believe blown); and plain people, reading such lists, can come to no other conclusion than that, in buying plate, they do not buy blown glass, except in the case of one kind, which is very properly and distinctly indicated by the prefix "patent." Therefore, as ordinary plate glass is cast, so must rough plate be in the minds of people unlearned in glaziers' mysteries. If two sorts of plate glass are distinguished, the rough and the smooth, why not also distinguish two sorts of sheet glass, since there are two, the rough and the smooth. Why sell rough sheet for rough plate, they having no resemblance to each other? It is contended that there is no motive for doing so no advantage resulting from it to the seller; we are not, however, credulous enough to believe that the substitution takes place without some very sufficient

* Lindley: A Theory of Horticulture, p. 237.

motive, into which we hope we may not be obliged to inquire. We, however, impute no motives: we dare say that all is fair and usual; but we also say that such lists have the effect of misleading buyers to the most serious extent, as was proved by the incident that has led to this discussion. If glaziers wish to sell rough sheet glass, by all means let them, provided they call it by its right name. We hope and believe that they will see the propriety of being hereafter more explicit; for they cannot but feel that the existing practice leads to consequences which honest men must deeply regret, although trade interests may for the moment cause them to attempt a justification.

As to Mr. BARWELL JONES, and his charging malicious intention upon those who venture to put the public on their guard against the tricks, or if he pleases, the customs, of tradesmen, it is preposterous. According to Chief Justice FITZ JAMES, "if a man speak against the KING'S supremacy, by any manner of means, that speaking is to be understood and taken in law as malicious." We have only to substitute the "craft of glass dealers" for "the KING'S supremacy," and we have this Mr. BARWELL JONES repeating the notorious old Judge's outrageous dictum. People must be very sore when so small a thing makes them frantic.

Our correspondent is possibly some very young man, fresh from school, with his head full of romances, and eager to push his hand into the fire like another SCÆVOLA. As he grows older, he will, it is to be hoped, learn wisdom enough to avoid arguments in which it would be no credit to him to be successful. In the meanwhile, without waiting till he shall arrive at years of discretion, we may congratulate the public upon the "mistake" in glazing Winchester gaol; for it will have effectually prevented the recurrence of similar mistakes in glazing conservatories, unless those who have such work to execute should be of opinion that glass is glass, and one kind as good as another. If Mr. JONES is some elderly gentleman, we can then assure him that we have no fault to find with him which does not lie against him as one of a class. We dare say he is a highly respectable man: but, like other men, he naturally enough does that which his predecessors have done for years, which our predecessors have submitted to, and to which, if some effectual stand be not made, our successors must continue to submit, as long as glaziers have interests different from those of their customers.

ON THE DEGENERATION AND IMPROVEMENT OF VINE STOOLS.

By M. BOUCHARDAT.

THE Vine is the best plant that can be taken for the purposes of studying the modifications which a divided individual undergoes in consequence, either of the different influences to which it is subjected, or of the various conditions in which it is placed. Indeed, of all the plants which are multiplied by division, the Vine is the most common, the most rich in varieties, and the most frequently made the subject of experiments, varying in different countries and for different varieties.

The numerous observations collected by the author in the work from which this extract is made, are arranged in three chapters. In the first the degeneration of Vine stools abandoned without culture is considered; in the second that of neglected Vines; and in the third, the degeneration, and improvement which carefully cultivated Vines can experience, are examined.

In the first chapter the following facts are stated by the author, as the results of his examination: 1st, the limit of the degeneration of Vine stools abandoned without culture is different for each particular variety; 2d, the first effect of abandonment is to change the taste of the bunches, the period of their ripening, and their size; 3d, the next is to diminish the size of the Grapes composing the bunches; 4th, the third is to lower the amount of useful produce. When Vines thus changed are again cultivated, the first modifications are soon effaced, but the third is so lasting that the author has divided it into several sub-varieties. The loss in quantity is often very visible even after 25 years of good cultivation, and the Vine has been at several times completely invigorated. 5th, the more productive the stock, the more it suffers by being abandoned; it either perishes altogether, or the amount of its produce is less than that of a much worse stock.

In the second chapter the author has proved that the *pineaux fromentés*, which form perfectly distinct sub-varieties, multiplying by the division of individuals, spring from the *francs pineaux* which correspond to them, and that these remarkable modifications of the type can be produced spontaneously in Vines, the cultivation of which has been a long time neglected.

In the third, and by far the most important chapter in the book, the author has opposed facts to the extreme opinions of those who maintain, on the one hand, that the varieties of Vines remain constant, and that they do not produce by division new varieties; and on the other, that Vine stools transplanted from one country to another lose their own peculiar characters, and take those of the country in which they are newly planted.

In the first division of the present chapter those modifications which depend on the principal exterior agents or conditions of culture, and not on the individual plant, such as the influence of soil, manure, exposure, and transplantation to a distance, are examined.

In the second division the accidental conditions depending on the individual are studied; it is here that the author has discovered the most interesting and important causes of the modifications which Vine stools undergo. It is proved by observation that varieties perfectly new and stable can be obtained, all belonging, however, to the group from which they spring, and resembling, by very marked characters, the individuals which gave them birth. As the differences can be traced to the quality as well as the quantity of produce, their study is very interesting. It is found that on a stool can be produced suckers, buds, and internodes, having peculiar properties which may be perpetuated by the division of the new individual so as to give birth to a distinct variety. The author describes a modification which gave rise to buds producing fruit differing in colour from that usually gathered from the stock. White *tressots* produced suckers which gave Grapes variegated with black and white. This acquired variety can be multiplied by the division of the branches which have acquired new tendencies.

The author has investigated some remarkable modifications in stocks whose young wood was dead, and which gave shoots only from old stocks. He there discovered the origin of those small-berried, unproductive varieties, described by him under the names of *pineau demoisellat noir*, *pineau demoisellat blanc*, &c.

In the last section, the accidental modifications of Vine stocks, giving rise to varieties more and less productive than the original types, are studied. In this rapid sketch of M. Bouchardat's memoir, one example only can be given. A stock of the variety of Vine called the *bon tresseau*, consisting of four limbs fit to produce four new stools was planted. Three of the new stools were very productive, and in every respect similar to that from which they sprung; the fourth had vigorous wood, but every year produced a very small quantity of Grapes. This last was planted and multiplied; the causes of its degeneration are attempted to be explained, and the author then proceeds to show how, in the absence of fruit, good varieties can be distinguished from the bad. He shows in what way a knowledge of these matters can be applied in the establishment of a good Vine, and how to judge accurately of the value of the seedlings.

Plants chosen for the purposes of breeding often present considerable difficulties in their propagation; two methods are given by which these obstacles can be overcome. They consist in the judicious application of manures properly chosen, and in a method of plantation by which cuttings deprived of old wood may be used.

From the facts contained in the present memoir it is clear that the surest and quickest way of bringing our Vines to perfection is to observe with the greatest possible care those varieties which have been tested by long cultivation; to be always watchful, in order not to let slip, without making use of them, those individual modifications which appear from time to time on some branches of our stocks, and which, if properly propagated, would give rise to sub-varieties remarkable either for their fecundity, early ripening, the little care requisite in their cultivation, their power of resisting cold and moisture, longer duration, better produce, or, in short, for some essential quality.

If this doctrine, which is developed in the present memoir, and supported by well observed facts, attracts the attention of Vine growers, the author may hope to open to them a field rich in the elements of progress. *Comptes Rendus.*

ELVASTON CASTLE, THE SEAT OF THE EARL OF HARRINGTON.

(*Continued from p.* 821.)

IT has been stated that the country around Elvaston consists altogether of table land, and that it is totally destitute of diversity of surface. It is not, however, devoid of fine views, for on landing on the east wing of the castle, there is presented to the eye one of the most extensive prospects which almost any country can command, and one certainly magnificent of its kind. It is termed, and with much propriety, "the great east-wing avenue." The approach to this avenue is from the terrace, which surrounds the castle by a flight of steps 24 feet wide; each step is 2 feet in the tread, and only rises 3½ inches, which is the height of all the steps in the several terraces, rendering their ascent or descent easy—a point in the formation of terraces which should not be disregarded. It is precisely half a mile from the steps to the termination of the dress ground, all being perfectly level, with a finely kept lawn 150 feet broad, extending the whole length unobstructed by any plant or other object. Beyond the dress ground, every tree, for the distance of five miles, has been removed which obstructed the view, extending 10 miles into Nottinghamshire. An avenue of this extent leading from the castle is terminated only by the hills in the distance. On the terrace, right and left of the castle, are Yew hedges of great height; and descending the steps on each side are two very fine specimens of Gold Yew, upwards of 13 feet high. One of them was brought here from Surrey about 2 years ago; it does not, however, exhibit any evidence of having been removed, for it is growing in equal luxuriance with its fellow, which had been previously established there.

As we have already stated, the dress ground extends half a mile. Both sides of the avenue alluded to are planted precisely alike, and with plants of corresponding height. On each side are arranged circular beds, leaving in the centre 150 feet of turf quite clear. These beds are edged with common Yew, trimmed about 2 feet high; the centre of each bed is planted with Hollyhocks, and around the edges next the Yew are dwarf Dahlias. Thus they represent immense green baskets full of flowers, and, on account of their extent, the effect during autumn is exceedingly grand. The first line of plants behind these takes a wavy direction agreeably with the circles, and is composed exclusively of Irish Yews from 8 to 10 feet high. The first straight line of plants in the rear of them consists of Araucaria imbricata, alternated with Picea nobilis and Cryptomeria japonica; consequently there is twice the number of Araucarias as of each of the others. The second row is planted with Cedars of Lebanon and Deodars alternately. The third line with Pinus insignis, Douglas Firs, Picea Webbiana, Abies Pinsapo, and Hemlock Spruce. These latter alternating with the Pinus insignis, which constitutes the principal feature of this line, being all large plants. Both sides are, as above, planted for the extent of half a mile, the plants being all selected specimens. The effect of the whole is magnificent, and constitutes one of the grandest features of Elvaston.

The north terrace garden is screened partly by a Yew hedge 12 feet high. This garden leads to the lake, and is approached from the castle by broad semicircular steps, with Box hedges on each side, 3 feet high and 2 feet wide, cut square. Descending on each side with the steps are rows of Irish Juniper, from 8 to 10 feet high. This garden is in scroll pattern, profusely ornamented with vases and flower-stands, bounded on the other sides by Holly hedges 12 feet high; a number of fine specimens of Irish Juniper are disposed at the termination of each scroll, in order to give character to this peculiar style. We observed here a fine plant of the rare gold-striped Irish Yew 5 feet high, and also a noble Juniperus excelsa 15 feet in height, a perfect pillar.

On the west side of this garden is an entrance which leads to the garden of the "Three Sisters," so named from having been laid out under the direction of his lordship's three sisters. It is an old garden, in the geometric style, and is chiefly planted with sweet-scented plants, such as Honeysuckles, Roses, &c., arranged in masses; these afford a supply of cut flowers. There are also here some grand specimens 15 feet high, of Cupressus torulosa. Proceeding westward from the garden of the Three Sisters we enter a labyrinth, also designed by these ladies. It is formed of Portugal Laurel hedges, 11 feet high, trimmed square, a kind of hedge very suitable for a labyrinth.

Leaving the labyrinth and the garden of the Three Sisters, and proceeding northwards, we enter the Magnolia Garden, which is divided into beds, having Sweetbriar hedges. The Magnolias employed are all deciduous species or varieties, and every sort which could be obtained is to be found here. From the circumstance of deciduous kinds only being employed, an important object is kept in view, viz., the rendering this a spot of attraction in spring, the whole of the beds being carpeted with Lily of the Valley. They are, therefore, most beautiful just as the Magnolias begin to develope their leaves and flowers. *R. G.*

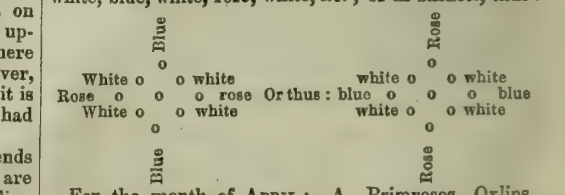
(*To be continued.*)

M. CHEVREUL'S ARRANGEMENTS OF FLOWERS.

THE following arrangements of flowers are given by M. Chevreul, for the purpose of illustrating the principles before laid down, and of serving as a guide to those who wish to carry them into practice. Our readers must, however, in referring to these examples, bear in mind that the combinations of flowers given below are recommended for gardens in the neighbourhood of Paris, and that, because of the difference of our climate and the consequent different periods of flowering, the identical plants chosen by M. Chevreul will have, in some cases, to be replaced by others of the same colour and appearance, in order that all the individuals composing any one group may be in flower at the same time.

For the month of FEBRUARY:—If the winter has not been very severe or long, three varieties of Crocus make their appearance in this month, viz., the white, violet, and yellow. A border of a single line may be made with these placed in any one of the five following orders, viz.: 1, yellow, violet, yellow, violet, &c.; 2, yellow, violet, white, yellow, violet, white, &c.; 3, yellow, white, violet, white, yellow, white, violet, &c.; 4, yellow, violet, yellow, white, yellow, violet, yellow, white, &c.; and 5, violet, yellow, violet, white, violet, yellow, violet, white, &c. They may also be arranged in quincunx either in a border or a basket.

For the month of MARCH:—Winter Aconite may be opposed to Snowdrop, or vernal Spring-flake (Leucoïum vernum). In some seasons the Christmas Rose (black Hellebore) remains in flower in this month, and may be surrounded with winter Aconite, Violets, and Snowdrops in no particular order. White, rose, and blue Hepaticas may be arranged in a border, thus: white, blue, white, rose, white, &c.; or in baskets, thus:



For the month of APRIL:—A. Primroses, Oxlips,

&c.—Primroses being of several distinct colours, offer considerable facilities in their arrangement. A border of Primroses in the following order looks well: red, white, orange, lilac, yellow, brownish violet, white, red, white, orange, &c., repeating the series in the same order. If a circular or elliptical border be required, one composed of Primroses arranged as follows will be found agreeable to the eye: white, red, white, orange, or orange edged with brown, violet or lilac, yellow, Oxlips or Cowslips, violet or bluish lilac, orange or orange edged with brown, white, red, white, and so on as before. The yellow Oxlips or Cowslips occurring at equal distances produce an excellent effect, their straight peduncles, covered with yellow flowers, agreeably destroying the flat appearance which would otherwise arise from the uniformity in the height of the other plants.

If from the last arrangement the orange flowers be taken away, the effect is greatly deteriorated by the loss of symmetry. This observation must be borne in mind whenever a border forming a closed circle is, from its small size, at once taken in by the eye; if this be not the case, the first arrangement may be preferred to the last.

B. The large-flowered Arabis, Saxifraga crassifolia, the Arabis, Caucasian Doronicum; then repeat in the same order. If the Arabis are left to themselves they spread too much relatively to the Saxifrages, and there is then too much white. If it is too much trouble to keep the Arabis in bounds, the following arrangement will be found useful: Arabis, Saxifrage, Doronicum, Arabis, Saxifrage, Doronicum, &c.

C. Doronicum, purple Honesty; or, Saxifrage, Doronicum, Arabis, purple Honesty; or, Saxifrage, Arabis; then begin again, observing the same order. To insure this border looking well, care must be taken that the flowers of the Arabis and Doronicum do not spread too much relatively to the Saxifrages or the Honestys. Again, in the last arrangement, one Honesty may alternate successively with one Saxifrage, so as to have the Honestys between two Doronicums and the Saxifrage between two Arabises.

D. 1, Blue Hyacinth, yellow Narcissus, blue Hyacinth, yellow Narcissus, &c.; 2, Hyacinths alone, in the following order: White, red, white, red, &c.; or thus: white, blue, white, red, white, blue, white, red, &c. Large baskets of blue Hyacinths alternate well with Doronicums; so do large baskets of white Hyacinths with Saxifrages.

E. 1, Evergreen Candytuft (Iberis sempervirens), Rock Alyssum (Alyssum saxatile), Candytuft, Alyssum, &c. 2, Candytuft, Virginian Lungwort (Pulmonaria virginica), Alyssum, then repeat. 3, Candytuft, Phlox verna (purple) or Anemone pavonina (red), or Anemone apennina (sky-blue); Alyssum, Phlox verna or Anemone pavonica, or A. apennina, then begin again and repeat in the same order.

F. Beds of Periwinkle (Vinca minor and major), white and blue mingled with white and violet Violets, and with Anemone nemorosa, or Isopyrum thalictroides; and, if the beds are of any size, with yellow flowers, such as Cowslips, Ranunculus Ficaria, &c., produce a good effect.

G. 1, Dwarf Peach trees with double red flowers (Amygdalus persica) Kerria japonica, dwarf Peaches, Kerria japonica, &c. 2, Dwarf Peaches, yellow Jasmine (Jasminum fruticans), dwarf Peaches, yellow Jasmines, &c.

H. Tartarian Honeysuckles (Lonicera tatarica), red, the white-flowered variety of the same plant, then the red again, then the white, and so on. This is, however, rather heavy; a Kerria japonica may be interposed between two Honeysuckles, red or white, but in consequence of the great difference in their form they must not be so near as to touch each other; there must be, moreover, behind such a line as this other good-looking plants.

I. A Pyrus japonica rising in the form of a bush above a bed of Violets produces a good effect, by the contrast of its scarlet flowers with the colour of the Violets.

DISEASES OF PLANTS.

(*Continued from page* 819.)

Third species. Rameal Necrosis.—The subtraction of caloric produces effects analogous to those of its excess. Thus we see the branches of trees, on the coming on of sudden frosts, or in the heart of winter, turn black, shrivel up and present the appearance of having been burnt by fire. Those branches which from the shortness of the autumn or the want of the usual heats have not been able to ripen properly, show this phenomenon frequently, especially in the case of ill nourished and delicate plants. In the spring the stems of Tulips and other flowers perish from the same cause.

It appears to me that it is to this head that should be referred that disease of the Olive called *Brusca*, upon which we have two excellent memoirs, between which I should certainly give the first place to that of *Cosimo Moschettini*. The constant alternations of heat and cold, when bright hot days are followed by cold clear nights, seem to occasion it. The leaves turn brown, dry up and fall, leaving the bare tree with all the appearance of being burnt. As it is observed that it is always the weakest trees that are most liable to the *Brusca*, I conclude that the best method of preserving them from it is good cultivation, judicious treatment, and more especially reserve and economy in pruning, a thing so little attended to, or I may say almost entirely neglected.

Fourth species. Necrosis of Buds.—If a spring, following a mild winter, is interrupted by hoar frosts or frosts, it becomes very injurious to trees. The young buds, at the moment when they are ready to burst, are suddenly deprived not only of the heat necessary for their development, but also of a portion of that which is essential to their vegetable life; and whilst the rest of the branch does not suffer, they are in various degrees affected. Thus I have sometimes observed all the flower-buds killed, whilst the leaf-buds have not suffered. So also in the case of buds which include leaves and flowers, the latter will sometimes be found to have been killed, whilst the leaves are uninjured.

Fifth species. Pistillary Necrosis.—The winter of 1805 was very mild, and moist beyond measure. Vegetation was far advanced in the beginning of March, and several trees were already in full flower. At the end of that month a cold wind, followed by some hoar frosts, stopped their progress. I hastened to examine with care the flowers of various plants, which were either fully out or ready to burst. It was my fortune to observe a phenomenon which I had not happened to read of in any writer. Examining the flowers of the Cherry, the Apricot, and the Pear, I observed the male organs generally perfectly sound. Those attacked were flaccid, but preserved their parts to all appearance well organised, and the re-appearance of the sun restored their vigour. But it was very different with the pistils. They were all burnt up, as it were, which was very evident the moment the sun shone upon them. The Pears were in a worse condition than the Apricots. This astonished many persons, as it did me at first; for it seemed that the Pear, a natural production of our own country, suffered more than the Apricot, imported from the hot climate of Asia. Upon carefully investigating the matter, I observed that in the Pear the pistil is much less protected than in the Peach and Apricot, in which the petals form a good screen round the ovary, to which the external air has much less ready access. The Pear does not enjoy this advantage. This necrosis was not confined to the style or stigma, but the whole ovary was affected. I examined some unopened buds of the Pear, and I found them injured in a similar manner, which was not the case with the Peach and Apricot. Looking at the trees themselves, I found that it was the oldest among them that had suffered the most. Finally, after several days, during which I did not lose sight of these flowers, I saw the male organs remain the usual time in their healthy state, whilst there was scarcely a vestige left of the female organ, which had fallen off in the form of a blackish powder. I must not omit to state that during several successive years, the observation of the flowers of herbaceous plants which have suffered from hoar frosts has shown me that the female organs are much more injured than the male.

Those who love to persist in the strictest analogy between the animal and vegetable systems, will find in this observation a fresh argument in support of their theory, as it is the general opinion that sterility in animals proceeds more frequently from the female than from the male. To me it suffices to observe that the above-mentioned circumstance may be due in part to that which Linnæus has observed, namely, that the extremity of the pistil is deprived of epiderm.

NOTES ON SOME NEW VARIETIES OF PEARS.

From the "Bulletin de la Société d'Horticulture Pratique du Rhone; pour 1849."

This contains descriptions of many old and new sorts presented for exhibition; and as these descriptions appear to have been carefully made, by M. C. Fortuné Willermoz, the following extracts will probably be acceptable to those interested in the cultivation of Pears.

Ananas.—Middle-sized, short-pyriform, surface somewhat uneven; stalk thick, about half an inch in length, oblique; skin smooth, soft, of a golden yellow with reddish dots; flesh pale yellow, very fine, melting, full of sugary juice, perfumed. Season, end of September and beginning of October. This was also exhibited under the name of Bergamotte Cadette.

Angora. "Syn. Belle Angevine, Faux Bolivar, Royal d'Angleterre, Comtesse ou Beauté de Tervueren, Grosse de Bruxelles, Duchesse de Berri d'Hiver, Très Grosse de Bruxelles et Lyons."—[The description appears to apply to the Uvedale's St. Germain. The Angora Pear, said to have been brought from the Levant by Tournefort, has proved to be the Catillac.]

Belle Epine Dumas. Syn. Epine de Rochoir, Beurré Rochoir, erroneously, at Lyons. This must not be confounded with the Epine Dumas, of which the Duc de Bordeaux is a syn.—Fruit very large, pyriform, somewhat turbinate; skin smooth and fine, golden yellow on the one side, and of a vermilion colour on the other, dotted with reddish brown, russeted about the footstalk; the latter is about an inch in length, bent, implanted in a small irregular cavity; eye small, in a shallow evenly-formed cavity; flesh pale citron, very fine, buttery, containing a very agreeable sugared juice. Season, commencement of October. The tree requires a rich substantial soil.

Bergamotte Edouard Sageret. Syn. Poire Sageret No. 2, Poire Edouard.—Fruit middle-size, pyriform; flesh coarse, rather gritty round the core, tender but not melting, sweet and perfumed. Season, end of August.

Bergamotte Lucrative (not Beurré Lucratif). Syn. Bergamotte Fièvé.—Fruit very large, roundish, flattened. Classed among those of first-rate quality. Ripe in September.

Bergamotte Sageret. Syn. Poire Sageret, No. 1.—Fruit middle-sized, roundish. Flesh white, very fine, melting, sugary. Ripens in November and December, and when grown on a standard will keep even till February or March.

Beurré Goubault. (This must not be confounded with Doyenné Goubault.)—Fruit middle-sized, almost round; skin pale green, passing to a yellowish-green, sprinkled with brown dots. Stalk slender, about half an inch in length. Eye large, open, slightly sunk. Flesh fine, half melting and buttery, perfumed, gritty near the core. Season, beginning of September.

Beurré Gris d'Hiver Nouveau. (Bavay.) Syn. Beurré Gris Supérieur, Beurré de Luçon, Beurré Gris d'Hiver of Bivort, St. Michael d'Hiver.—Fruit very large, oval, flat at the ends. Stalk short, about four-tenths of an inch in length, thick; eye small, slightly sunk in a small regularly-formed hollow; skin shining, greenish-yellow, tinged with red next the sun. Flesh white, firm, juicy, and of a very agreeable flavour; it is sometimes a little gritty, when the tree is planted in a strong soil. Season, December and January. The tree is vigorous and extremely fertile. We think this variety ought to be classed among the Doyennés rather than among the Beurrés.

Beurré Lefèvre. Syn. Beurré de Mortefontaine.—Fruit very large; colour, a mixture of brown, green, and red; but its quality does not correspond with its beauty, and it soon becomes mealy. It ripens in October.

Beurré Moiret. Syn. Beurré Moiré.—Fruit large, pyramidal, yellowish green, a little tinged with red next the sun, and sprinkled with brown dots. Stalk about an inch in length, of medium thickness. Eye slightly sunk. We have not had an opportunity of examining its flesh, but we have been assured that it is of first-rate quality. Ripens in the end of September. The tree is vigorous and fertile.

Beurré Quételet.—Fruit middle-sized, broadest transversely. Stalk rather more than half an inch in length, thick, fleshy, deep brown, implanted in a shallow regular cavity. Eye middle-sized, irregular, placed in an evenly formed shallow basin. The flesh is said to be melting, buttery, and of first-rate quality, ripening in the end of October.

Beurré St. Louis.—This variety has been introduced to Lyons by Prof. Jourdan, a very eminent pomologist. It bears considerable resemblance to the Délices d'Hardenpont.

Beurré St. Nicolas.—Fruit large, obtusely pyramidal. Stalk thick, fleshy, curved, about eight-tenths of an inch in length; eye very large, placed in a shallow cavity. Skin smooth, shining, golden yellow, dotted with brown, red next the sun. Flesh pale citron, fine, very melting, with abundance of sugary juice agreeably perfumed. This beautiful and excellent Pear ripens at the end of September.

Bézi des Vétérans. (Van Mons.)—Fruit, large, turbinate, or oval. Stalk rather more than an inch in length, yellow, very slender, oblique. Eye open, in a shallow cavity; segments of the calyx erect. Skin greenish yellow, with small russet patches, tinged and streaked with light red next the sun. Flesh pale citron, tolerably fine, melting, containing abundance of sugary juice, very agreeably perfumed. Ripe in October and November, and will even keep later.

Beurré des Charneuses. Syn. Fondante des Charneuses, by corruption Beurré, or Fondante des Carmes.—Fruit large, turbinate, rounded at the eye, diminishing and slightly bent towards the stalk; the latter is about three quarters of an inch in length, thick, oblique, yellow. Skin greenish yellow, sprinkled with numerous brown dots. Flesh pale citron, traversed by some small greenish filaments, melting, buttery, with abundant juice, sweet, and very agreeably perfumed.

Bonne d' Ezée, not Bonne des Zees. Syn. Belle et Bonne de Zee (d'Albret).—Fruit very handsome, oblong, obtuse. Stalk three-fourths of an inch in length, very thick, yellowish brown with grey dots. Eye large, placed in a regularly formed wide but shallow depression. Skin of a fine yellow colour, relieved with brown and green dots. Flesh white, tolerably fine, when cut permitting the escape of a very abundant sugary juice. [According to M. Jamin it ripens in September.]

Catinka. (Esperin.)—Fruit middle-sized or large, irregularly oval, turbinate, tapering towards the stalk, which is slender, an inch and a half in length, reddish brown, with a small fleshy projection on one side at its insertion. Eye regularly formed; segments of the calyx short. Skin light green, changing to greenish yellow at the maturity of the fruit, sprinkled with numerous small brown dots, and washed with carmine red next the sun. Flesh white, tolerably fine, melting, and full of rich sugary juice, with a Crassane flavour. This handsome and excellent Pear remains for six weeks fit for use in November and December. The tree is fertile and very vigorous, even on the Quince.

Colmar d'Aremberg.—Fruit large, or very large, turbinate, flat at the eye, diminishing considerably towards the stalk, which is short, thick, oblique, deeply inserted in a cavity surrounded with projections. Eye very small in comparison with the size of the fruit, placed in a deep cavity. Skin green, changing to golden yellow at the maturity of the fruit, relieved with numerous russet specks and some greenish dots. Flesh white, tolerably fine, melting, with a very abundant sugary juice, delicately and agreeably perfumed. Ripe in November and December; it is necessary to seize the moment of its maturity; if taken too soon it is rather sharp, too late it is mealy and dry. One of the fruits exhibited was upwards of 15 inches in circumference. ‖

VILLA AND SUBURBAN GARDENING.

IN selecting varieties of Grape Vines, the first point to consider is, whether the temperature is to be maintained at a higher degree than that of an ordinary greenhouse. If such is to be the case, the higher flavoured kinds may be cultivated, but it would be useless attempting the growth of these, unless a considerable amount of artificial heat is applied. Where the latter can be secured, the following kinds may be planted: Black Hamburgh, Muscat of Alexandria, Cannon Hall Muscat, and Black, White, and Grizzly Frontignans. Where little heat can be obtained beyond that afforded by the glass covering, then the following kinds only should be employed: Black Hamburgh, Black Prince, West St. Peter's (Oldaker's) Royal Muscadine, and Sweetwater. An attempt to cultivate too many varieties in one house has few advantages, and many disadvantages. It is always better to select three or four well-known free-bearing, good kinds, suitable to the situation and temperature in which they are to be grown, than to seek variety, which is followed by questionable success. The latter is, however, an error into which the amateur is often incautiously led; for, under such conditions, he expects much, even far more than the nature of his accommodation can produce, and consequently he fails in his efforts.

The kind of plants which should be selected, and which are most suitable, are those which have been raised from eyes the previous season. It may be asked why such are to be preferred to older Vines, or stronger ones propagated by layers. The answer is that plants raised from eyes have generally much better roots, the latter being the production of the individual plant, unaided, as in the case of the layer, by the mother or stool; plants one year from the eyes are better than older ones, because the roots are not so much matted and crippled, and they admit of being planted to more advantage. The best season for planting is the beginning of April. The operation is generally but imperfectly understood. Instead of turning the plant out of the pot with the ball entire, as is frequently practised, and placing it in the soil without disturbing any portion of it, let the whole of the mould be carefully disengaged from the fibres, and then stretch the latter out to their full length on the surface of the border, not a foot beneath it, as is sometimes done. Sprinkle some of the finer soil, about 2 inches thick, over the whole, and upon this, place a few inches of half-decayed manure, as a covering and protection to the roots in drying weather; when this is completed, give each plant a moderate watering with water at a temperature of 100°; and should it appear necessary at any future time to apply water to the border, always use it at this temperature. The only remaining point in the operation is to fasten each Vine securely, in order that it may not get moved at the root.

When Vines are first planted, it is a bad plan to subject them immediately to a high temperature; rather allow them to start with the natural season. In most instances they will make a shoot sufficient to reach the top of an ordinary Vinery the first year. One shoot only should be permitted to remain on each Vine, and this should not be stopped during its season of growth, unless it exceeds the limits assigned to it. *Pharo.*

Home Correspondence.

Pine-apples at Trentham.—Your correspondent "Mirabile dictu" well deserves the thanks of all Pine growers, for the valuable information which he imparts to them. It appears from his last communication that Pine-apples of first-rate excellence are grown at Trentham; the question now arises, whether hot-water pipes or tanks are best for producing bottom-heat for Pines; a plan of the Pine pit at Trentham, with advice on the subject, would no doubt therefore prove acceptable to many of your subscribers. *A Pine-apple Grower.*

The Viper Question.—It is not, I think, generally known that other creatures, besides the viper, have been supposed to exercise the faculty of affording a temporary refuge for their young, by receiving them into their stomachs, and therefore, without feeling competent to offer any opinion on the subject, I transcribe the following sentences from Barrow's "Voyage to Cochin China," p. 144, as likely to interest those who bear to either side of this perplexed question: "A whole shark, near 11 feet in length, was cut up as bait for crayfish. Four young sharks were found alive in the stomach of this voracious animal; but whether they had been devoured by the old one, or had voluntarily fled thither for protection, was a contested point among our medical gentlemen. One declared that he had more than once seen their own young egorged from the stomach of the old ones when taken; and that once in particular he had observed a dozen sawfish (a species of shark, the Squalus pristis) springing alive out of the mother's mouth, after it had been hoisted out of the sea upon the deck of the ship. Doctor Moseley, who has written on the subject, and ought to be considered as good authority, has observed that the young sharks always retreat into the stomach of the old ones in time of danger; an observation, indeed, that was made two centuries before his time. Sir Richard Hawkins, who sailed on a voyage to South America in the year 1593, expressly says that he has frequently seen the young sharks go into, and out of, the mouth of the dam, and that he has found them in the stomach; so that Linnæus is probably mistaken in supposing that

cidedly proved that the living principle, in particular classes of land animals, is endued with the power of resisting the action of the gastric juice; but the difficulty of making experiments on the digestive faculties of the stomachs of fishes, leaves it undetermined whether the same principle is capable of exerting a greater or less degree of power in this class of animals." The strife about the viper might surely be terminated in the new reptile house of the Zoological Society, by sending specimens in the spring to breed in the commodious apartments there provided. The keepers are practised observers of the facts connected with natural history, and the authorities would probably lend their sanction to the solution of the difficulty, and so put an end to the arguments *pro* and *con*, some of which have made one suspect that the viper not only itself bites, but occasionally becomes the cause of biting in others. *D.*

The Polmaise System of Heating at Polmaise.—Have you ever seen Tonynemeda's "Garden of Curiosities?" If you have you will remember that the translation says, amongst other things which are written in the Malleus Maleficarum, you shall find that the commissioners having apprehended certain sorceresses, willed one of them to show what she could do, assuring her life on condition that from thenceforward she should offend no more in the like, whereupon going out into the fields in presence of the commissioners and many others, she made certain characters and mumbled a few words, there rose a vapour which, ascending upward like a cloud, began to thicken of itself in the midst of the region of the air, gathering and making there a black and fearful cloud, which cast out so many thunders and lightnings that it seemed something more than earthly. There are also garden curiosities of the present day well worth recording. We are instructed in certain works on gardening that gardeners should have a prophetic eye, and, to use the words of old Elspa, "These second-sighted folks should see things far off, and things to come, as clear as I can see my thumb." Now some of those spaemen undertook to tell the fortune of the Polmaise system of heating, and like Sir William Worthy, in the "Gentle Shepherd," said—

> "Weel gin ye hae a bairn
> That ye like weel, and wad his fortune learn;
> I shall employ the farthest of my skill,
> To spae it faithfully, be't good or ill."

It is well known that many said evil things against it, and that it would die in a short space. Whether these seers belonged to the school of Merlin or Michael Scot I cannot tell; but one thing is certain—I went to Polmaise lately, and found it still living and working well. This system has now undergone an ordeal of about 10 years' duration, which may well satisfy the most sceptical opponent it has ever met with, for it has had many trials, from the *expurgatio simplex* and upwards. Mr. Gorry, the gardener, informed me that this season he had cut bunches of Grapes which weighed 5 lbs., and I measured some berries that were nearly $\frac{4}{5}$ inches in circumference; the foliage of the Vines is still of an uncommon size, and the fruit is well coloured. These marks will surely not be looked upon as symptoms of a low pulse or of approaching dissolution, and we hope the enlightening power of scientific knowledge will have a beneficial effect upon the minds of those who cultivate the vegetable productions of this world, and, like the blissful influence of Christianity, put to silence those oracles whose characteristics are ambiguity, obscurity, and convertibility, and like Milton sing—

> "The oracles are dumb
> No voice or hideous hum
> Rings through the arched roof in words deceiving;
> Apollo from his shrine
> Can no more divine
> With hollow shriek, the steep of Delphos leaving.
> No mighty trance or breathed spell
> Inspires the pale-eyed priest from the prophetic cell."

It is stated in the "Theory of Horticulture," that the maturation of the fruit is dependent upon the action of the leaves and roots, and the secretions that it forms are principally derived from the former. Consequently whatever contributes to the healthy condition of the leaves and roots will have a directly beneficial influence upon the fruit, and *vice versa*. Now, will any person say, after seeing the production of one of the Vineries at Polmaise, that the leaves and roots are not in a healthy condition? If the system had been contrary to natural laws, symptoms of the violation of these laws would have been making their appearance, for we believe that when natural laws are broken, punishment in some shape or other is the certain consequence. *P. Mackenzie, West Plean, Stirling.*

Continuous Blooming Roses.—Will "Crito" have the goodness to inform a "Young Hand" what class, or individual Roses, he includes under the head of "continuous bloomers." The enquirer has a small collection of between 200 and 300, consisting of Moss, Provence, Gallica, Alba, Hybrid China, Sempervirens, Hybrid Perpetual, Bourbon, and Noisette Roses, but cannot say that any one of them possesses the very desirable property of beginning to flower in June, and not leaving off till destroyed by frost. *Dumfries, Dec.* 25.

To make "Yoghoort," or Turkish Curds.—Boil a quart of new milk for several minutes; then take it off the fire, and pour it into a bowl or other vessel, in which the yoghoort is to be served up. When the milk has cooled sufficiently just to allow of your finger bearing the heat, place the bowl in some place where it may not be disturbed. Then dissolve about a teaspoonful of leaven of sour dough,* in a couple of dessert spoonfuls of water; pour this mixture into the milk, and stir the whole well. Afterwards wrap the bowl up in flannel or some woollen cloth, to prevent the milk from cooling too rapidly, and when it is cold and appears to have thickened, take off the cloth, and cover the top of the bowl with some calico, or a napkin, of several folds in thickness, which must be brought in contact with the surface of the curds, to draw off the whey by capillary attraction. After the liquid has remained undisturbed for 12, 13, or more hours, it will be ready for use. If properly made, it should then have the consistency of jelly or *blanc mange*, so that a piece taken out of the bowl should retain the shape of the spoon. Having thus obtained yoghoort, you have only to use a dessert spoonful of it instead of sour dough, to curdle the milk; for the yoghoort made with leaven is not agreeable, the leaven, indeed, being only used when yoghoort cannot be procured, and serving, as it were, to lay a foundation; it is therefore well to put by a small quantity of yoghoort each time, for next day's use. The yoghoort is a most wholesome, refreshing thing, especially in warm weather. It is very pleasant with sugar or honey, and is an excellent addition to the breakfast-table. A small quantity dissolved in a tumbler of cold water is an admirable quencher of thirst. Having been thus loud in the praises of yoghoort, it is but right for me to add, that with some persons a taste must be acquired for eating it; but after two or three trials, it will be relished more each time. Yoghoort is so common in this part of Turkey, that one is never at a loss to procure any, to curdle milk; some natives are therefore actually ignorant how the first was made, probably imagining that at the beginning of the world, yoghoort was likewise created. A native to whom I said that it was scarcely known in England, exclaimed, "What a country! no yoghoort! but how can that be possible?" *H. H. C., Erzeroom, Turkey in Asia.*

Holes of Animals.—Those of which I spoke had "about a handful of crumbly earth at the entrance," and would freely admit the middle finger—rather more than that. I only took notice of them in last September and October (when I wanted to catch some field mice, and thought they belonged to that animal), but I cannot say when they were made. The question, when they are most plentiful, rather implies that they would have disappeared in the compass of a year; which, without my aid, I do not think they would have done. *A. H.*

Advice to Masters and Gardeners.—Towards the close of your last year's volume, "Dodman" says, "I do not recommend you (gardeners) as soon as you get to a place to begin a radical reform." The following may, however, convince him that a radical reform as early as possible after taking a situation is in many cases necessary. When I first made my appearance here (no matter where), I was hastened to a greenhouse, next to a Fig-house, then a Peach-house, &c. In passing through these, my guide often noticed "How clean everything has been left." I made no reply; but indeed I thought they had turned a glass house into a pot or a tool-shed. I next entered the kitchen-garden, where I saw a spade and a fork lying here, and a rake and hoe there. I requested to see the tool-house, where I found a few implements that had been used in the flower-garden in the previous summer, in the same dirty manner as when they were used. I immediately issued orders that all tools should be brought to the shed; after much difficulty the majority of them were found; some had strayed away among the farm labourers, and these by virtue of long possession, and a new gardener too, they considered to be their own, although they were marked with the garden mark. A radical reform was put into action, the tools were well cleaned, mended, and put in their places. I then gave the foreman directions to see that every tool was in its place, and that any man who left a tool out, or put one away dirty, should be fined 3*d*. After this rule had been put into operation, however, the old practice could not be forgotten, and in the first month I received, in the shape of fines, 5*s*. 9*d*., and in the first six months, the fine proceeds amounted to 12*s*., to which at the end of the year, I added a little more, and offered it as a prize for study. Now, however, I seldom get a fine in a month: such reform had surely been wanting here. The next place which I visited after my arrival was a plant stove (formerly a Pine stove), in which the plants stood 3 feet deep in the pit. Their roots had made their way through the pots into the soil beneath, where they had well established themselves. A radical reform was surely also wanted here; and it took place quickly. The plants were lifted out, some cut down, others repotted, the pit was filled up, new pots of course were wanted, and a good supply of broken tiles from the pottery. The conservatory was the next place I entered; here I found a collection of stove and greenhouse plants, such as Camellias, Azaleas, Heaths, Epacrises, Gesneras, Euphorbias, &c. The person who accompanied me considered the house warm, for outside the quicksilver stood at 29° Fahr., while inside it was 65°; 70° were aimed at. My employer said the Camellias had not flowered well since the season in which they were bought, although they had many bloom-buds on them; and no wonder, the heat alone would have caused the buds to fall off. But the greatest evil here was that the plants had been potted in soil taken from the bottom of a pond, without any drainage, or at least only a single crock over the hole in the pot. The Camellias had become unhealthy; the leaves had curled up, some fell off, &c. "Dodman" will, therefore, surely agree with

* Other ingredients are sometimes used instead, such as a few spoonfuls of rain-water or bezour, or a twig of Oak-leaves

might make a good sub-

me that reform was wanted in this department, for in the following season matters would be even worse. I cut the plants well in in February and put them into a gentle heat; shortly afterwards they appeared to break tolerably well. I shook the soil from the roots and repotted them; they were then placed in a heat varying from 65° to 70°, and by the end of April they had made good shoots, from 6 inches to 8 inches long. The heat was then considerably reduced, and in the beginning of June they were placed in the open air, where they remained till the end of September; ever since then they have been kept moderately cold, and now nearly the whole are well covered with flower buds. Some are in good flower, and the foliage is a good dark green. At first my employer feared the result of my radical reform, but now I seldom go two days without being congratulated on the health of the plants. Every department underwent the same treatment as early as possible, as I considered that delays would be dangerous, and that I would lose a season. "Dodman" should combine theory with practice, and then he would be in a position to advise. *Hortulanus.*

Reviews.

Episodes of Insect Life. By Acheta Domestica. 2 Vols., 8vo, with numerous coloured plates. Reeve and Co., London.

Of this singular work the first series appeared in 1848, the second has just been issued; both in covers as gay as the jewelled creatures whose history they tell. They belong to a class of writings consisting of the real and unreal, the fanciful and the matter of fact, by means of which some suppose that natural history may be rendered popular with the careless and indifferent. We subscribe to the opinion that such means deserve encouragement; and class the volumes before us among the more successful of their kind.

The author is well read and well bred. There is nothing to offend the prejudices of society nor the good taste of men of letters, nor the scientific prudery of professed naturalists. On the contrary, to a style which is very much that of a gentlewoman, is added an amount of knowledge of the habits of insects which would have done no discredit to a Curtis or a Westwood. The worst that can be said of the author is, that his (her ?) liveliness has too much the air of constraint, and his illustrations are now and then more grotesque than is desirable. In short, the book is for the drawing-room table, rather than for the study. Its gay illustrations of queer insects, queer fancies, and queer places, are sure to raise a smile if they do not provoke serious criticism, and may lead persons of active minds to enquire into truths of which Acheta's sketches are the burlesque.

The following account of "A Love among the Roses," that is to say, of the Rose-chafer, *Cetonia aurata*, in the second volume, gives as good an example of the author's manner as any extract for which our limited space will afford room.

"Young ladies, and old, and ladies of a certain age, all of you who have propensities for petting, we can recommend to you a pet—a novel sort of favourite. We will describe his person and his qualities. In figure, he is a model of miniature proportion, a match for the German Dwarfs, a rival of General Tom Thumb, and a contrast to many of his pigmy order, frightful in big-headedness or bulk of limb. He is clad in a coat of mail, which he never doffs; yet be not alarmed at his military array; for its wearer is as little formidable as certain field-marshals, the Marshal of the City, or the men in armour at the Lord Mayor's show. Never, indeed, was carpet knight more gentle; and though he wears spurs (badge of his order), they were not won in fight, nor does he ever plunge them into ladies' trains. His armour—how shall we describe it for lustre, taste, and finish? The finest suit that ever issued from the workshops of Milan, rich in the most cunning inlay of gold or steel, would prove, if compared with it, a rude, unsightly piece of workmanship. On the back of the corslet, burnished green and gold are the prevailing hues, while in front, on breast-plate, cuisse, and gauntlet, the lustre of the precious metal is predominant, mingled with changeable reflections of purplish crimson. But description fails in doing justice to an array so brilliant. Let us proceed, therefore, to its owner's character and habits, which are in all respects consonant to his polished exterior. His gentleness has been before adverted to, and he is no less distinguished for taste and delicacy. No gross and greedy appetite defiles his form or nature; for nothing coarser than honey or the golden farina of flowers, moistened by the juice of fruits, makes up his table of regalement. He loves, while yet in freedom, to ride upon a sunbeam; but would be content, when once enthralled, to bask only in the sunshine and his mistress's smile—to revel and to sleep upon a bed of roses. What think you, ladies, of this our candidate for your especial notice? In proper and euphonious parlance, '*Cetonia durata*' is the fitting appellation which he bears; but to you, probably, if already known at all, he is more familiar as 'a nasty beetle!' Yes, it is thus, doubtless, that, blinded (as some are for their live-long day) by the morning mist of early prejudice, you have been led to miscall even that beautiful creature, the *Rose* or *Golden Chafer*; with a multitude of others scarcely less worthy of admiring notice."

Those who want a couple of amusing, glittering volumes for a drawing-room ornament, or a *fête* day present, will hardly find two better suited to the purpose.

Morning Rambles in the Rose Gardens of Hertfordshire. By William Paul. Piper, London.

A useful and interesting little pamphlet of 32 pages, containing descriptions of 11 of the "far-famed Rose gardens of Hertfordshire." The object of these descriptions is to give "Rose fanciers" who live at a distance, and who might therefore be prevented from seeing these gardens, an opportunity of knowing what they contain, and the modes of growth under which different varieties of Roses flourish best. We select the following account of Mr. Warner's garden at Hoddesdon, in illustration of the clever way in which Mr. Paul manages his subjects:

"This beautiful garden is about a mile from the Broxbourn Station on the Eastern Counties Railway, and is remarkable for the diversified surface it presents. On the lawn, fronting the house, is a row of tree Pæonies, and fine specimens of the Weeping Elm, the Abies Deodara, Daphne pontica, Fern-leaved Beech, and other ornamental trees. On the upper end of the lawn is a raised terrace of considerable length, from which a fine view of this part of the garden is obtained; the Essex hills, embracing part of Nazing Common, affording an agreeable prospect in the opposite direction. A shaded walk descends, "slowly winding" to a canal, over which a rustic bridge is thrown; the scene enlivened by an excellent imitation of rocks formed of brick and cement, thrown with careless hand in the bed of the stream. Near this spot is a rustic building, which perfectly realises the idea of—

> "The calm retreat, the silent shade;"

and an agreeable encounter on a summer's day is a retreat so pleasantly shaded, suggesting, in addition to the ordinary enjoyments of gardening, ideas of coolness and repose. But our path lay onward, and we pursued it till we entered the Dahlia-garden, where we were confronted by a Gothic arch in ruins, covered with Ivy, and in judicious connection therewith were antique windows apparently dilapidated by the hand of time. On the side of this garden, adjoining the lawn, was a border of Roses, five plants deep, formed of standards and dwarf-standards. It contained the usual popular sorts. Among the new ones were Moss Laneii and Géant des Batailles, whose brilliant tints recalled the description of Lovelace:

> "Vermilion ball that 's given
> From lip to lip in heaven;
> Love's couch's coverlid."

"In the centre of this garden is a column of Roses; several plants, principally Sempervirens, being planted at a little distance from each other, and then united into one mass. The effect of this column was decidedly good, and it is worthy of imitation. There was also a plant of Leopoldine d'Orleans standing alone, trained as a weeper, the finest specimen of such we had ever seen, and a splendid Félicité perpetuelle but little inferior. We also noticed the single Ayrshire trailing over and around a large Oak, whose trunk it completely encircled and enlivened with its foliage and blossoms, and this was no mean feature in the scene. Here we paused for a moment to admire fine specimens of the Paulovnia imperialis and Bignonia catalpa, when our ears were greeted by the murmuring of a distant waterfall. And agreeable indeed it was. Nay, more; sweeter far just then than the sounds of the sweetest music, calling up in imagination all that seemed required to amplify and complete the harmony of the scene—associating the freshness of the streamlet with the fragrance of the flowers. We turned our steps thitherward, for it was not far, and found it to proceed from a neighbouring brook, by the side of which was a rustic seat, covered with Ivy, Honeysuckles, and evergreen Roses. It was neither costly nor grand; but it was natural, and fancy applied to it Spenser's description of—

> "——— an arbour green dispread,
> Framed of wanton ivy flowering fair,
> Through which the fragrant eglantine did spread,
> His prickling arms entrailed with Roses red,
> Which dainty odours round about them threw."

This was indeed a delightful spot; but we dared not linger. A few steps more, and we found ourselves in the Rose-garden. The soil, although naturally loamy, was thought not sufficiently good, and the beds were originally filled with prepared soil. In the centre of the garden is a Rose temple. The ground on which it stands consists of four beds of equal size, segments of a circle, the soil being raised, to form a mound, about 4 feet high. Twelve Gothic arches, the standards of which are of iron, 7 feet 3 inches high and 6 feet 3 inches apart, describe the outside of the circle. From these rise several rods, which meet at the top, and are united to a rod rising from the centre to form a dome. Two walks pass transversely through the centre of this temple, thus leaving four arches for ingress or egress. A seat surrounds the central support. Among the climbing Roses which covered the framework we observed—*Macartney:* Maria Leonida, creamy white—*Hybrid Chinese:* Fulgens, crimson; Bennus, light carmine; Sempervirens; Leopoldine d'Orleans, white tipped with lake; Princess Louise, creamy white—*Noisette:* La Biche, white, flesh centre—*Multiflora:* Laura Davoust, white to pink—*Ayrshire:* Ruga, flesh colour. In the same beds with the climbing Roses were interspersed various dwarf hardy kinds on their own roots, to fill up the ground. Various beds surrounded the temple, which were planted with standard Autumnal Roses, of which the following were the most striking: *Bourbons:* Cardinal Fesch, cherry crimson; Gloire de Rosomène, crimson scarlet; Le Grénadier, rosy purple: Phœnix, purplish crimson; and Bouquet de Flore, light carmine—*Chinese:* Gouvion St. Cyr, pink, and Eugene Beauharnais, amaranth—*Tea-scented:* Belle Allemande, pink tinged with fawn; Niphetos, pale lemon; Eliza Sauvage, cream and orange; and Bougère, deep salmon. There are three rustic figures mounted on pedestals introduced round the exterior with good effect. Beyond these is planted a hedge of dwarf Scotch Roses, over which we caught a glimpse of the lawn studded with various ornamental trees and plants. We wished to take a look at the Pinetum, where the specimens, though young are interesting; but time, alas! forbade. The bath garden, too, was before us, and, though not remarkable for the rarity of its plants, through this we must necessarily pass. In front of the bath is a prettily-designed fountain, playing cheerfully enough, and from which a straight walk, with a border on either side, leads to a magnificent cut-leaved Alder, whose branches are upheld with arches covered with climbing Roses. Following the bank of the canal, we pass before a figure of Neptune reclining on a rock rising from the waves, with a fountain playing over and around it. The island is planted with Weeping Ash, Weeping Willows, and Laburnums at its edge, while Scarlet Thorns and Tulip trees occupy the centre. On this side the canal is a lawn sloping to the water, with a row of free-flowering showy standard Roses in front. The next object of attraction is a span-roofed house, built expressly for the cultivation of Orchidaceous plants, several fine specimens of which were in bloom. The skill with which these plants are cultivated needs no comment at our hands: the prizes obtained at the principal flower-shows sufficiently attest the fact. In the upper garden the natural soil is gravel; consequently the flower-beds are filled with prepared soil. The lawn is decorated with flower-beds, among which single specimens of standard Roses are interspersed. We noted the following as the best: *Boursault:* Elegans, rosy crimson—*Hybrid Bourbon:* Coupe d'Hébé, pink; Las Casas, rosy pink—*Bourbon:* Queen, rose and buff; Madame Desprez, rosy lilac; and Cardinal Fesch, cherry crimson. The natural soil of this garden is gravel: consequently the flower-beds are filled with prepared soil. A plant of the Cloth of Gold, which had occupied a south wall for three years, had never flowered. By the side of it grew the single Macartney, which flowered freely, and elicited general praise. A line of arches covered with Roses and Honeysuckles crosses the lawn, and produces a very pleasing effect. Maria Leonida (Macartney) and Leopoldine d'Orleans (Sempervirens) were trained over a seat, the branches drooping naturally from above with a careless grace, which art might in vain try to imitate. A small bed of the crimson Chinese Rose "Fabvier," its brilliant flowers glowing in the sun, was the last object to rivet the attention.—At the end of this garden, adjoining the dwelling-house, is a conservatory, well stocked with flowering plants: there is also an Orange house, containing some fine specimens of Oranges and Camellias."

Miscellaneous.

The late Mr. W. Loddiges.—We regret to announce the decease, on the 28th ult., of Mr. William Loddiges, after an illness of three weeks. This gentleman has long been known as one of the most persevering cultivators of his age, and a genuine lover of plants for their own sake. With him has gone the last of the old firm of Conrad Loddiges and Sons. The business now rests in the hands of, and will we believe be carried on by, his nephew Mr. Conrad Loddiges.

Artificial Fecundation of Fish's Spawn.—As bearing upon a recent communication of M. de Quatrefages on the artificial fecundation of fish's spawn, M. Haxo says that for several years past, two inhabitants of Vosges, without being aware either of the previous publications of M. de Golstein, or of the principles announced by M. Quatrefages, have put the recommendations of this gentleman into practice, and have obtained results which have completely decided the question. M. Haxo states that since 1844, a medal has been awarded, by the Société d' Émulation of Vosges, to M. Géhin and Remi, Labresse fishermen, for having artificially hatched trout's eggs. It appears that the fishermen having for some time endeavoured to prevent the destruction of the fry of the trout in the streams and rivers of Vosges, and having often seen the female when about to spawn (which happens in November), rub her belly gently on a bed of sand, and thus force the eggs out, which she then leaves on the sand at the edge of the streams; concluded that if they could catch the females (and they are not very timid in the spawning season), force the spawn from them artificially, and then place the eggs in a safe place, after having fecundated them by forcing the milt from the male in the same way, the eggs would be sure to be hatched; the chances of their destruction being entirely removed. They tried what they could do; having caught some females in a proper state, the fishermen forced out the eggs by gently rubbing the fish's belly with their hand, then placed the eggs in a pan of clear fresh water, at the bottom of which was a layer of fine sand. They then obtained the milt from the males by a similar process; the milt was placed in the same pan, when the water became slightly turbid, a sign that the eggs were fecundated. The pan (which was an iron vessel pierced with small holes), was then put in a stream of running water, and in the following March the eggs were hatched and the pan was full of little fish. This experiment was several times repeated before the society. MM. Géhin and Remi next tried their experiments on a large scale, and endeavoured to replenish the streams and rivers of Vosges and its neighbourhood; and such has been their

success, that at present they can offer to the amateur 5 or 6,000,000 trout from one to three years old, which they have reared in a piece of water belonging to themselves; the present year will no doubt add many hundreds of thousands to the already enormous number of their fish. We may as well add that at the end of the second year, a small trout weighs 4½ ounces (125 grammes), and at the end of the third year it weighs about 9 ozs. (250 grammes). It is more particularly at these two ages that the fry (élevins) are sold by the two fishermen. *Comptes Rendus, No.* 11, 1849.

Calendar of Operations.

(For the ensuing week.)

GENERAL REMARKS.

PROTECTION from frost demands attention in every department at this season of the year, and particularly in regard to pits and frames. These usually contain some of the most useful plants for both in-door and out-door decoration, as well as the choicer and more tender kinds of vegetables, either for present use, or in a progressive state for removing to the open ground at a more advanced period of the year. In protecting these useful structures effectually and economically, it is of the first importance to keep them, and everything about them, as dry as possible. This points out the superiority of wooden shutters over mats or any other textile manufacture which is not impervious to moisture. Another advantage is in their not lying too close to the glass, as a cavity is thus secured, which, in conjunction with the non-conductive properties of the wood, tends to prevent the escape of heat. To this we may add that they are more easily put on or removed, and prevent the breakage of glass, which is scarcely avoidable in handling frozen mats with cold fingers. We are aware they are more expensive in the first outlay, but their durability, in conjunction with the advantages here enumerated, are sufficient to silence any objection upon that head. Where mats are used, they should be hung or spread in the most convenient place for drying them during the day, as they are by this attention rendered much more serviceable in excluding frost. During very severe weather it is a common practice to place a layer of hay or straw between the mats and the glass; it is however very objectionable on account of the litter and untidyness which it unavoidably creates.

PLANT DEPARTMENT.

Even thus early in the season, there are many plants which may be potted with advantage. Amongst these we may instance some varieties of Heaths which have flowered during the last three months, and are now about to commence their new growth; and it will be better that they have previously a new supply of soil. Attention should now be paid to securing a stock of different kinds of soils for spring and summer use. These are much better if collected in frosty weather, as many obnoxious insects are at that time buried deep in the earth, and the eggs and larvæ in that part of the soil within the influence of the frost are destroyed; for these reasons such only should be selected. A good stock of Orchid baskets should now be made, that there may be no delay at the time of shifting. In this matter, every grower will please his own fancy; but no kind gives more general satisfaction than the hemispherical wire basket. They should be made of copper wire, which requires no painting. Water at this season should be applied with the nicest discrimination, taking care to avoid two very common faults; one of which is in applying it before a plant actually requires it, and the other is, supplying it too sparingly when really needed. The rule should be to ascertain that a plant is in a fit state to receive water, and then to give enough to moisten every part of the soil. Caution in the use of fire heat during frosty weather is equally necessary; a high night temperature is, above all things, to be avoided. Stoves should range from 50° to 55° at night; intermediate houses, 40° to 50°; Geraniums and soft-wooded greenhouse plants, 38° to 43°; New Holland house, the same; Heath house, 32° to 38°. The day temperature should range from 5° to 15° higher, according to the amount of light. The practised eye will readily detect many little alterations which are required, such as removing to the warmer end of each house such plants as are a little more delicate in constitution than their neighbours, or which from various causes require a more favourable situation. CONSERVATORY.—As soon as any of the flowering plants become shabby in appearance, they should be removed out of the way, to make room for others which are coming into flower. And in arranging these, let the situation of each be suited as much as possible to the nature of the plant; some kinds prefer a shady situation, and *vice versâ*. With regard to temperature, also, some require to be placed in the warmest parts of the conservatory, while others will be satisfied with a simple protection from frost.

FORCING DEPARTMENT.

PINERY.—Fruiting pits 55° to 60° by night, 65° to 75° (or 85° by sun heat) during the day: bottom-heat 80°. Admit as much fresh air as possible, moderating the quantity when the wind is very keen. The day temperature, and the moisture, should be regulated by the clearness of the weather and the amount of air which can be admitted. Do not on any account allow the moisture to be in such abundance as to condense and run into the plants. Crownless and deformed fruit are the result of moisture being allowed to accumulate in the hearts of the plants at the time the fruit is coming up. Where the pot system is practised, the plants in all stages should be examined once in two or three weeks, and a portion of those whose roots have made the greatest progress should be repotted. VINERIES.—In starting these, after washing the Vines and glass, the woodwork, and everything else about the house, should be painted if necessary. If the outside border is not already secured, this should be done before the Vines are started. Unless the roots extend into the interior of the house, the border should be covered with 18 inches of fermenting material, such as stable litter and leaves, to produce a gentle warmth in the soil before the inner temperature is raised higher than 50°. Before the litter is laid on, all loose or exhausted soil should be scraped off the border as far as the roots, and replaced by a top-dressing of charred turf, crushed bones, charcoal, and fresh horse droppings. The inside border should also have the exhausted soil removed, and top-dressed with a similar mixture. Commence with a gentle heat of from 45° to 50° night temperature, and from 50° to 60° by day. The amount of moisture should be moderate at first, and increased gradually as the plants advance in growth. Syringe freely in fine weather.

FLOWER GARDEN AND SHRUBBERIES.

Half hardy plants in pits and frames should have all the air which the weather will allow. Of plants of this description when kept in turf pits, and protected from frost by means of straw, leaves, mats, or other similar contrivances, it is often necessary, in protracted frosty weather, to keep them covered for days and even weeks. When this occurs, take advantage of the first opening in the weather to admit daylight at least: this should be done cautiously at first, by turning the mats down at the back. It is worth while to run a 2-inch hot-water pipe through any pits or frames which are constructed in a substantial manner, if they lie contiguous to any of the houses which are so heated. The first expense is not great, and the benefits of the plan will be found an ample recompense, as it does away with the expense of mats or shutters, economises labour, and secures to the plants the advantage of daylight in the severest weather. Wherever this system is already adopted, care should be taken to prevent the heat from becoming too great by regulating the stop taps according to the state of the weather, and by tilting the lights at the back during the day. Take advantage of fine weather to remove all dead or decaying leaves and plants, lest they should contaminate their neighbours.

FLORISTS' FLOWERS.

Nothing is so conducive to success in the cultivation of these favourites of the amateur than proper soil and composts; they are, in fact, "the sinews of the war," and the frosty weather is the proper time to attend to them. When little else can be done, the heaps should be turned. Perhaps the best plan is to remove the hard and frozen crust from each, allowing the surface to remain exposed; the succeeding morning adopt the same plan, till all has been frozen through. Cow manure should be gathered, which may easily be done when frozen, and laid in heaps; and if the amateur has it not of his own, it will be advisable to buy a ton or two of some farmer. Willow dust should be highly prized and sought after by those who cultivate Auriculas, and at this season of the year, there are many poor men who would gladly collect it at 2*s.* 6*d.* per sack. Decayed leaves, or an inch or two of the surface soil from plantations, or hedge bottoms, are invaluable, and a cart load of river sand will be indispensable. Night-soil should not be forgotten. Blood and the sweepings of the slaughter-house are powerful fertilisers, but should be used with great caution. Now the new year has dawned upon us, we may begin to make preparations, and though all florist flowers are, comparatively speaking, in a state of rest, yet each succeeding week will, in either one or the other, cause symptoms of excitability to appear; for instance, Tulips will soon peep; when they do, a handful of river sand, placed as a small cone over them, will be serviceable. We tried pit-sand some years ago with not very good success, the foliage having been much cankered from some impurity contained in it.

HARDY FRUIT GARDEN.

If Apricots are not already covered, it should be done as soon as possible, for their flower buds are injured by frozen sleet much sooner than is generally believed; this was abundantly evidenced last year, by the blackened anthers which might be found after severe frost in the buds which were scarcely yet unfolding themselves. A recurrence of such a season as the last would be unfortunate, and as it is quite possible, every available means should be adopted to ward off the effects of cold and wet. As Apricots are more tender than Peaches or Nectarines, it is my practice to train them first and to cover them immediately after that operation is completed. We use Spruce or Yew branches, placed very thinly amongst the shoots, and over these a canvas screen, which is readily rolled up or let down by means of lines passing over pulleys fixed in the face of a 6-inch projecting wooden coping. The object of using the Spruce and Yew branches is to prevent the injurious effects of a cold current of wind, which often sweeps along between the wall and the canvas; one of the greatest advantages arising from the use of the latter is in keeping the trees dry.

KITCHEN GARDEN.

FORCING VEGETABLES.—FRENCH BEANS: Where the old-fashioned method of forcing these in pots is still pursued, very good soil should be used for the purpose, and where the plants are up they should be carefully supplied with water. But by far the most economical method is to grow them in a bed of soil, in a pit which has the advantage of being heated at pleasure, both top and bottom, by means of hot-water pipes. The best plan of proceeding is to fill the frame to within 12 ins of the glass with fermenting materials, and upon this to lay 9 inches of rich loamy soil. The seeds should be sown in drills longitudinally, for as the surface of the soil will be upon the same incline as the glass, the plants will not shade one another so much as if planted in rows. As the plants increase in size the fermenting material will gradually sink, and when the heat thereof begins to decline it will be sustained by means of the hot-water pipes.—A sowing of Lettuces and Radishes should be made on a warm open border facing the south, and covered with a little dry Fern, which should be drawn off with a wooden-headed rake during the day in fine weather. A sowing of Parsley should be made under a south wall, where it can be easily protected.

State of the Weather near London, for the week ending Jan. 5, 1850, as observed at the Horticultural Gardens, Chiswick.

Dec. and Jan.	Moon's Age.	Barometer. Max.	Barometer. Min.	Thermometer. Max.	Thermometer. Min.	Thermometer. Mean	Wind.	Rain.
Friday.. 28	13	29.552	29.340	27	16	21.5	N.	.00
Satur.. 29	0	29.641	29.548	36	26	31.0	N W.	.02
Sunday . 30	15	30.219	29.952	38	28	33.0	N.E.	.00
Monday 31	16	30.322	30.302	38	17	27.5	N.W.	.00
Tues. .. 1	17	30.271	30.213	35	19	27.0	W.	.00
Wed. .. 2	18	30.223	30.221	39	27	33.0	N W.	.00
Thurs.... 3	19	30.201	29.996	44	38	41.0	N.W.	.02
Average....		30.061	29.939	36.7	24.4	30.5		0.04

Dec. 28—Drifting snow; clear and frosty.
— 29—Sharp frost; partially overcast; cloudy; clear and frosty.
— 30—Clear; cloudy at night.
— 31—Cloudy; fine; overcast; sharp frost.
Jan. 1—Sharp frost; fine; cloudy; clear and frosty.
— 2—Hazy; fine; hazy at night.
— 3—Foggy; hazy; drizzly; hazy.
Mean temperature of the week, 6½ deg. below the average.

State of the Weather at Chiswick during the last 24 years, for the ensuing week, ending Jan. 12, 1850.

Jan.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds. N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 6	41.0	30.3	35.6	9	0.33 in.	2	6	2	2	3	7	2	—
Mon. 7	40.5	29.7	35.1	7	0.31	1	3	4	2	2	4	5	3
Tues 8	38.2	30.5	34.4	6	0.26	3	2	7	3	—	7	1	1
Wed. 9	39 3	31.7	35.5	7	0.20	1	5	3	3	5	3	1	1
Thurs. 10	40.7	29.8	35.3	10	0.40	1	5	3	4	4	3	2	2
Friday 11	40.3	30.4	35.4	13	0.83	3	4	3	—	5	6	1	2
Satur. 12	40.9	30.0	35.4	11	0.75	2	4	2	2	5	6	2	1

The highest temperature during the above period occurred on the 6th and 7th, 1845—therm. 54 deg.; and the lowest on the 7th and 8th, 1841—therm. 6 deg.

MONTHLY DEPTH OF RAIN, in inches and hundred parts of an inch, which fell at Chiswick in the years 1841 till 1849, inclusive.

	1841.	1842.	1843.	1844.	1845.	1846.	1847.	1848.	1849.
	In.	In.	In.	In.	In.	In.	In.	In.	In.
Jan. ..	2.60	1.06	1.33	2.25	2.97	2.85	1.31	1.16	1.73
Feb. ..	0.76	1.32	2.35	2.27	0.93	1.47	0.94	3.12	2.52
March	1.32	1.81	0.47	2.44	1.25	1.09	0.41	3.05	0.85
April ..	1.58	0.15	1.62	0.33	0.95	3.93	0.92	3.06	2.21
May ..	2.16	1.73	5.26	0.25	2.89	1.35	1.59	0.28	3.53
June ..	2.45	1.58	1.62	0.97	1.36	0.80	1.31	3.20	0.31
July ..	3.56	1.52	1.67	2.10	2.31	1.78	0.79	2.21	2.82
August	2.69	2.81	3.28	1.84	2.79	4.50	1.50	4.70	1.60
Sept. ..	3.71	3.39	0.98	1.31	1.77	1.76	1.66	2.20	2.49
Oct.	4.61	1.71	4.19	4.13	1.39	5.54	1.75	2.93	2.18
Nov. ..	3.41	4.47	2.13	3.06	2.11	1.43	2 26	0.90	1.32
Dec. ..	2.12	0.76	0.58	0.39	2.61	1.21	1.81	2.03	1.28
Annual amount	30.97	22.31	25.48	21.34	23.33	27.71	16.25	28.84	22.84

1847 was drier than any year in the present century.

Notices to Correspondents.

*** Several correspondents unavoidably remain unanswered, in consequence of the temporary absence of the editor.

ASPLENIUM FONTANUM: *W X Y Z.* It would thrive in a Wardian case; but in planting, it should be elevated between two or more rough fragments of porous stone, so that it may not be liable to have stagnant water about its roots.

BOOKS: *H B.* The Supplement to Loudon's "Hortus Britannicus" may be had of all booksellers.

CAMELLIAS: *An old double white.* They will be safe in your conservatory, however dilapidated it may be—provided they are not exposed to the sun in case of being frozen. It is not the cold that hurts them, so much as a rapid thaw. We do not, however, guarantee them against any amount of cold. They live near London in the open air under a north wall without protection; and they bore the frost of 1837-38 in cold pits, with only 4-inch walls. We should risk it.

GRAPES: *E H D.* The Josling's St. Alban's Grape is now known to be the Chasselas Musqué, one of the best sorts for a Vinery; but it is apt to crack. You will find a full account of it at p. 631, 1849.

INSECTS: *Rev. E T D.* The small larvæ found at the decayed stool of a lilac are those of some species of Tipulidæ allied to Leia. *W.*

NAMES OF FRUITS: *T S A.* 1, Beauty of Kent; 2, Wyken Pippin; 3, probably King of the Pippins; 6, Lamb Abbey Pearmain; 9, Cockle Pippin; 11, Alexander? 12, Downton Pear.‖—*W B H.* The Apple is handsome and, doubtless, excellent for kitchen use; but its name has not been satisfactorily ascertained.‖

NAMES OF PLANTS: *W T.* We do not recognise it. The bit you have sent looks like a fragment of Gelsemium sempervirens—but it is not it. When your plant is larger perhaps you will send a *good* specimen, and say from what *part* of America it comes. To say that a plant comes from America is like saying that it comes from anywhere.

SIZES OF POTS: *R R.* Proper "sixes" measure 13 inches across the top, inside measure, and 12 inches deep inside; the utmost variation from the above dimensions should not exceed a quarter of an inch. ¶

WARDIAN CASES: *E S.* Plants die in Wardian cases from one of these causes: 1, they are overwatered when originally prepared for their voyage; or 2, the case is badly made, and the seams or joints open under a tropical sun; or 3, the case is put into the hold instead of remaining on deck; or 4, the glass is broken; or 5, the case is put alongside of the engine-room or funnel of a steamer, when its contents are baked.

SEEDLING FLOWERS.

FUCHSIAS: *E. Mayle and Co.* The descriptions in "Notices to Correspondents" of the 22d of September last, were given in accordance with the flowers as received and numbered, and if any were misnumbered that must rest with the person who sent them. No transfer of description from one number to another can be acceded to. It should always be borne in mind that the descriptions given of florists' flowers in the *Gardeners' Chronicle* are given from the flowers as received, and not made up from what that or this flower may become under more favourable circumstances.*

DR. NEWINGTON'S AGRICULTURAL IMPLEMENTS.—All applications must be made to Mr. H. DUFAUR, 21, Red Lion-square, Holborn, London, Depôt for Dr. NEWINGTON'S Inventions. Lectures and Prospectus sent gratis.

THE LONDON MANURE COMPANY beg to offer as under, and pledge themselves that every Manure shall be perfectly Genuine:—Corn Manure for Wheat, Barley, Oats, Clover—most strongly recommended from its success last year; it will be found cheaper than Guano, and bear the strictest analysis. Also URATE, Superphosphate of Lime, Sulphate and Phosphate of Ammonia, Nitrate Soda, Fishery and other Salt, Gypsum, Sulphuric Acid, &c.

GENUINE PERUVIAN GUANO.—To insure this free from adulteration, all purchasers, if they prefer it, can receive their warrants from Mr. Purser, and remove the Guano direct from the Warehouses of Messrs. A. GIBBS and SONS, the Importers.

Bridge-street, Blackfriars. EDWARD PURSER, Secretary.

Country Dealers and Agents supplied.

BY HER MAJESTY'S ROYAL LETTERS PATENT.

PATENT HOTHOUSE WORKS, KING'S ROAD, CHELSEA.

EDENCH invites the attention of Gentlemen about to erect Hothouses, &c., to the vast superiority in every respect possessed by his PATENT HOUSES, which he will warrant superior in every respect to any others. Good Glass from 16 to 21 oz. per foot, 1 foot wide, 3 feet long, furnished, and the Houses when completed charged from 1*s.* 3*d.* to 1*s.* 6*d.* per superficial foot, according to size and quantity; one principle, the roof being formed without wood or putty, and the other principle being wood rafters and the glass put in with putty. Patent Sashes, requiring no paint, from 7*d.* to 9*d.* per ft.

HEATING BY HOT WATER.

THE IMPROVED "FLUE BOILER" AND FURNACE.

W. HILL begs respectfully to inform the numerous applicants for his "FLUE BOILER" of a small and intermediate size, that he shall be prepared, early in December, to supply sizes to suit every description of Apparatus, from that of 100 feet of 3-inch pipe to 2000 feet of 4-inch pipe. A List of Sizes and Prices will shortly be published. W. HILL guarantees his Boilers to be the most effective and economical of any in use.

Horticultural Works, Greenwich, Jan. 5.

The Agricultural Gazette.

SATURDAY, JANUARY 5, 1850.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

WEDNESDAY, Jan. 9—Highland and Agricultural Society.

THURSDAY, — 10—Agricultural Imp. Society of Ireland.

IF it be an old saw that nothing is more precious than TIME, modern instances there are enough, to show that it brings few things more instructive than its periodic epochs. The close of one year and the commencement of another bring with them a sort of prescriptive licence, not more for relaxation than for reflection—furnishing the busy with an opportunity and excuse, and the idle with an incentive, to look back a little, and forward a little—in a word—to think. It would seem that no occupation is so assiduous, so intensely practical, as not to be allowed breathing time between the pulling down of the old almanack and the putting up of the new, to run the eye over the Works and Days accomplished in the one, and see what application can be made of their experiences to guide with better effect the labours that are yet to come, and to apply their errors to that best and only use which consists in making them the warning-points of future steerage, as the mariner enters in his chart the each sunken rock or quicksand that his eye has caught or his keel has grazed upon.

But the near completion of the former half of a century such as the present, and the near entry upon its other—Hope may be allowed to say its *better*—half, presents to us at this time something beyond the mere annual turn-over of one of the pages that time is counted by; and certainly, of all other classes, to the Agriculturists, suggests a coincidence of change in which even the all but effluxion of a Half-century yields in importance to another Transition in which he is more essentially concerned. It is impossible at such a moment to help casting a glance back over something more than the mere events of a year, both in reference to the period reviewed and the nature of the reflections suggested by the events and changes it has given birth to.

Of all the agencies which man employs in the elaboration of his ends and purposes, the one to which he pays least acknowledgment, least honour due—is Time. He briefly admits sometimes the fineness of the day—for weather is changeable; he is thankful occasionally for a night of sleep—for he has known what it is to pass one, restless; he prizes health—because he has felt sickness; he blesses food, and values raiment—for he is sensible of hunger, and of cold; even to daylight, even to fresh air, he pays the stray tribute of a thought sometimes—for he remembers the foul faintness of the crowded court, and the stumbling darkness of some belated journey home. But the grand, *unchanging* element which clings to him at life's every instant, the viewless and impalpable essence that surrounds him more impressively, more closely, than the atmosphere he breathes—the sleeping partner that enters into every plan he makes, that will not be turned, bribed, cheated, recalled, or anticipated—this element alone he never can be taught to appraise at its true worth, or to recognise in its true proportions, as the influential and secretly presiding architect that gives to the whole edifice of his purposes and actions their final issue and development.

Yet there is no ingredient of error we more commonly entail upon the Future, than leaving out or miscalculating the effect upon events of that mysterious force whose nature we are ignorant of, and whose pressure we cannot control—the force of Time. Unwilling as we often are to judge, fairly and comprehensively, of the Present by the history of the Past, there is no limit to the incautious haste, to the audacity with which we rush, into a judgment of the Future from the Present.

But it is most strange of all that this should be a not uncommon fault of the Agriculturist. If there is a human calling or pursuit which deals with Time and its pregnant uncertainties, more emphatically and on a larger scale than any other, it is that of the agriculturist. If to the working hand or mind of any being the lesson is ever rife, palpable, and pressing, written upon earth and sky, and all the elements he waits upon, mixed with every hope and waiting upon every discouragement—the lesson *not* to pronounce too hastily upon the future, not to be over sanguine nor depressed beyond measure, it is to his. Yet it is a fact not less remarkable than true that, practically, there is no branch of industry so prone to the extremes of Fear and Hope, and to the exaggeration of each extreme. It would seem as if the Seasons themselves, instead of the *experience* of the Seasons, guided the impulses of alternate expectation and despondency observable in that business to which of all others it should seem that Nature herself is most lavish of steady and moderating instruction.

Why is this? Why is it that the broadly based confidence produced by Trade calculation and the habit of mind engendered by it—which qualifies the uncertain period of high prices and prosperity, and supports by a more cheerful assurance the season of pressure—moderating both by a comprehensive and *willing* review of all the known causes that have been at work to produce the one, and *are* at work to produce the other—are not only not acquired or encouraged, but are so observably rejected from the counsels of the agriculturist?

To point back over the three extraordinary years that lie behind us, the first, remarkable for a general scarcity over Europe, the second for an almost general revolution — destructive not more to political order than to Trade and Commerce, the third for a reactive abundance of the Harvest, before paralysed Trade, and its resulting demand, had, except in our own Country, and only lately in our own, had time to recover; and again, withdrawing our view to our own Country, to aggravate the list of transitional causes by a single glance at the history of the Railroad Mania, which pawned into circulation more than all the spare Capital of the Country upon the employment of a legion of beef-and-mutton-eating labourers to be thrown out of work again by the failure of the schemes that employed them—to recapitulate these unprecedented circumstances, in explanation of a season of comparative trial to the agricultural interest during the latter part of the period, would surely be no difficult or ineffective task, did it find a willing or considerate ear.

Why does it not? Why does the simple narrative of obvious and acknowledged facts in explanation of existing phenomena meet with unwelcome and suspicion, as if the ear addressed was unaccustomed by long habit to the simple exercise of the judgment upon the facts presented to its review?

Let the half-century that lies behind us answer that question. Let the habit of mind that it has seen engendered into the very heart and pith of agricultural discussion, poisoning and distorting at every turn the circulation of its free enquiries—enquiries which yield in value as well as interest to none which have this earth for their sphere, and man for their interpreter — settle that question with itself as best it may. To the progress of Time we look forward with a well-founded and daily confirmed hope, for a gradual development of facts and influences which shall restore both the temper and utility of those discussions which have for their basis our national progress in agricultural knowledge and practice.

To those minds which are able to regard the depression of a season as *a consequence* of past events, and to look boldly and widely around them for the true causes of future prosperity, we repeat that the aspect of the present, in every surrounding branch of industry and trade, is pregnant with the most solid elements of encouragement and hope. And if there is one ground on which, more than another, we welcome these indications at the opening year, it is for the restoration of that state of mind and feeling to which alone the pure topics of Agricultural progress can be usefully addressed.

In no country of the world is Husbandry-practice and knowledge more *unequal* than in our own. The same County, the same Parish, presents *the best* and *the worst* divided only by a hedge. This is the very condition, of all others, to which the diffusion of practical knowledge is the most specifically, the most urgently applicable. It invites our efforts not more by the need, than by the encouragement, that such a condition especially presents. What foreigners who have visited England have uniformly said of its educational state—that it discloses the highest and the lowest, with the widest interval between them—might be applied with redoubled application to its Agriculture. Discouraging as the one side of such a picture may be, it is however confirmed by all experience, that this is the very condition from which the race of improvement commonly takes its date of most rapid progress. The past ten years have afforded an earnest of that which may be made in a given time; but they who have in this short interval done and learnt most would be the last to assert that nothing more remained to be accomplished, either in the theory or practice of the art. Every step attained suggests the next that must be taken, and tends to show that the ratio of progress is itself progressive; that impediments and discouragements, let them arise from whatever quarter, or appear at first however formidable, are in their very nature temporary, while the advancement of that intelligence and skill that overcomes them is, as far as any human thing can be, irresistible and eternal.

THOUGH Turnips may be grown and consumed on the farm with profit, yet experience has decided that Turnip culture is chiefly beneficial as affording the most approved method of renewing the impaired fertility of the soil after cereal crops have been taken; but amid all the advances which we have made in agriculture, it appears that a ton of Turnips is worth no more now for feeding purposes than it was nearly a century ago. The experience of the Colchester sheep-feeder, which Mr. MECHI mentioned at a late meeting, who was consuming Turnips at the rate of 3*s.* 6*d.* per ton, shows this; and it must also be recollected that this was probably under very favourable conditions, for practical men know well that the feeding qualities of Turnips are much greater when grown on rich land (such as that on both banks of the Stour in Essex and Suffolk or the warp loams of the Waveney) than they are on the hungry sands and gravels, or peaty fens, which adjoin. These qualities, however, are often entirely disguised by the practice of giving large quantities of highly nutritious food in addition.

The experience of Scotch feeders approaches very nearly to the same result; 3*s.* 6*d.* to 4*s.* 6*d.* per ton is the price which is commonly given for Aberdeen yellow Turnips when eaten on the land by sheep, without any artificial food. Here also good soils are always sought after, as they produce far more nutritious roots. In the Lothians a great many farmers let out their Turnips to be consumed, chiefly in the yards, by cattle, and 7*s.* per ton may be estimated as the usual price paid; but this does not give their real value, as the feeder's profit requires to be added. Oilcake is commonly given to the cattle, but usually only for finishing the fattening process, and then the common allowance given by the grower is 25 per cent. of the amount consumed. Under these circumstances the green crops are disposed of with little anxiety and risk to those who raise them, and it is questionable if they could make as much of them as those who make this their special business. That Turnips should be worth more, when consumed by cattle under shelter, than when done so by sheep exposed to all weathers, is quite consistent with sound theory; for there is no reason to believe that the constitution of the ox is not as well adapted to extract as much meat from the same weight of roots as that of the sheep; and farmers should fully consider the conditions which they subject them to, before they exclaim, with Mr. MECHI, "Bullocks are most ungrateful fellows, and no favourites of mine."

It is not an uncommon practice for English farmers to give 14 lbs. of cake daily to an ox, or other feeding substances in the same proportion, and it is no wonder that the whole roots consumed frequently go for nothing, and sometimes a considerable quantity of the artificial feed must also stand on the wrong side of the ledger. It is very questionable whether this extreme system can be vindicated, and it affords matter for suspicion whether it answers the main end—that of rapid accumulation of fat and muscle. Dr. THOMSON'S experiments clearly established the fact that less effect was actually produced by increasing the supply of artificial food to

cows, beyond a much more moderate quantity than stated above; and although we have no direct experiments on the subject, analogy would lead us to believe that the maximum effect is attained as soon in the less vascular system of the ox. The organs of assimilation appear to become blunted by such a process, and a large portion of nutriment must pass through the system undigested. That sheep should be greater favourites where cattle are so treated is easily explained from the fact that they will not consume so large an amount of highly nutritious food according to their weight. There is little reason to doubt that WARNES' mode of feeding, or certain modifications of it, would yield much better results as regards profit; and the box system being so well adapted to prepare and preserve the manure, might go far to compensate by its increased richness for the cost of a large quantity of cake, &c.; but where it is too frequently subjected to waste, both by being washed and by fermentation being carried too far, our experience in the consumption of 100 acres of roots by sheep and cattle, for some years back, gives about 7*s.* per ton after deducting a moderate bill for artificial food; and we have no faith in the policy of increasing that to such an extent as would probably sink the whole value of the roots in the manure heap. At the same time our experience is quite in accordance with the results of Mr. LAWES' invaluable experiments, which show that the feeding of stock, when properly managed, will furnish us with ammonia (the most important element of waste) at a cheaper rate than guano or any other artificial manure.

An extended inquiry over the best farmed districts in Scotland would show a small expenditure for artificial food and manure in comparison with Lincolnshire; in the latter the cost of maintaining the fertility of the soil would be much greater: and in this lies the main disparity in the two systems—and by this being overlooked and not apprehended, much Scotch capital has been wrecked on English soil. Spring crops, where the circumstances are favourable, can be grown at much less expense than autumn crops, and this is one reason that as high rents can be paid in Scotland while the gross produce is smaller. "W.," who wrote on this subject in our last year's volume, must be aware that the 4-course shift in Berwickshire is a totally different system from what goes under the same name in Norfolk. There the crops and rotation would probably be 100 acres Grass, 100 Oats, 100 Turnips, 60 Wheat, and 40 Barley. If the Berwickshire farmer could adopt the Norfolk course and practice, without increasing his expenditure—the greater extent of the higher priced products would go far to compensate him for the reduction which has taken place in the prices of grain.

Leases of 19 and 21 years prevail over Scotland, which have done much for its agriculture—but something more is now required, as the practice of allowing the land to become deteriorated towards their termination is quite notorious, and much capital is withdrawn from the soil, to the injury of all parties—so much so, that the Lincoln farmer, under his yearly holding, with an equitable tenant-right, is in as good a position, and his capital as securely invested. It appears to us that the subject of compensation for unexhausted improvements is the most important question at the present time, which affects the capital directly engaged in cultivation. It would be much for the benefit of landlords and tenants that they were fully convinced that 'high farming' and 'liberal covenants' should go together. *R.*

THE LABOURER.

As it is to be greatly feared that there may be a want of work for labouring men during the present winter, I have been looking through the accounts of a little attempt which I made this year to improve a small piece of unproductive Grass land opposite to my house; and as the result seems such as to encourage the employment of spade labour on a small scale, the details of my proceedings may perhaps be of service at this time. Last year I observed the quantity of hay made on this plot of ground, which is just about two-fifths of an acre, and it did not half fill a cart. The turf was pared off with a breast plough in August, and a crop of stone Turnips obtained by ploughing and harrowing without manure. The ploughing and harrowing was kindly done for me gratis, and the seed I saved myself, and it was sown by my own man; but setting a price on each operation, it would stand thus—

	£	s.	d.
Breast ploughing two-fifths of an acre, at 1*l.* ...	0	8	0
Ploughing, harrowing, and sowing white Turnips with seed-barrow	0	10	0
Hoeing Turnips	0	3	0
Expenses of first year	£1	1	0

Which may be reckoned as repaid in part by the crop of stone Turnips, but I will put no value upon them I should have mentioned that the turf, when dry, was not burned, and merely the ashes spread on the land, which practice appears a great waste of valuable manure, but was carted off and laid in a heap with layers of yard dung. This heap we turned over once during the winter, and about 3 cwt. of salt mixed with it to kill any grubs, &c. At the end of last January I commenced breaking up the ground with the fork and pick-axe, and now we soon found the reason why the Grass had always been so short on this spot, for it turned out a complete stone-quarry. The ground a few inches below the surface was paved, as it were, with the flat building stones of this country, which had formed the walls of old houses; amongst which we found remains of all ages, Roman and other coins, an arrow-head and other pieces of iron work, and a curious leaden seal, said to be of the time of Edward I. Here was a very different operation from what I had contemplated, for all I had thought of was merely digging the ground over thoroughly two spits deep. However we stuck to it, and I paid for grubbing, wheeling off, and stacking up 140 cubic yards of stone. At any rate this insured good deep cultivation. After the ground had settled down a little, we carted upon it 20 single horse cart-loads of the half-rotted sods and dung from the heap, and about 10 loads of fresher dung; *i.e.*, in all, 30 single-horse cart-loads of manure, or 75 loads to the acre. Here, then, was deep cultivation and liberal manuring. The loads of dung were all well covered with earth till required to be spread, so as to retain all their virtues. Being then spread a little at a time, to prevent loss, it was dug in about the middle of March. After lying some days, the dry weather being favourable, the ground was all raked over and broken fine with the back of the rake, the stones and weeds collected in heaps and wheeled off. A simple marker was made to mark out the drills at 2 feet apart, and the points can be shifted to mark drills at any distance from 9 inches to 6 feet. When once the first drills were drawn straight by a line, all the rest were easily marked by this implement. A man by treading along each mark with one foot before the other on the deeply-worked ground made a hollow sufficient to contain the bones, ashes, and seed. In these hollows or depressions bones dissolved in sulphuric acid mixed with sifted coal ashes were sprinkled with a shovel, and the seed sown on the bones, and covered very lightly with a rake, the man stepping on the drill as he covered it in. Thus a somewhat firm seed-bed was made, and the seed was covered very shallow. March 24 we began sowing Parsnips and Carrots, and early in April, red Beet. On April 25 commenced sowing Long Red Mangold Wurzel, to the produce of which I am about particularly to allude, which was followed later by sowing green top Swedish Turnips. The Mangold seems to have suffered less from the severe drought of last summer than the other crops, for, though all good, they were at one time very much checked by the dry weather. Nov. 21. The Mangold was taken up, and one row—selected by chance, and which my man said was the worst in the field—was kept by itself and weighed. The row was 110 feet long, in which there were 102 roots, and these, cleaned and topped, weighed (exclusive of the basket) 604 lbs. This gives 6 lbs. as the average weight of each root, without the top, and the rows being 2 feet apart, is at the rate of 53 tons 6 cwt. to the acre, in which there would be 20,196 such plants. The tops, besides, furnished several meals to some pigs. Out of the crop I picked 12 plants, which were exhibited at the show of the Cirencester Agricultural Society, and these weighed, with their tops, exactly 13 lbs. each on the average, which if it could be carried out through a whole crop (and why not?) would make double the produce actually realised. I may observe that my roots of the long red sort were beaten in weight and size by some long yellow ones shown at the same time by Mr. Cook, of Stratton, a neighbour. I will now give, as nearly as I can, a statement of the expense of the operations I have described, and of the return realised, supposing the whole had been Mangold Wurzel:

	£	s.	d.
Expense incurred as above, in 1848	1	1	0
Carting off turf, and laying it in a heap; 2 days a horse and cart and man	0	10	0
5 loads of dung and salt, at 4*s.*	1	0	0
Turning heap of sods and dung, 2 days at 1*s.* 6*d.* ...	0	3	0
Grubbing stones, 65 days at 1*s.* 6*d.*	4	17	6
Wheeling off 140 yards of stone, at 2*d.*; spreading and digging in dung, raking, &c.	4	12	6
10 loads of fresh dung, and 20 do. of sods and dung—*i.e.* 30 loads carted out, 2 days horse and cart ...	0	10	0
10 loads of dung, at 4*s.*	2	0	0
Bones, acid, ashes, and seed	0	8	0
Sowing	0	3	0
Hoeing, singling, and cleaning	0	10	0
Taking up crop, at 1*l.* per acre, ...	0	8	0
Carting home, 1 day	0	5	0
Rent and taxes, at 3*l.* per acre	1	4	0
Expenses on 2-5ths of an acre	£17	12	0
Deducting the value of the stone got, which is 140 yards, at 5*d.* per yard	2	18	4

We have as the expense incurred on 2-5ths of an acre £14 13 8
Or at the rate of 36*l.* 13*s.* 9*d.* per acre.

If the expenditure of 36*l.* 13*s.* 9*d.* had been incurred in raising a crop of 53 tons 6 cwt. of Mangold Wurzel, it would have cost a little under 14*s.* per ton, which is not a high price for that root, if it is grown in the neighbourhood of any considerable town. In short, this very high rate of expenditure nearly covers itself, besides improving the land very greatly, whether for subsequent tillage or for laying down again in Grass. It is evident that the expense above detailed is far greater than in common cases would be incurred; and if Carrots were made the principal crop, though not so heavy a produce, the crop would always be saleable. The reason I have undertaken the disagreeable task of bringing my own experience before the readers of your Journal is, that I believe a great boon may, by imitating my little example, be conferred, at very little, if any sacrifice of expense, upon industrious labourers, who might otherwise be forced upon the rates, to the general injury. I have in a former year, in your Journal, recommended anonymously this same resource of spade labour, and the examples which have been reported since fully bear out my views of its practicability and success. In any parish, then, in which there are men out of work, instead of putting them to unproductive and useless employment, or allowing them to become paupers, let an individual, or a few joined, rent a piece of poor pasture, hire a trustworthy man to be foreman and superintendent of the labourers, drain it, if necessary, under an agreement with the landlord, and proceed by paring off and making manure of the turf, and deeply working the soil, to prepare it for a root crop to be sown in spring. At that time the sods, being partly decomposed, may be dug in, and a good dressing of superphosphate of lime applied with the seed, if there should be a difficulty in procuring or carting to the spot town or other more bulky manure. All the labour to be paid for equally, to married or single, by piece. The money advanced in this case as weekly wages may be regarded only as a loan to the labourers, the repayment of which is secured by its investment in the land, and will surely be received back again next autumn, together with the grateful thanks of the labourer, the approbation of the ratepayers, and above all, the approval of a good conscience. I hope the above details may induce many to stretch out a hand to enable the honest labourer to keep himself and his family out of the workhouse through the coming winter. *Thomas Tancred, Cirencester, Dec.* 17.

PITCH PRESERVES CORN FROM THE WEEVIL.

By M. CAILLAT.

In a late number of the "Comptes Rendus" was a letter from M. Barruel on the action of carbonic oxide on weevils, and on using this gas for their destruction. Some journals, and amongst other *l'Echo Agricole*, published lately another method for destroying these insects, discovered by Mr. W. Little. This is by employing ammonia, which, according to Mr. Little, kills the weevils the instant it comes in contact with them. I have proved, however, in the presence of several witnesses, that ammonia does not instantly kill weevils; for after being exposed for several minutes to ammonia, either gaseous or liquid, they get on their feet and run with ease when removed from this caustic alkali. The prolonged action of ammoniacal gas, carbonic oxide, carbonic acid, or of any other irrespirable gas, of course eventually kills these insects. I do not know what sort of an apparatus fit for all cultivators, large or small, rich or poor, would be adopted by M. Barruel for applying carbonic oxide, or by Mr. Little for ammoniacal gas; but I beg to state that there is another substance less costly and of much easier application, this is pitch. The utility of this substance against weevils is well known to many agriculturists and corn merchants.

I placed in a vessel holding about a quarter of a pint, and well corked, three live and strong weevils; I at the same time introduced a little flask containing pitch. They soon began to grow uneasy, then fell on their backs and struggled with their feet, but without being able to get up; at the end of 15 or 18 hours they perished. The mere smell of the pitch, in a closed space, is thus fatal to them. If a little pitch be smeared on the upper part of the closed vessel in which the weevils are, they die more quickly. That pitch will drive away these insects, and preserve grain from their attacks, is certain. My father had his granaries, his granges, and the whole house infested with weevils, which found their way into the cupboards and among the linen. He placed an open tub smeared with pitch in the grange and the granaries; after a few hours thousands of these creatures might be seen running in all directions away from the place where the tub was. By passing the vessel through the house from story to story, it was soon completely cleared of these troublesome and noxious creatures.

The agriculturist who wishes to get rid of weevils, has nothing to do but, as soon as he is aware of their presence, to pitch the surface of some old boards and place them in his granaries; the pitch must of course be renewed several times in the course of the year, in order to keep the insects away. *Comptes Rendus.*

TULL'S HUSBANDRY.

HAVING made a trial of Tull's peculiar method of growing crops, I have reason to think it deserves more attention than it has received. One recommendation of it must be valuable in these times, namely, that it requires extraordinarily little capital, and yet seems capable of producing better crops than are supposed to be the average of the whole country. Another recommendation is, that it requires a considerable quantity of farm labour. Its great saving consists in seed, and in its doing away with the necessity for green crops and heavy manuring. To Tull we are indebted for the drill and the horse-hoe, whence it seems but reasonable to infer that the inventor of such valuable instruments can justly claim our attention to that third thing which completed his peculiar method of husbandry, which he assures us he adopted so many years with success, but which his modern panegyrists are prone to pass by as some "odd notion" or monomania, which "'tis a pity" so great a master of agriculture was affected with. Some of the readers of the *Agricultural Gazette* may

require to be told what that peculiar method was. It was this—the land was ploughed into ridges 5 or 6 feet wide, and two or three rows only of corn were drilled on each ridge, occupying about the space of a foot or 14 inches on the top of it—the wide spaces between two sets of rows were frequently and deeply ploughed while the crop was growing, while the narrower spaces on the tops of the ridges were hand-hoed—and a constant succession of corn crops was thus obtained without dung or fallow. The exclusion of the dung was only on account of its cost, for Tull always admitted that his method would grow greater crops with than without it. Only he maintained in theory, and defended it by his many years' practice of the method, that good crops might be obtained without manure, if there were but sufficient tillage while the crop was growing. The exclusion of manure, then, is not necessarily a part of Tullian practice; but because there is evidence that the present average crops may be obtained without manure for some seven or eight years at the very least, and because the production of manure requires an amount of capital on the part of the tenant, and also on the part of the landlord in dividing his farms and building suitable accommodation for cattle, which capital neither tenant nor landlord can, in but too many cases, command; therefore what I propose is this—let a certain portion of the farm be cultivated in the Tullian manner, that is, with annual crops of corn; the horse, the plough, and the cart or waggon, is pretty well all the capital required for it. Let the straw be appropriated to the rest of the farm in accordance with present or any other arrangements that may be thought better. The justification of such an arrangement between landlord and tenant depends on the merits of Tull's method, to which I will now proceed.

Tull's theory was that perpetual good crops of corn might be obtained without manure, and he states that he had 12 successive good crops of Wheat by his method, as above described. His theory and his reasons for it I should be glad to be permitted to discuss in the columns of the *Gazette*. All I can venture to say upon it is that 12 successive good crops do not prove that the theory holds for perpetuity. But as Tull says the land was manifestly improved when he sowed his 13th crop upon it, we may infer that there is some undetermined number of years, different in different soils, up to which number at all events the land will annually become more and more fertile under this system, after which it may be that constant cropping without manure will impoverish the land, however much tillage only it receives. Thus much, I think, may fairly be inferred from Jethro Tull's statement. But is the statement itself correct, or what did he mean by good crops? On this point he has not left us many particulars. He says he often weighed the produce of a yard in length of a ridge with only two or three rows on it, and found as much as 18 or 20 ounces of Wheat, which, the ridge being 2 yards wide, is about 6 quarters to the acre; and he tells us—"I do not know that I ever had an acre yet, that was tolerably well managed in this manner, but what produced much more" than 16 bushels of Wheat. Again, "He was desired," he says, "to take an exact account of the product of an acre in the middle of a field of 25 acres of horse-hoed Wheat," and it "yielded 29 bushels and 6 gallons of clean Wheat." He then states some purely accidental causes in the harvesting of it which prevented the crop from being 32 bushels. He adds, "It had a good crop of Wheat the preceding year drilled in double rows; and the year before that had a crop of Barley drilled in triple rows; the ridges always of the same breadth. All these crops were horse-hoed, but in the year before the first of these the field had a crop of sown black Oats; so that there were four successive crops without any fallow or dung. And there is now growing a fifth crop, being Wheat, likely to be much greater than any of the precedent, if the year prove as favourable."

I think, then, that it may be concluded that Tull annually grew above 3 quarters of Wheat to the acre. His land was on chalk, and he says, "being almost all hilly was thought too light for Wheat." Mr. Cobbett, in his Introduction to "Tull's Husbandry," relates an experiment of his own in 1813, which, he observes, "was the finest year for Wheat in the memory of man." He drilled 2½ pecks of spring Wheat per acre, on land "in a very good state and very suitable for the crop," in single rows on 3 feet ridges, and had at the rate of 33 bushels and 6 gallons per acre. Between the ridges he sowed the same Wheat broadcast at the rate of 3 bushels per acre, and had a crop at the rate of 36 bushels and half a gallon per acre. He also relates that Mr. Beaman had grown Tullian Wheat, without manure, for six years successively on "a marly clay" in Herefordshire, and had averaged 23 bushels per acre.

The only other experiment I have been able to find of this system is mentioned in "Cobbett's Register" for 26th Oct., 1833. It is there stated—"In the year 1824 Mr. Box sowed an acre of Wheat on the principle laid down by the late Mr. Tull, on land of a middling quality. This acre in 1825 produced eight sacks; in 1826, 8 sacks; in 1827, 7 sacks 2 bushels; in 1828, 4 sacks 1½ bushel; in 1829, 5 sacks; in 1830, 7 sacks 2 bushels; in 1831, 6 sacks 2½ bushels; and in 1832, 7 sacks 1 bushel; making in the whole 54 sacks 1 bushel, or on the average of years, 6 sacks and a trifle more than 3 bushels. Mr. Box had also several other crops of Wheat on the same principle, which has averaged as much as on the narrow drill system. Last year his Barley averaged 4 quarters 6 bushels per acre, and his Oats 6 quarters per acre. Mr. Saunders here produced a sample of Mr. Box's eighth year's Wheat, which looked remarkably fine; and also observed that he had two pieces of Wheat this year, sown on land of extremely bad condition, the produce of which was likely to be 7 or 8 sacks per acre. Mr. Saunders said that he had closely watched Mr. Box's acre, which was producing the ninth crop without dung. The land was very poor, and certainly not extraordinarily well attended to; but so satisfied was he (Mr. Saunders) of the advantages of the system, that he commenced at Michaelmas sowing 8 acres of Wheat and 6 acres of Barley, all without dung; 2 acres of the Wheat were very fine, and the Barley sown on the best part of the land remarkably good." These experiments were tried at Market Lavington. It is much to be desired that we could get further accounts of subsequent success or failure. And now I proceed to relate my experiment last year. It was on 97 poles of a Wheat stubble in very ordinary condition. Exclusive of the headlands, which were uncultivated, there were 91 poles, and the produce was 11 bushels, or 19½ bushels per acre. The ridges were 6 feet wide, and only half a peck of white Wheat dibbled about a foot width on the top of the ridges. Either it was so badly dibbled, or the wireworm made such ravages, that at harvest there were but 10 plants in a yard of length, equal to 5 plants for every square of the field exclusive of headlands. I ascertained this by actually counting the plants over the entire of the five longest ridges, and the remaining six were to all appearance the same. The tillering was most beautiful, and the ears wonderful, often containing 80 grains of corn. And yet there appeared room for 10 more similar plants on every yard of length. This year I have drilled three rows on the tops of similar ridges, lying over the open furrows of last year, and intend hoeing out the middle row in the spring, except where I find vacancies in the outside rows. The experiment is extended to 1 acre, and 3 pecks of seed were drilled upon it. Had I done so last year, I doubt not I should have had as good crops as those of the foregoing experiments. Thus much must suffice for the present as to the probability of a crop by the Tullian method. If agreeable I should be glad to go further into the subject. I will now conclude with giving my estimate of the cost of thus cultivating an acre.

I assume wages to average 1*s.* 10*d.* a day throughout the year, and the cost of a team of horses to be 8*s.* a day for the number of working days in a year, which I take to be from 200 to 220. The wages of the boy who drives the plough I assume to average 6*d.* a day. The first ploughing into ridges may be done in the customary way, and took me 10 hours or 1¼ day to do an acre. The hoe ploughings consist in going as near to the Wheat as you can without ploughing it out, and turning one deep furrow from each side of the double or treble row, whichever it may be; and then the next time turning these furrows back to the rows. Mine were hoe-ploughed but three times, the two first from the row, the last to it. Four hoe-ploughings would be better. They must be done with a swing or a one-wheel plough, and two or three horses at length, according to the land. Four hoe-ploughings of an acre will take up a day and a half. I gave two hand-hoeings to the tops of the ridges, but expect it will be unnecessary for the future as far as weeds are concerned, so extraordinarily does the Tullian method clean the land. No garden can surpass it. Couch, however, must be got out in the usual way, and once out this method will keep it so. I charge each cultivated acre with 1*s.* 6*d.* to pay the rent and taxes of the headlands, and the fields ought to be made large enough not to exceed this. Observe that I have averaged the rate of wages throughout the year, which accounts for such an item as reaping being only 3*s.* 8*d.* per acre. The following, then, is my estimate of the cost of cultivating an acre of corn year after year in the Tullian method:

	£	*s.*	*d.*
Ploughing into 6 feet ridges, one day and a quarter—man at 1*s.* 10*d.*; boy at 6*d.*; three horses at 8*s.* p. day	0	12	11
Four hoe-ploughings, one day and a half	0	15	6
Harrowing before drilling, a single time—man or boy and one horse, one-eighth of a day	0	0	7
Drilling—man, boy, and team, one-eighth of a day ...	0	1	4
Harrowing after drilling, a single tine	0	0	7
Rolling in spring—man or boy and team one-eighth of a day	0	1	3
Hire of drill	0	1	6
Hand-hoeing twice, three days	0	5	6
Reaping two days	0	3	8
Carrying and rick-making—man, boy, and team, one-third of a day	0	3	6
Thatching—one man one day	0	1	10
Taking in rick, though less than carrying and rick-making, say	0	3	6
Threshing and winnowing 3 quarters, seven days ...	0	12	10
Seed, from 2½ to 3 pecks	0	4	0
Charge for headlands	0	1	6
Marketing 3 quarters—man, boy, and team taking 10 quarters a day	0	3	2
	£3	13	2

Assuming the produce to be 3 qrs., at 2*l.* per qr., here is a balance of 47*s.* to be divided between rent, rates, tithes, and profit, besides the straw, of which my experiment gave 46 trusses per acre. If any one thinks 3 qrs. per acre is but a low figure in these days, let him exchange his straw for manure and produce more. But it must be very high farming by cattle feeding that will surpass this of Tull's for amount paid in labour, rate of profit on capital, and surplus left for rent, as well as human food sent to market, if my estimate of cost and produce at all approach correctness. My very knowing work-people pronounce my Tullian Wheat to be 4*s.* a quarter worse than that sown in the common way. I can only say I have had it mixed with an equal quantity of old red Wheat and ground into "whole meal," which has made the lightest and sweetest brown bread I have ever tasted. But, say my masters, who declare this to be the maddest of schemes, it is deficient in flour. Be it so, and put it at 4*s.* a quarter less than the average; still will this estimate bear a comparison with the general cultivation of the country. I believe I have overrated the costs, for it is drawn up with the prospect of having land thrown upon me, and with the intention, in that case, of cultivating an entire farm upon this Tullian method.

Amicus Tull.

AGRICULTURAL PROGRESS.

Poor Mr. Mechi! I wonder he is not agriculturally defunct. Fired at from all quarters, attacked sometimes by landlords, and at others by tenants, nothing but the shields of honesty and truth could have saved him from utter annihilation. As Mr. Compton of Water Newton has chosen my name as a peg on which to hang a string of very sensible and truthful remarks, I will follow his example, and put before your readers a sort of "*olla podrida*" of agricultural reflections, on past and passing events in agriculture. It appears to me that the great curse of agriculture has been and is even now "ignorance." I mean a want of agricultural knowledge, not only in the mere practice of agriculture, but of the great and sound principles of the duties of landlords and tenants, under our altered circumstances. I believe in the majority of cases (for there are delightful exceptions), landlords were satisfied to let their farms on the old feudal principle of hereditary tenure, and hereditary subservience, moral and political. The remark applies equally to Whig, or Tory, or Liberal. It was the custom of the country. The vote at an election and the game on the farm were alike sacred and inviolate. Leases (when granted, which was not very often), were drawn up with meshes enough to catch a dozen stray farmers, and therefore there was no chance for any errant spirit to escape from their encirclement.

In one case within my knowledge, it was specifically agreed that the banks and fences should be at least 31 feet wide, and the Beans remain uncut, until the 1st October, so as to facilitate sporting. The absurd restrictions in leases might be illustrated, and multiplied *ad infinitum*, but this is unnecessary. Now, this was all natural and fair, so long as the land predominated over population, that is, so long as there was no difficulty in feeding and employing the population. The farmers readily acquiesced in the system; they held their lands on easy terms, and although doing pretty comfortably, always pretended to be very poor. In fact it was deemed criminal amongst them to let landlords know anything of practical agriculture, and I know, even now, some good honest farmers of the old school, with primitive habits, who gravely consider public agricultural meetings to be the ruin of agriculture. But within the last half century, how great has been the necessity for a change! How imperative that our prejudices should give way to the pressing demands of altered circumstances! Like the compound multiplication of horseshoe-nails, the overwhelming increase of population (acres do not multiply), has reversed the whole system. The craving demands of hunger and the gigantic foreign imports, to supply those cravings, have appalled our statesmen, our landlords, and our tenantry. The letting and tenure of land will now assume the stern character of business. Already men of capital and intelligence, who treat for unimproved lands, with poor or embarrassed landlords, dictate such terms as will enable them to apply a much larger investment of capital and human labour, with a prospect of remuneration and security.

A new supply of capitalists are now presenting themselves in the agricultural drama, as tenants and as landlords. I mean the surplusage of trade, commerce, and manufactures. Wealth is not (as a general rule) accumulated by landlord proprietors, and farming is too slow a business (especially as hitherto managed) to permit any great aggregation of wealth; but the gigantic enterprise, zeal, energy, discrimination, and wisdom of our merchant princes, manufacturing lords, and busy traders, have enabled them to tax the world, and fill their coffers to overflowing. In them we find the present purchasers and new possessors of landed estates, great and small. Let us hope, also, that in their progeny will be found, agriculturally, both as landlords and tenants, a mercantile treatment of the affairs of the soil. It is very important that they should acquire agricultural knowledge. Let us hope there will be more agricultural colleges. Agriculture is a slow business, and a keen one, too, full of nice economies and narrow margins, subject to casualties and vicissitudes beyond human control. Agriculture is becoming public property. How great the change! Hitherto hidden in secluded obscurity, it is now thrown open to the blaze of public examination or public censure. Editors of metropolitan papers now consider the production of our daily bread and employment of our daily labourers a matter of sufficient public interest. This is good. The force of public opinion in this free country always detects error and dictates amendment.

I am not one of those who love and praise the "good old times." It is a fallacious term. The people were never so well fed, clothed, or housed as in these good new times. The monopoly (a hateful term) of limited production in manufactures vanished at the appearance of steam power, which has stimulated and developed the taste and capability of our artisans, and has decked the humble occupants of our village churches with the

elegances and varieties of form and colour. That same mighty power has, by rapid intercommunication, confronted intelligence with ignorance and prejudice. The steam press will shed its brilliancy on agriculture, and the steam engine must compel, from the undisturbed bosom of mother Earth, an increase of her fertility. Our antiquated obstructive legalities in conveyancing will give way to public, secure, and immediate transfer. A thousand acres of land will change hands as quickly as 20,000*l.* consols. Why should it not? We shall then have squared estates, straight roads, central buildings, and a thousand profitable conveniences, in lieu of the ruinous monstrosities of ancient times and ancient primitive circumstances. This is the age of progression, legal, civil, social, artistic, and economical. Can, then, agriculture stand still and escape this general influence? Impossible!

The censure of our present state of agriculture is not the mere *ipse dixit* of poor Mr. Mechi. It is the truthful burden of the various county essays that receive the prizes of the Royal Agricultural Society of England, that excellent and useful Society, which finds it difficult to exact from numbers of its recreant members the paltry and promised annual pound pittance. So far as Mr. Mechi is personally concerned (and I am told to speak personally of that individual), I will say that his investments and improvements must ultimately pay, and promise now fairly to do so. I mean those effected on sound and incontrovertible principles, such as drainage, deep cultivation, open fields, substantial buildings, steam-power, &c. If any portion of his operations have been done extravagantly or improperly, such parts cannot be expected to answer. Those who are conversant with agricultural amendment, know full well that seven years are scarcely long enough fully to develope its results. My confidence in these results is firm and unshaken, and great is my mental gratification that the few superabundant means with which it has pleased God to bless me have been expended in affording food and employment to my able and willing fellow creatures.

I have noticed with pain, but not with surprise, the delight with which any supposed failure of mine is hailed by certain folks, whilst an old practical farmer who loses his money because he disbelieves in drainage, or perseveres in old and unprofitable practices, is most abundantly and sympathetically pitied and patted on the back. Now that my farm is in working order, the public may, at all times, form their own conclusions. To me it daily and happily developes the truthfulness of agricultural amendment. I have doubled the produce of grain, and quadrupled the quantity of meat. Let others who have the means do the same, and we shall arrive at the same results as in manufactures, viz., no importations, a cheaper article, and greatly increased consumption; for no man can deny that our rural and general population could consume three times as much animal food as they now get. Of course, with these diminished prices, we shall naturally and properly have proportionately cheaper rents, rates, tithes, and taxes, with a more vigorous, because better fed, peasantry.

So long as it pleases God to spare me I shall continue, in spite of all opposition, to stimulate agricultural amendment, and indulge in the, to me, most delightful task of admiring the divine wisdom and goodness, as exhibited in Nature's ever-varying beauties. *J. J. Mechi, Tiptree-hall, Kelvedon, Dec.* 27.

Home Correspondence.

The Fruits of Thin Seeding.—Having read a good deal recommending thin seeding, I was induced last year to try it upon a small scale. I therefore took a piece of land in the middle of one of my fields, the average piece of my farm, ploughed four times after winter Tares, and sown upon a state fallow; the result is as follows:—2 ridges 50 perches, sown broadcast with 9 quarterns, produced 9 bushels of Wheat; 2 ridges 52 perches, hoed in with 5 quarterns, produced 6 bushels 1½ peck of ditto; 2 ridges 48 perches sown broadcast with 6 quarterns, produced 8 bushels of ditto. Where the Wheat was sown thinnest the wireworm eat it most, and made the Wheat very thin also; the quality and quantity of the straw was not so good, and the quality of the Wheat not so good by 2*s.* per sack, besides filling the land with a quantity of weeds. Had it been sown after Clover, with one ploughing, I think the difference would have been more in favour of the thick seeding. *G. R. Hulbert, Ford Farm, Bradford, Wilts.*

High Farming and Low Prices.—In compliance with the suggestions of your caustic correspondent "P.," I willingly supply further detail of the "inexplicable mismanagement" of the 41 acres of arable land, not in Wheat, and of the 35 acres of Grass land, and also of the consumption of the produce of the same. 15 acres of the arable land was cropped in Beans, 10 acres in Clover, 2 acres in Turnip fallow, and 14 acres in bare summer fallow. The Clover and about 10 acres of the Grass land was mowed, and the produce of the arable and Grass land, except the Beans sold and credited in the account, was consumed on the farm, by 4 farm horses, 5 colts, 35 ewes and their lambs, and 28 pigs, besides 6 oxen wintered on Turnips, chaff, and linseed and hay, and which, when sold out in the spring, barely paid the cost of the linseed consumed; the oxen therefore, with the linseed, are excluded from the account. "P." is unjust towards the farmer, in stating they require a compulsory tribute from the rest of the community. They will gladly adopt any course of cultivation to make both ends meet, and no class in the country more heartily embrace the good old motto "live and let live." But one can hardly see that profitable cultivation is so easy of attainment at the present prices, and the existing outgoings in the shape of rent, labour, and rates; even the intelligent and indefatigable Mr. Mechi declares that last year he lost money. He hopes for better things this year, and who does not so hope? My Lord Kinnaird estimates the produce of the district in Scotland in which his estates lie, in the present year, at upwards of 60 bushels per acre of Wheat; and should we not gladly accept his lordship's estimate as an indication of the produce of the country at large? But "hope deferred maketh the heart sick." There are, I am sure, but few farmers who will not meet the present prices as far as they can, by increased production; indeed, it is the urgent duty of all to do so. But the farmers have been compelled also, as other classes in the country dependent upon them know to their cost, to curtail greatly their own personal and housekeeping expenditure, which cannot fail to depress the general trade of the country. To revert to my farm; while I cheerfully submit to any criticism in which "P." may indulge, I should prefer practical suggestions from experienced men; and I hope if any of your correspondents can point out a more profitable course of management than the one I propose to pursue, they will kindly do so. I have good farm buildings and yards, the buildings are spouted, and the yards have a tank to take the surplus urine which the manure will not absorb; and in order to enrich the manure heap, I propose to consume in the yards all the produce of the farm except the Wheat. Nearly all the arable, and the greater part of the Grass land, is furrow drained, with pipes 30 inches deep. I have succeeded this year in putting in 30 acres of Wheat, and I hope next year to adopt the following course of cropping of the arable land. One-half Wheat, one-sixth fallow, with Swedes and Mangold Wurzel on such part as can be cleaned without a summer fallow, one-sixth Clover, and one-sixth Beans. In conclusion, allow me to say a word in favour of burnt soil, and to recommend it strongly to all clay farmers as a manure for Turnips, or a dressing of a summer fallow for Wheat; its good effects are most striking. I have used it for several years, and the present season have applied upwards of 800 yards in the manner described, at the rate of about 60 yards per acre. *R. F. W.*

Farm Estimates.—I peruse your Paper with some attention and much interest, but must acknowledge that I am much perplexed, not knowing what to think of the many complaints made by farmers that not only they are not gaining anything, which I could readily believe, but that they are going headlong to ruin. In your Paper of 10th November, an account was given of the expenses attending the cultivation of an acre on the 4-course system, showing a profit of 28*s.* 6*d.* per acre. This account I have not seen controverted yet, and others, as well as myself, have expressed a wish that the calculations should either be admitted to be correct, or proved to be wrong. It is also much to be regretted that no one has yet given an exact debit and credit account of a farm, leaving out all that may appertain to the maintenance of the farmer and his family, or giving the farm credit for all that is taken for family use; combining the two together cannot show the exact state of accounts in so far as the actual produce of the land is concerned, inasmuch as a person may spend too much, and lay it all to the account of farming being unprofitable. Advocate as much as you can the bringing forward of such accounts from various parts of the country; it would enlighten the public, and might at same time show, by comparisons, where economy might be practised. In your *Gazette* of Nov. 24, "Amicus Tull" gives an account of his proceedings in a small farm of 56½ acres, and states the profits at about 105*l.* "Omicron," in your *Gazette* of Dec. 15, reduces this to 29*l.* 10*s.* But how does he do this? He begins by putting the profit on pigs, fed off the Barley of "Amicus Tull," at *nil*; he allows him nothing for his Barley, so that in fact he blots out altogether the produce of 5 acres. Is that fair? He deducts the keep of the horse, under plea that a man must have a horse to go over his farm, forgetting that it does not take very long to go over a farm of 56 acres. He reduces also the produce of the 8¾ acres of Wheat to 4 quarters per acre, not taking into consideration that, if "Amicus Tull" has raised his produce to 5 quarters, he has debited himself with 37*l.* 10*s.* of extra manure; that is, to nearly half of the amount put down for the produce of the Wheat; besides he gives you the result of his four years, which appear to bear out his prospective account. Everything considered, I am of opinion that his statement is fair, and that the objections made thereto are not well founded; indeed, as far as the pigs are concerned, it is really but too apparent that the critic had not weighed all things well; if he would not allow him his pigs, allow him his Barley at least; to deprive him of both by a stroke of his pen is not at all charitable. I make these few observations to be used by you as you think proper; farmers ought to be rather encouraged than discouraged, they have much to contend against, but nothing that they cannot overcome, provided they are properly met by landlords, with a fair reduction of rents, not allowed at rent days, as of alms-giving; with the removal of sundry objectionable conditions in the leases; and with the abrogation of the Game laws. *One who wants to come at the Truth.*

Price of Meat.—A butcher, in large business, in Hertfordshire, declares that he never made so much money "since he wore a blue apron," as he has done in the last six months, his profits having been upwards of 45 per cent. The explanation of his being able to do this is, that notwithstanding all that has been said, the supply of meat has not been excessive, and that, as there has been no excess that has been considerable, even if there has been any excess, he has been able to sell on his own terms, while the farmers have sold to him under the influence of a panic. *T. F.*

Thin Seeding.—Early in September last, I forwarded you a report of an experiment made upon different quantities of Wheat to the acre, to test how far thin seeding might be carried out successfully; and as, upon former occasions, Mr. Wilkins had endeavoured to cast suspicion upon my statements, and in several instances had denied them *in toto*, I resolved not to interfere in the threshing out the respective portions, but entrusted them to my clerk and assistant, Mr. Johnston, and a person named Poole, and his two sons, to thresh and make up the quantities, without knowing the object sought to be ascertained, further than to test them simply as an experiment. From some cause or other you deferred inserting this article, until the 24th of last month; and as I had hoped, forgotten or declined it altogether, as I had, from the obnoxious personalities resorted to by the rev. gentleman, resolved never again to enter into public correspondence with him, and had in a letter to his friend Dr. Newington expressed such intention. But I cannot allow his last letter to pass without a parting observation; first that I did not misrepresent the quantity stated by him, as being 35,000 grains from a single grain, but I might have expressed a doubt as to 35,000 grains having been produced, and which doubt I still entertain. That as Mr. Wilkins never had, at the time I forwarded my communication, informed the public that the sort of Wheat he had cultivated was the Egyptian or many-spiked Wheat, which has always been held as exceedingly productive, but unfit for mealing purposes, I took the liberty of merely stating that fact, that the agricultural public might attach to it the importance that it deserved; this has roused the reverend gentleman's ire to such an extent that he has fallen upon me pell-mell, by endeavouring to bear me down with personalities (of which I regret he is more guilty than any other person I have ever come in contact with). Before I conclude, I beg to be excused observing that the remarks upon Mr. Thedam's experiments are upon a level with those made upon my own; as I happen to be acquainted with the nature of the soil on his farm, I am enabled to state that it is light silicious Turnip soil, and absorbent, and therefore would not be affected by moisture beyond the average lands of the district. And as regards Mr. Mechi's land, although it might in some instances be unequally seeded, as stated by Mr. Wilkins, notwithstanding which the majority that I examined was drilled exceedingly well, and regularly deposited. But it happened that exactly as Mr. Thedam increased the quantity of grains in each hole up to five, that the produce was greatest. And Mr. Mechi having adopted the same opinion as myself, that six pecks per acre on well cultivated land in Essex was the proper quantity, has drawn forth the stringent observations of the rev. gentleman, to whom I now respectfully bid adieu. *Robert Baker, Writtle.*

What do a Ton of Roots cost?—As high farming is the best system, and the most honourable, to enable the British farmer to meet the present low prices of agricultural produce; as there cannot be so much obtained for it, there must be more made of it; and as this cannot be done so profitably without the root crop—then it is surely the duty of every lover of his country to throw as much light as he possibly can on one of the most important branches of farming.

COST OF TURNIP CULTURE.

Per acre—	£	s.	d.
One deep winter ploughing	0	9	0
Ditto subsoil ploughing	0	16	0
Two spring ploughings	0	12	0
Three double harrowings	0	3	0
One scarifying	0	2	0
Two rollings	0	1	0
For gathering Couch	0	2	6
Ridging and dung covering	0	3	6
Dung, 25 tons, at 3*s.* per ton	3	15	0
For carting and labour	0	12	0
Three horse-hoeings	0	4	0
	£7	0	0

As this system of cultivation will so much improve the condition of the soil, one-fourth must be taken—1*l.* 15*s.*

	£	s.	d.
One-fourth of cultivation	1	15	0
For artificial manure	1	0	0
For seeds	0	3	0
Sowing	0	1	0
Thinning	0	5	0
Hoeing	0	3	0
Pulling and cleaning	0	8	0
Carting and camping	0	10	6
Rent, rates, tithes, and taxes	2	10	0
Interest on capital	0	9	6
	£7	5	0

Taking an average crop of roots at 25 tons per acre, and as the tops are worth for manure 1*l.*, and quite as much when given to cattle, they will cost 6*l.* 5*s.* per acre, or 5*s.* per ton, clean roots. Now, what is a ton of roots *worth*? This is one of the most important questions to the British farmer at the present time; but to manufacture them into beef, and to make it profitable, will depend on the skill and judgment of the farmer, and how it is carried out. I will give you an experiment of three animals, and what they consumed during their 18 weeks of feeding. Two short-horned

heifers, three years old, bred on the farm, value 26*l.* when put into the boxes.

	Daily—lbs.	Weeks.	Tons.	cwt.	lbs.		£	s.	d.
Roots	180	18	10	2	56,	at 10*s.* per ton	5	1	3
Hay	10	Do.	0	11	28,	at 3*l.* per ton	1	13	9
Straw	20	Do.	1	2	56,	at 1*l.* 10*s.* p. ton	1	13	9
Litter straw	36	Do.	2	0	56,	at 1*l.* per ton	2	0	6
Pea-meal, 4 lbs. increasing to	8	Do.	0	7	0,	at 7*s.* per cwt.	2	9	0
Barley-meal	2	12	0	1	56,	at 7*s.* per cwt.	0	10	6
Linseed-meal	2	12	0	1	56,	at 12*s.* per cwt.	0	18	0
Oilcake	10	6	0	3	84,	at 10*s.* per cwt.	1	17	6
Coals and attendance							1	16	0
Value of the two heifers							26	0	0
Interest on capital, at 10 per cent.							0	18	0
							£44	18	3
Taking the manure to be the value of straw consumed							3	14	3
							£41	4	0

They were sold for 41*l.* 10*s*, leaving a balance of 6*s.* after payment of 10*s.* per ton for roots. A cow, eight years old, bought for 10*l.* 10*s.*, of a cross breed, fed in stall and box.

	Daily—lbs.	Weeks.	Tons.	cwt.	lbs.		£	s.	d.
Roots	160	18	9	0	0,	at 10*s.* per ton.	4	10	0
Hay	8	Do.	0	9	0,	at 3*l.* per ton	1	7	0
Straw	16	Do.	0	18	0,	at 1*l.* 10*s.* p. ton	1	7	0
Litter straw	22	Do.	1	4	84,	at 1*l.* per ton	1	4	9
Pea-meal, 3 lbs. increasing to	6	Do.	0	5	0,	at 7*s.* per cwt.	1	15	0
Barley-meal	1	12	0	0	84,	at 7*s.* per cwt.	0	5	3
Linseed-meal	1	12	0	0	84,	at 12*s.* per cwt.	0	9	0
Oilcake	5	6	0	1	98,	at 10*s.* per cwt.	0	18	9
Coals and attendance							1	0	0
Value of cow							10	10	0
Interest on capital at 10 per cent.							0	7	3
The cost							£23	14	0
Taking the value of manure to be the straw consumed							2	11	9
							£21	2	3
Sold for							16	10	0
Loss on this cow							£4	12	3

The hay and straw being cut into chaff and mixed with the Pea-meal and steamed; the Linseed and Barley-meal being steeped 26 hours and mixed with chaff. The period of year, Jan. 15th to May 21st, 1849. *William Aitchison, Counden, Warwickshire.*

Balance Sheet. — I believe your correspondent "H. H. H. R." to be correct in his observations respecting his balance sheet. I was thunderstruck when I calculated what an acre of Wheat cost, and I believe half the tenants in Somersetshire must go to Australia; but he has left out two items—manure and the tenant's property tax, 3½*d.* in the pound. The latter ought not to be upon the land, but upon his profits of the year, the same as in trade—the average of three years I believe. P.S It was from the 1st of January, 1849, to the 1st of May, we graziers lost upon our stock; selling out in May, after consuming all our hay, Mangold Wurzel, Swedes, &c., for the same only as they were worth the 1st of January. Keep for four months upon 37 beasts a loss of 5*l.* a head = 185*l.* loss; while the butcher, miller, and baker are making their fortunes. *Sub.*

Landlord and Tenant.—Our landlords must drain our lands ere we can grow 40 bushels, or even 30, charging us a 5 per cent. interest; and these times throw us back a something towards extra burning, cleaning, &c., our land; we will then try what "H. H. H. R." says, try and grow 40 bushels. See the difference of price in Wheat at 5*s.* per bushel and 7*s.*; this is 2*s.* per bushel on 40 bushels, exactly 4*l.* per acre. How are we to live and be honest? Rely on it Wheat cannot be grown in this country for 5*s.* per bushel. *Sub.*

Farmers' Clubs.

LEIGHTON BUZZARD AGRICULTURAL ASSOCIATION, *Sept.* 28.—At this meeting, Mr. CALVERT made the following remarks on the Smithfield nuisance. He said—

Last session of Parliament a committee sat for the purpose of considering the subject, and notwithstanding the astounding facts brought forward, not a single petition was presented to the House. It was shown that while agricultural produce to the value of seven millions sterling changed hands in that market, the loss by the present system to farmers who sent their cattle there was not less than 400,000*l*, or 5 per cent. He would appeal to graziers to think about that fact. He had read the evidence with the greatest attention; and it was clearly proved that a loss was sustained in driving every beast backwards and forwards to Smithfield, and he would earnestly conjure the meeting to petition Parliament and enlighten their members on the subject. If not, the salesmen would continue to have the benefit, and the graziers be for ever precluded from disposing themselves of their own stock, as they could do in every other market in the kingdom. There ought to be a large market for London, with ample lairs, conveniently situated for driving the animals thither without loss, and the immense confusion witnessed in the streets, and definite times should be fixed upon for taking stock into the market, and above all that awful scene of Sabbath desecration, which so much disgraced the neighbourhood of Smithfield, should be done away with for ever. It had been said that farmers need not look to a protection. He thought this was a true doctrine; but there was one point which they might attend to likely to add considerably to their profits. Suppose that, with a new market, the clear gain upon each head of cattle was 1*l.*, then to those graziers who exhibited in 12 months 100 beasts, here would be a clear gain of 100*l.* to their annual income. (Hear, hear). The market was held on Monday, and the beasts had to be sent up on Saturday. About 11 o'clock on Sunday the business of the salesmen began, who then went to examine them; and about 9 o'clock in the evening, the driving, shouting, and roaring began; and salesmen were thus compelled to desecrate the sanctity of the day—compelled by legislative enactment, and in a day, too, when so much was said about the legislature interfering to prevent such occurrences, so repugnant to the right-minded feelings of the people of this Christian country.

FYLDE.—The Chairman proposed "The Liberty of the Press."—Mr. JOHN LIVESEY thanked the company for the compliment they had been pleased to confer. He was sure they could not too highly appreciate the freedom of the press in England. Leaving that subject, he would express a degree of admiration at the exhibition they had witnessed that day. In another part of the county a monster exhibition had been held, in which, he maintained, most humbly but firmly, that there could not be an equal competition between the persons who took their stock; whilst in this society every one was placed upon a level, and there was that kind of freedom which, he contended, was a most healthy and salutary stimulant to the improvement of agriculture. The competition elsewhere was most unequal; it was that of a Goliah against a pigmy. It was the competition of men of abundant, he might say superabundant capital—men who need not consult their means nor their capacity in the promotion, not of their agricultural ideas, but of their agricultural fancies—it was the competition of such men with those who had to consider not only their fancies, but their very subsistence and existence. (Loud cries of "Hear.") He said, therefore, that an exhibition such as that they had that day witnessed, was one which claimed their special approbation, and one which tended more to encourage a hope of improvement of agriculture than any witnessed elsewhere. This reminded him of an anecdote, which, very possibly, most of those present had heard, but which was extremely *apropos* at the present moment. The lady of a Yorkshire baronet, who had little to employ her time, as was the case with most ladies at the present day—would that they had something more to do!—(laughter)—the baronet's lady was in this particular position, and took a fancy to the pursuit of agriculture. She had a wish to turn her attention to farming, and therefore she solicited from her husband the privilege of managing a small farm, which he readily granted. He considered that her waste time could not be better occupied than in some industrious pursuit, and determined that she should have every facility to pursue her notion. She kept this farm for a time; the end of 12 months came round, and she began to take stock. She then appeared before her husband with a considerable balance in her favour, and said, "I have had a very pleasant time of it, and find agriculture a most lucrative business. I have sold this, that, and the other, and have so much in hand; and I really am at a loss to understand why the farmers should complain." "My dear," said the husband, "have you got the rent ready?" The lady was taken aback immediately; that simple question had never entered her mind. (Laughter.) She had farmed without rent, and had, therefore, made a profit. This, however, was a kind of oversight very few landlords would permit their tenantry to be guilty of. (Cheers.) It was therefore important for the tenant to remember that he must farm, not according to mere fancy and for superficial competition, but, as one of the inspectors had remarked, according to that which was useful and profitable. It would be extremely out of place in him to enter upon anything like agricultural topics. There was an old proverb, "Every man to his trade." And he should find himself as much out of place amongst agricultural technicalities as the gentlemen present would, if put into a printing office and requested to "set up" a few types, or to read a few proofs. But there were at the same time a few leading principles connected with every business or trade, of which those not engaged therein might be allowed to take cognisance. Their duty was to avail themselves of circumstances placed at their disposal; and if the removal of protection had been an injurious act to the farmer, he who was shipwrecked could do nothing better than collect the materials left him, and construct a raft for his own safety. If the removal of protection had left them in a state of jeopardy and danger, he called upon them to act with energy and hopefulness, instead of exhibiting despondency and lethargy. The interest of agriculture was one which must be of a permanent character. The prosperity of manufactures and of all works not absolutely essential to the existence of the human family, was often fluctuating and hazardous; but that which was necessary for the support of life must always be enduring and permanent. There could be no cessation in the demand for agricultural produce; they would always have a demand sufficiently great for them to supply. That being granted, there was only one course left for the farmer—and that was for him to avail himself of every means Providence put in his hands to work out his own salvation; and in a critical period like the present that could only be done by bringing to bear the utmost amount of energy and of intelligence. Various suggestions had been thrown out with respect to the mode of effecting a retrenchment of expenditure. He would remind them there was one course which they could not and ought not to adopt—and that was, to make a reduction in the price paid to labour. He trusted the agriculturists of this country would never be under the necessity of cutting down the remuneration of their labourers; inasmuch as he thought that in a well-paid, well-fed, and contented body of labourers consisted in a great measure the substantial prosperity of agriculture. In proof of this, they had only to contrast this country with a neighbouring and unfortunate country, Ireland. (Hear, hear.) The farmers of England must now see the necessity of applying increased capital to the cultivation of the land. In comparison with the magnitude of our trade and commerce, the amount invested in agriculture was totally incompatible and insufficient. He maintained that there was a totally inadequate application of capital in this country to agriculture. But that increased application of capital, that untiring energy, that necessary intelligence could never be expected to be employed under the present conditions on which land was let—conditions which were exacted for the benefit of a few to the inconvenience and hindrance of many. (Hear, hear.) He contended that we must witness a number of legislative changes before this new system of management could be carried out. Amongst these changes the most important was the absolute necessity of giving to the farmer some security for the return of capital which he might advance in the improvement of the soil. That, he felt conscious, must be one of the first measures passed by the Legislature. And next to that must be the introduction of an extensive plan of leasing. He could name many instances in this part of the country, if called upon to do so, where individuals taking farms, in order to improve those farms and attain something like comfort and prosperity to themselves, and to achieve a reputation for intelligence, energy, and enterprise, had been induced to apply capital most unsparingly; and their reward had been, not the return of that bread which they cast upon the waters, but an increase of rent, subject to the disagreeable alternative of ejection. This was a fact, and nothing could prevent the recurrence of such facts—and disgraceful facts they were, because property had its duties as well as its rights—nothing could prevent the recurrence of these proceedings but the security of leases. (Cheers.) And there was another point—not only was the granting of leases necessary, but they must be proper leases. He had occasionally inspected leases that were worth nothing at all to the tenant. It was not only the multiplication of leases that was required, but their simplification. He believed that, generally speaking, the leases granted now were much too complicated, much too replete with restrictions to be of any substantial benefit to the farmer. He thought, therefore, that a wholesome improvement might take place in the simplification of leases. After briefly adverting to the absolute importance of a reduction in the cost of the conveyance of land, Mr. Livesey went on to say that there was another subject he had occasionally seen noticed at agricultural meetings which should be fearlessly adverted to—namely, the present strict and rigid maintenance of the Game-laws. He thought the sooner those laws were repealed, or subjected to great modification, the better it would be for agriculture. He mentioned these subjects because he knew there was often a delicacy on the part of the farmers to refer to them. He maintained that for these meetings to attain their proper purpose, every subject connected with agriculture ought to be fully and freely discussed. The subjects he had named—security to farmers for capital expended in the permanent improvement of their farms, the multiplication and simplification of leases, the cheapening the cost of the conveyance of land, and the repeal or great modification of the Game-laws—these were subjects which most deeply affected the farming interest. The present customs might be compatible with an era now passed away; but with an era of severe and universal competition, such customs as those to which he had adverted could not be maintained; or so long as they were maintained they would be detrimental to the interests of farmers. And so long as farmers were silent upon these matters they would be enemies to their own interests. *Preston Chronicle.*

Review.

Experimental Agriculture, being the Results of Past and Suggestions for Future Experiments in Scientific and Practical Agriculture. By James F. W. Johnston, F.R.SS.L. and E., &c. Wm. Blackwood and Sons, Edinburgh and London.

A WELL conducted experiment implies intelligent design. It is the test of a probability. We cannot *know* what has not hitherto been determined; but the connection amongst observed facts is so constant that, once ascertained, it may be considered permanent; and that which we do know thus enables us very often to anticipate conclusions regarding what is still unknown. A certain amount of acquaintance with the subject of research is thus necessary to any one who would successfully conduct an experimental inquiry respecting it. He must be able to imagine plausibly in the first place, and then he must be able skilfully to devise and impartially to execute some plan for testing the accuracy of his idea. For this reason nothing could be more useful than a work which first communicates the kind of knowledge required by an agricultural experimenter, and then details a great mass of research as models for his further proceedings.

Such is the character of the work before us. Professor Johnston is in the position for which we imagine him to be best suited when philosophising upon those facts which a multitude of labourers have gathered, and are continually adding to the stores of scientific agriculture. No one has more skilfully arranged the results of our practical men, whether of the field or the laboratory; nor is there any one with a higher reputation as a teacher of those truths which, in his hands, they are made to exhibit. He has done no inconsiderable service himself as a personal labourer on the boundary line between agriculture and the sciences; but it is to those works in which he has collated the labours of others that the defenders of his reputation will chiefly refer.

We must add one word by way of criticism. The title of the book before us leads to the expectation of more than it contains. "Experiments in Scientific and Practical Agriculture" should include many subjects beside that of manures, which is the only one that is discussed. Certainly it is discussed very fully; but the important topics of the mechanical condition of the soil, the improvement of plants, the feeding and breeding of animals, are quite as deserving of place in a work professing to treat of "Experimental Agriculture."

Calendar of Operations.

DECEMBER.

BEDFORDSHIRE FARM, *Dec.* 31.—The weather of the current month has been of a truly wintry character, and has in a great measure ruled every out-door operation of the farm. When fine and open the plough has been kept steadily at work, in following up the sheep on Turnips, and in turning over the remainder of the stubble for spring Beans and green crops, the greater part of which have been well manured. When frosty, the teams have been engaged carting dung, and liquid and other manures, threshing by machine, carting Turnips and litter for cattle, &c. We go with one-horse carts in all ordinary cases. There is but one waggon on the ground, and that gets an airing but seldom. The labourers will be engaged in threshing and dressing corn, storing Turnips, turning composts, lopping Willows and hedges, &c., in addition to the usual labour in connection with horses and stock. The great bulk of the Turnips are cut, for both cattle and sheep, and also the hay, and Pea and Oat straw. The fatting stock are kept upon Turnips, meal, and chiefly hay chaff. The store cattle and sheep receive Pea and Oat straw, with a proportion of Turnips. The stores intended for next year's fatting off receive a portion of Linseed or other artificial food, to keep them in a progressive state. The young stock of from 6 to 12 months old have also a small allowance of Linseed jelly. We seldom consume any Mangold Wurzels till February or March, when they seem more suitable for stock than when given in the autumn; they also take the place of Turnips, and permit the free working of the land for Barley, which has always succeeded best with us when sown early. Barley sown last year in February has turned out better, both in yield and quality, than any sown later. The early sown Barley weighs 57 lbs., full weight, per bushel; some of the late but 53 lbs. per bushel. The price of meat has for some time ruled very low, but still it is higher in proportion to the price of feed corn, whether of home or foreign growth, than in the time of high prices. It is self-evident that there is more profit in fatting stock now with Barley at 26*s.*, Oats 18*s.*, and Linseed at 36*s.* per quarter, the product realising from 3*s.* 4*d.* to 4*s.* per 8 lbs., than when corn sold at double its present price, and meat made but about a fourth more. Those, therefore, who have poor land to improve can do so now at a much less cost than formerly, with, we think, a small present profit. On the other hand those who expended large sums in the purchase of corn in the times of high prices, or consumed their own produce for the benefit of the land, not only lost then, but cannot be repaid now, even with increased produce, with such low prices. The character of the past year will long be remembered as one of the most serious that ever happened in its effects on the interests of the British farmer. We hope, however, that the worst is past, and that the "good time coming" may have been preparing for us, and is just at hand. *R. V.*

DORSET FARM, *Dec.* 31.—Almost all are now employed alike in providing food for cattle, carrying dung, and other kinds of top dressings that have been provided for the land. But, although there may be little work directly pressing, with the exception of stock feeding, yet exertion ought to be made to get the ploughing forward for spring corn, and also for the Turnip crop, for the earlier ploughing is done the more it will be pulverised by the frosts, and will hold the seed more equally. And instead of leaving our dung in the yards, and having to turn it

in the spring before applying it for the root crop, it is better to take every opportunity of carting it out to the fields where it is to be used, so that there may be as little hindrance as possible to get it spread out when the busy season of putting in the crops arrives; and instead of putting it up loosely in a heap on the field, we prefer driving the carts over it, to tread it firmly down, which prevents its rotting so much; the less it is rotted the less is it wasted. We have been employed getting out a supply for our Mangold Wurzel crop; and also getting some pond mud put on the pasture lands. This is done when the weather is too frosty to allow of ploughing. We have still a little spring Wheat to sow after Turnips, which we shall most likely finish in the course of a month. Our ewes have now begun lambing, and so far as they have gone have done very well. We have only had four slipped lambs of the 500 we are breeding from. We keep them in different lots, according to their degree of forwardness, in a large well sheltered yard, to which a covered shed is attached, into which we put the newly lambed ones, and feed them with hay, Cabbages, and Mangold Wurzel; the latter are stored in a house close by the shed. In looking back upon the year that is almost closed, we must say that there have been few seasons more favourable to the various operations of farming, and whatever the profits of farming may have been, it is certain that "mother earth" has done us all justice by giving us abundant crops of every sort. *G. S.*

Fen Farm, *Dec.* 28.—The attention of farmers in December and January is absorbed in the treatment of live stock, the preservation of manure, and the management of drains. The treatment of live stock involves the treatment of Turnips, respecting which a diversity of opinion and practice prevails. To take Swedes up in November becomes a more frequent plan, and if the land is at all cold and heavy, cart them at once to the yard or home-close, near the steading, in long heaps 3 yards wide, and lightly thatched with stubble. On lighter soils the pies are smaller, and distributed over the field to be cut for folded sheep, or partly taken to the stalls as wanted. Still it is the custom in many places to eat the Turnips without packing them until more than half consumed, particularly where breeding ewes are put on them, in which case the land seldom receives sufficient tillage and the Barley is got in late. Ewes are said to do better on dry Grass land, supplied moderately with cut Turnips and hay or chaff; others, again, advocate the reservation of a piece of white Turnips (at the risk of half of them being destroyed by frost) for ewes after lambing, arguing that they cool the sheep and increase the milk so as greatly to benefit the lambs. White Turnips, as I observed last season, ought not to be seen after Christmas; but I have been assured by men of great experience that they are of great value for early winter keep. I must think the hybrids and Swedes worth far more; but when the sowing season is unfavourable, or unforeseen interruptions occur, the white Turnip is a capital resource to fall back upon. Turnips are attempted sometimes on a small scale on fen land, and they will look tolerably well, but they will not fatten stock; they are very subject to grubs or larvæ, and they distress the land. Not so with Carrots or Coleseed, always providing suitable manure precedes them. As in the case of properly managed Carrots the land is thoroughly cleaned and stirred to a considerable depth, a good crop of Coleseed offers a dense cover and carries a great many sheep. A great weight of Mangold Wurzel is generally obtained; but if the soil is light and turfy, it is exhausting and the produce washy; still it is very useful to fill up gaps anywhere, and is eagerly consumed by all kinds of stock. We have paid for cleaning Turnips 7*s.* per acre. The beasts offered in Peterborough market have improved in quality during the past month, and higher prices have been made; the supply may be expected to increase, and if 7*s.* per stone of 14 lbs. continues to be realised with the very moderate price of Linseed cake, they will remunerate the grazier who did not buy too early. We hear of a great variety of compounds being given with the cookery of the new school. As experiments carefully noted they would deserve all commendation. As if to exhibit a worthy object for all breeders to aim at, the very excellent animal shown at Smithfield by Mr. Jones got fat in a small paddock without any trouble, and with scarcely any expense; the blood relations of such a bullock should be taken care of, and if this easy "aptitude to fatten" should prove to be a family feature, he might furnish an array of facts against the enemies of fat, and so save much food and stop a deal of claptrap periodically thrown at the comparative amount of prizes offered for good stock and to deserving labourers. I have already exceeded my limits in beginning one of the subjects now claiming the attention of farmers. *J. W., Peterborough.*

Sussex Farm, *Dec.* 31.—Our teams are for the most part engaged in carting dung from the cattle yards to the fields, for the next year's green crops. We put the dung in large square heaps, and cover the heap over with earth. We dig a hole at one end of the heap, to catch the liquid manure, which is frequently thrown over the heap. We are also carting dung on to the Hop gardens when the ground is hard enough to carry the carts, and as soon as the weather becomes open we shall commence to dig the ground, and the teams will return to ploughing. Our labourers are for the most part engaged in threshing Oats, Peas, and Beans, filling dung, planting and repairing hedges, ditching, draining, &c. Our stock ewes are at present 309 in number. We carry on to the Grass land two loads of Turnips daily for them; they are brought into the yard at nights, and are fed with Pea-haulm or Oat-straw. As the winter advances we give them hay; they are much improved in size since we commenced to grow green crops, and are at present in excellent condition. We find the Cabbages very useful food at this time; they need no preparing, and are not injured by frost. We give our cows a feed of Cabbages or Turnips; the young stock and lambs also receive a feed of Cabbages daily. *J. B.*

Notices to Correspondents.

Barley: *A B.* You may apply guano over the young leaf, without harm to it, if it be done in wet weather. You may sow the Barley in 9-inch rows, and after it is up sow 16 lbs. of mixed Clover seeds broadcast, and hoe it in. A shallow hoeing will suffice. You had better in that case either sow the guano a fortnight before sowing the Clover seeds, or delay it till after the Clover is up.

Butter made by Compression of Air: *T F.* We never heard of such an idea. We have heard of butter made by agitation (as it is in other cases, but) by a stream of air passing through the cream; but the structure of cream does not make it at all likely that mere compression would have any effect upon it.

Courses of Cropping: *Subscriber.* The land is to be broken up. Half of it might be pared and burned, and sown with Turnip and other roots; and half of it ploughed up and sown part with Oats and part with Beans. Half the roots will be fed on the land by sheep, and half carried home, to be consumed in the barn by cattle, which will be littered with the straw from the grain crops. The following year the Turnip land will be Wheat, one-fourth of it being also sown with Clover seed, and the stubble may be divided into four parts—one planted with Beans, one with Mangold Wurzel, one with Swedes, and one, which on the following year will be Clover, may be sown with Carrots for the current year.

Discoloured Yolks: *Philanas.* We have heard of similar cases with ducks, in which the offensive appearance has passed away as the season has advanced; but the only two instances within our own experience have occurred with hens, both much out of health, a recovery of which brought the yolks (apparently the only part of the egg affected) right again. Ducks at this season require animal food, or kitchen-scraps, besides the vegetable diet of Barley-meal, corn, &c. They should also be drily and warmly housed at night. The yolks of eggs are unquestionably affected by poverty as well as by peculiarity of diet. Of the latter fact, the coming season will afford opportunities of making curious experiments, by mixing with the food of hens ingredients either calculated to colour the yolks of their eggs, as madder, or those which may be thought likely to communicate a recognisable flavour, as musk, or essential oils. Lung diseases, to which fowls are so liable, may be expected to derange the egg-organs, from their closeness to the seat of disorder. *D.*

Drumhead Cabbage: *Inquirer.* We had to transplant some late in July, as you had. Ours have "Cabbaged, but they are very small." You had better use your leaves, as it is very doubtful if they will Cabbage after winter.

Feeding Pigs: *Amicus Tull* promises shortly to send accounts of his cost of feeding them.

Glazed Iron for Roofing: *T F* says, Why should not sheets of thin iron be coarsely glazed, and sold even cheaper than asphalte roofing, for covering barns, stables, &c.? The weight need not be large, nor the cost great. As the expense of fixing would be more than slating, the price ought to be less than slating. Glazing materials, when purity of colour is not needed, are of most trifling cost. [Sheet iron for roofing is, as you are no doubt aware, sold in a corrugated form for strength's sake, and either painted or coated with zinc for protection from weather.]

Manure: *Christmas.* You will find, at p. 798, that the misprint which has misled you was corrected. Cold clay soils would be benefited by the manure being applied in an unfermented state; but it must be applied so long before the seed is sown, or before the crop begins to grow rapidly, as that it shall have rotted in the soil before that time. We turn our box manure once, besides the carting out to heaps.

Partial Journalism: *A Correspondent and Subscriber.* Will you advise how we can be otherwise than *partial?* Do you think that 16 columns of type weekly is sufficient, in which to discuss *all* truth? The thing is absurd. Well, we restrict ourselves to agricultural matters, and not having room even for all that reaches us on them, we conclude to abandon every topic which arises out of their relation to politics. Not that such topics are not highly important, not that it is not of the very highest moment that the Truth regarding them be ascertained and made known, but that the remainder, to which we confine ourselves, is amply sufficient to occupy us; and, we imagine, *usefully* occupy us, too.

Poultry: *Gallus.* Mr. Dixon's work appeared piecemeal, the greater part of it, originally in our columns. Another book which you may consult is "Farming for Ladies," which discusses poultry, rabbits, pigs, &c.

Smithfield Show: *Newport.* The stone referred to is the imperial stone of 14 lbs.

Succession of Crops: *A B.* You may, we think, do safely what you purpose about Barley and Clover seeds after Beans and Turnips; and take Wheat after Clover.

Swedish Turnips: *A B.* An ox of 40 stones will eat about 1 cwt. a day along with straw chaff. Ten sheep of 16 lbs. a quarter will eat about 2 cwt. a day in the fields; rather less in the house.

*** Communications reaching town after Wednesday cannot be answered the same week.

Markets.

COVENT GARDEN, Jan. 5.

The weather during the week has been milder than that of the preceding, and the supply of Vegetables has been rather more abundant. Fruit, to , is for the most part sufficient for the demand. Hothouse Grapes and Pine-apples are good for the season, Filberts and Walnuts are abundant, and Chestnuts plentiful. Oranges and Lemons are abundant, good table Pears are scarce. Amongst Vegetables, Turnips are good and plentiful; Carrots the same. Cauliflowers and Broccoli are sufficient for the demand. Potatoes have not altered since our last account. Lettuces and other salading are plentiful. No alteration in the price of Mushrooms. Some Asparagus and Seakale may be obtained. Cut Flowers consist of Heaths, Pelargoniums, Gardenias, Bignonia venusta, Chrysanthemums, Fuchsias, Primulas, Camellias, Cinerarias, and Roses.

FRUITS.

Pine-apples, per lb., 5*s* to 8*s*	Oranges, per 100, 5*s* to 12*s*
Grapes, hothouse, p. lb., 3*s* to 6*s*	Almonds, per peck, 6*s*
— Portugal, per lb., 9*d* to 1*s*	— sweet, per lb., 2*s* to 3*s*
Pears, per doz., 2*s* to 4*s*	Walnuts, p. 100, 1*s* 6*d* to 2*s*
— per half sieve, 8*s* to 12*s*	— p. bush., 16*s* to 24*s*
Apples, kitchen, p. bsh., 2*s* to 4*s*	Filberts, per 100 lbs., 60*s* to 65*s*
Lemons, per doz., 1*s* to 2*s*	Nuts, Bar., p. bush., 20*s* to 22*s*
— per 100, 6*s* to 12*s*	— Brazil, p. bsh., 12*s* to 16*s*
Oranges, per doz., 9*d* to 1*s* 6*d*	Kent Cobs, 60*s* to 65*s* p. 100 lbs.

VEGETABLES.

Seakale, per punnet, 2*s* to 3*s*	Onions, p. bushel, 3*s* to 4*s*
Asparagus, per bundle, 4*s* to 6*s*	— Spanish, p. doz., 1*s* 6*d* to 4*s*
Cabbages, p. doz., 6*d* to 1*s*	Shallots, per lb., 4*d* to 8*d*
Cauliflowers, p. doz., 3*s* to 6*s*	Garlic, per lb., 4*d* to 8*d*
Broccoli, p. doz. bundl., 7*s* to 15*s*	Lettuce, Cab., p. sc., 4*d* to 9*d*
Greens, per doz., 1*s* 6*d* to 2*s* 6*d*	— Cos, do., 6*d* to 1*s*
Brussels Sprouts, p. hf. sieve, 1*s* 6*d* to 2*s*	Endive, per score, 1*s* to 1*s* 6*d*
Sorrel, p. hf. sieve, 6*d* to 9*d*	Mushrooms, p. pot., 1*s* to 1*s* 3*d*
Potatoes, per ton, 60*s* to 100*s*	— per bush., 3*s* to 6*s*
— per cwt., 3*s* to 6*s*	Small Salads, per punnet, 2*d* to 3*d*
— per bush., 2*s* to 3*s*	Watercress, p. 12 bun., 4*d* to 6*d*
Turnips, p. doz. bun., 1*s* 6*d* to 2*s* 6*d*	Fennel, per bunch, 2*d* to 3*d*
Red Beet, per doz., 1*s* to 2*s*	Savory, per bunch, 2*d* to 3*d*
Horse Radish, p. bdl., 2*s* to 4*s*	Thyme, per bunch, 2*d* to 3*d*
Cucumbers, each, 3*s* to 3*s* 6*d*	Parsley, p. doz. bun., 3*s* to 4*s*
Leeks, per bunch, 2*d*	— Roots, p. bdle., 1*s* to 1*s*
Celery, p. bundle, 8*d* to 1*s* 3*d*	Marjoram, per bunch, 2*d*
Radishes, p. 12 bunches, 1*s* to 2*s*	Mint, per bunch, 2*d*
Carrots, per bun., 4*d* to 6*d*	Basil, per bunch, 2*d*
Spinach p. sieve, 1*s* to 2*s*	

HAY.—Per Load of 36 Trusses.

Smithfield, Jan. 3.

Prime Meadow Hay	66*s* to 75*s*	Clover	60*s* to 85*s*
Inferior ditto... ...	55 63	New Clover	— —
Rowen	50 60	Straw	24 28
New Hay	— —		J. Cooper.

Cumberland Market, Jan. 3.

Prime Meadow Hay	68*s* to 72*s*	Inferior	50*s* to 75*s*
Inferior ditto... ...	50 63	New Clover	— —
New Hay	— —	Straw	24 28
Old Clover	80 90		Joshua Baker.

Whitechapel, Jan. 3.

Fine Old Hay ...	63*s* to 66*s*	New Clover	—*s* to —*s*
Inferior ditto ...	50 55	Inferior ditto... ...	60 65
New Hay	— —	Straw	22 24
Old Clover	80 84		

POTATOES.—Southwark, Dec. 31.

The Committee report that the arrivals last week from the Continent have been very extensive—nearly 3000 tons; so large a supply of foreign Potatoes tends much to depreciate the value of those coastwise, particularly Scotch Regents, which are very difficult to sell; prime York Regents still command a high figure. The present prices are as follows:—York Regents, 70*s.* to 110*s.* per ton; Wisbeach do., 60*s.* to 70*s.*; Scotch do., 60*s.* to 70*s.*; Scotch cups, 40*s.* to 60*s.*; French whites, 60*s.* to 65*s.*; Rhenish and Belgian do., 40*s.* to 60*s.*

SMITHFIELD, Monday, Dec. 31.

The number of Beasts, although not very great, is quite equal to the demand. Trade is dull, and it is difficult to make anything over 4*s.* of the choicest. The supply of Sheep is small, and there is consequently a small advance on all kinds; the trade is, notwithstanding, dull, and 4*s.* 6*d.* is only realised in a few instances for choicest Downs. Good Calves are scarce and a little dearer. From Holland and Germany we have 196 Beasts, and 200 Sheep; from Spain, 80 Beasts; from Scotland, 100; from Norfolk and Suffolk, 500; and about 1400 from Leicester, Lincoln, and Northampton.

Per st. of 8 lbs.	*s* *d*	*s* *d*	Per st. of 8 lbs.	*s* *d*	*s* *d*
Best Scots, Herefords, &c.	3 10 to 4	0	Best Long-wools	3 8 to 3	10
Best Short-horns	3 8 — 3	10	Ditto Shorn	... ...	...
2d quality Beasts	2 10 — 3	4	Ewes & 2d quality	3 0 — 3	6
Best Downs and Half-breds	... 4 0 — 4	4	Ditto Shorn	... ...	...
Ditto Shorn	... ...		Lambs	... ...	— ...
			Calves	 3	4 — 4 4
			Pigs	 3	4 — 4 4

Beasts, 3089; Sheep and Lambs, 16,620; Calves, 69; Pigs, 135

Friday, Jan. 4.

Owing to the absence of foreign supply the number of Beasts is small; however, trade is slow at Monday's rates. The supply of Sheep is a fair average for the time of year; a reduction of about 2*d.* per 8 lbs. must be made to effect a clearance. The only foreign stock being Calves, the trade is heavy in this department; it is difficult to clear out at a reduction. From Holland and Germany there are 111 Calves; from Scotland, 220 Beasts; from Leicester, Northampton, and Lincoln, 100; and 122 Milch Cows from the home counties.

Best Scots, Herefords, &c.	3 10 to 4	0	Best Long-wools	3 6 to 3	8
Best Short-horns	3 6 — 3	10	Ditto Shorn	... ...	— ...
2d quality Beasts	2 8 — 3	4	Ewes & 2d quality	2 8 — 3	4
Best Downs and Half-breds	... 4 0 — 4	2	Ditto Shorn	... ...	...
Ditto Shorn	... ... — ...		Lambs	... ...	... ...
			Calves	 3	0 — 4 2
			Pigs	 3	0 — 4 4

Beasts, 808; Sheep and Lambs, 4610; Calves, 289; Pigs, 233.

HOPS.—Friday, Jan. 4.

Messrs. Pattenden and Smith report that the market remains in the same quiet state as for some time past.

MARK LANE.

Monday, Dec. 31.—The supply of English Wheat from the neighbouring counties this morning was small, and quickly disposed of at an advance of 2*s.* per qr. Foreign met but a limited inquiry at the prices of this day se'nnight, and the attendance at market was moderate.—Barley, Beans, and Oats, are unaltered in value, as are also white Peas, but Maple and Dun are each 1*s.* per qr. cheaper.—Floating cargoes of Indian Corn are inquired after at 28*s.* 6*d.* for Ibraila, and 29*s.* for Galatz.

British per imperial Quarter.	*s.* *s.*		*s.* *s.*
Wheat, Essex, Kent, & Suffolk ... White	44—47	Red	38—41
— — fine selected runs ... ditto	47—48	Red	41—44
— — Talavera	50—54		
— Norfolk, Lincoln, & York ... White	—	Red	—
— Foreign	35—52		
Barley, grind. & distil., 23*s* to 25*s*... Chev.	26—30	Malting	25—26
— Foreign.... Grinding and distilling	18—23	Malting	22—25
Oats, Essex and Suffolk	15—20		
— Scotch and Lincolnshire ... Potato	20—24	Feed ...	17—22
— Irish ..... Potato	18—22	Feed ...	16—19
— Foreign ..... Poland and Brew	16—20	Feed ...	13—17
Rye	20—22	Foreign	20—23
Rye-meal, foreign ..... per ton	5*l.*—6*l.*		
Beans, Mazagan ... 23*s* to 24*s* ..... Tick	25—27	Harrow	25—27
— Pigeon ..... 26*s* — 29*s* ... Winds	22—29	Longpod	22—25
— Foreign ..... White	24—26	Egyptian	23—25
Peas, white, Essex and Kent ..... Boilers	26—28	Suffolk	26—29
— Maple ..... 24*s* to 27*s* ..... Grey	22—24	Foreign	22—29
Maize ..... White	22—25	Yellow...	24—26
Flour, best marks, delivered ... per sack	36—40		
— Suffolk ..... ditto	32—36	Norfolk	32—36
— Foreign ..... per barrel	22—25	Per sack	33—35

Arrivals in the Port of London last week.

	Wheat. Qrs.	Barley. Qrs.	Malt. Qrs.	Oats. Qrs.	Beans. Qrs.	Peas. Qrs.
Flour, 11730 sks						
— 50 bls						
English	2027	2883	4128	1593	774	739
Irish	—	—	225	—	—	122
Foreign	11565	11787	—	12465	385	2469

Friday, Jan. 4.—The arrivals of all grain during the week have been unusually small, and having to-day but a thin attendance at market, little business was transacted in any article, and prices of all may be considered nominally the same as on Monday.—Indian Corn afloat is held at late prices, but the demand is languid; the same may be said of Flour. The weather has become mild.—During the week great firmness has characterised the Wheat trade, and an advance of 1*s.* to 2*s.* per qr. upon British has been very general in the various markets of the kingdom; in some instances an improvement of 1*s.* per qr. has been established upon foreign. Spring corn has been dull, and its value remains nominally unchanged.—By the last accounts from Memel and Konigsberg trade was quiet, and grain prices unaltered. In Dantzic the owners of old Wheat held for somewhat advanced rates. In Stettin, grain of all kinds was in good demand, and the eagerness of buyers caused prices to rule relatively higher than in the other Pommeranian ports.

Arrivals this week.

	Wheat. Qrs.	Barley. Qrs.	Oats. Qrs.	Flour.
English ...	1160	2140	4180	5830 sacks
Irish	—	—	—	
Foreign ...	2520	3370	5030	— brls.

Imperial Averages.	Wheat.	Barley.	Oats.	Rye.	Beans.	Peas.
Nov. 24.....	40*s* 4*d*	28*s* 3*d*	17*s* 0*d*	24*s* 0*d*	29*s* 8*d*	30*s* 7*d*
Dec. 1.....	40 2	28 1	16 4	24 1	28 6	30 2
— 8.....	39 4	27 5	16 6	23 9	28 4	30 1
— 15.....	38 9	26 9	16 0	22 6	27 8	28 11
— 22.....	38 9	25 9	15 9	22 9	27 5	28 11
— 29.....	39 4	25 9	15 6	24 0	26 11	29 0
Aggreg. Aver.	39 5	27 0	16 2	23 6	28 1	29 7
Duties on Foreign Grain	1 0	1 0	1 0	1 0	1 0	1 0

Fluctuations in the last six weeks' Corn Averages.

Prices.	Nov. 24.	Dec. 1.	Dec. 8.	Dec. 15.	Dec. 22.	Dec. 24.
40*s* 4*d*—		...	...	...	...	...
40 2	...		...	...	...	...
39 4	...	...		...	...	...
39 4	...	...	...		...	...
38 9	...	...	...	...		...
38 9	...	...	...	...	...	

SEEDS.—Dec. 31.

Canary, per qr.	80*s* to 86*s*	Coriander, per cwt.	16*s*— 20*s*
Caraway, per cwt.	31 — 33	Mustard, white, p. bush.	6 — 7
Hempseed, per qr.	34 — 35	— brown, do.	7 — 9
Linseed, foreign, do.	37 — 45	Rape, per last	25*l.*—28*l.*
Clover, red, per cwt.	— —	Cakes, Linseed, p. 1000	9*l.* 12*s*
— — foreign, do.	— —	— — foreign, p. ton	6*l.* 15*s*
— white, do.	— —	— Rape, foreign, do.	4*l.* 5*s*
— — foreign, do.	— —	Tares, per bush.	4*s* 6*d*—5*s* 6*d*

CAMELLIAS, STANDARD ROSES, BULBS, &c., just received from the Nurseries of Mons. P. VERDIER, at Paris.

MR. J. C. STEVENS will sell by Auction, at his Great Room, 38, King-street, Covent Garden, on TUESDAY, Jan. 8, at 11 for 12 o'clock, an Importation of 560 Camellias, well furnished with flower-buds, 420 Standard Roses of the best sorts, 450 Hyacinths, 180 Tulips, 185 Gladioli, 40 Amaryllis, &c.—without any reserve.—May be viewed the day prior, and Catalogues had.

DUTCH BULBS AND OTHER BULBOUS ROOTS, WITH A QUANTITY OF MISCELLANEOUS NURSERY STOCK.

MR. D. A. RAMSAY will sell by Auction, at Brompton Auction Ground, Fulham-road, 1 mile from Hyde Park-corner, on THURSDAY, January 10, 1850, without reserve, a quantity of BULBS, comprising Double Hyacinths, Ranunculus, Tigridia, Crocus, Narcissus, Lily of the Valley, Tulip, White Colchicum, Commelina, Pernettya, Rigida, &c.; Mushroom Spawn, 150 roots of Victoria Rhubarb, Giant Asparagus, Strawberry, Standard and Dwarf Fruit Trees, 200 Standard and Dwarf Roses, and a quantity of Ash-leaf Kidney Potato.—May be viewed the day prior and morning of sale. Catalogues free by post, and of the Auctioneer, Brompton Nursery, Fulham-road, Brompton.

AMERICAN PLANTS.

MR. D. A. RAMSAY has received instructions (from an eminent Firm) to sell by Auction, at the Brompton Auction Ground, Fulham-road (one mile from Hyde Park-corner), in February, 1850, without reserve, 500 RHODODENDRONS, 150 SCARLET RHODODENDRONS, a quantity of AZALEAS, and other American Plants, with a choice assortment of Standard, Dwarf, and Climbing ROSES, and other Stock.—May be viewed prior to the Sale, and Catalogues had of the principal Seedsmen, and of the Auctioneer, Brompton Nursery, Fulham-road, Brompton.

BROMPTON NURSERY GROUND.

D. A. RAMSAY begs leave to offer his Services to the Trade and others as an AUCTIONEER, VALUER, &c., and trusts that by devoting his personal attention, with strictly moderate charges, to give satisfaction.

Parcels of Stock, &c., received and offered for Sale by Auction on the above premises.

D. A. R. begs to state that all goods or stock sent to him for Sale by Auction must be delivered on to the premises prior to being advertised for sale.—Letters addressed to Mr. D. A. RAMSAY, Auctioneer, &c., Brompton Auction Ground, Fulham-road, Brompton, promptly attended to.

HOT-WATER PIPES AND TROUGH PIPES, with all the usual connexions.

J. JONES, Iron Bridge Wharf, No. 6, Bankside, London, keeps a very large stock of Hot Water and Trough Pipes, with Elbows, Syphons, Tee Pieces, Collars, Flange Sockets, and Spigots, Throttle Valves, &c., of excellent quality, and at very low prices. Parties requiring the work to be done can have good workmen sent to any part of the kingdom, with everything requisite for the heating, &c., at a stated sum. Rain-water pipes, Sutters, Sash-weights, Railing Bars, Air Bricks, and numerous other castings are also kept at J. JONES'S, Iron Bridge Wharf, No. 6, Bankside, London.

AGRICULTURAL TRAINING SCHOOL, Established for General, Practical, and Scientific Education, Hoddesdon, Herts.

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Resident Head Master.—Mr. HASELWOOD.
Second Master.—Mr. LUPTON. *Third Master.*—Mr. COKAYNE.
French and German Master.—Mr. ROELANDS.

Lecturers.

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Botany, Geology, and Natural History	Mr. HASELWOOD.
Practical Mechanics and Natural Philosophy	Mr. LUPTON.
Practical Surveying, Levelling, and Draining	Mr. HASELWOOD and Mr. LUPTON.

This Institution has been established on the largest scale of efficiency, and will be found complete in every department.

A Fund has also been established by several noblemen and gentleman advocates of combining "Science with Practice" to assist the Tenant Farmers to educate their sons at this School; particulars of which, with Prospectus, may be had of the Head Master, Hoddesdon, Herts, either personally or by letter.

TO NURSERYMEN AND OTHERS.—ELIGIBLE OPPORTUNITY.

TO BE DISPOSED OF, an old-established and suitably stocked and planted NURSERY GROUND, of about 4½ acres, enclosed by substantial brick walls, nearly covered with bearing Fruit trees; a compact Cottage, Three Greenhouses, viz., a 67 feet lean-to, a 40 feet, and 30 feet span ditto, Propagating Stove, Range of Brick Pits, Frames, Lights, Hand-glasses, &c, all in good condition. An excellent supply of water. The business is in the locality of two populous towns, three villages, and various gentlemen's residences, within a short distance from a railway terminus, and nearly 20 miles from any similar establishment.—For particulars and to treat for the same apply to Mr. G. M. HINDS, Estate Agent, &c., 37, Queen-street, Ramsgate.

FOR PUBLIC SALE, at the New Corn Exchange Tavern, Mark-lane, on MONDAY, January 21, 1850, at 2 o'clock precisely, about 1700 tons of damaged PERUVIAN GUANO, in Warehouse, ex sundry ships, by order of Messrs. Anthony Gibbs and Sons, the Importers.—Catalogues and further particulars in due time from Messrs. J. A. RUCKER and BANCRAFT, Brokers, 26, Commercial Sale Rooms, Mincing-lane, London.

HOW TO KEEP A HORSE FOR LESS THAN ONE SHILLING PER DAY, and Make the Animal look Better than when Paying 12s. and 14s. per Week.—Consider the enormous saving in these hard times—times of cheapness.—Apply personally or by letter at MARY WEDLAKE and Co's, 118, Fenchurch-street, Oat-bruising and Chaff-machine Manufactory, established upwards of 40 years.

METCALFE AND Co.'s NEW PATTERN TOOTH-BRUSH and SMYRNA SPONGES.—The Tooth-Brush has the important advantage of searching thoroughly into the divisions of the teeth, and cleaning them in the most extraordinary manner, and is famous for the hairs not coming loose.—1s. An Improved Clothes-Brush, that cleans in a third part of the usual time, and incapable of injuring the finest nap. Penetrating Hair-Brushes, with the durable unbleached Russian bristles, which do not soften like common hair. Flesh-Brushes of improved, graduated, and powerful friction. Velvet-Brushes, which act in the most surprising and successful manner. The genuine Smyrna Sponge, with its preserved valuable properties of absorption, vitality, and durability, by means of direct importations, dispensing with all intermediate parties' profits and destructive bleaching, and securing the luxury of a genuine Smyrna Sponge. Only at METCALFE, BINGLEY, and Co.'s Sole Establishment, 130 B, Oxford-street, one door from Holles-street.

METCALFE'S ALKALINE TOOTH POWDER, 2s. per box.

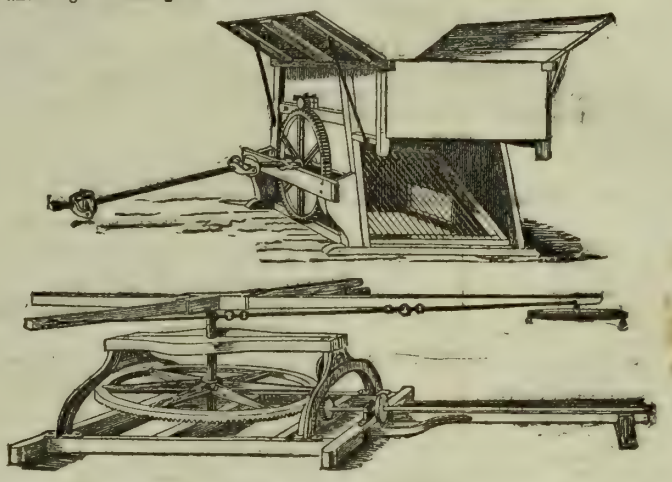
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ENGINEERS AND MACHINE MAKERS TO THE HON. BOARD OF ORDNANCE, WOODS, WORKS, EASTERN COUNTIES, AND SOUTH-EASTERN AND BRIGHTON RAILWAYS, &c.

The Daughter of the late Mr. THOMAS WEDLAKE, begs sincerely to return her thanks to those friends of her late father, who for the last six years have so kindly bestowed their patronage on her Establishment, the *Original Implement Factory*, founded upwards of 40 years, at Hornchurch, known under the name of the Fairkytes Iron Works; and she begs also to remind gentlemen farmers generally, that in conformity with the wishes of her deceased parent, she continues to carry on the same business under the name of MARY WEDLAKE AND Co. Upon an inspection of their various Machines, gentlemen connected with Agriculture will find all kinds of Machinery recently much improved; and M. W. and Co., being determined to meet the times, and being in a position to do so, they have made considerable reduction in their prices. They beg to draw the attention of their friends to the new 4-horse Threshing Machine, which, if it does not surpass, at least is equal to steam power, without a tenth of the expense and danger attending it.



The above Machine will be found made of the very best materials and of first-rate workmanship, with self-oiling boxes, which prevent the brasses and other parts from giving way.

NUMEROUS REFERENCES CAN BE GIVEN.

"Weybridge Farm, Hornchurch, July 29, 1846.

"SIR,—In answer to your letter respecting the Threshing Machine I had from Mrs. WEDLAKE, I beg to say that I am perfectly satisfied with it. It does its work very clean, without injuring the straw, and it will thresh faster, and is easier for the horses, than any machine of this description that I have ever seen; for my part, I do not see that there are any improvements wanted. Yours respectfully, ANTHONY VINCE."

"To Mr. Bunn, Farmer, Herts."

Mr. BLEWITT says, "I threshed 20 sacks of Oats in one hour, 3 loads of Wheat-straw per hour, and upwards. We have threshed upwards of 2000 of all sorts of grain in 12 months, without a shilling of expense for repair."

Mr. J. LEE: "I never saw such a machine before. We cannot get sufficient hands to feed it."

Mr. P. BROWN: "We have done upwards of 60 quarters per day; straw uninjured; two quarters and a half of Rye in little more than an hour."

Mr. WASHBOURN: "In all the course of my experience as a farmer, I never saw a machine of such power, and so substantially constructed."

All letters to be addressed to MARY WEDLAKE and Co., in full, the Fairkytes Iron Works, 118, Fenchurch-street, City; or 5 Stand, Mark-lane. A list of the different articles made at the Works may be had on application.

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BY HER MAJESTY'S ROYAL LETTERS PATENT.

F. M'NEILL AND Co., of Lamb's-buildings, Bunhill-row, London, the Manufacturers and only Patentees of

THE ASPHALTED FELT FOR ROOFING

Houses, Farm Buildings, Shedding, Workshops, and for Garden purposes, to protect Plants from Frost.

At the Great National Agricultural Shows, it is this Felt which has been exhibited and obtained TWO SILVER MEDAL PRIZES, and is the Felt SOLELY patronised and adopted by

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And on the Estates of the Dukes of Sutherland, Norfolk, Rutland, Newcastle, Northumberland, Buccleuch (at Richmond), the late Earl Spencer, and most of the Nobility and Gentry, and at the ROYAL AGRICULTURAL SOCIETY'S HOUSE, Hanover-square.

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Patent Felt Manufactory, Lamb's-buildings, Bunhill-row, London, where roofs covered with the Felt may be seen.

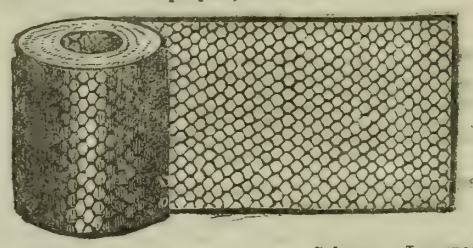
The new Vice-Chancellor's Courts, at the entrance to Westminster Hall, were roofed with F. M'NEILL and Co.'s Felt about two years since, under the Surveyorship of Chas. Barry, Esq., R.A. Her Majesty's Commissioners of Woods and Forests are so satisfied with the result that they have ordered the Committee Rooms at the Houses of Parliament to be roofed with their Felt. Quantity altogether used, 24,000 feet.

NOTE.—Consumers sending direct to the Factory can be supplied in lengths best suited to their Roofs, so that they pay for no more than they require.

Every information afforded on the construction of Roofs, or any proposed particular application of the Felt.

TOOTHACHE PERMANENTLY CURED BY using BRANDE'S ENAMEL for filling decaying Teeth, and rendering them sound and painless. Price 1s. Enough for several Teeth. The only substance approved by the medical faculty, as being unattended with pain or danger, and the good effects of which are permanent. Sold by all Chemists in the United Kingdom. Twenty really authorised Testimonials accompany each box, with full directions for use. Sent free, by return of post, by J. WILLIS, 24, East Temple Chambers, Whitefriars, Fleet-street, London, in return for 13 penny stamps. CAUTION.—The great success of this preparation has induced numerous unskilful persons to produce spurious imitations, and to copy "Brande's Enamel" Advertisements. It is needful, therefore, to guard against such impositions, by seeing that the name of JOHN WILLIS accompanies each packet.

GALVANISED WIRE GAME NETTING.—7d. per yard, 2 feet wide.



	Galvanised.	Japanned Iron.
2-inch mesh, light, 24-inch wide ...	7d. per yd.	5d. per yd.
2-inch " strong " ...	9 "	6½ "
2-inch " extra strong " ...	12 "	9 "
1⅝-inch " light " ...	8 "	6 "
1⅝-inch " strong " ...	10 "	8 "
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Sold wholesale by TAYLOR Brothers, at their Mills, Spital-fields, London, and retail, in 1 lb., ½ lb., and ¼ lb. tin-foil packets, at 1s. 4d. per lb., by most respectable Grocers and Tea-dealers in the kingdom; of whom also may be had TAYLOR Brothers' original SOLUBLE COCOA (only one-third the price of Coffee), the consumption of which article exceeds ONE MILLION POUNDS per annum—a fact which has induced many parties to manufacture spurious imitations, which, although somewhat resembling the appearance, are totally devoid of the essential and peculiar properties of the original and only genuine article. To guard against these counterfeits, TAYLOR Brothers recommend the purchase of their article in packets only which bear their name, with directions for use. Sold by all Grocers and Tea-dealers.

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2 ,, Woodford's Marrow
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4 ,, Blue Prussian
1 ,, Knight's Dwarf Marrow
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qr.-oz. Early Purple Cape
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Packet Legg's Late Dwarf White
,, True Walcheren
,, Chapple's Cream
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qr.-oz. Wheeler's Imperial
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qr.-oz. Large Paignton
hf.-oz. Early Hope
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qr.-oz. Atkin's Early Matchless
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Packet Cattell's Green Curled
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2 oz. James's Green top
1 oz. White Belgian
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1 oz. Silver-skinned
1 oz. Tripoli
PARSLEY—4 oz. Rendle's Treble Garnishing
2 oz. Myatt's Treble Curled
PARSNIP—2 oz. Improved Guernsey
RADISH—4 oz. Wood's Earliest Frame
8 oz. Early Scarlet
4 oz. White and Red Turnip
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4 oz. White Stone
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Barnes's new early Dwarf
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Sprotboro': very large and good
Matchless, Atkins's: superior variety; can be highly recommended
Enfield Market: very early and good
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Early Cornish: large, excellent sort
Early Paignton: very large
Warner's Incomparable: very early and excellent
CARROT—Improved Altringham: superior to the older variety
James' Green Top; large and very sweet
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CELERY—Seymour's Superb White: very solid, large size, and excellent flavour; well adapted for early crop
Giant White (Law's): solid, enormous size
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Monstrous Cos: largest of all, and not apt to run to seed
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James's Long Keeping: a very good variety, keeps sound longer than any other
PARSLEY—Rendle's Treble Garnishing
Myatt's Extra Fine Double Curled: a beautiful sort for garnishing
PARSNIP—Improved Guernsey
RADISH—Wood's Early Frame: the very best for forcing
TURNIP—Early Snowball: small, compact sort
Yellow Maltese: excellent for garden culture
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ESTABLISHED 1786.

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Printed by WILLIAM BRADBURY, of No. 13, Upper Woburn-place, in the Parish of St. Pancras, and FREDERICK MULLETT EVANS, of No. 7, Church-row, Stoke Newington, both in the County of Middlesex, Printers, at their office in Lombard-street, in the Precinct of Whitefriars, in the City of London; and published by them at the Office, No. 5, Charles-street, in the parish of St. Paul's, Covent-garden, in the said county, where all Advertisements and Communications are to be ADDRESSED TO THE EDITOR.—SATURDAY, JANUARY 5, 1850.

THE GARDENERS' CHRONICLE
AND
AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 2—1850.] SATURDAY, JANUARY 12. [PRICE 6*d.*

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TO THE SUBSCRIBERS TO THE

GARDENERS' BENEVOLENT INSTITUTION.

—The case of JOHN SHEPHERD, No. 11 on the List for the next Election (16th January, 1850), and the third application, is most respectfully and earnestly recommended to the Subscribers by Mr. GRISSELL, of Palace-yard, Westminster, who will thankfully again receive proxies. Mr. GRISSELL hopes, with the assistance of the Subscribers, that JOHN SHEPHERD will be successful at the next Election.

TO THE SUBSCRIBERS TO THE

GARDENERS' BENEVOLENT INSTITUTION.

—Your Votes are solicited for EDWARD BEACH, of Quedgely, near Gloucester, a very deserving old man, now upwards of 75 years of age. He has been all his life engaged in the gardening business; but, unfortunately, through losing a great portion of the little money he saved, is now dependent on charity. The favour of your Vote will be highly esteemed He is strongly recommended by Messrs. GARAWAY, MAYES, and Co., Durdham Down Nursery, Bristol; Mr. GEORGE WHEELER, Nurseryman, Warminster; and Mr. J. C. WHEELER, Kingsholm Nursery, Gloucester.

GARDENERS' BENEVOLENT INSTITUTION.

—NOTICE is hereby given, that the ANNUAL GENERAL MEETING of the Subscribers to this Institution will be held on Wednesday next, the 16th inst., at the London Coffee House, Ludgate-hill, for the purpose of receiving the Accounts of the charity for the past year, and electing Officers for the ensuing year; also to consider a Report from the Committee recommending certain alterations in the Rules of the Institution.

An Election of TWO PENSIONERS will also take place from among the following Candidates, whose cases have been examined and approved of by the Committee:

Name.	Residence.	Applic.	Age.
EDWARD MARSHALL	London	8th	70
MARY BROWNE	Do.	6th	84
JOHN SKEATES	Brixton	6th	70
THOMAS MILLS	Dulwich	5th	72
JOHN APPLEBY	Clapham	4th	57
ROBERT DUNCAN	Highgate	4th	70
JAMES BATTEY	Chelsea	3d	66
EDWARD BEACH	Quedgley, Gloucester	3d	75
JOHN COCKS	Brixton	3d	63
RICHARD RUDLAND	Sutton-at-Hone, Dartford	3d	77
JOHN SHEPHERD	Clapham	3d	71
WILLIAM BROWN	Andover	2d	71
RICE EVANS	Stone, Staffordshire	2d	71
JOHN HURDEN	Bath	2d	65
CORNELIUS ROBINSON	Greenwich	2d	70
JOHN SNOW	Farnborough	2d	65
THOMAS FITZGERALD	Fulham	1st	64
JOHN HOPKINS	Nuneaton, Warwickshire	1st	63
HENRY SCHNEIDER	Colerne, Wiltshire	1st	84

The chair to be taken at 11 o'clock precisely. The ballot will commence at 12, and close at 2 o'clock precisely. No person will be allowed to vote whose subscription for the year 1849 is unpaid on the day of election. By order,

EDW. R. CUTLER, Secretary,
January 12. 97, Farringdon-street.

AMERICAN PLANTS.

HOSEA WATERER begs to announce he has just published a New and Complete Catalogue of his AMERICAN and CONIFEROUS PLANTS, which may be had on application, inclosing two stamps for postage to

HOSEA WATERER, Knap Hill Nursery, Woking, Surrey.

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THE THREE BEST CUCUMBERS EVER YET SENT OUT.

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JAMES CAMERON, NURSERYMAN and FLORIST, returns his best thanks to his friends and the public in general for their liberal support, and begs to say he has now for sale a sufficient quantity of the above valuable APPLE, and is thus enabled to offer them at so reduced a price as to ensure them extensive cultivation. It is a middle-sized variety, and different from any in cultivation, and remarkable for its rich sugary and aromatic flavour, superior in every respect to the Ribstone Pippin. It is in its height of flavour from January till the end of May, and a very good bearer. Strong dwarf maiden plants 5*s.* each; the usual allowance to the trade. Remittances from unknown correspondents, previous to the trees being sent, by Post-office orders, made payable to JAMES CAMERON, Nurseryman, Uckfield, Sussex.

J. C. has also an extensive stock of Fruit and Forest Trees, Quicks, Evergreens, and Roses of first-rate quality.

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Seedling Forest Trees.	Plants for Hedging, Underwood, &c.
Seedling Ornamental Trees and Shrubs.	Quartered Trees
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AGENT IN LONDON,

Mr. J. C. SOMMERS, 159, Fenchurch-street, who will afford every information as to supplies of Forest Trees, and Garden or Agricultural Seeds.

*** There are ready and economical means of transit from Edinburgh, both by Steam and Railway, to all parts of the Kingdom.—George IV. Bridge, Edinburgh, Jan. 12.

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VICTORY OF BATH.—12 seeds, 6*d.*

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DOUBLE ITALIAN TUBEROSE ROOTS.—The Bulbs of this most beautiful and fragrant Flower have been just received from Italy, at A. COBBETT'S Old-established Italian Warehouse, 18, Pall-mall, and are warranted double, and of which large and choice roots are selected at 4*s.* per dozen. Also, expected, about the end of January, a choice collection of Orange, Lemon, Citron, and Shaddock Trees, together with Catalonian, Azorian, and Arabian Jessamine plants, any of which may be bespoke.—N.B. Orders by post punctually attended to.

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CHARLES DALY AND SON beg to refer their friends and the public, who should be in want of cheap Thorn Quick, cheap Irish Yews, cheap Shrubs, cheap Forest Trees, and cheap Early Seed Potatoes at 5*s.* per bushel, to their Advertisement in the *Gardeners' Chronicle* of the 27th of October, and 3d and 10th of November last. Their Catalogue of Garden and Farming Seeds sent free by post, containing a good many of their own growing, which will be seen by their Advertisement.

They will also feel much obliged by their customers paying their last year's account, as they have no wish to put them to expense.—Coleraine, Ireland, Jan. 12.

HOME GROWN SEEDS.

SUTTON'S NEW PRICED CATALOGUE OF HOME GROWN SEEDS, being a careful selection of only the very best kinds of KITCHEN GARDEN, AGRICULTURAL, and FLOWER SEEDS, with prices affixed to each article, will, it is presumed, be found the most useful and convenient of any yet presented to the public.

All purchasers of Seeds would do well to peruse this Catalogue, as the low prices therein quoted will enable them to effect a great saving in their expenditure. It will be sent gratis on the receipt of a penny stamp, for postage.

MESSRS. SUTTON'S COMPLETE COLLECTIONS OF KITCHEN GARDEN SEEDS are now in course of delivery at the undermentioned prices. No. 1, 2*l.* 2*s.*; No. 2, 1*l.* 1*s.*; and No. 3, 12*s.* 6*d.*—Reading Seed Warehouse, Reading, Berks.

COLE'S SUPERB SOLID RED CELERY.—This fine Celery has given such entire satisfaction, not only for the great size to which it attains, but for its unequalled crispness and exquisite nut-like flavour, that it needs no further recommendation. Seed may be had genuine from the grower, WILLIAM COLE, Dartford, Kent, in sealed packets, 1*s.* 6*d.* each, or the amount in postage stamps; also of Messrs. J. and J. FRAZER, Leyton, Essex; Mr. BUNYARD, Maidstone, Kent; Mr. CRIPPS, Tunbridge Wells, Kent; Mr. DENYER, 82, Grace-church-street, London; Mr. TILEY, 16, Pulteney-bridge, Bath; Mr. FRANCIS, Hertford; Mr. MILNER, Bradford, Yorkshire; Messrs. J. and J. FAIRBAIRN, Clapham, near London; Messrs. GARAWAY, MAYES, and Co., Bristol; and of Mr. SMITH, Westerham, Kent. *** A liberal allowance to the trade.

W. COLE further states, in justice to himself and agents, that his entire stock of seed saved in 1849 is in his possession and that of his agents, from whom it may be had new and genuine, bearing his name and address printed on the envelope.

COCHIN CHINA FOWLS.—NEW-LAID EGGS FOR SETTING may be had by applying by letter, post-paid, to W. O., at Mr. Mac Lachlan's, 6, Birchin-lane, Lombard-street, London.

NEW RANUNCULUSES, ANEMONES, &c.

CAREY TYSO, Wallingford, Berks, begs to announce that he has selected Twenty splendid SEEDLING RANUNCULUSES, raised in 1848 and 1849, with which he obtained several first prizes, and which he can recommend for exhibition. Descriptions and prices will be forwarded in a general Catalogue for 1849–50 on receipt of two postage stamps. Selections of 100 named Ranunculuses, 50*s.* to 5*l.* Mixtures, 8*s.* to 20*s.* per 100. Double Anemones, 50 sorts, 20*s.* to 30*s.*

Imported German Seeds: Asters, Stocks, Larkspurs, &c., 20 varieties, per post, 2*s.* 6*d.*

TYSO'S "Treatise on the Ranunculus" can be had of all booksellers, price 6*d.*; or direct per post for eight stamps.

RENDLE'S NEW SEED CATALOGUE.

RENDLE'S NEW BOOK CATALOGUE OF SEEDS is *just published*, and entered at Stationers' Hall. It will be found of much value to all purchasers of Kitchen Garden, Agricultural, and Flower Seeds.

PART 1 *contains a descriptive Catalogue of the best* CULINARY VEGETABLES *in cultivation, with the time of sowing, height, and other useful particulars, as well as the quantities furnished by* WILLIAM E. RENDLE & Co. *for their collections.*

PART 2 *contains a descriptive Catalogue of all the choicest and best varieties of* AGRICULTURAL SEEDS.

PART 3 *contains a most excellent descriptive List of all the newest and choicest* FLOWER SEEDS, *giving—1st, the hardiness and duration of each variety; 2d, the colour; 3d, the height; and 4th, the time of flowering. Also some useful information and advice relating to the proper mode of culture, with the manner of testing the quality of good seeds. It gives also a full detailed list of all the best German seeds, such as Stocks, Asters, &c., as well as the quantities furnished by* WILLIAM E. RENDLE & Co. *for their collections.*

Copies of this valuable Catalogue can be obtained on application *gratis*, by inclosing two penny stamps to pay the postage.

KITCHEN GARDEN SEEDS.

COLLECTIONS OF GARDEN SEEDS,

Containing all the choicest sorts, offered at the following prices:

	£	*s.*	*d.*
No. 1.—Complete Collection of 20 quarts of Peas, and all other Seeds in proportion, for one year's supply	2	10	0
No. 2.—Complete Collection in smaller quantities	1	10	0
No. 3.—Ditto ditto	1	0	0
No. 4.—Ditto ditto	0	12	6

Complete Lists of the sorts contained in each collection will be found in our new Book Catalogue.

FLOWER SEEDS.

We have a very superior stock of all the newest kinds, and as some of the choicest varieties are grown under our own inspection, we can warrant them to be quite new and correct to name.

SCALE OF PRICES SENT POSTAGE FREE.

No. 1.—100 packets choice sorts, including all the best Hardy, Half-Hardy, and Greenhouse Annuals, Biennials, and Perennials ..... 18*s.* larger packets, 25*s.*
No. 2.—50 Ditto ditto ditto 10*s.* „ 15*s.*
No. 3.—25 Ditto ditto ditto 6*s.* „ 8*s.*

Complete Lists of the sorts contained in each collection will be found in our new Book Catalogue.

All orders above £2 will be delivered free of carriage to any station on the Great Western, Bristol and Gloucester, Bristol and Exeter, or South Devon Railways; or to any town in Devon and Cornwall; or to Cork, Dublin, or Liverpool, by Steamers.

Railway and Steam communication to all parts of Great Britain and Ireland.

For Catalogues and further particulars apply to
WILLIAM E. RENDLE & CO., Union-road, Plymouth,
ESTABLISHED 1786.

SEED POTATOES.

CHARLES SHARPE has much pleasure in announcing that he has got the under-mentioned sorts of POTATOES to offer again this season, which have for the last four successive years given general satisfaction in all parts of the kingdom. The first six sorts are very early and productive; those marked thus * are the best sorts for Frame Forcing; they are offered at the following prices, packing included:

Per bushel of 56 lbs.		Per bushel of 56 lbs.	
*Early Oxford Potatoes ...	8s.	Early Manleys	7s.
*Early Round Frame ...	8s.	Early Cockneys	7s.
Early Ash-leaved Kidney	8s.	Fox's Seedling	7s.

Second Early Potatoes for Winter and Spring use:

American Native Potatoes	5s.	Kentish Pink Kidney ...	4s.
York Regents	5s.	Forty Fold	4s.

Orders will be forwarded on the receipt of a Post-office order, and great care will be taken to ensure their safe delivery. A liberal allowance to the Trade.—Wisbeach, Cambridgeshire.

EPPS' COLLECTIONS OF KITCHEN GARDEN SEEDS.—No. 1 contains the following quantities, and are of the best and newest kinds, being a sufficient supply for a nobleman's large establishment: 26 quarts Peas, 12 quarts Beans, 4 oz. Beet, 1 oz. Borecole, 6 oz. Broccoli, 1 oz. Brussels Sprouts, ½ oz. Buda Kale, 7 oz Cabbage, 10 oz. Carrot, 2 oz. Cauliflower, 2 oz. Celery, 3 lbs. Cress, 4 pkts. Cucumber, 2 oz. Endive, 2 oz. Leek, 6 oz. Lettuce, 3 pkts. Melon, 2 quarts Mustard, 10 oz. Onion, 4 oz. Parsley, 6 oz. Parsnip, 2 oz. Savoy, 3 pkts. Radish, 1 oz. Scorzonera, 2 quarts Spinach, 2 lbs. Turnips, 1 pkt. Vegetable Marrow, 1 oz. Salsafy, and 12 pkts. Herbs, Chili, Capsicum, &c. £3 3 0
No. 2, two-thirds of the above 2 2 0
No 3, one-third ditto 1 1 0
No. 4.—This collection is sufficient for a gentleman having a moderate sized garden 0 12 6

The great satisfaction these collections have given to some of the principal families in England, Ireland, Scotland, and Wales induces W. J. EPPS with confidence to solicit further patronage. The collections contain this year 15 per cent. more than last, and quite equal in quality. Descriptive Seed Catalogues may be had on application. All orders to be accompanied with a Post-office order from unknown purchasers. No charge made for packing, and delivered free of expense to any railway station in London.—Agricultural and Horticultural Seed Establishment, High-street, Maidstone.

DWARF PEAS.

HAIRS'S Dwarf Green MAMMOTH KNIGHT'S MARROW PEA is perfectly distinct from any other in existence; grows 2 feet, is 3 weeks earlier than the old dwarf Green Knight's, and the Peas and pods are twice the size. 5s. per quart.

BISHOP'S LONGPOD.—Grows 2 feet high, early as Early Frames, pods as large as Scymetar's, and 20 to 24 per stem. 2s. per quart.

BURBIGE'S ECLIPSE.—Grows 1 foot high, pods larger than Imperial, greater bearer, and altogether superior to that variety. 1s. per quart.

The above are three of the best Dwarf Peas ever introduced. Full particulars can be had of DUNCAN HAIRS, Seedsman, &c., Wholesale and Retail, 109, St. Martin's-lane, Charing-cross, London.

Catalogues can be furnished on application, and every article connected with the trade supplied on terms to defy competition. Garden Tools, Nets, Mats, Mushroom Spawn, and Potatoes saved from selected stocks at moderate prices.

NEW STRAWBERRY, "STIRLING CASTLE PINE."—The Subscriber begs to intimate that he has purchased the Stock of the above from the raiser, Mr. LAING, of Stirling. Its principal characters are as follows: Size of fruit large, classing with Keens' Seedling, British Queen, &c.; Form, somewhat irregular, inclining to conical; Colour, pale red, or scarlet when fully ripe; Flavour, excellent, partaking of that of the old Red Pine. It is also very prolific. Having been raised in 1846, it has now been thoroughly proved, and the following notices of it, selected from many others, will, it is hoped, be a sufficient guarantee for its superior merits:

"We recommend Mr. Laing to propagate this variety and advertise it, as, from the specimens submitted to us, we consider it a most valuable addition to this useful family of fruits."—*Mr. Macintosh, in North British Agriculturist of Aug.* 1.

"This Strawberry seems to be an abundant bearer; fruit large, juicy, and high-flavoured. It may rank as a first-class fruit, will succeed the Keens' Seedling, and prove an excellent market variety."—*Mr. Macnab in Report of Caledonian Horticultural Society.*

Plants can now be sent out, 20s. per 100, or 3s. per doz. Post-office orders or references required from unknown correspondents.—ROBERT M. STARK, Edgehill Nursery, Edinburgh.

SUPERB NEW MELON.

GARAWAY, MAYES, AND CO., having purchased the whole stock of seed of that superior MELON called CAMERTON COURT GREEN-FLESH, beg to inform all lovers of this delicious fruit, that they can supply it in packets at 2s. 6d. each.

Notice of Fruits, in Gardener's Journal of September last.—"J. P. Your Green-flesh Melon, about 2½ lbs., is a neat, well-grown fruit, sweet, and melting, and the flesh thick." For the 25th September.—"This is really (we gladly confess it) a very good Melon."

G. M. and Co. have likewise the whole stock of the BRISTOL CHAMPION CUCUMBER, which they can strongly recommend. With the following approved sorts.

Bristal Champion—long, hardy, black spine; excellent. 2s. 6d. per packet.

Holm Pierpoint Wonder—fine long white spine. 1s. per pkt.

Great Britain, excellent; Victory of Bath, excellent; Roman Emperor, early long prolific; and Cuthill's Black Spine, all at 1s. per packet.

Sion House, (true), best for house culture, 1s. per packet.

Kelway's Victory, very prolific black spine, excellent for pot culture, 1s. per packet.

Beechwood Melon, Duncan's improved green-flesh, Cabool, Cuthill's early scarlet flesh, Hampton Court, and Egyptian green flesh, all at 1s. per packet.

G. M. and Co. have now their large stock of Vegetable and Flower Seeds for this season, with the following new and approved varieties, well worth the attention of their friends.

Railway Peas, the earliest known, fine pod; Champion of England, ditto, excellent for second crop; Great Britain, British Queen, Pond's or Ward's Incomparable, varieties of Knight's Marrow, the finest Pea grown; Norris's Superb Dwarf Cabbage; Bundy's fine dwarf Brussels Sprouts; Highclere White Broccoli, the latest known, lasting until Cauliflowers come in; Walcheren Broccoli, true; Coles' Superb Red Celery, from the grower; Superior Garnishing Parsley; German Stocks and Asters, imported annually; Nemophila maculata, new; Phlox Drummondi oculata, new; Ipomœa rubra cærulea.

Durdham Down Nurseries, Bristol, Jan. 12.

SLATE WORKS, ISLEWORTH.—The following articles, manufactured in Slate for Horticultural purposes by EDWARD BECK, may be seen in use at WORTON COTTAGE, upon application to the Gardener, Sundays excepted. Orange Tubs, Plant Boxes, Tanks, Cisterns, Shelves, Garden Path Edging, Hot Water Tank Covers, Flower-beds for Balconies, Shelves fitted to hold water for Orchidaceous Houses, &c.

Estimates given for Work as shown upon Drawings and in Specifications. A large stock of Slate Slabs, of all sizes and thicknesses, kept on sale.

THE REAL CASSABAR MELON.

THE LARGEST AND FINEST MELON IN THE WORLD. J. WEEKS AND CO. beg to offer to the Nobility and Gentry the above for Sale, at 5s. per packet. Early orders are requested, there being but a limited quantity to dispose of.—J. WEEKS and Co., King's-road, Chelsea.

RENE LANGELIER, Clarendon Nursery, St. Helier, Jersey, begs to offer the following new PEARS, which will be found faithfully to answer the description given of each, they having been tried and proved these last five years:

BEURRE ST. HELIER.—Ripens February and March; large, brown, melting, first quality; trees vigorous. Will do well as a pyramid or on a wall; all the trees are not less than two years old; fine strong, on Quince stocks, 10s. 6d.

BEURRE DELAVAL.—Ripens November and December; fine waxy colour, size of a large Crassane, melting, excellent; pyramid or north-west wall will suit it well. Most of the trees are in a bearing state; stock limited. 10s. 6d.

GABOURELLE'S SEEDLING.—Round kitchen fruit, the greatest bearer of Pear trees. Ripens December and January; well adapted for orchards, for which the trees are principally trained, and are very vigorous; from 6s. to 7s. 6d.

R. L. regrets that the following should have been omitted in the printing of his Descriptive Catalogue, but they will be found excellent and melting, *viz.*, LANGELIER'S BEURRE and BEURRE LEON DE CLERC. Those who may have received them, may be assured they are of first-rate quality; so is GROSSE CALEBASH. Having a large stock of superior grown trees, on Quince stocks, all grown and proved by R. L., he has been induced to reduce his price as follows, if the selection is left to him; none but the best melting sorts will be sent, and he will be responsible for their accuracy. Baking or kitchen Pear, is desirable, as a melting sort, being so useful for a family.

24 trees of best melting, strong and healthy, one of each ... 36s.
24 do., one of each, from 3 to 4 years old, both Quince and own stock ... ... 48s.
24 do., bearing trees ... ... 60s.
50 do., large, not less than 4 or 5 years old ... ... 70s.
50 do., larger, well grown and fine ... ... 90s.
50 do., very large ... ...125s.

The trade supplied with any quantity at per 100 or per 1000.

R. L. will supply from 200 sorts and upwards, only one of each, first quality, at 10d. per 100; many will be in a bearing state.

Application to be made to Messrs. PIPER, 23, Paternoster-row, London, for the Descriptive Catalogue. Fine Camellia stocks for grafting or planting in shrubberies, where they do well, from 40s. to 50s. per 100; also a superb collection, all strong and healthy, of which a Catalogue will be published separately, as well as Vines, of which R. L. possesses an extensive and select collection, also proved by him. A remittance or reference from unknown correspondents.

BY HER MAJESTY'S ROYAL LETTERS PATENT.

PATENT HOTHOUSE WORKS, KING'S ROAD, CHELSEA.

E. DENCH invites the attention of Gentlemen about to erect Hothouses, &c., to the vast superiority in every respect possessed by his PATENT HOUSES, which he will warrant superior in every respect to any others. Good Glass from 16 to 21 oz. per foot, 1 foot wide, 3 feet long, furnished, and the Houses when completed charged from 1s. 3d. to 1s. 6d. per superficial foot, according to size and quantity; one principle, the roof being formed without wood or putty, and the other principle being wood rafters and the glass put in with putty. Patent Sashes, requiring no paint, from 7d. to 9d. per ft.

HEATING BY HOT WATER.

CUCUMBER AND MELON BOXES AND LIGHTS.—One hundred 1, 2, and 3-light Boxes and Lights of all sizes ready for immediate use. Warranted best materials, packed and sent to all parts of the kingdom; 2-light Boxes and Lights from 1l. 6s. Garden Lights of every description, Conservatories, Green and Hot-houses, made and fixed in all parts of the kingdom. References given to the Nobility, Gentry, and the Trade, in most of the counties of England.

JAMES WATTS, Hothouse Builder, Claremont-place, Old Kent-road, London.

TO PARENTS AND GUARDIANS.

A LADY, residing near Eccleston-square, Pimlico, begs to offer a Comfortable Home to one or two Young Ladies, who may require the care and attention of a mother. Good references given and required.—Address, H. D. D., care of W. Parkins, Stationer, 25, Oxford-street, London.

POLMAISE HEATING.

J. LEWIS'S IMPROVED POLMAISE STOVES are delivered to the Railways in London, with Plans for fixing. For a Greenhouse: 20 feet by 12, 6l. 10s.; 30 feet by 14, 8l. 10s.; 50 feet by 18, 10l. 10s. Stoves for Churches, Schools, and Halls, according to size.

Hothouse Works, Stamford-hill, Middlesex.

STEPHENSON AND CO., 61, Gracechurch street, London, and 17, New Park-street, Southwark, Inventors and Manufacturers of the Improved CONICAL and DOUBLE CYLINDRICAL BOILERS, respectfully solicit the attention of scientific Horticulturists to their much improved method of applying the Tank System to Pineries, Propagating Houses, &c., by which atmospheric heat as well as bottom-heat is secured to any required degree, without the aid of pipes or flues. S. and Co. have also to state that at the request of numerous friends they are now making their Boilers of Iron, as well as Copper, by which the cost is reduced. These Boilers, which are now so well known, scarcely require description, but to those who have not seen them in operation, prospectuses will be forwarded, as well as reference of the highest authority; or they may be seen at most of the Nobility's seats and principal Nurseries throughout the kingdom.

S. and Co. beg to inform the Trade that at their Manufactory, 17, New Park-street, every article required for the construction of Horticultural Buildings, as well as for heating them, may be obtained upon the most advantageous terms.

Conservatories, &c., of Iron or Wood, erected upon the most ornamental designs. Balconies, Palisading, Field and Garden Fences, Wire-work, &c.

GLASS PIPES.

MESSRS. COATHUPES AND CO., GLASS MANUFACTURERS, of Bristol, and of Nailsea, Somerset, beg to inform Engineers and others, that they are prepared to supply GLASS PIPES of from 1 to 4-inch bore, in lengths of from 3 to 7 feet—be lengths being less as the diameters of the bores increase.

GLASS FOR CONSERVATORIES, &c.

HETLEY AND CO. supply 16-oz. Sheet Glass of British Manufacture, at prices varying from 2d. to 3d. per square foot, for the usual sizes required, many thousand feet of which are kept ready packed for immediate delivery. Lists of Prices and estimates forwarded, on application, for PATENT ROUGH PLATE, THICK CROWN GLASS, GLASS TILES and SLATES, WATER-PIPES, PROPAGATING GLASSES, GLASS MILK PANS, PATENT PLATE-GLASS, ORNAMENTAL WINDOW GLASS, and GLASS SHADES, to JAMES HETLEY and Co., 35, Soho-square, London.

See the *Gardeners' Chronicle* first Saturday in each month.

SUBSCRIPTION ON BEHALF OF WM. HOWDEN, LATE FOREMAN, INVERLEITH NURSERY.

It is now generally known that Mr. WILLIAM HOWDEN has left the situation he held as Foreman to JAS. DICKSON and SONS, Inverleith Nursery, where he was upwards of Forty years, and is understood to be in very infirm health. It has been suggested by a number of his friends and acquaintances, that, in his present circumstances, some mark of respect should be shown him by his brethren, to testify their estimate of his character and approval of his conduct during the long time he held the above situation. Those, therefore, desirous of subscribing can do so to any of the following Foremen in the Edinburgh Nurseries, viz., Mr. P. S. Robertson, Golden Acres; Mr. Melrose, Mignonette Bank; Mr. Alexander Tait, Leith Walk; Mr. Archibald M'Keith, Warriston Lodge; or to Mr. James Kelly, Nurseryman, Tanfield; Mr. Thomas Methven, Nurseryman, Stanwell Lodge; Mr. Charles Alexander, 1, Waterloo-place; Mr. John Peacock, 1, George IV. Bridge. Early subscriptions are respectfully requested; and it is proposed that after a reasonable time a Committee shall be formed of the Subscribers, to present the money in any way they may think best suited to his present position.

P.S.—It is hoped all friendly to this object will give those that are employed under them an opportunity of contributing. To save expense, two or three may join and remit per post-office order, and small amounts can be sent in postage stamps.

The following Subscriptions have already been received:

	s.	d.
P. Lawson and Son	21	0
Dicksons and Co.	21	0
Eagle and Henderson...	21	0
Wright, Sons, & Wright	21	0
Alex. Cross and Sons, Glasgow	10	6
Edward Sang and Sons, Kirkaldy	10	6
Thomas Handasyde, Musselburgh	10	6
R. M. Stark.....	10	6
John Peacock.....	10	6
Charles Alexander	10	6
Jas. M'Nab, Royal Botanic Gardens	5	0
Charles M'Intosh, Dalkeith	5	0
William Black, Leith ...	5	0
Wm. Campbell, G.P.O.	5	0
Peter S. Robertson	5	0
James Kelly	5	0
W. W. Evans, Rl. Cal. Hort. Soc. Gardens ..	5	0
Robert Grieve, St. Catherine's	5	0
R. T. M'Intosh	5	0
Jno. Thomson, 1, Waterloo-place	5	0
C. Cobbold, Broughton-park	5	0
Jno. Walls, S.S.C.	5	0
I. Anderson, S.S.C.....	5	0
C. H. J. Smith	5	0
Downie and Laird..... ...	5	0
Dr. Neill	5	0
Thomas Methven	5	0
Alexander Tait	5	0
A. Brown, Princes-street Gardens	5	0
Jno. Carstairs.....	5	0
Peter Booth, Falkirk ...	5	0
R. Merrilees, Glasgow ...	5	0
James Thyne, jun.	5	0
A Sympathiser	5	0
And. Fowler	5	0
Moses Brown	5	0
James Tough, Kirkaldy	5	0
Thos. Bruce, Arbuthnot House	5	0
A. Dickson and Sons, Hawick.....	5	0
Jas. Simpson, Wemyss Castle	5	0
Duncan Mitchell, Amisfield	5	0
Wm. Farquhar, Tollymore-park	5	0
Wm. Graham, Merchiston Lodge.....	5	0
J. C. Farquharson, 5, Inverleith-row	5	0
Jas. Goodall, Lochnaw-Castle	5	0
J. Petrie, Cullen-house	5	0
Professor Dunbar	5	0
Captain Mitchell, Inverleith-row	5	0
Miss Mitchell	5	0
Jas. Melrose, Mignonette Bank Nursery.....	5	0
Edinburgh, January 12.		

	s.	d.
Shopmen in Dickson & Co.'s	5	0
Anonymous.....	5	0
H. Low & Co., London	2	6
Thos. Black & Sons.....	2	6
Jno. Dods, Lochend.....	2	6
Archd. M'Keith, Warriston Lodge.....	5	0
Geo. Lawson, Rl. Cal. Hort. Soc. Gard.	2	6
Wm. Clark, Cramond ...	2	6
Jno. Reid, Millbank.....	2	6
J. Morrison, Dean Nursery	2	6
Jas. Straitton, Bot. Gard.	2	6
Rk. M'Donald, Drummond Castle	2	6
J. M'Phail, Lewis Castle	2	6
Jno. Cochrane, Glasgow	2	6
Shopmen in Cross and Sons, Glasgow	4	6
Do., Austin & M'Anslane	2	0
Do., Jas. Thynes, jun....	1	0
Robt. Thomson, Glasgow	2	6
H. Ritchie, Parson's Green	2	6
James Falconar, Cambo	2	6
George Inglis, Dron.....	2	6
A. Temple, Falkland ...	2	6
J. Ferguson, Leith Walk	2	6
G. Fowler, Smeaton House	2	6
J. Melrose, Morton Hall	2	6
J. Wallace, Dunimarle...	3	0
Thos. Dick, Colinton ...	2	6
R. Anderson, Morningside	2	6
J. M'Pherson, Reswallie	2	0
Jas. Goodal, Newbattle Abbey	2	0
Wm. Baxter, Riccarton	2	0
J. Ewings, Summer Place	2	0
Journeymen at Cullen House	7	0
Do., at Parson's Green	1	0
Do., at Newbattle Abbey	3	0
Do., at Wemyss Castle	6	6
A. Campbell, New Saughton	1	0
G. Jamieson, Coltbridge	1	0
Geo. Hutchinson	1	0
Jas. Drummond, Blair Drummond	1	0
Chas. Baxter, Hailes House	1	0
J. Kidd, Rossie Priory....	3	0
G. Cowan, 9, George-st.	2	6
Jas. Mathieson, Melville House	2	6
Jas. White, Auchinleck	2	6
Jno. Duguid, Golden Acres Nursery	2	6
W. Thomson, do.	2	6
Jas. Ross, do.	2	6
Jas. Cooper, do.....	1	0
Jas. Macall, do.....	1	0
Geo. Garrie, do.	1	0
R. Stewart, do.	1	0
Jno. Addison, Gosford	1	0
Peter Barr, Blairhill ...	1	0
Jas. Reid, Fairneyhill...	1	0
Jno. Taylor, Mignonette Bank.....	1	0

HARTLEY'S PATENT ROUGH PLATE GLASS.

In submitting our list of prices, we would beg to direct attention to the Leading Article of the *Gardeners' Chronicle* of Saturday, Dec. 8, upon the subject of "Patent Rough Plate." Some alteration having been made in the mode of manufacturing this description of Glass, the quality is greatly improved, and we now supply it perfectly flat, and, by an arrangement with Messrs. HARTLEY and Co., precisely at their prices. Cut to order in panes of

8 by 6	and under	10 by 8	at 4½d. per foot.
10 by 8	,,	14 by 10	at 5d. ,,
14 by 10	,,	1½ foot	at 5½d. ,,
1½ foot	,,	3 feet	at 6d. ,,

PACKED IN BOXES of 50 feet each.

6 by 4 and 6½ by 4½...10s. 6d. 8 by 6 and 8½ by 6½...13s. 6d.
7 by 5 and 7½ by 5½...12s. 0d. 9 by 7 and 10 by 8 ...15s. 0d.

Milk Pans from 2s. to 6s. each, Metal Hand-frames, Tiles, and Slates; Propagating and Bee Glasses from 2d. each; Cucumber Tubes, 1d. per inch; Peach Glasses, 10d. each; Wasp Traps, 3s. 6d. per dozen; Pastry Slabs, Hyacinth Glasses and Dishes, Shades for Ornaments, Fish Globes, Plate and Window Glass of every description, and Lamp Shades. Lactometers for trying the quality of Milk, 4 tubes, 7s. 6d.; 6 tubes, 10s. Self-registering Thermometers for Greenhouses, Horticultural Glass, &c.

JAMES PHILLIPS and CO., 116, BISHOPSGATE STREET WITHOUT, LONDON.

HARTLEY'S PATENT ROUGH PLATE GLASS FOR CONSERVATORIES, &c.

See Article in THE GARDENERS' CHRONICLE of Saturday, December 8, 1849.

"Continued experience leaves us no room to doubt that this is the best material yet produced, and that it will in time supersede glass of all other kinds for the greater part of Gardening purposes." . . . "As for the article substituted for Rough Plate . . . it is wholly unfit for any horticultural purpose." . . . "The best sample of it which we have yet seen was Manufactured by Messrs. HARTLEYS, AND SOLD BY MESSRS. JAMES PHILLIPS & CO., 116, BISHOPSGATE STREET."

BECK'S PELARGONIUMS, and other raisers' Flowers.—Now ready for selection and going out. Twelve of the following varieties, including box and carriage to London, will be forwarded in exchange for post-office order on Brentford for Two Guineas. They are well-rooted in 3-inch pots, and ready for an immediate shift into a larger size:

Blanche, Centurion, Cracker, Forget-me-not, Ariel, Cassandra, Cruenta, Gustavus, Gulielma, Grandiflora, Junii, Negress, Rosamond, Sundown. Or Nine of the above, and Hoyle's Crusader, or Foster's Victory.

EDWARD BECK, Worton Cottage, Isleworth.

MITCHELL'S ROYAL ALBERT RHUBARB still has its supremacy over all other kinds for its extraordinary earliness, delicious flavour, and splendid red colour; also a most prolific bearer and free grower, with large stalks. For early forcing it far surpasses every other variety. For making wines, preserves, and all culinary purposes, it is an inestimable production. Strong one-year planted roots 1*s.* 6*d.* each; also Myatt's Linnæus, 1*s.* 6*d.*; and Victoria, 9*d.* The usual allowance to the trade. Post-office orders made payable to WILLIAM MITCHELL, Enfield Highway, Middlesex, will meet with prompt attention. N.B. The above is from four to five weeks earlier than the well-known Victoria.

MYATT'S LINNÆUS RHUBARB.

J. MYATT AND SONS can confidently recommend this variety as the best in cultivation. The most satisfactory proof of this assertion is the fact that the Market Gardeners round London and Manchester have planted the Linnæus Rhubarb more extensively than any other variety. It is extraordinarily productive, and about a fortnight earlier than the Victoria; added to this, it is held in general esteem for preserving and all culinary purposes. One-year planted roots, 1*s.* 6*d.*; ditto, Mitchell's Royal Albert, 1*s.* 6*d.*; Victoria, 9*d.* The usual Trade allowance.—Post-office orders are requested to be made payable to JOSEPH MYATT, Manor Farm, Deptford.—Jan. 12.

CLERODENDRON BETHUNEANUM.

HUGH LOW AND Co. have much pleasure in offering the above-named most beautiful plant. It was introduced by them from Borneo, and is figured and described by Sir Wm. J. Hooker in the December Number of the Botanical Magazine. Strong established plants, 63*s.* each. A Catalogue of their general collection, stamped, and free by post; also a list of Vegetable and Flower Seeds, containing the best and most approved varieties, may be had on application.

Clapton Nursery, London, Jan. 12.

The Gardeners' Chronicle.

SATURDAY, JANUARY 12, 1850.

MEETINGS FOR THE ENSUING WEEK.

MONDAY,	Jan.	14	Chemical	8 P.M.
			Medical	8 P.M.
			Geographical	8½ P.M.
TUESDAY,	—	15	Horticultural	2 P.M.
			Linnean	8 P.M.
			Civil Engineers	8 P.M.
WEDNESDAY,	—	16	Microscopical	8 P.M.
			Society of Arts	8 P.M.
THURSDAY,	—	17	Antiquarian	8 P.M.
			Royal	8½ P.M.
FRIDAY,	—	18	Royal Institution	3½ P.M.
SATURDAY,	—	19	Asiatic	2 P.M.
			Royal Botanic	3½ P.M.
			Westminster Medical	8 P.M.

WE have received from the METROPOLITAN SEWAGE MANURE COMPANY the report made by the directors at a late half-yearly meeting of the shareholders. The conclusions at which the directors have arrived being founded exclusively upon horticultural evidence, the subject is thus brought directly within our peculiar province.

We might criticise some of the calculations produced upon the occasion referred to, such for example as the estimate of a clear gain of from 18 to 23 per cent., after the completion of the works, which appears to us to be wholly fallacious; but we prefer for the present to leave the question of profit and loss to be settled between the shareholders and directors, confining ourselves to an examination of the evidence obtained from Market Gardeners as to the effect of London sewage on their crops. In a case of this nature amateur evidence is less satisfactory. The general result of this experience is as follows:

1. Growth is more rapid and healthy after the application of "sewer water." (*Bransgrove, Miller, G. and W. Bagley, Crouch.*)

2. Vegetables increase in size; but its effect on trees and shrubs has not been observed. (*G. Bagley, Miller.*)

3. The yield of Raspberry bushes is much improved; but nothing further observed. (*Miller.*)

4. It lessens blight. (*Bransgrove, Broadbent, W. Bagley, Crouch, Miller.*)

5. No offensive odour. (*All the witnesses except Bransgrove, who found a* "very little.")

6. As to any improved price obtained for the crops the evidence is inconclusive, except in the case of Carrots.

From these general statements the report proceeds to particulars, and similar evidence is brought forward in proof of the advantage of "sewer water" to Potatoes, Radishes, Vegetable Marrow, Onions, Cabbages and Broccoli, Seakale, French Beans, Turnips, Carrots, Strawberries, Raspberries, Cucumbers, Celery, Rhubarb, and Peas. In Beet the *plants* are reported by Mr. MILLER to have considerably increased in size, but nothing is said of the *roots*; and Mr. CROUCH gives evidence of the goodness of Broad Beans *when in blossom*, but he says nothing of the crop when *in pod*. The advantage to Currants, Gooseberries, and Rose trees, is doubtfully reported on.

We think that, upon the whole, this is a fair statement. The reports are not very encouraging; and may therefore be regarded as the more trustworthy. We cannot, however, draw from them the inference that the "sewer water," spoken of in the report before us is worth so much as the advocates of liquid sewerage have believed. The money gained by the employment of the fluid, beyond what would have been received without it, is nowhere stated; and yet this is the only test of the advantages attending its application. All other statements are vague and insufficient. When a man says that his crops are better, in consequence of the use of a certain manure called *x*, we seek in vain to compute the amount of gain. But if he says—I had 10 acres of Cabbages, half manured with *x* and half with *m*, and I sold the crop on *x* for 2*l.* an acre more than the crop on *m*, then we know that it is worth while to pay 30*s.* or 40*s.* for the use of *x*. No such information is to be found in the report of the directors.

But there is another question. Do the reports now produced, such as they are, represent truly the effect of using liquid manure? We think not. They appear to represent little more than the effect of irrigation. A deluge of Thames water, skilfully applied, would probably have produced results as good. The market gardeners declare, with one trifling exception, that there was no offensive smell whatever, at the time of application; and Mr. WATSON, an amateur, whose testimony we have purposely omitted, speaks to the same fact. If we are not misinformed, there are those who actually drank the "sewer water" as it came from the Company's mains, without perceiving any quality that did not belong to river-water. It may therefore be doubted whether the Company, in their anxiety to avoid over-strong drenches, which would be disadvantageous, have not followed the example of the homœopathists, and been supplying their customers with infinitesimal doses.

For this reason we regard the report of the directors as one which represents the effects of sewage water in a light less favourable than it deserves. There can be no doubt that the liquid which passes from the London sewers will exercise a far more striking effect upon crops than anything here testified to, provided it is applied in sufficient strength, and skilfully. What the Company should do, with a view to their own interests, is to obtain leave to apply their sewage to half some considerable crop, say a dozen acres, of any kind of kitchen garden produce; and when the crop is ready for market, to call together competent and unbiassed judges, in whom the public places confidence, who shall examine and report upon the result in a business-like way. It is a very great question for London, and one which ought to be settled without further loss of time. In fact, until this is done, all consideration of the various schemes which have been proposed for draining London is premature. Is the sewage water of London worth saving, in a *pecuniary point of view*, or is it not? That is the main question. If it costs 30*s.* an acre to apply it to crops, and the advantage is represented by 40*s.*, it seems clear that any plan for draining London, in which the sewage is wasted, must be put aside. On the contrary, if the reverse should prove to be the fact, the best plan will then be the one which gets rid of it in the quickest and cheapest manner.

Towards the solution of this fundamental question no approach seems to have been hitherto made. It is admitted on all hands that sewage water is valuable; but nobody has satisfactorily shown what the real relation is between crop and cost, so far as the metropolis is concerned.

A QUESTION has arisen as to whether Gardeners are justified in taking APPRENTICE FEES from their workmen. We should have thought that only one answer could possibly have been returned—and that in the affirmative—*provided they do so with the permission of their employers*. Why not? What specious reason can there be why gardeners should be deprived of that reward of experience and skill which other classes receive, and to which, under certain conditions, the law itself gives them a claim.

The advantage attending the system of binding youths to trades for a specific period, in order to gain a knowledge of the daily practice requisite in each department of their art, cannot be attained without some stimulus to the exertions of their master; and since no incentive but one of a pecuniary nature can be supposed capable of producing the desired attention to a lad who has no other claim on his employer, it has followed, as a natural consequence, that tradesmen and mechanics demand an allowance, in payment for the service they render. Laws are framed expressly to protect the two parties to this beneficial agreement. Why gardeners are not to enjoy advantages which belong to other callings is more than we can understand. Nevertheless many persons blame, with no little severity, the gardeners receiving recompense from these negociations. Let us examine the arguments on both sides of the question, and endeavour to lead the reader to a satisfactory conclusion.

The small number of lucrative situations in the business of horticulture, and the comparatively low salaries received by gardeners of all grades, are the principal reasons why it is considered that premiums should be dispensed with. We do not admit that they would be valid ones, even if boys were not usually allowed wages fully equal to the value of their labour, and head gardeners were so comfortably provided for as not to need some assistance of this description. The man who expends a large amount of time and trouble in completing his acquaintance with gardening affairs, and who contents himself with a salary inadequate to his proper maintenance during so many of his earlier years, has a clear right to be paid by his younger brethren for the communication of that intelligence which will ultimately place them in a similar position. Knowledge not only gives power to its possessor, but it also supplies him with wealth, if rightly used; the readiest way of turning it to account being by instilling it into others. This is both justifiable and laudable. The abandonment of all the profit derivable from such a source is more philanthropic than commendable.

But then it is said that gardeners pay no attention to their apprentices; that the apprentice fee is all they think of. And this is true enough of some men, whose conduct is a disgrace to them; but it is not true of all, nor of many, and it is preposterous to condemn a system because men are to be found who abuse it. The same thing happens in all walks of life. A correspondent suggests that the system would be much improved if a portion of the premiums paid by the friends of the apprentice were shared amongst the different foremen of the garden in which he is situated, because on these must necessarily devolve the practical instruction; or at least, that the principal gardener might offer a reward to those in whose department the apprentice manifestly made the greatest progress. This is a point on which we do not feel called upon to offer any remark; such things should be left to private arrangement.

Another circumstance that strongly inclines many to oppose premiums is, that they are sometimes estimated by proprietors as a part of the gardener's salary, the latter being reduced in consequence. We cannot too highly deprecate this principle. On no reasonable grounds can a gentleman be entitled to the profit arising from his gardener's skill in teaching. Surely it is reasonable thus to compensate a gardener for his previous toils, and for the communication of their results to the young men placed under his charge. But as for premiums exacted from journeymen under the pretence of affording them opportunities for improvement, these are totally indefensible upon any principle whatever.

We think, too, that other reasons may be given in favour of apprentice fees; they tend to keep the profession select and respectable. The simple fact of a parent being able to expend 20*l.* or more upon his son's professional education (although this, in itself, is a comparatively trifling sum) may be taken as a security for the respectability of a young man's connexions, and for his possessing at least a reasonable amount of school education. If having undergone the process of apprenticeship were invariably insisted on as a qualification for a good gardener, there cannot be a doubt that an entirely different state of things to what at present exists would immediately ensue. All the upstarts who are now so abundant, the ignoramuses who, by dint of impudence, overreach the more modest gardener, and the persons who from a variety of low callings have elevated themselves into notice by any means rather than professional skill, would fall back into those places which alone they are competent to occupy, and talent would meet with the consideration it deserves. This would be one of the excellent consequences of a universal demand of apprenticeship fees.

They are further beneficial, from the effect they produce upon the apprentice himself. Finding that his relations have expended a certain sum on his behalf, he will, if at all guided by right feeling, be led to reap every possible profit from his station, so that the money provided for him may not be spent in vain. He thus learns to set a greater value on time; to employ and improve it in the best manner; and he becomes continually impressed with the importance of making the most of those years and occasions which he perceives are regarded as so important by the parties with whom he is connected. Nor must the claims which a premium gives the apprentice on the gardener to whom it is accorded, be for a moment forgotten. He thus acquires a positive right to his attention and care, and nothing but a want of good moral feeling can supersede that right. Finally, the gardener himself is thus elevated to a higher rank in the eyes of the rest of the world, when it is discovered that his profession is not a

matter which can be compassed in a very short time, but that several years of unwearied perseverance are essential to the mastery of even its outline.

These remarks are thrown together partly in the hope that they will assist in settling some differences which have come to our knowledge, but more especially because we believe that a very wholesome old English practice has fallen into some disrepute, owing no doubt to the scandalous neglect of their apprentices by some who take them. But we must not be understood as countenancing in any way the habit of taking apprentice fees surreptitiously. To place the apprentice in his proper place, and to give the system of apprentice fees its true value, the employer must be a party to the binding as much as the gardener himself; his full consent must be obtained, and he must be made perfectly aware of the effect which the reception of apprentices has upon his own interests. This arranged, as it in many cases would be very easily, there can be no doubt that the advantages to horticulture would become apparent in a very few years. The number of lads applying to a gardener for reception as apprentices in his master's establishment would be of itself a guarantee of the excellence of the gardener himself.

We repeat, however, that the sanction of the employer is indispensable; to take money of men for their places clandestinely is not only a direct fraud, but a dirty trick, disgraceful to all concerned in it.

VILLA AND SUBURBAN GARDENING.

THE pruning and training of the Grape Vine are subjects that have been often discussed, each person upholding, with much earnestness, the system he follows. Different modes of proceeding may be applicable under particular circumstances; for one general plan can scarcely be applied universally, nor would it be in all cases alike successful. But I shall content myself with stating for their guidance the system most generally to be relied upon, easily understood by amateurs, and which involves little difficulty in its practical execution.

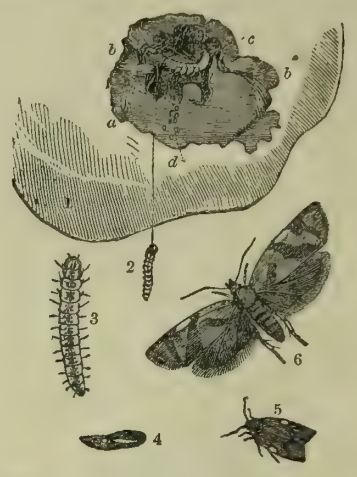
Suppose a young Vine to have been planted, and to have commenced growing, only one shoot should be permitted to run up the trellis. This shoot may be allowed to grow without stopping, until it reaches the top of the rafter; one Vine will always be found to be enough for one light, more especially as the amateur will require to use his Vinery for plants in winter, and even during summer. Numbers of plants are not injured by the partial shade of Vines, and the blossoms of many are prolonged thereby. In the autumn, when the wood is perfectly ripened, this one shoot may be cut down to the bottom of the roof sash, *i. e.* to the angle where the upright sash or wall meets it; for it is between this part and the top where Grapes are to be produced. In the second year the Vine will push strongly, making a vigorous shoot the whole length of the roof sashes early in the summer, even without artificial heat. This shoot should be stopped, as has been already recommended, at the highest point of the house. In consequence of its early growth, the wood, in most instances, will be perfectly ripe by the end of summer. It will be observed that Grapes are not to be obtained until the third season after planting, and then only a limited crop should be taken from the Vines. When the autumn pruning arrives, the before-mentioned shoot should be shortened two-thirds back, allowing only one-third for bearing. It will be found in spring, if all the conditions here set forth have been strictly complied with, that it will push and show for fruit at every eye, probably at some eyes two and three bunches will appear, but these should all be removed except one; a bunch to an eye is enough; over-cropping is a serious evil, and should at all times be guarded against. The bunches, and berries too, will always come small under such conditions. They are also more liable to shank, and to be of indifferent colour. The leading or main shoot, which has sprung from the top eye, must be trained as before to the extreme point of the house, and then stopped. The lateral shoots producing the fruit should also be stopped one eye in advance of that from whence the bunch springs, and the successive laterals which make their appearance during the season must also be removed at this joint. It must be borne in mind, that although it is necessary to remove the superfluous laterals, none of the leaves belonging to the main stem or principal side shoots must be mutilated or taken off on any account, for on these not only depends the proper ripening of the current year's crop, but also that of the following season. *Pharo.*

THE PEAR MOTH.

TORTRIX ANGUSTIORANA.

THE economy of this insect has been hitherto unknown, and I believe no one suspected it of being an enemy in the orchard. The French seem not to have been acquainted even with the moth, until M. Dupouchel received it from Russia; it is pretty certain that neither Linnæus nor Fabricius knew it, and in England it has only been recorded as an inhabitant of various parts of the kingdom. It makes its appearance in June, but I have found specimens upon the palings in the Regent's Park during the whole of July. It is to Mr. F. J. Graham, of Cranford, we are indebted for a knowledge of the early states of this insect; and njurious as the caterpillar is to the Pear, I doubt not its history will interest pomologists; and if its publication should tend to the preservation of the "Queen of English fruits," I shall feel gratified.

Last January (1849), Mr. Graham gave me two Pears, the crowns of which had a large brown patch surrounding the calyx (fig. 1, *a*), with very fine delicate webs (*b b*) attached to the stamina and withered calyx, and extending to the margin of the spot. On cutting away the calyx I found the caterpillar, which it was impossible to discover before, concealed under the projecting margin, as shown at *c*, and on disturbing the creature it dropped by a thread from its mouth (2); it was a quarter of inch long, of a dirty greenish ochreous colour, and reddish brown down the back; the head was ochreous, with a square labrum, and two minute antennæ, having two pointed brightish brown spots at the base, and a line of the same colour on each side, with minute black eyes; the thoracic segment is ample, horny, shining, and ochreous, variegated with brown; there are 8 or 10 minute tubercles on each segment, from which arise longish hairs; the six pectoral legs are spotted with black, and it has eight abdominal and two anal feet; 3, magnified.



My caterpillar died, but Mr. Graham having placed one of the Pears in a tumbler glass, covering it with paper, the caterpillar spun up in one of the folds, and changed to a pupa (4) of a bright brown colour, and on the 7th of June a female moth hatched, of which the following are the characters: Tortrix angustiorana of Haworth, rests with its wings nearly flat upon its back, the edges of the upper ones meeting and entirely concealing the under wings. The wings of the female expand 7½ lines; it is of a cinnamon colour; the antennæ are short and the palpi slightly project in front; the upper wings have several darker rusty marks, one an oblique oblong patch on the inferior margin near the base, only extending to the disc; an indented and oblique one in an opposite direction, quite across the wing, from the middle of the costa, where it is narrowest, to the anal angle, where it is broadest; a third extends from the costa, where it forms a large spot, to the cilia, near the same angle; the pale spaces between this and the central band and the apex, are more or less ornamented with spots between the nervures, and are margined with silvery or shining lines, and there is a black dot with a pale margin in the centre between the second and third bands, and sometimes an ochreous oval spot exactly at the centre of the costa; the cilia are bright tawny; under wings not large, black, with a coppery tint, cilia lighter; fig. 6, magnified. The male is smaller, expanding only 6 lines; it is much darker, especially the head, thorax, and upper wings, which are silky dull grey, the markings are larger and dark cinnamon, shaded into purplish black at the base and along the costa, excepting the ochreous spot, which is less distinct, or entirely wanting.

The moths are inconstant in the tone of their colouring, which led Mr. Haworth to describe a variety of the male as Tortrix rotundana. In France it has been published by M. Dupouchel as Pædisca Dumeriliana, and M. Guené has given it the generic name of Batodes.

The injury which this caterpillar does to the finest sorts of keeping Pears renders it desirable to find a remedy; but except by searching for the maggots in the eyes, whenever any of the web, which is of the most delicate texture, is discoverable, and picking them out, I cannot suggest any mode of extirpating this pest that would not at the same time taint or injure the fruit. In a state of nature, in all probability, the caterpillars spin up amongst the withered leaves, or in chinks in the bark, to undergo their transformations; and as many more enemies of this delicious fruit resort to the same sources for hybernation, nothing can be more judicious than to sweep up the leaves and burn them, or to subject them to speedy fermentation, at the same time keeping their stems clean.

I cannot refrain from remarking how seldom we get *good* Pears in *prime* condition. Is it our seasons, indifferent varieties, or uncongenial soil, that cause such failures? I am disposed to think that proper attention is not paid to the selection in the first instance, or that there is a vast difference in the qualities of the same varieties; that one stock of Chaumontel, for instance, will not bear comparison with another in the next garden even. I may add that Hayes, near Uxbridge, is a stiff clay over gravel, yet there are in various gardens there some of the finest Pears I ever ate; and one at Magdalen Hall, which I think equal to any I have tasted, Mr. R. Thompson has pronounced to be a new variety, grafts of which I had the pleasure of sending to the Horticultural Gardens and to Mr. Graham. *Ruricola, Belitha Villas, Barnsbury Park.*

DISEASES OF PLANTS.

(*Continued from p. 5.*)

Sixth species; NECROSIS OF THE FOLIAGE.—The leaves of all vegetables are liable to a double *necrosis*, which, either in whole or in part, disorganises and dries them up, reducing them at last to a black powder. A very hot wind in summer, a hoar-frost, or extraordinary cold in spring, more especially, produce the effect. It will be readily conceived how injurious this disease will be to the plant, particularly when the young buds are not yet fully developed. The leaves both nourish and protect them, and if they fail, the buds cannot but suffer extremely. In the neighbourhood of any habitation where there has been a conflagration, or wherever frequent fires produce much smoke, this necrosis will also appear very commonly.

It is very difficult to counteract these different species of malady, to which may probably be reduced some others which produce analogous effects. Nor is it easy to prevent the consequences which result to the plant, which are in most cases fatal. But before mentioning the preventive or curative methods which may be tried with the plants attacked, I propose, for the sake of amateurs, to enter into a few considerations on the effects of frost and cold upon plants, which may afford matter for useful reflection.

The most careful observers of nature are agreed, that the damage occasioned to the vegetable economy is not so much from the intensity of the cold, as from the circumstances which precede, accompany, and follow it. It is true that the winter frosts, by congealing the vegetable fluids, increase their volume and cause a laceration and bursting of the vessels. But, as in this season, the masses formed by the low temperature are gradually dispersed as it gently rises, the natural stimulus produced by the gradually returning heat is sufficient to restore the healthy action of the plant. Sometimes, however, it freezes in spring so as to produce the laceration of the vessels, and then the appearance of the sun restoring suddenly with great force the motion of the juices, this rapid alternation must be most fatal to the plant. The same thing may be said of the cold which in autumn strikes the branches or buds, which are as yet scarcely formed, and have rarely attained sufficient strength to resist it. There is also another consideration; those plants which rest in winter, are before that period too weak for the development of that vegetation which is brought out by the first heats of spring, and very sensible to a slight degree of frost. The frost, however, coming at its proper season, not suddenly, but increasing gradually, is of much greater benefit to plants than is generally believed, especially to those which grow in the temperate zones. The cold (according to the theory of the celebrated Thouin) closing by degrees the pores of all the upper part of the plant, causes the sap to descend into the roots, where it has not to fear the effects of frost, being protected by the soil, or in very cold situations by the thick bed of snow. Spring frosts are the more fatal in proportion to the clearness of the atmosphere, and as the rays of the sun strike with more power upon the plant. It has been observed that the cold coming from the north or the west does less damage than that from the east or south; and it is a fact that, under the two last exposures, plants suffer much the most. Of this I have often had occasion to convince myself. In the extraordinary cold of the 27th March, 1805, in the garden of the University, the young shoots of some Pears under a south wall suffered much more than those of the Apricots exposed to the north; the former lost all their flowers, whilst the latter preserved them.

Agricultural works are full of methods by which, according to various writers even of great reputation, vegetables may be protected from frosts or its fatal effects warded off. But most unfortunately they can only be put into practice in a very restricted extent of country, and for very few individuals. I will, however, mention some of them. I will commence by observing that, in regard to certain plants, there may be means of diminishing if not of avoiding the evil in question. When the winter has been unusually mild, and the earth has never properly felt the frost (or as our Lombard proverb has it: "the winter will not stick to the sky") so that it may be feared that the cold will come on in spring instead of at the proper season, those operations by which the vegetation of some plants are accelerated must not be hastened. Thus, as Vines shoot forth the more rapidly, the sooner the working the ground round them is commenced, we should be careful not to touch the vineyards till we may reasonably conclude that the season is settled.

It has been recommended to light fires, feeding them with moistened straw, which will give out a much denser smoke than when dry. They must be lighted up towards sunrise, and so placed that the current of air which prevails at the time shall carry the smoke in amongst the Vines or the branches to be protected. Otherwise they would be of no use. This is a very good plan for preventing the mischief of hoar frosts in spring. It may appear rather tedious, but is the most certain. *On this occasion I may be excused in lamenting the fate of those who, devoting themselves to theoretical agriculture, for the illustration of practice, are consulted by*

amateurs and cultivators for a preservative or remedy for one or another of the numerous evils which afflict plants. They are expected to find an expedient in every disaster; and that is not all, it must be easy, economical, and such, in a word, as that it may cost no more than a breath to attain the desired results. That is for the most part impossible. It must be considered that the difficulties to be overcome are often not commensurate with the powers of man. Nature is stronger than he, and it is only by great labour and uninterrupted perseverance that he is ever enabled to obtain what he desires. I repeat it, agriculture must divest herself of the clothing of quackery which some are trying to fit on to her. It is a difficult art. Our studies have only revealed us a very few of Nature's secrets, most of which she keeps jealously concealed. He however who is disposed to work, and does it with method and without being alarmed at its tediousness, will often succeed in his undertaking.

Watering, also, with water fresh from a well or from a temperate spring, may produce an excellent effect on plants in flower or with their buds ready to open, if done towards sunrise. Others have prescribed the winding round the stems of trees a rope, one end of which should be immersed in a vessel of water, thinking that by this means the caloric of the water may be communicated to the tree and save it. But, in the present day, this method is rejected as being quite useless. Roofs of matting or straw may protect some espaliers or a few other plants. Some are in the habit of placing amongst the Vines tall branching plants, which, by sheltering them from the winds, may prevent *necrosis*. But, can any of these things be done in the open country? Do the favourable results obtained by any one person prove the certainty of success in other cases? The care of the cultivator must rather be directed to ward off the consequences of the evil, which are in so many cases aggravated by the unskilfulness and obstinate ignorance of him who directs the rural works. It is certain that the injured branches must be cut off, but it is equally prejudicial to omit this operation or to do it too soon. It should not be done till the flow of the sap is stopped, that is, till the beginning of summer. But, in general, the greatest mischief amongst us is caused by no one giving himself the trouble to cut away the boughs which the cold has rendered incapable of vegetation. The Walnut is perhaps of all the trees of our country the one most subject to necrosis of the branches. From the neglect of pruning off these branches many individuals are lost or very much injured.

Although plants cultivated in gardens, from being more delicate, have the most to fear from the consequences of these evils, yet they have the advantage of being more easily treated. Plants struck by autumn or spring frosts have been entirely restored by putting them into dark rooms before the sun or even a single ray of light has reached them. In almost all circumstances the necrosis can be prevented in proportion as the expedients proposed are more applicable to gardens than to the open country.

ELVASTON CASTLE, THE SEAT OF THE EARL OF HARRINGTON.

(*Continued from p. 4.*)

Proceeding towards the north from the Magnolia Garden the way lies through a grove of Cedars of Lebanon, grafted 10 feet high with the Deodar. In front of these are lines of tall Irish Junipers. This grove leads to the lake, which all at once bursts upon the view, just where one could hardly have expected such a magnificent feature to exist. From this particular spot its smooth crystal-like surface of vast extent, abounding with huge rocky decorations, which are clothed occasionally with lofty Pines, is advantageously disclosed. A high irregular mass stands out boldly in the fore-ground, covered with Araucaria imbricata to the summit, and intermixed here and there with occasional groups of Broom and other plants. To the right of this the eye reaches for at least half a mile across the water, without discovering any visible termination. Turning to the left, we enter the Fountain Garden, which comprises various jets that rise 40 feet high out of a basin of an irregular form, margined with variegated Thyme. The background of this is made up of massive rocks, on which are planted numerous fine specimens, and among them the male and female Cedar, a grand specimen of Juniperus recurva, and another of Cunninghamia sinensis, with noble plants of Juniperus sinensis and Irish Yews. In the rockery is a shell grotto of curious and singular execution; numerous valuable specimens of conchology are arranged here with much taste and skill. In the centre of the grotto is a beautiful golden statue of Queen Eleanor. On the Grass banks on each side are groups of Juniperus hibernica, planted so as to represent minarets; and the foreground contains fine examples of Juniperus cracovia, lycia, tamariscifolia, and Sabina variegata, with Thuja filiformis, and Abies Clanbrasiliana. Santolina Chamæ Cyparissias and Lavender Cotton (Santolina squarrosa) spring out of the rocks, which are in places verdant with turf. In front stands a Deodar 25 feet high, whose branches, 3 feet in diameter, droop at the points, so as to represent a fountain. A beautiful view of Spondon Church, which is three miles distant, is obtained from the grotto, through an oval fissure in the rocks, the lake representing the foreground to the church. It may be stated here that this lake, with its towering rocky projections and Alpine decorations, was only begun to be formed in 1839. No portion of it whatever existed previous to that date.

Pursuing our course by the margin of the water, new prospects open on the view, and the south front is completely lost. Following this course, through masses of rock, which are left in the rear, we travel under covered Yew hedges, beside which stands a fine variegated Elm and rising above the Yew hedges, that are 15 feet high, are beautiful Minorca Hollies. We now come upon an extensive view of the lake, whose new forms rising in the distance are seen through an arch in the rock. On both sides are immense rocky formations, on which are groups of Pines and Junipers, with some fine plants of Taxodium distichum pendulum. We here lose the water entirely, and enter an American garden consisting of nearly 2 acres. The walks are of turf, 12 feet wide, with files of Irish Yews on each side, 6 feet high and 20 feet apart. Every sort of plant suitable for a garden of this kind is here, and among them many large specimens of the rarer Rhododendrons, as well as some huge plants of Andromeda floribunda and of Daphnes. We also remarked a noble Cupressus macrocarpa 10 feet high, and two Taxodium sempervirens of nearly similar height, all in perfect vigour and in fine foliage. Also associated with these there was a magnificent weeping Larch, 24 feet high and 3 feet in diameter, a perfect drooping column. After passing through the American ground, we shaped our course towards a bridge which crosses the lake at its narrowed point. The vista here, both east and west, is extensive and varied, with no appearance of a close. Bold promontories of various forms jut forward, while the water running behind them creates endless interest, and the enormous masses of rock, from 40 to 50 feet high, clothed occasionally to the summit with lofty Pines, give grandeur of expression. Across the bridge is a broad Grass walk, lined on each side with Irish Yews and backed with lofty plants of variegated Holly. Before proceeding far along this, we suddenly turn upon another view of the lake. Here we observed a beautiful Quercus Ilex var. Fordii, forming a column 25 feet high, this being its natural form of growth. This is a very handsome evergreen Oak, deserving of more extensive introduction into pleasure-grounds. Our direction now leaves the lake through scattered boulders of rocks, which rise in majestic grandeur out of the turf, and are backed with Hollies, Deodars, and red Cedars. The recesses are tufted with irregular masses of Lavender Cotton and Juniperus tamariscifolia, some of which hang naturally out of the fissures of the rocks. Farther on we come upon varied groups of Irish Junipers, the Lavender Cotton, and Tamarisk Juniper, scattered as before, until we reach the margin of the lake opposite the castle, which is partially seen through some fine old Cedars with horizontal branches, and a little to the left a tall weeping Ash 76 feet high. The north side of the lake, beyond the rocky masses, is backed by a considerable breadth of plantation occupying several acres, planted with large Deodars, Pinus macrocarpa, P. Sabiniana, P. Lambertiana, P. insignis, P. Cembra var. helvetica, Abies morinda, some of which are covered with cones, A. Douglasii, Picea Webbiana, and immense Yews, some of them upwards of 600 years old. All the above were transplanted in a large state. A rocky projection into the water at this point, we remarked, was planted with Spartium radiatum, Phlomis samia, Lavender Cotton, Juniperus recurva, variegated Savin, and Gold Yews. Turning to the left, we come upon a considerable breadth of lawn among the rocks, where are fine plants of Gold Hollies and Pinus Cembra var. helvetica. The rocks are here seen rising up behind them, covered with patches of Genista radiata, Spartium umbellatum, &c. Aralia japonica, 10 feet high, was in flower, and there were also plants of weeping variegated Box, Berberis buxifolia, Bupleurum fruticosum on the way side. The rock is here occasionally covered with Vinca major variegata in large masses. At this place we come abruptly upon a vast mass of rock about 50 feet high above the lake; an irregular rocky path leads to its summit, where a fine view of the castle, the church, and the rugged decorations of the water, with its bold involutions, is advantageously commanded. An island comes in here with good effect, covered with rocks and planted with Weeping Hollies, Juniperus excelsa, Yews, Pinasters, Douglas Firs, Pinus Cembra helvetica, variegated Spruce Fir; these, again, are relieved with high fastigiate Pines and Irish Yews, and the margin is covered with common Savin. On the mound from whence the view is obtained are large plants of Araucaria imbricata and Douglas Firs, 30 feet high, with cones on them; these are surrounded with Yews 100 years old, and large Cedars of Lebanon. On this mount we observed the following plants growing in great luxuriance in various recesses of the rocks: Juniperus Bermudiana, variegated evergreen Cypress, Colletia horrida, Hakea sp., Hydrangeas, Yucca gloriosa, Picea Webbiana, Amygdalus orientalis, Santolina Chamæ-Cyparissias, Cineraria maritima, Deodars, P. Cembra var. helvetica, Hemlock Spruce, Juniperus sinensis, Cotoneaster microphylla, Juniperus squamata, J. lycia, Aristotelia Macqui (variegated), Berberis empetrifolia and all the other obtainable species, Gaultheria Shallon, variegated Pinaster, and endless numbers of Alpine plants. From the plants growing on this mass of rock, some idea may be formed of its marvellous dimensions. *R. G.*

(*To be continued.*)

TRADE MEMORANDA.

Will any one be so good as to inform us who Messrs. H. T. Melson and Co., of "Stock Exchaing Chambers," Dale street, Liverpool, may be. Can they be Mr. John Handford?

Home Correspondence.

Descent of the Sap in Plants.—As you have invited your correspondents to state how far they agree with Professor Schleiden on the subject of the descent of the sap in plants, I venture to make a few remarks on this subject. It is now some 10 years since that whilst engaged in a series of experiments on the formation of wood, I found reason to doubt Du Petit Thouars' theory, on the ground that although in ringed trees there was a larger amount of woody matter around the lips of the upper portion of the wound, there was still a certain amount of growth of wood on the lower lips, which could not have taken place had the formation of wood depended on matter sent down from the leaves. I accounted for the greater quantity of the wood formed upon the upper lip of the wound, by the fact that in the upper part of the tree there was the greatest amount of the fluids of the plant, which obeying the ordinary laws of the diffusion of fluids and gravitation, would necessarily produce in this part either an exudation of fluid or a growth of tissue, according to the condition of the plant. That this was the case I found by ringing smaller branches, in which the fluid in the tissue below was as great as in that above the wound, and here the formation of woody matter and exudation of fluid was nearly equal. The objections to the theory of the formation of the wood by the leaves appear to me to be also fatal to the theory of a descent of the sap. The case of the Camellia mentioned in the *Gardeners' Chronicle* may, I think, be explained on the principle I have suggested above. An experiment confirming my view of the case may be performed upon a plant of common Spurge. If the stem is cut through, and the cut surfaces examined, it will be found that the lower one, presenting a surface for the exudation of the tissues in the root and a small portion of the stem, will afford much less of the peculiar milk of this plant than the upper cut surface; but if the smaller branches are cut, it will be found that the surfaces bleed just in proportion to the amount of tissue above or below the wound. The same experiment may be performed with the same results on the leaves. There has also always appeared to me a great difficulty in accounting for the ascent and descent of the sap through the petiole of the leaf. No one has succeeded in demonstrating the existence of a set of vessels in the petiole capable of carrying down the special secretions of the plant, in opposition to the constantly vigorous current of the ascending sap, passing into the blade of the leaf, in order to supply the great loss that is going on by evaporation from this part of the plant; nor are we acquainted with any cell-process by which the contents of one set of cells can be conveyed to that of others, except the common diffusion of the fluids of the plant, whose general tendency is towards the surfaces of the leaves where evaporation takes place, whether their relation to the whole stem is above or below it. It appears to me that it may be stated as a law in vegetable physiology that every vegetable secretion found in the cells of plants is formed directly from the assimilable matters—carbonic acid, water, and ammonia, or from soluble assimilated matters which can pass from cell to cell by the process of endosmose. To explain this law fully would take up far more space than you would be willing to admit in your columns; but as I understand it, it appears to me to explain all the facts on which the theory of the ascent and descent of the sap depends, and to contravene the axiom to which you draw attention in your Leading Article of Saturday last. This is a subject admitting a good deal of further illustration and experiment, and one to which the attention of persons having leisure and plants at command might be profitably directed. *Edwin Lankester.*

Continuous Blooming Roses.—I am preparing to give your readers a descriptive list of a few Roses which I have called continuous blooming; but in truth none can be more so than the two which may be seen in front of many hundred English cottages, and known as the common and crimson China. If the cultivators will but take the pains to remove the flowers as they fade, and prevent the seed-pods from swelling, they will not fail. I have been trying them on standards with varied success, because I have found that a frost which does not injure a plant on a wall or house front cuts off many of the young buds on the head of a standard. I have many standard Chinas of different varieties, and some called Noisettes, a score or two of which more or less partake of the character of the old China; but as they have been only bloomed one season, I am not satisfied that I have seen enough to justify a positive opinion. I will merely state that among the nearest approach to my desideratum, and at all events much longer in bloom than many others, I may mention first Noisette Fellenburg, flowering from the end of June to the end of November, in a strong clay soil, seven miles north of London. This is bright crimson, flowers double and small, joints short as the crimson China, and it has stood out three winters in a bleak situation, without protection of any kind, on ground but poorly drained. I will look over my notes, and give a few more, that even the first year of planting give promise of covering very close when fully established. I observe this Rose is noticed elsewhere, but all the florists together cannot say too much of it, and those who want a few cannot do better than order Fellenburg, and as many more as they require "of the same habit and season." *Crito.*

Salvia splendens.—My plan of growing this and other autumn flowering plants, including Chrysanthemums, is as follows: The cuttings are struck with the bedding out plants in spring, and receive similar treatment till planting out time, when those plants intended for decorating the conservatory in autumn and winter are planted in rows 3 feet apart, in a piece of fresh dug ground in the kitchen-garden that has not been very lately manured; they are watered and stopped as occasion requires until September, when they are carefully lifted and potted, and kept close for a few days in a pit, after which they are ready to take their places in the greenhouse or conservatory. *H. H.*

A Warning to all who have Aviaries; showing the Extreme Voracity and Astute Cunning of the English Rat.—I have very frequently read in your columns remarks on the best and most effectual means of getting rid of these atrocious vermin; but as I have not myself been personally interested at the time in their destruction, I have only become theoretically acquainted with the subject in its general bearings. I am now about to crave the kind aid and advice of yourself and correspondents on a matter, to me, of vital import, and shall then be prepared to combine practice with theory; the result shall assuredly be made known *pro bono publico*. But to my grievance. For the last 20 years I have been an amateur or "fancier" of song birds; and many little anecdotes connected with their personal history have appeared in your Paper during the last few years. I built my birds, at starting, a large commodious aviary, and fitted it up in a style worthy of its inhabitants, the *agréemens* of well polished looking and toilet-glasses, everlasting fountains and leafy foliage not being wanting to render their house an "ornithological palace." My collection has been noted as one of the most select of its kind extant, comprising nightingales and other foreign song birds, and including specimens of nearly every chorister of the English woods and forests. The extreme number of birds my aviary has contained at one and the same time has been 366; it having been my "weak point" to boast of having more birds in my possession "than there were days in a year." (Alas! I cannot say so now!) Built as it is on a most picturesque spot, and arched over by a number of lofty Fir trees, growing immediately in its rear (in Ravenscourt Park), Nature and Art have vied with each other to render the *personnel* of my aviary unexceptionably beautiful. I have been thus explicit, with the view to place my yet unexplained grievance in a strong light. I say grievance, for the aviary is now completely dismantled, my birds are reduced to the number of 11 only, (what a descent from poetry to prose!) and these, confined in wire cages, are kept simply as mementoes of what they once were. "*Troja fuit!*" Now I trace all my misery to an army of rats, which, since the heavy rains of autumn, have quitted their usual haunts, and unceremoniously "billeted" themselves upon me. These murderers first made their appearance at night, through holes eaten in various parts of the floor, and every morning I as carefully nailed over the said holes flattened pieces of zinc; this, for a night or two, kept the marauders at bay. However they very soon reappeared, until at last my flooring was almost completely "tesselated" with zinc. Not imagining for some time that they came to prey upon the birds, I placed poisoned food in their runs; also "Harrison's Pills," &c., as strongly recommended by your correspondents. All these, however, remained untouched, and the frightful diminution of my feathered friends, now apparent day by day, soon convinced me of the awful extent of my misfortune. The climax is soon reached. On opening the aviary door one morning, about a fortnight since, a scene of devastation presented itself which I will not, indeed cannot, attempt to describe. Suffice it to say, my eye fell instinctively on a large hole in the centre of the floor, which had been gnawed through an immensely thick protective piece of wood, and on counting the number of inmates I found them just 11!* To remove these, and in a fit of desperation to convert their late habitation into a greenhouse was the work of a short half hour; and thus "my tale is told." The cunning of these rats has been immense. They must have carried on their operations of gnawing while mounted one on the back of another (a system of theirs I have before now heard of), for the flooring is laid on wooden sleepers, and the distance from the ground below to the flooring above is at least 8 inches. To exterminate these monsters is my full determination, and I shall anxiously look for instructions from you as to my best mode of procedure; the more especially, when I add that I have in the immediate vicinity of the aviary nearly 100 head of poultry, many of them the choicest gold-spangled bantam breed of the late Sir John Sebright, and the finest specimens of the gold-spangled Hamburghs. I am told by a knowing neighbour, by way of comfort, that I may fully expect some morning to find the entrails of some of these torn out by the rats. What a prospect! *Wm. Kidd, Sanders' Cottage, New-road, Hammersmith, Jan.* 1.

Wooden Shutters v. *Garden Mats.*—I have often thought that wooden shutters on frames would form better protectors than mats, and I have reasoned in this way—Why should not wooden frames do as well as glass? for many, nay the majority of things that only want protection from frost, or excessive wet, are best wholly exposed, when there is no frost; and when there is, I judge light is not wanted. I have had a fire burning for three weeks to start my earlier Vines, and now, in the fourth week, the buds are just breaking. Why should not the house be covered with wooden frames till there is some appearance of the buds breaking? What a saving of fuel and labour, by day and night, would these shutters occasion! In the case of heavy rain, too, they could be pulled down over the border. Considering the many uses they might be put to—where, as the day lengthens, they might interfere with the early dawn of light, I think they will be found both invaluable and cheap. *J. L., Deptford.*

Harmony of Colours: Paint for Inside of Greenhouses.—I have read with much interest your observations on the effect of contrasted colours, to which I would suggest a practical corollary—viz: that the appearance of plants in a greeenhouse or conservatory is greatly enhanced by a judicious tinting of the woodwork. I was led to this conclusion some time since by observing that almost all flowers appeared to peculiar advantage in a room whose walls are painted a very light yellow-green; and, acting upon this suggestion, I have had the interior of my greenhouse painted, as nearly as possible, the same colour, with excellent effect. The colour in question is a few shades greener than the yellow-green of the Primrose flower; in fact, a colour midway between the fresh leaf of the Primrose and its flower, is about the right tint. I find that the yellow generally used by painters fades so that a slight excess of yellow at first is not objectionable. It is important that the tint should be a warm yellow-green, not grey or blue-green, which last is very objectionable. If the outside of the house be painted black, the effect from without also is improved. It is curious to notice on removing a plant (say for example Leschenaultia formosa) from a house tinted stone-colour to one tinted green, how much more brilliant its colours appear; so much so, as really to give an appearance of improved health to the plant. Should any of your readers adopt my suggestion, I recommend them to see that the green is not deadened with black, a favourite practice with painters. The green and the yellow must both be pure colours, mixed with white-lead only; and allowance should be made for a tendency in the yellow to fade. *J. R., Sevenoaks.*

Sulphured Rags v. *Hares.*—I have proved that the plan recommended by "S.," of keeping hares from barking trees is utterly useless, and it is possible that he, having had an additional "few days' experience," has discovered the same thing. Many of the washes recommended for this purpose are also failures. I wish you could prevail upon those who recommend the adoption of any principle, system, or plan, to state their failures when they have found that they have too hastily formed opinions, and arrived at conclusions which were not warranted by their further experience. I do not allude particularly to this case, or to any other case, but I speak in a general way. *Henry C. Ogle, gardener to the Earl of Abergavenny, Tunbridge Wells.*

Destruction of Vermin.—My gardener has just given me an account of the vermin he destroyed in my garden in the year 1849, which is as follows: Birds shot—12 bullfinches, 331 sparrows, 99 blackbirds and thrushes. Caught in Traps—233 tom-tits, 62 mice. Picked up and destroyed—23,802 snails. Caught in a Net, Dec. 11, 1849—46 green linnets, 44 sparrows, 10 pied-finches, 2 blackbirds; total, 102. *A. A.* [A fine time the insects will have of it now.]

* The cunning of the animal is more remarkably seen in the fact of his disappearing with his prey bodily through the aperture in the floor, thus leaving no feathers behind him, but commencing his meal in a neighbouring garden, wherein I have just heard that wings and feathers have been repeatedly found. The rats, no doubt, mounted the poles and caught the poor birds while sleeping in imagined happy security on their perches. This proves that the flooring of all aviaries should be under-cased with zinc.

Societies.

CALEDONIAN HORTICULTURAL (Annual winter meeting.)—On this occasion the office-bearers for 1850 were elected, and seven new members added to the roll. A report from the Committee of Prizes was received and approved of. For the best three sorts of Pears, fit for dessert, and exclusive of Marie Louise, there were three competitors. A 1st prize was awarded to Mr. Morrison, gr. to R. Ainslie, Esq., for Chaumontelle, Gansell's Bergamot, and Crassane; and a second premium to Mr. Baxter, gr. to Sir J. G. Craig, Bart., for Beurré Rance, Easter Beurré, and Winter Nelis. For the best four Marie Louise Pears the prize was awarded to Mr. Morrison. For the best six kinds of table Apples there were four competitors. A 1st prize was assigned to Mr. Calder, gr. to Lady Harris, for Seacliff Apple, Gravenstein, Borsdorffer, Ribston Pippin, King of Pippins, and Old Nonpareil; a second Premium was voted to Mr. Morrison, for Cellini, scarlet Nonpareil, Paradise Pippin, Ribston Pippin, Melville Pippin, and Cephalonia; and a third to Mr. M'Donald, gr., Drummond Castle. For the 12 finest flowered single clusters of Chinese Chrysanthemums, there were four competitors. A 1st prize was awarded to Mr. Young, gr. to Mrs. H. N. Ferguson, the kinds being Minerva, Duc de Nemours, General Moreau, Salter's Annie, Queen of Yellows, Princess Maria, Clustered Yellow, Marquess, Queen Victoria, Bicolor, Queen, and Comte de Rutyen. A second premium was voted to Mr. Mitchell, gr. to Lady Keith, for Queen, Temple of Solomon, Plaratum, Celestial, Manama, Victoria, Salter's Annie, Etilla, Frigene, Princess Maria, Antoinette, and Nancy de Lirmet. [We print these names as we received them; but they seem most barbarous and unlike reality.] For the four most dwarf and finest-flowered plants of Chinese Chrysanthemums, the prize was awarded to Mr. Sleigh, gr. to the Lord Advocate, the kinds being Bicolor, Queen, Mirabile, and David. For the best two heads of German Greens there were eight competitors. A 1st prize was awarded to Mr. Mitchell, for Alder's fine dwarf; and a 2d to Mr. Johnston, market gardener, Braidburn. For the premium offered for the best four Leeks, there were no fewer than 12 competitors, all of whom produced large and well blanched specimens. The 1st prize was gained by Mr. Blair, gr. to J. C. Renton, Esq, M.P., the kind being Scotch Flag; and a 2d premium was voted to Mr. Pousty, gr. to W. M. Innes, Esq. For the best four stalks of solid Celery, two red and two white, there were eight competitors. A 1st prize was awarded to Mr. Sinclair, gr., Tullichewan Castle, for Seymour's Matchless Red and Seymour's Superb White; and a 2d premium to Mr. Henderson, gr. to C. K. Sivewright, Esq., the kinds being Sutton's Superb White, and Cole's Dwarf Red. For the best three sorts of Onions there were seven competitors, the bulbs being in general large and fine in quality. A 1st prize was awarded to Mr. Morrison for Deptford, James' Keeping, and Blood-red; a 2d premium was voted to Mr. Allan, gr., Seapark, for James' Keeping, Reading, and Strasburgh (raised by him at Duffus House); and a 3d was assigned to Mr. Pousty. For the best four specimens of Red Beet there were eight competitors. A 1st prize was awarded to Mr. King, gr. to A. Campbell, Esq., for Wyatt's variety; and a 2d premium was voted to Mr. Reid, Edmonston Gardens. For the prize of Two Guineas, offered by Messrs. Lawson and Son, for the best collection of Dried Specimens of Hardy Perennial Herbaceous Plants, two collections were sent. The prize was awarded to Mr. J. Jeffrey, Royal Botanic Garden, Edinburgh, his collection containing 1692 species and varieties, arranged according to the Natural System of De Candolle. The silver medal was voted by the Society, as 2d prize, to Mr. A. Jaffrey, Experimental Garden, whose collection consisted of 1045 species and varieties, likewise arranged according to the Natural System. It also contained several sheets of carefully executed dissections of the parts of the flower. In competition for the silver medal, offered by the Society, for the best collection of British plants, including Filices, four competitors appeared. The medal was awarded to Mr. M'Hattie, Royal Botanic Garden, whose hortus siccus included 570 species, correctly named, and arranged according to the Natural System. A 2d prize, with certificate of merit, was voted to Mr. Pender, Barnton, for a collection containing 363 species, arranged according to the system of Linnæus. An additional award, with certificate of merit, was granted to Mr. Syme, Blairhill, who produced a collection consisting of 102 species correctly named. Amongst articles for exhibition only were a collection of fruits from Dalkeith Palace Garden, including two Pine-apples, and 50 varieties of Apples proved and named at Dalkeith, for which the Society's silver medal was voted to Mr. M'Intosh; from Mr. Baxter, Riccarton, four fine bunches of retarded Grapes, one of which, named Abercairney Seedling, was particularly pointed out as a good winter Grape, also Beurré Rance Pears from root-pruned trees; from Mr. Addison, Gosford, three fine seedling Chinese Primulas, for one of which, a cross between the rose and white varieties, a certificate of merit was granted; from Mr. Young, Archerfield, a box of fine named Chrysanthemum flowers; a beautiful bouquet from Canaan House; Chrysanthemums from Mr. Reid, Edmonston House; fine Alfriston Apples (from a standard tree) from Mr. Lauder, Goshen; a dish of very fine Mushrooms from Mr. Pender, Moredun; and from Mr. Lyall, gr., Pinkie House, fine forced Rhubarb stalks. J. Mitchell, Esq., Leith, exhibited specimens of a free fruiting variety of Bryonia dioica, grown by him in the open air at Mayville, from seeds collected by him at Ribe, on the west coast of Schleswig. The specimens were covered with beautiful berries, in various states of maturity, red, orange, yellow, and green; and it was stated that the plant grows rapidly, and proves highly ornamental for trellises or verandahs. Mr. Blair, Mordington House, exhibited six varieties of seedling Potatoes raised from American seeds, and these were ordered to be tried in the Society's garden. Mr. Anderson, Linkfield, exhibited some fine Carrots from a field near Aberlady, and stated that the produce was equal to 32 tons per acre.

Reviews.

The Physical Atlas of Natural Phenomena. By Alex. Keith Johnson, F.R.G.S. (Reduced from the edition in imperial folio.) 4to. Blackwood. 1850.

THIS admirable work is thus spoken of in the last edition of Mrs. Somerville's "Physical Geography:"

"The author avails herself, with much pleasure, of an opportunity of expressing her admiration of the accuracy, extent, and execution of Mr. Keith Johnston's 'Physical Atlas,' and of the valuable information contained in the letter-press which accompanies it, which has afforded her the greatest assistance. It was the author's wish, and her publisher's intention, that the present edition should be accompanied by a series of maps to illustrate the more important questions of physical geography treated of in it; but Mr. A. Keith Johnston having announced the publication of a new edition of his 'Physical Atlas,' in a reduced size at a low price—the first two numbers of which have already appeared—the project was relinquished, in the belief that Mr. A. K. Johnston's smaller Atlas will furnish suitable illustrations to this work."

That belief has not been belied. The work alluded to is now before us, and proves to be one deserving of the

highest commendation for "its accuracy, extent, and execution."

The object is to show, by means of lines and colours traced over maps of various parts of the world, the great facts belonging to climate, geological formations, and the distribution of living things upon the surface of the earth. For instance, in one map we have a representation of the mountain chains of America; in another, the geological structure of the globe; in two others, a striking delineation of the amount of rain which falls over the world in general, and Europe in particular, and so on. A series of nine maps shows the geographical distribution of plants, animals, and human beings. In all there are 24 of these representations, engraved and coloured with the greatest neatness and accuracy, and with an amount of detail which is extraordinary, considering the small size of the pages.

The maps themselves are explained and illustrated by a great quantity of well-arranged letter-press, embodying and classifying all the more important facts which are known to natural philosophers.

Of all these maps the most interesting to us is that which shows at a glance "the distribution and cultivation of the most important plants which are used as food for man." Could such a map be suspended in the meeting room of farmers' clubs and gardeners' reading rooms, we should soon cease to have our patience abused by idle speculations about growing Maize and Tobacco in England, or Cotton and Yams in Ireland, or making wine in either country. We wish it were in our power to illustrate this by an example, but the form and nature of the book are not susceptible of being transferred to the pages of a newspaper, and therefore we must content ourselves with recommending Mr. Johnson's Atlas strongly to all who are interested in the subjects of which it treats.

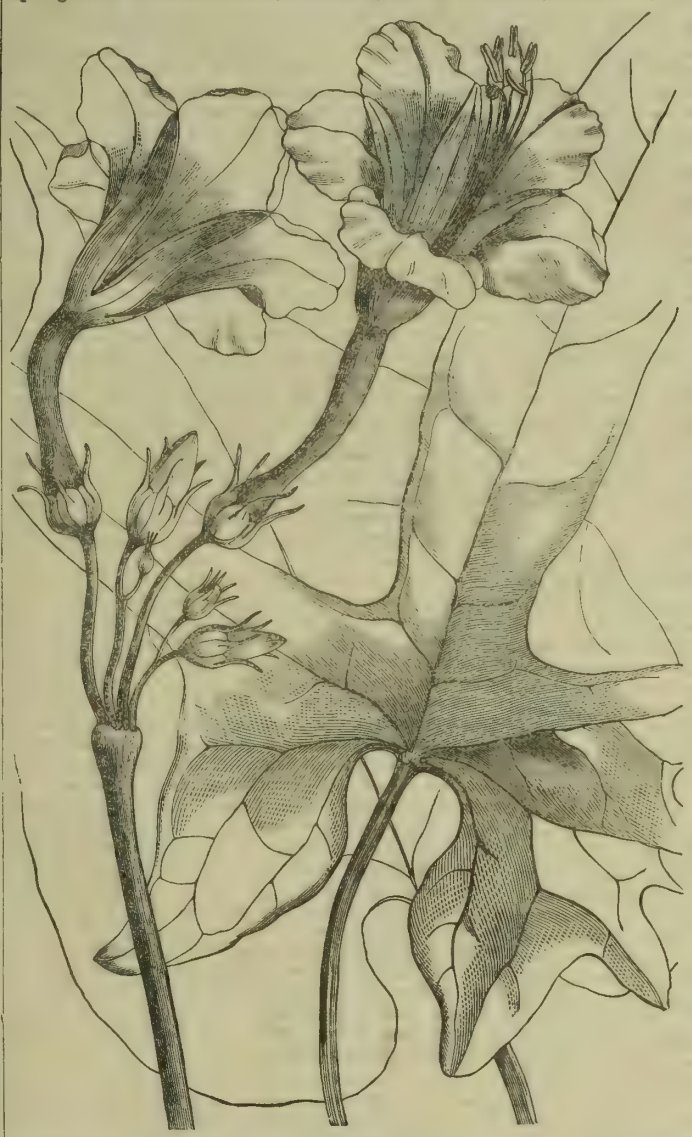
Genera Floræ Americæ boreali orientalis illustrata. The Genera of the Plants of the United States, illustrated by Figures and Analyses from Nature; by Isaac Sprague. Superintended by Asa Gray, M.D. Vol. II., plates 101—186. 8vo. Putnam, New York and London.

At p. 7, of the *Chronicle* for 1849, we gave our opinion of the first volume of this important work, which is destined to do more for the student of the systematical botany of the United States than any book which has yet appeared. The first volume was well done, and richly deserved the commendation it received at our hands; the present is yet better, and merits a still kinder report. Like other artists, Mr. Sprague improves his hand with practice; and the knowledge of Dr. Asa Gray is an exhaustible mine of useful technical observations. Some of the plates are equal to anything of the kind produced in Europe; those of Mallowworts in particular will, we trust, meet the eye of Professor Schleiden, and assist in changing his views of the true structure of such plants.

Dr. Gray's remarks upon the genera of this family are among the most novel and striking in the volume. We can only wonder that he should not have seen the unsoundness of the French doctrine of deduplication, instead of unreservedly accepting it, on the faith of M. Duchartre's interpretation of the progress of development. We would also express our doubt of the propriety of following Mr. Bennett in separating the spurious genus Frangula from Rhamnus, upon verbal rather than substantial differences. These are, however, slight blemishes, and in no way detract from the character of the work, which promises to become one of which the United States may well be proud; for none of the states of Europe will have produced its equal, when it is completed.

Miscellaneous.

Calboa globosa.—A rambling perennial, raised from seeds received from Mr. Hartweg in January 1846, and said to have been collected on the eastern declivity of Orizaba, in Mexico. It is smooth in every part. The leaves are thin, dull green, on long stalks, and extremely variable in form; some are cordate and acuminate; others sagittate; others completely hastate, with the lobes all narrow, and the lower ones deeply angular. The flowers grow in naked umbels, on a peduncle 9 or 10 inches long; the pedicels are from 1½ to 4 inches long. Each sepal has a long subulate process at the back. The corolla is 2½ inches long, deep rich red, with a curved cylindrical tube, and a campanulate erect limb, divided into five erect rounded wavy lobes. The stamens are declinate, and longer than the corolla. This very curious plant, of which the annexed woodcut is a representation, was referred to Quamoclit by Mr. Bentham, but it appears to be perfectly distinct from that genus in its declinate stamens, and curved corolla, with a great campanulate inflated limb. Whether or not there may be more than one species is somewhat uncertain. The Calboa vitifolia of Cavanilles, from St. Blas in California, is figured by that author with five long distinct reflexed segments to its corolla, which is said to be yellow on the outside, and purplish red in the inside. If so, it must be distinct from this. The plant in the Society's garden is undistinguishable from the Guatemala specimens brought home by Hartweg, and yet it was raised from Mexican seeds. This gives rise to a suspicion that Cavanilles' account is not to be trusted, and that there may be only one species; if so, it will bear the name of C. vitifolia. A strong half-woody climber, growing freely in any good rich soil composed of loam and sandy peat. It is easily increased by cuttings of the young shoots, and requires to be kept rather dry in a cool part of the stove during the winter, but should be grown in a cool airy part of the greenhouse during summer, where it will flower from August to October. Although undoubtedly a fine species, it is only fit for growing where there is plenty of room for its tops to spread. It will not flower in a pot, and must therefore be planted in the open ground. *Horticul. Society's Journal, Jan.* 1, 1850.



Chinese Method of Colouring Green Tea.—During a visit which I paid to a tea manufactory in the city of Shanghae I happened to meet some merchants who came from the celebrated green tea district of Wheychou. They would not acknowledge that any colouring matter was used in the manufacture of their teas, and pretended to laugh at the idea of such a thing. They said, moreover, that they were aware the practice of colouring was a common one about Canton, where inferior teas were made, but that they never coloured their teas in Wheychou. It is, however, a difficult thing to get the truth out of a Chinaman; and from information which I had received I knew quite well that our Wheychou friends were deceiving us in the present instance. Shortly afterwards I had an opportunity of seeing the whole process; and as it is one of considerable interest, I noted it down at the time with great care, and now send you a copy of my observations. The superintendent of the tea makers managed the colouring part of the business himself. In the first place he procured a portion of indigo which he threw into a porcelain bowl, not unlike a chemist's mortar, and crushed it into a fine powder. He then burned a quantity of gypsum in the charcoal fires which were roasting the tea. The object of this was to soften the gypsum, in order that it might easily be pounded into a fine powder in the same manner as the indigo had been. When taken from the fire it readily crumbled down and was reduced to powder in the mortar. These two substances having been thus prepared were then mixed up in the proportion of four parts gypsum to three of indigo, and together formed a light blue powder which in this state was ready for use. This colouring matter was applied to the tea during the last process of roasting. The Chinese manufacturer having no watch to guide him, uses a joss stick to regulate his movements with regard to time. He knows exactly how long the joss stick burns, and it of course answers the purpose of a watch. About five minutes before the tea was taken out of the pans, the superintendent took a small porcelain spoon and lifted out a portion of the colouring matter from the basin and scattered it over the tea in the first pan; he did the same to the whole, and the workmen turned the leaves rapidly round with their hands, in order that the colour might be well diffused. During this part of the operation the hands of the men at the pans were quite blue. I could not help thinking that if any drinker of green tea had been present during this part of the process his taste would have been corrected—and I hope I may be allowed to add, improved. It seemed perfectly ridiculous that a civilised people should prefer these dyed teas to those of a natural green. No wonder that the Chinese consider the nations of the west as "barbarians." One day Mr. Shaw, a merchant in Shanghae, asked the Wheychou Chinamen their reasons for dyeing their teas: they quietly replied that as foreigners always paid a higher price for such teas, they of course preferred them, and that such being the case the Chinese manufacturer could have no objection to supply them! I took some trouble to ascertain precisely the quantity of colouring matter used in the process of dyeing green teas; certainly not with the view of assisting others, either at home or abroad, in the art of colouring, but simply to show green tea drinkers in England, and more particularly in the United States of America—what quantity of gypsum and indigo they eat or drink in the course of a year. To 14⅓ lbs. of tea were applied rather more than an ounce of colouring matter. For every 100 lbs. of green tea which are consumed in England or America, the consumer really eats more than half a pound of gypsum and indigo and I have little doubt that in many instances Prussian blue is substituted for indigo. And yet, tell these green tea drinkers that the Chinese eat dogs, cats, and rats, and they will hold up their hands in amazement, and pity the taste of the poor celestials. In five minutes from the time of the colour being thrown into the pan the desired effect was produced. Before the tea was removed the superintendent took a tray and placed a handful from each pan upon it. These he examined at the window to see if they were uniform in colour; and if the examination was satisfactory he gave the order to remove the tea from the pans, and the process was complete. It sometimes happened that there was a slight difference amongst the samples, and in that case it was necessary to add more colour, and consequently keep the tea a little longer in the pans. *R. F., in the Athenæum.*

Calendar of Operations.

(For the ensuing week.)

GENERAL REMARKS.

If the ground in any portion of the kitchen-garden or pleasure-ground indicates a want of better drainage, this is an excellent time for remedying the evil, as there is greater leisure for improvements at this season; and as the surface is not so fully occupied, any disturbance of it is not so objectionable. If the subsoil consists of stiff clay it is very easy to excavate it, now that it is thoroughly moistened. The depth of the drains and the distance apart must depend entirely upon the nature of the soil; but whatever the latter may be, the draining should be very liberally done, as it is of paramount importance that the water should percolate through the soil freely and quickly, for the sake of the crops in the kitchen-garden, and to render the pleasure-ground more enjoyable. It may happen in many instances that the ground has been drained at some former period, but that such drainage has not been perfectly effective; in cases of this kind the existing drains should be first examined, and if they are in good working order they show the necessity of deeper drains, so that the water may be drawn off to a lower level. Let all the drains, and especially the main receivers, be kept as far as possible from trees, as they are liable to be choked up by their roots.

PLANT DEPARTMENT.

General Plant Houses.—Euphorbias, Poinsettias, &c., which have done flowering, will now require less heat and moisture, that they may be ripened gradually off, and have about three months rest before they are again started into growth. It is not worth while to retain more of the old plants than will be required for large specimens, as young plants are easily propagated, and, if well grown, make nicer plants than the old ones, and, by discarding the latter, you get room for other things. You will at this time decide what plants you intend to make specimens of, and in doing so, be very careful not to keep more than you have proper room for. It is often considered a good fault to have too many; but, with regard to plant growing, this is a decided mistake, and it is much better to determine what you have not room for at once, than to have your pets smothering each other in a few months' time, and

so making it necessary to throw them away, and along with them all the trouble and care which you have bestowed upon them during that period. Cuttings of the most useful plants you throw away should first be secured, and placed under congenial circumstances in a propagating pit, to form flowering plants for next autumn and winter. Poinsettias and Euphorbias should be struck in pots of damp white sand, and placed for a few weeks in a cool dry place, where the temperature is never lower than 40°. When the bases of the cuttings are cicatrised, they may be plunged in a moist bottom heat. So treated, they will soon make both leaves and roots in abundance. When it is desirable to have very large specimens of these showy winter-flowering plants, let them be pruned to within an eye or two of the two-year-old wood, and place them in a dry cool part of the stove, till they begin to break of their own accord, when they must be removed to a situation where they will have an abundant supply of heat and moisture. A portion of your stock of Achimenes, Gloxinias, and other summer flowering bulbs, should now be started. A suitable compost for these plants, consists of one-third rich mellow turfy loam, one-third leaf-mould, and the remaining portion of pigeons' dung, sand, and charcoal. Whenever pigeons' dung or other rich manure is used, it should be very finely comminuted, by rubbing it through the hands along with the sand, before it is incorporated with the other ingredients. Achimenes should be started in their old soil, and parted when the young growths are about an inch long. Plants of this family delight in a moist bottom heat, with a moderate top heat, that the roots may be kept in advance of the tops. When potted, they should be placed at once in the pots in which they are to flower.

FORCING DEPARTMENT.

If a stock of leaves for fermenting is not already procured, it should have immediate attention; they should be gathered as dry as possible, and stowed away in open sheds. If they are not quite dry when collected, they should be spread out thinly on the floor of these sheds, to prevent fermentation taking place until it can be usefully employed. Where such conveniences are not already in existence, they may soon be erected, as they are very inexpensive. The roof should be supported by pillars of Oak or Fir, with one side open, and the back and ends closed in with rough slabs; the roof may be thatched in the ordinary way. These, of course, will find their place in the "back grounds;" but although cheaply constructed, they, and everything else about the same quarter, may and should be kept perfectly tidy. The same remarks will apply to tan, which should be kept as dry as possible until wanted for use. By keeping a stock of all kinds of materials ready for use, a much greater amount of work may be done, and a greater effect produced, with the same apparent means, as you are enabled thereby to proceed systematically in all your operations. PEACH-HOUSE.—Outside roots should be protected by a straw thatch, which should throw the wet off into the drain in front of the border. If the buds are just swelling, maintain a temperature of about 50° by night, and sprinkle the trees several times a day in clear sunny weather. STRAWBERRIES.—Select some of the strongest best-rooted plants, and after examining the drainage and ascertaining that it is in an efficient state, they should be top-dressed with a mixture of loam, well rotted dung, and fine charcoal, and plunged close to the glass in a mild bottom-heat, say 65°, with top-heat, 45° to 50°. MELONS.—Seed of some approved early kind should now be sown, and a bed prepared.

FLOWER GARDEN AND SHRUBBERIES.

Active preparations should now be made for propagating, by getting pits, frames, soil, and pots ready. In taking cuttings off bedding plants, a little care in correctly naming and distinguishing the different kinds will be well spent. It is very tantalising to find the harmonious arrangement of your colours destroyed, for want of a little more care on the part of your propagator. When the weather permits, let any alterations in the ground which have been decided upon, be persevered in with all possible despatch; keeping always in mind, that success depends upon the careful manner in which every operation is performed. These remarks more particularly apply to the formation of the ground, the preparation of the soil, and the taking up and replanting of choice shrubs. If not done already, cuttings should be put in immediately of many hardy shrubs, as the Jasmine, flowering Currants, Honeysuckle, &c. Look sharp after the beds of Crocus and other spring-flowering bulbs, as mice are very apt to attack them. We use the common figure 4 trap, baited with anything that mice are fond of, and find it answer the desired end.

FLORISTS' FLOWERS.

The continuous frost up to this day, Thursday, suspends all floricultural operations. In addition to preparation of composts, &c., recommended last week, there are many things connected with the fancy which will occupy the amateur's leisure hours. Formerly when we wanted to layer our Carnations we were wont to have a day upon some moor getting pegs or hooks of the fronds of the Fern or Braken; we now have some thousands of leaden ones, ready cast, and though these may have been put by uncleaned as well as not straightened, when we potted off our layers, we now find it a good opportunity to look them over and make them ready for the next season. Then there are perhaps some hand-glasses which want repairing, Carnation sticks cleaning, re-painting, and storing away till wanted. At this period when there is little else to be got, and frames are kept much closed, mice are apt to commit serious depredations, especially amongst Polyanthuses kept in pots. On the first symptoms of their handy-work traps should be set, for we have known several pounds worth of damage done to an extensive collection during a prolonged frost. When the frost breaks up, one of the first things required will be to look over the beds of seedling flowers, and to press the plants down, and, at the same time, examine all labels and pegs, as these as well as plants are apt to be raised by the frost. Auriculas may be watered, should the weather prove mild, not a few spoonfuls on the surface, which may not penetrate a quarter of an inch, but a soak, so that the soil may be thoroughly moistened; abundance of air must at the same time be given.

HARDY FRUIT GARDEN.

Scions for grafting, of choice fruit trees, should be secured, and laid in under a north wall. In selecting these make choice only of those varieties which have been proved by experience to be well adapted to the locality. There are many varieties which do admirably in one county, but are worthless in another. In purchasing new kinds, the above reason makes it advisable not to procure too many plants of any one variety till its applicability to the soil and situation has been tested. By procuring root-pruned plants on Quince stocks this may be easily managed in a couple of seasons. Planting of fruit trees should be proceeded with. It is well to be at some little pains in preparing the ground for the reception of Pears and other choice fruits. If the soil be deep and retentive, a stratum of ashes, or some similar substance, should be laid within 9 inches of the surface, to check the downward tendency of the roots. Loam from an old pasture, without manure, forms the best soil for the healthy and fruitful development of the Pear tree.

KITCHEN GARDEN.

CUCUMBERS.—These must have careful attention at this dull season. By a proper arrangement of the ventilators a constant circulation of the air should be secured, and the portion of fresh air which is admitted from the outside should, if possible, be made to pass over the warm surface of the flues or pipes before it comes in contact with the plants. Upon a proper attention to this point the health of the foliage and the setting of the fruit very much depend. A high night temperature and a scalding evaporation is very injurious. A crop of some early kind of Peas and Early Mazagan Beans should be sown as soon as the ground is dry; and if carefully attended to, by mulching with old tan when up, and by protecting with Fir boughs on the windward side, they will generally produce a better crop than if sown in November, and, unless in very favourable localities, they will be quite as early. In sowing vegetable seeds, which are liable to be attacked by the mice, it will be found useful to sow chopped Furze or malt screenings in the drills. ROOT HOUSE.—Take advantage of wet weather to examine and remove any decayed or decaying roots. Adopt efficient measures for keeping the frost out.

State of the Weather near London, for the week ending Jan. 10, 1850, as observed at the Horticultural Garden, Chiswick.

Jan.	Moon's Age.	Barometer. Max.	Barometer. Min.	Thermometer. Max.	Thermometer. Min.	Thermometer. Mean	Wind.	Rain.
Friday.. 4	20	29.737	29.445	48	26	37.0	S W.	.00
Satur... 5	6	29.437	29.127	42	21	31.5	W.	.00
Sunday. 6	22	29.599	29.42.	35	13	24.5	E.	.00
Monday 7	23	30.154	29.867	36	14	25.0	N.	.00
Tues. .. 8	24	30.330	30.332	36	31	33.5	N.E.	.00
Wed. .. 9	25	30.2 1	30.065	33	29	31.0	N.E.	.00
Thurs....10	26	29.908	29.821	34	28	31.0	N E.	.00
Average....		29.910	29.769	37.7	23.8	30.3		0.00

Jan. 4—Foggy; overcast; clear at night.
— 5—Frosty; very fine; clear; sharp frost.
— 6—Slight fall of granular snow; frosty; fine; hazy; frosty.
— 7—Sharp frost; bright sun; severe frost at night.
— 8—Severe frost; overcast and cold.
— 9—Slight snow; overcast throughout.
— 10—Slight snow showers; dusky clouds; densely overcast.
Mean temperature of the week, 4½ deg below the average.

State of the Weather at Chiswick during the last 24 years, for the ensuing week, ending Jan. 19, 1850

Jan.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds. N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 13	42.5	33.3	37.9	14	0.29 in.	4	2	3	2	5	4	3	1
Mon. 14	42.0	30.6	36.2	13	0.80	4	4	3	2	3	4	1	3
Tues 15	40.8	29.0	34.9	8	0.54	3	4	3	2	2	4	4	3
Wed. 16	40 9	30.9	35.9	12	0 34	—	6	3	—	3	5	3	2
Thurs. 17	42.1	30.8	36.5	8	0.23	2	5	2	3	2	6	2	2
Friday 18	42.0	31.8	36.9	10	0.45	—	3	1	2	4	7	3	3
Satur. 19	41.5	30.2	35.9	10	0.88	4	2	4	—	3	6	4	1

The highest temperature during the above period occurred on the 19th 1828—therm. 60 deg.; and the lowest on the 19th, 1838—therm. 4½ deg. below zero.

Notices to Correspondents.

BACK NUMBERS OF THE GARDENERS' CHRONICLE: The publisher begs to say that the following may be had. Any subscriber who will forward postage stamps equivalent to as many numbers as are required, will have them sent free by post. The volume for 1847, price 30*s.*, and volume for 1848, price 30*s.* 6*d.*, can still be had. The volume for 1849 is now ready, price 30*s.* The volumes of former years are out of print.

1841—1, 8, 13, 14, 15, 16, 17, 18, 20, 22, 23, 24, 26, 27, 28, 29, 30, 31, 32, 34, 45, 46, 47, 48, 51.

1842—4, 6, 8, 11, 12, 16, 18, 20, 31, 32, 34, 39, 41, 42, 45, 49, 50, 51, 52, 53.

1843—13, 16, 17, 18, 20, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 36, 37, 38, 40, 41, 42, 43, 48.

1844—1, 2, 3, 4, 5, 6, 7, 8, 9, 10 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 48, 49, 51, 52.

1845—1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 17, 18, 19, 20, 21, 23, 25, 27, 28, 31, 33, 39, 40, 41, 44, 45, 50, 51, 52.

1846—4, 5, 6, 7, 10, 11, 12, 13, 14, 15, 16, 17, 18, 20, 22, 23, 26, 42, 43, 46, 47, 48, 49, 50, 51, 52.

1847—1, 2, 3, 4, 5, 6, 7, 8, 10, 11, 13, 14, 15, 19, 21, 22, 23, 27, 32, 33, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 51, 52.

1848—1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 30, 33, 34, 36, 37, 39, 40, 41, 44, 45, 51, 52, 53.

1849—All except 49.

TO OUR CORRESPONDENTS.—May we beg it to be understood that *we cannot answer inquiries privately through the post.* We are ready to give reasonable information through our columns, but we cannot consent to the labour of writing letters.

APPLES: *X Y.* Very like the Fenouillet Gris.‖—*E B.* Your seedling from a Ribston pip is a sad degeneration, unworthy of a name.‖

BLUE-BELLS: *P Y.* One is the bulb and the other the underground runner which produces the bulb.

BOOKS: *C.* The "Vegetable Kingdom" was a new edition of the "Introduction to the Natural System;" the "Introduction to Botany" is a different work. The "Elements of Botany" now consist of the Elements, the Glossary, and Medical and Œconomical Botany; the last completing that work. You should procure these works in addition.—*Fucus.* We know nothing of the chart you speak of. Consult Mr. Keith Johnson's beautiful and cheap Atlas. There is no book comparable to Euclid.—*T G H.* We have seen no more of the work you mention than is noticed at p. 719 of our volume for 1848.‡

CELERY: *F H S.* We never recommend dealers.

CHICORY: *J Stokes.* It is not the same thing as Dandelion; the medicinal properties of Chicory may be similar to those of Dandelion, but they are not the same.

CONIFERS: *H.* Juniperus thurifera is a native of Spain and Portugal, where it grows 20 feet high; it is known in some collections by Miller's old name of Juniperus hispanica, or Spanish Juniper. Cupressus thurifera is a native of Mexico, where it attains a height of 50 or 60 feet; C. Coulteri is the same thing. Juniperus macrocarpa is a native of Greece, where its height is from 10 to 12 feet; it has large purple berries, and open sharp-pointed leaves. Cupressus macrocarpa is a native of the Californian mountains, and attains a height of from 50 to 60 feet, and when old has a flat spreading head, very like an old Cedar of Lebanon. Juniperus taurica, as its name implies, is a native of the mountains of the Crimea; it resembles the common brown-berried Juniper (J. oxycedrus) of Spain and Portugal, of which it seems nothing but a variety, with rather larger and greener foliage. J. daürica is the same as, or only a very slight variety of, the common dwarf Juniper (J. nana).¶

EVERGREEN SHRUBS FOR SHADY PLACES: *Oswald.* Berberis Aquifolium, tree Box, Hollies, Laurels, Privets, and amongst them Periwinkle; but nothing will grow very well within the reach of Elm roots. Put the plants as near the Elms as you can.

INSECTS: *R R.* The insects found in the crevices of your old Peach tree wall are the bark mite described in our volume for 1843, p. 356. We do not think them injurious except where



excessively numerous, or to very young trees. We would, however, advise you to repoint your wall or face it with cement, and use iron parallel rods to fasten the branches to, instead of nails and shreds. 1 shows the minute insects congregated round the base of the branch, after they have left their winter quarters; 2 is one magnified. *W.*

NAMES OF PLANTS: *J K.* Oncidium Barkeri, Catasetum maculatum, Lycaste plana.—*Hybrid.* Aponogeton distachyon, quite hardy.—*P B.* 1, L. anceps; 2, L. a. Barkeriana; 3 and 6, varieties of L. furfuracea; 4, L. autumnalis; 5, apparently a form of L. furfuracea, but perhaps distinct (all these scurfy stalked Lælias require to be studied carefully); 7, L. peduncularis, a pale var.; 8, L. erubescens; 9, Epidendrum paniculatum.—*M A G.* We do not recognise the plant; and its flowers, very young, and male only, do not enable us to determine it.

ROSES: *Northumbriensis.* We have not before seen any question from you. The best answer to your inquiry is perhaps in the following extracts from Mr. Rivers's excellent "Rose Amateur's Guide." Of Hybrid Perpetuals he speaks thus, "All the robust-growing varieties of this family form admirable standards, and are particularly well adapted for planting in rows by the sides of walks, giving them plenty of manure, and the necessary culture required by these Roses—removing a portion of their bloom buds in June; thus, if there are 10 clusters of bloom making their appearance, cut off five to within about three buds of the base of each shoot; these will soon push forth, and give fine flowers in August. Constant care should be taken to remove in the same manner all the clusters of blooms as soon as they fade. Louis Bonaparte, and a few others, are very apt to make barren shoots without terminal flowers. As soon as this can be ascertained, cut all such shoots to within six or eight buds of their base; they will then, in most cases, give fertile branches; in short, these Roses require much summer pruning and attention to make them flower in great perfection in autumn." Of Bourbons thus, "These Roses require but little pruning; towards the end of March or beginning of April their shoots may be thinned, those that are killed by the winter removed, and long shoots shortened to within four or five buds."

SEEDS: *G M G.* All the plants you name are very tender, and require a good hothouse.

WEATHER: *B B.* We dare not undertake the task; it would overwhelm us. For such purposes a newspaper should be established expressly. We cannot receive verbal messages.

MISC.: *H.* Your questions have no relation to gardening. As to the Peppermint, study what has been lately said, and well said, in our columns concerning the perfumes of plants. As to spoiled white wine being converted into vinegar, you have only to leave it in a warm place without a bung in the cask. It will thus become acid enough, if it was originally well made. If it does not change quickly enough, put in a toast dipped in yeast.—*A B.* The price would be 3*s.* or 4*s.*, depending on the length.—*A Country Parson.* We thank you for the hint, and should be only too happy to do what you suggest. But where is the man to be found? We have formerly done something; but the difficulty is enormous. We will try, however, to make some progress, if not much; taking the chance of disturbing a nest of hornets.—*A Devonian.* Calycanthus macrophyllus appears to be a hardy shrub. Golden Yew is a variety of the common Yew, and handsome; read what has been done with it at Elvaston, the fairy land of England. We will do our best to meet your wishes. In fact, we have only just made a journey to the Continent for the express purpose of finding a competent artist, in which we have succeeded.

THE IMPROVED "FLUE BOILER" AND FURNACE.



W. HILL begs respectfully to inform the numerous applicants for his "FLUE BOILER" of a small and intermediate size, that he shall be prepared, early in December, to supply sizes to suit every description of Apparatus, from that of 100 feet of 3-inch pipe to 2000 feet of 4-inch pipe. A List of Sizes and Prices will shortly be published. W. HILL guarantees his Boilers to be the most effective and economical of any in use.
Horticultural Works, Greenwich, Jan. 12.

HOT-WATER PIPES AND TROUGH PIPES, with all the usual connexions.
J. JONES, Iron Bridge Wharf, No. 6, Bankside, London, keeps a very large stock of Hot Water and Trough Pipes, with Elbows, Syphons, Tee Pieces, Collars, Flange Sockets, and Spigots, Throttle Valves, &c., of excellent quality, and at very low prices. Parties requiring the work to be done can have good workmen sent to any part of the kingdom, with everything requisite for the heating, &c., at a stated sum. Rain-water pipes, Sutters, Sash-weights, Railing Bars, Air Bricks, and numerous other castings are also kept at J. JONES's, Iron Bridge Wharf, No. 6, Bankside, London.

The Agricultural Gazette.
SATURDAY, JANUARY 12, 1850.

MEETINGS FOR THE TWO FOLLOWING WEEKS.
THURSDAY, Jan. 17—Agricultural Imp. Society of Ireland.
THURSDAY, — 24—Agricultural Imp. Society of Ireland.

AMONGST the various causes operating for good or evil upon Agriculture, it is strange that so little attention should have been hitherto directed to the circumstances that influence in this country the price and accessibility of Land—the raw material of the farmer's business. It is the more remarkable, because when men were canvassing every argument to show our inability 'to compete with the foreigner,' as the phrase went, one should hardly have expected such a monster evil to have lain unchallenged, as our Conveyancing System. If an Act of Parliament were proposed to be passed levying a tax of from 4 to 20 per cent. upon every transaction of sale or mortgage in land, with the additional hardship of making the weight of the assessment fall upon the buyer inversely with the amount of the purchase-money—so as in fact to make the rich and large purchaser be taxed in the smaller, and the petty buyer in the larger penalty, it is easy to conceive the outcry that would be heard. And yet we have this very system ready-made to our hands and in daily operation upon us, by virtue of what is called the 'Practice of Conveyancers,' backed and countenanced by the absurd scale of Stamp charges rated '*ad valorem*' in a new sense of the phrase, that is to say, at the greater ratio for the smaller amount of land sold and money paid.——It is wonderful what people can be brought to bear in silence, provided the infliction be allowed to grow up gradually and slowly.

Everybody knows that security and permanence of Tenure has the most marked influence on cultivation. A Farmer won't enter into a long contract *with* his land when he has not a corresponding interest *in* his land. But even the longest Leases come to an end, and if there is no prospect of renewal, the good farming, and with it the high condition, gradually drop down to zero with the expiration of the term. It cannot be helped; it is human nature; and will probably always remain so. No man will cultivate for another's benefit as he will for his own: it is vain to ask it—a mistake in ethical science to expect it.

But the aggregate loss to the Nation entailed by the quantity of land in this country lying annually under the influence of restricted outlay by the operation of this hot and cold system would hardly be conceived from its apparently exceptional occurrence in each particular district. The expense of 'getting up the steam,' again, of Farms that have been 'run out,' as it is descriptively called, is out of all measure or comparison with the task of merely keeping on foot the standard of fertility once obtained by good management. The intermediate loss of produce and of employment is, collectively, enormous. The public and the Laborer are thus injured, and nobody benefited.

But if it be true in principle that the Tenant from year to year cannot be expected to enter into as long contracts with the soil he cultivates, as he who holds in it the longer interest of a Lease, and that the Lease itself is only a more extended illustration of the same rule, it needs little explanation to show that the same principle applies to the further comparison of a term of years—or again of a Life-interest—with the Fee simple.

The obvious result as well from one as the other, is national loss, in the shape of unemployed Labour, uninvested Capital, unobtained produce, and undeveloped powers of the Soil. "It is all very well for the proprietor to make this or that improvement," is the remark commonly heard; "he may do with safety and security things of which the result will descend to his children, even if he do not live to reap the benefit himself; but how can it be the interest of the *Tenant* Farmer to lay out his capital on the same scale upon the inheritance of another?" Now what does this mean, but that the *owner* of land is, in point of fact, justified in being a better friend to the public, by laying deeper and more permanent foundations of increased produce, than can be expected from the temporary occupier, whose investments are sure, some time or other, to suffer an extrinsic appropriation of their results, from the effluxion of the term, a change in the proprietorship, or even an alteration of the Rent.

And the argument is identically the same throughout the still higher stages—advanced only in its several degrees—from the Tenant at will, whose interest may perish with the year, up to the Tenant for Life, every sixpence of whose expenditure on the property goes at his decease to the benefit of a stranger, and is so much money lost to those whom the 'out-going tenant' of this world's holdings naturally and justly regards as his surviving self, namely his children; or if his first-born alone succeed to the inheritance, then his *younger* children, or his widow. The Legislature has commenced—and only commenced—the recognition and amendment of the latter evil by the Drainage Bill, clogged however, as we fear such special acts of Government must ever be, by a difficult and, at best, imperfect system of inspectorship and expensive watching. The requirement too is found to be *progressive*. Money for Drainage implies, by no very circuitous route, *more* money for Buildings. The demand is only moved a step, and, when that is taken, will disclose another. Such special acts are ever a commentary on their own necessity: they point, with successional and accumulating force of evidence, to something radically wrong, to some conflicting under-sore which bleeds up through plaister after plaister in succession. The humour must be probed.

It consists, simply and solely, in the attempt to engraft a *commercial scion* upon a *feudal stock*. They will not 'anastomose,' they refuse point blank to grow together. So long as land is rendered unmarketable, except to giant purchasers, by the unwieldy operation of our present system of Conveyancing, so long will its degree and mode of *cultivation* present the most incongruous alternations of bad and good, varying with the motley character of the tenures into which it is squeezed and driven by the pressure of too narrow an ingress and outlet for the capabilities and wants of a growing community. Take *any* other article of sale and purchase—any other subject of one of man's distinctive attributes, the power of EXCHANGE,——a Horse, a Ship, a Steam Engine, a Share in a Company, a thousand pound Stock, or a *hundred* thousand,——who ever thinks, or dreams, of dogging its *History* for sixty years back, of scrutinising its archæological memoirs and incidents, or threading the eccentric sinuosities of its passage from hand to hand down to the possession of the seller! But let the same value be represented in land, the ownership of which is infinitely more a matter of open notoriety, and may have remained in the same family, from generation to generation for hundreds of years, and forthwith all is doubt, mystery, and distrust. Voluminous Abstracts of Title must be delivered containing a full particular of every Birth, Death, and Marriage, that has happened in the seller's family for the last generation or two, and every Mortgage that has been made, every Term that has been created for purposes long ago accomplished; occasioning a delay generally of months, sometimes *of years*, before the history can be made out; and all this at the expense, and future risk, not of the Seller, but of *the Purchaser!*

The practical consequence is that the sale of land in large quantities is troubled and impeded, but in small quantities (through the disproportionate expense) almost prohibited.

The Land of the Country is thus necessarily amassed into immense and overgrown properties; because the dealing with it in smaller quantities is virtually shut out by the inexpressibly preposterous custom—for Law it cannot properly be called, the Legislature having ever opposed it—that the buyer must prove the seller's right to sell, and must trace the proprietary history of a single field for the same long back-period and at the same expense as that of an estate of a thousand acres; paying his Lawyer not according to the extent of the purchase, but according to the length of the Deed, which may be just as long in the former case as in the latter.

The number of purchasers is thus unavoidably reduced, and the market value of the article is proportionably diminished: for it needs no LOCKE to tell us that where purchasers are few and sellers many the value of a thing is lowered, and where purchasers are many and sellers few the value is increased. But the diminution of proprietary value, occasioned by our existing conveyancing system, though reducing land from 10 to 15 years' purchase below its relative value in Belgium, Holland, Prussia, and other countries of Europe, where public Registers of Title exist, is nowhere more injuriously seen and felt than in its effects upon the *investment of capital in Agriculture*. If it be true that under the protection of a long lease, capital and industrial enterprise will go to work, in a very different spirit to that which cramps the energy and motives of a tenant from year to year, in how much greater a degree does this principle apply where the alternative of mere occupation of another man's property is contrasted with the absolute and devisable ownership of that which purchase has made his own.

The Lawyers declare the fault is not theirs. The purchaser of land requires that the Title shall be 'investigated:' the amount of evidence, the long chain of family history necessary to be traced out in order to complete this investigation, has grown by long usage to a length which acknowledges no submission even to the authority of an Act of Parliament to shorten or facilitate it. The 'Custom of Conveyancers,' a convenient anonyme for the refractory evil that cannot be punished for contempt of court, and which sits like an incubus on the landed property of the kingdom, defies all individual attempt, no matter from what quarter, within or without, to relieve its leaden pressure upon the soil. Owners of land, like the wolf in the Fable, would gladly have the bone extracted from their throat, but the trouble and danger of its removal make them such reluctant patients that lawyer Stork is entreated to desist from an attempt that he himself undertakes with no very agreeable anticipations. So there it is allowed to remain festering in the way of everything that attempts to *pass*, and 'enterprises of great pith and moment' are successively rejected and turned aside on account of a preliminary difficulty which every one acknowledges, every one professes readiness to 'sacrifice all private considerations' to assist on the removal of, but no one exactly knows how to proceed against.

We have had a Real-property Commission sitting so long that hope is almost smothered by delay; and meantime all motion and inquiry upon the point is foiled by the eternal answer that a 'Commission is sitting.' We trust, however, that when this subject is again brought before Parliament in the coming Session, owners of land will have begun to perceive its importance to themselves, and not regard it as a mere question for the Crown Lawyers. Facility of Transfer, and patent evidence of title, are not less valuable, nor a whit less applicable, to 'real' than to 'personal' property. The Transfer-books of the Bank of England present the *ne plus ultra* of simplicity in the latter kind, and afford a familiar portraiture of that which a Registry would confer upon the former. Everybody benefits by simplicity: it promotes free circulation as well as Security, and is thus eventually more favorable even to those whose professional services and profits might at first seem shortened by the change. But to sellers and purchasers, to all, in short, concerned in the use or interchange of the commodity, there is but one view of the advantage, *sua si bona norint.*

WE understand, that some of the large Life Assurance Offices have intimated to the Inclosure Commissioners their willingness to advance money to Landowners, for the purposes of the "Private Money Drainage Act, 1849," on reasonable terms. We hope shortly to learn that other parties have come forward in the same manner, and that that valuable Act is in full operation throughout the country generally. For an explanation of the provisions of the Act, we beg to refer our readers to our Paper of the 13th October last, p. 649, and would only further remark, that the early applicants were most successful in obtaining money under the public Drainage Act.

ROYAL AGRICULTURAL COLLEGE, CIRENCESTER.

LIST OF PRIZEMEN AT GENERAL EXAMINATION, CHRISTMAS, 1849.

Agriculture — 1, E. J. Overbury, of Liverpool; 2, V. Rice, of London.

Chemistry—1, E. J. Overbury and T. R. Luzmore, of Liverpool; 2, E. J. Lambert, of Clifton.

Natural History — 1, R. Holland, of Mobberly, Cheshire; 2, E. J. Lambert, of Clifton.

Veterinary Practice—1, S. V. Jones, of Brecon; 2, H. J. Lloyd, of Warwick.

Mathematics, &c.—1, T. R. Luzmore, of Liverpool; 2, E. J. Lambert, of Clifton.

Surveying and Engineering — 1, T. R. Luzmore, of Liverpool; 2, W. L. Smith, of London.

JOHN WILSON, Principal.

ON ARTIFICIAL MANURES, &c.

THE BOTLEY FARMERS' CLUB have, it seems, resolved *unanimously*, that where there is not sufficient dung for

the Wheat crop, it is more profitable to apply concentrated manures than to purchase dung, and that an equal amount of money expended in the purchase of concentrated manures will raise more Wheat over the natural produce of the land than the same amount expended in the purchase of oilcake, or corn, and converted into dung by feeding cattle. I think it must be acknowledged, that this is a remarkable decision, proceeding as it does from a body of practical farmers; for, generally speaking, they have been accustomed to place their whole reliance upon farm-yard manure, even where high farming is adopted, and though numerous individuals have had recourse to guano, yet collectively it may be said that concentrated manures have found little favour in their eyes. Now though the opinion of individuals, and their confident laying down of the law based only on that opinion, is of no value for the advancement of truth; yet, when an assembly of farmers, laying aside their ancient prejudices, proclaim their unanimous conviction of some new fact, their opinion is worth a great deal. All my experiments tend to corroborate the view taken by the Botley Club on this subject, by showing the real value of these concentrated manures, and suggesting thereby the probability, that sometimes they may be substituted with advantage for dung, or at least supply its place when more is wanted; and I have now further evidence to offer to the same effect. I do not mean to say that they have been attended with uniform success, and it would be unreasonable to expect it; for they are not like experiments conducted in a laboratory, where all the materials are entirely under your own control; but a few square rods or yards of soil will sometimes possess a composition so different from the adjacent land, as to perplex the investigation and make comparison in any single instance utterly useless. If the result in question is a failure, the more you multiply your experiments, the more it becomes evident whether such failure is to be admitted as a general rule, or whether it is only an accidental exception; and, therefore, I regret to observe, that accurate experiments upon these subjects have almost ceased to be recorded in your pages—it is the only way in which science and practice can work together usefully; for agricultural experiments, if they are accurately conducted, point out to the chemist the direction in which he should pursue his investigations; while, on the other hand, those investigations point out to the agriculturist what sort of experiments he may try with most probability of success. I, for instance, have been much encouraged to persevere in the employment of the ammoniacal manures by Professor Way's important discovery of the strong attraction of earth for ammonia, an attraction so strong that a solution of the salt will part with its ammonia in passing through a funnel filled with earth; for, if this be so, when more is added than is needed for present use, no amount of rain will wash it down into the drains; but the soil becomes a depository, in which is stored up all that the vegetation on the ground cannot appropriate to itself, and ready to yield up its treasure again to roots capable of extracting it. There is reason, however, to apprehend that any addition beyond a certain amount tends rather to check the action of the manure than to increase it, and therefore a small quantity added every year, is of more use than if the whole were applied at once, even though none were lost by evaporation, or volatilised by conversion into carbonate. Ammonia is so universally favourable to the development of leaf, that to Grass crops it is always beneficial, if it is not applied so strong as to be caustic; but this is a very common fault, and in one case, where the slops from the house were applied not sufficiently diluted, the produce was less than on that part which received none; the same thing happens more or less whenever ammonia is added more than sufficient for the requirements of vegetable action. Take, for instance, these experiments upon Grass.

	Weight of Hay per acre.			Profit per acre after deducting the expense.		
	tons.	cwt.	lbs.	£.	s.	d.
84 lbs. of Croll's sulphate of ammonia	2	5	80	1	16	6¾
Without manure	1	13	64			
56 lbs. of sulphate and 84 lbs. of Peruvian guano	3	0	0	0	19	5½
Without manure	2	10	106			
84 lbs. of sulphate and 1 cwt. of Peruvian guano	2	18	10	0	10	6¼
Without manure	2	9	58			
Or, take these upon Clover:						
75 lbs. of Croll's sulphate of ammonia	1	18	64	0	12	6¾
Without manure	1	12	69			
42 lbs of sulphate and 150 lbs. of guano	1	17	16	0	1	7¾
Without manure	1	12	16			
42 lbs. of sulphate and 150 lbs. of guano, again	1	17	80	0	0	7¼
Without manure	1	12	16			
56 lbs. of sulphate and 150 lbs. of guano	1	17	42	loss	3	5¾
Without manure	1	12	69			

In another field, the same quantity of sulphate, with 50 lbs. less of guano, gave a profit of *7s. 4d.*, which by the addition of ¼ cwt., was reduced in another part to *4s. 4d.*, and so, again, the increase of hay produced by watering the Grass with the drainage from the stables was diminished in this proportion.

	Weight of Hay. Tons.	Cwt.	lbs.
The unwatered part produced	1	9	85
With 400 gallons and 36 lbs. of sulphuric acid ...	1	16	26
With 440 gallons and 50 lbs. of the acid	1	15	13
With 420 gallons and 60 lbs. of the acid	1	11	8

Though the quantity of liquid was less in the last instance than in that which precedes it, yet the strength was greater, being from the horse stable instead of the cows; it appears therefore that when ammoniacal manures are applied beyond a certain amount, the excess above that amount is not only a waste of expense, as far as the profit of that year is concerned, but hinders the full effect of the more moderate dose, by poisoning some of the plants with more food than they can assimilate and digest; the exact proportion in which it should be administered it is not easy to ascertain, without repeated trials, for the same amount acts very irregularly, according to the difference of soils. Thus, for instance—

	Weight of Hay. tons.	cwt.	lbs.	Profit per Acre. £	s.	d.
100 lbs. sulphate of ammonia and 25 lbs. of guano increased the hay from	1	1	58	—		
To	1	12	96	1	9	5½
But when the natural produce was...	1	14	98	—		
The same quantity of manure increased it to	2	10	106	2	8	4

The compound nature of guano complicates the question considerably; for besides ammonia, it contains more than 80 per cent. of other salts, earthy and alkaline, the value of which was proved this year again by 35 lbs. of wood-ashes increasing the acreage of hay to the amount of 8 cwt.—a proof which I recommend to the attention of those who have yet to learn how great a benefactor wood is to agriculture—wood in its destruction, they will say—yes; but the wood must grow in order to be destroyed. Wheat being a stronger plant, seems to receive less injury from an excess of ammonia than Grass; but increase of foliage by no means insures an increase of seed, which of course in this case is the main point; the inequalities of the soil present some difficulties in appreciating the results; but still I think a comparison of the following trials is sufficient to show the inertness of manure when accumulated beyond a certain amount, as far as the formation of grain is concerned.

	Weight of Corn. Bushels.	Weight of Straw. truss.	lbs.
With 56 lbs. of sulphate of ammonia ...	45	106	24
Without it	43½	98	32
With 56 lbs. and 84 of guano	52½	124	16
Without either	52½	122	8
With double the ammonia and double the guano	45	111	4
Without either	45	98	32
With 3 cwt. of guano	45	101	4
Without it	43½	91	4
With 112 lbs. of sulphate and 72 of phosphate of potash ... ... }	45	98	32
Without either	48½	91	4

Now in all these cases it may be observed that although the benefit derived from the manure varied according to the variations in the quality of the soil, yet no increase of ammonia, though aided by other ingredients, increased the amount of grain beyond that produced by the smallest quantity; and where the produce was naturally greater, it did nothing but increase the straw; but it may be said that where the land is already in such a high state of cultivation, it is unreasonable to expect much improvement; but I will show that the same rule prevails in inferior soils, where the action of the manure is more visible, and its value can be measured by profit, the price of corn being estimated at 10*l.* per load, or 40*s.* a quarter. I will select four examples; in the two first, the unassisted produce of the soil, unassisted I mean by artificial manure, though from different localities, was the same, 38½ bushels; in the third it was 34 or 35 bushels; in the fourth it was 30 bushels.

	Profit. £	s.	d
42 lbs. of sulphate of ammonia, 56 of guano	0	5	0
56 lbs. of sulphate of ammonia, 150 of guano	0	4	1½
56 lbs. of sulphate of ammonia, 12 phosphate potash	2	18	7
56 lbs. of sulphate of ammonia, 100 of guano	1	18	10
86 lbs. of sulphate of ammonia, 100 of guano	0	3	10
56 lbs. of sulphate of ammonia	1	3	9
56 lbs. of sulphate of ammonia, 100 of guano	0	18	6
56 lbs. of sulphate of ammonia, 150 of guano	0	16	7½
42 lbs. of sulphate of ammonia, 84 of guano	2	2	0
42 lbs. of sulphate of ammonia, 125 of guano	1	5	2

Now these experiments tend to prove, that as a small quantity of beer is a nourishing drink for a labouring man, but too much is injurious to him, and any indulgence in it beyond a very limited moderation ceases to be beneficial—so it is in the application of that essential element of fertility, ammonia; a small quantity is almost always useful, but when certain limits are transgressed, either positive injury is inflicted by every further addition, or at least it is attended by little or no immediate benefit to the crop, and the profit is diminished in proportion to the increased expense. It is certainly some consolation to know that the surplus is not carried away into the drains by rain; but still experience has not yet shown what changes it may afterwards undergo; and, at all events, it is clear that the same amount distributed over successive years would yield a better return than it can do when applied all at once. But this is not all; the same experiments serve to expose the ignorance of the taunts with which the free-traders assail the agriculturists, not being aware that Wheat cannot be manufactured like calico; they seem to think that if you spare no expense in cramming the earth as full as it will hold with manure, every plant would be loaded with grain from the soil to the top of the ear. You might as well cover your fields with Californian sand and expect to reap gold. They know that there is no limit to the power of producing manufactures, though experience might have taught them that there is a limit to the profits of that production; but they have yet to learn that there is a limit to the powers of fertility; that every species of soil has its own maximum, beyond which no skill or expense short of madness can force them to rise; that the composition of its bulk, on which so much depends, is not within agricultural control; and that to require the worst to be made equal to the best is not less unreasonable than it would be to expect Soyer to make an excellent dish out of horse flesh by any application of condiments and sauces and culinary art. It is therefore a cruel and senseless mockery to tell the farmer who has wrought his land up to its highest capability, that he must repair the injuries inflicted upon him by theoretical legislation, and defeat the competition of the foreigner, with all his superior advantages, by increasing the produce of his soil. But to stimulate the inactive farmers, of whom there are still too many, to reach that maximum by improved cultivation, to show them what is possible on soils of similar quality, and to make them discontented with anything short of it, is another object of these experiments. Some methods of improvement, however, there are, which, being still matters of dispute and doubt, cannot be received into general practice till time and frequent experiments have proved their value. One of these is thin sowing, the expediency of which some of its advocates begin to doubt. My experiments have this time been upon the whole rather favourable to it, as the following table will show. In order that the results might not be attributed to any particular mode of cultivation, the seed was sown in three different ways—broadcast, dibbled, and dropped by hand in the lines formed by the presser, and in five different proportions, 4, 5, 6, 7, and 12 pecks.

Pecks per Acre.	Broadcast. Corn. bush.	Straw. truss.	lbs.	Dibbled. Corn. bush.	Straw. truss.	lbs.	Dropped. Corn. bush.	Straw. truss.	lbs.
4	40	120	0	40	105	20	30	107	28
5	35	98	32	40	102	8	40	115	20
6	37½	93	12	42½	111	4	45	125	20
7	40	112	8	40	120	0	40	102	8
12 in 2 instances	40	108	32	It was thought useless to try these in the same proportion.					
in a 3d	35	113	12						
in a 4th	33½	88	32						

From these experiments I infer—1, that though very thin sowing may sometimes answer, yet it is not safe; it cannot afford the loss of seed which animals and weather sometimes occasion; and 2d, that such thick sowing as 3 bushels may not only safely, but with advantage, be reduced to one-half that quantity; with advantage not only in the economy of seed, but also from the greater amount of produce. Further experiments will either confirm or rectify these conclusions. 2. Although it is impossible to change clay into sand, or chalk into either, yet it is not impossible to improve the texture of any stiff soil, like that which lies over our chalk (which, though not clay, has yet a sufficient mixture of alumine to make it sometimes very intractable), by burning or rather charring a portion of it. Gardeners, whose operations being on a small scale, and therefore attended with little risk, lead the way often in cultivation, like pilot balloons, which are sent up into the air to show the direction of its currents to those who are to peril their lives afterwards in a larger one; they begin to be aware of the utility of burnt soil and charcoal in the growth of their plants, there is reason therefore to expect the same good effect in the larger operations of husbandry. In strong clay soils it has been frequently practised with excellent effect; but not, so far as I know, on soils of less tenacity. My evidence upon this subject is not so full as I hope to make it hereafter, but the following facts encourage further trials. Two modes of burning were tried—in small heaps and in large heaps, and the results are instructive. The first was the most successful, not because it was the best, for I believe the contrary, but because it was the easiest; the difference to the eye was, that the ashes of the small heaps were black, in the other red. The real difference was, that the great draught of air occasioned by the combustion of the larger quantity of fuel supplied oxygen enough, not only to convert the black oxide of iron, which coloured the soil, into the peroxide, but also to convert the carbon into carbonic acid gas, most of which escaped, though some portion of it would be absorbed by the ashes, and become, so far, a source of fertility. The remedy is obvious—the soil should be heaped up more quickly, to check the rapidity of the combustion, but yet not so much as to extinguish the fire by precluding all access of air. The principle is the same as in burning charcoal, but the management is more difficult, because the material is not so capable of slow combustion; but under right management a much larger amount of soil would be roasted in proportion to the amount of fuel consumed. The crop of Swedish Turnips which grew on the burnt ground last year, without any farm-yard manure, was superior to that which received 14 loads per acre; but that perhaps is no more than might be expected from land in good condition, which would be better prepared for that particular crop by the effects of the operation; but the question was, whether the succeeding crops

would be the better for it too, and that is answered for one more year by these experiments:

Oats.	Quantity produced.		Weight of Straw.		Weight per Bushel.	
	bsh.	gals.	trus.	lbs.	lbs.	oz.
On soil manured with 14 loads of dung	75	0	110	0	39	6
On soil burnt in large heaps...	75	0	116	24	39	8
On soil manured with 14 loads of dung	80	0	115	20	39	12
On soil burnt in small heaps...	82	4	122	8	40	4

Thus it appears that in the production of corn, burning the soil is an equivalent, and more than an equivalent, to 14 loads of farm-yard manure, and increases both the weight of the grain and the bulk of the straw. It is not liable, therefore, to the objection which may be urged against ammonia alone, that, when applied to Wheat, it sometimes injures the weight when it increases the straw. The same conclusions receive further corroboration from the renewed experiments upon the cultivation of Wheat, year after year, in the same ground. On eight of the plots devoted to these experiments seven years ago, the produce of one-half, which was sown with good grain, weighed 68 lbs. 14 oz., and the straw 109 lbs. 6 oz.; of the other half, which was sown with bad, or tailing, Wheat, 63 lbs. 10 oz., and the straw, 103 lbs. 2 oz. This year, although none of them have received any manure during all that time, except a small quantity of two salts—phosphate of potash and carbonate of ammonia—and one quarter of them have had none at all of any sort, yet this year the produce in grain falls little short of that which the same ground bore at first, and in bulk of straw far surpasses it.

	Corn. lbs. oz.	Straw. lbs. cs.
The good seed produced	61 4	162 8
The bad produced	63 2	168 8

Nor is this due only to the energy of the artificial manures; for that portion which has had no manure at all during the whole seven years, except its own ashes, has had its weight of grain raised from 25 lbs. 4 oz. to 27 lbs. 14 oz., and of straw from 44 lbs. 8 oz. to 71 lbs. Now, it is possible that some portion of the ammonia sprinkled upon other parts of the experimental ground may have been volatilised, and transferred hither by the united agency of wind and rain; but since the effect has been most visible since the practice was adopted of burning the weeds and roots upon the soil in which they grew, it is reasonable to attribute it principally to the action of fire, and then that part would be most fertilised which, from the abundance of its vegetable matter, received the greatest proportion of ashes and of burning; for it is very remarkable, that the thin seed, which got no other manure, yielded a better return than the good seed, in the proportion of 15 to 13, and 7 lbs. more of straw. Of the three salts that I have named, the most efficient was the phosphate of potash; and I wish to call the attention of manufacturing chemists to the value of this salt in agriculture, because I had very great difficulty in procuring it at all in large quantities. It may sometimes fail, like any other manure, but it is generally successful when used in moderation; which, indeed, is no more than may reasonably be expected, when we consider that an average acre of Wheat contains 20 lbs. of phosphoric acid and 23 lbs. of potash. In my experiments, the largest profits stand to the account of phosphate of potash combined with small doses of ammonia—for instance,

8lbs. sulph.ammon. and 18lbs. phos.potash, gave 1*l.* 17*s.* 6*d.* profit.
26 „ ditto „ 12 „ ditto „ 2*l.* 18*s.* 7*d.* profit.

Where the quantities were greater, the profit was less: 36 lbs. sulph. ammon. and 36 lbs. phos. potash, gave 1*l.* 1*s.* 11*d.*

I have extended these observations to so great a length, that I must hasten to a conclusion, and, without entering into all the details of the other experiments, content myself with giving the general results of the four other salts tried. This was the order of success; 1, sulphate of soda; 2, muriate of ammonia; 3, phosphate of soda; 4, nitrate of potash. In all these cases, the produce was not much less than it was seven years ago; in the three first, 2 oz. of the solution succeeded better than 4 oz.; in the third, an anomalous case occurred, the seed was only steeped in the solution, and received no other dressing, and the plants were only hoed once; yet the produce was more than where it was afterwards watered with the solution, and hoed several times, but the advantage of hoeing was distinctly shown—it added 6 lbs. of corn to the crop which was watered with the solutions, and 8 lbs. to that of which the seed was only steeped. Different portions of each were hoed one, two, three, and four times; and those who have a superstitious preference for odd numbers will be glad to learn that they beat the even numbers in the proportion of 3 to 1. Lastly, for the encouragement of experimenters, I may add, that these numerous trials of artificial manures have been attended with no loss; but after balancing the success against the failures, calculation gives a profit of 8*s.* 4*d.* per acre over an extent of 35 acres. *L. Vernon Harcourt, West Dean House.*

ABOUT DRAINING.

Is there still a farmer who disbelieves in dainage on strong clays? Let him walk with me some such wet week as this, and his prejudices must vanish; if not they ought to do so. Well booted and umbrella'd, I delight in watching the operations of Nature (and of art), during her heaviest rains. It washes away prejudice by actual fact. It does happen that I have some straight water-courses freed from weeds, sedges, bushes, and other impediments. These form a strange contrast to the contorted sinuosities of the natural uncleansed brooks. In one case the impetuous flood gliding on rapidly but steadily, soon subsides; in the other venting its rage on one side, rebounding to the opposite bank, tearing up holes and throwing up hills, but scarcely advancing, whilst its rear, impatient of delay, revenges itself on the negligent farmer, by flooding a portion of the adjacent fields.

Well, then, having disposed of the main outfalls, let us discourse about feeders. But stop; if we cannot avoid having a crooked ditch, let us by all means keep it clean and open, and above all, notice that the bank or fence side is constantly growing into the ditch, whilst the brow is washed away. Let us therefore pare down the excrescence of the bank, which the matted roots are sure to sustain, and have an especial regard to diminish the convexity of the projecting curves, making the ditch rather deeper on that side, and so draw the stream as much as possible from the concave or opposite bank. But will 1-inch pipe drains run freely, placed 5 feet deep, in our poor, strong, yellow, unctuous, tenacious clays? Tenacious, indeed; for, when heavy rains fall on them, they look as smooth as a sheet of highly-glazed yellow Bath post, but if you tread on them, especially after frost and rain, it is a question which is the strongest, you or the bird-lime-like clay. *Entre nous*, it is an error to suppose that you can by drainage change these soils into black mellow humus, or alter their general character. It is not reasonable; for a 7-inch ploughing turns over 700 tons per acre, and our 20 tons of manure, once in three or four years, is a mere flavouring to such soils. Still, without drainage, it is ruinous to farm such land in wet seasons. Another great mistake is to suppose that, because this land is drained, no furrows or water-furrows are required. I have tried some on the flat, and suffered for it in the next spring, and in fact for two years, the difference in the friability of the surface being apparent for that period. Our furrows are not like those huge and absurd mounds in the midland counties. Our lands are 7 feet 2 inches wide, perfectly flat, and the furrow the depth of the ploughing. When continuous rains occur, or a hasty shower, which falls quicker than the earth can imbibe and filtrate it, it oozes or flows into the furrows very quietly, and is received at various intervals by cross water-furrows, which are deeper than the stetch-furrows. These cross or water-furrows intercept and conduct the water to the side ditches, or open ditch, before it accumulates. The volume and momentum which would in a large field accrue are thus broken and subdivided, so that the surface soil is not driven into the open ditches. There is no loss of land by these furrows on drained land, for at harvest they are scarcely perceptible. Much mischief has been done by laying cold tenacious soils on the flat.

With reference to the comparative merits of deep and shallow drainage, it is quite certain the more numerous your taps the quicker you will empty the cask, and the deeper you put them in the more liquor you will draw out. It is now a settled fact that deep drains will run longer and discharge much more water than shallow ones. The cause is obvious enough; 5 feet deep of earth will imbibe or receive much more water than half the depth, or 2 feet 6 inches, on the same principle that a cask 5 feet deep, when empty, would receive twice as much water as one only 30 inches deep. By the same rule, deeply drained land will not, after dry weather, discharge water so soon as shallow drained, and, indeed, will not run at all after the first few autumnal rains, provided those showers are only sufficient to moisten so deep a mass of earth; but when charged with water in winter, the deep drains begin running rather sooner than the shallow ones, and continue running much longer. I observe the water is more pure and clear from the deep than from the shallow drains. It is better filtered—a decided advantage to the farmer.

One heavy land field, drained 5 feet deep and 50 feet apart, at a cost of 32*s.* per acre, discharges its water very much more readily than it used to do. I attribute this to very deep cultivation. Where the proprietor drains it is best to err on the safe side, by draining more closely, but depth is most important.

We are all, I suppose, agreed that open ditches in strong clays do not under-drain the adjoining land. I knew of an open ditch that was filled up after putting pipes into it. It never before discharged water from the adjoining land, but it does now. The reason is obvious—the capillary power exerted at the sides of the open ditch was stronger than the force of gravity. I know of several heavy undrained farms thrown up and reduced 10*s.* per acre in value—a severe penalty for not expending 3*l.* per acre in drainage. *J. J. Mechi, Tiptree Hall, Dec.* 17.

Home Correspondence.

Holidays in Ireland.—I send you a list of the holidays of obligation observed by the Catholics of Ireland, and your readers may judge whether "the greater number happens at hay-making and harvest-time" or not. January 1st, January 6th, March 17th, March 25th, Ascension Day, occurring generally in May, Corpus Christi, in May or June, June 29th, August 15th, November 1st, and Christmas Day. I may also observe, that the people are not forbidden to do any necessary work on those days, which any one who has any knowledge of the country knows well; on the contrary, I have always seen the people willing to do such work as saving hay and securing corn, when bad weather was apprehended. *W. Whitaker.*

Wheat v. *Oats.*—At the price of Wheat, compared with its nutritious properties, I am of opinion that it is cheaper than Oats for the purpose of feeding cattle and horses; but I fancy I have somewhere seen (probably in your pages) that horses do not thrive upon Wheat. If I am not mistaken in this recollection, will you be so kind as to give the reason for this opinion, which I am not able to reconcile with the fact that bran is so good for horses. My idea is that a feed, composed of half Beans, half good sound Wheat (both crushed), would contain almost twice as much nutrition in it as the same weight of Oats; and if I am not prevented by your unfavourable opinion, I mean to act upon this idea in the keep of cart horses. *T. G.* [Wheat is certainly not a wholesome food for horses. It is apt to collect in the stomach and intestines, and cause indigestion and obstructions. This may possibly arise from having so large a per centage of gluten. It requires to be made into bread before it is wholesome food for man or beast. Even if wholesome, we doubt its economy. Wheat at 5*s.* per bushel of 60 lbs., is just 1*d.* per lb. Oats at 2*s.* 3*d.* per bushel of 36 lbs., or 18*s.* per quarter, is only ¾*d.* per lb. Beans are more nutritious than Wheat; and at 36*s.* per quarter are cheaper, though too much of this food will not agree with horses. See Prize Essay on the Management of Farm Horses, in the Journal of the Royal Agricultural Society of England. *W. C. S.*]

Qualification of Land Agents.—In the *Gazette* of Dec. 8, I observed an article under the above head. On the whole the remarks are judicious and not inapplicable, but in my opinion the writer has struck upon a sand-bank, which has proved fatal to many agriculturists as well as others, viz., that of attaching undue importance to theory, to the omission, or at least the neglect, of practice. He says, "A landed proprietor should insist upon his agents having gone through some regular course of study." Now, I assume that, notwithstanding a man having gone through the regular course of study here spoken of, he may still remain very ignorant of the business in hand, if to all his theoretical studies he has not added some degree of experience in the management and culture of land. This assertion is not an unfounded one, nor do I make it without a firm conviction of its truth. How often do we see those who have spent years in such study cutting a most lamentable figure when brought to put their theory into practice; they then experience that, however easy it may be to cultivate imaginary farms with paper and ink, the same assumes a very different aspect when they are brought into contact with the "stern reality." After many trials and disappointments, we are at last brought to see that six months' practice is worth more than two years of their so-called agricultural duties. Let it not be supposed that I look with contempt upon the assistance of science, far be it from me to do so or to deny the advantages our agriculture has derived from her researches, neither do I uphold the old or low system of farming, a system which is daily losing ground, before the gigantic and advancing strides of the "new views." But when I see men who have attained to a considerable degree of perfection in their business, by the experience of many years (land agent or farmer, as the case may be, for my remarks apply to either) entirely set aside by the agricultural students and fireside farmers of the present day, I cannot forbear to lift up my voice and opinion, however weak and humble they may be, in their behalf. *B. M.*

On Fatting Cattle.—Having spent my earlier years in a part of the kingdom where cattle-feeding was practised by most of the farmers for profit, and where, without doubt, the greater part of their rents, &c., were paid by it, even after sending them more than 500 miles to Smithfield-market, I have been a little surprised to see it stated by some of your correspondents that cattle-feeding does not pay. But, if you will allow me, I will assert that it may pay under ordinary circumstances; and although I do not produce a set of figures to prove this, I think I shall produce proof equally conclusive. In the parts to which I allude — the counties of Banff, Aberdeen, Kincardine, and Moray—it is a practice with some farmers, who may not have stock sufficient to consume all the Turnips that they grow, to let part of them to butchers or others, who send the beasts to consume them on the farm. The farmer generally lets the Turnips at from 8*l.* to 10*l.* per Scotch acre, and supplies house room and oat straw, and carries the Turnips. The cattle man, who pulls the Turnips and looks after them, is paid by their owner, and boarded in the farm house. I know farmers, also, who have a fancy for cattle feeding, who take Turnips in addition to their own on the same conditions; and that it does pay, there is not the shadow of a doubt; and in this case the somewhat common practice of making up the want of profit by the superiority of the dung cannot be resorted to, as the owner of the Turnips, not of the stock, has it, which he may set down against the straw used and the dressing of the Turnips; and then he is left with his 8*l.* or 10*l.* clear value for his Turnips. And this will also lead us to suppose that Turnip growing is not quite such a losing concern as some Dr. and Cr. accounts make it; for 7*l.* per imperial acre will go a good way to grow Turnips. I shall try to explain, at another time, a reason or two why cattle feeding does not pay with some. *G. S.*

Farm Labourers' Cottages.—The Royal English Agricultural Society has given to Mr. Goddard, Architect, Lincoln, the prize of 50*l.*, offered during last

year, for the best essay and plan on the arrangement and construction of labourers' cottages. A detailed statement accompanies the essay, containing the cost of every item, both in kind and amount. Whatever may be the professional merits of the latter part of Mr. Goddard's performance, practical experience will not acknowledge that any material improvement has been effected by the doings of the society, in the ground plan of the accommodation. The two cottages are joined under one roof, there is only "one" room on the ground floor, the scullery forms the other apartment, and has a window opening to the south front, and the door (only one), is placed in the north-east corner of the respective ends of the cottages. That quarter must ever be a cold exposure, and in the prize plan, a porch is not placed for the purpose of shelter. We think two apartments on the ground floor to be most essential to every improved accommodation, for the separation of age and sex, and for the use of different purposes. Mr. Goddard withholds any more room, in order to prevent the congregating of multitudes in one house, and consequently his ideas improve nothing beyond the old-fashioned pinfolds of 10 square feet, huddling together a whole family within that very limited dimension. No house ever can be clean that has only "one door," for every purpose of ingress and egress, the very name of scullery supposes a backward position, and a door to itself, by which to discharge the filth of its occupation. We think that on these two very primary points, the plans of Mr. Goddard are defective. We like the small area of back buildings, as being essential to every living accommodation —the three bed rooms on the second floor are a good arrangement, though the three doors open in an awkward jutting manner on the head of the stair. The cost of each cottage, 90*l.*, might give a better accommodation. *J. D.*

Cumberland one-horse Carts.— A correspondent, "L. V. R.," who has discovered what he considers an improved cart, is set upon with as much asperity by some as if he had seen a sea-serpent. The writer of this thinks he can improve on the account given. He has had made an unusually large cart for a horse from 17½ to 17¾ hands high; the wheels 4 feet 5 inches in diameter, very strong and well finished, but without side boards or name plate, for the cost of 8*l.* 11*s.* 6*d.*, in Cumberland; back and belly-band are excluded from this expense. *Alter.*

Manure Shed.—Your Paper of Dec. 29 asks for the measurement of my shed—the length is 30 feet, the width inside the wall 13½ feet, and the height from the ground to the beam, 8 feet; the wall round it may be of any height (2 or 3 feet), according to the situation, and the floor should be hollow in the middle and composed of gravel or broken stones, so as to continue smooth, and not cut up with wheels. A cask must be placed to receive the liquid produce of the houses, and a keg or small barrel cut in two makes a convenient implement when fixed on a long handle for emptying the cask into the manure. The shed being close to the cow-houses, the manure is of course always under cover; it never is in the slightest degree fire-fanged, which I suppose is owing to the exclusion of water; because, I have another dunghill which is equally well constructed for retaining its liquid contents, and better attended to, as to being regularly spread and trodden down by pigs, and by a wheelbarrow, but it is without a roof: the manure from it is generally equally good in quality, but there is often a layer of fire-fanged dung in it. This last dunghill, however, contains only horse-dung, the other one is a mixture of stable and cow-house manure, which may make the former more inclined to heat. I have often remarked that, after a rainy night, the barrowsful of manure that have not been spread, but lie in heaps, are in a violent state of fermentation; but the body of the manure is not so, from being pressed close together, as it is in cattle boxes, where it never heats. *H. W. Myddleton.*

Present Rents with Present Prices.—My own ideas of the capacity of land are so great; we have so little arrived at a just knowledge of the means of production; we have so much to learn, generally, in the higher grade of farming, that, speaking of the country at large, if landlords and tenants will co-operate in carrying out such an improved system as the case requires, there can be little room for despondency—more for hope—in case prices do not fall lower than they are at present. In taking this view of the case, we must look at the country at large. In many parts of it there are large tracts lying almost idle in poor Grass. These are kept as they are, either because they could not be broken up and properly cultivated without an expense which the tenant could not afford, or because he would want intelligence how to manage them when broken up. There is no doubt but these might pay an infinitely larger rent, if placed under a judicous course of husbandry, and would greatly benefit the tenant himself. If such a tenant is not equal to the undertaking, he should give way to one who is; but if every disposition is shown on his part to carry out the well-laid plans of his landlord, some allowances may be made, and some assistance afforded, in prosecuting the good work. In other parts, where the farming is of a better description, and where we cannot look to so great an amelioration of the soil, we can have only to depend on the improved practice which modern discoveries have introduced, and which, except with a few highly gifted individuals, have not been brought to that degree of perfection which they are capable of. We are as yet far from being acquainted with the maximum of production which the land is capable of. Take Wheat for instance. The usual distance in the rows is 12 inches apart, but in a late Number of your Journal the quantity of grain at 12 inches was 5 quarters, that at 6 inches was 6 quarters 7 bushels. The superior merits of high farming have only of late attracted peculiar notice; and there is little doubt but that if Mr. Huxtable had attended the meeting at Sturminster the other day, as was expected, he would have been able to show to the satisfaction of the company that a fair profit may be made with prices such as they are. If 40 bushels of Wheat are grown on an acre, there will not be much reason to complain of the present price. But in many cases not more than 20 bushels are grown; which shows that it is not so much high rents which do the mischief, as low farming. In looking to the future there appears to be more danger from prices falling still lower, than from any failure with them such as they are at present. We are now only at the commencement of the working of the new measure. There is no doubt much fresh land abroad will be brought into cultivation, solely with the view of pouring their produce into the English market. These lands, many of them, are of the richest kind, such as on the banks of the Ohio, and from the mass of emigration poured into them from Ireland and other parts, can afford to raise corn at a much cheaper rate than ourselves It may be said, there is the expense of the traffic; but ships are now bringing it over to Liverpool free of cost, in case the speculation is a bad one; if the reverse, a price is paid on the profit. The farmer has not probably had much reason to complain (thanks to a merciful Providence) during the present year. The crops have been abundant, and perhaps they were never secured before at a much less cost. The trial will be when a bad season comes. Our corn may be spoilt, that of other countries good and plentiful. In former times, increased prices made some amends for deficiency of produce. In this case, we shall have our own corn almost unsaleable, and less of it to sell at a reduced price, whilst our markets may be still more than ever inundated with foreign grain. This article should not be closed without a few remarks on what appeared in your Journal the other week, that Lancashire was famous for being the worst farmed county from London to Edinburgh. To any one travelling by railway, it must be allowed that such must appear to be the case, as you pass through a country which has not a vestige of decent farming in it. But there are other parts which are perhaps farmed just as well as most others in the kingdom, such as Speakes, Orrel, Sefton, &c. The Scotch farmers, too, who have settled in the Fylde, have brought their own good style along with them, and may be held up as a pattern to all England. If the worse parts are so bad, we may indulge the hope that, as the spirit of improvement is abroad, there may be a larger scope presented to them for surmounting the difficulties of the present times, and that they will not succumb under the depressing movements that seem to pervade the southern regions, but maintain present rents with present prices. *Law. Rawstorne.*

Scotch and English Farming.—I have read with pleasure the comparison made in your Paper of Dec. 15th, as to the practical merits of North and South-country farming. It is a subject that will tend to the advance of profitable farming, by bringing into notice the best and most economical methods of cultivation, and I fully agree with you that the success of the farmer depends more upon "rightly directing and applying" the physical force of the farm, than the aid already given to us by the discoveries of the chemist and geologist. But superior as the farming may be in the best cultivated districts of Scotland, as a south countryman, I will not grant that we are to look only to the north for the example to be followed in every instance—for there is always some peculiarity of management which may be suited to that particular place, or that may be adopted with some advantage elsewhere. Nor will many of your readers allow that the amount of labour employed upon a farm in Suffolk, as compared with a farm in Scotland, can be taken as a proof of the superior management of the latter—unless further comparison is made as to soil, the kind of management required, the kind and value of the produce, and the cost of production. And as an inducement for you to enter further into the subject, I beg to say a few words upon the following extracts from the article in question. "It is quite notorious what fallacious guides farm accounts have been in this respect, but if the total expenditure in any department is taken throughout the year, and made matter of comparison, there is less risk of being deceived. Let us take one example, which will readily show the economy of the Scotch system in one important item, that of horse-power. Raynbird, in the agriculture of Suffolk, states, that on a light land farm of 240 arable acres, 10 horses would be kept; the same number of horses in Scotland would only be required for 340 acres of land of the same description, farmed on the four-course shift, although the grain was all threshed by horse-power. This is not easily accounted for where the manual labour is also much greater. How far the employment of the gigantic waggon and the cumbrous tumbril, conjoined with small enclosures, may have an influence in furnishing these contrasts, it is not for us to determine." I believe the statistical account of the 240 acre farm is given at page 143, of the "Agriculture of Suffolk." Now instead of its being a farm of 240 acres, it is one of 300; there being 60 acres of pasture land, which requires in Suffolk some expenditure of horse labour, to keep it in condition, as well as during the hay harvest. The occasional application of heavy dressings of soil to the pasture, and other direct or indirect cartage, will of course increase the number of horses required to work the farm. And again the light arable land of Suffolk requires claying before the tenant can bring out its full capabilities; and this is not merely an occasional dressing, but it is a process that is continually going on upon the farm, and swallows up all that surplus horse-power that you imagine we may dispense with. The several crops grown upon the farm you have referred to are also stated in the "Agriculture of Suffolk," and I ask whether the growth of Mangold Wurzel and Carrots (crops that are removed from the land to the farm-yard), does not require some additional horse-power. And I think it is but fair, now that you have come to the conclusion that Scotch management is the best and most economical, that you should also give us some further data, upon which your opinion is founded; and until this is done, I fear your south-country readers will think that the "gigantic waggon, and the cumbrous tumbril" are not the only causes for the employment of an additional number of horses. My object is to obtain, and if possible to impart, information, and I am quite ready to grant that so far as regards the use of one-horse carts, and the arrangement of the barn machinery, that you are far before us, but have you not yet to avail yourselves of the use of the drill, which the Scotch farmers will ere long adopt more generally, though it may occasion them to employ an extra horse or two. *Hugh Raynbird, Laverstoke, Hants.* [On our farm, 240 acres are managed by seven horses. The rotation gives us 150 acres of grain crop, only 30 acres of Clover, and 60 acres of Swedes, Mangold Wurzel, and Carrots, *all* of which are carried home. At the same time we must acknowledge that our labour bill for manual labour is far greater than on the common Scotch farm. The quality of our land is indicated by the rent, which, with tithe and poor-rates, amounts to at least 50*s.* an acre.]

Maize, or Indian Corn.—I have no wish to occupy any space in your Paper in discussing whether Maize may be generally grown in England, or whether, if it may, the crop is likely to be profitable. The cultivation has lately had a fresh start, and those who make practical trials of what the plant can do here will be the best judges of such questions. In my former communication, which appeared in your Number of the 31st of last March, my principal object was to show Mr. Keene, and the public, that in much of what that gentleman asserted last spring, he was in error. That he was in error has since been demonstrated to Mr. Keene, though he will not see it, but replies thus: "I cannot consent to make it a personal question of Cobbett *v.* Keene, or Keene *v.* Cobbett." A just remark perhaps, that is, from anybody but Mr. Keene, he having, in the language I before quoted, originally made the matter so much that which he now says it ought not to be. But, to my business in hand, which you will perceive is a proper sequel to the remarks I before addressed to you. In the first place, you have yourself, in the *Gardeners' Chronicle* of Nov. 10, confirmed my statement that Mr. Keene's name "40-day" is nothing more than old name, a translation of the French *Quarantain.* The very same name was long ago used by the Italians, whose *Mélica*, or *Méliga Quarantina* may be found in print in Mr. Loudon's *Gardeners' Magazine* (vol. v., p. 106, date 1829), where it is translated "40-day." Secondly, Mr. Keene having, when before the Agricultural Society, and in his "Facts for Farmers," asserted that his hybrid was much more dwarf and more early than the corn before tried in England, I have, in order to obtain the best proof, this year grown all his three varieties on the same land (borders of Lancashire and Cheshire), with the older sort, called Cobbett corn. The result is, that Mr. Keene's hybrid shows itself to be taller than the old kind, by about one-third, considerably more backward in ripening, and far less approaching to perfection in filling the ear with grain. Mr. Keene's is both a dwarf and a very early kind, as compared with many others, but it is manifestly a larger and later plant than the old *Quarantain*, 40-day, or Cobbett corn, taller, stouter in the stem, stronger in the root, and putting out the ears at a point much higher from the ground. This is the conclusion I draw, not, however, without taking the precaution to cause the same varieties to be grown, in the same way, by other persons in the same neighbourhood. I have sent specimens of each of the crops for the inspection of the Farmers' Club at Botley (before whom Mr. Keene recently lectured), and the same specimens have since been laid before the Agricultural Society in London. In your Number of the 10th of November, you observe, that "ripe specimens of 40-day Maize, and of Cobbett's corn, were exhibited on Tuesday last, to the Horticultural Society, by Mr. Charlwood, the eminent seedsman in Covent-garden." Now, to whichever variety the name "40-day" may rightly apply, permit me to say that Mr. Charlwood has, in fact, had no "Cobbett's corn" to exhibit. I have seen what he had at his own shop. That which he has considered as being "Cobbett's corn," is certainly excellent of its kind, but it is the real *maïs à poulet*, or chicken-corn; and I purchased some of it from him, in order to send it with other specimens of chicken-corn, to the Farmers' Club and the Society, to show that Mr. Keene, first representing the "Cobbett corn," as a thing 15 feet high, had been equally wrong when he afterwards confounded it with the chicken-corn, the most dwarf of the tribe. Very near to the shop in which Mr. Keene's corn is now sold, in Covent-garden market, there is

another shop where you may see corn which has been grown by a farmer at Reigate. This latter is the real "Cobbett corn." *James P. Cobbett, Manchester, Dec.* 17, 1849.

Societies.

AGRICULTURAL IMPROVEMENT SOCIETY OF IRELAND, *Jan.* 3.—The Secretary laid on the table the draft of the instructions for the guidance and direction of the Instructors in their different districts, and the course the different local bodies should pursue, to secure due attention to their duties; as they felt that the success of the measure depended entirely on local co-operation and assistance, without which the efforts of the Instructors would be comparatively useless. The following are extracts from the document referred to:—"The object of sending out the Practical Instructors being to communicate information to the working farmers, the Instructor, under the direction of the local officer to whom he is accredited, shall devote his time and attention exclusively to the instruction and improvement of that class, and shall encourage and stimulate them to habits of industry and exertion at all times in the year; reminding them that every season has its own appropriate work to be done on the farm; he must also strongly impress upon them the advantages of an improved system of husbandry in all its branches. The Instructor will be expected, as far as practicable, personally to superintend the several operations on the different farms in his district, from time to time; and his exertions in this respect will be judged by the improved appearance of the land and the crops under his management." The following are the leading subjects to which the Instructor should direct the attention of the farming classes:—1. The necessity of turning up and digging the tillage land deeply and well in winter, in order to expose it to the effects of the frosts, and to prepare it for cultivation in spring. 2. The advantage of removing surface and other water, levelling all unnecessary banks and ditches, and spreading their contents, either in compost or otherwise, upon the land. 3. The profit to be derived from the preparation of manures of every description, by collecting weeds, scouring ditches, and accumulating bog mould, sand, sea-weed, or dung in heaps, and in proper positions, for easy distribution in the spring. 4. The necessity of house-feeding stock of all kinds, for the purpose of saving their manure, and collecting it in proper dung-pits and convenient places, on the principle that all fertilising substances should be again restored to the land, to prevent it from being exhausted by over-cropping. 5. The benefit arising from the adoption of a proper rotation of crops, suited to the different soils, and the observance of the Golden Rule, that no two grain or white crops should ever succeed each other, without an intervening green crop between them. 6. The benefit to be derived from the cultivation of green crops generally, such as Turnips, Carrots, Potatoes, Parsnips, Mangold, Cabbages, Peas, Beans, Clover, Rye-grass, &c., so as not to depend exclusively on any one green crop, but to put down as great a variety of manured crops as possible. 7. The nature and importance of the culture of Flax, and modes of preparing it. 8. The manufacture of butter, and mode of saving it, for the London or home market; and, above all things, the necessity of strict care and cleanliness in making it, upon which its value chiefly depends. *Edward Bullen, Secretary, Society's Rooms,* 41, *Upper Sackville-street, Dublin.*

GLOUCESTERSHIRE AGRICULTURAL SOCIETY.—At the late annual meeting of this Society, Mr. HEWITT DAVIS said—

An advantage attended such meetings as these in the opening it gave to agriculturists to learn from each other what to be doing in these times. Unfortunately their situation was now so embarrassing that it became a matter of necessity to take every opportunity of introducing improvement. The times were adverse to the agriculturists, the prospect before them was doubtful, and the future had no bright hopes. But as there were many in England who had all the property they possessed at stake in the soil, it would not do to despair; and he was happy to tell the meeting that he did not think the agriculturists need despair. For low as prices were, they had been as low before, and they had shown their ability to farm with them, and when they did not possess the assistance which they now had to meet the times. In addressing those who were occupying farmers he must say that he saw they were under great difficulty. In passing through the country he had seen much land which was not farmed as it ought to be. But then he knew no men could farm properly when their land was smothered with trees, or its vegetation retarded by stagnant water. In these and other points the landlords must assist the tenants. The removal of trees was one ready way in which the landlords could help in the improvement which was necessary to the existence of the farmer. But they could do more. Let the landlords put the land in a fit state, and let them give their tenants leases, that their children might have the benefit of improvement after their fathers. Draining was one way of improving; and there was no doubt that the produce of arable land might be increased three-fourths by draining it. That increase, moreover, was all profit—it was more than all profit; for this reason, that undrained land, while the produce was small, was not only difficult, but more expensive to cultivate. The gentlemen present knew very well that with undrained land horses very often stood idle, as it was no use attempting to work it while wet. Besides waiting, they had to roll and harrow and tear the clods to pieces; whereas if the water had been drained from the land much of that labour might be spared; and the farmer would be enabled to introduce the cultivation of a number of plants which the land in an undrained state was unfitted for. The foundation of profit in farming now was right and improved cultivation. But a great deal of land was unfit for cultivation, from the want of draining. He mentioned draining particularly, because it presented the readiest means by which landlords could improve farms for the benefit of their tenants. (A voice—"And their own.") A few weeks ago, in Norfolk, he saw much in their practice which might be useful to him at home. He saw them cultivating land which was naturally poor, and yet raising good crops. He saw stock, some of it brought from this part of the island fed on roots, and by high feeding, taken to market in six months. So much was the cattle improved, that the Norfolk farmers reaped as much in six months as the breeders benefited in a much longer period. It had always been his opinion, that the breeder of cattle should combine the finishing. The London market was principally supplied from Norfolk; and he thought, with the large towns in the west, the breeder there would find it advantageous to fatten the stock he raised, and not sell an animal for 16*l.* to the Norfolk farmer, who in six months would sell it again for 25*l.* The oilcake used in fattening enables the eastern farmer to cultivate a poor soil; and if this was advantageous in a poor soil, it would be even more so in a good soil. The farmers might rely on it, that nothing but their own exertions would take them through times to come; and that whatever reduction the landlords might make in their rents, that alone would not meet the times.—Mr. HOLLAND, of Evesham, deeply felt, in common with all present, the sad winter that was in prospect for the labourer; and he was quite sure that the coming distress of the labourers would touch more deeply and tenderly their feelings, even than it would touch their pockets. But he knew this, that in every great change that took place—and therefore in that which was taking place—the man of the least intellect was he who suffered most. And it appeared to be one of the laws of civilisation—one of the conditions of the advance of the country in intelligence—that those who were lowest in society must suffer in the change. The landlord, who to a certain extent could exert a control over those who employed labourers, as well as over those whom he employed, having the advantage of education, ought to be the most prompt in intellect on these points. These, he was certain, would endeavour to alleviate the condition of the labourer; and although the prospects of pauperism was great, he knew also that where there was good farming, pauperism fell away at the very sight of it. Amongst those reports, the printing of which cost the tax payers of this country so many thousands, without benefit to anybody—amongst those reports he had met with a curious instance of the benefit of good farming in preventing pauperism. It was of a man who went into a particular parish, having purchased a farm in it. He found on taking possession, that the whole of the labourers in the parish were taken into employ man by man, but that most of them were on the rates, and that in fact the farmers were allowed a part of the rates to pay the labourers. This person did not like men so degraded, he did not like these particular men, so he called into the parish 30 additional labourers. There was immediately an outcry amongst the farmers; they declared that the parish was already overburdened with pauperism; they could not get on with things as they were, and yet the new comer was about to increase pauperism. "What," cried they, "shall we do?" This person persisted; he employed all the labourers he had taken on, for he possessed capital, and farmed with judgment in proportion. The labourers on the rates, too, were taken off the rates by his employment, and actually in this very parish—he could name the parish if he could refer to the report, but he could not remember at this moment—the very men who cried out against a superabundance of labourers in the parish were now obliged to import additional labourers. Now if this could be done in one parish, why not in all parishes? But there were certain periods when distress fell on this large interest through the act of Providence; but when distress also arose from want of capital, nothing in the shape of improvement could be made in agriculture, nothing could be done to benefit the position of the labourer without adequate capital being brought into that branch of industry. And, therefore, he suggested, that if Mr. Fulljames had given his 10*l.* as a premium to any gentleman who should produce an animal that could carry the farmer not merely across the country, but through this period of agricultural distress, and land him safely on the other side (laughter), he believed that Mr. Fulljames would not be asked to give it to the general fund. What sort of animal must that be? Why Mr. Long and Mr. Beach said it was the landlord. Now he was willing to do his duty as a landlord, but certainly he was not willing to be the sort of animal which the tenants required. (Laughter.) His duty as a landlord was very simple and plain; it was to make the most of the raw material which belonged to him. He maintained, that if a man had the disposition of any raw material, whether it be capital, manufactured goods, or land, his duty was plain; it was to do what everybody else would do. He would be a very foolish fellow if he did not in as fair a way as possible make the most of that raw material. (Hear.) Now the tenant who worked the soil, in position was something like the manufacturer, as Mr. Beach had very properly told them. Then the question was, were the interests of the producer of the raw material at variance with the interests of the manufacturer of the raw material? For himself, he said they were not; that is, if they went the right way to work; but he contended that they had not done right up to that time. As for the landlord, he said, "I must have game—lots of game; the tenant must not interfere with it. On the other hand, I must have votes at elections. At any rate, I will not say so, because it is contrary to the law of the land. I will not say, then, I will have votes, but I will not give my tenant a long lease or tenure, so that he will lose the capital he has put in the ground, if he is turned off for voting against my interests." Now these matters were considered in farm affairs, they ought to be deferred, for they had nothing to do with the raw material. Well, then came the question, what was to be done with the raw material? The landlord could not take a large estate into his own hands and cultivate it; the landlord, in truth, was more dependent on the tenant than the tenant was on the landlord (hear), because the tenant could always get another landlord, while the landlord would not like to lose a good tenant. (Hear.) Now, it was the interest of the landlord to throw away all care for game and politics, and to get the best tenant he could, and thus get the best price for his land. Now, the meeting might suppose that to get the best price he would put up the land to the best bidder; but no, he would do no such thing. The highest bidder might not be the best man—he might be a man of straw. But if the landlord was determined to take as his tenant only a man of capital, then he was sure that competition would not raise the price of land unduly high, because men of capital would not give more for the rent of the land than would allow a fair return on their capital. Then they had an opportunity of ascertaining what was a fair rent for the land, while there was a capital check against the rent being too high. Now, if the landlord would throw aside all ideas except that of good cultivation—if he were determined simply to have good tenants, and determined to work the land as it ought to be worked—there they had a good competition as to the price of the land, and also a protection against its being more than it ought to be. Then having fixed on the landlord what he ought to do, the next thing to be considered was what the tenant ought to require. If the tenant was a man of capital, he knew what to do in farming, and he hoped none of them would take a farm without capital, and out of the love of farming. The tenant ought never to invest his property in the cultivation of the soil until he had security in the shape of a good long tenure. It was all very well to talk of tenant rights; and those rights were good if the tenant had no lease. If he understood tenant right properly, it was this: if a tenant expended money in the cultivation of the land, and got notice to quit before the capital was exhausted, then he got a return from the landlord for the unexhausted capital on the land. Well and good. Now, in the first instance, he, as a landlord, always liked to try a man to whom he contemplated to grant a lease, because in granting a long lease the landlord made the tenant master of the soil, in a sense of the word. He granted leases for 20 years, and therefore he was never in a hurry to make a bargain with a man, even if he be a man large capital. There, then, tenant right came in very well. In four years he had an opportunity of ascertaining the skill of his tenant; and if they did not like each other, a mutual separation might take place, the capital sunk in the soil might be recovered, and the landlord would have an opportunity of getting another tenant. This showed if he was right, and he could not be wrong, as it was clear—it showed that the landlord and tenant were "in the same boat." He had, indeed, heard it said, "Very true, but the landlord is sitting and the tenant is pulling." (Laughter.) It might be so, as it often was; but it would not be so if the landlord and tenant had a proper agreement. There came the rub. It was all very well to speak in this way. But if things were as they had been, then all that Mr. Beach had said must come home to their hearts. But the agriculturists were in a different case now—they were in a crisis. He spoke now a word at which, according to the rules of the society, he must stop. But nothing of the kind had happened before. They had been working with different expectations, under a series of fluctuations—not knowing their bargains—not liking their bargains—feeling the want of capital—feeling their capital was without security; and the consequence was, that the laws under which this occurred having fallen, this had taken away the present system, and the agriculturists were in a crisis. How were they to get over that crisis? Not by the sacrifice of the tenant, nor by the sacrifice of the landlord. He knew not how other landlords would do, but, for himself, he would make much sacrifice to keep tenants who did their duty to the land, cultivated it properly, spent their capital, and were moved by the spirit of improvement. But, at the same time, he felt that it was his duty to get rid of a man who put his hands in his pockets, and did nothing but cry out against the times, determined to have a reduction of his rent from his landlord—not that it was in his bargain, but simply on account of the hardness of the times. A bargain was a bargain. He gave a tenant 14 years' good or bad times; he never made a reduction; he had not been asked for it, and if he had he should have laughed at the application. The tenants never gave him a higher rent than they had bargained for in good times, and he did not take lower in bad times. Now, if the agriculturists would take care to have such bargains, their future position would be different, and the landlords, if they had tenants who had the means of farming well, by adequate capital, the landlords would be very foolish if they did not give the tenants an ample tenure and full play to their skill and energy.—Mr. BEACH, of Redmarley, said: With regard to what had fallen from Mr. Holland in speaking of the labouring classes, he must say that he did not feel so confident as that gentleman. His remarks were scarcely to the purpose; for he believed there were many parts of the country in which the land was farmed as well as it could be. In his own parish, for instance; and there he was convinced an additional labourer could not be profitably employed on any of the farms. He believed that if all the labourers were employed that could be profitably, there would still be a superabundance of labourers. And then, with regard to draining, it did not always produce greater crops. He had proved it; he had drained and undrained land, lying side by side, and he got as much, by care to the water-courses, from one as he did from the other. ("No, no.") It was wet land; but he would not say it was the case with all land. He was quite sure of this, too—that a great excess of manure would not secure a great crop, even of roots; and he could point out an example of this, even at the present time. Lord Bathurst, who was a good farmer, had a crop of Swedes, and some of them, grown without manure, were as good, if not superior, to those grown on the other side of the hedge, with the best of manure. It was the same with corn. He was quite sure that there was a certain point beyond which they could not put the producing powers of the land; and the more land was forced, the more was it subject to worm and failure. With regard to the tenant, it was the duty of the landlord, tenant, and labourer, to work together. He thought that the social condition of the labourer was not like what it ought to be; the tenant must now descend in his class, for the sake of the labourer, quite as much as the landlord must descend in his class to look after the interests of the tenant. He believed the time was coming, if not come, when they must have a better educated class of labourers, and the labourers now demanded from the farmers that social intercourse which would be beneficial not only to themselves, but to the whole agricultural body. He hoped that henceforth all classes of agriculturists would work together, for it would benefit and advance the interests of the country.—Mr. HOLLAND said he was glad to hear Mr. Beach say he hoped the time would come when there would be a better race of agricultural labourers; for it was time they should have a new race of labourers. There was one thing distressing to those who wished to improve the condition of the labourer—it was their bad situation which prevented improvement. Farmers now seldom received their labourers under their own roofs; and the result was that though the labourer went on very well in his father's house as a boy, yet when he grew up, when he became a labourer, he became one in the way. He ought to sleep in another bed, and he got one. He got a lodging in the village by paying so much a week; but what was this lodging? It was a bed only, and perhaps with two or three other persons sleeping in the same room. Nothing more. What, then, became of the labourers after their work was done? Pass through a village between 8 and 9 o'clock in the evening, and see if they were not loitering in the street, or collected in some bye-place in masses, because they had no roof over their heads, and concocting mischief, or they were in the public-houses, because they found there a good fire and company, and something to employ their minds, which would be employed either for good or evil. The consequence of the want of a home, which the labourers felt, was that adults were in as bad a school as they were 30 years ago. How could it be remedied? The agriculturists could not go to any large expense at present, but still they could remedy this state of things in some manner very inexpensively. There was a schoolroom in almost every parish; and if the landlords and tenants would join in putting in the room a few books, a fire, and an intelligent man to conduct it, which might be done every evening, at a small cost, it would be extremely useful. He believed it, because he had seen it in different places where it had been attempted, and a large amount of good had been done, at a small cost. The man whom they had sent to school as a boy, to learn to read and write, would have an opportunity, at the cost of a few pence a week, of keeping up that knowledge, and of getting a better insight into agriculture; and a man would be so employed, that when he tried it—men being so much under the influence of habit—he would find himself unfitted for the public-house. He would not propose this in public if he thought it was an experiment; but he knew, as a fact, that it had been carried out at a small expense, with great advantage; and, therefore, he thanked Mr. Beach for having given him an opportunity of saying so much. *Abridged from the Gloucester Journal.*

Reviews.

The Stud, for Practical Purposes and Practical Men. By Harry Hieover. Longman, Brown, Green, and Longmans.

WE can recommend to our readers the perusal of this little book. They will find it to contain much useful information, conveyed in an amusing style. Its object does not seem to be so much to specify the good points of an animal, which an intending purchaser should look for, as to enumerate and describe such imperfections as when it is wanted for a given purpose or kind of

employment, may be tolerated, provided it be otherwise of the proper "stamp."

In speaking of broken knees the author gives this advice, "I would advise a buyer not to reject a good horse with good action, if he wants one more for use than show, because he has marked knees. With broken knees and good action the horse may be and most probably would be perfectly safe and pleasant to ride; with bad action and no broken knees he would still more probably be neither safe to ride or even drive." It is to indicate that sort of horse which, without having any *very* imposimg appearance, may nevertheless be called, as he calls it, "A *pretty* good sort for most purposes," that Harry Hieover has written the work. And a very good idea of what he means is conveyed by the figure in the frontispiece, for our author is as skilful in the use of the pencil as in that of the pen. Perhaps more so, indeed; for it is not everyone who will admire the characteristic prolixity and talkativeness of his style, however its peculiarities may ultimately be rendered agreeable by habit. You have in this book the conversation of an intelligent and "chatty" companion, on a subject regarding which he is an undoubted authority.

TABLE, showing the Consumption of Food and the Increase of Animal per week, for each 100 lbs. Live Weight, as recorded by various observers.

BEASTS.

Description of Animal.	Number of Animals.	Duration of Experiment.	Authority.	Food consumed per Week to each 100 lbs. live weight of Animal.		Increase per week upon each 100 lbs. live weight.	
				Description.	Quantities.		
		Wks. Days.			lbs. oz.	lbs.	oz.
Oxen	4	5 0	H. S. Thomson	Linseed	0 13¾	1	8
				Bean-meal	2 12¼		
				Straw and Turnips	....		
Oxen	4	4 0	H. S. Thomson	Oilcake	1 13	1	1⅓
				Bean-meal	1 13		
				Turnips	....		
Oxen	6	22 0	Mr. Postle	Peas	1 13	0	14
				Linseed	0 8		
				Turnips	64 0		
Oxen	6	22 0	Ditto	Oilcake	3 5	0	13¼
				Turnips	66 0		
Oxen	27	9 0	J. H. Leigh	....	....	1	4½
Ditto	30	10 5	Ditto	....	....	2	12

Calendar of Operations.

JANUARY.

Few Farm, *Jan.* 5.—The stock of manure increases as the straw disappears. Beasts tied up or in boxes, consuming hay or chaff, Turnips, and Linseed cake, at 8*l.* per ton, meal or compound, produce the best and the greatest quantity of manure; this is carted from time to time to a large heap forming in the future Turnip field; last week we cleared the stable yard, partly on to the same heap, and the remainder near a tank, to be well soaked by liquid manure; the daily sollings from a stalled stable, from a shed of 4 or 5 stalled cows, and the pigsties are also mixed together, in square heaps, in the yard or field, 5 or 6 feet high, and twice or thrice that measure in length and breadth; these are well sluiced by all the disposable liquid, and in all cases covered in the yard with road mortar, and in the field with soil cast from a trench dug deep on the sides. These heaps are formed in the field at some distance from the fence, on any ridge or hill, so that when distributed over the piece, a spit may be taken from under the heap, which would otherwise be too rich; and it makes a better dressing than half the manure so called. It is customary with some to cart their muck into a road or corner near its destination, time after time, at a considerable waste of its most valuable contents, as seen by the rank growth of Thistles and Nettles hard by, as well as by the black colour of the bed, too strong to grow anything. Some farmers have a plan of accommodating their town friends with straw, receiving the manure made in the stable in return; if the dung-heap was managed carefully this would be a fair bargain, but the litter of nine stables out of ten at least is cast into a great bulk and overheated before removal, so that it is not of so much use for land as the straw alone would have been, if cut into chaff, instead of being carted to the town, and brought back inert and valueless; if not convenient to preserve in a thin layer, or kept moistened with animalised fluid, it should, if intended for any useful purpose, be removed at short intervals, or as soon as a cart-load or so had accumulated. When manure from a variety of animals is mixed together, there is not much danger of its being "fire-fanged;" but if there is a tendency to heat to a dry mould, it may be easily repressed by the aid of the indispeneable tank, or a few barrowsful of road mortar, which should always be at hand for that purpose; if road scrapings are not to be procured easily, the boasted compost may be turned to account, taking care that it be not too foul with seeds and live roots of weeds, of which hedge bottoms are generally composed. Another resource for adding to the efficacy of manure, and mixing with it, is the clean clay, sand or marl, excavated in deepening an outfall, or removing a bank, observing to put any large quantity of such materials on land having a subsoil of a different character, as gravel or clay on a field lying over limestone, marl, or chalk; or sand on clay, &c.; by which means the fertility may be very greatly increased. Caution is, however, required, as a person heavily clayed some land at Deeping, at a considerable expense, and spoiled his field, the clay being of a very hungry nature, and moderate productiveness was only recovered after a lapse of several years, by deep cultivation, and at a disproportionate cost. "Claying" is carried on extensively in the Fens, by deep trenches being opened at intervals, and the clay found at depths varying from 3 feet to 7 or 8, is cast out on each side; when this operation is performed properly, it is of surprising benefit, making the light, fuzzy, black soil of a solid texture, and capable of sustaining heavy crops of fine grain. Last week I took advantage of the frost to cart a large quantity of clay, taken from a dike, a distance of two miles, upon a low place in Borofen. *J. W., Peterborough.*

Notices to Correspondents.

Arsenic: *A Correspondent* enquires as to the quantity and mode of application of arsenic as a pickle for Wheat seed. I have used nothing else for the last 4 or 5 years, and during that period have almost entirely escaped "smut," which previously I had in abundance. Its cost is very trifling, and after all that has been said against it, on the score of poultry and game, it is in my experience absolutely safe. Besides, its use is particularly cleanly. I prefer it upon comparison, and in the order, to sulphate of copper, brine and lime, and chamber-lye. I allow 2 oz. of arsenic to a bushel of Wheat. If purposing to begin drilling on Tuesday morning, prepare a bag (3 bushels) on Monday evening. Dissolve 6 oz. of arsenic in a quart or two of boiling water; pour this into a watering-can, containing a gallon of soft water, and stirring it up briskly every minute or two (or the arsenic may settle); rain the mixture gradually over the Wheat, lying meanwhile thinly on a stone floor; turn backwards and forwards five or six times with a shovel, till every corn is well wetted, and then leave for the night in a close heap on the floor. The first thing in the morning prepare another bag in the same manner, and this quantity (6 bushels), at 6 or 7 pecks to the acre, will suffice for a day's drilling. Should rain delay the drilling, spread thinly, the Wheat will take no harm. I use no line. My drill is a 3-rowed bowl drill, and the best I am acquainted with for the small farmer. Price (without a manure hopper), 5*l.*; maker, Hemming, Dunnington, 7 miles from Evesham. I trust the above account may prove sufficiently intelligible. In practice the plan is highly satisfactory. *J. B., I. N.* [Many thanks.]

Coloured Yolks: *Philanax.* In answer to "Philanax's" inquiry, I beg to state that a fowl of mine laid about eight eggs of the same description, and I ascertained that she had been kicked, and the yolks in the egg-bag injured thereby—a practice not at all uncommon among servants when the poultry annoy them by continually being about the kitchen door. *Nomen fictitium.*

Emigration: *Falcon.* It is in type.

Ewes on Turnips: *E T W.* There is, and ever will be, a great risk in putting breeding ewes on Turnips. The amount of the danger depends entirely on the wetness of the autumn and winter, and therefore in districts liable to a great fall of rain, the risk is greater than in drier localities, a less quantity of moisture being taken into the system. Where pasturage is very short, the best plan is to take care that the lambs fall very early; horned ewes will lamb many weeks before Christmas, and forward Down ewes soon after. The Turnips may, therefore, be reserved till after this period, or they may be pulled and given sparingly on the pastures, or the ewes may follow after other sheep on Turnips, taking care, however, that they are only so folded for a certain portion of the 24 hours. *W C S.*

Mummy Wheat: *J G.* Did you apply for any. Give us your *experience* of any fraud on the part of the advertiser, and we will publish it.

Oilcake: *W B.* Can any one state his *experience* of the superiority of English oilcake to foreign.

Pigeons: *A Constant Reader* asks the name of the best practical book on pigeons.

Rats: *J G N.* See a shilling book by H. D. Richardson—M'Glashan, Dublin.

Water: *N.* If they will drink it they may have it; but it is better to slake their thirst by giving them Turnips enough.

Markets.

COVENT GARDEN, Jan. 12.

Notwithstanding the severity of the weather the supply of Vegetables has been pretty well kept up. Fruit, too, is for the most part sufficient for the demand. Hothouse Grapes and Pine-apples are good for the season, Filberts and Walnuts are abundant, and Chestnuts plentiful. Oranges and Lemons are abundant, and there are some Seville Oranges in the market, but they are very dear and not good. Table Pears are scarce. Amongst Vegetables, Turnips are good and plentiful; Carrots the same. Cauliflowers and Broccoli are rather scarce and dear. Potatoes have not altered since our last account. Lettuces and other salading are plentiful. No alteration in the price of Mushrooms. Some Asparagus, Seakale, and Rhubarb may be obtained. Cut Flowers consist of Heaths, Pelargoniums, Bignonia venusta, Chrysanthemums, Primulas, Camellias, Cinerarias, Christmas Roses, Azaleas, Lilacs, Lily of the Valley, Epacrises, Acacias, and Roses.

FRUITS.

Pine-apples, per lb., 5s to 8s	Oranges, per 100, 5s to 12s
Grapes, hothouse, p. lb., 3s to 6s	Almonds, per peck, 6s
— Portugal, per lb., 9d to 1s	— sweet, per lb., 2s to 3s
Pears, per doz., 2s to 4s	Walnuts, p. 100, 1s 6d to 2s
— per half sieve, 8s to 12s	— p. bush., 16s to 24s
Apples, kitchen, p. bsh., 2s to 4s	Filberts, per 100 lbs., 60s to 65s
Lemons, per doz., 1s to 2s	Nuts, Bar., p. bush., 20s to 27s
— per 100, 6s to 12s	— Brazil, p. bsh., 12s to 16s
Oranges, per doz., 9d to 1s 6d	Kent Cobs, 60s to 65s p. 100 lbs.

VEGETABLES.

Seakale, per punnet, 2s to 3s	Spinach p. sieve, 2s to 3s
Asparagus, per bundle, 4s to 6s	Onions, p. bushel, 3s to 4s
Rhubarb, p. bundle, 1s 6d to 2s	— Spanish, p. doz., 1s 6d to 4s
Cabbages, p. doz., 6d to 9d	Shallots, per lb., 4d to 8d
Cauliflowers, p. doz., 6s to 9s	Garlic, per lb., 4d to 8d
Broccoli, p. doz. bundl., 18s to 24s	Lettuce, Cab., p. sc., 4d to 9d
Greens, per doz., 2s 6d to 3s	— Cos, do., 6d to 1s
Brussels Sprouts, p. hf. sieve, 1s 6d to 2s	Endive, per score, 1s 6d to 2s
Sorrel, p. hf. sieve, 6d to 9d	Mushrooms, p. pot., 1s to 1s 3d
Potatoes, per ton, 60s to 100s	Small Salads, per punnet, 2d to 3d
— per cwt., 3s to 6s	Watercress, p. 12 bun., 4d to 6d
— per bush., 2s to 3s	Fennel, per bunch, 2d to 3d
Turnips, p. doz. bun., 1s 6d to 2s 6d	Savory, per bunch, 2d to 3d
Red Beet, per doz., 1s to 2s	Thyme, per bunch, 2d to 3d
Horse Radish, p. bdl., 2s to 4s	Parsley, p. doz. bun., 3s to 4s
Cucumbers, each, 3s to 3s 6d	— Roots, p. bdle., 1s to 1s
Leeks, per bunch, 2d	Marjoram, per bunch, 2d
Celery, p. bundle, 8d to 1s 3d	Mint, per bunch, 2d
Radishes, p. 12 hands, 1s to 2s	Basil, per bunch, 2d
Carrots, per bun., 4d to 6d	

HAY.—Per Load of 36 Trusses.

Smithfield, Jan. 10.				
Prime Meadow Hay	68s to 74s	Clover	60s to 90s	
Inferior ditto	50 65	New Clover	— —	
Rowen	50 60	Straw	24 28	
New Hay	— —		J. Cooper.	
Cumberland Market, Jan. 10.				
Prime Meadow Hay	65s to 72s	Inferior	60s to 75s	
Inferior ditto	50 63	New Clover	— —	
New Hay	— —	Straw	24 28	
Old Clover	84 88		Joshua Baker.	
Whitechapel, Jan. 10.				
Fine Old Hay ...	63s to 66s	New Clover	—s to —s	
Inferior ditto ...	50 55	Inferior ditto	55 60	
New Hay	— —	Straw	22 26	
Old Clover	80 85			

HOPS.—Friday, Jan. 11.

Messrs. Pattenden and Smith report that there is a little more demand for all kinds of Hops with colour and quality.

SMITHFIELD, Monday, Jan. 7.

The number of Beasts is not so large, but the demand being very small, trade is slow. The best qualities are pretty freely purchased at late rates. There are many more Sheep than on Monday last, still the supply cannot be called excessive; the choicest Downs are selling briskly, but other kinds meet with a dull trade. There are very few Calves, and veal is consequently dearer. From Holland and Germany we have 86 Beasts; from Spain, 48; from Scotland, 60; from Norfolk and Suffolk, 1200; and 1000 from Leicester and Northampton.

Per st. of 8 lbs.—	s	d	s	d
Best Scots, Herefords, &c.	4	0 to 4	2	
Best Short-horns	3	8 — 3	10	
2d quality Beasts	2	8 — 3	4	
Best Downs and Half-breds	4	0 — 4	4	
Ditto Shorn	...	...	...	

Per st. of 8 lbs.—	s	d	s	d
Best Long-wools	3	6 to 3	10	
Ditto Shorn	...	...	...	
Ewes & 2d quality	3	0 — 3	4	
Ditto Shorn	...	...	...	
Lambs	...	...	...	...
Calves	...	...	3	8 — 4 0
Pigs	...	...	3	4 — 4 4

Beasts, 3070; Sheep and Lambs, 21,630; Calves, 34; Pigs, 206.

Friday, Jan. 11.

The number of Beasts is not large, but the demand is smaller. Trade is very slow at a reduction of fully 2d. per 8 lbs. The supply of Sheep is small, about, however, as usual at this time of year. Buyers are very scarce, and a clearance cannot be effected at lower rates. We have more Calves; they meet with a slow sale at 4d. per 8 lbs. lower. From Holland and Germany there are 141 Beasts, 340 Sheep, and 121 Calves; from Scotland, 140 Beasts; and 125 Milch Cows from the home counties.

Best Scots, Herefords, &c.	3	10 to 4	0	Best Long-wools	3	6 to 3 8
Best Short-horns	3	6 — 3	8	Ditto Shorn	...	... — ...
2d quality Beasts	2	6 — 3	2	Ewes & 2d quality	2	10 — 3 2
Best Downs and Half-breds	4	0 — 4	2	Ditto Shorn	...	... ...
Ditto Shorn	...	... —	...	Lambs	...	... ...
				Calves	...	... ... 3 6 — 4 2
				Pigs	...	... ... 3 4 — 4 4

Beasts, 693; Sheep and Lambs, 3560; Calves, 225; Pigs, 220.

POTATOES.—Southwark, Jan. 7.

The Committee report that the arrivals since our last report have been moderate, which, with cold weather, have enabled salesmen to clear out most of the heavy arrivals the preceding week without storing. The supply of the best Yorkshire Regents is moderate, consequently they make a high price. The following are this day's quotations:—Yorkshire Regents, 70s. to 120s. per ton; Wisbeach do., 60s. to 70s.; Scotch do., 60s. to 70s.; Scotch cups, 50s. to 60s.; French whites, 65s. to 70s.; Rhenish and Belgian do., 60s. to 65s.

MARK LANE.

Monday, Jan. 7.—Although the supply of English Wheat by land carriage samples was moderate this morning, it met a slow sale at the prices of this day se'nnight, and several stands were not cleared at a late hour. Owing to a large arrival of Flour, millers abstained from purchasing foreign, and the trade was exceedingly limited at late rates.—Barley, Beans, and Peas were each a heavy sale, but we do not alter our quotations.—Business in Oats was quite of a retail character; Scotch were the turn cheaper.

British per Imperial Quarter.	s.	s.		s.	s.
Wheat, Essex, Kent, & Suffolk ... White	44	—47	Red	38	—41
— — fine selected runs ... ditto	47	—48	Red	41	—44
— — Talavera	50	—54			
— Norfolk, Lincoln, & York ... White	—		Red	—	
— Foreign	35	—52			
Barley, grind. & distil., 23s to 25s ... Chev.	26	—30	Malting	25	—26
— Foreign ..... Grinding and distilling	18	—23	Malting	22	—25
Oats, Essex and Suffolk	15	—20			
— Scotch and Lincolnshire ... Potato	20	—24	Feed ...	17	—22
— Irish ..... Potato	18	—22	Feed ...	16	—19
— Foreign ..... Poland and Brew	16	—20	Feed ...	13	—17
Rye	20	—22	Foreign	20	—23
Rye-meal, foreign ..... per ton	5*l.*	—6*l.*			
Beans, Mazagan ..... 23s to 24s ..... Tick	25	—27	Harrow	25	—27
— Pigeon ..... 26s — 29s ... Winds	22	—29	Longpod	26	—28
— Foreign ..... White	24	—26	Egyptian	23	—24
Peas, white, Essex and Kent ..... Boilers	26	—28	Suffolk	26	—29
— Maple ..... 24s to 27s ..... Grey	22	—24	Foreign	22	—29
Maize ..... White	22	—25	Yellow ...	24	—26
Flour, best marks, delivered ... per sack	36	—40			
— Suffolk ..... ditto	32	—36	Norfolk	32	—36
— Foreign ..... per barrel	22	—25	Per sack	33	—35

Arrivals in the Port of London last week.

	Wheat.	Barley.	Malt.	Oats.	Beans.	Peas.
Flour, 17215 sks	Qrs.	Qrs.	Qrs.	Qrs.	Qrs.	Qrs.
— 12384 bls	2150	4339	5917	3735	625	579
English	—	—	89	4380	—	—
Irish	6001	8597	—	7863	274	701
Foreign						

Friday, Jan. 11.—The arrivals of grain during the week have been moderate, and this morning's market being badly attended, business in all articles was very limited. A portion of the English Wheat left over from Monday remained unsold at a late hour, that day's rates being unobtainable. Foreign is nominal at our quotations, neither do we observe any alteration in the value of spring corn.—Indian Corn is neglected, floating cargoes being purchasable at a trifling reduction.—The firmness we had to report on the 4th inst. has been succeeded by great languor throughout the English markets for all descriptions of grain. Business has been very limited, and a decline of 1s. per qr. submitted to in many instances. In New York, on the 26th Dec., the prices of Flour were unaltered, and shipments confined to Canadian.

Arrivals this week.

	Wheat.	Barley.	Oats.	Flour.
	Qrs.	Qrs.	Qrs.	
English ...	3110	5690	3880	3480 sacks
Irish	—	—	600	
Foreign ...	5280	6090	4840	— brls.

Imperial Averages.	Wheat.	Barley.	Oats.	Rye.	Beans.	Peas.
Dec. 1	40s 2d	28s 1d	16s 4d	24s 1d	28s 6d	30s 2d
— 8	39 4	27 5	16 6	23 9	28 4	28 1
— 15	38 9	26 9	16 0	22 6	27 8	28 11
— 22	38 9	25 9	15 9	22 9	27 5	29 11
— 29	39 4	25 9	15 6	24 0	26 11	28 0
Jan. 5	40 0	25 11	15 10	24 11	26 11	28 5
Aggreg. Aver.	39 5	26 7	16 0	23 8	27 8	29 3
Duties on Foreign Grain	1 0	1 0	1 0	1 0	1 0	1 0

Prices.	Dec. 1.	Dec. 8.	Dec. 15.	Dec. 22.	Dec. 29.	Jan. 5.
40s 2d	...	...	...	...	...	...
40 0	...	...	...	...	...	...
39 4	...	...	...	...	...	...
39 4	...	...	...	...	...	...
38 9	...	...	...	...	...	...
38 9	...	...	...	...	...	...

SEEDS.—Jan. 7.

Canary, per qr.	76s to 84s	Coriander, per cwt.	16s — 21s
Caraway, per cwt.	31 — 32	Mustard, white, p. bush.	6 — 7
Hempseed, per qr.	34 — 35	— brown, do.	7 — 9
Linseed, foreign, do.	37 — 45	Rape, per last	28*l.* — 34*l.*
Clover, red, per cwt.	— —	Cakes, Linseed, p. 1000	9*l.* 12s
— — foreign, do.	— —	— — foreign, p ton	6*l.* 15s
— white, do.	— —	— Rape, foreign, do.	4*l.* 5s
— — foreign, do.	— —	Tares, per bush.	4s 6d — 5s 6d

Liverpool, Tuesday, Jan. 8.—The week's imports of Wheat, Flour, Oats, and Oatmeal from Ireland are to a fair extent. The improved tone in our trade observed on Friday was not supported to-day, and the business transacted was limited. Wheat, Flour, Beans, and Indian Corn were the turn lower. Oats were fully as dear. Barley and Peas unaltered.

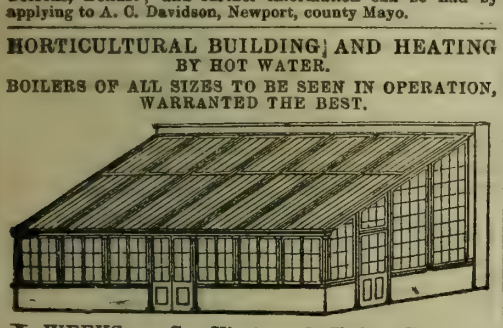
FOR PUBLIC SALE, at the New Corn Exchange Tavern, Mark-lane, on MONDAY, January 21, 1850, at 2 o'clock precisely, about 1700 tons of damaged PERUVIAN GUANO, in Warehouse, ex sundry ships, by order of Messrs. Anthony Gibbs and Sons, the Importers.—Catalogues and further particulars in due time from Messrs. J. A. RUCKER and BANCRAFT, Brokers, 26, Commercial Sale Rooms, Mincing-lane, London.

TO BE LET, a good ARABLE FARM, of 700 acres, in Hampshire, with immediate Possession. It is within three miles of a railway station, and at an easy distance from Basingstoke, Andover, and Newbury Markets. Rent moderate, tithe and rates very low. For particulars, apply by letter (stating the experience and capital of the applicant), to X. Y. Z., care of George Lamb, Esq., Basingstoke, Hants.

PARTNERSHIP.—To FARMERS.—The Advertiser, who has been settled in the West of Ireland for nearly two years, on a farm of about 800 acres arable land, a good Barley soil, and about 7000 acres mountain pasture (which affords good grazing), is anxious to meet with a suitable PARTNER, having a ready-money capital of not less than 1500*l.* or 2000*l.* The farm is held on lease of three lives, or 31 years, under an improving and popular landlord at a yearly rent of 480*l.* The poor-rates on the farm have never exceeded 4*5.* per annum, payable by the tenant; and from measures now in progress in the district, is likely to be reduced to half that amount. A sum of upwards of 3000*l.* has been expended by the advertiser in draining, fencing, and other permanent improvements, including farm-buildings and cattle-sheds. The people are exceedingly peaceable and well disposed. Labourers' wages from 6*d.* to 8*d.* per day, depending on the season. The farm being close to the sea, grain can be delivered in a neighbouring market town at 1*s.* 6*d.* per ton, and in Glasgow, Liverpool, or Gloucester, at from 8*s.* to 12*s.* a ton. There is also a large quantity of seaweed available for manure, and limestone can be had on the premises at 1*s.* per ton, and an abundant supply of fuel. The quantity of land under tillage during the past year was about 500 acres.—References can be made to Messrs. King, Melville, and Co., corn-factors, London; Messrs. J. and C. Sturge, merchants, Birmingham and Gloucester; Messrs. Richardson, Brothers, and Co., Liverpool; Messrs. John M'Call and Co., merchants, Glasgow; Messrs. Redpath, Browne, and Co., Edinburgh; Messrs. Davidson and Torrens, Belfast; and further information can be had by applying to A. C. Davidson, Newport, county Mayo.

HORTICULTURAL BUILDING AND HEATING BY HOT WATER.

BOILERS OF ALL SIZES TO BE SEEN IN OPERATION, WARRANTED THE BEST.



J. WEEKS AND Co., King's-road, Chelsea, HORTICULTURAL ARCHITECTS, HOTHOUSE BUILDERS, and HOT-WATER APPARATUS MANUFACTURERS, solicit an inspection of their various Works completed and in progress. Horticultural Buildings of every variety. BOILERS of all sizes to be seen in operation, and which they warrant to be the most effective and economical of any in use. The largest size Boiler is now effectually heating three extensive ranges of Forcing-houses, 130 feet by 22 feet, all Span Roofs and lofty, containing upwards of 50,000 cubical feet of air. Also various small and intermediate size Boilers, some of all sizes in operation. The consumption of fuel is very moderate, and the fires will continue from 10 to 15 hours without attendance. The extensive arrangements now in full operation on their premises, enables them to build to any extent, and at very moderate prices. Hothouses, Greenhouses, Conservatories, Forcing-pits, Frames, Glass Lights, &c. A very extensive collection of Stove and Greenhouse Plants, which are sold at very low prices. Plans, Estimates, and Catalogues forwarded on application.
J. WEEKS and Co., King's-road, Chelsea.

CROWN, SHEET, AND ROUGH PLATE GLASS, FOR HOTHOUSES, CONSERVATORIES, &c.
Of every manufacture FIT FOR USE, including the make of Messrs. CHANCE, HARTLEY, SWINBURNE, and others.

100 and 200 feet cases of large Sheet Glass, from 2½*d.* per foot. Small ditto, 10*s.* 6*d.* per 100 feet, packed in boxes ready for immediate delivery. Curators of Botanical Societies, Florists, Railway Agents, and others requiring large quantities, will, on sending dimensions, receive estimates at the lowest prices.

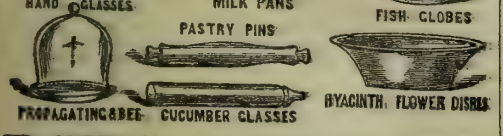
GLASS MILK PANS, CREAM POTS, Lactometers, Bee Glasses, Fish Globes, and all kinds of Dairy Glass, Propagating Glasses, Hyacinth Dishes, Cucumber Tubes, and every other description of Garden Glasses.

PATENT GLASS PENS, self supplying, never blot, never soil the ruler, and will write continuously for 12 hours.

Also, Glass Rulers, Glass Inks for office-stands, desks, &c. Stationers and Schools supplied. Wholesale Warehouse for Ornamental Shades, Lamp Shades, Gas Glasses, Genuine White Lead, Paints, Colours, and Pumps for Farm purposes.

Our Catalogue of 18 folios is the most complete ever published. No Gardener or Farm Bailiff should be without one. May be had Gratis on sending two postage stamps to Messrs. COGAN and Co., 18, Leicester-square, London.

GLASS FOR CONSERVATORIES AND HORTICULTURAL PURPOSES, &c.



T. MILLINGTON'S SHEET GLASS, which is of the best description, varying from 16 to 32 ounces, at from 2*d.* per foot and upwards; 100 feet and 200 feet cases of large Sheet Glass, for cutting up, at 2½*d.* per foot. British Plate Glass, from 1*s.* 2*d.* to 2*s.* per foot, according to size. Patent Rough Plate Glass, from ⅜ to 1 inch in thickness, from 4*d.* per foot upwards. Glass Slates and Tiles. Milk Pans from 12 to 24 inches diameter, from 2*s.* to 5*s.* each. Cucumber Tubes, from 12 to 24 inches long, at 1*d.* per inch. Lactometers, 7*s* 6*d.* each. Wasp Traps.—Lists may be had on application at the Warehouse, 87, Bishopsgate-street Without, same side as the Eastern Counties Railway.

THE LONDON MANURE COMPANY beg to offer as under, and pledge themselves that every Manure shall be perfectly Genuine:—Corn Manure for Wheat, Barley, Oats, Clover—most strongly recommended from its success last year; it will be found cheaper than Guano, and bear the strictest analysis. Also URATE, Superphosphate of Lime, Sulphate and Phosphate of Ammonia, Nitrate Soda, Fishery and other Salt, Gypsum, Sulphuric Acid, &c.

GENUINE PERUVIAN GUANO.—To insure this free from adulteration, all purchasers, if they prefer it, can receive their warrants from Mr. Purser, and remove the Guano direct from the Warehouses of Messrs. A. GIBBS and SONS, the Importers.
Bridge-street, Blackfriars. EDWARD PURSER, Secretary.
Country Dealers and Agents supplied.

PERUVIAN GUANO.—As Agents of the Peruvian Government for the importation and sale of this valuable MANURE, we think it right, for the protection of consumers and respectable dealers, to apprise them that the adulteration of the article is still extensively practised, and to recommend them to apply either to ourselves, to our agents, Messrs. GIBBS, BRIGHT, and Co., of Liverpool and Bristol, or to dealers of established character, in whose honesty and fair dealing they can place implicit confidence. ANTONY GIBBS and SONS.
London, January 12.

MESSRS. NESBIT'S CHEMICAL AND AGRICULTURAL SCHOOL, 38, Kennington-lane, London.—A sound practical knowledge of Analytical and Agricultural Chemistry, Geology, Surveying, Levelling, Railway Engineering, &c., may be obtained in Messrs. NESBIT'S Academy, in addition to a good modern education.

Mr. NESBIT'S works on Arithmetic, Mensuration, Gauging, Land Surveying, English Parsing, &c., are published by LONGMAN and Co., and may be had of all Booksellers.

The terms of the School can be had on application either personally or by letter.

IMPROVED FOUR-HORSE PORTABLE STEAM-ENGINES AND BOLTING OR THRESHING MACHINES.

FREEMAN ROE AND HANSON, Southwark Iron Works, and 70, Strand, beg to call attention to their Steam-Engines and Threshing Machines, which are more economical in fuel, for the quantity of work done, than any before the public. They may be seen any day at their works, Sumner-street, Southwark Bridge-road.—Water-rams for raising Water. Deep Well Pumps; Baths; Hot-water Apparatus; Fountains. Towns supplied with Gas or Water.

WIRE-WORK, HOT-WATER APPARATUS, GREENHOUSES, &c.

ST. THOMAS BAKER, MANOR-HOUSE, MANOR-PLACE, KING'S-ROAD, CHELSEA, Manufacturer of INVISIBLE WIRE FENCE, to resist Grazing Stock, and rendered Rabbit-proof. WIRE-WORK in Trainers, Arches for Walks, Bordering, Flower Stands, Pheasantries, &c. HORTICULTURAL BUILDINGS, Green and Hothouses, Conservatories, &c. The same heated by HOT-WATER APPARATUS on improved and economical principles.

Parties waited on in Town and Country, and Drawings and Estimates free. Work for the Trade as usual.
Ward's Cases, or Domestic Greenhouses.

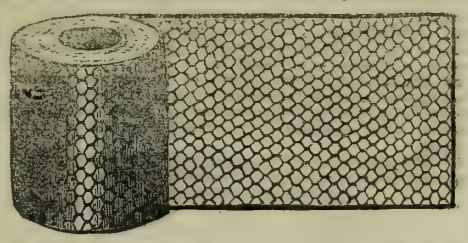
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BAKER'S PHEASANTRY, Beaufort-street, King's-road, Chelsea, by special appointment to her Majesty and H. R. H. Prince Albert.—ORNAMENTAL WATER FOWL, consisting of black and white swans, Egyptian, Canada, China, barnacle, brent, and laughing geese, shieldrakes, pintail, widgeon, summer and winter teal, gadwall, Labrador, shovellers, gold-eyed and dun divers, Carolina ducks, &c., domesticated and pinioned; also Spanish, Cochin China, Malay, Poland, Surrey, and Dorking fowls; white, Japan, pied, and common pea-fowl, and pure China pigs; and at 3, Half-moon-passage, Gracechurch-street.

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ALFRED TUCKETT, having had considerable experience in Draining Land, more particularly on heavy wet clays, and being a manufacturer of very superior Drain Pipes and Tiles, offers his services as CONTRACTOR FOR THE DRAINAGE OF ESTATES. All contracts undertaken by A. TUCKETT will have his own personal superintendence, and from his thorough knowledge of such work, he feels confident that he can execute it to any extent, and at such a moderate cost, that the interest will be cheerfully paid by tenants.
Warmley, near Bristol.

WIRE NETTING, ONE PENNY PER SQUARE FOOT.



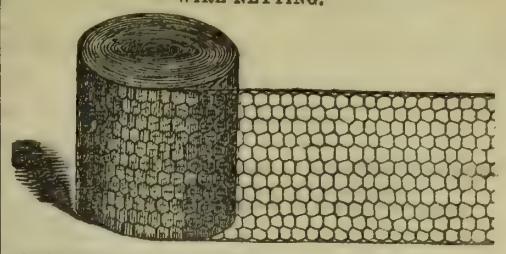
GALVANISED WIRE NETTING, TWOPENCE PER SQUARE FOOT.—This article requires no painting, the atmosphere not having the slightest action on it. It was exhibited at the late Metropolitan Cattle Show, and was highly eulogised both for its utility and pretty appearance, and acknowledged to be the cheapest and best article ever produced. It forms a light and durable fence against the depredations of hares, rabbits, and cats, and is peculiarly adapted for Aviaries, Pheasantries, and to secure poultry; and by the galvanised requiring no paint, it answers admirably for training all kinds of creeping plants. Large quantities always kept in stock, of 18, 24, 36, and 48 inches wide; it can, however, be made to any dimensions desired. Patterns forwarded free of expense.

12 inches wide	3*d.* per yard	30 inches wide	7½*d.* per yard
18 " "	4½*d.* "	36 " "	9*d.* "
14 " "	6*d.* "	48 " "	1*s.* "

Galvanised do., 1*d.* per foot extra.

Extra strong Imperial Wire Sheep Netting, 3 feet, 1*s.* 6*d.* per running yard; if galvanised, 2*s.* Also every description of Wire Nursery and Fireguards, Wire House Lanterns and Shades, Fly-proof Dish Covers, Meat Safes, &c.; Window Blinds, 1*s.* 10*d.* per square foot, with bolts complete, in mahogany frames; Gothic Garden Bordering, 6*d.* per running foot; Flower Trainers, from 3*d.* each; Garden Arches, 20*s* each; Flower Stands, from 3*s.* 9*d.* each; Galvanised Tying Wire for plants and trees, Dahlia Rods, and every description of Wire-work; Weaving, for the use of paper-makers, millers, &c.—At the Manufactory of THOMAS HENRY FOX, 44, Skinner-street, Snow-hill, London.

STRONG PREMIUM HARE AND RABBIT PROOF WIRE NETTING.



CHARLES D. YOUNG AND COMPANY (LATE W. AND C. YOUNG),
MANUFACTURERS OF IRON AND WIRE WORK, &c., 22, PARLIAMENT-STREET, WESTMINSTER, LONDON; CASTLE-BUILDINGS, DERBY-SQUARE, LIVERPOOL; 128, HIGH-STREET, EDINBURGH; and 32, ST. ENOCH-SQUARE, GLASGOW, beg respectfully to call the attention of Landed Proprietors and others to their strong Wire-Net Fence, for excluding Hares and Rabbits from Gardens, young Plantations, Nurseries, &c.

This Net was exhibited at the Show of the Highland and Agricultural Society of Scotland, held lately at Inverness, where its Efficiency, Great Strength, and Exceeding Cheapness attracted general attention, and had awarded from the Judges the Society's Silver Medals, with high commendations.

The immense damage done by Hares and Rabbits in Gardens and Young Plantations is often so great, that in the course of a year or two it will amount to more than the entire cost of protecting them with this Net. It is so durable, that when Plantations are sufficiently advanced to be independent of its protection, it can be removed to other exposed situations with the greatest facility, by any labourer. As a Fence against Hares and Rabbits, it is of itself quite sufficient, having only to be unrolled and attached, with small wire sent for that purpose, to wooden stakes driven into the ground, about every six or seven feet apart. It is, besides, peculiarly adapted for rendering Hedges, Paling, or other existing Fences, *completely impervious* to such vermin; and by being cut up into small pieces of three or more feet, as required, it forms a most efficient guard, at little expense, for individual Plants and Shrubs.

PRICES.—18 ins. high, 9*d.*; 24 ins., 1*s.*; 30 ins., 1*s.* 3*d.*; and 36 ins., 1*s.* 6*d.* per lineal yard.

Or a web of 100 yards, 18 ins. wide, will cost	..	£3 15 0
Do. of 100 yards, 24 ins. wide	..	.. 5 0 0
Do. of 100 yards, 30 ins. wide	..	.. 6 5 0
Do. of 100 yards, 36 ins. wide	..	.. 7 10 0

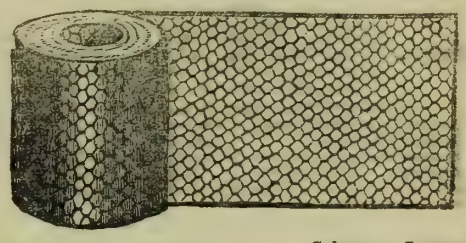
If more or less than a web is required, it would be charged at the same rate per yard.

This Netting is also admirably adapted for Pheasantries and Poultry-yards, and is charged at the same rate. As carriage has, in many instances, been an obstacle to parties at a distance requiring this Net, C. D. Y. and Co. have made arrangements by which they will undertake to deliver it at any of the principal ports of Scotland, England, and Ireland, for One Halfpenny per lineal yard.

C. D. YOUNG and Co. cannot give a better idea of the great strength of their Premium Wire Netting than by stating that the weight of one yard of their 24-inch at 1*s.* is equal to 2½ yards of another article in the market, the same width, at 9*d.* per yard. Samples for inspection sent free of expense.

C. D. YOUNG & Co. manufacture every description of IRON and WIRE WORK required for this and foreign countries.
Workmen sent to all parts of Scotland, England, and Ireland.

GALVANISED WIRE GAME NETTING.—7*d.* per yard, 2 feet wide.



		Galvanised.	Japanned Iron.
2-inch mesh, light, 24-inch wide	...	7*d.* per yd.	5*d.* per yd.
2-inch " strong "	...	9 "	6½ "
2-inch " extra strong "	...	12 "	9 "
1⅝-inch " light "	...	8 "	6 "
1⅝-inch " strong "	...	10 "	8 "
1⅝-inch " extra strong "	...	14 "	11 "

All the above can be made any width at proportionate prices. If the upper half is a coarse mesh, it will reduce the price one-fourth. Galvanised sparrow-proof netting for pheasantries, 3*d.* per square foot. Patterns forwarded post-free.

Manufactured by BARNARD and BISHOP, Market-place, Norwich, and delivered free of expense in London, Peterborough, Hull, or Newcastle.

HYDRAULIC ENGINES, WATER RAMS, &c., on Improved Principles; Engines worked by Steam or Hydraulic power, to raise from 1 gallon to 1000 per minute to a height of 500 feet, and from a depth of 900 feet. Douche Vapour, Hot-air, and all other kinds of Baths. Buildings, Conservatories, &c., heated by Steam, Air, or Water. Boring, Sinking, and Collecting of Water, &c. Towns supplied.—Direct to JOHN LEGG, Cheltenham.

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The great satisfaction these collections have given to some of the principal families in England, Ireland, Scotland, and Wales induces W. J. EPPS with confidence to solicit further patronage. The collections contain this year 15 per cent. more than last, and quite equal in quality. Descriptive Seed Catalogues may be had on application. All orders to be accompanied with a Post-office order from unknown purchasers. No charge made for packing, and delivered free of expense to any railway station in London.—Agricultural and Horticultural Seed Establishment, High-street, Maidstone.
*** Cole's Superb Dwarf Red Celery, 1*s.* per packet.

AMERICAN PLANTS.

GEORGE BAKER begs to inform the gentry and public he has published a NEW CATALOGUE of his AMERICAN AND CONIFEROUS PLANTS, &c., and may be had on application.—Windlesham Nursery, Bagshot, Surrey.

DAHLIAS.

CHARLES TURNER has much pleasure in offering the following beautiful new DAHLIAS, plants of which will be ready in May next.
QUEEN OF THE ISLES (Skynner).—White, distinctly tipped with deep crimson, very striking and beautiful; the petals being smooth and well arranged. It was exhibited at Cambridge and Norwich, 12 blooms on each occasion, and received the highest award and commendation. Warranted the finest Dahlia ever offered by C. TURNER. 3 to 4 feet—10*s.* 6*d.*
MRS. SELDON (Turner).—Bright pure yellow, good petal, flower very circular and full size, extra fine. It was awarded a first-class Certificate at Birmingham for six blooms; the only place exhibited at, the stock being short. 5 feet—10*s.* 6*d.*
THAMES BANK HERO (Robinson).—Deep crimson, full size and constant, good form. 4 feet—10*s.* 6*d.*
SERAPH (Fellows.)—Bright novel orange, compact, fine form, a very constant flower for exhibition. Received first class Certificate at Norwich. 3 feet—10*s.* 6*d.*
DUKE OF CAMBRIDGE (Fellows).—Silvery lilac, very constant, and good habit. 3 feet—7*s.* 6*d.*
QUEEN OF LILACS (Turner).—Pale lilac, full size, fine form, and noble show flower. 4 feet—7*s.* 6*d.*
UNIQUE (Turner).—Fancy, dull red with white tip, a fine form. 2 to 3 feet—7*s.* 6*d.*
MRS. LABOUCHERE (Turner).—Fancy, scarlet, white tip, a sweet variety; being very bright, constant, and not more than 18 inches high. 7*s.* 6*d.*
PURITY (Turner).—The finest white raised, when caught very beautiful, but being uncertain will not be charged for. Purchasers of the others may have plants gratis.
A Descriptive Catalogue ready in January, comprising all the novelties.—Royal Nursery, Slough.

RENE LANGELIER, Clarendon Nursery, St. Helier, Jersey, begs to offer the following new PEARS, which will be found faithfully to answer the description given of each, they having been tried and proved these last five years:
BEURRE ST. HELIER.—Ripens February and March; large, brown, melting, first quality; trees vigorous. Will do well as a pyramid or on a wall; all the trees are not less than two years old; fine strong, on Quince stocks, 10*s.* 6*d.*
BEURRE DELAVAL.—Ripens November and December; fine waxy colour, size of a large Crassane, melting, excellent; pyramid or north-west wall will suit it well. Most of the trees are in a bearing state; stock limited. 10*s.* 6*d.*
GABOURELLE'S SEEDLING.—Round kitchen fruit, the greatest bearer of Pear trees. Ripens December and January; well adapted for orchards, for which the trees are principally trained, and are very vigorous; from 6*s.* to 7*s.* 6*d.*
R. L. regrets that the following should have been omitted in the printing of his Descriptive Catalogue, but they will be found excellent and melting, *viz.*, LANGELIER'S BEURRE and BEURRE LEON DE CLERC. Those who may have received them, may be assured they are of first-rate quality; so is GROSSE CALEBASH. Having a large stock of superior grown trees, on Quince stocks, all grown and proved by R. L., he has been induced to reduce his price as follows, if the selection is left to him; none but the best melting sorts will be sent, and he will be responsible for their accuracy. Baking or kitchen Pear, is desirable, as a melting sort, being so useful for a family.
24 trees of best melting, strong and healthy, one of each ... 36*s.*
24 do., one of each, from 3 to 4 years old, both Quince and own stock ... 48*s.*
24 do., bearing trees ... 60*s.*
50 do., large, not less than 4 or 5 years old ... 70*s.*
50 do., larger, well grown and fine ... 90*s.*
50 do., very large ... 125*s.*
The trade supplied with any quantity at per 100 or per 1000.
R. L. will supply from 200 sorts and upwards, only one of each, first quality, at 10*l.* per 100; many will be in a bearing state.
Application to be made to Messrs. PIPER, 23, Paternoster-row, London, for the Descriptive Catalogue. Fine Camellia stocks for grafting or planting in shrubberies, where they do well, from 40*s.* to 50*s.* per 100; also a superb collection, all strong and healthy, of which a Catalogue will be published separately, as well as Vines, of which R. L. possesses an extensive and select collection, also proved by him. A remittance or reference from unknown correspondents.

GARDENERS' BENEVOLENT INSTITUTION.—At a General Meeting of the Subscribers to this Institution, held on Wednesday last, 16th inst., at the London Coffee-house, Ludgate-hill, for the purpose of electing TWO PENSIONERS on the Funds of this Charity, the following was the result of the Ballot:

Name.	Residence.	Applic.	Age.	Votes.
EDW. MARSHALL	London	8th	70	115
MARY BROWNE	Do.	6th	84	483
JOHN SKEATES	Brixton	6th	70	20
THOMAS MILLS	Dulwich	5th	72	220
JOHN APPLEBY	Clapham	4th	57	71
ROBERT DUNCAN	Highgate	4th	70	414
JAMES BATTEY	Chelsea	3d	66	76
EDWARD BEACH	Quedgley, Gloucester	3d	75	169
JOHN COCKS	Brixton	3d	63	159
RICH. RUDLAND	Sutton-at-Hone, Dartford	3d	77	76
JOHN SHEPHERD	Clapham	3d	71	389
WILLIAM BROWN	Andover	2d	71	7
RICE EVANS	Stone, Staffordshire	2d	71	22
JOHN HURDEN	Bath	2d	65	9
CORN. ROBINSON	Greenwich	2d	70	55
JOHN SNOW	Farnborough	2d	65	81
THOS. FITZGERALD	Fulham	1st	64	76
JOHN HOPKINS	Nuneaton, Warwickshire	1st	63	9
HENRY SCHNEIDER	Colerne, Wiltshire	1st	84	54

The Meeting then declared Mary Browne, of London, and Robert Duncan, of Highgate, as having the greatest number of Votes, duly elected Pensioners of this Charity.
EDW. R. CUTLER, Secretary,
January 19. 97, Farringdon-street.

BASS AND BROWN'S SEED AND PLANT LIST, stamped to go free by post. Copies forwarded to any address. — The above comprises their General Descriptive priced Spring Catalogue, in which will be found a rich assortment of the newest and best articles that can be procured.
PART 1 contains Lists of new and choice FLOWER AND VEGETABLE SEEDS. The Flower Seeds are in five divisions, Hardy, Half-hardy, and Tender Annuals; and Hardy and Greenhouse Perennials; descriptive of colours, heights, prices, &c.; prefaced by a page of useful Remarks on Sowing and Raising Seeds, with allusions to such as require peculiar care. The Vegetable List contains the time of sowing each description of Seed, giving heights of Peas, and a variety of other useful information.
PART 2. ROOTS, FRUITS, AND BULBS, consisting chiefly of a selection from their Autumn Catalogue of such as are required for spring planting.
Part 3. A descriptive priced List of Geraniums, Fuchsias, Dahlias, Petunias, Verbenas, Chrysanthemums, Cinerarias, Achimenes, Gloxinias, Azalea indica, Stove and Greenhouse Plants, and a variety of Bedding and other Miscellaneous Plants.
PART 4. NEW PLANTS OF 1850, to be sent out in the Spring, consisting of Petunias, Fuchsias, Verbenas, Dahlias, &c.
A separate List of Agricultural Seeds.
Seed and Horticultural Establishment, Sudbury, Suffolk.

SAMUEL FINNEY AND CO.'S NEW CATALOGUE OF SEEDS will be ready in a few days, and forwarded gratis on the receipt of two penny stamps for postage. In forming our Collections of Seeds we have taken special care to include all the select and most approved kinds, and such as we can confidently recommend.
Of VEGETABLE SEEDS, our Collections contain a full supply of all that is requisite for the largest establishment, and the kinds and quantities for each collection are stated. No. 1, 2*l.* 10*s.*; No. 2, 1*l.* 10*s.*; No. 3, 1*l.*; and No. 4, 12*s.* 6*d.*
Of FLOWER SEEDS, we have included all the most choice and showy kinds, particularly those we know to succeed well in the north, and a full list of all the best kinds of German Seeds, imported direct in sealed packets, with prices.
A Collection of 100 packets of the best hardy and half-hardy kinds for ... 15*s.* 0*d.*
Ditto of 50 ditto ditto ditto ... 8 0
Ditto of 25 ditto ditto ditto ... 5 0
We particularly recommend this Catalogue to residents in the north, as they will be enabled to purchase to advantage. All orders delivered free of carriage at any of the railway stations between Newcastle and York, Berwick and Carlisle, and by steam-boat to London, Hull, Whitby, Leith, Dundee, and Aberdeen. Railway and water communication to all parts of the kingdom.
SAMUEL FINNEY and Co., Gateshead, near Newcastle-on-Tyne.

PLANTING SEASON.

ALFRED BALSTON begs to inform planters he has still a large proportion of his Nursery Stock to dispose of, which, in consequence of having relinquished the trade, he offers at very reduced prices. The Stock comprises every variety of ORNAMENTAL, FRUIT, and FOREST TREES, and all the best kind of SHRUBS in cultivation, no expence having been spared in the collection, and from the light nature of the soil in which it has grown, the plants have all a mass of fibrous root, which causes them to grow most luxuriantly after being transplanted.
A.B. particularly recommends the following: Common Laurel, 9 inches to 1 foot, 15*s.*; 1 to 2 feet, 30*s.*; 2 to 4 feet, 40*s.*; 4 to 6 feet, 80*s.* per 1000. Portugal Laurels, 1 to 2 feet, 10*s.* per 100. Rhododendron ponticum, 1 to 2 feet, 30*s.*; 3 to 4 feet, 60*s.*; 4 to 5 feet, 100*s.* per 100. Ghent Azaleas of all the finest kinds, specimen plants, 2*s.* 6*d.* each; smaller ditto, 6*s.* per dozen. Rhododendron campanulatum, caucasicum, catawbiensis, &c., 100*s.* per 100. Standard Roses of all the finest sorts, 12*s.* per dozen. A large stock of Evergreen Oak in pots and transplanted; also common Oak, Elm, Beech, Birch, Berberis, Hornbeam, Privet, &c.
Orders must be accompanied by remittances. Orders amounting to 5*l* delivered free.—Poole Nursery, Dorset.

POLMAISE HEATING.

J. LEWIS'S IMPROVED POLMAISE STOVES are delivered to the Railways in London, with Plans for fixing. For a Greenhouse: 20 feet by 12, 6*l.* 10*s.*; 30 feet by 14, 8*l.* 10*s.*; 60 feet by 18, 10*l.* 10*s.* Stoves for Churches, Schools, and Halls, according to size.
Hothouse Works, Stamford-hill, Middlesex.

WILLIAM MASTERS, Exotic Nursery, Canterbury, having the largest and most diversified stock of NURSERY PLANTS in the country, and by long experience being expert in determining the characteristics of various sites of ground, so as to plan and plant them most desirably, offers his assistance to gentlemen requiring the aid of a Landscape Gardener, or wanting Nursery Plants at the most economical prices. Planning and Planting by contract, if required. Communications to the above address will receive immediate attention.

GARDEN SEEDS of a superior quality may be had in Collections of 1*l.*, 2*l.* or 3*l.* worth, containing a supply for the whole year, upon application to the Subscriber. Also, a large Collection of the best FLOWER SEEDS, in assortments of 25 kinds for 6*s.*; 50 for 10*s.*; 100 for 18*s.* Larger quantities in proportion. Orders amounting to 2*l.* and upwards delivered to any station on the South Eastern Railway.

WILLIAM MASTERS, Exotic Nursery, Canterbury.

NEW VERBENA, TURNER'S "MRS. MILLS."—The following opinion of the above is from Glenny's Garden Almanack: "This variety was exhibited at the Shacklewell Dahlia and Seedling Show, and at Birmingham, where it was awarded First Class Certificates. It is unquestionably the best formed of all we have seen in cultivation; the petals nearly touch each other at the outer edge, and the outline, though not perfect, is nearer to it than any we have seen; it is one of the colours that come near to blue." It is a beautiful pot plant, and equally desirable for bedding, being of close habit, free flowering, and fine foliage. Plants in spring, 5*s.*

Royal Nursery, Slough.

BASS AND BROWN'S GENERAL SPRING CATALOGUE, for 1850, of SEEDS AND PLANTS, will be supplied free by post on application.

In their Catalogue will be found a rich assortment of the newest and best articles which can be procured, and contains the usual descriptive and useful information, both of seeds and plants, provided in their previous annual Spring Catalogues.

CHOICE VEGETABLE SEEDS.

Complete Collections of the best and newest sorts, in proportionate quantities of each, for large and small gardens, at per collection, 1*l.*, 2*l.*, and 3*l.* If any sorts are not required, enlarged quantities of others will be sent.

A Collection may be had of good sorts for a small garden, for 10*s.* 6*d.*

SELECT AND CHOICE FLOWER SEEDS,

Free by post, with full instructions for sowing, heights, colours, &c.

	s.	*d.*
100 varieties best and newest Annuals	15	0
50 varieties for 8*s.* 6*d.*, 30 for 5*s.* 6*d.*, 20 for	4	0
20 varieties best dwarf kinds, in larger packets, suited for filling beds on lawns, 7*s.* 6*d.*, or 12 do. for	5	0
20 varieties best Greenhouse Annuals, 7*s.* 6*d.*, 12 for	5	0
20 varieties choice Greenhouse Perennials, 10*s.* 6*d.*, 12 for	7	6
20 vars. choice hardy Biennials and Perennials, 7*s.* 6*d.*, 12	5	0
30 varieties imported German Stocks	5	0
20 ditto ditto, 3*s.* 6*d.*, 12 for	2	6

SUPERB NEW RANUNCULUSES,

Free by post, with printed instructions for planting and culture.

50 choice new varieties, named	40*s.*	0*d*
25 ditto ditto	22	6
50 fine older varieties, named	15	0
100 finest mixed, 10*s.*; 100 fine (free by post, 6*s.*)	5	0

GLADIOLUS, EARLY VARIETIES,

To flower in the open air from June to August, and should be planted without delay.

12 splendid named, 10*s.* 6*d.*, or post free, 11*s.* 6*d.*
12 vars. beautiful hybrids, 6*s.*, or post free, 7*s.*
Beautiful mixed hybrids, 3*s.* 6*d.* per doz., or post free, 4*s.* 3*d.*

GLADIOLUS, LATE VARIETIES,

To flower in the open ground from August to November.

Gandavensis, large roots, 9*d.* each, or 7*s.* 6*d.* per dozen; Brenchleyensis, each, 5*s.*; autumnalis, 1*s.* 6*d.*; formosissimus, 1*s.* 6*d.*; psittacinus sanguineus, 9*d.*, or 7*s.* 6*d.* per dozen; ramosus, 9*d.*; rosa mundi, 1*s.*; Splendens, extra superb, 3*s.* 6*d.*; Queen Victoria, 2*s.* 6*d.*; Prince of Wales, superb, 2*s.* 6*d.*; vitellinus, 2*s.* 6*d.*; speciosus, 2*s.* 6*d.* The above are all superior varieties, including very superior splendid new. The 12 for 21*s.*

MISCELLANEOUS.

GERANIUMS, 12 new vars. of last season, strong	42*s.*	0*d*
" 12 first-rate older kinds	15	0
" 20 ditto ditto	25	0
" fine older vars., per doz.	6*s.* to 9	0
" 12 choice fancy varieties	15	0
CARNATIONS, 12 pair choice show varieties	20	0
PICOTEES, 12 pair choice show varieties	20	0
PINKS, 12 pair choice varieties	10	0
ROSES, STANDARDS, 12 splendid varieties	20	0
" DWARFS, 12 fine, 9*s.*; 12 superior ditto	12	0
" " 12 choice Autumnal vars.	18	0
" CLIMBING, 12 fine varieties	9	0
HARDY HERBACEOUS PLANTS, 100 showy varieties	30	0
" " " 50 ditto	18	0
" " " 100 ditto, including new and superior sorts	50	0
" " " 50 ditto ditto	32	0
HARDY ROCK PLANTS, 25 fine varieties	12	0
HARDY FLOWERING SHRUBS, 20 ditto	12	0
HOLLYHOCKS, 20 proved fine double vars.	12	0
ANTIRRHINUMS, 12 fine vars., 6*s.*; 12 superior do.	10	0
PHLOX, 12 fine vars., 6*s.*; 12 superior do.	9	0
GREENHOUSE PLANTS, 50 select and showy vars.	50	0
" 25 do., 28*s.*; 12 do., 15*s.*; 12 extra choice	25	0
RHUBARB, Mitchell's Royal Albert, each	1	6
" Myatt's Linnæus, each	1	6
" " Victoria, per doz., 9*s.*; each	1	0
" Ruiford's Giant and Youell's Tobolsk, p. doz.	5	0
GOOSEBERRIES, 20 finest prize named vars., 15*s.*; 12 do.	9	0
" fine varieties, named, per doz.	4	6
CURRANTS, finest sorts, per doz.	3*s.* to 4	0
ASPARAGUS, fine Giant, per 100	3	0

CATALOGUES OF ROOTS free by post, on application, comprising our superb new Ranunculuses, Gladioluses, &c.

☞ *The Branch Railway being now open to Sudbury, and the Eastern Union continued through to Norwich, we shall now deliver goods carriage free to London, Norwich, or any station on the line. With goods amounting to not less than 40s., plants or seeds presented gratis.*

Post-office orders payable to either BASS and BROWN or STEPHEN BROWN. Remittances requested from unknown correspondents.

Seed and Horticultural Establishment, Sudbury, Suffolk.

TO FLORISTS AND OTHERS.

TO BE DISPOSED OF, on reasonable terms, the Lease, Stock, &c., of a FLORIST AND SEED BUSINESS, situate 5 miles from the City, and in one of the best neighbourhoods round London. The greater portion of the premises are newly erected, and comprise a Dwelling-house, commanding Show-house, and Seed-shop, with Stove and five Plant-houses, Pits, &c., the whole of which are heated by Hot Water, on the most approved principle. The Glass may be either taken at a valuation with the stock or at a rental.—For further particulars, apply to Mr. D. A. RAMSEY, Auctioneer, &c., Brompton Nursery, Brompton, Middlesex.

Now ready,

AYRES' AND MOORE'S CULTURAL AND DESCRIPTIVE SEED LABELS.

OPINIONS OF THE PRESS.

"One of the most ingenious and useful contrivances of the day; one which every seed vendor in Great Britain, of whatever class, should make up his mind to adopt."—Gardeners' Journal, December 22, 1849.

"Particularly useful, and therefore deserving of general patronage. * * * We recommend purchasers to obtain their seeds packed in these useful envelopes."—Cottage Gardener, December 22, 1849.

"A series of seed labels, or seed papers, for all the popular biennial and perennial flower seeds—for general use. * * * We strongly advise seedsmen to use these instructive seed papers, which must come into general use as soon as they become known, either with vendors or the purchasers of seeds."—Horticultural Magazine, January, 1850.

"The value of information of this kind to amateurs cannot be over-estimated, and we anticipate every seedsman in the kingdom will avail himself of their use."—Durham Advertiser.

"As these Descriptive and Cultural Labels cost very little more than the paper, *the purchaser can insist upon having them*; they will then speedily become general."—Liverpool Standard.

Published wholesale by D. M. AIRD, 170, Fleet-street, London, from whom specimens and lists may be obtained.

COLE'S SUPERB DWARF RED CELERY.

WM. PORT AYRES begs to inform his friends and the public that he can supply the above SEED of his own growth, in sealed packets, with "Directions for Cultivation," at 1*s.* each. This Celery may also be had genuine of the following Seedsmen, &c.:

Warner, Cornhill
Hurst and M'Mullen, Leadenhall-street
Flanagan and Son, Mansion-house-street
Noble, Fleet-street
Charlwood, Covent-garden
Hairs, St. Martin's-lane
Clarke, Bishopsgate-street
Hamilton, Cheapside
Chartres, King William-street
Henderson, Pine-apple-place
Glendinning, Turnham-green
J. and C. Lee, Hammersmith
Fairbairn, Clapham
Pamplin, Lea-bridge-road
Low and Co., Clapton
Downie and Laird, Edinburgh
Garraway and Mays, Bristol
F. and J. Dickson, Chester
Urquhart and Son, Dundee
Pontey, Plymouth
Rendle and Co., do.
Veitch and Son, Exeter
Lucombe, Pince, and Co., do.
Watkinson, Manchester
Darby, Cirencester
Roy, Aberdeen
Ballantyne and Co., Dalkeith
Smith, Worcester
J. C. Wheeler, Gloucester
Janson and Finney, Gateshead
Burgess and Kent, Newcastle, Staffordshire
A. Stewart, Kelso
Backhouse and Son, York
Perkins, Northampton
Barnes, Stowmarket
Turner, Slough
Epps, Maidstone
Fisher, Holmes, & Co., Sheffield
F. Farrell, Dublin
S. Farrell and Co., Belfast
Cuningham, Liverpool
Dickson and Turnbull, Perth
Waterer, Knap-hill
Little and Ballantyne, Carlisle
Gregory, Cirencester
Silverlock, Chichester
Griffin, Bath
Standish and Noble, Bagshot
Page and Son, Southampton
Cuparn, Newark, Notts
Cattell, Westerham, Kent
Sutton and Son, Reading
Hooper and Co., Covent-garden
Ewing, Norwich
Moore, East Dereham, Norfolk
Mountjoy, Ealing
Widnall and Davis, Cambridge
Sharp, Wisbeach
Pearson, Hampstead-road
Pope, Gib Heath, Birmingham
Wood, Coppice, nr. Nottingham
Keynes, Salisbury
Ferguson, Aylesbury
Hirst, Dewsbury.

AYRES' SUPERB LATE WHITE CELERY.—This is a small and very excellent Celery, remarkable for standing very late in the Spring without running to seed. It is of first-rate quality, and is very strongly recommended. The supply of Seed this season is limited. 2*s.* per packet, post free.

DANESBURY PARK GREEN FLESH MELON. This Melon is recommended as being superior in every respect to the Beechwood, very hardy, a first-rate bearer, and of very superior flavour. 2*s.* 6*d.* per packet, post free Should any purchaser be disappointed in this Melon, W. P. A. will return the purchase-money, so confident is he of its superiority. —The usual discount to the trade.

PATRICK'S SUPERIOR FRAME CUCUMBER. W. P. A. has been fortunate in securing a few seeds of this old but first-rate Cucumber. It can be confidently recommended as being one of the very best in cultivation, suitable alike for POTS and FRAME FORCING, and quite at home upon the open ridge. It is very hardy and prolific, very dark, slightly ribbed, with black spine; length, 12 to 20 inches. Packets, post free, 2*s.* 6*d.*

SNOW'S SUPERB WINTER WHITE BROCCOLI.—A few pounds of this superb Broccoli has been received direct from Mr. Snow, and therefore it can be warranted genuine. The seed will be sent out *neat* as received from Mr. S., so that its vegetative power may be depended upon as being at the least 75 per cent. Packets, post free, 2*s.* 6*d.* each.

MISCELLANEOUS SEEDS.—The following can be recommended as being of first-rate quality:

BROCCOLI.

	Per packet—*s.*	*d.*
Elsden's superb Winter White	2	0
This variety is not so handsome as Mr. Snow's, but is more hardy, as it stands the generality of winters uninjured.		
Elsden's April White Mammoth	1	0
A large and excellent late kind.		
Hammond's true White Cape	2	6
A genuine stock of this first-rate autumn Broccoli.		
Walcheren, true Dwarf	2	6
Miller's Dwarf	1	0
Very late, and being small, may be planted at 1 foot apart. Recommended for amateurs.		
Wilcove, true	1	0
Green Cape, true	1	6
From a first-rate stock.		
New Hearting Borecole	1	0
Buda Kale, true	1	0
Brussels Sprouts, true Dwarf	1	0

	Per packet—*s.*	*d.*
Paragon Cabbage	1	0
Walcheren Cauliflower	2	6
Berkshire Green Cos Lettuce	1	0
Ayres' Giant Curled Parsley	0	6
Dwarf Drumhead Savoy, true	1	0
True Ridge Cucumber.	1	6
	Per quart.	
Hair's Dwarf Green Mammoth Knight's Marrow Pea	5	0
The finest Pea known.		
Isherwood's Railway	1	6
The earliest Pea known.		
Bishop's New Long-podded Dwarf	1	6
A first-rate kind.		
Burbidge's Eclipse	1	6
Very dwarf.		
Auvergne, true	1	0
Fairbeard's Surprise, and Champion of England Peas, each	1	6
British Queen, Thurston's Reliance, and Knight's Pea	2	0

*** W. P. A. begs to direct attention to his *priced* Catalogue of Vegetable Seeds, from which purchasers may make their *own selection, cheaper than at the cheapest of the cheap advertising houses.* All Seeds from this establishment will be sent out with printed labels, bearing full cultural directions. A select collection of Stove and Greenhouse Plants, Heaths, Azaleas, Pelargoniums, and Florists' flowers generally, at moderate prices. A remittance indispensable from unknown correspondents. Post-office orders on Greenwich payable to

WILLIAM PORT AYRES, Brooklands Nursery, and No. 4, Tranquil Place, Blackheath, Kent.

COLE'S SUPERB SOLID RED CELERY.—This fine Celery has given such entire satisfaction, not only for the great size to which it attains, but for its unequalled crispness and exquisite nut-like flavour, that it needs no further recommendation. Seed may be had genuine from the grower, WILLIAM COLE, Dartford, Kent, in sealed packets, 1*s.* 6*d.* each, or the amount in postage stamps; also of Messrs. J. and J. FRAZER, Leyton, Essex; Mr. BUNYARD, Maidstone, Kent; Mr. CRIPPS, Tunbridge Wells, Kent; Mr. DENYER, 82, Grace-church-street, London; Mr. TILEY, 16, Pulteney-bridge, Bath; Mr. FRANCIS, Hertford; Mr. MILNER, Bradford, Yorkshire; Messrs. J. and J. FAIRBAIRN, Clapham, near London; Messrs. GARAWAY, MAYES, and Co., Bristol; and of Mr. SMITH, Westerham, Kent; Mr. FONTEY, Nurseryman, Plymouth; and Mr. IVERY, Nurseryman, Peckham, Surrey.

*** A liberal allowance to the trade.

W. COLE further states, in justice to himself and agents, that his entire stock of seed saved in 1849 is in his possession and that of his agents, from whom it may be had new and genuine, bearing his name and address printed on the envelope.

"BROMHAM HALL" GREEN FLESH MELON, Is the finest flavoured in the World.

EDWARD TILEY having become possessed of the whole stock of Seed of that very superior Melon called "BROMHAM HALL" GREEN FLESH MELON, respectfully invites the attention of the public generally, to the superiority of this over all other Melons ever yet sent out. It was forwarded to the Editor of the *Gardeners' Chronicle*, July 22d, 1848, for his judgment, and he was of decided opinion that the Bromham Hall Melon was the finest flavoured fruit he had ever tasted. It was exhibited at the Chiswick Exhibition, July 11, 1849, where it was awarded by the judges the Silver Knightian Medal for the best flavoured green flesh Melon. It was again sent to Dr. LINDLEY, August 11th, 1849: "We have received your Bromham Hall Melon, it was much over ripe, nevertheless it was by far the best flavoured Melon we ever tasted." It was again exhibited at the Horticultural Society's Rooms, Regent-street, September 4th, 1849, and was again pronounced by the judges to be the best flavoured Melon they ever tasted, and was awarded the Banksian Medal. The fruit is very handsome—it is round shaped, hollow crown, beautifully netted, thin skin, flesh very firm and solid, melting flavour, very free setter, and abundant bearer. Weight, from 3 lbs. to 4½ lbs. It has been found to do well during the summer, without bottom heat. It may be as easily grown by an amateur in a frame as the common Vegetable Marrow. There is a great advantage in it for the fruiterer, as it will retain its fine flavour for a considerable time after being cut. Sold in packets of 6 seeds, 2*s.* 6*d.*; larger do. of 15 seeds, 5*s.* Also the following fine varieties can be highly recommended all true:

	s.	*d.*	
Queen Melon	1	6	per packet.
Bowood Green Flesh	1	0	"
Beechwood do.	1	0	"
Windsor prize do., 1*s.*; Emperor	1	0	"
Fleming's Trentham Hybrid	1	0	"
Duncan Green Flesh do. improved	1	0	"
Hampton-court Green Flesh	1	0	"
Egyptian do. do. improved	1	0	"
First prize Cucumber, Victory of Bath	2	0	"
Gordon's White Spine	1	6	"

These two Cucumbers are unequalled for their superiority for exhibition, having been thoroughly proved to the satisfaction of hundreds of growers. They will be found to grow as well out of doors on a ridge, or against a wall, during the summer months, as a common ridge Cucumber; also equally as productive. Length, from 20 to 26 inches.

N.B. It is with regret we state that numerous parties have been disappointed by purchasing an inferior variety under the name of Victory of Bath. E. T. begs to say it has proved not to be the true variety sent out by him.

Lord Keynon's Favourite (winter Cucumber), a very scarce variety. It is the best for winter cultivation ever yet grown; it is very hardy, and free setter, and never shanks off; fruit very handsome. Length, about 14 inches. 2*s.* 6*d.* per packet. A packet of each of the three varieties, 5*s.*; if preferred, also a packet of the Bromham Hall Melon will be included with the three Cucumbers for 7*s.*—Sold by EDWARD TILEY, Nurseryman, Seedsman, and Florist, 16, Pulteney-bridge, Bath. A remittance must accompany the order, either in cash or 1*d.* postage stamps.

GLASS FOR CONSERVATORIES,

JAMES PHILLIPS AND Co. have the pleasure to hand their New List of Prices of GLASS for Cash.

CUT TO SIZE.

16 oz. from 2*d.* to 3½*d.* per foot.		
21 " 3½ " 5 "		
26 " 3½ " 7½ "		
32 " 4 " 9½ "		

SHEET SQUARES.

	s.	*d.*
In boxes of 100 feet.		
Under	6 by 4	12 6
6 by 4 and under	7 by 5	16 6
7 by 5 "	8 by 6	18 6
8 by 6 "	10 by 8	20 6

100 feet and 200 feet cases of large Sheet Glass, for cutting up, at 2½*d.* per foot. British Plate Glass, from 1*s.* 2*d.* to 2*s.* per foot, according to size.

HARTLEY'S PATENT ROUGH PLATE, packed in boxes of 50 feet each:

6 by 4 and 6½ by 4½ ... 10*s.* 6*d.*	7 by 5 and 7½ by 5½ ... 12*s.* 0*d.*
8 by 6 " 8½ by 6½ ... 13 6	9 by 7 " 10 by 8 ... 15 0

SHADES FOR ORNAMENTS.

MITCHELL'S MINERAL ANTISEPTIC BLACK PAINT. (Sole Agent for same.)

PATENT GLASS PENS.

ALABASTER VASES, WAX FLOWERS, &c.

ROUGH PLATE GLASS FOR WINDOWS, SKYLIGHTS, AND FLOORS.

¼-inch thick ... per foot	1*s.* 0*d.*	⅜-inch ... per foot	2*s.* 6*d.*
⅜-inch ...	1 1	½-inch ...	4 0
½-inch ...	1 6		

PATENT ROUGH PLATE TILES.

¼-inch thick ... each	0*s.* 11*d.*	⅜-inch ... each	7*s.* 7*d.*
½-inch ...	1 3	½-inch ...	2 0

SHEET GLASS TILES AND SLATES.

	16-oz.	21-oz.	26-oz.	32-oz.
Tiles made of Sheet Glass ...	8*d.*	10*d.*	1*s.*	1*s* 4*d.*
Slates, 20 inches by 10 ...	10*d.*	1*s.*	1*s.*4*d.*	1*s.* 8*d.*

Slates are kept in stock of the usual sizes, and made to any dimension and substance.

GLASS MILK PANS, from 2*s.* to 6*s.* each; METAL HAND-FRAMES, Propagating and Bee Glasses from 2*d.* each; Grape Glasses; Cucumber Tubes, 1*d.* per inch; Peach Glasses, 10*d.* each; Wasp Traps, 3*s.* 6*d.* per dozen; Pastry Slabs, Hyacinth Glasses and Dishes, Fish Globes, Plate and Window Glass of every description. Lamp Shades. LACTOMETERS for trying the quality of Milk, 4 tubes, 7*s.* 6*d.*; 6 tubes, 10*s.* Self-Registering Thermometers for Greenhouses.

Estimates and List of Prices forwarded on application to their Warehouse, 116, Bishopsgate-street Without, London.

HARTLEY'S PATENT ROUGH PLATE GLASS FOR CONSERVATORIES, &c.

See Article in THE GARDENERS' CHRONICLE of Saturday, December 8, 1849.

"Continued experience leaves us no room to doubt that this is the best material yet produced, and that it will in time supersede glass of all other kinds for the greater part of Gardening purposes." . . . "As for the article substituted for Rough Plate . . . it is wholly unfit for any horticultural purpose." . . . "The best sample of it which we have yet seen was Manufactured by Messrs. HARTLEYS, AND SOLD BY MESSRS. JAMES PHILLIPS & CO., 116, BISHOPSGATE STREET."

RENDLE'S DESCRIPTIVE CATALOGUE OF SEEDS can still be obtained GRATIS, on receipt of two penny stamps, to pay the postage.

OPINIONS OF THE PRESS.

Dr. LINDLEY, in the *Gardeners' Chronicle*, Dec. 22, 1849, says, "*This contains lists of good vegetables, with useful notes appended to the names of many of the sorts. . . . It is a well-arranged Catalogue, and will be found of service to all purchasers of Seeds.*"

The Editor of "The Midland Florist," for January, 1850, says, "*We have just received the General Catalogue of Garden, Agricultural, and Flower Seeds, sold by William E. Rendle and Co., Plymouth, which, from its excellence, well merits something more than a passing notice, and happy shall we be from time to time (with Messrs. Rendle's permission) to extract some of its valuable information for the benefit of our readers. . . . The Flower Seed List is peculiarly comprehensive, and gives to each variety its scientific name, hardihood, time of duration, colour, height, and time of flowering. Our readers will thus see that, from its immense utility, we can scarcely say too much in its recommendation; and we are sure that the name of the eminent firm will be a sufficient guarantee that every article they send out will not only be true to name, but also of the best possible quality.*"

Apply to WILLIAM E. RENDLE and Co.,
Seed Merchants, Plymouth.

HOME GROWN SEEDS.

SUTTON'S NEW PRICED CATALOGUE OF HOME GROWN SEEDS, being a careful selection of only the very best kinds of KITCHEN GARDEN, AGRICULTURAL, and FLOWER SEEDS, with prices affixed to each article, will, it is presumed, be found the most useful and convenient of any yet presented to the public.

All purchasers of Seeds would do well to peruse this Catalogue, as the low prices therein quoted will enable them to effect a great saving in their expenditure. It will be sent gratis on the receipt of a penny stamp, for postage.

MESSRS. SUTTON'S COMPLETE COLLECTIONS OF KITCHEN GARDEN SEEDS are now in course of delivery at the undermentioned prices. No. 1, 2*l.* 2*s.*; No. 2, 1*l.* 1*s.*; and No. 3, 12*s.* 6*d.*—Reading Seed Warehouse, Reading, Berks.

DARTFORD NURSERY, DARTFORD, KENT.

J. D. PARKS offers to the public some fine Standard Full-trained PEACHES, 2 years moved, and finely rooted, good melting sorts, at very low prices. Also large Limes, Poplars, Planes, Horse Chestnuts, Thorns (various), Acer macrophylla, Spruce, Larch, Silver and Scotch Firs, some of them 20 feet high, at very reduced prices, to clear the ground. Also, Hornbeam, some tall, and some bushy; Weeping Ash, &c.

A highly improved SEEDLING SCARLET GERANIUM, raised from the old Globe, or Compactum, that being a pale scarlet, and the seedling very bright. Price 5*s.*, for strong plants in March. They have been shown to a London nurseryman, who has ordered two plants.

J. D. P. is also the author of a pamphlet on "The Treatment of a Deranged Spine or Back," price 1*s.*, which can be sent anywhere by post, with a 2*d.* stamp. J. D. P. also undertakes the cure of deranged spine.

STRONG THORNS AND FOREST TREES.

ISAAC DAVIS, Larkfield Nursery, Wavertree, near Liverpool, having to clear off this year a portion of his Nursery Stock, consisting of 100,000 strong transplanted Thorns, a few thousands of Oak, Ash, Elm, Scotch Fir, &c., &c., from 3 to 5 feet, he would be glad to sell them very cheap.—Jan. 19.

SEEDLING RANUNCULUS ROOTS.—Selected show varieties, containing edged, spotted, striped, mottled, and beautiful self colours, of 12 years' selection, and which have gained upwards of 40 first prizes, are now offered in one mixture, for the first time, at 21*s.* per 100.

SAMUEL WALTERS, Hilperton, Trowbridge, Wilts.

SEED POTATOES.

CHARLES SHARPE has much pleasure in announcing that he has got the under-mentioned sorts of POTATOES to offer again this season, which have for the last four successive years given general satisfaction in all parts of the kingdom. The first six sorts are very early and productive; those marked thus * are the best sorts for Frame Forcing; they are offered at the following prices, packing included:

Per bushel of 56 lbs.		Per bushel of 56 lbs.	
*Early Oxford Potatoes ...	8*s.*	Early Manleys	7*s.*
*Early Round Frame ...	8*s.*	Early Cockneys	7*s.*
Early Ash-leaved Kidney	8*s.*	Fox's Seedling	7*s.*
Second Early Potatoes for Winter and Spring use:			
American Native Potatoes	5*s.*	Kentish Pink Kidney ...	4*s.*
York Regents	5*s.*	Forty Fold	4*s.*

Orders will be forwarded on the receipt of a Post-office order, and great care will be taken to ensure their safe delivery. A liberal allowance to the Trade.—Wisbeach, Cambridgeshire.

The Gardeners' Chronicle.

SATURDAY, JANUARY 19, 1850.

MEETINGS FOR THE ENSUING WEEK.

MONDAY,	JAN.	21	Pathological	3 P.M.
			Medical	3 P.M.
			Statistical	8 P.M.
			British Architects	8 P.M.
TUESDAY,	—	22	Civil Engineers	8 P.M.
			Medical and Chirurgical	8½ P.M.
			Zoological	9 P.M.
WEDNESDAY,	—	23	Society of Arts	8 P.M.
			Geological	8½ P.M.
			Royal Society of Literature	4 P.M.
THURSDAY,	—	24	Numismatic	7 P.M.
			Antiquarian	8 P.M.
			Royal	8½ P.M.
FRIDAY,	—	25	Philological	8 P.M.
			Royal Institution	8½ P.M.
SATURDAY,	—	26	Westminster Medical	3 P.M.

IF our readers will take the trouble to refer back to our volume for 1848, p. 254, they will observe an article entitled the "Florist and the Rose-maggot;" requesting our particular attention to the history of this destructive insect, with reference to the observations then recently published in the "Florist," and extracted thence into our columns of the same year, p. 191, announcing the discovery, in little cylindrical burrows in the dead snags of Rose bushes, of the winter-quarters of a small, black-headed maggot, which was there asserted to be the young state of the Rose-maggot applied, by the way, to the larvæ of any of the numerous small species of moths which burrow into the Rose-bud and eat out its heart). In a subsequent page (299) a woodcut is given of a Rose-snag cut open, showing a number of cells, each of which is said to have been the birthplace of these destructive larvæ.

Since the publication of these several notices our attention has been directed to this subject, and the result of our examinations renders it necessary for us to advise the gardener not to cut off the dead ends of these snags; since, although in a very few instances, we have met with the little black-headed maggot in question, yet in the majority of cases we have found that the burrows are inhabited, and, in fact, formed by a different insect, whose economy is in the highest degree singular, and which deserves the protection of the gardener, from the benefit which it confers upon him, by destroying great numbers of his enemies, the plant-lice. But this is not the whole of the result of our examinations, for we have thereby picked up some facts in regard to the natural history of four or five other species of insects inhabiting the same situation, the economy of which has hitherto remained unknown, or has baffled the researches of entomologists; so that we may safely affirm that these Rose-snags offer a mine of interesting observation to any person disposed to regard such investigations in their proper light.



CEMONUS UNICOLOR magnified, and of the natural size, carrying an aphis in its mouth, together with a Rose-snag cut open, showing a provisioned cell, a cell with the full grown larva, and one with the insect in its cocoon.

In the present article we shall confine ourselves to the species which, from its curious economy, may be aptly termed the APHIS SEXTON of the Rose-snags. On the 20th of June, 1848, whilst looking over some standard Roses, to examine the state of the dead ends, which had been cut off obliquely, we observed a little glossy black fly, full of activity, alight on the top of one of the twigs, and as suddenly creep into one of the little circular burrows which we had observed formed in the soft pithy part of the twig. Our attention was immediately roused, not only by the action of the insect itself, but also from the fact that it carried some small green object in its mouth. It soon flew out of the hole, and after patiently watching the stem we saw it again approach, but more carefully, in consequence of our being so close to its burrow. We had, therefore, an opportunity of observing that its load was a green aphis, which it at length took into its hole, as it had done with the former.

This observation let us into the whole secret of the manufacture of the burrows, the insect by which, and the object for which, they were made. Our little black fly was one of the small burrowing wood wasps, and it made these holes for the purpose of fitting up a cell for the abode of its progeny, still unborn, the food of which when hatched was to consist of the store of aphides which it was then engaged in burying. Such is the course of proceeding of many species of sand and wood wasps, whose economy has been often observed and is well known; but this species presented several circumstances worthy of notice. The aphis was carried by the wasp in its jaws, whereas many of the allied species make use either of their fore, middle, or hind legs to clasp their prey, but here it is so weak and so light in weight that the wasp is able to carry it without the assistance of its legs. Several aphides are thus deposited in the little oval cell previously formed at the bottom of the burrow, together with an egg, and then a covering is fixed over the whole; another cell is then filled, which is of course nearer to the top of the twig than the first, and so on several cells are thus successively formed and filled. It is important to notice that the imprisoned aphides are not killed by the parent wasp (in which case they would become putrid), but that the young larvæ, when hatched, have a store of *fresh* food; they do not, however, keep their victims long in suspense, as they are quickly hatched and are very voracious; indeed, by the end of July or August they have attained their full size and entirely consumed their stock of food, which the parent fly has the instinct to apportion to their entire wants; but what is sufficiently curious, although they are full grown at this early period (when the heat of the weather is sufficient to cause them quickly to undergo their transformations), yet they remain unchanged as larvæ, all through the winter, in the shape of small yellow footless grubs, enclosed in a shining silken kind of case, becoming pupæ in the spring, and assuming the perfect winged state about the end of May. We have reared the same insect in burrows formed in the pith of Elder sticks stuck in our garden; and Mr. F. SMITH states that it also burrows into bramble sticks, depositing small green caterpillars in its cells.

This wasp, which belongs to the Hymenopterous family of Crabronids, is named, from its uniform black colour, Cemonus unicolor. It varies from rather less than a quarter to more than a third of an inch in length; it is slightly covered with fine silvery down on the head and thorax, and has the abdomen glossy, finely punctured, and affixed to the thorax by a curved footstalk scarcely longer than the remainder of the first segment. The male differs from the female in having more of the silvery down on the face. It is one of our commonest of insects. *J. O. W.*

ONCE upon a time the great object of the English Gardener was to make what he called a COLLECTION of plants. If he had a greenhouse he would have a collection of Heaths, or Pelargoniums, or Mesembryanthemums, or Aloes; if the master of a stove it was in that case his ambition to get together a collection of Passion-flowers, or Ferns, or Ixoras, or something of the sort. If confined to an acre of ground he would have a collection of Apples, or Pears, or Gooseberries; the owner of a few rods of land would be content with a collection of Peas, or Lettuces, or Potatoes. In any case, a collection was the great end to be attained. In forming these collections men did not consider whether the plants were useful or useless, handsome or ugly, different or identical; all they wanted was a long list of names; and a proud man was he who could say that he reckoned a larger collection of Gooseberries, or Apples, or Potatoes, than his neighbour. The addition of a "seedling" or two, of his own raising, elevated him to the summit of horticultural happiness. *Felix ter et amplius!*

We have heard of one gentlemen who numbered 1200 Roses in his list, among which were about 350 wild Briars, some of which had a little hair on their leaves, and some had none, some had double teeth, some had single, one sort had ovate hips and another oval, and so on. There exists we believe to this day a collection of Pæonies formed upon the same enlightened principle; and we have no doubt that similar collections of Daffodils, Michaelmas Daisies, or Catmints, may be found in some sequestered garden.

This harmless folly, like many other crotchets, destitute of all elements of longevity, could scarcely exist, one would think, in this utilitarian age. We are therefore witnessing at the present day collections giving way to selections; "hard pruning" applied in all directions to those old bushes of barren half dead wood; and a few select plants, thoroughly well grown, replacing the empty pots and moribund sticks which invariably characterised the collections of our worthy forefathers and their ancient sons as long as they remained among us. It is therefore not a little curious to find a race of worthy men still unconscious of the change in public feeling, and continuing to publish interminable lists of this and that, as if the rage for collections was as fresh as ever.

Some recent lists of nurserymen and seedsmen afford amusing examples of this. One grower of Roses offers 607 sorts of that flower; another, 850; a Potato-saleman's catalogue has 160 sorts; a Dahlia-grower's 3 or 400; a Geranium-grower's, as many; a seedsman invites attention to his 38 sorts of Cabbage and 61 sorts of Peas!

Can extravagance go further than this? Should any one be surprised at the murmurs which are just beginning to make themselves heard on the part of buyers, or that a host of Rose-lovers should already have arrayed itself on the side of our correspondent "Crito?" Do the gentlemen who offer these wares to the public seriously think there is common sense in thus bewildering their customers? that the names under which their "sorts" are sold indicate real differences of quality? The idea is absurd. Sixty sorts of Peas! Why, there is not a dozen really worth growing; the rest are little more than fudge. We should be curious to know how many sorts of these Peas are provided from one bag of Charltons, bought of one of the great London seedmerchants. It would be worth while for an idle man to get a complete set of such Peas, to raise them, compare them, and report the result for the public good.

In this respect buyers are greatly in want of such

a guide as the French possess in their invaluable "Bon Jardinier." There we find the whole number of Peas, reputed as distinguishable, to amount to 34, and of these many are distinctly shown to be of no importance. Perhaps we may make it our own business to put an end to the absurdity belonging to English vegetable seed-lists.

It should always be borne in mind that, to render a variety worth permanent cultivation, it should possess some peculiar quality in which it distinctly excels all other varieties previously known. To distinguish it merely because it is "a seedling," as some do, is sheer anility. Those who are every year bringing forward what they call novelties are bound to show that they have been proved by competent judges to be not only different from, but better than anything previously known; and if buyers were wise, they would refuse to purchase in the absence of satisfactory evidence as to this point.

What is true of mere varieties, such as those of common kitchen garden plants, is equally true of the species belonging to classes holding a more aristocratical position in vegetable society. The possessor of a park admires the magnificence of the Conifers which he sees in the possession of his country neighbour. Let him set about forming a collection of Conifers, and what does he get? many magnificent kinds, some of very inferior beauty, and many of no interest whatever. The latter ruin the appearance of the others, and the effect which was looked for is marred. Take, for instance, a very good list of Conifers now before us; who is there that would wish to become possessor of such Pines as those called *monophylla, tortuosa, pungens, mitis, inops, Banksiana*, the tag-rag and bobtail of the race? In this, as in all cases, a selection is admirable, a collection an absurdity. So with Orchids, now much and deservedly the fashion. In that glorious order are found species of the most brilliant colours, the most exquisite perfume, and the strangest forms—each class admirable in its peculiar way. But the cultivator who proceeds to fill his house with these plants will be much deceived if he imagines such qualities to be universal, or even usual, in the race. About 2000 species are known to us, with a legion of varieties, and certainly there cannot be more than one-sixth of that number which will repay the grower for his trouble. In the great genera of Epidendrum, Catasetum, Dendrobium, Oncidium, Pleurothallis, Stelis, Oberonia, and Maxillaria, are to be found swarms of species which would be thrown out of a bit of rock-work in a flower garden, if they could be cultivated there. He then who spends his coin in making a collection of Orchids, will be inevitably disappointed; he alone who forms a good selection will be rewarded.

We need not say that these remarks are made with reference to horticulture, and not to botanical researches. The cultivator has one object in view, the botanist another; and it will often happen that the qualities which interest the one in the highest degree are precisely those which the other disregards. But such botanists are not buyers of live plants; their herbaria are their gardens, and very satisfactory ones too. It is therefore clearly the interest of nurserymen and seedsmen to take off their botanical spectacles, and to look at what they sell with the same eyes as their customers. They will cultivate that only which is worth cultivating; they will catalogue those things only which a buyer ought to buy; all the rest they will relinquish to the student of the "Curiosities of Horticulture." If they will do that, we shall soon see the lists of plants and seeds cut down to reasonable dimensions, and they will no longer be, as many of them now are, mere mazes, in which one could not find his way even with the clue of an ARIADNE.

CHEVREUL'S SCHEMES OF FLOWERS FOR MAY.

1, White Candytuft, red Tulip or double Lychnis (Lychnis sylvestris), white Candytuft, red Tulip or double Lychnis, &c. 2, White Candytuft, red Tulip or double Lychnis, yellow Alyssum; then again white Candytuft, and so on. 3, Blue Iris, white Iris, blue Iris, white Iris, &c. 4, White Iris, Oriental Poppy (Papaver orientale), white Iris, Oriental Poppy, &c. 5, White Iris, Oriental Poppy, blue Iris, Oriental Poppy, then repeat. 6, Red Valerian, white Valerian, red Valerian, white Valerian, &c. 7, White Valerian, Oriental Poppy, white Valerian, Oriental Poppy, &c. 8, Red Valerian, blue Iris, red Valerian, blue Iris, &c. 9, Red Pæony, white Pæony, red Pæony, white Pæony, &c. 10, Oriental Poppies alternating with Gueldres Roses produce a good effect. 11, Gueldres Roses, Flax, Gueldres Roses, Flax, &c. 12, Blood-red China Rose (Rosa semperflorens), pink China Rose, blood-red ditto, pink ditto, &c. 13, Pink China Rose, white ditto, pink di to, white ditto, &c. 14, White China Rose, pink ditto, white ditto, red ditto, and so on, beginning again. 15, Red China Rose, pink ditto, white ditto, red ditto, pink ditto, white ditto, &c. 16, Pink China Rose, red ditto, pink ditto, white ditto, pink ditto, red ditto, pink ditto, white ditto, &c.

A very good border can be made by alternating groups of pink China Roses, or of Cinnamon Roses, with, 1, groups of Laurustinus (Viburnum tinus); or 2, groups of yellow Jasmine. The groups should be 1 yard apart. The same Roses may alternate with common Laurels (Cerasus Lauro-cerasus); in this case the groups should be from 1 to 2 yards apart, and the Roses should be placed in threes, so as to form an equilateral triangle. The following arrangements also look well: 1, Common Lilac, white Lilac, common Lilac, white Lilac, &c. 2, Common Lilac, Laburnum, common Lilac, Laburnum, &c. 3, Laburnum, common Lilac, white Lilac, common Lilac, Laburnum, common Lilac, white Lilac, common Lilac, &c. 4, Laburnum, common Lilac, Syringa, common Lilac, then repeat. 5, Persian Lilac, Spiræa hypericifolia or ulmifolia, Persian Lilac, Spiræa, &c. 6, Persian Lilac, Kerria japonica, Persian Lilac, Kerria japonica, &c. Although the Kerria flowers a little earlier than the Persian Lilac, this arrangement answers very well. 7, White Lilac, Judas Tree (Cercis siliquastrum), white Lilac, Judas Tree, &c. 8, White Lilac, pink Tartarian Honeysuckle, white Lilac, pink Tartarian, &c. 9, Italian May (Spiræa hypericifolia), yellow Jasmine, Italian May, yellow Jasmine, &c. 10, Perfumed Cherry (Prunus Mahaleb), Judas Tree, Perfumed Cherry, Judas Tree, &c. When the Judas Tree is in flower, the perfumed Cherry is not; the last arrangement is, however, recommended for the contrast produced by the flowers of the first with the foliage of the second. 11, Perfumed Cherry, Laburnum, perfumed Cherry, Laburnum, &c. 12, Perfumed Cherry, Laburnum, perfumed Cherry, Judas Tree, then repeat in the same order. 13, Gueldres Rose, Bladder Senna, Gueldres Rose, Bladder Senna, &c. 14, Gueldres Rose, Judas Tree, Gueldres Rose, Judas Tree, &c. 15, Judas Tree, Laburnum, Judas Tree, Laburnum, &c. 16, Judas Tree, red Dogwood (Cornus sanguinea), Judas Tree, Dogwood, &c. 17, Syringa, Bladder Senna or Scorpion Senna, Syringa, Sennas, &c. 18, Tartarian Honeysuckle, Spiræa ulmifolia, Honeysuckle, Spiræa, &c. Borders of Anemones, sown thickly, are usually in flower this month.

ROSES.

SPECIMEN PLANTS, SHRUBS, STANDARDS AND FANCY STANDARDS, WITH SEVERAL VARIETIES.

SPECIMEN Roses may be planted in conspicuous and appropriate situations, although it is bad taste to sprinkle them all over an establishment. They should be very few in number, and very handsome in growth. Of the specimens best adapted there is a choice of three. They may be—1, bushes or shrubs; 2, standards of particular kinds; 3, standards with several varieties budded on the same stock. The first may be pruned and trained to attain almost any size by beginning with them young; a dwarf or rather a Rose on its own roots should be selected with half-a-dozen good branches; these may be cut back to 1 foot in length, if strong, or cut back to a single eye if weak, because strong growth to start with is absolutely necessary. With half-a-dozen strong shoots cut back to a foot in length, whether they are obtained at once ready to plant or waited for a year, you have a good foundation for a fine shrub; let these be restrained by hooked sticks stuck into the ground to hold them at equal distances round the plant, and spreading out, with the ends within 6 inches of the ground. Let these make their growth one season with the exception of any shoot that may seem in the way, and at the next pruning time cut out all weak branches, and remove all shoots that come up fresh from the root, because to be handsome the bush must grow without being choked by suckers. All the shoots should be shortened to various lengths from one to four eyes, according as they help to form a good shrub or otherwise, and any that are in the way may be cut clean out altogether.

The after treatment of this kind of specimen is as simple as that of a Currant or Gooseberry bush, but in all pruning of Roses it is necessary that the shoots should be cut as close to the eye as possible without injuring it, and all shoots removed altogether should be cut as close to the stem from which it grew as it is possible; all snags are dangerous, and shoots not cut back close to the eye are apt to die back past the eye. The shrub once attaining a sufficient size and strength will live for years, and continue in perfection in a sort of wild growth without any sort of care. The principal object to be attained is a plant calculated for the purpose. After a certain number of years the Rose will do without pruning, and yet be a splendid object, for it will prune itself, or at least those shoots which really require removing will die back, and you will merely have to cut away the dead wood.

The tree Rose for a specimen should be selected thus; first it should be on a strong healthy stock, perfectly straight; secondly, the bud must have been placed on a strong shoot, and pretty close to the stock; thirdly, it should be of the particular sort calculated to form a handsome head; fourth, it should have a healthy, undamaged root. This may be planted in the usual way, and with the necessary care. The growth of a standard tree, if not attended to at first, will never be right, and cannot be made handsome. The hints already given about pruning may be sufficient; but the object should be to get the head as large across as the height from the ground to the underpart, and as thick from the bottom of the head to the top, or two-thirds its diameter; therefore in the pruning of standards we ought to leave the end bud under the branch, that the lower branches may always incline downwards; and these end shoots being left two eyes long every time the trees are pruned, soon attain the desired size; but occasionally we are able to leave three or four eyes instead of two, when any portion of the tree wants filling out.

As the standards advance to a large size, and the head gets almost uncontrollable, the tree happens to require less of our assistance. It assumes an imposing appearance, and the increase of the head is much slower. Before the head calls for all the strength of Nature to supply its wants, the shoots grow long and strong, but then the tree has to support a large head, and there are a thousand shoots instead of a dozen; the shoots do not grow more inches than they at first did feet, so that, if the tree be left to itself, it very soon suits its growth to its situation. We have seen trees carefully pruned for 10 or 12 years, and then left to themselves, continue to be splendid specimens for years afterwards.

The third kind of specimens are whimsical perhaps, but curious and interesting for all that. To get these in good, handsome condition, and healthy, we must begin with a remarkably strong Briar, and, instead of cutting off the forked head, we should retain as many branches as we can; say we have three good branches spreading out a foot each way when the Briar is planted. Let it have all the necessary care of a good valuable Rose, as to the pruning of the root, the application of the dung, and the planting and stake; all of which we should have done on the spot where it is to remain. Rub all the shoots from the stock except those on the forked branches, and allow about three branches to remain and grow on each of these three forked branches. In selecting the three to be retained, have an eye to the object, which is to place a bud upon each of the whole nine, and therefore let those that remain be in the best position to support the independent growth of their own head. In July insert a bud in each of these nine shoots, which are the only shoots allowed to grow. Let the buds be put in as close to the heel of the shoot as possible, and on the upper side. All the buds should be different Roses, but all of one habit—of the slow-growing, ever-blooming sorts; if some were more vigorous than others, there would be no uniformity of growth, and it would all be confusion.

In pruning these, the principal point to be attended to is to cut them where they are crowded, to remove superfluous wood, and not to attend to the shape of the individual sort, but to their general growth, so as to form one head among them all. The small Roses are the best for this kind of specimen, and the colours should be contrasted as well as the choice will allow; such a head, when in bloom, is a very beautiful object, and with a strong Briar it is attained in one season partially, but in two perfectly, although it continues to improve for many years. The stock, and particularly the forked branches of it, must be constantly watched, to see that it does not shoot; for if it did, and was unnoticed, it would steal its way up among the branches, and pretty nearly choke up the head before it would be discovered, and all that time the various budded varieties would suffer, if some were not altogether destroyed; so that it is impossible to be too watchful.

As to the places in which specimen plants should be located, much depends on the form of the beds and clumps about the lawn, or the disposition of the paths. Specimens are planted with advantage near a clump, but not too close, and if opposite to a recess or inward curve, so much the better, but there should be 10 or 12 feet between the specimen and the clump, and in all cases they should be within a few feet of the path; but this is purely a matter of taste, as well as the form and disposition of clumps, the shape of a lawn, or the direction of the road. In some cases a few specimen plants of Roses add greatly to the effect, but until they have attained a considerable size they look poor and unmeaning, yet it is better to grow them where they are to remain than to remove them large, for however they may escape immediate danger they perhaps never attain that vigour which alone can secure healthy growth.

Crito.

ELVASTON CASTLE, THE SEAT OF THE EARL OF HARRINGTON.

(*Continued from p.* 21.)

DIRECTING our course along the north side of the lake, the vegetation is continually changing, and fresh objects of interest are constantly presenting themselves. The sides of the irregular Grassy path are clothed with huge blocks of rock, interspersed with interesting and valuable plants. There are occasionally to be met with masses of Berberis trifoliata, B. buxifolia, B. empetrifolia, B. rotundifolia, Ilex latifolia, Cotoneaster microphylla in large bunches, Arbutus tomentosa, 4 feet high and the same across, Mahonia glumacea, and fine plants of Juniperus tetragona, J. mexicana, and occasionally immense shaggy tufts of Juniperus tamariscifolia, hanging into the water. As we travelled along, beautiful specimens of the following were constantly occurring: Juniperus gossainthania, J. Bedfordiana, J. pendula (from China), J. lycia, J. Bermudiana, J. oxycedrus, J. phœnicea, J. squamata, J. excelsa, J. nana, J. sibirica, J. communis pendula, J. virginiana pendula, J. Sabina variegata, large bunches of Genista triquetra, G. germanica, G. actinacantha, G. multiflora, G. juncea, also profusely disposed large groups of the common and variegated Rosemary, white and common Lavender, &c. Behind these, among the high irregular rocky mounds, are grand plants of the yellow-berried Holly; some of the rocks were partially covered with variegated Ivy. We here saw a Juniper [illegible] the name of which is un-

known, from Candia, 12 feet high; and a Cupressus thurifera, 15 feet in height, planted on dry hills.

Leaving this, we take an inland curve, planted with Deodars, Hemlock Spruce, Picea Webbiana, Pinus Cembra, P. Laricio, P. Banksiana in the background; and nearer the walk are numbers of Juniperus excelsa, J. virginiana, Lavender, Southernwood, white-flowering Lavender, Giant Rhubarb, Abies Menziesii, Juniperus sinensis, J. thurifera, J. phœnicea, Yews, &c. Another walk branches off inland, from the back of the great rock, planted with Deodar, Pinus Lambertiana, P. Sabiniana, P. macrocarpa, &c.

One of the most difficult points to manage in ornamental water is the concealment of its terminations. This is very successfully accomplished at the eastern end of this lake, where the visitor is of necessity imperceptibly led into a root-house in a recess, bounded by a Portugal Laurel hedge and margined with Irish Yews, where an opening gives an extended view of the lake, with its islands, and the castle and church tower emerging from the plantations. This arrangement completely screens the head of the lake; sluices are placed here, by which about 20 acres of ornamental shrubbery, surrounding the lake, can readily be flooded in dry weather; near this is an engine-house which supplies the castle with water; the latter is partially concealed, and is otherwise rendered an ornamental feature. Matters of this kind, which are frequently objects that betray bad arrangement or that baffle the skill of the artist, are here made to serve ornamental purposes.

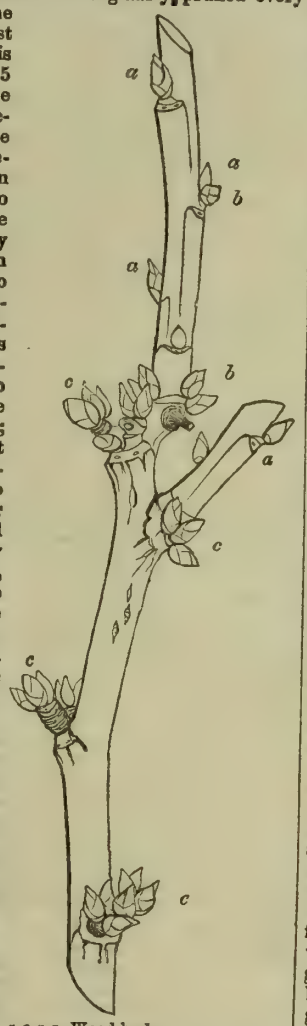
In passing along the south side of the lake, new features are continually presented, both by the nature of the scene on the opposite shore and the entirely new description of plants so frequently introduced. On leaving the head of the lake we pass through plantations whose sides are lined with Juniperus sinensis, 12 feet high, with a front line of Thuja Warreana, 10 feet high, we again come suddenly upon a grand assemblage of Juniperus sinensis, 12 feet high, exclusively on raised banks jutting forward in defile, the surface being covered with Lavender Cotton. Behind these are immense rocks, intermixed with Quercus Ilex, Q. coccifera, the Apulco Pine, Juniperus torulosa, and groups of various kinds of Broom. Retiring from this we come, as if by an accidental pass, upon a huge pile of rock, with an apparently natural circular opening, giving an extensive view of the water, with the bridge half a mile in the distance. Enormous columnar rocks of great height surround this, amongst which we noticed abundance of Abies Clanbrasiliana and A. pygmæa; pyramidal Cedars in groups, Juniperus pendula of China, Picea Hudsoni, Callitris triquetra, Juniperus Bermudiana, various Ruscus and Tamarisks. We proceeded unto an elevated position, where a seat is placed, and a kind of isometrical view of the lake is presented, the church and castle at the same time being entirely hid. The view here almost baffles description; an immense expanse of water, swarming with water fowl, is exposed, as well as the bold sinuosities of the margin, with an inconceivable amount of artificial rock naturally disposed and planted with thousands of the most valuable plants that could be obtained. When we contemplate, for a moment, that this is entirely a work of art, and consider the tens of thousands of tons of rocks all brought from a great distance, employed in its formation, we are left to conclude that it has not only no rival as a work of art, but there is nothing at all approaching it, in any garden in this country. We are now reaching the position from which we started, and, turning to the left, we come upon some Maltese crosses, 25 feet high, constructed of enormous rocky masses, surrounded with rocky hills, planted with large Abies Clanbrasiliana, Savin, and Lavender Cotton; near by are some cylindrical Cedars of Lebanon, the ground amongst them being strewed with Juniperus prostrata. We observed also a fine plant of the silver Juniperus Bermudiana, Thuja filiformis, 6 feet high, and a dwarf variety of Abies canadensis.

It may not be uninstructive to cast a retrospective glance at the scene we have just reviewed. Some writers have contended that rocks in garden scenery are only admissible when the nature of the country presents precipitate and abrupt undulations, with projecting rocky strata. If this be so, it follows that this attractive and highly decorative style must be limited to such places as Nature has indicated by cliffs and precipices; but we entirely dissent from such an opinion. Others, again, consider that if rocks are admitted into garden scenery where the surface is level, nothing must be attempted beyond a mere ridge, as an appropriate situation for Alpine plants; but we look upon this view of the subject in the same light as the former. We have here an example which subverts all such reasoning. Again, as regards ornamental water, it has been stated that its introduction is only justifiable where the mansion is placed on an elevated position so as to command a view of it in the lowest ground presented to the eye. Now it is true that the lowest position is the most natural one for water; but where all situations are alike, and no choice afforded, as in this case, is water, the grandest feature in ornamental gardening, next to trees, to be discarded, merely because certain objections exist as to its site? We think not; difficulties such as these are what master-minds in the art can and do overcome. It is by accomplishing such feats, in defiance of natural obstacles, and in opposition to existing prejudices likewise, which have been set down as defined principles, that these rules and theoretical injunctions have been exposed. We look upon the lake at Elvaston, with its majestic rocky and woody embellishments, as the result of ideas conceived upon the most enlarged views, and with the most enlightened and comprehensive anticipations of what the result would be; and it is only individuals of inflexible purpose who would have undertaken such a gigantic task as the work here described must have been; for it is entirely an artificial creation, under the greatest possible disadvantages, and without the smallest natural inducement or existing capability for such a state of things. *R. G.*

(To be continued.)

PRUNING.—THE CURRANT TREE.

Under every mode of training, the red Currant, and also the white, require to be regularly pruned every year. In rearing the young plants, the first thing to be aimed at is a clear stem, about 5 inches in length, free from suckers. In preparing the cutting, care should be taken to remove all the buds on the portion intended to be inserted in the ground, otherwise many of them would form suckers, injurious to the plants, and troublesome to displace effectually. In some cases cuttings can be obtained long enough to afford at once the proper length of stem; but when such cannot be had, when the cutting is altogether too short, or proves so after the necessary removal of the imperfectly formed wood at top, then three buds above the surface of the ground will be sufficient. These will generally produce three shoots, all of which may be allowed to grow during the first summer after the cutting has been planted, in order to assist in forming roots. Supposing the plant is intended for the open ground, and that it is to be trained in the usual way, open in the centre; then in autumn, after the leaves have fallen, two out of the three shoots which the plant has made should be cut off, and the third, selected as the most eligible for a stem, should be shortened, so that the third bud below the cut may be 5 inches above the ground. Three shoots will generally be produced the following summer. In autumn the plants will require to be planted out where they are to remain, and at the same time the shoots should be cut back to about 4 inches, taking care to cut above buds pointing outwards. We have now a stem 5 inches high, and three branches diverging from it, each of them shortened to about 4 inches. Two shoots should be encouraged from each of these three, so that in autumn the plant will have six shoots, corresponding with the ultimate number of branches necessary. All other shoots must be spurred to within an inch of their bases. The six shoots selected for leaders should be cut back so as to leave them from 4 to 6 inches long; and, like those of the former season, they should be cut to buds pointing outwards. At every future winter pruning the terminal shoots of the six branches should be shortened to between 4 and 6 inches long, according to their strength. When the branches nearly attain the intended height, the terminals may be shortened to two or three buds. With regard to the lateral shoots, they must all be cut to within an inch of the old wood at every winter pruning.



a a a a, Wood buds.
b b, Fruit buds.
c c c, Clusters termed fruit spurs; they consist chiefly of fruit buds, but amongst them there are generally some wood buds which produce small shoots.

Some recommend summer pruning. In moderation it may be advantageously performed. When the plants are luxuriant, and shoots are likely to overcrowd the centre, the tops of such shoots may be cut off in June. But it must be observed that if no shoots were allowed to grow excepting those necessary to be retained at the winter pruning, the plants would in consequence be less vigorous in the following season; for the more leaves the more roots, and the greater the quantity of the latter the more abundant will be the supply of nourishment.

Instead of the open bush-form, Currants may be grown with a single upright stem; and in this way they occupy very little space, and yet produce good bunches of fruit, which are not liable to be spoiled by wet.

When Currants are intended to be trained against a wall, they should be planted 3 feet apart, and a strong shoot trained upright for a stem. This should be shortened to 6 inches, and the two uppermost shoots trained horizontally right and left. From these, four upright shoots should be trained, so that the distance between them may be 9 inches. In order that these may not run up without being sufficiently furnished with fruit spurs, they should be shortened to 6 inches, and every year, at the winter pruning, the upright terminal shoots of the branches should be shortened according to their strength, shorter if weak, and if strong they should not be left longer than is consistent with their breaking into spurs not more than 6 inches apart. The laterals may have their points cut off annually in June, and cut nearly close to the old wood at every winter pruning. Various other modes of training may be adopted, but the same principles of pruning are generally applicable, namely, the shortening of the leading shoots and spurring in the laterals as above directed. The red and white Currants may be grafted on each other with good effect, as regards contrast of colours. *R. T.*

VILLA AND SUBURBAN GARDENING.

The permanent system to be pursued with respect to the pruning of the Vine has, by extensive practice, been made pretty clear. We will begin with pruning for early forcing.

Experience has proved that Vines intended for an early crop must not be cut in so closely as those which are destined to come in later, and with little heat beyond what the sun and glass afford. We shall presume that the Vines to be operated upon have now arrived at a full bearing state. If they have to produce an early crop, we should recommend the spurs to be cut back only to the second or third eye, not closer, as it has been found that when subjected to a high temperature at an early period, those eyes a little in advance of the main stem always break kindlier than those at the axle of the spur. It must be observed, however, that this system of pruning, except great attention has been paid in obtaining a succession of young shoots from the base of the old spur is apt to induce large gnarly snags, as unsightly as they are unproductive. To guard against these, early attention must be paid to securing shoots from the bottom of the spur. These latter will be called into existence by early attention being paid to stopping the spurs which are to produce the fruit. Thus checking the sap in that direction, and preventing the production of useless foliage, the bottom eyes are sure to push; hence one only must be permitted to grow, and it must be stopped as has been recommended for the fruit-bearing spurs.

In pruning for late crops, the spurs should be cut close back to the main stem, leaving only the buds at the very base. If the Vines are in vigorous growth, as they should be, these buds will push with great strength, and show a profusion of bunches, which should be attended to in their earlier stages of development, selecting the most vigorous, and retaining only one, unless you mean to destroy and weaken your Vines for future bearing. Amateurs, aye, and gardeners too, who ought to know better, run into this error, forgetting that it is the last ounce that breaks the horse's back. Vines overworked in their earlier stages of growth never or rarely recover satisfactorily. In my next I shall conclude my remarks on the Vine; they shall chiefly relate to temperature. *Pharo.*

DISEASES OF PLANTS.

(*Continued from page* 21.)

Genus X.; *one species.* Rent (*Screpolo*).—By the term *Rent* I mean a splitting or bursting which takes place suddenly, either by the force of excessive heat, which tears the vessels as it distends them, or by the severity of cold when the air rapidly draws off the caloric from the plant. These rents are usually exactly in the direction of the fibres, or diverge little from it, as at the moment of bursting it is in that direction that the least resistance is offered. When these rents and fissures happen in winter, it is generally at the time of the severest frosts, and they are frequently accompanied by a loud explosion, which is heard over the country. Under nothern exposures, travellers have often heard such noises like the reports of fire-arms.

The same phenomenon happens in summer also, but the thing is less frequent and does not carry with it the same prejudicial consequences that it does in winter, when the rents are followed by necrosis, and are, moreover, neglected. Sometimes these fissures will close naturally. If they remain open, then every means must be adopted to close them, for it is better, in the case of the trees thus injured, that they should show a permanent scar of an old wound than to run the risk of the fissures not closing at all, and offering a harbour for insects and wet which may facilitate internal disorganisation. Some have proposed ligatures for such cases; but this treatment is of use rather for those fissures which are occasioned by some external mechanical violence, than for those which are caused by the excess or by the sudden withdrawal of caloric. I should prefer making incisions in autumn or in spring in the callosities adjoining the fissures, when if the strata of bark have preserved their organisation and the proper degree of stimulus for a prosperous vegetation, the wounds will shortly heal of themselves. The violence with which the imprisoned heat escapes suddenly is perhaps the cause of the noise which accompanies the bursting.

To this genus, it seems to me, may be referred many diseases said to affect trees in particular ways. Some have observed Olive-trees to have their whole outside

so split up that the wood remains bare and the bark separates from it. In the same kind of tree at other times the epidermis and cellular tissue will be slit, whilst the strata of bark and parenchyma will remain entire. These are but different degrees of the above described malady. Nor do I know of any variations except in their effects and consequences which are much more fatal in proportion as the plants are delicate. For example, it is not all the trees of a wood, although struck by the *rents* so as to have their woody tissues split, that will die. But in the instance of the Olive it is different; in the first of the two above-mentioned cases, the death of the portion affected is inevitable. In the second case it will escape entirely, or only perish very late. When the fair season returns and the sap rises, the growth of the substance of the tree will either close the fissures entirely, or excrescences will form, which, although they may ultimately destroy or much injure the branch, will nevertheless support it for a long time. These *rents* will kill a great many autumn-made layers. I have at this moment under my eyes practical instances in confirmation of what I have asserted.

THE FIRST SIGHT OF TREES.

"THE Officer (from St. Kilda) in his Embassy, in *July* last (1696), Travelled so far as to Land on the Continent next to *Sky*, and it was a long Journy for a Native of *St. Kilda* so to do, for scarce any of the Inhabitants ever had the opportunity of Travelling so great a way into the World.

"They observed many wonderful things in the course of their Travels; but they have a Notion that *Mack-Leod's* Family is Equivalent to that of an Imperial Court, and believe the King to be only Superior to him: They say his Lady wore such a strange *Lowland* Dress, that it was impossible for them to describe it; they admired Glass Windows hugely, and a Looking-Glass to them was a prodigy; they were amazed when they saw Cloth Hangings put upon a thick Wall of Stone and Lime, and condemn'd it as a thing very Vain and Superfluous.

"One of the things they wondred most at, was the growth of Trees; they thought the Beauty of the Leaves and Branches admirable, and how they grew to such a height above Plants, was far above their Conception: One of them marvelling at it, told me, That the Trees pulled him back as he Travelled through the Woods; They resolved once to carry some few of them on their Backs to their Boats, and so take them to *St. Kilda*, but upon second thoughts, the length of the Journy, being through the greatest part of the Isle of *Sky*, deterr'd them from this undertaking."—*A late Voyage to St. Kilda, by M. Martin, Gent.*

Home Correspondence.

Continuous Blooming Roses.—I have cultivated a considerable number of Roses for the last 10 or 12 years, and find no Rose which so well merits this appellation, as the Gloire de Rosaméne. On the south front of a house, it yields flowers for a nosegay 8 months out of the 12. Twice during the last five years I have noted this fact; in the one instance the last blossoms were gathered January 4, and the first fresh ones May the 4th, in the other (a mild winter) the last blossoms were January 17, and first fresh, May 17. I did not take accurate note of other years, but its ordinary habit is as above. This winter its blossoms have ceased only with the last frost. I may further add that its late flowers are not miserable half-rotten buds, but fair fragrant flowers, such as adorn a bouquet. The crimson China growing near it does not come into bloom till three weeks or a month later, and ceases a full month earlier; in fact, its flowers are worthless after autumn once sets in. The Gloire de Rosaméne is a semi-double crimson Rose, of very brilliant colour, and fragrant, and a strong grower, about 10 feet high on its own roots. It is called a Bourbon, but has nothing in common with Bourbon Roses, and no doubt owes its origin to some very different and peculiar parentage. It looks almost like a cross between the crimson China and our common Dog-rose, and I am surprised that no attempt has been made to breed from it, as it seeds freely. None of the new Roses show any signs of affinity with it, but I can confidently recommend it as the earliest and the latest hardy Roses which we possess. It does very well as a standard, but does not flower so early; and its proper place is a south wall, to grow up around windows. Being rather naked below, it should be clothed with something else, for which purpose nothing is better than the crimson China. The Gloire de Rosaméne is an old Rose, introduced some 15 or 20 years ago, and may be procured of any nurseryman. *J. R. S. O.* [It is a great ornament of the trellis at Dropmore.]

Spotted Ranunculuses.—The following are six excellent spotted varieties on yellow grounds. Dido, Flaminius, Alexis, Festus, Meander, and Indicator. Can any of your readers furnish a list of half a dozen first-rate spotted ones on white grounds? *X. X.*

Apprentice Fees.—I have frequently seen discussions in your columns which appear to me to need some firm, but not unkind touch, to place the matters discussed in a just and reasonable point of view. The question, whether gardeners are justified in taking apprentice fees from their workmen, is one which can have but one solution, and which is handled in a manner really injurious to the useful class of men who are concerned in it. I will first give my, and I am confident the only, solution to this question. The employer is the only person who can guarantee effectiveness and permanency to the probation and instruction of an apprentice. "A gentleman" neither considers himself entitled to the profit arising from his gardener's skill in teaching, nor could profit by it, although his servant's time and skill are his by purchase, without becoming a tradesman. The gardener or nurseryman by trade, therefore, is the only person who can legally, or ought in good faith to receive, or permit to be received, on his grounds a money-bound learner. Presently we shall have our kitchen maids apprenticed to our cooks—our professional cooks, forsooth! Having given you my solution of the knot, I proceed to the manner in which it is too common to speak and write of gardeners. This lies in making a very useful class of labourers look upon themselves and their calling in an erroneous light, calling their business a profession, and raising Messrs. Blue-apron and Green-apron into a false estimation of their position, and leading them to be discontented with their situation in life. The sensible and expert husbandman, the ingenious and clever artisan, the weaver, the smith, and the wright, bring to their businesses as much mind and labour as the gardener who should even raise Pines, Melons, and Cucumbers, and miscall and misspell a few names of exotic plants, and have as much claim to the position of professional men. An ancient author gives a very true account of the injurious tendency of calling things by any but their right names; the free translation of it would run thus, "It is a thing most pernicious to lose the right terms for matters discussed, or in the business and intercourse of the world." We will see how this affects the case in hand. We have only to look to the third paragraph of the discussion of apprentice fees in last week's *Chronicle*, to see it exemplified in the mention of "the comparatively low salaries" received by gardeners. Why, professional gentlemen certainly should have, at least, 400*l.* or 500*l.* a-year, I must own, though very many in the church, the navy, and the army, not to mention law and physic, have nothing of the sort. And compared with these, the blue-aproned and green-aproned professors are shamefully under-paid. Thus our modest professors, who simply wish 60*l.*, or 70*l.*—nay, 80*l.* a-year, house and garden, and certain implied privileges—implied on their sides, but followed by ejection when discovered on their masters. This demand deprives hundreds of gentlemen of gardeners, and hundreds of gardeners of places, and is considerably more than is expected by men of the highest education, and of the real and dignified professions. Here is a matter of disappointment and discontent arising from the miscalling a trade or business, and that even when practised by a hired menial, a profession. Another source of discontent, not so solid, but perhaps more mortifying, is the expectation of being held in great estimation, and being made of great importance by their masters. I remember in your columns, perhaps a year ago, some gardener expressing himself in some such words as these about masters: "Oh! they don't think of our pro—fessi—on (drawl it out sonorously), but only of the gardener, my servant." Now, really this would be laughable, except that we see in it matter of regret, that these useful labourers for our amusement and luxury should be pained by a chimera of their own, or their false friends' creation. The objects of these harmless people's study and labour are so lovely and so delightful that no person of education and feeling can behold them without ecstacy, nor partake of the fruits of their care and labour without exquisite satisfaction. But the ecstacy and the satisfaction belong to the objects themselves, and not to the hands of honest hardness, which have (by well digging, dunging, potting, &c.) for hire supplied them; though, as long as they keep their humble place, and are respectfully thankful for the means of livelihood vouchsafed them, they may enjoy a slight reflection of the pleasure their faithful industry procures to their employers. The gardens at Kew, and even many noblemen's gardens, may require an army of gardeners of all grades of proficiency, and these will need organisation and discipline, but no one of the heads or managers of these, or any other gardens, is professional as a gardener. At least, we must concede professional dignity to the *artistes* who dress my lady's lovely hair, and decorate her lovelier foot, when we bring ourselves to the bestowal of it upon the graduates in green aprons. But we must correct ourselves. We are not the fountain of honour. We have no right to bestow dignities, though the people are becoming amazingly sovereign in this particular instance. Every cobbler now-a-days is a "reverend, if he 'spounds and 'splains Skripter (to write phonetically), arter wurk a-nights and a-Sundays." Every man who has a dirty boy under him in a hoy is a captain; every man who wears an apron, even of leather, is a "gemman;" and every one who has a Sunday cloth coat is a squire. What has not King Hudson to answer for on this head. How many esquires did he most unscrupulously and unrighteously create. What ruins has he spread abroad over the best suits of artisans and shopkeepers, who could only, decked out in them, call at the post-offices for their squireships' letters! My worthy friends, ye gardeners! keep and be contented with your position. When in business for yourselves ye are tradesmen, and must be satisfied with the fair profits arising from, and the consideration belonging to your trade. When you take the wages of an individual, or a body corporate, you are servants, though, if honest and trustworthy, most commonly favourite servants. That is the state of life in which it has pleased your Maker to place you, and your indulged discontent would be rightly, though impiously, addressed to Him—not to those whose tastes and wealth afford you scope for the exercise of your humble talent, and means of an honest and ample livelihood. *Elpidophorus, Hull.* [This letter requires more notice than we can give it to-day. Another week will produce our views of the writer's arguments.]

A simple and efficacious way of Smoking Glass houses with Tobacco to kill Green-fly.—I have used garden-pots for this purpose for these 10 years. The *modus operandi* is to put a quantity of coke, coal, or short pieces of wood made red hot in the bottom of the pot, and then on these the tobacco paper. That which I use is picked into small pieces before it is put on the hot cinders. The pot is then placed where it is wanted, and the embers blown with a pair of bellows, whose nose is introduced through a hole in the side of the pot near its bottom. Many a time have I lost my dinner, when, being upon 12*s.* a week, I could ill afford it, through the use of these same bellows, and my object now is to introduce to you a plan by which such dire disasters may be prevented, and that is by the use of a porridge pot (in Scotch vernacular)—a tar kettle or plumber's pot (in English). I punch out three holes in its bottom, 1 inch in diameter, and these afford means for a current of air to pass through the fuel. Such an apparatus is easily obtainable, and being cast-iron will last and answer the purpose perfectly for very many years. *James Cuthill, Florist, Camberwell.*

The proper time and best way of Felling Larch Timber.—In No. 51, p. 807, of your last year's volume, "A. B." asks the opinion of some of your correspondents as to this matter. I conceive that the best way would be to chop or saw away at the root (at the same place as the root would be sawn off if the tree were grubbed up), whilst the tree is standing, all the bark and sap-wood, and then let the tree remain standing until late in the next autumn. As the tree will be naturally much enlarged close to the ground, a saw might be entered horizontally all round to the depth of the sap-wood, and then, from the height of 6 inches or more, being chopped down perpendicularly, will remove all the sap-wood there without injuring the stick of timber. I am of opinion that the crude fluid in the alburnum and stem is not sap, nor scarcely resinous, and I think, in spring, the tree thus treated would put out leaf and convert some of that crude fluid into resin, and perhaps deposit some thus converted in the alburnum, and much improve its quality as timber. Certainly timber thus treated would become seasoned, dry, and fit for use sooner than when felled in any other way. If "A. B." has a dozen or so of trees, all of a size, let him serve a third part of them as I suggest; let him fell a third part now, and the other third part at Midsummer, and I doubt not but that the plan suggested by me will be found the best. *J. C. X.* [These *opinions* are not what we and the public want; we require facts and experience, if there be any.]

Tortrix angustiora (see p. 20).—The fact communicated by "Ruricola" relative to the discovery of the larva of this moth in the month of January in a web attached to the withered calyx of a Pear, is interesting, as proving that that species passes the winter in the larva state, ready to commence its attacks upon the young buds and leaves as soon as they are developed in the spring. I say young buds and leaves, because I think no one reading "Ruricola's" account will come to the conclusion that this insect feeds upon the Pear itself, or that it is naturally injurious to that fruit. The nature of the large brown patch is not described, and we doubt whether this was a bruise or a part eaten away by the larva, or merely a dark web spun by the insect. I cannot but think that this was merely an accidental adoption of winter quarters by the caterpillar, which has been mistaken by "Ruricola" (as was also the case with the Odymerus nest in the bee-hive, described by him in this work, 1848, pp. 452, 472) as the natural feeding place of the insect. Were such really the case, the habits of the insect must have been long ago observed, but such a situation, even as a hybernaculum, is contrary to the ordinary economy of insect life. If the Pear were left in its natural state it would fall during the winter, and the larva would find itself in the spring on the ground, surrounded by a mass of rotting vegetable matter, instead of upon the tree in the midst of its real food—the young leaves and buds. Instead however of the economy of this insect being hitherto unknown, as stated by "Ruricola," I beg to refer him to Loudon's "Gardeners' Magazine," vol. 14, where he will find that 12 years ago I published a detailed account of its habits and of the great injury which its larva commits in the spring upon the young buds and leaves of the Apricot. Mr. W. Wing also informs me that he has reared this moth from caterpillars found feeding upon the Whitethorn in the New-road, Paddington, which statement is confirmed by "Ruricola's" having captured the moths on the palings of the Regent's-park, adjoining the New-road. It thus seems that the moth is indiscriminate in its attacks on the foliage of various trees. I may take this opportunity of mentioning that the species of Smynthurus found upon Potatoes and described in this work (1848, p. 764), by Mr. Hardy, under the name of P. Caulastinus, and copied into the "Annals of Natural History" for 1848, has been subsequently published by Mr. Curtis in the Journal of the Royal Agricultural Society (July, 1849, p. 76), as a new species under the name of S. Solani. *J. O. Westwood.*

Rats v. Rabbits.—As a sort of consolation to the gentleman who stated his wrongs concerning the rats in his aviary so pathetically last week, I offer you this state

ment of my own grievances. I have for some time been a great rabbit fancier, and have had a nice outhouse fitted up for their reception, with exercise yard and everything which could conduce to their comfort; but in spite of all this, and although I have had my hutches mounted on tressels with projecting ends, and traps set all over the place, not one rabbit have I been able to rear but five. I have eight does and two bucks, so you may judge of the extent of my sorrows. Nay, so determined have my enemies been to effect the downfall of my establishment, that they have actually bored one of their accursed holes through the floor of one of my hutches at least 15 inches from the ground, and which was placed on tressels, so that no rat "of mortal growth" could possibly climb through the bars. If this says nothing for their honesty, its says a great deal for their perseverance and power of standing upon nothing. Could you, or any of your readers, give me a cure for this nuisance? *A Rabbit Fancier.*

To banish and drive away Rats.—It may be done by stuffing their holes after the following manner, which will banish them away so that they will not return while taste or smell remains. Take one pound of common tar, half an ounce of pearlash, and as much oil of vitriol as will ferment a handful of common salt; mix them all together, spread the mixture thick on brown paper, and lay a piece in the bottom of the holes for them to walk on, then stuff some into the holes and fill them up with lime. Or another way: Get a paper bag full of human hair from a barber's shop and stuff the rat holes with it, they will never appear there again. *W. E., Newcastle-upon-Tyne.*—Rats will prey on plants as well as on birds; an army of these cunning animals visited the greenhouses here last spring, and destroyed many valuable plants; they were not particular in what they attacked; one night, to my surprise, they gnawed off several Coniferous plants. Night after night they visited me, but no clue could be obtained as to their entrance. I found, however, at last, that they had worked their way down to the foundation, and came up by the flue. I set traps in their runs, but Mr. Rat was too cunning for me. He turned another way. I tried the ferret and dogs, but if we killed four, 20 came in search of them. I then began to think my plants were all doomed to be destroyed. I next tried phosphorus pills, but in vain; after that I chopped up fresh beef and seasoned it well with arsenic, and laid it in their runs, but all to no purpose. I recollected that, when a boy, these gentlemen worked their way into my rabbit boxes, and devoured six rabbits in one night, of which nearly all were eaten. The idea therefore occurred to me that rabbit flesh would form a good bait. I procured a young one, and chopped it very small; I then worked white arsenic well into it, and laid it on tiles near their runs over night. In the morning all was gone. I tried this the second night, but after taking such a hearty meal on the first occasion they were unable to finish my second lot; for two or three days afterwards we saw several in a declining state, and they ultimately vacated the premises. *W. Culverwell, Thorpe, Perrow.*

Birds.—As a set-off to "A. A." and his murderous gardener, I may say that since I came to my present residence, about two years ago, I have never had a single bird destroyed. This may be thought the opposite extreme, and perhaps it is; but I find there is plenty for them and for me. I have no doubt they amply repay me, by freeing my garden of innumerable insects and larvæ. As to slugs and caterpillars, such a thing is hardly to be seen. I would not allow my gardener to deprive me of the pleasure of hearing these sweet songsters, and of observing the curious habits of my feathered friends, even if it did cost a few dishes of fruit in the season. I suppose "A. A.'s" gardener would shoot the crows, magpies, and blackbirds, which are now busy in the Grass-field before my windows, doing no harm, I am sure, but probably much good. Surely he can have but little taste for the pleasures of the country, who can thus deprive himself of one of its greatest charms! *C. W.* P.S. My place is not very large, but large enough to harbour a great variety of birds—about 8 acres, one-half of which is gardens, shrubberies, and pleasure-ground.

Amount of Rain which fell at St. Breoke, Wadebridge, during the year 1849, as measured by Howard's rain-gauge:

	Inches.	Wet Days.		Inches.	Wet Days.
January	3.66	24	August	3.50	22
February	2.02	16	September	6.75	13
March	1.90	16	October	2.99	17
April	3.00	24	November	4.52	25
May	3.45	17	December	4.82	22
June	2.61	15		42.22	227
July	3.00	16			

Ditto at Goodamoor, Plympton:

	Inches.	Wet Days.		Inches.	Wet Days.
January	6.12	24	August	3.63	21
February	4.44	18	September	8.71	16
March	1.26	10	October	5.06	19
April	5.08	24	November	4.60	22
May	5.16	14	December	9.06	23
June	1.12	14		58.26	220
July	4.02	15			

Henry H. Treby, Jan. 10.

Mr. Cole's Celery.—I see that "Cole's superb solid red Celery" is rather liberally advertised. Will Mr. Cole favour the public by pointing out the difference between it and a sort annually distributed by the Horticultural Society under the name of Celeri Violet. I have cultivated both, and could not perceive the smallest difference between them. *W.*

Societies.

Horticultural, *January* 15.—J. J. Blandy, Esq., in the chair. In consequence of the severity of the weather, very few subjects were exhibited on this occasion.—Messrs. Jackson, of Kingston, sent an unnamed white-flowered Odontoglossum, apparently O. maxillare; and a new, rather pretty, though not very showy, Chorozema, called flavum, was contributed by Mr. Henderson, of the Wellington-road Nursery, St. John's-wood.—Of fruit, Mr. Davis, of Oak-hill, East Barnet, sent three dishes of West's St. Peter's Grape, well-coloured, plump, and finely bloomed, for which a Certificate of Merit was awarded; and, along with them, two bunches of Muscat of Alexandria.—An interesting collection of Pears and Apples (10 of the former and 50 of the latter) was exhibited by Messrs. Paul, of Cheshunt. Among these were some new good-looking kinds; but, as they were not cut up, we cannot state what their qualities might be.—Various garden labels were exhibited. The most novel were some made of what was called metallised gutta percha, the invention of a Mr. Little, of Lockhall, Bath. These were formed apparently by stamping the face of the label so as to press *it* down and raise the *name* up, together with a raised border round it. They were neat enough to look at, but being generally brown they were, perhaps, not so conspicuous a little way off as might have been desirable. They will, however, no doubt prove useful, provided they can be made cheaply and to stand the weather. Another kind was Mr. Morrell's zinc-backed labels, which are now pretty well known. Their advantages consist in their cheapness and legibility when written on either with ink or a soft pencil. And, finally, Dr. Lindley drew attention to a specimen of the old-fashioned stamped leaden label, which, after all, is one of the most lasting, and when the face is nicely painted, so as to leave the sunk letters black, it looks both neat and legible.

Linnean, *Jan.* 15.—The President in the chair. R. C. Gunn, Esq., J. Millingen, Esq., of Van Diemen's Land, Dr. Grindrod, of Manchester, J. D. Jones, Esq., of Hackney, and C. M. Talbot, Esq., M.P., were elected Fellows. Several works were presented by the Messrs. Reeve, in addition to previous gifts of the more valuable works published by their house. J. Curtis, Esq., read a paper on a new species of saw-fly. After some general remarks on the habits of the saw-flies, more particularly the food and habits of the larvæ, which are sometimes parasitical and sometimes form galls, the author described a new species which had just been observed and sent him by Viscount Goderich, F.L.S. He had observed the larvæ in 1846 on some plants of Solomon's Seal, and sent them to the author, but nothing came of them. In subsequent years the larvæ appeared on the same plants, and from these perfect insects were obtained. They turned out to be a new species of Selandria, which the author proposed to name after their discoverer S. Robinsoni. The larvæ were about three-quarters of an inch in length, and formed their cocoons in the earth. The author made some remarks on the structure of the wings of the saw-flies as means of specific distinction. The paper was illustrated by drawings. The Assistant Secretary read a continuation of Mr. Huxley's researches on the anatomy of certain families of the Medusæ.

Microscopical, *Jan.* 16.—The President in the chair. Mr. Woodhouse and the Rev. S. Brown were elected Fellows. Mr. J. S. Lister and Mr. Jos. Gratton were appointed auditors for the ensuing annual meeting. A paper was read by P. H. Gosse, Esq., on the Architectural Instinct of Melicerta ringens, a species of fresh-water Rotifer. After referring to the habits of various animals in building habitations, the author described minutely the well-known case of Melicerta ringens. This case consists of a mass of pellets, which are held together by a glutinous secretion, and in the midst of which the animal resides. The author described beneath the disk of the animal a small rotatory apparatus whose function had not hitherto been discovered, and which he had been able to observe was employed by the animal for the purpose of forming the pellets of which the case was built up. The case had been supposed by Ehrenberg to have been formed by pellets from the alimentary canal, but this was evidently an error. The Chairman announced that the annual meeting and *soirée* of the Society would be held on February 13.

Royal Horticultural of Ireland.—We observe in the *Dublin Advocate* a report of the late annual meeting of this Society, on which occasion it was officially stated that the past year had been a successful one; that in the more useful departments of horticulture increasing competition had taken place; that the number of subscribing members had increased, and that the sum outstanding as arrears was inconsiderable. *To meet the objections so frequently urged against the exclusive character of the Society, the council proposed that a selection from among the nurserymen who had lately joined the Society should be added to that body.* Mr. George Roe congratulated the Society on the fact that the opposition with which they had hitherto had to contend had given way, *and on the demand so long and strenuously made for the introduction of practical men on the council having at last been agreed to, which he conceived would add to the usefulness of the Society.* [Here, then, we have at last a distinct avowal that the complaints which we and others have so often made on behalf of Irish gardeners against this Society were well founded, and that tardy justice is to be rendered to the labourers in the Hibernian Vineyard.]

Reviews.

Species Algarum. Auctore F. T. Kützing, Leipzic, Brockhaus. 1849. Pp. vi. and 922. 8vo.

The number of described Algæ is now so immense that we have reason to be thankful to any one who will undertake to collect together the scattered members. We therefore gladly give our tribute of praise to this author, to whom we are indebted for many beautiful figures and curious observations. We must, however, protest against the careless way in which the labour has in many instances been accomplished, and the ultra views of the necessity of giving to every form specific organic importance; views which, in the present instance, not only disunite species which are all but identical in structure, but absolutely cause different states of the same species to appear in different genera.

We cannot but consider this spirit as extremely detrimental to science; it is bad enough in such genera as Salix, Rubus, &c., where we have the power of comparing many forms at the same glance; but with microscopic bodies the difficulty becomes enormous, even with the help of authentic specimens—so enormous, indeed, as to make it almost matter of impossibility to ascertain the identity of specimens from different localities, and at last results in making every specimen a distinct species.

It would be quite out of place in our journal to enter into details, and we are far from wishing to detract from the real utility of a work which, in the present state of science, is indispensable to every algologist who wishes at all to be *au courant;* our desire is simply to reprobate the love of making species and genera, which, after all, is but a very subordinate part of science; and except it be conducted on very sound principles, and with extreme caution, will lead to no ultimate fame. Experience will soon show the real worth of catalogues prepared in such a spirit, and, when they have served their temporary purpose, they will be thrown aside as unsatisfactory and nearly useless.

Kützing's claims to a high rank amongst algologists are so well established by his "Phycologia Universalis," notwithstanding all its faults, but more especially by his work on Diatomaceæ, which is far the best on the subject, that we are very unwilling that he should impair them by hasty or ill-digested volumes like that before us.

Miscellaneous.

An Inquiry into the Action of Gypsum as a Manure, by M. Caillat.—In the first part of his inquiry into the way in which gypsum acts when employed as a manure, M. Caillat has endeavoured to show that the method of calcination usually resorted to, for the purpose of obtaining the inorganic parts of plants, gives inaccurate results. The weight of the ash does not represent the mineral parts; in consequence of the high temperature to which a plant is exposed when calcined, there is a loss in the quantity of nearly all its inorganic components, and the sulphates especially are, to a great extent, either decomposed or destroyed. M. Caillat, by treating plants, such as Lucerne, Clover, and Saintfoin, with diluted pure nitric acid, succeeded in eliminating nearly the whole of the mineral matters present; so much so, indeed, that when the pulp was afterwards washed and burnt, not more than one-fifth per cent. of ash was left. This small residue consisted of silica and a small quantity of peroxide of iron, both of which are insoluble in the acid employed. This method of proceeding always gave more mineral matter than could be obtained by calcining an equal quantity of the same plants; and it has been thus ascertained that there exists in many vegetables, especially in the leguminous plants used as fodder, much more sulphuric acid than has been hitherto supposed. M. Caillat has ascertained that the loss of sulphuric acid in the process of calcination arises from a partial decomposition of the sulphate of lime; when, for example, he mixed a known weight of pure burnt sulphate of lime with Wheat starch in the form of paste, and calcined the whole, the residuary ash did not yield as much sulphuric acid as the sulphate of lime used contained. He also found, by another direct experiment, that sulphate of lime converted into sulphuret of calcium by the action of organic matter at a high temperature, became, in part, converted into carbonate of lime, under the influence of the oxygen in the air; this oxygen burning at the same time both the sulphur of the sulphuret and a part of the interposed carbon, forms sulphurous acid, which is given off, and carbonic acid, of which a certain portion remains combined with the lime, and thus helps to displace the sulphur. In a future memoir, M. Caillat proposes to examine and compare the mineral substances contained in leguminous plants growing on soils of like nature, but some of which have and others have not been manured with gypsum; and he expects to show that it is probable that gypsum naturally finds its way into the crops which it occasions to grow so quickly. By the above method of treating plants with nitric acid, the silica, which lies in the tissue of the epidermis, was isolated as completely as possible; it was perfectly white. By examining siliceous pellicles taken from some Grasses which, as is well known, contain a great quantity of silica in their epidermis, "I found," says M. Caillat, "that this silica, moulded in the cells of the skin, is very curiously disposed. It exists in little plates, from one to two hundredths of a

millimetre broad, according to the plant, packed side by side, but whose edges are not smooth, but indented very regularly, and thus articulated laterally. This organisation of the silica, which has not, so far as I am aware, been yet remarked, seems to me to be worthy of the attention of physiologists." *Comptes Rendus, Aug.*, 1849. [Compare this statement with Lindley's "Introduction to Botany," Plate I., fig. 6.]

Calendar of Operations.

(For the ensuing week.)

[In consequence of certain inquiries that have reached us in regard to the Calendar, we think it right to state that it is written for the Midland Counties, and that those who live to the South or North of these, must vary their practice accordingly.]

GENERAL REMARKS.

Let advantage be taken of frosty weather to do any heavy work upon the walks or borders, such as carting or wheeling compost or manure on to the ground. In determining what kind of material to use for the improvement of the soil, let due consideration be given to its present quality and condition, and to the particular requirements of the plants, whether vegetables or flowers, which are to be grown upon it during the coming season. A piece of ground which has received nothing for years except the ordinary dressings of dung, decayed leaves, &c., becomes effete, from the want of some ingredients which those manures only slightly contain, or of which they are altogether deficient. In such cases, something should be applied to restore the soil to its natural vigour. A dressing of fresh pasture soil will generally effect this purpose; but as this is not always convenient, burnt clay or charred refuse of any kind forms an excellent substitute; they are also valuable for their mechanical action on the texture of the soil. If this be repeated once in four years the result will be satisfactory; and in the kitchen garden, with the help of liquid manure in summer, an excellent crop of almost any vegetable will be produced. If the land is stiff, sifted coal ashes will be found an excellent mechanical agent in ameliorating its condition, and it likewise possesses the sponge-like property of absorbing any liquid or gaseous matters which may present themselves, giving them off again more gradually as the plants require them.

PLANT DEPARTMENT.

Orchids.—These should be carefully watched at this season, as many of them will be starting into growth. As soon as this is perceived in any plant, it should be repotted or supplied with a larger block or basket if necessary. In shifting Stanhopeas or other Orchids which send their flower-stems through the soil, very shallow wire baskets should be used without potsherds, charcoal, or other impenetrable material. I find them succeed admirably in lumps of fibry peat, from which the soil has been shaken out, mixed with rough, flaky leaf-mould, and plenty of clean sand, which is necessary to keep the leaf-mould and peat from becoming too spongy. The surface of the soil and the inside of the basket should be lined with sphagnum, which protects the roots from sudden gleams of sunshine, prevents the soil from falling out, and, by its powers of absorption, keeps itself and the soil sufficiently moist. That the roots are satisfied with it is evident from the beautiful network which they form throughout its entire surface. Maxillarias, Lycastes, Gongoras, &c., succeed better when treated in this way than they do in pots, but to the soil of these a good proportion of charcoal and potsherds, or pieces of sandstone, may be safely added, as their flower-stems are altogether above the soil. The sphagnum absorbs nearly sufficient moisture from the atmosphere of the house, and by doing away with the necessity of watering, extremes are avoided, and the soil is kept in a uniform healthy state. Those plants which do not require shifting, should be surfaced with a little of the same material as would be used in removing them to larger pots, or baskets. As soon as any plant is potted, or top-dressed, it should be dipped into the warm water cistern, that the whole of the peat, &c., new and old, may be thoroughly and equally moistened. In performing this operation, the pot or basket should be gently lowered into the water, so that it may gradually rise amongst the mass. If a little trouble is taken in this matter, any woodlice, or other insects, which are harbouring in the soil, will retreat before the rising water, till they come out on the surface, whence they may be easily removed. Syringing will be useful on fine mornings; but this should be made to fall on the plants like a gentle shower of dew, instead of being driven into them with a man's full strength. The plants which are attached to blocks will need an occasional slight syringing, to prevent them from shrivelling, as it is yet too early to keep up a sufficiency of moisture in the atmosphere. Water must be very carefully used, and should always be of the same temperature as that of the house. The rain which falls on the roof should be conducted into a tank within the house; it is preferable to river or pump water, which generally contains eggs of insects injurious to Orchids. For the further protection of the plants from their ravages, the peat and leaf-mould should be thoroughly baked, and the sphagnum immersed in boiling water, in order that all animal life may be destroyed before they are used. This points out another advantage which the wire basket has over the bundle of old fungus-coated sticks in which plants are commonly suspended; the latter, besides being unsightly, affords a certain harbour for insects. As the plants commence their growth, remove them to the warm end of your house, if you have only one; but it is impossible to grow them to perfection unless you are able to keep the dormant plants cool and dry, and those in a growing state comparatively warm and moist.

FORCING DEPARTMENT.

Peach-house.—From the time when the blossoms of Peaches begin to expand, maintain a steady night heat of 50°, not rising higher than 60° during the day, unless by sun heat. Syringing must be avoided until the bloom is set. If the external temperature is not too low, fresh air should be admitted every day in sufficient quantity to produce circulation, but cold currents must be carefully avoided. If the early Melon bed is not made, it should be immediately attended to. It should be constructed in such a manner as to secure a bottom heat; if you have not hot water at command, this should be effected by means of outside linings, and a dung chamber beneath the bed. Where Cherries are required early, the house should now be in proper order, as regards cleaning and painting; the temperature should be kept at 45° by night, and 55° by day, with air, until the buds begin to expand, when a rise of 5° should gradually take place. The fruit will set with the low temperature of 50° by night, and 60° to 65° by day. No kind of fruit requires greater care in forcing than this, as any excess of heat will prove ruinous. Air is indispensable during the day, while the trees are in flower; and even during the night, when the external air is not very cold. Bear in mind the hardships they have to endure out of doors; this will show the necessity of avoiding undue excitement.

FLOWER GARDEN AND SHRUBBERIES.

If the advice given in August and September of last year has been attended to, by deciding upon the arrangement for the different portions of the flower garden, and also by noting the number required of the different kinds of plants, an inspection of the stock at the present season will show of what kinds there is a deficiency, and thus determine what quantity of young plants have to be propagated between this time and the end of April. But if memoranda were not made at the time recommended, it should be done before the season is farther advanced. Bouvardias, Salvias, Lobelias of the section to which propinqua belongs, and other half-hardy deciduous plants should now be looked over, and if the stock of any is deficient, it should be increased by the usual means. During this severe weather preparations should be made by getting soil, pots, and crocks ready to pot off plants in store pots of such things as fancy Geraniums which are found so suitable for bedding. Amongst these varieties we may recommend Anais, Jenny Lind, Hero of Surrey, Jehu superb, Nosegay, Bouquet de Flore, &c. In the meantime let them be duly attended to in regard to watering, and by removing any decayed leaves, and stopping long weak growths, to induce the formation of bushy plants. As the flower garden is very deficient at this season in a display of flowers, let extra attention be paid to keeping every part of it in a state of perfect neatness.

FLORISTS' FLOWERS.

We hope the advice given last week has been attended to; it has been capital weather for "sweetening" soils and subjecting them to a thorough freezing. As an in-door employment, look through the collection of Ranunculus roots, and, if not already done, divest them of all dead fibres and thoroughly clean them. Where desirable, the offsets may be kept separately, for we always like to have a "nursing bed" of small roots, which gather strength for next year's bloom. Should the frost break up during the coming week, we may possibly have much rain. The stock of Auriculas, Carnations, &c., must be kept from its effects as much as possible; for it often happens that frost will return with considerable severity, and should the plants in frames have been soaked, it will be much to their disadvantage. Those who wish to propagate Dahlias extensively may now put the roots in gentle heat, to start them.

KITCHEN GARDEN.

Success in our gardening operations, as in the numerous other affairs of life, depends very much on careful attention to small matters, many of which, if examined individually, appear trifling; but if omitted or neglected, prove detrimental to the attainment of our hopes. Amongst the little things to be looked closely after at this season of the year, the garden snail (Helix aspersa), the common grey slug (Limax cinereus), and their congeners, may rank first. These hide themselves in the earth, box edgings, and other snug corners, till warm weather occurs, when they come forth and attack every vegetable in their way. On a mild day, hundreds may be seen crawling over the walks, of which a great number may be picked up by a quick boy, as they frequently continue visible during the whole of the day at this season. By beginning to destroy them thus early the ground is comparatively freed from these ravagers by the time our young plants appear in spring. Sea-kale forcing is most profitably done by means of a slight hotbed of leaves and litter with a frame upon it; by covering with wooden shutters the bleaching is ensured; 53° to 55° is sufficient for top heat. Look closely after Endive in damp weather, and remove all decaying leaves. Examine Cauliflowers and Lettuces in frames, and dust a little quick-lime amongst them if it is necessary. Give plenty of air on all favourable opportunities. Make a sowing of Radishes under a south wall, and when they come up protect them with a few evergreen boughs.

State of the Weather near London, for the week ending Jan. 17, 1850, as observed at the Horticultural Garden, Chiswick.

Jan.	Moon's Age.	Barometer. Max.	Barometer. Min.	Thermometer. Max.	Thermometer. Min.	Thermometer. Mean	Wind.	Rain.
Friday.. 11	26	29.791	29.760	34	27	30.5	S.E.	.00
Satur... 12	27	29.922	29.883	32	27	29.5	N.E.	.00
Sunday . 13	●	29.912	29.882	31	22	26.5	N E.	.00
Monday 14	1	29.797	29.541	31	26	28.5	E.	.00
Tues. .. 15	2	29.433	29.390	31	25	28.0	E.	.00
Wed. .. 16	3	29.643	29.443	33	29	31.0	N.E.	.00
Thurs....17	4	29.944	29.793	36	28	32.0	N.	.00
Average....		29.777	29.671	32.5	26.3	29.4		0.00

Jan. 11—Hazy throughout.
— 12—Hazy with slight snow; dusky with snow flakes.
— 13—Hazy; slight snow; clear and frosty at night.
— 14—Alternately calm and windy; frosty; dusky clouds; frosty.
— 15—Cloudy and cold; slight snow showers; overcast.
— 16—Uniformly overcast; cloudy; overcast.
— 17—Overcast; slight thaw.
Mean temperature of the week, 6½ deg. below the average.

State of the Weather at Chiswick during the last 24 years, for the ensuing week, ending Jan. 26, 1850.

Jan.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds. N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 20	40.3	30.3	35.5	4	0.65 in.	4	5	4	1	3	4	2	1
Mon. 21	42.9	33.4	38.1	13	0.48	—	3	4	1	6	4	4	2
Tues 22	43.8	34.7	39.3	18	0.57	2	4	1	4	3	7	2	1
Wed. 23	44.3	34.5	39.4	12	0.27	—	3	2	3	4	7	1	4
Thurs. 24	43.7	33.1	38.4	18	0.51	2	3	2	1	3	8	4	1
Friday 25	43.8	33.5	38.6	10	0.90	1	3	2	1	3	7	4	3
Satur. 26	44.7	33.2	38.7	10	0.34	1	4	2	2	1	5	3	3

The highest temperature during the above period occurred on the 20th and 22d, 1828; 22d and 25th, 1846—therm. 56 deg.; and the lowest on the 20th, 1838—therm. 7 deg.

Notices to Correspondents.

Agapanthus umbellatus: *A H.* It is probable that it will prove hardy in 18 inches of water. At all events, the experiment is well worth a trial. ‡

Ammonia: *Anon.* Plants absorb the carbonate both by their leaves and roots, but especially by the latter, to which it is conveyed by manure or dissolved in water.

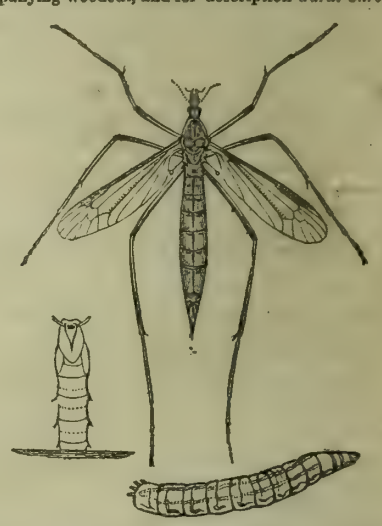
Coins: *J R C.* Such questions as yours do not concern the objects of this Paper. ‡

Figs: *G S.* You will not be likely to succeed in growing Figs under Vines in so small a space as 15 feet by 7, covered with glass. Better form a chalk subsoil, from 12 to 18 inches deep, and grow them out of doors. Without artificial heat, you can only expect to ripen, in the ensuing summer, the latest formed fruit on the extremities of last summer's shoots. ‖

Gesnera: *J T.* It is strictly a stove plant. You had better look to the roots, where, we presume, the mischief will be found to lie.

Grapes; *G S.* Although Frontignans in Vineries require fire heat, yet you may succeed in ripening those without it which you have planted in a frame, because you can cover it at night. In sunny weather your frame, containing a small quantity of air compared with the surface of glass, will frequently get excessively hot, unless great attention be paid to ventilation. ‖

Insects: *J D.* The insect found on the Cactus is a Typhlocyba, a genus allied to the froghopper or cuckoo-spit insect, and which is incapable of committing the injuries you describe. *W.*—*Pedicia rivosa.* It is most probable from your description that the young Cabbage roots have been eaten by the larvæ of the common daddy-long-legs, Tipula oleracea (see the accompanying woodcut, and for description *Gard. Chron.* for



1841, p. 612.) The larva of the cockchaffer has six legs, and is thick, curled, and fleshy. The ichneumon larvæ are white, fleshy, and destitute of legs, but are found in the bodies of other insects. *W.*—*E T W.* The caterpillars infesting the grains of Wheat are those of the moth of Noctua cubicularis, which we have received from other parts of the West of England. We can suggest no other remedy at the present season than careful examination and hand picking. *W.*

Lettuces: *Montgomeriides.* Steep your old Lettuce seeds in pure water for 12 hours before sowing; but it is very doubtful whether any vitality remains in them. ‖

Names of Plants: *G S.* Schinus Molle.—*M*—*l.* Trichocentrum tenuiflorum.—*P P.* Galeottia Beaumontii; the genus is extremely near Batemannia, and perhaps not really distinct.—*Troublesome.* Limonia Laureola, a fine thing; is it hardy? Tell us all about it.

Pruning the Peach-tree: *G S.* A young shoot must be trained from the base of the one which bears the fruit, in order to supply the place of the latter, which must be cut away at the winter pruning. A similar proceeding has to be repeated, tending, as you observe, to produce a long naked snag. But it often happens, that even at the base of this some buds that have remained in a latent state for years break out; and by taking advantage of these, a young shoot is obtained, having its origin almost close to the main branch, and then the adjoining snag can be cut away. ‖

Seeds: *N.* We cannot recommend dealers. ‡

Temperature: *G S.* The thermometers employed for registering the maximum and minimum temperatures at Chiswick are placed at a distance from any wall or building. They are Rutherford's, made by Newman, and agree with others in the neighbourhood, excepting occasionally; when the latter indicate slight differences they may be traced to the effects of radiation from buildings. ‖

Misc.: *A Market Gardener.* No circulating library of horticultural works exists that we know of. We are unacquainted with anybody likely to suit your purpose. We would advise you to advertise for a man. ‡—*G P.* You can have the numbers mentioned. The price will be 3*s.*

ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

ANNUAL COUNTRY MEETING OF 1850,
TO BE HELD AT EXETER.
PRINCIPAL DAY OF THE SHOW, THURSDAY, JULY 18.

PRIZES AND REGULATIONS FOR AGRICULTURAL IMPLEMENTS.

The Prizes are open to General Competition: Members have the privilege of a Free Entry; and Non-subscribers are allowed to compete on the payment of 5*s.* on each Certificate.

Forms of Certificate to be procured on application to the Secretary, 12, Hanover-square, London. All Certificates for the entry of Implements, &c., will be required to state the total number of articles entered to be shown by each Exhibitor, and the space required for their exhibition, and must be returned, filled up, to the Secretary, on or before the FIRST OF MAY, 1850; the Council having decided, that in no case whatever shall any such Certificate for Implements be received after that date.

PRIZES.

For the Plough best adapted for general purposes, 7*l.*
For the Plough best adapted for deep ploughing, 7*l.*
For the best One-way or Turn-wrest Plough, 5*l.*
For the best Paring Plough, 5*l.*
For the best Subsoil Pulveriser, 5*l.*
For the best Drill for general purposes, which shall possess the most approved method of distributing compost or other manures in a moist or dry state, quantity being especially considered, 10*l.*
N.B. Other qualities being equal, the preference will be given to the drill which may be best adapted to cover the manure with soil before the seed is deposited.
For the best pair-horse steerage Corn and Turnip-drill, 10*l.*
For the best Drill for small occupations, 5*l.*
For the best Turnip-drill on the flat, which shall possess the most approved method of distributing compost or other manures in a moist or dry state, quantity being especially considered, 10*l.*
N.B. Other qualities being equal, the preference will be given to the drill which may be best adapted to cover the manure with soil before the seed is deposited.
For the best Turnip-drill on the ridge, which shall possess the most approved method of distributing compost or other manures in a moist or dry state, quantity being especially considered, 10*l.*
N.B. Other qualities being equal, the preference will be given to the drill which may be best adapted to cover the manure with soil before the seed is deposited.
For the best drop Drill, for depositing seed and manure, 10*l.*
For the Manure-distributor which is best adapted for distributing broadcast any kind of compost or hand-tillage when in a moist state, and which is capable of adjustment for the delivery of any quantity, from 2 to 20 bushels per acre, 5*l.*
For the best portable Steam-engine, applicable to threshing or other agricultural purposes, 50*l.*
For the second best ditto, 25*l.*
For the best portable Threshing-machine applicable to horse or steam power, 20*l.*
For the best Corn-dressing Machine, 10*l.*
For the best Grinding-mill for breaking agricultural produce into fine meal, 10*l.*
For the best Linseed and Corn-crusher, 5*l.*
For the best Chaff-cutter, 10*l.*
For the best Turnip-cutter, 5*l.*
For the best Oilcake Breaker, for every variety of cake, 5*l.*
For the best One-horse Cart for general purposes, 10*l.*
For the best Light Waggon for general purposes, 10*l.*
For the best Machine for making Draining Tiles or Pipes for Agricultural purposes. Specimens of the Tiles, or Pipes, to be shown in the yard: the price at which they have been sold to be taken into consideration, and proof of the working of the Machine to be given to the satisfaction of the judges, 20*l.*
For the best Set of Tools for General Draining, 3*l.*
For the best Heavy Harrow, 5*l.*
For the best Light Harrow, 5*l.*
For the best Cultivator, Grubber, and Scarifier, 10*l.*
For the best Pair-horse Scarifier, 5*l.*
For the best Horse Hoe on the flat, 10*l.*
For the best Horse Hoe on the ridge, 5*l.*
For the best Horse Rake, 5*l.*
For the best Horse Seed-dibbler, or Seed-depositor, not being a drill, 10*l.*
For the best Cider Mill, 10*l.*
For the best Barrow Hand Drill, to work with cups, 3*l.*
For the best Liquid Manure Distributor, 10*l.*
For the best Haymaking Machine, 5*l.*
For the best Gorse-bruiser, 5*l.*
For the best Cottage Stove or Range for burning coals, 5*l.*
For the best and most economical Steaming Apparatus for general purposes, 5*l.*
Miscellaneous Awards and Essential improvements, Silver Medals estimated at 20*l.*
For the invention of any New Implement, such sum as the Council may think proper to award.

By Order of the Council, JAMES HUDSON, Secretary.
London, August 7th, 1849.

*** Prize Sheets, containing the Conditions of these Prizes, and the Regulations for Competition, may be had on application, by post or otherwise, to the Secretary, 12, Hanover-square, London.

FOR PUBLIC SALE, at the New Corn Exchange Tavern, Mark-lane, on MONDAY, January 21, 1850, at 2 o'clock precisely, about 1700 tons of damaged PERUVIAN GUANO, in Warehouse, ex sundry ships, by order of Messrs. Anthony Gibbs and Sons, the Importers.—Catalogues and further particulars in due time from Messrs. J. A. RUCKER and BANCRAFT, Brokers, 26, Commercial Sale Rooms, Mincing-lane, London.

PERUVIAN GUANO.—As Agents of the Peruvian Government for the importation and sale of this valuable MANURE, we think it right, for the protection of consumers and respectable dealers, to apprise them that the adulteration of the article is still extensively practised, and to recommend them to apply either to ourselves, to our agents, Messrs. GIBBS, BRIGHT, and Co., of Liverpool and Bristol, or to dealers of established character, in whose honesty and fair dealing they can place implicit confidence. ANTONY GIBBS and SONS.
London, January 19.

THE LONDON MANURE COMPANY beg to offer as under, and pledge themselves that every Manure shall be perfectly Genuine:—Corn Manure for Wheat, Barley, Oats, Clover—most strongly recommended from its success last year; it will be found cheaper than Guano, and bear the strictest analysis. Also URATE, Superphosphate of Lime, Sulphate and Phosphate of Ammonia, Nitrate Soda, Fishery and other Salt, Gypsum, Sulphuric Acid, &c.
GENUINE PERUVIAN GUANO.—To insure this free from adulteration, all purchasers, if they prefer it, can receive their warrants from Mr. Purser, and remove the Guano direct from the Warehouses of Messrs. A. GIBBS and SONS, the Importers.
Bridge-street, Blackfriars. EDWARD PURSER, Secretary.
Country Dealers and Agents supplied.

HOW TO KEEP A HORSE FOR LESS THAN ONE SHILLING PER DAY, and Make the Animal look Better than when Paying 12*s.* and 14*s.* per Week.—Consider the enormous saving in these hard times—times of cheapness.—Apply personally or by letter at MARY WEDLAKE and Co's, 118, Fenchurch-street, Oat-bruising and Chaff-machine Manufactory, established upwards of 40 years.

BY HER MAJESTY'S ROYAL LETTERS PATENT.

PATENT HOTHOUSE WORKS, KING'S ROAD, CHELSEA. EDENCH invites the attention of Gentlemen about to erect Hothouses, &c., to the vast superiority in every respect possessed by his PATENT HOUSES, which he will warrant superior in every respect to any others. Good Glass from 16 to 21 oz. per foot, 1 foot wide, 3 feet long, furnished, and the Houses when completed charged from 1*s.* 3*d.* to 1*s.* 6*d.* per superficial foot, according to size and quantity; one principle, the roof being formed without wood or putty, and the other principle being wood rafters and the glass put in with putty. Patent Sashes, requiring no paint, from 7*d.* to 9*d.* per ft.
HEATING BY HOT WATER.

STEPHENSON AND CO., 61, Gracechurch-street, London, and 17, New Park-street, Southwark, Inventors and Manufacturers of the Improved CONICAL and DOUBLE CYLINDRICAL BOILERS, respectfully solicit the attention of scientific Horticulturists to their much improved method of applying the Tank System to Pineries, Propagating Houses, &c., by which atmospheric heat as well as bottom-heat is secured to any required degree, without the aid of pipes or flues. S. and Co. have also to state that at the request of numerous friends they are now making their Boilers of Iron, as well as Copper, by which the cost is reduced. These Boilers, which are now so well known, scarcely require description, but to those who have not seen them in operation, prospectuses will be forwarded, as well as reference of the highest authority; or they may be seen at most of the Nobility's seats and principal Nurseries throughout the kingdom.
S. and Co. beg to inform the Trade that at their Manufactory, 17, New Park-street, every article required for the construction of Horticultural Buildings, as well as for heating them, may be obtained upon the most advantageous terms.
Conservatories, &c., of Iron or Wood, erected upon the most ornamental designs. Balconies, Palisading, Field and Garden Fences, Wire-work, &c.

The Agricultural Gazette.
SATURDAY, JANUARY 19, 1850.

MEETINGS FOR THE TWO FOLLOWING WEEKS.
THURSDAY, Jan. 24—Agricultural Imp. Society of Ireland.
THURSDAY, — 31—Agricultural Imp. Society of Ireland.

THE "PRESENT PRICES" excite very different emotions in different minds; and there are many we may be sure who are heartily and naturally rejoicing at the very causes which are spreading despondency amongst ourselves. But whatever the nature of the feeling produced, retrospect may yet show it to have been of very unnecessary intensity: and it may yet come to be seen that the connection between present prices and future prices is just as slight and uncertain still, as it has always hitherto been throughout the history of that most variable and inconstant of all things—the Corn Trade. And we believe that the very *uncertainties* of our position, by which so many are depressed, might thus be made a reasonable groundwork of hope.

Nevertheless, it is of course most proper to be prepared for the worst, and lest present prices should represent future experience too, it becomes a problem of the very highest importance—"How to produce Wheat at 5*s.* a bushel and meat at 5*d.* per lb.?" Let no one think, because, at those prices, his receipts in any or every year since he commenced business would be diminished by a sum more than the remission of his whole rent and taxes would replace, that therefore this problem is incapable of solution. For, to take the case of another manufacture, how clearly, on the very same ground, would the present *profitable* prices of cotton goods have, long ago, appeared ruinous, the cost of the labour and the raw material alone employed in the production of a given quantity then being far beyond the sum which that quantity would command in the market now. The cheapening in this case followed and indeed resulted from the constantly increasing skill and economy of the process; and although in our own case, most unfortunately, it has preceded that out of which alone, by right, it ought to have arisen, yet we may reasonably imagine that here, too, expenditure may be sufficiently reduced, and produce sufficiently increased, to meet our altered circumstances; and that present prices only put us in the position to which mutual competition, and our own increasing skill, would, in the ordinary course of things, have ultimately brought us. No doubt, we are not so well prepared for that position now as we should have been then; but the concession that that position is not necessarily fatal is all we at present desire. For all we yet claim to have proved is, that our proposed problem is not only absolutely forced upon our attention by the circumstances of our case, but that it is one which might reasonably, under any circumstances, have become the subject of examination. That there is no *primâ facie* absurdity about it must indeed be evident to every practical man who will take the trouble to consider the ordinary routine of farm operation, and see what wastefulness of means every part of it still exhibits.

Now we do not know of any instance in which this problem has yet been solved, or we should simply have to detail the particulars of the process for general imitation. Direct experience of the result has not yet spoken upon the subject, and therefore we have to content ourselves with demonstrations founded upon details. Of course if all the details be included, and each be absolutely true, such demonstrations will be perfectly trustworthy: it is the extreme liability to imperfection and inaccuracy of the premises with which agricultural demonstrations deal, that the conclusions arrived at by reasoning on these subjects are not always verified in the experience of the farmer. We can, however, only do our best to attain accuracy, and then we must just put such confidence in the results attained as the knowledge of this liability to error will permit—feeling certain, all the while, that any help, however imperfect, to the anticipation of a satisfactory experience, is far better than that absolute blindness under which so many seem ready to sit down in despair.

These remarks are introductory to a notice of Mr. HUXTABLE'S lately published pamphlet on "Present Prices,"* which is already, as it deserves to be, in its third edition. Setting aside the speculations of the author regarding the causes of the present lowness of the prices of agricultural produce—a topic upon which we do not intend to enter—let us just examine the argument by which he professes to have demonstrated its compatibility with agricultural prosperity. He has not *experienced* this compatibility; but he believes in it nevertheless. There is nothing absurd in that. No doubt, if any one saying "I will show you how to grow cheap food," could add, "Here are my farm accounts for the year, detailing the process and its result," he would be more eagerly listened to; but that should not hinder us from attending to the same assertion by another who only adds, "These are the reasons for which I believe the thing to be possible." Of course, the value of the teaching in such a case depends wholly upon the soundness of the "reasons" that are given. If they are trustworthy, so must the result be, to which they lead. Now the reasons which Mr. HUXTABLE adduces for his belief are all founded on experience; the experience, no doubt, to some extent, of the chemist, but still *experience*, and therefore, supposing it to be rightly recorded, unquestionable, as far as it goes. Mr. LAWES, of Rothamsted, he tells us, after labouring in his fields and feeding stalls for nine years, carefully applying manures and measuring vegetable growth, and administering food and measuring animal growth, and after working with Dr. GILBERT for as long in the laboratory, analysing manures, produce, soils, and foods, has come to the conclusion, that in the ordinary circumstances of most soils, and of growing animals in the long run, land and food are both dependent for their production of growth almost wholly on the presence in them of nitrogen; in the former case on nitrogen in the form of ammonia, and in the latter on nitrogen in the form of that part of food called protein and its compounds. He has also come to the conclusion that, out of every 10 lbs. of nitrogen thus used in the manufacture of Wheat and other cereal grains, hardly 4 are assimilated, 6 or more going to waste; and that of every 10 lbs. used in the manufacture of meat, hardly 2 are assimilated, 8 or more being rejected in the manure of the animals that are being fed. The former of these conclusions is supported, not only like the latter, by actual investigation of the facts, but by the consideration that ordinary land merely tilled, receiving no manure, is found able to yield *annually* a crop averaging 16 bushels of Wheat per acre—a quantity whose nitrogen corresponds in the proportion stated to that which the soil annually receives in the ammonia of the rain water which falls upon it. If the straw of this Wheat crop, instead of being always removed as supposed, be returned to the land, then for every bushel of Wheat that the soil is to produce beyond the 16, it must be supplied with about 5 lbs. of ammonia—a quantity sufficient, in the proportion named, to furnish the nitrogen which a bushel of Wheat is found actually to contain.

All these details are specified by Mr. HUXTABLE, and he uses them thus:—Supposing Wheat to be worth only 5*s.* per bushel—in the case of a crop of 32 bushels per acre, 16 bushels more than the unassisted yield of the land, such a quantity of ammonia will be needed to produce it as, at the present market price of the article, is worth 1*l.* 11*s.* 3*d*—then adding this to 4*l.* 10*s.* 3*d.*, at which (*including* rent and taxes, 1*l.* 8*s.* 4*d.*) he estimates the cost of cultivation per acre, he obtains a total which, deducted from 8*l.* (the value of the 32 bushels), leaves 1*l.* 18*s.* 6*d.* per acre for interest on capital and for profit—a conclusion which, supposing it to happen biennially, and the alternate crops just to pay their way,

* "The Present Prices," by the Rev. A. Huxtable. London: Ridgway, Piccadilly.

would leave the tenant of the land better off than even that most jealous of judges, the Income Tax Bill, supposes him to be.——But—"The rent is too low for the supposed produce"—"the cost of cultivation is not put high enough"—"green crops will *not* pay their way." All these objections are considered by the author: the rent is that of land actually worth only 20*s.* per acre, exclusive of tithe, &c., and which was *proved* to yield 16 bushels of Wheat annually without manure—but we will suppose that, as land now lets, it *is* too low, then we are perfectly ready to concede that rents must be lower than they now are, if prices continue poor as at present; this subject, however, we shall discuss hereafter; the other objections we are also ready, in some measure, to admit; for the cost of cultivation we do not think has been placed high enough—though we cannot now say why; and on the large scale and long run we have *not* found our green crops to pay their way. But, we must remember that there is a large margin —1*l.* 11*s.* 3*d.* per acre among the details of cost—which is supposed to be spent in the purchase of ammonia, though that ammonia need not be purchased; for, by the consumption of the green crops, we obtain a supply of it in the manure of our feeding stock. And, though in the course of years we have spent more on our green crops than we ever *directly* received from them, yet we believe, and we are beginning to experience, that this has arisen merely from want of the necessary skill. There are districts where Turnips are grown and consumed with a profit—*that* is certain; and there are many instances in our own experience where 9*s.* and 10*s.* per ton have been made from them in beef and mutton, beside all the ammoniacal manure which Mr. HUXTABLE supposes us to buy for our Wheat crop. And though, during the present winter for instance, we do not believe that all the green food for cattle in the country will furnish a money result to the consumer of more than 5*s.* per ton, yet we believe that a great deal is easily possible in the way of liquidating or even more than repaying the annual charge per acre of green crops on the farm, both by a greater skill in consuming them, which will yield more money per ton, and by a greater skill in choosing and growing them, which will produce more tons per acre. Mr. HUXTABLE, however, is confident that in making both beef and pork, and selling them at 5*d.* per pound, he has himself obtained results far exceeding the cost of the means employed, leaving therefore a profit to the farmer over and above their supply of manure, containing ammonia, said to be worth 6*d.* per pound, for the profitable growth of Wheat at 5*s.* per bushel.

But on this, though we believe it to be the most valuable portion of this truly interesting pamphlet, we must not detain the reader. Let him obtain the work and study it for himself. He will find it to contain details of the most interesting experience, obtained both on the farm and in the laboratory; and—it may be, with all his convictions unbroken (for they are not assailed) on Protection as a matter of expediency or even of justice to the farmer, and on rents, that, if prices continue low, they must fall —he will, we are sure, rise encouraged from its perusal, hoping that, after all, agriculture is not in the long run to be a ruinous business, and that better times are in store for the cultivators of the soil.

The subject of true agricultural economy on which these hopes can find their only right foundation—one which can be profitably discussed in great detail—we shall endeavour to take up hereafter; and that of the present rents of land, an equally important topic, we must reserve for a future opportunity. Meanwhile we conclude with the assertion, that—independently of the fact that, whatever the lowness of prices may be, profits *will* be made when the raw material of the manufacture shall have assumed the natural value to which a lessened competition will most surely bring it—we believe that the intelligence which, however it may regard the ultimate results hitherto of agricultural experience, sees hopeful truth in many a point which that experience contains—the intelligence which sees *useful* truth and reality, not merely guesswork and plausibility, in the results of *Chemical* experience, and in the character and tendencies which it reveals in those atoms with which the farmer deals—this intelligence will, when united with a thorough-going energy and industry, carry us successfully through the present critical period of agricultural history.

THE PRIVATE MONEY DRAINAGE ACT.

TO THE RIGHT HONOURABLE LORD JOHN RUSSELL.

MY lord, it is now nearly three years since I had the honour of bringing under your lordships' notice a suggestion for a bill, to enable the proprietors of settled estates to borrow money from private sources for the drainage of their lands, and also for building appropriate farm buildings, and to charge the amount so expended on the inheritance, as a rent charge, terminable in a certain limited number of years; the annual instalment being so regulated as to repay principal and interest in the time specified.

During the last session of Parliament his Grace the Duke of Richmond took up the subject, and brought in a bill "The Private Money Drainage Act, 1849," which has now become law, embracing the principle of my suggestions, in so far as they related to drainage, and it is almost needless for me to say that that measure has been hailed with satisfaction by the landed interest generally.

It is to be feared, however, that in consequence of a defect in the arrangement of the bill to which I have alluded, it may not be so generally useful as it might otherwise have been. The defect to which I refer, is the want of some provision for a receivership of that portion of the rent charge which goes to repay principal. There are few parties who are willing to lend money to be repaid in the manner specified. Parties who lend generally wish their capital to remain undisturbed, they only receiving the annual interest. This defect in the bill must therefore narrow the number of lenders to those persons or societies who trade in money; and thus, while enhancing the rate of interest to the borrowers, deprive the small capitalist of a safe, convenient, and profitable means of investing his money, in the improvement of his neighbour's land.

I need hardly point out to your lordship the great advantages which would have resulted from the full operation of such a measure during the present season. It would have furnished employment for the large masses of agricultural labourers now out of work, while the increased consumption, consequent upon their earning of wages, might, in some degree, have enhanced the prices of agricultural produce, and, at all events, would have furnished more ready markets. It would also have been an early step towards that improved system of agriculture, which, it is admitted on all hands, must spread itself over our fields, if the landed proprietors are not to have their incomes materially curtailed.

As it seems probable that the "Private Money Drainage Act, 1849," may be brought before Parliament in the ensuing session for amendment, I am now desirous of respectfully urging upon your lordship's attention the great benefit which would accrue to the country generally, by the early passing of a thoroughly practical measure for enabling the proprietors of settled estates to borrow money from private sources, not only for draining their lands, but also for erecting proper and suitable farm buildings, and, under sufficient guarantees, to make its repayment a terminable charge on the inheritance.

In bringing this subject under your lordship's notice, I know that I shall be borne out by all the practical men in the country, when I say that any outlay judiciously made in providing good substantial farm buildings, would be more than repaid within 22 years by the accruing advantages. If, therefore, such a measure as I have indicated were passed, and largely taken advantage of, the country would, at the end of a limited time, be fitted out with excellent farm buildings, at absolutely no cost, either to individuals or the public.

The two great requisites towards profitable agriculture are a highly cultivated soil, and proper accommodation for preparing and converting its produce. The one is as necessary as the other. Half the advantages of draining are lost, if the increased produce is brought home to be consumed in ruinous ill-conditioned buildings. Nor will it be doubted, that the constant association with confusion and filth, and their accompanying waste, has a directly injurious effect on the mental condition of farmers occupying such buildings; tending, very much, to repress and eradicate all ideas of order and regularity, so necessary to success in agriculture as well as in other occupations; yet it cannot be denied, that a large proportion of the farm buildings of the country are in the condition I have adverted to.

I am not unaware that the extension of the measure of last session to buildings, received the consideration of a section of Parliament; and that it was not thought desirable to include them in the bill at that time, in consequence (as was supposed) of the difficulty of controlling the expenditure. I cannot believe that there can be any difficulty, not easily surmountable, on that point. The same machinery which oversees the drainage expenditure, could with equal, or perhaps greater, facility, overlook the erection of buildings. The commissioners might be restricted to granting rent charges only for such buildings as were decided by the bill itself to be suitable for the different descriptions and sizes of farms, and of a plain but substantial description (and this might be arrived at by the examination of a few competent witnesses); leaving it, however, in the option of the proprietor to extend, embellish, or modify as he pleased (provided the substantial nature of the work were not interfered with), on making a money contribution, for which no rent charge would be granted, equal to the increased cost caused by his alterations of the plan. A quinquennial inspection, and powers of compelling the necessary repairs to be made, would add little to the expense, and would afford a perfect security for the reversioner.

It is not for me here to advert to the laws which restrain the alienation of land. That these laws have been the means in some measure of retaining in influence and power great names, which have formed rallying points for the country in times of difficulty and danger, no one can doubt. While, however, we retain these laws, it must be obviously for the interest, not only of the landed proprietors, but of the country at large, that obstacles to the application of capital to agricultural improvement should be removed to as great an extent as possible, consistently with good faith towards existing engagements.

In conclusion, I only regret that it has not fallen to a less humble individual than myself to bring this subject under your lordship's notice, as I firmly believe it to be a matter of great and vital importance in the present crisis. I have the honour to be, your lordship's most obedient humble servant, *John Girdwood, Chirk, N. Wales.*

ECONOMY IN FARM MANAGEMENT.

IT is objected to yourself and others, who urge the adoption of what is called high farming, as a resource whereby to meet the reduced prices of farm produce, that the capital is wanting to carry out a better system. However this may be, it will not I think be disputed, that it is the imperative duty of every farmer who desires to stand well in these times, to adopt resolutely whatever methods and arrangements are the most economical, though they require the change of old established customs. It may be an encouragement to many who are at a loss to discover in what way they are to meet diminished prices, without having capital to increase the produce of their farms, to point out and bring to their recollection the means of retrenchment, which lie within their reach. For instance, now is the time to resolve that a pair of good horses harnessed abreast, shall do as much or more work at plough than three or four in a string now do. This is perfectly within the power of most farmers, and by adopting this change they save additional horses and drivers, or if the same number of horses must be kept, they get through the work quicker, and are enabled to employ more ploughs whenever the land is in the best state for working. If the system of saving horse labour and extra drivers were carried out by adopting light carts, instead of waggons and the waggoners' boys, this department of expenditure would be placed on a good footing.

Another item of saving may be in very many cases made in seed corn, for whilst one man finds 4 or 5 pecks of Wheat, 6 pecks of barley, and the same of Vetches, sufficient seed to ensure excellent crops, and to allow of horse-hoeing between them, can we pity those who needlessly waste what they might keep in their own pockets? Again, as in the sowing of grain crops, so in the harvesting the same, a saving may be made, if the land is clean as it should be, by mowing or otherwise cutting the crop close to the ground, and thus saving the additional expense, which we see every year incurred in some parts, of mowing and harvesting a crop of stubble. This slovenly practice, quite unknown in well farmed districts, must be dispensed with before any tenant can have a claim to reduction in his other payments.

The way in which the food of animals and their manure is wasted by exposure to wet, cold, sun, and wind, is a matter which can be completely rectified only by the aid of the landlord; by his providing suitable buildings for housing stock, &c. Still, the intelligent tenant may help himself in some measure. Let him dig out the ground under some of his open sheds, put two or three poles across, at 8 or 9 feet distances, and put up some thatched hurdles in front. He will then have, at the expense of a few shillings, and a little labour of himself and his men, a sort of box-feeding shed, in which he will find his beasts thrive on less food, and the dung incomparably better made than when it consists of little else but wet straw in an open yard. I saw lately some splendid dung made, equal I suppose to the best guano, at no cost to the tenant, as follows. At the back of a house in which beasts were tied up to fat, were openings in the wall, closed by wooden shutters. On the outside of this tie-up house was sunk a pit, 7 feet deep, 17 feet wide, and the length of the house where the beasts were, viz., 35 feet. Into this pit the dung from the beasts was thrown through the openings at the back, and the drainage from them ran into it also. The pit was covered with a lean-to, resting on brick pillars rising from the centre of the pit, where a valley was formed, and from this the roof rose again to about 6 feet above the ground, and the pit was closed in on the sides and front, having shutters to open, out of which the manure could be thrown as required. In this pit 20 pigs were fatting, and said to thrive remarkably well, having a little clean litter thrown over the dung occasionally, which is kept well trodden down by their weight till it rises to the surface of the ground, and the pit is full. This, again, requires the help of the landlord. It was the tenant's practice to mix it under another shed with peat or ashes of burnt clay, and to apply from 5 to 7 bushels of the mixture per acre. He said that sometimes the beasts and pigs made a good profit, but always had cleared themselves, leaving him I calculate above 150 cubic yards of stuff equal to guano, for nothing! Surely some such means of making and preserving good manure, worth the labour of carting out, is an object for which a tenant should not be unwilling to pay a liberal interest on the expenses of building.

Another diminution of expense which low prices naturally bring with them is in the item of labourers' wages. Here it will be the natural desire, as well as the interest, of the good farmer, to manage so as, whilst relieving himself, to diminish as little as possible the comforts of the industrious labourers. A nobleman of much experience in these matters has proposed a plan for lightening the farmers' payments without allowing the whole loss to fall on the labourer, which is this, viz., suppose the rate of wages previous to reduction to have been 9*s.* per week, it is proposed in future to pay

of this 4*s.* 9*d.* per week in money, and to give 2 stones of flour to the man in lieu of the remainder. The calculation would then be about as under.

Former rate per week.	Proposed to pay in cash.	Value of 2 stones of Flour to Farmer.	Total cost of Wages to Farmer.	Value of 2 stones of Flour to Labourer.	Total value of Wages to Labourer.	Positive reduction to Labourer.
s. *d.*	*s.* *d.*	*s.* *d.*	*s.* *d.*	*s.* *d.*	*s.* *d.*	*s.* *d.*
9 0	4 9	3 0	7 9	3 6	8 3	0 9
10 0	5 8	3 0	8 8	3 6	9 2	0 10

And so on reducing 1*d.* for each 1*s.*, or about 8½ per cent.

If it is thought the labourer should bear a greater deduction than the above, the money part of the payment, can be varied accordingly. The cost of a bushel of Wheat is above estimated at 5*s.*; and that it produces 3stone 2lbs. of flour, the bran paying the expense of grinding. A great relief would be experienced by the farmer, and it would tend very much to the comfort and respectability of the labourer, could the custom of paying more extensively in kind, instead of in money, which is universal in the north of England and Scotland, be introduced more generally.

Another payment which is diminished to the farmer by permanent low prices of grain is the tithe; and others ought to follow, such as the price of beer, and tradesmen's bills generally; and when middlemen of all sorts are obliged to cheapen the articles which they sell, such as butchers' meat, bacon, bread, cheese, &c., the additional consumption, with an increasing population and flourishing trade, will no doubt benefit the farmer.

The last means of economy, as regards landed property, which I will allude to at present, less directly affects the tenant, but must surely force itself upon the serious attention of the landlords; I mean the unreasonable expenses which the technicalities of lawyers' practice have imposed upon the possession or transfer of this kind of property. Free trade in land itself is the great means of improving this species of property, such as the dire force of circumstances has driven the Legislature to sanction in Ireland, and which can alone enable proprietors, by selling part of their estates or by easily raising money on them, to obtain capital wherewith to improve the remainder. To remove from land the incubus which our lawyers and an antiquated system of feudal tenures have combined to impose upon the soil, must be the constant aim of those public writers, like yourself, who desire to benefit the landed interest and the country generally.

In conclusion, I will observe that if I see on one side of a hedge four horses at length, and a boy to drive them, whilst on the other a pair, and no driver, are found more efficient—if I see a man wasting his seed corn, and having his crops foul in consequence—if I see him mowing and raking up and carting home half-rotten stubble—if I see his beasts starving in cold and wet, and his dung washed and robbed of most of its good qualities—if I see him wasteful in so many points, and only niggardly towards his labourers—I can listen to no appeals for reduction of rent from such a quarter, as I consider, that by his own act, together with the reductions which low prices bring of themselves, he may afford himself more effectual relief than he could pretend to claim from his landlord in a reduction of rent. *T. T.*

P.S. One mode of relief, which those who seek for aid to the farmer from the Legislature would do well to urge, is the repeal of the excise duty of 6*s.* a thousand on bricks, about one-fourth of their cost price! No greater impediment to proper farm buildings exists than this heavy tax on their erection.

Home Correspondence.

Landlord and Tenant.—Your remark in the leading article of the *Agricultural Gazette*, of January 5th, that "the practice of allowing land to become deteriorated towards the termination of a lease, is quite notorious" is unfortunately the naked truth. At present the landlord, to escape having his farm thrown on his hands at the expiry of a lease, very frequently engages to give a fresh one, and so put off the evil day as long as the tenant is willing to remain on the farm. That, however, is but a temporary expedient, only available where both parties are pleased with their bargain, and with each other. But whenever a tenant has made up his mind some years previously to leave his farm, then is the time for scourging crops and neglect of every kind; one thing only is considered, how to get as much as possible out of the land, and to put nothing into it. "Liberal covenants" are excellent things, because strict ones are utterly useless; a bad tenant can ruin a farm in spite of them. A lease with some sort of clause or stipulation, by which an outgoing tenant should be bound to give up his farm in as good condition as when entered on, is indispensable to make the bargain fair. I would give the tenant compensation for unexhausted manures laid upon the farm, the amount to be fixed by arbitration, but permanent improvements, as is usually the case, would be arranged by a special bargain between the parties previous to their being undertaken. That would leave the tenant nothing to complain of, and the landlord would get back his farm in fair working order. Subject to that stipulation, a lease need only be a few lines long, and contain no restrictions whatever as to cultivation. That you or some of your able correspondents would give your readers a form of lease, is the reason why I am now troubling you with these few lines. I may be excused feeling rather acutely on the subject, from having an unlucky farm which has suffered nearly 40 years from want of some protection to the landlord at the end of the lease. Its first tenant was an amateur farmer, who knew very little about the business which he had undertaken. After 20 years of mismanagement he left the farm; having been anything but a gainer himself, he left the land, as might be expected, in a melancholy condition. His successor was just the man to bring things round, and put the place in order again. He was a young man, bred to the business, with plenty of capital; in fact "one in a thousand" among tenants. He began famously. I gave him a new dwelling-house and farm-offices, charged a low rent for the farm, on account of its being out of order, and assisted him in draining, inclosing, &c. For the first 10 years everything went on admirably, and the farm was got round into perfect order, quite a pleasure to look at. By that time his work naturally grew less as matters gradually came right, and my friend, being of an adventurous disposition, took to speculating, prospered at first and then became bankrupt. The lease became the property of his creditors, who are now for the few remaining years working it "properly," while the unlucky landlord is compelled to look and see his property ruined under his very eyes, without being able to help himself. In a few years I shall get the farm back in as bad order as that in which it was 20 years ago—my first heavy outlay and my 20 years' reduction of rent all gone for nothing. *Linton.*

Cost of an Acre of Roots.—The statement of the cost of an acre of roots in a late paper attracted my attention from my having previously made an estimate of this. I send it to you, thinking it desirable that your readers should have opportunities of comparing such estimates, and offering such corrections as their experience may suggest; by which means the average cost will be established, though the particular items of cost may vary in different soils, localities, and practices. The more difficult and important problem to be resolved is, what portion of this cost ought to debited to the succeeding crops in the rotation? If any of your experienced correspondents, who may have considered that point, would favour your readers with their view of this matter, and the reasons on which it has been founded, it would be very interesting and useful to those who desire to keep accurate accounts. Your correspondent's estimate amounts to 12*l.* 10*s.*; mine, to 10*l.* 8*s.* 3*d.* The principal difference between us arises from his charging 12*s.* for two ploughings in spring, which I maintain to be unnecessary after deep ploughing and subsoiling in autumn on clean land; 2*s.* 6*d.* for Couch picking, which would not exist on such land, generally; 7*s.* per ton for carting dung beyond my estimate, which assumes dung on the farm and therefore near at hand; 18*s.* 6*d.* charged for pulling, carting, and clamping, which I get done in the field, without hauling, at 7*s.* per acre; and 10*s.* more than my estimate for rent, tithes, and taxes. I charge rather less for hoeing, as I make use of Garrett's horse-hoe, which costs something less than 9*d.* an acre, and I put interest on capital at 5*s.* 6*d.* an acre more than your correspondent.

ESTIMATE.

	£	*s.*	*d.*
Rent, tithe, and taxes	2	0	0
Interest on capital, 15*l.* per acre	0	15	0
Ploughing and subsoiling in autumn	1	5	0
Cultivator in spring	0	2	6
Double harrowing and rolling	0	4	0
20 tons manure and filling	4	0	0
Ridging	0	2	0
Women spreading dung in furrows	0	1	3
Splitting the ridges over the manure	0	2	0
Drilling and seed	0	4	6
Singling	0	3	6
Twice horse-hoeing (Garrett's)	0	1	6
Hand-hoeing in the rows	0	3	6
Pulling, topping, and storing in clamps	0	7	0
Four bushels superphosphate of lime drilled with the seed	0	16	6
	£10	8	3

I am inclined to think horse and man labour somewhat under-estimated, in respect of the application of the manures, and that a safer estimate would be 10*l.* 10*s.* *C. L.*

High Farming.—Much has been said lately by your correspondents about great crops, thin seeding, and management of land. I can give you an instance embracing all these points, which occurred, I think, about 12 or 13 years since. It was a crop of Wheat, taken from a piece of ground of very moderate quality, but had been under spare culture for garden purposes for many years. To give you an idea of the quality of the soil, I may say that the site had been coal pits in former years, and in sinking the shafts of the pits, the refuse had been laid on the surface and levelled down, which consisted of shaly clay stone, of a very poor nature. The land naturally thin and bad, in the vicinity of a large and smoky town, of which it was within a mile. The quantity of seed sown per acre was 2 pecks; the height of the straw (all standing) 6 feet, and the produce 69 bushels of Wheat per acre. The person to whom it belonged has continued the practice of alternating a Wheat crop yearly on different parts of his ground, and that is the rule so far as seeding, and crop seldom varying much in quantity per acre. This proves what may be done even with moderate land, if dry. Spade culture, no doubt, would pay every cultivator, if there is sufficient capital to carry it out. We need have no complaint of the want of employment for labourers, and I believe at a cost very nearly assimilating to horse power. You may, in most neighbourhoods, get land dug, say 10 inches deep, at 4*d.* per rod, that will be little more than 30*s.* per acre, which, after digging, requires nothing more than sowing and harrowing; and if the result is as shown, it must be remunerating. It is unnecessary that the ground should be annually dug by the spade—say once in four years; consequently a person occupying 100 acres, digging 25 acres annually, would always keep his land in first-rate management, and the extra cost would be more than covered by the increased produce of the first crop, besides the improved after crops. This is a proper system for Mr. Mechi's enterprise. Something must be done to increase the produce—rent is not the object to be considered altogether. I live in a neighbourhood where I certainly am not surprised at the result of the existing mode of working land. The idea is ridiculous to suppose that crops can be grown by such proceedings. The ground is ploughed year after year, say 4 or 6 inches deep, leaving the bottom as impervious as a high road. A time is coming when the plough must give way to a better and more effectual instrument; if not the spade, it must be something nearly assimilating in its effect. The wonder to me has long been, not that people do not get great crops, but that they get what they do by such management. I am engaged in cultivating land, but not as an agriculturist, and I know well, from 35 years' experience, that land is grateful in proportion to its management, good or bad; and with me the opinion is, that it is impossible to say what land under good cultivation will produce. I fancy its limits have not yet been attained. Subsoiling is a sort of substitute for the spade culture, but a very poor one. I say subsoil by hand, that is dig 10 inches deep, and below work the subsoil over by a fork, and leave it, keeping the top soil on the surface, and you do it effectually, and I have no hesitation in saying that the cost per acre will be less than by horse power, and a very superior piece of work when completed. Much has to be undone that is done. Old notions must give way to necessity, and many things done which have not been done. We only want enterprise and the old customs destroying, and there is yet a living to be made by cultivating land. *Verax.*

Prices.—Report says farmers are suffering through the high charges of butchers and bakers; and householders are complaining, with justice, of being obliged to pay an exorbitant price for cheap food. The unnatural state of the market is most prejudicial to the present consumers of meat, as well as to those who might indulge in the luxury if the wholesale and retail prices were more equal. The manufacturers have to look to increased consumption to remunerate them; but if they, from want of capital, are unable to supply the market regularly, the public would be at the mercy of the middlemen, who would thus control the quantity offered for sale, and injure society, particularly the lower classes. Thus it is with sheep and oxen, &c.; the farmer receives a low price for his animals compared with what he did some years ago, and has not the advantage of the manufacturer, who makes up for the cheapness of his food, by selling double the amount. The relief of the agriculturists must come through the working community, eating meat two or three times a week; which they could do at the present worth of beef and mutton, when standing on its legs; and why should they not know the taste of the same brutes, when hanging up on an iron hook in the shambles? For this simple reason, because no one will take the trouble to regulate the matter. It is to be hoped such an excuse will no longer exist, and that the correspondents of the *Agricultural Gazette* will take up the subject, which is of such vital importance, not only in a commercial point of view, but as intimately connected with the comfort and happiness of our poorer neighbours. It is strange how little suggestions are attended to at the time, which in after years are carried out at an immense loss of gold and character, when common foresight would have saved both, and added blessings to thousands. Englishmen, with all their sense, good nature, and liberality, are yet a race possessing considerable selfishness; and when once enjoying competency, individuals are averse to exertion, and trouble themselves little about anything which does not bring grist to the mill. How often do we hear men who have idle time on their hands, exclaim, "Oh, never mind; things will all come right, why should I interfere and bother myself with what does not concern me?" Persons who are living on an income which does not require them to consider how they spend every shilling, think lightly of giving a halfpenny or penny per pound for meat more than they ought to do; forgetting the bad example of such carelessness, and how many hard working men suffer through provisions being advanced beyond their real value. Such is now the case, to the discomfort of those with limited but independent means, and to the serious loss of the labourer, whether in or out of doors. It would be doing good service to the public, if the *Agricultural Gazette* would, from time to time, state the price which should be given per pound for beef, mutton, pork, bread, and cheese, leaving a fair remuneration to the retailer; beer, per pint, might be included. Rents of shops have nothing to do with these matters; if men choose to have plate glass fronts they must pay for them, not their customers. *Falcon.*

Leases.—Without entering into the motives of political parties, I maintain that if leases had been encouraged, based upon the price of corn, to fluctuate between two given points, say 5*s.* 6*d.* to 7*s.* 6*d.* per bushel for Wheat, and other grain in proportion, spreading the average over three years, in the same way as the tithe commutation, tenants might have taken leases without fear, and landlords might have granted them with increasing advantage to themselves. Fix the rent of a farm at a given price for corn, and the three years' average will prevent any violent fluctuations to disarrange the landlord's income on the tenant's profits, and you have a

true criterion of the value. Give the tenant scope for his industry and enterprise, and then, if at the end of his lease, the farm is improved and he has reaped the benefit of his exertions, clap on a per centage for the landlord, and let the tenant go on again. If this plan had been adopted 30 years ago, the agriculture of the United Kingdom would have been upon a par with the best cultivated farms, and the price of corn, during that period, would never have exceeded, upon the average, what it is at present; then what becomes of protection? To this complexion it must come at last; or nearly all of us will be ruined, and drag our landlords into the vortex after us. I have been led into this digression by the query of "E. O.," who asks, What does it require to cultivate an average farm of 50 acres in the present day? Supposing "E. O.," as an amateur farmer, to be A 1, I just make a hasty estimate of what it would take to do the thing well, and not extravagantly, which upon an average grazing farm in the Eastern Counties, of about 44 acres arable and 6 pasture, would be within a few pounds.

2 Cart horses	£60	0	0
Plough and cart harness for ditto, Jas. Hunter, Kelso	8	15	6
1 Y. L. Plough, Messrs. Ransome and May ...	4	8	0
1 Roll ditto ditto	10	15	0
2 Sets of Hannam's, 3*l.* 10*s.*; and Howard's, Bedford, 4*l.*	7	10	0
1 Bentall's Broadshare Scarifier	6	12	0
2 Crosskill's Carts, with harvest ladders	26	0	0
1 Corn-drill, Smyth, Peasenhall	21	0	0
1 Horse-hoe, Wm. Ball, Rothwell	4	0	0
1 Thrashing Machine, Barrett and Exall ...	27	10	0
1 Corn-dressing machine, Bewley	5	0	0
1 Corne's Chaff Engine, by Hornsby*	10	0	0
1 Gardener's Turnip Cutter for beasts and sheep ...	4	10	0
2 Hand-rakes for gathering corn and hay, J. W. Sharman	1	6	0
Barn Implements, Sacks, Wheel-barrow, Dung-forks, &c.	15	0	0
3 Cows	36	0	0
2 Breeding Sows	6	0	0
30 Lambs, or crone ewes for fat lambs	30	0	0
Poultry	3	11	6
Labour for the first year	65	0	0
Valuation of muck and hay, stover, fallows, &c. ...	65	0	0
Rent	60	0	0
Seed Corn—11 acres Barley, 3 acres Beans, 8 acres Clover (seeds), 3 acres Tares, 2 acres Mangold Wurzel, 4 acres Swedes, 2 acres Turnips, and the 3 acres of Tare land to bear a crop of late Turnips	20	0	0
	£517	3	0

If "E. O." make the 17*l.* 3*s.* up 50*l.* it will buy a little artificial manure and cake, &c., and another 50*l.* just to keep the cart on the wheels during the Christmas tide, it would help him on wonderfully. "E. O." will perceive he might double his occupation, or even up to 120 acres for about 380*l.* more, and be in a much better position. *Peter Ploughman.*

Dry Process of Preparing Flax.—In the year 1810, a new method of dressing Flax was patented, by which the woody matter was separated from the fibre without steeping it, by means of mechanical action, and then the Flax was bleached by simply washing it in warm water. It would appear that the colouring matter is not chemically combined with the fibrous matter, while the plant is vegetating, or after it is pulled, but that the chemical combination takes place while the plant is steeped in water. The object of this steeping is to induce a fermentation, which loosens and destroys a cement which bound the fibres of Flax to each other and to the wood. The fermentation weakens considerably the strength of the Flax fibres, and even destroys many of them. This dry preparation, therefore, if it be practicable on a large scale, would be a prodigious improvement. It would render the Flax fibres much stronger, it would increase their quantity, and it would save the expense of the materials employed in bleaching the linen. It has been stated that the dry process has uniformly failed of success, when tried in Ireland. If this account be true, it is extremely difficult to explain it. About the time when the patent was taken out, the process was performed by workmen, under the direction of the patentee, at Old Bow, near London, with the most complete success; not merely upon handfuls of Flax, but upon whole fields of it. Indeed, the whole is so extremely simple, that it is difficult to explain how it should fail, if properly conducted. It is therefore highly probable, that the prejudices of the Irish, with which it would have had to contend at that day, were too powerful for it; but that as soon as it shall meet with fair play, it will be found just as practicable, and certainly much cheaper and better, than the methods at present in use. It is during the steep, then, that Flax acquires its permanent dark colour; and four processes in bleaching are requisite to restore it to its original white colour, or to separate the colouring matter, which is chemically combined with the fibres of the Flax. *T. S.*

The Fall of Rain here for the year 1849 is as follows:

January	Inches	1.56	
February		1.67	
March		0.24	
April		1.76	
May		5.03	
June		0.33	
July		2.75	
August		0.62	
September		2.77	
October	Inches	2.12	
November		1.69	
December		2.58	
		23.12	
In 1847		17.60	
In 1848		30.00	

The fall of rain in May last, 5.03 inches, is the largest I have to record in any month during the last three years. I have had under my notice a large field of observation as to drainage in the various soils of this district, and I have observed on many occasions the insufficiency of 1 to 1¼-inch pipes to receive and discharge the water from the soil; and indeed 2-inch pipes are not always adequate to this purpose, if the drain be an extensive one. If the parallel drains of a field consisting of 8 to 10 acres are collected into a single main, that should be constructed with double 2½ or 3-inch tiles, which appears to me to be far better than pipes, although of equal capacity; and when practicable, let all drains be open at both ends. In spring draining, it is essential to get under rather than into the water. *Henry Dixon, Dorwards Hall, Witham, January 7.*

* The threshing machine horse-works will do for this.

Thick and Thin Sowing.—As a proof of what may be done in thick and thin sowing, the following is a case which, so far as I have heard, is exceedingly rare, if not altogether unparalleled. The carpenter, who resides in the same village with myself, has about an acre of ground which he cultivates himself; rather more than half of this he sows every year with Wheat, at the rate of 1¼ peck per acre; the rows are 8 inches apart, and the plants 5 inches in the rows. The produce of this at harvest is from 12 to 16 coombs per acre, or 40 to 60 bushels. After the Wheat crop is off, he carries out what appears to me to be a very good system, and one which I heartily wish could be followed on all farms as might appear practicable, 1st, in drills 30 inches apart, he plants Beans; 2dly, between the rows of Beans, Beet; and 3dly, in the furrows, Potatoes. As the land in this part of the country is ploughed in narrow stitches, 9 feet in width, there are several furrows in an acre; consequently, he is enabled to grow a sufficient quantity of Potatoes to supply his family, consisting of himself, his wife, and five or six children, for the whole year. Although Mr. Mechi has gone a great length in thin sowing, I think he will allow that he is outdone in this case; should he be able to reduce his quantum of seed to this proportion, no doubt he will; and I am of opinion, he will only be doing what is perfectly right, and at the same time in strict accordance with the principles of good economical farming. Would that the day were already arrived when tenants might carry out this system of farming, and thus introduce additional crops into the 4-course system. Our country would then be in a more prosperous and flourishing condition than it has been of late years; and if landlords would come down into the country, and give employment to our labouring classes, who are willing to work, though now, in many cases, forced to be idle, we should then again see some signs of prosperity. They talk of industry whilst our poor are starving in the mean time for want of actual work. There is an almost endless quantity of profitable labour that might be done in this country in the way of drainage alone. An equally important subject for the consideration of landlords is, the improvement of farm-buildings, so as to provide good feeding-sheds, liquid manure tanks, &c. Tenant farmers are told they ought to do all this, and it would be well if they could and would; but let me ask, is it fair for the tenant to do it all, and then for the landlord to take his share of the benefit? I think not. Let our landed proprietors come forward and assist the tenantry, by first reducing the rent to the average price of corn, and then by providing a fair portion of the necessary means for improving their own property and increasing their own wealth. I am not one who would excuse the British farmers for not doing more than they have done hitherto, far from it; they are I consider far behind their duty, and stand very much in their own light; but let us, both landlord and tenant, pull together, to do each other good; let Christian charity prevail amongst us, and, with the blessing of a merciful Providence, we may hope to find ourselves better off than the gloom of our present prospect leads us to anticipate. *J. R.*

Agricultural Progress.—Rich Mr. Mechi, good Mr. Mechi, do not as yet lose all patience with us country clodhoppers; indeed, you must not, as you have undertaken to teach us. But, above all, do not think that we all cavil and sneer at your "improved husbandry," and triumph at your supposed failures. I, for one, may safely say that I have the greatest respect for you as an experimental farmer, and wish with all my heart that you may realise "cent. per cent." before you will have been at Tiptree-hall another seven years. I can well appreciate the merits of well-tilled ground, well-kept fences, good farm-buildings, and all the belongings of high farming. But, indeed, all farming, by reason of present prices, seems under a cloud and we all naturally want to know whether even high farming itself will pay, if things go on as they now are. Of no one can the question be more fairly asked than of Mr. Mechi, for he is a real high farmer, and, moreover, thoroughly acquainted with accounts. I would ask purely for information; it is important to me, for I am a shopkeeper in a market-town, the centre of a large agricultural district, and upon the prosperity of agriculture I conceive my profits depend. Let us put a case. I am the owner of Tiptree; you, Mr. Mechi, are my tenant (a strong case enough you will say). By our united efforts we have reclaimed the farm, and put it into the first-rate condition which it now presents. You have two years since taken a lease from me for 19 years, with "liberal covenants." Rent, say on 200 acres, 300*l.* You have probably 2000*l.* capital at least invested upon it, upon which you would want 10 per cent. What expectation have you now, with the present average of prices, of making a decent profit for yourself at the year's end? Could you, as tenant farmer, make a living out of it? Could you, even if I gave up 100*l.* a year rent? If you think you could, pray give us a short Dr. and Cr. statement of the how; for this is just what 19 people out of 20 tell me is impossible, and I wish to see proof, or, at all events, sufficient presumption that it is possible. If you do not choose to do any of these things, pray excuse the presumption of *Sagitta.*

Manure.—In the *Agricultural Gazette* of the 29th of December, a correspondent signing "P.," writes fully and forcibly on the necessity of farmers applying themselves to meet the altered circumstances in which they are now placed by competition, and trusting more to individual exertion than legislative interference. I agree with the writer on the many points advanced where economy and application can be brought to bear in increasing production, and I am desirous to avail myself of every opportunity of doing so. In the economy of manures much may yet be done, and I shall feel much obliged if "P." will inform me how I ought to make and preserve my farm-yard manure. My buildings are spouted, and the bulk of my manure is made under sheds, receiving no moisture but urine, and this, with cattle droppings, including the dung of pigs and horses, is mixed and well incorporated for the growth of Turnips in June. After the cattle leave the yards in the spring, the manure in the yards and sheds is turned over and kept dry under the sheds, till required for the Turnip crop. In the article above referred to, your correspondent complains of the "system of mixing together straw and cattle droppings, and leaving them to ferment exposed to air and water." Now I wish to know how manure should be made, in ordinary farm-yards, without straw? Can "P." make horses lie on boards; or what sort of farmsteads must be constructed, were all the young stock reared on the farm lodged on wooden gratings? Assuredly stock of any kind cannot be very comfortable when they have no bed but boards, though it is impossible to say how they might like a hard bed when used to it. I shall be obliged if your correspondent would be more explicit on this most important subject. *J. J. Rowley, Rowthorne.*

Cultivation of Hemp.—Hemp has been cultivated in the counties of Lincoln and Suffolk from time immemorial, but chiefly for the purpose of local manufacture; and, although it has been very little attended to in Ireland, some experiments made this year by the Royal Flax Improvement Society to grow this plant in the south, turned out very well. In county Limerick, some stalks attained the height of 7 feet. Hemp may be cultivated on the western coast of Ireland, where it would be of great use, as affording material for the nets, lines, and cordage of the fishermen, who are generally destitute of these necessary articles. It might be grown by themselves, and scutched, spun, and twisted, or netted, by their wives and daughters. The quantity of this article imported, annually, into Great Britain and Ireland, is about 45,000 tons, valued at 1,600,000*l.* About 1 million sterling of this comes from Russia. In entering upon the cultivation of Hemp, the first thing to be attended to is the selection of proper soil; the best suited for Hemp is a deep black vegetable mould, with a low situation, and inclined to moisture; it does well on a rich clayey loam, and old meadow land is well adapted for it. The mode of preparation, and the place in the rotation, are the same as for Flax. The proper season for sowing is April, as soon as there is no danger of the young plants receiving injury from the frosts. The seed is sown broadcast, from 2 to 3 bushels to the statute acre, according to the quality of the land. The quality of the seed must be fresh, heavy, and bright in colour. Hemp is one of the few plants employed in the agriculture of these countries, in which the male and female flowers are in different plants, which circumstance has some influence in its management, so far as taking it off the ground is concerned. When the crop is grown entirely for the fibre, it is pulled when in flower, and no distinction made between the male and female plants. But, as is most commonly the case when it is cultivated with a view to both fibre and seed, the usual practice is to pull the male plants, the stalks of which are easily known by their yellowish hue and faded flowers as soon as the setting of the seed in the females shows that their presence is no longer necessary. The reason for thus pulling the male so long before the female is, that the latter requires four or five weeks to ripen the seeds. The operation of pulling the females commences when the seed is ripe, which is known by the brownish hue of the capsules and the fading of the leaves. The after treatment, such as steeping, &c., is the same as Flax. *T. S.*

Societies.

Highland and Agricultural, *Dec.* 12: *Discussion upon the Storing of Turnips and other Roots.*

Mr. Scott, of Craiglochart, said — First, with regard to Turnips, I believe it is generally admitted that such of the white or yellow varieties as require to be kept over winter should be protected from the weather, and even Swedes will, in the majority of seasons, derive benefit from protection; for not only are Turnips liable to be injured by frost, but after the spring growth takes place, much of the nutritive matter is lost by being converted into woody fibre. Where it is necessary that the Turnips remain on the ground till spring, much benefit will be derived by having the bulbs covered with earth, which can be done on light land by passing a double boarded plough between the rows; but where the land is stiff, a common plough will answer the purpose better. Where Turnips are to be removed from the ground, it will be better that they be lifted and stored before any severe frost sets in. In cases when they cannot be directly carted off, they may be stored in quantities of one or two cart-loads, in the form of a Potato pit, and slightly covered with earth; but I believe the better way is to have the Turnips carted off to a convenient situation, and put up in ridges of about 6 feet in width, and about 4 feet in height, to be covered with straw, firmly tied down with straw ropes, the ends of which are easily fastened by putting a spade-

ful of earth on the end of each. Turnips stored in this way may be kept fresh till the end of May; but when it is wished to keep them so long, it may be necessary to turn them over in the month of April, to check the growth, covering them as before. In removing the stems and roots, care should be taken not to injure the bulbs; and they ought never to be stored in a frozen state, otherwise they will be liable to spoil; however, if not convenient to cart them off the field immediately on being pulled, by placing them in rows, on the field, of four or five drills, and covering them with the stems, they will be protected from slight frosts, and may be carted off the first dry or frosty day. Second, with regard to Potatoes; it is almost unnecessary to say that these roots must be protected from the influence of the weather, that they be kept dry, cool, and free from frost. At one time it was no uncommon practice to store Potatoes in large houses to the depth of 6 or 7 feet, or in large pits 6 or 7 feet in width; all that was considered necessary, if they were lifted dry, being to keep them free from frost; but of late years, such a proceeding would be a most hazardous experiment. When Potatoes are lifted from the ground, however dry they may be, and put together in quantities, they throw off a considerable quantity of moisture, or, as it is technically called, sweating takes place, which is repeated to a less or greater extent every time they are moved or turned over; and of late years, since the appearance of the Potato disease, even with sound Potatoes this appears to take place to a greater extent than formerly, and if means be not taken to allow the moisture thus generated to escape, there is great risk of heating or fermentation taking place, by which the whole mass may be destroyed. Potatoes for storing should be moderately ripe, and lifted dry, and probably the best mode of keeping them is to put them in a cool well-ventilated house, to a depth not exceeding 2½ feet; but care must be taken to exclude any strong light, otherwise those on the surface will turn green and acquire a bitter taste; but where Potatoes are grown to any extent, such an amount of accommodation as would be required for this purpose is seldom to be obtained, and, therefore, recourse must be had to pitting. The pits should not exceed 4 feet in width, raised to a point in the centre of about 3½ feet in height; and with a view to facilitate the drying of the Potatoes, and carrying off the moisture that is generated, lines of drain tiles or pipes may be put along the centre of the pits, and at short intervals carried up to the top, and also cross lines opening to the outside. The Potatoes are then to be covered with straw or turf, above which a moderate quantity of earth. Of course, on the approach of frost, the openings of the tiles or pipes must be carefully closed; and there is no doubt this plan will, to a certain extent, have a beneficial effect; but where it can be done with safety, a better mode is to cover the pits with straw only, until the Potatoes have become quite dry; and if the straw be put on to a depth of 9 or 10 inches, in the same manner as in thatching a stack, and firmly roped down, they will dry better, and the straw thus put on will resist a considerable amount of bad weather, but on the approach of severe frost it may be necessary to put on additional covering, which may be of stable litter, or they may be covered up with a light coat of earth; in this way Potatoes will keep well although there be a good many diseased ones amongst them, but if these are to a considerable extent, it may be prudent to separate them before storing.—Mr. MACLAGAN, jun., of Pumpherston, said: There are three things to be guarded against in storing the Potato, viz., dampness, frost, and heating or fermentation. In as far as I have been led to form an opinion, I think this object can best be accomplished by storing in pits. When Potatoes are stored in a house, there is generally too great a quantity of them put together, even though they are not heaped too high, and this is apt to induce fermentation, and produce rapid decay. From the extensive use of the Potato, and its acknowledged importance as food for man and beast, public attention has been more than ordinarily directed to its proper preservation, and various methods have been recommended for this purpose. I have found the common triangular pit to be as good, with a few simple precautions for preserving the Potato, as any method recommended. It should not be wider than 4 or 5 feet at the base, and as high as the Potatoes will lie when thrown up by the hand; and the ground about the pit should be well drained of all superfluous water. When the Potatoes are pitted they should be well picked, so that not a bad one should be put into the pit, and well drawn straw should then be put on them, covered with earth in the usual way. The Potatoes are very apt to heat when they are laid in a body, even though that should not be large, and a moisture exudes from them, or they are said to sweat. Now, precautions should be taken to remove the dampness, that if sweating should occur it may be attended with no worse consequences. This may be best done either by evaporation or by absorption. It is done by evaporation when the pits are ventilated by opening a connection between the interior of the pit and the external atmosphere, which is most conveniently effected by placing ventilators of straw on the top of the pits, or causing a circulation of air through the Potatoes, by means of tiles placed across the pit at different places. Those who have tried this plan have recommended it as most efficient; but the objection to it is that, if not properly attended to during frost, the Potatoes are very apt to get frosted. Or the dampness may be removed by absorption, by throwing any absorbing material, such as sawdust, or simply dry earth, among the Potatoes, during the process of pitting; and these substances, by absorbing the moisture exuded by the Potato, keep it always dry, and thus render it more certain of keeping. I know an instance where, before the present failure of the Potatoes, a farmer made a practice of throwing in some soil among the Potatoes as they were pitted, and his, in one season particularly, were the only Potatoes preserved sound in the pits in that neighbourhood, though other farmers had the same variety, but neglected this precaution, thinking the Potato could not be stored too clean. Now, as regards the Turnip. If Turnips are placed in a large heap, they soon give symptoms of fermentation and decay at the bottom, and in the middle of the heap; if, on the other hand, they are exposed singly to a withering draught, the feeding substance is soon evaporated, and nothing is left but the skeleton of the Turnip—its woody fibre. These are two extremes against which we must guard. And here, again, our object is best gained by storing in pits rather than in a house. In storing Turnips the ground on which they are to be put should be freed of all stagnant water, and the Turnips should first be thrown down in a body from 3 to 4 feet high, with a flat top, and straw thrown over them to preserve them from the frost; the rain falling from above, and passing through the heap, does no harm in my opinion, but rather good, in keeping the Turnip fresh. The great difficulty I have felt in getting Turnips stored, is the removing of them from the field, which is generally so wet, that it is not only oppressive to my horses to take them off, but injurious to the field for the next crop; and, besides, when the cartage of such a bulky material is to take place, a due regard ought to be had to the general economy of the labour on the farm. We are better ploughing our stubble land than injuring our Turnip field, and cutting up our roads by such great cartage. I allude only to when the weather is wet, which in nine seasons out of ten is the case at the very time we are most anxious to store our Turnips. It is therefore necessary that we should take some preparatory steps to preserve them in the field from the frost till we are enabled to get them home. Various methods have been recommended for this, such as ploughing in, &c.; but the objection I have to many of these is, that I cannot cart them home fresh at the very time I desire, viz., during frost. The plan I have adopted latterly is to shaw them all, and then throw them into heaps, 6 yards apart, in the field, and cover them with the shaws, and then when a frosty morning comes sufficient to bear the carts, the whole force is put on, and the Turnips are got home as fresh as the day they are pulled. This additional labour costs about 2*s.* 6*d.* per Scotch acre, but certainly when we consider every advantage attending it, it is well spent money. The poaching of the ground and the cutting up the roads are avoided, while it is done when the horses can be best spared from the plough.—Mr. BLACK, Dalkeith, said: The system of storing Turnips which I have adopted for several years past, and with satisfactory results, is this. All the Turnips I expect to be consumed previous to the 1st of February are topped and tailed, and put up in heaps of 6 feet in width at the base, and 3½ feet in height; this size of heap I would recommend as most convenient for covering—they are covered with loose straw next to the Turnips, and then with a coat of well dried thatch, similar to that used on corn and hay stacks; the ropes are put on horizontally, and fastened with pegs stuck into the heap, having the ropes twisted once round them. This finishes the storing for winter's use. Those intended for spring feeding are bulked up with a double-moulded plough, similar to Potatoes, men following the plough with spades to cover any high standing Turnips that may be left uncovered by the plough; they are left in this state till wanted, and are brought once more into sight by the application of a pair of heavy harrows crossing the drills; those that remain till seed-time approaches should be stored in a similar way to those intended for winter's use, but less care is necessary; all that is then needed is to protect them from the effects of droughty weather. This method of storing Turnips not only protects them from the effects of frost, but also from the ravages of hares, rooks, and rabbits. I may mention that I much admired the plan of storing Potatoes followed by Mr. G. Watson, Libberton Mains, this season. He covered them with a coat of well-drawn straw and ropes, allowed them to remain in this state till the fermentation which usually takes place had abated, and then covered them with earth when the straw had become completely dry, thus obviating the injurious effects that invariably follow from covering them close up while the process of fermentation is going on, particularly to those intended for seed. Mr. Watson tells me that the Potatoes stored in this manner have kept better than any other method of storing he has tried this season.—Mr. MELVIN, of Bonnington, Ratho, said: I believe it was Professor Johnston that, in one of his addresses to farmers, told us that when we were at a loss to know what was agricultural truth, we ought at once to ask a question of Nature, meaning by that to perform an experiment for ourselves, and read there the answer. Now, on the subject of the storing of roots, it appears to me that however much general knowledge there may be regarding the subject—and those gentlemen who have preceded me in this discussion have most thoroughly shown their possession of it—in regard to some minor points, a little exact knowledge would be of use. I do not mean by this, or now to enter upon the propriety of taking up Turnips before winter, as I have nothing to offer on that head, but to acquiesce in the views previously rendered, although I must confess it would be very desirable to have had some accurate series of experiments prepared in different localities to have learned the actual gain therefrom. But what I now propose to submit to the meeting is the actual results which follow the adoption of different modes of storing Turnips. The first experiment undertaken was to ascertain if any, or what amount, of loss of weight arose from having Turnips topped and rooted in the usual way, and left exposed in the fields for a period of time. A quantity were taken up on the 19th October last, cleaned, weighed, and heaped up, allowed to remain exposed to wind and weather until yesterday, when they were again re-weighed, and the loss per ton amounted to 1 cwt. 91 lbs., after having lain 52 days. This fact speaks volumes against the pulling, and allowing to lie in the fields, of Turnips, for any length of time. It seemed a matter of some importance to test accurately the loss of weight that Turnips suffered from being stored in the usual way, in rather small heaps, and covered with straw in an open exposed place. A portion so weighed on the 19th of October, and re-weighed on the 11th of December, showed a loss of 1 cwt. 60 lbs. in the ton; rather an unlooked-for fact, to me at least, as I was of the belief that the straw kept out a portion of the air from blowing so freely through them. The next subject of inquiry was, whether or not it is possible so to preserve Turnips, after being taken up, that no loss of weight shall result. A quantity, therefore, was sunk into the ground, the bottom of the hole laid with straw, and the bulbs all closely covered over with this also, and one foot depth of earth laid above all. The rain that fell was also shaded off. When this portion was re-weighed, it was found not to have lost any weight whatever. It would appear that, by hermetically sealing them up, as the chemists would say, at this period of the year, they can be preserved without loss. After the able statements we have heard from those so well qualified to lead opinion on this subject, it is not for me to presume to say in what manner the Turnip heap should be spread, but I would merely point to what the experiments above detailed would lead, and it is every one's duty to satisfy themselves on this head, which they can easily and cheaply do, as their experience may differ from mine. And first of all, it appears obvious that Turnips ought to be received from the field as soon as possible after being pulled; and next, that they be laid into as large masses as possible; for in this way they are much easier protected from external influence. But here again another subject must be guarded against, and that is the danger arising from internal decomposition. There are few crops of Turnips but contain many rotten ones, and even many bulbs, apparently sound when taken up and put into the store, soon manifest symptoms of decay; and as substances when in this state evolve heat, the temperature of the mass rises; for we are all aware that the low temperature is the cause of the bulbs being checked from growing during winter. So soon, therefore, as the heat of the heap increases, a fresh growth commences; this very growth again produces more heat, as we can easily prove from the rise in the temperature that takes place when Barley is malted. The store is now in a changed state; the vital powers of the bulbs being excited, they have no rootlets to push out into the moist earth, wherefrom to draw nourishment, but the stores contained within the bulb must be resorted to, and immediate deterioration takes place; should there be any slightly unsound, the warmth produces decomposition among these, and the decaying virus spreads. We therefore see that, between the two extremes, we must choose that free of heat, which, while preventing the external influence of frost, rain, sunshine, and drought from injuriously affecting its contents, and permitting the free egress of internal heat, is the best. The free passage of the air through the mass must be checked, while either the covering or quantity put together must not be too great. Rows of heaps, about 6 feet wide and 4 feet high, ranged parallel to each other, and the whole surface levelled over with straw so soon as the frost sets in, is the form that appears to combine most advantages; while the straw from thatching of stacks, or any short damp portions that are found about all yards, are much superior as a covering to new-threshed dry straw. There is another subject deserving some consideration in reference to this matter, and that is the manner in which the operation of topping and tailing of the bulb ought to be performed. We sometimes see broad slips from the top of the bulb slipped off along with the shaw, and at other times the root is taken off too far up. Since the chemical analysis of the shaw showed that there is nearly as much solid matter in it as in the bulb, it would naturally be expected that more attention should be paid it for the purpose of being consumed by stock, but this does not seem to be the case; and after all, perhaps, the best application of it is to plough it in green; still there is a portion of the thick end of the leaves that may be left attached to the bulb, and cattle do not seem to reject it as they do the rest of the blade. Now, it occurred to me that it is possible that when the leaves and root are cut off, as they are in the usual method, close into the bulb, there may be an emission of more of the juice than when part of the leaves and root is left. To ascertain this point, other three experiments were tried: first, then, a quantity had 2 inches of shaw, and the main root left at the bulb, weighed and exposed for 52 days, and before being reweighed, were found to have lost 2 cwt. 25 lbs. per ton. Another portion was weighed, topped, and tailed as the preceding, covered with straw in the usual way, and reweighed again yesterday, and was found to have lost 2 cwt. per ton. A third portion, similar to the last, was closely covered up beneath a foot of soil, and kept from the ingress of water, and, on again trying their weight, were found to have lost 57 lbs. a ton—corresponding to the loss resulting from the 2 inches of leaf that were left on them having fallen off in the handling of them a second time, it having much rotted; and otherwise, these three other trials just corroborate the former ones.—Mr. M'LEAN, Braidwood, said: I trust I may be permitted to state some of the modes practised in the higher districts, in which I reside, and where greater care is requisite to preserve them from the nipping frosts and vermin by which they are liable to be assailed when lifting them in November, and storing them in pits for winter use. I have found earth alone preferable to straw, not being so apt to take in rain. When storing, great care should be taken not to break the Turnip by the shawing knife, but left in the same state as those now upon the table, neatly topped but not tailed, as those cut are more likely to be decayed. Bulking up by the plough, as mentioned by Mr. Black, is an excellent mode of preserving them, besides benefiting the land by stirring up the subsoil; I have left portions undone, and have found the following crop better where bulked up. A plan very generally adopted is to run up a double moulded plough through every third or fourth drill, according to the weight of the crop, by careful shawing, putting them neatly into the opened furrow, and with the common plough once round completely covers them. This mode is found beneficial in sheep farms, as they may be allowed to pasture near them with safety. When wanted, by running up the double moulded plough, you scatter them to both sides, and get them easily removed, and I have invariably found them fresher than when stored in pits.—Mr. FINNIE, Swanston, said: I will confine myself to one or two remarks on the storing of Turnips, which well deserves more of our attention. Wherever I have been in either England or Scotland, there appears one uniform practice of storing Turnips, viz., throwing them together in large heaps, and in general regardless of their exposure to wind and weather—the quantity put into one mass—and whether, as the season advances, the stock actually get them in the state most likely to afford the greatest amount of nourishment. I have been most solicitous to obtain better information on that part of my practice, and the remarks, therefore, I am about to make, are not so much with a view of holding out a system for adoption, as to induce others to point out its defects. I believe every farmer will admit that it is most undesirable to go to the fields during the winter months for a supply of Turnips for either rearing or feeding cattle. Two evils result from it—1st, the poaching of the land; and, 2dly, the injury done to the stock from the quantity of clay and earth which is unavoidably brought home with them. In another respect, I think I shall be supported when I state that Turnips raised before frost sets in are much more nutritive, and, to use a homely expression, stand much more eating, than those left exposed to the winter blasts; and that, in short, hardly a season passes without many being entirely destroyed by frost and other causes. My object, therefore, has been to endeavour to adopt some systematic plan by which the cattle may have their supply of Turnips during the winter months in a way most likely to forward the fattening process. Towards the end of October, generally speaking, the Turnip crop may be said to cease growing for the season. I therefore calculate the quantity required for the months of November and December, root and stem them in the field, and drive them home to some convenient spot about the steading, not laying too many together, and give them a covering of straw. Those needed for January I store in pits similar in shape to the Potato, but restricting the quantity to 15 cwt. per lineal yard. What is intended for February and the two first weeks of March, I cut off the tops, but leave the roots, as I find they keep that length of time in a much fresher state than when the roots are taken off; but the quantity per lineal yard is reduced to 12 cwt. Those, again, intended for spring feed, and until the Grass is ready, are left untouched in the field, beyond doing what Mr. Black practises—running a double moulder plough between the drills, covering them as completely as possible with earth, and there they remain until the land must be cleared for the sowing of the Barley, when they are stored in pits of similar size as those already referred to. I should have stated that I first gave the pits a thin sprinkling of straw, over which the slightest covering of earth is thrown. I would prefer the earth alone; but in going to the pits in frosty weather, the straw prevents the earth sticking to the Turnips, and admits of them being taken to the cattle in a much cleaner state.—Mr. DICKSON, Saughton Mains, alluded to a different mode of storing Turnips, particularly Swedish. They are removed from the fields where grown, and taken to a field convenient to the farm steading, where they are placed, the leaves and roots being placed closely together. In this way one acre will hold the produce of from 10 to 15 acres. Mr. Melvin's experiments brought out a great deficiency in weight by storing. It would be desirable to learn from Professor Gregory or Dr. Anderson if this was attended with any serious loss to their feeding properties.—Professor GREGORY said, the mere loss of weight by no means proved an equal deterioration in the feeding qualities of the Turnip. It must first be determined whether the whole or how much of that loss is caused by evaporation, or exudation of the juices of the plant. If the latter, the loss would be great.—Mr. THOMSON, Peffermill, said, Turnips, like other plants, must have a ripe season, when he thought they should be raised and preserved as dry as possible. The Turnip, he thought, was ripe in November, and by storing them then he had for six or seven years found them to keep till May or June. He had uniformly found when Turnips were drawn from the field in March, that it was impossible to keep them without their giving way. They must be well stored previously to frost. Cutting close to the roots should be carefully guarded against. He had also another remark to make—he had often observed a quantity of stuff like treacle given out by the Turnips, and he was anxious to know how far this affected their feeding qualities.—Professor GREGORY remarked, that the fact mentioned by Mr. Thomson of the appearance of a syrupy liquid among the Turnips would seem to show that exudation of the juices actually does sometimes occur. It was obvious that the exudation of that liquid must have been highly injurious to the feeding power of the roots; and it remained to be seen under what circumstances that exudation took place, as well as how it was to be avoided.—Dr. ANDERSON said that, of course, if the diminution of weight was due to exudation, it would involve a serious loss, and it was not easy to ascertain whether or not this was the case. In the course of some experiments, however, in which he was then engaged, he had been led to observe, that exudation took place very slowly in the Turnip, and he was inclined to attribute the main loss to evaporation. In so far as he could venture to give an opinion, which, of course, must be only a theoretical one, on the subject of the preservation of Turnips, he was inclined to think that storing them was preferable to keeping them in the ground after they had reached maturity, because any further growth must be attended with a diminution of their value; when in the ground they are in the condition to take advantage of any warm day, and to deteriorate by the consequent growth. He might be permitted to observe, that he thought there was a want of definite information

regarding the alleged diminution of feeding value consequent upon the prolonged preservation of the Turnip. He was then engaged in a series of experiments on the feeding value of that root, which he hoped on some future occasion to communicate to the Society; and he remarked that, if Mr. Finnie could be induced to store some Turnips in different ways, their analysis would in all probability throw some light on the subject.

Miscellaneous.

Sainfoin.—I take it for granted that the system of sowing the whole of the Barley shift with Clover is no longer practised generally, from a conviction that half the shift, sown every eight years, will produce at least three-fourths as much food as can upon an average be produced from the whole of the shift sown every fourth year. When this plan is adopted, it will leave half the shift to be sown with some other crop. Here it is that I would commence operations: upon a part of this—say one-sixth of the entire shift—which I will suppose to be cropped with Peas, and which, upon a farm of 100 acres, in each season will amount to about 17 acres; to this quantity, therefore, I should direct my attention so soon as the Peas were harvested, and, by a little extra labour then, and during the period that elapsed before Michaelmas, I should take care to render the process of summer fallowing after the ensuing Wheat crop perfectly unnecessary. This being done, I should, in the Wheat crop, whether sown broadcast or in rows, deposit the seed with a drill in the spring. In that case, the land will present you with a crop of Sainfoin in place of the Turnip crop. This may be mown early in June for hay, and again in August for seed, and it will then produce a fine eddish in October. This I should continue in plant a second year, when it would displace the Barley crop, and again in the third year displacing the Clover layer. I then propose that it should be taken up for Wheat with the rest of the shift, when, in my opinion, it will with the same treatment produce the best crop the shift will afford. I am quite aware that the plant of Sainfoin will not be exhausted; but, upon a Sainfoin layer of four or five years' standing, the wireworm sometimes makes sad ravages in the ensuing Wheat crop, and even in the Turnips and Barley that follow: when the plant has been taken up in full vigour, say at the end of three years, I have never known these disasters occur. *Mr. Hine, in the Journal ofthe Royal Agricultural Society of England.*

Worcester Agricultural Society.—The premium offered by Mr. Henry Webb, for the best crop of Swede Turnips, grown with guano only, has just been awarded to Mr. Oldaker, of Grimley. The weight of the crops per acre in the competing fields was as follows:

	Tons.	cwt.	qrs.	lbs.
Thomas Oldaker, Esq.	35	2	3	12
T. G. Curtler, Esq.	23	3	2	8
Hon. and Rev. W. C. Talbot	23	4	2	16

Ireland.—English and Scotch farmers are settling in Mayo. A Scotch farmer has taken Gortnor Abbey, one mile from Crossmolina, with 167 acres of good land, fenced and drained, for 1*l.* 5*s.* per acre. At Poula Coppul, near Belmullet, an Englishman has taken a farm of 600 acres—100 of them good arable land, at a rent of 75*l.* per annum. At Ballyglass, an English family has taken 800 acres, of which 200 are fit for tillage, at 100*l.* a year. Within four miles of Newport, another "stranger" has taken a farm of 100 acres under Sir Richard O'Donnel. *Waterford Mail.*

Improvement of Welsh Agriculture.—The best way for an enterprising landlord, in the Welsh parts, to disseminate improved and scientific agriculture among his dependent farmers would be, to encourage the education of the most intelligent of his tenants' sons—to place them in the Royal Agricultural College—to permit him to view various good farming in England and Scotland, and then take him as his farm-bailiff. His practical and theoretical knowledge could be easily explained to the unlearned and unskilful tenantry, and might convince those who, from real ignorance, are often considered obstinate. *Mr. Read, in the Journal of the Royal Agricultural Society of England.*

Calendar of Operations.

JANUARY.

NORTH LINCOLNSHIRE WOLD FARM, *Jan.* 10.—Our horses and men have been employed during the last week in threshing Wheat and Barley with a 6-horse power machine, and in dressing and taking it to market. The Wheat is sold at 40*s.* per qr., weighing 18 stone per sack, gross, and the Barley at 23*s.* 6*d.* per qr., weighing 16 stone per sack, gross. We deliver the Wheat at a railway station, distant about 5 miles, and the Barley at Brigg, distant 13 miles from our farmstead; prices far from remunerating. We have been unable to stir a plough on the land, on account of the frost, since the 27th ult. Turnips are going up very swiftly, and although plentiful and cheap a month ago, we should not be surprised at their being sold at 5*l.* per acre to eat off on the land before the spring; an excellent crop was sold, however, in our neighbourhood at 25*s.* per acre, to be eaten on the land, before the storm set in. Our sheep are remarkably healthy on Turnips, and are doing well. The Wheat was looking beautifully before the frost commenced, but there are many hundreds of acres in our neighbourhood not yet up. *H. G. S.*

SOUTH HAMPSHIRE FARM, *Jan.* 12.—The weather since our last report has been of a varied character, but for the most part frosty with great absence of rain; and although for several weeks but little ploughing has been done, yet it is not important, for we should say a season was scarcely ever known when the field labour of the farm was in a more forward state than at present. Our horses have been employed during the past fortnight carting chalk on to newly grubbed ground, carting dung on to land where the Turnips have been fed off recently, in readiness to be sown with Wheat as soon as the frost breaks up; they have also been at work with the threshing-machine, threshing Wheat, Barley, Beans, Peas, and Oats, for which kind of work the frosty air has been highly favourable, for we find the corn we have had removed, threshed, and winnowed, has been much improved in condition by it. The few days of open weather which we had last week enabled us to finish ploughing all our fallow land intended for Turnips and other green crops. Our odd horses have been kept constantly employed by carting hay and Turnips for the ewes and lambs, carting hurdles for the removal of sheep, carting leaves from the pasture land, carting manure from the cattle pens, pigsties, &c., and also carting Carrots from the store heaps to the field for the lambs; and as we use them fresh from the heaps, the lambs do much better on them than they would with frozen Swedes. Our labourers have been engaged attending threshing-machine, winnowing corn, taking in ricks, hedging, banking, ditching, filling chalk, filling dung, filling carts with earth, where we are now removing old banks and carting into the hollow parts of our pasture land; thus two purposes are answered—the throwing open of the land and improving the surface of the grazing land; for which work the frost is well adapted, preventing the cart-wheels from cutting through the sward. The women are employed preparing and stacking Swedes and Turnips in readiness to be cut for the sheep; where our other work does not interfere, we prefer having them stacked and prepared by the acre, the price being 10*s.*, where we have a full crop. Our shepherds are now very busy, for although our horned ewes finished lambing, and all are forward in condition, and kept at full head on Turnips, hay, &c., yet our southdown ewes are just now dropping their lambs very fast; we have now 140 lambs, our stock of ewes being 200; the weather being severe, they require the utmost care, or numbers would perish; our in-lamb ewes go every day to a small piece of Swede Turnips, but return at night to a warm sheltered yard, well littered with straw, where they receive a liberal allowance of hay, and are regularly attended to by the shepherd, whose cottage adjoins the yard. Our forward down lambs are put on Turnips with the ewes at a week old; the ewes are supplied with common Turnips, cut with Gardener's cutters, and we find, more particularly in frosty weather, that it answers quite as good a purpose to cut common Turnips as it does Swedes, although it is not usually done in this neighbourhood, it being considered they can be readily consumed in the ordinary manner. Should the weather continue frosty, of which there is every appearance, the work of the farm will be of the same kind as during the past fortnight, having plenty of carting work and threshing to engage our attention. *J. B.*

Notices to Correspondents.

BACON: *JEM* supposes a far greater exactness of information to exist on agricultural subjects than is really the case. All we can say is that Bean, Pea, and Barley meals will probably make better bacon than Rye or Oats; but in what order they should stand to represent their relative excellence we cannot say.

MALT DUST: *H T W.* It is given to cows in various quantities, viz., from one to two pecks a day made into a mash, with hot water, giving it some time to steep. About two pecks of Oats, or one peck of Beans, a week, may be given to cows with advantage, in addition to other food. *W C S.*

MALT DUST FOR COWS: *Anon.* It may be steeped in either hot or cold water, and allowed to stand for some hours and so given as a mash. A peck a day may thus be given with other food. *W. C. S.*

SHEEP: *C.* They are the better for straw certainly; though wicker hurdles are not harder than, during the past fortnight, the ground has been on which flocks have been folded. A little straw would suffice.

SOUR BEER: *H Rumsey* says, "You lately recommended calcined chalk to cure stale beer. I tried it, and after the chalk had destroyed the acid the beer was flat. Afterwards I tried it in this way: In a two-hogshead cask we had about 56 gallons of very stale beer, turned by the thunder last summer, and not fit to drink. I drew it off, washed the cask out, and put in 2 lbs. of calcined chalk, and the beer on the chalk. I let it stand three days, then brewed 56 gallons of beer with 4 bushels of malt and 6 lbs. of Hops (worked as usual), and put it into the cask with the stale beer. It has been done about a month, and now tastes very soft and pleasant. My master says it is a hogshead of beer gained."

SYSTEMS OF AGRICULTURE *J W.* We hardly know what "A" and "B" differ upon. Our answer might be that there are very many more different systems of agriculture than either of them appear to assert.

Markets.

COVENT GARDEN, JAN. 19.

The severity of the weather has had its effect on the supply of Vegetables, and they are generally somewhat dearer than last week. Fruit is for the most part sufficient for the demand, except perhaps good dessert Pears and Apples, which are very scarce. Hothouse Grapes and Pine-apples are good for the season, Filberts and Walnuts are abundant, and Chestnuts plentiful. Oranges and Lemons are abundant, and there are some Seville Oranges in the market, but they are very dear and not good. Amongst Vegetables, Turnips and Carrots are rather scarcer. Cauliflowers and Broccoli the same; both have suffered severely from frost. Potatoes have altered little since our last account; there are large quantities of foreign ones in the market at from 50*s.* to 70*s.* a ton. Lettuces and other salading are dearer, and so are Mushrooms. Some Asparagus, Seakale, and Rhubarb may be obtained. Cut Flowers consist of Heaths, Pelargoniums, Bignonia venusta, Chrysanthemums, Primulas, Camellias, Cinerarias, Christmas Roses, Azaleas, Lilacs, Lily of the Valley, Epacrises, Acacias, and Roses.

FRUITS

Pine-apples, per lb., 5s to 8s	Oranges, per 100, 5s to 12s
Grapes, hothouse, p. lb., 5s to 7s	Almonds, per peck, 6s
— Portugal, per lb., 9d to 1s	— sweet, per lb., 2s to 3s
Pears, per doz., 2s to 4s	Walnuts, p. 100, 1s 6d to 2s
— per half sieve, 8s to 12s	— p. bush., 16s to 24s
Apples, kitchen, p. bsh., 2s to 4s	Filberts, per 100 lbs., 60s to 65s
Lemons, per doz., 1s to 2s	Nuts, Bar., p. bush., 20s to 22s
— per 100, 6s to 12s	— Brazil, p. bsh., 12s to 16s
Oranges, per doz., 9d to 1s 6d	Kent Cobs, 65s to 75s p. 100 lbs

VEGETABLES.

Seakale, per punnet, 2s to 3s	Spinach p. sieve, 2s to 3s
Asparagus, per bundle, 4s to 6s	Onions, p. bushel, 3s to 4s
Rhubarb, p. bundle, 1s 6d to 2s	— Spanish, p. doz., 1s 6d to 4s
Cabbages, p. doz., 9d to 1s 6d	Shallots, per lb., 4d to 8d
Cauliflowers, p. doz., 6s to 9s	Garlic, per lb., 4d to 8d
Broccoli, p. doz. bundl., 18s to 24s	Lettuce, Cab., p. sc., 4d to 9d
Greens, per doz., 2s 6d to 4s	— Cos, do., 6d to 1s
Brussels Sprouts, p. hf. sieve, 2s to 3s	Endive, per score, 1s 6d to 2s
Sorrel, p. hf. sieve, 6d to 9d	Mushrooms, p. pot., 2s to 3s
Potatoes, per ton, 60s to 120s	Small Salads, per punnet, 2d to 3d
— per cwt., 3s to 7s	Watercress, p. 12 bun., 6d to 9d
— per bush., 2s 6d to 3s 6d	Fennel, per bunch, 2d to 3d
Turnips, p. doz. bun., 1s 6d to 3s	Savory, per bunch, 2d to 3d
Red Beet, per doz., 1s to 2s	Thyme, per bunch, 2d to 3d
Horse Radish, p. bdl., 2s to 4s	Parsley, p. doz. bun., 3s to 5s
Cucumbers, each, 3s to 3s 6d	— Roots, p. bdle., 1s to 1s
Leeks, per bunch, 4d	Marjoram, per bunch, 2d
Celery, p. bundle, 8d to 2s	Mint, per bunch, 2d
Radishes, p. 12 hands, 1s to 2s	Basil, per bunch, 2d
Carrots, per bun., 6d to 1s	

HAY.—Per Load of 36 Trusses.

SMITHFIELD, Jan. 17.				
Prime Meadow Hay	68s to 75s		Clover	60s to 85s
Inferior ditto... ...	60	65	New Clover	— —
Rowen	50	60	Straw	23 28
New Hay	—	—		J. COOPER.
CUMBERLAND MARKET, Jan. 17.				
Prime Meadow Hay	65s to 72s		Inferior	65s to 80s
Inferior ditto... ...	50	60	New Clover	— —
New Hay	—	—	Straw	26 30
Old Clover	84	90		JOSHUA BAKER.

POTATOES.—SOUTHWARK, Jan. 14.

The Committee report that the arrivals during the last week from the Continent have been very large, and it is with difficulty present prices are supported. The best Yorkshire Regents are much inquired for, and are realising much higher prices than any other kind of Potato in the market. The following are this day's quotations:—Yorkshire Regents, 70s. to 120s. per ton; Wisbeach do., 60s. to 75s.; Scotch do., 60s. to 75s.; Scotch cups, 50s. to 60s.; French whites, 65s. to 70s.; Rhenish and Belgian do., 60s. to 65s.

SMITHFIELD, MONDAY, Jan. 14.

We have a good average supply of Beasts, and but a scanty attendance of buyers. Trade is excessively dull, and our top quotations are with difficulty realised for choicest qualities. The number of Sheep is not large, quite adequate, however, to the demand, which is very small, owing to the low prices at the dead markets. A few choice Downs make 4*s.* 4*d.*, but so rarely that it is too high to quote. Veal maintains its price, in consequence of short supply. From Holland and Germany we have 153 Beasts, 190 Sheep, and 8 Calves; from Scotland, 100 Beasts; from Norfolk and Suffolk, 1500; and 900 from Leicester and Northampton.

Per st. of 8 lbs.—s d	s d	Per st. of 8 lbs.—s d	s d
Best Scots, Herefords, &c. ...	3 10 to 4 2	Best Long-wools .	3 6 to 3 8
Best Short-horns	3 6 — 3 10	Ditto Shorn	...
2d quality Beasts	2 8 — 3 4	Ewes & 2d quality	2 10 — 3 4
Best Downs and Half-breds ...	4 0 — 4 2	Ditto Shorn	...
Ditto Shorn	...	Lambs	— ...
		Calves	3 4 — 4 4
		Pigs	3 0 — 4 2

Beasts, 3334; Sheep and Lambs, 22,070; Calves, 62; Pigs, 217.

FRIDAY, Jan. 18.

The supply of Beasts is short, although tolerably good for the season, and in consequence late prices are well supported, although the trade is by no means brisk. The number of Sheep as usual on Friday, at this time of year, is small; so also is the demand. Prices remain unaltered from Monday, but they are with difficulty obtained. The deficiency in foreign supply causes a better trade for Calves; there are very few good ones on offer, they make fully 8d. per 8 lbs more than on Monday. From Holland and Germany there are 13 Beasts, 100 Sheep, and 14 Calves; from Scotland, 200 Beasts; and 122 Milch Cows from the home counties.

Best Scots, Herefords, &c. ...	3 10 to 4 2	Best Long-wools .	3 6 to 3 8
Best Short-horns	3 6 — 3 10	Ditto Shorn	— ...
2d quality Beasts	2 10 — 3 4	Ewes & 2d quality	2 10 — 3 4
Best Downs and Half-breds ...	4 0 — 4 2	Ditto Shorn	...
Ditto Shorn	— ...	Lambs	...
		Calves	3 6 — 4 8
		Pigs	3 0 — 4 2

Beasts, 913; Sheep and Lambs, 2730: Calves, 95; Pigs, 225.

HOPS.—FRIDAY, Jan. 18.

Messrs. PATTENDEN and SMITH report that the market continues the same,

MARK LANE.

MONDAY, JAN. 14.—The market was tolerably well supplied with English Wheat by land carriage samples from the near counties; the millers, however, were by no means firm buyers (their trade being greatly interfered with by the large arrivals of foreign Flour), and a reduction of fully 1s. per qr. had to be submitted to before any progress could be made in sale, and the stands were not cleared at a late hour. A similar reduction had to be submitted to upon foreign Wheat, and the sale at the decline was trifling in the extreme.—Fine malting Barley must be quoted 1s. cheaper, whilst upon inferior descriptions a still greater abatement had to be conceded.—Oats maintained last week's rates.—Beans and Peas were both a slow sale, at 1s. decline upon the quotations of last Monday.

BRITISH PER IMPERIAL QUARTER.	s. s.		s. s.
Wheat, Essex, Kent, & Suffolk ...White	39—41	Red	38—40
— — fine selected runs ...ditto	41—44	Red	40—42
— — Talavera	44—46		
— Norfolk, Lincoln, & York ...White	—	Red	—
— Foreign	33—51		
Barley, grind. & distil., 28s to 23s...Chev.	26—30	Malting	25—24
— Foreign.....Grinding and distilling	17—22	Malting	21—24
Oats, Essex and Suffolk	15—20		
— Scotch and Lincolnshire ...Potato	20—24	Feed ...	17—22
— Irish .....Potato	18—22	Feed ..	16—19
— Foreign .....Poland and Brew	16—20	Feed ...	13—17
Rye	20—22	Foreign	20—23
Rye-meal, foreign .....per ton	5*l* —6*l*		
Beans, Mazagan .....22s to 23s .....Tick	23—27	Harrow	24—27
— Pigeon .....25s — 28s ...Winds	21—28	Longpod	25—27
— Foreign .....White	23—26	Egyptian	22—23
Peas, white, Essex and Kent.....Boilers	26—28	Suffolk	26—29
— Maple .....26s to 27s.....Grey	22—24	Foreign	22—29
Maize .....White	22—25	Yellow...	24—26
Flour, best marks, delivered ...per sack	38—40		
— Suffolk .....ditto	30—34	Norfolk	30—34
— Foreign .....per barrel	22—24	Per sack	30—36

FRIDAY, JAN. 18.—Excepting foreign Barley, of which we have a good supply, the arrivals of grain, both English and foreign, have been small during the week. This morning's market was thinly attended, and business, as of late, of a very limited character. Prices of all articles may be considered nominally the same as on Monday, but where sales were imperative a slight reduction was necessary.—Indian Corn is inquired after at 29s. 6d. afloat.—The Flour market continues dull, without alteration in prices. The corn trade since this day se'nnight has continued inactive and depressed throughout the kingdom, and prices of home-grown Wheat have declined 1s. to 2s. per qr. in most of the English markets, whilst the turn for spring corn has been generally in favour of the buyers. Some purchases of low Wheat and Indian Corn afloat, and also Barley on the spot, have been made for Ireland during the week.

ARRIVALS THIS WEEK.

	Wheat. Qrs.	Barley. Qrs.	Oats. Qrs.	Flour.
English ...	1210	1040	360	2650 sacks
Irish	—	—	—	
Foreign ...	1960	7570	6580	— brls.

IMPERIAL AVERAGES.	WHEAT.	BARLEY.	OATS.	RYE.	BEANS.	PEAS.
Dec. 8.....	39*s* 4*d*	27*s* 5*d*	16*s* 6*d*	23*s* 9*d*	28*s* 4*d*	30*s* 1*d*
— 15	38 9	26 9	16 0	22 6	27 8	28 11
— 22.....	38 9	25 9	15 9	22 9	27 5	29 11
— 29.....	38 4	25 9	15 6	24 0	26 11	28 8
Jan. 5.....	40 0	26 11	15 10	24 11	26 11	28 5
— 12.....	41 1	26 4	15 6	23 4	26 6	28 6
Aggreg. Aver.	39 6	26 4	15 10	23 6	27 4	29 0
Duties on Foreign Grain	1 0	1 0	1 0	1 0	1 0	1 0

Fluctuations in the last six weeks' Corn Averages.

PRICES.	DEC. 8.	DEC. 15.	DEC. 22.	DEC. 29.	JAN. 5.	JAN. 12.
41*s* 1*d*	...	...	...	...	...	...
40 0	...	...	...	...	...	...
39 4		...	...	...	...	...
39 4	...	...	...	...	...	...
38 9	...	...	...	...	...	...
38 9	...	...	...	...	...	...

LIVERPOOL, TUESDAY, JAN. 15.—The arrivals of grain, Flour, &c., have been moderate during the past week. Trade generally was inactive this morning. The few sales of Wheat were at a reduction from last Tuesday of 1d. per bushel on foreign, and 2d. on Irish. Oats declined ½d. per bushel. Barley, Beans, and Peas are each a dull sale, and prices rather weaker. Flour was the turn cheaper.

TO BE LET, with immediate possession, a NURSERY AND MARKET GARDEN, at Hampton, in the county of Middlesex, containing about 3½ acres, partially walled in, and well stocked; together with a Close of valuable Pasture adjoining, containing nearly 3 acres. There is a Cottage on the estate, and a Stable with Loft over, and every convenience for carrying on the business.—For terms and particulars, apply to Mr. BRADEL, 25, Gresham-street, London.

TO MARKET GARDENERS, NURSERYMEN, FLORISTS, AND OTHERS.

TO BE LET, within 7 miles of London, and near a Railway Station, an extensive range of FORCING HOUSES and PITS, completely fitted with hot-water pipes and apparatus, together with an assortment of Vines, in excellent condition, and all buildings, outhouses, and conveniences necessary for carrying on an extensive business. For particulars, apply to Messrs. RICE, Brothers, Auctioneers, &c., 263, High-street, Southwark, Surrey.

TO NURSERYMEN AND OTHERS.

TO BE DISPOSED OF, an old established NURSERY, about 100 miles from London, and in the immediate neighbourhood of a fashionable watering-place, the owner retiring from the business. The stock comprises a large quantity of Evergreens, Rhododendrons, &c. To any person who could command a small capital, this would prove a most advantageous opportunity. For further particulars, apply to Mr. D. A. RAMSEY, Auctioneer, &c., Brompton Nursery, Brompton, Middlesex.

GLASS FOR CONSERVATORIES, &c.

HETLEY AND CO. supply 16-oz. Sheet Glass of British Manufacture, at prices varying from 2d. to 3d. per square foot, for the usual sizes required, many thousand feet of which are kept ready packed for immediate delivery. Lists of Prices and estimates forwarded, on application, for PATENT ROUGH PLATE, THICK CROWN GLASS, GLASS TILES and SLATES, WATER-PIPES, PROPAGATING GLASSES, GLASS MILK PANS, PATENT PLATE-GLASS, ORNAMENTAL WINDOW GLASS, and GLASS SHADES, to JAMES HETLEY and Co., 35, Soho-square, London.

See the *Gardeners' Chronicle* first Saturday in each month.

GLASS FOR CONSERVATORIES AND HORTICULTURAL PURPOSES, &c.



T. MILLINGTON'S SHEET GLASS, which is of the best description, varying from 16 to 32 ounces, at from 2d. per foot and upwards; 100 feet and 200 feet cases of large Sheet Glass, for cutting up, at 2½d. per foot. British Plate Glass, from 1s. 2d. to 2s. per foot, according to size. Patent Rough Plate Glass, from ⅛ to 1 inch in thickness, from 4d. per foot upwards. Glass Slates and Tiles. Milk Pans from 12 to 24 inches diameter, from 2s. to 5s. each. Cucumber Tubes, from 12 to 24 inches long, at 1d. per inch. Lactometers, 7s. 6d. each. Wasp Traps.—Lists may be had, on application at the Warehouse, 87, Bishopsgate-street Without, same side as the Eastern Counties Railway.

THE IMPROVED "FLUE BOILER" AND FURNACE.



W. HILL begs respectfully to inform the numerous applicants for his "FLUE BOILER" of a small and intermediate size, that he shall be prepared, early in December, to supply sizes to suit every description of Apparatus, from that of 100 feet of 3-inch pipe to 2000 feet of 4-inch pipe. A List of Sizes and Prices will shortly be published. W. HILL guarantees his Boilers to be the most effective and economical of any in use. Horticultural Works, Greenwich, Jan. 19.

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PRINCIPAL DAY OF THE SHOW, THURSDAY, JULY THE 18th.

Members have the privilege of a free entry, and Non Subscribers are allowed to compete, on the payment of 10s. on each Certificate. Forms of Certificate to be obtained on application to the Secretary, 12, Hanover-square, London. All Certificates for the entry of Implements, and the space required for their exhibition in the Show-yard, must be returned, filled up, to the Secretary, on or before the FIRST OF MAY, and all other Certificates by the FIRST OF JUNE; the Council having decided that in no case whatever shall any Certificate be received after those dates respectively.

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To the owner of the second best ditto ditto ... 10*l.*
3—To the owner of the best Cow in milk or in calf ... 20*l.*
To the owner of the second-best ditto ditto ... 10*l.*
(In the case of the cow, to which either of these prizes is awarded, being in calf, and not in milk, the prize will not be given until she is certified to have produced a live calf.)
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5—To the owner of the best Yearling Heifer ... ... 10*l.*
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3—To the owner of the best Cow, in milk or in calf ... 20*l.*
To the owner of the second-best ditto ditto ... 10*l.*
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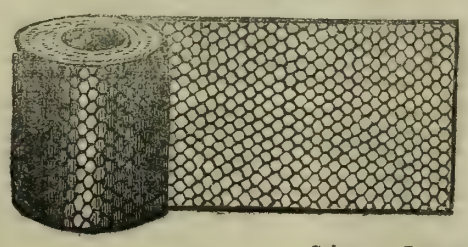
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AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 4—1850.] SATURDAY, JANUARY 26. [PRICE 6*d.*

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The following select List of Asters, Stocks, Zinnias, Balsams, Hollyhocks, Carnations, Pansies, and other important kinds, may be relied on as being of the very best quality.

CHOICE FLOWER SEEDS,

SENT FREE BY POST.

per packet.—	s.	d.
Asters, German, fresh imported, in sealed packets, 20 varieties for 5*s.*, or any smaller number of vars., each	0	3
Asters, German, fresh imported, many vars., mixed, very fine	0	6
Auricula, choice sorts	0	6
Alstrœmeria, Van Houtti	0	6
Aquilegia Skinnerii	0	6
,, glandulosa & others	0	6
Balsam, large German, splendid double	0	6
Calceolaria, from choice show flowers	1	0
Carnation, from stage flowers	1	0
Cineraria, bright blue, and other fine vars.	1	0
Clarkia rosea, double	0	3
Cobœa scandens	0	6
Cockscomb, fine dwarf	0	6
Convolvulus, maj., mixed	0	3
,, new crimson	0	6
Gaillardia picta	0	6
Geranium, choice sorts	0	6
Heartsease, from finest show flowers	0	6
Hollyhock, dbl. German	0	6
Ipomœa Burridgii	0	6
,, rubro cœrulea	1	0
Larkspur, dwart German, very double, mixed	0	3
Lobelia ramosa	0	3
Marigold, striped French	0	3
Marvel of Peru, fine	0	3
Maurandya Barclayana	0	6
Mignonette	0	3
Nemophila insignis	0	3
,, maculata	1	0
Picotee, from choice sorts	1	0

per packet.—	s.	d.
Portulaca Thellusonii	0	6
,, splendens	0	6
,, Thorburii	0	6
,, alba striata	0	6
Petunia, from splendid new varieties	0	6
Petunia, finest dark	0	6
Phlox Drummondii	0	3
,, ,, new scarlet	0	6
,, Leopoldia, beautiful	0	6
Polyanthus, fine sorts	0	6
Primula sinensis	0	3
,, new semi-double	0	6
,, fimbriata, mixed	0	6
Rhodanthe Manglesii	0	6
Salvia patens	0	6
Stock, German, ten-week, fresh imported, in sealed packets, 30 varieties for 6*s.*, or any smaller number, each	0	3
Stock, German, extra fine, mixed	0	6
,, mixed, ten-week	0	3
,, autumn flowering	0	6
,, new Victoria	0	6
,, Scarlet Giant	0	3
,, Brompton, of sorts	0	3
,, Intermediate, Buck's	0	6
Sweetwilliam, from 30 fine double varieties	0	3
Thunbergia alata, white and buff	0	6
Thunbergia aurantiaca	0	6
Tropæolum canariense	0	3
Verbena, choice sorts	0	6
Viscaria oculata	0	3
Wallflower, French striped	0	3
,, fine mixed German	0	3
Zinnia elegans coccinea	0	6
,, 20 varieties, each	0	3
,, ditto, mixed	0	6

In addition to the above, Messrs. SUTTON have one of the most extensive and complete stocks of Horticultural and Agricultural Seeds in the Kingdom, which, being of their own growth, they can warrant true to their kinds and quite new.

Also all the best kinds of early Potatoes.

N.B.—HEAVY GOODS SENT CARRIAGE FREE BY RAILWAY, AND SMALL SEEDS FREE BY POST, AS STATED IN THE NEW PRICED CATALOGUE.

Reading Seed Warehouse, Reading, Berks.

SLATE WORKS, ISLEWORTH.

—The following articles, manufactured in Slate for Horticultural purposes by EDWARD BECK, may be seen in use at WORTON COTTAGE, upon application to the Gardener, Sundays excepted. Orange Tubs, Plant Boxes, Tanks, Cisterns, Shelves, Garden Path Edging, Hot Water Tank Covers, Flower-beds for Balconies, Shelves fitted to hold water for Orchidaceous Houses, &c.

Estimates given for Work as shown upon Drawings and in Specifications. A large stock of Slate Slabs, of all sizes and thicknesses, kept on sale.

FISHER, HOLMES, AND CO., NURSERYMEN and SEEDSMEN, Sheffield,

beg to offer the following CHOICE CUCUMBERS and MELONS, which they can confidently recommend, being such as cannot be surpassed. Sent free by post.

CUCUMBERS.

BATLEY'S TELEGRAPH.—Light green, fine form, very prolific, 20 to 28 inches. 6 seeds, 2*s.*; 12 ditto, 3*s.* 6*d.*

COPPACK'S HYBRID.—Dark green, extra fine form, very superior. 6 seeds, 3*s.*; 12 ditto, 5*s.*

CONTENDER.—Dark green, large, and very prolific. 6 seeds, 1*s.*; 12 ditto, 1*s.* 6*d.*

LANCASHIRE WITCH. — A great improvement in every respect on the Sion House. 6 seeds, 1*s.*; 12 ditto, 1*s.* 6*d.*

LARRISY'S ST. CATHARINE.—Very handsome and superior, 24 to 28 inches. 6 seeds, 2*s.*; 12 ditto, 3*s.* 6*d.*

READ'S SUPERB.—Fine for early forcing, great length, and very prolific. 6 seeds, 1*s.*; 12 ditto, 1*s.* 6*d.*

SION HOUSE (true).—12 seeds, 1*s.*

VICTORY OF BATH.—12 seeds, 6*d.*

MELONS.

FLEMING'S TRENTHAM HYBRID.—6 seeds, 1*s.*; 12 ditto, 1*s.* 6*d.*

BEECHWOOD (true).—12 seeds, 1*s.*

NEMOPHILA MACULATA, 3*d.*, 6*d.*, and 1*s.* per packet.

A remittance either by post-office order or in postage stamps. The Trade supplied. Separate Catalogues of Garden, Flower, and Agricultural Seeds; Garden Implements, &c.; also Trees, Shrubs, &c., may be had free on application.

SEED POTATOES.

CHARLES SHARPE

has much pleasure in announcing that he has got the under-mentioned sorts of POTATOES to offer again this season, which have for the last four successive years given general satisfaction in all parts of the kingdom. The first six sorts are very early and productive; those marked thus * are the best sorts for Frame Forcing; they are offered at the following prices, packing included:

Per bushel of 56 lbs.		Per bushel of 56 lbs.	
*Early Oxford Potatoes	8*s.*	Early Manleys	7*s.*
*Early Round Frame	8*s.*	Early Cockneys	7*s.*
Early Ash-leaved Kidney	8*s.*	Fox's Seedling	7*s.*

Second Early Potatoes for Winter and Spring use:

American Native Potatoes	5*s.*	Kentish Pink Kidney	4*s.*
York Regents	5*s.*	Forty Fold	4*s.*

Orders will be forwarded on the receipt of a Post-office order, and great care will be taken to ensure their safe delivery. A liberal allowance to the Trade.—Wisbeach, Cambridgeshire.

SUPERB NEW MELON.

GARAWAY, MAYES, AND CO.,

having purchased the whole stock of seed of that superior MELON called CAMERTON COURT GREEN-FLESH, beg to inform all lovers of this delicious fruit, that they can supply it in packets at 2*s.* 6*d.* each.

Notice of Fruits, in Gardener's Journal of September last. —"J. P. Your Green-flesh Melon, about 2½ lbs., is a neat, well-grown fruit, sweet, and melting, and the flesh thick." For the 25th September.—"This is really (we gladly confess it) a very good Melon."

G. M. and Co. have likewise the whole stock of the BRISTOL CHAMPION CUCUMBER, which they can strongly recommend. With the following approved sorts.

Bristol Champion—long, hardy, black spine; excellent. 2*s.* 6*d.* per packet.

Holm Pierpoint Wonder—fine long white spine. 1*s.* per pkt.

Great Britain, excellent; Victory of Bath, excellent; Roman Emperor, early long prolific; and Cuthill's Black Spine, all at 1*s.* per packet.

Sion House, (true), best for house culture, 1*s.* per packet.

Kelway's Victory, very prolific black spine, excellent for pot culture, 1*s.* per packet.

Beechwood Melon, Duncan's improved green-flesh, Cabool, Cuthill's early scarlet flesh, Hampton Court, and Egyptian green flesh, all at 1*s.* per packet.

G. M. and Co. have now their large stock of Vegetable and Flower Seeds for this season, with the following new and approved varieties, well worth the attention of their friends.

Railway Peas, the earliest known, fine pod; Champion of England, ditto, excellent for second crop; Great Britain, British Queen, Pond's or Ward's Incomparable, varieties of Knight's Marrow, the finest Pea grown; Norris's Superb Dwarf Cabbage; Bundy's fine dwarf Brussels Sprouts; Highclere White Broccoli, the latest known, lasting until Cauliflowers come in; Walcheren Broccoli, true; Coles' Superb Red Celery, from the grower; Superior Garnishing Parsley; German Stocks and Asters, imported annually; Nemophila maculata, new; Phlox Drummondi oculata, new; Ipomœa rubra cærulea.

Durdham Down Nurseries, Bristol, Jan. 26.

SAMUEL FINNEY AND CO.'S NEW CATALOGUE OF SEEDS

is now ready, and will be forwarded gratis on the receipt of two penny stamps for postage. In forming our Collections of Seeds we have taken special care to include all the select and most approved kinds, and such as we can confidently recommend.

Of VEGETABLE SEEDS, our Collections contain a full supply of all that is requisite for the largest establishment, and the kinds and quantities for each collection are stated. No. 1, *2l.* 10*s.*; No. 2, *1l.* 10*s.*; No. 3, *1l.*; and No. 4, 12*s.* 6*d.*

Of FLOWER SEEDS, we have included all the most choice and showy kinds, particularly those we know to succeed well in the north, and a full list of all the best kinds of German Seeds, imported direct in sealed packets, with prices.

A Collection of 100 packets of the best hardy and half-hardy kinds for ... ... 15*s.* 0*d.*

Ditto	of 50	ditto	ditto	ditto	...	8 0
Ditto	of 25	ditto	ditto	ditto	...	5 0

We particularly recommend this Catalogue to residents in the north, as they will be enabled to purchase to advantage. All orders delivered free of carriage at any of the railway stations between Newcastle and York, Berwick and Carlisle, and by steam-boat to London, Hull, Whitby, Leith, Dundee, and Aberdeen. Railway and water communication to all parts of the kingdom.

SAMUEL FINNEY and Co., Gateshead, near Newcastle-on-Tyne.

BAKER'S PHEASANTRY,

Beaufort-street, King's-road, Chelsea, by special appointment to her Majesty and H. R. H. Prince Albert.—ORNAMENTAL WATER FOWL, consisting of black and white swans, Egyptian, Canada, China, barnacle, brent, and laughing geese, shieldrakes, pintail, widgeon, summer and winter teal, gadwall, Labrador, shovellers, gold-eyed and dun divers, Carolina ducks, &c., domesticated and pinioned; also Spanish, Cochin-China, Malay, Poland, Surrey, and Dorking fowls; white, Japan, pied, and common pea-fowl, and pure China pigs; and at 3, Half-moon-passage, Gracechurch-street.

TO PARENTS AND GUARDIANS.

A LADY, residing near Eccleston-square, Pimlico, begs to offer a Comfortable Home to one or two Young Ladies, who may require the care and attention of a mother. Good references given and required.—Address, H. D. D., care of W. Parkins, Stationer, 25 Oxford-street, London.

LIGHT, CHEAP, AND DURABLE ROOFING.

CROGGON'S PATENT ASPHALTE ROOFING

FELT and INODOROUS FELT, for damp walls. Sold in rolls, 32 inches wide, price 1*d.* per square foot. Also DRY HAIR FELT, for preventing the radiation of heat and deadening sound; and Sheathing for Ships' bottoms on which the copper lies smooth. Samples, Directions, and Testimonials sent by post.—CROGGON and Co., 2, Dowgate-hill, London.

HARTLEY'S PATENT ROUGH PLATE GLASS FOR CONSERVATORIES, &c.

See Article in THE GARDENERS' CHRONICLE of Saturday, December 8, 1849.

"Continued experience leaves us no room to doubt that this is the best material yet produced, and that it will in time supersede glass of all other kinds for the greater part of Gardening purposes." . . . "As for the article substituted for Rough Plate . . . it is wholly unfit for any horticultural purpose." . . . "The best sample of it which we have yet seen was Manufactured by Messrs. HARTLEYS, AND SOLD BY MESSRS. JAMES PHILLIPS & CO., 116, BISHOPSGATE STREET."

HARTLEY'S PATENT ROUGH PLATE GLASS.

In submitting our list of prices, we would beg to direct attention to the Leading Article of the *Gardeners' Chronicle* of Saturday, Dec. 8, upon the subject of "Patent Rough Plate." Some alteration having been made in the mode of manufacturing this description of Glass, the quality is greatly improved, and we now supply it perfectly flat, and, by an arrangement with Messrs. HARTLEY and Co., precisely at their prices. Cut to order in panes of

8 by 6	and under 10 by 8	at 4½*d.* per foot.	
10 by 8	,, 14 by 10	at 5*d.*	,,
14 by 10	,, 1½ foot	at 5½*d.*	,,
1½ foot	,, 3 feet	at 6*d.*	,,

PACKED IN BOXES OF 50 feet each.

6 by 4 and 6½ by 4½...10*s.* 6*d.* 8 by 6 and 8½ by 6½...13*s.* 6*d.*
7 by 5 and 7½ by 5½...12*s.* 0*d.* 9 by 7 and 10 by 8 ...15*s.* 0*d.*

Milk Pans from 2*s.* to 6*s.* each, Metal Hand-frames, Tiles, and Slates; Propagating and Bee Glasses from 2*d.* each; Cucumber Tubes, 1*d.* per inch; Peach Glasses, 10*d.* each; Wasp Traps, 3*s.* 6*d.* per dozen; Pastry Slabs, Hyacinth Glasses and Dishes, Shades for Ornaments, Fish Globes, Plate and Window Glass of every description, and Lamp Shades. Lactometers for trying the quality of Milk, 4 tubes, 7*s.* 6*d.*; 6 tubes, 10*s.* Self-registering Thermometers for Greenhouses, Horticultural Glass, &c.

JAMES PHILLIPS and CO., 116, BISHOPSGATE STREET WITHOUT, LONDON.

CROWN, SHEET, AND ROUGH PLATE GLASS, FOR HOTHOUSES, CONSERVATORIES, &c.

Of every manufacture FIT FOR USE, including the make of Messrs. CHANCE, HARTLEY, SWINBURNE, and others.

100 and 200 feet cases of large Sheet Glass, from 2½*d.* per foot. Small ditto, 10*s.* 6*d.* per 100 feet, packed in boxes ready for immediate delivery. Curators of Botanical Societies, Florists, Railway Agents, and others requiring large quantities, will, on sending dimensions, receive estimates at the lowest prices.

GLASS MILK PANS, CREAM POTS, Lactometers, Bee Glasses, Fish Globes, and all kinds of Dairy Glass, Propagating Glasses, Hyacinth Dishes, Cucumber Tubes, and every other description of Garden Glasses.

PATENT GLASS PENS, self supplying, never blot, never soil the ruler, and will write continuously for 12 hours.

Also, Glass Rulers, Glass Inks for office-stands, desks, &c. Stationers and Schools supplied. Wholesale Warehouse for Ornamental Shades, Lamp Shades, Gas Glasses, Genuine White Lead, Paints, Colours, and Pumps for Farm purposes.

Our Catalogue of 18 folios is the most complete ever published. No Gardener or Farm Bailiff should be without one. May be had Gratis on sending two postage stamps to Messrs. COGAN and Co. 48, Leicester-square, London.

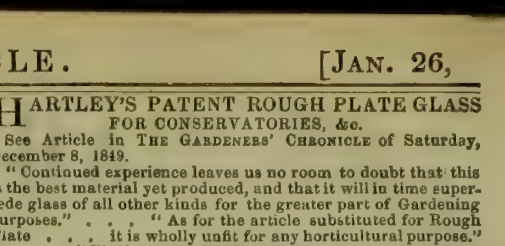
GLASS FOR CONSERVATORIES, &c.

HETLEY AND CO.

supply 16-oz. Sheet Glass of British Manufacture, at prices varying from 2*d.* to 3*d.* per square foot, for the usual sizes required, many thousand feet of which are kept ready packed for immediate delivery. Lists of Prices and estimates forwarded, on application, for PATENT ROUGH PLATE, THICK CROWN GLASS, GLASS TILES and SLATES, WATER-PIPES, PROPAGATING GLASSES, GLASS MILK PANS, PATENT PLATE-GLASS, ORNAMENTAL WINDOW GLASS, and GLASS SHADES, to JAMES HETLEY and Co., 35, Soho-square, London.

See the *Gardeners' Chronicle* first Saturday in each month.

GLASS FOR CONSERVATORIES AND HORTICULTURAL PURPOSES, &c.



T. MILLINGTON'S SHEET GLASS,

which is of the best description, varying from 16 to 32 ounces, at from 2*d.* per foot and upwards; 100 feet and 200 feet cases of large Sheet Glass, for cutting up, at 2½*d.* per foot. British Plate Glass, from 1*s.* 2*d.* to 2*s.* per foot, according to size. Patent Rough Plate Glass, from ⅛ to 1 inch in thickness, from 4*d.* per foot upwards. Glass Slates and Tiles. Milk Pans from 12 to 24 inches diameter, from 2*s* to 5*s.* each. Cucumber Tubes, from 12 to 24 inches long, at 1*d.* per inch. Lactometers, 7*s.* 6*d.* each. Wasp Traps.—Lists may be had, on application at the Warehouse, 87, Bishopsgate-street Without, same side as the Eastern Counties Railway.

IMPORTANT TO AGRICULTURISTS.—COLLECTION AND DISTRIBUTION OF MANURES.

STRATTON'S AGRICULTURAL REPOSITORY, BRISTOL.

STRATTON, HUGHES, AND CO.,

have now ready their PATENT TUMBLER CART for the collection of Night-soil and other offensive matters; also their Iron Mill, to be worked by horse-power, water-power, or steam, for mixing and incorporating Nightsoil with Charcoal and other deodorisers. The Tumbler Cart has an iron body with a close cover; can be fitted if required as a Watering-cart, with a Valve and Delivery Pipe for distributing water or liquid manure, and also with an Apparatus for distributing dry manures in any given quantities per acre.

STRATTON, HUGHES, and Co.'s Tumbler Carts are used for scavenging purposes in Manchester, Bristol, Worcester, Harwich, Rochford, Cardiff, &c., and they are now building them for Chester, Oxford, Huddersfield, &c., besides many for Agricultural Colleges and private individuals. STRATTON, HUGHES, and Co.'s new illustrated Catalogue of Carts, Waggons, and Agricultural Implements will be forwarded to any address on receipt of 1*s.* 6*d.* in postage stamps.

CORN MANURE.

BLASHFIELD'S PATENT COPROS.

—A new Manure for Corn and other Crops, prepared from the nitrogenous matter deposited on the banks of the Thames, in combination with other substances essential for the growth of corn, &c., price 8*l.* per ton. Sold, in a finely ground state, at No. 3, New London-street, Mark-lane; also, at the Works, Mill-wall, Poplar; Waterloo Dock, Lambeth; and No. 1, Praed-street, Paddington Basin.

PATENT COPROS, for Corn crops, also for Turnips, &c.; Superphosphate of Lime, Sulphate of Ammonia, Sulphate of Lime, Gypsum, calcined and saturated with liquid manure. CEMENT for Liquid Manure Tanks, Malt House Floors, and Barn-floors, manufactured by J. M. BLASHFIELD, successor to Wyatt Parker and Co., Original Patentees of Parker's Cement, Established 1796. Drain Tiles, Pipes, &c.

BECK'S PELARGONIUMS, and other raisers' Flowers.—Now ready for selection and going out. Twelve of the following varieties, including box and carriage to London, will be forwarded in exchange for post-office order on Brentford for Two Guineas. They are well-rooted in 3-inch pots, and ready for an immediate shift into a larger size:

Blanche, Centurion, Cracker, Forget-me-not, Ariel, Cassandra, Cruenta, Gustavus, Gulielma, Grandiflora, Junii, Negress, Rosamond, Sundown. Or Nine of the above, and Hoyle's Crusader, or Foster's Victory.

EDWARD BECK, Worton Cottage, Isleworth.

MYATT'S LINNÆUS RHUBARB.

J. MYATT AND SONS can confidently recommend this variety as the best in cultivation. The most satisfactory proof of this assertion is the fact that the Market Gardeners round London and Manchester have planted the Linnæus Rhubarb more extensively than any other variety. It is extraordinarily productive, and about a fortnight earlier than the Victoria; added to this, it is held in general esteem for preserving and all culinary purposes. One-year planted roots, 1*s.* 6*d.*; ditto, Mitchell's Royal Albert, 1*s.* 6*d.*; Victoria, 9*d.* The usual Trade allowance.—Post-office orders are requested to be made payable to JOSEPH MYATT, Manor Farm, Deptford.—Jan. 26.

EPPS' COLLECTIONS OF KITCHEN GARDEN SEEDS.

No. 1 contains the following quantities, and are of the best and newest kinds, being a sufficient supply for a nobleman's large establishment: 26 quarts Peas, 12 quarts Beans, 4 oz. Beet, 1 oz. Borecole, 6 oz. Broccoli, 1 oz. Brussels Sprouts, ½ oz. Buda Kale, 7 oz Cabbage, 10 oz. Carrot, 2 oz. Cauliflower, 2 oz. Celery, 3 lbs. Cress, 4 pkts. Cucumber, 2 oz. Endive, 2 oz. Leek, 6 oz. Lettuce, 3 pkts. Melon, 2 quarts Mustard, 10 oz. Onion, 4 oz. Parsley, 6 oz. Parsnip, 2 oz. Savoy, 3 pints Radish, 1 oz. Scorzonera, 2 quarts Spinach, 2 lbs. Turnips, 1 pkt. Vegetable Marrow, 1 oz. Salsafy, and 12 pkts. Herbs, Chili, Capsicum, &c. £3 3 0
No. 2, two-thirds of the above 2 2 0
No. 3, one-third ditto 1 1 0
No. 4.—This collection is sufficient for a gentleman having a moderate sized garden 0 12 6

The great satisfaction these collections have given to some of the principal families in England, Ireland, Scotland, and Wales induces W. J. EPPS with confidence to solicit further patronage. The collections contain this year 15 per cent. more than last, and quite equal in quality. Descriptive Seed Catalogues may be had on application. All orders to be accompanied with a Post-office order from unknown purchasers. No charge made for packing, and delivered free of expense to any railway station in London.—Agricultural and Horticultural Seed Establishment, High-street, Maidstone.

*** Cole's Superb Dwarf Red Celery. 1*s.* per packet.

CHEAP! CHEAP!! CHEAP!!!

CHARLES DALY AND SON beg to refer their friends and the public, who should be in want of cheap Thorn Quick, cheap Irish Yews, cheap Shrubs, cheap Forest Trees, and cheap Early Seed Potatoes at 5*s.* per bushel, to their Advertisement in the *Gardeners' Chronicle* of the 27th of October, and 3d and 10th of November last. Their Catalogue of Garden and Farming Seeds sent free by post, containing a good many of their own growing, which will be seen by their Advertisement.

They will also feel much obliged by their customers paying their last year's account, as they have no wish to put them to expense.—Coleraine, Ireland, Jan. 26.

The Gardeners' Chronicle.

SATURDAY, JANUARY 26, 1850.

MEETINGS FOR THE ENSUING WEEK.

MONDAY,	Jan.	28	Entomological (Anniversary)	8 P.M.
			Medical	8 P.M.
			Geological	8 P.M.
TUESDAY,	—	29	Civil Engineers	8 P.M.
WEDNESDAY,	—	30	Society of Arts	8 P.M.
THURSDAY,	—	31	Antiquarian	8 P.M.
			Royal	8½ P.M.
FRIDAY,	Feb.	1	Botanical	8 P.M.
			Royal Institution	8 P.M.
SATURDAY,	—	2	Asiatic	2 P.M.
			Westminster Medical	8 P.M.

IN his column of objections to APPRENTICE FEES, and of criticisms upon Gardeners, our correspondent "ELPIDOPHORUS" (p. 38), whose name we venture to translate into TIMOROUS, has missed his aim. But if he has failed to touch the substance, his blows have fallen fast and furious upon its shadow. The question we raised was whether or not gardeners are justified in taking apprentice fees. Mr. TIMOROUS disposes of that by a simple negative, and immediately assails the practice of calling gardeners professional men. It is impossible to acquiesce in either his judgment or his criticism.

We expressly stated that apprentice fees are not to be taken by a gardener without the sanction of his employer; but that, *with such sanction*, a gardener is as much justified in receiving them as anybody else. Our opinion was, therefore, against a gardener having any abstract right to such advantages, and consequently, against the justice of complaints when such fees are disallowed. If allowed, it is by the grace and favour of the employer. Now what else does Mr. TIMOROUS himself mean, when he says that "the employer is the only person who can guarantee effectiveness and permanency to the probation and instruction of an apprentice?" Does not the sanction of the employer, which we have ourselves insisted upon, give the required guarantee, so far as permanency is concerned? Not as to effectiveness, certainly; nor has our correspondent explained how an employer can guarantee the attention of a gardener to his charge. We may therefore say that, on the one hand, Mr. TIMOROUS's language conveys an objection to the system, and that, on the other, it waives the objection, adopting the very views which it seems to be intended to oppose.

For ourselves, we entertain no doubt that when circumstances are favourable, employers must find it to their advantage to encourage their gardeners, by permitting them to take an apprentice or two. Such a permission would be regarded as a gratuity for long service, or an expression of approval for good conduct. Nor can it be denied that the system works well in good hands, although we admit that it is sometimes, like other privileges, scandalously abused Whether or not however the permission is granted is a matter of private arrangement with which no one has a right to interfere except by way of such general considerations as we have, not we hope improperly, suggested.

The second part of Mr. TIMOROUS's letter is a quarrel with the name "profession" often given to gardening by ourselves and others. We should have hardly thought the point worth an argument; but since it has been raised we must endeavour to show that the term is strictly appropriate. We go into this dispute with the less reluctance, because no one will suspect us of the slightest intention of raising gardeners to a false position—the worst thing that could befal them, and the last thing which their true friends would attempt. But, on the other hand, we cannot permit them to be placed below their undoubted merits, of which Mr. TIMOROUS seems to form a very incorrect estimate. JOHNSON defines a profession to be "a calling; vocation; known employment;" adding, "The term profession is particularly used of divinity, physic, and law." We should have thought that the definition of our great lexicographer might have satisfied our correspondent's scruples, and saved the poor gardeners from the scolding that he has administered. Mr. TIMOROUS is too intelligent a person not to see that JOHNSON's addition is unworthy his reputation; for if the term profession is to be limited to "divinity, physic, and law," what becomes of the professions of *arms, marine, engineering, architecture, painting, sculpture*, and others? and what of the *professorships* of such subjects, which professorships are created by law, and have as much legal force as a patent of nobility?

We submit therefore that the JOHNSONIAN definition requires amendment, and that it should have stood thus—"PROFESSION: any calling; vocation; known employment; to which taste or science is necessary as well as skill." This will be found to exclude all trades and mere menial or mechanical employments; and to include the many varieties of intellectual occupation. It will exclude the butler and the lady's-maid, the private soldier and the garden "practical," the parish clerk and the doctor's errand boy; but it will include the commissioned officer, the engineer, the architect, the sculptor, the painter, and the gardener properly so called. We do not anticipate any objection on the part of our correspondent to the introduction of all these vocations into the class of professions, except that of the gardener; and we trust that his prejudices as to this will in time be overcome. He should consider that, in all "professions," there are many degrees of talent, and yet that the examples of highest or lowest talent are equally recognised as belonging to such professions. Will Mr. TIMOROUS say that a legally recognised apothecary does not belong to the profession of physic because he happens to be particularly stupid, or dirty, or ignorant, or otherwise disreputable; or that, because such a man is stupid, dirty, or ignorant, therefore the vocation of physic is not a profession at all? We think not; and therefore we object to his excluding gardening from the professions, for no better reason than because some gardeners have no title to belong to one. He evidently forgets that men are not necessarily what they call themselves; that a man is not a physician because he calls himself one, any more than a man is a gardener because he assumes that name. There are quack doctors and there are quack gardeners. Men practise physic, although their education was that of a pounder of drugs; men practise gardening although they know no more than a bricklayer's labourer. But, surely, it is unjust to take such cases as indications of the general *status* of the callings to which they respectively belong.

We are aware that, by the common law, a head gardener who lives in a house, furnished him by his master, on the grounds, has men under him, and receives a yearly wage, is a "menial" servant, and is liable to be dismissed at a month's notice, or on payment of a month's wages. But we do not think that important to the question at issue. The condition of mankind changes much faster than statute law. Surgeons were once accounted barbers; but will it be therefore said that our BRODIES and LAWRENCES rank with hair-dressers? In the days of ELIZABETH players were rogues and vagabonds; can it be contended that SHAKSPEARE then, or YOUNG and KEMBLE since, were rogues and vagabonds? The legal condition of men in one century can be no rule to determine their social position in an another century, because an old statute is unrepealed. In the reign of CHARLES II. a clergyman was a menial, living with grooms and serving-men; a waiting-woman was good enough for his wife. Will TIMOROUS contend that such is his station now?

We have no hesitation in asserting that numerous gardeners are to be found who, in all that is essential to sound education, are, we do not say equal, but superior to numberless individuals belonging to what Mr. TIMOROUS will admit to be professions. We have had in our hands gardeners' examination papers which would have stood high among those of the best medical students. Our own columns bear constant witness to the education, knowledge, and great social value of numerous gardeners in all parts of the country; and we cannot quietly allow such men to be classed among ploughmen, bricklayers, footmen, or even Mr. TIMOROUS's favourite *artistes*. It is true that for many reasons the standing of gardeners is not high in society, and probably never can be; but that is no reason why they should be swamped among the crowd that inhabit the cellars of our huge social edifice. Why, professions themselves stand in different relations to each other in our own tables of precedence. First comes Divinity, in the person of the Archbishop of CANTERBURY, next Law, represented by the Lord CHANCELLOR, and then at a wide interval military men and medical men, the latter ranking lowest. If it then be alleged that gardening is not a profession, because it is lower than arms or medicine, by the same reasoning it must be asserted that arms or medicine are not professions, because they rank lower than divinity or law.

We may seem to have given this matter more space than it deserves; for after all, it signifies little whether a man is said to follow a profession or a calling. The question has, however, been forced upon us, and we answer the challenge; the more readily, too, because it appears to us to involve the very important question whether a gardener is to be a well educated person or a machine. For ourselves we entertain no doubt that the interests and comfort of the higher classes, the employers of gardeners, demand that he should be the former, and that the views of our correspondent could have no other effect than that of throwing our gardeners back to the state in which they were under the STUARTS.

So many communications still reach us concerning the Winchester glass case, and so much anxiety seems to be felt by those about to employ ROUGH PLATE GLASS in their gardens in the ensuing summer, lest they should become the victims of imposition, that we are tempted once more to revert to a subject which is certainly one of the most important among the horticultural questions of the day. How, says "VITREA," am I to know whether the article I buy is what I intend to have, when I find a learned arbitrator declaring that blown unpolished sheet glass is legally substitutable for the rough plate which you so strongly recommend. If the Winchester justices, with the county funds at command, failed to secure a rational award, what is to befal a country clergyman if he finds his glazier cheating him?

That the award made at Winchester was thoroughly bad, is, we think, undeniable. The arbitrator allowed himself to be swayed by an obsolete use of language, and was, to all appearance, very little acquainted with the subject upon which he gave his decision. Such an example is not likely to be followed; but in case litigation should again arise, it is as well that unlucky buyers should be aware of the following important facts, which are capable of easy substantiation.

Excise duties were first levied on glass in 1695, they were reduced one half in 1696, and in 1700 repealed; in these Acts of Parliament the term "glass wares," was employed. In 1746 they were again imposed, crown, plate, flint, and all other *white* glass being classed together at *one rate of duty*, and *green* glass at another rate; this was previous to the manufacture of cast plate.

It is requisite to bear in mind that when the duty was imposed in 1746 there were two descriptions of glass made on the cylinder principle, denominated respectively *white* or plate glass and *green* or broad glass, corresponding with the white and green sheet glass on the Continent in the present day, the difference between the two in both cases being in the *material* only; in this country the green is no longer manufactured, being too inferior for the English market.

In 1773 the manufacture of cast plate was first established, and in 1775 an act was passed to separate it from crown glass, and charge it a higher rate of duty.

The effect of the introduction of cast plate was gradually to supersede blown plate, and the manufacture became well nigh extinct. It was, however, revived for a few years to a considerable extent *under somewhat peculiar circumstances* which *necessitated a continuance* of the term "blown-plate."

The duties on all white or plate glass, however made, were charged at so much per cent. on the material employed, but on all glass exported the duty was returned—this was fixed in the firs[t]

instance at 6*s*. 6*d*. per foot, on the assumption that it would be *equivalent to the amount paid*. It was at last discovered that, by the blowing process, a large premium might be realised; this was done to a considerable extent by Messrs. COOKSON and Co., who made "blown plate" from 1814 to 1817 expressly for that purpose, and realised in premium above 70,000*l*., hence the resuscitation of blown plate, and the necessity of continuing the same name. (See evidence of Mr. HETHERINGTON, 13th Report of the Commission of Excise Enquiry, page 90.)

When this system was arrested by an Act of Parliament, the manufacture of blown plate again became extinct and the term obsolete, notwithstanding that *all glass above one-eighth* of an inch thick WAS IN LAW PLATE GLASS, and the *legal definition* of crown glass, above that thickness, was "*blown plate*." See, as to this, the evidence of Mr. CHANCE, page 133, in which, in reference to this very matter, "blown plate" is called *sheet glass*, which in effect it was; but being called "blown plate" by Act of Parliament, the manufacturer of course, in his tariff and elsewhere, applied the same term, in order to be entitled to 6*s*. 6*d*. per foot, although he had paid only 3*s*. A case somewhat analogous to the one in queston occurred shortly before the repeal of the duties. Mr. HARTLEY, the great glass manufacturer of Sunderland, commenced making "broad glass," which paid a lower rate of duty than sheet, although made on the same principle; there were, however, certain conditions necessary to be attended to in the manufacture, to entitle it to the privilege of broad glass, which conditions were intended to deteriorate the quality. Mr. HARTLEY, although complying with these conditions, so improved the quality, that the manufacturers called upon the Excise to charge it with the sheet glass duty, because it was essentially the same article, and would be considered such by them, *irrespective of any tariff or Act of Parliament*; and on the ground that the article was essentially sheet glass, notwithstanding its trade or legal name, an Act of Parliament was passed expressly to subject it to the same rate of duty as sheet glass. The terms broad or spread immediately became obsolete, and merged into sheet.

From the foregoing statement, it must be evident, that a term employed in an Act of Parliament a century ago, or a tariff printed under the peculiar circumstances noticed, may justify a glass dealer in declaring that sheet glass is plate glass, but can be of no value or authority whatever in defining the meaning of a term in an architect's specification in 1849. As we stated on a former occasion, the point is not what was formerly made, or what an article was once called in this country, but what is the description of glass commonly and generally known as "*rough plate, $\frac{1}{4}$ inch*" thick, in the year 1849. To assert that what has been called "blown plate," in its unpolished state, answers this description, is absurd. *A certain thickness being specified, stamps it at once as having been cast plate*, in the meaning of those who draw builders' specifications.

Provided with this information, buyers have no real grounds for fear. If, however, they still dread misconception, or legal disputes, they may easily avoid them by insisting upon rough *cast* glass; one-eighth of an inch is thickness enough: beyond that thickness an additional price is necessarily charged by the maker; and it is paid by the consumer either for the sake of appearance, or against a risk from hail such as seldom falls in England.

There can be no question now that rough plate glass is the most beautiful, as well as the most useful, kind of glass that can be employed in horticulture. It is free from all the faults of sheet or transparent glass, and it has many advantages peculiar to itself, without a single disadvantage as a set-off. People say, indeed, that it transmits less light than smooth glass. Upon this point a friend has furnished us with the following statement:

"The ordinary photometric methods being inapplicable to determine the point you required, I employed one which limited the repetition of the experiments greatly, as it required a fine sunshiny day, of which we had few in the earlier part of last summer, and during the set-in fine weather I was in Germany. The method I adopted, and which is a very simple one, was this: I brought a small table into the open air and covered it with white paper; I then took the two plates (common sheet and HARTLEY'S rough plate) you furnished me with, one of smooth the other of rough glass, and placed them side by side in the same plane, but so inclined to the surface of the table that the direct rays of the sun fell perpendicularly upon them. Two adjacent shadows were thus thrown on the paper, and it was very obvious that the shadow of the rough glass was much darker than that of the smooth glass. Now we know from established experiments that the quantity of light reflected from the surface of smooth glass increases (and consequently the quantity of light transmitted decreases) with the obliquity of the incidence, and the law of this increase is known. I therefore changed the inclination of the smooth sheet glass until the shadows became sensibly equal, and, calculating from the angle at which this effect took place, I ascertained that the rough glass transmitted, *at perpendicular incidence*, about one-fifth less light than the smooth sheet. It is necessary, however, to bear in mind that the rough is considerably thicker than the sheet glass, and consequently more is lost by absorption in the former. At more oblique incidences the difference of effect is not so great, and at very oblique incidences the shadows are sensibly equal. It is impossible to repeat the experiments during the present weather, but when the sunshine again appears, I will re-ascertain the numerical results, having mislaid those of the former observations."

The glass used in this experiment was good 16 oz. sheet glass, and some rough horticultural plate supplied by Mr. HARTLEY, very inferior to what he is now manufacturing. It is true that *some* light is lost; but the beautiful condition of the plants beneath it prove that such a diminution is of no importance to the healthy condition of vegetation.

FAMILIAR BOTANY.

THE CHRISTMAS ROSE.

Still as the day upon the dark world creeps,
One blossom forth after another peeps,
Till the small flower, whose root is now unbound,
Got from the frosty prison of the ground,
Spreading the leaves unto the powerful noon,
Deck'd in fresh colours, smiles upon the sun.



WHO would suspect that modest drooping flower, which rivals the snow that surrounds it in the purity of its whiteness, to be one of the most virulent of vegetable poisons, and to have been employed for crimes which the historian almost shrinks from recording? The gardener only knows it as a broad green-leaved perennial, which produces, in the open ground, shortly after Christmas, its large white blossoms, at a time when all things else are bound in ice. The physician looks further, and pointing to its dark brown contorted knotty roots, warns the incautious workman against even permitting them to touch a wounded hand; adding that although sometimes used as a medicine by skilful men, it is extremely acrid, and in ignorant hands leads to almost certain death. The warning is needed the more because country quacks are too apt to prescribe it.

The natural abode of the plant is by hill sides, and in moist woods, in many parts of Europe, especially in France, Germany, and Italy. Botanists call it the Black Hellebore (*Helleborus niger*), but gardeners prefer its more familar name. The white attire which gives its wintry charm is derived from the calyx, not the corolla, as many think; the latter appearing in the form of sundry tube-shaped bodies, placed on the outside of the stamens, and dropping off, together with them, long before the calyx dies. This part, however, after a time, changes its colour, grows larger and larger, and at last acquires altogether the appearance of five green veiny leaves; which in that state serve as guards to the seed vessel, hanging over it like a roof, and keeping off the rain. It was in allusion to this peculiarity that Darwin spoke thus of the Christmas Rose in his fantastic poetry:

Bright as the silvery plume, or pearly shell,
The snow-white Rose, or Lily's virgin bell,
The fair HELLEBORAS attractive shone.——
—Erewhile how changed! in dim suffusion lies
The glance divine, that lightened in her eyes.——
Each roseate feature fades to livid green;
Disgust with face averted shuts the scene.

"This curious metamorphose," says the poet, "seems to show that the white juices of the corol (calyx) were before carried to the nectaries (petals) for the purpose of producing honey; because when these nectaries fall off, no more of the white juice is secreted in the corol, but it becomes green and degenerates into a calyx," which is something like saying that when a man's limbs become emaciated and shrunken from disease or old age they degenerate into tails. The simple fact is, that when the floral leaves of the Christmas Rose are young they are colourless, being filled with a watery sap and air, as is the case with similar parts in other plants; if they fall off early there would be no more change in this respect than there is in the blossom of a Cherry; but in the Christmas Rose the floral leaves do not fall off; on the contrary they go on growing for many weeks, and then, like all other leaves, under the continued action of light and air, secrete in their interior the same green substance as the ordinary foliage of the stem. It is exactly what happens also with the fruit, which is always colourless (white) in its infancy.

It must be admitted that the Christmas Rose is one of the most interesting of our garden plants, capable of enduring any degree of cold known in England, and blooming profusely when other things are torpid. All that it requires is shade and a damp loose soil, into which air can freely penetrate, and from which water can instantly drain. It abhors alike dryness and constant wetness. The side of a wet ditch is a favourite spot, but it must be only occasionally overflowed—for if the water collects about its roots, without running off, it becomes unhealthy, and obstinately refuses to flower. *R. E.*

PEAS.

THE Peas in cultivation are to be distinguished into the following classes.

A. Peas with a tough lining to the pod—Peas only eaten.

B. Peas without a tough lining to the pod—Peas and pods both eaten.

CLASS A.—Here the following distinctions are to be observed:

I. PEAS, WHITE.
- § 1. Tall sorts, requiring sticks.
- § 2. Dwarf sorts.

II. PEAS, BLUE, GREEN, OR LIGHT OLIVE.
- § 3. Tall sorts.
- § 4. Dwarf sorts.

III. PEAS, WRINKLED, OR INDENTED WHEN DRY.
- § 5. Tall sorts.
- § 6. Dwarf sorts.

I. PEAS WHITE.—§ 1. Tall sorts.

1. *Early Frame*, alias Early Single Blossomed, Early Double Blossomed Frame, Best Early, Early Dwarf Frame, Single Frame, Perkins's Early Frame, Early One-eyed, Superfine Early, Young's very Early, Batt's Early Dwarf Nimble, Russell's Fine Early, Early Wilson, Early Nicholas, Early Nana, Early French, Mason's Double Blossomed, Dwarf Albany, Early Warwick, Early Race-horse, Pois le plus Hâtif, Vert à rames de Mont Julienne, Michaux de Hollande, Pois Baron, Pois Laurent. About 4 feet high, rather slender; pods small, round, mostly containing five or six Peas; well known to be one of the earliest. It does not stand the winter so well as the Charlton.

2. *Prince Albert*, about 3 feet high; a variety of the preceding, ripening about 10 days earlier. The Early Kent is very similar to this, as is likewise Warner's Early Emperor.

3. *Early Charlton*, alias Golden Charlton, Early Sugar Frame, Late Dwarf, Twesly Dwarf, Hotspur, Wrench's Hotspur, Double Dwarf Hotspur, Early Hotspur, Golden Hotspur, Common Hotspur, Early Nicholas Hotspur, Nimble Taylor, Paddington, Essex Reading, Russell's Early Blossomed, Michaux, Michaux ordinaire, Michaux précoce, De Ruelle, Petit Pois de Paris, Dominé. About 5 feet high; may be distinguished from the Early Frame by its larger pods, which, instead of being round are broad, containing six or seven peas. It is the best Pea for standing the winter, but it is about a week or ten days later than the Early Frame. The Eastern Shore and Tall Frame are varieties allied to this, but inferior.

4. *D'Auvergne*, about 5 feet high; pods very long, nearly round, curved at the end, very full, containing sometimes 11 peas. A very productive and excellent sort, about 10 days later than the Early Charlton.

5. *Early Hero*. Ripens about the same time as the preceding; about 5 feet high; pods slightly curved, a little flattened, containing 6—7 medium-sized peas, of good quality; a good bearer. Lady's Finger, or Doigt de Dame, has long cylindrical pods; but does not bear so abundantly as some others. Shilling's Grotto fills badly, therefore neither of these require further notice.

6. *Tall White Marrow*, called also the Large Imperial Marrow, Tall Carolina, Large Carolina, New Tall Temple, Clive, Wooten, White Rouncival, Princesse, De Marly, Suisse. About 7 feet high, of strong growth; pods large, very broad, containing 8—9 Peas, of excellent quality; a good, prolific late sort. The Egg, called also Large Egg or Bean, and Patagonian, closely resembles the preceding; and to the same sort the Pearl or Nonsuch has considerable affinity; but these sorts are, on the whole, inferior to the Tall White Marrow.

7. *Dancer's Monastery*; 6 or 7 feet high, bearing a succession of very large pods, containing 7 or 8 large Peas of good quality; a sort of Marrow, earlier than the Tall White Marrow. It has doubtless been recently sold under some other name. Not worth distinction are the following: *Crown Pea*.—American Crown, Rose or Crown, Turc, Couronné, Turc à fleurs blanches, Pâquet; 5—6 feet high, of strong growth, with the blossoms in bouquets, or like a crown at top; and it is more remarkable for this pecu-

liarity than for any useful property. *Branching Marrow*—Donn's New, Prolific Isle of France, 5—6 feet high; pods large, nearly round, containing 8—9 Peas; late. *De Guivergny;* intermediate between the Dwarf and Tall White Marrow; but possesses no superior merit.

I. Peas white.—§ 2. Dwarf sorts.

8. *Early Dwarf*, alias Nain hâtif, or Lévégue, 1½ to 2 feet high; pods small, rather broad, mostly containing five Peas, very prolific, and of good quality; proper for growing under glass, in which case the tops should be pinched off. It flowers as low as the second or third joint. The Common Spanish Dwarf, called also Early Spanish Dwarf or Fan, Dwarf Bog, Knox's Dwarf; and Bishop's Dwarf, which sorts resemble each other, are inferior to the Early Dwarf, and must now be considered as entirely superseded by

9. *Bishop's New Long-pod*, about 2 feet high, pods nearly straight, almost cylindrical, containing six or seven Peas. An excellent prolific early dwarf Pea. Thompson's Early Dwarf is, like this, dwarf, early, and prolific in pods, but these contain fewer Peas; it is consequently not worth growing.

10. *Dwarf Brittany*, or Nain de Bretagne, Très nain de Bretagne, Très nain de Brest. The dwarfest known, its height being only 5 to 8 inches; pods small, nearly round; may be sometimes useful for late sowing, otherwise a mere curiosity. [The Large Spanish Dwarf belongs to this section, but being an indifferent bearer, it is no longer deserving of record; nor, in comparison with Bishop's New Long-pod, can the Dwarf Branching Marrow, which is the same as Grimstone's much-puffed Egyptian Pea, be deemed worthy of cultivation. The same may be said of the Queen of Dwarfs. As for the *Dwarf White Marrow*, alias Glory of England, Wabash, Hâtif à la Moelle d'Angleterre, Hâtif à la Moelle d'Espagne, Sanspareil, it is of excellent quality, but not prolific.]

11. *White Prussian*, or Dwarf White Prussian, Prolific or Poor Man's Profit, Prolific, Royal Prolific, Royal Dwarf, Dwarf Twesley, Stowe Pea. About 4 feet high; pods broad, long, and rather flat, containing 7 or 8 large Peas; an excellent prolific summer Pea, but will not remain so long in bearing as the Blue Prussian. *R. T.*

THE BOTANIC GARDEN, SIDNEY.

We have great pleasure in extracting from the *Sidney Herald* the following portions of a report upon the present condition of the public garden there. It will be highly satisfactory to Mr. C. Moore's friends to know that he is pursuing a career of much public usefulness, and we should hope that the legislative council will perceive that the unintentional displacement of Mr. Bidwill by Mr. Moore's appointment, has resulted in the acquisition of a valuable public officer.

Extracts from a Report by the Director of the Botanic Garden, Sidney, dated Jan. 18, 1849: "On entering upon my duties as director, in February last, I found that in consequence of a considerable diminution of labour, the garden was necessarily in bad condition, the borders were overgrown with weeds, and the walks out of repair; the arbour was broken down, from the natural decay of the wood forming the supports and trellis-work; the terrace walk in the lower garden, and the salt-water pond which terminates it on the west side, were in a very unfinished state. Upon such labours as were required to effect the necessary repairs, to supply the borders with showy, free-flowering plants, and to make new plantations of ornamental trees, I have been chiefly employed during the past year. The decayed arbour has been removed, and the frame-work of a new one erected; nearly all the walks in the upper garden have been broken up and covered with fresh gravel; 600 yards of new walk, 9 feet wide, in the lower garden, have been completed, upon which upwards of 900 cart loads of gravel were used; 300 cart loads of stone brought from the Old Government House and elsewhere, have been used in the erection of 200 yards of sea-wall, forming a continuation of the terrace walk around the garden cove and the salt-water pond adjoining. With a desire of carrying out the views of the Government, and of rendering the garden a school of botany and horticulture, I have prepared a catalogue, by means of which I shall be enabled to arrange and classify the present collection of plants. I have remodelled the western portion of the lower garden, for the purpose of illustrating the natural orders included in the class 'Monochlamydeæ.' And on the same side of the upper garden, a large plot of ground has been cleared and well trenched for a collection of such plants as are used in the arts, manufactures, medicine, and for domestic purposes; this will form, for the present, a nursery, from which seeds and plants of this description may be distributed. In a portion of this ground, a fresh plantation of Cotton has been completed, and up to the present is flourishing. A great demand has been made for Cotton seed, principally by persons residing in the Hunter River district, and that collected during the last season has already been distributed. The labels which have been attached to the plants in the garden, showing the natural order, scientific name and authority, English name and native country of each plant, appear to have given very general satisfaction; but no funds having been provided during the last year to cover the expense of printing, this system has not been carried out to any great extent. As, however, ample means are now at my disposal, I have made arrangements for naming one plant of each species. The various seeds which were collected during the last season have been principally distributed to persons returning to Europe, under an agreement that some equitable return should be made in kind; and collections both of seeds and specimens have been given to several medical superintendents of emigrant vessels for presentation to public institutions in the mother country. The small demand for Vine cuttings, in consequence of their very general distribution in the colony, has induced me to destroy many duplicates; it will, however, be my endeavour to ascertain the best varieties, which might be set apart and retained, whilst those of inferior quality might, without disadvantage, be destroyed. The regulations which I felt it my duty to recommend, and which were at once sanctioned by his Excellency the Governor and the committee of management, have had the desired effect of preserving order and decorum, without in any way interfering with the liberty of the persons visiting the garden. By a rigid enforcement of the rules, the character of the garden has been raised sufficiently in the estimation of the public to give an assurance that within its limits all the privacy and retirement of a rural walk may now be enjoyed without fear of interruption by rude and disorderly persons."

(Signed) *Chas. Moore.*

Nevertheless, in the face of these facts, we find a Mr. Cooper and a Mr. Donaldson striving with all their little might, in the Legislative Council, to put the Garden down: for such would be the effect of their measures, if adopted. We are, however, happy to add, that these gentlemen enjoyed the unenviable satisfaction of standing alone in their Vandalism.

ELVASTON CASTLE, THE SEAT OF THE EARL OF HARRINGTON.

(*Continued from p.* 37.)

On leaving the lake we diverge to the left by a walk which leads to the poultry-yard. Each side of this walk is lined with four rows of plants. The front row consists of Juniperus sinensis; the second of Thuja Wareana, 10 feet high; the third of Thuja orientalis, 12 feet high; and the fourth, of noble specimens of Pinus Cembra helvetica. The poultry-yard itself is surrounded by a wall covered with Magnolia grandiflora (the Exmouth variety), intermixed with Jasminum officinale, presenting a noble appearance. On the outside of these walls, where shelter is required, are lines of Deodars, Hemlock Spruce, Pinus Laricio, and Douglas Firs; on the side where protection is not required are files of the Chinese Juniper and Red Cedar.

The poultry-yard is comprised within a spacious quadrangle, fitted up with every necessary requirement for breeding and feeding all kinds of fowls. It contains turkey houses, duck houses, roosting houses, pigeon houses, together with numerous laying houses, all warmed with hot-water pipes. The yard in front of the buildings is divided into compartments by means of wire fencing, and for perfect security is also covered with the same material. In the middle of the yard is a spacious duck pond, out of whose centre rises a huge pile of rocks surrounded at the base with Irish Yews, and on the top there is a beautiful Abies Douglasii. A private way, having on either side a variegated Holly hedge 10 feet high, leads from the poultry-yard to the stables. On the west side of the poultry is a plantation several acres in extent, bounded by a green Holly hedge 10 feet high. The object of this plantation is to shelter the poultry-yard and the west wing of the Pinetum. It consists of rows of Pinus Cembra helvetica, P. austriaca, P. Laricio, and Picea pectinata. The end of this plantation brings us again into the circle of approach roads by the second grand entrance, where we take the direction of the Lime-walk. This walk has a double row of Limes on either side, 90 feet high. They are planted at some distance from the walk, and in front of them are arranged in groups every variety of Holly that could be obtained, the whole ending in variegated Hollies alone. The walk itself is margined with common Yew, kept dwarf. Emerging from the Lime-walk we enter a wood of common Yew, all of whose tops are grafted with thousands of the Gold Yew, producing, as may be imagined, a rich effect. The circle of approach is then continued with the Cedar of Lebanon in the background, all, however, being grafted with the Deodar. In front are arranged, for some distance, Irish Yews, Savin, and hardy Heaths, until we reach a part carpeted entirely on both sides with the fine variety of Gold Holly, the effect of which is rich beyond description. This peculiar plan of decoration terminates in the castle, and nothing could be more appropriate, surrounded as it is on all sides with plants singular for their expressiveness either of colour or form.

Leaving the castle in the rear, we kept on in an opposite direction, through beautiful variegated Gold Hollies as before, and entered the "Bedford Drive," so named in compliment to his lordship's brother-in-law, the late Duke of Bedford. The gravel road is 15 feet wide and 1½ mile long, maintaining in every respect the high character of the grounds already described. We proceeded first through variegated Holly hedges 12 feet high, dressed in the form of walls; these are succeeded by Portugal Laurel hedges of similar character, the object being to screen the grounds in the immediate vicinity of the mansion. We then emerge into a plantation planted right and left with Pinus excelsa, P. Laricio, P. austriaca, P. Cembra helvetica, and Hemlock Spruce. As far as these extend the edging on both sides is composed of Box 2 feet high and 2 feet across, cut square. The following evergreens, ranged in three lines on each side, then succeed these: Juniperus hibernica, J. sinensis, Cupressus thyoides variegata, and Thuja orientalis, variegated effectively, so as to produce a singular contrast. We here cross a narrow part of the American garden, which is partially concealed, pursue our course over the lake by a rustic bridge, and turning to the right have a beautiful view of Spondon church; on the left an avenue of Irish Yews, which terminates with an immense cross raised on an antique pedestal. The Drive here presents an uninterrupted line of straight avenue of 300 yards, margined on either side with Aucuba japonica, supported by a pyramidal variety of Thuja orientalis, 10 to 14 feet high, in rows, producing an extremely grand effect. The plantation behind is of great depth, and is composed of valuable Conifers. The edging at the termination of this straight line is varied with Pyrus japonica, and is then continued with green Box, all 2 feet high, shorn close and square, for at least a mile unbroken. In pursuing this portion of the Drive, the red Cedar takes the place of the Chinese Arbor-Vitæ, and then again we have the Irish Juniper, backed for some distance with Laurustinus. At the centre of the Drive, three-quarters of a mile from the castle in either direction, is what is termed "The Rest," which is surrounded by Portugal Laurel hedges, as are also the entrances to it. In the centre of the Rest is a large circle, containing a splendid Deodar. This circle is divided into four segments by means of Yew hedges. There are also in each four recesses with Yew hedges, supported on each side with Irish Junipers in files. At the end of each division is a small circle raised in the form of a mound, on which are planted Cryptomeria japonica; each of the angles constituting the four compartments is filled with Chinese Junipers, and flanked with Irish Yews.

Resuming the Bedford Drive: for a quarter of a mile variegated Hollies decorate both sides of the way, with Abies Douglasii in the background. The Hollies are from 10 to 16 feet high, and there are many hundreds of them, all of which were transplanted last year, but they exhibit little indication of having been so recently removed, and only a solitary plant was lost through the effects of the operation. At this part of the Drive we reach the "Leinster Walk," leading to the east avenue. On entering this walk, the turf is ornamented with low Portugal Laurel hedges, delineating geometrical scrolls. These hedges are all trimmed quite close and smooth; on each side are fine specimens of Cupressus Uhdeana, 8 feet high. Passing to the east avenue, are high Portugal Laurel hedges; at the termination here the walks cross at right angles, with gravel recesses. Fronting this is an angle with a green raised terrace, on which are arranged Juniperus hibernica, representing minarets, with scrolled figures of Box adjoining, cut and shorn close, 2 feet high, and 5 feet across the top. As we pass along the Leinster Walk, the east avenue is completely hid by large evergreen hedges, which also obscure any appearance of walks from the avenues. This walk takes a turn, and, crossing the Bedford Drive, leads to the kitchen garden, which is not visible from any walk or Drive until we reach the gate, everything being so admirably planned and planted. *R. G.*

(*To be continued.*)

DISEASES OF PLANTS.

(*Continued from p.* 38.)

Genus XI. Yellowness, or Icteritia.—Plants are sometimes liable to lose the beautiful green which clothes them, and to assume a yellow colour more or less deep. The leaves are, more than any other part of the plant, subject to this disease, which is for the most part accompanied by a stopped or more or less retarded perspiration. This is especially the case with trees, herbs usually turn yellow all over. This disease arises from causes totally the reverse of each other. A plant suddenly exposed to much light, when it had previously had no more than what was necessary for vegetation, more especially if it be of those which, growing naturally in the shade, do not require much light, will from this cause alone contract the yellowness. The extreme abundance of summer heat stimulating the plant to excess, and promoting a greater perspiration than that which is natural to the plant, may make it turn yellow; most frequent instances of this may be observed in the fields as well as in gardens. On the contrary, a sudden cold coming on at a time when the plant is most in want of heat, as well as any sudden abstraction of the aliment necessary for its prosperity, or a deterioration in its quality, will bring on the same disease. Thus trees planted in stiff soils which retain too much wet, or those in loose soils, without sufficient nutriment, turn yellow. The *Icteritia*, or *yellowness*, generally brings on other evils whose consequences are fatal, such as ulcers, which not unfrequently lead to death. Some plantations suffer from yellowness almost every year, from the circumstances under which they are placed. From these considerations several species of yellowness might be distinguished, according to the periods at which they come on. I shall confine myself, however, to two only.

First species. Accidental Yellowness. — This malady, as it appears to me, is always attributable to irregularity in the seasons, a sudden excess of heat or unseasonable cold. Such yellowness is often productive of much mischief. We generally suppose it to be confined to the foliage of trees, but if we carefully observe the various plants which cover the face of our fields, and look at those places where Nature has been most lavish of her vegetable riches, we shall there find the greatest injury caused by it, injury by so much the

greater as there is no help for it. It may, indeed, happen that where excess of heat has caused the yellowness, it may be partially remedied where there are means of irrigation, but such benefit can only be felt by a few individuals among herbaceous plants; and where cold has been the cause of the evil, there is no remedy.

Second species. PERIODICAL YELLOWNESS, so called from its attacking vegetables at stated seasons, on the recurrence of the same causes, often attributable to the cultivator's negligence. Plants growing in compact soils, with a substratum of stone or other substance impermeable to water, which consequently always lies about the roots; those which are placed in poor soils will regularly turn yellow every year. If long neglected, this disease will cause the plants to perish. It may, however, be prevented. Draining off the stagnant waters is of the first importance. Some think they can put a stop to the evil by copiously manuring stiff soils, but they frequently err in the choice of manure. Stable dung by itself must in these cases be put aside, and the preference given to the scrapings and sweepings of roads, yards, and waste places about manufactories and workshops. All sorts of coarse refuse containing miscellaneous substances from the three kingdoms are good, as, producing a slow and long continued fermentation, they evolve a considerable quantity of caloric, which assists materially in correcting the stiffness of the soil. Attention must, however, be paid to allowing its fermentation to have continued some time before they are applied, and not to lay them on the soil during great droughts.

VILLA AND SUBURBAN GARDENING.

WHEN the Vine is placed under artificial treatment, with a view to its early production of fruit, the natural atmosphere should in some measure guide our proceedings. Begin growth quickly, and heighten the temperature progressively with increasing sun light. The great error into which the uninitiated in forcing Grape Vines, and indeed anything else, fall, is that of neglecting to observe the laws which give impulse to vegetable life; they create mid-summer at mid-winter, and produce a mid-day temperature at midnight. These unnatural conditions must, as far as is consistent with the object aimed at, be avoided. If the weather is cloudy and cold, moderate the temperature; if fine, with bright sunshine, increase the stimulus. Night brings repose to vegetable as well as to animal life, and this fact ought to warn cultivators against roasting and steaming their plants at night; they should rather save their coals. I remember, when a lad, that in early forcing the grand point aimed at was the production of a high night temperature, and, in order to see that this was enforced, the hothouses were visited regularly by the head gardener at 10 o'clock at night. The stove doors by that time were red hot, the flues—for hot water was then unknown—were nearly in a similar condition, and water was copiously poured over them for half an hour, until the house was a complete vapour bath, sweating with moisture, and the thermometer at 80°. Such a state of things, we need hardly add, was both unnatural and unphilosophical. Had this heating and steaming commenced with the light of morning, these operations would not only have been more in accordance with nature, and more beneficial in their results, but they would have been practised at much less cost.

A night temperature of from 45° to 55° in spring, according to the state of the weather, will be found ample, even for a very early crop; a higher heat is attended with risk, and will not, under otherwise proper management, at all facilitate the ripening of the crop. The day temperature is quite another thing. Kindle the fire the first thing in the morning, and increase the humidity of the atmosphere by syringing or otherwise. Give a little ventilation as the day advances. A sun temperature of 80° or 100° will do no harm at some seasons, and less always than a few extra degrees put on by means of firing. Instead therefore of giving a table indicating the weekly or monthly temperature at which such houses should be kept, it is better to lay down general principles, leaving the amateur to use his own judgment and discretion, the proper exercise of which will supersede all tabular instructions, and will create a deeper interest in the object of his pursuit. *Pharo.*

Home Correspondence.

The Gardener, his proper position; a word or two thereon.—The observer of men and things—the man who extends his investigations beyond the immediate circle of his everyday occupations, whatever they may be, needs no reminding that there exists in every community, in every little circle that comprises the great aggregate of society, individuals who without one claim upon distinction, without any praiseworthy characteristic, would arrogate superior attainments, would assume a false position, would cheat themselves and their neighbours into the belief that they were beings of no common order; and the means by which they endeavour to establish their claims to such distinctions are by dressing in the borrowed plumes of their ancestors, or deprecating the merits of those immediately surrounding them. That such characters are to a degree mean and selfish, I need not stop to illustrate. They are the plague-spot of humanity, the great stumbling-blocks to social and mental progress, alike unworthy as men, as friends, as members of society. They, possessing no merit themselves, are unable to appreciate it in others. They cannot, or will not, recognise worthiness of character, except by association. The struggles of unaided genius, the "pursuit of knowledge under difficulties," however noble the object to be gained, excites no sympathy with them. In a word they belong to that class whose sentiments are immortalised—immortalised by their sheer ridiculousness—in the well-known couplet of a noble author, in which everything mentally, everything socially great is as nothing in the scale against the pride of birth. How much of the character I have attempted to sketch is appropriated by "Elpidophorus" I will leave him to decide. Certain it is he cannot distinguish between those simple mechanical labours which require no forethought or anxiety, and the results of the operations of the mind. He with one "fell swoop" classes the whole fraternity of gardeners, unless they are in business on their own account, under the general term "labourers." I consider "Elpidophorus" to have offered an irreparable insult to every respectable gardener who reads the pages of the *Chronicle*. By respectable I mean the man who with a competent knowledge of his PROFESSION, backed by an education—acquired, it may be in the main, by his own unaided perseverance—that will refine and elevate his tastes, combines a high integrity of purpose, a devotedness to his own self respect, and to the interest of those by whom he is employed. Such a man is unquestionably a servant, but is it respectful, is it common justice to call him a "hired menial?" If a person who performs some office for another, is a servant, and if a servant is a menial, then it is very probable that "Elpidophorus" belongs to that very numerous class. He must have but a very imperfect idea of the requirements of a gardener when he awards no more intellectuality to the principal of a large establishment, than to the man who merely sows his Peas, or digs the ground. I am not one who would wish to assume an importance which does not belong to my calling as a gardener. But I feel indignant in being spoken of in the spirit which "Elpidophorus" betrays in his letter. I had hoped the day was on the wane which judged of a man's intellectuality by the particular occupation to which he was attached, and felt a high gratification in the seeming fact that man reflected honour on his station rather than borrowed an importance from it. There are in every particular calling to which the intellect of man directs itself, individuals who are not only a disgrace to their fellows but a libel on humanity at large. In law, in physic, in divinity, there are abundant examples, as well as in the more humble "profession" of a gardener, or any other branch of human pursuit. But it is wrong, it is injustice in any case to stigmatise the whole for the delinquencies of a few, or the few for the misdeeds of the many. Every man who follows a "profession," has two characters at stake, the one relating to his calling, the other in his relation to society. For the gardener, as for every other person, I conceive the proper position to be in either case just what his moral, intellectual, or professional attainments entitle him to. Society will always find its level, and I rejoice that its constitution is such, that a legion of "Elpidophoruses" cannot debar a man from mixing with that society to which his attainments or tastes entitle him. I make no doubt that "Elpidophorus" is one of those gentlemen who at times figure in the advertising columns of the newspapers, wishing to engage a "gardener, without encumbrance, and who perfectly understands his business; wages 12*s.* per week. N.B., he will be required to wait at table occasionally, and to make himself generally useful." Comment in a case like this would be superfluous. *L. G.*

Hamburgh Grapes come from Spain and Portugal. What is the origin of the name? In the reign of Queen Anne, at the Methuen treaty with Portugal, 1703, my grandfather accompanied the Marquis of Pombal, as court agent and merchant. During the late wars my grandfather received what were called "assimilated papers," licenses of the French and other belligerent powers, for any vessel, from any country whatever, to introduce, unmolested, certain articles—for instance sugars, into France, where they had none. This was done only through the ports of Heligoland and Hamburgh, I believe. I need not say these papers fetched a high price. Vessels coming from Spain and Portugal took Grapes as well as sugars, which were afterwards shipped from thence to London, and I think the Grapes acquired the name of Hamburgh Grapes. Had that name of fowls a like origin? *E. D. Santos.*

The Pickaxe a good Implement for Stirring and Breaking up Frozen Soil.—The utility of exposing the soil to the pulverising influences of frost is generally recognised. What I have now to suggest is, the use of the pickaxe, or something similar, in breaking up the frozen soil that has been previously wrought with the spade. I was to-day quite astonished at the amount of work I could perform with it; I am confident that one man may do as much as other four with forks; but indeed the latter are at present quite useless here at such work. I am persuaded that if gardeners and others would give it a trial, they would at once find very remunerative employment for their men, now that the frost has again set in on the disappearance of the snow. *J. H., Salop, Jan* 21. [Try the pickfork.]

Coles' Superb Red Celery.—W. Cole begs to inform the public, as requested by W.'s letter (page 39) that the Solid Red Celery he now advertises is a plant selected from his stock six years ago; and judging from the number of testimonials he has received, of the unbounded satisfaction it has given, and from a prize being awarded him from the Horticultural Society for its being a new and superb article, thinks it unnecessary to say it is not the sort annually distributed by the Horticultural Society. [The *fact* is that on the 5th Dec., 1848, a certificate was given by the Horticultural Society for six heads of what was called Cole's Superb Red Solid Celery; *not for the sort*, upon which no opinion was given, but for the good cultivation it indicated. Our own belief is, that it is in no important respect, if in any respect, distinguishable from the Celeri violet, annually given away by the Horticultural Society.]

To drive away Rats.—My opinion is that if rats are poisoned in an aviary they will die in it, and cause a stench that will have a bad effect on the birds. If a ferret is applied for some time beneath the flooring the rats will decamp, for the very smell of a ferret will banish them. Where poison is employed, and rabbits cannot be easily got as bait, any kind of small fish will answer the same purpose, especially a salt herring. *John Pell.*——I was sorely troubled for several years with rats about and in my dwelling-house. I found that their main retreat and harbour was an unnecessarily large drain; this I caused to be filled up, and a small one, just sufficient for the purpose, to be laid as near the surface of the ground as could be, without being exposed; since then I have been quite free from them. I was told by a friend of a most effectual remedy. An acquaintance of his, a farmer, was so alarmingly beset by these destructive marauders, whose name was legion, that the usual aids of dogs, cats, ferrets, traps, &c., were unavailing; he was fairly put to his wit's end. He at length bethought him—lucky thought—that the most effectual way of dispersing an ungovernable mob or enemies of whatever kind, was to call in aid the red coats; so the next rat caught in a trap he enlisted or impressed into his service, had him *nolens volens* clothed securely in scarlet, and then let him loose; away he madly galloped, and dashed into the midst of the enemy—consternation seized upon the whole host *instanter*—the panic became general—helter skelter they went—he screaming and they too; the harder they ran the more he strove to keep up with them, so that at last it became "every one for himself, and a certain personage take the hindmost;" "in less than no time," or four-and-twenty hours, not an enemy was to be seen. *Ullswater, January* 23.

——"Mix one shilling's worth of Spanish flies in a bottle of the best French brandy; cork it well, and after shaking, deposit the bottle in smoking horse dung; let it remain six weeks and it will be fit for use." A few drops of this liquid is said to entice them from their holes into any kind of trap you choose to employ. I have not used the remedy myself, but it is well worth a trial. *A Subscriber.*

Pear Moths.—I have to thank Mr. Westwood for reminding me of his paper upon Tortrix angustiorana, written 12 years back. In referring to it I apprehend he has been too hasty in jumping at conclusions, for I am unable to reconcile his version of the economy of this moth with Mr. Graham's. Mr. Westwood's caterpillars lived upon the Apricot buds and leaves in May, Mr. Graham's inhabited the crowns of Pears in the winter; surely these cannot be the same; and so far from proving that the caterpillar does, it may fairly be inferred that it does not "pass the winter in the larva state, ready to commence its attack upon the young buds and leaves as soon as they are developed in the spring." It is very remarkable that of all the caterpillars I have reared during five years' residence at Hayes, with a garden fairly stocked with Pears, Apples, Plums, Peaches, and Apricots, I should never have bred the Tortrix angustiorana, from hundreds of larvæ which spin up in the spring-buds of those trees. I can rely upon Mr. Graham's accuracy, and I shall leave him to satisfy Mr. Westwood's doubts. I may however testify to the brown spots not being decayed when the Pears were given to me, and the webs were white, as I believe they always are, with the smaller moths. It is of little import, but Mr. Westwood speaks of my finding the moths "on the palings of the Regent's Park, adjoining the New-road;" such is not my statement, and it so happened that it was on the opposite side of the Park, under Primrose-hill, where there are gardens and fruit trees. I must also be permitted to satisfy your readers that Mr. Westwood quite misunderstood the purport of my article on Odymerus, the economy of which was sufficiently explained at the time, and well understood long before: but not so with regard to the sand wasps infesting bee-hives and rendering them disgusting to the fastidious bees; this was a new and interesting fact, and it is well known that bees will abandon their hives when any intruders take possession, if they cannot expel them. Possibly the sand-wasps in no other way injured the bees, as they store up caterpillars for their young, and I am not aware that they will purloin the honey, but they certainly have mouths which appear to be not inapplicable to such a purpose, and the males, at least, are well known to feed upon the farina of flowers. But there is still a third charge, of my ignorance regarding a minute Podura which infests Potato haulm. One reason why I did not call my species P. Caulastinus was, that Mr. Hardy's description and my insects did not agree in one particular. His Podura was apparently much larger than mine, the colour light yellow, and not deep ochreous; and his had six white spots behind the posterior legs, mine had none; moreover, many of my specimens were jet black, which he did not notice. With such discrepancies, it is a little surprising that any one at all conversant with specific differences should positively assert that P. Solani and P. Caulastinus are the same.

In my essays, both in the Journal of the Royal Agricultural Society and in the *Chronicle*, my object has been to lay before my readers new facts on good authority; and these should be fairly investigated, and not cavilled at, if knowledge is to be elicited and the public instructed. I may be excused for adding, that in 1842 the economy of Pemphredon or Cemonus unicolor was published in the above Journal, as well as three other insects, which store up the aphides as food for their larvæ. They will avail themselves of any tube open for their reception, and consequently the ends of straws on a thatched roof sometimes afford accommodation to very extensive families. *J. Curtis.* — Mr. Westwood, in last week's *Chronicle*, seems to think that no one, from reading the account of "Ruricola," can come to the conclusion that the larva of this moth feeds upon the Pear itself, or that it is naturally injurious to that fruit. This appears to me rather extraordinary, as "Ruricola" has so distinctly shown the extent to which the caterpillar has preyed on the rind in the portion of the Pear figured; in addition to which he states, in one place, "injurious as the caterpillar is to the Pear, I doubt not its history will interest pomologists;" and in another part he observes, "The injury which this caterpillar does to the finest sorts of keeping Pears renders it desirable to find a remedy," and immediately suggests the best one possible. But even if these statements were wanting, how could Mr. Westwood suppose the caterpillars could exist for three or four months, if not on the Pear, while enclosed in a glass tumbler? Surely this would not be in accordance with the "ordinary economy of insect life." In order to remove any doubt upon the subject, I beg to say the caterpillar does feed upon the rind of the Pear surrounding the calyx, into which convenient den he retires when his appetite is satisfied; and the method by which I bred the moth was by supplying the caterpillar with a fresh Pear as soon as he had produced decay upon the first on which I found him. If, therefore, any one besides Mr. Westwood has come to the conclusion that this caterpillar is not naturally injurious to the Pear, he has certainly formed a very erroneous one, which I trust these particulars will remove. Mr. Westwood is also wrong in supposing that this was merely an accidental adoption of winter quarters by the caterpillar, for I have found dozens of them in the same caves during the last three years. Yet Mr. Westwood scruples not to say that if this were the case, the habits of the insect must have been long since observed. Now were this trite argument infallible, not a few of Mr. Westwood's own original discoveries, including the last given in your Paper, might be set down as mere eccentricities, for the dead snags on a standard Rose tree are rather more prominent objects than the calyx of a Pear; yet in these snags Mr. Westwood has been able to "pick up facts in regard to four or five species of insects, the economy of which has hitherto remained unknown." The snag of a Rose tree may offer to Mr. Westwood "a mine of interesting observation," but the calyx of a Pear is not permitted to contain a single caterpillar for the observation of "Ruricola." Alas! "Ruricola!" into what errors hast thou not led me—who hast so often declared to me that the field of Nature is wide enough for us all, and that there are recesses in her magnificent cabinet which generations to come will fail to exhaust—who hast taught me that insects are led by an unerring instinct to feed on that which is most agreeable to their tastes and most suitable to their peculiar constitutions, and to take up their abodes in those places whence they can most readily supply their wants, and where they can rest most secure against their enemies. With the Odymerus I have nothing to do, but I have no doubt that "Ruricola" will be able to give a very satisfactory account of it. But with respect to the Smynthurus Solani, I must say a few words, as Mr. Westwood implies that Mr. Curtis borrowed his information of this insect from Mr. Hardy, who published an account of it in 1848. Now, Mr. Curtis, to my own knowledge, was acquainted with the insect at least two years before this; for I found it myself on the Potato in 1846, and sent him specimens of it; moreover, I subsequently gave a short description of it in the Journal of the Royal Agricultural Society for that year. It is, therefore, most probable that Mr. Hardy himself obtained his information of this insect from the above source, although I do not presume to say that he did; but it is quite certain that Mr. Curtis did not derive his knowledge from Mr. Hardy. I may add, that no author is more particular in citing authorities than Mr. Curtis, although it is matter of notoriety that very heavy contributions have been levied upon the stores contained in his unrivalled works, without the slightest acknowledgment. *F. J. Graham.*

Half-hardy Plants.—In your answers to correspondents (which by the way I must own you give with praiseworthy and unexampled patience), you speak of Limonia laureola as a fine thing, and ask, "Is it hardy? Tell us all about it." The reply to this inquiry I shall eagerly look for, as I have during the last year planted a small specimen of this species against an east wall, where it has borne the recent severe weather very well. Loudon tells us that it was raised in the garden of the Horticultural Society, from seeds sent by Dr. Royle, who found it on the tops of cold and lofty mountains in the Himalayas, where it is for some months buried under snow. Is it a fruit-bearing species, with fragrant blossoms? [No.] If so, it will be a truly valuable addition to our shrubberies. Many of my old favourites have thus far borne the intense cold with which we have been visited, though a few small seedling Acacias from New Zealand have lost their leaves, and Veronica speciosa has its young shoots injured, except where nailed close to the wall. I see, too, that many unripened twigs of Viburnum odoratissimum are damaged. I trust that the readers of the *Chronicle* will record their experience of the hardihood of any exotics, that others may benefit by it; for surely there must be numberless plants that will stand our climate, if a trial be afforded them; and probably the trial is making and has been made, unknown to any one but the experimentaliser. Pinus Hartwegii and Russelliana are unscathed with me, and Pinus Gordoniana, macrophylla, filifolia, and longifolia likely to succeed equally well, and the evergreen variety of Taxodium distichum. I want the names of a few good Coniferous plants of striking beauty, to adorn the shrubby side of a Grass terrace 600 feet long, half the length of which is open to the south-west gales, and situated high; the other half is sheltered by Fir trees. Can you assist me? Most interesting as is the description of Elvaston, it is on too magnificent a scale to gather hints from. *A Devonian.* [The Limonia in question is a Himalayan plant, really belonging to the genus Skimmia. It is figured in Wallich's "Plantæ Asiaticæ." We want to know how it bears the weather. Among the best Conifers for your purpose are Cupressus Goveniana, macrocarpa, and funebris, Abies Deodara and Douglasii, Juniperus excelsa, Pinus insignis, brutia, and Pallasiana.]

Apprentice Fees.—With your permission, I will just take a passing glance at the arguments of your correspondent "Elpidophorus," published last week. I perfectly agree with the Leading Article in the previous Number, and have no intention to defend the gentlemen of the "blue and green apron" notoriety, leaving them to your correspondent, who seems to understand their "natural history" so well. I wish to say a few words in respect to quite a different class of men—gardeners. I view gardening as a science, and a gardener as an intelligent man, and a respectable man. There are many such at the present time, and your propositions for a moderately high premium with apprentices is excellent, and that no gardener should take part of the wages of any young man for "improvement." By adhering to these rules it is to be hoped that gardeners, as a body, will be much more select than they are now. In the present state of things, weeds will choke up occasionally the more useful production. I do not pretend to say that any gardener has a "legal" right to take apprentices for a profit without his employer's sanction, but I think I am not wrong in saying there are very few gentlemen, who have gardeners of any note, that would have any objection to it—nay, but would rather pride themselves in having a gardener of known abilities. Besides, where is a youth to be taught gardening but in a gentleman's establishment, certainly not in a nursery; that would be about the same thing as to send a lad to a flour-mill to learn the baking business. As to hindering a gardener's time, it is no such thing; the apprentice follows the routine until he becomes sufficiently acquainted with it to cause a thirst for inquiring scientifically into its objects, then is the time he is really learning, and will require some books and explanations from the gardener; this, as a matter of course, is gone into in the evenings. I would, by the way, tell apprentices that no man can become a good gardener in the full sense, by merely following a prescribed set of rules; to be a really useful man he must dive into science, particularly those that gardening bears directly on, such as vegetable physiology, chemistry, &c.; and, in fact, he can scarcely study any science upon which gardening does not bear more or less. I can tell him, too, that none of the businesses or "professions" of the day present more scope for the mind, and that he must not rest under the banner of ignorance, but bring more mind than a common labourer or artisan. "Elpidophorus" speaks of gardeners as "a useful class of labourers;" it is some little satisfaction, after all, to hear that they are useful. Labourers we all are in a certain sense, but employers are generally aware that to have their places properly and economically managed, they do best to employ an intelligent man, not a mere labourer. I console myself by thinking your correspondent does not know the anxiety and responsibility devolving on a gardener, in addition to the many privations he has to endure before he is old enough to take a head situation, which, generally speaking, is five or six years more than that of ordinary trades. Neither do we find them on the whole a discontented body; but, of course, like all sensible men, they strive for advancement, and, I am happy to say, often get it. I will say no more on this subject, feeling assured you will spare no pains to place the gardener in his proper position, no matter whether it be a trade or "profession." *J. N.* [We have many letters on the same subject, but we think it needless to publish more, after expressing our own opinion on the subject in another column.]

Reviews.

Histoire Naturelle des Quinquinas. Par M.r H. A. Weddell, M.D. Paris, Masson. Folio. Pp. 108, and 34 plates, engraved on copper.

At last we possess in the admirable work before us an authentic and complete history of those little known trees, called after a Countess Cinchon, whose medicinal importance may be said to have placed them at the head of remedial agents derived from the vegetable kingdom. Hitherto the real relation which the Peruvian barks of commerce bear to the species described by botanists, and the modes of accurately distinguishing them, or of judging of their qualities by mere inspection, have been among the most perplexing subjects in medical botany; no two authors agreeing upon the subject, and none having the skill to separate the true from the false. The honour of accomplishing this very important task was reserved for Dr. Weddell.

This gentleman, at once a practised botanist, a skilful physician, and an energetic traveller, resolved to solve the great enigma by a personal visit to every district where "barks" are collected. In the words of the French committee, which was entrusted with the preliminary examination of his collections, "the traveller accompanied the bark peelers or Cascarilleros to the vast forests in which the Cinchona trees are scattered, distant many a league from inhabited places. Days and nights he lived in huts with these men; he then followed the barks, from hand to hand, till they reached the port where they were shipped, and thus he was enabled to ascertain personally their real history, which is not always known in the markets of America, to say nothing of those of Europe." Dr. Weddell entirely confirms the statement that there is so little proportion between consumption and supply that the most valuable sorts are threatened with rapid destruction. Nor does there appear to be any probability that this calamity, for such it must surely be considered, can be arrested, unless the best species are introduced into European colonies suited to their cultivation. This is fortunately not unlikely to be accomplished, for the finest of all, the Calisaya, has been raised in England from seed communicated by Dr. Weddell through his friend Mr. Pentland, and we have reason to believe that these gentlemen have also placed seeds in the hands of the East India Company, in many parts of whose vast territories the plant is certain to find a suitable soil and climate. This Calisaya, the discovery of whose real origin is entirely owing to Dr. Weddell, is incomparably superior to the others of the genus. It is the great source of quinine, every 100 lbs. of its bark yielding from 3 to $3\frac{1}{2}$ lbs. of the sulphate.

Not a point in the structure or economy of these plants has been neglected by the author. His detailed observations upon the hitherto ill-understood anatomy of the bark are full of interest and important facts; his botanical discrimination of the peculiarities by which the genera and species are to be distinguished, appear to have exhausted that part of the subject; and the great questions of geographical distribution, climate, soil, and other circumstances affecting the range of species, are discussed at large and fully, without the prolixity so commonly observed in the writings of travellers who are incapable of determining what are the material points of such a subject. Our narrow limits prevent our quoting at much length the views of Dr. Weddell upon this great question, but we should scarcely do it justice were we to omit the following conclusion to his examination of the Cinchona climate.

"To name all the trees or remarkable plants which grow in company with the Cinchonas would be to give a catalogue of a large part of the vegetable productions of western America, or, if you please, of a climate which at one and the same time produces Wheat and Maize, the Sugar-cane and Plantain, Cotton bushes and Coco shrubs. Palms are found through the whole extent of this zone, and in some places constitute a principal constituent of the forests, which are adorned moreover by tree Ferns, huge climbers in countless numbers, great Arads, Cecropias, an Oak (the Quercus granatensis), Bamboos, an infinite variety of Melastomads, with species of Laplacea, Macrocnemum, Lisianthus, Citrosma, Condaminea, Clusia, Myrospermum, Myrica, &c. In a word the Cinchona forests present to the eye that mixture of majestic forms, and brilliant colours, with which it is usual to paint virgin nature in the tropics; and I may add that, excepting the inequality of the surface, I found much general resemblance between the Ipecacuanha forests of Matto Grosso and those where I studied the Cinchonas in certain points of Bolivia and Peru."

"Finally, the region inhabited by the genus Cinchona, as it is now limited, extends over about 29° of latitude. It represents a narrow riband, which with its bends describes a vast curve, following the direction of the great Cordillera of the Andes, commencing with the 19th parallel South, and generally coinciding with its eastern slope, where it maintains an elevation varying a little according to latitude, but confined within the limits of 1200 and 3270 metres. The middle of this curve, which is at the same time its most western limit, and nearest the coast-line, is situated near Loxa, on the 82d degree of longitude west of Paris; its lower extremity touches upon the 62d degree, and its upper disappears about the 70th."

We forbear to enter upon the botanical details introduced into Dr. Weddell's work; opportunities for doing so will occur hereafter, when the species now growing in our garden shall have produced their flowers. In the meanwhile, we refer the reader to the volume itself, which is indispensable in all botanical or medical libraries, and which ought to be found wherever the works of Humboldt have a place.

In conclusion, we have only to add that it is illustrated by a charming view of the Cinchona forests of Carabaya, engraved after a sketch by the author, by 32 exquisite drawings of the Cinchonas and their barks, executed by Riocreux and Steinheil, and by an excellent map of the intertropical Andes, illustrating the geographical distribution of the genus Cinchona.

Calendar of Operations.

(For the ensuing week.)

GENERAL REMARKS.

IF the frost continues with anything like severity much longer, a considerable amount of forethought will be necessary in turning the time to the best account by devoting it to such work as can be performed most economically during such weather, and which will facilitate other work in future months. If this principle be not energetically and prudently acted upon, the spring work will be much hindered, and to such an extent that it will be no easy matter for a gardener to recover the proper order and timely succession of his crops. If the Potato crops were not all planted before Christmas, it should be one of the first jobs after the weather changes, and part of the interim may be usefully employed in making preparations for this crop. The non-advisability of using manure must doubtless be firmly impressed on the minds of all our readers, and instead thereof we would recommend the use of burnt clay or charred refuse. Experiments we made last year with these materials convince us that they act in many instances as preventives of disease, and in all cases the produce is clearer skinned, firmer in substance, and better for domestic purposes than the same varieties are when grown on similar ground without this amelioration of the soil. Our mode of proceeding is to plant them as we dig the ground over; after making a trench, we strew some of the burned clay and charred stuff in the bottom, and on it place the sets about 6 inches from the surface, and over them we place a liberal allowance of the mixture, that the young tubers may be formed in it. An important point is, that they have plenty of room between the plants, say from 18 inches to 2 feet, according to the habit of the variety, whether long or short-topped. Some of the hands may be usefully employed in trimming and pointing stakes for Peas and flowering plants, and in making besoms; such work is done as easily now as at any time, and the advantage of so doing will be appreciated when these things come ready to hand at a busier season. Various jobs of this kind will suggest themselves, such as preparing pots, crocks, tallies, &c.

PLANT DEPARTMENT.

GREENHOUSE.—Any plants which have done flowering, or which are commencing their growth, may now be potted. This will include Camellias, Azaleas, Acacias, Oranges, &c. By potting them as they go out of bloom, it will save time six weeks hence, when work is more pressing. In potting these plants, particular attention should be paid to making the new soil sufficiently firm to cause the water to percolate equally through it and the old; after potting they should be placed in a moderate temperature, just sufficient to keep them growing at a rate consistent with the amount of light. Oranges will be benefited by a slight bottom-heat (without increasing the top heat), to enable the roots to get a little in advance of the tops. Great care must be exercised in watering newly-potted hard-wooded plants. Examine the Pelargoniums intended for a June display, and shift any that require it. Those for May flowering should not be potted again. Where these plants are grown in well ventilated houses, they will be benefited by a slight syringing every fine day, about 2 o'clock, as the sun begins to decline. Hyacinths and Tulips, and other forced bulbs, should be freely supplied with water; a little attention in this respect will considerably prolong their period of bloom. Bring successions of these useful plants forward in a mild bottom-heat of about 60°, the top temperature not exceeding 50° to 55°, with plenty of fresh air. No heat suits these so well as that from a bed of well fermented horse litter and Oak leaves. Both flowers and foliage are finer than when they grow in a temperature obtained by means of flues or pipes.

FORCING DEPARTMENT.

VINERIES.—If the Vines have any of their roots in the open border, it should be covered with fermenting litter, to afford a slight heat to them. If the fermenting material rises to about 75° or 80°, it will generally be found that the soil beneath will range from 60° to 65°; a thermometer should be occasionally inserted into the latter, to prevent any injury to the roots, either by excess or want of warmth. A little ingenuity is necessary to make young rods break regularly at this season; it may be managed by bending them down to the bottom of the rafter, and curving them in such a manner as to elevate the buds nearest the base above their more precocious brethren, which in their turn must be induced to break regularly by the same method. After the buds begin to break, let the amount of heat and moisture be carefully regulated, not exceeding 55° by night, until they are all broken, nor 65° by day, unless with sun-heat. Great care will now be necessary to prevent weak and slender shoots, as an undue amount of artificial heat for a few days at this season will do irreparable injury in this respect. Rub off all buds which do not show fruit, as soon as they are distinguishable, except where they are required for the formation of wood. If useless shoots are allowed to remain, they exhaust the stored-up energies of the plant, which ought to be devoted to better purposes, and by the time they are able to elaborate sap, either for themselves or their neighbours, they must be cut out of the way. It should be remembered that only a certain breadth of foliage can be exposed to the direct influence of the sun's rays, and the whole of this should consist of the leaves belonging to the present and future fruit-bearing spurs. It is no less a disadvantage to retain too many of those which do show fruit; if the Vines happen to be in first-rate condition, probably every bud will show a bunch or two, but to allow them all to remain would cause disappointment in this year's crop, and materially injure next year's also. As soon as the most promising shows can be distinguished, they should be reduced to a number consistent with the present power and future strength of the Vines, and in no case should be left more than one bunch on a spur.

FLOWER GARDEN AND SHRUBBERIES.

Propagating half-hardy plants for masses should now be proceeded with, in order that they may be well established before turning-out time arrives. Any kinds, of which you do not at present possess a sufficient quantity, should be put into a warm moist temperature, to induce them to make young shoots. These will strike freely in a similar situation, and after having produced several crops of cuttings, they may be gradually hardened off. Cuttings of scarlet Geraniums, Calceolarias, Petunias, Verbenas, and a host of other things struck now, and encouraged by careful management, as regards potting, and a genial temperature, will not be much behind autumn struck plants; and a fine display is made during summer, in many places where, during winter, only a sufficient quantity of plants are kept to supply cuttings in February and March.

FLORISTS' FLOWERS.

Doubtless many of our readers who, like ourselves, believe that "all's for the best," would gladly see the end of this very old-fashioned winter; though, if our instructions have been attended to, they will have found plenty to do. It is some gratification to know that all the compost heaps have been well frozen through, and that abundance of provision, in the shape of rotten leaves, &c., has been collected and laid up for future use. When the frost goes, the amateur will see the advantage of early potting the layers of Carnations and Picotees, which will in that case look stout and healthy, even after this very severe frost, whilst those deferred till November, will be "not quite the thing." As soon as the frost goes, we shall have abundance of work. Dahlias even now may be started; and if not put into heat yet, it will be advisable to look the stock over, that if any varieties are lost, application may be made in time to replace them. Should mild weather ensue before our next calendar, give abundance of air to all plants in frames; when we say this, we do not mean that they should be exposed in boisterous windy weather; this, after having been kept comparatively closed, would be bad policy; the amateur must exercise discretion in these matters.

HARDY FRUIT GARDEN.

FILBERT BUSHES.—As soon as the female flowers can be distinguished, the bushes should be systematically pruned. All the shoots which do not show fruit should be shortened, regulating their length according to their strength, and spurring the weak ones in close to the old wood; it will be necessary to remove some of the shoots, to prevent over crowding. After regulating the head, clear away the nest of suckers with which these bushes are too frequently encumbered. If the bushes appear weak they should be assisted during the growing season, or, if too strong, root pruned. There is no reason why a collection of Nut bushes may not be as fruitful and ornamental as a collection of dwarf Apples or of pyramidal Pear trees. In pruning, a little precaution is necessary not to remove the whole of the male catkins, until some days after all the female flowers are expanded; and as many of the bushes will, in all probability, be destitute of male flowers, it will be necessary to procure some well-furnished branches from other bushes, and shake them gently over those which have female flowers only.

KITCHEN GARDEN.

At this season we give a slight sprinkling of salt to all ground which has been trenched several weeks, as soon as it will bear treading upon, and after the salt has been applied we fork over the surface. The improvement in the crops by this means is very visible, and thousands of insects are destroyed by it. It is scarcely necessary to add that a dressing of 2 lbs. to the superficial yard is of the greatest benefit to the Asparagus beds, and the dressing may be repeated in the beginning of April. A good dressing of salt is not less beneficial to the crops of Seakale. Besides the increased vigour and health of these sea-side plants, when salt has been freely used, it possesses the additional good property of destroying insects and ordinary weeds, and thus economising labour in the regular keeping of the place. An early crop of round Spinach should be sown this week on a warm border. FRAME POTATOES.—For this purpose, make up a bed of Oak or Beech leaves, sufficient to produce a gentle bottom-heat. They should be started in boxes of leaf-mould, and planted as soon as they have produced shoots an inch long; by taking this precaution all gaps are prevented. They should be planted 9 inches apart and 6 inches deep, with 3 inches of soil between the sets and the bed of leaves. By planting them this depth at once, the trouble of earthing up is avoided, and an excellent opportunity is afforded of getting a crop of Radishes, which will be ready to draw before they are in the way of the Potatoes. It will be necessary, for the sake of both Radishes and Potatoes, to admit air freely, and to draw off the sashes entirely, during mild weather. As soon as the ground will admit of it, preparations should be made for planting new beds of Horse-radish and Jerusalem Artichokes; for the former the ground should be finely broken in trenching, that the new under-ground stems may be formed clean and straight; and as the last-named vegetable seldom comes to maturity in this climate, a very favourable situation should be chosen, that it may have the best possible chance of forming its tubers, although it cannot perfect its flowers. The Horse-radish requires that the ground should be rich and deeply trenched; and that there may be no delay when the weather changes, advantage should be taken of the frosty weather to get the necessary manure in readiness on to the ground. The soil best adapted for growing the Jerusalem Artichoke to perfection is a light rather sandy loam, as a rich soil makes them grow too rank, and puts off the formation of tubers to too late a period.

State of the Weather near London, for the week ending Jan. 24, 1850, as observed at the Horticultural Garden, Chiswick.

Jan.	Moon's Age.	Barometer. Max.	Barometer. Min.	Thermometer. Max.	Thermometer. Min.	Thermometer. Mean	Wind.	Rain.
Friday.. 18	5	29.984	29.675	35	31	33.0	S E.	.55
Satur... 19	6	29.724	29.437	45	27	36.0	W.	.02
Sunday . 20	7	30.199	30.047	30	27	28.5	N.E.	.00
Monday .. 21	8	30.380	30.227	34	26	30.0	N E.	.00
Tues. .. 22	9	30.485	30.481	35	31	33.5	S.E.	.00
Wed. .. 23	10	30.449	30.397	40	25	37.5	S.W.	.00
Thurs.... 24	11	30.370	30.168	36	31	33.5	W.	.01
Average....		30.227	30.053	36.5	29.7	33.1		0.58

Jan, 18—Foggy; hazy; snow in broad flakes in afternoon; heavy rain [at night.
— 19—Cloudy; drizzling rain at night.
— 20—Frosty and overcast; cloudy.
— 21—Overcast; cloudy; frosty at night.
— 22—Densely and uniformly overcast; hazy; overcast.
— 23—Uniformly overcast; hazy; clear and frosty.
— 24—Foggy; drizzly and foggy; overcast.
Mean temperature of the week, 4½ deg. below the average.

State of the Weather at Chiswick during the last 24 years, for the ensuing week, ending Feb. 2, 1850.

Jan. and Feb.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds. N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 27	44.7	32.7	38.7	11	0.13 in.	1	3	3	1	3	9	4	1
Mon. 28	44.5	31.6	38.1	13	0.17	2	3	2	1	1	9	7	1
Tues 29	44.8	31.5	38.1	8	0.32	3	1	1	2	6	5	4	
Wed. 30	43.8	32.2	38.0	10	0.20	2	2	2	3	3	5	6	1
Thurs. 31	43.5	31.4	37.4	11	0.32	2	4	1	1	8	5	2	1
Friday 1	42.4	31.2	36.8	8	0.75	2	4	1	1	3	5	1	4
Satur. 2	43.7	31.1	37.4	8	0.42	2	2	3	3	2	5	4	2

The highest temperature during the above period occurred on the 28th Jan., 1843 and 1846; and 2d Feb., 1845—therm. 55 deg; and the lowest on the 27th Jan., 1827—therm. 17 deg.

Notices to Correspondents.

ANÆCTOCHILUS AND PHYSURUS: *G H H.* Place your plants in a situation in the stove where they will have more heat, less moisture, and plenty of light; it is excess of moisture, without a sufficiency of heat and light, that has injured them.¶

AZALEAS—12 HARDY KINDS: *M W.* Rutilans, fulgens superba, Adelaide, exquisita, gloria mundi, triumphans, imperatrix, nudiflora alba plena, dulcedo, belle rosette, pontica alba superba, ardens, Watereriì.¶

BOOKS: *J E.* Any respectable bookseller can procure "Moore on the Cucumber" for you if he chooses.‡—*C E.* "Roberts on the Vine" will possibly suit you.‡—*J S.* See the advertisement of last week. "Paxton's Flower Garden" will be a new work on a new plan. There will be no new edition of the Horticultural Society's Fruit Catalogue for the present.

BUDDLEA GLOBOSA: *L B S.* Propagate by cuttings or layers. It is an old South American shrub, found in every general catalogue that we have any knowledge of. Perhaps Loudon's "Arboretum Britannicum," the small edition in one volume, may suit you.

COFFEE-POT: *Coffea.* Lebrun's Patent. It has stamped on it, "Cafetière d' Alexandre Lebrun. Opticien à Paris."‡

CUCUMBERS: *J E.* Cuthill's Black Spine.‡—*O B.* We are unable to discover any unusual bitterness in your Cucumber; but it is not a good sort, belonging to those bearing the name of Smyrna. You had better use in future some of the black-spined varieties.

ELVASTON: *John Kinloch.* The subject of your request is in manuscript, and will shortly appear. *R. G.*

HEATING: *A Sub.* If you leave the sides of the tank exposed to the house, you will have enough of both bottom and top heat, unless your house is very high.

INSECTS: *J F.* The insects on the plant from Madagascar, imported with the Guava from Jamaica, are the common thrips of the hothouses. The plants attacked had better be removed from the rest, and strongly fumigated. *W.*

JOYCE'S STOVE: *A A.* This will answer the purpose imperfectly, among plants; but it dries the air very much, and should only be used in extremity. The carbonic acid emitted by it will not hurt plants half torpid in winter; although it destroys animal life.

NAMES OF FRUITS: *D M T.* 2, Downton; 7, Golden Pippin; 8, Scarlet Crofton? 9, Dumelow's Seedling; 17, Deux Ans; 4, 5, 11, 12, are worthless, and not at all known in the neighbourhood of London.‖

NAMES OF PLANTS: *J R.* Is it possible that you can be a gardener and not know that morsels of succulent plants cannot be named without flowers?—*J H.* Ageratum cœlestinum, and Eupatorium glandulosum.—*H H.* 1, Lastrea spinulosa; 2, Asplenium Adiantum-nigrum; 3, A. Ruta-muraria; 4, A. Trichomanes; 5, Polypodium vulgare; 6, Lomaria borealis. *S.*—*J D.* Pteris longifolia, very common in hothouses. *S.*—*G W.* Certainly not Styphelia tubiflora; it appears to be Cyathodes oxycedrus.

RHODODENDRONS—12 HARDY SORTS: *M W.* Albertus, Catawbiense superbum, Lowii, Ne plus ultra, Nobleanum ornatum and pictum; ponticum grandiflorum, pictum, and spectabile; tyrianthinum, Victoria, venustum.¶

SHRUBS—12 NEW ORNAMENTAL SORTS: *M W.* Weigela rosea, Spiræa Reevesiana, prunifolia (double), and expansa; Jasminum nudiflorum, Berberis trifoliata, Elæagnus reflexa, Ceanothus rigidus and cuneatus, Daphne Fortuni, Deutzia staminea, Syringa Emodi.¶

TEMPERATURE: *Gallicus.* We regret that we are not in possession of observations sufficient to enable us to say what the average difference would be, in winter and summer, between a thermometer exposed against a north wall and one in the open ground, protected merely from direct solar radiation. The subject deserves attention. The difference between a thermometer protected by an umbrella and one freely exposed may amount to 5 or 6 degrees.‖

TOBACCO: *G R M.* To add charcoal to Tobacco, will do neither good nor harm in a greenhouse.

TOWN PLANTS: *Sub.* The soot and dirt chokes the pores of their leaves, and often kills them; but we should think that with ordinary care most kinds of plants (Conifers perhaps excepted), would live with you as near London as Dalston. See an article on this subject, at p. 822 of our volume for last year.‡

VINES: *A Reader.* The White Muscat of Alexandria will bear the heat of a Pine stove. Vines that have been taken up and replanted should not be allowed to bear much fruit, if any, the first season.‖

MISC: *Maiheae Waltham.* We really cannot advise you. In such matters all men should judge for themselves. You may not find it possible to get into the garden of the Horticultural Society.—*W Loxley.* We shall be happy to get you supplied by the time you mention through our own agent.—One Shilling will be given for No. 1, 1846.

PERUVIAN BARLEY.—This wonderfully productive species was imported by the Earl of Lonsdale in 1847, and promises to be of more real importance to the Farmer, the Maltster, and Brewer, than any grain hitherto introduced. It is scarcely possible sufficiently to eulogise its merits, which have been proved of so high a class that it must eventually supersede all other Barleys, and become an indispensable addition to our cereal crops. Its Malting properties have been found very superior to all other kinds, producing Beer of a much better quality. For Feeding it is inestimable; the grain having no husk whatever, it yields quite as much meal as Wheat, and closely approaches it in quality. Sown in February on his lordship's farm at Barnes, Surrey, on ordinary land, in 1849, it produced 9 quarters to the acre, weighing 64 lbs. to the Bushel. Messrs. J. and C. LEE, sole proprietors of the PERUVIAN BARLEY, being desirous that so invaluable an article should be widely distributed, are prepared to send it out in parcels containing 1 peck each for 10*s*. A remittance must accompany all orders. Post-office orders to be made payable at the General Post-office.—Address, JOHN and CHARLES LEE, Nurserymen and Seedsmen, Hammersmith, London.

THE IMPROVED "FLUE BOILER" AND FURNACE.



W. HILL begs respectfully to inform the numerous applicants for his "FLUE BOILER" of a small and intermediate size, that he shall be prepared, early in December, to supply sizes to suit every description of Apparatus, from that of 100 feet of 3-inch pipe to 2000 feet of 4-inch pipe. A List of Sizes and Prices will shortly be published. W. HILL guarantees his Boilers to be the most effective and economical of any in use.
Horticultural Works, Greenwich, Jan. 26.

HOW TO KEEP A HORSE FOR LESS THAN ONE SHILLING PER DAY, and Make the Animal look Better than when Paying 12*s*. and 14*s*. per Week.—Consider the enormous saving in these hard times—times of cheapness.—Apply personally or by letter at MARY WEDLAKE and Co's, 118, Fenchurch-street, London, Oat-bruising and Chaff-machine Manufactory, established upwards of 40 years.

BY HER MAJESTY'S  ROYAL LETTERS PATENT.

PATENT HOTHOUSE WORKS, KING'S ROAD, CHELSEA.
E. DENCH invites the attention of Gentlemen about to erect Hothouses, &c., to the vast superiority in every respect possessed by his PATENT HOUSES, which he will warrant superior in every respect to any others. Good Glass from 16 to 21 oz. per foot, 1 foot wide, 3 feet long, furnished, and the Houses when completed charged from 1*s*. 3*d*. to 1*s*. 6*d*. per superficial foot, according to size and quantity; one principle, the roof being formed without wood or putty, and the other principle being wood rafters and the glass put in with putty. Patent Sashes, requiring no paint, from 7*d*. to 9*d*. per ft.
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STEPHENSON AND CO., 61, Gracechurch-street, London, and 17, New Park-street, Southwark, Inventors and Manufacturers of the Improved CONICAL and DOUBLE CYLINDRICAL BOILERS, respectfully solicit the attention of scientific Horticulturists to their much improved method of applying the Tank System to Pineries, Propagating Houses, &c., by which atmospheric heat as well as bottom-heat is secured to any required degree, without the aid of pipes or flues. S. and Co. have also to state that at the request of numerous friends they are now making their Boilers of Iron, as well as Copper, by which the cost is reduced. These Boilers, which are now so well known, scarcely require description, but to those who have not seen them in operation, prospectuses will be forwarded, as well as reference of the highest authority; or they may be seen at most of the Nobility's seats and principal Nurseries throughout the kingdom.
S. and Co. beg to inform the Trade that at their Manufactory, 17, New Park-street, every article required for the construction of Horticultural Buildings, as well as for heating them, may be obtained upon the most advantageous terms.
Conservatories, &c., of Iron or Wood, erected upon the most ornamental designs. Balconies, Palisading, Field and Garden Fences. Wire-work, &c.

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THE LONDON MANURE COMPANY beg to offer as under, and pledge themselves that every Manure shall be perfectly Genuine:—Corn Manure for Wheat, Barley, Oats, Clover—most strongly recommended from its success last year; it will be found cheaper than Guano, and bear the strictest analysis. Also URATE, Superphosphate of Lime, Sulphate and Phosphate of Ammonia, Nitrate Soda, Fishery and other Salt, Gypsum, Sulphuric Acid, &c.
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Bridge-street, Blackfriars. EDWARD PURSER, Secretary.
Country Dealers and Agents supplied.

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London, January 26.

GENUINE PERUVIAN GUANO, direct from the Importer's Stores, LINSEED CAKES, and all kinds of Artificial Manures, may be had at London prices, for Cash, of Messrs. ODAMS and PICKFORD, 15, Mark-lane, London.

MESSRS. NESBIT'S CHEMICAL AND AGRICULTURAL SCHOOL, 38, Kennington-lane, London.—A sound practical knowledge of Analytical and Agricultural Chemistry, Geology, Surveying, Levelling, Railway Engineering, &c., may be obtained in Messrs. NESBIT'S Academy, in addition to a good modern education.
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IMPROVED FOUR-HORSE PORTABLE STEAM-ENGINES AND BOLTING OR THRESHING MACHINES.
FREEMAN ROE AND HANSON, Southwark Iron Works, and 70, Strand, beg to call attention to their Steam-Engines and Threshing Machines, which are more economical in fuel, for the quantity of work done, than any before the public. They may be seen any day at their works, Sumner-street, Southwark Bridge-road.—Water-rams for raising Water. Deep Well Pumps; Baths; Hot-water Apparatus; Fountains. Towns supplied with Gas or Water.

HYDRAULIC ENGINES, WATER RAMS, &c., on Improved Principles; Engines worked by Steam or Hydraulic power, to raise from 1 gallon to 1000 per minute to a height of 500 feet, and from a depth of 900 feet. Douche, Vapour, Hot-air, and all other kinds of Baths. Buildings, Conservatories, &c., heated by Steam, Air, or Water. Boring, Sinking, and Collecting of Water, &c. Towns supplied.—Direct to JOHN LEGG, Cheltenham.

The Agricultural Gazette.

SATURDAY, JANUARY 26, 1850.

MEETINGS FOR THE TWO FOLLOWING WEEKS.
THURSDAY, Jan. 31—Agricultural Imp. Society of Ireland.
TUESDAY, Feb. 5—Agricultural Society of England.
THURSDAY, — 7—Agricultural Imp. Society of Ireland.
FARMERS' CLUB.—Feb. 4: London.

A TRUE CONFESSION!

"During a past year, I was occupying tenant of 270 acres of arable land, at a rent, including rates and taxes, of 562*l*. 17*s*. 2*d*. I employed a capital upon that farm—that is, I possessed a sum invested in it, when the accounts for the year were balanced—of 2871*l*. 16*s*. 11*d*. During that year I reaped a profit of 194*l*. 6*s*. 3*d*.; that is to say, the value of the farm stock at the close of the year, added to all receipts during it, was greater by that sum than the value of the stock at the commencement of the year, when added to all the expenditure during it. This income was the whole return from the employment of that capital. And if the result be analysed as it is in the ledger accounts of the period, the following results will appear: on the pig stock, a profit of 87*l*. 14*s*. 1½*d*., on an expenditure during the year of 121*l*. 16*s*. 4½*d*.; on the sheep stock, a profit of 62*l*. 19*s*. 4*d*., on an expenditure of 961*l*. 8*s*. 4*d*.; on the feeding cattle a profit of 193*l*. 15*s*. 1½*d*., on an expenditure of 564*l*. 17*s*. 7½*d*.; on the Clover crop, an expenditure (loss) of 33*l*. 5*s*. 2*d*.; on the Turnip crop an expenditure (loss) of 99*l*. 17*s*.; on the Carrot crop, some having been sold at 30*s*. per ton, a profit of 41*l*. 9*s*. 4½*d*.; on the Potato crop a profit of 27*l*.; on the Mangold Wurzel crop an expenditure (loss) of 42*l*. 0*s*. 5*d*.; on manures a cost (loss) of 37*l*. 5*s*. 8*d*.; on the Wheat crop a profit of 99*l*. 11*s*. 4*d*.; on rent a cost (loss) of 562*l*. 17*s*. 2*d*.; on implements a diminished value (loss) of 7*l*. 3*s*.; on horses a cost and diminished value (loss) of 277*l*. 7*s*. 7½*d*.; on a general account, under which sundry sums are put, for which an imperfect arrangement of accounts has provided no other place, an expenditure (loss) of 129*l*. 2*s*. 8½*d*.; and on a dormant capital account a loss by efflux of time (the period of the lease approaching) of one year's interest in tenant's capital invested in draining, buildings, &c., of 11*l*. 15*s*. During the year I refer to, I spent on this farm 701*l*. 16*s*. 8*d*. in wages and petty expenses connected with marketing, attendance on live stock, and barn work: thus I spent in this way 225*l*. 15*s*. 1½*d*. on the Wheat crop; 16*l*. 9*s*. 5*d*. on the Clover; 40*l*. 13*s*. 10*d*. on the Carrots; 54*l*. 8*s*. 10*d*. on the Potatoes; 89*l*. 16*s*. 2*d*. on the Turnips; 11*l*. 8*s*. 8*d*. on the horses; 49*l*. 17*s*. 0½*d*. on the feeding cattle; 41*l*. 12*s*. 8½*d*. on the sheep; 21*l*. 2*s*. 4½*d*. on the pigs; 65*l*. 17*s*. 0½*d*. on the general account; and 42*l*. 15*s*. on the dormant capital account. I specify these latter details in illustration, not of its money result, but of the style of cultivation which I had practised; it is the former series of particulars that explains the cash balance of the year's proceedings; collate them and you will find that on the whole my receipts during the year exceeded my costs by 194*l*. 6*s*. 3*d*. Nothing is put down among the latter for my household expenses—they are a matter quite apart from the business of the farm; nothing is put down for the cost or market value of the year's use of the money invested—the sum stated in the whole return for its use which agriculture has in this instance provided: neither has anything been put among the costs of the business, for the market value of the skill with which it was conducted, for, in truth, I am inclined to think that it was the *want* of skill rather than its possession to which, in this instance, the returns from it were owing."

Such is the statement of a tenant farmer—he sold his Wheat during that year at prices varying from 50*s*. up to 60*s*. per quarter, and a considerable quantity for seed fetched even 8*s*. per bushel. Beef was then worth 6*d*. per lb.; and mutton, sold during spring with the wool on, was worth 7½*d*. per lb. With these prices he obtained by the year's farming hardly 7*l*. per cent. for his capital. And if his returns were so low when he suffered no extraordinary losses of any kind in his stock, or indeed in any other way, if we except the Potato crop, which seems now to be pretty generally regarded as a sort of agricultural interloper, which has no place in statements of ordinary farm experience—if his returns were so low then, how shall he ever hope to weather a period of prices 20 per cent. lower than those he then received.—This is, indeed, the last dying speech and confession of the unfortunate man, and agricultural bankruptcy seems to be an inevitable consequence. Not so: listen to him again.

"I have had some years' experience of farming since that time; and some of them have yielded a much poorer return than that which I have specified in detail: but it has not always been the year of high prices which has been the most profitable; and the current year of low prices has advanced sufficiently to enable me to anticipate with confidence a better result from my proceedings during it than I have obtained during two or three of the past seasons. This will arise from a larger balance to the credit of the cattle and sheep stock, notwithstanding that beef is being sold at 5½*d*., and mutton at rather less than 6*d*. per lb., with the wool on. And to this I shall look, for the future, as the department in which most improvement is possible. Low prices, however undesirable, have this advantage, that sums invested in the purchase of cattle-food will now procure a larger quantity, enabling the fattening of a larger herd, and so producing more manure, and occasioning a higher fertility of soil. The 277*l*., for instance, of which at least three quarters were spent on horse-corn, will, during the present year, be represented by a sum at least one-third less. But, whatever the whole effect of diminished price may be, I can see many methods, dependent merely upon economy, in which the several balances to the credit of my different accounts may be increased. Cattle, where bought to feed, may be purchased younger, and therefore at less cost, and easily fed up to the value at which they were formerly procured, at little expense beyond that of food which has till now been wasted. Straw now used almost wholly as litter may be carefully consumed as fodder. Root crops may be consumed more sparingly, so as, by a given quantity, with the aid of an increased purchase of food, to keep more stock. Manure may be preserved more carefully. I paid upwards of 350*l*. to my predecessor for the manure upon the farm when I entered it; and I have thus, literally, nearly 400*l*. worth of dung every spring in the fields, and yards ready for application to the green crops. What would be thought of a man who had as much money invested in implements without a cart-shed in which to shelter them? And manure is far more liable to loss and injury by exposure than carts and waggons are: but whether under the circumstance of my lease it is my interest or not to erect shelter sheds for my manure heap; at all events I can save much that is now wasted, by a more careful management: and a saving here will, we know, soon affect farm experience in every department, increasing the balance to the credit of all the accounts in the ledger. Lastly, the expenditure of the current year will be considerably diminished in the article of labour; and that, not so much owing to diminished employment having been given as to diminished wages."

Now the advice and the comfort which the farmer takes to himself may be offered to many others. Let the raw material of the manufacture in which the farmer is engaged once attain its natural position, and the value of labour assume the status which, in relation to its new conditions, properly belong to it—once let rent and wages accommodate themselves to present prices, and present prices will immediately become profitable prices. But these two subjects—rent and wages—must be more fully discussed hereafter. We must content ourselves at present with having drawn attention to some of the details embraced in a general view of AGRICULTURAL ECONOMY.

CHRONICLES OF A CLAY FARM.

SECOND SERIES.—No. IV.

DAYS—weeks—months—how you drift away! bearing the present time with all its clamorous and busy sounds of life, into that long wake that stretches far—farther than the eye can reach—behind us! How you float past—boiling and tumultuous at first, as just escaped from the din and turmoil that marks the everlasting conflict of our onward course—then gently and deceitfully subsiding off with only a rising ripple here and there, that beckons to the eye and tells of something that *will* be remembered—some duty unperformed—some happiness perceived too late—then, at last, sinking away into the smooth surface that stretches far behind in undistinguishable outline, blending both near things and remote into one great PAST, and leaving us to wonder at the intensities of fear and hope, of vanity and usefulness, of evil and of good, with which each moment as it passed seemed pregnant.

How *wise* we are, as we look back! How clear-sightedly we discover each blunder, and its cause; how surely we believe that *here* at least and *there* at least—

forgive us this once, oh! Common sense and Judgment—and we will promise *never* to be such fools again!

Did ever man build a house—or farm a farm—or even drain a marshy meadow—and not feel some touch of this provoking after-wisdom that comes too late, telling of material and money wasted—plans insufficiently considered, too hastily accredited—tiles mislaid, too shallow or too deep, or in the wrong direction? In the matter of brick-and-mortar such aftersight is grown a proverb; and is it otherwise in land? Let him that has never felt it, cast the first stone: *he* has known little of Life's learning who has never repeated to himself how true it is that Experience is never *given*, but always *bought*;——at the top of the market too!

But there is this consoling difference between *Bricks*, and *Tiles*,—that is to say, between Building and Farming: that whereas in the former case you always find your cost in having done too much, proceeded on too large a scale—in the latter case you mostly find, such at least was my discovery—that your unprofitable expense is for ever peeping out in the niggling nature of your plans—field by field, hedge by hedge, drain by drain, a tank here, a cowhouse there—you have *waddled* through your Farm, denying your better instincts, resisting the true economy which would have prompted a complete and comprehensive plan that looks the whole matter in the face at once: as though a man should build a mansion room by room, and paint and furnish and roof them in, one by one, solemnly counting the cost all the way and shutting his eyes to the conviction that the next room—and the next story, must come at last—and that one roof, one plan, one outlay, the cheapest because the most compendious, might have covered all, and saved the worry and mortification of jobs *un*done, arrangements altered and blunders deplored.

Architects are expensive things it is true—but still the comprehensive plan is the cheapest in the end. We want *Farm-Architects*. Not (Heaven help us!) that we want more expense in farming, or in farm buildings, but a kind of knowledge in the whole laying out of a Farm, analogous to that of the architect who plans a building. The Landlord, the Tenant, the Bricklayer, the Carpenter, the Workmen, and last not least the gaping Neighbour—each has his opinion, and gives it freely enough. The result is generally a mongrel compromise between them all. No one voice—no one plan is predominant, and by the time the whole outlay is expended, the job is half a job, and the ship is spoilt for a ha'p'orth of tar and an ounce of oakum. The extreme of cold, as well as the extreme of heat, will leave a blister on the fingers.

Five months had winged away—and the glorious spring of that eighteen hundred and thirty *odd*, afore dated with such edifying minuteness, and now hanging up like a cobweb in some neglected passage of this Chronicle — had fallen into something more than summer—since the Wetlandshire Mercury had typified to the world at large that a certain farm was to be let, at a certain time. 'Fourteen' applications by the first post, duly forwarded by the prompt Firm of Penn and Debbitt—(and how many more by the next—and the next—what boots it to particularise?) had been forwarded in vain. For a blight had fallen—the strangest of blights!—the blight of Plenty, over the sons of the soil, and before September had crisped the morning air, and the partridge-chick had found cool midday covert under the young Turnip-leaf, every county journal had its broad page of 'Sales of Farming-Stock' set in types in which he who ran might read—something more than met the eye.

"—— Fallen upon bad times!—all up with farming, I doubt, Sir!" said a muffled voice, out of a red-striped neck-warmer; joggingly; for the utterer of the sentiment was on a rough nag, not a 'good'un to look at,' but he *went*—as an old clock does, by habit—with an ash stick *steadily going*, for pendulum, on one side, and a spur peeping under the left gaiter, and steadily going too, on the other, for regulator.

——"All up with farming I doubt!"

And the speaker threw an eye sideways to therider on his left, as he repeated the last words—an eye *most* expressive—for with the good natured 'crow's foot' that nestled close up to it and seemed to tell of home-feelings and fire-side memories, there was a momentary wrinkle, a peep of something well accustomed to concealment, that glanced out for an instant—telegraphing (how rapidly!) a half century's experience of the words 'From the Sweat of thy Brow shalt thou eat Bread.' Yet not complainingly: too truthfully and heart-whole for that.

No answer came. The ash stick went on steadily: and the spur; for the tail performed the part of index—a true *tell-tail*, swishing and signalising to each application of the blunt rowel upon the same spot, grown horny and resistful under its influence. The mouth that had spoken dropped into the neck-warmer again—and the kind but care-*full* eye looked straight forward, with its fellow, into the early morning fog that lay upon the road and fields, and dripped upon the hedges, where the gossamer had hung its tiny tissues, waiting patiently for Sunrise. *Click, click, click, click*, went the aggravating off-side hind-shoe, for half a mile nearly, before another word was spoken.

"Any chance of *it's rising again* d'ye think Sir?"

Still no answer. The question could not have applied to the Sun, for his great red merry countenance was just beginning to peep, enormously big, over —— hill, like some jolly welcome-faced friend, half behind the door, glowing with the knowledge how the heart of him, or her, who sits within will *rush* presently to tear away the screen that separates them. It could not be the Sun: for he is half up now, and yet no answer from that thoughtful-looking Quixote, that sits his mare as if he was riding in a dream, and had lost the power of utterance. It was strange, too; for he had been no moody companion from the time farmer Greening's trotting nag overtook him on the road; and if he had been, Mr. Greening wasn't the man to have hailed him in the merry way he did, and especially in such times: he would have gone by with the respectful, and self-respectful, morning salute of one who never intruded, nor retreated, on life's highway, in the matter of companionship. But *that question*—What was there in it that had stopped the way-cheer of discourse, and set one of the parties thinking like an oracle? It was lucky that his mare happened to make a false step as he turned her from the footpath where she had (no business to have) been nursing her hoofs, for it made him wake up, and say, "I'm not sure, Greening, that I can answer your question, but I can tell you how I answered one of the same sort a fortnight ago, to a man who came to look at my vacant farm."

"Oh! I heerd of it, Sir, I heerd of it! They was telling of it the other night at Bogmoor: and didn't tell it bad either: old Dobson said the West-country gentleman stood up to his full height (and he wasn't a short'un either), and says he, 'Pray, sir, how many bushels of Wheat will this farm grow to the acre?' pompous-like; and says you, drawing up queerly (and, beg pardon, you ain't a very tall'un, Sir), and looking calcylating and confidential-like, 'From 15 bushels to 50,' says you; and we all laughed a good'un, for we knew your look somehow: and I know'd how you'd say it, and what you meant pretty well. Yes, yes! I heerd o' that. He didn't like it, however. I think if you'd 'a' said *thirty* he'd 'a' had the farm."

"No!"

"Not? Well I don't know. Dobson said he seemed smartish like, and he didn't mislike the look o' the stubbles, nor the rick yard neither. What did he say to your crop o' swedes in the forty-acre piece, the Brickfield-close I think you call it? Didn't he think *them* big enough?"

"He didn't tell me: he couldn't, indeed: for he only looked over the hedge at them, saying that 'it wasn't a Turnip farm.' As he spoke to himself rather than to me, I didn't 'gainsay him. But as it takes me a long time to say anything smart, I accepted that as a *notice*, and prepared my answer for what I foresaw was coming when we had done riding through the stubbles: and as I think his hoofs were on every acre of them, I had time enough for preparation."

A short silence ensued. The Ash-stick and the spur seemed to work less emphatically. The horses dropped into a walk: they were nearing the town of ——, which began to loom through the morning mist. The approaching termination of the ride seemed to bring the two saddles closer together.

"I think I know what you mean. I had an inkling of it before, when I heard the story from old Dobson; but I see it plainer-like now, after what you've said. You likes a man as thinks of *grace before meat*," said Mr. Greening in a sort of under tone, and looking up into the face of the other, significantly, and with an expression of half inquiry.

"You've described it shorter and better than I could have done; you've hit the nail on the very head," said the other.——"I don't know how it is, Greening, but these dark misty mornings bring some thoughts into my mind that I hardly know how to tell exactly as I feel them. But this I know, that some of the thoughts they bring make me shrink from the very sight of a man that looks at nothing but the Wheat stubbles. I'd as soon ride this mare straight into the knacker's yard"——

"Lor' blesh ye Sir!"

"Well—you understand me; it's but a young 'un, certainly, for that last journey; but I should feel less sin or shame in that, than in letting a farm to a man who looks at the stubbles first, and the Turnip-fields afterwards, or not at all. The knacker has an eye for a horse"——

"For the dogs."

"Exactly! and so have some men for a farm. It does seem to me strange that all these pamphlet writers and law-makers should have omitted this—but I forgot—I am afraid you and I are not quite on the same bench in that question."

"Ah! don't 'e say so, Sir! I *should* like, uncommon, to have a bit of a talk with you, though, about *that*. It beats me entirely when I hear tell that you ar'n't——that you go with them there free—"

"Take care! take care! said the other, turning quickly in his saddle, as the fore-horse of a wagon-team turned suddenly at full trot down-hill from a side lane, into the high-road, grazing Mr. Greening's unspurred foot with the point of the leader's stretcher, and bringing the whole team, and the wagon after them rumbling round the corner, a very near shave and at the imminent risk of spilling a sack or two of Wheat that lay not very safely on the near-side shel'-board.

"Aye! there ye go," said Mr. Greening, rather angrily, as his rough and hot-coated nag jumped with some alacrity against the pathway out of reach of the wheels, pressing the other rider pretty close to the ditch, as the wagon passed on before them—"there you go Mr. Cropfield with your new Wheat and your Straw again! I wonder how many sacks to the acre you've grown upon last year's Oat-stubble *this* time! Do look at the boultings, Sir! That's for *litter for the team* I suppose! He's late to market with *that* load; no wonder the' go so fast. Well, if it ain't enough to make an honest head ache to see that!" added the indignant farmer, in a tone of unusual sarcasm. "That's what I call taking the new-laid eggs to market, and the *hen along*."

"Wheat on an Oat stubble!——He brings back manure, I suppose?"

"Aye for the Barley-crop; or Oats again, may be: it's all the same: he *counts back'ards*; he begins with the grain, and ends with—no he never comes to the *green*. He says *stems* pay quicker than *roots*; and Stock's expensive; so he starts at once with the high figures—though, my life! 'tis but a low 'un now, for that matter. *Do you* think, Sir, it 'll ever get up again?"

"The old question again! I'm afraid, Greening, you'd never hear out the answer, even if I could give it. Sharp questioners are impatient listeners."

"Oh! trust me for that: if you'd spare me the val'e of a half hour's walk through those Swedes again (I should like to see how the dibbed ones get on), I think I can take all you'll give, and ask for more, after."

"Oh, you're most welcome to see the Swedes: you'll come round to the dibbing, depend on it, and when we've done there"—

"I shall come round to *something else!* Ah! that's capital! No, no, no, no!" said Mr. Greening, laughing and suddenly bending his pony's shaggy neck with a jerk of both reins towards the street that led into the cattle fair, for they had reached the town, and the turn brought the colloquy to an end. "Well, I shall keep you to your promise, Sir, howsomever. Please to look out for a trespasser on Monday morning, you'll be most like to catch me early. I hav'nt forgot your words last autumn about the matty—what was it—the mattytynial hours."

"You'll be my fast prisoner to luncheon-time. Well, good day, Greening, and a good fair!"——Ah! those 'matutinal hours!' I repeated to myself, as Mr. Greening's good-natured face nodded away, and the ash stick and the well-worn spur, and the click, click, click of the hind hoof were lost up the street, towards which Nelly swerved sympathetically for a pace or two before she swung again into her usual trot, and forgot her little rough-coated companion. *Talpa.*

TITHE COMMUTATION.

As your agricultural as well as clerical readers may feel anxious to know the result of the corn averages for the seven years to Christmas last, published in the *London Gazette* of this evening, viz.:

Wheat	6*s.*	7½*d.*	per imperial bushel.
Barley	4	1¼	" "
Oats	2	8⅓	" "

I beg to state for their information that each 100*l.* of rent-charge will, for the year 1850, amount to 98*l.* 16*s.* 10*d.*, or about 1¼ per cent. lower than last year.

The following statement from my "Annual Tithe Commutation Tables" will show the worth of 100*l.* of rent-charge, for each year, since the passing of the Tithe Commutation Act, viz.:

		£	*s.*	*d.*
For the year	1837	98	13	9¼
"	1838	97	7	11
"	1839	95	7	9
"	1840	98	15	9½
"	1841	102	12	5½
"	1842	105	8	2¾
"	1843	105	12	2¼
"	1844	104	3	5½
"	1845	103	17	11½
"	1846	102	17	8¾
"	1847	99	18	10½
"	1848	102	1	0
"	1849	100	3	7¾
"	1850	98	16	10
	14)	1415	17	6¾
General average for 14 years		£101	2	8

Charles M. Willich, 25, *Suffolk-st., Pall Mall, Jan.* 8.

LIQUID MANURE.

Mr. Smith, of Deanston, lately read a paper, on the Collection and Application to Agriculture of the Sewage Water of Towns, before the Philosophical Society of Glasgow, from which we make the following extracts:

The removal of the sewage water, in its original fluid condition, by pumping, and its conveyance in pipes to the spot where it is to be applied, obviously afford a simple and efficient mode of dealing with it. It has been ascertained, by careful calculation, that sewage water can, in this manner, be taken up and conveyed a distance of 10 miles, and be thrown upon the ground in most equal distribution, at a cost of 3*d.* per ton, containing all the elements, unchanged and undiminished, and be presented to the great chemist, Nature, to be dealt with by the never-ceasing and costless labourers of the vegetable kingdom. The pumping, conveyance, and distribution had been tested at several places on a sufficient scale to demonstrate its perfect practicability and efficacy. The first experiment of the pumping conveyance in pipes, and distribution by hose, was made at Clitheroe, in Lancashire, under Mr. Smith's direction, by Mr. H. Thomson, of the extensive print-works there. The liquid consisted of the sewage of a village of the ordinary character, with that from the works, which contained, of course, a greater amount of soap-suds and alkaline matter: this was thrown into a tank containing the drainage from a farm-yard. The pumping, conveyance, and distribution by the hose answered admirably. The experiment was made on some old meadow land. This liquid was applied to a meadow at the rate of about 8 tons per statute acre, whilst farm manure, at the

rate of 15 tons per acre, was applied to a corresponding extent. The Grass from the liquid manure grew considerably more luxuriant than that from the farm-yard manure; but, unfortunately, the relative weights produced were not ascertained on cutting. The next experiment was made on a farm on the estate of Possil, near Glasgow, by Mr. Robert Harvey, of the Port-Dundas Distillery, who, in the most enterprising and spirited manner, at Mr. Smith's suggestion, laid down pipes for conveying liquid manure over his whole farm, consisting of upwards of 300 acres, and had the liquid manure from a dairy of upwards of 500 cows pumped to an altitude of more than 70 feet. The distribution of liquid manure has been carried on on this farm for more than four years, very little solid manure being used, except for comparative purposes. The distribution is chiefly on what may be termed the low pressure system, as, instead of being jetted with force to form an artificial shower, it is simply allowed to be discharged upon the surface (by tin-plate pipes of about 1½ inch in diameter, and 4 feet long, fitting into each other with slip joints, and these can be led to discharge the liquid at any point within their range, which can be extended to a length of 200 or 300 yards if necessary). In this manner one man can distribute the manure over from one to two acres per day. The manure is thus applied to pasture land, to Grass for cutting, for house feeding, and for making hay. It is applied also to stubble land and to fallow, and has uniformly raised magnificent crops of Grass, Potatoes, Turnips, Wheat, Beans, Barley, and Oats, on land not of the best quality. These men are employed during the whole year in distributing the manure, and go on in wet weather as well as in dry. Mr. Harvey has lately extended his system of pipes, and has erected a 12-horse engine, which is more than master of the work. The Sewage Manure Company of London, which obtained Acts in 1846 and 1847 for taking a portion of the sewage water of Westminster, has, after much untoward obstruction and delay, got to work with a 30-horse engine, and is now distributing the liquid in several of the market gardens at Fulham, and upon meadow land in the neighbourhood, with most satisfactory results. The Company receives 3*l.* 10*s.* for the season's watering of the garden ground, and 2*l.* for that of the meadow land. The results in growing Lettuce have been very extraordinary, a market gardener admitting that he had sold the Lettuces from an acre of land, so watered, 14 days earlier than that from some land which had not been watered, and that the pecuniary result had been 25*l.* per acre more. The operations of the Company are going forward, and in another season the value of liquid sewage manure will be fully demonstrated. The water at present applied by the London Company is very much diluted, and has very little smell, and being immediately absorbed by the ground, all offence is avoided. It was at first thought by the engineer of the Company that it would be necessary to employ their own servants to make the distribution; but it has been found in practice that the men, women, and boys who are usually employed about gardens are quite competent to the work, under the direction of the master gardener, so that the whole matter is, in the mean time, left in his hands to use the liquid as he considers most fitting.

It has been objected by some that the distribution of the sewage water would generate miasma all over the country, to which it may be replied that the matter taken from the sewers being in a fresh condition, and before it has had time to pass into any extensive decomposition, and being, in itself, much diluted with water, to facilitate its conveyance and distribution, and being thrown over an extensive absorbing surface, with a great area of atmosphere, any poisonous matter that may emanate from it will be so diluted that it cannot affect the health of man or beast. It is impossible, with present information, to determine what may ultimately be the profit derivable to any community from this source; but, taking what data we have from scientific inquiries, as well as that from the practical experience which has been worked out, it does not seem extravagant to anticipate a free yearly income of 1*l.* for each individual of the community. But, to render the estimate safe, in the first instance it may be made at 10*s.*, which would afford to the city of Glasgow an income of, at least, 150,000*l.*, which would put it in the power of the public authorities to root out by degrees all the narrow and unwholesome lanes, and the wretched dwellings, which are a disgrace to the present age, and to carry on continously the progressive improvement of the city. It has been suggested by many, that customers will not be found for the manure in this condition to so great an extent; but it must be obvious to every intelligent agriculturist who takes the trouble to make a survey of the surrounding country, and it will come home to the experience of every farmer, that there is everywhere a great want of manure to produce the fullest effect. If manure can be furnished in this manner at half the cost of ordinary manure, and be laid on the ground when the farmer wishes it, without carting over his land, with very little trouble to himself, and with results beyond the average of ordinary crops, there can be no doubt of finding customers everywhere. The crops of the farmer who uses this manure will excite the jealousy of his neighbours, which will lead them, I would almost say force them, to follow his example.

In order to test the usefulness of the manure in the liquid form, Mr. Smith said he had made extensive inquiries for several years. A number of experiments had also been made with the view of testing the practicability of dealing with it in the liquid form, and ascertaining the cost at which it could be pumped into pipes, and thus conveyed into the country. It was ascertained that sewage water can be conveyed, by pumping, 10 miles, and delivered on the ground for 3*d.* a ton, with a moderate profit; whereas to cart a ton for 10 miles, costs 5*s.* The liquid is not only conveyed at this charge, but distributed. The expense of distributing liquid manure, by cart, is considerable, and, in the solid form, it is more expensive still. Mr. Smith next remarked, that the sewage water of large towns contains all the elements of the food used by the inhabitants and by animals. These elements exist in the state of mechanical mixture, of suspension, and of solution. A large dilution of these matters with water not only deprives them of smell, but fits them better for being applied to the land. The suspended matter moves easily in properly constructed sewers, and can be conveyed with facility through pipes. The sewage matter applied in the liquid form is much less liable to be washed away by rain than when applied in the solid state; and, besides, both chemical investigation and the results of experience combine to show that solid manure is less valuable than manure in a state of suspension or solution. In the Meadows at Edinburgh, which are irrigated by sewage water, it is found that the matter in suspension has a tendency to lodge at the roots of the Grass, causing decay; while the fluid manure which ultimately remains, after flowing through several meadows, produces the healthiest and best Grass. Some of these meadows are let for 30*l.* to 50*l.* for the cutting of the Grass. Six different specimens of water from the meadows, of a gallon each, yielded—1. Water taken up immediately on its leaving the sewer, 244 grains of solid matter, and 82 grains in solution. 2. Taken as it flowed from subsidence pond, 52 grains of solid matter and 87 grains in solution. 3. Taken after having flowed over one plat, 31 grains of solid matter and 89 grains in solution. 4. Taken after having flowed over several plats, 15 grains of solid matter, and 82.7 in solution. 5. Taken still farther on, 2½ grains of solid matter, and 67.2 grains in solution. 6. Taken at sea when passing away, 2½ grains of solid matter, and 72.9 grains in solution. The meadows farthest from the source of the sewage water consist of poor sandy land, yet they produce better Grass, in consequence of the water being deprived in its progress of its grosser matter held in suspension.

Home Correspondence.

Emigration.—The necessity of systematic emigration having been sounded in the ears of authority for many a long day, without making any impression, a dawn of light appears to be shining at the eleventh hour, which it is to be hoped will not be dimmed without producing happy results. Had a place of colonisation been carried out 30 years ago, the labouring classes in the country would have improved both in conduct and intelligence; and poverty would have been the exception instead of the rule amongst that class. Where there is a limited extent of territory in the mother country, and her colonies are numerous and fertile, common sense points out the safty valve for an increasing population; that emigration should never have been taken up as a grand feature in political economy, only proves the want of foresight, or wilful determination not to profit by experience. England may well be said to be penny-wise and pound-foolish, putting off from day to day work which should be accomplished at the moment, spending millions in the futile attempt to remedy an evil by palliative measures, which can only be surmounted by vigorous action, guilty of procrastination, which creates difficulties and dangers, rendering "the last state worse than the first." Our peasants and artisans are on the whole a patient and deserving class, calling forth our sympathy in their distress, and how has it hitherto been answered? By casting their misfortunes in their teeth and offering them the workhouse, instead of providing profitable employment for those willing to exert themselves, and earn their daily bread. To say that all the hands are occupied on the land which can be, with any prospect of making a return for capital, is assuming what is not the fact. Let it however be admitted, for the sake of argument. Let the question then be asked, Is it advisable when a man applies for relief to take him and his family into the Union, or assist him to emigrate as a useful member of society? The very expense of keeping a man, his wife, and children in the workhouse for one year, would more than defray his passage out to Australia, and provide him with tools to set him up on his arrival. An industrious man thus sent out would never lose his attachment to his native country, but would in after years do her good service by his loyalty in preserving her possessions from revolt and separation; as well as by forming a market for the surplus productions of our manufacturing towns. Our best colonies have been considered as mere receptacles for convicts, thus peopling them with the refuse of society, and planting a race in our strongholds, who can have no pleasant reminiscences of the United Kingdom. A difficulty may be started, as to what we are to do with those sentenced to transportation; despatch them to Sierra Leone, the most fitting destination for those who have outraged society at home by their crimes. Mawkish sensibility may exclaim, What cruelty! But are we to show more commiseration for our culprits than for our hard-working labourers? Are we to provide every comfort for a man guilty of offending the laws, and tell the honest man he may starve unless he commits crime? Are we to continue to tax those who rise early, and toil through the day to pay rates, to be expended in pampering thieves and vagabonds? If one man knocks another on the head, and robs him, he should know that he must, if discovered, pay the penalty of his wickedness, and end his days far from his native land—not in luxury, in a most salubrious climate, but under a burning sun he will have to expiate his delinquencies, in sorrow and hard toil. Little pity is shown for our officers, soldiers, and sailors, who are doomed to breathe the pestilential atmosphere of the coast of Africa, with a view to prevent the slave trade, which all thinking men know to be impossible. Ladies over their tea, and gentlemen with straight hair, will expatiate by the hour, on the subject of inhumanity to the negroes, and the horrors of buying human flesh; but they seldom give a thought to the gallant fellows who sacrifice their lives in a cause as hopeless as washing a blackamoor white. The comfortable state of our goals, and the diet served out to men who disgrace themselves, is rather a premium to misconduct; many an idle vagrant committing a petty theft, in order to partake of the bounties of the prison. The lands of sunshine and plenty should not be appropriated to the ill-conditioned, but should be reserved for the surplus population of our own flourishing country. Our foreign possessions are the points we are to look to for our future markets, therefore honest men should be sent out as a reward for good conduct, giving them an opportunity of improving their condition, at the same time relieving the country from a heavy burthen, and the great responsibility which it incurs by pauperising a body of useful men; instead of turning their talents to account on the virgin soil of distant lands, where peace and plenty await them, and where they may in a short period become independent of the world, and reflect back credit on old England. Let us no longer waste sentiment on the criminal whose repeated offences evince a hardened disposition, and whose very nature is impervious to charity and kindness; but rather seek for sterling worth in the labourer's cottage, who procures a bare subsistence by untiring toil; such men are real objects of benevolence, and would well repay exertions on their behalf. Let us no longer begin at the wrong end of our task—encouraging thieves and vagabonds of every description, locating them in the finest climate, feeding them with the best, and being guilty of other inconsistencies, whilst the loyal and poor man is doomed to perpetual wretchedness and neglect. *Falcon.*

Liquid Manure.—Having instituted some experiments in gardening and agricultural concerns, in conjunction with a professional person of great intelligence and practical information, the issue may not be unworthy of notice. The first had reference to the substitution of pointed lightning conductors for training Vines, instead of the ordinary mode, by which instrumentality, the electric fluid, that known and powerful agent in promoting vegetation, is insensibly drawn from all transient thunder-clouds. An old hogshead also was sunk in the ground, in such a position that the Vine root might extend into it with facility. The vessel was then filled with liquid manure, the lid put on, with a tube inserted for replenishing it when exhausted, and the place covered in with earth. This plan was tried with perfect success, the Vine encircling a conductor, and nourished with the liquid manure, far surpassing in luxuriance of growth any of its adjacent neighbours, bearing a profusion of Grapes, superior both in quality and flavour. Hence I was led to examine the properties of the different descriptions of manure, and found that the animal kind, when completely decomposed, is best adapted for farming purposes. The case is similar with regard to stable and cow-house liquid manure, which is equally effectual. An inference may fairly be deduced, that the pointed and tiny blades of corn, as well probably of all plants, serve like small conductors, to establish an equilibrium between positive and negative electricity. Should this conjecture prove correct, some important changes may be introduced in husbandry, by which much of an invaluable article may be saved that is now improvidently wasted or lost, and cultivation extended at diminished expense. The preservation of liquid manure is an object that deserves the utmost attention and care. The requisite drains and tanks, or cesspools, can be cheaply constructed according to approved designs, either on a moderate or a large scale. At the same time, nothing contributes more to the cleanliness of the cattle, or the improvement of their condition, including all stock, sheep, pigs, &c. It will be no longer necessary to despatch ships to remote parts of the globe in search of guano, when a preferable substance lies abundantly within reach, and is easily procured. By the proper application of such means, seconded by skill and industry, no limit can be assigned to the production of green fodder, to the use of stall-feeding, and consequently, to the raising of rotation crops. For instance, it is advisable that all seed before sowing should be steeped, until saturated, in liquid manure, of sufficient consistency to form an adequate coating for each grain, no more being suffered to adhere than is actually required, in relative proportion to the species, as too much action is over exciting to the delicate sprouts under an artificial system. The process is peculiarly beneficial with respect to spring Wheat, Peas, Beans, Carrots, Beet, and early Potatoes. In garden business, it is strongly recommended to dip previously in the same material the roots of vegetables that need transplanting. Under operations of this nature, and with prudent management, double advantages will be gained, in economy of outlay, in manure, and in the cost of labour. These brief suggestions are submitted for consideration, with an anxious hope that

they may engage attention, as, judging from the best of experience, I feel persuaded that their adoption will not fail to realise the expectations entertained, by insuring increased returns, and yielding ample fruits at the period of harvest. *M. T. K.*

Practice with Science.—Such, as has been shown, being the advantages of high farming, it seems strange, nay almost inexplicable, that the advances towards it should have been so tardy, and that a large part of the country should still remain under the old system, with Grass land bare and neglected, and a limited portion of ploughed land dirty and poor. The cause of this is not easily explained, but it seems to have been derived from a variety of adverse circumstances, and until these undergo a change, no great hope for the future can be entertained. If we look at those more fortunate countries where a change has already taken place, we shall find that this has frequently proceeded rather from fortuitous than natural causes, and that they owe their advancement not to any systematic or deep-laid schemes, but to a lucky chance. It is now nearly half a century ago ("New Husbandry," page 26) since Messrs. Bailey and Culley, employed by the Board of Agriculture, reported that the three best cultivated counties in the kingdom were Norfolk, Lincolnshire, and Northumberland; and that if all the other counties were cultivated in like manner, one-third more produce would be raised in England, and one-half more in Wales. Has this stigma been wiped away from these backward counties? Far from it. To what cause may the advance in the others be chiefly ascribed? Mr. Grey, in his Report of Northumberland Farming, tells us that it was owing to the migration of some intelligent men from their paternal property on the banks of the Tees into a district in Northumberland called Glendale, that all the good farming in that highly cultivated county had originated. And the late Lord Spencer, in a very interesting article in the Royal Agricultural Society's Journal, has informed us that from Mr. Brett refusing to give 5*s.* an acre for his land, which now usually produces nearly 4 qrs. of Wheat, Lord Leicester determined to take the farm into his own hands, and then commenced a series of improvements which has had such a beneficial effect upon that district, and on the agriculture of the country at large. When we see important events proceeding from such slight causes, we need not so much wonder that where these causes have not operated, agriculture, as an art, should have so much languished. We read in a clever production which has lately made its appearance, that farmers are not a reading set. A thorough knowledge of the "New Husbandry" is only to be obtained by reading, or by a personal inspection of the most approved methods. The days of prejudice are fast departing, and the eyes of men begin to be opened to the value of modern discoveries; but, notwithstanding this, there are many landed proprietors, and their subordinate agents, who still have a hankering after the old system, and who either cannot see, or will not take any pains to promote the advantages of an improved one. Difficulties, no doubt, there are in their way, from the instruments they have to deal with, but these difficulties are not insurmountable, and they ought to be encountered. The present race of farmers, in many parts of the country, are still sadly illiterate, ill-informed, and impoverished. This is a serious obstacle to any plan of high farming. Education is the source of all good, moral, and intellectual—as the child is trained, so will he go. It is in vain to expect any great performance when the intellects are obtuse from want of cultivation. Sir John Sinclair, in his "Scotch Husbandry," attributes much of the good farming in Scotland to the establishment of parochial schools. Numbers of Scotch farmers, also, were accustomed to travel, with a view of acquiring useful information, and of comparing their own practices with those of other districts. Thus by degrees farming came into repute in that country, and instead of its being considered a servile employment, as it is with us, it was followed, as an honourable profession, by the younger sons of men of family and fortune. But there is another almost insuperable obstacle to high farming in many parts of this country—which is, want of capital. The common calculation for stocking a farm, and all the numerous requirements necessary for cultivating it to advantage, is 10*l.* an acre. A pair of horses is wanted for every 50 acres of arable land. Where is the money to come from amongst a set of men who have scarcely means at command to carry on their own miserable system? In Scotland the country bankers had come forward to lend the farmers money; and Sir James Stewart, in his "Political Economy," goes so far as to say, that "to the banks of Scotland the improvement of that country is entirely owing." That they have materially contributed to it can be well understood, when it is considered that a vast expenditure is required on any one engaging in a new farming undertaking, and how small will be the return or rather clear profit in the early part of it in case the land is much out of order, and has been entirely worn out; in many cases the losses are great, and these can only be redeemed at the latter end of the term, provided that be of sufficient length. One great deficiency in many farming concerns is the very inadequate mode of making manure. Unless a very large quantity of this indispensable ingredient be made on a farm, it is utterly impossible that high farming can be attained. This manure, at a distance from a town, can only be raised by feeding, upon green crops, large stock. But without sufficient capital how is the stock both of cattle and sheep to be obtained? Mr. Caird on his farm of 260 acres feeds off every year 130 cattle, the same number being annually purchased to supply their place. About 150 sheep are also fed fat on Turnips during the winter. In most of the farms upon the old system not a single head of cattle is ever fed; and every means are taken to waste manure rather than to make it. With so many impediments in the way, it is almost a hopeless task to attempt to raise to the dignity of the higher order of farming those so long sunk in ignorance and sloth, or even to expect to compensate by greater gains for the losses sustained by the reduction of prices in the market. *Law. Rawstorne.*

A Six Years' Rotation, on a farm of 220 acres of arable land, adopted as the result of many years' practice, is submitted to the notice of your readers. Soil, strong loam on chalk, approaching to clay before amelioration. 1st year, Swedish Turnip and Mangold; 2d, Barley; 3d, winter Beans; 4th, Wheat; 5th, Clover and Italian Rye-grass; 6th, Oats. In fallowing after Oats for the root-crop, the rule is to plough deep, at least 9 inches, and a portion of the land is always subsoiled with the Deanston plough, and all or the greater part is always manured from the cattle yards before ploughing; also bone manure is drilled with the seed. The root crop being carried off the land, early preparation can be made for sowing the Barley, which is drilled at the rate of 6 to 8 pecks per acre. After harvest, the preparation for winter Beans begins by manuring for the whole crop. The Beans are drilled in every third furrow, after the plongh, with a barrow-drill, sowing about 2 bushels per acre. In the following season, and after the last horse-hoeing, some imperial border yellow or other good Turnip seed is sown between the drills of Beans. By means of a long seed machine (called Bennett's), the holes of which are stopped, except five, which are regulated so as to drop the seeds in the middle of the space between the drills; this is done when the hand hoes are going over for the last time. When the Bean crop is harvested, the Turnips are, as soon as convenient, horse-hoed and singled, and the after growth is astonishingly rapid; a portion of the Turnips are carried to the fatting cattle and sheep, and the remainder folded off on the land. The Wheat crop is then put in as fast as every fold course is cleared, at the rate of 1 bushel per acre.* At the last spring hoeing Clover and Italian Rye-grass are sown amongst the Wheat, by means of the above named Bennett's machine, with all its holes now open. This crop is partly cut up green and partly cut for hay, and is always cut twice; next follows the Oat crop, the last of the rotation, and 2 bushels are generally sown as early as the season permits; they are also well hoed. All the white straw crops are drilled 12 inches row from row, and the roots and Beans 27 inches; one ploughing serves for every crop, except the roots, and they have occasionally been drilled with only one ploughing, and the use of Kirkwood's grubber. The old rotation here was—1st, naked fallow; 2d, Wheat; 3d, Barley or Oats; and 4th, seeds, 2 years ley. The fallow requiring never less than 6 ploughings, oftener 8, whilst 6 ploughings has frequently served for the whole of the above rotation, exclusive of the Deanston. The advantages of the 6 course shift are a high acreable produce, complete pulverisation of the soil, at a reasonable cost for horse labour, and a crop every year. *W. Fowke, Red House, Hunley, Winchester.*

Thin Seeding.—What are the facts at issue between myself and Mr. Baker? Last year I grew, as I have asserted, a very prolific Wheat; I am likewise growing it again, and it will be grown in several parts of England also, and in two other quarters of the globe. I was applied to for it by very many gentlemen whom I could not supply; and in order that no misrepresentation, such as Mr. Baker insinuates against me, should be made, I gave away nearly as much as I sold; and what I did sell, though the price in every case was left to myself, I charged only the market price of other Wheat. I had a letter from a merchant, begging of me to let him have the whole, and saying that he did not regard the price. But Mr. Baker again has reiterated that it is "unfit for mealing purposes." I had a little made into flour, and some bread from it, and some other bread made from some very excellent white Wheat, are now before me, and I assert that the bread made from the Wheat which Mr. Baker condemns is the better bread of the two. I have also had pastry made from it, and never did I eat better. I have also an analysis of it, gratuitously sent me by a gentleman of eminence, who states that "it is unusually full of gluten." It is, moreover, the heaviest Wheat I ever grew in this neighbourhood. I beg the readers of the *Agricultural Gazette* to bear in mind that I publish this account of the Wheat purely on public grounds. I believe it to be an invaluable kind of Wheat, and I hope to see its cultivation become general, and more especially as it must be seeded exceedingly thin. Let me also again repeat, that I could last harvest find roots from single grains having produced nearly 4000 grains, and I have not the least doubt whatever but next harvest I shall be enabled to do the same. With reference to my esteemed friend, Mr. Mechi, we understand each other very well; or if not, he is able to fight his own battle; and the same may be said of my friend, Mr. Thedam. In conclusion, I must add a word or two on thin-seeding, as I fear I am not generally understood. My attempts have been to ascertain the minimum quantity of seed for Wheat, and not the maximum quantity. I have also been careful to observe, that I have never advocated a definite quantity of seed for every kind of Wheat and for every kind of cultivation, nor for every other kind of grain; but just the reverse. On one field I might put two or more pecks of seed, when, on another, I might put but one. I should also put twice the quantity of one kind of seed Wheat that I should of another, and perhaps more. In my parish there are now fine fields of Wheat seeded with 3 pecks and 4 pecks of seed; and last year I think the best crop was from the smallest quantity of seed. But everywhere less seed is being used; all farmers, and even Mr. Baker himself, say they use less seed than formerly, and there is no doubt but the quantity will diminish as knowledge becomes more general: on no land can more than half a bushel of seed Wheat come to perfection; all the remainder decays, or does mischief to the crop, from a lack of scientific cultivation. *G. Wilkins.*

* The Wheat crop put in this season has cost within a fraction of 20*s.* per acre, including ploughing, &c., and 1 bushel of Wheat, at 6*s.* per bushel.

Societies.

Highland and Agricultural (General Meeting), *Jan.* 8.—The Duke of Roxburgh in the chair. *Admission of Tenant Farmers.*—Among various reports received, was one on this subject by the Directors, recommending that tenant farmers, who are members of any local agricultural association, should be admitted to the Society on a reduced subscription, was read. The report states that the subject has been for some time under the consideration of the Directors, and that the Secretary had been in communication with the farmers generally in regard to it, and proceeds as follows: "The list of the Society's members at present comprises 2707 names, of which only 239 are those of tenants. This is, unquestionably, a very small proportion, and does not indicate that amount of support which might be looked for from a body so numerous and so intelligent as the farmers of Scotland. It indeed might induce a casual observer to infer, that the Society does not command their confidence, or that, uninterested in its prosperity, they purposely stand aloof from it. That this is not the case the Directors are well aware. They have ample evidence of the interest which is taken in the Society by agriculturists of all classes; and through the medium of local associations and local shows, there is constantly maintained, between it and the farmers generally, a friendly intercourse and connection. The Directors are disposed to attribute this comparatively small number of tenant members to an idea which at one period was prevalent, and is not yet altogether exploded. The Society was too much regarded as exclusively a landlords' body; it was conceived by many that tenants were inadmissible to a share in its direction, and that though not debarred from becoming members, they were scarcely expected to do so. It is unnecessary now to explain that this feeling was unfounded; it is the boast of the Society, as a national body, that it represents every class connected with the agriculture of the country, and it is evident that, without the co-operation and aid of all, and more particularly of those practically engaged in farming, it cannot command that position which is so requisite for the furtherance of its important objects. Within the last few years several tenant farmers have become Directors of the Society, and, independently of the advantages afforded by their knowledge and experience, their presence at the Board has tended to dispel the impression which has been alluded to, and to induce their brother farmers more generally to rally round the Society. The Directors think that this would still farther be promoted were the present subscription reduced, as the Society could not more emphatically express its desire to include in its ranks the farmers of the country, than by inviting their adhesion on terms more favourable than those accorded to other parties. Such an advantage, besides, would be but reasonable, and no more than what the tenantry have a right to expect. Their connection with land generally is neither so extensive nor so permanent as that of a proprietor, and they should not, therefore, be called upon to contribute in an equal degree to the support of the Society. It seems somewhat incongruous, that a tenant, paying perhaps a rent of moderate amount, should not have it in his power to become a member on terms more favourable than those imposed on the largest landowner in the country. In recommending a reduction, however, there is one limitation which the Directors would suggest. It may be apprehended that were the farmers more generally to join the Society, they might be withdrawn from local associations, and that the support now given to these useful bodies might be interfered with. This the Directors do not anticipate; but as they cordially acknowledge the great advantages conferred by local societies on agriculture, they would be the last to promote any measure calculated to detract from their efficiency. So far from weakening, they would endeavour, by means of the proposed change, if possible, to strengthen their hands, and for that purpose they would restrict the privilege of the reduced rate to those tenant farmers who are members of some local society." The report proceeds to recommend that the annual subscription to tenant farmers shall be 10*s.* instead of 1*l.* 3*s.* 6*d.*, with the power of redemption at 5*l.* 5*s.*, instead of 12*l.* 12*s.* *Chemical Department.*—Professor Gregory reported that the Chemical Department of the Society continued to be conducted by Dr. Anderson to the satisfaction of the committee of superintendence, and of the Directors.

Dr. Anderson said he should not detain the meeting by entering into any extended details regarding the business of the laboratory. Since he had last the duty of reporting to the Society, they had been closely occupied in the laboratory with the performance of analyses of different sorts; and during that time about 70 analyses had been made for different parties; many of these were extremely complex and minute investigations, and had occupied considerable time. This did not, however, give any idea of the whole amount of work done, as he had also been engaged on several extensive investigations of subjects of general interest to the agriculturist. One of these was a set of very minute analyses of the Wheat soils of different districts of Scotland, which were intended to determine the standard constitution of such soils. These analyses were now in progress, and he hoped shortly to have an opportunity of laying the results before the Society. He was also engaged in a series of analyses of Turnips, grown with different manures and from different localities, for the purpose of determining the feeding value of that important root under different circumstances. Another subject now under investigation was the feeding value of our different grains, and of all the substances used as food for cattle. In this some progress had also been made, but at the present moment it was entirely laid aside, in order that all the time possible might be devoted to the Turnip analysis, which required to be set in operation without any unnecessary delay. The matter, however, was not lost sight of, although not at present under active investigation. On the whole, a very considerable amount of work had been got through in the laboratory; and more would have been done, had it not been for the interruption occasioned by their removal to the new laboratory, which had occupied much more time than was anticipated. He had not brought the first year of his official connection with the Society to a close without having experienced considerable difficulties in the management of the laboratory; these, however, he trusted, were now overcome, and he hoped that the experience of the past year would enable him in future to perform the duties of his office in a manner more satisfactory both to himself and the Society.

Reviews.

The "Present Prices." By the Rev. A. Huxtable, Rector of Sutton Waldron, Dorset. Ridgway, Piccadilly, London.

As a New Year's Present to the agricultural world, Mr. Huxtable's pamphlet will be useful to our readers, as furnishing food for much useful reflection to them at least.

Notwithstanding some important typographical errors, which confuse the calculations, but which we hope to see speedily corrected in an enlarged edition, we must repeat that we consider this work a most valuable addition to the agricultural literature of the day, whether it be to those who, contented with present prices, receive gladly any hint by which to carry out their pre-conceived opinions, or, on the other hand, for the interests of that very numerous class who loudly profess their inability to cope with a state of things which they desire to remedy by the direct interference of the legislature, and which our reverend author thinks may be encountered more readily and surely, "by the employment of our own individual resources, exertions, and arrangements."

It must be evident, on a moment's consideration, to every practical farmer that the discussion is not whether he can produce profitably Wheat at its present price of 5*s.* a bushel, or meat at 5*d.* a pound; that higher prices than these may be more agreeable to him, and more advantageous, is totally beside the question. If he has made up his mind that present prices cannot be rendered remunerative, he must either discontinue his business, and seek some other livelihood, or submit to carry it on at a loss, more or less ruinous, until better times, come how they may, whether by protection or otherwise, shall at last reward his labours.

Turning then from this class, Mr. Huxtable addresses himself to the attention of those who are prepared to consider, "By what system can we most profitably manufacture Wheat and meat at present prices?" to whom he says, "Unlike most of my farming friends, I have long been seeking out consolation from the better management of my own farm."

To many of the numerous and interesting topics alluded to in this pamphlet, we shall not now advert, being convinced, from the recollection of the popularity of a former publication of the reverend author on agricultural chemistry, that it requires no eulogium on our part to obtain for the present work a similar amount of the public attention; but we recommend it more specially as bearing "on the important subject of green crops, and the two distinct questions therein involved: firstly, what is the cost of their production? secondly, what is their value, when consumed on the farm, estimated by the increase of live weight in animals of known value, and by the worth of their residue as manure?" (P. 21.) In resolving these two questions Mr. Huxtable makes some valuable remarks, too long for quoting, and which, therefore, we will not injure by curtailing, but which he sums up in the following statement:

Dr.	£	s.	d.
Wheat crop	4	19	4
Swede crop	5	12	4
	£10	11	8

Cr.			
Beef (produced by 20 tons of Swedes at 17 lbs. to the ton, 340 lbs. at 5*d.* per lb. = 1700 pence per acre)	7	0	0
Wheat, 32 bushels at 5*s.*	8	0	0
	15	0	0
Deduct cost	10	11	8
Leaving	£4	8	4

to satisfy the interest of the other capital not yet specified, chiefly 7*l.* per acre for stock, which, at 10 per cent., would amount to 1*l.* 8*s.*, and thus leave, even at the dreaded prices so familiar to our ears, a margin of about 30*s.* per acre for each year.

How far it may be in the power of persons less favourably circumstanced than Mr. Huxtable, to obtain from their crops a like amount of value, is a very serious consideration. We must however add that he supports his conclusion, not by arbitrary estimates of what ought to be done, or of what he conceives may be done under such or such circumstances; but by carefully tested experiments carried out by able and trustworthy men, and as he goes into much detail both of "facts and figures," we give him much credit for the fairness and impartiality with which he arrives at his results.

That the green crops under the "alternate system" are too frequently regarded as mere food for their more noble and more highly prized successors, is an evil which we cannot but deplore. How commonly do we see the half-gnawed bulbs of Swedes lying about the fold, as if they were of no other use than to keep life in the sheep, which deposit the nourishment of the next crop of corn. How often too is the whole produce of the Clovers preserved at great expense and risk in summer, squandered in the winter's byre and cattle yard, merely as a medium of converting through the agency of manure-making cows, the surplus straw into *soi-disant* "muck," to be applied solely to the preparation of the succeeding Wheat crop. To this system it is that the remarks of Mr. Huxtable apply most forcibly, but as our own have already extended to an undue length, we shall postpone until some future day the consideration of this important branch of his subject.

Farm Memoranda.

Ellel Moor.—Ellel Moor was inclosed by a special Act in 1756, laid out into farms, and brought under cultivation. Draining and trenching have both been carried on from time to time to a limited extent, but not on a regular or fixed system. The soil is from 2 to 5 inches deep, growing in its natural state—Rushes, Whins or Gorse, Alder bushes and Heather; it lies upon a yellow bastard clay, full of stones, and frequently containing large quantities of oxide of iron, making it very hard to cut for drains; the rock is the millstone grit; the land varies so much, that there are hardly 2 acres exactly alike. I took possession of the farm, which consists of 77 statute acres, in November, 1843. It has an excellent house and good farm buildings. The tenant had been on it for 22 years, at a rent of 44*l.* per annum; but for want of energy, and from bad management, he had brought himself to a stand still. I commenced draining, trenching, and subsoiling. I did not cut any drains the first year on the thorough-draining principle, not feeling sufficiently informed of, or confident in, the system; since then I cut them 30 inches, and latterly 3 feet deep, at 7 yards apart, upon Mr. Smith of Deanston's plan, and find them answer extremely well. I occasionally used 1½-inch tiles, and at other times, from the quantity of stones there are, sough-drains, with broken stones on the top. I have been successful in most of my crops: in 1845 I gained the premium for the best crop of Swedish Turnips at the Lancaster Agricultural Society's Show, competing with the best lands in the neighbourhood of Lancaster—Burton and Milnthorpe; the crop weighed 24 tons, topped and tailed, to the statute acre. In 1846 I had 8A. 3R. statute of Turnips, Cabbage, Mangold, and Potatoes; the field was thorough-drained, but neither trenched nor subsoiled; it was formerly two fields, and I expended 75*l.* in draining, levelling fences, picking stones, &c.; and I may here mention that the value of the land, as made by two most experienced land-valuers at the time I bought it, was 6*s.* per acre for one field, and 8*s.* per acre for the other, at 26 years' purchase. The crop was not weighed; but I sold by auction 2A. 3R. 35P. statute of Swedes, which realised me 47*l.* net towards the outlay of 75*l.*, leaving me above 5 acres for my own; last year I mowed a most excellent crop of Rye-grass; so that I think it has nearly redeemed itself, and is in a very different condition to what it was. In the winter of 1847 and spring of 1848 I trenched and drained 6 acres of old ley, and trenched 4A. 1R. 35P. of Oat-stubble for green crops, the account of which I give below. The plan I proceed upon is to set my trenching in beds of 7 yards wide, the fall of the land, a drain being cut on each side of the bed. I provide, in the first instance, stones for the first two or three drains, and then commence trenching to the depth of the soil only, breaking up the subsoil to the depth of 10 or 12 inches with a pick, and throw all the stones on the top of the trenched land. This year I have used strong forks about 7 lbs. weight, with a projection at the back in this form (T), in order to give more leverage. I prefer them to the pick, being, I think, more effectual, and easier for the men. Whilst the trenching is going on, I have other men cutting the drains in the entrenched land, and the stones on the trenched land are wheeled in barrows to the drains, the land abounding so in them that they have seldom to wheel them more than 14 or 20 yards, so that I hardly ever have a horse and cart in the field. I believe this plan to be the cheapest and most effectual for my land, and I have given up the subsoil plough; the trenching is done by the customary measure of 7 yards square to the rod, or fall, as we call it; the price 8*d.* to 9*d.*; at which price a good man can earn 2*s.* to 2*s.* 3*d.* per day; the drains are cut by the rood of 7 yards long, 3 feet deep for stone soughs at 7*d.*, and 30 inches deep for pipe-tiles at 5½*d.*; the soughs are made, tiles laid, and stones filled, and drains filled up by day-work.

"Expense of thorough draining, at 30 and 36 inches deep, and 7 yards apart, trenching, &c., 6 statute acres of old ley on Ellel Moor:

Grubbing Whins ...	£2	5	0
„ Alder-bushes ...	1	12	9
Trenching 595 falls of 7 yards square, at 8*d.* ...	19	13	8
Cutting 685 roods of drains at 6*d.*, tiles, stone-breaking 258 cubic yards, laying tiles, filling up drains, &c. ...	45	18	11
Labour, getting up large stones and Alder-bushes, not let by contract, &c. ...	10	0	0
	79	10	4

I removed 920 one-horse cart-loads of stones from the land after it was drained and trenched, which I sold to the Surveyor of Roads, and which paid for the removal, the road being alongside the field, besides 70 loads of good rubble walling stones, from the large stones we had to break up with hammers and wedges. I sowed the field with Scotch lean Oats, and gave it 2 cwt. of Peruvian guano to the acre; it produced 197 thraves, the band being made small on account of the wet season; the straw was strong and full, but I have not weighed it for thrave. In corn it gave 44½ bushels per statute acre, of 39 lbs. to the bushel; and having made meal several times, I find it gives me four loads of 240 lbs. to the load per statute acre. I am now ploughing it for a second crop of Oats with a hand-dressing, probably superphosphate of lime; and the condition of the land is most satisfactory.

From the 4A. 1R. 35P. of Oat-stubble which I trenched, I removed nearly 500 one-horse cart-loads of stones, and sold most of them to the roads. I sowed it with Swedes, Mangold, Carrots, and a few Potatoes; and considering the wet summer, I had a very fair crop of Swedes, about 18 tons to the acre; and with what I have sold and have to sell, I shall more than twice cover the expense of trenching. For Mangold Wurzel on poor lands like mine, independent of the muck put into the stitches, I strongly recommend the practice of dibbling in with a trowel, every 10 inches, a prepared compost, and placing the seed immediately upon it. The compost I made last year consisted of bones, horse-feet parings from the blacksmiths' shops, hen-manure, which I carefully save, and ashes, or, still better, refuse charcoal: these were put into a heap under cover, and well wetted with tank liquid, and left to heat for two months. I have a light wooden roller, the same as a garden roller, 30 inches in diameter, with three strips of wood projecting about an inch railed on at every 10 inches longitudinally; it covers two stitches at once, 30 inches between each, and is drawn by men, and consequently levels to the top of the stitch, and leaves a mark every 10 inches. The compost is put into buckets, and with a garden-trowel the labourer takes out a trowelful of earth and replaces it with a trowelful of manure. The cost of doing this per acre is from 10*s.* to 12*s.*, if done with men: could women or boys be had, it would be less. I steep my seed in liquid manure 24 hours, and put in a bag two or three times larger than required, in order to be able to turn the seed and lay it on the midden in a gentle temperature from four days to a week. The bag must be turned every day, and great care taken not to place it in too hot a berth. Last year my hind overheated and destroyed the seed, and the consequence was I had at the third week's end to re-dibble fresh seed; notwithstanding which I had nearly as fine a crop as any I saw in the better land in the neighbourhood of Lancaster, owing to the compost and liquid manure. I dibble the seed in with the finger and thumb, placing three seeds at a little distance from each other in the compost at every 10 inches, and cover lightly with the finger. I have thus had it up in a week from the time of sowing. For Carrots I recommend, after they are weeded, and about 2 inches high, to give them, if the weather be damp, 1 cwt. of guano and 1 cwt. of gypsum per acre, sown on them early in the morning. I did so last year upon my crop, which I thought worthless, and the effect was astonishing.

Rotation.—My general rotation is—of old tough ley, two crops of Oats, both hand-dressed; two Turnips, Mangold, drilled Beans, Potatoes, Cabbages, and Carrots; three Oats, with Grass seeds, either mown or left to pasture three or four years; if mown, ploughed up earlier. I do not, however, follow strictly any rotation, but depend entirely upon the condition the land is in. I have two liquid manure tanks, and attribute my success in growing green crops mainly to its use upon the first appearance of the plant. My common Turnips were sown very late last summer; and in applying the liquid manure when in seed-leaf several rows were missed. The result was that I had not one-third of a crop on that portion, the fly destroying them; and what remained, from the want of a stimulant and ready concocted food—liquid manure—made very poor progress, the season being late.

Manure.—Since 1843-4, my first two years, I have bought no heavy manure, and very little guano, about a ton to 25 cwt. per annum. I find it the most advantageous to make the manure on the premises, by

buying Linseed and straw for bedding, and laying on as many cattle in the winter as I can accommodate for feeding. I have never bought a single ton of horse or cow manure, only night-soil from the factories, which nobody thought much about when I first commenced.

Cattle.—The greatest number of cattle kept by the last tenant were in summer never more than five milch cows, and about four or six head of young stock, a pig, and two horses. In 1846 I milked 15 cows, besides having young stock, three horses, and three brood-sows and store-pigs. Last summer I milked 12 cows, having rather more under the plough; and this winter I have nine milch cows, two two-year olds, and five fat beasts in my shippon, five yearling calves, one back-end calf, two nine-months-old bulls, three horses, two brood-sows, and eight store-pigs. I have grown Italian Rye-grass, and mown three crops; and now that the land is in better condition for it, I shall sow it again. I grew a very heavy crop of tick-Beans in 1847, broadcast, and well mucked with farm-yard manure. The extent of land was a customary acre, or 1A. 2R. 20P. statute, and I had 16 loads, of 280 lbs. to the load, and 147 lbs. *Richard Hinde, Journal of the Royal Agricultural Society of England.*

Miscellaneous.

Transplanting Swede Turnips.—I prepare a bed, and sow it early in rows about 8 inches apart, and thin out to 4 or 5 inches in the row. An acre will thus transplant about 20 or 25 acres. As the Vetches are mowed off, the space cleared is ploughed, well worked, dressed with 2 cwt. of the compost, and ridged up. As this work proceeds the plants are being prepared, and are planted while each drill is damp and fresh. As dispatch is only produced by division of labour, the process is as follows:—One party, No. 1, pulls the best plants, keeping them "heads and tails," and carries them to another party, No. 2, who sits at the end of the ground to be planted, and who nips off the slender part of the tap-root and the upper part of the leaves, laying them in a basket, also "heads and tails;" No. 3 carries them up the field to No. 4, who lays them in the drill, with the leaves towards the planter's left hand; No. 5, who must be a man or boy, that, striding across the drills, no petticoats may interfere with the plants just put in. I never use the dibbling-stick, which, in heavy land, only hardens the inside of the hole, but the planter is furnished with a light, hollow, half-round steel trowel, with which, in his right hand, he lifts up a portion of soil, while with his left he puts the plant in a slanting direction below it; then drawing back the trowel, the soil falls loosely on the plant, and a short stride of one leg takes him to the next. The proportion of labour for pulling and topping depends on the size and position of the plants; but one layer will do for two ordinarily quick planters, though my bailiff, whom you saw, can transplant a statute acre in the day. I usually transplant from 15 to 30 acres per annum, and have raised, according to the examination of the Inspector of the Liverpool Agricultural Society, 26 tons 4 cwt. per acre; but the land must be "mucked heavily, ploughed deep, and weeded clean," which I consider now, more than ever, the farmer's motto. *Mr. Neilson, Journal of the Agricultural Society.*

Calendar of Operations.

JANUARY.

SUSSEX FARM, *Jan.* 21.—The snow in this part has nearly disappeared, but since Saturday the weather has changed again to frost. Our teams are engaged ploughing Oat stubble for Beans and Peas, also ploughing two years seed lea for Oats. If the weather allows, the ploughs will continue at work; if too hard for that, we shall cart earth from road-sides, ditches, banks, and headlands, into heaps, to mix with lime, to be applied again to the land before the Turnip crop is sown. Men are engaged ditching, hedging, filling earth into carts, turning mixings, and threshing Oats and Peas. In speaking of threshing, I may state the difference between machine and hand threshing. The last stack of Wheat we threshed was the crop of 1848, threshed in October 1849, by machine; the stack was got in by truck and temporary railway. The stack yielded 50 sacks (4 bushels to the sack). Cost of getting in and threshing the same, 1*l.* 5*s.*

Threshing by manual labour, 50 sacks of Wheat, at 1*s.* 9*d.* per sack, would be	£4	7	6
Men and horses getting in stack and storing in barn	0	18	0
Expense by hand	5	5	6
Ditto by water power	1	5	0
Profit for machine	4	0	6

If the money saved by machinery was applied in draining, it would increase the food for both man and beast; instead of being an injury to the labourer it would be a general good. *J. B.*

Notices to Correspondents.

AMMONIA: *R G.* 100 gallons of undiluted urine will furnish during decomposition about 40 lbs. of carbonate of ammonia; to convert that into sulphate of ammonia, a *fixed* salt, 40 lbs. of sulphuric acid are needed—a quantity contained in 55 lbs. of liquid acid of specific gravity 1 8.

ARSENIC: *T H* says, "I see that your correspondent 'J. B. J. N.' advocates the plan of soaking Wheat in a solution of arsenic. Perhaps he is not aware that Wheat so treated will poison the game, and that the game so poisoned contain a sufficient quantity of arsenic in the flesh to affect very seriously, if not to kill, any animal partaking of them. This was fully established by experiments some months ago, which were published in the papers at the time, and for the truth of which I can vouch."

BACON: *A B.* Next week.

BOOKS: *F.* Some of the descriptions of selected farms, published by the Society for the Diffusion of Useful Knowledge, contain the details of dairy management. Their work, "The Ox," also has chapters on the dairy.

BOWERS' DISSOLVENT: *W L C.* If any of our correspondents are using, or have ever used, Bowers' Dissolvent for preparing grain (instead of grinding into meal), for feeding purposes, we should feel greatly obliged if he would inform us whether or not it answers the purpose.

BUTTER: *L R S* asks for the cause of his butter being very bad both in texture and taste? The cows are fed on Mangold Wurzel and Beans. Scrupulous cleanliness is preserved in all the dairy utensils, but the butter is short, tough, and almost rancid. The cream is only churned once a week. Can it be owing to the Beans? [We should think not]

CUNNINGHAM ACRE: *V A N.* The Irish acre is 7840 square yards —3000 yards more than the imperial measure. What is the Cunningham acre?

FIXATION OF AMMONIA: *W E.* 100 gallons of undiluted urine will give off so much ammonia as to require 86½ lbs. of gypsum, 139 lbs. of green vitriol, or 123 lbs. of Epsom salts to furnish sulphuric acid to "fix" it. The Epsom salts is the best to use; the iron salt, the worst.

FLAX: *A Subscriber at Reading.* Apply to Messrs. Storar & Co., Belfast.

GRASS SEEDS: *V A N.* For improved deep mossy or boggy soil, sow, per acre, without a crop: Agrostis stolonifera, 2 lbs. Alopecurus pratensis, 2; Festuca duriuscula, 2; Lolium perenne, 6; L. italicum, 3; Phleum pratense, 2½; Poa trivialis, 2½; Tritolium repens, 6; Lotus major, 1½; total, 27½ lbs.; and one bushel of Rye.

HARD WATER: *A B* may make his hard water soft, for use to clean a carriage, by precipitating the lime it holds in solution, and if the solution be one of *caustic lime*, as under the circumstances is possible, to add a little stale urine would answer the purpose.

LIQUID MANURE: *A F.* Mix it with charred vegetable matter; that is better than ashes, which, being generally alkaline, will hinder the fixation of the ammonia, to which the putrefaction of the ammonia gives rise.

LIME AND MUD: *B A, Cantab.* Lay it in alternate layers, and let it remain till next winter, turning it over in the meanwhile. You are not well advised not to add the lime till just before using it. Lime ought not to be mixed with stable manure, and the objection holds good for all animal manures; for instance, with night-soil salt may be usefully added to the manure heap. It is good for Grass land in inland places. Guano is the best artificial manure for Grass land—the best purchaseable manure next to stable manure. Pure horse-droppings are of more value than when mixed with straw. Pay the old man 8*d.* a large wheelbarrow-full for the horse-dung.

OVERHANGING HEDGES: *Horncastle.* You may enforce the removal of overhanging branches; but you had better consult your solicitor, if a remonstrance is ineffectual.

PHEASANT AND DOMESTIC FOWL: *Our correspondent L V R* asks if any of our readers, who intended during last summer to try to procure half-bred birds or "peros" from the pheasant and domestic fowl, have any favourable results to relate? He, after much trouble for the purpose, was deprived by an accident, or rather a series of accidents, from procuring any chicks. However, he is fully convinced, from what he has observed of the cock pheasant when confined in pens with the fowls, that it is vain to expect the birds to breed, except in very rare instances, when in confinement. The pheasant will not rest (although bred up in confinement from the shell) after he is a year old; the birds therefore should be at liberty, but strictly isolated.

LIQUID MANURE: *Lancashire Farmer.* If you have much to distribute, the pump and pipes would suit your purpose. If little, the water-cart will be cheaper.

Markets.

COVENT GARDEN, JAN. 26.

Vegetables, though generally somewhat dearer, are nevertheless pretty well supplied. Fruit for the most part is sufficient for the demand, except good Pears and Apples, which are very scarce. Hothouse Grapes and Pine-apples are good for the season, Filberts and Walnuts are abundant, and Chestnuts plentiful. Oranges and Lemons are abundant, and there are now some good Seville Oranges in the market. Amongst Vegetables, Turnips and Carrots are a little scarcer. Cauliflowers and Broccoli the same. Potatoes have altered little since our last account; there are some foreign ones in the market, which fetch from 50*s.* to 70*s.* a ton. Lettuces and other salading are dearer, and so are Mushrooms. Some French Beans, Asparagus, Seakale, and Rhubarb may be obtained; and some green Peas, not over fresh looking, have just arrived from Lisbon. Cut Flowers consist of Heaths, Pelargoniums, Bignonia venusta, Primulas, Camellias, Cinerarias, Christmas Roses, Azaleas, Lilacs, Lily of the Valley, Epacrises, Acacias, and Roses.

FRUITS.

Pine-apples, per lb., 5*s* to 8*s*	Almonds, per peck, 6*s*
Grapes, hothouse, p. lb., 6*s* to 8*s*	— sweet, per lb., 2*s* to 3*s*
— Portugal, per lb., 9*d* to 1*s*	Walnuts, p. 100, 1*s* 6*d* to 2*s*
Pears, per doz., 6*s* to 10*s*	— p. bush., 16*s* to 24*s*
Apples, kitchen, p. bsh., 4*s* to 6*s*	Filberts, per 100 lbs., 60*s* to 65*s*
Lemons, per doz., 1*s* to 2*s*	Nuts, Bar., p. bush., 20*s* to 22*s*
— per 100, 6*s* to 12*s*	— Brazil, p. bsh., 12*s* to 16*s*
Oranges, per doz., 9*d* to 1*s* 6*d*	Kent Cobs, 65*s* to 75*s* p. 100 lbs
Oranges, per 100, 5*s* to 12*s*	

VEGETABLES.

French Beans, p. 100, 2*s* 6*d* to 3*s*	Radishes, p. 12 hands, 1*s* to 1*s* 6*d*
Seakale, per punnet, 1*s* to 2*s*	Carrots, per bun., 6*d* to 8*d*
Asparagus, per bundle, 3*s* to 6*s*	Spinach p. sieve, 2*s* to 3*s*
Rhubarb, p. bundle, 1*s* to 1*s* 6*d*	Onions, p. bushel, 3*s* to 4*s*
Cabbages, p. doz., 9*d* to 1*s*	— Spanish, p. doz., 1*s* 6*d* to 4*s*
Cauliflowers, p. doz., 6*s* to 9*s*	Shallots, per lb., 4*d* to 8*d*
Broccoli, p. doz. bundl., 18*s* to 24*s*	Garlic, per lb., 4*d* to 8*d*
Greens, per doz., 2*s* 6*d* to 4*s*	Lettuce, Cab., p. sc., 4*d* to 9*d*
Brussels Sprouts, p. hf. sieve, 2*s* to 3*s*	Endive, per score, 1*s* 6*d* to 2*s* 6*d*
Sorrel, p. hf. sieve, 1*s* to 2*s*	Mushrooms, p. pot., 2*s* to 3*s*
Potatoes, per ton, 60*s* to 120*s*	Small Salads, per punnet, 2*d* to 3*d*
— per cwt., 3*s* to 7*s*	Watercress, p. 12 bun., 9*d* to 1*s*
— per bush., 2*s* 6*d* to 3*s* 6*d*	Fennel, per bunch, 2*d* to 3*d*
Turnips, p. doz. bun., 1*s* 6*d* to 3*s*	Savory, per bunch, 2*d* to 3*d*
Red Beet, per doz., 1*s* to 2*s*	Thyme, per bunch, 2*d* to 3*d*
Horse Radish, p. bdl., 2*s* to 4*s*	Parsley, p. doz. bun., 3*s* to 4*s*
Cucumbers, each, 3*s* to 3*s* 6*d*	— Roots, p. bdle., 1*s* to 1*s*
Leeks, per bunch, 2*d* to 3*d*	Marjoram, per bunch, 2*d*
Celery, p. bundle, 8*d* to 2*s*	Mint, per bunch, 9*d* to 1*s*

HAY.—Per Load of 36 Trusses.

SMITHFIELD, Jan. 24.

Prime Meadow Hay	67*s* to 72*s*	Clover	60*s* to 85*s*
Inferior ditto	55 60	New Clover	— —
Rowen	50 60	Straw	23 27
New Hay	— —		J. COOPER.

CUMBERLAND MARKET, Jan. 24.

Prime Meadow Hay	65*s* to 70*s*	Inferior	50*s* to 60*s*
Inferior ditto	50 63	New Clover	— —
New Hay	— —	Straw	24 30
Old Clover	80 88		JOSHUA BAKER.

WHITECHAPEL, Jan. 24.

Fine Old Hay ...	63*s* to 64*s*	New Clover	—*s* to —*s*
Inferior ditto ...	50 55	Inferior ditto	55 63
New Hay	— —	Straw	24 26
Old Clover	80 84		

POTATOES.—SOUTHWARK, Jan. 21.

The Committee report that there have been but few arrivals since our last report, shipping from the Continent being much retarded from the severity of the frost. The demand is not good, and it is with difficulty higher prices for French are obtained. The following are this day's quotations:—Yorkshire Regents, 90*s.* to 120*s.* per ton; Wisbeach do., 70*s.* to 75*s.*; Scotch do., 65*s.* to 75*s.*; French whites, 65*s.* to 70*s.*

SMITHFIELD, MONDAY, Jan. 21.

We have about an average supply of Beasts, and trade continues about the same as of late. Our top quotations are not very freely given, and some middling descriptions remain unsold. The supply of Sheep is not large; trade is, however, very dull at rather lower prices on the average. The number of Calves is greater than the demand, and lower rates are taken. From Holland and Germany we have 200 Beasts, 380 Sheep, and 112 Calves; from France, 10 Beasts; from Norfolk and Suffolk, 1700; and 920 from Leicester and Northampton.

Per st. of 8 lbs.—*s d*	*s d*	Per st. of 8 lbs.—*s d*	*s d*
Best Scots, Herefords, &c. ...	3 10 to 4 2	Best Long-wools .	3 6 to 3 8
Best Short-horns	3 6 — 3 10	Ditto Shorn	...
2d quality Beasts	2 8 — 3 4	Ewes & 2d quality	2 8 — 3 4
Best Downs and Half-breds ...	4 0 — 4 2	Ditto Shorn	...
Ditto Shorn	...	Lambs	— ...
		Calves	3 4 — 4 4
		Pigs	3 4 — 4 2

Beasts, 3334; Sheep and Lambs, 19,800; Calves, 153; Pigs, 205.

FRIDAY, Jan. 25.

We are but moderately supplied with Beasts; the demand is, however, so small that lower prices are submitted to, and many of inferior quality remain unsold. The supply of Sheep is small and very few are wanted; Monday's quotations are scarcely maintained. Good Calves are very scarce, and readily make 4*s.* 8*d.*, but inferior are not much dearer. From Holland and Germany there are 7 Beasts, 100 Sheep, and 33 Calves; from Scotland, 240 Beasts; Leicester, Northampton, and Lincoln, 100; and 127 Milch Cows from the home counties.

Best Scots, Herefords, &c. ...	3 8 to 4 0	Best Long-wools .	3 6 to 3 8
Best Short-horns	3 6 — 3 8	Ditto Shorn	— ...
2d quality Beasts	2 8 — 3 4	Ewes & 2d quality	2 10 — 3 4
Best Downs and Half-breds ...	3 10 — 4 0	Ditto Shorn	...
Ditto Shorn	— ...	Lambs	...
		Calves	3 6 — 4 8
		Pigs	3 4 — 4 4

Beasts, 714; Sheep and Lambs, 1860; Calves, 132; Pigs, 200.

HOPS.—FRIDAY, Jan. 25.

Messrs. PATTENDEN and SMITH report that the market continues the same as for some time past, fine new Hops being very scarce. It appears from returns just published, that from the 6th July to the 15th December last, only about 77 tons of foreign Hops have been entered for home consumption, equal to only about 700*l.* old duty; consequently holders of Hops have nothing to fear under this head.

MARK LANE.

MONDAY, JAN. 21.—There was a small supply of Essex Wheat to this morning's market, but fair of Kent; the former was disposed of on terms barely equal to our quotations of this day se'nnight, but the latter could not be cleared excepting at a decline of 1*s.* to 2*s.* per qr. Foreign was in limited demand, but the sales of too retail a character to allow of any alteration in prices.—The value of Barley is unaltered.—Beans and Peas are a very heavy sale.—Oats are not lower in price, but sales not extensive.

BRITISH PER IMPERIAL QUARTER.	*s. s.*		*s. s.*
Wheat, Essex, Kent, & Suffolk ...White	42—45	Red	38—40
— — fine selected runs ...ditto	45—47	Red	40—42
— — Talavera	50—52		
— Norfolk, Lincoln, & York ...White	—	Red	—
— Foreign	35—54		
Barley, grind. & distil., 21*s* to 24*s*...Chev.	25—29	Malting	24—25
— Foreign.....Grinding and distilling	18—23	Malting	22—25
Oats, Essex and Suffolk	15—20		
— Scotch and Lincolnshire ...Potato	18—23	Feed ...	17—22
— Irish .....Potato	18—21	Feed ...	15—18
— Foreign .....Poland and Brew	16—20	Feed ...	13—17
Rye	20—22	Foreign	20—23
Rye-meal, foreign .....per ton	5*l* —6*l*		
Beans, Mazagan .. ...22*s* to 23*s* .....Tick	24—26	Harrow	24—26
— Pigeon .....25*s* — 28*s* ...White	22—28	Longpod	26—28
— Foreign .....White	24—3	Egyptian	23—24
Peas, white Essex and Kent.....Boilers	25—27	Suffolk	26—28
— Maple .....24*s* to 26*s*.....Grey	22—28	Foreign	22—28
Maize ....White	22—25	Yellow...	24—26
Flour, best marks, delivered ...per sack	36—40		
— Suffolk .....ditto	32—36	Norfolk	32—36
— Foreign .....per barrel	22—25	Per sack	33—35

ARRIVALS IN THE PORT OF LONDON LAST WEEK.

	Wheat.	Barley.	Malt	Oats.	Beans.	Peas
Flour, 13687 sks	Qrs.	Qrs.	Qrs	Qrs.	Qrs.	Qrs.
— 90 bls						
English	2758	1526	2497	391	920	855
Irish	—	—	149	—	—	—
Foreign	1967	8193	—	6584	150	252

FRIDAY, JAN. 25.—The arrivals of grain during the week have been moderate. To-day's market was thinly attended, and the amount of business transacted small. The value of all grain remains without alteration from Monday.—Floating cargoes of Indian Corn continue in request, and 30*s.* cost freight has been made for Galatz.—The Flour market remains inanimate.—The Wheat trade still continues very depressed, and prices in many of the provincial markets have further declined 1*s.* to 2*s.* per qr. The tendency in the value of spring corn is also downwards, and English Barley in some of the country towns has been sold at very low rate, viz., 21*s*,, 22*s.* and 23*s.* per qr. The flat accounts from this side appear to have no influence on purchases throughout the Baltic, where former prices continue to be well supported.

ARRIVALS THIS WEEK.

	Wheat. Qrs.	Barley. Qrs.	Oats. Qrs.	Flour.
English ...	1310	1850	820	1680 sacks
Irish	—	—	890	
Foreign ...	8050	1300	—	— brls.

IMPERIAL AVERAGES.	WHEAT.	BARLEY.	OATS.	RYE.	BEANS.	PEAS.
Dec. 15.....	38*s* 9*d*	26*s* 9*d*	16*s* 0*d*	22*s* 6*d*	27*s* 8*d*	28*s* 11*d*
— 22.....	38 9	25 9	15 9	22 9	27 5	29 11
— 29.....	39 4	25 9	15 6	24 0	26 11	28 0
Jan. 5.....	40 0	25 11	15 10	24 11	26 11	28 5
— 12.....	41 1	26 4	15 6	23 4	26 6	28 6
— 19.....	41 0	26 3	16 0	23 9	26 6	27 6
Aggreg. Aver.	39 10	26 1	15 9	23 6	27 0	28 7
Duties on Foreign Grain	1 0	1 0	1 0	1 0	1 0	1 0

Fluctuations in the last six weeks' Corn Averages.

PRICES.	Dec. 15.	Dec. 22.	Dec. 29.	Jan. 5.	Jan. 12.	Jan. 19.
41*s* 1*d*	...	...	...	...	...	...
41 0	...	...	...	...	...	
40 0	...	...	...	...	...	...
39 4	...	...	...	...	...	...
38 9	...	...	...	...	...	...
38 9	...	...	...	...	...	...

SEEDS.—JAN. 21.

Canary, per qr.....74*s* to 78*s*		Coriander, per cwt. ...16*s*— 21*s*	
Caraway, per cwt. ...31 — 32		Mustard, white, p. bush. 6 — 7	
Hempseed, per qr. ...34 — 35		— brown, do. ..... 7 — 9	
Linseed, foreign, do. 37 — 45		Rape, per last .....28*l.*—34*l.*	
Clover, red, per cwt....— —		Cakes, Linseed, p. 1000...9*l.* 12*s*	
— — foreign, do.— —		— — foreign, p. ton 6*l.* 15*s*	
— white, do. ... — —		— Rape, foreign, do. 4*l.* 5*s*	
— — foreign, do.— —		Tares, per bush.... 4*s* 6*d*—5*s* 6*d*	

LIVERPOOL, TUESDAY, JAN. 22.—The arrivals of Wheat this week are to a fair extent, those of Oats, Oatmeal, Beans, and Indian Corn moderate. We had another inanimate market to-day. The purchases of Wheat were in the merest retail way, and last Tuesday's prices may be considered as weaker. There was very little inquiry for Oats or Oatmeal. Barley and Peas were each easier to buy.

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Honorary Member of the Royal Agricultural Society of England, Professor of Chemistry to the Horticultural Society of London, Lecturer on Chemistry in the Honorable East India Company's Military Seminary at Addiscombe, &c., &c.

PREFACE TO THE SECOND EDITION.

"In preparing a Second Edition of this little book, the opportunity has been taken of correcting several errors which the First Edition contained. The whole has been carefully revised, and such additions have throughout been made, as the advanced state of knowledge rendered necessary. In particular, the Tables of Analyses have been greatly extended, by the addition of the latest and most complete Analyses of almost all those plants which are cultivated as crops, as well as of the principal substances employed as manure."

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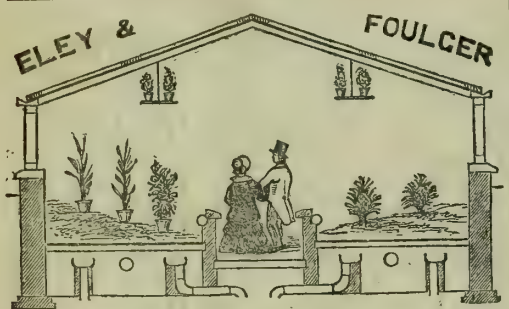
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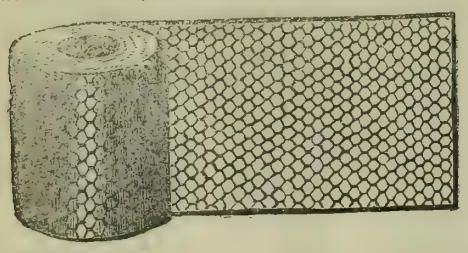


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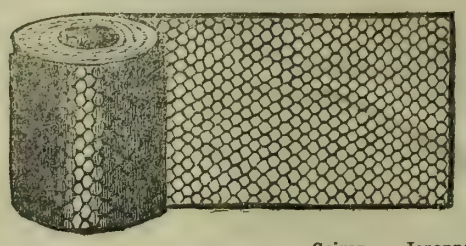
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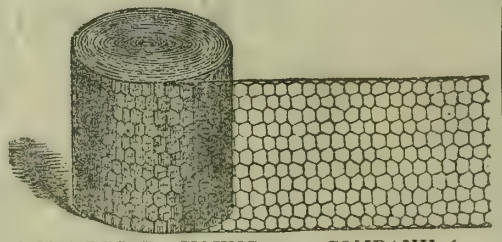


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Farming, high	75 *c*	Roses, wall	72 *c*
— cost of 100 acres on the 4-course system	78 *c*	— continuous bloomers	70 *c*
— Scotch	74 *a*	Rye-grass, Italian	76 *b*
Florists, annual meeting of	72 *a*	Seeds, old, to test	72 *c*
Forest trees, ill effects of pruning	69 *b*	Skimmia (Limonia) Laureola	71 *a*
Fortune, Mr.	67 *a*	Sprouts	75 *c*
Fuchsia spectabilis	71 *b*	Steam-power and agriculture	75 *a*
Grass seeds	72 *c*	Timber, bad] ffects of pruning on	69 *b*
Grass land, to improve	77 *b*	Trade memoranda	70 *b*
Hams	78 *a*	Traveller, notes of	70 *a*
		Victoria Regia, at Chatsworth	70 *b*
		Villa gardening	70 *a*

EXTRA GRAND HORTICULTURAL EXHIBITION, PRIZES £200.

THE DEVON AND EXETER BOTANICAL AND HORTICULTURAL SOCIETY intend holding an Extra Grand Exhibition on Wednesday and Thursday, the 17th and 18th days of July next, during the meeting of the Royal Agricultural Society, at Exeter. Competition will be open to all Subscribers to the funds of the Society of 1*l.* 1*s.*, not being nurserymen or dealers in plants. Schedules of the Prizes may be obtained on application to the Honorary Secretary, T. WILLIAM GRAY, Esq., 4, North-bridge, Exeter.—Feb. 2

RENDLE'S TRUE WILLCOVE BROCCOLI.—*This superior variety has been proved by thousands to be the best late sort in cultivation, and can be recommended with much confidence. We have saved a small quantity this season on our own grounds, from some of the finest heads ever seen; price* 1*s. per packet, free by post.*

*** Twenty packets to the Trade for 12*s.*, or 50 for 2*l.* 10*s.* It will give the most complete satisfaction.

Our commercial stamp is on each packet.

COLE'S SUPERB RED CELERY, 1*s.* per packet.

Apply to WILLIAM E. RENDLE and Co., Seed Merchants, Plymouth.

SEED POTATOES.

THOMAS JACKSON AND SON respectfully inform parties having parcels from London that their IMPROVED KIDNEY POTATO may be obtained true from the Wholesale Seed Firms in London named below, at the same price as advertised by T. J. and Son, viz.:

J. Wrench & Sons, London Bridge
Minier, Nash, & Nash, Strand
Gordon, Thompson, & Keene, Fenchurch-street
Noble, Cooper, & Bolton, 152, Fleet-street
Flanagan & Son, Mansion-house-street
Hurst & M'Mullen, Leadenhall-street
F. Warner, Cornhill
G. Charlwood, Tavistock-row, Covent-garden
H. Clarke, 86, High-st., Boro'
J. Kernan, Russell-street, Covent-garden.
J. G. Waite, 181, High Holborn.

And of most of the Wholesale Seedsmen in the country, at a slight advance of price, and from the advertisers, at 10*s.* per bushel, delivered free in London, or at any station on the South Western Railway.—Nursery, Kingston, Surrey, Feb. 2.

DWARF PEAS.

HAIRS'S Dwarf Green MAMMOTH KNIGHT'S MARROW PEA is perfectly distinct from any other in existence; grows 2 feet, is 3 weeks earlier than the old dwarf Green Knight's, and the Peas and pods are twice the size. 5*s.* per quart.

BISHOP'S LONGPOD.—Grows 2 feet high, early as Early Frames, pods as large as Scymetar's, and 20 to 24 per stem. 2*s.* per quart.

BURBIGE'S ECLIPSE.—Grows 1 foot high, pods larger than Imperial, greater bearer, and altogether superior to that variety. 1*s.* per quart.

The above are three of the best Dwarf Peas ever introduced. Full particulars can be had of DUNCAN HAIRS, Seedsman, &c., Wholesale and Retail, 109, St. Martin's-lane, Charing-cross, London.

Catalogues can be furnished on application, and every article connected with the trade supplied on terms to defy competition. Garden Tools, Nets, Mats, Mushroom Spawn, and Potatoes saved from selected stocks at moderate prices.

PLANTING SEASON.

ALFRED BALSTON begs to inform planters he has still a large proportion of his Nursery Stock to dispose of, which, in consequence of having relinquished the trade, he offers at very reduced prices. The Stock comprises every variety of ORNAMENTAL, FRUIT, and FOREST TREES, and all the best kind of SHRUBS in cultivation, no expence having been spared in the collection, and from the light nature of the soil in which it has grown, the plants have all a mass of fibrous root, which causes them to grow most luxuriantly after being transplanted.

A.B. particularly recommends the following: Common Laurel, 9 inches to 1 foot, 15*s.*; 1 to 2 feet, 30*s.*; 2 to 4 feet, 40*s.*; 4 to 6 feet, 80*s.* per 1000. Portugal Laurels, 1 to 2 feet, 10*s.* per 100. Rhododendron ponticum, 1 to 2 feet, 30*s.*; 3 to 4 feet, 60*s.*; 4 to 5 feet, 100*s.* per 100. Ghent Azaleas of all the finest kinds, specimen plants, 2*s.* 6*d.* each; smaller ditto, 6*s.* per dozen. Rhododendron campanulatum, caucasicum, catawbiensis, &c., 100*s.* per 100. Standard Roses of all the finest sorts, 12*s.* per dozen. A large stock of Evergreen Oak in pots and transplanted; also common Oak, Elm, Beech, Birch, Berberis, Hornbeam, Privet, &c.

Orders must be accompanied by remittances. Orders amounting to 5*l.* delivered free.—Poole Nursery, Dorset.

JOSEPH BAUMANNS, NURSERYMAN, Ghent, Belgium, begs to offer the following plants.

12	Cypripedium guttatum	£4	0*s.*	0*d*
25	Do. do.	7	0	0

A most beautiful hardy Orchid.

100	Cypripedium calceolus	1	10	0
100	Do. do., strong	2	0	0
1	Tropæolum Deckerianum	0	4	0
12	Do. do.	2	0	0
1	Do. do., grafted	1	0	0
1	Echites Wagnerianum	1	0	0
1	,, bicolor	0	7	6
1	Alstrœmeria multiflora	0	8	0
1	Achimenes Fauregia (longiflora alba)	1	0	0
20	New Achimenes	1	10	0
1	Plumeria grandiflora	0	8	0
1	Fehlia fuchsioides	0	10	0
1	Rhododendron hirsutum fl. alb.	0	7	6
1	Musa zebrina	0	15	0
12	Arum pictum	0	15	0
12	Caladium bicolor	0	15	0
100	Cyclamen europæum, strong	1	0	0
100	Azalea indica, in 50 sorts, 3 years old	4	0	0
100	Do. do. do., 4 do.	5	0	0
100	Camellias, in 50 good sorts, 2 years old	6	0	0
100	Do., 100 do. do.	7	0	0
100	Do., 50 do. 3 years old	8	0	0
100	Do., 100 do. do.	10	0	0
100	Chrysanthemums, in 100 good sorts	1	15	0
100	Iris germanica, in 100 good sorts	2	10	0
100	Œillets remontants	1	0	0
30	Pæonias herbacea, in 30 good sorts	4	0	0
12	,, tenuifolia fl. pl.	1	15	0
1	Azalea indica barbata, very fine, small plant	0	2	0
1	Do. do., with flower buds	0	10	0

The usual discount to the trade on any plants ordered by the 100 (see J. B.'s Catalogue). All letters must be post paid.

N.B.—Postage stamps do not prepay any letters to Belgium.

VERBENA, "COUNTESS OF YARBOROUGH."—This will be found to be the most rapid-growing Verbena yet known, and a most profuse bloomer, attractive colour, and splendid habit; one plant covered a bed 6 feet square, the colour a bright lavender, with a light eye, the flower-spike 63 pips deep and fine shape, and the freest seeder yet grown; one plant and one packet of seed saved from the above (Defiance grown by its side), sent free by post for 5*s.*; very strong single plants, 3*s.* 6*d.* each—discount to the trade if six are ordered. A remittance from unknown correspondents.

JAMES ROBINSON, Florist, River Head, Louth, Lincolnshire.

POTATOES FOR SEED.

TRUE ASH-LEAVED KIDNEY, good sample for general purposes, the best Early Potato grown, 5*s.* per bushel of 56 lbs., or 1*s.* 6*d.* per peck. Flour Ball, second early, the same price.—N.B. A good collection of Dahlias, Fuchsias, Geraniums, Verbenas, Roses, Tulips, Vegetable and Flower Seeds, &c., at moderate prices.—Apply to R. RILOTT, Seedsman, &c., Donnington, near Spalding, Lincolnshire.

SAMUEL FINNEY AND CO.'S NEW CATALOGUE OF SEEDS is now ready, and will be forwarded gratis on the receipt of two penny stamps for postage. In forming our Collections of Seeds we have taken special care to include all the select and most approved kinds, and such as we can confidently recommend.

Of VEGETABLE SEEDS, our Collections contain a full supply of all that is requisite for the largest establishment, and the kinds and quantities for each collection are stated. No. 1, 2*l.* 10*s.*; No. 2, 1*l.* 10*s.*; No. 3, 1*l.*; and No. 4, 12*s* 6*d.*

Of FLOWER SEEDS, we have included all the most choice and showy kinds, particularly those we know to succeed well in the north, and a full list of all the best kinds of German Seeds, imported direct in sealed packets, with prices.

A Collection of 100 packets of the best hardy and half-hardy kinds for				15*s.* 0*d.*
Ditto	of 50	ditto	ditto	8 0
Ditto	of 25	ditto	ditto	5 0

We particularly recommend this Catalogue to residents in the north, as they will be enabled to purchase to advantage. All orders delivered free of carriage at any of the railway stations between Newcastle and York, Berwick and Carlisle, and by steam-boat to London, Hull, Whitby, Leith, Dundee, and Aberdeen. Railway and water communication to all parts of the kingdom.

SAMUEL FINNEY and Co., Gateshead, near Newcastle-on-Tyne.

SEED POTATOES.

CHARLES SHARPE has much pleasure in announcing that he has got the under-mentioned sorts of POTATOES to offer again this season, which have for the last four successive years given general satisfaction in all parts of the kingdom. The first six sorts are very early and productive; those marked thus * are the best sorts for Frame Forcing; they are offered at the following prices, packing included:

Per bushel of 56 lbs.		Per bushel of 56 lbs.	
*Early Oxford Potatoes	8*s.*	Early Manleys	7*s.*
*Early Round Frame	8*s.*	Early Cockneys	7*s.*
Early Ash-leaved Kidney	8*s.*	Fox's Seedling	7*s.*

Second Early Potatoes for Winter and Spring use:

American Native Potatoes	5*s.*	Kentish Pink Kidney	4*s.*
York Regents	5*s.*	Forty Fold	4*s.*

Orders will be forwarded on the receipt of a Post-office order, and great care will be taken to ensure their safe delivery. A liberal allowance to the Trade.—Wisbeach, Cambridgeshire.

MYATT'S LINNÆUS RHUBARB.

J. MYATT AND SONS can confidently recommend this variety as the best in cultivation. The most satisfactory proof of this assertion is the fact that the Market Gardeners round London and Manchester have planted the Linnæus Rhubarb more extensively than any other variety. It is extraordinarily productive, and about a fortnight earlier than the Victoria; added to this, it is held in general esteem for preserving and all culinary purposes. One-year planted roots, 1*s.* 6*d.*; ditto, Mitchell's Royal Albert, 1*s.* 6*d.*; Victoria, 9*d.* The usual Trade allowance.—Post-office orders are requested to be made payable to JOSEPH MYATT, Manor Farm, Deptford.—Feb. 2.

UNIVERSAL CATALOGUE OF VERBENAS, FUCHSIAS, DAHLIAS, CHRYSANTHEMUMS, PETUNIAS, &c.

G. SMITH'S Priced and Descriptive Catalogue contains the very best selections of the above; with a useful note and a marked List of the best Verbenas for exhibition in pots, with mode of training, and what is of great importance to exhibitors, the time of stopping back, so as to catch a sheet of bloom when it may be required; with descriptions of his superb Seedling Fuchsias, Verbenas, Petunias, &c.; and will be forwarded on the receipt of one postage stamp.—Tollington Nursery, Hornsey, Islington.

WM. HAMILTON, SEEDSMAN, &c., 156, CHEAPSIDE, LONDON, will forward free by post, on receipt of 5*s.* 6*d.*, 25 varieties of the most beautiful Hardy ANNUALS, with the SCIENTIFIC AND ENGLISH NAME, TIME OF SOWING AND FLOWERING, MODE OF CULTURE, &c., printed on each packet; 12 varieties, free by post, 3*s.*

VEGETABLE and other SEEDS of every description, including all the new Peas and other Seeds of the season.

W. H.'s DESCRIPTIVE CATALOGUE will be forwarded on receipt of two postage stamps.—156, Cheapside, London.

OAKS AND SPRUCE on Sale, delivered either in Liverpool or Glasgow. Fine healthy strong grown OAK,

5,000	Plants, fully 5 to 6 feet high, at 16*s.* 6*d.* per 1000.			
10,000	do.	3 feet	12 0	,,
2,000	SPRUCE,	5 feet	16 6	,,
2,000	do.	3 feet	12 0	,,

These Trees have been transplanted, and will be found good and reasonable.—For further particulars, apply to J. W., Box B, 35 Post-office, Liverpool.

THE "GREAT BRITAIN" CUCUMBER.—Cucumber growers and others who are desirous of growing a long and handsome variety of black spine Cucumber, and a prolific bearer, fit for any season of the year, may obtain it of W. HARRIS, Strawberry Cottage, Brook-street, Upper Clapton, in packets of 6 seeds, for 2*s*, in postage stamps.

Extract from the Gardeners and Farmers' Journal, of May 5th, 1849.—"I send you the particulars respecting the Cucumbers I forwarded for your inspection. Mr. Hunter, gardener to N. Clepton, Esq., Islington, purchased some of the seeds of my Great Britain Cucumber, and he now complains that his fruit is not so long as those he saw at my place last August. He cut the first fruit on the 14th of April, and he has cut 12 since, none of which are shorter than the one you saw. He has, besides 12 fruit on two plants at the present time, from 18 to 21 inches in length. These I saw myself, and none of them are fit to be cut; they will of course grow to a much greater length. W. HARRIS"

[We may, in reference to this matter, observe that Mr. HARRIS forwarded us for inspection one of his Great Britain Cucumbers, which measured exactly 24 inches in length; it is a handsome, well grown fruit, and fit for table. We think this is not bad Cucumber growing in such a season as we have had for the last five or six weeks.]

GENUINE HOME-GROWN SEEDS FOR THE KITCHEN GARDEN, may be had of the Subscriber, in collections of 12*s.* 6*d.*, 1*l.*, 2*l.*, and 3*l.* worth, containing the most approved varieties in cultivation. Also for the Flower Garden, in selections of 25 kinds for 6*s.*, 50 for 10*s.*, 100 for 18*s.* packed in Ayres and Moore's new labels, with directions for culture, time of flowering, whence introduced, &c.—WILLIAM MASTERS, F.H.S., Exotic Nursery, Canterbury.

W. M.'s New Catalogue may be procured on pre-paid application. Orders amounting to 2*l.* and upwards delivered to any station on the South-Eastern Railway.

NEW VERBENA, "WONDERFUL."

GEORGE MOORE, Perry Barr Nursery, near Birmingham, has the satisfaction to offer the above beautiful VERBENA, raised by Mr. C. J. Perry, of Handsworth, and it is without doubt the finest show variety ever raised. The truss is very large, in some instances measuring upwards of 3 inches in height, and 2¼ inches in diameter; and invariably filling up well in the crown. The lower pips are the size of a shilling, and of good form, each touching the other, so as to form a complete and unbroken surface. Habit like Defiance, but blooming more freely; colour pure white, with primrose eye. G. M. would call attention to the following notices of the press:

"Among the Verbenas, a white seedling, raised by Mr. Perry, the honorary secretary to the society, is entitled to special notice. The pips are of a very large size, and well formed, being a pure white colour, with a yellow eye. It bids fair to supersede everything of its class, and obtained the highest distinction which the judges had to bestow—that of a certificate of merit."—*Midland Counties Herald, June* 28, 1849.

"The Verbenas were of the highest order of merit, and have never, we imagine, been surpassed either for variety, size of truss, or beauty of form. The principal exhibitors for Mr. Smith's prizes were Mr. Perry, Mr. H. Williams, and Mr. R. Hallam, with whom there was so close a competition as must have caused the judges some trouble. The varieties most striking were War Eagle, St. Margaret, Valentine de Sauveuse, Gem, La Reine, Mr. Perry's new white seedling, already noticed by us as a production of such distinguished merit as to surpass everything of its kind, a distinction to which all competent judges who have seen it consider it entitled. It received from the judges a certificate of merit."—*Midland Counties Herald, August* 2. 1849.

"VERBENAS; *P. Handsworth.*—A good pure white flower, and a very free trusser, one of those submitted to us throwing above 40 pips of good size; form pretty good, and tolerably smooth on the edges; perfectly free from tint or flush of any colour, saving the eye, which is clear and distinct, pale primrose."—*Gardeners' Journal.*

It was also favourably noticed in the *Aris's Birmingham Gazette* and the *Birmingham Journal*, and has received the following prizes:—Handsworth and Lozell's Horticultural Society, June 26, 1849.—Certificate of merit for 3 blooms, and in first stand of 6. July 3. Certificate for 9 blooms, and in first stand of 24, for Mr. G. Smith's prize of 3*l.*; also in first stand of 12. Walsall Horticultural Society.—Extra prize for 6 blooms, and in first stand of 6.

Plants will be ready for delivery on the 1st of May, at 5*s.* each, with the usual trade discount if three are ordered. Sole agents for London, Messrs. HUGH Low and Co., Clapton.

Perry Barr Nursery, Feb. 2.

THE REAL CASSABAR MELON.

THE LARGEST AND FINEST MELON IN THE WORLD.

J. WEEKS AND CO. beg to offer to the Nobility and Gentry the above for Sale, at 5*s.* per packet. Early orders are requested, there being but a limited quantity to dispose of.—J. WEEKS and Co., King's-road, Chelsea.

FERN SEEDS, &c.

GEORGE BENNETT begs to inform the lovers of FERNS, that he has purchased the entire stock of rare and valuable Fern Seed (sent home from New Zealand by the late Curator of the Sheffield Botanic Gardens), which he purposes selling at the reduced price of 2*s.* 6*d.* per packet (advertised in the Gardeners' Journal in August, 1849, at 10*s.* 6*d.* per packet). The names of the varieties are as follows: No. 1, Todea sp., variety Australis or Black Tree-fern; No. 2, Alsophylla medullaris, fine variety; No. 3, Cyathea dealbata, fine silvery-leaved Tree-fern; No. 4, Mixed varieties of Hymenophyllum, Trichomanes, Adiantums, Asplenіums, Lomaria, Niphobolus, Pteris, Cyatheas; No. 5, Mixed varieties of Alsophylla dealbata or Silver Tree-fern.

G. B. has also a quantity of valuable Shells from the above country, as well as a great quantity of Taxus sp., grows on the highest mountains in New Zealand. He has also for sale a valuable collection of rare specimens of Ferns in excellent preservation, of which printed Catalogues, with a list of prices, may be had on application to GEORGE BENNETT, Brandon Lodge, near Coventry, Warwickshire.

A remittance must accompany the order, either in postage stamps or Post-office order, made payable at Coventry Post-office, to G. B., as above.

NEW STRAWBERRY, "STIRLING CASTLE PINE."—The Subscriber begs to intimate that he has purchased the Stock of the above from the raiser, Mr. LAING, of Stirling. Its principal characters are as follows: Size of fruit large, classing with Keens' Seedling, British Queen, &c.; form somewhat irregular, inclining to conical; colour pale red, or scarlet when fully ripe; flavour excellent, partaking of that of the old Red Pine. It is also very prolific. Having been raised in 1846, it has now been thoroughly proved, and the following notices of it, selected from many others, will, it is hoped, be a sufficient guarantee for its superior merits:

"We recommend Mr. Laing to propagate this variety, and advertise it, as, from the specimens submitted to us, we consider it a most valuable addition to this useful family of fruits."—*Mr. Macintosh, in North British Agriculturist of Aug.* 1.

"This Strawberry seems to be an abundant bearer; fruit large, juicy, and highly flavoured. It may rank as a first-class fruit, will succeed the Keens' Seedling, and prove an excellent market variety."—*Mr Macnab, in Report of Caledonian Horticultural Society.*

Plants can now be sent out, 20*s.* per 100, or 3*s.* per doz. Post-office orders or references required from unknown correspondents. Agents in London, Messrs. Hurst and M'Mullen, 6, Leadenhall-street; and in Dublin, Messrs. Drummond, 58, Dawson-street.—ROBERT M. STARK, Edgehill Nursery, Edinburgh.

SEEDS FREE BY POST AND BY RAIL.

JOHN SUTTON AND SONS beg to refer the readers of the *Gardeners' Chronicle* to their Advertisement, which appeared in the second page of last week's Paper (Jan. 26).

Also to their List of NEW EARLY POTATOES, in the first page of the same number.

N.B. Small orders should be accompanied with postage stamps in payment.—Reading Seed Warehouse, Reading, Berks, Feb. 2.

SEEDS, &c.

ABRAHAM HARDY AND SON, SEED GROWERS, Maldon, Essex, feel pleasure in informing their friends and supporters that their Priced Retail List of AGRICULTURAL, VEGETABLE, and FLOWER SEEDS, also selected SEED POTATOES, is now ready, and will be sent to any address, on receipt of one penny postage stamp.

NEW REGISTERED GARDEN-POT.

OLIVER AND Co. beg respectfully to announce to the nobility, their patrons, and the public, that their newly-invented GRADUATED FLOWER POTS, for perfecting the growth of Plants, will be ready for delivery on the 1st March. Specimens on view at 210, Regent-street, opposite Conduit-street, London.

SUTTON'S NEW PRICED CATALOGUE OF HOME GROWN SEEDS, being a careful selection of only the very best kinds of KITCHEN GARDEN, AGRICULTURAL, and FLOWER SEEDS, with prices affixed to each article, will, it is presumed, be found the most useful and convenient of any yet presented to the public.

All purchasers of Seeds would do well to peruse this Catalogue, as the low prices therein quoted will enable them to effect a great saving in their expenditure. It will be sent gratis on the receipt of a penny stamp, for postage.

MESSRS. SUTTON'S COMPLETE COLLECTIONS OF KITCHEN GARDEN SEEDS are now in course of delivery at the undermentioned prices. No. 1, 2*l.* 2*s.*; No. 2, 1*l.* 1*s.*; and No. 3, 12*s.* 6*d.*—Reading Seed Warehouse, Reading, Berks.

NEW ICONOGRAPHIE OF CAMELLIAS, published by ALEXANDER VERSCHAFFELT, Nurseryman, Ghent, Belgium. Every month appears a Number with Four Plates of the finest and newest Camellias, with their description, price 1*l.* 1*s.* a year; or the 12 Numbers, free to England, price 1*l.* 1*s.*

A. VERSCHAFFELT will send out this summer his NEW CAMELLIA JACKSONII, 3*l.*; do. do., very strong, 5*l.* Drawings of it may be had, gratis, on application.

36 new varieties of Ghent AZALEAS (now ready for sale); they are of the finest colours, from the lightest to the darkest, and all are large and good flowers, fine strong plants, at 2*s.* 6*d.* each; the 36 varieties, 4*l.*

A General Catalogue of Plants may be had, gratis, on application, free by post.

ALEXANDER VERSCHAFFELT, Nurseryman, Ghent, Belgium.

EPPS' COLLECTIONS OF KITCHEN GARDEN SEEDS.

No. 1 contains the following quantities, and are of the best and newest kinds, being a sufficient supply for a nobleman's large establishment: 26 quarts Peas, 12 quarts Beans, 4 oz. Beet, 1 oz. Borecole, 6 oz. Broccoli, 1 oz. Brussels Sprouts, ½ oz. Buda Kale, 7 oz Cabbage, 10 oz. Carrot, 2 oz. Cauliflower, 2 oz. Celery, 3 lbs. Cress, 4 pkts. Cucumber, 2 oz. Endive, 2 oz. Leek, 6 oz. Lettuce, 3 pkts. Melon, 2 quarts Mustard, 10 oz. Onion, 4 oz. Parsley, 6 oz. Parsnip, 2 oz. Savoy, 3 pints Radish, 1 oz. Scorzonera, 2 quarts Spinach, 2 lbs. Turnips, 1 pkt. Vegetable Marrow, 1 oz. Salsafy, and 12 pkts. Herbs, Chili, Capsicum, &c. £3 3 0
No. 2, two-thirds of the above 2 2 0
No. 3, one-third ditto 1 1 0
No. 4.—This collection is sufficient for a gentleman having a moderate sized garden 0 12 6

The great satisfaction these collections have given to some of the principal families in England, Ireland, Scotland, and Wales induces W. J. EPPS with confidence to solicit further patronage. The collections contain this year 15 per cent. more than last, and quite equal in quality. Descriptive Seed Catalogues may be had on application. All orders to be accompanied with a Post-office order from unknown purchasers. No charge made for packing, and delivered free of expense to any railway station in London.—Agricultural and Horticultural Seed Establishment, High-street, Maidstone.

*** Cole's Superb Dwarf Red Celery, 1*s.* per packet.

WHITETHORN AND BEECH FOR FENCING.—500,000 very fine four years old transplanted WHITETHORN, at 6*s.* per 1000, or, selected, at 7*s.* 6*d.* per 1000; and fine Bedded BEECH, 2 to 3 feet, at 8*s.* per 1000. A large quantity of very fine transplanted OAKS, ranging from 3 to 5 feet, at 35*s.* per 1000. The above are all extremely fine and well rooted. Samples if required.—ARTHUR MACKIE, Nurseries, Norwich.

"BROMHAM HALL" GREEN FLESH MELON,
Is the finest flavoured in the World.

EDWARD TILEY having become possessed of the whole stock of Seed of that very superior Melon called "BROMHAM HALL" GREEN FLESH MELON, respectfully invites the attention of the public generally, to the superiority of this over all other Melons ever yet sent out. It was forwarded to the Editor of the *Gardeners' Chronicle*, July 22d, 1848, for his judgment, and he was of decided opinion that the Bromham Hall Melon was the finest flavoured fruit he had ever tasted. It was exhibited at the Chiswick Exhibition, July 11, 1849, where it was awarded by the judges the Silver Knightian Medal for the best flavoured green flesh Melon. It was again sent to Dr. LINDLEY, August 11th, 1849: "We have received your Bromham Hall Melon, it was much over ripe, nevertheless it was by far the best flavoured Melon we ever tasted." It was again exhibited at the Horticultural Society's Rooms, Regent-street, September 4th, 1849, and was again pronounced by the judges to be the best flavoured Melon they ever tasted, and was awarded the Banksian Medal. The fruit is very handsome—it is round shaped, hollow crown, beautifully netted, thin skin, flesh very firm and solid, melting flavour, very free setter, and abundant bearer. Weight, from 3 lbs. to 4½ lbs. It has been found to do well during the summer, without bottom heat. It may be as easily grown by an amateur in a frame as the common Vegetable Marrow. There is a great advantage in it for the fruiterer, as it will retain its fine flavour for a considerable time after being cut. Sold in packets of 6 seeds, 2*s.* 6*d.*; larger do. of 15 seeds, 5*s.* Also the following fine varieties can be highly recommended all true:

	s.	*d.*	
Queen Melon	1	6	per packet.
Bowood Green Flesh	1	0	"
Beechwood do.	1	0	"
Windsor prize do., 1*s.*; Emperor ..	1	0	"
Fleming's Trentham Hybrid	1	0	"
Duncan Green Flesh do. improved ..	1	0	"
Hampton-court Green Flesh	1	0	"
Egyptian do. do. improved	1	0	"
FIRST PRIZE CUCUMBER, VICTORY OF BATH	2	0	"
Gordon's White Spine	1	6	"

These two Cucumbers are unequalled for their superiority for exhibition, having been thoroughly proved to the satisfaction of hundreds of growers. They will be found to grow as well out of doors on a ridge, or against a wall, during the summer months, as a common ridge Cucumber; also equally as productive. Length, from 20 to 26 inches.

N.B. It is with regret we state that numerous parties have been disappointed by purchasing an inferior variety under the name of Victory of Bath. E. T. begs to say it has proved not to be the true variety sent out by him.

Lord Keynon's Favourite (winter Cucumber), a very scarce variety. It is the best for winter cultivation ever yet grown; it is very hardy, and free setter, and never shanks off; fruit very handsome. Length, about 14 inches. 2*s.* 6*d.* per packet. A packet of each of the three varieties, 5*s.*; if preferred, also a packet of the Bromham Hall Melon will be included with the three Cucumbers for 7*s.*—Sold by EDWARD TILEY, Nurseryman, Seedsman, and Florist, 16, Pulteney-bridge, Bath. A remittance must accompany the order, either in cash or 1*d.* postage stamps.

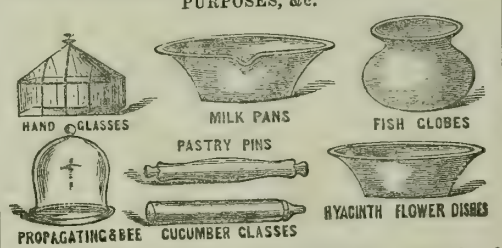
CUCUMBER AND MELON BOXES AND LIGHTS.

One hundred 1, 2, and 3-light Boxes and Lights of all sizes ready for immediate use. Warranted best materials. packed and sent to all parts of the kingdom; 2-light Boxes and Lights from 1*l.* 4*s.* Garden Lights of every description, Conservatories, Green and Hot-houses, made and fixed in all parts of the kingdom. References given to the Nobility, Gentry, and the Trade, in most of the counties of England. JAS. WATTS, Hothouse Builder, Claremont-place, OldKent-road, London.

TO PARENTS AND GUARDIANS.

A LADY, residing near Eccleston-square, Pimlico, begs to offer a Comfortable Home to one or two Young Ladies, who may require the care and attention of a mother. Good references given and required.—Address, H. D. D., care of W. Parkins, Stationer, 25, Oxford-street, London.

GLASS FOR CONSERVATORIES AND HORTICULTURAL PURPOSES, &c.



T. MILLINGTON'S SHEET GLASS, which is of the best description, varying from 16 to 32 ounces, at from 2*d.* per foot and upwards; 100 feet and 200 feet cases of large Sheet Glass, for cutting up, at 2½*d.* per foot. British Plate Glass, from 1*s.* 2*d.* to 2*s.* per foot, according to size. Patent Rough Plate Glass, from ⅛ to 1 inch in thickness, from 4*d.* per foot upwards. Glass Slates and Tiles. Milk Pans from 12 to 24 inches diameter, from 2*s.* to 5*s.* each. Cucumber Tubes, from 12 to 24 inches long, at 1*d.* per inch. Lactometers, 7*s.* 6*d.* each. Wasp Traps.—Lists may be had, on application at the Warehouse, 87, Bishopsgate-street Without, same side as the Eastern Counties Railway.

IMPORTANT TO AGRICULTURISTS.—COLLECTION AND DISTRIBUTION OF MANURES.

STRATTON'S AGRICULTURAL REPOSITORY, BRISTOL.

STRATTON, HUGHES, AND CO., have now ready their PATENT TUMBLER CART for the collection of Night-soil and other offensive matters; also their Iron Mill, to be worked by horse-power, water-power, or steam, for mixing and incorporating Nightsoil with Charcoal and other deodorisers. The Tumbler Cart has an iron body with a close cover; can be fitted if required as a Watering-cart, with a Valve and Delivery Pipe for distributing water or liquid manure, and also with an Apparatus for distributing dry manures in any given quantities per acre.

STRATTON, HUGHES, and Co.'s Tumbler Carts are used for Scavenging purposes in Manchester, Bristol, Worcester, Harwich, Rochford, Cardiff, &c., and they are now building them for Chester, Oxford, Huddersfield, &c., besides many for Agricultural Colleges and private individuals. STRATTON, HUGHES, and Co.'s new illustrated Catalogue of Carts, Waggons, and Agricultural Implements will be forwarded to any address on receipt of 1*s.* 6*d.* in postage stamps.

TO NURSERYMEN AND SEEDSMEN.

TO BE DISPOSED OF, in consequence of the recent decease of Mr. JOHN RONALDS, of Brentford, the old-established and extensive BUSINESS OF MESSRS. HUGH RONALDS AND SONS, of that place.—For particulars, apply on the premises; or to Mr. E. RONALDS, 109, Upper Thames-street; or to Mr. G. B. TOWNSEND, Accountant, 49, Leadenhall-street, London.

GLASS FOR CONSERVATORIES.

JAMES PHILLIPS AND Co. have the pleasure to hand their New List of Prices of GLASS for Cash.

CUT TO SIZE.

16 oz. from 2*d.* to 3½*d.* per foot.
21 " 3½ " 5 "
26 " 3½ " 7½ "
32 " 4 " 9½ "

SHEET SQUARES.

In boxes of 100 feet. *s.* *d.*
Under ... ... 6 by 4...12 6
6 by 4 and under 7 by 5...16 6
7 by 5 " 8 by 6...18 6
8 by 6 " 10 by 8...20 6

100 feet and 200 feet cases of large Sheet Glass, for cutting up, at 2½*d.* per foot. British Plate Glass, from 1*s.* 2*d.* to 2*s.* per foot, according to size.

HARTLEY'S PATENT ROUGH PLATE, packed in boxes of 50 feet each:

6 by 4 and 6½ by 4½ ... 10*s.* 6*d.* | 7 by 5 and 7½ by 5½ ... 12*s.* 0*d.*
8 by 6 " 8½ by 6½ ... 13 6 | 9 by 7 " 10 by 8 ... 15 0

SHADES FOR ORNAMENTS.
MITCHELL'S MINERAL ANTISEPTIC BLACK PAINT.
(Sole Agent for same.)
PATENT GLASS PENS.
ALABASTER VASES, WAX FLOWERS, &c.

ROUGH PLATE GLASS FOR WINDOWS, SKYLIGHTS, AND FLOORS.

⅛-inch thick ... per foot 1*s.* 0*d.* | ⅜-inch ..... per foot 2*s.* 6*d.*
¼-inch ..... 1 1 | ½-inch 4 0
⅝-inch 1 6

PATENT ROUGH PLATE TILES.

⅛-inch thick ..... each 0*s.* 11*d.* | ⅜-inch ..... each 7*s.* 7*d.*
¼-inch ..... 1 3 | ½-inch 2 0

SHEET GLASS TILES AND SLATES.

	16-oz.	21-oz.	26-oz.	32-oz.
Tiles made of Sheet Glass ...	8*d.*	10*d.*	1*s.*	1*s.* 4*d.*
Slates, 20 inches by 10	10*d.*	1*s.*	1*s.* 4*d.*	1*s.* 8*d.*

Slates are kept in stock of the usual sizes, and made to any dimension and substance.

GLASS MILK PANS, from 2*s.* to 6*s.* each; METAL HAND-FRAMES, Propagating and Bee Glasses from 2*d.* each; Grape Glasses; Cucumber Tubes, 1*d.* per inch; Peach Glasses, 10*d.* each; Wasp Traps, 3*s.* 6*d.* per dozen; Pastry Slabs, Hyacinth Glasses and Dishes, Fish Globes, Plate and Window Glass of every description. Lamp Shades. LACTOMETERS for trying the quality of Milk, 4 tubes, 7*s.* 6*d.*; 6 tubes, 10*s.* Self-Registering Thermometers for Greenhouses.

Estimates and List of Prices forwarded on application to their Warehouse, 116, Bishopsgate-street Without, London.

GLASS FOR CONSERVATORIES, GREENHOUSES, PIT FRAMES, &c.

HETLEY AND CO. are supplying 16-oz. Sheet Glass, of British Manufacture, packed in boxes containing 100 square feet each, at the following REDUCED PRICES for cash, A reduction made on 1000 feet.

Sizes. Inches.						Per foot.	Per 100 feet.
Under 6	by	4	at	1½*d.*	is	£0 12	6
From 6 " 4	"	7	"	5	"	2*d.*	" 0 16	8
7 " 5	"	8	"	6	"	2½*d.*	" 0 18	9
8 " 6	"	10	"	8	"	2½*d.*	" 1 0	10
10 " 8	"	12	"	9	"	2¾*d.*	" 1 2	11

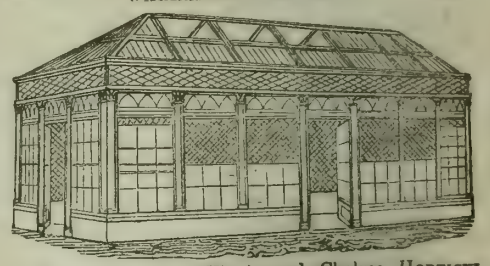
Larger sizes, not exceeding 40 inches long.
16 oz. from 3*d.* to 3½*d.* per square foot, according to size.
21 oz. " 3½*d.* 5*d.* " " "
26 oz. " 3½*d.* 7½*d.* " " "

PATENT ROUGH PLATE, THICK CROWN GLASS, and PATENT PLATE GLASS for Horticultural purposes, at reduced prices, by the 100 square feet.
GLASS TILES AND SLATES made to any size or pattern, either in Sheet or Rough Plate Glass.
Propagating Glasses, Bee-hive Glasses, Cucumber Tubes, Glass Milk Pans, Glass Water Pipes, and various other articles not hitherto manufactured in glass.
PATENT PLATE GLASS.—The present extremely moderate price of this superior article should cause it to supersede all other inferior window glass in a gentleman's residence. No alteration connected with the sash is required.
GLASS SHADES, as ornamental to, and for the preservation of every description of goods susceptible of injury by exposure. Prices, since the removal of the Excise duty, reduced one-half. List of Prices and Estimates forwarded on application to JAMES HETLEY and Co., 35, Soho-square, London.

HOW TO KEEP A HORSE FOR LESS THAN ONE SHILLING PER DAY, and Make the Animal look Better than when Paying 12*s.* and 14*s.* per Week.—Consider the enormous saving in these hard times—times of cheapness.—Apply personally or by letter at MARY WEDLAKE and Co's, 118, Fenchurch-street, London, Oat-bruising and Chaff-machine Manufactory, established upwards of 40 years.

HORTICULTURAL BUILDING AND HEATING BY HOT WATER.

BOILERS OF ALL SIZES TO BE SEEN IN OPERATION, WARRANTED THE BEST.



J. WEEKS AND Co., King's-road, Chelsea, HORTICULTURAL ARCHITECTS, HOTHOUSE BUILDERS, and HOT-WATER APPARATUS MANUFACTURERS, solicit an inspection of their various Works completed and in progress. Horticultural Buildings of every variety. BOILERS of all sizes to be seen in operation, and which they warrant to be the most effective and economical of any in use. The largest size Boiler is now effectually heating three extensive ranges of Forcing-houses, 230 feet by 22 feet, all Span Roofs and lofty, containing upwards of 50,000 cubical feet of air. Also various small and intermediate size Boilers, some of all sizes in operation. The consumption of fuel is very moderate, and the fires will continue from 10 to 15 hours without attendance. The extensive arrangements now in full operation on their premises, enables them to build to any extent, and at very moderate prices. Hothouses, Greenhouses, Conservatories, Forcing-pits, Frames, Glass Lights, &c. A very extensive collection of Stove and Greenhouse Plants, which are sold at very low prices. Plans, Estimates, and Catalogues forwarded on application.

J. WEEKS and Co., King's-road, Chelsea.

CORNWELL'S "VICTORIA" RASPBERRIES.

G. CORNWELL is now sending out strong canes of the above, at 25*s.* per 100; or 3*s.* 6*d.* per dozen. To be had at E. CHARLWOOD'S, Covent-garden; NOBLE'S Fleet-street; and of GEORGE CORNWELL, Market-Gardener, Barnet, Herts.

SPLENDID NEW DIANTHUS.

J. REID begs to inform the Public that he has succeeded in saving a small quantity of his new DIANTHUS REIDII. The ground colour is bright scarlet, laced with white, the truss or head of bloom is larger than a Dahlia flower; its dwarf habit is suitable for any situation. By sending 12 Postage stamps to J. REID, Mount Scilla Nursery, near Chippenham, Wilts, in return a packet of seed will be sent.

AMERICAN PLANTS.

GEORGE BAKER begs to inform the gentry and public he has published a NEW CATALOGUE of his AMERICAN AND CONIFEROUS PLANTS, &c., which may be had on application.—Windlesham Nursery, Bagshot, Surrey.

MITCHELL'S ROYAL ALBERT RHUBARB still has its supremacy over all other kinds for its extraordinary earliness, delicious flavour, and splendid red colour; also a most prolific bearer and free grower, with large stalks. For early forcing it far surpasses every other variety. For making wines, preserves, and all culinary purposes, it is an inestimable production. Strong one-year planted roots 1*s.* 6*d.* each; also Myatt's Linnæus, 1*s.* 6*d.*; and Victoria, 9*d.* The usual allowance to the trade. Post-office orders made payable to WILLIAM MITCHELL, Enfield Highway, Middlesex, will meet with prompt attention. N.B. The above is from four to five weeks earlier than the well-known Victoria.

ORANGE, LEMON, LIME, CITRON, AND SHADDOCK TREES.—The first importation of the above Trees, in most excellent and healthy condition, has arrived from Italy. They are from 2 to 4 feet high in the stems, very straight, and possess strong grafts, and will make splendid trees in two or three years; from 12*s.* to 25*s.* each. They may be seen at A. COBBETT'S Italian and Foreign Warehouse, 18, Pall-mall, London. Also Catalonian, Azorian, and Arabian Jessamine Plants. The Double Italian Tuberose Roots are still on sale, 4*s.* per dozen.

BASS AND BROWN'S SEED AND PLANT LIST, stamped to go free by post. Copies forwarded to any address.—The above comprises their General Descriptive priced Spring Catalogue, in which will be found a rich assortment of the newest and best articles that can be procured.

PART 1 contains Lists of new and choice FLOWER AND VEGETABLE SEEDS. The Flower Seeds are in five divisions, Hardy, Half-hardy, and Tender Annuals; and Hardy and Greenhouse Perennials; descriptive of colours, heights, prices, &c.; prefaced by a page of useful Remarks on Sowing and Raising Seeds, with allusions to such as require peculiar care. The Vegetable List contains the time of sowing each description of Seed, giving heights of Peas, and a variety of other useful information.

PART 2. ROOTS, FRUITS, AND BULBS, consisting chiefly of a selection from their Autumn Catalogue of such as are required for spring planting.

Part 3. A descriptive priced List of Geraniums, Fuchsias, Dahlias, Petunias, Verbenas, Chrysanthemums, Cinerarias, Achimenes, Gloxinias, Azalea indica, Stove and Greenhouse Plants, and a variety of Bedding and other Miscellaneous Plants.

PART 4. NEW PLANTS OF 1850, to be sent out in the Spring, consisting of Petunias, Fuchsias, Verbenas, Dahlias, &c.

A separate List of Agricultural Seeds.

Seed and Horticultural Establishment, Sudbury, Suffolk.

The Gardeners' Chronicle.

SATURDAY, FEBRUARY 2, 1850.

MEETINGS FOR THE ENSUING WEEK.

MONDAY,	Feb.	4	Entomological	8 P.M.
			Chemical	8 P.M.
			Pathological	8 P.M.
			Medical	8 P.M.
			British Architects	8 P.M.
TUESDAY,	—	5	Linnean	8 P.M.
			Civil Engineers	8 P.M.
			London Institution	7 P.M.
WEDNESDAY,	—	6	Society of Arts	8 P.M.
			Geological	8 P.M.
			Zoological	8 P.M.
THURSDAY,	—	7	Antiquarian	8 P.M.
			Royal	8½ P.M.
			Astronomical (Anniversary)	3 P.M.
FRIDAY,	—	8	Philological	8 P.M.
			Royal Institution	8½ P.M.
			Royal Botanic	3½ P.M.
SATURDAY,	—	9	Westminster Medical (Anniver.)	8 P.M.

THE friends of Dr. HOOKER have heard, with much anxiety, that this very distinguished traveller has fallen into the hands of a petty hill-chief, dignified by the title of Rajah of Sikkim, a country now become highly interesting on account of the magnificent vegetation with which Dr. HOOKER has found it to be occupied. We are enabled to state, on good authority, that the seizure of Dr. CAMPBELL and Dr. HOOKER, by this Rajah, was caused entirely by political considerations, and is not due to the scientific researches of the latter within the territories of the hill-chief. In proof of this assertion, Dr. HOOKER has not been treated in his captivity with harshness, but is allowed the use of his books, his papers, his instruments, and his collections. This information is derived from a letter, written by Dr. HOOKER himself, on the 12th of November, and superscribed, "All well, 24th of November," and which he contrived to smuggle away by the fidelity of a servant, with a scanty hope that it would be allowed to reach its place of destination, as it did, by the Marseilles mail, which arrived on the 21st ult. The Southampton mail, on the 26th, brought a part only of a letter of an earlier date (Lachoong Valley, Oct. 25th, 1849), or rather two continuous letters, but ending abruptly, giving an account of a visit to the plains of Thibet; from which the following brief extracts may prove of interest.

"We have spent four days in Thibet! It was, however, a serious undertaking, and required a combination of fortunate accidents, together with all my previous knowledge of the country. It was again by the Lachen Pass that we entered, and we met with a great friend in the Tcheba Jama, a man of intelligence and vigour. Scarcely had we reached the Thibetan frontier, than I set spurs to my pony, and galloped a-head, as far as possible, over the sandy plains, determined to see all I could. The elevation of 17,000 feet made any rapid movement so fatiguing, that my animal soon gave in; and I was obliged to pursue my way on foot up the Lachen, in an easterly direction, and at the back of Kinchinjhow, over sandy, or stony dunes, interspersed with a little Grass, tufts of Nettle, Carex, an Ephedra, and a thirsty-looking Lonicera, only a few inches high.

"Proceeding north-east from Kongra-Lama, I had long stony rolling mountains to the north, and to the east; while to the south, the stupendous snowy mass of Kinchin-jhow rose almost perpendicularly from the sandy plains. As the country was so traversable, I judged it best to follow the Lachen to its source near the Donkiah Pass, which I wished to be, if possible, our return route.

"Late in the day I arrived at the Cholamo Lakes, within sight of the Donkiah Pass, but with my pony so knocked up, that I had the greatest difficulty to drag him after me. Here, however, I refreshed him with some tufts of green Carex, and led him gently back, suffering myself severely from headache, caused by the sun's intense heat; for at this elevation (nearly 18,000 feet) a slight amount of exertion brings on headache. The evening was considerably advanced before I met my friends. When we proceeded, a party of Chinese soldiers followed us, their Ding-pun (or Lieutenant) mounted on a black yak! (Bos grunniens.) He was surrounded with pots and pans, bags, bamboo-bottles, containing butter-milk; his tent, blankets, and other possessions, were all heaped on the same yak, and he, perched a-top of all, looked like a gipsey on a laden donkey. The rider was a small, withered man, arrayed in a green coat; his Tartar cap surmounted with a brass button. Behind came the sepas (or soldiers), enormous, ruffianly-looking fellows, dressed in blanketing. Each was armed with a pipe, a large knife, and a rude, long matchlock lashed across his stern! The matchlocks of the Chinese are always carried slung at right angles across the hip; they are very rude weapons, and have a pronged support, or rest, which falls up with a hinge, and projects like an antelope's horn beyond the muzzle. These ungainly weapons, worn behind and at the lower part of the back, gave the sepas a most comical look. They came in marching order, took no notice of us, and camped close by. We pitched our tents within a low cattle inclosure, on the open plain, burning yak's dung for fuel. The cold was intense, and the wind violent and dusty; the sky brilliantly blue. We resolved to remain here for a day or two."

Immediately after this passage the narrative breaks off abruptly; it is only from another, yet we believe authentic source, that we learn that it was on their return into Sikkim after another attempt, but an unsuccessful one, to enter Thibet at a more eastern pass, the Rajah thought proper to send a band of soldiers, who entered the tents while our travellers were totally unprepared: they were suddenly, and at the same instant seized, each by a separate party; their arms bound behind them with cords (in Dr. CAMPBELL'S case, it is said, accompanied by cruelty), and they were conveyed to the residence of the Sikkim Rajah, at Tumlong, confined as prisoners, and not allowed any communication with each other. The Rajah himself sent a letter, conveying the intelligence to the GOVERNOR-GENERAL, who, in the kindest manner, has written to Sir WILLIAM HOOKER, with the assurance that he has replied to the Rajah's letter, demanding the instant release of the prisoners as a preliminary step to any treaty with him; and his Excellency confidently expects that the next mail will convey the welcome news of the gentlemen being set at liberty.

So far as PEAS are concerned, we have already fulfilled our promise of overhauling the preposterous lists with which buyers are mystified, by the publication of a second rapid sketch of the most distinct of the varieties. The result of this examination is to limit the number of such kinds to 27, exclusive of Sugar Peas, which are not worth having. Admitting that class, we still find only 40. And now let the reader just calculate the number of *aliases* under which this farrago is known in seedsmen's lists. It will be seen that the Early Frame exists under 24 disguises, the Early Charlton has 21, and that, in order to find the 27 which may, by a stretch of complaisance, be admitted, the unfortunate gardener has to push his way through no fewer than 235 claimants upon his attention. Talk of Botany and its difficulties! why they are nothing to this; for in Botany different names indicate real differences, and the *aliases* are trifling in number; but among Peas different names indicate identity or undistinguishable similarity. A gardener in a crowd of Peas is worse off than the traveller who for the first time steps on shore at a French watering-place, and suddenly finds himself hunted by a pack of *Commissionaires*.

And after all, 27 Peas form too large a number to draw from. For ourselves we should be perfectly satisfied with the following half-dozen, viz.:

No. 2. Prince Albert.
4. Auvergne.
9. Bishop's New Long-pod.
18. Bedman's Imperial.
23. Knight's Tall Marrow.
25. Fairbeard's Champion of England.

For we are convinced that they answer every purpose of a family.

Having thus begun the task of turning a river through this Augean stable, we shall go on with it, and next week produce the result of an examination of the Beans in seed lists.

LETTERS received from Mr. FORTUNE by the last mail announce the unexpected discovery by him of a real YELLOW CAMELLIA! It proves to be one of the Anemone-flowered race, the exterior petals being french white, and the central ones of a *rich primrose yellow*. He found it in blossom in a nursery garden in one of the towns in the north of China, which he had visited in his search after Tea plants.

CONTINUING our observations on Cotton culture in India, we have at last come to Madras, where the first experiments were made. This Presidency is somewhat of the shape of a triangle, with its base resting on Central India, and its apex terminating at Cape Comorin. It extends from 8° to 22° of N. lat., and lies between 75° and 85° of E. long. Two ranges of mountains run along its eastern and western coasts, and support between them a table land, which diminishes in elevation from south to north and from west to east, Mysore having a medium elevation of 3000 feet, and the Ceded districts a mean height of 1600 feet above the sea. The eastern ghauts rise at a distance of from 30 to 60 miles from the coast, washed by the Bay of Bengal, with the intermediate country forming an irregularly level, generally sandy plain. The western ghauts rise much more abruptly, and have a much narrower space between them and the Indian Ocean. They join the eastern ghauts at Cape Comorin, and run an uninterrupted course, except at the valley of Coimbatore, which is about 16 miles in breadth, and has the celebrated Neilgherries for its northern wall.

The whole of the above territory, being situated within the tropics, is necessarily under the influence of great heat, especially whenever this is unrelieved by moisture. But the vicinity of a great portion of it to the sea, the elevation of the remainder, and the influence of a double monsoon, much modify the climate. The north-east monsoon, which blows chiefly on the eastern coast, commences usually in October and continues till December, when the rains cease, and the wind becomes dry and parching. The south-west monsoon, which begins in May, continues till August or September, and is felt chiefly on the Malabar coast and western parts of the country. At other times the winds are variable, but mostly southerly from March till May; that is, from the termination of one monsoon till the commencement of the other. (Madras Medical Reports.)

The Mean Temperature of Madras was for 1848.

January	75.5	July	85 3
February	77.7	August	84.6
March	80.8	September	83.7
April	83.7	October	82.02
May	86.8	November	78.9
June	87.7	December	76.3

The Fall of Rain on an Average of 22 *Years.*

January	1.33	July	3.20
February	0.23	August	5.24
March	0.36	September	4.76
April	0.63	October	10.09
May	1.03	November	12.43
June	2.03	December	3.25

As the culture of Cotton, like that of every other plant, is dependant in a great measure on climate, it was necessary to premise with these observations, which may, however, be useful to horticulturists cultivating Peninsular plants.

So long ago as 1790 Dr. ANDERSON (to whom the genus Andersonia is dedicated) was employed in sending Mauritius as well as brown Malta Cotton seeds to different parts of the Peninsula. Dr. ROXBURGH had even then ascertained that the dry and less fertile soil of Coromandel was better suited than that of Bengal to the Bourbon Cotton. In 1813 Mr. METCALFE was sent with American Cotton cleaning machines to Tinnivelly, or wherever his services might be required. It was in this district that success was first attained in cultivating Bourbon Cotton, by Mr. HUGHES, who also produced the best, or Tinnivelly Senna, a result not in either case accidental, but the natural consequence of skilful culture and careful picking. In 1819 the Madras Government determined on establishing four Cotton farms of 400 acres each, under the Commercial Residents

of the districts of Tinnivelly, Coimbatore, Masulipatam, and Vizagapatam. Mr. Heath, who at that time held the above office in Salem and Coimbatore, also succeeded in cultivating Cotton by following the directions which he received from Mr. Hughes. He found that the Cotton came to perfection at a distance of 150 miles from the sea, and obtained in the season of 1823-24, from the district of Coimbatore, 500 bales of clean Bourbon Cotton. We have seen no accounts of the other farms, but it can hardly be accidental that Vizagapatam is stated to be the district in which the largest quantity of Cotton is obtained per acre, and that liberal pruning is practised there. The efforts in other places have not been altogether without results. For Capt. Hughes says, in 1842, "Difficulties and disappointments attended the introduction of the Bourbon Cotton into this (the Coimbatore) district, but which is now to be seen growing in all directions." So Dr. Wight, in the same year, speaks of improving "our indigenous and the now naturalised Bourbon Cotton;" also of "the Bourbon Cotton of the Coimbatore and Salem districts realising in England 9½*d.* per lb., when the country Cotton of the Tinnivelly district sold for only 6*d.* or 7*d.*" The above are at the rate of about 140 and 180 rupees for 500 lbs., for which the exporter pays only about 70 and 90 rupees. "But," Mr. Sullivan observes, "these are the prices paid to the brokers; the prices paid to the growers do not exceed 40 or 50 rupees." And he agrees with Dr. Wight, that all that is wanted is "more competition among buyers, and somewhat higher prices to growers;" and Mr. Fischer, himself an agent for the purchase of Cotton for the Madras merchants, says that the natives only want remunerating prices to grow the Bourbon Cotton. But, in justice to the exporters, we must observe, that the prices of Indian Cotton being dependant upon those of American Cotton, the uncertainties are too great for them to be very liberal.

We have referred to these statements as having been made previous to the present experiments. In the year 1840 three American planters were sent to Madras, and detached to Tinnivelly in January 1841. But it was stated that the sowing season had passed; for, according to the natives, the picking should be over before the land wind sets in, that is, before the 10th of April. The planters conceived that a more northern climate was more suitable, for "the finest Cotton is produced in a temperate climate." They were, after the loss of much time, removed to Errode in the end of August, where a piece of ground within the walls, and another on the glacis of the old fort, were selected, both in being a "black Cotton soil," with other plantations two miles distant having a deep reddish loamy soil. In these American, Bourbon, and country Cotton seed were sown. One of the planters objected to the "dry soil of Errode," observing that "at Coimbatore there has been an abundance of rain, and the land, from that and other causes, is in a good condition for ploughing." This district had been recommended by Mr. Heath, and by Mr. Fischer, and subsequently approved of by Dr. Wight; two of the planters were therefore here established. American and native Cotton were sown in drills, and some broadcast, about the middle of September, both in the black Cotton ground and in the ordinary red soil of the Peninsula, that in which the Bourbon Cotton is found to thrive best.

As the experimental culture in Coimbatore is interesting on account of the several physical questions which have been discussed during its continuance, we think it desirable to be more minute in their relation, as well as in detailing the progress of opinions. Thus so early as in December, when the leaves had shrivelled and become of a copper brown colour, Mr. Morris reported, from Errode, "I am fully convinced we never will succeed in raising the New Orleans Cotton in India;" so Mr. Simpson stated at Coimbatore in February; "In my opinion the New Orleans Cotton plant will not succeed in this part of India." The former gave as his reasons; —"First place, during the rainy season, which is the proper time for planting, we have had entirely too much rain, and so soon as the monsoons are over, unfortunately we have no rain at all;" and Mr. Simpson, that "excessive hot dry weather has been the main cause of failure;" and also the "insects, which seem to declare vengeance against the young bolls." Dr. Wight, who visited these farms in September and in January, ascribed the failure to two causes. First, to the soil "having become so hard as to be alike impermeable to both moisture and the roots of the plants," while "the frequent ploughing and hoeing, opening the soil, and giving free exit to the little moisture it had," with "the tearing of the superficial roots, still farther tended to impoverish the plants' channels of supply." To this Mr. Simpson replied: "By ploughing deep, the soil is pulverised below the influence of the sun, and mellows the land, which allows the tap root (12 inches or more in length) to penetrate into a moist earth, which will give support to the plants throughout a dry hot season." There is truth in both observations, and their value depends upon their proper application. Secondly, insects perforated the stems in all directions, but especially near the surface of the ground; but "neither the Bourbon nor country Cotton suffered from these attacks, protected, perhaps, by their slower growth, and harder and more woody texture." But in the *red soil*, near Errode, "the plants, in place of being very stunted in their growth, and nearly one-third dead or dying, appeared well grown, and bearing a fair crop of large bolls."

In Coimbatore the experiment was at that time less successful, the plants in the black soils having grown hardly a pound of Cotton, and being generally unhealthy, while those in the red soil, though small, were generally very healthy; but the failure of the crop was mainly owing to "an insect which seems hitherto to have attacked every flower, depositing its eggs in the germen." But neither Capt. Hughes nor Dr. Wight even then despaired of success; the latter suggested some good modifications of culture, to suit it to the Indian climate.

A few short weeks, however, completely changed the prospects of the experiment; up to the middle of January it was expected that not a single pound of Cotton would have been gathered. "About this time a heavy fall of rain took place, which had the effect of refreshing and greatly reviving the plants; a second fall was experienced about the beginning of February, and seemed completely to renovate them." In the middle of that month they became quite healthy, full of blossom and fruit, and gave promise of a large crop of Cotton. About the 6th and 8th of February 6 lbs. of Cotton were picked at Coimbatore, after that the picking continued uninterruptedly, and almost daily increased in quantity until the 13th of April, when it rose to 3500 lbs." From the irregularity of the stand of plants, the quantity per acre could not be correctly ascertained, and though in some parts at the rate of 500 or 600 lbs., the actual produce was 183 lbs., but allowing for wastage, from bad seed, &c., 233 lbs. 14 oz., per acre. The black soil produced a larger proportion than the red soil. These facts prove that the culture depended almost entirely upon the season, and that opinions respecting its success varied according to the falls of rain. Dr. Wight having succeeded Capt. Hughes in the middle of February 1842, we shall conclude this subject with the results of his experience in the following years, and up to the present time.

ON PEAS.

(*Continued from p.* 53.)

II. Peas, blue, green, or light olive.

§ 3. Tall sorts.

12. *Bellamy's Early Green Marrow*, 4½ to 5 feet high; pods long, straight, cylindrical, containing 6—7 Peas, some of which when ripe and dry are white, but the generality are olive green; a good bearer, tolerably early, and, on the whole, an excellent Pea. *Sutton's Superb Green Marrow* ranks near this, but the Peas are not so sugary.

13. *Fairbeard's Surprise*, or Fairbeard's Early Surprise, 5 feet high; pods thick, roundish, slightly curved, containing 7—9 large Peas of good quality; an excellent bearer, and early.

14. *Adamson's Matchless Marrow*, 5 feet high; pods large, flat, curved, containing 6—7 Peas; an excellent bearer, as early as the Charlton. Related to this is the *Tall Imperial*, alias Tall Blue Imperial, Tall Green Imperial, New Tall Imperial, Tall Prussian or Blue Union, Blue Union, Spanish Patriots, Green Nonpareil, Carré vert, Carré vert gros, Carré vert gros Normand. About 7 feet high; pods broad, obtuse, containing only 6 Peas, therefore must be now considered second-rate.

15. *Tall Green Marrow*, New Large Green, or Imperial Green, 7 feet high; pods large, broad, and rather flat, containing 8 or 9 Peas of excellent quality, yellowish green when ripe; a good prolific late sort. The *Gros Vert Normand* is allied to this, but scarcely so good.

16. *Victoria Marrow*, 6 to 7 feet high; pods nearly 4 inches in length, generally in pairs, straight, roundish, containing 7 or 8 very large Peas of good quality; an abundant bearer, remarkable for the great length of its pods, in which respect it exceeds all other sorts in this class.

II. Peas, blue, green, or light olive.

§ 4. Dwarf sorts.

17. *Groom's Superb Dwarf Blue*, about 18 inches high; pods large, broad, rather flat, containing 8 or 9 Peas of excellent quality, and very productive; a good summer dwarf Pea.

18. *Bedman's Imperial*, 2½ to 3 feet high; pods somewhat curved, roundish, containing generally 6 or 7 large blue Peas; an excellent bearer, though not very early, but as a summer Pea highly deserving of cultivation. The *New Imperial* is much inferior to it.

19. *Blue Prussian*, also called Dwarf Blue Prussian, Royal Prussian Blue, Prussian Prolific, Green Prussian, Fine Long-podded Dwarf, Early Dutch Green; 3½ feet high; pods long, roundish, containing 7 or 8 Peas; a good bearer, and though an old variety, it must still be ranked amongst the best of dwarf Peas for summer use.

20. *Dwarf Imperial.* — Imperial, Blue Imperial, Dwarf Green Imperial, New Improved Imperial, New Improved Dwarf Imperial, New Dwarf Imperial, New Long-podded Imperial, Green Nonpareil, Sumatra, Dwarf Blue Prolific, Blue Scymetar, Sabre, Blue Sabre, New Sabre, Dwarf Sabre, Nain vert impérial, Nain vert gros; 4 feet high; pods large, long, rather flat, much pointed, containing 8—10 Peas; good for late summer use. *The Dwarf Green Marrow*, alias New Green, Early Dwarf Green, Early Green, New Early Green, Royal Dwarf Marrow, Extra Green Marrow, Holloway Marrowfat, Green Rouncival, Wellington, New Green Nonpareil, Prince's Superfine Summer, Vert Hâtif à la Moelle, is considered a good sort, but it is much inferior to Knight's Dwarf Marrow.

21. *Flack's New Large Victoria*, 2½ to 3 feet high; pods middle-sized, flattish, nearly straight, well filled; Peas generally 6 in a pod, large, compressed, blue when dry, and some partly white; a few days earlier than the Blue Prussian, and is a very good prolific dwarf variety.

22. *Woodford's Green Marrow*, about 3 feet high; pods large, flattened, containing about 6 large Peas, which keep long green; a good bearer, ripening a fortnight later than the preceding.

III. Peas wrinkled, or indented when dry.

§ 5. Tall sorts.

23. *Knight's Tall Marrow*, or Knight's Late, Ridé, ou de Knight, Ridé tardif.—*Knight's Tall White Marrow*, *Knight's Tall Green Marrow*, *Knight's Tall Blue Marrow* may be considered as varieties differing in the colour of the dry seeds, but in no other essential particular; 6—7 feet high; pods large and broad, containing 7—9 Peas, more sugary than any other yet known; very productive, and bears long in succession; well adapted for a principal, or late summer crop. A sort called the *Waterloo* resembles the above, but is inferior.

24. *British Queen*, about 5 feet high; pods large, straight, nearly round, containing generally 7 very large Peas, in fact enormous, some measured when green 1½ inch in circumference; they are thicker in the skin, and scarcely so sugary as Knight's; but the sort is valuable for those who prefer large Peas.

25. *Fairbeard's Champion of England*, about 5 feet high; pods long, somewhat curved, and slightly flattened, containing 7 or 8 large Peas of very sugary quality, of a bluish colour when dry; an abundant bearer, highly deserving of cultivation.

III. Peas, wrinkled, or indented when dry.

§ 6. Dwarf sorts.

26. *Knight's Dwarf Marrow*, or Knight's New Dwarf, Ridé nain, of which there are some varieties differing in the colour of their seeds; about 3½ feet high, pods broad, rather flat, containing about 6 Peas, similar to Knight's Tall Marrow in point of sugary quality; an abundant bearer, a week earlier than Knight's Tall Marrow. *The New Indented Green Marrow* is not so sweet.

27. *Maclean's Seedling*, about 2 feet high, pods large, nearly straight, a little flattened, Peas very large, compressed, owing to their closeness in the pod, of excellent quality, blue when dry; a valuable, early, prolific dwarf variety.

Class B. Peas without a tough lining to the pod; Peas and pods both eaten.

Sugar Peas; Pois sans parchemin ou Mange-tout. The pods of all the Peas in this class should be gathered when quite young, like French Beans, and cooked after the same manner. They are little grown in England, and not worth growing; for which reason they are not numbered, although enumerated.

§ 7. Tall sorts.

Large Crooked Sugar, alias Sugar Pea Broadsword, Six-inch-pod Sugar Pea, Sans parchemin blanc a grandes cosses, Cornes de bélier. About 6 feet high, pods very large, broad, fleshy, crooked, late, productive; one of the best of this class.

Géant sans parchemin is also remarkable for the size of its pods, which are even larger than those of the preceding.

Vilmorin's Sugar, about 6 feet high; pods small, round, and straight; a good bearer.

Late Wyker Sugar, or Late White Sugar, 6—7 feet high; pods roundish, small, much curved; a good bearer, and very late.

Sans parchemin à fleurs rouges, grows tall and is also very late.

Turc ou couronné sans parchemin, of which there are two varieties, one with red and another with white flowers; pods numerous, tender, and sweet.

Sans parchemin à demi-rames has straighter and fuller pods than the Large Crooked Sugar, and is earlier than it.

White-podded Sugar, or Sans parchemin à cosse blanche, 5—6 feet high; curious on account of the white colour of the pods, which they retain from their first development to their maturity; the flowers are red; more curious than useful.

Yellow-podded Sugar, or Sans parchemin à cosse jaune, is analogous to the preceding. The *Alberjas* has been included amongst the Sugar Peas, but as it has sometimes a very thin lining to the pods, it cannot be recommended.

§ 8. Dwarf sorts.

Early May Sugar, alias Early Dutch, Early Sugar, Dwarf Dutch Sugar, Nain à la moelle d'Espagne; 4 feet

high, pods small, round, straight; very early, but tender.

Dwarf Dutch, or Dwarf Crooked Sugar, Dwarf Sugar de Grace, Early Dwarf de Grace, Nain hâtif de Hollande, Nain de Hollande. About 3 feet high; pods short, small, crooked; a week later than the preceding, but only a moderate bearer. The Dutch cultivate it under glass.

Dwarf Sugar, or Ledman's Dwarf, Gros Nain Sucré, Nain Sucré. About 3 feet high; pods long, nearly round, and slightly curved; a moderate bearer; late.

Sans parchemin nain ordinaire, 2 to 3 feet high; pods small, abundant, very tender.

En Eventail, the dwarfest of all the Sugar Peas, being only about a foot high, branching from the ground, somewhat fan-shaped; late and moderately productive.

Tamarind, or Late Dwarf Sugar, about 4 feet high; pods large, broad, and much curved, from 4 to 6 inches long. An abundant bearer; the latest in this class.

All the sorts of Peas to which numbers are prefixed are considered of first-rate excellence; and, from the brief descriptions given, any one can select what will suit him, as regards either early or late sorts; dwarf or tall; white, green, or blue; small Peas, as the Early Frame, Prince Albert, and Auvergne; very large Peas, as the British Queen; or very sugary Peas, as Knight's Dwarf and Tall Marrow. The sorts enumerated afford ample choice; and where all are good there can be no difficulty in selecting.

In addition to those here enumerated are sundry others with new names, concerning which we have no sufficient information. *R. T.*

A FEW EXAMPLES OF THE WORST EFFECTS OF MUTILATING THE BRANCHES OF TIMBER TREES.

There are two divisions into which the results of pruning timber trees may be divided: one which is evident to our ocular senses; the other, and not the least important, that which is derived from scientific data, and which must, in a great measure, be taken upon trust. To the latter division of the subject I have alluded in another place: it is with the visible effects, strictly speaking, that I have to deal on the present occasion. The accompanying drawings are no exaggerations, they are sketches from nature, and I trust will convey a correct idea of the subject they are intended to illustrate.

In fig. 1, which is drawn from a piece of Elm, split longitudinally for the purpose, some of the worst effects of a barbarous mutilation are evident. At A, the wound is closed over, but the rains, and the action of the weather for a long series of years, have left their effects in the decayed portion of the old branch; the injurious character of which, supposing the tree to have been used as timber, needs no comment. At B, a woodpecker has commenced a dormitory; the rain has effected a lodgement, penetrated the tissues of the wood, and ramified through the medullary rays, the walls of which it has destroyed, and seriously damaged the longitudinal system of the trunk. The example at C, shows a mode of pruning often highly extolled, viz., that of leaving a considerable portion of the branch attached to the trunk, but in this instance the wood was much decayed to the very centre of the tree. Of course when the branch was removed, vitality in a given portion of the tree was destroyed. The effects of such in a series of years is self-evident.

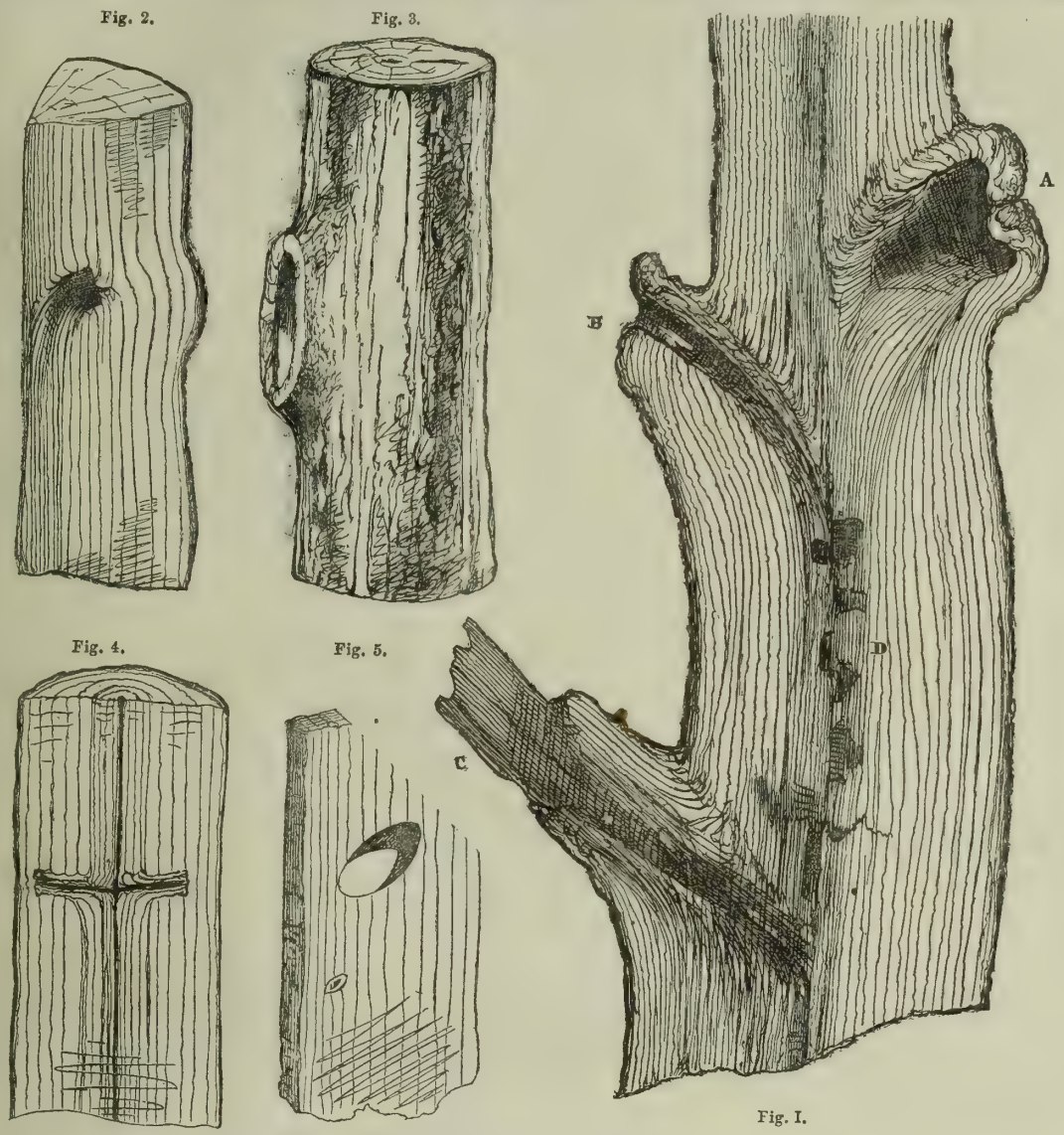


Fig. I.

A case of common occurrence, though often overlooked, is indicated in figure 2. When the tree was of a few years' growth, its lower branches were destroyed, to give it a "straight trunk." Successive annual layers of wood imbedded the dead stump, and the only external indication was a protuberance on the trunk. The mechanical effects of this apparently trifling case were seriously to damage several pieces of plank when the tree was sawn up for building purposes. Figure 3 merely shows the process of a wound "growing over." It must be borne in mind that a wound never heals. In figure 4 is represented a piece of pruned Scotch Fir. Figure 5 is a portion of plank cut from such a tree. I imagine they will tell their own tale.

Reflections, and profitable ones too, were suggested in sketching these examples, and at some future day I may beg permission to lay a paper, in which I shall embody them, before the readers of the *Gardeners' Chronicle*. *G.*

ELVASTON CASTLE, THE SEAT OF THE EARL OF HARRINGTON.

(*Continued from p.* 53.)

The entrance gates to the kitchen garden, from the ornamental grounds, are very rich in pattern, scrolls and mouldings being carved on them in gold, and they are backed up by Taxus incurva and Gold Yews. It may be imagined that because so much attention has been devoted to ornamental gardening at Elvaston, the cultivation of fruits and vegetables has received little care; but this is not the case: indeed it would be difficult to point out another establishment of similar extent in which everything is carried out in greater first-rate excellence than at Elvaston. The kitchen garden occupies 8 acres, five of which are enclosed by high brick walls; the remaining 3 acres constitute the exterior borders. A range of five glass houses occupy a portion of the north wall; three of these are exclusively employed in producing Muscat Grapes, no other variety being cultivated at Elvaston. One house contains Peaches; another Peaches and Figs. The crops of Peaches and Figs were over when we saw them; but one house of Grapes still remained in splendid condition, the bunches were large, and the berries finely swelled, exhibiting the colour of a golden drop Plum. The Peach trees, Figs, and Grape Vines, all indicated the highest degree of fertility.

The Peach trees on the open walls at Elvaston were the finest we saw last season north of London, and the same may be said of the Apricot trees; indeed we may add that the Apricot walls contained the most perfect trees we ever remember seeing either in this country or on the Continent. They are beautifully trained after the fan fashion, and they bear abundance of fruit annually from the top of the wall to the ground; the whole extent of wall does not exhibit a naked spot nor the least evidence of gumming, a matter of such common occurrence all over the country.

A range of low houses or pits, having a walk along the back, is exclusively employed in the culture of Pine-apples; the latter are all planted out in the open soil, as at Meudon, where such fine examples of this fruit were produced. The plants showed great vigour, and some had magnificent fruit on them nearly ripe, while there were others in every stage of growth forming a complete succession.

We observed a novel mode of ripening the Green-gage Plum here. A border is raised, in the form of an inclined plane, considerably above the garden level; the trees are planted on this border, and it is then covered with tiles, over which a trellis of wire is stretched, a few inches from them. The trees are trained to this trellis, and it is found that, on account of the heat absorbed during the day, and given out in the night, as well as on account of the reflected heat under sunlight, the fruit is ripened with much higher flavour than it is by any other plan adopted here.

Mr. Barron uses a great deal of liquid manure in the culture of exotic fruits under glass; and in order that this may at all times be of the right temperature for immediate use, a hot-water pipe, connected with one of the heating apparatuses, is carried through the tank. This keeps the liquid at a temperature of 80° without any trouble, and with much advantage to the plants.

The kitchen garden walls are covered on both sides with wire trellises, by which the common practice of "nailing" is entirely dispensed with. The north side of one of the walls is covered with the Warrington Gooseberry and with Raspberries, the former being trained in a horizontal form, like a Pear-tree, and by this means the crops are easily protected until a late period.

On an exterior border, facing the orchard, is a raised slope at an angle of 17°. This slope is 150 feet long and 12 feet broad. The border is made of good loam, on which is spread an inch of gravel, and on this a coating of asphalte is laid on hot. Bricks rebated receive a wire trellis; these are firmly set in the gravel and asphalte, and over the latter is spread a coating of tar. On this border are trained Green-gage Plums, Apricots, Peaches, Figs, and the Male Carle Apple; the latter, managed in this way, bears good crops of excellent fruit. This Apple is but little known in this country, our climate being generally unfavourable to its perfect ripening. Mr. Barron stated that the fruits produced on this slope were superior in flavour to those from perpendicular walls. The advantage of a slope over a south wall is that, in the former case, the force of the solar rays is nearly trebled. Table trellises have also a decided advantage over the common espalier, and for the same reason.

As numbers of the walks in the gardens at Elvaston, as well as these inclined slopes, are covered with asphalte, let us state how that work is done. A foundation is formed of stones, brick rubbish, cinders, and ashes from the furnaces, the thickness depending upon what the walk is wanted for. If only for walking on, and not for heavy weights, 3 or 4 inches is considered to be sufficiently thick. A little gravel is then put on, just enough to make it somewhat even and smooth when the roller is passed over it. On this is laid, as hot as possible, a mixture of fine gravel or screenings, coal or gas-tar, and quicklime; when this is spread 1 or 1½ inch in thickness, and the roller IMMEDIATELY passed over it, the work is finished; but a little fine screenings of good-coloured gravel (caulk or the refuse of a lead mine is best) swept over it, and the roller again applied, effect a great improvement in its appearance. The mixture is made by making the gravel quite hot on a flat kiln, formed of sheet iron; the coal-tar being also boiled until the scum leaves it.

Four barrow-loads of hot gravel, one of quicklime, and as much of the tar as will moisten and colour the whole, are the proportions used. Some of these walks so formed have now been down several years, and they are quite smooth and sound. *R. G.*

(*To be continued.*)

Erratum.—In last article, col. *b*, line 14 from bottom, for "late Duke of Bedford," read "present Duke of Bedford."

NOTES OF A TRAVELLER.—No. VII.

The Bamboo, and the Uses to which it is applied in China.—The Bamboo, as you are aware, is one of the most valuable trees in China, and is used for almost every purpose. Having from time to time noted down the uses to which I have seen it applied, my list seems so amusing that I send it to you for the readers of the *Chronicle*.

Bamboo is used in making soldiers' hats and shields, umbrellas, soles of shoes, scaffolding poles, measures, baskets, ropes, paper, pencil holders, brooms, sedan chairs, pipes, flower-stakes and trellis work in gardens, pillows are made of the shavings, a kind of rush cloak is made from the leaves for wet weather, and is called a To-e, or "garment of leaves." On the water it is used in making sails and covers for boats, for fishing-rods and fish baskets, fishing stakes and buoys; katamarans are rude boats, or rather floats, formed of a few logs of Bamboo lashed firmly together, and launched upon the water. In agriculture the Bamboo is used in making aqueducts for conveying water to the land; it forms part of the celebrated water wheel, as well as the plough, the harrow, and other implements of husbandry. Excellent water-pipes are made of it for conveying springs from the hills, to supply houses and temples in the valleys with pure water. Its roots are often cut into the most grotesque figures, and its stems finely carved into ornaments for the curious, or as incense burners for the gods. The Ningpo furniture—the most beautiful in China—is often inlaid with figures of people, houses, temples, and pagodas in Bamboo, which form most correct and striking pictures of China and the Chinese. The young shoots are boiled and eaten, and sweetmeats are also made of them. A substance found in the joints called Tabasheer is used in medicine. In the manufacture of Tea it forms the rolling tables, drying baskets and sieves; and last, though not least, the celebrated chop-sticks—the most important articles in domestic use—are made of it.

Gentle reader, however incredulous you may be, I must still carry you a step further, and tell you that I have not enumerated one-half of the uses to which the Bamboo is applied in China. Indeed it would be nearly as difficult to say what it is *not* used for as what it is. It is in universal demand, in the houses and in the fields, on water and on land, in peace and in war. Through life the Chinaman is almost dependent upon it for his support, nor does it leave him until it carries him to his last resting-place on the hill side, and even then, in company with the Cypress, Juniper, and Pine, it waves over and marks his tomb.

At the time of the last war, when the Emperor of China, very considerately no doubt, wanted to conquer the English by withholding the usual supplies of Tea and Rhubarb, without which, he supposed, they could not continue to exist for any length of time, we might have returned the compliment, had it been possible for us to have destroyed all his Bamboos. With all deference to the opinion of his celestial Majesty, the English *might* have survived the loss of Tea and Rhubarb, but we cannot conceive the Chinese existing as a nation, or indeed at all, without the Bamboo. *R. F.*

DISEASES OF PLANTS.

(*Continued from page 54.*)

Genus XII.; Phylloptosis, *or Fall of the Leaves.*—Every year, as the cold season comes on, the greater part of our trees lose their leaves. This is a constant phenomenon, the explanation of which has been the subject of study and observation with many learned men, among whom none has written upon it with greater precision than Giovene in his Memoir inserted in the 13th volume of the "Memoria della Società Italiana delle Scienze." But on the present occasion I only allude to the occasional loss of foliage in the height of summer, or at the end of spring. Usually this disease is the necessary consequence of yellowness not cured. I have never seen plants lose their leaves without a previous change of colour from green to yellow, or to a white or reddish tinge. A sudden privation of light will cause the leaves to fall, so also the excessive heat of summer. Trees have been observed to lose them out of season most frequently in what are called light hot soils, which have been overmanured. The want of nutriment which occasions yellowness will also produce *phylloptosis*. Plenck assures us that in the neighbourhood of works where arsenic, cobalt, or oil of vitriol are prepared, the smoke issuing even from lofty chimneys will instantly destroy not only the leaves of trees, but all the herbage which covers the ground.

The same precautions which tend to prevent yellowness are also applicable to stop the fall of leaves. Although trees and woody plants are the most liable to this disease, it is also observed in herbaceous plants, especially Leguminosæ. I should be disposed to adopt the opinion, clearly explained by Giovene, who thinks that the fall of the leaf is always preceded by an induration of the part, and is thus, as it were, only the last but the most evident symptoms of the disease. And it is not difficult to conceive that induration should follow from the causes we have mentioned. The same circumstance will account for the fact that many of the branches, from which the leaves have thus prematurely fallen, will perish. For this reason we recommend strongly to cultivators to examine well in spring the trees which have suffered from phylloptosis during the last year, and to prune out all branches showing withered or ill-nourished buds. The cutting out sickly and weak branches in pruning is a point much neglected, but which we insist upon as most important.

VILLA AND SUBURBAN GARDENING.

Great attention has been paid of late to the cultivation of the Pear. The numerous varieties which have been introduced from Flanders, of first-rate quality, extending over a very long period in their season of ripening, render this fruit one of the most important in our gardens, and peculiarly so for the amateur; as almost every garden whose soil is of ordinary quality, and which has an aspect favourable for the production of common garden produce, will bring forward Pears in perfection. Under proper management, too, a considerable variety may be grown in a garden of very limited extent. When I speak of proper management I mean the converse of what is usually exhibited in small gardens; for we too frequently find two or three large trees overshadowing the limited spot of kitchen-garden, and these in a great measure destroy the value and quality of everything near them. The kinds, moreover, are generally anything but suitable for such gardens. The Autumn Bergamot, Williams' Bon Chretien, and the Jargonelle frequently occur in such situations, and where these sorts do bear a large crop of Pears, they are of comparatively little value, for they are over in a few days. Instead, therefore, of a bushel of one kind of Pear, this quantity in 10 kinds, ripening over a period of several months, would be much better.

The first point to consider is the stock upon which the Pear should be grafted. Considerable diversity of opinion exists on this head; some recommending the Quince, others again condemning it, and preferring the Pear-stock. My own opinion is that they are both good when the soil is suitable. Where the situation is naturally damp, the Quince will thrive; but where it is very dry and sandy, it will make little progress, and the fruit will be small and gritty. I have had ample proof of this myself. Common observation will therefore easily enable any one to determine whether the soil is suitable for the one stock or the other.

The mode of training is another subject deserving attention. If the espalier system is preferred, it must be remembered that it involves a considerable outlay in the first place, if a permanent railing of iron is erected; and if wooden stakes are employed, then these are constantly giving way and fresh ones are required; endless expense is consequently incurred. Dwarf standards, if properly managed, will obviate the use of these expensive props. If the ground is properly drained—an essential point as regards the flavour of the fruit, as well as the productiveness of the trees—they may be planted 8 or 10 feet apart along the borders, and crops of Lettuces and the lighter kinds of vegetables grown around them without effecting any very serious injury to the trees. In our next we shall furnish a list of a few kinds suitable for the amateur, with the system of management after planting. *Pharo.*

Erratum.—In the fourth line of the last article on Suburban Gardening, for "quickly" read "quietly."

TRADE MEMORANDA.

Will any one inform us who Messrs. George Boden, and Co., of Hindley-street, Ardwick, Manchester, are. This firm refers to W. Russell, Esq., 23, Russell-street, Chorlton on Medlock, Manchester; and Mr. George Higginbottom, Merchant, Heaton Norris, Stockport. Perhaps the referees will oblige us with the information.

Home Correspondence.

Victoria Regia at Chatsworth.—This interesting plant still flourishes here, and continues to expand its beautiful flowers, two of which have generally opened every week during the winter; these, however, are much smaller than those produced during the earlier stages of the plant's growth, the largest now seldom measuring more than 7 inches in diameter, whilst the first flowers measured nearly 11. Although for some time past the plant has appeared to enjoy a partial rest, yet its growth has never been suspended, a gradual production of leaves as well as flowers having constantly been taking place, but these leaves, when fully matured, rarely have much exceeded 2 feet in diameter, a small size compared with those unfolded during the plant's most vigorous growth, the diameter then reaching nearly 5 feet, and the succulent leaf-stalks which at that time, had they been allowed room, would have reached to an immense length, are now also greatly diminished in size, and seldom extend to more than 3 or 4 feet from the root. At the present time, however, the plant exhibits no symptoms of decay, but is evidently in the most perfect health; the growth also appears on the increase, the leaves develope themselves with more rapidity, and are becoming larger in size; and if we might form a judgment of future success by present appearances, a most vigorous growth may be anticipated in spring. All these expectations, however, may prove delusive; our knowledge of the habits of the plant is too limited at present to admit of our deciding whether it is really an annual, a biennial, or a perennial; the latter, however, we are inclined to lean to. Should it be found to be short-lived, we are happy in having been able to save a quantity of fine-looking seeds, some of which are already sown, and will probably prevent its being again lost to the country. The following statistical remarks on the state of the growth of leaves, and production of flowers, are a continuation of those given at page 742 of last year's volume; it will be seen by them that there are at the present time 15 leaves on the plant—that the 55th leaf is now developing itself, and the 25th flower-bud unfolding. *Joseph Paxton.*

[We hope to be able to find room for the statistical tables in a short time; for the moment we are unable to do so.]

Potatoes.—Plant good early kinds, for it is important to combine precocity and well selected varieties. Single eyes are best for producing early and fine produce. Objections to this rule, however, may be fairly urged, as by planting unusually early they are subject to rot; hence, as a preventive, planting whole sets has been resorted to. In either case, where practicable, plant them close in fleet drills, on a warm border in February, or on a slight hotbed in March, to be transplanted finally in open compartments late in April, or early in May. A small space will suffice to raise plants for a large garden. Those raised from single eyes should be transplanted with sets and roots entire. The plants from the whole ones should be slipped off, planted, and watered, no further nourishment being now necessary from the parent tuber. The top shoot may be left on, and planted with the whole set in small shallow drills. Another, and perhaps the chief, advantage of thus raising Potatoes in advance, is that during the dry months of March and April, opportunity will be better afforded in bringing the ground for their reception into the best condition. These remarks also apply to raising Potatoes early from selected seed. *Hardy and Son, Maldon.*

Agapanthus umbellatus.—"A. H." will find it hardy enough to withstand our winters in the open border, merely protected by a hand-glass. It has been growing here with the above treatment for these last 20 years at least, and there is now a bed of it consisting of nine plants, which give annually from 30 to 50 umbels of flowers that remain in great beauty for weeks: the soil is a deep, well-drained loam. *J. G. Nelson, Winterton Rectory, Great Yarmouth, Jan. 23.*

Rats.—Every one who has read Mr. Kidd's lamentable narrative of the destruction by rats of his beautiful and unique aviary, will deeply sympathise with him. The loss is not only great to himself but to all who love Nature and the sweet music of these winged choristers. We are well acquainted here, rather too well, with the predatory and carnivorous habits of the English rat, having lost many hundred head of poultry by their destructive agency. In a single night rats will carry away a dozen chicks. They are well known to come at night and take young chickens from under their mother's wings, and carry them away bodily. And I have seen an instance of the hen pursuing the rat that had so abducted her offspring. If Mr. Kidd had laid down a bed of shingle or rough gravel, from 6 to 10 inches in depth beneath the floor of his aviary, no rat could have reached him: they cannot burrow in shingle. Being near the coast, where it is easily and quickly obtained, we laid it beneath the floor of a barn here, and it effectually kept these vermin out. Harrison's pills are excellent, only they must be fresh when used; but a rat that has tasted flesh, and has a chance of finding more, will not stop to eat pills or corn of any kind. The only method of exterminating rats is with ferrets and terriers; the country around us swarms with these vermin; they come from the fields, hedges, and copses. For months past we have by these means kept up a constant warfare, and have caused nearly 200 of them to bite the dust. *X. Y. Z., Hants.*

Roses.—Will "Crito" be good enough to give us the names of those Roses which he considers "promising?" I do not mean that he shall be pledged to do so, but simply that he should give us an opportunity of trying, at the same time that he does, those varieties that he thinks there is reasonable hope may come near his notions of continuous bloomers, and especially as it would enable us to save a season with all those that do turn out well. I, for one, would try them all, and report the result. *Amicus.*

Pear Moths.—I have read the articles in your last three numbers upon the habits of the larva of Batodes angustiorana, by my friends Mr. Curtis and Mr. Westwood, and I wish to make a few remarks upon the same subject. I have never raised this insect from the larva myself, but I must quite dissent from Mr. Graham's opinion, that the rind of the Pear is the common food of the larva; that it will eat it I do not doubt, but I believe it to be purely accidental. Any person who has paid attention to the larvæ of the various Tortrices which feed upon the Apple tree, must have noticed that they often spin a leaf to the fruit, and the larva then feeds indiscriminately upon the leaf or the rind of the young Apple, and I have little doubt that this was the case with the larvæ of B. angustiorana, found by Mr. Graham upon the Pears, although it is possible that having found the calyx a convenient habitation, it might feed entirely upon the rind of the fruit. Still I am quite certain that this insect feeds more commonly upon other trees than it does upon the Pear. In my own garden it swarms upon a hedge composed of Privet and Whitethorn; on the opposite side of the path is a Laurel hedge, and upon this it is equally abundant; there is only one small Pear tree near the spot, and on this tree I never saw the insect. In Hainault Forest it abounds upon the Oaks, in spots where

there is no other tree except the Hornbeam. My own opinion is, that the larva is a general feeder upon the leaves of trees—that it forms a web in the autumn in which it passes the winter, and reappears in the spring to feed upon the buds of various trees. Mr. Graham seems quite to forget that the larvæ of many species of Lepidoptera live through the winter without food, and there would be nothing extraordinary in the larva of Batodes angustiorana living in a tumbler during the whole of that season without feeding. I have kept the larva of Boarmia repandaria in a pill-box from October to March, during which time it had not a particle of food. If those caterpillars which naturally pass the winter in a semi-torpid state are kept in a room at a temperature of 50°, or higher, and can be supplied with proper food, they will sometimes continue feeding, and the perfect insects will appear two or three months before the usual period, but they will more often perish just as they have attained their full growth. I may just say, in conclusion, that the larvæ of Carpocapsa pomonana, which feed in the Apple, quit the fruit in the autumn, and form webs under the rough bark of the tree. In this state they remain quiescent till the end of May in the following year, when they change to pupæ, and in 14 days the moth appears. *Henry Doubleday.*

Skimmia (*Limonia*) *Laureola.*—Arguing from analogy, there can be no doubt that Limonia laureola would be perfectly hardy in any part of England, if planted in a well drained sheltered locality. I have seen it growing in many parts of the Himalayas. First of all, flowering in April, surrounded by large patches of snow, on the north side of the mountain Chena, near Nynee Tal, at least 8000 feet above the sea, and above Cupressus torulosa, which grows in great abundance on the south side of the same mountain. The surrounding plants were Gagea, Fritillaria, Convallaria, Anemone discolor, and Primula denticulata. I then found it at Patternullah, 9000 feet, in May, and shortly afterwards at Phagoonimly, 9000 feet, not far from Simla; growing associated with Lonicera angustifolia, which has stood the present winter very well. You are mistaken about the flowers not being scented. They are deliciously and powerfully fragrant, so as to perfume the air to some little distance. The leaves also, when bruised, are strongly scented; so much so, that the plant always bears amongst the inhabitants the local native name for musk, as indeed is mentioned by Dr. Royle, at p. 130 of his "Illustrations of the Botany of the Himalayas." I have always observed the plant on the northern sides of the mountains, where it is sheltered from strong winds. There appears to be considerable doubt about the real genus and even natural order of the plant, which is decidedly polygamous. Wallich calls it Laureola (Aurantiaceæ), you call it Skimmia (Ilicineæ?), and Decaisne has figured the same species in "Jacquemont's Travels," fig. 161, as Anquetellia laureola (Zanthoxyleæ). *William Munro, Jan.* 29. [The discovery of this plant being really a species of the little known genus Skimmia, was we believe made by the late Prof. Zuccarini.]

Half-hardy Plants.—I may state that during the sharp frosts of November last, I had in the open ground, well sheltered, two magnificent specimens of Veronica speciosa, and several very fine old tree looking plants of Fuchsia Eppsii. The whole were in such full vigour and bloom, that at night I gave them the protection of a mat, &c. Nevertheless, my poor Veronicas that had stood through the previous winter without damage were killed nearly to the ground. The Fuchsias were entirely destroyed, as well as some seedling Acacias from New Zealand, from 4 to 5 feet high in pots, and under the cover of a warm summer house. The thermometer in the morning indicated 9 degrees of frost. *W. V., Bembridge, Isle of Wight.*

Evergreen Berberries.—In Dr. Lindley's paper on this subject, in the Journal of the Horticultural Society, vol. 5, part 1, it is stated, in describing Berberis trifoliata, that "the fruit has not yet been formed in this country." In 1848 a plant growing against a wall at the Deepdene ripened several berries, from which, however, I failed in procuring plants. They were small in size, round in shape, and of a light red colour. Neither the fruit nor the flowers add much to the beauty of the plant, which is certainly one of the handsomest evergreen shrubs we possess, when trained against a wall. Whether it it hardy enough to make a good border plant remains, I believe, to be proved. *J. B. Whiting.*

Fuchsia spectabilis (*the Queen of Fuchsias*).—In May last I received from Messrs. Veitch's four plants of this fine Fuchsia, of which the accompanying woodcut is a representation. Two of them were soon sold, and of the remaining two I lost one, and was shortly afterwards informed of the decease of the two I had sold. In justice to Messrs. Veitch, however, I should state that upon my employer representing these facts to them they immediately made good his loss. The first plants were much mildewed, which no doubt caused their death. I have succeeded in preventing its spread by applying sulphur, which is the only antidote against mildew that I know of. This Fuchsia strikes with me as freely as any other sort; the soil I employ for it is a mixture of two parts loam, one of peat, and two of leaf-mould, with a sufficiency of pure white sand to keep the whole porous, but any light sandy soil will do to root them in, provided the above compost is used for potting them off in. After the cuttings are rooted, I pot them in thumb-pots, and place them under a handlight in a house where the temperature ranges from 55° to 60°. I find that, like all other Fuchsias during their growing season, this delights in a moist atmosphere. I have a fine healthy plant of it struck from a cutting last July, which is now 1½ foot high. I have continued to grow it all the autumn, not allowing it any rest. When my young plants have made roots enough, I repot them in a size larger pot, and as they increase in size I use well decomposed dung in the soil, instead of leaf-mould. Treated in this manner they grow as freely as any other Fuchsia; in fact, by the last week in March I shall have upwards of 500 plants of it. I intend to remove them about the middle of May into a greenhouse or cold pit, but I shall take especial care to keep the atmosphere as moist as possible. From the present



appearance of the plant I should say that it will require much the same treatment as F. serratifolia. *E. Fancourt, St. John-street Nursery, Colchester.*

Societies.

Entomological, *Jan.* 7. *(Obituary of Mr. Edward Doubleday.)*—G. R. Waterhouse, Esq. President, in the chair. After the ordinary routine business of the evening had been completed (including the announcement of the changes proposed to be made in the council and officers at the anniversary meeting on the 28th inst.), the President announced that, as a mark of respect to the memory of the late Edward Doubleday, Esq. (who had for two years past performed the office of secretary to the Society), no scientific business would be taken into consideration at the meeting.

We therefore take this opportunity of presenting to our readers a short summary of the life of this lamented entomologist, snatched from us in the midst of his labours and in the prime of his life. He was born on the 9th October, 1810, and was the descendant of an old and well-known Quaker family long residing at Epping. It was not until the establishment of the "Entomological Magazine," in 1833, that he appeared before the public as the author of various articles upon entomological matters; since which period he was a constant and extensive contributor to the literature of the science. His articles in the early volumes of the "Entomological Magazine" are of a general character, or consist of notices of the habits of insects, interspersed with ornithological scraps, and mingled freely with classical quotations and notes, resulting from an extensive reading of early Spanish literature, of which he was a devoted admirer. In 1835 he undertook, in conjunction with Mr. Foster, another member of the Society of Friends, a natural history tour through the United States of America (to the institutions of which country he was much attached), and many of his notes made during this tour were published in the later volumes of the Entomological Magazine, and fully prove his unbounded admiration of the works of Nature. Up to the period of his decease (which took place on the 14th of last December) he sincerely longed to revisit the scenes in the New World which, whilst there, he had so much loved. During this tour he made large collections of specimens in all branches of natural history, which on his return he freely distributed among his friends and various public institutions. In 1841 he was appointed assistant in the zoological department of the British Museum, where his time was chiefly occupied in the arrangement of the entomological collections, more especially the Lepidopterous insects, which now constitute one of the finest series of specimens of that order in existence. His publications, since the period of his connection with the British Museum, have been almost confined to the insects of this order, and have appeared in the "Annals of Natural History," the "Entomologist," the "Zoologist," and the Transactions of the Linnean, Zoological, and Entomological Societies. In 1848 he commenced, in connection with Mr. Hewitson, the publication of a splendid work upon the genera of butterflies, of which it is greatly to be regretted that scarcely more than half has appeared. The minute analysis of the obscure characters of the genera of diurnal Lepidoptera contained in this work is deserving of the highest praise. He also compiled an excellent synonymical catalogue of the diurnal Lepidoptera, in the collection of the British Museum. Personally, Edward Doubleday was open-hearted, with an utter aversion to quackery, or moral delinquency, wherever he thought it existed. Precipitate, however, in his judgment, and regardless of what the world deems caution, he occasionally placed himself in positions which entailed upon him much subsequent annoyance, as was the case when he took up the part of his friend Stephens against Rennie, in Loudon's "Magazine of Natural History."

In addition to his other acquirements, he possessed an excellent knowledge of British plants, and was a Vice-President of the Botanical Society. We have before us one of his latest letters, written from Sevenoaks shortly previous to the attack of paralysis which (after several months of acute suffering) ended his mortal career; and as it is highly characteristic of his love of Nature, we will close this short notice of him with an extract from it, premising that it was written whilst labouring under very severe pain, and yet it is playfully dated, "7 Querci 1.6.49." and after stating that he had tried to walk off an attack which was supposed to be sciatica, he adds "*Nota bene:* There is here a Hawthorn 7 feet 3 inches in circumference; I had no idea of the beauty of the country." We believe, in conclusion, that we speak the unanimous opinion of the naturalists of this kingdom, in asserting that the death of Edward Doubleday is one of the most severe losses which zoology has sustained, in this country, for many years past. *J. O. W.*

Reviews.

The Cabinet Lawyer: a Popular Digest of the Laws of England. Longmans. 12mo, pp. 714.

The fact of the present work having reached a 15th edition, sufficiently shows that it is not without its use. Let not the public however imagine that they will find in this popular digest of the laws of England, an accurate statement of the law on any given point; such neither is nor can be the case. The law of England in its present state is comprised in some 70 or 80 octavo volumes of statutes at large, and about 10 times as many volumes of reports. To condense these into a work of 700 pages, is manifestly impossible. The use of all such digests as the one now before us, is to enable a common person to understand what questions he should put to his solicitor, in cases of legal difficulty, and not to enable him to solve such cases himself; that he can only do by devoting his whole time to the study of the law. "I wish" says Lord Bacon, "every man knew as much law as would enable him to keep himself out of it;" but if our readers act upon the knowledge to be acquired from any popular digest, however ably edited, they will find to their cost that they have acquired just enough law to lead them further astray than they would otherwise have gone.

Miscellaneous.

Botanic Garden, Calcutta.—We learn that Mr. Scott, of Chatsworth, has been appointed head gardener of this great establishment. His merits, as evinced in the admirable cultivation at Chatsworth, are too well known to require comment. Mr. Scott was recommended by Mr. Paxton and Mr. Gibson, of Chatsworth, Messrs. Low, Messrs. Knight and Perry, Mr. Henderson, gr. to Earl Fitzwilliam; James Yates, Esq., F.R.S.; Dr. Moir, of Aberdeen, and others. Mr. Scott was a candidate for the Neilgherry appointment, for which Dr. Falconer and Dr. Royle selected Mr. Scott and Mr. M'Ivor, as having the best claims. It was thought, however, that a man accustomed to the luxuries of Chatsworth would

be ill-placed on the Neilgherries, where there was little either of garden or gardeners; and therefore as Mr. M'Ivor seemed a young man full of energy, and was both scientific and practical, he was preferred on that occasion, and his excellent conduct since his appointment has fully justified the expectations formed concerning him. That Mr. Scott should have had the offer of the first higher vacancy under the Indian Government, shows the estimate formed of his skill as a gardener by the authorities at the India House.

Annual Meeting of Florists.—The annual meeting of florists and amateurs, which has been discontinued two or three years, was resumed on Wednesday last, after the close of the election, and was held at the rooms of the Society for the Encouragement of Floriculture, Mr. Glenny in the chair, supported by Messrs. Keynes, of Salisbury; Turner, of the Royal Nursery; John Edwards, Esq.; and other florists and amateurs. Arrangements were made for various provincial shows to keep clear of each other. After the usual toasts, the chairman called the attention of the meeting to what union had done for floriculture in 1832, and continued to do for it until the apple of discord was thrown among them, since which it had gradually gone back; and, after urging all to forego all minor considerations, and keep in view only the one great object, the advancement of the science, proposed "Success to Floriculture," which was drunk with great spirit. *Abridged from the Country Gentleman.*

Calendar of Operations.

(For the ensuing week.)

PLANT DEPARTMENT.

Forcing-house.—The main thing to be aimed at is to render the artificial temperature, and other circumstances, as nearly proportioned as art and ingenuity can make them, to those in which the plants naturally flourish. As summer is the season to be imitated, when the sun's rays have the greatest power, the structure used for plant forcing should be of the lightest possible description; painted or coloured white inside; and the plants set on or plunged in white gravel or light-coloured sand; that the greatest possible amount of light may be diffused and reflected amongst their foliage. The glass and laps should be perfectly clean. The ventilators should be so arranged that the air may be admitted under the pipes, and thus warmed to the temperature of the house before it comes in contact with the plants. Top air should be given by opening every sash a little, in preference to admitting the same quantity in several large currents. As the flowers expand, the plants should be removed to a cooler and drier atmosphere, with a view to prolong their period of blooming. It should be remembered that forced plants require a greater supply of water than the generality of plants at this season; and when they are in a fit state to receive water, let sufficient be given to moisten thoroughly every part of the soil. Excepting in very dull weather, the syringe may be used with advantage once a day upon those plants whose flowers have not yet expanded. Use water of the same temperature as the house for this purpose as well as for watering the plants.

FORCING DEPARTMENT.

If the early sown Melon seed has germinated successfully, a bed should be immediately prepared for them. By the method which I am about to describe, I have for many years had the greatest success in cultivating the choicest kinds, and especially those Persian varieties which are so often complained of as difficult to manage. Hot water pipes supply my pits with top and bottom heat; the latter of which ascends to the soil through a bed of rubble. On the surface of the rubble, 6 or 8 inches of turfy soil is laid, which, after being soaked with water, is pressed into a solid mass; this is made smooth with the back of a spade, some guano is sprinkled over it, and then the hills are put in, preparatory to planting. My reason for adopting the above process is to form a compact mass of soil, which will be filled with the ramifications of the roots by the time the first fruits have completed their swelling; and by piercing the soil with a tin tube, water is conveyed to these roots, during that critical period, without wetting the surface soil or producing any moisture in the house, by which the quality of the ripening fruit would be deteriorated. The healthy vigour of the plants is thus maintained, and with the assistance of a couple of rich top dressings they are kept in a fruitful state for six months.

FLORISTS' FLOWERS.

Those who were fortunate enough to save seed from their choice Ranunculuses should now think of sowing. Let them get earthenware pans, or wooden boxes will do, 5 or 6 inches deep; for at least 2 inches a quantity of good drainage must be put, and on this the compost, of leaf soil and sandy peat, filling either box or pan within half an inch of the rim. The compost must be pressed evenly down, and then well watered, so that the soil may be soaked through; this should be done the evening previous to sowing. The seed (which is generally full of husks), should be spread very thickly on the surface, pressing it down and then covering lightly with the same compost. The pans may then be put in a close cold frame; after a few days give them air, which may be continued for the present. Carnations and Picotees.—After the long frost that we have had, the first thing we would recommend is a general supervision of the stock; let some one go over them, pot by pot and plant by plant. Dead and yellow leaves must be removed, the surface soil loosened, and, in fact, the plants should have a regular dressing, the last previous to their final potting. We would also recommend that the soil for this purpose should be put under cover, not only to preserve it from the action of the atmosphere, but also that on rainy or other days it may be carefully turned, and ready any moment.

HARDY FRUIT GARDEN.

Any Peaches or Nectarines on the open walls, which have any show for fruit, should be protected, if this has not been attended to. Among the espalier fruit trees, the flower buds of many of the hardier kinds will soon be swelling; and as we may yet expect some severe weather, prudence points out the propriety of protecting anything which is choice or valuable. For this purpose nothing is cheaper than Spruce or Yew branches, which are also of considerable service in retarding the opening of the blossoms, until the time of the year is more favourable for their safe development. The ground should be forked over amongst bush fruits, taking care to injure the surface roots as little as possible, as the fertility of the tree depends mainly upon these. The Strawberry beds should also be looked over, the dead leaves and runners removed, and if it was omitted last autumn, the plants should be thinned when they require it. Some dry soot should now be dusted in amongst them, to destroy snails; after which, the spaces between the rows should be manured and lightly forked over without breaking their roots.

KITCHEN GARDEN.

A crop of Peas should now be sown in turf, and raised in a little heat, to be planted out about the middle of March. The most economical way of doing this is to cut strips of turf 4 or 5 inches wide, and lay them on boards with their grassy sides downwards; a drill is then to be made along the middle of the turves by pressing a strip of wood into them; and in this the seeds are to be sown and covered with a little light soil. The boards may be placed under the trellis of a Peach-house, or in a similar situation, where the night-temperature does not exceed 50°. As soon as they are up they must be fully exposed to the light, and towards the end of the month they will be sufficiently advanced to be placed out of doors. The best situation is under a south wall, where they should be protected by a few branches of evergreens until they are thoroughly inured to the open air, which must be done by gradually exposing them. The variety which I have found best adapted is Bishop's Long-podded; make a sowing of the same kind on an open sunny border, and also of Fairbeard's Champion of England, which may be sown once a fortnight from this time till the middle of June. This is a fine flavoured Pea, and an excellent cropper.

State of the Weather near London, for the week ending Jan. 31, 1850, as observed at the Horticultural Garden, Chiswick.

Jan.	Moon's Age.	Barometer. Max.	Barometer. Min.	Thermometer. Max.	Thermometer. Min.	Thermometer. Mean	Wind.	Rain.
Friday.. 25	12	29.993	29.724	51	45	48.0	S.W.	.14
Satur... 26	0	29.874	29.384	51	21	36.0	W	.12
Sunday . 27	14	30.152	30.316	37	29	34.0	S.W.	.00
Monday 28	15	30.009	29.803	49	33	41.0	S.W.	.11
Tues. .. 29	16	30.003	29.779	50	32	41.0	N.E.	.08
Wed. .. 30	17	30.302	30.173	42	24	33.0	E.	.00
Thurs....31	18	30.190	29.900	50	40	45.0	S.E.	.38
Average....		30.112	29.883	47.1	32.0	39.5		0.83

Jan. 25—Foggy; densely clouded; rain at night.
— 26—Low dark clouds; showery; frosty at night.
— 27—Sharp frost; very fine; overcast.
— 28—Densely overcast throughout.
— 29—Fine; very fine; extraordinary high tide in the Thames; rain.
— 30—Foggy; very fine; sharp frost at night.
— 31—Frosty; hazy and cold; heavy rain.
Mean temperature of the week, 1½ deg. above the average.

State of the Weather at Chiswick during the last 24 years, for the ensuing week, ending Feb. 9, 1850.

Feb.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds. N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 3	44.2	32.1	38.1	12	0.42 in.	2	2	3	—	1	10	2	2
Mon. 4	44.3	33.0	38.7	12	0.31	5	4	2	—	6	5	4	2
Tues 5	44.1	32.0	38.0	8	0.39	2	3	2	1	3	4	4	5
Wed. 6	45.6	33.8	39.2	13	0.25	2	1	3	3	4	5	5	1
Thurs. 7	46.3	33.3	39.8	13	0.29	2	1	3	—	3	8	5	2
Friday 8	45.3	33.3	39.3	15	0.57	1	3	2	—	4	10	3	1
Satur. 9	45.5	32.1	38.8	7	0.30	—	3	1	2	1	10	5	2

The highest temperature during the above period occurred on the 9th 1831—therm. 62 deg.; and the lowest on the 9th, 1847—therm. 4 deg.

Notices to Correspondents.

Annuals: *Glasconian.* Next week.‡

Books: *Progressionist.* Works on microscopic fungi are not very plentiful. Our best is the last volume of Smith's "British Flora," without plates. For plates, take Corda's "Icones," in five or six volumes folio. Pritchard on Animalcules may possibly suit you.

Camellias: *X Y Z.* Place them in a *gentle* heat, and they will swell their buds.‡

Chalk in Gardens: *Humus.* Your light shallow soil will be much improved by a heavy dressing of chalk and clay, one part of chalk to two of clay. On no account add lime to a compost heap, but apply it directly to the surface of the soil.

Clianthus puniceus: *E F L.* With ordinary care it may be removed with safety now.‡

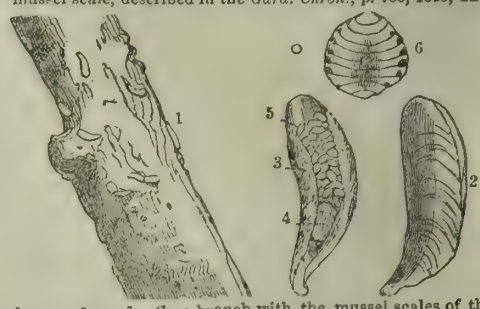
Emigration: *N E.* We cannot, as we have often stated, take upon ourselves the responsibility of recommending colonies to our correspondents. They must judge for themselves; for which purpose they must read the books on emigration now published at a low price. Should you go to New Zealand, however, we should advise you to go there direct by one of the New Zealand Company's ships.

Gardening a Profession: *Elpidophorus* must excuse us for not carrying this matter further. He has expressed his opinion; we have offered, not we hope discourteously, our own. He is unconvinced by our arguments; we are *more than ever* dissatisfied with his, except such of them as support our view, although produced for the purpose of baffling it. We agree in some of what "Elpidophorus" now states; but we regard that part of his letter as being irrelevant, and we much dislike the tone in which the whole is written. Since we cannot insert the reply from "Elpidophorus," we also omit some very good and temperate letters addressed to us by gardeners themselves.

Gladiolus gandavensis: *The Original Raiser* of this variety would thank some of our readers to inform him what difference there is between it and Brenchleyensis? He states that the reported history of the latter is that it was raised between oppositiflorus (always miscalled in England floribundus) and natalensis; but that, he adds, is the exact parentage of gandavensis, oppositiflorus being the female parent. He has never succeeded in getting a (certain) crossed seedling between these two plants in the converse direction, or with natalensis for a mother. Last year he had at least 20,000 seeds, which ought to have produced this cross, but only one grew, and that is yet too young to flower.

Heating: *A B.* You will not get a flow in the manner you propose. Keep the gutters level. Let the end next the boiler proceed from the top of the boiler, and connect the other end of the gutter with the bottom of the boiler by a perpendicular pipe. Iron gutters are cheaper and better than leaden ones.

Insects: *H G B.* Your Pear trees are attacked by two different species of scale insects—a large globose one, and the small mussel scale, described in the *Gard. Chron.*, p. 736, 1843, and



here re-figured. (1, a branch with the mussel scales of the natural size; 2, the scale magnified; 3, the same seen from beneath, showing the mass of eggs and the shrivelled body of the female, which is still more magnified at 6.) The worst affected parts ought to be pruned out, and the others washed with hot water. *W.*

Lawns: *G R S.* As soon as February is well advanced lay down your lawn with the following seeds per acre:—1 lb. of Avena flavescens, 6 lbs. of Crested Dog's-tail, 3 or 4 lbs. of Hard Fescue, 20 lbs. of Rye-grass, 6 lbs. of white Clover, and 2 or 3 lbs. of Poa trivialis. If you find this too expensive reduce the quantity of Avena, Dog's-tail, and Rye-grass; less of all will do if you are in no hurry. This kind of lawn is for regular mowing. Above all things take care that the land is clean, the seeds pure, and the surface perfectly level.

Lisianthus Russellianus: *Sub.* Sow it every spring, and flower it in the following year.‡

Microscopes: *S A.* We are unacquainted with the "Student's." If it is achromatic, with ¼ inch object glass, and *is well* made, it will answer for most purposes in botanical anatomy. But if you want to study systematic botany well, such an instrument is useless, because you cannot dissect under it.

Names of Fruits: *Albert.* 1, Bedfordshire Foundling; 2, Alfriston.‖—*H D.* King of the Pippins.‖

Names of Plants: *Erzeroum.* 353, Sagittaria sagittifolia; 176, Cotoneaster vulgaris; 192, Sanguisorba officinalis.—*A Young Beginner.* The leaves may belong to Solandra grandiflora, but it is not certain. You seem to manage it properly, but perhaps you cut it back too much and keep it too cool while growing. Flower your Gardenia radicans without shifting it. The heat of a Pine bed is not too high for G. florida, provided it is damp enough; it will probably flower there.—*John Fryer, jun* The "seeds" are the grains or minute seed-vessels of the common Self-heal, or Prunella vulgaris, found everywhere in pastures.

Old Seeds: *Const. Reader.* Some will grow, others will not. You had better test them in the following manner: Sow 20 seeds (100 is the usual quantity), of each sort in a pot of nicely prepared soil, covering them sparingly with earth, and place them in a moderate hotbed. When they are up count off those which are living, and the difference will show the quantity of bad seed. If the seed does not grow more than 25 per cent. it is inferior, but if from 50 to 70 per cent., it may be considered good, as some allowance must be made for seeds saved before being fully ripe, &c.‡

Plumbago Larpentæ: *Edina.* To make a "specimen," start your Plumbago in a rather warm greenhouse about the middle of February. After it has begun to grow vigorously, give it a liberal shift, using a mixture of peat, loam, leaf-mould, and a little sharp sand. As it grows, tie the branches out nicely, so as to admit all the air and light possible to the centre of the plant. When in flower, place it in a rather shady situation, unexposed to direct currents of air.‡

Polmaise Heating: *J S M.* We entirely agree with you. Nothing can be more admirable than the sentiment "Turpe est aliud loqui, aliud sentire; quanto turpius aliud scribere, aliud sentire." But we fail to see its application in this case. We have always expressed our opinions freely enough; when we have seen reasons to change them we have said so, but we do not feel inclined to throw them overboard against our conviction. Polmaise and Arnott stoves may be compared with each other very profitably by those who are interested in the comparison.

Rochea falcata: *Sub.* It is a common greenhouse plant, requiring merely to be kept free from frost.‡

Roses: *W C.* William Jesse and General Allard are not suitable for the south front of a house which is required to be covered to the height of 12 feet. Any of the following will answer your purpose. *Bourbon:* Madame Lacharine, flesh; Marquise d'Ivry, pink; Pierre de St. Cyr, rose. *Noisette:* Desprez, buff and yellow; Fellenberg, crimson; Solfaterre, yellow.‡

Rough Plate Glass: *J P H C.* We cannot see the difference you mention. Hartley's is equally rough on each side—common cast is not. We are, however, trying some experiments, which we hope to report upon very soon, if we can get some sunshine. In the last Leading Article there is a misprint of *cent.* for *cwt.*, which pray correct.

Thermometers: *F H.* The thermometers employed for registering the maximum and minimum temperatures at Chiswick, are according to Rutherford's construction. When subjected to the same steady temperature, the indications of the mercurial and spirit thermometers exactly correspond throughout the range of their scales. It must, however, occur that when the temperature is rapidly rising or falling, the mercurial and spirit thermometers will exhibit a slight difference, unless they are equally delicate; but the difference certainly ought not to amount to one or two degrees, as in your case. A short period of steady temperature should bring them to exact correspondence; if not, at once return them to the maker. The lowest indication of any common registering thermometer is not quite the lowest temperature of the air when the latter suddenly rises after reaching the lowest point.‖

Winter and Spring Flowering Cool Greenhouse Plants: *Sub.* Camellias, Daphne indica rubra, Erica hiemalis and gracilis, Styphelia tubiflora, Leschenaultia formosa, Chinese Primulas, Cinerarias, Cyclamens, Van Thol Tulips, Narcissus, &c ‡

Misc.: *Tutus quo.* The Venus's Fly-trap does *not* digest flies. We cannot answer the other question. If "J. L. S." sent any letter it was either printed, or rejected for some sufficient reason. We cannot undertake to answer such inquiries, even if made at the time, instead of twelve months afterwards.—*Amicus.* We know nothing about Pinus Wilkinsonii. ‡—*W V.* Sow your New Zealand seeds at once, in gentle heat.‡

POTTER'S GUANO. — This effective MANURE, now greatly Improved, is confidently recommended as a Dressing for all Spring Crops. It is equal to Peruvian Guano, and 25 per cent. cheaper. Also SUPERPHOSPHATE of LIME, GYPSUM, and SULPHATE of AMMONIA, all of guaranteed quality, and Cheaper than at any other establishment in town or country.
Factory, 28, CLAPHAM ROAD PLACE, LONDON.

CORN MANURE.

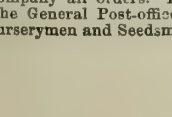
BLASHFIELD'S PATENT COPROS.—A new Manure for Corn and other Crops, prepared from the nitrogenous matter deposited on the banks of the Thames, in combination with other substances essential for the growth of corn, &c., price 8*l.* per ton. Sold, in a finely ground state, at No. 3, New London-street, Mark-lane; also, at the Works, Mill-wall, Poplar; Waterloo Dock, Lambeth; and No. 1, Praed-street, Paddington Basin.
PATENT COPROS, for Corn crops, also for Turnips, &c.; Superphosphate of Lime, Gypsum, calcined and saturated with liquid manure. CEMENT for Liquid Manure Tanks, Malt House Floors, and Barn-floors, manufactured by J. M. BLASHFIELD, successor to Wyatt Parker and Co., Original Patentees of Parker's Cement. Established 1796. Drain Pipes, Tiles, &c.

GUANO AND OTHER MANURES.

PERUVIAN GUANO of the finest quality (as imported by the Contractors) on Sale; also Superphosphate of Lime, Gypsum, Nitrate of Soda, Salt, and all other Manures of known value.—Apply to MARK FOTHERGILL, 201A, Upper Thames-street, London.

PERUVIAN GUANO.—As Agents of the Peruvian Government for the importation and sale of this valuable MANURE, we think it right, for the protection of consumers and respectable dealers, to apprise them that the adulteration of the article is still extensively practised, and to recommend them to apply either to ourselves, to our agents, Messrs. GIBBS, BRIGHT, and Co., of Liverpool and Bristol, or to dealers of established character, in whose honesty and fair dealing they can place implicit confidence. ANTONY GIBBS and SONS.
London, February 2.

THE LONDON MANURE COMPANY beg to offer as under, and pledge themselves that every Manure shall be perfectly Genuine:—Corn Manure for Wheat, Barley, Oats, Clover—most strongly recommended from its success last year; it will be found cheaper than Guano, and bear the strictest analysis. Also URATE, Superphosphate of Lime, Sulphate and Phosphate of Ammonia, Nitrate Soda, Fishery and other Salt, Gypsum, Sulphuric Acid, &c.
GENUINE PERUVIAN GUANO.—To insure this free from adulteration, all purchasers, if they prefer it, can receive their warrants from Mr. Purser, and remove the Guano direct from the Warehouses of Messrs. A. GIBBS and SONS, the Importers.
Bridge-street, Blackfriars. EDWARD PURSER, Secretary.
Country Dealers and Agents supplied.

BY HER MAJESTY'S  ROYAL LETTERS PATENT.

PATENT HOTHOUSE WORKS, KING'S ROAD, CHELSEA.
BENCH invites the attention of Gentlemen about to erect Hothouses, &c., to the vast superiority in every respect possessed by his PATENT HOUSES, which he will warrant superior in every respect to any others. Good Glass from 16 to 21 oz. per foot, 1 foot wide, 3 feet long, furnished, and the Houses when completed charged from 1*s.* 3*d.* to 1*s.* 6*d.* per superficial foot, according to size and quantity; one principle, the roof being formed without wood or putty, and the other principle being wood rafters and the glass put in with putty. Patent Sashes, requiring no paint, from 7*d.* to 9*d.* per ft.
HEATING BY HOT WATER.

THE IMPROVED "FLUE BOILER" AND FURNACE.



W. HILL begs respectfully to inform the numerous applicants for his "FLUE BOILER" of a small and intermediate size, that he shall be prepared, early in December, to supply sizes to suit every description of Apparatus, from that of 100 feet of 3-inch pipe to 2000 feet of 4-inch pipe. A List of Sizes and Prices will shortly be published. W. HILL guarantees his Boilers to be the most effective and economical of any in use.
Horticultural Works, Greenwich, Feb. 2.

STEPHENSON AND CO., 61, Gracechurch-street, London, and 17, New Park-street, Southwark, Inventors and Manufacturers of the Improved CONICAL and DOUBLE CYLINDRICAL BOILERS, respectfully solicit the attention of scientific Horticulturists to their much improved method of applying the Tank System to Pineries, Propagating Houses, &c., by which atmospheric heat as well as bottom-heat is secured to any required degree, without the aid of pipes or flues. S. and Co. have also to state that at the request of numerous friends they are now making their Boilers of Iron, as well as Copper, by which the cost is reduced. These Boilers, which are now so well known, scarcely require description, but to those who have not seen them in operation, prospectuses will be forwarded, as well as reference of the highest authority; or they may be seen at most of the Nobility's seats and principal Nurseries throughout the kingdom.
S. and Co. beg to inform the Trade that at their Manufactory, 17, New Park-street, every article required for the construction of Horticultural Buildings, as well as for heating them, may be obtained upon the most advantageous terms.
Conservatories, &c., of Iron or Wood, erected upon the most ornamental designs. Balconies, Palisading, Field and Garden Fences. Wire-work, &c.

PERUVIAN BARLEY.—This wonderfully productive species was imported by the Earl of Lonsdale in 1847, and promises to be of more real importance to the Farmer, the Maltster, and Brewer, than any grain hitherto introduced. It is scarcely possible sufficiently to eulogise its merits, which have been proved of so high a class that it must eventually supersede all other Barleys, and become an indispensable addition to our cereal crops. Its Malting properties have been found very superior to all other kinds, producing Beer of a much better quality. For Feeding it is inestimable; the grain having no husk whatever, it yields quite as much meal as Wheat, and closely approaches it in quality. Sown in February on his lordship's farm at Barnes, Surrey, on ordinary land, in 1849, it produced 9 quarters to the acre, weighing 64 lbs. to the Bushel. Messrs. J. and C. LEE, sole proprietors of the PERUVIAN BARLEY, being desirous that so invaluable an article should be widely distributed, are prepared to send it out in parcels containing 1 peck each for 10*s.* A remittance must accompany all orders. Post-office orders to be made payable at the General Post-office. — Address, JOHN and CHARLES LEE, Nurserymen and Seedsmen, Hammersmith, London.

GENUINE PERUVIAN GUANO, direct from the Importer's Stores, LINSEED CAKES, and all kinds of Artificial Manures, may be had at London prices, for Cash, of Messrs. ODAMS and PICKFORD, 15, Mark-lane, London.

NATURAL GRASS SEEDS, FOR PERMANENT PASTURES, AND IRRIGATED OR CATCH MEADOW.
Which may be had Separate, or Mixed, expressly to suit the soil.
MESSRS. JOHN SUTTON AND SONS having for many years paid especial attention to the examination of Natural Pastures, and the collecting of various kinds of Grasses which grow naturally in the various soils of England and Wales, for the purpose of introducing an improved system of laying down land to permanent pasture, are thereby enabled to supply the sorts and quantities of Seeds best adapted to suit the soil for which they are intended; and *at much less expense* than is usually incurred.
Also Finest Lawn Grasses and Mixtures for improving old Pastures. Ashcroft, Liverpool, and other Swedes, White Belgian and other Carrots, Yellow Globe and other Mangolds, True Italian Rye-grass, Drumhead Cow Cabbage, Kohl Rabi, &c.
Reading Seed Warehouse, Reading, Berks.

CHEAP AND DURABLE ROOFING.

BY HER MAJESTY'S  ROYAL LETTERS PATENT.

F. M'NEILL AND CO., of Lamb's-buildings, Bunhill-row, London, the Manufacturers and only Patentees of THE ASPHALTED FELT FOR ROOFING
Houses, Farm Buildings, Shedding, Workshops, and for Garden purposes, to protect Plants from Frost.
At the Great National Agricultural Shows, it is this Felt which has been exhibited and obtained TWO SILVER MEDAL PRIZES, and is the Felt SOLELY patronised and adopted by
HER MAJESTY'S WOODS AND FORESTS,
HONOURABLE BOARD OF ORDNANCE,
HONOURABLE EAST INDIA COMPANY,
HONOURABLE COMMISSIONERS OF CUSTOMS,
HER MAJESTY'S ESTATE, ISLE OF WIGHT,
ROYAL BOTANIC GARDENS, REGENT'S PARK,
And on the Estates of the Dukes of Sutherland, Norfolk, Rutland, Newcastle, Northumberland, Buccleuch (at Richmond), the late Earl Spencer, and most of the Nobility and Gentry, and at the ROYAL AGRICULTURAL SOCIETY'S HOUSE, Hanover-square.
It is half the price of any other description of Roofing, and effects a great saving of Timber in the construction of Roofs. Made to any length by 32 inches wide.
PRICE ONE PENNY PER SQUARE FOOT.
*** Samples, with Directions for its Use, and Testimonials of seven years' experience, with references to Noblemen, Gentlemen, Architects, and Builders, sent free to any part of the town or country, and orders by post executed.
☞ The Public is cautioned that the only Works in London or Great Britain where the above Roofing is made, are
F. M'NEILL AND CO.'S
Patent Felt Manufactory, Lamb's-buildings, Bunhill-row, London, where roofs covered with the Felt may be seen.
The new Vice-Chancellor's Courts, at the entrance to Westminster Hall, were roofed with F. M'NEILL and Co.'s Felt about two years since, under the Surveyorship of Chas. Barry, Esq., R.A. Her Majesty's Commissioners of Woods and Forests are so satisfied with the result that they have ordered the Committee Rooms at the Houses of Parliament to be roofed with their Felt. Quantity altogether used, 24,000 feet.
NOTE.—Consumers sending direct to the Factory can be supplied in lengths best suited to their Roofs, so that they pay for no more than they require.
Every information afforded on the construction of Roofs, or any proposed particular application of the Felt.

The Agricultural Gazette.

SATURDAY, FEBRUARY 2, 1850.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

TUESDAY,	Feb. 5	—Agricultural Society of England.
THURSDAY,	— 7	—Agricultural Imp. Society of Ireland.
TUESDAY,	— 12	—Agricultural Society of England.
WEDNESDAY,	— 13	—Highland and Agricultural Society.
THURSDAY,	— 14	—Agricultural Imp. Society of Ireland.

FARMERS' CLUB.—Feb. 4: London.

"AGRICULTURAL ECONOMY—THE ANTIDOTE TO AGRICULTURAL DISTRESS." This is the title of a pamphlet addressed to the farmers of Wales in 1838,* but which may be made useful by all farmers now. It was intended especially for small farmers, but the truths it urges are equally applicable to occupations of larger extent.

Its subject is one to which we shall continually recur, because we believe that the agriculturist can maintain his position only by lessening the cost relatively to the amount of his produce. But, knowing at the same time that no single item of his outlay is equal in amount to that which he pays for rent, we are also ready to insist on the reasons why that, as well as the other particulars of agricultural expenditure, should fall. Certainly no topic is more obviously a part of agricultural economy than that which includes the whole relationship of landlord and tenant; for there is nothing on which the whole business of farming, with the profits derived from it, so clearly depends, as the proportion between the tenant's capital and his occupation on the one side, and the cost to him of that occupation on the other. And while we have no doubt that the natural course of events will ultimately cause both of these particulars to accommodate themselves to the prices of agricultural produce, at rates compatible with the usual agricultural profits, yet we have as little doubt that, if prices were to rule permanently low, the process will be one of much suffering and injury to the parties concerned. And we submit, that if agricultural writers, instead of deprecating high farming and advocating retrenchment of expenditure, were to deprecate careless farming and advocate retrenchment of occupation; if they could induce the multitude who are now so justly anxious about the future, at once and together to give their landlords notice to quit, offering at the same time to retake about one-half the extent they at present respectively hold, we should arrive at once, and not through years of suffering, at the circumstance, as between landlord and tenant, and between tenant and land, which will enable agriculture, at the lower prices of its produce, to yield, nevertheless, the ordinary profit upon its processes. Land of present quality would be immediately to be had at less than its present price; and the larger acreable capital invested in its cultivation would enable the prosecution of a true economy in the manufacture of food.

What this true economy is, let any intelligent farmer answer, who knows, for instance, the large proportion of the wages he pays as the reward of time rather than of labour—the small proportion paid for "piece work," which is the only method of payment to insure work being done, or the amount of the costly item of horse labour per acre of arable land: let *him* answer who knows how manure ought to be made and cared for, and what proportion of the matter provided for the enrichment of the soil actually finds its way to the brooks and the ditches. Let any one run over in his mind the details of seeding, of plant cultivation and harvesting, and especially of the meat manufacture—and consider what waste of the raw material, what expensiveness of management obtains here, and he will see many a method which existing means enable by which produce may be largely increased, to meet a lower price.

We have been supplied by an Essex farmer—a well known public man, and good agricultural authority—with the following statement of the cost of cultivating 100 acres of arable land of average quality in Essex, upon the four course or Norfolk system of cropping, viz., one-fourth fallow crop of roots, &c., one-fourth Barley or Oats; one-fourth Clover, Peas, or Beans; one-fourth Wheat.

	£	s.	d.	£	s.	d.
To labour, 48 weeks, five men and one boy; the men at 9*s.*, boy at 4*s.* per week. The harvest month, with beer, 6*l.* each man and 3*l.* the boy	153	0	0			
Extra time at hay season and for beer ...	4	10	0			
Horse labour, four horses, 26 weeks at 2 bushels Oats each and ¼ ton hay, or equivalent in cut chaff; Oats, 18*s.*; Hay, 45*s.* per ton	39	13	0			
The summer months at half the foregoing rate	19	16	6			
Rent of ploughman's cottage	4	0	0			
				220	19	6
Rent	125	0	0			
Tithe rent-charge, 7*s.* 6*d.*	37	10	0			
Poor-rates and highway-rates	17	10	0			
Church-rates, 3*d.*; Insurance, 6*d.*... ...	3	15	0			
Repairs—Carpenter, Mason, Thatcher, &c.	10	0	0			
Purchased manure	15	0	0			
				208	15	0
Tradesmen's Bills.						
Blacksmith and cast iron	15	0	0			
Harness maker, sacks, ties, &c.	3	10	0			
Veterinary and incidental	3	10	0			
Insurances of horses and live stock ...	7	10	0			
Table beer, at 6*d.* per week each man ...	6	10	0			
				36	0	0
25 acres seed corn, 48 bushels Wheat, 5*s.*	12	0	0			
25 acres seed corn, 80 bushels Barley and Oats, 3*s.*	12	0	0			
25 acres seed corn, 36 bushels Peas or Beans and Clover	10	5	3			
				34	5	3
25 acres green crop—10 acres Mangold Wurzel and Swedes, for seeds	1	10	0			
10 acres white Turnips, for seeds	0	15	0			
5 acres Vetches, ditto	4	0	0			
				6	5	0
Interest on invested capital that does not deteriorate, 500*l.* at 5 per cent.	25	0	0			
Interest, and for wear and tear on 500*l.* stock that deteriorates, 10 per cent. ...	50	0	0			
				75	0	0
Tenants' superintendence and labour				50	0	0
				£631	4	9

Statement of Produce on a farm of 100 acres of average land of mixed soil in Essex, under favourable circumstances of season, &c.

	Per acre. £	s.	d.	£	s.	d.
25 acres Wheat, at 30 bushels, at 5*s.* ...	7	10	0	187	10	0
15 acres Barley, at 40 bushels, at 3*s.* 6*d.*...	7	0	0	105	0	0
10 acres Oats, at 48 bushels, at 2*s.* 3*d.* ...	5	8	0	54	0	0
12½ acres Peas or Beans, at 28 bushels, average 3*s.* 3*d.*	4	11	0	56	17	6
12½ acres Clover, half mown, half fed ...	3	0	0	37	10	0
Turnip and green crop, at saleable value, to feed on farm, at 3*l.* per acre				60	0	0
Straw consumed on farm by way of fodder from 75 acres, and keep of stock thereon, and feed on eddishes				30	0	0
				£530	17	6
Loss on 100 acres				100	7	3
				£631	4	9

Now from this it appears that at 5*s.* per bushel for Wheat and the other low prices named, the tenant obtains about 25*l.* by the employment of 1000*l.* on 100 acres of land—with which to keep his stock and implements good and repay his own superintendence, cost, and labour: this is plainly quite insufficient for the first only of these requirements. But we venture to assert with confidence that land worth nearly 2*l.* per acre, as this is supposed to be, might with an intelligent economy of management be made to yield more than 30 bushels of Wheat, 40 of Barley, and 48 of Oats—that Turnip and green crops may be made worth more than 3*l.* per acre, and that Clover half-mown, half-fed, is

* By OWEN OWEN ROBERTS, London: SIMPKIN and MARSHALL.

worth far more than this sum on land of "average quality." We venture confidently to assert that two pairs of horses are able to manage more than 25 acres of green crop—that many of the items under the head of tradesmen's bills are too high—and that the quantity of seed used is unnecessarily great. And do not let it be supposed that our argument is directed only towards the tenant's side of the question—for the sum charged as Rent, in *all* its items, even though it should not be too high already, will, we have no doubt, fall, with all the other particulars of cost, to a level permitting the attainment of the usual farm profits per annum. The subject of agricultural economy even in this general view of it, furnishes reason for confident hopefulness as regards the position of agriculturists: and, if it be taken in union with the certainty of reduced rents which must follow reduced prices and might *accompany* them, if occupiers would only insist upon their rights, we do not think that that which gives satisfaction to one-half of the community ought to frighten the other.

Nothing is so various as farm practice: the truest skill will modify the details in every branch of the business, so as to attain the most economical result according as different conditions present themselves. In comparing the features of particular systems of agriculture, whether in regard to different districts or countries, we are often apt to arrive at very erroneous conclusions by overlooking the requirements of some localities in which others do not participate. We have often thought that writers have erred much on this head: and, having seen a little of both Scotch and English systems of farming, we have endeavoured to sketch the leading peculiarities of each: it has been our desire to do so with impartiality, and, in a friendly spirit, to evoke discussion on matters in farm practice wherever it should appear that different means were taken to accomplish similar results.

As formerly stated, we regard the merits of the Scotch system of farming to consist chiefly in Economy: in other respects we believe it to have been entirely over-rated. We may have overlooked other merits possessed by it, but we must confess that they are unknown to us. We have had no intention of holding up the Scotch farmers as the "best," or "as a pattern to all England" in any details of farm management, without stating specific grounds for such an opinion: and to illustrate the economy of farm management, we thought the most likely means of arriving at a correct estimate was to view the results in the gross. If the expenses of a single acre of any crop had been taken, it would have been as liable to discussion as the estimates of the whole crops on the farm: the correspondents of the *Gazette* do not seem able to arrive at the expense of raising an acre of roots within pounds of each other—a goodly sum when applied over a large breadth. If we had a good chronometer we might soon detect the aberrations of a badly regulated watch, and we could easily ascertain the effects of a small error when it had been frequently repeated. In farm practice we have no such correct standard of comparison—the expenses of cultivation are as various as the physical nature of the soil—and, besides, if you pressed a Scotch farmer too closely on this head, you would perhaps find that his practice is much in advance of his calculations, for you will be told "if you count cost you need not sow corn." We prefer the synthetic method; and to argue the merits of details entirely on principles.

In endeavouring to show the economy of the Scotch system in horse-power—an item of expenditure which a modern writer (Colman) views as "the great drawback in England to a farmer's prosperity"—we thought that we could not apply to better authority than the careful and compendious work on "the Agriculture of Suffolk," by Messrs. Raynbird; and we feel that an explanation is due to them, of the manner in which we have attempted to draw conclusions from their details of a Suffolk farm, when contrasted with the same in Scotland. We entirely agree with Mr. Raynbird that there is much in the two systems of farming that might render comparison in this respect unfair: but a light land farm was selected in both cases, where the same proportion of white and green crops were grown, and where the physical characters were similar. It would have been unjust to have taken the amount of horse-power required on the heavy lands of Suffolk, for we think that there is a wide difference in physical qualities between the fertile clays of Earl Soham and the heavy lands of the Scotch carses. The management of the white crops on the heavy lands of Suffolk is particularly excellent and neat; the narrow "stetches" which the drill covers at once or twice—the horses walking in the furrows—enable the tenacious clays to be cultivated in fine style. But we believe that the practice is too uniform, and that the farmers err grievously in cultivating the light lands in the same manner; this practice must involve a loss of land, as nothing grows in the furrows; and a greater amount of extra horse-power will thus be required on the farm than in broad work, even though in the latter case the whole of the green crops and hay should be carted into the farm-yard.

On the arable lands in Scotland there is no permanent Grass land cut for hay, and we were aware that "some expenditure of horse labour" was required on it, and to balance this we kept down the usual extent which 10 horses would accomplish in Scotland, by at least 20 acres, which was imagined enough to compensate this difference. We did not give extreme instances, as we know that on some farms a much larger extent was wrought, even where drilling was generally adopted; and on the other hand, we know of some light lands in Suffolk where the number of horses kept was as great as that stated by Mr. Raynbird, even where claying is not practised. We are asked whether the growth of Mangold Wurzel and Carrots does not require some additional horse-power, "to drive them to the yards." No doubt they do. The average produce of these roots, on such a farm, is calculated at 260 tons. Now, 10 horses should drive all these into the yards in four days at the most, which is scarcely equal to one-seventh horse-power throughout the year; and it must be borne in mind that probably three or four times the same quantity of roots are driven in by 10 horses on a light land Scotch farm. Many of these items of expenditure of horse-power appear formidable to an English farmer, which a Scotchman, with more simple means, would think little about.

In regard to drilling corn crops, we think that Scotch farmers should not be deterred from following this practice, on the ground that it may occasion them to employ an extra horse or two; for, if the land were kept clean while in corn, less labour would be required to prepare the stubbles for the green crops, and autumn cultivation might in many cases be adopted. The extra seed sown in Scotland might be well applied in wages to hoe the crop, if drilling was practised. We believe that, as agriculture advances, less horse-power will be employed, and more manual labour. It may be stated with certainty that the Scotch farmer could not furnish favourable contrast to the English farmer in economy of horse-power, if he were compelled to use the waggon and the tumbril, and to have small inclosures and stetches of a few feet in width on the light lands; for we imagine these would swallow up the greater part of that surplus horse-power required on many an English farm.

There is generally a most simple and efficient class of farm implements in Scotland. The great display at Norwich did not afford a very favourable contrast; no doubt many reflected great credit on the progress of agricultural engineering, but a vast proportion were rude and expensive tools for the end they were intended to serve. We never see a railway locomotive but we can stand and gaze with admiration on its beautiful and complicated mechanism, when we reflect on the wonders which it has accomplished; but we can never look with much relish on an agricultural implement which bears an unnatural resemblance to it, after having seen its best efforts. Steam on a farm should certainly be a fixture. Agricultural engineers should aim at substantial simplicity rather than ingenious, but expensive refinement; they should always remember that the spade, and even the flail, are two very efficient implements when wielded by a vigorous arm. *R.*

COST OF FATTENING PIGS.

I now send some of my accounts of the cost of fattening pigs, having just slaughtered the first lot of my own breeding. When I began farming I was dissuaded from my design to breed my own pigs, on the ground that the sties were so contaminated with young animals that they could not thrive. I accordingly began with purchasing rather large store pigs, but found them unprofitable, for two reasons. First, in purchasing, the dealer always said store pigs were very dear just then, and when they came home I learnt that I had bought them too dear. Next, they were never in the condition that pigs of their age ought to be; for I am convinced that one art of profitable feeding is to push the animals forward from the very first. Accordingly I afterwards purchased younger animals, which left a smaller margin for the dealer to get the advantage of my man, who in other respects was, I believe, a good judge; and gave me the chance of causing them to make earlier progress. I have given the cost of the first lot in full detail, that my system may be better understood, and because it is rare that one can get a lot of pigs, every one of which it will be worth while to carry through a process of fattening up to large hogs. From this it will be seen how many journeys there are to mill—a serious affair probably to some farmers, but to me, who am compelled to keep three horses to 35 arable acres, comparatively trifling. I have not included it in the cost, neither the litter, nor the attendance—matters well worthy of notice in a comparison with purchased manures, but of no consequence in my method of estimating the future profits of my farm, by debiting it at once with the whole horse and manual labour. I must have made a mistake somewhere when I formerly stated that 11*s.* a score (20 lbs.) would pay 27*s.* a quarter for Barley, for these accounts show that it will pay more. Lot 4 I am much pleased with, as I picked out the sow myself from lot 3. Farmers may say what they please, but it is clear to me that a good selection, good attention, and good food (not Potatoes, Turnips, and other such rubbish) will make a pig pay pretty well the market price of the Barley, except in very dear seasons, and leave the manure for the cost of litter, attendance, interest of money and buildings. The propensity of a pig to fatten, compared with a sheep or an ox, is truly extraordinary, and then you get a good price for the non-nitrogenous article fat, leaving, I presume, a highly ammoniacal manure. I could, in a sense, wish it were not so, for I am a vegetarian in diet, and detest this fattening system; but unless artificial manures, and the sewage of towns, become much cheaper, or Tull's system can be made to answer, I see no other method of profitable farming. I would call attention to a notable difference in these accounts, namely, the variation in the quantity of Barley from one to three quarters per hog. I had some Barley by me in the spring which I used in place of toppings for the last lot, and I kept them on longer on Barley-meal at last, and got them up to a greater weight than the previous lots. I killed the first pig in the last lot five days before it was nine months old, and it weighed 12 score 2 lbs., and the last killed weighed 15 score 6 lbs. being ten months and nine days old. The reader must judge what rubbles and toppings are by the price. A sack of bran would cost 4*s.* and a sack of pollard 4*s.* 6*d.* here, at the time a sack of rubbles would cost 7*s.* 6*d.* They are all the offal of Wheat, ground.

1847.	LOT I.	£	s.	d.
Jan. 23.	Bought 8 pigs, just 8 weeks old	4	0	0
	1 qr. of Peas bought	2	16	0
	1 qr. 6 bushels of Beans bought	3	13	6
— 16.	1 sack hog flour	1	0	0
	1 ditto rubbles	0	7	6
Feb. 20.	1 ditto ditto	0	7	6
Mar. 5.	1 ditto toppings	0	15	0
	2 ditto rubbles	0	15	0
April 8.	2 bushels toppings	0	10	0
	1 sack rubbles	0	7	6
— 16.	2 sacks rubbles	0	15	0
May 5.	1 sack toppings	0	15	0
— 8.	1 sack rubbles	0	7	6
	½ ditto Pollards	0	2	9
— 26.	1 sack toppings	0	16	6
	3 sacks rubbles	1	4	0
June 21.	3 ditto ditto	1	4	6
— 22.	1 ditto toppings	0	16	6
July 8.	1 ditto hog flour	0	19	0
	3 ditto rubbles	1	4	0
Aug. 2.	1 ditto toppings	0	16	6
	3 ditto rubbles	1	4	0
	Grinding 12 qrs. 1 bush. of Barley	1	12	4
	Cost, exclusive of the Barley	26	9	7
	The pigs began Barley-meal on Aug. 21, and were all killed by Oct. 20, weighed 84 score 2 lbs., and fetched 11*s.* per score	46	4	0
	Deduct expenditure, as above	26	9	7
	Leaving, to pay for 12 qrs. 1 bush. of Barley (which was quite worth that money about that time)	£19	14	5

1847.	LOT II.	£	s.	d.
Oct. 1.	Bought 12 pigs, 15 weeks old, but stunted	9	12	0
	2 sacks of Beans bought	4	4	0
	8 sacks of rubbles	2	16	0
	10 sacks of toppings	6	14	6
	6 sacks of Barley-meal bought	5	14	6
	Grinding 12 qrs. of Barley	1	12	0
	Cost, exclusive of the Barley	30	13	0
	Four pigs were killed as porkers, and, at 4*s.* per stone, were worth	5	4	0
	The other eight weighed, when killed, 80 score 17 lbs., and fetched 10*s.* 6*d.* per score, or	42	8	6
	Total income	47	12	6
	Deduct expenditure, as above	30	13	0
	Leaving, to pay for 12 qrs. of Barley, the same sample as before, but not worth so much money as then	£16	19	6

1848.	LOT III.	£	s.	d.
April 1.	Bought four pigs, in good order	2	16	0
	5 bushels of Peas bought	1	2	6
	9½ sacks of rubbles	3	6	9
	5 sacks of toppings	2	16	6
	1½ sack of hog flour	1	12	0
	Grinding 8 qrs. of Barley	1	1	4
	Cost, exclusive of the Barley	12	15	1
	One pig fed out of the above, but having no part of the Barley-meal, was kept as a sow, and valued at the time the rest began Barley-meal, at	3	10	0
	The remaining three, when killed, weighed 39 score 2 lbs., and fetched	19	10	0
	Total income	23	0	0
	Deduct expenditure, as above	12	15	1
	Leaving, to pay for 8 qrs. of Barley, of the bad quality of the harvest of 1848	£10	4	11

LOT IV.

The sow mentioned in Lot III. had 11 pigs on the 7th March, 1849. One of these was killed when weighing 12 lbs. The other 10 were kept for bacon hogs, the last of which was killed on January 16th inst. The sow has had a second litter of four pigs, now about three months old, and the following account will include the cost of keeping the sow from March 7, 1849, up to the time of having these four pigs, as well as the cost of the 10 fat hogs:

2½ qrs. of Peas or Beans, grown by self ...	...£3	15 0
17 sacks of rubbles, at 6s. per sack ...	... 5	2 0
3½ sacks of toppings, at 12s. per sack ...	... 2	2 0
Grinding 30 qrs. 3 bush. of Barley	... 4	1 0
Cost, exclusive of the Barley ...	...£15	0 0
The 10 pigs, when killed, weighed 134 score 8 lbs., and fetched 8s. 6d. per score, or	... 57	2 0
Deduct expenditure, as above ...	... 15	0 0
Leaving, to pay for 30 qrs. 3 bush. of Barley (which would not have fetched more than 26s. per quarter in the market)	...£42	2 0

I am as astonished as the reader may be. I had almost forgotten, as items of food, buttermilk from two cows, occasionally some skim milk, a little cut Grass or Vetches, and stubbling, the value of which the reader can guess as well as I can; but the last lot has had a great deal more skim milk than the others, which must have contributed materially to this otherwise almost incredible account. I have examined it over and over again, and cannot find any error. *Amicus Tull.*

AGRICULTURAL USES OF STEAM POWER.

It is worth while, however, to ask, what is the specific impediment that forbids the banns between the Steam-engine and the Plough-share? What it is that prevents the versatility—(that peculiarly marked attribute of steam power)—which can drive a vessel of several thousand tons across the Atlantic, against a head-wind and sea, or spin the finest thread with a touch more delicate than the human thumb and finger—what prevents it from being applied to the clumsy performance of the Plough?

Because it is a clumsy performance: and that noble power will have nothing to do with it. It is a law to which the annals of invention have given repeated proof, that late-discovered powers of Nature will not "gear on" to those means and appliances which they have antiquated. They refuse to *waste themselves.* From the natural sympathy—so to speak—which exists between the "best of its kind" in every department of matter, may be deduced the perception of a corresponding law of antipathy between things separate and incongruous in their nature and degrees of excellence, and remote in the order of invention. It is not the inapplicability of steam power, but the incongruity with it of the Plough (an instrument employed for the purpose of applying *animal traction* to the act of cultivation, and belonging only to that secondary class of powers) that forbids the union.

The plough does not *cultivate.* It must be followed by the harrow, the scuffler, the roller, the scarifier, to complete, by many and repeated processes, the work which, after all, is not so well done as it is accomplished in one good digging by—THE SPADE. Is there nothing in this to furnish a suggestion as to *the mode* in which steam-power must be applied, if ever, to the problem of *cultivation?* We estimate the expense of a summer's fallow, on stiff land (five ploughings, with harrowing, &c., to correspond, and loss by Rent), at 5*l.* per acre. It could be well dug, for less money, at one operation. Why is it not? Because our horses and implements would be lying idle, which are rendered necessary by the whole economy of the farm-arrangements as at present constituted, and which prevent the possibility of adapting *handwork* on the scale required to get the fields ready at the proper periods; and, also, because cultivation by *hand* requires a peculiar co-operation of *the will* (well understood by employers of spade-labour), demanding either an inward impulse, which nothing but *direct* self-interest can give, or a lynx-eyed superintendence, the expense of which destroys the balance of profit from spade-cultivation over the clumsy honesty of such animal power as we have long substituted for it. Set a man to dig 2 acres of land, one for your Wheat-crop, and the other for his own, and you will see quickly the operation—almost unconscious to the labourer himself—of that law which limits spade-work to his *own plot,* and denies it to *your acreage.*

The plough, and all the instruments that follow it, are only the "animal-power" substitute for that more perfect process accomplished in brief by the spade, when worked by the foot, held by the hand, and directed by the skill, and *purpose,* of manual labour. This is what mechanical power must imitate: not the sluggish cleaving of the ploughshare, which only splits up an unbroken seam of surface, making a *fulcrum* of that which lies below, and thus pressing and polishing the sub-soil year after year into barren and impermeable induration, which the roots of no annual can penetrate. This is but the first of a whole series of imperfect processes, not one of which it is even desirable to imitate; not one of which is *necessary* where the spade can be used.

Why then should we wish that *ploughing* should ever be done by steam-power, stationary or locomotive? What we want is not ploughing, but *cultivation:* that process which the farmer by necessity performs in three, four, or five acts, not half so well as the gardener accomplishes it in one. As well might we expect to apply successfully the boiler and cylinder of a locomotive to the pole of a four-horse coach, or the shafts of a wagon, or the lever handle of a common pump, or the distaff and spindle of a cottage spinning-wheel, as attempt to gear on the power of steam to the elaborate clumsiness of a plough. In every case where steam has superseded animal labour (as it is its mission to do), it has demanded to be harnessed to the work with a harness of *its own;* it has rejected old-fashioned tools and their appliances, and has seized at once the shortest means to its object. Instead of the leverage of the horse's leg, pulling at the axletree, it seizes at once upon *the wheel,* and drives it round; and instantly (by that law of occult affinities above alluded to) a demand is raised for *the most perfect surface,* for the wheel-tire to run on: the iron rail is supplied, and Mr. M'Adam, though a very good dog in his day, is discarded. So, again, instead of working at the pump-handle, it seizes at once upon the sucker-rod and drives it up and down. Instead of wasting time and labour in the back-and-forward action of *the oar,* it drives along the vessel by the continuous stroke of the paddle-wheel, or, still more simply, by the screw. But of all its triumphs, the greatest and the most astounding was when the puzzling problem of *the Spinning-wheel* presented itself! Here was the foot, the thumb and finger, the directing will—all at work at once, and all to be imitated and superseded: the very moisture of the skin requisite to the rolling and hardening of the twist, as it was pressed between the fingers! What an operation to attempt by the dead rollers of machinery. Under the full glare of such a precedent, what upon the same earth, it may be surely asked, declares that the act of inverting and crushing a clod of soil should present an insurmountable or an unprofitable task to steam-driven machinery? I say "inverting and crushing," for in those two acts lies the problem of cultivation. In a dry climate it is simpler than under our moist atmosphere, for we are obliged to chop the soil instead of crushing it. If we analyse the act of cultivation as performed by the spade, it is as follows:—The blade is pressed to the requisite depth into the soil, the handle is then bent down, as a lever, to lift the slice, which is turned over, and dropped into the trench, top downwards; the under surface, thus exposed, is then chopped and cut, in order to admit the atmosphere, which in fact is the real fertiliser after all,—and to expose the soil to which, as fully as possible, is the whole object of cultivation. It is hardly necessary to point out how imperfectly this is done by the plough. Instead of inverting, it turns the soil only half or three-quarters over: it goes through it like a wedge, *squeezing* it from its bed, instead of raising and loosening it. It is true it breaks the soil if light, but it is the heavy soils that most need breaking; and in proportion as the furrow-slice is broken, it often drops back, and the inversion is less complete. It leaves the surface weeds either actually peeping at the edge of the furrow-slice, or if concealed, yet seldom sufficiently buried to be destroyed: but what is worse, it does all its work at the expense of the subsoil, which, year after year, is worn, and sometimes polished to a case-hardened surface by the repeated pressure of the share, and the stamping of the iron-shod hoofs that drag it. What can offer a more forbidding and impenetrable barrier to the descending roots than such a pavement as this meeting the sponge-like fibres that are destined to find nourishment for the stem, and which begin to seek it at the greatest depths, just when the plant is in the latter stages of its growth, forming the grain in the ear? This evil the spade entirely avoids: it neither hardens nor loosens the subsoil, it leaves it precisely in its natural state, moderately stiff, a condition perhaps the safest for plants of the grain tribe, which require a firm footing to carry their long stem, though for the more succulent tribes of root-crops a subsoil broken to a greater depth is desirable.

The plough is certainly a better cultivator upon a light than upon a stiff soil. It is upon heavy and retentive clays that the superiority of the spade is pre-eminent. Here, therefore, is the great field for improvement: what we want upon the clays (which embrace so large a portion of Great Britain), is a mode of cultivation which may be accomplished without the treading of animals or any *traction* at all of the implements of tillage across the worked land. In pursuing, therefore, the subject of cultivation by steam, the idea of the plough is a misleader. What we want is not to plough the land, but to cultivate it: and if, as I have endeavoured to show, the plough and all its subsidiary implements are a mere substitute for the spade, and on stiff soils in a moist climate, a very expensive, cumbrous, and imperfect one, the object of the inventive machinist will be better directed, as well as simplified, by discarding it altogether from his thoughts, and concentrating his attention on the action of the spade.

The gardener scarcely permits a dog to walk over a bed that has been newly worked; yet the farmer is obliged to let his whole team of horses with all his heavy implements pass over his land many times after the cultivation is finished; and even after the sowing is done, the seed-harrows do but skim and film over the dismal work made in damp weather by the tread of the horses that draw them, and the previous implements. On heavy land, in a moist season, this is most pernicious: in fact, it limits the cultivation of such soils to seven months out of the twelve. Now all attempts at cultivation by steam seem to have failed, chiefly for this reason, that the experimentalist has set out with the idea of an instrument that is to be drawn backwards and forwards across the field, like a plough, either by a locomotive or a stationary engine. No such necessity exists. The spade is not *drawn across* the field: it acts perpendicularly upon the spot it is applied to; separating, lifting, and inverting each spadeful in succession, neither damaging by any farther pressure the soil it has once moved, nor hardening the subsoil underneath, in the act of moving it.

In reference to the economy of steam-power, Sir John Herschel has well observed, that in reaching the summit of Mount Blanc, a man must toil for four or five days in succession, whilst *two pounds, avoirdupois, of coals* in a steam-engine would be able to lift him to that height in a few minutes: in the same manner it has been calculated, that one ton of coals have virtue in them to perform the horse-power required to plough a hundred acres of land, could we but discover the proper *mode of applying* steam to cultivation. To plough a hundred acres of land by horse-power costs about 40*l.* We can form a kind of judgment therefore—*in advance of its realisation*—of the comparative cost of the production of food by animal power and by steam power. In the days of Alfred, when the purchase of a book made a serious gap in the income of a prince, the price of a volume of the "Penny Cyclopædia" would have afforded matter of more just incredulity than can prudently be entertained in the present day of the possible application of that power to the production of food which has already been applied to that of clothing. The mechanical production of articles of physical want, is a department of human labour, in which all experience warrants us in anticipating the greatest economical improvements; and true philanthropy can hardly devote itself more wisely than to the furtherance of such inventions, as well as the suppression of that distrust of their accomplishment which often delays the progress its incredulity discourages. *Mr. Hoskyns's Inquiry into the History of Agriculture.*

Home Correspondence.

Spouting to Eaves.—Many of us are unable to get our landlords to put up eaves-spouting to the buildings round our farm-yards, and the consequence is that, although we have taken the economical step to construct tanks to receive the liquid manure draining from our yards, we find in rainy times the contents of the tank so weak and "small-beerish," that it is not worth the labour to pump up and carry to the fields. Much the greater quantity therefore at such times runs to waste after the tanks are filled. Will you or any of your readers be so kind as to inform me what would be the best mode of extracting from the large bulk of liquid entering the tank in wet seasons the small proportion of fertilising matter which it contains, so that it can be retained in a more concentrated form for use at a time when it will be more serviceable. Would not gypsum thrown at intervals into the tanks fix the ammonia, and when emptied from them become a most valuable manure? Would common lime answer the purpose? A little information on this head will enlighten *An Ignoramus.* [Pump to waste from a well connected with the tank through a large bulk of charred stuff, and by and bye clean out the filter and use *it* as manure.]

High Farming.—In the article on this subject in a late *Gazette,* the writer observes, "A time is fast approaching, when the plough must give way to a better and more effectual instrument; if not the spade, it must be nearly assimilating in its effects." The spade has been proved so superior to the plough, that many of our farmers begin to think of returning to that primitive method. This will never do, onward is the watchword. Why should we not have a spade engine? My idea of such a machine is, that it should be a revolving box, containing teeth; on the outside of the box, on one side, three rows of spades, opposite the same number of forks, six in each row, thus the machine would contain 18 spades and as many forks. The spades to raise the sods and conduct them into the box, as the box revolves the spades would rise and the forks descend and loosen the subsoil, as the forks left the subsoil the earth to fall from the box, and spread again on the land thoroughly pulverised by its revolutions in the well toothed box. The engine to be worked by steam power, and moved by a couple of horses. Machinery for agriculture is far in the wake of every other thing in England. There are many works on the steam engine, in regard to its application to mines, mills, steam navigation, and railways. But no aid for the farmer. Let us consider a ship for a moment, not one that is to bring us gold and spices, but one sent by some enterprising merchant, to fetch corn; does he send a number of small heavy vessels similar to those owned by our forefathers, when the spade was invented? No, he will apply a large sum of money for a good ship with proper charts, compass, and an intelligent captain. Suppose now the same degree of intelligence and expensive machinery was used in raising the corn at home, or suppose again that our ships were as rudely constructed and manned as our farms. Landlord and farmer must work together, there is much for both to do. Union and a ready consent to whatever may promise to their mutual good is the only plan. And if we want an example to the contrary, we have only to look to Ireland, and there is not one, however ignorant he may be of his own failings, but sees much to condemn both in the people and the landlords, and shall we suffer ourselves to sink into the same slough? *Anon.*

High Farming.—In the present day, when so much is said and written on the subject of "high farming," it becomes the duty of all who write and read to analyse well the calculations put forth. Otherwise, a subject so laudable in itself, must lead to a perpetuation of error and misunderstanding. I am a great advocate for high farming, in a qualified sense of the term, but when your correspondent "Verax," in your excellent Paper of the 19th ult., asserts that land may be dug 10 inches deep at 4*d.* per rod, which is little more than 30*s.* per acre, I must beg to correct him. He will find that 160 × 4*d.* = 2*l.* 13*s.* 4*d.*, which will also

throw his preceding calculation into shade, viz., that it (digging) may be done "at a cost very nearly assimilating to horse power." The above error just gives practical farmers room to doubt whether the result of the crop is correct, viz., 69 bushels from 2 pecks of seed upon such land as he describes. The remainder of "Verax's" contribution I consider to be chiefly theoretical quackery; by which practical farmers are every day insulted by statements of cost and produce. "Verax" says, in speaking of the capabilities of land under good management—"I fancy its limits have not yet been attained." We do not want fancies to be sent forth by an *Agricultural Gazette*, or otherwise I should fancy "Verax's" statement to be the production of any one but a practical farmer, especially when he adds, in conclusion, "dig 10 inches deep, and below work the subsoil over by a fork, and I have no hesitation in saying that the cost per acre will be less than by horse power." *A Suffolk Farmer.*

Rents.—I have been much surprised that, at the many large meetings which have been held in various towns and counties of late, no resolution has ever been moved and carried by either landlord or tenants, to the effect, "that it is expedient that there should be a reduction in the rental of farms." Everyone who has had any transactions in land, whether as owner or occupier, is fully aware that in the last few years the rent of land has steadily advanced; land under-rented is quite the exception to the present rule—in short, the landlords must be aware that they have the full share of the improvements in farming by the advances made in rent, whether those improvements were made by themselves, as owners, or by the tenants. If, then, our present rents were considered a just and fair value of the land, when corn was 50*s.* for Wheat, and other corn in proportion, how can it be so now, when the average of Wheat has fallen? which was the case for the six weeks ending December 22, 1849, to 10*s.* 6*d.* below that price, making a difference in value, of Wheat alone, to a farmer who produces 4 quarters per acre, of 42*s.* per acre, with a loss on a similar scale on all the remaining produce of his farm. That the present rent of many farms, where the tenant has no capital beyond what he has invested in his occupations, will never be paid long is as certain as that no man can pay 20*s.* who can only earn 16*s.*; and is it fair towards those who have other resources to make them do it? most certainly it is not. Every landlord must know that he is now procuring as many of the necessaries of life for 20*s.* as he formerly did for 25*s.*, and although he may justly say that in many articles he is indebted to a relaxation of the duties on foreign produce, such as sugar, brandy, &c., still the main articles of consumption and wear are the produce of his own tenants, say, bread, beer, meat, clothes, and shoes. These are all made from raw material produced on his own property, by his own tenants, which tenant he now continues to charge the same rent as he did when the tenant had the chance of charging him an extra price for the above mentioned produce. A landlord may say he only charges the market value of his land, and up to the present time perhaps that argument holds good, but a different feeling is now prevalent amongst men, and although many highly farmed occupations might be taken at the present rent, with a view to benefit by the late tenant's improvements for a few years, by men of small capital, it is quite certain that really good and monied tenants will not be found to embark in highly rented losing concerns. Surely, then, it is but fair, and expedient also, to keep the present tenants, by allowing them out of their rents such a portion of the saving as a landlord effects out of his income that can be fairly apportioned to their articles of produce. Many, I know, both write and say it is not a question of rent; and one party writing went far enough to say he had been insulted by a return of 10 per cent. No one supposes that 10 or 20 per cent. alone is equivalent to the loss, but as well might a man say to a builder, "Take away those stones, they will not of themselves build my house." True, but they will lay the foundation; and until we get higher prices by some means or other, we must be content to take as many small contributions as can be collected from one quarter or other, and I think it will puzzle any tenant to find a better item for the foundation of such saving than 15 per cent. off his rent; no retrenchment in the expenses of Government will ever come so home to his purse as that, although it is a very desirable object to be gained, in combination with other savings. In fact, reduction of rent is now our main stay until we get higher prices for our produce, and, added to some such savings as the following, will enable many tenants to hold on "till the good time comes." Take first, then, 15 per cent., or more, where the case is a bad one, off a rental of 400*l.* per annum, equal to 60*l.* per annum; add to that the reductions in the price of labour, in oil-cakes for feeding, in horse corn, ditto for sheep, seed corn, besides the reduction in all articles of household expenses; add these together, get some of our local and government taxes reduced, and it very much improves the picture, and I am sure that instead of a reduction of rent being an insult, it will be the chief and most certain means of enabling us to hold our occupations. When, then, we hear at these public meetings our landlords use that oft-repeated quotation, "We all row in the same boat," then let them be requested to take an oar for once, and endeavour with ourselves to bear up against the storm. The demand must be firmly advocated; it is the greatest and only real help we can get for the present, and one which has justice strongly on its side, which is one of the most powerful advocates a cause can have. *E. C.*

Memoranda.—It is suggested by a constant reader of this *Gazette* whether there is not a fallacy in a late remark published by us, that on a reduction of the price of Wheat one-third, one-third more Wheat must be sold to raise the present amount. Suppose the quarter of Wheat 60*s.* reduced to 40*s.*, that is 20*s.* a sack, surely half the quantity, one sack, and not one-third, must be sold to raise the sum of 60*s.*; 40+20 = 60.—As to the uses of carts and waggons, no doubt carts are most desirable where the article such as chalk or compost is to be unloaded; but nothing gives a lad more trouble than to load a cart with hay or corn, the area is so small, and more accidents happen, not only by the frequent falling of the load in the field, but to the person employed in loading coming to the ground with or without the contents of the cart; then the difficulty of fixing a cart if you wish to take the horse away before unloading, and the nice balance required in pitching off the hay or corn, makes the waggon greatly preferable both for convenience and safety.—An inquiry was made in a late Number on the subject of sheep feeding in an orchard, and whether they injured the Apple trees. Not when they are old and rough in the bark, but the rubbing of sheep against young trees will hurt them by the grease of the wool apparently stopping up the pores of the wood. Sheep must be hard put to to eat the Grass under the shade of an old orchard, it is generally so coarse and sour.—There has been much complaint of the bad accommodation for the poor labourers in the country, but undoubtedly the heavy tax on bricks, very nearly one-fourth, 7*s.* on 28*s.* the thousand, is the reason why more, and more roomy, cottages are not built. The writer has a small cottage with only one bed room, where the family has gradually increased to the number of eight, man and wife and six children; and though he professes to be as poor as one of his own barn rats, he feels obliged this summer to add two rooms at an expense of 30*l.* to 40*l.*, and if he gets his rent for the next eight or ten years he will not have cleared himself of this outlay, so heavy by reason of this very exceptionable tax on bricks.—Mr. Hine, in his remarks in the last Number on Saintfoin, is quite right about the wireworm, &c., and he might have added that no produce of the farm is so nutritive, either as hay or Grass; it is also invaluable to stop the scour in sheep or lambs; but when Mr. Hine writes of Saintfoin being cut in June for hay, and again for seed in August in the same year, he must have been altogether in the clouds. It is the case with broad Clover, but under no circumstances whatever with Saintfoin, confidently affirms their humble servant, who has cultivated it for years. *J. D.*

Draining Peculiarities.—It is as well, when we observe certain effects, to endeavour to trace their causes. We had a heavy fall of snow last Friday, on Saturday night it thawed; the next morning the 1-inch drains, 5 feet deep, on the Clover leas and Rye-grass fields were discharging like pumps; the Wheat fields, the fallows for roots, and the Tare field scarcely showed a discharge. How is this to be accounted for? The soil and drainage were alike. Again, in the autumn, the Turnip and Mangold Wurzel fields discharged most abundantly, whilst the drains in the Clover leas, fallows, and stubbles did not run at all. Is it because the shading of the leaves prevents evaporation, and condenses large quantities of dew? It cannot be owing to deep and loose cultivation, because the bare fallows did not discharge. Again, in May I have observed the Wheat and other fields discharging most abundantly, whilst not a drop flowed from a heavy crop of Tares. Do Tares evaporate prodigiously, whilst Turnips attract, condense, and deposit moisture? Farmers all like Tares on heavy land—they dry and loosen the soil; Turnips, on the contrary, keep it moist. No doubt season has something to do with it. By the bye, it is a good sign that at last, in the 19th century, the *Times* agricultural commissioners have just discovered that our national agriculture is woefully deficient. There are hopes for the future now. I hope there is no one now who doubts about deep drainage answering in strong clays. *J. J. Mechi, Tiptree-hall, Jan.* 25.

Italian Rye-grass.—In 1848 I sowed an acre of Italian Rye-grass, in spring; I cut it in the autumn twice. In 1849 I cut it seven times—that is, five heavy mowings, and two inferior in October and November. It is now rather bare in parts. I wish to know whether I can cut it again this year productively, or whether I had better have it dug and grow Carrots? How can I get rid of the narrow-leaved Dock out of a meadow I am now entering upon? With two acres I have kept two cows, and sometimes three, in full profit for the whole year. By deep spade husbandry, and subsoiling with a fork 14 inches long in the tines, I grow Italian Rye-grass, Vetches, and Rye, Rape, Mangold Wurzel, Carrots, and Kohl Rabi, following Blacker's invaluable system. I buy hay and Oat straw; the latter we steam in one of Richmond's useful machines. I dig 2 feet deep, and fork below. The remarks which "Verax" makes in page 43 are generally true, as I can practically assert; but he is incorrect as far as respects the north, in saying "you may in most neighbourhoods get land dug, say 10 inches deep, at 4*d.* per rod, that will be little more than 30*s.* per acre." In Lancashire you cannot get it done at that price; besides, 4*d.* per rod comes, according to my calculation, not to 30*s.*, but to 2*l.* 13*s.* 4*d.*, a material difference. As I am alluding to subsoiling by the large fork—if "T. G.," of Clitheroe, applies to Whittaker, the blacksmith in Accrington, he will make him a first-rate fork, such as has done good service to your obedient servant, *R. W.* P.S. We use the large fork in summer between the rows of Mangold Wurzel, lifting the soil 14 inches deep, and find it very successful. [A good workman will earn 2*s.* 6*d.* per day at digging 10 inches deep, what may be called an adhesive loam, for 4*d.* per rod. You had better dig the Rye-grass stubble for Carrots. Docks must be pulled up.]

The able Pamphlet of Mr. Huxtable is justly exciting attention amongst agriculturists at the present moment. I must, however, confess I am not so hopeful as the author of the feasibility of growing Wheat at 5*s.* per bushel, and meat at 5*d.* per lb. Few farmers of intelligence will fail to admit that his views on the general principles of farm management are sound and good, and that if such principles, skilfully put in practice, will not realise a profit, we may despair of success under any other. His estimate of the cost of the manual labour to carry out the course of management he recommends is so very far below the amount which experience has taught us to be necessary under a much lower system of culture, that I fear the effect of his essay, without further explanation, will be to depress and dishearten, rather than rouse and encourage the large class of farmers who cling still to the customs of their forefathers, and who are really the class most in need of aid. If Mr. Huxtable can adduce one instance in which the course of husbandry he recommends has been pursued at the small cost in labour he assumes to be practicable, and where the land has remained free from Couch at the end of the course, as he assumes it would be at the commencement, and would kindly furnish the public with the items of expense in manual labour during the course, he would confer an obligation on the agriculturist. I have adopted a somewhat similar course to that recommended by Mr. Huxtable, but have found my labour bill to exceed double the amount stated by him, and in regard to the item of 1½*d.* per bushel for threshing Wheat, I cannot get the work done under 4*d.* per bushel. *R. F. W.* [The cost to us, including coals, per centage on machinery, and labour, is less than 2*d.* per bushel.]

Railway and Farm Hedgerows.—Travelling the other day to and from Birmingham, I observed men carefully digging the earth close to the roots and stems of the thorns forming the railway fence. A good many reflections at once presented themselves to my mind. Why was this being done? Because it was profitable to do it; cultivation and the absence of weeds naturally promoted the vigour and strength of the fence. Well, then, if it was profitable to do this, why don't farmers adopt the same plan? They are supposed to be keen calculators, and yet not a single instance of the kind did I see in the thousands of hedgerows diverging at right angles from the railway fence. Was it prejudice? want of capital? want of inclination? or want of observation? or what could this neglect arise from? I do consider the Birmingham railway fences to be a lengthened and running commentary and censure upon the defective hedgerow-ism of the United Kingdom. Landlords and tenants, too, may be forgiven for having had bequeathed to them a mass of ancestral deformities miscalled hedges; but surely something might be done to diminish sheer enormities to keep them clean and trimmed into decent shape. Hedges will pay for cleanliness and cultivation, as well as Beans or Turnips, and they need it as much. I hope no British farmer will for the future be found growing his own fire-wood, or saving pollards for gate posts, or preferring wooden hurdles to iron or netting. When we have more capital in agriculture and fewer waggons, all our gates and posts will I expect be of iron. Even the surveyor's sign posts and the name plates on our carts would be infinitely cheaper in the long run if made of cast iron. But to return to our hedgerows. How often do I see a new bank planted with Thorn-fence, unhoed for years; consequently the fence itself can scarcely maintain its mere stunted existence, whilst overgrown and almost stifled by enormous Thistles and other weeds, producing luxuriant crops of seeds to stock the adjoining fields. I find practically that by cutting down to reasonable proportions an old fence, and brushing it annually just about the 1st of July (after the partridges have hatched), you get your bank covered with good Grass instead of miserable weeds. The top should be like the thin edge of a wedge. The railway fence is effective, although only 18 inches wide; the field hedgerows are non-effective, although frequently 18 feet wide. How can any useful vegetation take place under a shade 10 to 20 feet high? I have now vented my spleen about the waste of land and money occasioned by bad hedgerows. *J. J. Mechi, Tiptree-hall, Jan.* 25.

Scotch Carts.—To your correspondents "A. B. C." and "L. V. R.," I shall reply as briefly as possible in respect to these carts. I thank the latter for saying "your readers are indebted to me for many a pleasant paragraph." I hope this will be of a similar mould. First, I never gave any measurements or weight of the above carts, but I may say 7 cwt. is about their weight. They were much knocked about by my men, and are now as strong as ever, showing they are not of a "gingerbread" construction. The cost for these was 12*l.* each, made to tilt, as I conceive all farm carts ought to be. If made fixed or "dormant bodied," the cost, as all know, would have been less—most of the Cumberland carts are thus made. If Cumberland claims parentage to these carts, Berwickshire and Roxburghshire have done what the duty of the offspring should be, viz., to surpass in excellence their parents. "A. B. C." says "the Cumberland carts might be im-

proved under skilful hands." So "L. V. R." has not a perfect cart to recommend, but "X. Y. Z." certainly has, and W. Mather, of Kalemouth, Kelso, is the maker, and never were finer carts or better wheels ever manufactured. "L. V. R." speaks of the "famous border carts"—mine are amongst these, but how different is the construction of carts in every village in England, every wheelright fancies he can build a cart, and yet many of these are the greatest simpletons. I could wish many a Hampshire maker would wheel himself about and march, and let some better artificers take their place. If a plough is to be made, or any work required, a tree or half a tree must be cut up, and charged in the bill; all the wood they can, they use, then cut and trim; the cuttings and trimmings are all in the bill. What improvements can a man introduce or get done with such a class of blunderers? They also make the farm servant believe in the excellence of clumsiness. I wish in every village there was a well-educated smith and wheelright; but at present we must go far away from home for good farm implements. Some have introduced iron wheels for carts and drills, highly stupid inventions on a farm. I need not dilate upon their imperfections. I recommended Scotch carts as better than waggons, and better than any cart I ever saw in England, many of which are very "cockney," as "L. V. R." knows, and "A. B. C." can testify. In their arguments these gentlemen have, I fear, "couped," Scottice, "upset," both themselves and their carts. *X. Y. Z., Hants.*

Qualification of Land Agents.—Your correspondent "B. M.," in a late *Gazette*, jumps to his own conclusions, unwarranted by any observations of mine, as my reasoning never went to prove that a moderate scientific or classical education would alone fit a man for this duty, unless accompanied by sound practical knowledge. The absence of either renders a person incompetent to perform the services necessary, and will inevitably cause any one "to strike on a sand bank." Why should not practical agriculture form a portion of the studies alluded to? I quite agree with "B. M." that a mere literary person or "fire-side farmer" would only form a parallel to the lawyer land agent. *B.*

Cumberland Clod-crusher and Cart.—I am sorry I omitted to reply to "Clericus" on the subject of the Cumberland clod-crusher. The precise weight of a 6 feet square implement of this kind, I cannot obtain very easily; those commonly used, of the form and size described, a pair of the light Cumberland horses walk easily away with. As to the "teeth," the edges of the angles of the cross-bars or breakers may be shod with iron if desired; well-seasoned ash lasts, however, as they say here, "a serious long time"—very many years. The carpenter of "Clericus," who cannot make a tool of the kind for less than 4*l.*, ought not to make it at all; the best workman, with the best wood, would here charge no more than 30*s.* If, after the descriptions given by "A. B. C." and myself, this or any other carpenter or joiner cannot make the implement, I am afraid his head must be of a nature incapable of being influenced by any clod-crusher yet invented. With regard to the Cumberland carts, "A. B. C." may be assured that their just price is only 10*l.*, with side pieces, the whole made of the best seasoned wood, and capable of carrying a ton of lime or coal. Nay, at Penrith, a respectable cartwright declares that he charges only 9*l.*, but says "he gets his wood handier" than the mountaineers do; 10*l.* and 11*l.* also, is the price of the Scotch carts on the borders and in Northumberland (see Mr. Allen's paper read before the Newcastle Farmers' Club last year). "A. B. C.'s" cart of 15*l.*, and "X. Y. Z.'s" of 26*l.*, are neither of them the common farm cart of the North. *L. V. R.*

Advertisement Duty.—There is a notice in your Newspaper in favour of a movement for the repeal of the advertisement duty. This duty interferes more with the interests of farmers than many persons are aware of. Ever since my return from America, I have frequently complained of the evil it occasions. It is often supposed that newspapers in America are filled with politics, and most travellers regard them as mere vehicles of opinions. They are not so—they are means by which time is economised, and business extended and carried on. The news they contain is generally confined to a few lines, the rest of the papers being filled with advertisements. Whatever a farmer or shopkeeper has for sale he advertises. In England, farmers are compelled to lose, in the majority of cases, a day in order to go to a market town, and say that they have half a dozen pigs for sale, or six bushels of Vetches or Peas, or whatever else they may have. Oftentimes they fail in selling their articles, and a fortnight after, find that there was some person not far off who would have purchased of them. Could the farmer have advertised what he had for sale, he would have saved his market, and might have arranged the sale at his own house. In the town of Buffaloe, in the state of New York, there were 12 newspapers published a few years since, of which five were daily papers, and two German—but they contained hardly any news. They were sustained as advertisement sheets for the use of the farmers in the neighbourhood, and the shopkeepers in the towns, which is the case everywhere in the United States. Again, supposing such advertisements to be as frequent in this country as they are in the United States, and that farmers constantly saw notices of new machines, new implements, economical means for roofing &c., before them, their present obstinate prejudices would be overcome, and by this simple influence activity and inquiry would supplant indolence, and the dull belief that what a man has seen practised for 20 years must be incapable of improvement. *T. F.*

Farmers' Clubs.

NEWCASTLE, *Aug.*—I. "*Which is the best method of improving Grass land when it has become hidebound?*"

Mr. GLOVER announced that he had received communications on this subject from Mr. Hugh Taylor, of Cramlington, and from Mr. D. F. Jones, a Fifeshire farmer, both of which he would read. Before doing so, he would just take the liberty of saying, that it was little to the credit of a Club possessing 200 members, to send only two communications in connection with the subjects for to-day's discussion. Mr. Taylor wrote as follows:—"The idea conveyed to me by the term hidebound is, that the roots of the Grass are so interlaced, and so firmly matted together, as to resemble peat; that the blades of Grass sent up are so puny as scarcely to be able to penetrate the thick covering of dead though undecomposed vegetable matter, and that the roots and dead blades together form so impenetrable a thatch that the access of air and moisture is all but entirely prevented. Last autumn, after a continuance of wet weather, I examined a Grass field at Cramlington, laid out in the high, old-fashioned ridges. Whilst the furrows were so wet that every passing animal left its impress, the tops of the ridges were as hard and dry as in the height of summer. In fact, upon the removal of the turf, it was found that the rain had not penetrated the soil—that each ridge had turned off the water as well as any well-built and carefully covered corn stack. The consequence of this state of things need scarcely be mentioned. The rains not only bring down many substances fitted to promote the growth of plants, but, by percolating the soil, open a passage for the air; and then follow all those chemical changes in the soil without which vegetation must soon be at a standstill. In attempting to restore to hidebound land its proper degree of productiveness, all our endeavours must tend to the breaking up of this thatch, that air and moisture may be admitted, to promote the decomposition of the organic matter. Seeing a description of a scarifier in the 'British Husbandry' of the Library of Useful Knowledge, I had one constructed according to the plan there laid down, and tried it upon one portion of a field that was completely hidebound. After the land had been well combed and scarified, the whole field was top-dressed with lime and soil, at the rate of about 25 tons per acre. The produce was not weighed, but every one who saw it was of opinion that the scarified—which was the worst part of the field—carried twice as heavy a crop as the better, but unscarified portion. Scarifying was tried subsequently on several occasions, and in each with marked good effects. This implement is now in the possession of Mr. Stephenson, of Throckley, who has, I have no doubt, found it equally useful in improving his Grass lands. I hope other members of our Club will give this, or some other implement on the same principle a trial, and let us know the results. The answer that I should be inclined to give to this question is—That after the land has been well scarified, a heavy dressing of caustic lime (or of some other substance tending to promote the rapid decomposition of organic matter) be given in the autumn or early spring, and this well harrowed in."—Mr. D. F. Jones, a Fifeshire farmer (continued Mr. Glover), had written as follows:—"Hidebound Grass land, if I understand the term properly, is where there is, from a long continuance of pasturage, an accumulation of undecomposed or partially decomposed vegetable matter, which remains in this state from the want of free access of air, and its consequent decomposing effect. Undecomposed vegetable remains, instead of acting as a manure, act as a poison to the growing plants. Instance, peat. But when the various chemical elements which compose or build up these organic remains are freed from the organic combinations in which they existed when forming a part of an organised being, and on decomposition enter into other chemical (inorganic) combinations, they form a most valuable source of food for the living plant. Many of the members of the Newcastle Farmers' Club are well aware of one of the great distinctions between the vegetable and animal kingdoms—that the former requires that its food should be entirely of an inorganic nature, either derived from the mineral world or from organic decomposition. It is still doubtful if the parasitic plants are exceptions to this rule; but with this we have nothing to do here. The latter, the animal kingdom, requires that its food should be in an organised state. The food of animals consists of but a few of the chemical elements; and these must be presented in an organised form, whether animal or vegetable. Were it not so, a lump of charcoal, moistened with a few drops of spirit of hartshorn, would be nearly all that a man would require as food—a dinner the members of the Newcastle Farmers' Club would not much fancy to find on the table when they enter the dining room. If the hidebinding be caused by the accumulation of imperfectly-decomposed vegetable matter, the remedy will be simple—namely, admit the air, and employ such manures as will exercise a decomposing effect on the organic matter. To admit the air, I would recommend the use of a most efficient implement made by Mr. Slight, of Edinburgh, a subsoil-stirrer, worked by two horses. Harrows may also be used with advantage. Added to these mechanical operations, a dose of quicklime, or lime and salt; and if the pasture be very old, a dose of bone-dust. In recommending the subsoil-stirrer, I am supposing that the land is thoroughly drained. If not, let this be the first operation performed."—Mr. STEPHENSON said, in reply to the Chairman, that the scarifier named by Mr. Taylor, and which was now in his (Mr. S.'s) possession, consisted of 12 or 14 coulters, fixed in a frame, with a large wheel before it. These coulters could be driven 5 inches into the turf; and by using it first in one direction, and then crosswise, the ground was effectually cut up. He made use of it last spring. The season, since, had not been favourable, and he could hardly yet make any report of the result. He considered the question now under discussion to be one of very great importance. A great portion of the Grass land in this district, owing to the fog not being destroyed, did not produce one-third of the Grass which it was capable of yielding. He had tried different ways, and had come to the conclusion that the most effectual method of destroying the fog was to pare and burn. He had repeatedly hmed hidebound land—one field three times over—and had at last obtained a good herbage; but it had taken nine years to accomplish this—three successive dressings every three years. He had applied guano—and that method had failed. He had applied soot at the rate of 50 bushels per acre, which completely destroyed all vegetation for two years; but now the pasture was much improved. He found that paring and burning, and giving six loads of lime to the acre, was the most effectual method. You only lose one year's Grass by so doing. After the ashes and lime were applied to the land, and it was properly harrowed, the Grass and Clover seed should be sown, and the following year there would be a splendid pasture. He spoke from experience. He was aware that several members of the Club would condemn this plan, because the best of the land was for a time destroyed by the burning. But what of that, if by so doing you eventually made the land of greater value? He was quite satisfied, he repeated, that there was a large breadth of land not producing a third of what it would do, if the top soil were removed.—Mr. W. KELL remarked, that paring and burning had this recommendation, he understood, that it destroyed the ova of insects injurious to the crops.—The CHAIRMAN said, it was certainly a staggering remedy for hidebound land, to take the hide off altogether. What had Mr. Matthews to say on the subject?—Mr. MATTHEWS said paring was the most effectual remedy. Five acres of land were now under experiment at Beamish, by burning and other modes, and he would communicate the result at a subsequent meeting. There was a subsoil plough of Ransome's which was an excellent instrument, disturbing the whole of the soil without removing it. He must support the views of Mr. Stephenson. By his method you got a more thorough change of herbage, and quicker, and could apply whatever seeds you thought proper. II. "*Whether is it more profitable to fallow after Beans, when they are substituted for Grass seeds, so making a seven years' course, or to take a white crop after Beans, making an eight years' course, due regard being paid to the non-deterioration of the land.*"—The SECRETARY again read a communication from Mr. Hugh Taylor. "The finishing the course of cropping at the seventh instead of the eighth year," he said, "would be at once set down as a complete sacrifice of a crop, were it not that many good and money-making farmers consider the former course more profitable. The grounds of this preference I find it impossible to discover. It is acknowledged that land can be kept in condition under the usual four-course of cropping, provided we insure against the failure of the Grass seeds, by the substitution, occasionally, of some crop which shall neither impoverish the soil nor allow of its being overrun with weeds. Since the eight-years' course is merely that of the four-years repeated, Beans being substituted the second time over for Grass seeds, the Bean crop, since we are unable to continue the course by taking the usual white crop after it, must either impoverish the soil or render it foul. If either of these conclusions has any foundation, then the advocates of the seven-years' course may be in the right. Does, then, the Bean crop leave the land in a foul condition? There can be no doubt that when Beans are sown on foul land, in spite of the character they have for smothering weeds, they will leave the land in as bad (if not worse) condition than when they were sown, if the usual broadcast method is followed. But under these circumstances the hay crop would be equally liable to the objection. When, however, as in the Lothians of Scotland and in some parts of our own county, the Bean crop is drilled at intervals of 2 feet or more, repeatedly horse-hoed, hand-weeded, and set up in the same manner as Potatoes, it must, so far from leaving the land out of order, be one of the crops best adapted to the cleaning of it. In fact, on soils much addicted to the growth of weeds, the hay crop is found so much to encourage this tendency that the Bean crop is often substituted, for the sake of keeping the land clean. This, then, cannot be a sufficient reason for the omission of the white crop. Does the Bean crop exhaust the land more than the hay crop? From data afforded by 'Johnston's Lectures on Agricultural chemistry,' I have calculated that the following is the total amount of substances taken up by the crops in the usual four-course of husbandry:

	Inorganic Matter.		Organic Matter.	Total.
Fallow, Wheat, Oats,	536 lbs.	.....	8364 lb.	
Hay	209 lbs.	.....	4291 lb.	 13,400
Substituting Beans for hay:				
Fallow, Wheat, Oats,	36 lbs.	.....	8364 lb.	
Beans	210 lbs.	.....	4340 lb.	 13,450

We have, then, a balance of 50 lbs. per acre, or three-tenths per cent. on the gross produce, against the Bean crop—an amount scarcely appreciable at any time, but utterly lost sight of when we consider that this excess is in the organic constituents, and call to mind that the whole of the organic matter of plants may be derived from the atmosphere. It must, too, be of still less consequence in the nighbourhood of Newcastle, throughout which so great an amount of organic elements—in the forms of chloride and sulphide of ammonium, carbonic acid, &c.—is sent into the atmosphere, by the combustion of coal and refuse from the mines, and which must be brought down again, in quantity, by every shower. No account has here been made of the aftermath of the hay. I think we may say that it exhausts the land to at least one quarter of the extent of the crop of hay. If we take this view we shall have then:

Course with hay...	14,525
Course with Beans	13,450

Or the hay crop exhausts the land to the amount of 1000 lbs. more than the Bean crop. There is no doubt that though the total amount varies so little, yet the different constituents combined to form this total vary in the two crops. But even this is in favour of the Bean crop; for it deprives the land of a less weight of substances useful to the grain crops than does the hay. This may be seen by comparing the analyses of the two crops. Neither, then, can this ground of preference be sustained. In cases where an actual comparison of the two methods has been made, the sole evidence taken has probably been the succeeding Wheat crop. That this should be better by fallowing after Beans is only to be expected; since the great bulk of that nutritive matter in the soil, which might have been assimilated by the Oat crop (and this more especially of the soluble silicates, which would have been used in the building up of the stem and husk of the Oat), has been left in the soil as so much extra manure for the crop of Wheat. But let us try each course fairly, remembering that the manure must be proportional to the number and description of crops, and the land treated in a husbandlike manner when under the Bean crop, and I think I may venture to say we shall hear little more of fallowing after Beans."—Mr. ROBSON said, one course would be more profitable than another according to circumstances. On land naturally good, and in rich condition, like Mr. Stephenson's, no doubt an eight years' course was the most profitable; but on poor land it was advisable to fallow after Beans, and not to take a white crop, or you would make your poor land still poorer.—Mr. STEPHENSON differed from the last speaker. He seemed to think that he lived in Goshen. Let them only exert themselves, and they would bring their land into as high condition as any in Tyneside, if they would only expend capital. He considered that to fallow after Beans was farming land to perfection. By taking a crop of Wheat or Oats you were extracting from the land what was essential to the green crop. The method he would recommend was to fallow after Beans—then have a green crop—then Wheat, seed, two years Grass and Oats, fallow, Wheat, Beans, making an 8-years' course. By this method you always had your land in good heart, and your crops would be much improved, particularly Clover, of which, instead of having only a ton to the acre, and nothing but Rye-grass, you would, in a favourable year, have nearly three tons, and full of Clover. He had this year had a field in Clover which was fallowed after Beans, and the first cut weighed 2¾ tons per acre. The best way, he would repeat, to keep land in good heart, was to fallow after Beans. III. FAILURE OF THE BROAD CLOVER: *What is the reason assigned for the failure of the Broad Clover, and what means ought to be taken to prevent this loss?*—Mr. WEEKS said the cause of the failure, according to the general opinion, was that the land grew tired of growing the crop. Yet there were two fields near him—one of which had grown Clover every four years from time immemorial, and the other had only been sown with Clover this year—and the former had yielded an abundant crop, while the latter was almost a total failure.—Mr. COLBECK observed that the question was one of great difficulty. A neighbour of his who had been sorely baffled with his Clover, said he would *mak'* the land grow it, but he had been obliged to give in—the land beat him. He (Mr. Colbeck) had tried various experiments, but without arriving at any satisfactory conclusion. He did not think that the failure arose from the absence of inorganic constituents in the soil. The same land that could not be made to grow broad Clover would grow Beans, and the two crops required as nearly as possible the same constituents. A French writer on agriculture ascribed the failure to a parasitical plant, the Lesser Broomrape (or Orobanche minor). He said that in Flanders it had

been found that this plant, whose seed resembled that of the Clover, destroyed the crop. Perhaps the members of the club would keep a look-out, and see if they could detect it among their Clover. There was also another parasitical plant—the Clover Dodder (Cuscuta Trifolii), which might be a cause of the failure.—Mr. John Cookson said the general opinion was that the land became "Clover-sick." If the failure was caused by a parasitical plant, how came it that the same seed would give you a good crop on fresh land, although it gave you little or none on the old land?—Mr. Johnson said, he only knew that a crop of Clover was often very bad to come at. He had ploughed a field that had been in Grass 50 years or more, and sown it with Clover; and he had not a stem to cut. The field would not grow Clover. It was rather better the second year, certainly; but it was not so good as he looked for.—Mr. W. Stephenson said, he never wanted Clover; he always had plenty; but he only sowed it every eight years, and with Beans between. They might talk of chemistry as they liked, which had undoubtedly done much for us, but had enlightened us little as to the failure of the Clover; he was convinced that the principal cause of failure was from such frequent repetition.

Calendar of Operations.

JANUARY.

Lammermuir Sheep Farm, *Jan.* 21.—Winter has now fairly set in, and that with no ordinary severity. It began on the 28th December, when the thermometer fell to 19°, accompanied with a hurricane of wind. The frost has continued ever since with greater or less intensity, occasionally varied with slight showers of snow. In this way the surface of the ground was frozen to the depth of 7 or 8 inches, and a substantial foundation laid for a snow storm, which began in earnest on the 12th ult. The average depth is now between 18 and 20 inches; in many places the wreaths are from 6 to 10 feet deep. As it did not come on without sufficient warning, there was plenty of time to have the sheep laid in to proper shelter. We are now haying the whole of them, and considering that this is the first genuine snow storm our hills have experienced for six or seven years, the sheep are eating the hay much more greedily than we had anticipated. The common allowance is a stone to every score of sheep, or something like 1¼ lb. per head. As the snow is deep, and they can get very little heather, the hay is supplied to them morning and evening. The rams were removed from the ewes on the 5th ult., after having been among them for six weeks. They are now in an inclosure by themselves, and receive a small allowance of Turnips daily, just sufficient to keep them in moderate condition. Before the frost set in, we had succeeded in getting the greater part of our yellow Turnips either stored or earthed up with the plough. These, we trust, will be safe, though we are rather apprehensive for those which are still unprotected. The weather has been very unfavourable for either storing or earthing up. When free from frost, the ground was generally too wet for introducing a plough among them; for unless the soil be dry, it drags on the breast of the plough and makes very imperfect work, besides the poaching it causes, to the injury, as we think, of the succeeding grain crop, even though it be afterwards subjected to the influence of frost. Before the snow, the carting out of manure for Turnips, and top-dressing of a piece of old Grass with earth, was the principal work of the farm horses. Now, however, man and horse are fully occupied in providing with hay those lots of sheep which lie nearest to the steading. *A Lammermuir Farmer.*

Notices to Correspondents.

Agricultural Politics: *Falcon.* Your last article must be declined—with thanks.

Bad Butter: *S R S* asks, in the *Gazette* of Jan. 26, for the cause of his butter being bad both in texture and taste; cows fed on Mangold Wurzel and Beans, with scrupulous cleanliness in dairy utensils, but cream churned only once a week. My cows were fed last winter on Mangold Wurzel cut into shreds with a (Moody, Frome) Turnip-cutter, and mixed with hay and straw-chaff; butter made twice a week. The butter was good in flavour, but crumbled. In the spring I was able to add Rape to the above food, the butter immediately changed to a good texture, and improved in flavour; this change I attribute to the oily nature of the plant Rape. I have this winter used oilcake crushed, giving two quarts a day to each cow, three perhaps would not be amiss, with Mangold Wurzel, some few Swedes, and a sprinkling at times of Carrots, all cut up, being well cleared from dirt, and mixed with chaff. Butter is good both in texture and flavour, but I think it should be made winter and summer twice a week. I have used Beans, but find them neither so good nor so cheap as cake. *Thomas Sealy.*

Boxes, &c.: *A B.* The Peruvian Barley *we* would not buy at the price.—The descent into the boxes need not be more than 1 foot or 18 inches, and that is no great obstacle.

Farm Accounts: *C J S* will soon see the English Agricultural Society's account books. They are to be published by Mr. Sanford, 315, Oxford-street.

Fen Farm: *J W.* A letter addressed to you has been returned. Please to give your full address.

Hams and Bacon: *A B.* When properly salted, they will dry very well in a dry and airy outhouse without artificial heat, though not so quickly as when the atmosphere is dried by the assistance of such means. It will not answer to keep pork of 7 stones (of 8 lbs.), carcase weight, 12 months in pickle; as, in addition to becoming intolerably salt and losing weight, the fibre of the muscle of meat so young would not be sufficiently firm to resist the corroding action of salt; and if it were otherwise, such meat would be unsaleable in the provision market. Such meat may certainly be made into bacon, and, perhaps, best by a method much practised in Ireland with pork too small to cure in flitches, which is as follows, viz., after cutting off the ham to cure in the usual way, the whole of the bones are taken out of the flitch, which, after being in salt for 10 days or a fortnight, is hung up for a week to partially dry, after which it is tightly rolled up the lengthway of the flitch—the belly part inside, and the back the outside of the roll—and the roll secured by twine wound spirally at 1½ to 2 inches apart from one end of the roll to the other, after which the roll is hung up to complete the drying. It is very doubtful, however, that the above described, or any other, mode of curing pork so young would answer so profitable a purpose as selling it fresh for table, which at the weight named, if well fed and of a small kind, is well adapted for the London market. *J. E.*

Mr. Sadler on Rearing Calves: *Anon.* We have received an unfinished article on this subject, without signature.

Mummy Wheat: *J C.* We have looked back, but cannot find the advertisement you allude to. Wanted—the advertisement and an instance, with full particulars of fraud on the part of the advertiser, before we can do anything in the matter.

Patent Process for preparing Flax: *Spes.* If "T. S." can give any information with regard to the patent process of preparing Flax, "carried on at Old Bow with complete success in 1810," he may confer a great benefit on the country.

Peruvian Barley: We have to thank Messrs. Lee for a sample. It is a naked Barley not different in appearance from varieties of that species which have been often cultivated in this country before. The price (10*s.* a peck) at which it is advertised may not be more than enough to pay a reasonable profit on the cost at which it has been procured; but it is certainly far more than enough to hinder any reasonable man from purchasing it.

Pigeons: *Constant Reader.* The best in English is "A Treatise on Domestic Pigeons," 8vo, with copper-plates. London, 1765. Both the text and the figures of this have been shamelessly pirated. It is scarce—a copy with coloured plates fetched a guinea, and we were fortunate in getting an uncoloured copy for 6*s.* It treats of fancy pigeons only. There is the "New and Complete Pigeon Fancier," by Daniel Girton, Esq., of the county of Bucks (London: T. Kelly, Paternoster-row, no date). This is probably out of print; price 1*s.* There is the "Pigeon Keepers' Guide," price 6*d*, by James Rogers (a dealer), of the City-road (Dean and Co., Threadneedle-street), from the latest and best authorities. It has some fair woodcuts. "Farming for Ladies" has a chapter on the subject. Temminck's "Histoire des Pigeons et Gallinacé" (never translated), has some interesting particulars; but he mainly directs his attention to the wild and foreign species, viewing them as a naturalist rather than a poultry keeper. *D.*

Poultry: *A Midland Subscriber* may apply to Mr. James Bissell, Bradford-street, Birmingham.

Spade Husbandry: *A B.* Will "J. R." say what quantity of Beans and Beet his friend the carpenter obtains per acre by double culture, and if he has ever tried Carrots as a double crop with Beans, successfully.

Sheep in Orchards: *E L* says, "One of your correspondents asks whether sheep are injurious to orchards. They are so, if the oil of their fleeces is allowed to come in contact with the fruit trees, and poison the bark; but if the fruit trees are protected either by being staked or thorned, or what is better still, if they are planted on a slight eminence, so that the sheep has no comfortable standing place to rub, the orchard will be uninjured."

Willows: *A Correspondent* asks if any of the readers of the *Chronicle* or *Gazette* will obligingly furnish information on the cultivation of Willows. The kinds most profitable, the best method of cultivation, with reference especially to marshy lands near rivers and lakes, and the best way of setting to work to establish a basket factory where none has existed before; this and any other information on the subject of turning marshy lands (incapable of being thoroughly drained) to profit, will be thankfully received.

Worcester Agri. Society: *Somerset* will be very much obliged, and no doubt many other readers of the *Gazette*, if Mr. Webb or Mr. Oldaker will state the quantity of guano applied per acre, and also how applied, and whether the 35 tons 2 cwt. 3 qrs. 12 lbs. of Swedes obtained per acre were Turnips only, or with the tops and tails.

Young Cattle: *F Hale.* We should prefer keeping young stock in small sheltered yards to tying them up. In the former case they will probably eat less food; but in the latter, though they eat more, they will at the same time exceed the others more in thriving than they do in eating. Swedes and good hay are of course first-rate food for any kind or age of stock.

*** Communications reaching town after Wednesday cannot be answered the same week.

Markets.

COVENT GARDEN, Feb. 2.

The supply of Vegetables is pretty well kept up, and Fruit for the most part is sufficient for the demand, except Pears and Apples, which are scarce. Hothouse Grapes and Pine-apples are good for the season—the former rather scarcer. Filberts and Walnuts are abundant, and Chestnuts plentiful. Oranges and Lemons are abundant, and there are now some good Seville Oranges in the market. Amongst Vegetables, Turnips and Carrots are good, Cauliflowers and Broccoli sufficient for the demand. Potatoes are unaltered since our last account; some foreign ones are in the market, at from 50*s.* to 70*s.* a ton. Lettuces and other salading are dearer, and so are Mushrooms. Some French Beans, Asparagus, Seakale, and Rhubarb may be obtained. Cut Flowers consist of Heaths, Pelargoniums, Bignonia venusta, Primulas, Camellias, Cinerarias, Christmas Roses, Azaleas, Lilacs, Lily of the Valley, Epacrises, Acacias, and Roses.

FRUITS.

Pine-apples, per lb., 5*s* to 8*s*	Almonds, per peck, 6*s*
Grapes, hothouse, p. lb., 6*s* to 8*s*	— sweet, per lb., 2*s* to 3*s*
— Portugal, per lb., 9*d* to 1*s*	Walnuts, p. 100, 1*s* 6*d* to 2*s*
Pears, per doz., 6*s* to 10*s*	— p. bush., 16*s* to 24*s*
Apples, kitchen, p. bsh., 4*s* to 6*s*	Filberts, per 100 lbs., 60*s* to 65*s*
Lemons, per doz., 1*s* to 2*s*	Nuts, Bar., p. bush., 20*s* to 22*s*
— per 100, 6*s* to 12*s*	— Brazil, p. bsh., 12*s* to 16*s*
Oranges, per doz., 9*d* to 1*s* 6*d*	Kent Cobs, 65*s* to 75*s* p. 100 lbs
Oranges, per 100, 5*s* to 12*s*	

VEGETABLES.

French Beans, p. 100, 2*s* 6*d* to 3*s*	Radishes, p. 12 hands, 1*s* to 1*s* 6*d*
Seakale, per punnet, 1*s* to 2*s*	Carrots, per bun., 6*d* to 8*d*
Asparagus, per bundle, 3*s* to 6*s*	Spinach p. sieve, 2*s* to 3*s*
Rhubarb, p. bundle, 1*s* to 1*s* 6*d*	Onions, p. bushel, 3*s* to 4*s*
Cabbages, p. doz., 9*d* to 1*s*	— Spanish, p. doz., 1*s* 6*d* to 4*s*
Cauliflowers, p. doz., 6*s* to 9*s*	Shallots, per lb., 4*d* to 8*d*
Broccoli, p. doz. bundl., 18*s* to 24*s*	Garlic, per lb., 4*d* to 8*d*
Greens, per doz., 2*s* 6*d* to 4*s*	Lettuce, Cab., p. sc., 4*d* to 9*d*
Brussels Sprouts, p. hf. sieve, 2*s* to 3*s*	Endive, per score, 1*s* 6*d* to 2*s* 6*d*
Sorrel, p. hf. sieve, 1*s* to 2*s*	Mushrooms, p. pot., 2*s* to 3*s*
Potatoes, per ton, 60*s* to 120*s*	Small Salads, per punnet, 2*d* to 3*d*
— per cwt., 3*s* to 7*s*	Watercress, p. 12 bun., 9*d* to 1*s*
— per bush., 2*s* 6*d* to 3*s* 6*d*	Fennel, per bunch, 2*d* to 3*d*
Turnips, p. doz. bun., 1*s* 6*d* to 3*s*	Savory, per bunch, 2*d* to 3*d*
Red Beet, per doz., 1*s* to 2*s*	Thyme, per bunch, 2*d* to 3*d*
Horse Radish, p. bdl., 2*s* to 4*s*	Parsley, p. doz. bun., 3*s* to 4*s*
Cucumbers, each, 3*s* to 3*s* 6*d*	— Roots, p. bdle., 1*s* to 1*s*
Leeks, per bunch, 2*d* to 3*d*	Marjoram, per bunch, 2*d*
Celery, p. bundle, 8*d* to 2*s*	Mint, per bunch, 9*d* to 1*s*

SMITHFIELD, Monday, Jan. 28.

We have a good supply of Beasts, and trade is dull at barely late rates. The number of Sheep is small, but quite adequate to the demand, which is very limited; our highest are extreme quotations. Calves being scarce sell readily at good prices. From Holland and Germany we have 120 Sheep and 49 Calves; from Spain, 21 Beasts; from France, 25; from Scotland, 340; from Norfolk and Suffolk, 2100; and 500 from Lincoln, Leicester, and Northampton.

Per st. of 8 lbs.—	s	d	s	d
Best Scots, Herefords, &c.	3	10 to 4	0	
Best Short-horns	3	6 — 3	8	
2d quality Beasts	2	6 — 3	2	
Best Downs and Half-breds	4	0 — 4	4	
Ditto Shorn				

Per st. of 8 lbs.—	s	d	s	d
Best Long-wools	3	6 to 3	8	
Ditto Shorn				
Ewes & 2d quality	2	10 — 3	4	
Ditto Shorn				
Lambs		—		
Calves	3	8 — 4	8	
Pigs	3	4 — 4	4	

Beasts, 3524; Sheep and Lambs, 16,850; Calves, 85; Pigs, 210.

Friday, Feb. 1.

The supply of Beasts is a fair average, both as regards numbers and quality. Trade is very dull, and Monday's quotations cannot be maintained; indeed, several remain unsold. The number of Sheep is small, consequently they are cleared off cheerfully at fully late rates, but at no quotable advance. There are but few Calves on offer; trade is brisk at Monday's rates. Trade is more brisk for Pigs, the dead markets being clearer. From Holland and Germany there are 29 Beasts, 100 Sheep, and 58 Calves; from Scotland, 140 Beasts; from Norfolk and Suffolk, 200; and 121 Milch Cows from the home counties.

Best Scots, Herefords, &c.	3	8 to 3	10
Best Short-horns	3	6 — 3	8
2d quality Beasts	2	6 — 3	0
Best Downs and Half-breds	4	0 — 4	4
Ditto Shorn		—	

Best Long-wools	3	6 to 3	8
Ditto Shorn		—	
Ewes & 2d quality	2	8 — 3	4
Ditto Shorn			
Lambs			
Calves	3	6 — 4	8
Pigs	3	6 — 4	6

Beasts, 824; Sheep and Lambs, 1690; Calves, 164; Pigs, 240.

HAY.—Per Load of 36 Trusses.

Smithfield, Jan. 31.

Prime Meadow Hay	66*s* to 72*s*		Clover	60*s* to 80*s*	
Inferior ditto	50	63	New Clover	—	—
Rowen	50	60	Straw	21	25
New Hay	—	—		J. Cooper.	

Trade very heavy.

Cumberland Market, Jan. 31.

Prime Meadow Hay	65*s* to 70*s*		Inferior	65*s* to 75*s*	
Inferior ditto	50	60	New Clover	—	—
New Hay	—	—	Straw	24	28
Old Clover	80	88		Joshua Baker.	

Whitechapel, Jan. 31.

Fine Old Hay	60*s* to 66*s*		New Clover	—*s* to —*s*	
Inferior ditto	50	55	Inferior ditto	55	60
New Hay	—	—	Straw	22	26
Old Clover	80	84			

POTATOES.—Southwark, Jan. 28.

The Committee report that there have been but few arrivals since our last report, which has enabled salesmen to effect a clearance of stored Potatoes to a certain extent. The following are this day's quotations:—Yorkshire Regents, 90*s.* to 130*s.* per ton; Wisbeach do., 70*s.* to 100*s.*; Scotch do., 70*s.* to 80*s.*; Scotch common whites, 50*s.* to 60*s.*; French whites, 60*s.* to 80*s.*; Belgian do., 60*s.* to 70*s.*

HOPS.—Friday, Feb. 1.

Messrs. Pattenden and Smith report that the market continues the same for all fine Hops.

MARK LANE.

Monday, Jan. 28.—The supply of Wheat by land carriage samples from Essex and Suffolk this morning was small, but good from Kent; and although offered at a decline of 1*s.* to 2*s.* per qr., a considerable quantity remained unsold towards the close of the market. Holders of foreign being generally indisposed to allow of any reduction, very little business was transacted.—English malting Barley is fully 1*s.* per qr. lower; foreign grinding supports the rates of Friday last.—Beans are unaltered in value.—We reduce our quotations 1*s.* per qr. for white Peas.—Former prices are fully maintained for Oats, but the trade is not brisk.

British per Imperial Quarter.	s.	s.		s.	s.
Wheat, Essex, Kent, & Suffolk ... White	41	43	Red	36	38
— — fine selected runs ... ditto	43	45	Red	38	40
— — Talavera	48	50			
— Norfolk, Lincoln, & York ... White	—		Red	—	
— Foreign	35	54			
Barley, grind. & distil., 21*s* to 23*s* ... Chev.	24	28	Malting	23	24
— Foreign ... Grinding and distilling	18	22	Malting	22	25
Oats, Essex and Suffolk	15	19			
— Scotch and Lincolnshire ... Potato	18	22	Feed	17	20
— Irish ... Potato	18	20	Feed	15	18
— Foreign ... Poland and Brew	16	20	Feed	13	17
Rye	20	24	Foreign	20	23
Rye-meal, foreign ... per ton	5*l*	6*l*			
Beans, Mazagan ... 22*s* to 23*s* ... Tick	24	26	Harrow	24	26
— Pigeon ... 25*s* — 28*s* ... Winds	22	28	Longpod	26	28
— Foreign ... Small	24	36	Egyptian	22	23
Peas, white, Essex and Kent ... Boilers	24	26	Suffolk	25	27
— Maple ... 24*s* to 26*s* ... Grey	22	23	Foreign	21	28
Maize ... White	22	25	Yellow	24	26
Flour, best marks, delivered ... per sack	36	40			
— Suffolk ... ditto	32	36	Norfolk	32	36
— Foreign ... per barrel	22	24	Per sack	32	34

Arrivals in the Port of London last week.

Flour, 13470 sks	Wheat.	Barley.	Malt	Oats.	Beans.	Peas.
— 6435 bls	Qrs.	Qrs.	Qrs	Qrs.	Qrs.	Qrs.
English	3511	2477	5356	226	1005	810
Irish	—	—	59	890	—	—
Foreign	10358	2020	—	25	2317	—

Friday, Feb. 1.—There has been a moderate arrival of foreign Wheat, good of Barley, during the week, and small of other descriptions of grain. This morning's market was badly attended, and the value of all corn entirely nominal, with a decidedly downward tendency in prices, for every sort excepting Oats.—The corn trade throughout the kingdom since the 25th ult. has continued depressed, and a decline of fully 1*s.* per qr. in the value of English Wheat and Barley has been very general. In Dantzic the supplies by land-carriage have been bought at a decline of 2*s.* per qr., but old sorts remain nominally as before. In the other Baltic ports the continued dull accounts from this side have caused buyers to pause, and business to become dull, but prices are unaltered, supplies having fallen off, and both buyers and sellers appearing satisfied that the Wheat crop throughout that country was a small one. The Belgian markets are heavy, and 61—62 lbs. Antwerp and Louvain Wheat quoted 35*s.* 6*d.* to 37*s.* f.o.b. In Leghorn, on the 23d ult., quotations for Wheat were as high as in our own markets. In Naples we find prices have declined; good Barletta is quoted at 33*s.*, freight to U. K. 6*s.* per qr. In Odessa, on the 14th ult., the stock of soft Wheat consisted of 375,000 chwts. of which 280,000 were in first hands, and 95,000 belonged to exporters; the 280,000, however, consisted of light ordinary qualities. Good new Polish was quoted at 30*s.* to 32*s.* 6*d.*; and old at 28*s.* to 30*s.*

Arrivals this week.

	Wheat. Qrs.	Barley. Qrs.	Oats. Qrs.	Flour.
English	2720	3610	6130	3110 sacks
Irish	—	—	1140	
Foreign	8270	6160	5490	— brls.

Imperial Averages.	Wheat.	Barley.	Oats.	Rye.	Beans.	Peas.
Dec. 22	38*s* 9*d*	25*s* 9*d*	15*s* 9*d*	22*s* 9*d*	27*s* 5*d*	28*s* 11*d*
— 29	39 4	25 9	15 6	24 0	26 11	28 0
Jan. 5	40 0	25 11	15 10	24 11	26 11	28 5
— 12	41 1	26 4	15 6	23 4	26 6	28 6
— 19	41 0	26 3	16 0	23 9	26 6	27 6
— 26	40 1	25 9	15 10	21 2	26 1	28 5
Aggreg. Aver.	40 0	25 11	15 9	23 4	26 9	28 5
Duties on Foreign Grain	1 0	1 0	1 0	1 0	1 0	1 0

Fluctuations in the last six weeks' Corn Averages.

Prices.	Dec. 22.	Dec. 29.	Jan. 5.	Jan. 12.	Jan. 19.	Jan. 26.
41*s* 1*d*	...	...	...	...	...	...
41 0	...	...	...	...	...	...
40 1	...	...	...	...	...	
40 0	...	...	...	...	...	...
39 4	...	...	...	...	...	...
38 9		...	...	...	...	...

SEEDS.—Jan. 28.

Canary, per qr.	74*s* to 78*s*	Coriander, per cwt.	16*s* — 21*s*
Caraway, per cwt.	31 — 33	Mustard, white, p. bush.	6 — 7
Hempseed, per qr.	34 — 35	— brown, do.	7 — 9
Linseed, foreign, do.	37 — 45	Rape, per last	28*l.* — 34*l.*
Clover, red, per cwt.	— —	Cakes, Linseed, p. 1000	9*l.* 12*s*
— — foreign, do.	— —	— — foreign, p ton	6*l.* 15*s*
— white, do.	— —	— Rape, foreign, do.	4*l.* 5*s*
— — foreign, do.	— —	Tares, per bush.	4*s* 6*d* — 5*s* 6*d*

Liverpool, Tuesday, Jan. 29.—The imports this last week are on a larger scale than for some time past. During the week the grain trade has been quite inactive, and the quotations nearly nominal. There was a limited attendance at this day's market. Wheat was in moderate demand from the town dealers, and in most cases declined 1*d.* per bushel. Oats declined about 1*d.* per bushel. Barley, Beans, and Peas were each alike dull. Indian Corn was not in such good demand today, and was from 6*d.* to 1*s.* per qr. cheaper.

Sales by Auction.

MESSRS. LODDIGES' CELEBRATED ARBORETUM FOR SALE BY AUCTION.

TO NOBLEMEN, GENTLEMEN, AND NURSERYMEN.

MR. J. C. STEVENS is favoured with instructions from Messrs. LODDIGES, of Hackney, to submit for unreserved competition, on the premises, on MONDAY, 4th March, and several following days, in consequence of the decease of the Senior Partner, the FIRST PORTION OF THEIR UNRIVELLED ARBORETUM, comprising many thousand well-grown specimens of the rarest and most beautiful Trees and Shrubs, affording to noblemen and gentlemen engaged in Ornamental Planting an opportunity which has never before occurred.—Catalogues are preparing, and will be ready for delivery 10 days prior to the sale, on the premises, and of Mr. J. C. STEVENS, 38, King-street, Covent-garden, London.

AMERICAN PLANTS.

MR. D. A. RAMSAY has received instructions from an eminent firm to sell by Auction, at the Brompton Auction Ground, Fulham-road, Brompton, one mile from Hyde-park Corner, on WEDNESDAY, February 13, 1850, at 12 o'clock precisely, without reserve, 500 Rhododendrons, 2 to 4 feet, 150 Scarlet Rhododendrons, and other American plants, comprising Azaleas, Andromedas, Sedums, Ericas, &c.; 400 Standard, Dwarf, and Climbing Roses, a quantity of strong Vines and Fig Trees, Ilex Cunninghami, Cupressus, Daphne, Pinus, Garrya elliptica, Lycium horridum, &c.; a quantity of Ornamental Trees and Shrubs, comprising Scarlet Chestnut, Ailanthus, Thorn, Weeping Cherry, American Willow, Tulip Tree, &c.; Ribes, Caragana, Cotoneaster, Benthamia, Cytissus, Hibiscus, &c.; with other miscellaneous stock, comprising Pyrus japonica, Clematis, and other creepers; Victoria Rhubarb, Asparagus, Ash-leaved Kidney Potatoes, and a quantity of Bulbs and Bulbous Roots.—May be viewed the day prior and morning of sale, and Catalogues had at the principal Seed Shops, and of the Auctioneer, Brompton Nursery, Fulham-road, Brompton.

NOTTING-HILL.—TO GENTLEMEN, BUILDERS, NURSERYMEN, AND OTHERS,

MR. D. A. RAMSAY will sell by Auction, on the premises (adjoining the Clarendon Hotel, Clarendon-road, Notting-hill), on WEDNESDAY, February 6, 1850, at 1 o'clock precisely, without reserve (from the stock of a Country Nurseryman, and removed for convenience of sale), a quantity of Ornamental Trees and Shrubs, 500 Standard and Dwarf Roses, 2000 Evergreens, Pinus, Rhododendrons, &c., with other Stock.—May be viewed the day prior and morning of Sale; and Catalogues had at the Clarendon Hotel, and of the Auctioneer, Brompton Nursery, Fulham-road, Brompton, London.

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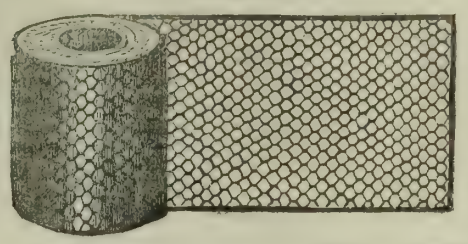
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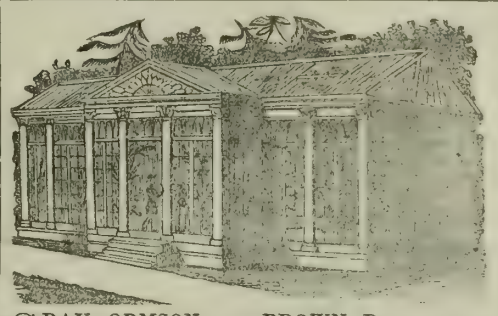
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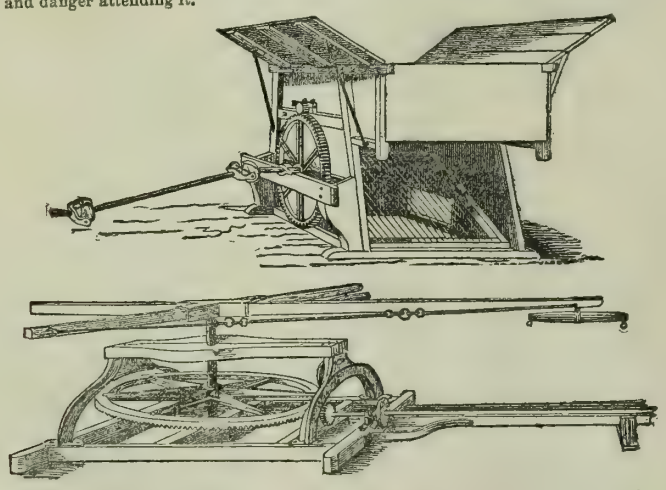
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THE GARDENERS' CHRONICLE AND AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 6—1850.] SATURDAY, FEBRUARY 9. [PRICE 6*d.*

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ROYAL BOTANIC SOCIETY, REGENT'S PARK.—The following are the days appointed for the EXHIBITIONS at the Gardens this season:

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THE DEVON AND EXETER BOTANICAL AND HORTICULTURAL SOCIETY intend holding an Extra Grand Exhibition on Wednesday and Thursday, the 17th and 18th days of July next, during the meeting of the Royal Agricultural Society, at Exeter. Competition will be open to all Subscribers to the funds of the Society of 1*l.* 1*s.*, not being nurserymen or dealers in plants. Schedules of the Prizes may be obtained on application to the Honorary Secretary, T. WILLIAM GRAY, Esq., 4, North-bridge, Exeter.—Feb. 9.

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OPINIONS OF THE PRESS.

Dr. LINDLEY, in the *Gardeners' Chronicle*, Dec. 22, 1849, says, "*This contains lists of good vegetables, with useful notes appended to the names of many of the sorts. . . . It is a well-arranged Catalogue, and will be found of service to all purchasers of Seeds.*"

The Editor of "The Midland Florist," for January, 1850, says, "*We have just received the General Catalogue of Garden, Agricultural, and Flower Seeds, sold by William E. Rendle and Co., Plymouth, which, from its excellence, well merits something more than a passing notice, and happy shall we be from time to time (with Messrs. Rendle's permission) to extract some of its valuable information for the benefit of our readers. . . . The Flower Seed List is peculiarly comprehensive, and gives to each variety its scientific name, hardihood, time of duration, colour, height, and time of flowering. Our readers will thus see that, from its immense utility, we can scarcely say too much in its recommendation; and we are sure that the name of the eminent firm will be a sufficient guarantee that every article they send out will not only be true to name, but also of the best possible quality.*"

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Extract from the Gardeners and Farmers' Journal, of May 5th, 1849.—"I send you the particulars respecting the Cucumbers I forwarded for your inspection. Mr. Hunter, gardener to N. Clepton, Esq., Islington, purchased some of the seeds of my Great Britain Cucumber, and he now complains that his fruit is not so long as those he saw at my place last August. He cut the first fruit on the 14th of April, and he has cut 12 since, none of which are shorter than the one you saw. He has, besides 12 fruit on two plants at the present time, from 18 to 21 inches in length. These I saw myself, and none of them are fit to be cut; they will of course grow to a much greater length. W. HARRIS"

[We may, in reference to this matter, observe that Mr. HARRIS forwarded us for inspection one of his Great Britain Cucumbers, which measured exactly 24 inches in length; it is a handsome, well grown fruit, and fit for table. We think this is not bad Cucumber growing in such a season as we have had for the last five or six weeks.]

VERBENA—"WONDERFUL."

G. MOORE begs to refer the readers of this Paper to his Advertisement of the 2d inst.

Perry Barr, near Birmingham, Feb. 9.

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JOHN STEWART AND SONS, Dundee, have large stocks of fine 2 and 3 years transplanted THORNS; LARCH, 1½, 2, and 3 feet; Scotch, native, 1 and 2 years transplanted; NORWAY SPRUCE, 1, 1½, and 2 feet; WEEPING BIRCH, 1½ to 2 feet, and 2 to 3 feet. They will be sold cheap.

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(This Advertisement will not be repeated.)

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ROBERT WHIBLEY has much pleasure in offering the following superb new ANTIRRHINUMS, which will be ready by the first week of May, as being very distinct, and far superior to any yet offered; and begs to refer to Professor LINDLEY'S report in this Paper, August 13, 1849.

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The whole of them are very dwarf and compact, scarcely exceeding 12 inches in height, and throwing out numerous laterals, on which they bloom freely, and are well adapted for bedding or pot culture, being as showy in a bed as the scarlet Geranium or Verbena, and last as long in bloom, while they possess the quality of being kept through the winter without protection from glass; a mat supported on stakes is ample covering during severe weather

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4. FORGET-ME-NOT (WHIBLEY).—An excellent flower, fine shape, large yellow centre, and distinct; splashed with purple on a light ground. 3*s.* 6*d.*

5. BELLE OF THE VILLAGE (WHIBLEY).—Upper and lower lips spotted light carmine, tube striped violet; large and fine. 3*s.* 6*d.*

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7. BLACK EAGLE (WHIBLEY).—A fine self, colour a deep crimson scarlet shaded black, good yellow eye; the darkest Antirrhinum known, foliage quite distinct from any yet in cultivation, and the flower stems part green and part a black purple. 5*s.* 6*d.*

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9. SUPERB (WHIBLEY).—A fine shaped flower, good bright circular yellow centre, upper lip spotted violet on a yellow ground, lower lip splashed crimson. 3*s.* 6*d.*

11. BEAUTY (WHIBLEY).—A pretty mottled flower, of good shape, fine full centre, studded and splashed with light purple. 3*s.* 6*d.*

12. GRANDISSIMA (WHIBLEY).—A fine large bold flower, full bright centre of a deep yellow, upper lip dotted light violet purple, lower lip striped deep purple. 3*s.* 6*d.*

31. ATTRACTION (WHIBLEY).—Fine shaped bold flower; good showy yellow centre, splashed and dotted bright purple upon a straw-coloured ground. 3*s.* 6*d.*

33. CAPTIVATION (WHIBLEY).—A large and distinct flower; full, circular, yellow centre, striped and spotted bright purple crimson. 3*s.* 6*d.*

The set of 13 for 39*s.*; and when three sets are ordered, four will be sent.

As R. W. has already received many orders, it will be as well for those who intend honouring him with their commands for the above, to let him know as soon as convenient, so as to ensure a supply. They can safely be sent by post. This description will not be repeated. His general Catalogue will shortly be ready, when all his customers will receive a copy free of expense.—Chester Nursery, Kennington, London.

THE REAL ORIGIN OF THE CAMELLIA ARCHIDUCHESSA AUGUSTA.

There appeared in "La Flore des Serres et des Jardins de l'Europe," for July, 1849, pp. 488, 486, the following startling paragraph from the pen of M. L. Van Houtte, the editor: "I experience the double satisfaction of being able to announce to the readers of the 'Flore' a MAGNIFICENT NOVELTY, and to re-establish its reputation, which has been unjustly damaged in the eyes of some persons." We should have been happy to have joined in applauding the above announcement, instead of being compelled to attack it, if the editor had not endeavoured to throw suspicion both on the truth of facts stated by us and on our honesty. To continue the quotation: "Under this same name there has found its way into the market a very inferior whole-coloured variety, which has been imposed upon the public either by gross negligence or the most unjustifiable intention." And in his Catalogue for 1847, 1848, p. 25, No. 31, M. L. Van Houtte adds, "ARCHIDUCHESSA AUGUSTA, *Gaeto. di Vzo. Corsi*, superb Camellia, imbricated, of a beautiful red colour. (MM. B. and G. are wrong in calling it the same as C. Pecchioliana, which is a totally different thing, and which they themselves have named Contessa Nencini, as every florist can testify)."

Your readers will shortly see to whom "gross negligence or the most unjustifiable intention" is most attributable.

As early as the year 1844 we obtained several layered plants of the variety called Puccini, and after a careful cultivation, and a most conscientious examination of the flowers obtained from our variety, we thought it our duty to inform the public, which we did by stating in French, in our Catalogue for 1846, that "we cannot find the least difference, either in form or in colour, between it and the new variety ARCHIDUCHESSA AUGUSTA of Piccioli and Corsi." The true Archiduchessa augusta, which is brought forward by M. L. Van Houtte, with so much parade as something "*superb among the superb, quite out of the common way, and for which he predicts the most lasting success,*" was not obtained from seed by M. Gaetano di Vicenzo Corsi, as the learned editor has it; and we challenge him to disprove the following account of his pet the Archiduchessa Augusta.

In February 1845, Mr. Joseph Piccioli, of this town, the *original producer* of the plant under discussion, saw its flowers for the first time. He immediately offered it to us for 16*l.*; we refused the offer, simply because we had, the *year before*, brought out our own variety Puccini, which we ascertained to be exactly the same thing. Not finding a purchaser, M. Jos. Piccioli handed it over to M. Vicenzo Corsi, who had an account against him. The latter gentleman offered it to M. L. Van Houtte, who purchased it at a price considerably higher than that at which it was at first offered to us.

The artist who drew the plant copied it most admirably, and by way of precaution M. Corsi prevailed upon the amateurs whose names are given below to sign the drawing. The names were those of M. Jos. Piccioli (the original owner), Professor Commander Betti, M. César Franchetti, and M. Charles Luzzatti.

When the plant was sent to M. Van Houtte it was about 4 feet high, well branched, very healthy, and with several flower-buds, which expanded on its arrival in Ghent. The flower, as described by M. Van Houtte himself (No. 31 of his Catalogue for 1847, 1848), is of a beautiful purple red colour, imbricated, without white or green streaks, and with no violet. During the five years that the plant has been before the public in Florence, its flowers have never differed from the drawing which accompanied it into Belgium, and which was signed as above stated. It was then with no little surprise and anger that the exaggerated and disfigured drawing given by M. L. Van Houtte in the "Flore" for July, 1849, was viewed; more especially as the letters sent for a space of two years by M. Van Houtte to M. Vicenzo Corsi, who was equally interested in the matter, are altogether contradictory, inasmuch as the plant had never produced with him, any more than at Florence, flowers differing from the drawing sent. So strange a variation, not to say so monstrous a change, can only be attributed to degeneracy provoked by an excess of heat; the same thing happens to many other varieties when too much forced to flower. We ask any conscientious horticulturist whether that blue and greyish white mixed with green is a natural and constant effect? And whether that regularity of the spots does not denote the suppleness of pencil which allows itself to be directed by that rare virtue which M. Van Houtte is pleased to qualify with disinterestedness?

In order to conceal his defeat from his readers, M. Van Houtte insinuates in his catalogue, No. 31, that we are mistaken, and that we have supposed the Archiduchessa Augusta to be synonymous with the Camellia Contessa Nencini, which was brought into commerce by us in 1844. Had we not taken care to characterise this variety, which is white, imbricated, with translucent petals, streaked and dotted with rose; had we not repeated this in our own supplement of 1848-49, p. 10, we should have looked upon the above statement as a piece of vain puerility; but the repeated and unmeasured attacks of our adversary too plainly show an intention to raise the price of his Archiduchessa Augusta at the expense of the public, and to attribute to ourselves, who have done all we could to prevent mistake, his own unjustifiable plans; *suum cuique!—Burnier and Grilli.*

We take this opportunity of informing the readers of the *Chronicle* that, having ascertained that the varieties of Camellia Evelina centifolia, Florensa, brought into the market by us in the winter of 1848-9, do not correspond with the drawing, we shall be happy to return to those who received specimens from us the sums of money respectively paid by them as soon as they make application to us to that effect. The accident arose in the following way: On the 19th May, 1846, the Countess Nencini, of this town, by M. Jean Freppa, offered us the two varieties of Camellia in question, accompanied by drawings and six other plants, for the price of 2500 Florence lires. A long illness, which confined Mr. Burnier to his bed, prevented him from himself seeing the flowers of the new varieties obtained from the Countess. As soon as we became the purchasers, we, acting in perfect good faith, set to work to propagate the plants, which, deprived of their branches for the purpose of multiplication, did not flower soon enough to enable us to correct the mistake. The truth of the above statement is proved by the legal proceedings instituted by us, and which were compromised by the seller repaying the purchase money, and also by the statement signed Jean Freppa, and dated 12th May, 1849.

We also beg to inform the readers of the *Gardeners' Chronicle* that our new general Catalogue, considerably enlarged, especially as regards new Camellias obtained in Italy, will shortly appear, and will be sent to any one who will favour us with his address.

In the course of the last few years we have supplied the trade with more than 80 varieties of new Camellias, as our current prices show; and we have before begged those who received them to be kind enough to state in their own catalogues whence they obtained them, in order to prevent any mistake or complaint from amateurs who might obtain them from other sources and under other names. We are sorry to say, however, that our request has not been complied with, as we find scarcely more than a dozen of these varieties mentioned in the catalogues, the others often appearing as other varieties, and under other names.

BURNIER AND GRILLI.

HORTICULTURAL AND METEOROLOGICAL OBSERVATIONS
MADE BY MM. BURNIER AND GRILLI, AT THEIR AGRICULTURAL AND BOTANICAL ESTABLISHMENT AT FLORENCE.

The subjoined table of the extraordinary temperature of the atmosphere which we have had lately may prove interesting to your readers, and useful in a scientific point of view. The temperature has never been known to be so low nor so disastrous in its effects as at present; an idea of the mischief thus caused may be conveyed to the reader by the following notes.

I. *Plants in the open air exposed to the South, and killed by the frost.*

Olive trees of the plains.
Orange trees ,,
Citron trees ,,
Evergreen Oaks and Cork trees.
Fig trees and Japan Medlars.
Prunus lauro-cerasus
Laurus borbonia
,, indica
,, camphora
,, glauca
,, nobilis
Arbutus unedo
Magnolia grandiflora partly, and fuscata
Nerium splendens and others
Pistacia vera
Pittosporum lineare
Chamærops humilis
Phœnix dactylifera
Metrosideros, all the varieties
Benthamia fragifera
Rhamnus alaternus and variegatus
Rhododendron arboreum and its varieties
Raphiolepis indica
Siphocampylus, all the vars.
Solanum jasminifolium
Viburnum japonicum
,, sinense
,, Tinus
Araucaria imbricata
,, Brasiliensis
,, Cunninghamii
,, excelsa
Pinus canariensis
,, longifolia

N.B. Owing to differences of aspect, there may be a few exceptions to the above general statement. At all events these plants have been in the open ground for periods of from 10 to 90 years and more.

II. *Plants in the open air, exposed to the North, and which have not suffered by the frost.*

5000 Camellias, comprising 500 of the most renowned varieties and of different strength. Of this large number not more than 11 have been killed outright—not to mention some trifling damage to other varieties, and which we do not reckon as anything.

2000 Rhododendrons, comprising 250 distinct varieties.

R. arboreum and others of different strength, except R. cinnamomeum and its varieties, which have suffered materially.

Of 2000 specimens of 100 varieties of Azalea indica, a few points and leaves are all that have suffered.

1000 Araucaria imbricata and Brasiliensis; 10 species of Podocarpus, a collection of Juniperus, of Taxus, of Thuja, Cryptomeria, Taxodium sempervirens.

500 Magnolia grandiflora, the collection, fuscata, &c.

500 Myrsine africana, the points only injured.

Olea fragrans, Illicium anisatum, religiosum, Cleyera japonica, Gardenia grandiflora and radicans.

Enkianthus, Viburnum japonicum and sinense, Euonymus fimbriatus, Escallonia, Cotoneaster, Cratægus, Ligustrum japonicum.

Daubentonia, as well as other more delicate plants, which were preserved by the snow from the effects of the greatest cold (15° R.)

Daubentonia tripetiana
Escallonia floribunda and rubva
Erythrina Crista-galli and laurifolia
Euonymus fimbriatus
Franciscea, all the varieties
Gardenia florida and radicans
Habrothamnus, all the vars.
Haloragis capensis
Halleria lucida
Houstonia coccinea
Indigofera australis
Inga pulcherrima
Jochroma tubulosa
Kennedya bimaculata
Malvia Tweediana
Myrica pennsylvanica
Myrtus tarentina
,, romana
,, bætica
,, tenuifolia
Olea fragrans
Poinciana Gilliesii
Quercus chrysophylla
,, confertifolia
,, Fordii
,, Ghiesbreghtii
,, glabra
,, insignis
,, phullata
,, rugosa
,, species, Mexico

N.B.—The above plants are grown without any shelter in a border at the north of the town wall, which serves as a boundary, and is about 500 yards long and 8 yards high, where they are directly exposed to the North wind, as well as to the greatest cold, and where they get no sun from the 15th of Nov. to the 15th of March, and do not experience those changes of temperature to which all the other plants are exposed.

Meteorological Observations made at the Agricultural and Botanical Establishment of MM. Burnier and Grilli, situate 90 feet above the level of the sea. The degrees are those of Réaumur's* thermometer, which was exposed to the North, under the town wall, 25 ft. high, fixed to a Camellia.

1849. Dec.	9 A.M.	12 A.M.	3 P.M.	6 P.M.	9 P.M.	Max.	Min.	
27	...	...	+ 2.3	...	...	...	— 5	
28	— 0.3	— 1.8	— 1.8	...	...	...	— 3	Six inches of snow fell.
29	— 7.0	— 1.3	...	...	...	...	— 9	Fog.
30	—12.0	— 5.3	...	...	...	...	—15.3	Sky clear part of day.
31	— 0.3	+ 2.7	...	...	...	...	— 8.6	Sunshine and thaw during day.
1850. Jan.								
1	...	+ 3.2	+ 2.9	+ 1.0	...	+ 3.3	— 3.3	Do. do.
2	— 4.7	— 1.3	+ 0.3	— 1.8	...	+ 0.6	— 7.3	Do. do.
3	— 1.3	+ 0.6	+ 0.6	— 1.3	...	+ 1.0	— 2.6	Do. do.
4	— 4.6	— 0.4	+ 1.0	— 2.4	...	+ 1.2	— 6.6	Fine weather.
5	— 4.6	— 0.6	...	+ 0.5	+ 0.9	+ 1.2	— 6.1	Snowy.
6	+ 1.3	+ 2.6	+ 2.6	+ 1.6	+ 2.6	+ 2.6	— 2.0	Temperate and snowy.
7	+ 2.0	+ 2.9	+ 3.2	+ 1.3	+ 0.6	+ 3.3	...	Rainy.
8	+ 6.0	+ 7.7	+ 6.6	+ 6.4	+ 8.2	+ 9.7	...	Do.
9	+ 6.4	+ 6.4	+ 6.6	+ 5.3	+ 4.6	+ 6.9	+ 4.0	Sun, cold wind, cloudy.
10	+ 4.0	+ 5.3	+ 5.0	+ 4.3	+ 3.0	+ 6.0	+ 2.6	Sun, snow totally disappeared.
11	— 1.0	+ 6.3	+ 6.0	+ 3.0	+ 2.0	+ 1.0	...	Fine weather, a little cold wind, rain in the evening.
12	+ 1.0	+ 2.0	...	...	...	...	...	Cloudy, 3 inches of snow, which melted in the course of the day.

Observations by Prof. Amici, of the Florence Museum, made 240 feet above the level of the sea; thermometer, Réaumur's, surrounded by a grating.

1849. Dec.	9 A.M.	12 A.M.	3 P.M.	6 P.M.	9 P.M.	Max.	Min.
27	...	...	+ 2.0	...	...	...	— 4.8
28	...	— 1.5	— 1.5	...	...	...	— 2.5
29	...	— 1.0	...	...	...	...	— 7.0
30	— 9.0	— 4.0	...	...	...	...	—10.0
31	...	+ 2.4	...	...	...	...	— 5.0
1850. Jan.							
1	...	+ 2.4	+ 2.2	+ 0.8	...	+ 2.5	— 2.5
2	— 3.5	— 1.0	+ 0.2	— 1.4	...	+ 0.5	— 5.5
3	— 1.0	+ 0.5	+ 0.5	— 1.0	...	+ 0.8	— 2.0
4	— 3.5	— 0.3	+ 0.8	— 1.8	...	+ 0.9	— 5.0
5	— 3.5	— 0.5	...	+ 0.4	+ 0.7	+ 0.9	— 4.6
6	+ 1.0	+ 2.0	+ 2.0	+ 1.2	+ 2.0	+ 2.0	— 1.5
7	+ 1.5	+ 2.2	+ 2.4	+ 1.0	+ 0.5	+ 2.5	...
8	+ 4.5	+ 5.8	+ 5.0	+ 5.6	+ 6.2	+ 6.8	...
9	+ 4.8	+ 4.7	+ 4.0	+ 4.0	+ 3.5	+ 5.2	+ 4.0
10	+ 3.0	+ 4.0	...	...	...	...	+ 2.0
11	...	...	...	...	...	...	...
12	...	...	...	...	...	...	...

* To convert any given degree of Réaumur's thermometer to the corresponding degree on Fahrenheit's scale, multiply the given degree of Réaumur by 9, divide the product by 4, and add 32 to the quotient; the result will be the corresponding degree of Fahrenheit's thermometer.

Observations of Father Inghirami, at the Observatory of Ximaiano, at Florence, 250 feet above the level of the sea. Réaumur's thermometer, surrounded by walls.

1849. Dec.	9 A.M.	12 A.M.	3 P.M.	6 P.M.	Max.	Min.
27	...	...	+ 2.0	...	...	— 3.2
28	..	— 1.5	— 1.5	...	...	— 2.8
29	...	...	...	...	+ 0.9	—10.2
30	— 9.0	...	...	...	— 3.2	—11.1
31	...	+ 2.4	...	...	+ 0.9	— 5.6
1850. Jan.						
1	...	+ 2.4	+ 2.3	+ 1.2	+ 2.1	— 1.1
2	— 3.8	+ 1.0	+ 0.3	— 1.4	+ 0.8	— 5.8
3	— 0.3	+ 0.8	+ 0.8	— 1.3	+ 1.0	— 2.0
4	— 3.8	— 0.6	+ 1.0	— 2.0	+ 1.3	— 5.0
5	+ 4.0	— 0.8	...	+ 0.7	+ 1.1	— 4.1
6	+ 1.3	+ 2.6	+ 2.6	+ 1.6	+ 2.0	— 1.5
7	+ 0.8	+ 2.9	+ 3.2	+ 1.3	+ 2.8	...
8	+ 4.8	+ 6.0	+ 6.7	+ 7.4	+ 7.2	...
9	+ 5.1	+ 5.0	+ 6.7	+ 5.3	+ 5.5	+ 4.3
10	+ 3.3	+ 4.3	...	...	...	+ 2.3

Observations of M. O. Savi, Professor of Botany at Pisa, 9 feet above the level of the sea. Réaumur's thermometer, placed in the middle of a garden, and isolated.

9 A.M.	12 A.M.	3 P.M.	6 P.M.	Max.	Min.
...	...	+ 2.0	...	...	— 5.0
...	— 1.5	— 1.8	...	...	— 2.8
...	...	...	...	+ 1.0	—10.0
—9.0	...	...	...	— 3.0	—11.0
...	+ 2.4	...	...	+ 1.6	— 5.6
...	+ 2.4	+ 2.3	+ 1.2	+ 1.8	— 1.0
—3.5	+ 1.0	...	— 1.4	+ 0.6	— 5.5
—1.3	+ 0.6	...	— 1.0	+ 1.0	— 2.0
—3.6	— 9.4	+ 0.7	— 1.8	+ 1.3	— 5.0
—4.0	— 0.6	...	+ 0.9	+ 1.0	— 4.0
+1.3	+ 2.5	+ 2.4	+ 1.8	+ 2.0	— 1.3
+1.6	+ 2.6	+ 3.0	+ 1.0	+ 2.6	...
+4.7	+ 5.8	+ 6.3	+ 7.0	+ 7.4	...
+5.0	+ 4.6	+ 6.3	+ 5.0	+ 5.8	+ 4.0
+3.2	+ 4.3	...	...	...	+ 2.0

Observations of M. G. Barucci, Director of the Semplici Pharmaceutical Garden at Florence; height above the sea, 75 feet. Réaumur's thermometer, placed in the middle of the garden, and isolated.

9 A.M.	12 A.M.	3 P.M.	6 P.M.	9 P.M.	Max.	Min.
...	...	...	...	...	...	— 6.0
— 0.4	— 2.0	...	...	...	...	— 4.0
— 9.0	— 1.5	...	...	...	...	—10.0
—14.4	— 6.3	...	...	...	...	—16.0
— 0.4	+ 3.2	...	...	...	...	— 7.5
— 0.5	+ 3.8	...	...	...	+ 2.0	— 4.4
— 5.6	— 1.5	...	...	...	+ 1.0	— 8.3
— 1.5	— 0.7	...	...	...	+ 2.0	— 3.6
— 5.5	— 0.4	...	...	...	+ 2.4	— 7.8
— 5.5	— 0.7	...	...	...	+ 2.0	— 7.1
+ 1.5	+ 3.1	...	...	...	+ 2.0	— 3.0
+ 2.4	+ 3.4	...	...	...	+ 3.0	...
+ 7.2	+ 9.2	...	...	...	+ 0.0	...
+ 7.6	+ 7.6	...	...	...	+ 6.0	+ 5.0
+ 4.8	+ 6.3	...	...	...	...	+ 3.4

AMERICAN PLANTS.

GEORGE BAKER begs to inform the gentry and public he has published a NEW CATALOGUE of his AMERICAN AND CONIFEROUS PLANTS, &c., which may be had on application.—Windlesham Nursery, Bagshot, Surrey.

MITCHELL'S ROYAL ALBERT RHUBARB still has its supremacy over all other kinds for its extraordinary earliness, delicious flavour, and splendid red colour; also a most prolific bearer and free grower, with large stalks. For early forcing it far surpasses every other variety. For making wines, preserves, and all culinary purposes, it is an inestimable production. Strong one-year planted roots 1*s.* 6*d.* each; also Myatt's Linnæus, 1*s.* 6*d.*; and Victoria, 9*d.* The usual allowance to the trade. Post-office orders made payable to William Mitchell, Enfield Highway, Middlesex, will meet with prompt attention. N.B. The above is from four to five weeks earlier than the well-known Victoria.

SEED POTATOES.

CHARLES SHARPE has much pleasure in announcing that he has got the under-mentioned sorts of POTATOES to offer again this season, which have for the last four successive years given general satisfaction in all parts of the kingdom. The first six sorts are very early and productive; those marked thus * are the best sorts for Frame Forcing; they are offered at the following prices, packing included:

Per bushel of 56 lbs.		Per bushel of 56 lbs.	
*Early Oxford Potatoes ...	8*s.*	Early Manleys	7*s.*
*Early Round Frame ...	8*s.*	Early Cockneys	7*s.*
Early Ash-leaved Kidney	8*s.*	Fox's Seedling	7*s.*
Second Early Potatoes for Winter and Spring use:			
American Native Potatoes	5*s.*	Kentish Pink Kidney ...	4*s.*
York Regents	5*s.*	Forty Fold	4*s.*

Orders will be forwarded on the receip of a Post-office order, and great care will be taken to ensure their safe delivery. A liberal allowance to the Trade.—Wisbeach, Cambridgeshire.

SPLENDID NEW DIANTHUS.

J. REID begs to inform the Public that he has succeeded in saving a small quantity of his new DIANTHUS REIDII. The ground colour is bright scarlet, laced with white, the truss or head of bloom is larger than a Dahlia flower; its dwarf habit is suitable for any situation. By sending 12 Postage stamps to J. Reid, Mount Scilla Nursery, near Chippenham, Wilts, in return a packet of seed will be sent.

SLATE WORKS, ISLEWORTH.—The following articles, manufactured in Slate for Horticultural purposes by Edward Beck, may be seen in use at Worton Cottage, upon application to the Gardener, Sundays excepted. Orange Tubs, Plant Boxes, Tanks, Cisterns, Shelves, Garden Bath Edging, Hot Water Tank Covers, Flower-beds for Balconies, Shelves fitted to hold water for Orchidaceous Houses, &c.

Estimates given for Work as shown upon Drawings and in Specifications. A large stock of Slate Slabs, of all size and thicknesses, kept on sale.

PEAS.—Dr. Lindley, in the Leading Article of this Paper, Feb. 2d, says, "For ourselves we should be perfectly satisfied with the following half-dozen sorts of Peas."

PRINCE ALBERT	BEDMAN'S IMPERIAL
BISHOP'S NEW LONG-POD	FAIRBEARD'S CHAMPION OF ENGLAND.
KNIGHT'S TALL MARROW	
AUVERGNE	

WILLIAM E. RENDLE and Co., Plymouth, will supply TWO QUARTS of each of the above for 10s., or ONE QUART of each for 6s. 6d., carriage free to any station on the Great Western, Bristol and Exeter, or South Devon Railways, on receipt of Post-office order.—Apply to WILLIAM E. RENDLE and Co., Union-road, Plymouth.

THE BEST SIX SORTS OF PEAS,
SO STRONGLY RECOMMENDED BY THE EDITOR OF THE "GARDENERS' CHRONICLE" ON SATURDAY LAST, AT PAGE 67.

JOHN SUTTON and SONS having a large stock of these excellent PEAS, will supply them at the annexed prices:

	s.	d.
PRINCE ALBERT ... ... per gallon	2	6
AUVERGNE ... ... ,,	2	6
BISHOP'S NEW LONG-PODDED ... ,,	5	0
BEDMAN'S IMPERIAL ... ... ,,	2	0
KNIGHT'S TALL MARROW ... ,,	3	0
FAIRBEARD'S CHAMPION OF ENGLAND ,,	3	0

All other kinds of Peas and Seeds may be had at proportionately low prices, as see SUTTON'S PRICED LIST, which will be sent, gratis, on receipt of one penny stamp for postage.

Sutton's superb Cos Lettuce, 1s. per packet.
Reading Seed Warehouse, Reading, Berks.

RANUNCULUSES, ANEMONES, AND LILIUM LANCIFOLIUM.

H. GROOM, Clapham Rise, near London, by appointment Florist to her Majesty the Queen, and to his Majesty the King of Saxony, begs to recommend the present season as well fitted for planting the above bulbs, which he can supply at moderate prices, having a very extensive stock. His Catalogue may be had on application.

SEEDS, &c.

WM. DENYER, Seedsman and Florist, 82, Gracechurch-street, London, begs most respectfully to inform his Friends and the Public that his new Descriptive and Priced CATALOGUE of SEEDS, &c., is now ready, in which will be found all that is new, rare, and useful. Copies of the same may be had on application.

W. D. has just received a fresh supply of the following (strong flowering roots), at reduced prices:

Lilium lancifolium rubrum	2s.	6d.	each.
Gladiolus gandavensis, 6d. each, or ...	5	0	per doz.
,, floribundus superbus	1	0	per doz.
,, natalensis	1	0	per doz.

MYATT'S LINNÆUS RHUBARB.

J. MYATT and SONS can confidently recommend this variety as the best in cultivation. The most satisfactory proof of this assertion is the fact that the Market Gardeners round London and Manchester have planted the Linnæus Rhubarb more extensively than any other variety. It is extraordinarily productive, and about a fortnight earlier than the Victoria; added to this, it is held in general esteem for preserving and all culinary purposes. One-year planted roots, 1s. 6d.; ditto, Mitchell's Royal Albert, 1s. 6d.; Victoria, 9d. The usual Trade allowance.—Post-office orders are requested to be made payable to Joseph Myatt, Manor Farm, Deptford.—Feb. 9.

ORANGE, LEMON, LIME, CITRON, AND SHADDOCK TREES.—The first importation of the above Trees, in most excellent and healthy condition, has arrived from Italy. They are from 2 to 4 feet high in the stems, very straight, and possess strong grafts, and will make splendid trees in two or three years; from 12s. to 25s. each. They may be seen at A. Cobbett's Italian and Foreign Warehouse, 18, Pall-mall, London. Also Catalonian, Azorian, and Arabian Jessamine Plants. The Double Italian Tuberose Roots are still on sale, 4s. per dozen.

WM. HAMILTON, Seedsman, &c., 156, CHEAPSIDE, LONDON, will forward free by post, on receipt of 5s. 6d., 25 varieties of the most beautiful Hardy ANNUALS, with the SCIENTIFIC AND ENGLISH NAME, TIME OF SOWING AND FLOWERING, MODE OF CULTURE, &c., printed on each packet; 12 varieties, free by post, 3s.

VEGETABLE and other SEEDS of every description, including all the new Peas and other Seeds of the season.

W. H.'s DESCRIPTIVE CATALOGUE will be forwarded on receipt of two postage stamps.—156, Cheapside, London.

UNIVERSAL CATALOGUE OF VERBENAS, FUCHSIAS, DAHLIAS, CHRYSANTHEMUMS, PETUNIAS, &c.

G. SMITH'S Priced and Descriptive Catalogue contains the very best selections of the above; with a useful note and a marked List of the best Verbenas for exhibition in pots, with mode of training, and what is of great importance to exhibitors, the time of stopping back, so as to catch a sheet of bloom when it may be required; with descriptions of his superb Seedling Fuchsias, Verbenas, Petunias, &c.; and will be forwarded on the receipt of one postage stamp.—Tollington Nursery, Hornsey, Islington.

BECK'S PELARGONIUMS, and other raisers' Flowers.—Now ready for selection and going out. Twelve of the following varieties, including box and carriage to London, will be forwarded in exchange for post-office order on Brentford for Two Guineas. They are well-rooted in 3-inch pots, and ready for an immediate shift into a larger size:

Blanche, Centurion, Cracker, Forget-me-not, Ariel, Cassandra, Cruenta, Gustavus, Gulielma, Grandiflora, Junii, Negress, Rosamond, Sundown. Or Nine of the above, and Hoyle's Crusader, or Foster's Victory.

Edward Beck, Worton Cottage, Isleworth.

FISHER, HOLMES, and CO., Nurserymen and Seedsmen, Sheffield, beg to offer the following CHOICE CUCUMBERS and MELONS, which they can confidently recommend, being such as cannot be surpassed. Sent free by post.

CUCUMBERS.

BATLEY'S TELEGRAPH.—Light green, fine form, very prolific, 20 to 28 inches. 6 seeds, 2s.; 12 ditto, 3s. 6d.
COPPACK'S HYBRID.—Dark green, extra fine form, very superior. 6 seeds, 3s.; 12 ditto, 5s.
CONTENDER.—Dark green, large, and very prolific. 6 seeds, 1s.; 12 ditto, 1s. 6d.
LANCASHIRE WITCH. — A great improvement in every respect on the Sion House. 6 seeds, 1s.; 12 ditto, 1s. 6d.
LARRISY'S ST. CATHARINE.—Very handsome and superior, 24 to 28 inches. 6 seeds, 2s.; 12 ditto, 3s. 6d.
READ'S SUPERB.—Fine for early forcing, great length, and very prolific. 6 seeds, 1s.; 12 ditto, 1s. 6d.
SION HOUSE (true).—12 seeds, 1s.
VICTORY OF BATH.—12 seeds, 6d.

MELONS.

FLEMING'S TRENTHAM HYBRID.—6 seeds, 1s.; 12 ditto, 1s. 6d.
BEECHWOOD (true).—12 seeds, 1s.
NEMOPHILA MACULATA, 3d., 6d., and 1s. per packet.

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Post-office orders are respectfully requested from unknown correspondents.—Nursery, Great Yarmouth.

The Gardeners' Chronicle.
SATURDAY, FEBRUARY 9, 1850.

MEETINGS FOR THE ENSUING WEEK.

Monday,	Feb.	11	Medical	8 P.M.
			Geographical	8½ P.M.
Tuesday,	—	12	Syro Egyptian	7½ P.M.
			Civil Engineers	8 P.M.
			Medical and Chirurgical	8½ P.M.
			Zoological	9 P.M.
Wednesday,	—	13	Literary Fund	3 P.M.
			Microscopical (Anniversary)	7 P.M.
			Society of Arts	8 P.M.
			Graphic	8 P.M.
			Ethnological	8 P.M.
			Pharmaceutical	9 P.M.
Thursday,	—	14	Royal Society of Literature	4 P.M.
			Antiquarian	8 P.M.
			Royal	8½ P.M.
Friday,	—	15	Geological (Anniversary)	1 P.M.
			Royal Institution	8½ P.M.
Saturday,	—	16	Asiatic	2 P.M.
			Westminster Medical	8 P.M.

Among the more important facts which recent chemistry has demonstrated is, that plants naturally derive the ammonia which is so necessary to them from the atmosphere. Thrown into the air in the form of a carbonate, it is immediately dissolved in the vapour eternally present, and when that vapour is precipitated as rain it is conveyed to the earth and to all the foliage that intercepts it. Absorbed by the leaves, sucked up by the roots, it adds intensity to the green colour and vigour to all the powers of vegetation. How it acts is immaterial; that it does act, and with admirable effect, is now undoubted.

"The nitrogen of putrefied animals," says Prof. Liebig, "is contained in the atmosphere as ammonia, in the state of a gas which is capable of entering into combination with carbonic acid, and of forming a volatile salt. Ammonia in its gaseous form, as well as all its volatile compounds, is of extreme solubility in water. Ammonia, therefore, cannot remain long in the atmosphere, as every shower of rain must effect its condensation, and convey it to the surface of the earth. Hence, also, rain-water must at all times contain ammonia, though not always in equal quantity. It must contain more in summer than in spring or in winter, because the intervals of time between the showers are in summer greater; and when several wet days occur, the rain of the first must contain more of it than that of the second. The rain of a thunderstorm, after a long-protracted drought, ought, for this reason, to contain the greatest quantity conveyed to the earth at one time."

This was Liebig's first discovery of importance in agricultural chemistry; and it formed one of the most valuable facts in the earlier editions of his well-known work. That ammonia is necessary to plants had been long previously shown by Davy; it was its atmospheric origin in part that the Giessen philosopher pointed out; and thus a new light was thrown upon the refreshing and invigorating effect of heavy rains, which act, not merely by their water, as once was thought, but also by the carbonate of ammonia which they bring down.

So far as agriculture is concerned this is, however, a truth devoid of possible application, because the volatile carbonate cannot be advantageously used, artificially, through the agency of the atmosphere. The farmer who should throw a cloud of carbonate of ammonia into the air of his occupation, would get little of it back again for his own profit. But it is otherwise with gardeners, who have to create an artificial atmosphere in a confined space. It is not a little remarkable, then, that so simple an agent, so easily procured, and applicable with so little trouble, should have scarcely ever been employed in hothouses—at least in the proper manner. Where it has been used it has been almost invariably when dissolved in water, and applied with a syringe. It was thus that nitrate of ammonia, disguised under the name of Humphrey's Compound, was used: and, as was to be expected, with no such effect as was anticipated.

It should be remembered that carbonate of ammonia is generally dispersed through the atmosphere, in which it is suspended, dissolved in invisible vapour. In this state it is incessantly in contact with every part of the foliage. When rain falls, the ammonia disappears for the moment, passing downwards in the rain-drops to the ground, and thence arriving at the roots of plants. But if it is in gardens first dissolved in water, and then thrown upon plants with a syringe, natural conditions are by no means imitated. It reaches no part except that on which the water falls, half the upper surface and nearly all the under surface of the foliage is missed, and it is scarcely detained even upon the parts which the water actually touches.

The proper course is to throw it into the air in the form of gas. This is easily effected in the following manner. When a greenhouse or hothouse is shut up, warm and damp, rub upon the heated pipes, the flues, or a hot piece of metal, a small piece of carbonate of ammonia *with some water* (not dry); the peculiar smell of smelling salts will be instantly perceived, and if this is done at the two ends of a house, as well as in the middle, the air will rapidly receive a sufficient charge of the substance. After it has been allowed to remain about the plants for a short time, some gardeners syringe their houses freely; but it is doubtful whether that is the best plan, provided the air of the house is naturally damp. It must be admitted that the effect of this simple application is very remarkable, quickly producing a visible change for the better in the appearance of the plants; *provided they are otherwise well cultivated.*

But caution must be used in the application. A piece of carbonate of ammonia as large as a shilling is sufficient for one charge in a stove 40 feet long.

The quantity of ammonia which the air naturally contains is always very small; less no doubt than plants will greedily absorb. But it warns us that if too much is applied, great damage may be expected; as in truth is found in the shrivelled and dying leaves of plants exposed to too much vapour of this description. Upon this point it may be useful to take another statement from Liebig's book.

"If we suppose that the air saturated with moisture at 59° F. allows all the water which it contains in the gaseous form to fall as rain, then 1 lb. of rain-water must be obtained from every 1132 cubic feet of air. The whole quantity of ammonia contained in the same number of cubic feet will also be returned to the earth in this 1 lb. of rain-water. But if the 1132 cubic feet of air contain a single grain of ammonia, then the few cubic inches usually employed in an analysis—must contain only 0.0000048 of a grain. This extremely small proportion is absolutely inappreciable by the most delicate and best eudiometer; it might be classed among the errors of observation, even were its quantity ten thousand times greater. But the detection of ammonia must be much more easy when a pound of rain-water is examined, for this contains all the gas that was diffused through 1132 cubic feet of air."

. . . "Experiments made in this laboratory

(Giessen), with the greatest care and exactness, have placed the presence of ammonia in rain-water beyond all doubt. It has hitherto escaped observation, because it was not searched for. All the rain-water employed in this inquiry was collected 600 paces south-west of Giessen, whilst the wind was blowing in the direction of the town. When several hundred pounds of it were distilled in a copper still, and the first 2 lbs. or 3 lbs. evaporated with the addition of a little muriatic acid, a very distinct crystallisation of sal-ammoniac was obtained; the crystals had always a brown or yellow colour."

It must, therefore, be remembered that while the mixture of carbonate of ammonia with the air of hothouses is beyond doubt a most advantageous process, it requires to be conducted with some judgment and caution.

BEANS.

Although many names have been given, it appears that the sorts of Beans are not so numerous as to require distinction in classes.

1. *Early Mazagan*, aliàs Mazagan, Stidolph's New Early, Early Bromley, Early Malta, Early Aldridge, Féve de Mazagan. Stems rather slender, 2 to 4 feet high; pods containing three, seldom more than four Beans. Esteemed the best for early crops, and should be sown in October, November, January, and February.

2. *Marshall's Early Dwarf Prolific*, aliàs Marshall's Prolific; stems 1½ to 2 feet high, branching close to the stem, very prolific—producing, in clusters, pods resembling those of the Mazagan, but contains somewhat larger Beans, and nearly a fortnight earlier.

3. *Long-pod*, aliàs Common Long-pod, Early Long-pod, Large Long-pod, Hang-down Long-pod, Sword Long-pod, Windsor Long-pod, Turkey Long-pod, Moon, Wrench's Early Moon Lisbon, Early Lisbon, Sandwich, Féve à longues cosses. Stems 3 to 4½ feet high, pods long, not very broad, generally containing four Beans, of good quality; being very productive, this sort is generally one of those employed for principal summer crop, especially in cottage gardens. To this is related, *Johnston's Wonderful*, which differs in the pods and Beans being broader and flatter than those of the Long-pod.

4. *Green Long-pod*, aliàs Green Nonpareil, Green Genoa, Féve verte, Féve toujours verte. Stems 3—4½ feet high; pods long, a little flattened, containing generally four rather small oblong Beans, which are much valued by some for their green colour when served up at table, but they require to be gathered when very young, otherwise they lose their fine colour; a good bearer, and, in point of earliness, succeeds the Long-pod.

5. *Dutch Long-pod*. Stems 3—4½ feet high; pods long and broad, containing 4—6 large, broad, white Beans, of good quality; an abundant bearer, later than the Long-pod.

6. *Windsor*, aliàs Broad Windsor, Kentish Windsor, Taylor's Windsor, Taylor's Large Windsor, Taylor's Improved New Windsor, Wrench's Improved Windsor, Mumford, Small Spanish, Féve de Windsor. Stems 3—4 feet high; pods short, but very broad, seldom containing more than two Beans, which are very large, roundish, flattened, and esteemed the best for a summer crop, remaining longer fit for use than any other, with the exception of the following:

7. *Green Windsor*, aliàs Toker, Féve de Windsor verte. Similar to the Windsor, excepting that the Beans retain a green colour after being ripe.

8. *Green China*, or Féve verte de la Chine. Stems about 2½ feet high; pods long, roundish, containing three or four Beans, which remain green even when dry; an abundant bearer, and in some cases may be found useful, on account of its coming in late.

9. *Dwarf Crimson Seeded*, alias Féve très naine rouge, naine rouge. The earliest and dwarfest of all the sorts of Beans; stems scarcely attaining a foot in height, branching close to the ground, and bearing profusely; pods about 3 inches in length, generally well filled; the Beans are crimson, nearly the size of those of the Long-pod. It might be grown in rows from 12 to 15 inches apart.

10. *Dwarf Fan*, aliàs Fan or Bog, Dwarf Cluster or Bog, Féve naine hâtive à châssis. Stems 1½ to 2 feet high; pods small, nearly round, containing seldom more than three small oblong Beans.

White Blossomed, or White Blossomed Long-pod; stems 3—4 feet high; pods long, nearly round, usually containing four Beans, which are somewhat oblong, of a dingy white colour when dry; only a moderate bearer, but is sometimes sown in May and June for the later crops.

Red Blossomed, aliàs Scarlet Blossomed, Purple Blossomed, Early Asper, Féve à fleurs pourpres; stems 3—4 feet high; pods short; Beans generally three in a pod, of a dingy colour when ripe; more ornamental in blossom than useful for fruit.

Dark Red, or Red Windsor. Allied to the Windsor, but differs in the Beans being of a light red colour when young, dark red when ripe; its colour when cooked is objectionable. The *Féve Violette* has similar characteristics.

There may be some varieties besides those above noticed, but they are not sufficiently known. The sorts to which numbers are prefixed are those only considered worthy of cultivation, and in most cases the following will be sufficient:—Early Mazagan, Long-pod, Green Long-pod, Windsor, and Green Windsor. *R. T.*

NOTES OF A TRAVELLER.—No. VIII.

On paying a visit to one of the principal nursery gardens at Fa-tee, near Canton, I was curious to see the process of preparing and packing those seeds which are usually sold to foreigners to be sent home to friends in Europe and America. I had been accustomed to believe, with all good charitable people, that these seeds were boiled or poisoned in some way by the Chinese before they were sold to our merchants, in order that the floral beauties of China should not find their way into other countries, and the trade in seeds be injured.

The Chinese are certainly bad enough, but like other rogues they are sometimes made worse than they really are. "Come Aching," said I to the old man who generally supplied these seeds, and in whose good graces I stood pretty high, from having made him a present of a rare and curious plant, "I want to see your method of packing seeds for foreigners. Take me to your seed-room and show me the whole process from beginning to end." The old man led me up to the middle of his garden, where he had an ornamental shed or seed-room. It was nicely fitted up with shelves, on which were arranged a great number of small porcelain bottles, such as I had often seen in London with seeds from China. "Sit down," said he, "and I will explain the business to you. I first gather the seeds from the plants. I then put each kind, separately, into one of these small bottles, and then pack the whole into a little box ready for being shipped to Europe or America." "I understand that part of the business," said I, "but what is the substance which you put into the bottles along with the seeds?" This was a white ashy-looking matter which we supposed in England might be burnt bones, and some conjectured that it was mixed with the seeds for the purpose of manure. "Burned lice," said Aching. "Burned what?" I asked, with a smile which I could not conceal. He repeated the assertion with all the gravity of a judge. The reader may probably be ignorant of the Chinese language, and I will therefore explain that a Chinese cannot pronounce our letter *r*; he has not such a sound in his language. In trying to pronounce any word in which the letter occurs, he invariably substitutes the sound of *l* for that of *r*. It was, therefore, burned Rice, or the husks of Rice reduced to ashes, which he meant. I then asked him the reason why he used this substance in packing seeds, and he replied in Canton English as follows: "*S'pose my no mixie this seed, worms makie chow-chow he.*" Although the Chinese in Canton would consider this excellent English, it may be as well to explain what his meaning actually was, which was this. "Suppose I did not mix ashes with the seeds, worms would eat them." He alluded to a little maggot which would come out during the voyage. "Don't be angry," said I, "but we English fancy you do something to destroy the vitality of the seeds, instead of endeavouring to preserve it." "I know," said the old man, "you fancy I boil them!"

It is a most difficult matter to preserve the seeds of trees and shrubs in the south of China, owing to the attacks of maggots. This is, without doubt, one of the reasons why Canton seeds so seldom grow when they are received in England, another is the age of the seeds. Old ones, gathered in former years, are generally mixed up with the fresh ones, and are all sent home together. Most assuredly, however, poor Aching does not boil them or poison them in any way. *R. F.*

ELVASTON CASTLE, THE SEAT OF THE EARL OF HARRINGTON.

(*Continued from p.* 70.)

Leaving the kitchen-garden in the direction opposite to that by which we entered it, we pass over asphalte walks through the orchard, the walks being edged with common Yew. On leaving the orchard, on each side are splendid Irish Yews, with a cut base of common Yew, and behind are rows of Juniperus excelsa—fine specimens, from 10 to 12 ft. high, and uniform in growth. These are occasionally intermixed with Gold Cedars. The back-ground is clothed with high Pines. At the termination of this a new feature commences. Portugal Laurel scrolls, 18 inches high and 4 feet broad, constitute the margin. These are backed by princely specimens of Deodar, Abies Douglasii, Pinus Cembra, P. insignis, and A. Morinda, the latter loaded with cones. The underground is covered with wild Heath in great variety.

We will now revert to the subject of transplanting large trees from a distance, in order to give this wonderful garden immediate effect. The following list of a few old Yews and Cedars of Lebanon will serve to illustrate the vastness of the undertaking:

No.	Miles brought.		Circumf. of Stem. ft.	in.	Feet high.	
1	4	—	5	4	38	— Diameter of branches 54 feet.
2	3	—	6	5	39	— " " 30 "
3	10	—	7	0	33	— Stem at the time decayed and hollow; now nearly filled with new roots, feeding in decayed trunk.
4	7	—	7	0	17	— Clipped arbour.
5	32	—	5	0	34	— 18 ft. across; about 300 years old.
6	28	—	A clipped column, 22 feet round and 28 feet high.			
7	34	—	7	2	33 feet high, diameter 25 feet.	
8	26	—	13	0	Clipped arbour, 19 feet high; several birds and other figures.	
9	10	—	5	6	19	— Clipped arbour, 27 feet across.
10	33	—	7	6	32	— Stem quite hollow.
11	10	—	7	9	25	— Known to be above 600 years old.

As we measured the above and ascertained their history, we decline enumerating more; but there are hundreds of others of similar dimensions, which were brought a distance of from 4 to 40 miles. Of some Cedars of Lebanon, which had been brought two miles, the stem of one was 4 feet 6 inches in girth and 51 feet high, another was 4 feet in girth and 35 feet high, and a third was 6 feet in girth, 37 feet high, and 48 feet across the branches. These were the dimensions of the latter when transplanted some years ago, but it is now 7 feet 8 inches in girth, and growing vigorously. We are quite within bounds when we state that 10,000 of these large plants have been removed, and that hundreds of thousands, of smaller dimensions moved, are greatly in advance of those found generally in nurseries.

The removing of large trees, therefore, formed an important consideration in the formation of the gardens at Elvaston, immediate effect constituting, as it did, a prominent feature in all the proceedings. These operations do not appear, however, to have been attended with much risk or difficulty. The size of the subject to be moved or the distance from whence it was to come never deterred nor influenced for a moment the completion of the design. Gigantic trees, which would have made a stout-hearted improver shudder to attack, in order to transpose them even a few yards, considering the risk and magnitude of the undertaking, appear to have been thought lightly of at Elvaston. Indeed, Mr. Barron informed us that, during the last 18 years, they have been in the habit of moving large trees, *at all seasons, and without any previous preparation*, with nearly uniform success. This has been with them more a matter of necessity than choice; much, of course, depended upon the kind of tree to be removed, and the facilities for removing it. As a general rule Mr. Barron does not consider it prudent to move deciduous trees when they are in leaf, unless the facilities for the work are great, and the case urgent. Under such circumstances it can be done; an Elm tree was pointed out to us upwards of 40 feet high, and the bole nearly 5 feet in circumference, which was transplanted on the 27th of May, when it was in full leaf, without sustaining any apparent check. Mr. Barron's practice and opinion in regard to transplanting large evergreen trees, may appear paradoxical, because they are opposed to the general rule, and in direct opposition to the opinions almost universally entertained on this important operation. He considers that large Hollies, Cedars of Lebanon, all the Fir tribe, and Yews, may be moved at any time. The weather being favourable, and other circumstances suitable, they will do best if transplanted when their juices are thinnest, or when they are in the *most active state of growth*. This is certainly a startling statement, when compared with general practice; but his reasons, which are founded upon experience, are these: the water, when applied to the roots, is quickly absorbed, and soon ascends to the leaves, where it immediately becomes available in the promotion of growth. Whenever plants are removed at a period when their juices are not in active circulation, the ends of the lacerated roots, being surrounded sometimes with too much moisture for months, rot before relief can be obtained; the check is consequently much more severe in the latter than in the former case. This season of conducting the operations of transplanting at Elvaston was in a great measure forced upon them. Ground had been prepared, and there existed urgent reasons for immediately completing the work. They could not stop the operations until what had been laid down by Sir Henry Stewart and others, as the proper season for them, had arrived, or until nicely prepared trees could be procured. They had, therefore, to strike out a course for themselves, which terminated in a system which was at first based upon the simple idea that if a plant could be successfully moved with an undisturbed mass of earth sufficiently large, they need not then wait for particular seasons, or trees which had undergone previous preparation. The result showed ample evidence that the basis laid down was a solid one. The next difficulty was merely a mechanical problem, which was soon solved. A platform of planks was formed under the tree to be removed, the whole resting on two central poles; this done, the carriage (which was constructed with six wheels and two strongly trussed beams, the ends of which rest in the bolster of each axle, and so arranged as to be easily taken to pieces (the axles being 19 feet apart), was placed one beam on each side of the tree. The entire mass was then raised, by means of a principal screw, and suspended in strong chains under the beams. Thus placed, except in high winds or very rough roads, the load will ride without a gye rope. All the trees at Elvaston have been carried upright, the same as they grew; and in this way a Lombardy Poplar, above 70 feet high, weighing with the ball more than 12 tons, was carried a great distance. For the moving of smaller trees, a three-wheeled machine with a roller at each end, and having a lever for raising and lowering the plants (which can be done in five minutes when ready), is found useful. Both these machines are in constant requisition at Elvaston, during summer and winter. *R.G.*

(*To be continued.*)

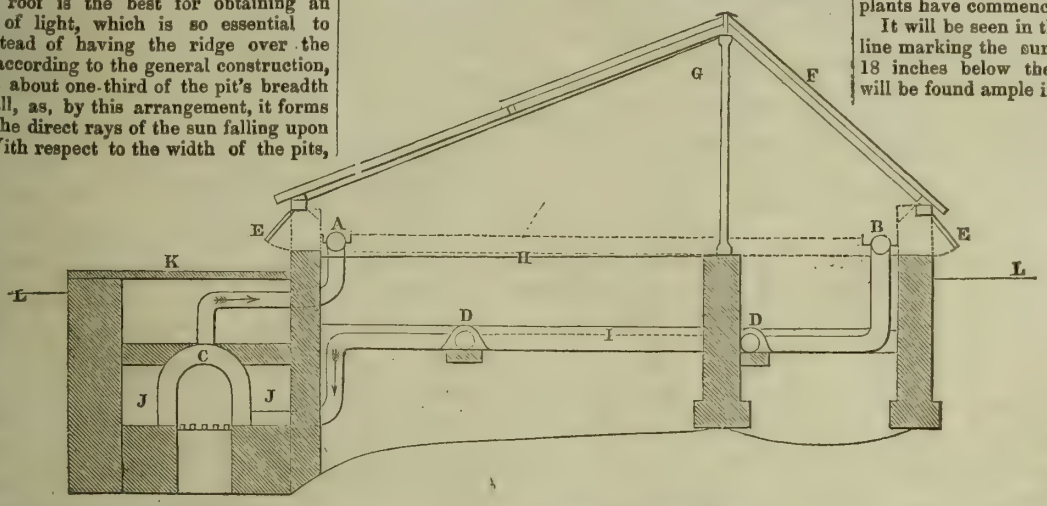
ON THE CULTIVATION OF THE PINE-APPLE AT TRENTHAM.

In compliance with the request of "A Pine Grower," I beg to forward you a brief description of my practice in the culture of Pine-apples, along with a plan and section of our pits for growing them on the Meudon plan, the bottom-heat being supplied by pipes instead of tanks.

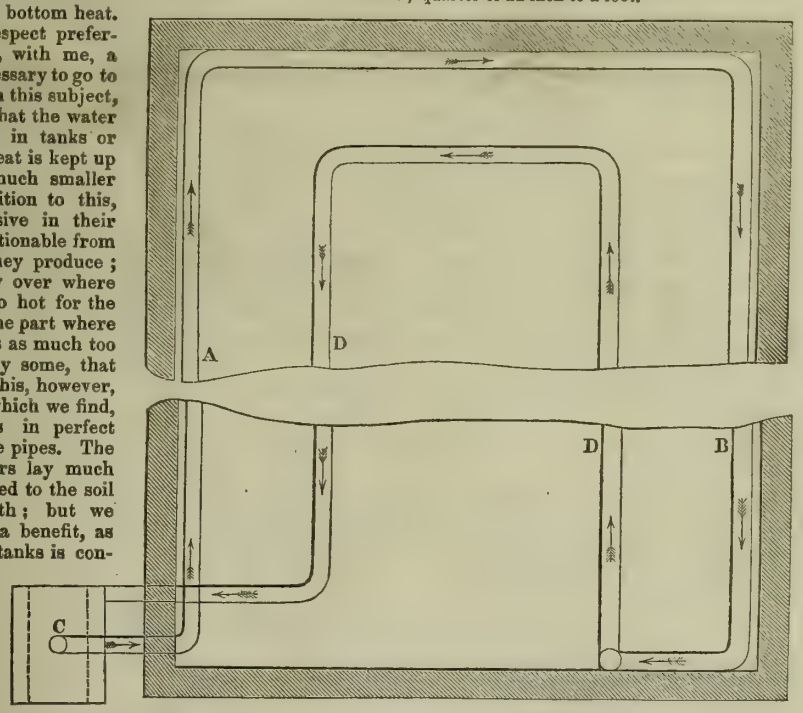
In constructing the pits, the principles to be kept in view are the following:—Abundance of light, to be obtained by a span roof, glazed with long panes; ample means of supplying top and bottom heat, with perfect control over such means, which is most easily and economically effected by returning the pipes which supply the top heat beneath the bed, thus causing them to

produce bottom-heat also. To these we have only to add abundant provision for ventilation.

In the cultivation of this fruit, the most important principle to be kept in view is the careful imitation of the natural climate of the West Indian Islands. We should supply them with a steady heat to their roots, and with a hot moist atmosphere, tempered with abundant ventilation, so as to resemble their native sea breezes; shielding them from the excessive heat of the sun by a thin light awning, as they are in their natural habitats by the light clouds which float through the sky during the hottest part of the day. When the sun is not excessively hot they should have all the light that can be afforded them. With regard to soil, use an enriched maiden loam and turfy peat, in the proportion of two-thirds of the former to one of the latter. When we first commenced growing them out of pots, we tried them in sandy peat, according to the method practised at Meudon, but owing, I suppose, to a difference in the quality of the soil, our success did not answer our expectations; and we find that by using a larger proportion of loam we obtain better swelled fruits from smaller plants. Care must be taken to plant them so far apart as to allow the leaves of each plant to take their natural curvature, and thus to expose the greatest amount of their surface to the direct influence of the sun's rays. The span-shaped roof is the best for obtaining an abundant supply of light, which is so essential to success; but instead of having the ridge over the centre of the pit, according to the general construction, I prefer placing it about one-third of the pit's breadth from the back wall, as, by this arrangement, it forms no obstruction to the direct rays of the sun falling upon all the plants. With respect to the width of the pits, ours are like that shown in the section; but it would be no disadvantage to construct them a few feet wider, as the amount of light which enters the pit is so much greater in proportion to the distance between the side walls.



Scale, quarter of an inch to a foot.



A Flow-pipe. Top heat.
B Return ditto. Ditto.
C Boiler.
D Bottom-heat pipes.
E Ventilators.
F Back sashes fastened to the ridge with hinges.
G Light cast-iron columns, 12 feet asunder, to support ridge.
H Surface line of soil.
I Oak leaves.
J Flues, which pass a short distance under ground and enter a flued fruit-tree wall
K Raised path, paved.
L Ground line.

Considerable difference of opinion exists as to whether pipes or tanks are the most efficient and economical means of supplying bottom heat. That the former are in every respect preferable to the latter has long been, with me, a settled conviction. It is not necessary to go to any length into the arguments on this subject, but it will be sufficient to state that the water flows more freely in pipes than in tanks or gutters, and consequently the heat is kept up with less labour, and with a much smaller expenditure of fuel. In addition to this, tanks are much more expensive in their first construction, and are objectionable from the irregularity of the heat they produce; for, while the soil immediately over where the water enters the tanks is too hot for the health of the plants, that over the part where the water re-enters the boiler is as much too cold. It has been suggested by some, that the heat would be too drying. This, however, is not the case; as a proof of which we find, when renewing the soil, roots in perfect health, within a few inches of the pipes. The advocates of the tanks or gutters lay much stress upon the moisture supplied to the soil by the evaporation from beneath; but we find this an injury rather than a benefit, as the moisture arising from the tanks is condensed in the soil, and by degrees the latter becomes so saturated, that in a few months' time it is totally unfit for the healthy development of the roots. This would be a great evil, if the plants were in pots, but it is still greater when they are permanently planted in the soil in which they are to fruit. Our pipes are laid on a bed of ashes or gravel, about 18 inches below the surface of the soil; and over the pipes is a ridge of gravel, the crown of which is 12 inches from the surface: the intervals between should be filled with Oak leaves, to the same level, thus leaving 12 inches for soil.

The soil we use consists of two-thirds maiden loam, from an old pasture, and one-third peat, in a rough state; these are mixed together and laid under a wooden platform, upon which are folded sheep, which are fed upon the short Grass from the lawns, and the refuse leaves of culinary vegetables. The platform is constructed of narrow strips of wood, placed far enough apart to allow the dung and urine from the sheep to fall through. After the soil has been there long enough to be saturated with the liquid, it is removed to a covered shed, till wanted for use, and its place supplied with a fresh lot. But as we think this matter particularly worthy of the notice of gardeners, we will take an early opportunity of making it the subject of a separate article. Before using the soil, if the loam happens to be of a stiff nature, we mix it with a proportion of clean pit sand, according to its requirements. In putting the soil into the pits, and in planting, great care is taken to avoid compressing it, and for this reason we begin with the back row, and plant it before putting in the soil for the second row. As the work proceeds, a slight watering is given, to settle the soil, and its surface covered with about an inch of fresh tan, which is excellent for this purpose, as it continues in the same loose and open state for a long time, absorbs heat rapidly from the sun, prevents too rapid evaporation, and, when moistened by the syringe, throws off very congenial exhalations.

If the plants have been previously grown in pots, the roots are carefully unwound and spread out into the new soil; but we generally prefer plants which have been grown without pots from their infancy. With this object in view, we devote a space along the front of each pit to the growth of suckers, and thus do away with the necessity of succession pits. This system enables the Pine grower of limited extent to keep a succession of fruiting Pines and plants in a single house or pit; and it is not less useful when larger quantities are cultivated, as by growing young plants in the front row, it allows of the entire surface of the bed being kept much nearer the glass than would be admissible if the pits were filled exclusively with fruiting plants. In the soil for the suckers we mix a small portion of rough new tan, which the roots delight in, and it facilitates their being moved with good balls. In this matter we have not the slightest difficulty, indeed the plants grow with the greatest vigour immediately after being shifted; and those which are moved with a ball of earth, have a decided advantage over those which have been previously grown in pots, unless indeed the pots were much larger than those which are ordinarily used for this purpose. Those which are lifted do certainly get a few of the points of their roots shortened, but they are always furnished with a supply of young feeders, which are ready on every side to strike into the new compost. To keep up a constant successional supply we plant out at all seasons of the year. As soon as a fruit is cut, the plant is pulled up, and after removing a basketful of the old exhausted compost, its place is supplied with an equal quantity of new material; in this the finest plant, carefully selected from the front row, is planted. This practice of filling up vacancies as they occur, may be continued for several years, till it is advisable to renew the soil in the pit entirely. In such a case we choose a period immediately after a rather large proportion of plants have ripened their fruits; and during the time which has been occupied by these in completing their maturity, we allow the vacancies to remain unreplenished, in order that at the time of clearing we may have fewer plants in the way. Of the latter, we carefully lift those plants which have not yet thrown up their fruits, and set them in a close shed; but those whose fruits are in progress we allow to remain, carefully clearing away the soil from around them, as far as it can be done without injury to the roots. After the old soil and leaves are cleared out, they are replaced with new materials in the same order as at first. In replanting, of course those which were lifted with balls are planted in the back rows, and the remaining rows of fruiting plants are supplied with the finest young plants from the fronts of the pits. After planting, at any time, the atmosphere for a few days afterwards should be kept rather moister than usual, and the shading more freely used than at other times, till the plants have commenced to make roots into the new soil.

It will be seen in the accompanying section that the line marking the surface of the soil is not more than 18 inches below the level of the wall plates. This will be found ample if the plants are grown according to the directions I shall lay down with regard to ventilation, which is, in my opinion, one of the most important points to be attended to. By allowing a constant and free circulation of air to traverse through the pits, and taking due care to make it pass over the surface of the hot-water pipes immediately on its entering, the plants do not grow near so large as they are generally seen under the ordinary modes of cultivation; but as the sap is more highly concentrated, the strength and vigour of these small plants is very superior to the large rampant ones which are grown in a closer atmosphere, and whose leaves can scarcely support their own weight. The advantages resulting from attention to this single matter of free ventilation are, that the individual plants, without being planted at greater distances, have a larger space in which to spread out their foliage, according to their natural shape; by which, not only the leaves themselves derive greater benefit from the sun and air, but the light is also enabled more freely to reach the soil, from which it is too often excluded by the dense mass of bloated leaves. Allowing each plant plenty of room, I consider one of the chief points in Pine growing; and as the plants do not grow so large under this mode of management, the gardener is enabled to plant them much nearer to the glass in the first instance,* and thus a greater portion of light is secured to both them and the soil during every period of their growth; and these several advantages, in combination with those arising from other points of management, in which the natural requirements of the plants are carefully considered, tend to the attainment of the grand object in view, namely, the production of the handsomest, largest, and best flavoured fruit.

This article will scarcely be complete without a few words on watering, and especially with reference to liquid manure. If the soil approximates in quality that described above, the use of the liquid during the growth of the plants would not only be unnecessary, but injurious; as the growth caused thereby would be too gross to be properly matured, and the natural consequence would be large plants with small fruits. But, after the fruit has made its appearance, artificial stimulants of this kind may be used with advantage, to assist it during its swelling, taking care, however, to discontinue watering altogether before the fruit begins to turn colour.

One of the opponents of this method of Pine growing has objected to it on the grounds that it produces a glut of fruit at one season, and a deficiency at another; but to convince doubters that such is not the case, we give an extract from our fruit-book of last year, showing the number that has been cut in the several months. We have in—

January	5	July	20
February	5	August	20
March	5	September	14
April	6	October	13
May	9	November	27
June	12	December	12

It may be interesting to some to know whether the cultivation of Pines on this method be profitable. The

* As an instance of how near the glass we grow them, I may mention that in 1847 we had to raise a square of glass to let up a fine fruit which weighed 6¼ lbs.

knowledge of the facts, that less labour by half is employed than would be necessary if they were grown in pots—and that the system of heating is, of all others, the most economical—would lead us to presuppose that it would pay a fair profit. But, to satisfy myself on this point, I last year sent fruit to market at different seasons, for the purpose of forming a correct statement of the value of the produce, founded upon the selling prices.

	£.	s.	d.
Value of the Pines ripened in 1849, if they had all been sent to Covent Garden, after deducting the cost of their carriage to London, which would be very heavy, owing to the distance	140	16	6
Cost of labour and coals at 9*s.* 6*d.* per ton.	80	0	0
Profit	£60	16	6

It is true that our coals are cheap in comparison with their price in the neighbourhood of London, but in the opposite scale we must mention the cost of carriage, and also the smallness of our pits, which precludes the possibility of growing Vines or other things along with the Pines, which is a custom often adopted by large growers for Covent Garden Market. This advantage enables them to meet the additional expence incurred in fuel. *G. Fleming.*

DISEASES OF PLANTS.

(*Continued from p.* 70.)

Genus XIII. Heterophyllia, *or Diversity in the Form of Leaves;* and Genus XIV. Heterocarpia, *or Diversity in the Form of Fruits.*—Botanical works and memoirs of scientific academies are full of descriptions of instances of extraordinary vegetation, by which fruits or leaves assume unusual forms or modes of development. Such are the numerous large-leaved forms of Cabbages and Lettuces. Diversity of climate has great influence on these changes. It is curious to observe the Erysimum alliaria L., and in different stations. On the summits of mountains it is dwarf, barely half a hand high, with narrow leaves covered with stiff hairs, and bearing but very few flowers. Descending towards the plains it gradually increases in size, till on the borders of ditches we find it eight or ten times as high, with large leaves of a beautiful green. Plants which will vegetate equally well on dry ground and in water, have often their leaves very differently formed in the two situations. Sometimes *heterophyllia* is accompanied by other diseases; thus the prolification of the Rose is generally attended by an alteration in the form of the leaves, and numerous similar instances may be observed in any walk over the fields.

Fruits also offer to us analogous irregularities, and none more so than those of the Orange tribe. In the Orange itself, with perfect seeds and pericarps, the fruit is often covered with crests, tubercles, and other inequalities. Lemons and Citrons vary still more, some have more or less deep circular indentures which are surmounted by expansions of the rind, having a rude resemblance to a crown; others are so shaped as to imitate, in some measure, the human hand. All these deformities may be originally caused by climate, soil, and vicissitudes of the weather. These diseases are, however, merely accidental, and do not usually affect the ordinary functions of the plant, and appear of no account to the cultivator. But considering what I have said in the definition of what is disease in a plant, they could not have been passed over in silence.

SELECT FLOWER AND KITCHEN-GARDEN SEEDS.

As cultivators of gardens are now making their purchases of seeds for the season, perhaps it will not be out of place to point out a few of the most choice and useful varieties, concerning the culture of which we shall treat in the Calendar of Operations as the proper times come round.

Amongst plants for the stove and warm conservatory, do not omit Thunbergia alata and its varieties, Ipomœa bona-nox, I. rubro-cærulea, and I. Quamoclit, Hibiscus insignis, H. Manihot, Momordica sp., Gomphrena globosa, Balsams, Cockscombs, and other general favourites.

Amongst useful plants for the greenhouse and cool conservatory are Schizanthus, Primula sinensis, and Rhodanthe Manglesii. A very nice lot of Calceolarias and Cinerarias may generally be obtained by procuring a packet of seed from any respectable dealer, or well-known grower of these flowers; of course, show varieties must not be expected, but, for conservatory or drawing-room decoration, they will save more expensive varieties. One of the most beautiful creepers for the cool conservatory is Tacsonia mollissima; it is of a delicate rose colour, and very graceful in habit, beautifully adapted for hanging in natural festoons from the roof of a lofty house; its fruit is also interesting, especially when it bursts, and displays its wax-like seeds. It will flourish in a very cool greenhouse, and, as it generally seeds under good management, it may be procured by this means.

In the way of biennials or perennials for partial protection, or entire exposure in the flower garden, we may particularly instance the following, which may be raised from seeds. First and foremost we place the Humea elegans, which requires growing one year as a frame plant, to prepare it for planting the next year; it is by far the most graceful and ornamental half-hardy plant which finds a place in the flower garden. Stachys, Pentstemons, and Antirrhinums are pretty and useful plants, which require very little protection; and amongst those which do not need any protection, the most striking are Alstrœmerias, the Hollyhock, perennial Larkspurs (Delphinium), Monkshood (Aconitum), and several species of Dianthus, Campanula, and Papaver.

Hardy and half-hardy annuals are so numerous that we shall only mention a few of those which are deserving of a place in every garden, however small. Those which succeed better if raised under glass, and afterwards transplanted, are Lobelia gracilis, L. erinus, L. ramosa, and their varieties; Phlox Drummondi, Saponaria calabrica, Calliopsis, and if room can be afforded them, German Stocks and German Asters. Those we select for sowing in the open ground are the following:—Centaurea cyanus and depressa, Bartonia aurea, Clarkias, Calendula (Marigold), Collinsias, Corydalis, Delphinium Ajacis, Eschscholtzia, Gilia tricolor, and G. achilleæfolia, Godetia, Iberis (Candytuft), red and white; Lathyrus odoratus, and others; Malcomia (Virginian Stock), Nemophila, Tagetes (French and African Marigold), with Marseilles, French, and other double Poppies.

One or two of the above are worthy of particular attention: the first of these is Delphinium Ajacis, the branching Larkspur, than which nothing can be more beautiful or useful; it is equally appropriate for planting singly in mixed beds, in straight lines, or in large masses, and these may be either dwarf or tall, by simply pegging the plants down, or by tying them up. Centaurea cyanus, growing 2 feet high, and C. depressa, 5 inches high, are equally beautiful, and exceedingly useful in making bouquets.

Before we conclude this section of the subject, it will be proper to notice a few half-hardy ornamental creepers, of which seeds should be procured: these are Calampelis scabra, Lophospermum, Maurandya, Scyphanthus, Cobæa scandens, and the different varieties of ornamental Gourds; of the latter we would particularly mention the Turban, or Turk's Cap, and the Bottle Gourd, as these two varieties are considered hardier than others.

We close these remarks with a few words on kitchen garden seeds. Nothing can be more absurd than for a gardener to encumber himself with an extravagant number of varieties of the different culinary vegetables.

Of Peas we content ourselves this year with four varieties; two of them, Bishop's Dwarf Long-podded, and Fairbeard's Champion of England, we proved last year to be far superior to those we had previously grown, and which had been selected in former years after careful experiments. The other two kinds, which we still grow this year, are Hairs' Dwarf Green Mammoth, and Burbidge's Eclipse.

We have one sort of garden Bean "The New Royal Cluster;" and one variety of Kidney Bean "The Dwarf Prolific;" these two Beans we last year proved to be superior to all other Beans which have come to our knowledge.

One kind of Borecole is enough, the dwarf hardy green; and of Broccoli, we know only four varieties, which we have tested in former years, viz., Snow's Superb White, Knight's Protecting, Early Purple Cape, and Early White; and two new late ones to try against our older favourites, viz., Imperial Winter, and Elletson's Mammoth.

Of Cabbages, we have the true Early York for culinary Cabbages, Drumhead for "Sour-krout," and Chappel's Colewort for the purpose which its name implies.

Of Cauliflowers, the early Asiatic and the Walcheren are what we use.

Of Carrots, the Dutch Horn for forcing, and the Altringham for general crop.

Of Celery, we limit ourselves to one kind, Cole's Superb or "Celeri violet," a variety of undoubted superiority.

Of Lettuces, we select the Brighton Cos or Paris Cos, the hardy Hammersmith Cabbage, and the Drumhead.

Of Onions, for general crop, the White Spanish, the Deptford, the brown, and white Globe; for Salads, the two-bladed for pickling, the silver skinned; and for autumn sowing, the Tripoli.

Of Radishes, one long-rooted variety, and the red and white globular, with black Spanish for winter use, and the white Naples to produce roots for pickling.

Of Spinach, the round for summer use, and the hardy prickly for winter.

Among the items which ought not to be omitted are the Ice-plant for garnishing, Chicory and Lamb's Lettuce for winter Salads, Hamburgh Parsley for the sake of its roots, and Nicotiana Tabacum for fumigating

In the above remarks I have not noticed those vegetables of which only one or two varieties exist, even in seedsmen's lists, as mistakes can scarcely take place in such places. *The Writer of the Calendar.*

TRADE MEMORANDA.

We have to thank "Vigil" for his information respecting Messrs. Boden, Russell, and Higginbottom, mentioned at page 70. It is exactly what we anticipated.

Home Correspondence.

The Wire System of Fastening Fruit-trees to Walls.—In an article by Mr. Fleming, which was given in your Paper for the second week in July last, these objections were brought against this system of fastening. 1. That the young shoots get behind the wires. 2. That the shoots are kept at too great a distance from the wall. 3. That the shoots become half sawn off by rubbing. I own that there is a liability of the shoots growing behind the wires; but he must be a negligent gardener who permits it to take place to any injurious extent. Secondly, the distance of the shoots from the wall is entirely regulated by the stay-nails, only such a space being necessary to be left as to allow of the bass or any other ligature which may be used to pass between, which, I suppose, must also be the case if studs were used. Thirdly, during the experience of six years the shoots have not been found to have been injured in the way mentioned by rubbing. Therefore I conclude that Mr. Fleming's statement, that wires can only be employed against flues with advantage, is rather too sweeping; for all the gardeners whom I have known to have tried the plan are extremely pleased, and say that it does not require half the labour, and is greatly superior to the old method of nailing. I do not hereby mean to say that studding may not be a better method, for I have not tried it; but I should suppose it requires a much more evenly built wall than the fixing of wires does, and also does not offer the same facility of keeping young shoots in their places by stretching twigs across them. It certainly seems to be less expensive, though I believe Mr. Fleming has placed the expense of the other too high; for at the following prices, which I do not consider to be over moderate, I calculate that a square yard of wiring will cost 4*d.* instead of 7½*d.* A pound of wire (No. 13), 4½*d.* per lb.; stay-nails, 8*d.* a score; fixing, 2*s.* a day. In the garden from which I take my facts the wires were fixed by a day labourer six years ago. They have been painted once since, and not one single wire has either been broken or become loose. *T. A.*

Felling Larch.—There cannot be a doubt that the proper season for this operation is when the tree is full of turpentine, which is during spring and summer, and at no other season should resinous trees be felled. The wood of the Larch is as durable and nearly as hard as Oak, if felled at the proper season; but if felled in winter, its quality is very inferior and soon decays. *A Practical Sexagenarian Arborator.* [We doubt the soundness of this opinion. See the next letter.]—I have a small plantation (12 or 14 acres), consisting of Oak, Larch, and Spanish Chestnut. A few years since the Oaks were in some places nearly stifled by the Larch; but as I did not want Larch poles at the time, I had some of them stripped early in spring, and allowed them to stand, thinking they would die off immediately, out of the way of the Oak, but, to my surprise, the tops kept alive, and actually grew a little through the summer (though the stripped part seemed quite dead), the foliage only dying off two or three weeks before that of the unstripped trees. In the following spring I had them felled, and the carpenter, who had worked Larch largely, pronounced them to be decidedly the very best he had ever used or seen. *U. L.*

Mutual Benefit Societies for Gardeners.—In an age of association like the present, it is strange that so little has been done by gardeners in the way of organised efforts, to bear each others' burdens in times of sickness, distress, and old age. From the whole of these none are certain of exemption, and at such times, many of us need something to fall back on. The cause of this indifference may probably be traced in part to the prosperous circumstances in which some are placed, and in part also to the difficulty which such an undertaking suggests. Now, being conscious myself of the desirability of benefit societies among gardeners, I will briefly state what my views are respecting the practicability and mode of their formation and conduct. I would have each society to be composed of gardeners, properly so called, or in other words of persons whose abilities have been tested and approved of by their respective employers, and are or have been in the receipt of the average amount of head gardener's wages. This arrangement may perhaps be objected to, on the ground of its excluding young and deserving aspirants; but if the case does not admit of an alternative, and if the scheme should prove as advantageous as I anticipate, I trust that it will operate as an extra stimulus to their exertions in the pursuit of their object. I would propose next that the amount of admission money and of weekly subscriptions should vary according to age, 10*s.* as the former and 6*d.* as the latter being the lowest. In case of illness each member should receive from the fund about 10*s.* weekly, with medical attendance, and at death 5*l.* should be paid towards his funeral expenses. I have fixed the items of disbursement at a low figure, because the accumulation of a substantial fund is highly essential to the permanency of the society, and also because the aim of the society should embrace an object in addition to those named, viz., the granting of assistance to members whom the vicissitudes of service or other circumstances might involve in pecuniary difficulties. Small loans might also be granted to members whose character and prospects would warrant a belief in their ability at a given period to refund the same. There is many an honest and intelligent gardener who, after enduring the privations consequent upon the want of an engagement for one, two, or more years, is obliged to enter upon a situation all but penniless, bearing the marks of poverty upon his back; by such a person the value of a loan of this kind would be appreciated. I place these general features of the scheme before the public, merely remarking that I feel the utmost confidence in its practicability—a confidence inspired by the character of the class of persons by whom it will be worked. I think it is likely that there will be a society of the kind established in the neighbourhood of Windsor, and it would delight me to hear of such associations becoming general throughout the land. *W. Sherwood, Englefield-green, Surrey.*

Rose Insects; Effect of Liquid Manure on Roses; and continuous blooming kinds.—Allow me to thank you for the explanation given in your Leading Article of the 19th inst. to a fact which has formerly much perplexed me. I had, I suppose, like many others, been struck by the observations made in your Paper with reference to the "snags." I adopted the suggestion, and with the most marked benefit; but in the course of last summer I had occasion to cut an old stem of a transplanted Brennus Rose, which had suffered from removal, and seeing one of the holes, for which I keep a constant look out, at the end of the piece which I was about to remove, I split it open, expecting to find, as usual, one of my enemies of the maggot race. To my surprise a shining black fly made his escape, and at the bottom of the boring I found at least 100 or so of aphides. I was puzzled to think what could be the connection between them, and also puzzled by the appearance of the aphides, as they were more like the fly which infested the Spruce Fir a few years ago than the common Rose aphis. Your notice fully explains the whole affair, and accounts for the appearance of the aphides. Allow me, however, to question the soundness of giving up the original advice which you were the means of conveying to us. I for one shall rebel against the advice of 1850 in favour of that of 1849; and allow me to suggest that, at all events, there are hundreds of snags, too small for your fly or for aphis, which harbour maggots and which should be cut off. Your friend, if watched a little more narrowly, will be found I think to burrow in any dead wood—Ash poles (to which I tie my tall Roses), Scarlet-runner sticks, or Rose wood of the second or third year's growth, the thickness of one's little finger; but pray do not let him be made the protector of the whole race of maggots which may be found in the thin small twigs of Roses, the white Provins, for instance, especially. I tried liquid manure last year with Roses; the result of my experiments was, that old large plants, just coming into bloom, were amazingly improved by it, and enabled to open, when I think that without it they would have failed. Lamarque, La belle Parabere (June), Solfaterre, Celine (June), were the trees which I watched especially; but in the case of young, lately-planted trees, not in bloom, I did great mischief to them by applying liquid manure. The dry hot summer may have partly caused the failure in that case. A correspondent of yours wishes to know of Perpetuals for lengthened blooming. I find the best of mine to be some selected from Wood's (of Maresfield) catalogue in the class of Noisettes. Lamarque, Solfaterre, Luxembourg, against a wall; the two former are splendid. Liberal feeding and pruning keep these going from May or June to November. I cut Cloth of Gold, two good blooms, in the last week of November. *C. E. C.*

Birds.—I do not think that your remarks (p. 22) are applicable to the birds that infest gardens. 1. The green grosbeak or green linnet. 2. The chaffinch. These birds feed only on small seeds, and I cannot find any one who can say he has seen anything else eaten by them. No. 1. Destroys the Polyanthus, I do not know why. 3. The sparrow feeds upon grain in the winter and on fruit in the summer, and is never seen hunting for insects. 4. The greater titmouse. 5. The lesser titmouse. These birds destroy fruit buds in the spring, and are very destructive in the Pea borders. At other times they feed on Oats, of which they are very fond. They also are fond of flesh and fat, and are found in butcher's shops. 6. The bullfinch eats nothing but fruit buds when they can be had, and at other times seeds and winter berries. This is by far the most mischievous bird in gardens. 7. The blackbird or black ouzel. 8. The thrush or throstle. These birds are wholesale eaters of fruit; when there is no fruit, they feed on earth-worms and berries. They are of service in reducing the number of earth-worms, but these birds are in such vast quantities, that in the absence of all birds of prey, it is quite necessary, if fruit is to be had, to destroy many of them. The blackbird will eat Gooseberries until he stupifies himself, and in this state may be shot. At other times it is difficult to do so. I am not aware of any bird eating to this excess but the blackbird. The thrush is not so voracious as the blackbird. The titmouse will not be scared away like other birds, but is readily caught in wire traps, which is not the case with the sparrow and chaffinch. Sparrows will go into brick traps, but occasionally a robin is killed; the use of them has been discontinued in my garden on this account. The titmouse is fond of flies, but is not swift enough on the wing to catch many. The swallow tribe do this work more effectually, as they eat nothing but flies, being never seen feeding on the ground. All the books on natural history which I have seen, give a favourable account of birds, and would lead us to suppose that all of them do more good than harm. Many persons speak of the little birds as if all of them destroy insects; but I hope I have made it appear that this is not the case. *A. A.*

Vine Borders.—I am sorry that I have not been sooner able to make a few remarks on the contrast and apparent contradiction which seemed to exist between a statement of mine and one signed "G. R." brought into comparison with it, in the *Gardeners' Chronicle* of the 15th of December last. But if both statements be carefully considered, I do not think that they will be found to disagree, for "G. R.'s" directions for the use of carrion would reduce it, in the strict sense of the word, to a rich and dry compost; and it is moreover recommended to be used for the purpose of enriching a border of loose and dry materials, as any other manure might be, whereby all the evil effects of carrion, as such, are done away with. This is quite a different thing from putting under Vines whole carcases of horses, dogs, birds, or other large pieces of carrion [to be sure it is], and that, too, in a stiff cold soil, as is often recommended, and which I think so injurious. I certainly agree with "G. R." (we both rejoice in initials only, so our disagreements could not be carried far) in thinking blood, if applied in a proper manner and at proper seasons, to be one of the very best liquid manures that can be put to a Vine border. *T. A.*

Rat's-bane, properly so called, a Settler for the Million.—When I published, in your Paper of January 12, the irreparable loss I had sustained by an army of rats, who had remorselessly eaten up all, save 11, of my large and favourite family of "pet" birds, collected at much cost, and with considerable trouble, during a period of 20 years, I felt sure that some at least if not all your correspondents would sympathise with me, and assist me to the utmost of their ability in placing the enemy *hors de combat*. Nor did I reckon without my host. From all parts of the United Kingdom have I received letters of condolence, many of them conveying hints invaluable for my guidance, in carrying on the war of extermination with certainty and despatch, and emphatically requesting that the result of my proceedings might be made publicly known. In the columns of the *Gardeners' Chronicle* too, there have appeared each week some valuable suggestions which I have carefully noted, and for which I hereby tender my best thanks to the kind writers. For the benefit of all who may hereafter fall victims to the rapacity of rats, I will now, as briefly as may be, lay before them my military tactics, and explain how I finally brought up my *corps de reserve*, which gained me a decisive victory. Instead of commencing hostilities at once, on discovering the extent of the ravages committed, I gave encouragement to the enemy, by throwing in his way divers articles of food, such as dripping, lard, meat, bones, fish, and other dainties. This gave him confidence, and threw him off his guard, so that he revelled unsuspiciously among all the good things of this life, while I was secretly plotting his destruction. I took care, meantime, to secure all the hen-houses, and shut the inmates up every night, to protect them from their blood-thirsty foe. The great field-day was Friday last, a day I shall long remember. I devoted it entirely to strategy; and, *Nil actum reputans dum quid superesset agendum*, I completed all my arrangements before the hour of dusk, impatiently waiting for the rising sun of the morrow. Poison was my weapon; fresh herrings and sprats were my aides-de-camp. The poison was carbonate of barytes, ground to an impalpable powder, and phosphorus. An incision was first made in the backs of the herrings, and the carbonate of barytes well rubbed in. The parts were then, as artistically as possible, reunited. The sprats being smaller than the herrings, and more plastic, were pierced through their sides with a sharp piece of deal wood. Had a knife, a fork, or the human hand touched them, all would have been vain. The barytes was then "drilled in," and other sprats, not poisoned, were placed above and below them, so that suspicion was disarmed. "*Latet anguis in herbâ!*" It should be borne in mind that the barytes is without taste and without smell; hence its great value. The way in which I applied the phosphorus would take more space to detail than you can well afford in one number of your Paper. At a future time, I will gladly furnish particulars of this, and other interesting matters, connected with my recent experiments, for I have been both a "sapper" and a "miner!" When the preparations were all completed, I stationed my trusty messengers in every part of the garden and shrubberies—some under trees, some in flower-pots, some hidden by a brick, others partly imbedded in the garden walks, &c., &c. They "did their bidding" right bravely! on coming down stairs, the morning following, I found the enemy had fallen into the snare.* There was a serious diminution of the provisions furnished for their repast, and the hand of death was observable on every side. They had eaten ravenously; they had been seized with cruel thirst; they had sated themselves with water; they had "burst their boilers!" To use an expressive, and most appropriate classical quotation, there was a visible "*Decessio pereuntium—successio perituro rum*," which clearly proved I had won the day. In a word, two days and two nights effectually routed the whole army, and I was left master of the field. If it be urged by some, as perhaps it will be, that I am cruel, consider the aggravation, an unprovoked and brutal attack upon a large affectionate family of sleeping innocents, who were ruthlessly snatched from their beds at midnight, torn limb from limb, and their agonised bodies crunched; aye, "crunched" is the word, between the fangs of murderous assassins. Oh! "Had they ten thousand lives, my great revenge has stomach for them all." *William Kidd, Sander's Cottage, New Road, Hammersmith, February* 5.

* It is worthy of note, that the usual snares and gins, employed for the purpose of catching rats, are of little or no use, when the creature is "quartered" where he can obtain animal food. Rats can readily smell the hand that sets the snare, and also the bait touched while suspending it on the hook. By this it is evident that rats are "up to trap," and must be outwitted by good generalship.

Societies.

LINNEAN, *Feb.* 5.—W. YARRELL, Esq., in the chair. The Rev. G. Capel, W. Febitt, Esq., and J. Buckman, Esq., were elected Fellows. Dr. Lankester laid upon the table the works of the Ray Society for the year 1849, consisting of a volume of papers on botany, and Dr. Baird's beautiful monograph on the British Entomostracous Crustaceæ. The following address to Mr. Brown, on the occasion of his being elected to the Presidency of the Society, was then read by the Secretary, in the absence of Dr. Wallich, who had been deputed by the Royal Bavarian Botanical Society to present it.

Viro eminentissimo, edoctissimo, emeritissimo,
Domino Domino ROBERTO BROWNIO, D.C.L.
Permultarum Societatum Litterariarum Socio et Patrono,
Et nuper Linnæanæ Londinensis Præsidi electo,
Botanicorum Antistiti,
Qui Antipodum Floram primus et pæne solus digessit,
Explorans fideliter quas et ipse legerat et alii reportarunt plantas,
Qui complures Plantarum Familias Naturales ordine disposuit,
Exquirens fortiter novas et neglectas generum notas,
Qui Physiologiam Stirpium plurimis investigationibus dispunxit,
Exponens feliciter morphoseos et geometrices botanicæ leges,
Qui reliquias Pristinæ Floræ fossiles discretim discussit,
Expandens florenter intimam lignorum structuram,
Qui denique hodiernæ Phytographiæ et Phytologiæ aperto discrimine
Et pater et stator et auctor exstitit,
Et, quod faustum nomen socio imposuit Germanorum Academia distincto,
Ceu alter Raius per totum orbem famam sui dispersit,
Honorem, quo et se ipsam et virum ornavit Societas Linnæana,
Promovendo in sedem patroni divi Linnæi talem vicarium,
Societas Botanica Ratisbonensis Regia
Calendis Januar. MDCCCL. Piè gratulatur.

Mr. Gould exhibited specimens of a new species of Menura, which had been taken on the Richmond River, in New South Wales. He stated that a few weeks ago he had the honour of dedicating a species of Ptiloris, a very beautiful genus of birds, to her Majesty, and he proposed to dedicate the present species of Menura to the consort of the Queen, under the name of M. Alberti. Mr. Gould stated that this was no mere compliment to the Queen and Prince, on account of their rank, as they had claims on the naturalist on account of their liberal patronage of natural history science. He also exhibited a new species of lobster, and two new Lepidopterous insects from Australia. A continuation of Mr. Huxley's paper on the Structure of some Forms of Medusæ was read.

Review.

An Address delivered at the Annual Fair of the Newhaven County Horticultural Society, Sept. 26, 1849, by J. B. Parsons. Newhaven (U. S.): 8vo, pp. 49.

It must be confessed that in the United States things are done in a manner which shocks ancient English feelings, and would raise from their graves, if that were possible, the departed officials of some of our decrepid scientific corporations. Here we have a Horticultural Society calling its anniversary meeting "a fair," and what is more strange, intrusting the delivery of an official address on the occasion—not to its President, or one of its own officers, nor even to one of its members, but to a stranger, a nurseryman who seems to have been accidentally in the neighbourhood.

Unusual as is this, according to our notions of official propriety, yet it is impossible not to admit that the Newhaven Society was right, for a better address than that delivered by Mr. Parsons we have seldom read; and although we do not precisely recommend the example of the Society in question to be followed here on all occasions, yet we think the circumstance, like all such circumstances, well worth the consideration of those who have country societies to manage.

What sort of address this was will be collected from the following extracts:

"And as one of the very best means of interesting parents in the pleasures of the country, I deem these horticultural societies and their exhibitions. They are springing up too in every part of the country. Towns and villages of the east and far west, wherever slavery is not found, are organising them. They are changing the character of our products, increasing the wealth of our country, and giving new pleasures and interests to our people."——

"During the year 1847, the number of bushels of Wheat produced in the United States was over 114,000,000; of Indian corn nearly 540,000,000; of Oats nearly 168,000,000; of Potatoes over 100,000,000; and nearly a million more of Barley and Rye and Buckwheat and Beans and Peas; while in pounds there were, of Cotton, 1,041,000,000; of Tobacco, 220,000,000; of Rice, 103,000,000; of Sugar, 325,000,000; of honey, 23,000,000, with sundry other articles, amounting in the aggregate at their market value to more than 838,000,000 dollars. For the same year, the value of the produce of orchards, gardens, and nurseries was more than 54,000,000 dollars. Of live stock and its products, there were 60,000,000 pounds of wool; 23,000,000 of swine slaughtered, besides horses and sheep, and beef and poultry, and dairy, valued in the aggregate at 252,000,000 dollars. There are no data by which we can form any estimate of the amount of capital employed in the cultivation of the soil; but we have stated sufficient to show that it is the great interest of the country; for, without attaching any value to the capital employed, the value of the articles produced by the soil amount to nearly 1,145,000,000 dollars; while the produce of all other industry, forests, fisheries, and mines, with the capital employed in commerce, manufactures, insurance, banks, profits of interest, and of the professions, and rentals of houses and lands, all taken together, amount in the aggregate to less than 869,000,000 dollars."——

"There is no species of farming the profits of which can compare with those of the Peach orchard. Within a few miles of my residence there is an orchard of 20 acres, which is said to have produced 2000 dollars per

year, the vegetables between the trees paying the expense of cultivation. The Strawberry crop is also very profitable, particularly where irrigation can be obtained. Nearly 5000 bushels are every season sold in the city of New York, and to the cultivator the profit per acre is enormous. From our frequent drought, however, this crop is more precarious unless it can be supplied with water. The Grape can also be profitably cultivated, and the vineyards of Dr. Underhill are said to yield a net profit of some 4000 dollars per annum." . . . "American Apples command a high price in England, and I have seen the Newtown Pippins selling in London at 9 and 10 cents each. So popular is this Apple there, as I was told by the dealers, that no other American Apple, particularly no red Apple, could be sold while this was in the market. This variety is exported largely by R. L. Pell on the Hudson River, and his nett profits on this fruit are said to be some 8000 dollars per annum. Such are the facilities now of steam navigation, that we can export readily, and with large profit, all the finer Apples and Pears, with one or two varieties of Peaches."——

"The graduate of our colleges comes forth with some of the mental characteristics essential to a good farmer or horticulturist—the power of concentration, habits of reflection, and refined taste, all of which may be given him by the study of the classics and the exact sciences, to which the time of the college student is mostly devoted. But more than these is essential to the horticulturist or to the tiller of the soil. He needs habits also of close observation, which can be given him effectually only by the study of the natural sciences; and he wants, too, a practical and familiar acquaintance with these sciences, with chemistry, with botany, with geology, &c., to enable him to apply his knowledge effectually. The professor of the classics or of mathematics may contend that the time allowed to students at college is too short to admit of obtaining accurate knowledge of natural science, except by neglect of those branches. If such is the case, it were better they should be neglected. For all the purposes of mental training I am inclined to think the study of physical science as valuable as the study of exact science, and how much more practically valuable. Scarcely one student in a hundred, 10 years after he has left college, has any recollection of conic sections or integral calculus, but he can readily recollect all that he may have learned of geology or chemistry or vegetable physiology, because this knowledge is exercised every day, if he resides in or often visits the country. To one possessed of this knowledge, every tree and plant and rock and clod of earth speaks a language and possesses an interest unknown to one who may have passed with honour through the highest seminaries of learning."——

"In the meantime,
'Would you be strong? go follow up the plough;
Would you be thoughtful? study fields and flowers;
Would you be wise? take on yourself a vow,
To go to school in Nature's sunny bowers;
Fly from the city; nothing there can charm—
Seek wisdom, strength, and virtue on a farm.'"

Miscellaneous.

The Sheffield Gardeners' Instruction Society held its first annual meeting on the 23d ult. It appeared from the report which was read that various horticultural works, including two gardeners' newspapers, had been purchased and circulated among its members during the past year. The report also referred to the papers presented at the monthly meetings, from which, and the discussions thereon, much interesting information had been communicated. The treasurer's account showed a balance in hand of 1*l.* 4*s.*, after payment of all expenses. The Society then proceeded to elect officers for the ensuing year, when the president was re-elected, and a secretary and fresh committee appointed.

Calendar of Operations.

(For the ensuing week.)

GENERAL REMARKS.

The hot-water pipes of plant structures and forcing houses may be an ornament thereto, if kept in proper order; but they are the reverse of this if allowed to become dirty or rusty. Our method is to paint them black when they are first fixed, and afterwards to renovate their appearance by rubbing them over with a little boiled oil, once in a season. This is, of course, considerably cheaper than painting, and is very easy of application, while it answers the purpose as well, if not better, than the paint. We mention this now, as time to put these matters right can be better spared than when the season is farther advanced.

PLANT DEPARTMENT.

As a great majority of the plants in this department will soon require repotting, a sufficient stock of all requisite materials should be prepared before-hand; and with regard to soils, this should be particularly attended to. It is in many places a difficult matter to get good peat, but, without it, fine-rooted, hard-wooded plants cannot be grown to perfection. If, therefore, healthy well grown specimens of these kinds are an object worth trying for, no trouble must be considered too great in procuring suitable soil. As the amount of daylight increases, the temperature of the greenhouses may be slightly raised, particularly in fine clear weather; but be cautious not to excite stove plants, especially hard-wooded ones, until the days are longer, as a much greater difference exists between the light of their natural habitats and of our climate at this season than between the latter and that of the countries whence our greenhouse plants are introduced; hence these last are less liable to be injured by a temperature approaching their own natural one, in conjunction with our dull atmosphere. Stoves and the Orchid-house should not range higher than 55° to 58° at night; forcing-house, 60°; greenhouse, 40°; Heath-house, 36° to 40°. Take care that no moisture falls on the flowers of Orchids, or their beauties will soon be destroyed. If a speedy development of the flowers of any species which are now showing be desired, they may be removed into the forcing-house.

FORCING DEPARTMENT.

The fermenting material on the outside borders of Vines in action must be carefully managed; maintaining a steady mild heat, avoiding alternations of heat and cold. It should, therefore, be considered before the forcing commences, whether the supply of litter will be sufficient to produce the necessary temperature as long as it is required. The thermometer should be daily examined, and the temperature of the litter kept between 65° and 75° as extreme points. With proper attention, this can be effected at a small cost, either of labour or fermenting material. STRAWBERRIES.—A succession of these should be brought forward once a fortnight, by advancing each section a stage, and following them up with a further supply from the cold frames. As they are removed to the shelves of the forcing house, it will be an advantage to place pans under the pots, as the water is liable to pass off without properly moistening the soil, and thereby doing serious injury to such a moisture-loving plant as the Strawberry. The water which runs into the pans should not be allowed to remain in them longer than necessary to allow the roots and soil to absorb as much as they require. Any water remaining in the pans after a sufficient time has elapsed for this purpose should be emptied out, as nothing tends sooner to give a bad flavour to the fruit, than water in the pans, and it sours the soil.

FLOWER GARDEN AND SHRUBBERIES.

Let no exertion be wanting to render this department perfectly clean and neat; any large trees which are condemned should be removed, and all dead or decaying branches cut out of those which are to remain. If it were not done in the autumn, the surface of all the clumps should be dug or forked over, adding manure or compost where it is needed. At the same time, any necessary alterations in the arrangement of the plants should be made; and where they are too thick, the least desirable should be removed. It is a great pity to see masses of choice shrubs crushing together, and compelling each other to stand on tiptoe to get a peep at daylight; but ridiculous as such management undoubtedly is, the case is a very common one in English gardens. If fine specimens are desired, let every bush or tree stand distinct and free from its neighbour; spread out all bushes that will admit of it, and prune, support, or draw down, according to their individual requirements. In regulating the clumps, very fine specimens of different shrubs will attract attention, either on account of the symmetry of their form, or the peculiar beauty of their general habit. The best of these should be selected, and planted in appropriate positions on the lawn, where they will show themselves to the greatest advantage on all sides. In connection with the digging and regulation of the clumps, the edgings should be clipped, and the turf and gravel cleaned and rolled. By finishing every part as you proceed, a much greater quantity of work may be done by the same means, thus giving satisfaction at the same time both to yourself and others.

HARDY FRUIT GARDEN.

Bulfinches are very destructive to the buds of various fruit trees, and an effective means of preventing their ravages is to paint over the whole of the branches with a mixture of slacked lime and fresh cow-dung. It is probable that the eggs and larvæ of various insects will be smothered at the same time. To prevent the bulfinches injuring tall Cherry trees, we know of no means except shooting them. A single pair of these birds will, in a few days, entirely destroy the buds of a very large tree; this will show that these enemies cannot be too strictly watched.

KITCHEN GARDEN.

Those who have not yet set their Potatoes, should no longer defer it, as the bitter experience of the last few years has afforded abundant testimony as to what course must be pursued, if we would have even a chance of success. The principal points which demand attention are, to plant early varieties only, as soon in the season as possible, and to plant in open airy situations, in dry well drained ground, without manure. The sets should be planted 6 inches deep, and if a few handfuls of burnt clay or well charred refuse be placed about them, the produce seems to ripen quicker and cleaner, without being deteriorated in quality or size. On a warm border make another sowing of Radishes, and one of Early Horn Carrots. In very favourable localities, Onions, and an early bed of Parsley, may now be sown. The Leek is very hardy, and cannot be sown too early, as its excellence depends upon this, and upon being transplanted as soon as the plants are large enough, into a piece of rich well-prepared ground. Late sown, bad Leeks, are worse than weeds.

State of the Weather near London, for the week ending Feb. 7, 1850, as observed at the Horticultural Garden, Chiswick.

Feb.	Moon's Age.	Barometer. Max.	Barometer. Min.	Thermometer. Max.	Thermometer. Min.	Thermometer. Mean	Wind.	Rain.
Friday.. 1	19	29.799	29.715	55	47	51.0	S.W.	.02
Satur... 2	20	29.816	29.727	56	41	48.5	S.W.	.01
Sunday. 3	21	29.853	29.821	57	25	41.0	W.	.00
Monday 4	22	29.975	29.795	49	36	42.5	S.W.	.00
Tues. .. 5	23	29.634	29.477	49	39	44.0	S W.	.16
Wed. .. 6	24	29.259	28.911	46	32	39.0	N.W.	.00
Thurs.... 7	25	29.670	29.454	46	31	38.5	W.	.00
Average....		29.725	29.471	51.1	35.8	43.5		0.19

Feb. 1—Densely overcast; cloudy, with slight showers.
— 2—Slight rain; densely clouded and mild.
— 3—Fine; white clouds; clear at night.
— 4—Hoar frost; very fine; clear.
— 5—Slight rain; fine; very boisterous, with rain at night.
— 6—Boisterous; clear at night.
— 7—Fine, with dry brisk wind; clear.
Mean temperature of the week, 5½ deg. above the average.

State of the Weather at Chiswick during the last 24 years, for the ensuing week, ending Feb. 16, 1850.

Feb.	Average Highest temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds. N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 10	45.1	31.4	38.2	9	0.52 in.	2	4	1	2	4	7	2	1
Mon. 11	44.6	31.2	37.9	11	0.34	5	2	1	—	5	5	2	4
Tues 12	45.2	30.3	37.8	10	0.23	3	2	—	—	4	9	4	3
Wed. 13	45.1	31.5	38.3	10	0.30	—	2	1	1	5	7	5	3
Thurs. 14	46.2	32.7	39.5	7	0.40	—	1	2	1	4	8	6	2
Friday 15	46.8	32.2	39.5	10	0.25	1	2	2	—	4	6	7	2
Satur. 16	46.1	31.4	38.7	4	0.23	3	3	1	2	—	7	6	2

The highest temperature during the above period occurred on the 10th 1831—therm. 65 deg.; and the lowest on 11th, 1845—therm. 3 deg. below zero.

Notices to Correspondents.

AMERICAN BLIGHT: *Somerset Gardener.* Destroy it by means of spirits of tar applied with a common painter's brush.‡

BOOKS: *E C.* Roberts' book on the Vine will poesibly suit you ‡—*A B C.* We make it a rule never to give prices or recommend dealers.‡

CANNAS: *A H.* C. indica and C. iridiflora may be preserved out of doors, but with little success, unless in a very warm and rather dry situation. The roots may be kept alive through the winter by means of a thick covering of any dry material, such as Fern. It is much better, however, to take them up and winter them in soil in a cellar, or other similar place out of the reach of frost.¶

CANTUA BICOLOR: *M C.* You are not very likely to flower this and others by the middle of April. If you have a mind to take the chance, then force them smartly, without loss of time.

DIPPING CAMELLIAS IN HOT WATER TO KILL SCALE: *K.* Water of 130° or 140° used with force from a syringe might not harm the plants, while plunging the shoots in water of these temperatures in all probability would injure them, and particularly if the leaves were young or thin in texture. When the infested shoots are plunged into the heated water for any length of time, the temperature should be much lower than if the water was applied by a syringe; it is better to make a second application with water at a much lower temperature, than to use it once only at 150°, which is too high for plants with leaves on them.¶

DISEASES: *Ilex.* Next week.

FASTENING LABELS TO FRUIT TREES: *F.* Use tarred twine *loosely* tied, or *loose* copper wire.

FRAXINELLA: *H R K.* It may be propagated by seeds, or by dividing the roots.‡

FORTUNE'S YELLOW ROSE: *T.* It was shown by Messrs. Standish and Noble, at the garden exhibition of the Horticultural Society, in May last. It resembled Jaune Desprez, but is more coppery in colour.‡

GARDEN POTS: *Diss.* The following "is the correct nomenclature of the several sizes:"

Old Name.	Usual Breadth in inches.	Usual Depth in inches.	New Name.
Twos ...	18	14	18 inch.
Fours ...	15	13	15 ,,
Sixes ...	13	12	13 ,,
Eights ...	12	11	12 ,,
Twelves ...	11½	10	11 ,,
Sixteens ...	9½	9	9 ,,
Twenty-fours ...	8½	8	8 ,,
Thirty-twos ...	6	6	6 ,,
Forty-eights ...	5	5	5 ,,
Sixties ...	3½	3	3 ,,
Thumbs ...	2½	2½	Thumbs.

GLASS: *R B.* The thinnest rough plate.—*W.* About London, the price per foot of 16 oz. sheet varies from 3½*d.* to 6½*d.*, and that of crown from 2½*d.* to 6*d.*, according to quality.‡

INSECTS: *J W.* Thanks for the hornet cocoons. The other specimen is a mass of the cocoons of the Ilithyia sociella, a social moth. Pray look out for the larvæ of Ripiphorus for us. *W.*—*Sylvanus.* The insect sent is the wood-boring Sirex Juvencus. Respecting the Babylonish Cylinders, apply to Mr. S. Birch, at the British Museum; or Professor Wilson, at the East India House. *W.*

NAMES OF PLANTS: *G P L.* Melilotus leucantha.—*Constant Sub, tired of the ignorance of gardeners.* It is no proof of your gardener being ignorant that he cannot tell you the names of two Ferns: probably he never saw them before, and if he had, it might be as they now are, viz., without names. Ferns are not grown in every garden; in but few are correctly named; are difficult of determination; and, unless you have chosen a gardener who has made the study of botany a part of his education, and has books to refer to, you must not expect him to name uncommon plants. If he had served in any great botanic garden, he (although not a botanist) might have learned the names of these Ferns by rote; the large one is Cassebeera hastata, and the small piece, Adiantum pubescens. *S.*—*P B and another.* Next week.

ROSES: *Ravenswood.* They are attacked by an Erysiphe, a parasitical fungus. You should carefully cut, *to the ground*, all the branches on which it appears, and burn them. Prune your Ivy when it suits your convenience, except when it is growing *fast.* The cuttings will readily strike root; at any time of the year except winter—now.

SEEDSMEN: *A Yorkshireman.* You must consult your solicitor. We cannot give legal opinions.

SUNDRIES: *Hortulanus.* Small unburnt coal is injurious to the tender spongelets of the roots of plants if it contains much sulphur.—Buy Dr. Lindley's "Elements of Botany," and Johnson's "Agricultural Chemistry," with Low's "Meteorology," and Reid's "Law of Storms."

TACKLE FOR TIMBER RAISING: *Wilfordiensis* writes thus—"Can you, or any of your correspondents, inform me of the best method for raising a large Cedar tree which was blown down in a violent gale of wind last night? It is about 60 feet high, and the bole measures 5½ feet diameter just above the ground. It stood on a lawn, and was most ornamental. If raised, would it be likely to grow, with great care? The roots do not appear to be much injured, as the surrounding ground was very light in texture. We have taken the precaution to cover all the roots that were exposed with good soil, and covered the whole with leaves." The information is wanted at once, because the tree is now lying on its side. It will, however, take no further harm, if the part thrown into the air is covered with leaves.

VINES: *R G.* Use hot-water pipes rather than flues. You can grow in the house, besides what you mention, Kidney Beans, Strawberries, Aubergines, and Capsicums; and you may force Figs, as well as Rhubarb, Seakale, &c. We doubt, however, your success with Melons.—*J C L.* West's St. Peter's, Black Morocco, Black Frontignan, Black Hamburgh; Muscat of Alexandria, Cannon Hall Muscat, White Nice, if allowed to become *amber coloured;* White Sweetwater.

MISC.: *A Subscriber.* Your complaint shall be attended to. If, as you say, "almost every number" were defective in this way, we must ourselves discover it.

SEEDLING FLOWERS.

CINERARIA: *Beginner.* Colour, violet purple; size and texture good; petals rather narrow for their length, and scanty in the circle.*

HARTLEY'S PATENT ROUGH PLATE GLASS.

In submitting our list of prices, we would beg to direct attention to the Leading Article of the *Gardeners' Chronicle* of Saturday, Dec. 8, upon the subject of "Patent Rough Plate." Some alteration having been made in the mode of manufacturing this description of Glass, the quality is greatly improved, and we now supply it perfectly flat, and, by an arrangement with Messrs. HARTLEY and Co., precisely at their prices. Cut to order in panes of

8 by 6	and under	10 by 8	at 4½*d.* per foot.
10 by 8	,,	14 by 10	at 5*d.* ,,
14 by 10	,,	1½ foot	at 5½*d.* ,,
1½ foot	,,	3 feet	at 6*d.* ,,

PACKED IN BOXES of 50 feet each.

6 by 4 and 6½ by 4½...10*s.* 6*d.* 8 by 6 and 8½ by 6½...13*s.* 6*d.*
7 by 5 and 7½ by 5½...12*s.* 0*d.* 9 by 7 and 10 by 8 ...15*s.* 0*d.*

Milk Pans from 2*s.* to 6*s.* each, Metal Hand-frames, Tiles, and Slates; Propagating and Bee Glasses from 2*d.* each; Cucumber Tubes, 1*d.* per inch; Peach Glasses, 10*d.* each; Wasp Traps, 3*s.* 6*d.* per dozen; Pastry Slabs, Hyacinth Glasses and Dishes, Shades for Ornaments, Fish Globes, Plate and Window Glass of every description, and Lamp Shades. Lactometers for trying the quality of Milk, 4 tubes, 7*s.* 6*d*; 6 tubes, 10*s.* Self-registering Thermometers for Greenhouses, Horticultural Glass, &c.

JAMES PHILLIPS and CO., 116, BISHOPSGATE STREET WITHOUT, LONDON.

CROWN, SHEET, AND ROUGH PLATE GLASS, FOR HOTHOUSES, CONSERVATORIES, &c.

Of every manufacture FIT FOR USE, including the make of Messrs. CHANCE, HARTLEY, SWINBURNE, and others.

100 and 200 feet cases of large Sheet Glass, from 2½*d.* per foot. Small ditto, 10*s.* 6*d.* per 100 feet, packed in boxes ready for immediate delivery. Curators of Botanical Societies, Florists, Railway Agents, and others requiring large quantities, will, on sending dimensions, receive estimates at the lowest prices.

GLASS MILK PANS, CREAM POTS, Lactometers, Bee Glasses, Fish Globes, and all kinds of Dairy Glass, Propagating Glasses, Hyacinth Dishes, Cucumber Tubes, and every other description of Garden Glasses.

PATENT GLASS PENS, self supplying, never blot, never soil the ruler, and will write continuously for 12 hours.

Also, Glass Rulers, Glass Inks for office-stands, desks, &c. Stationers and Schools supplied. Wholesale Warehouse for Ornamental Shades, Lamp Shades, Gas Glasses, Genuine White Lead, Paints, Colours, and Pumps for Farm purposes.

Our Catalogue of 18 folios is the most complete ever published. No Gardener or Farm Bailiff should be without one. May be had Gratis on sending two postage stamps to Messrs. COGAN and Co., 48, Leicester-square, London.

GLASS FOR CONSERVATORIES, &c.

HETLEY AND CO. supply 16-oz. Sheet Glass of British Manufacture, at prices varying from 2*d.* to 3*d.* per square foot, for the usual sizes required, many thousand feet of which are kept ready packed for immediate delivery. Lists of Prices and estimates forwarded, on application, for PATENT ROUGH PLATE, THICK CROWN GLASS, GLASS TILES and SLATES, WATER-PIPES, PROPAGATING GLASSES, GLASS MILK PANS, PATENT PLATE-GLASS, ORNAMENTAL WINDOW GLASS, and GLASS SHADES, to JAMES HETLEY and Co., 35, Soho-square, London.

See the *Gardeners' Chronicle* first Saturday in each month.

GLASS PIPES.

MESSRS. COATHUPES AND Co., GLASS MANUFACTURERS, of Bristol, and of Nailsea, Somerset, beg to inform Engineers and others, that they are prepared to supply GLASS PIPES of from 1 to 4-inch bore, in lengths of from 3 to 7 feet; the lengths being less as the diameters of the bores increase.

GLASS FOR CONSERVATORIES AND HORTICULTURAL PURPOSES, &c.



T. MILLINGTON'S SHEET GLASS, which is of the best description, varying from 16 to 32 ounces, at from 2*d.* per foot and upwards; 100 feet and 200 feet cases of large Sheet Glass, for cutting up, at 2½*d.* per foot. British Plate Glass, from 1*s.* 2*d.* to 2*s.* per foot, according to size. Patent Rough Plate Glass, from ⅛ to 1 inch in thickness, from 4*d.* per foot upwards. Glass Slates and Tiles. Milk Pans from 12 to 24 inches diameter, from 2*s.* to 5*s.* each. Cucumber Tubes, from 12 to 24 inches long, at 1*d.* per inch. Lactometers, 7*s.* 6*d.* each. Wasp Traps.—Lists may be had, on application at the Warehouse, 87, Bishopsgate-street Without, same side as the Eastern Counties Railway.

BY HER MAJESTY'S ROYAL LETTERS PATENT.

PATENT HOTHOUSE WORKS, KING'S ROAD, CHELSEA.

E. DENCH invites the attention of Gentlemen about to erect Hothouses, &c., to the vast superiority in every respect possessed by his PATENT HOUSES, which he will warrant superior in every respect to any others. Good Glass from 16 to 21 oz. per foot, 1 foot wide, 3 feet long, furnished, and the Houses when completed charged from 1*s.* 3*d.* to 1*s.* 6*d.* per superficial foot, according to size and quantity; one principle, the roof being formed without wood or putty, and the other principle being wood rafters and the glass put in with putty. Patent Sashes, requiring no paint, from 7*d.* to 9*d.* per ft.

HEATING BY HOT WATER.

STEPHENSON AND CO., 61, Gracechurch-street, London, and 17, New Park-street, Southwark, Inventors and Manufacturers of the Improved CONICAL and DOUBLE CYLINDRICAL BOILERS, respectfully solicit the attention of scientific Horticulturists to their much improved method of applying the Tank System to Pineries, Propagating Houses, &c., by which atmospheric heat as well as bottom-heat is secured to any required degree, without the aid of pipes or flues. S. and Co. have also to state that at the request of numerous friends they are now making their Boilers of Iron, as well as Copper, by which the cost is reduced. These Boilers, which are now so well known, scarcely require description, but to those who have not seen them in operation, prospectuses will be forwarded, as well as reference of the highest authority; or they may be seen at most of the Nobility's seats and principal Nurseries throughout the kingdom.

S. and Co. beg to inform the Trade that at their Manufactory, 17, New Park-street, every article required for the construction of Horticultural Buildings, as well as for heating them, may be obtained upon the most advantageous terms.

Conservatories, &c., of Iron or Wood, erected upon the most ornamental designs. Balconies, Palisading, Field and Garden Fences, Wire-work, &c.

THE IMPROVED "FLUE BOILER" AND FURNACE.

W. HILL begs respectfully to inform the numerous applicants for his "FLUE BOILER" of a small and intermediate size, that he shall be prepared, early in December, to supply sizes to suit every description of Apparatus, from that of 100 feet of 3-inch pipe to 2000 feet of 4-inch pipe. A List of Sizes and Prices will shortly be published. W. HILL guarantees his Boilers to be the most effective and economical of any in use.

Horticultural Works, Greenwich, Feb. 9.

MESSRS. NESBIT'S CHEMICAL AND AGRICULTURAL SCHOOL, 38, Kennington-lane, London.—A sound practical knowledge of Analytical and Agricultural Chemistry, Geology, Surveying, Levelling, Railway Engineering, &c., may be obtained in Messrs. NESBIT'S Academy, in addition to a good modern education.

Mr. NESBIT'S works on Arithmetic, Mensuration, Gauging, Land Surveying, English Parsing, &c., are published by LONGMAN and Co., and may be had of all Booksellers.

The terms of the School can be had on application either personally or by letter.

HYDRAULIC ENGINES, WATER RAMS, &c., on Improved Principles; Engines worked by Steam or Hydraulic power, to raise from 1 gallon to 1000 per minute to a height of 500 feet, and from a depth of 900 feet. Douche, Vapour, Hot-air, and all other kinds of Baths. Buildings, Conservatories, &c., heated by Steam, Air, or Water. Boring, Sinking, and Collecting of Water, &c. Towns supplied.—Direct to JOHN LEGG, Cheltenham.

IMPROVED FOUR-HORSE PORTABLE STEAM-ENGINES AND BOLTING OR THRESHING MACHINES.

FREEMAN ROE AND HANSON, Southwark Iron Works, and 70, Strand, beg to call attention to their Steam-Engines and Threshing Machines, which are more economical in fuel, for the quantity of work done, than any before the public. They may be seen any day at their works, Sumner-street, Southwark Bridge-road.—Water-rams for raising Water. Deep Well Pumps; Baths; Hot-water Apparatus; Fountains. Towns supplied with Gas or Water.

THE LONDON MANURE COMPANY beg to offer as under, and pledge themselves that every Manure shall be perfectly Genuine:—Corn Manure for Wheat, Barley, Oats, Clover—most strongly recommended from its success last year; it will be found cheaper than Guano, and bear the strictest analysis. Also URATE, Superphosphate of Lime, Sulphate and Phosphate of Ammonia, Nitrate Soda, Fishery and other Salt, Gypsum, Sulphuric Acid, &c.

GENUINE PERUVIAN GUANO.—To insure this free from adulteration, all purchasers, if they prefer it, can receive their warrants from Mr. Purser, and remove the Guano direct from the Warehouses of Messrs. A. GIBBS and SONS, the Importers.

Bridge-street, Blackfriars. EDWARD PURSER, Secretary.

Country Dealers and Agents supplied.

GENUINE PERUVIAN GUANO, direct from the Importer's Stores, LINSEED CAKES, and all kinds of Artificial Manures, may be had at London prices, for Cash, of Messrs. ODAMS and PICKFORD, 15, Mark-lane, London.

POTTER'S GUANO. — This effective MANURE, now greatly Improved, is confidently recommended as a Dressing for all Spring Crops. It is equal to Peruvian Guano, and 25 per cent. cheaper. Also SUPERPHOSPHATE of LIME, GYPSUM, and SULPHATE of AMMONIA, all of guaranteed quality, and Cheaper than at any other establishment in town or country.

Factory, 28, CLAPHAM ROAD PLACE, LONDON.

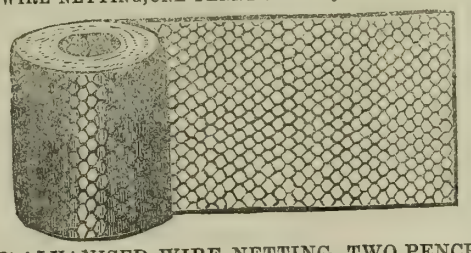
IMPORTANT TO AGRICULTURISTS.—COLLECTION AND DISTRIBUTION OF MANURES.

STRATTON'S AGRICULTURAL REPOSITORY, BRISTOL.

STRATTON, HUGHES, AND CO., have now ready their PATENT TUMBLER CART for the collection of Night-soil and other offensive matters; also their Iron Mill, to be worked by horse-power, water-power, or steam, for mixing and incorporating Nightsoil with Charcoal and other deodorisers. The Tumbler Cart has an iron body with a close cover; can be fitted if required as a Watering-cart, with a Valve and Delivery Pipe for distributing water or liquid manure, and also with an Apparatus for distributing dry manures in any given quantities per acre.

STRATTON, HUGHES, and Co.'s Tumbler Carts are used for scavenging purposes in Manchester, Bristol, Worcester, Harwich, Rochford, Cardiff, &c., and they are now building them for Chester, Oxford, Huddersfield, &c., besides many for Agricultural Colleges and private individuals. STRATTON, HUGHES, and Co.'s new illustrated Catalogue of Carts, Waggons, and Agricultural Implements will be forwarded to any address on receipt of 1*s.* 6*d.* in postage stamps.

WIRE NETTING, ONE PENNY PER SQUARE FOOT.



GALVANISED WIRE NETTING, TWO-PENCE PER SQUARE FOOT.—This article requires no painting, the atmosphere not having the slightest action on it. It was exhibited at the late Metropolitan Cattle Show, and was highly eulogised both for its utility and pretty appearance, and acknowledged to be the cheapest and best article ever produced. It forms a light and durable fence against the depredations of hares, rabbits, and cats, and is peculiarly adapted for Aviaries, Pheasantries, and to secure poultry; and by the galvanised requiring no paint, it answers admirably for training all kinds of creeping plants. Large quantities always kept in stock, of 18, 24, 36, and 48 inches wide; it can, however, be made to any dimensions desired. Patterns forwarded free of expense.

12 inches wide	3*d.*	per yard	30 inches wide	7½*d.*	per yard
18 ,, ,,	4½*d.*	,,	36 ,, ,,	9*d.*	,,
14 ,, ,,	6*d.*	,,	48 ,, ,,	1*s.*	,,

Galvanised do., 1*d.* per foot extra.

Extra strong Imperial Wire Sheep Netting, 3 feet, 1*s.* 6*d.* per running yard; if galvanised, 2*s.* Also every description of Wire Nursery and Fireguards, Wire House Lanterns and Shades, Fly-proof Dish Covers, Meat Safes, &c.; Window Blinds, 1*s.* 10*d.* per square foot, with bolts complete, in mahogany frames; Gothic Garden Bordering, 6*d.* per running foot; Flower Trainers, from 3*d.* each; Garden Arches, 20*s* each; Flower Stands, from 3*s.* 9*d.* each; Galvanised Tying Wire for plants and trees, Dahlia Rods, and every description of Wire-work; Weaving, for the use of paper-makers, millers, &c.—At the Manufactory of THOMAS HENRY FOX, 44, Skinner-street, Snow-hill, London.

BAKER'S PHEASANTRY, Beaufort-street, King's-road, Chelsea, by special appointment to her Majesty and H. R. H. Prince Albert.—ORNAMENTAL WATER FOWL, consisting of black and white swans, Egyptian, Canada, China, barnacle, brent, and laughing geese, shieldrakes, pintail, widgeon, summer and winter teal, gadwall, Labrador, shovellers, gold-eyed and dun divers, Carolina ducks, &c., domesticated and pinioned; also Spanish, Cochin China, Malay, Poland, Surrey, and Dorking fowls; white, Japan, pied, and common pea-fowl, and pure China pigs; and at 3, Half-moon-passage, Gracechurch-street.

SEEDS.—FOR SALE, some cwts. of SKIRVING'S SWEDISH TURNIP, WHITE BELGIAN CARROT, and ORANGE GLOBE MANGOLD WURZEL SEEDS; ripened last summer on Whitfield Farm, near Berkeley, Gloucestershire, at 8*s.*, 6*s.*, and 9*s.* per imperial stone, respectively.

Apply to Mr. MORTON, Whitfield Farm.

ROYAL AGRICULTURAL COLLEGE, CIRENCESTER.—The WINTER SESSION will commence on Friday, the 15th of February, 1850. All new students are required to attend for examination on the preceding day. Those who purpose entering as students for the ensuing session are requested to apply (either by letter or personally) to the principal, at the College, Cirencester, Gloucestershire, for the necessary admission papers.

By order of the Council, PHILIP BOWES, Secretary.

London, Office, 26, King William-street, West Strand.

ROYAL AGRICULTURAL COLLEGE, CIRENCESTER.

Patron—His Royal Highness PRINCE ALBERT.
President of the Council—Right Hon. Earl Bathurst.
Vice-President—Right Hon. Earl Ducie.
Principal—John Wilson, F.R.S.E., F.G.S., &c.
Chaplain and First Master—Rev. L. C. Edwards, M.A.
Second Master—J. D. Pemberton, C.E.

RESIDENT PROFESSORS.

Agriculture—John Wilson, F.R.S.E., &c.
Chemistry—J. A. C. Voelcker, Ph.D., F.C.S.
Natural History, Botany, Geology—Jas. Buckman, F.G.S., &c.
Mathematics & Natural Philosophy—Rev. L. C. Edwards, M.A.
Veterinary Practice—John Barlow, M.R.C.V.S.
Surveying and Practical Engineering—J. D. Pemberton, C.E.

OBJECTS.

The object of this institution is to provide such a course of instruction as will be most useful to the Agriculturist. The benefits to be derived from a judicious application of scientific information are becoming more and more extensively acknowledged, while the means of obtaining that information, if indeed it can be obtained at all without for the time sacrificing a due attention to the practical operations of husbandry, are so scattered and costly as to be within the reach of very few.

The College course of instruction is conducted in such a manner that while the student is well based in the principles of each science, its relations with agriculture are specially touched upon and explained, and their practical application shown as far as possible in the operations of the College Farm. The theoretical and practical instruction go hand in hand, and the whole is combined with the advantages of collegiate discipline.

By order of the Council,
PHILIP BOWES, Secretary.

London Office, 26, King William-street, West Strand.

HIGHLAND AND AGRICULTURAL SOCIETY OF SCOTLAND.—GLASGOW SHOW, 1850.

The SOCIETY'S AGRICULTURAL MEETING and GENERAL SHOW is to be held at GLASGOW, on the 31st of JULY, and 1st and 2d of AUGUST. The competition is open to Exhibitors from any part of the United Kingdom. Stock, Implements, &c., must be entered with the Secretary on or before the 20th of June.

In addition to the ordinary Premiums, there will be a Sweepstakes for the best Short-horn Bull of any age, to which the Society will contribute 25*l.* Subscriptions (2*l.*) of competitors must be intimated by the 1st of May, when the list will be closed.

Copies of the Premiums and Regulations, and Forms of Certificates of Entry, may be had on application to the Secretary.

By order of the Directors,
J. HALL MAXWELL, Secretary.

Edinburgh, 6, Albyn-place, Feb. 9.

DR. NEWINGTON'S IMPLEMENTS. — Persons requiring these Implements this spring, must make early application. A stock of HAND-DRILL HOES, with the various fittings; HAND-DIBBLES, with and without wheels, and various other Sowing Machines and Agricultural Implements of Dr. Newington's Invention, may be seen at Messrs. DUFAUR and Co.'s, 21, Red Lion-square, Holborn, London. A Prospectus and Lecture on these methods of Agriculture sent, gratis, on application.

CORN MANURE.

BLASHFIELD'S PATENT COPROS.—A new Manure for Corn and other Crops, prepared from the nitrogenous matter deposited on the banks of the Thames, in combination with other substances essential for the growth of corn, &c., price 8*l.* per ton. Sold, in a finely ground state, at No. 3, New London-street, Mark-lane; also, at the Works, Mill-wall, Poplar; Waterloo Dock, Lambeth; and No. 1, Praed-street, Paddington Basin.

PATENT COPROS, for Corn crops, also for Turnips, &c.; Superphosphate of Lime, Gypsum, calcined and saturated with liquid manure. CEMENT for Liquid Manure Tanks, Malt House Floors, and Barn-floors, manufactured by J. M. BLASHFIELD, successor to Wyatt Parker and Co., Original Patentees—Parker's Cement. Established 1796. Drain Pipes, Tiles, &c.

The Agricultural Gazette.

SATURDAY, FEBRUARY 9, 1850.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

WEDNESDAY,	Feb.	13—{ Agricultural Society of England. / Highland and Agricultural Society.
THURSDAY,	—	14—Agricultural Imp. Society of Ireland.
WEDNESDAY,	—	20—Agricultural Society of England.
THURSDAY,	—	21—Agricultural Imp. Society of Ireland.

THE oral discussion of subjects connected with Farm Practice is a mode of exhibiting and elucidating facts that can scarcely be too highly recommended to the notice of Agricultural Societies. It is not merely useful to the members themselves, whose wits can scarcely fail of being sharpened by contact, but when such discussions are published, they are peculiarly suited to impress and convince the minds of the whole farming fraternity, in consequence of the large amount of individual experience they elicit. The speakers at meetings held for the improvement of practical agriculture are generally the most zealous, and, without disparagement to others, the most intelligent of the class to which they belong; and, as a somewhat necessary consequence, they naturally

unite in forming that vanguard of explorers whose duty and inclination lead them to the fresh and unbroken territory of progressive improvement, and thus to enlarge the bounds of our present knowledge. They are, in fact, the lights as well as the beacons of the agricultural world; for their discoveries, when crowned with success, never fail sooner or later of being turned to personal advantage by hosts of less adventurous labourers; while on the other hand their errors and failures are equally important and useful, from the warning they convey.

It is true, however, that the establishment of improvements in agriculture is slowly and tediously effected; so much so that it would seem as if the amount of evidence required to give them currency must, to bring conviction, be far more abundant than what would be demanded or considered necessary in any other department of experimental inquiry. And this remark is true, not merely in regard to those great improvements which are apt to startle the cautious by their extreme novelty, but also in regard to other practices which are neither new nor untried. As an illustration we may instance the self-evident necessity there exists for every farmer who cultivates Turnips—and who does not, now-a-days?—storing up a sufficient quantity of these roots to supply his stock with food during that period of winter when frost and snow render it impracticable, or at least difficult, to carry it from the field. The tendency of the agricultural mind at present is evidently towards individual exertion, in order that low prices may be met and neutralised by a more vigorous personal effort in endeavouring to improve the details of farm practice. Many of these details are so exclusively within the tenant-farmers' own control, that, if neglected, he can scarcely look for assistance or even expect commiseration from those who would otherwise willingly befriend him in carrying forward those more extensive and important improvements which call for co-operation on the part of the landlord.

These remarks have been suggested partly by a discussion which took place at a late monthly meeting of the Highland and Agricultural Society of Scotland, on the best modes of storing Turnips in winter, and partly by a personal acquaintance with the fact that very many farmers do not lay up a store of Turnips at all in winter, and thus by their practice prove their disbelief in its utility. A four weeks' continuance of frost and snow has probably brought a slight conviction that it would have been as well to have provided against a contingency so common in a climate such as ours, by laying in previously a store of Turnips sufficient to have lasted through a storm of moderate length; but it is to be feared that, with many, such a conviction will weaken and ultimately vanish as the frost and snow disappear with returning good weather. The speakers at the meeting referred to were no doubt so convinced by long experience of the indisputable advantages of storing Turnips, as not to deem it necessary to waste time in advocating a practice so palpably and self-evidently useful. Their object was to elicit as many opinions and facts as possible on the details of the practice itself, being perfectly satisfied and unanimous in regard to its utility; but it is doubtful if that practice be as general even in Scotland as might be expected from the proverbially economical and provident habits of its farmers. How many flocks of sheep and lots of cattle have been fully supplied with unfrosted Turnips during the last fortnight? The greater proportion, it is to be feared, have not been so comfortably circumstanced. We have had occasion lately to see many flocks of sheep dotting the dreary surface of the snow-covered fields, and striving, but unsuccessfully, to scrape the frozen crust from their food; and in what state is it when reached? Every Turnip bulb as hard as an Ailsa Craig curling-stone, and requiring such an amount of nibbling and chiselling on the part of the poor animals as must be sadly detrimental to the fattening process; if, indeed, which is more likely, they do not lose fat rapidly, from the chilling effects of masticating such cold as well as "short commons," conjoined moreover with exposure to a temperature far below the freezing point. The cattle on such wretchedly managed farms seldom fare much better than the sheep, if we may judge of their treatment by the not unusual spectacle of a number of people employed in the Turnip fields excavating the bulbs from under the snow, and carting them home to the farm steading.

The waste of food in such cases must greatly diminish the profits of feeding; and yet how easily might it be avoided by a little foresight and extra exertion in laying up a proper supply of Turnips before winter sets fairly in. Those who contend for the advantages of giving Turnips fresh and juicy from the field to stock, cannot surely suppose that they are sufficiently great to counterbalance the evils necessarily entailed on the animals by several weeks' semi-starvation. No doubt Turnips, as well as other roots, lose weight by being stored any considerable time; but it is the opinion both of Professor Gregory and Dr. Anderson that this loss of weight is principally due to evaporation of water from the bulbs and not to the disappearance of nutritive matter, which could only happen either from decomposition in the substance of the Turnip itself, or from the juices exuding from the parts where the tops and tails are cut off. But even admitting that there is a considerable loss occasioned in consequence of rotten bulbs, and bleeding from the cut surfaces, still a much greater loss is sure to be sustained in the field from the depredations of various animals, both winged and four-footed; besides, there is the main objection already urged, that by leaving the whole crop of Turnips in the field, only to be carried home when required, the risk of partially starving the stock during frost and snow is rendered certain. In addition to the testimony of men of science to the fact, that the storing of Turnips is not attended by any noticeable loss of nutritive material, we have what will be considered more satisfactory by some, the statements of several of the most intelligent and best practical farmers of East Lothian and Mid-Lothian, that it is a regular part of their system of farm-management to store up a large quantity of Turnips for the use of their stock in winter. The details of the process are extremely simple; all that is necessary being to get the Turnips carted home free of frost and as dry as possible, and cover them plentifully with straw of any kind to protect them from frost.

The disadvantages of not adopting the practice have been forcibly brought before us by a particular instance in our own neighbourhood. A flock of 12 score of 4-year-old breeding ewes, deprived of Grass by half-a-foot of snow on the surface of the ground, have been receiving daily for some time back a couple of cart-loads of *frozen* Turnips, knocked out of the snow by mattocks at no little trouble and discomfort to the workmen. The consequences to the flock at lambing time cannot be otherwise than disastrous; for Turnips, at all times dangerous and unwholesome food for ewes carrying their young, are particularly so when given to them in a frozen state. Another instance may be mentioned of a flock of wether sheep folded on Turnips, which, when we saw them, seemed to have given up scraping away the snow from the buried bulbs beneath from sheer fatigue. Now, in either case, how can any hope or expectation of profit be reasonably entertained? In the former case, deaths among the ewes at the lambing season cannot but be the result; while, in the latter, the fat must be rapidly withdrawn from the body to supply the waste of the lungs—a waste which is greatly increased by the highly condensed state of air at the freezing point. Such wanton mismanagement is the more inexcusable when we consider how easy it is to throw a few acres of Turnips together in clamps of three or four cart-loads each, in different parts of the field, and cover them with straw and a few shovelfuls of earth, to keep it from blowing off with the wind; and how convenient and satisfactory it would be, in frost or snow, to cart or wheel out on the surface as many as could be consumed each day?

Economy, as well as humanity, calls loudly for a general adoption of the system of storing Turnips before winter; and now that we are put to our own resources to meet depressed prices by improved practices, such a glaring and too common neglect as we have alluded to, should not be allowed to exist. If we ever hope to make a profit by fattening stock, with mutton and beef at 5*d.* per lb., we ought to take care that "John Frost," in his annual visit, do not merely eat up our profits, but also a large slice of what should go to pay the expense of growing our Turnip crop.

NOTES OF FARM PRACTICES IN 1776.

Scotch and English Farming—*Bexley, Norfolk.*—We went into the barns, where they were threshing Barley and Wheat; the Barley put up as hay, the Wheat in stacks. I drew out some of the Barley to see the length of it, and was much surprised to find the stalks of it only about a foot long, and what we, in Scotland, call "nirly." "Was not this a very bad crop, Mr. Leader?" "No," says he, "it was middling." "Pray how much may you have off an acre?" "About 5 coombs," says he (2 coombs are a 30th part more than a Winchester quarter). "And how much Wheat?" "About 6 coombs." "Only six," says I; "why, as near Edinburgh as you are Norwich they get 16 bolls, and a boll and a coomb are very nearly the same." We next went to the Turnip field that he had sold, and pray what do you think was feeding there? Why, cows, and calves which were as big very near as their mothers, and yet sucking; he informed me that some people found it profitable to bring up calves thus for the London market. They buy old cows, in spring, at the calving, at about 3*l.* or 4*l.* apiece, let them run at Grass all summer together, and at Martinmas put them upon Turnips, as forerunners to sheep, allowing them only to eat the leaves, and then put the sheep to eat the root. These calves they sell in March, when about a year old, at 7*l.* or 8*l.* a piece; and Mr. Leader assured me they will often weigh 25 stones and upwards, and being constantly fed to the full, they weigh like lead.

Jan. 11.—We, in Scotland, envy the English their fine country, their industrious servants, and everything we do not know about. Mistaken fancy! But it is the case everywhere, that people are not content with their own situation, but think that others, whose condition they are not acquainted with, are much better than they; for my part I have been reflecting a good deal since I came here upon what of the productions of the ground have as yet come within my reach, and, without hesitation, I pronounce Scotland far the preferable country. I envy them their ploughing and economy in some things, but for their soil or their servants I envy them not; the small "nirly" corn I have seen here we would reckon no crop at all. Would the farmer within four miles of Edinburgh take six bolls an acre for a crop? They would plough it down ere they reckon it a good one, and when I speak of the farmers in Midlothian getting 12 and 16 bolls an acre, they cry out, "Oh! what a country that must be." "Yes," says I, "if one knew how to manage it." When I tell Mr. Leader of a field being let for four or six years of white crop running, "Do what you please with the land here," says he, "it would not do that; we would have nothing at all the third year." I have been enquiring likewise about their servants, and find that the farmers are, in a manner, slaves to them.

April 21.—Mr. Brett, of Messingham, has fed within this last month six or seven cattle on Barley-meal and Oat-straw—it comes very expensive, but necessity has no law—where is the necessity? a Scotsman would say. A Norfolk man, says, "I would rather starve myself as not see my fat bullocks get forward." *N. B.*

FARM ESTIMATES.

The following is the cost and return of farming at present prices, as furnished by Mr. Watson, of Kellor. It is unnecessary to give his estimate under former prices, for, excepting that the returns are moneyed out at 20 to 30 per cent. less than those, the calculations are the same.

Returns of Produce from a Farm of 500 acres, on a five-shift rotation, on an average of past years.

Dr. Charges.				Cr.
Rent of 500 acres, at 32*s.* per acre ...	£800	0	0	
Interest on invested capital, 3000*l.*, at 10 per cent. per annum	300	0	0	
Ditto on floating capital, 2000*l.*, at 5 per cent. per annum	100	0	0	
Expenses of management, wages, insurance, tradesman's accounts, Grass seeds, &c., at 20*s.* per acre per ann.	500	0	0	
Annual loss on live stock by disease and accidents	100	0	0	
Public burdens	50	0	0	
—1850	0	0		
Profit				106 0 0
				£1956 0 0

Returns.				Cr.
Oats from 100 acres, at 48 bushels an acre	£4800	0	0	
Off for servants, horses, seed, &c. ...	2400	0	0	
Bushels, at 3*s.*	2400	0	0	—360 0 0
Wheat, spring, 40 acres, at 32 bushels per acre	1280	0	0	
Less seed	160	0	0	
Bushels, at 7*s.*	1120	0	0	—392 0 0
Barley, 60 acres, at 42 bushels per acre	2520	0	0	
Less seed, horses, &c.	500	0	0	
Bushels, at 4*s.*	2020	0	0	—404 0 0
Profits for live stock fed upon 200 acres Grass, 100 acres greens				800 0 0
				£1956 0 0

Signed, Hugh Watson, Kellor.

The comparative loss of 412*l.* at present prices, is made out by reducing the prices of the corn about 30 per cent., and the returns from the live stock 20 per cent. Such reductions being assumed to be the consequence of free trade. But if credit be taken for so large a depreciation in the value of the returns, as the consequence of a reduction in the prices of food, surely some allowance from the charges should have been made; for is it not clear that farmers will participate with all other classes in the economy which cheaper food produces? But it is rather to the high scale of charges on the one side, and to the smallness of the returns on the other; to the large rent and high cultivation, and implied corn fertility of the land—as contrasted with the smallness of the corn and cattle returns, that I would draw attention; for certainly upon the expenditure with the system of farming here adduced, I believe no English farmer would ever anticipate other than loss.

The cropping adopted is the five-course, of greens, Barley, and Wheat, seeds down two years, and Oats. The charges on the debit side amount to 1850*l.*, with 516*l.* for corn consumed by men and horses, and for seed, deducted from the returns, making a total of 2366*l.*, an average of 94*s.* 7*d.* per acre per annum, exclusive of any purchase of stock. The rent is put at 32*s.* an acre, a price that certainly commands a fertile grain growing soil. The capital at 10*l.* an acre. This can be employed only under high cultivation, larger corn returns, and use of fine stock. The expenses, 20*s.* an acre, with corn allowances amounting to 20*s.* 7*d.* more, making a total of 40*s.* 7*d.* per acre per annum, are also on the highest scale.

In a word, land rented at 32*s.* an acre, employing 10*l.* an acre capital, and an expenditure of 40*s.* 7*d.* an acre per annum, may fairly be expected to be highly cropped, and making much more than ordinary returns; but we find Mr. Watson gives but 40 acres of Wheat, and a gross produce of only 2472*l.*, as the entire returns of 500 acres of fertile grain-growing land; and with this soil and this outlay his course of cropping admits of only 200 acres of corn, and of which only 40 acres are Wheat. If against this we contrast the ordinary Norfolk four-shift rotation, viz., greens, spring corn, seeds, and Wheat, a rotation which has been adopted for the purpose of fertilising poor soils, and adapting them to the growth of grain, and which admits of less corn being grown in the rotation than does the course usually taken on land of the description in question, we shall find, "against Mr. Watson's 160 acres of spring corn and 40 acres of Wheat, producing 1156*l.*," we have 125 acres of spring corn and 125 acres of Wheat, producing 1822*l.* We have further to notice that by Mr. Watson's showing, of his 500 acres, 300 acres are annually applied to feeding of stock, at a loss of 550*l.* per annum; for the only return from these is the 800*l.* profit of live stock, which, are kept at a cost of 1350*l.*, viz.:

Rent, 32*s.* an acre	£480	0	0
Interest on capital on 300 acres	240	0	0
Expense of management, wages, &c. ...	300	0	0
Corn payments and consumption	200	0	0
Loss on live stock	100	0	0
Public burdens	30	0	0
	£1350	0	0

So that if Mr. Watson's estimate be correct, Scotch farming under former prices has had the serious error of allowing the loss from the live stock to absorb five-sixths of the gain from growing corn; and the imperfect acquaintance with accounts has admitted of a system and rotation so defective being held up as a public example. Although, doubtless, one must allow something for the spirit of partisanship in these calculations, still as the principle of keeping stock for the purpose of growing grain must be dependent on the amount of loss incurred in the stock returns, I cannot but be doing a service in showing to what an injurious extent this may be carried by thus exposing these extracts, which are given as the farming of the first farmers in Scotland. That I may not leave the question here, I attach charges and returns that, as I conceive, will prove much nearer the mark, ever bearing in mind we are dealing with land described as fertile grain growing, the rent, &c., being put at 34*s.* an acre, and the capital that has been employed being 8*l.* an acre.

The annual charges and returns for 500 acres of "fertile grain-growing land," cultivated on the Norfolk 4-shift rotation, and calculated on present prices. (To be put against Mr. Watson's calculations in "Blackwood's Magazine.")

Dr. Charges.				
Rent, rates, tithe, at 34*s.* an acre			£850	0 0
Interest on capital, at 8*l.* per acre, viz.,				
2000*l.* invested at 5 per cent. ...	£100	0 0		
To give back the capital in 20 years ...	100	0 0		
2000*l.* floating, at 5 per cent.	100	0 0		
			300	0 0
Wages, at 24*s.* an acre			600	0 0
Corn consumed by horses and for seed...			350	0 0
Tradesmen's bills and sundry charges...			150	0 0
			£2250	0 0
Balance profit, in addition to 5 per cent. per annum, allowed for interest on capital			309	7 6
			£2559	7 6

Returns.			Cr.
62½ acres of Oats, at 7 qrs. per acre, 437 qrs., at 17*s.*...	£371	17 6	
62½ acres of Barley, at 5 qrs. per acre, 312½ qrs., at 28*s.*	437	10 0	
			809 7 6
125			
125 acres of Wheat, at 3½ qrs. per acre, 437½ qrs., at 40*s.*			875 0 0
Cattle returns from grazing...			
125 acres of roots			
125 ditto of Swedes			
250 acres, at 3*l.* an acre			750 0 0
Ditto from consuming the straw, the growth of 250 acres			125 0 0
			£2559 7 6

Thus a tenant may realise, at free-trade prices, on a capital of 4000*l.*, a return of 509*l.* 7*s.* 6*d.* per annum. One glaring error in "Blackwood's" calculations has been to assume the same capital and the same amount of wages against the low returns under low prices that he has against the higher under former ones, whereas, if the prices of the returns from farming are to fall in the ratio it has been assumed, a capital of 4000*l.*, and a scale of wages of 25*s.*, will represent 5000*l.* and 30*s.*—food being 25 per cent. dearer, and already the wages of the agricultural labourers have been reduced fully in this proportion on the last two years. *Hewitt Davis*, 3, *Frederick's-place, Old Jewry, London, Jan.* 15.

PRICES OF WHEAT.

Some of your readers may be interested in the following curious Table of the Prices of Wheat in England, collected from the earliest authorities (which I have appended to each date, with the expressions made use of by them in mentioning the prices). The difference of the value of money prevents, of course, all modern comparison; but the extraordinary variations in successive years, and even before and after harvest in the same year, afford a strange picture of the times to which the dates refer. The fluctuation is no less than from 1*s.* 6*d.* to 5*l.* 4*s.* the quarter! Should it be thought sufficiently interesting I will (in your next Number) continue it down to the commencement of the last century—when the records are of easier access, and lose their curiosity. *C. Wren Hoskyns.* [Pray do.]

TABLE OF THE PRICES OF WHEAT IN ENGLAND, FROM THE MIDDLE OF THE ELEVENTH TO THE END OF THE SIXTEENTH CENTURY.

Year.		£	s.	d.	Authority.
1043	"So great a famine in England that a sester (Sextarius) or quarter of Wheat sold for"	0	6	0	Huntington;
1125	"The dearest year in England ever known"	0	6	0	Robert de Monte Do.
1190	"So great a scarcity that at Salisbury a qr. of Wheat sold for"	0	13	4	[ciosum Chron: Pre-
1197	... ...	0	18	8	Do.
1202	"So great a scarcity, occasioned by continual rains, that a qr. of Wheat sold for"	0	12	0	Waverley Annals
1205	"So great a frost (lasting from Jan. 14 to March 19) that the qr. sold for" ...	0	12	0	Matthew Paris
—	"The ground was so hard that it could not be tilled, and the summer following Wheat was"	0	13	4	Stow
1237	"Wheat, by the qr., was" ...	0	3	4	Dr. Kennet (Antiq: Peterborough)
1243	"Corn so plentiful that Wheat and Peas were each of them by the qr."	0	2	0	Matthew Paris
1246	"A qr. of Wheat so dear," at	0	16	0	Thos. Wikes
1247	—— "still dear," at	0	13	4	Do.
1258	"So great a famine that many people were starved." Wheat per qr.	0	16	0	[ford Walter Heming-
—	"In some places"	1	0	0	Stow
1270	"Wheat was so dear, that it was sold at," per qr. ...	4	16	0	Fleetwood
—	And in some places at 16*s.* by the bushel, "so that parents did eat their own children"(!)	6	8	0	[Britan. Author of Antiq.
1286	Wheat per qr., at	0	2	8	Fleetwood
—	"But such a storm of rain, thunder, and lightning fell on St. Margaret's night, that Wheat came by degrees to"	0	16	0	Do.
1287	"Wheat so cheap that it sold at" per qr.	0	3	4	Knyghton
1288	"So great the plenty of corn, and scarcity of money, that Wheat was sold by the qr. at"	0	1	6	Annales Wigorn.
—	... ...	0	2	0	Waverley Annals
—	"At London"	0	3	4	Stow
—	"In other parts of England" at	0	1	4	Do.
—	"Nay, in the North and West parts at"	0	0	8	Do.
1289	"By reason of great hail and rain, Wheat rose from 2*s.* the qr. to"	0	10	8	Do.
—	"And by degrees came to" ...	1	0	0	Do.
1290	Wheat per qr.	0	16	0	Walsingham
—	"Which scarcity continued off and on for many years."				
1294	Wheat per qr.	0	16	0	Fabian
—	"And sometime as high as" ...	1	0	0	Knyghton
1302	"Wheat by the qr."	0	4	0	Dugdale
—	"Malt ground," at	0	3	4	Do.
—	Peas, at	0	2	6	Do.
—	Oats, at	0	2	0	Do.
1309	Wheat, at, per quarter ...	0	7	2	Wm. Thorn
1314	Wheat, Beans, and Peas, at...	1	0	0	Walsingham
—	Malt, at	0	13	4	Do.
—	"Nay, by the rains in harvest the dearth was such that Wheat came to 30*s.* and" ... (A Proclamation issued that no more Wheat *should be malted*,)	2	0	0	Do.
1316	"Wheat exceeding dear," at	1	12	0	Fabian
1317	"So great a scarcity of Corn, that at Leicester Wheat was"	2	4	0	Knyghton
1336	"Such plenty of corn and scarcity of money, that" Wheat at London was, p. qr.	0	2	0	Knyghton
1338	Wheat, per qr., at	0	3	4	Sir R. Cotton
	Barley and Oats, at	0	0	10	Do.
	Peas and Beans, at	0	1	0	Do.
1339	Wheat and Malt, at	0	9	0	Do.
	Oats, Beans, and Peas, at ...	0	5	0	Do.
1349	"Corn so plentiful that Wheat was" per qr.	0	2	0	Antiq. Britan.
1359	"Wheat very dear, so that a qr. was"	1	6	8	Fabian
1361	"Wheat so cheap that" a qr. was...	0	2	0	Dugdale
1363	"Wheat so dear that" a qr. was	0	15	0	Kennet
1369	"Such a dearth that Wheat was" per qr.	1	4	0	Walsingham
—	... ...	1	0	0	Stow
1379	Wheat so cheap that, &c. ...	0	4	0	Do.
1387	Wheat, by the qr. (at Leicester)	0	2	0	Do.
1390	Wheat at Leicester, by the qr., from 13*s.* 4*d.* to	0	16	8	Knyghton
1401	'Wheat very dear,' at... ...	0	16	0	Fabian
1407	... ...	0	3	4	Kennet
—	"Sowing Wheat," at	0	4	5	Do.
1416	'Wheat very dear,' at ...	0	16	0	Fabian
1423	'Wheat cheap,' at	0	8	0	Do.
1425	'Wheat *for malting*,' at ...	0	4	0	Kennet
1434	"The autumn was so wet that for almost two years following Wheat was sold at," per qr.	1	6	8	
1437	"Yet at the end of the year following it came again to"	0	5	4	Hist. Croyland
1439	"Such a scarcity that Wheat was, by the qr., sold at" ...	1	0	0	Stow
—	... ...	1	6	8	Fabian
1440	"The scarcity continued" ...	1	4	0	Do.
1444	Wheat, per qr.	0	4	4	Fleetwood
1445	Ditto ditto	0	4	6	Do.
1447	Wheat by the qr.	0	8	0	Do.
1449	Ditto ditto	0	5	0	Do.
1451	Ditto ditto	0	8	0	Do.
1453	... ...	0	5	4	Do.
1455	'Wheat very cheap,' at ...	0	1	2	Do.
1457	Wheat by the qr.	0	7	8	Do.
1459	Ditto ditto	0	5	0	Do.
1460	Ditto ditto	0	8	0	Do.
1463	'At London'	0	2	0	Anon.
1463	'At Norfolk'	0	1	8	Anon.
1464	'White Wheat,' by the qr. ...	0	6	8	Cotton
1486	"Wheat very dear," at ...	1	4	0	Fabian
1491	Wheat, the qr., at	0	14	8	Do.
1494	'Wheat cheap,' at	0	4	0	Do.
1495	Wheat, per qr.	0	3	4	Do.
1497	'Wheat very dear'	1	0	0	Do.
1499	Wheat, per qr.	0	4	0	Do.
1504	Ditto ditto	0	5	8	Antiq. Canterb.
1521	"A dearth. Wheat per qr."	1	0	0	Stow
1551	Wheat by the qr. ... ... And continued at that price for four years.	0	8	0	Do.
1557	"In this year, before harvest, Wheat was, per qr." ...	2	13	4	Do.
—	'But after harvest, at London'	0	5	0	Do.
—	'And in the country'	0	4	0	Do.
1558	Wheat, per qr. ... ... And continued at that price for four years.	0	8	0	Fleetwood
1574	"Such a dearth at London" that Wheat was, the qr. ...	2	16	0	Do.
—	And after harvest	1	4	0	Do.
1587	Wheat was, at London ...	3	4	0	Do.
—	And in the country, from 10*s.* to	0	13	0	Do.
	"This was occasioned by excessive transportation."				
1594	Wheat, the qr., at	2	16	0	Do.
1595	"Wheat (by much transportation)"	2	13	4	Do.
1596	"Wheat, by reason of great rains"	4	0	0	Do.
1597	Wheat fell, from 5*l.* 4*s.* to ...	4	0	0	Do.

Home Correspondence.

Loans under the Private Money Drainage Act.—You state in your last Number "that some of the large Life Assurance Offices have intimated to the Inclosure Commissioners their willingness to advance money to landowners, for the purposes of the 'Private Money Drainage Act, 1849,' on reasonable terms." Now I have ascertained that two of the offices demand 5 per cent. interest on any sums under 3000*l.*; and consequently the rent-charge to pay off 100*l.*, with interest, in 22 years, would be 7*l.* 12*s.* per annum, besides the expenses incurred in surveying, mapping, and inspecting the land drained (say 1*l.* per cent.), making 8*l.* 12*s.* per annum. Considering that Consols are now at 97½, these do not appear to be reasonable terms. The rate charged by Government was 3½ per cent., making the rent-charge 6*l.* 11*s.* 11*d.* for 100*l.*; and, as about two-thirds of that loan of 2,000,000*l.* was taken by Scotch landowners, and nearly as much, I believe, has been granted to Irish landlords during the last three years, would it be too much to ask of ministers a loan of 1,500,000*l.* or 2,000,000*l.* for the English landowners, on the same terms, as the best means of honestly relieving landlords, farmers, and labourers from their present difficulties? *Salop.*

Arsenic.—Your correspondent, "J. B.," says he prefers this, as a pickle for seed Wheat, to sulphate of copper (*i. e.* blue-stone). Such, however, has not been my experience; for after several years' practice with arsenic, and successfully too, as far as the prevention of smut in the crop, I have for the last 10 years used sulphate of copper more to my satisfaction. The chief recommendation of the latter above the former, to me, is its safety in the hands of any one except the principal. I bestow extra dressings with my machine upon the corn intended for seed, which renders the tedious practice of skimming in the pickle unnecessary. I dissolve 1 lb. of blue-stone in a gallon of boiling water, which should be diluted with sufficient water to make 9 gallons. This is delivered through the rose of a common watering-pot over the Wheat the day before it is wanted, and stirred well upon a brick floor. I consider also that Wheat thus prepared is much safer to keep a short time, in case unfavourable weather should retard the operation of committing it to the soil, than if prepared with arsenic. I have known three-fourths of the seed destroyed by weather preventing its being used, where arsenic was applied, whereas I have had portions left in sacks when beat off by weather, for even weeks, without suffering from a preparation of blue-stone. I wish your correspondent had at more length described the drill he mentions for using his seed with, as in Suffolk we are acquainted with no (new) drill suitable for Wheat for double the amount he names. *W. S. G.* [Our Wheat is pickled thus: 1½ lbs. of sulphate of copper and 2 gallons of water are sprinkled in solution over 8 bushels of Wheat, and the seed is ready for sowing in an hour. The solution must be held in an earthenware vessel. It will soon *eat* its way out of a watering-pot.]

Destruction of Rats and Mice.—This subject having frequently occupied a place in your columns, as indeed its importance deserves, I am disposed to send you a prescription, which has succeeded with me, where the most noted have failed. The phosphoric poison so much vaunted, did very little. Arsenic tried in many ways was hardly more effective, the little grittiness of the powder annoying their teeth, or warning them of danger. And arsenic in solution is not so convenient, nor quite so easy to place without danger to domestic animals. Without recapitulating the other poisons tried, I will at once mention the effective one; which, notwithstanding the underground communication now rendered so general and complete, by the recent sanitary regulations, keeps my premises free; or if traces of either rat or mouse appear, gets rid of them in a day or two. The substance is precipitated carbonate of barytes, not the native carbonate, which is as gritty as arsenic, whilst the precipitated is as fine and soft as fine flour. It is best prepared by the druggist, as most used to such things; but the following is the method, and it can be done by any careful and skilful person. Dissolve 1½ oz.

carbonate of soda (common washing soda), in half-pint water; and in another half-pint, 1 oz. muriate of barytes. Pour the soda about a wine-glassful at a time into the solution of barytes, and shake well at each addition. The liquid will become white and thick, and must be thoroughly shaken when all the soda is in. Then set it aside to settle quite clear, which may take 12 hours or more. (It will settle much quicker if made with hot water; but the powder is then not so fine, and does not answer so well.) When settled quite clear, pour off the liquid as close as possible; fill the bottle again with water, and shake it well up, to wash out all soda &c., from the sediment. Let it settle clear again; pour off again; turn out the white powder on a filter to drain, and dry it. It will clot in drying, but is easily rubbed down fine again. To use this, mix ¼ oz. of it with 2 oz. lard, and ¼ oz. flavoury cheese (good Dutch cheese answers very well); smear it over bread like butter, or make it up with crumbs or meal into little balls like marbles; or still better, smear it over the rinds of fried bacon; and place it in the holes and tracks. For rats, the addition of two drops of oil of aniseed, to the 2 ounces of lard, seems to be more attractive; but I have not observed this addition to do much for mice. *J. Prideaux.*

On Rearing Calves.—I was much struck by seeing in your columns, a few weeks ago, a communication from Mr. Thomas Sadler, stating that he was in the habit of rearing his calves by continued feeding from the time they were calved; that he sold them at 22, 24, and 26 months old, at from 20*l.* to 24*l.* each; and that he had found this way more profitable than buying in lean beasts at the markets and fatting them. Now it needs no observation to see that this is not the usual way; but is it not consonant to common sense? Firstly, it agrees with the well-known maxim of a "quick return;" secondly, it is entirely analogous to our treatment of sheep, which have firstly their mother's milk, secondly the best Grass the farm affords, in winter as many Turnips as they can eat; with perhaps some addition of hay or meal, and are sold fat at from 12 to 16 months old. This is the way they are treated now. How were they treated formerly? Why, exactly in the same way as we now treat our calves; they were let scramble on as they could for two or three years, and then fatted. It is acknowledged, in the case of sheep, that the forcing system is far the most profitable, and why should it not be so in the case of cattle? There is this difference of course in the two cases, that the sheep's milk would be wasted if not given to the lambs, whereas the cow's milk, which is taken from the calves, itself brings a considerable profit. It is therefore a question of degree, whether, if you determine to rear and fat beasts on your own farm, you ought not to suffer the loss of a few cheeses, or a few pounds of butter, for the sake of bringing your beasts to market one or even two years earlier; the mere being out of the interest of your money for such a time is something, but this is not the only advantage. How many calves die annually, or from some disease in their calfhood, caused by want of sufficient nourishment, never attain their proper size and health, and are a loss when they should be a gain, it is of course impossible to estimate, but that the loss must be considerable is evident. Who has not seen a calf, the smallest and sickliest of the lot, not only recover from incipient disease, but actually outgrow the others, from being allowed to suck a cow for one, two, or three months. *Anonymous.*

Report on the Implement Show of the English Agricultural Society.—The following memorial to the Society was forwarded towards the close of last year's weekly meetings. "Richard Nicklin, of Glenville, near Douglas, Isle of Man, most respectfully calls the attention of the President, Vice-President, and the Council of the Royal Agricultural Society of England, to the following suggestions. It is particularly to the implements that attention is desired, as their increasing number being so great it is impossible for those attending the shows to view them sufficiently; and there never being more than one-fifth of the subscribers attending any one of the meetings, would it not be greatly to the benefit of the subscribers generally, if accurate and plain illustrations of all the prize implements were given with the report on the exhibition of implements at every show? Now, the subscribers not having that report until about six months after the show, and many of them waiting for it before they purchased implements, it would be greatly to their benefit if it could be had sooner. Could this be done by the Society having stamped sheets, as newspapers, and when the report is ready, to be forwarded as newspapers are? At present each part of the journal costs 6*d.* sent through the post, and six sheets of the largest size allowed by law would contain as much matter as the generality of them hitherto has had—for on folding a single number of the *Times*, there will be found 60 pages rather larger than those of the Journal—besides, there are lectures delivered at the meetings, if of the greatest importance then four-fifths of the subscribers will not have it until they get the next part of the Journal, which is generally six months after, but if sent by the stamped paper, they can have it very soon after it is ready for printing. If this plan was adopted as soon as there is sufficient matter to fill a sheet, it could be forwarded much earlier than at present."

Agricultural Memoranda.—Dining the other day with some dozen of our most respectable agriculturists, certain opinions were broached. It was unanimously agreed that deep drainage, or indeed anything more than furrow drainage, was useless on heavy land. Subsoiling, or deep cultivation, was pronounced to be injurious and unprofitable, having been tried by two gentlemen present. It was also asserted that liquid manure was of no benefit to the land—and that also was stated by one who had tried it. The company approved the sentiment. I quote the foregoing to show how strong a hold prejudice has yet on many very respectable agriculturists. A knowledge of chemistry would at once convince a farmer that the urine of animals contained the most soluble and valuable parts of the manure. A reference to the cottager's garden on a poor heath, or other neglected spot, should settle the question of deep cultivation, and as to drainage, a reflection as to how the heavy land got wet, and a glance at a beer tap in the lowest part of a cask ought to bring conviction. My heavy land 5 feet drains to-day were extremely busy pouring forth in an energetic and curvilinear stream the heavy rain of last night, minus I hope some of its ammonia and carbonic acid. Just finished threshing one half a field of Wheat, which was recommended to be ploughed up in the spring, being thin sown and slug eaten; produce over 40 bushels per acre. *J. J. Mechi, Feb.* 1.

Societies.

ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

A Monthly Council was held at the Society's House, in Hanover-square, on Wednesday last, the 6th of February. The following Members of Council and Governors were present: His Grace the Duke of Richmond K.G., Trustee, in the chair; Earl of Chichester, Hon. R. H. Clive, M.P., Hon. Capt. Dudley Pelham, R.N., M.P., Hon. H. W. Wilson, Sir Charles Lemon, Bart., M.P., Mr. Raymond Barker, Mr. Bramston, M.P., Mr. Brandreth, Col. Challoner, Mr. Foley, M.P., Mr. Garrett, Mr. Brandreth Gibbs, Mr. Grantham, Mr. Fisher Hobbs, Mr. Wren Hoskyns, Mr. Milward, Mr. Pendarves, M.P., Mr. Chandos Pole, Mr. Pusey, M.P., Prof. Sewell, Mr. Shaw (London), Mr. Villiers Shelley, Mr. Simpson, Mr. Slaney, M.P., Mr. Stansfield, M.P., Mr. H. S. Thompson, Mr. Hampden Turner, Mr. Thomas Turner, Prof. Way, and Mr. Jonas Webb. Charles Towneley, Esq., of Towneley, near Burnley, Lancashire, and Charles-street, Berkeley-square, London, was elected a Governor of the Society.

The following new members were elected:

More, R. B., Linley, near Shrewsbury
Bryant, James, Prospect, near Plymouth, Devon
Howard, J. P., 59, Mark-lane, London
Duntze, Sir John, Bart., Exleigh, Starcross, Devon
Clarke, Richard Hall, Bridwell, Collumpton, Devon
Fellowes, Robt., jun., Billeswall Hall, Lutterworth, Leicestersh.
Cole, Rev. N., South Brent, Ivybridge, Devon
Sparkes, John, North Bemfleet, Wickford, Essex
Burkill, Ed., Winteringham, Barton-on-Humber, Lincolnshire.

The names of 48 candidates for election at the next meeting were then read.

Finances.—Colonel Challoner, Chairman of the Finance Committee, presented to the Council the Report of the Committee on the accounts of the Society to the end of the month of January; from which it appeared, that the current cash balance in the hands of the bankers at that time was 3631*l.* He explained to the Council that this balance included the Exeter subscription of 1260*l.*; amount received for life-compositions, 1247*l.*; and on account of arrears of subscription from members, 1124*l.* The Committee recommend that this sum of 1247*l.*, received as compositions, should be invested as capital by the purchase of stock in the public funds. Colonel Chancellor further reported, on the part of the Committee, that 998 letters had been addressed and sent by post, to members who were more than 2 years in arrear of their subscriptions, claiming the sum of 5205*l.* as the amount of such arrears; that 446 of these members had returned answers to the application, 206 had paid their arrears, amounting to 808*l.*, while 552 persons had sent no answer whatever. He added that the Finance Committee would proceed to enforce the claim of the Society against these parties, in accordance with the instructions and order of the Council. The quarterly statements of income, expenditure, and liabilities, as well as that of the funded property of the Society, were laid on the table for the information of the Council.—The Council confirmed this report, and adopted the suggestion it contained for the investment of the balance on the life composition account.

Chemical Lectures.—The Report of the Chemical Committee having been read, the Council decided that Professor Way's offer to deliver a course of elementary lectures on chemical science before the members during the current year should be accepted, with their best thanks. It was arranged that the first lecture should be delivered in the Council-room of the Society at 12 o'clock on Wednesday, the 27th inst., all members of the Society having the privilege of being present on the occasion.

Meeting of 1851.—Mr. Pusey, M.P., having laid before the Council a communication from the Royal Commission for the Exhibition of the Products of Industry of all Nations in 1851, it was decided that the President should be requested to direct a special meeting of the Council to be summoned for Wednesday, the 20th inst., at 12 o'clock, for the purpose of taking such communication into consideration.

Mr. Shaw, of London, presented a coloured plan of the Islington Cattle Market; and took that opportunity of reporting the renewed outbreak of small-pox among the sheep in Norfolk.

Numerous communications for the weekly Council, and presents for the library, were received, with the thanks of the Council, which then adjourned.

Reviews.

Tax on Successions and Burdens of Land, &c. By P. B. Brodie, Esq., Barrister-at-Law. London: Longman and Co. 8vo, pp. 92.

The author of the essay now before us proposes that a tax should be imposed on all persons taking landed property by descent, and on those who come into the possession of personal property under marriage and other settlements; he also advocates the revival of the house-tax and the substitution of it, together with the two above-mentioned taxes on successions, in lieu of the present income-tax. With regard to the proposed tax on successions, Mr. Brodie justly observes that—

"Of all direct taxes perhaps none can be found less open to objection than a tax on successions. If a person, on his first coming into the enjoyment of property, pays a portion of it at once to the state, he would make the payment more willingly than if he were to be harrassed by the periodical visits of the tax-gatherer for payments of a portion of his income, to meet which he must be continually making sacrifices. The hardship of the tax which is only to be once paid can be nothing in comparison with the hardship of a tax which is to be continually recurring. It has also another decided advantage from its being taken out of property *in transitu*, before the new owner comes into the actual enjoyment of it. It is levied at the precise time when he acquires his fortune, or an increase of it. He has not, therefore, to contract his expenditure and diminish his enjoyments, or lessen his savings. He is only prevented from launching out into so great an expenditure or making such savings as his new acquisition would have warranted if the amount of the tax had not been deducted. In short, the withholding from him what he has never enjoyed cannot be compared to the deprivation, which a person may have to undergo, who may have to provide for the payment of any other direct tax. The severity of any other direct tax may, in some degree, be mitigated in process of time, after its imposition, by persons accommodating themselves to it, and may, after a lapse of time, be wholly done away with when the tax has become permanent, and the persons succeeding to land so taxed take the land subject to the tax, and have therefore never enjoyed it exempt from the tax. But even then, of the two direct taxes, a tax which is not to be periodically demanded, and is only to be paid at the time when the party who is to pay it has an acquisition of property, and has not had the actual benefit of such acquisition, must be the preferable tax of the two."

Mr. Brodie estimates the amount of personal property, settled in one year, including sums to be raised for portions under trusts in settlements of real property, to be about 8,000,000*l.*; the same sum may be considered as annually taken out of settlement, and might be made liable to a tax on successions. Such a tax, if levied similarly to the present probate and legacy duty, would amount to about 350,000*l.* annually, and would, according to the author's plan, be paid by the trustees of the settlement when the money settled came to be divided among the objects of the trust.

By a slight alteration in the probate and administration duty, namely, by making the duty on both 3*l.* per cent. on all sums of 300*l.* and upwards, by continuing the present rate of duty on probates for all sums under 300*l.*, and by making the administration duty for all sums under 300*l.* correspond with the probate duty, it is estimated that 600,000*l.* a year might be obtained, in addition to what is returned under the present system.

With a view not to press too hard on persons of the first degree, Mr. Brodie does not propose to increase the legacy duty of 1*l.* per cent. now charged on them. If, however, it were to be increased 1*l.* per cent., a sum considerably exceeding 200,000*l.* per annum would be added to the revenue. It is proposed to increase the legacy duty on persons in the second degree from 3*l.* to 4*l.* per cent., and also to increase that now paid by persons more distantly related to the deceased, and to strangers, Mr. Brodie very justly observing, that "there can be no event in which persons would less unwillingly pay a heavy tax than on the fortuitous acquisition of property."

Then with regard to landed property: "It is proposed that upon every succession to real property by the death of the previous owner, the duty should attach, and that the amount of duty should, as to the persons succeeding, be regulated according to the same five degrees of relationship as in regard to personal property, and that the amount in each degree should be as follows, viz.:—the first degree, one year's net income; the second degree, one year's net income, and one-half of a second year's net income; the third degree, two years' net income; the fourth degree, three years' net income; and the fifth and last degree, four years' net income. According to the above scale, the amount of the duty on real property will, on comparison, be found, as to the second, third, and fourth degrees, below the amount of the duty on probates and administrations and legacies, if increased as proposed."

The sum which could be thus obtained the author estimates at about 2,741,665*l.* The total amount of the additional tax on personal property and real property would be, then, 350,000*l.* for taxes on settlements of personalty, 600,000*l.* for probates and administrations, 415,432*l.* for legacies, and 2,741,665*l.* for real property, amounting altogether to 4,107,097*l.*

By reviving the old house tax an additional sum of about 1,500,000*l.* would annually be added to the revenue, and this sum, together with the last, would ex-

ceed 5,600,000*l.* a year, as nearly as possible the amount of the present income-tax, and might replace that tax.

Such is an outline of Mr. Brodie's plan—a plan which he has developed with great impartiality and clearness in the little work now before us, to which we must refer those of our readers who wish for further information on this subject, and a perusal of which we strongly recommend to all those who imagine that land is already over taxed in this country.

A Cyclopedia of Agriculture, Practical and Scientific, in which the Theory, the Art, and the Business of Farming are practically treated. By upwards of Fifty Farmers, Land Agents, and Scientific Men. Edited by John C. Morton. Blackie and Son, Warwick-square, London. Parts I. and II.

It does not seem inconsistent with propriety that we should give a descriptive notice of this work—though an opinion on its merits is, for obvious reasons, impossible here. The designed character of the publication is sufficiently indicated in the Prospectus which has already appeared in our advertising columns. How far it may attain the position at which it aims, remains to be seen. It differs from previous and cotemporary cyclopedias in the original character of its contents, and in the division of labour principle on which its authorship has been effected.

The first and current numbers contain articles by Drs. Lindley and Playfair, Messrs. Ball, Burns, Curtis, Gorrie, Grigor, Hannam, Hoskyns, Morton, Thomson, Walton, and Way—embracing several sections of the theory and details of farm practice. The work opens with an introductory essay on the History of the Art, in which the obstacles to improvement, and its consequent tardy progress, are discussed by Mr. Hoskyns. The articles Acclimatation, Farm Accounts, follow, commencing the alphabetical order of arrangement, which is continued up to the article Ashes, in the midst of which No. II. concludes.

Farmers' Clubs.

St. Peter's, *Jan.* 16*: Farm Costs.*—The following resolutions were passed unanimously : 1st, That, as the value of agricultural produce is greatly lessened, it is the opinion of this meeting that farmers in general should, and must adopt and carry out a system of vigilant and wise economy, extending even to every expense unavoidably incurred. And as those employed in trade are reaping considerable advantages from the cheapness of food, it is thought by all present that the tradesman will now be able (without injury to himself), to make a considerable reduction in his charges. It appears particularly desirable reductions should be made in this neighbourhood, as from various returns now before the meeting, it is evident that tradesmen's charges are even higher here than in most parishes around. It is therefore resolved that the tradesmen of this parish be requested and desired to reduce their charges to the following scale, viz.—Blacksmith's work about 2*l.* per horse, per annum ; including the entire work required on the farm, except new tires for carts and waggons, and new ploughshares ; or if the work is not done by contract, that the shoeing should be 6*d.* per shoe, and other charges in proportion. Collar and harness maker to about 10*s.* per horse. Carpenters and bricklayers to 3*s.* 6*d.* per day ; and Bricklayers' labourers to 2*s.* 2d, That this meeting feels the importance of endeavouring to maintain in health, honesty, and comfort, the agricultural labourer. And while the fulness of the labour-market, and the necessities of the farmer, would urge to a reduction of the labourers' wages to the lowest point, it is of opinion that means should be from time to time devised to employ as many hands as can possibly be employed with the hope of profit ; and that those employed shall be paid so as that their condition is not rendered worse by the altered state of things. 3d, That it is the opinion of this meeting that in too many cases, the agricultural labourer is charged too much rent for his cottage ; and that it appears desirable that pains should be taken to bring the matter before the landlords, with a view to effect a general reduction. *William Manser, Chairman, James Smeed, Secretary.*

Miscellaneous.

The Improvement of Chat Moss.—The drainage was the first step to improvement ; this was effected by cutting open parallel ditches 66 yards apart, 4 feet wide at the top, and sloping down to about 14 inches at the bottom, and 3 feet 6 inches deep : in a wet floating mass like this Moss it was not possible to sink the ditch to the whole depth at once, and the first two spits being taken out it was then left for time to consolidate the surface ; the covered cross-drains, 10 yards apart, laid 3 feet deep, and running into the open ditches, were commenced ; but in forming these, as well as the open drains, it was necessary to allow some time to elapse between the different operations, that the water might to some extent run off ; the hollow drain was made by the top sod, dried by exposure to the air, being wedged into the open cut, and the peat thrown in again upon that to fill up. When the surface was partially dried, the Heath and other plants growing upon it were set on fire and burnt off as closely as possible ; and by ploughing and cross-ploughing, and cutting up the sods with a roller armed with knives, the ingenious contrivance of Mr. Reed, he was enabled to destroy the tough and elastic character of the surface : after this process marl, which was found at the southern edge of the Moss, was, by means of a moveable railway, laid on the top, to the amount of 100 cubic yards to the statute acre ; the average distance which the marl had to be removed being about two-thirds of a mile. Whilst these operations were in progress, I went over the Moss with Mr. Reed, and remember that both men and horses were obliged to work with pattens, or flat pieces of wood, attached to the feet. By means of the Liverpool and Manchester Railway, then in full operation, Mr. Reed was enabled to bring from the latter town any quantity of manure, and he found that a mixture of night-soil and ashes was preferable to anything else. By growing a crop of Potatoes in the first instance, the different particles of moss, earth, and manure became so thoroughly blended together, that the soil formed would produce anything, and Wheat, Clover, and Oats followed each other in successful rotation. Since Mr. Reed left (some years ago), the management has been intrusted to Mr. Evans, now of the Haigh Foundry, Wigan, and it has been discovered by experience that it is not advisable to grow Wheat or Clover on such land : Turnips, Oats, and Potatoes are considered the best crops ; and instead of marl, which is both bulky and heavy to move, it is now ascertained that salt mixed with lime is the most effective instrument in destroying the mossy nature of the surface, and preparing it for a first crop of Potatoes ; these grow exceedingly well on moss lands unmarled, but if marled, their failure is as general as on other soils. *Mr. Garnett, in the Journal of the Royal Agricultural Society of England.*

Calendar of Operations.

FEBRUARY.

Bedfordshire Farm, *Feb.* 4.—Farm operations of late have generally been subservient to the weather. During the frost, our horses were principally employed in carting dung and "mixins" upon the land. Nearly 50 acres of Grass were dressed with mud and soap ashes, at the rate of about 20 tons per acre ; the proportion of soap ashes about one-sixth of the whole. The mixture had been several times turned, and is in a finely pulverised state when spread. The horses are now ploughing the Turnip land after sheep, part of which is intended for immediate sowing with early white Peas, and part for Oats. Some land is also being ploughed for spring Tares. We prefer sowing Oats, Peas, and Tares thick—little less than 4 bushels of each per acre, although the land is clean, and in good condition. Bean-setting has partially commenced. The usual price for planting by hand runs from 4*s.* to 5*s.* per acre. Our fatting cattle now receive a mixture of Swedes and Mangold Wurzels steamed, with hay and straw chaff, with Bean, Barley, and Linseed meal mixed. The store Beasts live chiefly upon Barley and Oat straw, with a portion of roots. The milch cows have hay, Swedes, and Carrots. Fatting sheep live upon roots, hay and straw chaff, with about a pound of corn each. The store sheep have a portion of roots, with chaff. Ewes and lambs get shelter in yards at night, and receive a mixture of Clover and Pea-chaff, with a few bruised Oats, all served in troughs. In the day time the ewes have a run in the Grass fields, and get some Mangold Wurzels to assist the milk. Mangolds require to be given with discretion at first, otherwise they do harm. An ordinary sized root to an ewe is quite sufficient to begin with. Mangolds, Turnips, Carrots, and Potatoes stored previous to or during the frost now require examining, and the injured roots picking out and consuming. Turning the apparently sound roots will do them much good for ultimate preservation. *R. V.*

Notices to Correspondents.

Bean-drills : *E L.* Messrs. Drummond, Stirling, N.B.

Bones : *M S.* Mix one bulk of bones, thoroughly wetted, with two bulks of ashes or sand. The two must be *mixed*, and they need not be under cover.

Chaff-cutter, &c. : *G W.* Gillett, of Brailes, near Stourbridge. We do not know Taylor's emigrants' flour-mill. Salt might be tried with possibility of advantage. But a thoroughly soaked soil will admit hardly anything *into* it.

Cochin China Fowl. Many genuine specimens have a few feathers on the legs or feet, or both ; others, equally true-bred, are clean-legged. The feathers in such cases are no *distinctive* mark, only an occasional appendage. *D.*

Cottage Chimney : *M P* desires to know how to construct one which shall not smoke. Will any one describe his experience in this matter.

Distribution of Liquid Manure : *F H.* It can be effected only by water-cart, or pipe, or conduit of some kind cut in the surface of the land. A hand water-carriage might be obtained at no great cost ; if the extent to be manured is not too great for such small means. Or you might take advantage of your gentle slope to convey the water over its surface by furrows, as in a water-meadow.

East Ilsley : *Amicus.* Many thanks ; but the speech refers too exclusively to a political matter.

Emigration : *Henry* wants the names of works on New Zealand as a field for the emigrant.

Expense of Growing Wheat : *Falcon* says, perhaps some of our correspondents would kindly give their experience as to the cost of growing Wheat, per bushel, on various soils, mentioning the previous crop, and the probable value of the one succeeding the grain, as it generally follows that the gain on the produce of one crop compensates for the loss on another.

Farm Estimates : *Mr. Mechi* says, "The estimate of an Essex farm of 100 acres, quoted in your editorial article, is omissive and assumptive. True, the farmer pays rent for 100 acres, but only crops or derives the benefit of about 90, the other 8 or 10 being occupied by fences, ditches, headlands, roadways, and buildings. Should he continue to pay for these ?"

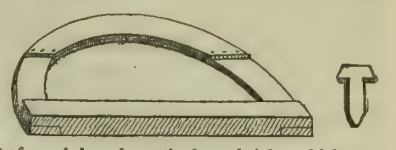
Horse-Hoe : *J K S.* We know of no good corn horse-hoe but Garrett's. The Bean-barrow is a Scotch implement : apply to Drummond, Stirling, N. B.

How to have Fresh-laid Eggs all Winter : *Anon.* In February or March set a broody hen, with a sitting of game eggs. The black-breasted reds I prefer. The pullets, if liberally fed, will begin to lay in September, and will continue laying through the winter. I have several hens which have been in an egg and have laid an egg in 20 weeks. If any of them should go broody after laying a nest of eggs, put it in a coop for two or three days, and reduce its food considerably. The hatching fever will then go off, when it may be released, and in about three weeks it will begin to lay again. I have practised this plan several years with invariable success. The fowls must be warmly housed and well fed. *Nomen fictitium.*

Hybrid Pheasants : *N F.* says, "I know two persons who tried 'L. V. R.'s' experiment last summer. Both experiments failed. I have closely enquired into many cases, but never yet could find indubitable proof that the pheasant will couple with the domestic hen."

Is the Neighbourhood of a Water-meadow Unhealthy ? *An Old Sub.* asks this question.

Liquid Manure Tanks : *A Constant Reader and Enquirer.* When clay is plentiful, a liquid manure tank may be made readily and cheaply, without mortar or mason. Make two centres and two wedges, similar to the drawing ; the backs of the centres should be of 3-inch scantling, and the bows of inch boards ; when these are placed together, back to back, with inch wedges between them, they will describe a circle, say of 6 feet. Dig a hole as for sinking a well, say 9 feet deep and 8½ feet in diameter ; cover the bottom with clay, well puddled, 9 inches thick ; lay the floor of your tank with bricks, flat ; describe on this area a circle of 6 feet 9 inches diameter ; on this place the centre, raising it 4½ inches from the floor ; set a circle of bricks on end round it ; put clay round the outside of the bricks ; tread and puddle it well ; drive here and there a pebble into the openings on the outer margin of the bricks, to make the arch firm ; trim your work by rapping those bricks into place, that, by the treading of the clay, have been driven out of upright ; knock out the wedges ; raise your centre, by loose bricks, 9 inches, and proceed with another circle of bricks as before. When you have arrived at the required height, remove the centres,—and your tank is finished. If you wish to cover it,



place a floor of rough boards on the loose bricks which supported the centre ; make a dome of earth, and on this an arched covering, with an opening for the pump, which should be large enough to admit a man and bucket, to clean out the tank when requisite. The arched covering should be with mortar, and may require a mason. Several of these tanks may be made to communicate ; and for this purpose, in one of your circles of bricks, near the bottom, three bricks should be placed horizontally on each other ; two of the perpendicular bricks on which the three rest can be taken out, and a communication 9 inches by 6 formed with the adjoining tank, taking care to puddle well the short drain between the two. Any parish school-boy ought to be able to calculate the number of bricks and cubical contents of the above tank.

Liquid Manure : *Henry.* The proportion of ammonia differs very much in different specimens. That is the only possible explanation of the difference.

Mud : *T K.* You had better lay it in a heap to dry, then break it down and mix it with lime and salt before application to Grass land. Mix in such proportions as that the quantity of mud you have per acre shall add 2 cwt. of salt and 30 or 40 bushels of lime. It is impossible to say what the value of it is.

Peruvian Barley : *Old Subscriber.* Sow it by all means. Since you have paid for it, give it a trial. We do not believe it to be materially different from the common naked Barley of the country.—*Messrs. Lee.* Your letter shall be answered next week.

Property-Tax : *A O G.* We have for some years declined answering legal questions. You must consult your solicitor.

Reed : *Hesperus.* You must obtain runners or stolons, and transplant early in spring.

Erratum.—At page 60, col. *b*, on "A Six Years' Rotation," for "W. Fowke, Hunley," read "W. Fowlie, Hursley."

*** Communications reaching town after Wednesday cannot be answered the same week.

Markets.

SMITHFIELD, Monday, Feb. 4.

The number of Beasts is large and the quality very good. Trade is very slow, at a reduction from the rates of Monday, and several remain unsold. The supply of Sheep is very small, still there are sufficient for the demand. We have a dull trade, and our top quotations are with difficulty realised. Good Calves continue to be scarce and dear. From Holland and Germany we have 121 Beasts, 590 Sheep, and 22 Calves ; from Scotland, 300 Beasts ; from Norfolk and Suffolk, 2200 ; and 400 from the midland counties.

Per st. of 8 lbs.—	s	d	s	d	Per st. of 8 lbs.—	s	d	s	d
Best Scots, Herefords, &c.	3	8	to 3	10	Best Long-wools	3	6	to 3	10
Best Short-horns	3	6	— 3	8	Ditto Shorn	...	...		...
2d quality Beasts	2	6	— 3	4	Ewes & 2d quality	2	8	— 3	4
Best Downs and					Ditto Shorn	...	...		...
Half-breds	4	0	— 4	4	Lambs	...	...	—	...
Ditto Shorn	...	...		...	Calves	...	...	3 8	— 4 10
					Pigs	...	...	3 0	— 4 0

Beasts, 3688 ; Sheep and Lambs, 16,020 ; Calves, 69 ; Pigs, 205.

Friday, Feb. 8.

We are well, although not abundantly supplied with Beasts ; the demand is very small, consequently trade is exceedingly dull, and it is with difficulty that Monday's rates are realised for choicest kinds. Several of inferior description remain unsold, notwithstanding there is a disposition to take lower prices. The number of Sheep is rather larger than of late. The dead market being pretty clean, they are readily sold at fully Monday's quotations. Good Calves are still scarce and dear. Some Dutch that arrived late in the day were sold rather lower. Trade is very dull for Pigs. From Holland and Germany there are 30 Beasts, 60 Sheep, and 76 Calves ; and 132 Milch Cows from the home counties.

Best Scots, Herefords, &c.	3	8	to 3	10	Best Long-wools	3	6	to 3	10
Best Short-horns	3	6	— 3	8	Ditto Shorn	...	...	—	...
2d quality Beasts	2	6	— 3	4	Ewes & 2d quality	2	8	— 3	4
Best Downs and					Ditto Shorn	...	...		...
Half-breds	4	0	— 4	4	Lambs	...	...	...	...
Ditto Shorn	...	...	—	...	Calves	...	...	3 8	— 4 10
					Pigs	...	...	3 4	— 4 0

Beasts, 847 ; Sheep and Lambs, 2070 ; Calves, 171 ; Pigs, 220.

HAY.—Per Load of 36 Trusses.

Smithfield, Feb. 7.

Prime Meadow Hay	66s	to 72s	Clover	60s	to 80s
Inferior ditto... ...	50	63	New Clover	—	—
Rowen	50	60	Straw	21	24
New Hay	—	—		J. Cooper.	

A very dull trade.

Cumberland Market, Feb. 7.

Prime Meadow Hay	65s	to 70s	Inferior	58s	to 70s
Inferior ditto... ...	50	63	New Clover	—	—
New Hay	—	—	Straw	24	28
Old Clover	75	88		Joshua Baker.	

Whitechapel, Feb. 7.

Fine Old Hay ...	60s	to 66s	New Clover	—s	to —s
Inferior ditto ...	50	55	Inferior ditto... ...	55	63
New Hay	—	—	Straw	21	25
Old Clover	75	84			

POTATOES.—Southwark, Feb. 4.

The Committee report that the arrivals during the last week have been considerable, which, with a fair quantity from the Continent and very mild weather, has caused the demand to be heavy at the following prices :—Yorkshire Regents, 90s. to 130s. per ton ; Wisbeach do., 70s. to 100s. ; Scotch do., 70s. to 80s. ; Scotch cups, 60s. to 75s. ; French whites, 60s. to 80s. ; Belgian do., 60s. to 70s.

HOPS.—Friday, Feb. 8.

Messrs. Pattenden and Smith report that the market continues firm, with a better demand both for consumption and speculation, and should Mr. Cayley succeed in his motion for a total repeal of the malt duty (which stands for Tuesday week), we must have a considerable advance in the Hop market, particularly in yearling and old Hops, which at this moment are to be bought much under the cost of production.

COVENT GARDEN, Feb. 9.

The supply of Vegetables is pretty well kept up, and Fruit for the most part is sufficient for the demand, except Hothouse Grapes, Pears and Apples, which are scarce. Pine-apples are also less plentiful. Filberts and Walnuts are abundant, and Chestnuts plentiful. Oranges and Lemons are abundant, and there are some good Seville Oranges in the market. Amongst Vegetables, Turnips and Carrots are good, Cauliflowers and Broccoli sufficient for the demand. Potatoes are unaltered since our last account; foreign ones fetch from 50*s.* to 70*s.* a ton. Lettuces and other salading are dearer, and so are Mushrooms. French Beans, Asparagus, Seakale, and Rhubarb may be obtained. Cut Flowers consist of Heaths, Pelargoniums, Bignonia venusta, Primulas, Camellias, Cinerarias, Christmas Roses, Azaleas, Lilacs, Lily of the Valley, Epacrises, Acacias, and Roses.

FRUITS.

Pine-apples, per lb., 5*s* to 8*s*
Grapes, Portugal, p. lb., 9*d* to 1*s*
Pears, per doz., 6*s* to 10*s*
Apples, kitchen, p. bsh., 4*s* to 6*s*
Lemons, per doz., 1*s* to 2*s*
— per 100, 6*s* to 12*s*
Oranges, per doz., 9*d* to 1*s* 6*d*
Oranges, per 100, 5*s* to 12*s*
Almonds, per peck, 6*s*
— sweet, per lb., 2*s* to 3*s*
Walnuts, p. 100, 1*s* 6*d* to 2*s*
— p. bush., 16*s* to 24*s*
Filberts, per 100 lbs., 60*s* to 65*s*
Nuts, Bar., p. bush., 20*s* to 22*s*
— Brazil, p. bsh., 12*s* to 16*s*
Kent Cobs, 65*s* to 75*s* p. 100 lbs

VEGETABLES.

French Beans, p. 100, 2*s* 6*d* to 3*s*
Seakale, per punnet, 1*s* to 2*s*
Asparagus, per bundle, 3*s* to 6*s*
Rhubarb, p. bundle, 1*s* to 1*s* 6*d*
Cabbages, p. doz., 9*d* to 1*s*
Cauliflowers, p. doz., 6*s* to 9*s*
Broccoli, p. doz. bundl., 18*s* to 24*s*
Greens, per doz., 2*s* 6*d* to 4*s*
Brussels Sprouts, p. hf. sieve, 2*s* to 3*s*
Sorrel, p. hf. sieve, 1*s* to 2*s*
Potatoes, per ton, 60*s* to 120*s*
— per cwt., 3*s* to 7*s*
— per bush., 2*s* 6*d* to 3*s* 6*d*
Turnips, p. doz. bun., 1*s* 6*d* to 3*s*
Red Beet, per doz., 1*s* to 2*s*
Horse Radish, p. bdl., 2*s* to 4*s*
Cucumbers, each, 3*s* to 3*s* 6*d*
Leeks, per bunch, 2*d* to 3*d*
Celery, p. bundle, 8*d* to 2*s*
Radishes, p. 12 hands, 1*s* to 1*s* 6*d*
Carrots, per bun., 6*d* to 8*d*
Spinach p. sieve, 2*s* to 3*s*
Onions, p. bushel, 3*s* to 4*s*
— Spanish, p. doz., 1*s* 6*d* to 4*s*
Shallots, per lb., 4*d* to 8*d*
Garlic, per lb., 4*d* to 8*d*
Lettuce, Cab., p. sc., 4*d* to 9*d*
Endive, per score, 1*s* 6*d* to 2*s* 6*d*
Mushrooms, p. pot., 2*s* to 3*s*
Small Salads, per punnet, 2*d* to 3*d*
Watercress, p. 12 bun., 9*d* to 1*s*
Fennel, per bunch, 2*d* to 3*d*
Savory, per bunch, 2*d* to 3*d*
Thyme, per bunch, 2*d* to 3*d*
Parsley, p. doz. bun., 3*s* to 4*s*
— Roots, p. bdle., 1*s* to 1*s*
Marjoram, per bunch, 2*d*
Mint, per bunch, 9*d* to 1*s*

MARK LANE.

Monday, Feb. 4.—The quantity of Wheat on sale in Mark-lane this morning, by land carriage samples from Essex, Kent, and Suffolk, was small, and the arrivals coastwise were also limited. The condition of most of the samples was more or less affected by the late damp weather. Good dry parcels sold at last week's rates, but the general runs declined in value 1*s.* per qr. No alteration took place in the value of foreign Wheat, but the demand continues limited in the extreme. The nominal top price of town-made Flour remains unchanged; country and foreign marks were easier to purchase.—English Barley of all descriptions met with some little attention, and a further reduction had in some instances to be submitted to before progress could be made in sales. Foreign was also easier to purchase.—Oats were in moderate supply, and quite as dear as at the close of last week.—Beans and Peas were a dragging trade, and their value continues rather to decline.

British per Imperial Quarter.	s.	s.		s.	s.
Wheat, Essex, Kent, & Suffolk ... White	40	41	Red	35	38
— — fine selected runs ... ditto	43	45	Red	38	40
— — Talavera	42	44			
— Norfolk, Lincoln, & York ... White	—		Red	—	
— Foreign	35	54			
Barley, grind. & distil., 20*s* to 22*s* ... Chev.	24	28	Malting	23	24
— Foreign ..... Grinding and distilling	18	22	Malting	22	25
Oats, Essex and Suffolk	15	19			
— Scotch and Lincolnshire ... Potato	18	22	Feed ...	17	20
— Irish ..... Potato	18	20	Feed ..	15	18
— Foreign ..... Poland and Brew	16	20	Feed ...	13	17
Rye	23	25	Foreign	20	23
Rye-meal, foreign ..... per ton	5*l*	6*l*			
Beans, Mazagan ..... 21*s* to 23*s* ..... Tick	23	26	Harrow	23	26
— Pigeon ..... 24*s* — 28*s* ... Winds	21	28	Longpod	22	28
— Foreign ..... Small	24	3[illegible]	Egyptian	22	23
Peas, white, Essex and Kent ..... Boilers	24	26	Suffolk	25	27
— Maple ..... 23*s* to 26*s* ..... Grey	22	23	Foreign	21	28
Maize ..... White	22	25	Yellow ...	24	26
Flour, best marks, delivered ... per sack	38	40			
— Suffolk ..... ditto	30	33	Norfolk	30	36
— Foreign ..... per barrel	22	24	Per sack	30	34

Friday, Feb. 8.—The supplies of grain have been small during the week, caused probably in a measure by the late boisterous state of the weather, at the same time the demand for all articles of our trade has been limited in the extreme. The few parcels of English Wheat on sale were placed with difficulty at Monday's rates, and the value of foreign remains nominally the same.—Barley, Beans, and Peas, if anything, were rather easier to purchase.—Oats were sold in retail quantities to needy buyers, at full prices.—Indian Corn is dull, but few cargoes on sale at Falmouth or Queenstown.—Rye in less favour.

Arrivals this week.

	Wheat. Qrs.	Barley. Qrs.	Oats. Qrs.	Flour.
English ...	1010	2740	2330	620 sacks
Irish	—	—	—	
Foreign ...	580	—	—	— brls.

Imperial Averages.	Wheat.	Barley.	Oats.	Rye.	Beans.	Peas.
Dec. 29.....	39*s* 4*d*	25*s* 9*d*	15*s* 6*d*	24*s* 0*d*	26*s* 11*d*	29*s* 0*d*
Jan. 5	40 0	25 11	15 10	24 11	26 11	28 5
— 12.....	41 1	26 4	15 6	23 4	26 6	28 6
— 19	41 0	26 3	16 0	23 9	26 6	27 6
— 26.....	40 1	25 9	15 10	21 2	26 1	28 5
Feb. 2.....	39 4	25 4	15 2	23 10	25 6	27 0
Aggreg. Aver.	40 2	25 11	15 8	23 6	26 5	28 2
Duties on Foreign Grain	1 0	1 0	1 0	1 0	1 0	1 0

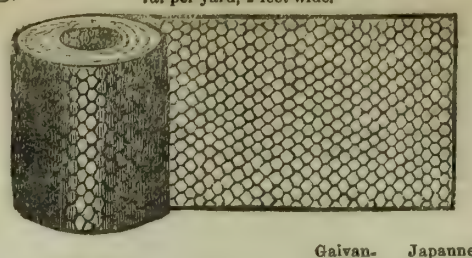
Fluctuations in the last six weeks' Corn Averages.

Prices.	Dec. 29.	Jan. 5.	Jan. 12.	Jan. 19.	Jan. 26.	Feb. 2.
41*s* 1*d*	...	...	...	...	...	...
41 0	...	...	...	...	...	...
40 1	...	...	...	...	...	...
40 0	...	...	...	...	...	...
39 4	...	...	...	...	...	...
39 4	...	...	...	...	...	...

Liverpool, Tuesday, Feb. 5.—The arrivals of Wheat have been moderate. During the past week the trade generally has been very inactive, and confidence seems to have left us. The business at our Corn Exchange this morning was again on a very moderate scale; indeed, so little was done in Wheat and Flour that it is hard to make an alteration in the prices of Tuesday. Oats declined ½*d.* to 1*d.* per bushel, and Egyptian Beans 1*s.* per qr. Barley and Peas were both much neglected. Indian Corn was 6*d.* per qr. cheaper.

GALVANISED WIRE GAME NETTING.—

7*d.* per yard, 2 feet wide.

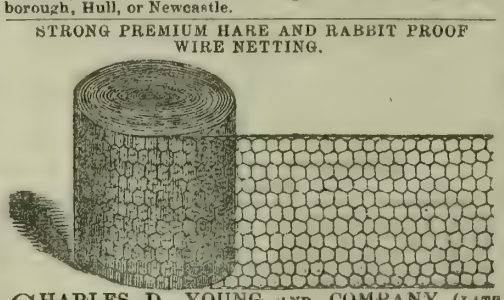


	Galvanised.	Japanned Iron.
2-inch mesh, light, 24-inch wide ...	7*d.* per yd.	5*d.* per yd.
2-inch ,, strong ,, ...	9 ,,	6½ ,,
2-inch ,, extra strong ,, ...	12 ,,	9 ,,
1⅝-inch ,, light ,, ...	8 ,,	6 ,,
1⅝-inch ,, strong ,, ...	10 ,,	8 ,,
1⅝-inch ,, extra strong ,, ...	14 ,,	11 ,,

All the above can be made any width at proportionate prices. If the upper half is a coarse mesh, it will reduce the price one-fourth. Galvanised sparrow-proof netting for pheasantries, 3*d.* per square foot. Patterns forwarded post-free.

Manufactured by BARNARD and BISHOP, Market-place, Norwich, and delivered free of expense in London, Peterborough, Hull, or Newcastle.

STRONG PREMIUM HARE AND RABBIT PROOF WIRE NETTING.



CHARLES D. YOUNG and COMPANY (late W. and C. YOUNG),

MANUFACTURERS OF IRON AND WIRE WORK, &c., 22, Parliament-street, Westminster, London; Castle-Buildings, Derby-square, Liverpool; 128, High-street, Edinburgh; and 32, St. Enoch-square, Glasgow, beg respectfully to call the attention of Landed Proprietors and others to their strong Wire-Net Fence, for excluding Hares and Rabbits from Gardens, young Plantations, Nurseries, &c.

This Net was exhibited at the Show of the Highland and Agricultural Society of Scotland, held lately at Inverness, where its Efficiency, Great Strength, and Exceeding Cheapness attracted general attention, and had awarded from the Judges the Society's Silver Medals, with high commendations.

The immense damage done by Hares and Rabbits in Gardens and Young Plantations is often so great, that in the course of a year or two it will amount to more than the entire cost of protecting them with this Net. It is so durable, that when Plantations are sufficiently advanced to be independent of its protection, it can be removed to other exposed situations with the greatest facility, by any labourer. As a Fence against Hares and Rabbits, it is of itself quite sufficient, having only to be unrolled and attached, with small wire sent for that purpose, to wooden stakes driven into the ground, about every six or seven feet apart. It is, besides, peculiarly adapted for rendering Hedges, Paling, or other existing Fences, *completely impervious* to such vermin; and by being cut up into small pieces of three or more feet, as required, it forms a most efficient guard, at little expense, for individual Plants and Shrubs.

Prices.—18 ins. high, 9*d.*; 24 ins., 1*s.*; 30 ins., 1*s.* 3*d.*; and 36 ins., 1*s.* 6*d.* per lineal yard.

Or a web of 100 yards, 18 ins. wide, will cost .. £3 15 0
Do. of 100 yards, 24 ins. wide 5 0 0
Do. of 100 yards, 30 ins. wide 6 5 0
Do. of 100 yards, 36 ins. wide 7 10 0

If more or less than a web is required, it would be charged at the same rate per yard.

This Netting is also admirably adapted for Pheasantries and Poultry-yards, and is charged at the same rate. As carriage has, in many instances, been an obstacle to parties at a distance requiring this Net, C. D. Y. and Co. have made arrangements by which they will undertake to deliver it at any of the principal ports of Scotland, England, and Ireland, for One Halfpenny per lineal yard.

C. D. Young and Co. cannot give a better idea of the great strength of their Premium Wire Netting than by stating that the weight of one yard of their 24-inch at 1*s.* is equal to 2½ yards of another article in the market, the same width, at 9*d.* per yard. Samples for inspection sent free of expense.

C. D. Young & Co. manufacture every description of IRON and WIRE WORK required for this and foreign countries.

Workmen sent to all parts of Scotland, England, and Ireland

HORTICULTURAL BUILDING AND HEATING BY HOT WATER.

BOILERS OF ALL SIZES TO BE SEEN IN OPERATION, WARRANTED THE BEST.



J. WEEKS and Co., King's-road, Chelsea, Horticultural Architects, Hothouse Builders, and Hot-water Apparatus Manufacturers, solicit an inspection of their various Works completed and in progress. Horticultural Buildings of every variety. BOILERS of all sizes to be seen in operation, and which they warrant to be the most effective and economical of any in use. The largest size Boiler is now effectually heating three extensive ranges of Forcing-houses, 230 feet by 22 feet, all Span Roofs and lofty, containing upwards of 50,000 cubical feet of air. Also various small and intermediate size Boilers, some of all sizes in operation. The consumption of fuel is very moderate, and the fires will continue from 10 to 15 hours without attendance. The extensive arrangements now in full operation on their premises, enables them to build to any extent, and at very moderate prices. Hothouses, Greenhouses, Conservatories, Forcing-pits, Frames, Glass Lights, &c. A very extensive collection of Stove and Greenhouse Plants, which are sold at very low prices. Plans, Estimates, and Catalogues forwarded on application.

J. Weeks and Co., King's-road, Chelsea.

EPPS' COLLECTIONS of KITCHEN GARDEN SEEDS.

No. 1 contains the following quantities, and are of the best and newest kinds, being a sufficient supply for a nobleman's large establishment: 26 quarts Peas, 12 quarts Beans, 4 oz. Beet, 1 oz. Borecole, 6 oz. Broccoli, 1 oz. Brussels Sprouts, ¼ oz. Buda Kale, 7 oz. Cabbage, 10 oz. Carrot, 2 oz. Cauliflower, 2 oz. Celery, 3 lbs. Cress, 4 pkts. Cucumber, 2 oz. Endive, 2 oz. Leek, 6 oz. Lettuce, 3 pkts. Melon, 2 quarts Mustard, 10 oz. Onion, 4 oz. Parsley, 6 oz. Parsnip, 2 oz. Savoy, 3 pints Radish, 1 oz. Scorzonera, 2 quarts Spinach, 2 lbs. Turnips, 1 pkt. Vegetable Marrow, 1 oz. Salsafy, and 12 pkts. Herbs, Chili, Capsicum, &c. £3 3 0
No. 2, two-thirds of the above 2 2 0
No 3, one-third ditto 1 1 0
No. 4.—This collection is sufficient for a gentleman having a moderate sized garden 0 12 6

The great satisfaction these collections have given to some of the principal families in England, Ireland, Scotland, and Wales induces W. J. Epps with confidence to solicit further patronage. The collections contain this year 15 per cent. more than last, and quite equal in quality. Descriptive Seed Catalogues may be had on application. All orders to be accompanied with a Post-office order from unknown purchasers. No charge made for packing, and delivered free of expense to any railway station in London.—Agricultural and Horticultural Seed Establishment, High-street, Maidstone.

*** Cole's Superb Dwarf Red Celery, 1*s.* per packet.

"BROMHAM HALL" GREEN FLESH MELON, Is the finest flavoured in the World.

EDWARD TILEY having become possessed of the whole stock of Seed of that very superior Melon called "BROMHAM HALL" GREEN FLESH MELON, respectfully invites the attention of the public generally, to the superiority of this over all other Melons ever yet sent out. It was forwarded to the Editor of the *Gardeners' Chronicle*, July 22d, 1848, for his judgment, and he was of decided opinion that the Bromham Hall Melon was the finest flavoured fruit he had ever tasted. It was exhibited at the Chiswick Exhibition, July 11, 1849, where it was awarded by the judges the Silver Knightian Medal for the best flavoured green flesh Melon. It was again sent to Dr. Lindley, August 11th, 1849: "We have received your Bromham Hall Melon, it was much over ripe, nevertheless it was by far the best flavoured Melon we ever tasted." It was again exhibited at the Horticultural Society's Rooms, Regent-street, September 4th, 1849, and was again pronounced by the judges to be the best flavoured Melon they ever tasted, and was awarded the Banksian Medal. The fruit is very handsome—it is round shaped, hollow crown, beautifully netted, thin skin, flesh very firm and solid, melting flavour, very free setter, and abundant bearer. Weight, from 3 lbs. to 4½ lbs. It has been found to do well during the summer, without bottom heat. It may be as easily grown by an amateur in a frame as the common Vegetable Marrow. There is a great advantage in it for the fruiterer, as it will retain its fine flavour for a considerable time after being cut. Sold in packets of 6 seeds, 2*s.* 6*d.*; larger do. of 15 seeds, 5*s.* Also the following fine varieties can be highly recommended all true:

	s.	d.	
Queen Melon	1	6	per packet.
Bowood Green Flesh	1	0	,,
Beechwood do.	1	0	,,
Windsor prize do., 1*s.*; Emperor ..	1	0	,,
Fleming's Trentham Hybrid	1	0	,,
Duncan Green Flesh do. improved ..	1	0	,,
Hampton-court Green Flesh	1	0	,,
Egyptian do. do. improved	1	0	,,
FIRST PRIZE CUCUMBER, VICTORY OF BATH	2	0	,,
Gordon's White Spine	1	6	,,

These two Cucumbers are unequalled for their superiority for exhibition, having been thoroughly proved to the satisfaction of hundreds of growers. They will be found to grow as well out of doors on a ridge, or against a wall, during the summer months, as a common ridge Cucumber; also equally as productive. Length, from 20 to 26 inches.

N.B. It is with regret we state that numerous parties have been disappointed by purchasing an inferior variety under the name of Victory of Bath. E. T. begs to say it has proved not to be the true variety sent out by him.

Lord Keynon's Favourite (winter Cucumber), a very scarce variety. It is the best for winter cultivation ever yet grown; it is very hardy, and free setter, and never shanks off; fruit very handsome. Length, about 14 inches. 2*s.* 6*d.* per packet. A packet of each of the three varieties, 5*s.*; if preferred, also a packet of the Bromham Hall Melon will be included with the three Cucumbers for 7*s.*—Sold by Edward Tiley, Nurseryman, Seedsman, and Florist, 16, Pulteney-bridge, Bath. A remittance must accompany the order, either in cash or 1*d.* postage stamps.

FERN SEEDS, &c.

GEORGE BENNETT begs to inform the lovers of FERNS, that he has purchased the entire stock of rare and valuable Fern Seed (sent home from New Zealand by the late Curator of the Sheffield Botanic Gardens), which he purposes selling at the reduced price of 2*s.* 6*d.* per packet (advertised in the Gardeners' Journal in August, 1849, at 10*s.* 6*d.* per packet). The names of the varieties are as follows: No. 1, Todea sp., variety Australis or Black Tree-fern; No. 2, Alsophylla medullaris, fine variety; No. 3, Cyathea dealbata, fine silvery-leaved Tree-fern; No. 4, Mixed varieties of Hymenophyllum, Trichomanes, Adiantums, Aspleniums, Lomaria, Niphobolus, Pteris, Cyatheas; No. 5, Mixed varieties of Alsophylla dealbata or Silver Tree-fern.

G. B. has also a quantity of valuable Shells from the above country, as well as a variety of the seeds of Taxus sp., grows on the highest mountains in New Zealand. He has also for sale a valuable collection of rare specimens of Ferns in excellent preservation, of which printed Catalogues, with a list of prices, may be had on application to George Bennett, Brandon Lodge, near Coventry, Warwickshire.

A remittance must accompany the order, either in postage stamps or Post-office order, made payable at Coventry Post-office, to G. B., as above.

PLANTING SEASON.

ALFRED BALSTON begs to inform planters he has still a large proportion of his Nursery Stock to dispose of, which, in consequence of having relinquished the trade, he offers at very reduced prices. The Stock comprises every variety of ORNAMENTAL, FRUIT, and FOREST TREES, and all the best kind of SHRUBS in cultivation, no expence having been spared in the collection, and from the light nature of the soil in which it has grown, the plants have all a mass of fibrous root, which causes them to grow most luxuriantly after being transplanted.

A.B. particularly recommends the following: Common Laurel, 9 inches to 1 foot, 15*s.*; 1 to 2 feet, 30*s.*; 2 to 4 feet, 40*s.*; 4 to 6 feet, 80*s.* per 1000. Portugal Laurels, 1 to 2 feet, 10*s.* per 100. Rhododendron ponticum, 1 to 2 feet, 30*s.*; 3 to 4 feet, 60*s.*; 4 to 5 feet, 100*s.* per 100. Ghent Azaleas of all the finest kinds, specimen plants, 2*s.* 6*d.* each; smaller ditto, 6*s.* per dozen. Rhododendron campanulatum, caucasicum, catawbiensis, &c., 100*s.* per 100. Standard Roses of all the finest sorts, 12*s.* per dozen. A large stock of Evergreen Oak in pots and transplanted; also common Oak, Elm, Beech, Birch, Berberis, Hornbeam, Privet, &c.

Orders must be accompanied by remittances. Orders amounting to 5*l* delivered free.—Poole Nursery, Dorset.

Sales by Auction.

MESSRS. LODDIGES' CELEBRATED ARBORETUM FOR SALE BY AUCTION.

TO NOBLEMEN, GENTLEMEN, AND NURSERYMEN.

MR. J. C. STEVENS is favoured with instructions from Messrs. LODDIGES, of Hackney, to submit for unreserved competition, on the premises, on MONDAY, 4th March, and several following days, in consequence of the decease of the Senior Partner, the FIRST PORTION OF THEIR UNRIVELLED ARBORETUM, comprising many thousand well-grown specimens of the rarest and most beautiful Trees and Shrubs, affording to noblemen and gentlemen engaged in Ornamental Planting an opportunity which has never before occurred.—Catalogues are preparing, and will be ready for delivery 10 days prior to the sale, on the premises, and of Mr. J. C. STEVENS, 38, King-street, Covent-garden, London.

TO NOBLEMEN AND GENTLEMEN ENGAGED IN ORNAMENTAL PLANTING, AND THE TRADE.

A large parcel of Araucaria imbricata, and Cedrus Deodara, two of the most noble Ornamental Trees ever introduced into Europe, and a few other hardy Coniferæ.

MR. J. C. STEVENS is directed to sell by Auction, at his Great Room, 38, King-street, Covent-garden, on THURSDAY, Feb. 21, at 11 for 12 o'clock precisely, 1100 Cedrus Deodara, 1 to 2 feet; 500 Araucaria imbricata, 1 foot to 18 inches; 12 fine specimens of Taxodium sempervirens, from 5 to 8 feet, and 100 strong plants 18 inches; 10 Taxodium pinnatum; 25 Pinus patula; 100 Cupressus torulosus; and 6 Gordon Island Cypress.—May be viewed the day prior and morning of sale, and Catalogues had (by enclosing a penny stamp) of Mr. J. C. STEVENS, 38, King-street, Covent-garden, London.

BROMPTON PARK NURSERY.

TO NOBLEMEN, GENTLEMEN, NURSERYMEN, &c.

MESSRS. PROTHEROE AND MORRIS have received instructions from Mr. John Sangster, and Mr. Robert Donald, trustees to the above estate, to submit to an unreserved sale (as the whole must be cleared off on or before Lady-day next), a large portion of valuable stock still unsold, consisting of the well known celebrated collection of Standard, Dwarf, Maiden, and Trained Fruit Trees, and a rich assortment of Evergreens, Deciduous Shrubs, and Ornamental Trees; together with the Greenhouses, fitted up with new and improved Hot-water Apparatus. The sale to commence on MONDAY, the 25th February, and five following days, at 11 o'clock each day.—May be viewed prior to the sale. Catalogues (1s. each, returnable to purchasers) may be had of the principal Seedsmen in London; and of the Auctioneers, American Nursery, Leytonstone, Essex. If sent by post, 1s. 6d. each.

AMERICAN PLANTS.

MR. D. A. RAMSAY has received instructions from an eminent firm to sell by Auction, at the Brompton Auction Ground, Fulham-road, Brompton, one mile from Hyde-park Corner, on WEDNESDAY, February 13, 1850, at 12 o'clock precisely, without reserve, 500 Rhododendrons, 2 to 4 feet, 150 Scarlet Rhododendrons, and other American plants, comprising Azaleas, Andromedas, Sedums, Ericas, &c.; 400 Standard, Dwarf, and Climbing Roses, a quantity of strong Vines and Fig Trees, Ilex Cunninghami, Cupressus, Daphne, Pinus, Garrya elliptica, Lycium horridum, &c.; a quantity of Ornamental Trees and Shrubs, comprising Scarlet Chestnut, Ailanthus, Thorn, Weeping Cherry, American Willow, Tulip Tree, &c.; Ribes, Caragana, Cotoneaster, Benthamia, Cytissus, Hibiscus, &c.; with other miscellaneous stock, comprising Pyrus japonica, Clematis, and other creepers; Victoria Rhubarb, Asparagus, Ash-leaved Kidney Potatoes, and a quantity of Bulbs and Bulbous Roots.—May be viewed the day prior and morning of sale, and Catalogues had at the principal Seed Shops, and of the Auctioneer, Brompton Nursery, Fulham-road, Brompton.

CHELSEA.

TO GENTLEMEN, NURSERYMEN, BUILDERS, and Others.

MR. D. A. RAMSAY has been favoured with instructions from Messrs. Wm. Dennis and Co., to sell by Auction, on the premises, King's-road, Chelsea, opposite Cremorne Gardens, on MONDAY, February 25th, 1850, and two following days, at 12 o'clock, each without reserve (to clear the land taken for building purposes), a large portion of the NURSERY STOCK, comprising a quantity of Aucuba, Holly, Box, and other Evergreens; Mulberry trees of all sizes; the prize collection of Gooseberries; the new silver-striped Ivy; large Irish Ivies; yellow Jasmine and other Creepers; a quantity of ornamental trees and shrubs; a choice collection of standard Plums and other Fruit trees, with a quantity of Moss Rose stools and layers, and other Roses in choice varieties; also a quantity of Camellias, Azaleas, Geraniums, Aloe, Yucca, &c.—May be viewed two days prior to the Sale, and Catalogues had (6d. each, returnable to purchasers) on the premises; at the principal Seed-shops; and of the Auctioneer, Brompton Nursery, Fulham-road, Brompton, London.

TO GENTLEMEN, FLORISTS, AND OTHERS.

THE STOCK OF A FLORIST.

MR. D. A. RAMSAY will sell by Auction, at the Brompton Auction Ground, Fulham-road, Brompton (one mile from Hyde Park Corner), on WEDNESDAY, Feb. 19, 1850, at 12 o'clock precisely, without reserve, a quantity of large specimens of Camellia, Erica, Azalea indica, Acacia armata, Epacris, &c.; with 1500 Greenhouse Plants, in choice variety, comprising Camellia, Oleander, Epacris, Azalea, Crassula, Corræa, Cytissus, and other Plants in bloom; and also 300 Standard and Dwarf Roses.—May be viewed on the morning of Sale, and Catalogues had of the Auctioneer, Brompton Nursery, Fulham-road, Brompton, London.

COCHIN CHINA FOWLS.—New-laid Eggs for setting may be had by applying by letter, post paid, to W. O., at Mr. McLachlan's, 6, Birchin-lane, Lombard-street, London.

IMPORTANT TO MILLERS AND OTHERS.

TO BE LET, with immediate possession, in the neighbourhood of Bristol, a FLOUR MILL, of excellent construction and unrivalled situation, driving four pairs of French stones, combining advantages in transit of goods both by rail and water scarcely equalled. The whole new and in full work. Any one wishing to treat for the above is requested to apply by letter, post-paid, to G. F., at Mr. Symes', Cheese Factor, Temple-street, Bristol.

TO BE SOLD, OR LET, under peculiar circumstances, and upon very advantageous terms, a series of Forcing and Succession GRAPERIES, PEACH and PLANT HOUSES, upon which a large sum has been expended to bring them into a high state of bearing. To a purchaser, any reasonable accommodation will be given for payment.—Apply to Mr. PARSONS, Auctioneer and Estate Agent, 30, Marine-parade, Brighton.

TO BE LET for a term of 7, 14, or 21 years, and entered upon immediately, NORTHFLEET GREEN FARM, situate in the parish of Northfleet, Kent, containing 136 acres (more or less) of superior, dry, Arable and Hop Land, with suitable Dwelling-house and Agricultural Buildings. The incoming tenant will enter without valuation.—For particulars apply to WALTER D. JONES, Esq., Lancyck, near Newcastle Emlyn, Wales; and, to view the Farm, to J. BEESCHLEY, Esq., Wombwell-hall, near Gravesend, Kent.

TO NURSERYMEN AND SEEDSMEN.

TO BE DISPOSED OF, in consequence of the recent decease of Mr. JOHN RONALDS, of Brentford, the old-established and extensive BUSINESS OF MESSRS. HUGH RONALDS AND SONS, of that place.—For particulars, apply on the premises; or to Mr. E. RONALDS, 109, Upper Thames-street; or to Mr. G. B. TOWNSEND, Accountant, 49, Leadenhall-street, London.

SUPERB RANUNCULI.—The present being the usual month for planting, we beg to recommend the following. The new varieties have been selected with great care, of first rate sorts, from immense quantities of seedlings; and for vigorous growth and free flowering are far preferable to the older varieties. Selections, in strong roots, at the following reasonable charges, with printed instructions for planting and treatment.

RANUNCULUS.—Free by post.	£	s.	d.
50 Splendid new varieties, with names	2	0	0
25 do. do. do.	1	2	0
50 Fine older varieties, do.	0	15	0
25 do. do.	0	8	0
100 Finest mixed	0	10	0
100 Fine mixed, 5s.; or free by post for	0	6	0

A Descriptive Catalogue of the seedling varieties may be had. Remittances are expected from unknown correspondents.

BASS and BROWN, Seed and Horticultural Establishment, Sudbury, Suffolk.

PLANTING SEASON.—NURSERY GROUNDS, RED LODGE, NORTH STONEHAM, NEAR SOUTHAMPTON.—An unlimited supply of every description of FOREST, FRUIT, AND ORNAMENTAL TREES, AMERICAN PLANTS, AND FLOWERING SHRUBS, may be procured from these extensive grounds, at the most reasonable prices, printed Catalogues of which may be had of the proprietor, WM. ROGERS, Sen., NURSERYMAN AND CONTRACTING PLANTER.

Transplanted Forest Trees, 1 to 2 feet, adapted for extensive Forest or Coppice Planting, usually sold by the thousand; and also of a large size, for Ornamental Planting or immediate effect, from 3 to 12 feet, the prices varying from 25s. to 5l. p. 100.

Ash, Beech, Birch, 15s. to 30s. per 1000; Spanish Chestnut, 20s., 30s., and 40s.; Larch Fir, 7s. 6d. to 20s.; Spruce, 20s., 30s., and 40s.; Scotch, 10s., 15s, and 20s.; Pinaster, 10s., 15s., and 20s.; Sea Pine, adapted for exposure to the sea, 15s., 25s., and 40s.; Mahonia, for cover, 40s. to 80s.; Hazel, 15s., 20s., and 35s.; English Oak, 15s., 20s., and 40s.; Poplar, 20s., 30s., and 40s.; Quicks, 5s., 7s. 6d., and 10s.

Planting contracted for to any extent from 5l. to 20l. p. acre.

ORNAMENTAL TREES AND SHRUBS.

Rhododendron ponticum, 2 to 6 inches, 20s., 40s., and 80s. per 1000; 1 foot, single stems, fit for working, 10s. per 100; 1½ to 2 feet, strong, 20s. to 40s. per 100, fit for planting out at once to cover; 4 to 6 feet, single stem, for working the beautiful scarlet and other fine kinds, 50s. per 100. Tree Rhododendrons may thus become as generally cultivated as Tree Roses. Scarlet Rhododendrons, 18s. per dozen; hybrid scarlet, blue, lilac, and white, with large handsome trusses of flowers, 4 to 6 inches, 25s.; 1 foot, 40s. per 100; Kalmia latifolia, 2 to 4 inches, 8s. to 12s. 6d. per 100; 1 to 2 feet, blooming buds, 50s. per 100; 2 to 3 feet, fine, 75s. per 100; Epigæa repens, 50s. per 100; and all other American plants at equally low prices.

Dwarf Rose Stocks for working, 8s. per 100; Single Camellias, 25s., 40s., and 50s. per 100, fit for working; Double Camellias, of sorts, on own roots, 6 to 9 inches, 12s. per dozen; Pinus (Abies) Douglasi, from seed, 6 to 9 inches, 10l. per 100 or 30s. per dozen; Arbutus, 6 to 12 inches, 8s. to 12s. per 100; 1 to 1½ foot, 20s. per 100; 2 feet, 30s. per 100; Laurel, 8s. to 20s. per 100; Laurustinus, bedded, 40s. per 1000, 8s. per 100; Variegated Holly, 1 foot, 25s. per 100; Clematis azurea grandiflora, 6s. per dozen, 42s. per 100; Deutzia scabra, 2 feet, 12s. 6d. per 100; Common China Rose, 12s. 6d. per 100; Tree Roses of the most select kinds, 5l. per 100; Dwarf Roses, 50 sorts, named, 50s. per 100; Double White, Double Red, and New Crimson Thorns, 40s. per 100, 6s. per dozen; Large Dutch Honeysuckles, 12s. 6d. per 100; Giant Irish Ivy, 8s. per 100.

The prices are for wholesale, if ordered in less quantities a higher price will be charged. All orders above 5l. carriage paid to London.

American purchasers will find great advantages in procuring their supplies from these grounds, from their proximity to the Docks whence the American Steam-packets take their departure, thus saving the delay and expenses of Land Carriage.

MESSRS. J. AND H. BROWN'S CATALOGUE for 1850, contains all that is new and useful in Exotic and Hardy Plants and Shrubs. Sent free by post for six stamps. Orders for any of the following are respectfully solicited.

HARDY AMERICAN PLANTS.	s.	d.
Andromeda floribunda, fine established plants, well set with bloom, per dozen	20	0
25 Azaleas, new hardy Belgian varieties, on their own roots, with flower-buds, one of a sort, by name	20	0
25 American Azaleas, do. do. do.	15	0
6 Andromedas of sorts, including floribunda	8	0
6 Kalmias, and 6 Ledums, one of a sort, by name	10	0
25 Hardy American Shrubs, one of a sort, by name	10	6
12 Rhododendrons, including scarlet, white, and rose, hardy varieties	12	0
New Hardy Yellow Rhododendrons, each 7s. 6d. to	10	6
Hybrid Rhododendrons, extra fine, with 30 to 50 bloom buds, each 2s. 6d. to	3	6
6 Fine Hardy Magnolias, one of a sort, by name	10	6
Hardy Heaths and Vacciniums, ditto ditto, per doz.	8	0
50 Dwarf Roses, on their own roots, by name	16	0
12 Tea-scented Roses, one of a sort, by name, in pots	9	0
Standard and half-standard Roses, per dozen 12s. and	15	0
Green and Black Tea plants, quite hardy, per dozen	15	0
New Crimson Moss Rose, per doz.	6	0
Bourbon Roses, superior sorts, Rose La Reine and Perpetual Queen, per dozen	10	6
12 Greenhouse Azaleas, one of a sort, blooming plants	25	0
12 Choice Camellias, by name, ditto ditto	30	0
50 Choice Greenhouse Plants, one of a sort, by name	45	0
24 Choice Ericas, one of a sort, by name	15	0
First-rate Show Pinks, per dozen 6s. and	9	0
First-rate Carnations and Picotees, per dozen 9s. and	12	0
First-rate Pansies, per dozen 6s. and	9	0
Cinerarias and Calceolarias, show varieties, strong plants, per dozen 9s. to	12	0
Verbenas and Petunias, best new sorts, per dozen	5	0
12 Pæonies, double white and black, of sorts	8	0
25 Choice Hardy Herbaceous Plants, named	7	6

CHOICE FRUIT TREES.			
Fine Dwarf and Standard Trained Peaches, Nectarines, Apricots, Plums, Pears, and Cherries; the best and most approved sorts of these respective kinds, true to name, 2s. 6d. each, or, per dozen	24	0	
Untrained or maiden ditto, 1s. 6d. each, or, per dozen	15	0	
Fine Gooseberries, Currants, and Raspberries, per dozen	3	0	
Strong Vines, Figs, and Apples, per dozen	15	0	
Filberts, new, thin shell and red skin, per doz.	3	0	
Cryptomeria japonica and 6 Choice Hardy Pinus, for	10	0	
Glycine sinensis, extra fine in pots, 15 to 30 feet each	3	6	
Flower Seeds, 18 papers, 5s.; 36 ditto, 10s.; of the most approved varieties, sent free by post.			

Vegetable and Agricultural Seeds supplied in large or small quantities.—Albion Nursery, Stoke Newington, London, Feb. 9.

COLE'S SUPERB SOLID RED CELERY.—This fine Celery has given such entire satisfaction, not only for the great size to which it attains, but for its unequalled crispness and exquisite nut-like flavour, that it needs no further recommendation. Seed may be had genuine from the grower, WILLIAM COLE, Dartford, Kent, in sealed packets, 1s. 6d. each, or the amount in postage stamps; also of Messrs. J. and J. FRAZER, Leyton, Essex; Mr. BUNYARD, Maidstone, Kent; Mr. CRIPPS, Tunbridge Wells, Kent; Mr. DENYER, 82, Grace-church-street, London; Mr. TILEY, 16, Pulteney-bridge, Bath; Mr. FRANCIS, Hertford; Mr. MILNER, Bradford, Yorkshire; Messrs. J. and J. FAIRBAIRN, Clapham, near London; Messrs. GARAWAY, MAYES, and Co., Bristol; and of Mr. SMITH, Westerham, Kent; Mr. PONTEY, Nurseryman, Plymouth; and Mr. IVERY, Nurseryman, Peckham, Surrey; Messrs. ARCHIBALD WOOD and Co., Nurserymen and Seedsmen, Worcester; and Mr. POPE, Nurseryman, Gib Heath, near Birmingham.

*** A liberal allowance to the trade.

W. COLE further states, in justice to himself and agents, that his entire stock of seed saved in 1849 is in his possession and that of his agents, from whom it may be had new and genuine, bearing his name and address printed on the envelope.

FRUIT TREES AND SHRUBS AT HALF PRICE, NOW ON SALE FOR FOUR WEEKS, BY WILLIAM E. RENDLE AND CO., PLYMOUTH.

In consequence of the South Devon Railway Company having taken away a large portion of our Union-road Nursery, we are compelled to make some EXTENSIVE ALTERATIONS, *and as the whole of the ground must be cleared within four weeks, we have come to the determination of offering the stock at* HALF *the usual prices.*

PEACHES, NECTARINES, and APRICOTS.—Dwarf trained trees, 2s. 6d. each; smaller ditto, 1s. 6d. each; nice cut backs, 1s. each. A few very large trained trees in a bearing state, from 5s. to 7s. 6d. each, comprising Royal George, Noblesse, Chancellor, Newington, and some of the best sorts in cultivation.

PEARS.—Several hundred fine round-headed trees at 1s. 6d. each, worth 3s. 6d. and 5s. each, comprising all the best sorts in cultivation.

GRAPE VINES.—All the best sorts, 4 to 6 feet, 1s. 6d. each.

ARBUTUS.—Fine plants in pots, 12 to 18 inches, 5s. per doz.

ILEX OAK.—Fine plants in pots, and bushy, from 15 inches to 24 inches in height, 5s. per dozen, worth 1s. each. Four-year-old seedlings, out of boxes, SIXPENCE per doz.

BOX EDGING, 3d. per yard.

RASPBERRIES, "RENDLE'S LARGE BEEHIVE."—This is a large handsome variety, very prolific, and delicious flavour, and has given the most complete satisfaction. Strong Canes, 20s. per 100, or 3s. per doz. "YOUELL'S FASTOLFF," 10s. per 100.

CEDARS OF LEBANON.—We have a large stock of these in pots. Good plants, 3 feet, 36s. per dozen. Large handsome plants in pots, 4 to 6 feet, 5s. each; or one quarter the price usually charged.

BLACK NAPLES CURRANTS.—Very superior to the old sort, 6s. per dozen.

GOOSEBERRIES.—Some of the very best varieties in cultivation, 30s. per 100.

PORTUGAL LAURELS.—An immense stock will be sold unusually low. Fine plants, 18-inch, bushy, 20s. per 100; 3 feet, 30s. per 100; 4 feet, 40s. per 100.

BERBERIS, or MAHONIA AQUIFOLIA.—A very large quantity, 18 inches, 16s. per 100. This is a fine shrub for underwood.

Weigela rosea, strong plants, 12 inches, 6s. per dozen; Parnettia mucronata and floribunda, 6s. per doz.; Ribes, double red, and albidum, strong plants, 18 inches, 9s. per dozen.

Remittance, or reference in London, from unknown correspondents.

All orders above 5l. will be delivered free of carriage to any of the stations on the South Devon, Bristol and Exeter, or Great Western Railways. Steamers from this port to London, Dublin, Cork, Falmouth, Belfast and Glasgow, three times a week.

The South Devon Railway is now open to Plymouth, the Station being adjoining our premises. For Catalogues, and further information, apply to

WILLIAM E. RENDLE and Co., Union-road, Plymouth.

FIRST ORDERS WILL HAVE THE PREFERENCE; AS THEY WILL BE EXECUTED IN STRICT ROTATION.

ESTABLISHED 1786.

FINEST LAWN GRASS SEEDS AND HOME-GROWN GARDEN SEEDS, sent free by Railway and by Post.

SUTTON'S PRICED CATALOGUE OF SEEDS will be found most useful to all interested in Horticulture and Agriculture. It will be forwarded gratis on receipt of one penny stamp for postage.

MESSRS. SUTTON'S COMPLETE COLLECTIONS OF KITCHEN GARDEN SEEDS, are now in course of delivery, at the under-mentioned Prices:—

No. 1, 2l. 2s. No. 2, 1l. 1s. No. 3, 12s. 6d.

Reading Seed Warehouse, Reading, Berks.

TO THE TRADE.

BERNARD SAUNDERS, NURSERYMAN, &c., Jersey, begs to inform the Seed Trade that he has for sale a small quantity of that best of all PEAS for a late crop, the BRITISH QUEEN, at a moderate price, for cash. This Pea first originated in Jersey, and was sent out by B. S., and may be depended on as being genuine. Early orders are requested, as the stock is small. B. S.'s collections of Dwarf Apples and Pears stand unrivalled in the Channel Islands, and may be relied on as being correct to name, having had 40 years' experience in their correction and cultivation; Catalogues of which may be obtained on prepaid application.

N.B.—This Advertisement will not be repeated.

ON SALE BY THE SUBSCRIBER.—500,000 2-year Seedling Scotch Firs, superior plants, from native Highland seed, at 6s. per 1000; 500,000 2-year Seedling Larch; 200,000 3-year Seedling Black Norway Spruce; 200,000 transplanted ditto; a very extensive stock of Fancy Pines, viz., Excelsa, Pallasiana, Banksia, Fraserii, Nobilis, Grandis, Taurica, Webbiana, Pindrow, Lambertiana, &c.; some fine large specimens of Cedrus Deodara and Araucaria imbricata, &c.; a large stock of Irish Yews, from 5 to 10 feet high; with a very extensive stock, all sorts and sizes, of Nursery Stock in general.

JAMES ROY, Jun., Ferry-hill Nurseries, Aberdeen, Feb. 9.

FRUIT TREES, FLOWER-BEDS, &c.—Garden Netting, of superior quality, for preserving Fruit trees from frost, blight, and birds, or as a fence for rabbits, fowls, pigeons, Tulip and Seed beds, can be had in any length or quantity at 3d. per yard 2 yards wide, or 6d. per yard 4 yards wide, from JOHN KING FARLOWS, Fishing Rod and Net Manufactory, 5, Crooked-lane, London-bridge. The netting being tanned will stand exposure to the weather for many years. Forwarded to any part of the kingdom on receipt of post-office order, or reference in town. An allowance to gardeners and large consumers.—Copy the Address, 5, Crooked-lane, London-bridge.

JOHN KERNAN

4, GREAT RUSSELL STREET, COVENT GARDEN, 1850.

Begs to offer a Select List from his

GENERAL CATALOGUE OF VEGETABLE AND FLOWER SEEDS,

WHICH MAY BE RELIED ON WITH CONFIDENCE AS THE MOST DESIRABLE FOR CULTIVATION.

Peas.

	Per qt.—s.	d.
Prince Albert	0	9
Early Racehorse	0	9
Shilling's Early Grotto ...	1	0
Thompson's Early Dwarf	0	9
Fairbeard's Early Surprise	1	0
Fairbeard's Champion of England	1	0
Bedman's Improved Imperial	0	9
Blue Scimetar	0	9
Woodford, or Nonsuch ...	0	9
Knight's Dwarf Green Marrow	1	0
Knight's Tall Green ditto	1	0
Victoria Marrow	1	0
British Queen	1	0

With all other varieties worth cultivating.

Beans.

	Per qt.	
Early Mazagan	0	8
Sword Longpod	0	8
Hangdown	0	8
Taylor's Windsor... ...	0	8
Johnson's Wonderful ...	0	8
Green Genoa	0	9
All the varieties of dwarf French Beans	1	0
Painted Lady and Scarlet Runners	1	0

	Per oz.	
Beet, fine London Red ...	0	6
Beet, Silver, or Seakale	0	6
Beet, Castelnaudary ...	0	6
Borecole, dwarf curled ...	0	6
Borecole new heading, per paper	0	6
Brussels Sprouts (foreign seed, fine)	1	0
Kohl Rabi, per paper ...	0	6
Borecole, red and white, variegated, for garnishing (very beautiful) ...	0	6

Broccoli.

	Per oz.	
Myatt's Early Purple Cape	1	0
Miller's Dwarf	1	0
Chappell's Cream ...	1	0
Bowles's Sulphur ...	1	0
Somner's Late White ...	1	0
Grange's Early White,—from the original raiser	1	0
Invisible White	1	0
Purple Sprouting ...	1	0
Brimstone	1	0
Walcheren	1	0
Imperial Winter ...	1	0
Hampton Court ...	1	0
Dwarf Siberian	1	0
Purple Syrian	1	0

Cabbage.

	Per oz.	
Nonpareil	0	9
Shilling's New Queen, fine	1	0
Atkin's Matchless ...	1	0
Heart-shaped	0	6
Knight's Early Dwarf ...	1	0
Early York	0	6
Early Battersea ...	0	6
Peake's Incomparable ...	1	0
Robert's Emperor ...	1	0
True Cornish, per packet	0	6
Perpetual	1	0
Vangirard (Winter) per packet	0	6
Large Drumhead — (for cattle), per lb. ...	2	6

And all other kinds in cultivation.

Carrot.

	Per oz.	
Early Scarlet Horn ...	0	4
Long Orange	0	4
Fine Surrey	0	4
Parsnip, Hollow crown	0	3
Altringham, per lb. ...	2	0
White (for Agriculture), per lb.	2	6

Cauliflower.

	Per oz.	
Mercer's fine Pearly ...	1	0
London Particular ...	1	0
Large Asiatic	1	0
Walcheren	1	0
Fine late	1	0

Cress.

Plain, per pint	0	6
Curled	1	0
American, per oz. ...	0	3
Broad-leaved, per oz. ...	0	3
Water, per paper ...	0	6
Mustard, per pint ...	0	6

Furze, per lb., 1*s.*; Broom, per lb., 1*s.*
Coarse Grasses for Game Covers, 8*s.* per bushel.
Long Red and Globe Mangold Wurzel, per lb., 1*s.*
White Silesian, or Sugar Beet, per lb., 2*s.*
Chevalier Barley; Hopetown, Tartarian, Sandy, and other Oats; Tick Beans; Field Peas, &c.
A fine Collection of all the best permanent Grasses (hand picked), separate or mixed; if mixed, per bushel, 10*s.*
Sweet Vernal, the earliest and most suitable Grass for early Lambs, clean seed, 5*s.* per lb.
Ditto, seed in pod, 2*s.* 6*d.* per lb.
White and Red Clover, Lucerne, Trefoil, &c., per lb. or cwt.
Kohl Rabi, for Agriculture, per lb., 2*s.* 6*d.*
New Tartarian Buckwheat, per packet, 6*d.*
Italian Rye Grass. Spring and Winter Tares.
A few of the very finest Grasses for Lawns, per lb., 1*s.* 6*d.*

Parsley.

	s.	d.
Plain, for feeding early lambs, per bushel ...	16	0
Extra Curled, per oz. ...	0	3

Celery.

	Per paper.	
Cole's Superb Red ...	1	0
Seymour's Superb White	0	6
New Rose, solid	0	6
Dwarf White Siberian, very solid, per packet .	0	6
Seymour's Superb Red, per packet	0	6
New Giant	0	6

Cucumber.

Victory of Bath ...	1	0
Acme of Perfection ...	1	0
Syon House	1	0
Weedon's Free bearer ...	0	6
Early Frame	0	3
Kerrison's	1	0
Walker's Rambler ...	0	6
Windsor Prize	0	6
Early Handglass ...	0	3
Early Ridge	0	3

Melons.

Seymour's Golden Perfection	0	6
True Syon House ...	0	6
Snow's Hybrid Green flesh, per packet	0	6

And all the better sorts cultivated for this market.

Endive.

New Imperial, per packet	0	6
Batavian ... per oz.	0	6
Green curled	0	6
White curled	0	6
Herbs, all the kinds, per packet	0	6

Lettuce.

Brighton Cos, per oz. ...	1	0
Imperial Cos	1	0
Artichoke-leaved, a fine new hardy sort, per pkt.	0	6
Victoria Cabbage, p. paper	0	6
Green Paris Cos	0	6
White Summer Cabbage	0	6
Fine London White Cos, per oz.	0	9
Paris Cos, per oz. ...	1	0
Ady's Cos	1	0
Drumhead	0	9
Bath Cos, & others, p. oz.	1	0

Onion.

	Per oz	
James's Long Keeping ...	0	6
Fine White Spanish ...	0	6
Globe	0	6
Strasburgh	0	6
Deptford	0	6
Silver-skin	0	9
Tripoli	1	0
Blood-red	0	6
Two-bladed, for pickling	0	8

Radish.

New Scarlet Olive-shaped, a delicious new variety, per packet	0	6
New rose, per packet ...	0	6
Early Frame, per pint ...	1	0
Long Scarlet	1	0
Red and White Turnip	1	0
Black Spanish, per oz. ...	0	3

Spinach.

New Flanders, per pint	0	6
Round, or Summer ...	0	6
Lettuce-leaved (new), per paper	0	6
New Zealand, per oz. ...	0	6

Turnips.

Early Snowball	0	3
Red American Stone, p.oz.	0	3
Teltow, for stewing ...	0	3
Early Dutch	0	3
Yellow Maltese ...	0	3
,, Stone	0	3
Early Snowball, per lb....	1	6
Early Dutch (earliest), true imported ...	2	0

AGRICULTURAL TURNIPS.

Yellow Bullock per lb.—	1	0
Skirving's Swede ...	1	0
Laing's ditto	1	0
Ashcroft ditto	1	0
Dale's Hybrid	1	0
Red Round	1	0
White Round	1	0
White Globe	1	0
Oxheart	1	0

Myatt's fine new Strawberries.
Asparagus plants, according to age, per 100, 2*s.* 6*d.* to 5*s.*
Seakale do. do. do. 5*s.* to 10*s.*
Dulley's Early Scarlet Admirable Rhubarb, per root, 1*s.* 6*d.*
Myatt's Victoria do. (the largest in cultivation), 1*s.* 6*d.*
Mushroom Spawn, per bushel, 5*s.*
Cornwell's Victoria Raspberry, per dozen, 4*s.*
All the fine new Raspberries, 2*s.* 6*d.* to 3*s.* per dozen.
Seeds of all the new Strawberries, Raspberries, Gooseberries, and Currants, per paper, 6*d.*

Potatoes. per bushel

	s.	d.
Soden's Early Oxford, per bushel	10	0
Barnard's Early Frame	8	0
Shilling's Early Prolific, per peck	2	6
Kirke's True Ash-leaved Kidney, per bushel ...	10	0
England's Fair Beauty Kidney	6	0
Walnut-leaved Kidney,	10	0
Jackson's Ash-leaved Kidney	10	0
Ash-leaved Kidney, bshl.	10	0
Forty-fold	7	0
Early Hen's Nest do.	8	0
Early Shaw ... do.	6	0
Prince Regent's ... do.	6	0
Kentish Mignon ... do.	6	0
Albany Kidneys ... do.	6	0
Flour-ball ... ... do.	6	0

And many other most productive late kinds; also seed saved from the best varieties, 6*d.* per packet.
Garlic, per lb., 6*d.* Shalots, per lb., 6*d.*
Budding and Pruning Knives.
Russia Mats, 1*s.* 6*d.* each.
Cuba Bass, per lb., 2*s.*
Buckwheat, Indian Corn, Rape, Hemp, &c., for Aviaries.
The trade supplied on moderate terms, with every article true to its kind.
Catalogues may be had on application.

Flower Seeds.

Asters, 20 distinct German varieties, in sealed packets, suitable for exhibition, the collection 10*s.*
A mixture, including all the colours of the above, per paper, 6*d.*
Do. in 12 distinct colours, the collection 5*s.*
Superb German and Prussian Stocks, 25 distinct varieties, for exhibition, the collection 10*s.*
12 varieties of do., distinct in colours, 4*s.*
12 autumn flowering do., in distinct colours, 4*s.*
A mixture of all the finest varieties of Ten-week, per paper, 6*d.*
A mixture of Brompton do., per packet, 6*d.*
12 named varieties of Hollyhocks, 5*s.*

Per packet—s.	d.	
Achimenes, seeds & bulbs of all the varieties.		
Anagallis Phillipsii ...	0	6
,, superba grandiflora ...	0	6
,, indica	0	3
,, carnea	0	3
,, latifolia ...	0	6
Amethystea cærulea ...	0	6
Anemone, fine mixed ...	0	6
Antirrhinum (all the new kinds)	0	3
Argemone grandiflora ...	0	3
,, Barclayana ...	0	3
,, speciosa	0	3
Aquilegia glandulosa ...	1	0
,, siberica ...	0	3
,, fine mixed German varieties	0	6
Auricula, from fine named flowers ...	1	0
,, alpine	0	6
Brachycome iberidifolia .	0	6
,, alba, new ...	1	0
Balsams, 12 very fine distinct colours, all double ...	5	0
,, mixture of above	0	6
Bartonia aurea	0	3
Blumenbachia insignis...	0	6
Browallia, of sorts ...	0	6
Calceolarias, from a collection of named shrubby kinds	1	0
Calceolarias, from Herbaceous do.	1	0
Calceolaria pinnata ...	0	6
Calendrinia discolor ...	0	3
,, grandiflora...	0	3
,, umbellata — (new), fine for rockwork ...	1	0
Callichroa platyglossa ...	0	3
Campanula pulcherrima.	0	6
,, Loreii, blue...	0	6
,, ,, white.	0	6
,, stricta ...	0	6
,, sylvatica new	0	6
And many other sorts, fine, as a contrast with bedded out Verbenas, &c.		
Catananche bicolor ...	0	3
Cistus guttatus, very dwf.	0	6
Clintonia pulchella ...	0	6
,, elegans ...	0	3
Cockscomb, Dwarf Scarlet	0	6
Cuphea viscosissima ...	0	6
,, silenoides ...	0	6
,, platycentra new	1	0
,, miniata ...	0	6
Cineraria, selected from 36 of the latest new kinds	1	0
Commelina cœlestis ...	0	3
Carnation, from named flowers	1	0
Clarkias, all the varieties	0	3
Coreopsis, new marbled .	0	6
,, tinctoria ...	0	3
,, Drummondii...	0	3
Candytuft, new crimson .	0	3
,, purple ...	0	3
,, white ...	0	3
,, Sweet scented	0	3

Per packet—s.	d.	
Convolvulus major ...	0	3
,, minor ...	0	3
,, do. new dark	0	6

CLIMBERS.

Cobœa scandens ...	0	6
Calampelis scaber ...	0	6
Lophospermum erubescens	0	6
,, Hendersonii	0	6
Loasa aurantiaca ...	0	6
Maurandya Barclayana .	0	6
,, new scarlet...	0	6
Tropæolum peregrinum .	0	6
,, pentaphyllum	0	6
,, Jarrattii ...	1	0
,, tricolorum grandiflrm.	1	0
,, trimaculatum, new ...	1	0
Ipomœa rubra cærulea...	0	6
,, punctata ...	0	6
,, nil	0	6
,, rosea	0	6
,, striata & others	0	6
Thunbergia alata ...	0	6
,, ,, alba	0	6
,, aurantiaca .	0	6
,, Fryerii ...	0	6
,, new yellow...	0	6
Cleome pentaphylla ...	0	6
,, rosea	0	6
Collinsia grandiflora ...	0	3
,, bicolor	0	3
,, ,, new dwarf	0	3
Dahlia scabigera (dwarf lilac)	0	6
Datura fastuosa, purple...	0	6
,, ,, white ...	0	6
Delphinium or Larkspurs, distinct or mixed ...	0	3
Ditto, biennial and perennial varieties	0	3
Digitalis grandiflora ...	0	3
,, new spotted ...	0	3
,, fulgens ...	0	3
Dianthus, double white, Indian pink	0	6
,, Knight's new hybrid ...	0	6
,, double Indian	0	3
,, latifolia ...	0	3
,, Cherii ... ... and others.	0	6
Didiscus cæruleus ...	0	6
Dahlia, fine mixed ...	1	0
Eucharidium grandiflorum	0	6
Eutoca viscida	0	3
Egg plant, white... ...	0	6
,, purple ...	0	3
Eschscholtzia, 3 sorts ...	0	3
Erysimum Perofskianum	0	3
Fuchsias from named sorts	1	0
Gaillardia picta	0	6
,, bicolor ...	0	3
,, Richardsonii .	0	3
,, aristata ...	0	3
Globe Amaranthus, of sorts	0	3
Gentianas, of sorts ...	0	6
Geum splendens	0	6
,, Wicei	0	6
Geranium, from fine sorts	1	0
Grahamia aromatica ...	0	6
Godetia, all the new sorts	0	3

Per packet—s.	d.	
Heartsease, from first-rate prize flowers	1	0
Humea elegans	0	6
Helichrysum macranthum	0	6
,, bracteatum album	0	3
Heliotropium Peruvianum	0	6
,, Voltareanum	0	6
Hibiscus Richardsonii ...	0	6
,, africanus ...	0	3
,, Humboldtii ...	0	6
Heliophila araboides ...	0	3
Helianthemum (Rock Cistus) 6 vars. for rockwork, each	0	3
Hedysarum coronarium, mixed	0	6
Do., all the vars., mixed	0	6
Hollyhock, Chinese ...	0	6
,, fine mixed ...	0	3
Hydrolea spinosa ...	1	0
Ipomœa Burridgii ...	0	6
,, quamoclit ...	0	6
,, And others ...	0	6
Ipomopsis elegans ...	0	6
,, Berichii, new	1	0
Isotoma axillaris ...	0	6
Jacobæa, double crimson	0	3
,, ,, purple...	0	3
,, new lilac ...	0	3
Kaulfussia amelloides, for edging ...	0	3
,, trachelioides...	0	6

HANDSOME ORNAMENTAL GRASSES.

Lagurus ovatus (Hare's-tail Grass)	0	6
Agrostis pulchella ...	0	6
Briza gracilis	0	6
,, maxima	0	6
Stipa pinnata	0	6
Larkspurs, 12 distinct German vars.	4	0
,, mixed dwarf Rocket ...	0	3
Leptosiphon densiflores .	0	3
,, androsaceus .	0	3
Loasa pentlandica ...	0	6
,, aurantiaca ...	0	6
Linum monogynum, fine	0	6
,, grandiflorum ...	0	3
,, perenne	0	6
,, album	0	3
Lymnanthus grandiflora	0	6
,, Douglasii...	0	3
Lobelia heterophylla major, fine ...	0	6
,, bicolor	0	3
,, gracilis, for edging	0	3
,, ramosus	0	6
,, erinoides	0	3
,, rosea	0	6
,, propinqua ...	0	6

And many other biennial and perennial varieties.

Lisianthus Russellianus, in plants (seed does not vegetate well).		
Lupinus Hartwegii ...	0	3
,, nanus	0	3
,, Cruikshankii ...	0	3
,, Dicksonii and many others ...	0	3
Lychnis speciosa, new ...	0	6
,, flos Jovis ...	0	3
,, cœli-rosa ...	0	3
,, prostrata ...	0	3
,, chalcedonica, scarlet	0	6
Malope grandiflora ...	0	3
Mallow, new zebra ...	0	3
Malva miniata	0	6
Marvel of Peru, 6 distinct colours, each	0	3
Marigold, dwarf pigmy French	0	6
Other varieties	0	3
Datura fastuosa, purple...	0	6
,, ,, white ...	0	6
Delphinium or Larkspurs, distinct or mixed ...	0	3
Ditto, biennial and perennial varieties	0	3
Digitalis grandiflora ...	0	3
,, new spotted ...	0	3
,, fulgens ...	0	3
Dianthus, double white, Indian pink	0	6
,, Knight's new hybrid ...	0	6
,, double Indian	0	3
,, latifolia ...	0	3
,, Cherii ... ... and others.	0	6
Didiscus cæruleus ...	0	6
Dahlia, fine mixed ...	1	0
Eucharidium grandiflorum	0	6
Eutoca viscida	0	3
Egg plant, white... ...	0	6
,, purple ...	0	3
Eschscholtzia, 3 sorts ...	0	3
Erysimum Perofskianum	0	3
Fuchsias from named sorts	1	0
Gaillardia picta	0	6
,, bicolor ...	0	3
,, Richardsonii .	0	3
,, aristata ...	0	3
Globe Amaranthus, of sorts	0	3
Gentianas, of sorts ...	0	6
Geum splendens	0	6
,, Wicei	0	6
Geranium, from fine sorts	1	0
Grahamia aromatica ...	0	6
Godetia, all the new sorts	0	3

Per packet—s.	d.	
Nemophila insignis major	0	3
,, insignis alba (new)	0	6
,, discoidalis (new)...	0	6
,, Cramboides, and others	0	6
,, maculata	1	0
Neirembergia splendens	0	6
,, violacea ...	0	3
,, fine mixed	0	6
,, nyctaginiflora	0	3
Nolana atriplicifolia ...	0	3
,, paradoxa ...	0	3
Œnothera Sellowii ...	0	6
,, Drummondii ...	0	6
,, densiflora ...	0	6
,, macrocarpa ...	0	6
,, and others ...	0	3
Papaver Marcelli ...	0	3
,, nudicaulis ...	0	3
,, 16 new Prussian varieties, very showy for borders	5	0
Peas, sweet, all the colours separate or mixed ...	0	3
Pentstemon, of sorts ...	0	6
Phlox Drummondii, various shades...	0	6
,, Drummondii, white	1	0
,, Leopoldii, new ...	1	0
,, new, scarlet ...	0	6
Picotee, from named flowers	1	0
Platystemon californica	0	3
Potentilla Garnieriana ...	0	3
,, Ru-selliana ...	0	6
,, insignis, fine new	0	6
Polyanthus, fine mixed...	0	6
Portulaca splendens ...	0	6
,, Thellusonii ...	0	6
,, grandiflora ...	0	6
,, striata alba ...	0	6
,, Gilliesii ...	0	6
,, yellow ...	0	6
Primula sinensis (white fringed) ...	1	0
,, lilac	1	0
,, cortusoides ...	0	6
Rhodanthe Manglesii ...	0	6
Salvia patens	0	6
,, bicolor	0	6
Sanvitalia procumbens. .	0	6
Schizanthus Hookerii ...	0	6
,, Grahamii...	0	6
,, humilis & others	0	3
,, Priestii ...	0	3
,, venustus ...	0	3
Schizopetalon Walkerii, very sweet	0	6
Sphænogyne speciosa ...	0	3
Streptocarpus Rexii ...	0	6
Silene shatta	0	6
,, compacta	0	6
Stock, white pyramidal...	0	6
,, Buck's Intermediate, 16 out of 20 will come double...	0	6
,, Chapman's Scarlet 10-week	0	3
,, Shepherd's White and Purple... ...	0	3
Sedum cæruleum, for rock-work	0	6
Sultan, yellow	0	3
,, white and purple	0	3
Tagetes, signata ...	0	6
,, lucida ...	0	6
Thunbergia (*see* Climbers.)		
Tropæolum (*see* Climbers).		
Viscaria oculata	0	3
,, new dwarf ...	0	6
,, white	0	6
Violet, Russian (everflowering)	0	6
Verbena, a mixture of 6 best sorts	0	6
Veronica Lindleyana ...	0	6
Wahlenbergia grandiflora	0	6
Wallflower, blood red ...	0	3
,, Double German, of sorts	1	0
,, changeable	0	6
Zinnia elegans coccinea	0	6
,, purpurea	0	6
,, aurea	0	6
,, mixed, from 20 separate varieties	0	6

Ornamental Trees and Shrubs of all descriptions.
Cedrus Deodara, Cryptomeria japonica, Taxodium sempervirens, } 2*s.* 6*d.* to 10*s.* 6*d.* each.
Named Double Anemones and Ranunculuses; Gladiolus ramosus and floribundus; Tigridia pavonia and conchiiflora; with many other flowering Bulbs and Herbaceous Plants, which may be planted out till the middle of May.
Carnations, Picotees, and Pinks, per pair, from 1*s.* to 3*s.* 6*d.*
All the better named Heartsease from 6*s.* to 30*s.* per dozen.
Fine named Dahlias, per dozen, 12*s.*
,, Chrysanthemums, new kinds, 12*s.*
Standard Dwarf and Climbing Roses, 1*s.* to 2*s.* 6*d.* each.
Rivers' Miniature Fruit Garden, with directions for culture and root-pruning, 2*s.*
Rivers' new edition of the "Rose Amateur's Guide," 6*s.*
Paxton's "Cottagers' Calendar," 3*d.*, which ladies and gentlemen should distribute to cottagers.
Collection of 24 Annuals, mixed, recommended by Dr. Lindley as suitable for Shrubberies, 5*s.*
Seeds for distribution by Gentlemen to their Tenants and Cottagers on the most liberal terms.
24 papers of Hardy Annuals, 5*s.*
Seeds selected and carefully packed for North and South America, India, New Zealand, and Australia, in the most secure way to arrive safe at any of the above places.

Where a post-office order accompanies an order for any of the above-named Seeds, J. KERNAN will allow, as discount, additional articles to the amount of 2*s.* in the pound.

Ladies and Gentlemen relying upon the judgment and experience of JOHN KERNAN, instead of being supplied (as is often the case) with what is neither useful nor ornamental, may depend upon having a selection of the most useful and indispensable Vegetables to the amount named, by the parties forwarding him their orders. The same economy will be observed in the choice of Flower Seeds. J. K. feels it almost needless to observe that the liberality of discount will be with the amount.

Old meadow turf, which will take a considerable time to decompose and char by the regular or natural means, may be produced by the following simple and short process. Place four bricks, raised two on two, about 3 feet distant from four others similarly arranged, upon which place a sheet of iron large enough to rest fully on the bricks. By making a fire under this simple machine, and allowing your turf to remain until charred, it will, when bruised, make an excellent stimulant for Annuals, Herbaceous and Pot Plants of all sorts. If the vermin or the season do not disturb them, you will not require more than one plant in a hundred of those that come up. Be careful to begin thinning when the plants are quite young.

Printed by WILLIAM BRADBURY, of No. 13, Upper Woburn-place, in the Parish of St. Pancras, and FREDERICK MULLETT EVANS of No. 7, Church-row, Stoke Newington, both in the County of Middlesex, Printers, at their office in Lombard-street, in the Precinct of Whitefriars, in the City of London; and published by them at the Office, No. 5, Charles-street, in the parish of St. Paul's, Covent-garden, in the said county, where all Advertisements and Communications are to be ADDRESSED TO THE EDITOR.—SATURDAY, FEBRUARY 9, 1850.

THE GARDENERS' CHRONICLE
AND
AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 7—1850.] SATURDAY, FEBRUARY 16. [PRICE 6*d.*

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EXTRA GRAND HORTICULTURAL EXHIBITION, PRIZES £200.

THE DEVON AND EXETER BOTANICAL AND HORTICULTURAL SOCIETY intend holding an Extra Grand Exhibition on Wednesday and Thursday, the 17th and 18th days of July next, during the meeting of the Royal Agricultural Society, at Exeter. Competition will be open to all Subscribers to the funds of the Society of 1*l.* 1*s.*, not being nurserymen or dealers in plants. Schedules of the Prizes may be obtained on application to the Honorary Secretary, T. WILLIAM GRAY, Esq., 4, North-bridge, Exeter.—Feb. 16.

ROSE EXHIBITION.

DISS HORTICULTURAL SOCIETY.—The Townsmen of Diss will offer the following prizes for ROSES at the Meeting of this Society, to be held on THURSDAY, the 4th of July, 1850.

TO NURSERYMEN—OPEN TO ALL ENGLAND.

For 100 named varieties,	1st Prize, a Silver Cup	£10 0 0
" "	2d Prize, Money	3 0 0
For 50 named varieties,	1st Prize, Silver Cup	5 0 0
" "	2d Prize, Money	2 0 0
For 36 named varieties,	1st Prize, Money	1 0 0
" "	2d Prize, Money	0 15 0

TO SUBSCRIBERS OF NOT LESS THAN TWO YEARS.

For 36 named varieties,	1st Prize, Silver Cup	5 0 0
" "	2d Prize, Money	2 0 0
For 24 named varieties,	1st Prize, Money	3 0 0
" "	2d Prize, Money	1 0 0
For 12 named varieties,	1st Prize, Money	1 0 0
" "	2d Prize, Money	0 10 0
Also to Cottagers, in various Prizes,		3 10 0

The above are in addition to the usual Prizes of the Society. All communications to be addressed to the Rev. C. H. BROWNE, Blo' Norton, East Harling, Norfolk.

CUCUMBER AND MELON SEEDS.

CUTHILL'S EARLY SCARLET-FLESH MELON gained two Prizes last year, one at Chiswick, and one at Regent's Park; Snow's Green-fleshed Prize Melon, 2*s.* per packet, each. Cuthill's Early Black Spine Cucumber, the best for all purposes, see *Chronicle;* Snow's Superior White Spine Ditto, 1*s.* per packet, each sort of 10 seeds; 20 seeds of best Marrow, 6*d.*; Lisianthus Russellianus, 1*s.* per packet; Lisianthus plants, very fine, from 2*s.* 6*d.* and 3*s.* 6*d.* to 5*s.* each; the various sorts of Strawberry plants, in pots, for forcing. Cuthill's Treatise upon the Potato, Strawberry, Cucumber, Melon, and Lisianthus, 1*s.*, or, by post, 1*s.* 4*d.* Cucumber Plants ready.—JAMES CUTHILL, Florist, Camberwell, Surrey.

W. B. PAGE AND SON have still to offer from their Horticultural and Agricultural Seed Establishment, Southampton,

MARTYNIA LUTEA, 5*s.* per packet.
PAGE'S PRODIGY PEA, 5*s.* per quart.

SELECT FLOWER & KITCHEN GARDEN SEEDS, ESPECIALLY RECOMMENDED BY THE WRITER OF THE CALENDAR IN THE GARDENERS' CHRONICLE OF FEB. 9th, PAGE 86.

JOHN SUTTON AND SONS, *possessing all the kinds of Seeds* so strongly recommended in the *Gardeners' Chronicle*, page 86, can supply them at the following low prices.

THE FLOWER SEEDS, good sized packets, post free, at 6*d.* and 3*d.* each.

THE PEAS.—Hairs' Dwarf Green Mammoth, direct from Mr. Hairs (Mr. H.'s price) ... per quart—5*s.* 0*d.*
The other sorts ... ... " ... 1 0
The new Dwarf Prolific Kidney Beans " ... 1 6
The New Royal Dwarf Cluster ... " ... 0 8

THE BROCCOLIES, CAULIFLOWERS, LETTUCES, ONIONS, CELERIES, CARROTS, and all others recommended by the Editor at 3*d.* to 1*s.* per oz.; or in Packets free by post 0 6

*** All the sorts of Beans recommended by Dr. LINDLEY, at page 84, may be had at 4*d.* to 8*d.* per quart.
Reading Seed Warehouse, Reading, Berks., Feb. 16.

RENDLE'S TRUE WILLCOVE BROCCOLI.—*This superior variety has been proved by thousands to be the best late sort in cultivation, and can be recommended with much confidence. We have saved a small quantity this season on our own grounds, from some of the finest heads ever seen; price* 1*s. per packet, free by post.*

*** Twenty packets to the Trade for 12*s*, or 50 for 2*l.* 10*s.* It will give the most complete satisfaction.

Our commercial stamp is on each packet.

COLE'S SUPERB RED CELERY, 1*s.* per packet.
Apply to WILLIAM E. RENDLE and Co.,
Seed Merchants, Plymouth.

FRUIT TREES AND SHRUBS AT HALF PRICE, NOW ON SALE FOR FOUR WEEKS, BY WILLIAM E. RENDLE AND CO., PLYMOUTH.

In consequence of the South Devon Railway Company having taken away a large portion of our Union-road Nursery, we are compelled to make some EXTENSIVE ALTERATIONS, *and as the whole of the ground must be cleared within four weeks, we have come to the determination of offering the stock at* HALF *the usual prices.*

PEACHES, NECTARINES, and APRICOTS.—Dwarf *trained* trees, 2*s.* 6*d.* each; smaller ditto, 1*s.* 6*d.* each; nice cut backs, 1*s.* each. A few very large trained trees in a bearing state, from 5*s.* to 7*s.* 6*d.* each, comprising Royal George, Noblesse, Chancellor, Newington, and some of the best sorts in cultivation.

PEARS.—Several hundred fine round-headed trees at 1*s.* 6*d.* each, worth 3*s.* 6*d.* and 5*s.* each, comprising all the best sorts in cultivation.

GRAPE VINES.—All the best sorts, 4 to 6 feet, 1*s.* 6*d.* each.

ARBUTUS.—Fine plants in pots, 12 to 18 inches, 5*s.* per doz.

ILEX OAK.—Fine plants in pots, and bushy, from 15 inches to 24 inches in height, 5*s.* per dozen, worth 1*s.* each. Four-year-old seedlings, out of boxes, SIXPENCE per doz.

BOX EDGING, 3*d.* per yard.

RASPBERRIES, "RENDLE'S LARGE BEEHIVE."—This is a large handsome variety, very prolific, and delicious flavour, and has given the most complete satisfaction. Strong Canes, 20*s.* per 100, or 3*s.* per doz. "YOUELL'S FASTOLFF," 10*s.* per 100.

CEDARS OF LEBANON.—We have a large stock of these in pots. Good plants, 3 feet, 36*s.* per dozen. Large handsome plants in pots, 4 to 6 feet, 5*s.* each; or one quarter the price usually charged.

BLACK NAPLES CURRANTS.—Very superior to the old sort, 6*s.* per dozen.

GOOSEBERRIES.—Some of the very best varieties in cultivation, 30*s.* per 100.

PORTUGAL LAURELS.—An immense stock will be sold unusually low. Fine plants, 18-inch, bushy, 20*s.* per 100; 3 feet, 30*s.* per 100; 4 feet, 40*s.* per 100.

BERBERIS, or MAHONIA AQUIFOLIA.—A very large quantity, 18 inches, 16*s.* per 100. This is a fine shrub for underwood.

Weigela rosea, strong plants, 12 inches, 6*s.* per dozen; Parnettia mucronata and floribunda, 6*s.* per doz.; Ribes, double red, and albidum, strong plants, 18 inches, 9*s.* per dozen.

Remittance, or reference in London, from unknown correspondents.

All orders above 5l. will be delivered free of carriage to any of the stations on the South Devon, Bristol and Exeter, or Great Western Railways. Steamers from this port to London, Dublin, Cork, Falmouth, Belfast and Glasgow, three times a week.

The South Devon Railway is now open to Plymouth, the Station being adjoining our premises. For Catalogues, and further information, apply to

WILLIAM E. RENDLE and Co., Union-road, Plymouth.

FIRST ORDERS WILL HAVE THE PREFERENCE; AS THEY WILL BE EXECUTED IN STRICT ROTATION.

ESTABLISHED 1786.

PLANTING SEASON.—NURSERY GROUNDS, RED LODGE, NORTH STONEHAM, NEAR SOUTHAMPTON. — An unlimited supply of every description of FOREST, FRUIT, AND ORNAMENTAL TREES, AMERICAN PLANTS, AND FLOWERING SHRUBS, may be procured from these extensive grounds, at the most reasonable prices, printed Catalogues of which may be had of the proprietor, WM. ROGERS, Sen., NURSERYMAN AND CONTRACTING PLANTER.

Transplanted Forest Trees, 1 to 2 feet, adapted for extensive Forest or Coppice Planting, usually sold by the thousand; and also of a large size, for Ornamental Planting or immediate effect, from 3 to 12 feet, the prices varying from 25*s.* to 5*l.* p. 100,

Ash, Beech, Birch, 15*s.* to 30*s.* per 1000; Spanish Chestnut, 20*s.*, 30*s.*, and 40*s.*; Larch Fir, 7*s.* 6*d.* to 20*s.*; Spruce, 20*s.*, 30*s*, and 40*s.*; Scotch, 10*s.*, 15*s.*, and 20*s.*; Pinaster, 10*s.*, 15*s.*, and 20*s.*; Sea Pine, adapted for exposure to the sea, 15*s.*, 25*s.*, and 40*s.*; Mahonia, for cover. 40*s.* to 80*s.*; Hazel, 15*s.*, 20*s.*, and 35*s.*; English Oak, 15*s.*, 20*s.*, and 40*s.*; Poplar, 20*s.*, 30*s.*, and 40*s.*; Quicks, 5*s.*, 7*s.* 6*d.*, and 10*s.*

Planting contracted for to any extent from 5*l.* to 20*l.* p. acre,

ORNAMENTAL TREES AND SHRUBS.

Rhododendron ponticum, 2 to 6 inches, 20*s.*, 40*s.*, and 80*s.* per 1000; 1 foot, single stems, fit for working, 10*s.* per 100; 1½ to 2 feet, strong, 20*s.* to 40*s.* per 100, fit for planting out at once to cover; 4 to 6 feet, single stem, for working the beautiful scarlet and other fine kinds, 50*s.* per 100. Tree Rhododendrons may thus become as generally cultivated as Tree Roses. Scarlet Rhododendrons, 18*s.* per dozen; hybrid scarlet, blue, lilac, and white, with large handsome trusses of flowers, 4 to 6 inches, 25*s.*; 1 foot, 40*s.* per 100; Kalmia latifolia, 2 to 4 inches, 8*s.* to 12*s.* 6*d.* per 100; 1 to 2 feet, blooming buds, 50*s.* per 100; 2 to 3 feet, fine, 75*s.* per 100; Epigæa repens, 50*s.* per 100; and all other American plants at equally low prices.

Dwarf Rose Stocks for working, 8*s.* per 100; Single Camellias, 25*s.*, 40*s.*, and 50*s.* per 100, fit for working; Double Camellias, of sorts, on own roots, 6 to 9 inches, 12*s.* per dozen; Pinus (Abies) Douglasi, from seed, 6 to 9 inches, 10*l.* per 100 or 30*s.* per dozen; Arbutus, 6 to 12 inches, 8*s.* to 12*s.* per 100; 1 to 1¼ foot, 20*s.* per 100; 2 feet, 30*s.* per 100; Laurel, 8*s.* to 20*s.* per 100; Laurustinus, bedded, 40*s.* per 1000, 8*s.* per 100; Variegated Holly, 1 foot, 25*s.* per 100; Clematis azurea grandiflora, 6*s.* per dozen, 42*s.* per 100; Deutzia scabra, 2 feet, 12*s.* 6*d.* per 100; Common China Rose, 12*s.* 6*d.* per 100; Tree Roses of the most select kinds, 5*l.* per 100; Dwarf Roses, 50 sorts, named, 50*s.* per 100; Double White, Double Red, and New Crimson Thorns, 40*s.* per 100, 6*s.* per dozen; Large Dutch Honeysuckles, 12*s.* 6*d.* per 100; Giant Irish Ivy, 8*s.* per 100.

The prices are for wholesale, if ordered in less quantities a higher price will be charged. All orders above 5*l.* carriage paid to London.

American purchasers will find great advantages in procuring their supplies from these grounds, from their proximity to the Docks whence the American Steam-packets take their departure, thus saving the delay and expenses of Land Carriage.

SAFFRON WALDEN.
SUPERB COLLECTION OF DOUBLE HOLLYHOCKS.

WILLIAM CHATER has a large and healthy stock of his unequalled collection of this splendid flower, and can supply good strong plants that will bloom well next autumn. For particulars, see printed Catalogue, which may be had on application by enclosing a postage stamp. Plants warranted true to name. A remittance requested on delivery of plants.

Post-office orders to be made payable at Saffron Walden.

NEW STRAWBERRY, "STIRLING CASTLE PINE."—The Subscriber begs to intimate that he has purchased the Stock of the above from the raiser, Mr. LAING, of Stirling. Its principal characters are as follows: Size of fruit large, classing with Keens' Seedling, British Queen, &c.; form somewhat irregular, inclining to conical; colour pale red, or scarlet when fully ripe; flavour excellent, partaking of that of the old Red Pine. It is also very prolific. Having been raised in 1846, it has now been thoroughly proved, and the following notices of it, selected from many others, will, it is hoped, be a sufficient guarantee for its superior merits:

"We recommend Mr. Laing to propagate this variety, and advertise it, as, from the specimens submitted to us, we consider it a most valuable addition to this useful family of fruits."—*Mr. Macintosh, in North British Agriculturist of Aug.* 1.

"This Strawberry seems to be an abundant bearer; fruit large, juicy, and highly flavoured. It may rank as a first-class fruit, will succeed the Keens' Seedling, and prove an excellent market variety."—*Mr. Macnab, in Report of Caledonian Horticultural Society.*

Plants can now be sent out, 20*s.* per 100, or 3*s.* per doz. Post-office orders or references required from unknown correspondents. Agents in London, Messrs. Hurst and M'Mullen, 6, Leadenhall-street; and in Dublin, Messrs. Drummond, 58, Dawson-street.—ROBERT M. STARK, Edgehill Nursery, Edinburgh.

*** Not to be repeated.

TO PEAR GROWERS.

RENÉ LANGELIER, St. Helier, Jersey, begs to state that he has still to dispose of, Trees of BEURRE ST. HELIER, a very valuable sort for its long keeping and melting qualities. Also BEURRE DELAVAL, as well as GABOURELLE SEEDLING, which is a great bearer, and fit for kitchen use.

R. L. wishes to draw the attention of amateurs to his unrivalled Collection, of which the trees are of unusual vigour. R. L. can meet any orders for what has been before advertised in this Paper.

FRUIT TREES (CARRIAGE FREE).—FULL TRAINED PEACHES, NECTARINES, APRICOTS, PEARS, PLUMS, CHERRIES, AND APPLES.

JOHN SUTTON AND SONS, Reading, Berkshire, are sending out SEEDS daily to almost every part of the Kingdom, and beg to inform their friends that they have a very first-rate collection of FRUITS in their Nurseries, which will be found as excellent as their Seeds, and are offered on as economical terms. Also all the best Perpetual Roses.

Priced Nursery Catalogues, gratis, on receipt of two stamps; and Priced Seed Catalogues, one stamp, for postage.

BROMHAM-HALL GREEN-FLESH MELON IS THE FINEST FLAVOURED IN THE WORLD.

EDWARD TILEY having become possessed of the whole stock of Seed of that very superior MELON called "BROMHAM-HALL GREEN-FLESH MELON," he is now sending out good sound Seeds at 2*s.* 6*d.* per packet of 6 seeds; larger do. of 15 seeds, 5*s.* per packet. For further particulars of the above, see Advertisement in this Paper, February 9th. Also the following fine varieties can be highly recommended:

	s.	d.	
Queen Melon	1	6	per packet.
Bowood Green-flesh	1	0	"
Beechwood do.	1	0	"
Windsor Prize do.	1	0	"
Emperor	1	0	"
Fleming's Trentham Hybrid	1	0	"
Duncan's Green-flesh do. improved	1	0	"
Hampton-court Green-flesh	1	0	"
Egyptian do. do. improved	1	0	"

FIRST PRIZE CUCUMBERS.

Victory of Bath	2	0	"
Gordon's White Spine	1	6	"
Lord Kenyon's Favourite	2	6	"

A packet of each of the three varieties, 5*s.*; if preferred, also a packet of Bromham-hall Melon will be included with the three Cucumbers for 7*s.*

Sold by EDWARD TILEY, Nurseryman, Seedsman, and Florist, 16, Pulteney-bridge, Bath. A remittance must accompany the order, either in cash or penny postage stamps.

TO PLANTERS.

W. DRUMMOND AND SONS, Stirling, have this season a large Stock of FOREST TREES, of fine quality, which they are offering at reduced prices. The Plants, from the free soil and exposure of their Nursery Grounds, are well rooted and hardy.

Priced Lists, including Shrubs and Fruit Trees, sent post free, on application.

N.B.—Priced Lists also of Seeds and Agricultural Implements sent free if required.—Stirling, Feb. 16.

SEED POTATOES.

CHARLES SHARPE has much pleasure in announcing that he has got the under-mentioned sorts of POTATOES to offer again this season, which have for the last four successive years given general satisfaction in all parts of the kingdom. The first six sorts are very early and productive; those marked thus * are the best sorts for Frame Forcing; they are offered at the following prices, packing included:

Per bushel of 56 lbs.		Per bushel of 56 lbs.	
*Early Oxford Potatoes	8*s.*	Early Manleys	7*s.*
*Early Round Frame	8*s.*	Early Cockneys	7*s.*
Early Ash-leaved Kidney	8*s.*	Fox's Seedling	7*s.*

Second Early Potatoes for Winter and Spring use:

American Native Potatoes	5*s.*	Kentish Pink Kidney	4*s.*
York Regents	5*s.*	Forty Fold	4*s.*

Orders will be forwarded on the receipt of a Post-office order, and great care will be taken to ensure their safe delivery. A liberal allowance to the Trade.—Wisbeach, Cambridgeshire.

SAMUEL FINNEY AND CO.'S NEW CATALOGUE OF SEEDS is now ready, and will be forwarded gratis on the receipt of two penny stamps for postage. In forming our Collections of Seeds we have taken special care to include all the select and most approved kinds, and such as we can confidently recommend.

Of VEGETABLE SEEDS, our Collections contain a full supply of all that is requisite for the largest establishment, and the kinds and quantities for each collection are stated. No. 1, 2*l.* 10*s.*; No. 2, 1*l.* 10*s.*; No. 3, 1*l.*; and No. 4, 12*s.* 6*d.*

Of FLOWER SEEDS, we have included all the most choice and showy kinds, particularly those we know to succeed well in the north, and a full list of all the best kinds of German Seeds, imported direct in sealed packets, with prices.

A Collection of 100 packets of the best hardy and half-hardy kinds for ...	...	...	...	...	15*s.* 0*d.*
Ditto of 50	ditto	ditto	ditto	...	8 0
Ditto of 25	ditto	ditto	ditto	...	5 0

We particularly recommend this Catalogue to residents in the north, as they will be enabled to purchase to advantage. All orders delivered free of carriage at any of the railway stations between Newcastle and York, Berwick and Carlisle, and by steam-boat to London, Hull, Whitby, Leith, Dundee, and Aberdeen. Railway and water communication to all parts of the kingdom.

SAMUEL FINNEY and Co., Gateshead, near Newcastle-on-Tyne.

ORANGE, LEMON, LIME, CITRON, AND SHADDOCK TREES.—The first importation of the above Trees, in most excellent and healthy condition, has arrived from Italy. They are from 2 to 4 feet high in the stems, very straight, and possess strong grafts, and will make splendid trees in two or three years; from 12*s.* to 25*s.* each. They may be seen at A. COBBETT'S Italian and Foreign Warehouse, 18, Pall-mall, London. Also Catalonian, Azorian, and Arabian Jessamine Plants. The Double Italian Tuberose Roots are still on sale, 4*s.* per dozen.

MITCHELL'S ROYAL ALBERT RHUBARB still has its supremacy over all other kinds for its extraordinary earliness, delicious flavour, and splendid red colour; also a most prolific bearer and free grower, with large stalks. For early forcing it far surpasses every other variety. For making wines, preserves, and all culinary purposes, it is an inestimable production. Strong one-year planted roots 1*s.* 6*d.* each; also Myatt's Linnæus, 1*s.* 6*d.*; and Victoria, 9*d.* The usual allowance to the trade. Post-office orders made payable to WILLIAM MITCHELL, Enfield Highway, Middlesex, will meet with prompt attention. N.B. The above is from four to five weeks earlier than the well-known Victoria.

H. LANE AND SON have great pleasure in recommending the following SEEDS, which may be had by unknown correspondents, by enclosing Postage stamps or Post-office order. Seymour's Celery and Fleming's Melons having been so successfully exhibited, require no comment.

CELERY—Seymour's White Champion ...	1*s.*	6*d.*	per packet.	
,, ,, Superb White ...	0	6	,,	
,, ,, Red Matchless ...	0	6	,,	
,, ,, Golden Perfection ...	1	0	,,	
MELONS—Fleming's, or Trentham Hybrid				
Persian	1	0	,,	
,, ,, Genuine Sweet Ispahan	1	0	,,	

Great Berkhampstead, Herts.

HART AND NICKLIN, FLORISTS, Guildford, Surrey, offer the following Plants, strong and healthy:

GERANIUMS.—1*l.* the dozen: Forget-me-not, Ariel, Magog, Pearl, Gulielma, Aurora, Hebe's Lip, Mount Etna, Conflagration, Arabella, Sultan, and Rosamond. 10*s.* the dozen: Marc Antony, Rosy Circle, Jehu, Mustee, Duke of Cornwall, Orion, Isabella, Lady Rivers, Favourite, Shakespeare, South Western, and Maid of Anjou.

PANSIES.—1*l.* the 20: Juvanta, Sylph, Laneii, Zabdi, Minerva, Premier, Nobilis, Caroline, Gem, Marquis of Lothian, Aurora, Example, Constellation, Berryer, Muta, Ophir, Brutus, Orestes, Queen of Whites, and Exquisite. 12*s.* the 20: Duchess of Rutland, Countess of Stradbroke, Snowdrop, Rainbow, Model of Perfection, Climax, One in the Ring, Dr. Wolff, Madonna, Superb, Supreme, Wonderful, Emperor of China, Joan of Arc, Mary Jane, Bride of Abydos, Satirist, Pizarro, Reliance, and Matilda. Basket included, and, when two Collections are taken, free to any station on the South Western, South Eastern, or Great Western Railways.

RENÉ LANGELIER, St. Helier, Jersey, begs to state that he has still several thousand CAMELLIA STOCKS to dispose of, at from 40*s.* to 50*s.* per 100, all fit for immediate grafting, and well established, so that they can travel without the pots, well packed in boxes. Also several thousands of that fine GLADIOLUS "CARDINALIS," large flowering bulbs, at 5*s.* per 100; it is well known to be perfectly hardy out of doors. Also very large bulbs of AMARYLLIS LONGIFOLIA, also perfectly hardy and blooming; large trusses, very sweet-scented; 2*s.* 6*d.* each.

THE READING GIANT ASPARAGUS.—Strong Plants, 3 years old, 4*s.* per 100; 2 years old, strong, 3*s.* per 100. No charge for package. The above is decidedly the best kind of ASPARAGUS, a large quantity being sent annually at a high price to Covent-garden Market. With small orders a remittance by Post-office order, *or penny postage stamps*, will oblige.

Fine Brown Cos Lettuce plants, 1*s.* 6*d.* per 100.
New Prolific Hautbois Strawberries, 5*s.* per 100.
Address, JOHN SUTTON AND SONS, Reading, Berks.

ROSES.

ROSES established in 24 pots for immediate forcing. (See catalogue for two penny stamps.) Hybrid Perpetuals, the finest of all for this purpose, 1*l.* per dozen.

H. LANE and Son, Great Berkhampstead, Herts.

SEEDS.—A few select Seeds from the original raisers, which have now for several years given such general satisfaction to those who have grown them, viz.:

Elletson's (true) large Mammoth or April White Broccoli.
Elletson's (true) improved Wilcove White Broccoli.
Lindsay's imperial crimson Dwarf Beet.
Usher's "Exquisite" Curled Parsley.
Metcalfe's improved Dwarf Walcheren Broccoli.
Telford's superb early Dwarf Cabbage.

The above may be had at 1*s.* each, or the six sorts for 5*s.*, in Post-office order or postage stamps, on application to WILLIAM MAY, Hope Nurseries, Bedale, Yorkshire. W. M. begs to refer to former *Chronicles* for his Advertisements of select Pansy, Cineraria, Antirrhinum, and Hollyhock Seeds; also to his superb collection of hardy Herbaceous Plants, Hollyhocks, &c.

ON SALE BY THE SUBSCRIBER.—500,000 2-year Seedling Scotch Firs, superior plants, from native Highland seed, at 6*s.* per 1000; 500,000 2-year Seedling Larch; 200,000 3-year Seedling Black Norway Spruce; 200,060 transplanted ditto; a very extensive stock of Fancy Pines, viz., Excelsa, Pallasiana, Banksia, Fraserii, Nobilis, Grandis, Taurica, Webbiana, Pindrow, Lambertiana, &c.; some fine large specimens of Cedrus Deodara and Araucaria imbricata, &c.; a large stock of Irish Yews, from 5 to 10 feet high; with a very extensive stock, all sorts and sizes, of Nursery Stock in general.

JAMES ROY, Jun., Ferry-hill Nurseries, Aberdeen, Feb. 16.

PANSIES, &c.

JOHN SCHOFIELD AND SON are prepared to send out the following set of 24 fine Show PANSIES for 1*l.* 1*s.*, viz.: Duke of Norfolk, Purple Standard, Caroline, Cracker, Blue Fringe, Milton, Paren, Jullien, Indispensable, Canary, Negro, Mrs. Bragg, Disraeli, Duchess of Norfolk, Perfection, Constellation, Zabdi, Candidate, Cypreus, Cossack, Supreme, Androcles, Alpha, Charmer, Post free.

A large stock of older varieties, 6*s.* per dozen.

J. S. and Sons have a few pairs left of their fine seedling PICOTEE, "MISS HOWARD." It was shown at the West Riding Central Floral Society Show, when a committee of seven was appointed to test the merits of the Seedling specimens, and to recommend such only as were worthy of being sold out, viz., Messrs. Smith, Dobbinge, Stephenson, Oxley, Grey, Bramma, and Mansley. It was also submitted to Mr. Wood, in 1848; vide "Midland Florist," No. 21, under the letters J. S.: "12; an excellent light purple edge, good pod, broad and well-formed petals, crowns well; one of the most promising we have seen this season."

A fine healthy stock of the best varieties out, of Carnations, Picotees, and Pinks, 9*s.* to 20*s.* per dozen pairs. Dahlias, Verbenas, and Fuchsias, 3*s.* to 12*s.* per dozen.

Also a full descriptive Catalogue; and a few packets of very select Pansy and Calceolaria Seed, 2*s.* 6*d.* per packet. A remittance is respectfully solicited from unknown correspondents.

Knowsthrope, near Leeds, Yorkshire.

COLE'S SUPERB SOLID RED CELERY.—This fine Celery has given such entire satisfaction, not only for the great size to which it attains, but for its unequalled crispness and exquisite nut-like flavour, that it needs no further recommendation. Seed may be had genuine from the grower, WILLIAM COLE, Dartford, Kent, in sealed packets, 1*s.* 6*d.* each, or the amount in postage stamps; also of Messrs. J. and J. FRAZER, Leyton, Essex; Mr. BUNYARD, Maidstone, Kent; Mr. CRIPPS, Tunbridge Wells, Kent; Mr. DENYER, 82, Gracechurch-street, London; Mr. TILEY, 16, Pulteney-bridge, Bath; Mr. FRANCIS, Hertford; Mr. MILNER, Bradford, Yorkshire; Messrs. J. and J. FAIRBAIRN, Clapham, near London; Messrs. GARAWAY, MAYES, and Co., Bristol; and of Mr. SMITH, Westernam, Kent; Mr. PONTEY, Nurseryman, Plymouth; and Mr. IVERY, Nurseryman, Peckham, Surrey; Mr. ARCHIBALD WOOD, Nurseryman and Seedsman, Worcester; and Mr. POPE, Nurseryman, Gib Heath, near Birmingham; and Mr. CLARKE, 86, High-street, Borough.

* A liberal allowance to the trade.

W. COLE further states, in justice to himself and agents, that his entire stock of seed saved in 1849 is in his possession and that of his agents, from whom it may be had new and genuine, bearing his name and address printed on the envelope.

SPLENDID DOUBLE RANUNCULUS ROOTS.

MR. SNELLING is commissioned to sell a few hundred roots of the above most beautiful flower, the property of an amateur grower. They are of a first class mixture, worth 20*s.* per 100, and may be had for 5*s.* per 100, at 28, New-road, Brighton. Sent carriage free for 6*s.* per 100, or 25 good roots for 18 postage stamps.

Choice Flower Seeds, 18 packets, various, for 18 postage stamps.—ROBERT SNELLING, 28, New-road, Brighton.

JOHN RIVERS, SEEDSMAN, Sawbridgeworth, Herts, begs to offer the following superior productive POTATOES:

2d Early.—Soden's Early Oxford	per bushel	6*s.*	6*d.*
Do. Fox's Seedling	,,	6	6
Do. Shaw's Early	,,	4	6
Late, very superior bearers, and very late keepers	,,	5	0

Carriage paid to London. Post-office orders are requested from unknown correspondents.

VERBENA—"WONDERFUL."

G. MOORE begs to refer the readers of this Paper to his Advertisement of the 2d inst.

Perry Barr, near Birmingham, Feb. 16.

RHODODENDRON PONTICUM FOR UNDER COVER, &c.

JOHN WATERER begs to state he has large quantities of the above, which is now universally acknowledged the best Evergreen for such purposes, being free from attacks of hares and rabbits. Strong plants, fit for immediate planting, 10*s.* 6*d.*, 15*s.*, to 21*s.* per 100.

Descriptive Catalogues of his well known collection of American Plants, &c., to be had on application.

American Nursery, Bagshot, Surrey.

EARLY TEN-WEEK POTATO, the earliest grown, will beat the Ash-leaved Kidneys by ten days—per bushel, 14*s.*; per peck, 4*s.*, bags included. Pure Stocks of ASH-LEAVED KIDNEYS, RED DITTO, BARHAM'S WALNUT-LEAVED, SHAWS, REGENTS, FORTY-FOLD, &c., at moderate prices.

Twelve of the newest and rarest Flower Seeds:

Nemophila maculata	Martynia angularis
Brachycoma, splendid hybrids	Portulaca Thorburnii (yellow)
Phlox Drummondii alba	,, alba striata
,, oculata	Podolepsis chrysanthemoides
,, Leopoldina	Schizanthus retusus alba
Martynia fragrans	Ipomœa Burridgii

One packet each 10*s.* 6*d.*

GERMAN STOCKS, from 2*s.* per collection.
,, ASTERS, from 3*s.* ,,
,, CARNATIONS, 2*s.* 6*d.* per 100.

DUNCAN HAIRS, 109, St. Martin's-lane, Charing-cross, London.

SUPERB RANUNCULI.—The present being the usual month for planting, we beg to recommend the following. The new varieties have been selected with great care, of first rate sorts, from immense quantities of seedlings; and for vigorous growth and free flowering are far preferable to the older varieties. Selections, in strong roots, at the following reasonable charges, with printed instructions for planting and treatment.

RANUNCULUS.—Free by post.	£	*s.*	*d.*
50 Splendid new varieties, with names	2	0	0
25 do. do. do.	1	2	0
50 Fine older varieties, do.	0	15	0
25 do. do.	0	8	0
100 Finest mixed	0	10	0
100 Fine mixed, 5*s.*; or free by post for	0	6	0

A Descriptive Catalogue of the seedling varieties may be had. Remittances are expected from unknown correspondents.

BASS and BROWN, Seed and Horticultural Establishment, Sudbury, Suffolk.

CEDRUS DEODARA OR HIMALAYA CEDAR.—The Subscribers beg to inform the admirers and planters of the above hardy Tree, that they have upwards of FIFTY THOUSAND, from one to five years old, in pots, grown from seed, constantly in the open ground, which they are now supplying on such terms as will induce their general introduction into all plantations, being of rapid growth, highly ornamental, and of great value as a Timber tree.

WM. MAULE and SONS, Stapleton-road Nurseries, Bristol.

WHITETHORN AND BEECH FOR FENCING—500,000 very fine four years old transplanted WHITETHORN, at 6*s.* per 1000, or, selected, at 7*s.* 6*d.* per 1000; and fine Bedded BEECH, 2 to 3 feet, at 8*s.* per 1000. A large quantity of very fine transplanted OAKS, ranging from 3 to 5 feet, at 35*s.* per 1000. The above are all extremely fine and well rooted. Samples if required.

ARTHUR MACKIE, Nurseries, Norwich.

MYATT'S LINNÆUS RHUBARB.

J. MYATT AND SONS can confidently recommend this variety as the best in cultivation. The most satisfactory proof of this assertion is the fact that the Market Gardeners round London and Manchester have planted the Linnæus Rhubarb more extensively than any other variety. It is extraordinarily productive, and about a fortnight earlier than the Victoria; added to this, it is held in general esteem for preserving and all culinary purposes. One-year planted roots, 1*s.* 6*d.*; ditto, Mitchell's Royal Albert, 1*s.* 6*d.*; Victoria, 9*d.* The usual Trade allowance.—Post-office orders are requested to be made payable to JOSEPH MYATT, Manor Farm, Deptford.—Feb. 16.

BOTANICAL EXPEDITION TO OREGON.—COMMITTEE.

The Hon. Lord Murray
The Hon. Lord Cunningham
Sir David Dundas of Dunira, Baronet
Sir John M'Pherson Grant of Ballindalloch, Baronet
Wm. Gibson Craig, Esq., M.P.
William Murray, Esq., of Henderland
G. Patton, Esq., of Cairnies
J. H. Balfour, M.D., Professor of Botany
Charles Lawson, Esq., George the Fourth Bridge
James Greig, Esq., Inverleith Nursery
I. Anderson, Esq., Maryfield
James Macnab, Esq., Royal Botanical Gardens.

Andrew Murray, Esq., of Conland
Charles M'Intosh, Daikeith } *Joint Secretaries.*
David Smith Esq., W. S., *Treasurer*

With power to add to their number.

It having been thought by several Gentlemen interested in the ARBORICULTURE and HORTICULTURE of SCOTLAND, that it would be of great benefit to the country, as well as to the interest of these SCIENCES, to introduce the SEEDS of such of the HARDY TREES, SHRUBS, and FLOWERS OF NORTH AMERICA, as are suited to the climate of this country, an ASSOCIATION has been formed for this object, and the services of a young Botanist of zeal and great skill, can be obtained, who is ready to follow up the labours of the late Mr. Douglas, to complete his researches, and to extend them into that part of the country not fully explored by him. It has been ascertained that a great many TREES, PLANTS, and SHRUBS, hitherto unknown in Great Britain, and likely to prove valuable additions to the Forests and Gardens of Scotland, exist in these districts. With the view of raising the funds necessary for carrying this object into effect, it has been resolved that each person willing to support the undertaking, shall subscribe the sum of Five Pounds, or so many shares of the same amount as they may please, each Subscriber being entitled, for every share, to a corresponding portion of the SEEDS which may be collected from time to time, sent home. No Subscriber to be liable for anything beyond the amount subscribed by him. The Committee undertake that the distribution of the SEEDS shall be conducted on principles of the greatest fairness and impartiality. The names of Subscribers will be received by any of the Members of the Committee, or the Secretaries or Treasurer; and as the Botanist will leave this country as soon as a sufficient sum shall be obtained, and the subscription will then be closed, the Committee request that their friends who intend to subscribe will guard against disappointment by coming forward without delay.

HORTICULTURAL BUILDING AND HEATING BY HOT WATER.

BOILERS OF ALL SIZES TO BE SEEN IN OPERATION, WARRANTED THE BEST.

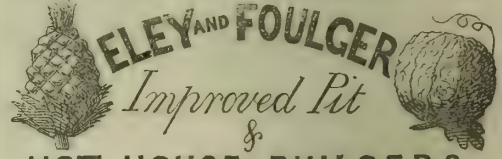


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Dr. LINDLEY, in the *Gardeners' Chronicle*, Dec. 22, 1849, says,

"*This contains lists of good vegetables, with useful notes appended to the names of many of the sorts. . . . It is a well-arranged Catalogue, and will be found of service to all purchasers of Seeds.*"

The Editor of "The Midland Florist," for January, 1850, says,

"*We have just received the General Catalogue of Garden, Agricultural, and Flower Seeds, sold by William E. Rendle and Co., Plymouth, which, from its excellence, well merits something more than a passing notice, and happy shall we be from time to time (with Messrs. Rendle's permission) to extract some of its valuable information for the benefit of our readers. . . . The Flower Seed List is peculiarly comprehensive, and gives to each variety its scientific name, hardihood, time of duration, colour, height, and time of flowering. Our readers will thus see that, from its immense utility, we can scarcely say too much in its recommendation; and we are sure that the name of the eminent firm will be a sufficient guarantee that every article they send out will not only be true to name, but also of the best possible quality.*"

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No. 1 contains the following quantities, and are of the best and newest kinds, being a sufficient supply for a nobleman's large establishment: 26 quarts Peas, 12 quarts Beans, 4 oz. Beet, 1 oz. Borecole, 6 oz. Broccoli, 1 oz. Brussels Sprouts, ½ oz. Buda Kale, 7 oz. Cabbage, 10 oz. Carrot, 2 oz. Cauliflower, 2 oz. Celery, 3 lbs. Cress, 4 pkts. Cucumber, 2 oz. Endive, 2 oz. Leek, 6 oz. Lettuce, 3 pkts. Melon, 2 quarts Mustard, 10 oz. Onion, 4 oz. Parsley, 6 oz. Parsnip, 2 oz. Savoy, 3 pints Radish, 1 oz. Scorzonera, 2 quarts Spinach, 2 lbs. Turnips, 1 pkt. Vegetable Marrow, 1 oz. Salsafy, and 12 pkts. Herbs, Chili, Capsicum, &c. £3 3 0
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The great satisfaction these collections have given to some of the principal families in England, Ireland, Scotland, and Wales induces W. J. EPPS with confidence to solicit further patronage. The collections contain this year 15 per cent. more than last, and quite equal in quality. Descriptive Seed Catalogues may be had on application. All orders to be accompanied with a Post-office order from unknown purchasers. No charge made for packing, and delivered free of expense to any railway station in London.—Agricultural and Horticultural Seed Establishment, High-street, Maidstone.

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GENUINE HOME-GROWN SEEDS FOR THE KITCHEN GARDEN, may be had of the Subscriber, in collections of 12*s.* 6*d.*, 1*l.*, 2*l.*, and 3*l.* worth, containing the most approved varieties in cultivation. Also for the Flower Garden, in selections of 25 kinds for 6*s.*, 50 for 10*s.*, 100 for 18*s.* packed in Ayres and Moore's new labels, with directions for culture, time of flowering, whence introduced, &c.—WILLIAM MASTERS, F.H.S., Exotic Nursery, Canterbury.

W. M.'s New Catalogue may be procured on pre-paid application. Orders amounting to 2*l.* and upwards delivered to any station on the South-Eastern Railway.

The Gardeners' Chronicle.

SATURDAY, FEBRUARY 16, 1850.

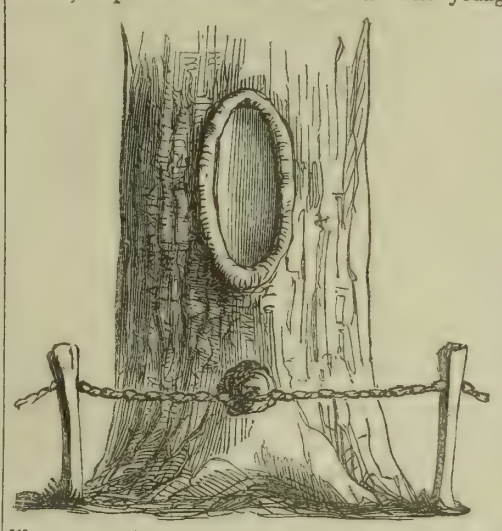
MEETINGS FOR THE ENSUING WEEK.

MONDAY,	Feb.	18	Pathological	8 P.M.
			Medical	8 P.M.
			Chemical	8 P.M.
			Statistical	8 P.M.
			British Architects	8 P.M.
TUESDAY,	—	19	Horticultural	2 P.M.
			Linnean	8 P.M.
			Civil Engineers	8 P.M.
THURSDAY,	—	21	Antiquarian	8 P.M.
			Royal	8½P.M.
FRIDAY,	—	22	Philological	8 P.M.
			Royal Institution	8½P.M.
SATURDAY,	—	23	Royal Botanic	3½P.M.
			Westminster Medical	8 P.M.

WE cannot say that our correspondents have thrown much light upon the question whether SAP DESCENDS. The letters we have hitherto received refer to nothing more than this, that organisable matter is universally diffused in the system of a tree. But that is not the real point of enquiry; what should be explained is, why, when a *ring* of bark is removed from a branch the new growth takes place principally on the upper edge of the wound and very slightly on the lower; and why gum, formed in the leaves of a Potato is afterwards found in the tubers, in the final form of starch. It would be as well to confine attention in the first instance to these two cases; and to show—1. That they do *not* depend upon the presence of what is called descending sap; and 2, to what else they are owing.

The general diffusion of sap, which is universally admitted, even allowing to that term the meaning of organisable matter, does not appear to us to have any bearing on the question of a ringed branch; although it may explain such an instance as the following, for which we are indebted to Mr. TOWERS.

"Certain it is that the bark of trees, when wounded, or cut in amputation of branches proceeding from the trunk, converges from all points, and not solely, as some assert, from the uppermost, cross incision. The Elm tree may furnish the best examples for investigation, some of which are to be seen in every hedge-row. In the public road leading from Waddon to Mitcham Common, there stand several large Elms in front of a gentleman's house. A wound was made in one of them fully 18 inches long, and in the middle 5 or 6 wide, by which the bark stripped off to that extent, exposed the wood below it. The young



liber came rolling forward on every side, and is now seen approaching pretty equally, though with projections of a redder colour, which mark the more recent processes. A line of posts and rails, with a chain at top, extends along the front, close to the row of trees. An abrasion or wound had been made in close contact with a part of the chain, which now is buried, and firmly fixed in the bark, by a knotty boss formed of cortical matter."

In this instance the descending sap, uninterrupted in its course downwards, may be said, by its lateral diffusion, to have formed wood at every part of the edge of the wound; which would readily happen, the continuity of the bark being interrupted only for a narrow space, and not all round. But if this case does not bear on the question at issue, it singularly illustrates a curious story told in a late number of "CHAMBERS' Journal." "A traveller mentions an instance of the 'sentient principle' occurring among the denizens of an Indian forest. Two trees, he tells us, of different kinds, although only 3 feet apart, had grown to the height of 50 or 60 feet, when one of them took the liberty of throwing out a low branch in such a way as to touch the trunk of his neighbour, and thus occasion much pain and irritation. 'On this the afflicted tree in turn threw out a huge excrescence, which not only enveloped the offending branch, but strangled it so completely as to destroy it utterly; the ends of the deadened boughs projecting 3 or 4 feet beyond the excrescence, while the latter was carried on a distance of 3 feet across to the shaft of the tree, so as to render all chances of its future movement wholly impossible!' This appears to our traveller to display as much forethought and sagacity as taking up an artery for aneurism, or tying splints round a broken bone." Here it is evident that the excrescence of the "afflicted tree" is the boss described by Mr. TOWERS.

Another cause of the junction of the lips of a ringed wound, independently of the descending sap, is the rapid growth of the medullary rays all over the surface of the naked wood. We need not say that when wood is laid bare by the removal of bark, the ends of an infinite number of medullary rays are exposed; these ends have a great power of growth, which they sometimes exercise in such a way as to clothe the surface of the wood with bark, wholly independently of any material advance of the lips of such a wound. Of this we have the following instance, from the Rev. M. J. BERKELEY: "A vigorous Oak had been mischievously barked all round, and to such an extent as to preclude all probability of ultimate union of the severed edges. The tree, however, for a year or two seemed to suffer very little from the injury, as new tissue was thrown out from the exposed extremities of the medullary rays; and to such an extent, that had not the parties who first injured the tree been so bent on its destruction as to cut away the newly-formed tissue, union would have speedily been effected, and the tree in all probability preserved. The growth of new tissue was not assisted by any thin strips of the inner bark still adhering to the tree, by which the descending tissue could have been conducted, but proceeded simply as indicated above, from the medullary rays."

Or there may be exceptional cases, in which the organisable matter (descending sap) collected in the interior of a tree, unable to follow its accustomed track, may be expended in the formation of wood, even in an ascending direction; as in another instance mentioned by Mr. BERKELEY, of a young Ash tree, sawn off level with the ground, the disc of which, though no new shoots have been thrown up, is gradually closing over like the Firs (Abies pectinata and Pinus Picea) described by M. GŒPPERT in the volume of the Ann. des Sc. Nat. for 1843. In the present instance, as no other Ash tree grows near it, there can be no room for supposing that its roots are ingrafted into those of some neighbouring tree, as was found to be the case with GŒPPERT's Firs.

To deny the existence of a descending sap is virtually to deny the truth of the whole theory of wood formation. We do not here speak of AUBERT DU PETIT THOUARS's views, or of those of Mr. GAUDICHAUD, as they are explained by those physiologists; but we allude more especially to the views of DUHAMEL, DE CANDOLLE, MIRBEL, and others, who, after all, differ from the two first physiologists more in the terms they employ than in the facts on which they rely. Few botanists indeed are, we believe, prepared to deny altogether the views of M. GAUDICHAUD respecting the descending course of the development of the wood-cells, though their notions may be modified by MIRBEL's assertion of their growth from the cambium. Nor will their judgment be shaken by the acrimony with which the controversy between those celebrated physiologists was carried on; for it is probable that in this, as in so many other disputed questions, there is a degree of truth on both sides.

Our invitation for the communication of facts and opinions on this interesting subject ought to elicit many curious examples; but deductions are not to be drawn too hastily from a few exceptional cases, though they may suggest matter for consideration, and prevent our narrowing our views too much to one line of argument.

"A GARDENER," said the late Mr. KNIGHT, "having "to expend the capital of others, ought to be cautious "in trying *expensive* experiments, of which the results "must be necessarily uncertain; and I believe a very "able and experienced gardener, after being the in-"ventor of the most perfect machinery, might, in "many instances, have lost both his character and "his place before he had made himself sufficiently "acquainted with it, and consequently become able "to regulate its powers."

It is doubtful whether a sentence more full of practical wisdom than this has ever been penned for the instruction of gardeners. It points out to them forcibly the wrongness of addicting themselves to mere experiments at the cost of their employers, and the danger which they incur as regards their personal interests. The warning, too, came with peculiar force from one who was himself the greatest horticultural experimentalist that ever lived. It was a plain declaration that few of the numberless trials which he had himself made of new methods had answered the purpose sufficiently to have justified a gardener in having taken their risk upon himself.

No doubt can exist that the greatest experience, and the most complete acquaintance with principles, even when combined with the most perfect tact in applying them, continually fail to suggest experiments, the result of which is certainly successful. There exist in nature so many counteracting circumstances, of unsuspected, or unascertained, or unexpected force, that the best-laid plans break down when brought into play against them. These natural forces may be not unaptly compared to the moral forces which oppose the application of abstract theories to human affairs; or rather which oppose the regulation of human affairs by the best considered theories. They constitute a kind of friction, the amount of which can rarely be calculated beforehand. The result of this is seen in the frequent failure of chemical speculations when practically applied to cultivation; as, for example, in the artificial manures prepared by Professor LIEBIG, and so many others. No doubt can exist that this eminent

philosopher is as intimately acquainted with his peculiar science as any living man, and that if *à priori* reasoning could be trusted, his would be worthy of all confidence. If then such as he break down, what may a gardener not expect?

These important truths are, however, greatly misinterpreted. Many persons imagine that, because they are enjoined not to try *expensive* experiments at the cost of their employers, therefore they are not authorised in trying any experiments whatever. Others take up the singular crotchet, that, because they are not to lay out their employers' capital in volunteering expensive experimental researches, therefore they are to oppose all such researches when their employers assume all the responsibility of success or failure. And hence we find men doggedly setting themselves against everything except routine, and resolutely thwarting all plans which bear the stamp of novelty.

How senseless is this! Fraught with what danger to the progress of improvement! Experiment is the soul of cultivation, and those who at their own charge are willing to undertake its risk, should surely meet with whatever aid and assistance experience can suggest, instead of being thwarted by those who are bound to execute *faithfully* the orders they receive, and without a question. Suppose, for example, A has a gardener, called *b*; A orders an Apple-tree to be taken up, and replanted with its roots in the air, and its branches in the ground—is *b* justified in objecting to execute the order? Certainly not; nor can he claim a right to know what end A has in view in so novel an operation. What he is bound to do is to take care, as far as he is able, that the branches strike root in the ground, a condition essential to the experiment. If the tree dies, it is the affair of A; not of *b*, as some gardeners imagine, who fall into the mistake of supposing not only that their employers' property is their own for all purposes except that of sale, but that they are answerable for the consequences of their employers' acts. This mistake no doubt arises, in some cases, from the gardener having an honest pride in the articles confided to his care, and from the belief that strangers will impute to him the blame of failures or preposterous schemes which belong to his employer. But it is not the less a mistake. It is one, too, which cannot be too quickly extirpated, because it has cost many a well-meaning, but ill-advised gardener, his place, and deprived many an employer of half the pleasure which his garden would have afforded.

We would therefore recommend gardeners to encourage their employers to engage in rational experiments in gardening, and, laying aside all blue-apron fancies, to join cordially in bringing them to a *true* issue. By this means they will add much to the interest which the wealthy classes take in one of their favourite enjoyments, and will powerfully contribute to the real advancement of their own art. All the world is now alive to the necessity of progress: men of property are anxious to ascertain the true value of the numerous propositions continually submitted to them. A garden is often the place in which preliminary enquiries can be best conducted, the gardener is the person to be charged with them, and he may depend upon it that the more zeal and intelligence he displays in executing such a duty, the greater will be his value to his employer, and the higher his elevation in the social scale.

ROSES.

A few Words on Forcing the Rose.

Roses are generally forced in pots in which they have been established one year at the least, but oftener two. When they are put into the first house, which is little better than a greenhouse, in the month of October, or later, according to the time they are wanted in bloom, the intention is to gradually increase the temperature until the plants are prepared for the warmer atmosphere of the forcing-house. When the Roses have been bloomed and are done with, they are generally turned out of doors to complete their growth, and they are either planted out or otherwise disposed of, certainly not forced the following year according to general practice. This is altogether a wrong principle, because the Rose, like the Vine, may be brought to begin its growth at almost any season. The first year it is very difficult to force well. The best way is to put the plants in the house the first year they are potted, and as soon as they are potted, in September or October. Let them be watered, and the house kept at 45° at the most for all the first month. We are to presume that the plants are pruned down to the usual two eyes, and all the small wood cut out. At the end of the first month, which has no apparent effect on the plant, the temperature may be raised gradually to 55°. They must be examined the instant the buds burst, and if there be any appearance of fly, the house must be fumigated, and the plants well syringed. As the shoots grow the temperature may be raised to 60°, and be placed near the glass, that they may not be drawn. If you can raise the temperature sufficiently to enable you to give plenty of air, let it be done. Our business is not so much with the forcing of flowers the first season as it is to establish the plants in their pots; and, by forwarding them three months the first year, have them to be ready three months earlier to begin their work next year. There will be straggling flowers among them the first year, but they are better picked off while buds than be allowed to flower and check the growth of the plant. Let it complete its growth as carefully as if there were the flowers. As soon as the weather will make it safe, let the plants be plunged in the shade up to the rims of the pots, and remain there until the leaves fall and the wood ripens. They may then be pruned to two eyes for each strong shoot, and cut out all the weak ones. Let them be placed in the cool house as before, which house must not be a higher temperature than 45°. It will be seen that from the Rose bushes having had their rest three months longer than those out of doors, they will be as forward without heat as they were the first year with heat, and you may calculate on being able to force them better year after year, and they will not draw so much. They will require the heat increased, but not so early, and they will begin as regularly to open their buds at the earlier period as they used to open at their proper season.

Rose forcers may, in fact, take an excellent lesson from Vine forcers, yet we have seen the best Grape forcers in the kingdom buy, year after year, new two-year established Roses, or one year, to force the same year; and more than once we have seen them fail, with all their care and gently nursing them from 45° to 65° by slow degrees; and when done with, set out to rest themselves, as it was called, but in fact to get back to their old backward habit, instead of remaining ready to begin to work earlier. The only objection that we have ever heard was that the plants were spoiled by forcing, that is, were drawn up too much to be recovered in one year. This is not complimentary to the forcers, but the principal object gained by forcing the same plants continually was this, they became changed in their season, and at length scarcely wanted forcing, a lower temperature being sufficient to bring them to perfection, and they therefore became less inclined to draw every year they were produced. Of course, the pots required shifting occasionally, the pruning was necessary, and, in other respects, they required as much care as their out-of-door neighbours; but the same set of Roses has been forced several years, and if they were not quite so strong as Roses are at their proper season, they were much stronger than the ordinary run of forced Roses at the nurseries. When the flowers are bursting and coming nearly to perfection, it is desirable to lower the temperature gradually to 55°, at which they will last much longer, and become better able to stand the possible changes sustained in removal. The Moss Rose is the principal forcing variety, but Rose du Roi is the best of the others for bringing out of season. These remarks apply as much to standard Roses as to dwarfs on their own roots, but the China, and continuous blooming kinds on their own roots, may be kept in flower all the winter, or rather a succession can be kept up from one end of the year to another. A common hotbed will do as well as houses; and it is only necessary to have beds of different temperature, or rather to have a new bed ready when the old one gets exhausted. The forcing after the manner we have here described applies only to summer Roses on their own roots, and all kinds of varieties on common Briars; for, if the Briar is excited, there is no difficulty about the heads. *Crito.*

ELVASTON CASTLE, THE SEAT OF THE EARL OF HARRINGTON.

(*Concluded from p.* 84.)

Although, as we have stated, the gardens at Elvaston have been, comparatively speaking, but lately called into existence, yet the multitude as well as the magnificence of the specimens of trees and shrubs they contain surpasses common belief. We shall proceed to bear out this assertion by a statement of a few of the remarkable plants which struck us as being well worth recording, and shall begin with

	Height—ft.	in.	Remarks.
Araucaria imbricata	26	0	
Ditto	17	4	There are about 150 of these sizes down to 10 feet; below this there are upwards of 1000 fine plants.
Ditto	16	3	
Ditto	14	9	
Ditto	14	6	
Ditto	14	3	
Abies Douglasii	28	6	
Ditto	21	9	About 200 of these large sizes, and of all sizes about 1000 fine specimens. Three are very distinct varieties, one having red cones.
Ditto	21	6	
Ditto	23	0	
,, canadensis	many hundreds from 8 to 18 feet.		
,, cephalonica	13	6	—Above 100 specimens, from 3 feet to this size.
,, Pinsapo	5	6	—From this size down to 3 feet, above 30.
,, Menziesii	12	6	Great numbers of these, and two distinct varieties.
Ditto	11	3	
,, Brunoniana	3	0	—Across the branches 3 feet; about 30 plants of this size.
Picea grandis	11	9	—Diam. of branches 11 ft. 4 in.
Ditto	9	3	—,, ,, 10 ft. 8 in. Very beautiful.
,, nobilis	9	6	
Ditto	7	7	Of these and lesser sizes there are considerably above 100 plants.
Ditto	8	5	
Ditto	6	8	
Ditto	6	6	
,, Webbiana	15	2	Many of these, and of smaller sizes.
Ditto	10	5	
,, Hudsoniana	many 2 feet across.		
,, Nordmanniana	4	3	The latter is 3 ft. 8 in. across; first plant brought to this country.
Ditto	3	1	
Pinus insignis	22	9	
Ditto	21	1	
Ditto	18	1	
Ditto	17	1	There are many hundreds of these large specimens.
Ditto	16	0	
Ditto	14	0	
Ditto	21	9	
,, macrocarpa	30	4	
Ditto	29	0	Several others down to 10 ft., as well as numbers of smaller specimens.
Ditto	18	3	
Ditto	19	3	
Ditto	20	8	
,, Sabiniana	17	6	
Ditto	14	0	Many others 10 feet and about these sizes; the third mentioned specimen is 17 feet across.
Ditto	16	1	
Ditto	16	0	
Ditto	14	6	
,, Coulteri	11	3	This is very distinct from the foregoing.
Ditto	12	8	
,, Lambertiana	18	10	
Ditto	17	9	Above 30 other specimens.
Ditto	14	0	
,, ponderosa	25	0	
Ditto	24	6	Common variety.
Ditto	21	6	—Very distinct from the former, being remarkably dense and fine, both sorts have seeded, from which many have been raised.
,, Cembra helvetica	18	0	—About this size there are several hundreds.
,, excelsa	15	11	—Do., several varieties exist among these.
,, monticola	5	2	—Several of these.
,, australis	12	0	
,, nivea	7	0	—The first plant introduced to this country.
,, Laricio	30	0	—Above 1000 large plants.
,, austriaca	15	0	—Ditto ditto.
,, Romana	25	0	—Very beautiful.
,, Spanish var. of pyrenaica	19	1	—16 feet 8 in. across; very handsome.
,, pyrenaica	15	0	—13 feet 6 in. across; many of them.
,, apulcensis	15	4	—Several very beautiful.
,, ayacahuite	9	6	—Ditto ditto.
,, Devoniana	5	0	—6 ft. 9 in. across.
,, Lindleyana	10	3	—15 ft. 6 in. across; several.
,, Russelliana	8	0	—9 ft. 3 in. across; very robust; several plants.
,, patula	9	9	—11 feet across; very graceful.
ditto	10	9	—12 feet across; very graceful.
,, macrophylla	6	3	—6 feet across; several.
,, Teocote	4	9	—A number about this size.
,, Llaveana	3	2	—Many.
,, Orizabæ	2	0	
,, pithyusa	7	6	—6 ft. 9 in. across; very dense.
,, occidentalis	7	3	—7 ft. 7 in. across.
,, Pinaster variegata	20	6	—Very handsome.
ditto	13	0	—A large number of these.
ditto	11	0	
Taxus baccata fastigiata	13	1	—Above 1200 large specimens.
Do., gold-striped	9	6	—12 feet across.
Ditto	10	0	—18 feet across.
Ditto	13	9	—Of this above 1000 specimens.
,, canadensis	4	0	—Many.
,, nucifera	4	1	—In fruit; several.
,, Harringtoni	3	0	—4 feet across; many.
,, coriacea	3	6	—Ditto.
,, tardiva	2	6	—Many.
,, elegantissima	2	0	—Ditto.
Juniperus chinensis	18	2	
Ditto	14	0	Above 1000 grand specimens of these.
Ditto	13	9	
Ditto	15	9	
,, recurva	11	9	Above 100 specimens.
Ditto	12	0	
,, cracovia	8	6	Several.
,, daurica	9	0	
,, lycia	8	6	—Many.
,, suecica	11	0	
Ditto	10	9	Many of such sizes, and hundreds nearly as large.
Ditto	9	6	
,, hibernica	11	3	—Above 1000 grand specimens.
,, excelsa	13	0	
Ditto	10	6	About 200 specimens.
Ditto	10	6	
,, thurifera	13	0	Many.
,, canadensis	13	3	
,, squamata	—	—	—5 feet across.
Cupressus sempervirens	17	7	—A large number about this size.
,, torulosa	14	0	
Ditto	13	6	Above 100 fine specimens.
Ditto	12	6	[beautiful.
,, thyoides variegata	12	6	—Above 100 fine ditto, very
,, thurifera	13	0	—Many fine plants.
,, macrocarpa	9	0	—About 100 specimens.
Cryptomeria japonica	9	0	—7 feet across (*in fruit*); of this many fine specimens.
Thuja orientalis	14	0	—Many hundreds.
,, filiformis	6	2	—Several beautiful plants.
,, Wareana	9	6	—Above 100 large plants.
,, plicata	4	0	—A considerable number.
,, tatarica	10	0	—Many.
Taxodium sempervirens	10	6	—Circumference of stem 14 ins.; many of this.
Cedrus Deodara	22	0	
Ditto	25	4	Many hundreds of these sizes, and some thousands of what would be considered fine specimens.
Ditto	24	6	
Ditto	25	8	
Ditto	25	0	

The above only conveys a very imperfect idea of the contents of the ornamental gardens at Elvaston. The reader must rather deduce his own inferences from the imperfect sketch we have given, than from any list which a cursory visit of a few hours could produce. We have only referred here to a few Conifers and Taxads, but it may be stated that no evergreen tree or shrub known to bear our climate, has been omitted a place in this collection, however difficult or expensive they may have been to procure. Variety, therefore, an important element in all garden scenery, has been attained in no ordinary degree here; and this is maintained throughout the whole, as far as may be consistent with the principles so manifestly exemplified in every part, together with the character emanating from those principles, which demanded, under particular circumstances, that the arrangement should be perfect as a whole, in relation to its individual parts; hence it became necessary to employ, in certain divisions, a greater number of particular species or varieties to express clearly the idea upon which the arrangement was based. Certain styles of gardening admit of con-

tinuous variety throughout all parts; others, again, as at Elvaston, depend for their variety on a combination of materials of a particular character, brought together with a view to the completion of a certain object, in order that that object may contrast advantageously with other objects differently expressed, and with other varied materials. It must, therefore, be evident that individual parts distinctly required in the detail a certain amount of uniformity to contrast and balance other parts, without which conformity of idea as well as design became confusion. In order therefore to rightly interpret the great beauties of Elvaston, the vastness of the whole must be grasped by the mind which attempts the task.

We beg to observe, in conclusion, that these gardens, great and unrivalled as they are, are by no means finished. The same great spirit of improvement is still in active operation, neither blunted nor dismayed by the majestic grandeur of the designs already completed, which strike us with wonder and astonishment. The noble proprietor of Elvaston, derives an amount of pleasure of the most rational and most enjoyable kind in the accomplishment of his great garden schemes, which no other pursuit could have afforded him, contributing health with the most refined amusement. From his castle, in the words of the poet,

"A wood coeval with himself he sees,
And loves his own contemporary trees."

R. Glendinning.

DISEASES OF PLANTS.

(*Continued from page* 86.)

Genus XIV. Polysarcia, *or extraordinary Augmentation of Bulk.*—This disease might be easily confounded with others, if attention be not paid to its peculiar symptom, the extraordinary increase of volume, accompanied sometimes by bursting; or if that does not take place, degenerating into other diseases, such as ulcers, for instance. These results do not occur in the allied disorders, where excess of vigour in vegetation prevents the production of flowers or fruits. *Polysarcia* generally arises from sthenical causes. Abundant nourishment and excess of sap, depending on over energy in the natural stimulants, may produce it; so also too much water or cold, which does not allow that respiration which is necessary in vegetable economy, may occasion the same phenomenon. I, therefore, distinguish three species.

First Species. Apparent Polysarcia.—In this case the enlargement is followed by an irregular splitting, not longitudinal, as in the case of Rent or Screpolo. It is the easiest of cure. When the aperture appears to have attained its full size, it must be treated as I have directed in the case of ordinary wounds.

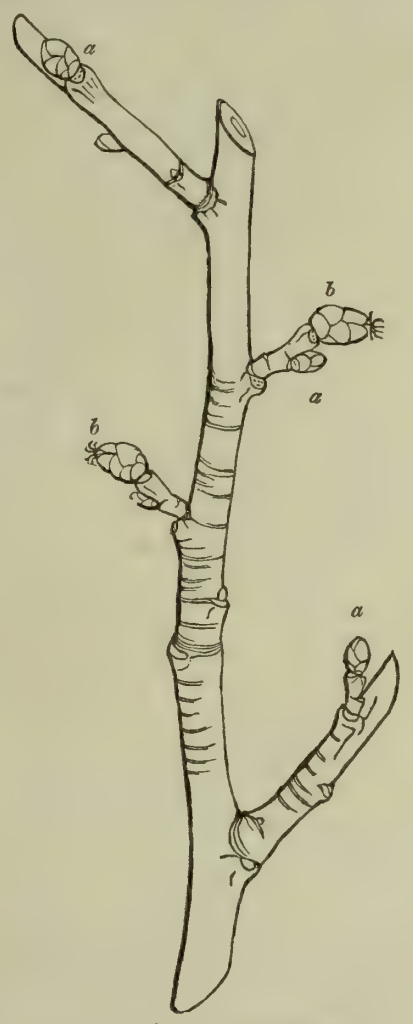
Second Species. Concealed Polysarcia.—Sometimes, although rarely, arborescent plants will exhibit enlargements, but the epidermis has sufficient strength to resist the force of the sap without bursting. The disease may thus be said to be concealed. Where the indications of its existence are certain, the bark, whether of the branch or of the root, may be pierced, so as to allow the issue of the superabundant matter. Sometimes also cautery may be advantageously applied.

Third species. Polysarcia of Fruit.—Plenck classes the bursting caused by *polysarcia* amongst external injuries. To me, however, it appears to be merely the last stage of the disease. I have, therefore, established this species of *polysarcia of fruit*, which in rainy seasons is very common in the Grape and some other fruits. There is no remedy for it. The fruit, from the abundance of rain, becomes over filled with juices, which it cannot assimilate for want of the requisite stimulus. The skin gives way to the pressure of these juices and bursts.

Genus XV.; *one species.* Anasarca, *or Softening and Watery Swelling of all parts of a Plant.*—Many plants, especially herbaceous ones, when grown in a rich and well-watered situation, become not only more bulky than usual, but acquire a soft and tumid consistence, with an insipid and watery flavour. This disease is almost always the result of a moderately warm season, with frequent rains. It is the cause of the inferior quality of wines, which in some years have no strength, for want of the development of saccharine matters. Kitchen garden vegetables, especially roots and bulbs, are very subject to it. It is very nearly allied to *polysarcia*, the only difference being the excessive softness the plant acquires without any bursting. As the disease is owing to over-irrigation, it can be prevented in gardens, but its cure is impossible. In years where rains are unusually plentiful, it may be observed also in the grains of corn. When scarcely formed, instead of drying up, they become soft, and if in the least degree stimulated by heat, they will develop their germs, and young plants will form in the ear itself, as I have myself observed in my youth. The same thing will happen in plants subject to *bulbomania*, independently of those which naturally produce bulbs mixed with their seeds. In this case the disease assumes a very different aspect, but its origin is the same—a superabundance of juices, which, for want of the proper stimulus, is unable to flow in the ordinary channels.

PRUNING.—THE FILBERT TREE.

The Filbert Tree is one of those which does not contain all the parts necessary for the production of fruit in the same bud. Some buds develope only the male parts, and others only the female; the former are comprised in those pendant yellow catkins, easily recognised in the end of winter and early spring. The female portions are less conspicuous; all that appears of them are some slender, deep crimson stigmas, protruding beyond the apex of the buds, as represented at *b b*. On these, fertilising particles from the catkins either fall naturally, or are otherwise brought in contact with them whilst being blown about by the winds; and fruitfulness is the result. If, on the contrary, there are no catkins, or if they are prematurely cut away in pruning, there can be no fruit. Pruning should not be commenced till after the appearance of the crimson stigmas at the apex of such buds as *b b*, and after the full expansion of the catkins. When the latter have fulfilled their purpose, they fall off. After fertilisation, the buds *b b* elongate into a twig much the same as other buds; but towards midsummer the formation of the cluster can be seen. The cluster is always terminal. When catkins are wanting on the cultivated trees, those of the common Hazel, when they are fully expanded, may be hung on the branches.



a a a, wood-buds; *b b*, blossom buds.

The county of Kent has been long celebrated for the production of large crops of Filberts. That mode of pruning must be good which has been successfully practised for generations; and we, therefore, cannot do better than give the method pursued by the Maidstone cultivators, as it is minutely detailed by the Rev. William Williamson in the 4th vol. of the first series of the Transactions of the Horticultural Society. The author of the communication treats the cultivation of the Filbert under the following divisions: *Soil*, *Raising the Plants*, *Manure*, and *Pruning;* which last, he adds, forms the great distinction between the cultivation in Kent and in other counties.

"The suckers are taken from the parent plant generally in the autumn, and planted in nursery beds (being first shortened to 10 or 12 inches), where they remain three or four years. They are slightly pruned every year, in order to form strong lateral shoots, the number of which varies from four to six. But though it is the usual practice to plant the suckers in nursery beds, I would advise every one to plant them where they are to remain, whether they are intended for a garden or a larger plantation; and after being suffered to grow without restraint for three or four years, to cut them down within a few inches of the ground. From the remaining part, if the trees are well rooted in the soil, five or six strong shoots will be produced. Whichever method is practised, the subsequent treatment of the trees will be exactly the same.

"In the second year after cutting down, these shoots are shortened; generally one-third is taken off. If very weak, I would advise that the trees be quite cut down a second time, as in the previous spring; but it would be much better not to cut them down till the trees give evident tokens of their being able to produce shoots of sufficient strength. When they are thus shortened, that they may appear regular, let a small hoop be placed within the branches, to which the shoots are to be fastened at equal distances. By this practice two considerable advantages will be gained—the trees will grow more regular, and the middle will be kept hollow, so as to admit the influence of the sun and air.

"In the third year a shoot will spring from each bud; these must be suffered to grow till the following autumn or fourth year, when they are to be cut off nearly close to the original stem, and the leading shoot of the last year shortened two-thirds.

"In the fifth year several small shoots will arise from the bases of the side branches which were cut off the preceding year; these are produced from small buds, and would not have been emitted had not the branch on which they are situated been shortened, the whole nourishment being carried to the upper part of the branch. It is from these shoots that fruit is to be expected. These productive shoots will in a few years become very numerous, and many of them must be taken off, particularly the strongest, in order to encourage the production of the smaller ones; for those of the former year become so exhausted that they generally decay; but whether decayed or not they are always cut out by the pruner, and a fresh supply must therefore be provided to produce the fruit in the succeeding year. The leading shoot is every year to be shortened two-thirds, or more should the tree be weak, and the whole height of the branches must not exceed 6 feet.

"The method of pruning above detailed might, in a few words, be called a method of spurring, by which bearing shoots are produced, which otherwise would have had no existence. Old trees are easily induced to bear in this manner, by selecting a sufficient number of the main branches, and then cutting the side shoots off nearly close, excepting any should be so situated as not to interfere with the others, and there should be no main branch directed to that particular part. It will, however, be two or three years before the full effect will be produced. By the above method of pruning, 30 cwt. per acre have been grown in particular grounds and in particular years, yet 20 cwt. is considered a large crop, and rather more than half that quantity may be called a more usual one; and even then the crop totally fails three years out of five; so that the annual average quantity cannot be reckoned at more than 5 cwt. per acre.

"When I reflected upon the reason of failure happening so often as three years out of five, it occurred to me that possibly it might arise from the excessive productiveness of the other two. In order to ensure fruit every year, I have usually left a large proportion of those shoots which, from their strength, I suspected would not be so productive of blossom-buds as the shorter ones; leaving them more in a state of nature than is usually done; not pruning them so closely as to weaken the trees by excessive bearing, nor leaving them so entirely to their natural growth as to cause their annual productiveness to be destroyed by a superfluity of wood. These shoots, in the spring of the year, I have usually shortened to a blossom bud."

That style of pruning which is found the best for the Currant, is also considered, in general, the best for the Filbert. The Maidstone growers prefer plants raised from layers, and which have been bedded out in the nursery for two or three years. Each plant should have one strong upright shoot, which after the final planting should be cut back to 18 inches; this will admit of 1 foot of clear stem, above which height shoots should be encouraged, to form the head. Six branches will be a sufficient number. Their leaders should be annually shortened, in order to make them throw out laterals. They should be trained in form of a goblet, or somewhat approaching thereto. This is merely a mechanical operation.

With regard to the management of the laterals, no precise rule can be laid down. It must be varied according to the nature of the soil, and the greater or less humidity of the climate. If the soil is rich and moist, strong shoots, too strong for any but wood-buds being formed on them, will be produced. Instead of the fruitful laterals produced on the Kentish soil, rod-like walking canes will be produced when the plants are grown in many other parts of the kingdom. They must be cut back, otherwise they would form strong cross branches; but then we must consider that each of these rods, with their ample foliage, has contributed to the formation of roots during the summer; that these roots will be adequate to supply nourishment in the following season to all the shoots made in the present season; but when the shoots are necessarily reduced, say more than one half, either by shortening or cutting out entirely, then the remaining portion has more than double the quantity of roots necessary for its nourishment; and it will, in consequence, be stimulated to grow with excessive luxuriance. There are two ways by which the excessive luxuriance may be prevented by pruning, namely, by summer pruning, and by root-pruning.

As the roots are formed by the action of the leaves, it is evident that the fewer leaves there are on a plant during the summer of 1850 the less will be the quantity of roots formed in that period; and just so much diminished will be the contributors to luxuriance for the summer of 1851. By winter pruning we reduce the subjects to be fed, but not the feeders; but by summer pruning we proportionately reduce both, and that to any extent that may be found necessary. Therefore, when the laterals are likely to prove too luxuriant, check them in the early part of the season; when they have made 6 or 8 inches in length, pinch off their tops; and when they push a second time, pinch them back to the first bud formed by the secondary shoot.

In the following spring cut them back to a female blossom bud, if any; but otherwise, spur them nearly close to the branch. By the annual repetition of such proceeding, fruit will ultimately be obtained; and the fruiting will prove a check to over-luxuriance. If root-pruning be resorted to, it should be performed in the autumn.

Suckers should be carefully removed; or rather they should be eradicated as soon as they make their appearance, if this can be done without injuring the roots; otherwise autumn or beginning of winter is the best time for laying bare the roots for some distance round the stem of the tree, and thoroughly clearing off all vestiges of suckers. *R. T.*

VILLA AND SUBURBAN GARDENING.

The practice of what is termed root pruning has of late years attracted a good deal of notice. Root pruning is, however, no modern discovery. It has been followed less or more for a century, and perhaps even longer; but the system of docking the roots, and dwarfing trees, is somewhat new in this country, although well understood in the Celestial Empire. The result of this practice has been the production of stunted, bark-bound trees, the fruit from which partakes more of the character of the wood of the tree than that which we desire to find in a plump well-grown Pear. I therefore take this opportunity of cautioning my amateur readers on a point which, to my personal knowledge, has sadly misled many of them. It may be stated, and in fact recognised as an axiom, that unless a tree is in a kindly growing condition, the fruit will at all times be inferior. Let it not be inferred from this that I mean over-luxuriance; in that case wood alone will be made.

Pears should be generously used when they are first planted; the ground should be in good heart, and manured near the surface. If in the course of a few years the trees indicate a tendency to produce more wood than is desirable either as respects the fruitfulness of the trees, or outgrowing the limits originally assigned them; then cautiously examine the roots, and carefully curtail their exuberance, but this should be done by degrees, and the month of August should be preferred to any other for the operation.

The most important point in the management of Pear trees hinges on the summer pruning; many imagine that when the trees are planted there is nothing more to be done, except picking the fruit. This notion has converted some little gardens into little forests. During summer let the superfluous shoots be stopped back to within 3 inches of the old bearing wood, broken off rather than cut. This will cause flower-buds to be formed at the base of the shoots so treated. The projecting part can be removed in autumn or winter close to the fruit buds; by following this mode of treatment the trees will be kept within a limited space, and their productiveness secured.

The following 25 kinds will furnish ripe fruit for a long time, and all of them are of first-rate excellence.

Jargonelle, August
Dunmore, September
Monsuette, Sept. and Oct.
White Doyenné, Sept. and Oct.
Seckel, October
Louise Bonne, of Jersey, Oct.
Gansel's Bergamot, October and November
Eyewood, Oct. and Nov.
Marie Louise, Oct. and Nov.
Beurré Diel, Oct. and Nov.
Beurré Bosc, Oct. and Nov.
Thompson's, November
Napoleon, Nov. and Dec.
Fovelle, Nov. to Jan.
Glout Morceau, Nov. to Jan.
Hacon's Incomparable, Nov. to Jan.
Chaumontelle, Nov. to Jan.
Ne plus Meuris, Nov. to March
Passe Colmar, Dec. and Jan.
Beurré d'Aremberg, Dec. and Jan.
Winter Nelis, Dec. and Jan.
Knight's Monarch, January
Jean de Witte, Jan. and Feb.
Easter Beurré, Jan. to March.
Beurré Rance, Feb. to April.

Pharo.

Home Correspondence.

Culture of Pine-apples at Trentham.—Since my article on this subject appeared, I have received several letters asking for additional information; and, to prevent others the trouble of writing for the same purpose, I take the liberty of replying to their inquiries through the medium of your journal, at the same time assuring them that I do so with the greatest pleasure. What has caused most enquiry is, the apparent difficulty of obtaining a bottom heat ranging from 80° to 85°, by means of the return pipes from those which supply the top heat of from 60° to 65°; but this matter will appear clear when it is considered that the heat accumulates in the soil, as it can only escape from thence by the surface, and then through the medium of the heated atmosphere. These causes, aided by the foliage of the plants, check radiation, and thus cause the lesser power to maintain the greater heat. On the other hand, the atmosphere loses heat rapidly, by the constant and rapid radiation from the entire surface of the pit. The plan given at page 85 shows that the bottom and top heat are both supplied by one set of pipes, and this causes no inconvenience even in the heat of summer, as at first sight seems probable. It would appear desirable that the pipes for supplying the bottom heat should be separate and distinct from those which supply the top heat, and furnished with stop-taps or valves to regulate it; but, besides adding considerably to the expense of first construction, we find that in practice they are unnecessary, as the bed during summer derives assistance from the sun in nearly the same proportion that the atmosphere of the house does; so that the moderate fire heat necessary on account of the top heat at night, and in dull weather, is nearly sufficient to keep up the bottom heat also; and when more is required, we do not consider it any disadvantage that the top heat is somewhat raised at the same time, as the admission of more air then takes place, and thus the plants enjoy a free circulation of air resembling the breeze of their native isles. We also find in practice that the bottom heat is kept up at an expenditure of fuel very much less if pipes are used than it can by means of tanks; and very little, if any, extra fuel is necessary, on account of the top heat, as the circulation is more active, from its having to pass through the higher ranges of pipes. When there is a separate set of pipes attached to the boiler for keeping up bottom heat, the fires made purposely to keep up the bottom heat require nearly as much fuel as if the water was allowed to circulate through the top pipes also; and if the valves in the top pipes have to be partially closed, to impede the circulation, the heat is not so regular in all parts of the house or pit; and where the circulation is not free and rapid, a greater quantity of fuel is required. One inquirer is anxious to know if any means are used, when the plants are old or large enough, to throw them into fruit, such as drying them off, or keeping them cool any length of time. My answer is, No; we do not adopt any such means. It is effected by following such a course of cultivation, with regard to heat and moisture, light and air, as shall keep the plants progressing, without the slightest check, but at the same time bring them to maturity as quickly as possible. This is only to be managed by liberal ventilation, in company with heat, light, &c., and by such treatment the plants attain sufficient strength to produce fruit, while in size they appear to be mere suckers, excepting that their sturdy vigour, and the curvature of their leaves, show that they are plants indeed. The age of the plants when they show fruit, varies from 14 to 20 months; we have some now showing, which were only planted from the reserve rows in the end of last July, at which time they were probably six or seven months old. He further asks, how we manage to get them up at the periods mentioned. This is done simply by planting some out in every month; in every case selecting the most forward plants from the reserve rows, and taking care also to plant a few suckers at similar intervals. In this way a gradual succession is secured, and the plants throw up their fruit in similar order. Even when a pit is cleared for the purpose of entirely renovating the soil, it is replenished with plants of different ages, so that in no case have we a glut of fruit coming in at any season. The order in which the replanting takes place is so exactly described in page 85 *c*, that it does not seem necessary to repeat it. *G. Fleming.*

Food of Birds.—Your correspondent "A. A.'s" remarks upon the food of certain birds are so erroneous, that I do not think they ought to pass by unnoticed. All the finches feed their young with insects, which also constitute a large proportion of the food of the parent birds during the breeding season. The sparrow is one of the most useful birds in gardens in the spring, destroying immense numbers of caterpillars, particularly those of the winter moth (Cheimatobia brumaria), one of the most troublesome insects we have, the larvæ being general feeders, but particularly injurious to Roses, the young shoots being often quite destroyed by them. The cockchaffer is also eagerly sought after by the sparrow. The chaffinch destroys great numbers of small insects, frequently taking them on the wing like the fly-catcher. The titmice never feed upon the buds of trees; insects form the principal part of their food; but they also feed upon seeds and fruit of various kinds. The ox-eye titmouse does much damage to Peas, and I believe it is the only species of the genus that will eat them. The blue tit is injurious to summer Pears and Apples; I never saw either the cole or marsh tits meddle with fruit. Bullfinches seriously injure fruit trees by picking off the blossom-buds; and sparrows will sometimes feed upon the buds of Currant and Damson trees, but I never knew them attack the Gooseberries. The song thrush destroys immense numbers of shell snails, and on this account is very serviceable in gardens; and although I admit that some birds are destructive at times to the produce of our garden, I am convinced that on the whole they do far more good than harm. *Henry Doubleday, Epping.*

Best time for Felling Larch.—The remarks of "U. L." and those of his carpenter, in your Number of Feb. 9, entirely confirm the theory of "Arborator" as to the proper period for felling the Larch. The decortication of the trees in spring prevented the return of the sap to the root, as effectually as if the trees had been felled. The sap having risen, the tops on which some bark was left, would remain growing during the succeeding summer, as may be noticed by any observer, when Oak or other hard wood is decorticated in the spring. The pruning of Larch is attended with bad effects, as the resin exudes from the wound and produces the Aphis lanifera, which causes the white disease so common on Larch and on Apple trees. [!!!!!] *A Practical Sexagenarian Arborator.*

On the Use of Ammonia in Plant Houses—You well remark (p. 83) "that it is strange that an agent so simple, so easily procured, and applied as ammonia, should be so sparingly employed—at least in a proper manner." Few gardeners who have observed the extraordinary luxuriance exhibited by plants grown in brick pits, heated, and having a regulated supply of this powerful agent in a gaseous form, from "linings" of fermenting horse-dung, will be inclined to doubt its value or hesitate to adopt its use in plant houses when obtained from the more elegant and less bulky, but not less effectual form of the "carbonate." And as many of your readers will, doubtlesss, in the coming season be anxious to test its efficacy, they will find the necessity —whether using the more homely linings, or the salt—of bearing in mind the concluding words of your article on this subject, "that this most advantageous process requires to be conducted with judgment and caution." I have used the carbonate occasionally last season with benefit by applying a small lump of it, moistened, in the way you direct, to the hot pipes; or sometimes I dissolved a small quantity in water, and with it, from a fine rose or the engine, sprinkled the hot pipes and boiler, thereby filling the house with vapour holding the ammonia in solution, which, when condensation took place, conveyed it to the plants somewhat after Nature's own way. While on this subject, I may observe, that of late ammoniacal gas has been used as "more effective, easier of application than tobacco or other established remedies" for the destruction of the insects that infest plants, and some of your readers may be inclined to try it. I would, in this case, even more than the other, urge the caution you recommend, and not until practised in its application, try it, unless on individual, and not the most valuable plants. I have seen specimens subjected to its influence for a very short time, nearly done for. It may, if properly understood and managed, be very effectual, and I know it to be so; but it is "a process that requires to be conducted with judgment and caution;" and in the absence of these I would strongly recommend this "counter-blast" to be avoided, and the innocuous but effectual fumes of tobacco only employed to destroy the tiny plant-suckers. *A. B.*

Sunday Schools.—I was happy to see the remarks of "G." on the mutilations of timber, miscalled pruning it. On looking at the illustrations, I could not help wishing that some publisher would favour the world with a few such, drawn and coloured from Nature, in a style corresponding to "Varty's Graphic Illustrations of Animals." I am far from wishing to undervalue the last-named work, but I think the walls of our Sunday-school rooms would be more profitably covered by such illustrations as I have suggested. Many a country peasant might get hints from such illustrations that would be of infinite value to him in after-life. It is probable that several of the scholars will have to do with trees hereafter, probably very few with elephants or camels. *Diss.*

Worthlessness of the Spanish Chestnut as Timber.—I am desirous to record, for the benefit of others, the disappointment I have experienced in Spanish Chestnut timber. I had two fine trees of this Chestnut which I felled a few years ago, and had them sawn into boards and thick planks. When the timber was cut I was pleased with its appearance; but after it had been sawn about a twelvemonth, as it got dry, the boards began to split and part into many slips and pieces; even planks 5 inches thick have parted in many places throughout their whole length though they have never been used, but have lain upon a floor untouched. The cause appears to be a want of cohesion between the annual circles of growth, for as the boards dry they part along the lines of growth. A slice of Onion, which would fall into a series of rings, would not be an inappropriate, (though not quite literal) representation of a section of this wood. My father like many others had been led to believe this to be excellent timber, and consequently planted a good deal of it; but finding trees 20 years old only to part into rings in this way, I have had the mortification of rooting up a great many. The soil in which they were grown is the conglomerate, above the old red sandstone. *U. L.* [This statement of course refers to the real Spanish Chestnut; not to the timber often called Chestnut when found in old buildings, which is the produce of the sessile-fruited Oak.]

Melons.—I believe that few things have interested the majority of your readers so much as the remarks on Peas and Beans, and the list of select flower and kitchen garden seeds. In looking over the latter, however, I was rather surprised at the omission of all mention of Cucumbers and Melons; for a young gardener who can cultivate no more than about four or five lights of Melons to make a judicious selection of the kinds from the great number now advertised would, I conceive, be rather a puzzling affair. Now, I beg to state that I have cultivated many of those kinds, but the two which have always given the greatest satisfaction to my employer and myself are Cuthill's Early Scarlet-flesh (this Melon may be made, with little difficulty, to ripen a good crop of fine fruit in the month of May), and the true Beechwood. *W. Sherwood, Englefield-green, Surrey.*

Tackle for Raising Blown Down Trees.—About seven years ago a large Acacia was blown down on its side here. In order to raise it up again, a sort of machine used by bargemen, called "a jack" was employed for the purpose with complete success. Of course many persons were required to raise it gradually, after a very large hole had been dug all round it to receive its roots. A plentiful quantity of water was poured in, and it was supported by props for a year, but it is now growing vigorously, although one of the roots was broken. *H. M.*

——A much larger, and probably much older Cedar (above 100 years old), than that mentioned at p. 88 was blown down here in the year 1810, and put up again, after cutting off the broken and maimed branches, with perfect success. It is still flourishing, having put out fresh branches and borne fruit on them. It was pulled up by means of triangle and pulleys by oxen. It was thought a hopeless operation when down. The tree was too fine a one and too valuable not to make the attempt. *F. D.*

——The following kind of apparatus is of the simplest construction, but is capable of raising a great weight; I used it in raising large trees last spring. After pro-

viding strong ropes, and nine strong poles, about 15 feet in length, and 10 inches in diameter, I had them placed in threes, each three forming a triangle, and each triangle placed so as to form an equilateral one with the prostrate tree as a centre; a double block with pulleys was hung at the top of the triangle, and through this the rope lifting the tree was passed. A roller of wood was then placed across the two poles most distant from the tree, and round that the rope was wound by hand-spikes. The roller will require to be about 8 inches in diameter, secured at the ends by a hoop of iron, and there should be a teeth wheel at one end, with a latch, to hold every inch as it is gained; only two triangles are necessary for raising, but to prevent the tree, after it has been brought perpendicular, from getting beyond that position, it is necessary to be provided with the means of prevention, for if it is allowed to swing too far it will injure the roots. The raising is, however, the easiest part of the operation. To ensure the tree being preserved, great care will be necessary to prevent it from being shaken by winds before it has made fresh roots; an iron collar should be put round it sufficiently high to resist the force of the storm. Three chains should be fixed to the collar (still forming a triangle), and properly secured in the ground, and the farther they are away from the base of the tree, the more powerful they will prove; a joining screw should be attached to the chains, so that they may be made tight at pleasure. It will be necessary to get some fine light soil well-watered in, so that there may be no hollows allowed to remain among the roots, for much of the success of the operation depends upon this. *A.*

Victoria Regia at Chatsworth.—It will be gratifying to learn that two fine young seedling plants of the Victoria at Chatsworth have come up in the immediate neighbourhood of the parent plant, which is still flowering and doing well. *Joseph Paxton, Feb.* 13.

Descent of the Sap in Plants.—With a view to prove that the sap of Vines would retrogade under certain conditions, I inarched the top of a young Vine, growing in a pot, on to the young wood of a spur of an old Vine which was growing in a Vinery, and as soon as the union of the two had completely taken place, I rubbed off all the buds on the young Vine but the lowest bud next the pot, which I left to grow. Day after day I then continued cutting through this young Vine close under the remaining bud, until it was quite separated from the root in the pot. The shoot from the bud went on growing, and at the same time throwing down a large amount of woody matter at the cut part, just where it started from; but there did not appear to be any enlargement on the lower lip of the cut, nor in the stem of the young Vine through which the sap was retrograding, either while the separation was being performed or afterwards. *John Caie.*

Medlar Jelly.—Take quite ripe medlars, wash them and put them into a preserving pan with as much water as will cover them; let them simmer slowly until they become quite a pulp, and then strain through a jelly-bag. To every pint of the liquor add three-quarters of a pound of lump sugar; boil it an hour until quite clear and a good jelly; put it into pots when cold. *L.*

Fuchsia spectabilis.—As much difficulty has been experienced not only in growing this Fuchsia, but even in keeping it alive, I am induced to state the favourable course I have pursued. I ordered my plant of Messrs. Veitch, and shortly after receiving it I observed that its leaves and stems were mildewed; and to check the progress of the mildew I placed the plant in a well ventilated greenhouse, as close as possible to the window, but rather shaded from above by high Rhododendrons, &c., in flower. Here it had all the benefit of the air I possibly could give, with occasional syringings when the sun was off it. It soon improved under this treatment, and grew rapidly; and although the mildew did not entirely vanish, yet it did not seem to effect much injury. It was potted and repotted in light loam, and is now in an 8-inch pot (it was a very small plant when received), 2 feet high, with six stems, the shortest (except one which had its top taken off for a cutting, and which is broken into two shoots), being about 19 inches; some of its leaves (with the foot stalk, which is an inch long), are 6½ inches in length. In July I took off two cuttings, struck them in an old spent hot-bed, and then gave them the same treatment as before, placing them upon a shelf to receive the air directly as it entered the house from the open window. During the winter they have received no fire heat, except whilst the frost was with us; they have been kept dry, but not so much so as to produce injury; but they have had as much air as the weather would permit. The young wood and the leaves in parts are still infested with a little mildew, but not near so much as when the frost was on, with the fire heat, and the house shut up. *H. W., Tulse-hill, Brixton.*

Origin of Hamburgh Grapes.—I am very much disposed to concur with the late Mr. Dias Santos, as to the etymology of Hamburgh Grapes. I have some Vines nearly 100 years old of that sort. They were, by the net-work style of forcing, covering the entire roof with small wood reduced to the size of small Cluster Grapes; but pruning and the Polmaise have brought them to the size, quality, and flavour of the Grapes of Castile, and other parts of the Peninsula. I also agree with him about the poultry. The noble breed named Hamburgh never could originate there, but must have been transported from some southern region. *W.*

Gardeners' Advertisements.—I observe not less than 30 advertisements for employment as gardeners or bailiffs, or in both capacities, in your Paper of last week; and I beg to say I think it a great mistake of such advertisers that they do not mention their terms. This item, in addition, would certainly lead to more frequent enquiries, and facilitate engagements. I am wanting a working superintendent for a small occupation, and neither dare insert an advertisement on account of the inundation of applicants, nor answer one from the absence of this point. In fact, I see no way of providing myself but in the home market, Scotland, unless this mode of advertising is adopted. I throw out this hint as alike beneficial to employer and employed. *A Derbyshire Subscriber.* [We have repeatedly pointed out the same error, but without any effect upon the advertisers.]

Societies.

Botanical of Edinburgh, *Jan.* 10.—The President in the chair. The following papers were read: 1. *On the British Species of Chara*, by Charles C. Babington, M. A., F. L. S., &c.—The author stated that having been enabled, through the kindness of Professor Henslow, to examine a set of foreign specimens sent by M. Braun, he had been induced to attempt an arrangement of our native species in a more complete manner than had yet been done. The British species described by Mr. Babington are 16, 10 being under section Nitella, and six under Chara. Dr. Balfour illustrated the paper by some large drawings and figures. 2. *On the Watery Secretion of the Ice Plant*, Mesembryanthemum crystallinum, L., by Dr. Augustus Vœlcker, Professor of Chemistry in the Royal Agricultural College, Cirencester.—The author stated that he had only determined the chief ingredients of the fluid, not being able to make a quantitative analysis, owing to the small amount of liquid at his disposal. He found that the fluid contained organic matter, partly albumen and oxalic acid, chloride of sodium, potash, magnesia, and sulphuric acid. 3. *List of Plants found in the Island of Rathlin*, by Miss C. Gage.—The picturesque and interesting island of Rathlin or Raghery is situated off the coast of Antrim, being 3 miles distant from the promontory of Fairhead, on the mainland, and nearly 5½ miles from Ballycastle. In its geological formation it is basaltic, and presents fine cliffs, with some remarkable columns, more especially at Doon point, on the south-eastern side. It is about five miles in length, and varies from half a mile to a mile and a half in breadth. It is interesting in a historical point of view, particularly in connection with the adventures of Robert the Bruce, the ruins of whose castle are situated on the eastern part of the island. Among the plants noticed were Galium pusillum, Cuscuta epilinum, Scilla verna, Elatine hexandra, Sedum reflexum, and S. Rhodiola, Lavatera arborea, Hypericum Androsœmum, Malaxis paludosa, Eriocaulon septangulare, &c. From Miss Gage's list there would appear to be nearly 300 phanerogamous plants and ferns in the island.—Dr. Cleghorn exhibited the fruit of Hydnocarpus inebrians, which is used for poisoning fish in Malabar, lamp oil being extracted from the seeds; a drawing of Erythropsis Roxburghiana, and also the fruit of Sterculia fœtida. Mr. M'Nab exhibited a specimen of the spathe and flowering spadix of Euterpe montana (Mountain Cabbage Palm), and noticed the rapidity with which the branched spadix is developed. It would appear that the branches of the spadix are confined by the spathe until their resiliency bursts it, and the branches at once spread out at right angles from the common rachis. Dr. Balfour exhibited a specimen of Wood Hyacinth, gathered by Mr. John Jeffrey, in which all the bracts were converted into green leaves, many of them 4 or 5 inches long, and ⅛ in. broad, giving the plant a very peculiar aspect. A letter was read from Mr. Hailstone, mentioning that he had gathered specimens of Cynosurus echinatus near Thorpe Arch, Yorkshire. Miss Gage, Rathlin, was elected an extraordinary member.

Reviews.

Gattungen einzelliger Algen, physiologisch und systematisch bearbeitet. Von Carl Nägeli. Zurich, 1849. Pp. viii. and 139; tab. 8.

In noticing Nägeli's former work on the more recent systems of Algæ, though we were anxious to pay a proper tribute to his real merit, we declared ourselves strongly against the crudity of his views and the rashness with which, after a very imperfect study of the subject, he had pronounced his dogmata. Our criticism is completely justified by the present publication, which, amidst a mass of the strangest confusion and ill-conceived definitions, contains very little that will repay the trouble of wading through statements which a moment's consideration is sufficient to overthrow. To the student it is a mere perplexing maze, and the more practised algologist will grudge the labour of gleaning the few grains of corn which it contains.

It is quite out of our province to enter into details, but we cannot help referring to the excellent remarks contained in the *Botanische Zeitung*, of Oct. 12, 1849, a journal conducted in an admirable spirit, and with just and sober views, and which cannot fail to have a very salutary influence on the rising botanists of Germany. In the present instance we rejoice greatly that the Editor has exposed the folly of generalising at every step, without any tolerable knowledge of the needful premises, and the absurdity of pompous laws on every minute distinction, laws which are often the merest truisms, or which fail at once on any attempt to apply them. We suppose that this form of writing is considered the indication of superior mind by some, or it would not be so frequently adopted; but in our estimation few things are worse than semi-metaphysics. Happily a taste of this kind has not sprung up amongst ourselves, and the philosophy of Oken has appeared in so very unattractive a form, as dressed up by the Ray Society, that our young botanists are not at present likely to be Okenised.

Miscellaneous.

On Chicory Coffee; its History, Manufacture, Adulterations, and means of detecting them. By A. Chevalier, in Journ. de Pharm., July, 1849.—In a memoir upon Coffee, by M. Payssé, some details are given on the preparation of Chicory-coffee in Holland. These were printed by Parmentier in the "Annales de Chimie," for 1806, and are as follows: "The Chicory for this purpose is collected in spring; the roots are conveyed to the manufactory, stripped of their leaves and washed to remove the soil.* They are cut into six parts, and then divided and dried. When dry, they are roasted in great cylinders like Coffee. After the roasting, the Chicory is reduced to a coarse powder. In Holland this Chicory is then mixed in variable proportions with Coffee; the resulting product is very bitter, which is considered by the common people to be a very salutary refreshment, which modifies the stimulant action of the Coffee. Such a favourable idea has been formed of it, that of late this preparation has been employed alone, without any addition of Coffee; and nevertheless it possesses no other virtue than that of colouring more or less readily the water in which it is boiled or infused, of communicating to the liquid the bitter taste of the extractive substances contained in Chicory, and of being far less expensive than Coffee." M. Payssé adds, that "Peas, Lupins, Beans, Beet-root, Carrot, &c., have been employed as a substitute for Coffee." The manufacture of Chicory-coffee, however, remained for a long time stationary and of little importance; but for the last 20 years it has extended considerably, and has become an object of commerce of great importance. Till within the last few years it was carried on principally near Valenciennes; but since then manufactories have sprung up in several localities, especially at Arras, Cambray, Lille, Paris, Senlis in Normandy, Brittany, and in England.† The cultivation of Chicory, to obtain the root for the purpose of converting it into Coffee, has become a source of great prosperity for these districts. The plant requires a deep soil of good quality, and well prepared; the seed is sown in May, and the harvest takes place in October. Some time before collecting the roots, the leaves are mowed, and cows fed with them.‡ The roots are dug up with a spade, placed in heaps, and covered with straw to preserve them from frost. The roots, thus collected, are cut at first longitudinally, and then transversely, in pieces from 5 to 10 centimetres in size; they are then carried into the drying chambers, which are heated with a kind of anthracite which produces no smoke. The roots are placed in layers of about 40 centimetres; they are frequently stirred to prevent them from burning and to facilitate the drying. Four such operations are made in about 24 hours. The roots dried by the above process are known by the name of *Cossètes.* They are kept in granaries; but in general sold almost immediately to the manufacturers, who roast them according to the demand. When the roasting is complete, 2 per cent. of butter is added, and a couple of turns given to the roasting machine. This addition is made in order to impart lustre to the Chicory, and to give it the appearance of roasted Coffee. The substance is then emptied into iron vessels, and after cooling is crushed in vertical stone mills, or between iron cylinders; it is then sifted, and during this operation a small quantity of a reddish colouring substance (*rouge brun de Prusse*), is added to give it the colour of Coffee. The product is then weighed off, and sold in packets under a variety of names, but very rarely under its own; for instance, among others, Mocha Powder, Ladies' Coffee, Cream of Mocha, Pectoral Coffee, Chinese Coffee, Tom Thumb Coffee, Polka Coffee, and Colonial Coffee. We have stated that it forms a very important object of commerce; in fact, 12,000,000 lbs. are consumed in France, and a large quantity is exported. On consulting the tables of the commerce of France, it will be seen that from 1827 to 1836 there was exported from France 458,971 kilogrammes of Chicory-coffee of the value of 321,282 francs; and since this period the amount has vastly increased. *Adulteration.*—This substance is very frequently mixed with other ingredients, the means for detecting which consequently vary. We shall briefly notice them. 1. Brick-dust, ochre, and earth may be detected by incineration and determining the amount of ash; 100 grms. of pure Chicory-coffee furnish from 4 to 5 per cent. of residue; an excess would indicate fraud. 2. Adulteration with Coffee-grounds. This is carried on upon a great scale in Paris. It is easily detected. A sample of the suspected Chicory is dried in a water-bath, and a pinch thrown upon the surface of a glass of water; the Chicory almost immediately absorbs the water and sinks to the bottom of the vessel, whilst the Coffee-grounds remain on the surface. 3. Adulteration with roasted bread, dirt, and remains from vermicelli, &c. This adulteration is generally made with the crusts of bread collected in the streets, crusts which are not always very clean. They are roasted or rather burnt in the oven, ground, and mixed with the Chicory powder. This adulteration can be detected by iodine-water, as the

* The roots are now no longer washed, as this operation is said to injure their value.

† For the last two years very large quantities of dry Chicory have been exported from France into England.

‡ It forms an excellent fodder, but when given alone communicates a very disagreeable flavour to the milk of the animals.

product resulting from the decoction of pure Chicory does not strike a blue colour. 4. Adulteration with roasted Acorns, which may be detected by iodine-water and by persulphate of iron, which in such a case strikes a black colour. 5. Adulteration with roasted corn, Haricots, and Peas, may be detected by means of iodine-water. There is no method as yet known of detecting the adulteration by roasted Beet-root and Carrot. *Chemical Gazette.*

Calendar of Operations.

(For the ensuing week.)

GENERAL REMARKS.

Do not allow a labouring man to be exposed to heavy rains, by which he is liable to have his health injured, and his constitution weakened. In such cases it were far greater charity to send him home until the weather is fit for him to work; but this is seldom necessary in a well regulated place, as there is abundance of work which may be performed under cover, and which will facilitate other operations, when better weather permits them to be undertaken. Among these may be mentioned, making besoms, Orchid baskets, and rustic ornaments for the flower garden and shrubbery in summer; making, painting, and writing or printing labels; washing and painting sashes and other woodwork; washing pots, breaking crocks, tying mats, cleaning and training plants, sorting roots and fruits, and preparing Potato sets. To carry on such work to the best advantage, a sufficient stock of the requisite tools and materials should always be kept ready, that the men may be turned in to the work at a moment's notice. If this precaution be not taken, much of the time which ought to be occupied in doing the work will be lost in setting about it.

PLANT DEPARTMENT.

Many stove plants, especially of the soft-wooded, free-growing kinds, may now with advantage be placed in a moderate bottom-heat for a week or two, to set the roots in motion, before they are repotted; this will prepare them to take immediate advantage of the fresh compost. Get all plant trellises painted, that they may be ready for use when required. Besides conducing to their preservation and neat appearance, the paint effectually smothers any insec s or eggs which may be lurking about them. Active exertions should now be made to eradicate scale, mealy bug, or other insects with which any of the plants (particularly those in the stoves), are infested. Hot water is the best remedy; it may be safely used at 130°, and even higher. It may undoubtedly be applied much hotter, at this season, on the old well-ripened shoots and leaves, than would be safe a month or six weeks hence, when the plants have commenced their new growth. Insects of all kinds are eradicated with much greater ease at this season, when they are, comparatively speaking, in a dormant state, than they can be a few months hence.

FORCING DEPARTMENT.

In clear fine weather assist Nature by giving some additional heat to all the Pineries, as well as to the Vineries and Peach-houses, now in operation. This increase, accompanied by a proportional circulation of air, by means of the ventilators, will be very beneficial; but during dull cloudy weather it is advisable to be sparing of artificial heat, for the double purpose of husbanding the energies of the plants and preventing the needless waste of that expensive article fuel. Avoid too moist an atmosphere in the Pineries, or some of the shows will be liable to come without their crowns; and be very careful in syringing not to allow any moisture to fall upon the flowers. A little neglect on these points, added to a deficient circulation of air, is productive of monstrous crowns, and frequently of deformed fruit. A slight syringing may be given about 3 P.M., to Peaches which are fairly set; but with caution, for much splashing of water at this season is injurious both to roots and branches. Leave a small portion of air on at all times.

FLOWER GARDEN AND SHRUBBERIES.

It is a frequent practice to leave a circle of bare ground round specimen trees and shrubs. This is done to afford greater facilities for top-dressing with manure or compost, and for loosening the ground to admit the sun and air more freely. The effect, however, is not so pleasing as when the turf is continued close up to the plant, and it is besides much more troublesome to keep in order; and for this reason, as soon as the plants are thoroughly established, and have begun to grow freely, the bare ground should be entirely turfed over. In small gardens, it is a common practice to cultivate flowers in and round the shrubbery beds; and though scarcely in good taste, to make similar use of the circles round single specimens, rather than allow them to be covered with turf; in such cases let some leaf soil be dug or forked in, to stimulate the plants into vigorous growth. When planting the flowers in these beds, it should be borne in mind to keep a space quite clear between them and the base of the specimen. We have often seen the lower branches of fastigiate trees entirely spoiled by neglect on this point.

FLORISTS' FLOWERS.

Polyanthuses.—We usually sow the seed before this time; but in consequence of the unpropitious weather, we, like many of our readers, have been obliged to defer it till now. We find nothing better in the way of compost than an old Carnation soil. We sometimes endeavour to keep old stools of our best varieties of Carnations and Picotees over for propagation; and it will sometimes happen, with our best endeavours, that some will perish in the winter. The compost in which they grew comes in very well for our purpose; we have square earthenware pans, or sometimes raisin boxes, which may be bought cheaply at the grocer's; these we fill with the compost before alluded to, first passing it through a wire sieve, putting all the coarse portions at bottom for drainage—keeping, also, a sharp look-out for worms, which are to be carefully picked out. After filling level with the edge of the box or pan, we allow it to settle, and the following day sprinkle the seed carefully on the surface, barely covering it with the soil; they should then be placed in a cold frame, keeping them from excessive wet. Auriculas.—In consequence of the past severe weather, these plants appear to be retarded; this will be all in favour of a good bloom. Give more water and air on every favourable occasion; warm, gentle showers will be highly beneficial. Pansies in pots for early spring flowering should now be top dressed with rich compost; buds which will be too forward may be removed, and the pots placed on a stratum of ashes in a fresh frame; keeping the lights off in all favourable weather, and giving occasional waterings with weak liquid manure. Cover Tulips which have now appeared above ground, whenever there is the least indication of frost. Take up cuttings of early forced Dahlias and strike in heat, and place old roots in hot water pits or dung beds, to forward them for the same purpose.

HARDY FRUIT GARDEN.

It is a common thing to see gardens crowded with large fruit trees, most of which are inferior or worthless varieties, and even the good ones, from want of proper management, are generally unproductive; besides which, their roots exhaust the ground and their tops shade it, thereby preventing the proper development of other vegetables. This system should be altogether changed; all inferior varieties should be removed, and of the remaining ones the standards should be drawn down, if they will bear it, and the dwarfs trained as pyramidal or goblet shaped bushes. If the soil is rich, which may be naturally expected amongst vegetables, the production of gross and superfluous wood should be prevented by regular and systematic root pruning. The most economical arrangement of fruit trees for a garden is to form espaliers on the south side of all walks running east and west, and on both sides of all walks running north and south. On these all the fruit trees, including Gooseberries, Currants, and Raspberries, should be trained, and the whole available space of the garden will be left for vegetables. It will be necessary to support the fruit trees with stakes for a few years, after which they will support themselves. We mention this now, as all planting of fruit trees should be completed as soon as possible.

KITCHEN GARDEN.

Draw up ridges of soil on each side of the rows of early Peas which are above ground, in order to protect them from cold sweeping winds; it will be as well, also, to put the stakes to them at once, and by using the small spray to fill up the bottom it will contribute to their more perfect protection. Care must be taken to prevent the ravages of mice and birds; rats also frequently attack broad Beans just as they are starting, and if not noticed in time, they will destroy the crop.

State of the Weather near London, for the week ending Feb. 14, 1850, as observed at the Horticultural Garden, Chiswick.

Feb.	Moon's Age.	Barometer. Max.	Barometer. Min.	Thermometer. Max.	Thermometer. Min.	Thermometer. Mean	Wind.	Rain.
Friday.. 8	26	29.722	29.675	51	39	45.0	W	.00
Satur... 9	27	29.699	29.428	50	35	42.5	S.W.	.10
Sunday . 10	28	30.035	29.970	48	31	39.5	W.	.00
Monday 11	29	29.927	29.412	48	33	40.5	S.W.	.11
Tues. .. 12	●	29.404	29.254	45	29	37.0	W.	.01
Wed. .. 13	1	30.246	29.837	43	21	32.0	N.	.00
Thurs....14	2	30.126	29.957	51	47	49.0	S.W.	.16
Average....		29.743	29.648	48.0	33.6	40.8		0.41

Feb. 8—Hazy; cloudy; overcast.
— 9—Cloudy and rather boisterous; densely clouded; clear.
— 10—Clear; very fine; clear at night.
— 11—Rain; boisterous with rain; clear.
— 12—Overcast; boisterous with rain; clear at night.
— 13—Clear with dry air; sharp frost at night.
— 14—Sudden rise of temperature; rain throughout.
Mean temperature of the week, 2 deg. above the average.

State of the Weather at Chiswick during the last 24 years, for the ensuing week, ending Feb. 23, 1850.

Feb.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds. N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 17	46.2	31.9	39.0	9	0.32 in.	3	1	2	3	3	3	8	1
Mon. 18	44.7	32.0	38.3	11	0.30	3	1	3	1	4	5	6	1
Tues 19	45.3	31.5	38.4	12	0.64	4	—	3	4	1	7	5	2
Wed. 20	45 4	32.7	39.1	14	0.51	1	3	2	4	2	5	5	2
Thurs. 21	47.2	33.5	40.3	14	0.20	2	4	2	5	—	6	5	—
Friday 22	46.0	34.7	40.4	11	0.29	3	4	5	—	2	5	5	—
Satur. 23	46.9	33.7	40.3	9	0.14	2	2	4	1	—	9	3	3

The highest temperature during the above period occurred on the 23d 1846—therm. 58 deg.; and the lowest on 19th, 1845—therm. 16 deg.

Notices to Correspondents.

Abalia japonica: *O L.* Like all plants which bleed excessively, the best time for pruning this will probably be *when in full growth.* At that time the leaves consume the sap as fast as it rises, and prevent its discharge through the wound. Try one shoot first, and if that succeeds the others may follow. The bleeding of the Vine, the Walnut, and the like, is nothing, when those plants are making wood rapidly.

Azaleas: *Weeks and Co.* Our opinion is that the seedling is not worth growing. As to earliness, it is six weeks behind the common white; nor is it so good in form of flower. The character of "flowers in threes" is not very likely to last.

Books: *R S.* We should imagine that Glenny's "Handbook to the Flower Garden and Greenhouse" would exactly suit you. It is new and contains a great deal of useful information concerning common things.—*M L S.* Dr. Lindley's "School Botany," "Elements of Botany" *complete*, and "Vegetable Kingdom" will form a sufficient botanical library for you, if you do not want mere details of genera and species.—*Alexander.* Babington's "Manual." A common pocket lens or object glass will answer your purpose; but to be able to dissect under it you must have a stand for it. The latter may consist of an upright support fixed into a square piece of wood sufficiently heavy to keep the apparatus steady. The lens should have a hole through its handle, so as to enable it to be passed over the top of the support, which should be shouldered or notched to keep it from slipping too far down the support. ‡

British Orchids: We regret to say that we cannot insert the inquiry in any other than the following form: Miss L. S. Fuller, of Hall-lands, Nutfield, Reigate, will be obliged to any correspondent who can send her roots of the following British orchids, directed to be left at the Meestham station: Conopsea (gnat-like), Conopsea alba, Viridis (green frog), Albida, Papilionacea indivisa, Simia, Variegata, Smithii militaris, Fusca (brown-winged lady), Tephrosanthos, Hircina, Fucifera (drone bearing), Aranifera, Arachnites, Monorchis, Goodyera Cordata, Serapias latifolia, Palustris, Epipactis ensifolia, Scrapias rubra, Corallorrhiza innata, Malaxis Læselii, Calceolus.

Cryptomeria: *A Correspondent* will thank some of our readers to inform him whether or not there are two varieties of Cryptomeria japonica. He states that the first plants received turn brown and russety during the winter season, while others more recently obtained are of a beautiful verdant green, not showing the least change in their colour; in fact, that a difference is traceable throughout the whole year.

Fern: *L.* You may remove it, with great care, by digging deep enough; but you must remember that what are called roots are merely underground stems; the real roots are the black fibres, all of which should be preserved.

Grasses: *Grasshopper.* You cannot have good turf under the heavy shade of trees. Grasses may be made to grow, but they are always shabby in such places. Cannot you thin your trees? If not, it would be better to cover the ground with the common Periwinkle, which is hardy, and will thrive under trees.

Insects: *Constant Sub.* The insects sent are the larvæ of a species of beetle (Tenebrio molitor), commonly called mealworms, from devouring meal, bran, flour, &c. The only mode of extirpation is by carefully sweeping the crevices of the apartment, or by turning a guinea pig in. *W.—W H C N.* The insect is the beetle named Elater lineatus, *Gardeners' Chronicle*, 1845, p. 344. The progeny of it is the common wireworm. Find all you can, and kill all you find. 1, a plant attacked by, 2, the wireworm; 3, the wireworm magnified; 4, the perfect beetle Elater lineatus; 5, the same magnified. *W.*



Labourers: *Constant Reader.* No answer can be given to such inquiries. With very skilful management and good men, a garden may be kept in perfect order with a number of labourers which, under another kind of management, would be wholly insufficient. We have in our eye a place which, some years ago, was worse kept with 36 men than it now is with 20. A good deal depends, too, upon the demands of the household. There is a place in one of the western counties, very like what you describe, which is kept in admirable order, with 11 good men under a skilful gardener. But he is a man of a thousand.

Names of Fruits: *E A M.* The Pear is not known; it is very handsome, russet and very bright red, but scarcely first-rate.‖

Names of Plants: *Ilex.* The Holly leaves are overgrown with a plant called Chlorococcus viridis, in consequence of the dampness to which they are exposed. It will disappear when the Holly sheds its leaves.—*P B.* Rogiera amœna, alias Rondeletia thyrsoidea; a variety of Gongora maculata; Vanda furva.—*Erzeroum.* A thousand thanks. Box just unpacked. Very nice things. You shall hear about some of them presently.

Poplars: *Arborator* inquires, "What is the cause of the general premature decay of the Black Italian Poplar?"

Potatoes: *Enquirer.* A cross between a common Potato and a sweet Carolina Potato! Whoever heard of such an impossibility? Your sweet Potato had probably been growing before it was boiled, or else it had been frozen.

Resinous Trees: *C Z.* The worst time to prune them is in the spring, when they are beginning to grow—the safest in autumn or winter. If you desire to remove the heads of your Firs, do so at the latter season. But had you not better top some, and leave others untouched?

Roses: *An old Sub.* You may plant Roses deeper than many other plants; but it is best to keep the roots within ready reach of the air. Instead of sinking the roots, why cannot you make the earth into small mounds, and put them over them?

Rubia: *M.* Thanks. It would be a proper subject of exhibition in the great affair of 1851, provided it can be had in quantity.

Seeds: *A Sub.* We are sorry to be obliged to say that we *cannot* recommend one seedsman rather than another. Any seedsman of respectability can furnish what you require. If he does not happen to keep them he can obtain them from his London correspondent. There is no difficulty among respectable seedsmen.

Shrubs: *G.* No shrubs will grow well under Beech trees; you may, however, try common Laurels, Hollies, Junipers, Box, Laurestinus, and Privet.‡—*D S.* All kinds of shrubs will succeed on chalk, provided there is sufficient soil above it for them to grow in; if you have only a very thin layer of soil on the chalk, then try such things as Junipers, Box, Yew, Berberis, Phillyreas, &c.‡

Vines: *W T.* Your Vines being young, vigorous, but bad sorts, it will be advisable to graft them. This should be done as soon as they have fairly broken into leaf.‖—*Q.* The Early Black July, Royal Muscadine, Miller's Burgundy, Pitmaston's White Cluster, Black Burgundy, are sorts that will ripen in the open air in this climate in favourable situations. No sort ripens its fruit and matures its wood out of doors in this country so perfectly as the Black Burgundy, and from it the best wine can be made.‖

Misc: *B S.* It is not uncommon for Boronia serrulata to assume a brown colour in winter, and for some of its leaves to drop off; but yours may be wrong at the roots. You had better look to the drainage. The best soil for it is rough peat mixed with a little sharp sand. After potting, it should be placed in the warmest end of your greenhouse. Mildew is easily recognised by its white powder-like appearance. Attack it with sulphur the moment it appears. You will be right in placing your Camellias in 60° moist heat.‡—*C S V W.* Do not be alarmed at your Polypodium aureum casting some of its fronds; if it is healthy it will produce young ones to take their places. Pot your Camellias when they have done blooming, and place them in a moist heat of 60° while they are making their new wood; after that, harden them off by degrees. ‡—*Ilex.* We are not in possession of the dimensions of the machine you mention.‡

Erratum: Under the head "Linnæan Society," in last week's Paper, p. 87, second line from the beginning, instead of "W. Febitt," *read* "W. Tebbitt."

GENUINE PERUVIAN GUANO, direct from the Importer's Stores, LINSEED CAKES, and all kinds of Artificial Manures, may be had at London prices, for Cash, of Messrs. Odams and Pickford, 15, Mark-lane, London.

THE LONDON MANURE COMPANY beg to offer as under, and pledge themselves that every Manure shall be perfectly Genuine:—Corn Manure for Wheat, Barley, Oats, Clover—most strongly recommended from its success last year; it will be found cheaper than Guano, and bear the strictest analysis. Also URATE, Superphosphate of Lime, Sulphate and Phosphate of Ammonia, Nitrate Soda, Fishery and other Salt, Gypsum, Sulphuric Acid, &c.

GENUINE PERUVIAN GUANO.—To insure this free from adulteration, all purchasers, if they prefer it, can receive their warrants from Mr. Purser, and remove the Guano direct from the Warehouses of Messrs. A. Gibbs and Sons, the Importers.

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Country Dealers and Agents supplied.

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PERUVIAN GUANO of the finest quality (as imported by the Contractors) on Sale; also Superphosphate of Lime, Gypsum, Nitrate of Soda, Salt, and all other Manures of known value.—Apply to Mark Fothergill, 201A, Upper Thames-street, London.

POTTER'S GUANO. — This effective MANURE, now greatly Improved, is confidently recommended as a Dressing for all Spring Crops. It is equal to Peruvian Guano, and 25 per cent. cheaper. Also SUPERPHOSPHATE of LIME, GYPSUM, and SULPHATE of AMMONIA, all of guaranteed quality, and Cheaper than at any other establishment in town or country.

Factory, 28, CLAPHAM ROAD PLACE, LONDON.

SEEDS.—FOR SALE, some cwts. of SKIRVING'S SWEDISH TURNIP, WHITE BELGIAN CARROT, and ORANGE GLOBE MANGOLD WURZEL SEEDS; ripened last summer on Whitfield Farm, near Berkeley, Gloucestershire, at 8*s.*, 6*s.*, and 9*s.* per imperial stone, respectively.

Apply to Mr. Morton, Whitfield Farm.

STEPHENSON and Co., 61, Gracechurch-street, London, and 17, New Park-street, Southwark, Inventors and Manufacturers of the Improved CONICAL and DOUBLE CYLINDRICAL BOILERS, respectfully solicit the attention of scientific Horticulturists to their much improved method of applying the Tank System to Pineries, Propagating Houses, &c., by which atmospheric heat as well as bottom-heat is secured to any required degree, without the aid of pipes or flues. S. and Co. have also to state that at the request of numerous friends they are now making their Boilers of Iron, as well as Copper, by which the cost is reduced. These Boilers, which are now so well known, scarcely require description, but to those who have not seen them in operation, prospectuses will be forwarded, as well as reference of the highest authority; or they may be seen at most of the Nobility's seats and principal Nurseries throughout the kingdom.

S. and Co. beg to inform the Trade that at their Manufactory, 17, New Park-street, every article required for the construction of Horticultural Buildings, as well as for heating them, may be obtained upon the most advantageous terms.

Conservatories, &c., of Iron or Wood, erected upon the most ornamental designs. Balconies, Palisading, Field and Garden Fences, Wire-work, &c.

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STRATTON, HUGHES, and CO., have now ready their PATENT TUMBLER CART for the collection of Night-soil and other offensive matters; also their Iron Mill, to be worked by horse-power, water-power, or steam, for mixing and incorporating Nightsoil with Charcoal and other deodorisers. The Tumbler Cart has an iron body with a close cover; can be fitted if required as a Watering-cart, with a Valve and Delivery Pipe for distributing water or liquid manure, and also with an Apparatus for distributing dry manures in any given quantities per acre.

Stratton, Hughes, and Co.'s Tumbler Carts are used for scavenging purposes in Manchester, Bristol, Worcester, Harwich, Rochford, Cardiff, &c., and they are now building them for Chester, Oxford, Huddersfield, &c., besides many for Agricultural Colleges and private individuals. Stratton, Hughes, and Co.'s new illustrated Catalogue of Carts, Waggons, and Agricultural Implements will be forwarded to any address on receipt of 1*s.* 6*d.* in postage stamps.

CHEAP AND DURABLE ROOFING.

BY HER MAJESTY'S ROYAL LETTERS PATENT.

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At the Great National Agricultural Shows, it is this Felt which has been exhibited and obtained two Silver Medal Prizes, and is the Felt solely patronised and adopted by

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Her Majesty's Estate, Isle of Wight,
Royal Botanic Gardens, Regent's Park,

And on the Estates of the Dukes of Sutherland, Norfolk, Rutland, Newcastle, Northumberland, Buccleuch (at Richmond), the late Earl Spencer, and most of the Nobility and Gentry, and at the Royal Agricultural Society's House, Hanover-square.

It is half the price of any other description of Roofing, and effects a great saving of Timber in the construction of Roofs. Made to any length by 32 inches wide.

Price One Penny Per Square Foot.

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☞ The Public is cautioned that the only Works in London or Great Britain where the above Roofing is made, are

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Patent Felt Manufactory, Lamb's-buildings, Bunhill-row, London, where roofs covered with the Felt may be seen.

The new Vice-Chancellor's Courts, at the entrance to Westminster Hall, were roofed with F. M'Neill and Co.'s Felt about two years since, under the Surveyorship of Chas. Barry, Esq., R.A. Her Majesty's Commissioners of Woods and Forests are so satisfied with the result that they have ordered the Committee Rooms at the Houses of Parliament to be roofed with their Felt. Quantity altogether used, 24,000 feet.

Note.—Consumers sending direct to the Factory can be supplied in lengths best suited to their Roofs, so that they pay for no more than they require.

Every information afforded on the construction of Roofs, or any proposed particular application of the Felt.

NATURAL GRASS SEEDS, for PERMANENT PASTURES, AND IRRIGATED OR CATCH MEADOW.

Which may be had Separate, or Mixed, expressly to suit the soil.

MESSRS. JOHN SUTTON and SONS having for many years paid especial attention to the examination of Natural Pastures, and the collecting of various kinds of Grasses which grow naturally in the various soils of England and Wales, for the purpose of introducing an improved system of laying down land to permanent pasture, are thereby enabled to supply the sorts and quantities of Seeds best adapted to suit the soil for which they are intended; and *at much less expense* than is usually incurred. Particulars will be forwarded by post.

Also Finest Lawn Grasses and Mixtures for improving old Pastures. Ashcroft, Liverpool, and other Swedes, White Belgian and other Carrots, Yellow Globe and other Mangolds, True Italian Rye-grass, Drumhead Cow Cabbage, Kohl Rabi, &c.

Reading Seed Warehouse, Reading, Berks.

The Agricultural Gazette.

SATURDAY, FEBRUARY 16, 1850.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

Wednesday,	Feb.	20—Agricultural Society of England.
Thursday,	—	21—Agricultural Imp. Society of Ireland.
Wednesday,	—	27—Agricultural Society of England.
Thursday,	—	28—Agricultural Imp. Society of Ireland.

There are two ways in which a model proposed for imitation will be examined. Some, after the manner of the Chinese tailor, will attempt to copy it literally, to the very "darns" of the specimen before them; or, failing their ability to do that, will loudly deny its suitableness as an example for them: others will aim at imitating, not so much the details, as the enterprise and the intelligence to which they have been owing. Auchness Farm will be looked upon by such as an admirable instance of profit arising from an energetic attention to, and a skilful use of circumstances; both of which are perfectly imitable and always profitable, whether the precise conditions of the case exist elsewhere or not.

We have never met with a more excellent illustration of this truth than is presented in the pamphlet just published by Mr. Caird, of Baldoon, in answer to the numerous criticisms which his "High Farming" had received.* But it is not a vindication of this kind alone, of which his previous publication is here proved to be susceptible. A balance sheet for the year is given in the pamphlet before us, and the profits and expenses of Potato culture are compared with those of a more ordinary green crop cultivation, so as to show that Mr. M'Culloch's experience of agricultural profit is not incompatible with the Potato-rot and Wheat at 5*s.* per bushel.

We only add that Mr. Caird's second pamphlet deserves to be widely read, if for nothing else, as an exceedingly happy specimen of good controversial writing. He had been roughly and in some cases contemptuously treated by the reviewers of his original publication; men in high agricultural stations scrupled not to speak of the "silly pamphlet" of the young Wigtonshire farmer: we venture to predict that whoever may assail him for the future will give him credit not only for equal skill and talent with any who have hitherto contributed to our agricultural literature, but for that common sense too which his opponents hitherto have claimed for themselves. We have never read a pamphlet which proved in its author a happier union of intelligence and skill as a practical farmer with wit and ability as a literary man.

At a general meeting of the Highland and Agricultural Society, held lately, a report was made by the directors, recommending that tenant-farmers who are members of any local agricultural association should be admitted to the Society on a reduced scale of charges. The terms of the recommendation are to the effect that the annual subscription for tenant-farmers shall henceforth be only 10*s.* instead of 1*l.* 3*s.* 6*d.*, with the power of redemption at five guineas instead of 12 guineas as formerly. A recommendation, similar to this, was made by ourselves last year in a leading article, and we are glad to find that the directors have taken up the matter in such a manner as will likely lead to the recommendation being adopted. If it be accepted, of which there seems little doubt, a highly advantageous opportunity of joining the Highland and Agricultural Society will be afforded to every farmer who is already, or may become, a member of a local Society.

The proposal appears to be a judicious one in many respects, inasmuch as it will tend to strengthen local associations by increasing their membership, while at the same time they will constitute the natural and proper sources from which the parent society may look for a steady accession of strength to its membership and funds. By thus infusing a popular spirit into the Highland Society, the directors not merely widen the basis upon which to carry on their operations, but they also increase the probabilities of making these operations more immediately felt and more permanently useful. The first obvious effect, as already observed, will be to strengthen the local societies—many of which there is reason to fear are in a languishing condition—and afterwards to link them together in the common duty of supporting the parent society. The circle of action will thus be complete, and a system set agoing which to appearance possesses all the elements necessary to stability and progressive expansion.

The next point to be considered is the question—Will the tenant-farmers of Scotland generally respond to the liberal and accommodating spirit displayed by the directors of the Highland Society, supposing their recommendation to be adopted? Our remarks in a former article on this subject, as well as at present, assume that they will do so readily, and that they only wait a reasonable adjustment of the terms of admission in order to come forward *en masse* to give the Highland Society what it has hitherto lacked—the hearty support and co-operation of the tenantry of Scotland. The directors have testified their respect for, and anxiety to meet the wishes of, the farmers, by resuming the annual exhibitions of stock and implements; and this resolution has been adopted, we are inclined to believe, with considerable monetary difficulties staring them in the face. If, therefore, the farmers are in earnest in their approval of these annual exhibitions, let them show it by a course of action equal to the exigencies of the case. The directors have done *their* duty, let the farmers do theirs also. What we advise is, for every farmer in Scotland, who can afford it, to make himself a life-member of the Highland and Agricultural Society, by a *single* payment of five guineas, as soon as the recommendation of the directors has been agreed to. The sum thus placed at the disposal of the directors would form a large and permanent fund, the interest upon which would enable them more thoroughly to systematise the operations of the Society, and advance the practical interests of agriculture.

The farmers of Scotland have it completely within their power to help forward their own interests by responding to the proposed recommendation of the directors of the Highland Society. Hitherto the help has come too much from the other side, and probably there has been too much coaxing required to draw out the support of the tenant-farmers in behalf of the parent societies. That there are many noble exceptions among them—many farmers who are not only members but have been directors of these societies—only makes the rule more obligatory on the defaulters. The difficulty of moving the agricultural body generally in favour of any practical proposal, the advantages of which are not perhaps immediately realisable, is somewhat remarkable when contrasted with the spontaneous and almost instantaneous response accorded to by the manufacturing class to projects of competition and exhibition of a far more formidable character. We are aware that some farmers even go the length of affecting to under-rate the utility of agricultural societies, yet, strange enough, these individuals frequently disprove their own cavils by adopting the very improvements which but for these societies had probably never been made public. We are inclined to think that few such objectors are to be found in Scotland—otherwise it sadly belies its character for intelligence—and we would earnestly recommend the secretaries of the local agricultural societies of that country to use their influence in bringing the recommendation of the directors of the Highland and Agricultural Society under the favourable notice of their own members.

* High Farming Vindicated and Farther Illustrated. By James Caird, &c. Adam and Charles Black, Edinburgh; Longmans, London.

EGYPTIAN WHEAT.

As I have been applied to by some of the subscribers to the *Agricultural Gazette* to publish some additional information respecting the Wheat I have before referred to, with your permission I will endeavour to give the information required. I obtained it late in the year 1848, under the name of Mummy Wheat; but my opinion has always been that no Wheat taken from mummies retains vitality. I have, however, three specimens now by me of Mummy Wheat, and of the genuineness of two of them there can be no doubt, and I shall very soon put them all to the trial whether they will germinate or not; but if they should, or either of them, it will be to me an agreeable surprise. My own opinion has always been that farinaceous seeds will retain vitality but for a very few years under any circumstances whatever, but that oleaginous seeds, on the contrary, will retain life to, I believe, an almost indefinite length of time.

But although I have no faith that this Wheat was found in a mummy, yet there is no doubt but it originally was brought from Egypt, and that it is the same Wheat, and therefore to me most interesting, which is referred to in the 41st chapter of Genesis and 5th verse, in Pharaoh's account of his dream. I state that I have no doubt but such is the fact, because travellers, on whose veracity I can rely, have informed me that they have seen it grow there, and that it exactly answers the

description of it recorded by the Divine historian. But I will extract the account of it as given in a comment in the place I have here referred to in D'Oyly and Mant's Bible, and taken from "Fragments to Calmet."

"This is not," says the learned commentator, "an unusual and monstrous production, as it has often been supposed to be. A species of Wheat which grows in Egypt actually bears when perfect this number of ears on one stalk" (seven ears of corn came up upon one stalk, rank and good). "The stem is solid, or at least full of pith, in order to yield sufficient nourishment and support to so great a weight as the ears it bears, whereas the stem of our own Wheat is a mere hollow straw." *Fragments to Calmet.*

This is an exact description of this wonderful vegetable production, except that I grew last year many stalks with 10 ears on them, and, as I have so often repeated, many roots from single grains produced nearly 4000 fold.

My old opponent, Mr. Baker, turns my account of this Wheat into ridicule. He has published over and over again also that "it is a Wheat coarse and not fit for mealing purposes;" but I hope my friends will believe me when I state for their information, and I know I have many among the readers of the *Agri. Gazette*, that my firm belief is that it is the most valuable species of Wheat now in existence. The flour is the most nutritious of any I have ever before possessed, and the bread and pastry made from it have a flavour in them which, I believe, cannot be surpassed for excellence. With regard to its cultivation, I hope it will not for some years fall into the hands of men who, from long prejudice, cannot believe that corn can be grown unless they put 15 or 20, or even 30 grains of seed, and even more, in a space of ground on which in skilful hands one grain only will develop itself and arrive at perfection. But of this Wheat, 43,260 grains only are sufficient for an acre of land, and that quantity I grew last year from 11 or 12 seeds only, and is the 11th or 12th part of a bushel. I am aware, as the learned Calmet has written, that this will appear to be "a monstrous production!" I am aware also that my friend, Mr. Baker, will insinuate again that I write fables, but "truth is truth nevertheless;" and in a matter of so much importance to my country I shall not shrink from declaring it. But is there not something interesting in the certain knowledge that we possess the self-same species of Wheat which God himself showed to Pharoah in his vision, and which the venerable Jacob and his 12 sons, the Patriarchs, made bread of and eat in the land of Egypt, 3565 years since? For my part, though thoughtless bigotry and prejudice may again and again publish to the world that it is not fit for mealing purposes, I cannot express the pleasurable sensations which I daily and hourly felt last summer, as I saw it ripening in my field; and out of the field it was with pain that I kept myself, for I was in it, among the beautiful crop, the most beautiful I had ever before seen, almost every day, from morning till night nearly. Nor is it a slight pleasure I feel that I have at this moment bread on my table made from the Almighty Creator's favourite grain, and which is the same Wheat with which, 3565 years since, He in his wisdom and mercy sustained his human creatures from miserable destruction during the most lengthened and widely spread famine which has been permitted to exist since the beginning of time! I have stated, however, that I hope for some time it will not fall into the hands of prejudiced men, for I firmly believe that as much as two pecks of seed an acre would endanger the crop. Farmers in general, therefore, must not use it; but if any gentleman who has a well-cultivated open space of ground from which he can keep the birds at harvest, will cultivate it in the manner I have described, that is, put a single grain in every square foot of ground, and no more; or if he pleases, put a single grain into a foot and a half of ground, the result must be exactly as it was in my field, namely, he will have "seven ears of corn," or more "come up upon one stalk, rank and good," and in some instances from 3500 to 4000 fold. But the land must be free from underground stagnant water, be well and deeply cultivated, and not merely turned over with a plough, and contain the proper food for Wheat to feed on. *Geo. Wilkins.* [The Egyptian Wheat (Triticum compositum) has been commonly cultivated in our neighbourhood—chiefly among allotment tenants, with whom quantity rather than quality is an object. It does not fetch the average price of Wheat in the market, owing to the inferior quality which millers, and therefore corn-factors, believe it to possess.]

PRICES OF WHEAT.

I PROCEED with the collection of Prices (commenced in your last Number), carrying it through the 17th century, into the early years of the 18th; when the great exporting period commenced, with an extraordinary succession of good Harvests. The last year named in the former Table was 1597; in which, according to Fleetwood, Wheat fell from 5*l.* 4*s.* to 4*l.* per quarter.

YEAR.	*s.*	*d.*	AUTHORITY.
1599—"The price of Wheat per quarter had fallen to"	27	0	Sir F. Eden
1594 to 1612 } Average price during this period	42	5½	Windsor Tables
1606 to 1625 } "The price of middling Wheat during this period was sometimes as high as 58*s.*, and as low as 29*s.* The average was" [*Query.* From these *data*, what was the average price from 1606 to 1612, both inclusive?]	34	0	Sir C. Davenant
1631—"The price of a quarter of Wheat was"	68	0	Child
1632—A year of scarcity. Price of Wheat not mentioned.			
1633—A Royal Proclamation, fixing the prices of Provisions in London, to bring them back to the usual rates, disturbed by the scarcity of the preceding year.			
1613 to 1637 } Average price at Windsor market during this period ..	47	4	Arthur Young
[*Query.* What was the average from 1625 to 1637, both inclusive?]			
— No accounts have been preserved of these intervening years. From the difference in the averages given below, it will appear, however, that the average price of the period was	48	7½	
1646—By a Royal Ordinance dated in 1646 it appears that at this time, and down to a considerably later date, the usual bread-corn of the poorer sort of the people in England was Barley. Rymer Fæd. XIX.102	48	0	
1647—Price of Wheat per quarter ..	73	8	Fleetwood
1648—Ditto ditto ..	85	0	Do.
1649—Ditto ditto ..	80	0	Do.
1650—Ditto ditto ..	76	8	Do.
1651—Ditto ditto ..	73	4	Do.
1652—Ditto ditto ..	49	6	Do.
1653—Ditto ditto ..	35	6	Do.
1654—Ditto ditto ..	26	0	Do.
1655—Ditto ditto ..	33	4	Do.
1656—Ditto ditto ..	43	0	Do.
1657—Ditto ditto ..	46	8	Do.
1658—Ditto ditto ..	65	0	Do.
1659—Ditto ditto ..	66	0	Do.
1660—Ditto ditto ..	56	6	Do.
1661—Ditto ditto ..	70	0	Do.
1662—Ditto ditto ..	74	0	Do.
Average of the above 17 years, viz., from 1646 to 1662, both inclusive	59	0	Fleetwood
Average price at Windsor, from 1638 to 1662, inclusive ..	55	8	Arthur Young
1663—Price of Wheat, per quarter ..	57	0	Fleetwood
1664—Ditto ditto ..	40	6	Do.
1665—Ditto ditto ..	49	4	Do.
1666—Ditto ditto ..	36	0	Do.
1667—Ditto ditto ..	36	0	Do.
1668—Ditto ditto ..	40	0	Do.
1669—Ditto ditto ..	44	4	Do.
1670—Ditto ditto ..	41	8	Do.
1671—Ditto ditto ..	42	0	Do.
1672—Ditto ditto ..	41	0	Do.
1673—Ditto ditto ..	46	8	Do.
1674—Ditto ditto ..	68	8	Do.
1675—Ditto ditto ..	64	8	Do.
1676—Ditto ditto ..	38	0	Do.
1677—Ditto ditto ..	42	0	Do.
1678—Ditto ditto ..	59	0	Do.
1679—Ditto ditto ..	60	0	Do.
1680—Ditto ditto ..	45	0	Do.
1681—Ditto ditto ..	46	8	Do.
1682—Ditto ditto ..	44	0	Do.
1683—Ditto ditto ..	40	0	Do.
1684—Ditto ditto ..	44	0	Do.
1685—Ditto ditto ..	46	8	Do.
1686—Ditto ditto ..	34	0	Do.
1687—Ditto ditto ..	25	2	Do.
Average from 1663 to 1687, inclusive, according to Fleetwood	45	5¾	
Average of this period, according to the Windsor Tables ...	45	3½	Young
"The price of Wheat was declining in the two years preceding 1688."			
1686—"The average for this year ..	30	2¾	Tooke
1687—"And the following year" ..	22	4½	Do.
1688—"This low and declining state of prices produced considerable distress among the landed interest, and was probably the ground on which the celebrated Act 1 Wm. and Mary was passed, granting a bounty on the exportation of corn. Whether as the effect of the bill, or of the weather, (of which I find no particular notice), the average price of the year advanced to" ..	40	10¾	Tooke
— This same year the average, according to Fleetwood	46	0	Fleetwood
1689—Average price of Wheat ..	30	0	Do.
1690—Ditto ditto ..	34	8	Do.
1691—Ditto ditto ..	34	0	Do.
1692—"Great rains in autumn: an earthquake, felt in England and most parts of Europe." ..	46	8	Folio pamphlet, Anonymous; Longman, 1768
— "In this year commenced that series of bad seasons, at the end of the 17th century, traditionally known as '*the barren years*';[*] Wheat per quarter..	41	6	Tooke
1693—Average price per quarter ..	67	8	Fleetwood
— Ditto ditto	60	1½	Tooke
1694—"A very wet summer;" Wheat per quarter	64	0	
1695—"Many of the Scotch are driven into Ireland by the excessive price of corn;" Wheat per qr.	53	0	
1696—"A very wet summer. "Want of current money to carry on the smallest concerns, even for daily provisions in the market. Great sums daily transported to Holland, with other treasure sent to pay the armies, cause such a scarcity that tumults are every day feared; nobody paying or receiving."	71	0	Evelyn Memoirs

[*] In the "Farmers' Magazine" for January, 1800 (vol. 1, page 103), the editors, referring to the want of well-registered notices of the seasons which occasioned the 'barren years' at the end of the 17th century, remark, "Such a Register would not only inform the present generation, but must also prove very interesting to posterity."

YEAR.	*s.*	*d.*	AUTHORITY.
1697—"An unfavourable harvest." Average of the year	60	0	Folio Pamphlet
1698—"A very wet summer. The Peace and dearness of corn in England enable the French to seduce our manufacturers. With these they establish a manufacture for cloths and woollen goods in Picardy. Great complaints of dearness of provisions and decay of trade"	68	4	Do.
1699—"A wet summer. These cold and wet seasons lasted more than seven years; the dismal effects of famine were felt in most parts of Europe." Exportation of corn prohibited..	64	0	Do.

"The scarcity which prevailed in England from 1693 to 1699 (both inclusive), though no doubt principally owing to the badness of the season, and therefore extending through a considerable part of Europe, must have been somewhat enhanced by the Bounty. In 1699 accordingly the exportation of corn was prohibited for nine months." *Adam Smith.* "As the price, on the average, was above that up to which the Bounty was payable, it does not appear how that measure could have enhanced the price. The scarcity was felt through the greater part of Europe, and during an interval of about seven years." *Tooke.*

1700—Price of Wheat per quarter ..	40	0	Fleetwood
1701—Ditto ditto	37	8	Do.
1702—Ditto ditto	29	6	Do.
1703—The price of Wheat at Lady-day	30	0	Do.
At Michaelmas	42	0	Do.
1704—"The Harvest had been unfavourable. Wheat at Lady-day (nearly double what it had been the preceding Spring) per quarter	58	0	Do.
At Michaelmas	34	8	Do.
1705—"The crops of the previous autumn abundant, and from that time till 1708 prices continued to be very low ranged."			
1706—"About this time the kingdom was blessed with plenty; so that the people contributed cheerfully to the expenses of the war"	—		Folio pamphlet before quoted
1707—Average of the three years ..	26	4	
1708—"A hard frost, which brought on a prodigious scarcity of provisions, more in France than in England. The summer was cold and wet." ..	—		Do.
Wheat per quarter at Lady-day	30	8	Tooke
Ditto after Harvest	52	0	Do.
1709—"The Queen in her speech to Parliament complains of corn being exported at such high prices as distressed the poor. Exportation prohibited for one year. — There fell this year rain to the depth of 26½ inches. I think the mean depth of rain falling in England is 19¼ inches." ..	—		Folio Pamphlet
Wheat per quarter at Lady-day	64	8	Tooke
Ditto after Harvest	92	0	Do.
1710—"Exportation prohibited for one year."			
Wheat per quarter at Lady-day	92	0	Do.
1711—Prices falling.—Not specified.	—		
1712—Prices fell to	38	0	Do.
1713—Wheat per quarter after Harvest	64	0	Do.

The average price of the whole period, viz., from 1594 to 1713 (both inclusive), is a fraction under 48*s.* 5*d.* per quarter.

The above Table brings us nearly down to that time which may be called the GREAT EXPORTING PERIOD of British Agriculture; viz., the half century occurring between 1715 and 1765. It may make the whole subject more interesting, and of useful application, to trace briefly the rise and progress of our foreign Corn-trade, outwards and inwards, during the Five distinct phases or periods which it exhibits.

THE FIRST PERIOD

1534 to 1554 — Was one of opposition on the part of the Legislature to Exportation, altogether; and an (unavailing) attempt to suppress it by statute [25 Hen. VIII., c. 2]. This continued Twenty years; and indicates a prevalence of dear prices.

THE SECOND PERIOD

1554 to 1688 — Is marked by a qualified permission to export so long as the home price was below certain limits, which are fixed higher and higher by successive statutes, becoming more favourable to the export trade; but imposing a duty to be paid by the home-grower on the corn exported.

THE THIRD PERIOD.

1689 to 1715 — Opens with free permission to export, under the encouragement of a Bounty (5*s.* per quarter), followed in 1700 by an abolition of the Export-duty (2*s.* per quarter), which from 1688 had survived, (*side by side with the Bounty!*) Both were, however, inoperative for about six and twenty years after the passing of the Act [1 Wm. and M. c. 12.] owing to the dearness which prevailed during that period. (*The Barren Years.*)

THE FOURTH PERIOD.

1716 to 1765 — Comprises half a Century of great Plenty; during which Exportation was at its height: small Importations also occurring occasionally. In these fifty years there were only five deficient harvests. The balance of Exports was 31 million of quarters; on which the sum paid in Bounties was upwards of six millions sterling.

THE FIFTH PERIOD

1765 to 1791 — Commenced with a Cycle of Ten bad Harvests. Frequent suspensions of the privilege of Exporting, and of the Bounty; which at last becomes a dead letter. The tide having turned, *Im*portation becomes constant and considerable. A duty of sixpence per quarter is placed in 1773 on imported corn [13th Geo. III., c. 43]. The Importations during the period amount to upwards of five millions of quarters. The average home-price (1765 to 1791, both inclusive), was 47*s.* 2½*d.* per quarter.

This last period is the most instructive of any that can be referred to: as Import and Export were equally free. From its close in 1791 down to 1815, all calcu-

lation or experience is frustrated by the outbreak and continuance of the European war, aggravated by alternating seasons of severe scarcity; followed, in 1815, by legislative efforts to palliate the continued effect of a sudden collapse of prices on the return to a state of Peace. Immense, and indeed unprecedented, as the progress has been from that date in Trade, Commerce, and the Useful Arts, Agriculture included, it can only be regarded, historically, as one of continued struggle, on the part of the Agriculturist, against the irregular but sure declension of prices towards their natural level: which, so far as a judgment may be hazarded from both the averages above drawn, the first from a very long, and the second from a significantly apposite and instructive period—would seem to point to 47*s.* or 48*s.* per quarter: the improvements in Agriculture, and the increase of population, being taken as a counterpoise to each other. *C. Wren Hoskyns.*

FEEDING ON OPEN BOARDED FLOORS.

Having some north country enquiries as to this system, I proceed to detail my own practice. In order to arrive at the proper width of opening between each plank, I measured the animals' feet, and found them when closed, as follows:—Sheep, 2 inches wide; pigs, 1⅝ to 2½ inches; cattle, 3½ to 4½ inches.

I therefore made the openings 1¼ inch for sheep, pigs, and small calves, 2½ inch for bullocks. The three former answer admirably; the latter no doubt, will likewise do, although I have not quite completed the bullock floors. The Rev. Mr. Huxtable, who originated the plan, has much smaller openings; but I found practically an immense advantage by enlarging them. The sheep sweep their own floor quite clean—of course they have no straw. Pigs do admirably well, but we give them straw at the ends or corners for bed. Pigs having no wool and very little hair, must have warmth in cold weather, or they will get internal inflammation from want of external circulation. I think I save three-fourths of the straw by boards for pigs, and no doubt shall do so with bullocks. I find that a great deal of the solid manure also goes through the openings, when trodden upon by the pigs, and of course by the bullocks also.

I am satisfied the openings might be even larger; for I have seen very young pigs gallop across the sheep floor when disturbed trespassing for the odd pieces. Still I like to be on the safe side; I have never had an accident yet.

Straight sound yellow Deals answer best. They require no planing, merely sawing. I use 1½ inch thickness for sheep and hogs; 2 inch for bullocks. Width for sheep, 2¾ inches; width for bullocks, 2¾ in. The bearers may be of Oak, or yellow Deal, or 4½ brick partitions. The planks are divided by a wooden gauge, and nailed to the cross ledges, the nails well clenched on the under side. Ledges 2 feet apart, bearers 4 feet apart, convenient sizes for removal and lifting up, 8 or 9 feet, by 6 or 7 feet.

One hundred Hampshire down sheep at this time of year, having long wool, require a superficial area of 1000 feet, which gives also room for their food and water troughs. (Sheep should always have access to water, and also to a lump of salt). Each sheep has thus an allowance of 10 superficial feet for itself, and its feeding apparatus. I emptied one shed tank to-day, 2 feet deep, it was three parts filled with burned clay or brickdust—there was no spare liquid. I put on 9 loads per imperial acre; of course it was saturated and mixed with the urine and droppings, no straw. The pigs are over my liquid manure tank. The almost constant stream when the pigs are moving about, reminds the ear, and the hearer, how much straw it would require to absorb the trickling deposit.

Large breeds of long woolled sheep, such as Cotswolds, Kents, &c., would require a larger area. After sheep are shorn they may be packed much closer. You will find sheep thus shedded require shearing earlier than if in the open air. One very warm day, early in May, I wondered why the sheep could not feed, but soon found they wanted their jackets off. I never had a sheep ill on boards, although about three fat ones were slaughtered when giddy. I consider the boards a certain cure for foot-rot. We generally find many lame sheep after their long journey, as they come from the Hampshire flock-masters. In about three weeks the worst of them are "all right," being of course properly attended to on arrival.

The Rev. Mr. Huxtable tells me, his trellis work, or openings for bullocks, are only ¾ inch or less. Mine will be 2½ inches for bullocks; I attach much importance to ample space, provided the animal's feet *cannot* enter the opening.

For bullocks, the planks should be laid parallel with the manger; also for sheep, although not so material. No fermenting material should be used under the sheep or animals, or it will injure their health. Burned ashes, dark friable soil, sawdust, or dry sand, are all good.

Every day we sprinkle half a bushel of gypsum to each 100 sheep, on the boards. Their urine falls on it, and it is worked through, and the ammonia is preserved. I pay 15*s.* per ton for my gypsum. I also sprinkle salt on now and then pretty freely, and sweep it through, otherwise it makes the boards wet. I am satisfied, after two years' trial, that we shall *all* be board feeders by-and-bye. I used to fold my sheep out in the day, and on boards at night, but experience has shown me what an enormous advantage there is in keeping them always warm, dry, and comfortable, instead of making them "steam engines" in wet weather. We were a good deal plagued at first when we had narrow ¾in. openings, having to sweep the floor, and the sheep got dirty, but now with 1¼ in. openings, there is no trouble in any way; no expence of littering. The cost of boarding and labour, per superficial yard of 9 feet, is, as near as I can calculate—for the sheep floor, 4*s.* 2*d.* to 4*s.* 6*d.*; for the bullock do, about the same. Bricked and cemented tank under it, about 2*s.* per superficial yard. The urine and manure appear to preserve and harden the flooring. So great is the comfort and saving of straw that I shall extend the operation materially, and report progress when my bullocks are boarded. I shall give the bullocks a little straw, perhaps, according to circumstances. *J. J. Mechi, Tiptree-hall, Kelvedon, Essex, Feb.* 12. P. S. I fear, as some of our old practical friends find so much difficulty in getting their straw "stamped down," that they will wonder what we want boarded floors for. By-the-bye, I saw, at Earl Bathurst's farm, at Cirencester, a great number of sheep on boards tied up like bullocks, and doing well.

Home Correspondence.

Practice with Science.—The discoveries of the age have been displayed in the composition and application of manures. One of the most important parts of husbandry is to return, through the medium of manures, the richness extracted from the land by cropping. Every farm situated at a distance from a town should raise sufficient manure to supply its own requirements. This is what is commonly called a self-supporting farm. A farm of this kind should have every possible convenience in the construction of the buildings belonging to it. The usual form of these is an oblong quadrangle. If the manure is to be raised through the cultivation of green crops, the feeding of stock becomes a necessary consequence. There is perhaps nothing in which so much deception is common as in the feeding of animals of different kinds; the exact cost of the keep not being accurately reckoned, the clear profit is generally considered greater than it really is. Those who have brought their calculations to a strict reckoning, have generally found that they have made no pecuniary gain, but more frequently have experienced a serious loss; yet, notwithstanding this, they have found it necessary to continue the system for the purpose of turning their straw into good manure. Mr. Hillyard, in his work on "Practical Farming and Grazing," has given this matter much consideration. From the calculations there given, it does not appear that a bullock can be kept much under 10*s.* a week, attendance included, and oilcake being 10*l.* a ton. If a bullock be put on Turnips and oilcake for 16 weeks, there would be an expense incurred of 8*l.* If a 3-year-old beast be bought at 12*l.*, and sold at 20*l.*, which is as much or more than can be expected at the present low price of meat, there would remain nothing—but the manure a free gain. Thus the feeding of bullocks can only be considered, as has been justly observed, an improved machine for converting straw into dung; the next question is, how is this machine to act most efficiently? There are three modes in use—feeding in boxes, in stalls, and in open courts with sheds. Much discussion has lately arisen on Mr. Warnes' method of box feeding. It is alleged that not only will the animal feed faster and better in this way, but the dung is also better made. The straw retains the whole strength of the urine, and by the constant compression going forward, none of the ammonia can escape. All animals like warmth, and as Nature generally points out that which is good for them, so is it clear that the same warmth is essential for their health and well-doing. Animals fastened up by the head, frequently great numbers in a long range, will have the means of obtaining this warmth more perhaps than in any other way, and often to too great a degree; but it may be a question whether health will be promoted by this close confinement, and without that they are not likely to increase in flesh and substance, as they ought to do. In sheds with open courts, not more than four or five beasts in each, they have room to move about, which is conducive to health and therefore fatness; they have sufficient warmth, in case the opening in the shed is not larger than is necessary for their safety to pass to and fro, and I believe it is a matter beyond all doubt that they will make infinitely the largest quantity of dung, particularly so, if a few pigs are placed along with them. Whatever be the arrangement of the farm buildings, the fall of the ground should dip to the centre of the yard, the whole contents of the liquid manure being conveyed into a tank at the lower end. Dung should be neither too wet nor too dry, but with sufficient moisture to cause a certain degree of fermentation, and thus assist in its decomposition. The different roofs of the building should be spouted to carry off the water to a distance, and to prevent its starving and drowning the main dung heap. Mr. Spooner, in the Royal Agricultural Society's Journal, gives a good idea of his mode of preserving his dung in a proper state. The part where this is put is sunk some feet deep, sloping downwards; a wall is built on each side, with proper openings, through which the dung is thrown from the different sheds, and with a roof at the top to keep out the rain. The dung is thus kept free from any injurious wet, and if it gets too dry it is moistened from the tank at the lower part. When it has to be removed the cart is backed under the shed. By the manure being thus preserved and made the most of, there is not only sufficient for what is wanted for the farm, but some to spare, which is sold. No farm-yard should ever be without a tank on the inside, and a reservoir communicating with it on the outside. This may be made at little expense, and will often pay for its cost in a single year. Independent of the great value of liquid manure, when used by itself for different farming purposes, it is most valuable for the purpose just described, giving moisture to the dung heap, when required, to promote fermentation. The dung in the farm-yard should not be turned, as, if this were done too frequently, its strength would be reduced, and it might at last be brought to what is called a *caput mortuum.* In the winter time advantage should be taken of a frost, and it should then be carted out, and put upon a headland for whatever crop it may be wanted in the spring, whether it be Beans, Turnips, &c. This should be raised into a large high heap, as the less surface it covers the less likely is the ammonia to escape. It is a common practice to cart and unload upon the heap. This, however, is by some objected to, as the unequal pressure from the wheels and the horses' hoofs will create lumps in the dung, which will cause its unequal distribution, when it comes to be spread in the drills. Over the top of the heap should be placed a layer of gypsum, to prevent the escape of ammonia, or if that cannot be easily obtained, a covering some inches thick of common soil well trodden down. To this may be added the high authority of Sir Humphrey Davy, who, in his "Agricultural Chemistry" (p. 6), says that "whoever refers to the simplest principles of chemistry cannot entertain a doubt whether manure ought to be ploughed into the land recent, or when it has gone through the process of fermentation. As soon as the dung begins to decompose it throws off its volatile parts, which are the most valuable and the most efficient. Dung which has fermented, so as to become a mere soft cohesive mass, has generally lost from one-third to one-half of its most useful constituent elements; and, that it may exert its full action on the plant, and lose none of its nutritive powers, it should evidently be applied much sooner, and long before decomposition has arrived at its ultimate results." *Law. Rawstorne.*

Pheasant and Domestic Fowl.—As I have been trying, year after year, to procure hybrids between the pheasant and domestic fowl without any success, I think it right to say that, in my opinion, it is all but a fruitless endeavour to try to obtain them. Although some few specimens have been produced between them, yet it is of such rare occurrence (even where every care and perseverance has been bestowed upon them), that I think the trouble and expense outweighs the chances of success. If your correspondent, "L. V. R.," has ever seen hybrids from these two species, I think he will at once conclude, with me, that they are very clumsy ill-looking birds, with the beauties of both parents so obscured by the union that they have nothing left but their singularity to recommend them, which circumstance is a sufficient proof that they do not (as some people would have us believe) regularly breed with the poultry of farms adjacent to preserves. I cannot believe that a single instance of the kind, upon good authority, can be produced. The only chance of breeding them is in confinement, and then but very rarely indeed can it be accomplished. Out of more than 100 eggs last year, from a bantam hen confined with a cock pheasant, I had only two prolific ones (the chicks of which were too weak to extricate themselves from the eggs), the rest were clear or unprolific, and if any one had reason to expect progeny, I certainly had; and I think such an infringement upon the fixed laws of Nature will never be attended with much success. *J. B. B.*

Advertisements.—The abolition of the advertisement duty would confer much advantage on agriculture. The difficulty of intercommunication between farmers, renders them an easy prey to a multitude of jobbers, who, if they buy cheap, take especial care to sell as dear as they can find a customer to pay. I have often found, when too late, that I was wanting something which my neighbour a mile or two off was most anxious to dispose of. Were advertisements 2*s.* 6*d.*, instead of 5*s.* or 7*s.*, they would be almost constantly used. The abolition of the penny stamp duty on newspapers would do more to educate the people than all our educational acts of Parliament. When I say education, I mean the power of reading, which, in our country districts, if acquired at a Sunday or national school, is soon after, like a piece of unused iron, destroyed by the rust of non-employment. One of the main secrets of American success is their cheap twopenny newspapers. The insinuation of cheapness reaches the most minute veins as well as the larger arteries. *J. J. Mechi, Feb.* 2.

Mr. Charnock's Paper on Drainage.—As the best medium I can adopt, may I beg permission, through the columns of the *Gardeners' Chronicle and Agricultural Gazette*, to correct an error, which has inadvertently escaped revision, in my paper on "drainage," in the present number of the "Journal of the Royal Agricultural Society of England." The error referred to is that wherein the amount of filtration, as shown from the Holmfield House experiments, is stated to be $5\frac{1}{10}$ per cent of the rain that has fallen, whereas it should be 18⅓ per cent., as every reader of the paper will perceive, by the respective quantities given of filtration and rain. It will be seen that this mistake does not affect the argument in any material degree; nevertheless I wish its correction to come from myself. *J. H. Charnock.*

Societies.

ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

A Weekly Council was held at the Society's House, in Hanover-square, on the 13th inst.: Present—Mr.

Slaney, M.P., in the chair, Hon. Captain Dudley Pelham, R. N., M. P., Baron Mertens, Mr. Alcock, M.P., Mr. Burke, Mr. Dyer, Mr. Fuller, M.P., Mr. H. F. Hunt, Mr. Majendie, Mr. Pendarves, M.P., Professor Sewell, and Mr. Reynolds Solly.

The Marquis of Westminster was elected a Governor of the Society.

The following new members were elected :

Staniland, Meaburn, Mayor of Boston
Rome, Joseph, Mayor of Carlisle
Branwell, Christopher, Headon House, Sunderland
Colthurst, Joseph, 36, Jermyn-street, London
Milner, John, Hordle Farm, Lymington, Hants
Bayley, Robert Riddell, 4, Basinghall-street, London
Percival, Stanley, Bridgefoot, Barnet, Herts
Wyatt, Thomas, 359, Strand, London
Bradshaw, William, Slade House, Levenshume, Manchester
Caldwell, Capt. Fr. Ed. (78th Highlanders), Langford-lodge, Brandon, Norfolk
Treby, Paul Ourry, Goodamoor, Plympton, Devon
Steward, Charles, Henley, Ipswich, Suffolk
Stephens, Edward, Trewornan, Wadebridge, Cornwall
Samuelson, B., Britannia Iron Works, Banbury, Oxon
Wilkinson, Rev. John, Broughton Gifford, Melksham, Wilts
Dickin, Thos., jun., St. Stephen's-hill, Rugely, Staffordshire
Carew, Thomas, Colepriest House, Tiverton, Devon
Cail, J., 8, Pavilion-place, Battersea Fields, Surrey
Daniel, Thomas Daniel, Stuckeridge, Bampton, Devon
Maw, George, Southcott, Wesleigh, Bideford, Devon
Robinson, Mrs., Wilson House, Milnthorpe, Westmoreland
Veitch, James, Exeter, Devon
Riley, Edmond, South Dalton Grange, Beverley, Yorkshire
Stratton, Richard, Salthrop, Swindon, Wiltshire
Veitch, James, Jun., Exeter, Devonshire
Phillips, John R. Spencer, Riffams Lodge, Chelmsford, Essex
Roberts, William, 197, High-street, Exeter, Devonshire
Hayne, J., 24, Gloucester-square, Hyde-park, London
Lewis, Capt. T. E. Lock, R. E., Exeter, Devonshire
Packhard, E., Saxmundham, Suffolk
Arnold, William, Jun., Nethercott, Iddesleigh, Hatherleigh, Devonshire
Lubley, John, the Parsonage, Wiveliscombe, Somersetshire
Hellyer, G. W. Maine, Bashley, Lymington, Hampshire
Tatton, Thomas, Wittenshawe Hall, Northenden, Manchester
Reed, Howard, Long Sutton, Lincolnshire
Comins, Rev. William, Rackenford, Tiverton, Devonshire
Henry, James, Blackdown House, Petworth, Sussex
Harrison, James, Buckingham
Bentley, Robert John, Eastwood House, Rotherham, Yorkshire
Wills, Thomas, Jun., Eastury, Bovey-Tracey, Chudleigh, Devon
Smith, Sir Charles Cunliffe, Bart., Suttons, Romford, Essex
Arnold, Thomas Owen, the Park, Hatherleigh, Devonshire
Hoare, Richard, Hampstead, Middlesex
Galpine, W. L., Lymington, Hampshire
Thompson, Robert, 22, Victoria-road, Kensington, Middlesex
Mac Connell, Frederick, Newby Bridge, Milnthorpe, Westmlad.
Christy, James, Jun., Boyton Hall, Chelmsford, Essex
Edge, James Thomas, Stelly Hall, Nottinghamshire

Adulteration of Guano.—Mr. H. T. Hunt, of High-street, Lambeth, attended the Council for the purpose of reporting the extensive and systematic plans carried out weekly in the neighbourhood of the Metropolis, for the adulteration of Peruvian Guano, and which he thought it of the highest importance to be made known at this season of the year, when purchases of Guano were so largely made by farmers throughout the country. Mr. Hunt laid before the Council samples of the various compounds, manufactured for the express purpose of adulteration. The Council thanked Mr. Hunt for the favour of these communications, which they decided to refer to the next monthly Council, with a recommendation that a Special Committee should be appointed to investigate this important subject, and to place the samples of adulteration in the hands of the Consulting Chemist of the Society.

Canary Grass.—Mr. Majendie presented to the Council, on the part of Dr. Cazin, Secretary to the Agricultural Society at Boulogne, a specimen of the Phalaris arundinacea of Linnæus (known in this country as the Reed Canary-grass, or Riband-grass), along with a supply of the seeds for distribution among the members present.

Tuberous Roots.—Dr. Lindley transmitted from the Horticultural Society's Gardens at Chiswick, a supply of the tubers of Melloca for distribution and trial as an agricultural plant. In the last number of the Journal of the Horticultural Society, Dr. Lindley has given "Some Memoranda concerning the Melloca."

Australian Flax.—Mr. James Dixon, of Skelton Castle, Launceston, Van Diemen's Land, transmitted specimens of Flax grown by him in that colony during the three previous years.

Culture of Fruit Trees.—Mr. Robertson transmitted from Paris his mode of improving the culture of fruit trees, which the Council referred to the Journal Committee.

Wheat Sowing.—Mr. Birch Wolfe favoured the Council with a continuation of his experiments on the sowing of Wheat, which was also referred to the Journal Committee.

Miscellaneous Communications.—Baron Mertens presented a copy of his work entitled "Faits et observations sur l'utilité du Drainage perfectionné." Mr. Bullen (Secretary to the Royal Agricultural Improvement Society of Ireland) also personally presented a copy of the volume of the "Quarterly Journal of Agriculture and Industry of Ireland" for 1849. Mr. Fuller, M.P., presented a plan of his portable saw-mill, with a statement of its advantages. Mr. Willacy a plan and statement of his portable hand railway for farms. Mr. C. Steward a communication of his experience in the use of Crosskill's one-horse carts. Captain Waterton a statement of the value of his Alkaline Feeding Powder, given to cattle attacked by the prevailing epidemic; and Messrs. Dodd and Peeling a copy of their Farm Account-book.

The best thanks of the Council were ordered for these various presents and communications. It was announced that a Lecture, by Prof. Way, would be delivered to the Members on Wednesday, the 27th inst., at 12 o'clock.

Highland and Agricultural, *Jan.* 16.—His Grace the Duke of Buccleuch in the chair. *"The Advantages or Disadvantages of Subsoil Ploughing and of Trench Ploughing."*—Mr. Dickson said :

The effect of subsoil ploughing is, in process of time, to deepen the surface soil. It breaks up and loosens the subsoil, mixing it partially with the soil, greatly increasing the efficiency of the drainage, and by the admission of atmospheric influence to a much greater depth than formerly, renders what was previously a barren subsoil, and an obstruction to the effectual drainage of the soil, suitable for the reception of the roots of plants, thereby increasing their fertility, more particularly in seasons of either excessive drought or moisture. Besides these advantages, there is also the greatly increased facility, and saving of labour in the subsequent working of the land, and the ease with which, at any later period, the soil can be deepened by trench-ploughing, and bringing up a portion of the loosened and prepared subsoil. As to the disadvantages; the chief objection which I hear urged against subsoil ploughing is, the expense of the operation; this, I am glad to say, has now been materially diminished, or rather reduced to one-half of what it cost with the ploughs formerly in use, by the introduction and use of Reid's subsoil plough, as improved by Mr. Slight. I have seen wet undrained land, where the operation of subsoil ploughing was positively injurious; but this was an injudicious application, the effect produced, being to increase the depth of wet soil, and make it more difficult to work, and longer of drying; as it is now well understood that on wet land, draining should in all cases precede subsoil ploughing or trench ploughing. I have also seen a dry sandy loam with a gravelly and sandy subsoil, subsoil ploughed without any apparent beneficial result; this was obviously also an injudicious application, as the cause of the inferiority of this soil previously arose from the deficiency of alumina or clay, to enable it to retain sufficient moisture in dry weather, while the subsoil ploughing increased the porosity of the subsoil without adding to the soil, clay, or any other substance that could improve the quality of it. The plan I follow in subsoil ploughing, is to take a furrow with the common plough, from 9 to 10 inches deep, at right angles with the lines of the drain, the subsoil plough following and breaking up the subsoil 6 inches deeper, thus working in all to the depth of 15 or 16 inches; this I have been able to do with one pair of powerful horses in each plough; the cost of the operation (exclusive of the ordinary ploughing), is about 10*s.* per acre, and I find that I can save the whole of this extra labour in spring, when I come to work the land for green crops, as, from the depth to which the atmosphere has affected the land that has been subsoil ploughed, it is better in condition for drilling up for Turnips, after being grubbed and harrowed, to level and mix the soil, than is the land that had not been subsoil ploughed, after having got an additional ploughing, with harrowing and rolling. My experience in subsoil ploughing extends over the last 10 years, and, with the exception of the first experiment, which was made on a soil consisting of a deep dry loam, or a tolerably porous subsoil, where I observed no beneficial results, the whole of the other fields which I have subsoil ploughed have been much improved thereby; and, during the last three years, I have left a portion undone of each of the fields which I subsoil ploughed, that I might be better able to judge of the result of the operation. On all these fields I have observed that the portion not subsoil ploughed, was longer of drying in spring than that which was subsoil ploughed, and was about two days later of being in a fit state for working, and also that the crops of Beans, Potatoes, Turnips, and Wheat, were superior on the land which had been subsoil ploughed to those on the portions of the fields that had not been so treated. In November last I had much gratification in witnessing the very effectual deep working of the French plough and subsoil plough, on the Marquis of Tweeddale's home farm at Yester; and also of observing the successful result of the deep working of the soil in the preceding year, as shown in the immense crop of Turnips raised on inferior soil, with a very moderate application of manure. This confirmed my own experience of the beneficial result of deep working land that had previously been thoroughly drained I am of opinion that subsoil ploughing is an operation which may be profitably repeated on the same land periodically, previous to the application of manure, by each time going 2 inches deeper, and bringing up 2 inches of the previously loosened subsoil, and the subsoil plough also penetrating 2 inches deeper than formerly. I am not prepared to say how often this may be repeated with profit; but this I know, that it would be a very great advantage to, and would materially increase the produce of the land I farm, had I the whole of it cultivated to the depth of 18 inches. In conclusion, it appears to me that the question of the advantages or disadvantages of subsoil and trench ploughing, resolve into the comparative advantage or disadvantage of a deep or of a shallow soil; and seeing that it is well known that the roots of many of our cultivated plants—more particularly Turnips, Wheat, and red Clover—will go down in search of food to the depth of 3 feet, where the soil and subsoil are made fit for their reception, it can scarcely be said to remain an open question whether or not it is advisable so to deepen the soil at such a moderate outlay as I have here shown it to cost.—Mr. Hope, Fentonbarns, said: I feel a great degree of reluctance to do or say anything which has a tendency to throw doubt on what any practical man may deem an improvement in the practice of agriculture. Still it does not suit at all times to keep silence, and particularly on the present occasion, when I believe a frank expression of our united observations and experience may have the effect, if not to put money in our pockets, at least to keep what little there is there. I do not mean, in every case, to deny the utility of subsoiling and of trench or extra deep ploughing; but I do say that on arable land that has been long under the plough, and in fair condition, that they are operations requiring to be performed with great caution. If the soil has actually to be made, I grant at once their beneficial tendency; in fact, I do not think you can get well on without either one or both being efficiently attended to. But it is a very different matter if you take an ordinary Lothian farm, thoroughly drained, and say you must now subsoil plough it, and afterwards turn it over 18 or 20 inches deep. In the first place this will be a heavy expense, and in the second, I believe it will serve no good purpose. I am aware that, in 1843, Mr. Brodie, Abbeymains, obtained a premium from the East Lothian Agricultural Society for a report of an experiment in subsoiling, from which it appeared that, at the end of the fifth year, there was a profit of 1*l.* 10*s.* 1*d.* per acre, after deducting the original cost of the operation. Mr. Brodie is well known as one of the first practical farmers in Scotland, and who is not to be frightened at trouble or expense, if he sees any prospect of being repaid; but now Mr. Brodie has dropped the practice, and he perceives no difference in his crops. I could mention one or two other gentlemen who have tried it without benefit, though one thought the loss on his first Wheat crop more than compensated by the superiority of the Oats; but since then he has observed no difference. We all know that Oats require more moisture than any of the other cereals. I have tried subsoil ploughing in three different fields. On the first two it was unfortunately done up and down the ridge, or in the direction of the drains, being unaware at the time that it was considered necessary to have it done across the drains; so I will not insist on the loss sustained on the Wheat crop as telling against subsoiling; but a year or two afterwards, when tried on the third field of thin moorish soil, with a subsoil of rather hard yellow sand, and where I thought it would have a good effect, if anywhere, it was done across the drains. It is now upwards of eight years since then, but I have never been able to perceive the slightest difference on the crop where it was done, from where it was not done. A cleverly-written and ingeniously-reasoned pamphlet, styled "A Practical Essay on Deep Ploughing, by an East Lothian Agriculturist," was published two years ago. I believe it is no secret that the author resides near Dunbar, which, if not the land of Goshen, is very near it. The only experiment mentioned directly bearing on the point is in these words: "That land of the same quality ploughed 18 inches deep produced one-fifth more than that ploughed only 12 inches deep. Both these rates are beyond the common depth of field culture, and on the least of them there was an excellent crop in a very unfruitful season. The result strongly shows the utility of deep ploughing." It would have been more satisfactory if we had got over and above this meagre account a description of the soil, its previous management, and the kind of crop, of which there was one-fifth more. What might do on the well-known Dunbar glebe, might be very unsuitable on Fenton Muir. I recollect, two years ago, of trenching being in vogue, and some of the best fields in the county did not recover the effects of the operation for at least one rotation. I have sometimes lifted soils from headlands, and have had no crops on the bared space until it was thoroughly saturated with manure. But two years ago, I lifted fully 12 inches of one, composed of strong alluvial clay, and found below that, such a quantity of lime, that when again turned up by the plough, it had all the appearance of a rich compound. It ploughed much easier than the top soil that had been carted off, and the succeeding crop of Barley, without manure, was as strong as could grow. But there are not 2 acres of this description of soil on my farm. If I had ploughed this piece of land 20 inches or 2 feet deep, I would have had an excellent crop, and had I allowed myself to be carried away by one experiment, and gone over my whole farm as recommended by the East Lothian Agriculturist, I think the chances are at least equal that my name would before this have found its way to the "Gazette." I find it difficult enough to keep 6 or 8 inches on the surface, so full of manure as I could wish; I confess I am unable to stand the expense of doubling this depth, let alone quadrupling it. No doubt it might be a very nice thing to have a farm with a depth of 2 feet of rich soil; however I would prefer entering on such a possession to having the honour of making it. We have been told by a high authority in agricultural matters, that Swedish Turnips may be grown on a deal table, if certain chemical ingredients were properly served up to them. Without going this length, I may tell you I have eaten Peas grown in the neck of a glass bottle filled with common water, the original Pea having only a very small quantity of cotton wrapped round it to keep it moist. I look upon the soil simply as the store house in which is laid up, to be given forth when required, the necessary food for the growing crop, and the medium by which plants are enabled to take their food. The soil itself may or may not be naturally composed of the required ingredients, but whether these may have been placed there naturally or artificially, the generality of soils in this country may be viewed merely as the mechanical means by which the food of plants is conveyed to them. Constant cropping soon renders requisite to the richest and poorest, or removal or addition by the hand of man, of the materials that form the crops previously, and to be extracted from it. I have frequently heard of roots of various plants penetrating to great depth in search of nourishment, but I am inclined to believe that this only happens when the necessary food is wanting near the surface, and it may happen that the crop may be lost, or its growth so materially retarded, before the roots reach the substance on which it feeds, that the proper season of growth may have passed away. I once borrowed a machine from Mr. Ainslie, of Elvingston, for dibbling bones immediately below the Turnip seed. I tried it with guano and bones mixed, and though from the quantity of guano it did not work so pleasantly as I would have liked, yet the crop of Swedish Turnips grown after it was decidedly better than where the same quantity of manure was sown in the drills. I could only account for this by the whole manure being placed in such close proximity to the seed, that the roots seized upon it at once, and by that means the plants got a start which they kept to the end. I generally plough deeper for the Turnip crop than any other time during the rotation, principally because I think that deep ploughing assists in retaining the moisture longer, and consequently that the Turnips are not so apt to be hurt by drought; but the drills in which guano is sown (and Turnips now-a-days positively will not grow without it), are made quite ebb, so that the roots may get as quickly to it as possible. It is unquestionable that the richest part of all arable soils is usually on the surface, and that the cream is on the top. I see only harm in burying this out of the reach of plants. For all practical purposes, I find a plough furrow of 7 or 8 inches deep all that is required. For white crops, after either Beans, Potatoes, or Turnips, I think 6 or 8 inches quite enough. I once saw an experiment after Potatoes, where the field, having had Finlayson's harrow run through it, two ridges were not ploughed at all, and on them the Wheat crop was decidedly the thickest and best. A great deal depends on the mechanical texture of the soil, and what is suitable for one kind of crop and land does not answer for others. But I have ever found that it is a safe rule, on every description of soil, to make the land dry, keep it clean, to take care always to plough it at the proper time; obtain the finest possible tilth for all descriptions of green crops; turn over a neat clean furrow for grain crops; but above and beyond all, never to forget manure, for muck is emphatically the mother of money.—Mr. Robb, Gorgie, said: About 13 or 14 years ago I subsoil ploughed about 10 acres of the farm on which I reside. Two years after that I subsoiled some more of the same farm. About eight years ago I subsoiled some fields in Dumbartonshire, and this season I have subsoiled 12 acres of the farm I reside on, and intend doing more this season. The first-mentioned fields were ploughed with one of the earliest made subsoil ploughs from the neighbourhood of Stirling. The fields in Dumbartonshire were done by a plough improved by the late Mr. Stirling of Glenbervie. The operation this season was performed with a plough invented by Mr Slight, I believe. The two first-mentioned ploughs are powerful, they were worked by two men and four horses, and they were very difficult to guide; hence the work was rather irregularly done, notwithstanding strict attention was bestowed on it. I am inclined to think that very few fields have been thoroughly and uniformly subsoiled by such ploughs, sometimes they worked too deep, sometimes too shallow, sometimes too broad, sometimes too narrow, so that subsoils in many cases have been scooped out into a series of irregular hollows. During winter the hollow places were saturated with, and soured by, the stagnant water. I have no hesitation in saying that a worse crop might be produced, over these hollows, the first year after such subsoiling, than would have been produced on the same soil if the field had not been so subsoiled. The imperfect manner of performing the operation I believe to be the chief cause of disappointment. Subsoiling with the first-named ploughs was expensive, and in many cases, though not in all, unsatisfactory—six horses and three men being necessary, a little commotion took place in the establishment when one subsoiled. Now with Mr. Slight's plough, two men with four horses go a subsoiling as quickly and coolly as they go to ordinary ploughing. The common plough with two horses making a furrow about 10 inches broad, and as deep as they can, not being over nice about the proportions, the subsoil plough following, drawn by two horses, and stirring the subsoil from 3 to 5 inches deeper, without raising it, a boy follows throwing out the loose stones, and marking with pins any stones that require fork and spade to remove them. It is essential that the first plough cuts a furrow no broader than the subsoil plough can stir thoroughly and truly, as, upon this thorough and uniform stirring depends the success of the operation. I am afraid many persons may expect too much benefit to be

apparent on the first crop, after subsoiling. When the operation is imperfectly performed, little or no benefit can accrue. Even when the work is done in the very best manner, according to our present means, I would not look for a very marked increase of crop, the first year after the operation. When we thoroughly stir our subsoils, we do not make them fit to produce superior crops immediately; we only put them in a condition which facilitates the changes necessary to make them more subservient in assisting the soil to produce superior crops. We merely put them in a condition to acquire influence and power. If my views are correct (and my experience induces me to believe they are), we can, by judicious thorough subsoil ploughing, convert a clay soil into a loam; we can acquire a deeper soil, that shall absorb a greater quantity of rain in a given time, without being injured by it that shall afford the roots of plants a larger field through which to ramify in search of food, and shall dry earlier and more uniformly in the spring, thereby admitting the plough earlier; that shall retain and give out by slow degrees a greater quantity of air and moisture, nourishing the crops for a longer period; that shall produce a crop more uniform as to bulk—a crop that shall ripen more equally, and be of more equal quality. These results I shall name "The advantages to be derived from judicious, thorough, uniform, subsoil ploughing."

—Mr. PATERSON, Meadowfield: Several years ago I tried some experiments in trench ploughing, but I never, in any instance, thought it paid for the additional expense incurred. One field upon which I experimented lay upon a considerable slope, the upper part of it was a dry gravelly soil, upon an open gravelly subsoil; the lower part of the field was gravel mixed with clay upon a close retentive subsoil; no part of it was furrow drained. The lower and wet part was partially cross drained. Upon the dry land I think the operations made no perceptible difference; the wet land evidently was injured by it. Since then, I have never either subsoiled or trench ploughed any. But the system having been advocated by men of high standing in the agricultural community, I have turned my thoughts a good deal to the subject, and although I would not say that in some soils and certain situations it might not prove beneficial, yet am of opinion its universal adoption would be a waste of money, and never would remunerate those who practised it indiscriminately on all kinds of soils. On wet and undrained soil its effects have been admitted by all to be injurious, and although on the same kind of lands when drained, its injurious effects have been less apparent, yet I think they may still have been so to a certain extent. One advantage said to be derived from the operation, is the facilitating the ingress of the water into the drains; my opinion is, that if land is thoroughly deep drained, nothing will prevent the water getting into the drains; and subsoiling clayey land, I believe, has the effect rather of retarding than accelerating the descent of the water into the drains, and upon open bottomed land the operation is not required for this purpose. In confirmation of this opinion, every person must have observed, when preparing his land for green crop in a wet spring, that if, while he ploughed shallow (which is generally done at first if the land is dirty), he was overtaken with a heavy fall of rain, the land soon dried and was little the worse, whereas, if immediately before a heavy rain, he had given it a very deep furrow, the consequences were far more injurious, and the land longer in drying, which shows that the deeper the soil is stirred, so much the longer will it be in drying, and on this account, I am of opinion, that trench ploughing and subsoiling has not the effect of facilitating the ingress of water into the drains. Another advantage said to be derived from subsoiling, is the loosening the soil to a greater extent, and thereby allowing the roots of plants to penetrate more easily into it in quest of food. This advantage, like the former, I think, is over-estimated; for in land in good heart, the roots of plants do not go very far down in quest of food; and I think the common two-horse plough efficiently used, goes quite deep enough for this purpose. I have often thought that if the advantages of subsoiling were as great as its supporters would make us believe, what immense crops would we not see upon the tops of our drains, where we have subsoiling in the most perfect manner; yet what do we here experience on a well drained field? I have never yet been able to see the smallest difference between that part immediately over the drains and the rest of the field. The only kinds of land upon which I think subsoiling to be of advantage are upon moorish land, where, under a thin covering of moss, or clay, there is a sort of muir-bound pan, which the common plough will not penetrate, and which it is necessary to break through, in order to get a sufficiency of loosened soil to produce a crop; and also on land that has been long under an imperfect cultivation, and become so very hard by continued shallow ploughing, that subsoiling is the only way in which it can be got ploughed to an ordinary depth. My practice is never to plough very deep except once during the rotation, and that either in the autumn ploughing, immediately before the green crop (if the land is clean), or, if not, after the land is properly cleaned, and before I put in my green crop in the spring, then I plough very narrow, and as deep as two horses can draw—say about 10 or 11 inches. This, I think, in most cases, is all that is necessary, in the way of stirring and turning over the soil, for keeping the land in the greatest state of fertility.—Mr. LAING, Addinstone, said: A portion of the most retentive land, consisting of 3 acres, was set apart for an experiment on this subject. One acre was drained 15 feet wide, another 30 feet, and the third portion was not drained at all; the first portion was not subsoil ploughed, the second and third portions were subsoiled. The results proved that subsoil ploughing with drains 30 feet apart, produced better crops than with drains 15 feet without that operation; while the undrained land was soured and did not recover its fertility till it was drained and subsoil ploughed. After entering in 1810 to the farm of Addinstone, in Berwickshire, the property of the Marquis of Tweeddale, I continued the use of the implement with success: but, from the land, which I then supposed only required that work, consisting of portions at the bottom of some of the fields, while the upper part is dry Turnip land on a gravel subsoil—in some seasons apt to suffer from drought, and lying on a considerable declivity, I was induced to subsoil the whole field. This would have been tedious work with the Deanston plough, from the extent to be gone over. Consequently, it suggested itself to me to convert the common plough into a subsoil one, which was easily accomplished, by taking off the mould-board, and putting on subsoil apparatus. By this means, the land being free from frost, stones have been ploughed from 14 to 16 inches deep, both through the clay and gravel subsoil, the effect from which has amply repaid the expense—the dry land producing Turnips of greater size, and the grain crops not being nearly so much affected with drought, while the wet land, at the bottom of the fields, having been previously thorough drained, was rendered comparatively dry, producing luxuriant crops. With regard to deep or trench-ploughing, I would consider that on land where the subsoil consists of retentive sterile clay, it would not be prudent to bring such under that operation, unless it had been subsoil ploughed at the beginning of the previous rotation; that the subsoil would be ameliorated, from the admission of air and water, and brought into a fit state for mixing with the active soil. I can add testimony to this so far, from having portions of my farm, consisting of dry loam, and the same description of land with clay and sand in the subsoil that required draining, which I have successfully turned over to the depth of 15 or 16 inches, with three horses yoked abreast with the equalising draught swing-trees. To those proprietors or farmers who still may have doubts regarding the efficacy of such operations, I would strongly recommend a visit to Broadwoodside, his lordship's experimental farm. There they will see land that was valued a few years ago at a rent of 7*s.* per acre, yielding abundant crops of corn and Turnip. These results have been produced by thorough draining, and ploughing to the depth of 14 inches; and now several of the fields have been operated on with these efficient implements, the Tweeddale and the subsoil-trench ploughs, lately invented by his lordship (the former turning, in the most substantial and satisfactory manner, a furrow 14 inches deep, and the latter stirring up and mixing the subsoil), making nearly a uniform soil to the depth of 20 inches.—Mr. M'LEAN, Braidwood, said: I believe, to do justice to subsoiling, the under soil should only be loosened or stirred up, so as to allow a more easy and immediate escape of the water into the drains or subsoil, and to give more easy access to the roots of plants. I think it will be generally admitted that 6 or 8 inches of the upper soil contains the soil and substance of fertility; this arises from the continued action of the atmosphere, the repeated tillage, the frequent manurings, the droppings from the cattle and sheep when under pasturage, and, withal, the constant working of the worms and other small animals, which a wise Providence has so wisely arranged to increase the fertility of the soil; so, in adding largely to the hitherto enriched soil, by a poor and likely unproductive subsoil, you deteriorate to a certain extent the value of the whole.—Mr. FINNIE, Swanston, said: I have both subsoiled and trench ploughed, but while I never could say that the same crops stated by the advocates of subsoiling were realised, from trench ploughing I have experienced decided benefit. In such a locality as this, and where the land is so much dosed with manure from the town, annual weeds are very troublesome. These I have found disappear to a very great extent by the trench ploughing. My Grass and after crops have likewise been very much improved; but it is a singular fact that, notwithstanding all that has been advanced in favour of subsoiling, not one accredited statement has ever reached my eye, showing the comparative advantages arising from it above a similar piece of ground, judiciously and substantially cultivated by the ordinary plough; and as I have no prejudice to subsoiling, my anxiety is to have the problem solved by actual and comprehensive results. — Mr. BERTRAM SMEATON: It so happened that part of his farm was to be subsoiled at one time, and he demurred to it, but the work was proceeded with. Eight additional horses were put on his farm, and he attended the operation with great pleasure. The work was beautifully done, and he watched, with great interest, the progress of the crops. He was certain that he visited the crops at least twenty times, but no shade of difference could he detect between the subsoiled and the unsubsoiled, the drained and the undrained. He carefully compared the two crops, and found no difference. All he could say in favour of the subsoiling was that it did no harm. It was his impression that the land would have been injured, but he could not say that it had that effect. The result of the operation, after all the additional strength employed, so far as he could perceive, was just exactly *nihil.* (Laughter.)—Mr. MELVIN, Bonnington, said: In reference to the remarks made by Mr. Dickson, that subsoil ploughing did not show at the first—it happened to be the reverse with me, for soon after Mr. Smith had published his description of his plough, I had an opportunity of seeing it at work, and certainly praise the way in which his six horses wrought the massive implement, and the effectual manner in which the subsoil was broken up. As it was but reasonable to expect good to result from its use, I resolved to attempt the operation, and procured a smaller plough, to which three horses were attached, but it was found that the horses had not sufficient power, and the work was done as described by Mr. Robb. A larger plough and four horses were then employed, and with this about 100 acres of land were gone over, a report of the results of part of which was submitted to the Society; but since then I have seen reason somewhat to modify my views, as, although on 40 acres for the first two or three years the cost of the operation was returned, yet afterwards the crops did not appear better, as was the case on the remaining portion, judging by the eye, as Mr. Dickson says he did. Remarks have been made regarding subsoil ploughing deepening soil, but we must recollect that the soil has required thousands of years for its formation, and forcing a piece of steel and iron through the subsoil will hardly at once convert it into soil. However the means now proposed to effect the thorough performance of the operation, seems hardly equal to the work; for to do the work effectually it took six horses in the Deanston plough; two are only required for the one now recommended; let us recollect for a moment that the surface soil requires the power of two horses in the common plough to work it to the depth of 7 or 8 inches, and it appears to me unreasonable to expect that the same two horses can plough to 8 inches deep the firm tenacious subsoil, which has remained undisturbed for ages.—The noble Chairman then observed that what he had that day heard both for and against the system of subsoiling, satisfied him that still there was a great deal to be done before coming to any really sound conclusion on the subject. He was perfectly satisfied that on some land of his own he has experienced much benefit from subsoiling. He was glad that he had heard the discussion that day, and he must say that he had heard nothing—not even from his friend Mr. Bertram—to shake his faith in the value of deep ploughing or subsoiling. Where draining was not an accompaniment of the subsoiling, he considered it to be no better than throwing away money.

Calendar of Operations.

FEBRUARY.

DORSET FARM, *Feb.* 11.—Since last report we have got out a good quantity of dung ready for the Mangold and Turnip crops; and also a part of the pastures dressed with pond mud, at the rate of 18 to 20 yards per acre. Some of our ploughs have been employed after the Turnips, to be sowed with spring Wheat, drilled in with some Rape dust and ashes. We have taken up and stored our Swedes, laying them down in lines about 6 feet wide, and as high as they will pile up, thatching them to keep out sun and rain. Our ewes, with the exception of some young ones, have mostly lambed, but we have not so many lambs as usual in proportion to the flock. We have not lost many, but have had very few twins. We are to fat off the old ewes with their lambs, and are giving them, in addition to their Grass, a quantity of Mangold Wurzel and a pound of Linseed cake per day, and the lambs are allowed to run before the fold and get some cake that they can take at any time. In feeding couples it is better not to let the mothers have too much cake, as I believe it has a tendency to dry up the milk, although it may fat the ewe quicker, and the Mangold Wurzel keeps up a flow of milk. We have now begun to give the land intended for Barley a second ploughing, but the weather is so wet that sowing cannot yet be hardly thought of, but as soon as it is dry enough we shall commence sowing Wheat and Barley. *G. S.*

SUSSEX FARM, *Feb.* 11.—The weather for two weeks past has been favourable for getting on with farming work; our teams for the most part have been engaged ploughing the remainder of the land intended for Oats, Peas, and Tares. The day being rather wet our teams are engaged carting home Swedes for the cattle, cows, and sheep, and Carrots for the horses, carting litter from plantations home to cattle yards, drawing poles out of woods for the Hop gardens; but, as soon as the land is dry enough, we shall commence to sow Beans, Peas, and Tares. Men are engaged threshing Beans, Peas, and Oats, for seed; sorting Hop-poles, digging Hops, &c. Our stock ewes receive daily two cart-loads of Swedes, and a feed of hay night and morning; the lambs receive one cart-load of yellow Turnips daily, and are shifted every day or two from field to field. *J. B.*

Notices to Correspondents.

ACIDITY IN BEER: *Cerevisium* says, "In your Paper there have appeared divers methods for correcting acidity in beer by means of alkalies; nothing can be more easy, and it is the plan generally resorted to when drank by most persons. But this, I take it, is not the difficulty to be overcome; the great object is to check the fermentation, so that acetic acid be not formed. If any of your correspondents will let us know how this is to be effected, they will confer a real benefit upon your readers generally, for nothing can be more injurious to the stomach than the constant use of drinks strongly impregnated with alkalies, more particularly lime. Last spring, myself and several others had our beer rendered extremely acid by lightning. Is there any method of preventing this? I brew 4 bushels to the hhd., and 1 lb. of Hops to the bushel of Malt; it is well boiled, well fermented, and put into half-hhd. casks, perfectly sweet, and a small quantity of new Hops and sand, by way of fining, is added to each cask when the beer becomes still; the cellar is under ground. Notwithstanding, the beer always becomes more or less acid within three months. It appears to me that perfectly sound beer is rarely, if ever, to be met with."

BARLEY: *Alpha.* Give it them gradually, beginning with half a bushel a day, to your 80 sheep. One bushel to that number is a full allowance.

BONES: *E F L.* We should prefer mixing the soot with the bones *after* they were dissolved.

BONES AND ACID: *H W.* Prepare some water-tight basin, you can do so with puddled clay out of doors; let it be a foot deep, and as large as your bones require. Soak the bones well, and then pour one-third their weight of acid over them; turn it over and over, and in a day or two cover all over with ashes; in a fortnight mix all up.

CARCASES: *R E.* The most rapid way to effect decomposition is to mix with something already decomposing. Chop the flesh up, and lay it in alternate beds with hot stable manure, and cover over with vegetable mould, burnt earth, or charred stuff of any kind; any of these will detain the effluvia.

COTTAGE CHIMNEYS: *M P* may inquire of Mr. Allan, Epsom, Surrey, who will readily give him very valuable instruction, that gentleman having made the attainable comforts of the poor his peculiar study.

CYCLOPÆDIA: *J Parsons.* Your letter has been forwarded to Dr. Playfair.

DAIRY PRODUCE: *W M.* A cow will yield from one pound of butter a day upwards, according to size, age, food, season, time of calving, breed, constitution, and health. So many are the circumstances which often render a direct answer to a direct question in farming impossible. Ayrshire cows have been found to yield a considerably larger quantity of much poorer milk than those of Kerry.

FEEDING SHEEP: *Constant Reader.* Give 8 lbs. apiece of Swedes or Mangold Wurzel at 6 A.M.; ½ lb. to 1 lb. of meal, in 2 lbs. of hay chaff, at 10 A.M.; 6 lbs. of Swedes at 1 P.M, and 8 lbs. of Swedes at night. That will feed large sheep. If they will not eat all, clean out the troughs before next feeding time, and give less next time.

GIANT SAINTFOIN: *E N N.* It will thrive on a light dry gravelly soil. Sow 2 bushels per acre and cut three times in a season, for fodder. You must sow it by itself, not with any Rye-grass. Drill it across the young Wheat plant.

GRASSES: *Old Troublesome* might apply to Lawson, Edinburgh, stating the circumstances of the case. Our answer to his question would be a quotation from Lawson's book: and he will get seeds and advice together from the original source, by applying as we suggest above.

GUILLOTINE CHAFF-CUTTER: *S W.* Thanks. The true address is Mr. Gillett, Brailes, Shipston-on-Stour, Worcestershire.

HAY: *A Constant Subscriber.* We have seen, in the bottom of a large rick, old hay that weighed 3 cwt. per cubic yard, but one-half of this is the more ordinary weight, and in measuring a rick of common shape, all above the eaves goes for nothing, or rather, to compensate for the less density of the upper part of what *is* measured.

HYBRID MAIZE: *Mr. Saville* should apply to Mr. Glendinning at the Garden.

LIQUID MANURE: *Constant Reader.* It is a subject on which we want experience. Cannot Mr. Dickenson or Mr. M'Culloch tell us the means and their cost by which they water their Grass? The immense labour of carrying out the weight of dilute liquid from yard tanks made us give up the practice long ago. We now box-feed our cattle: and we use litter enough to absorb the urine; and the best way is to keep as little dung as possible in the open yard, to fill your tank with charred stuff, and pump from the bottom of it to waste, clearing it out now and then, and using the stuff in the dung-heap.

RYE-GRASS: *W H., Cork.* Lolium *perenne*, with all its varieties, is perennial. But some Rye-grasses are not included in this species, for instance, Italian Rye-grass is a biennial.

SMALL FARMS: *X Y Z.* Your recommendations as to saving manure are, of course, right, and lie at the foundation of the improvement desired. Among the intermediate steps are drainage (if required), to make the manure applied available for the plants, and the employment of good animals, to convert the food into meat for sale or consumption.

SUNDRIES: *Urban.* Four or five inches is a deep enough furrow after sheep have been folded on Turnips. Clover will ultimately fail it taken every fourth year. Take Beans every eighth year, or sow Trifolium incarnatum now and then, or alter your rotation to a six years' course.—Can any one tell us the average cost and profit per annum from an Alderney cow?

SWEDES, &c.: *A A.* Matson's, for places where the plant will run to leaf; Laing's, for early sowing; Fettercairn, for hard flesh; Skirving's for weight of produce. The Ashcroft is spoken of as a distinct sort: we do not know it. We are not aware that Dickenson's is a distinct variety of Italian Rye-grass. Mr. Rodwell, who has written on the subject in the English Agricultural Journal, professes to have selected distinct varieties.

TITHE: *G B S.* Your question is not clearly put. Given the tithe, as originally commuted (a), the value for any year (m) as calculated from the averages, of 100*l.* of the original rent-charge, then your tithe for any year is $\frac{a \times m}{100}$

YOUNG CHICKS: *Rus* says: "Some young chickens which had been fed on egg and Rice [eggs boiled hard? Rice unboiled?], fell sick with a disease which caused their crops to feel quite hard. They were found, on being opened, to be full of water. How should they have been treated?" No doubt improper diet caused indigestion and produced fever—fever urged them to slake ther excessive thirst, and the surplus liquid thus imbibed may have filled up the air-cells, which abound among the abdominal viscera—dropsy was the consequence. These complaints are very common, not only among the young but also adult fowls. See "D. S. E.'s" articles on Diseases of Poultry and their cure. Prevention is the only true method, as regards young chickens.

WHEAT AFTER BARLEY: *A A Laicus.* It is not so likely that Barley leaves what is injurious to Wheat, as that it takes what would have benefited it. Barley too is sown generally on soils whose texture is not favourable to Wheat culture. Wheat may be sown in rows 12 inches apart, and if you get the true *Triticum æstivum*, the end of March is not too late. It is bad farming to sow Wheat after Barley. Peas of an early sort will ripen perfectly though sown so late as the end of April.

WORKS ON NEW ZEALAND: *T T* kindly replies to an inquiry on this subject:—I wish to assist "Henry" in his inquiries; but first I would premise that the resources of that country are being so rapidly developed, under the excellent Governor and the exemplary Bishop of the colony, that books written only a year or two ago cannot be depended upon for particulars

relating to the actual condition of different settlements, but must be consulted chiefly in reference to the climate, soil, and permanent features of the country. If your correspondent is a churchman, he will feel great interest in the Canterbury settlement, and he would do well to call at No. 1A, Adelphi-terrace, where some of the gentlemen intending to emigrate as founders of the settlement meet daily from 10 till 5 o'clock, where also Mr. Alfred Wills, who has been during seven years officially employed on surveys in the southern province of New Zealand, attends daily. Here an emigrant would obtain that oral information from those most interested in that settlement at least, and the most recent accounts, which are more real than anything which books can afford. The Canterbury papers, too, published occasionally by Parker, West Strand, contain all the most recent particulars of that colony. For New Zealand in general we have "Adventures in New Zealand from 1839 to 1844," by Jerningham Wakefield, 2 vols. 8vo. "Handbook for New Zealand," by a late Magistrate, who resided four years; 1 vol., Parker, 1849. "Handbook for the Southern Settlements," by G. P. Eurp, member of the Legislative Council. "Travels in New Zealand," by Dr. Dieffenbach; Murray, 1843. "View of the Art of Colonisation, in letters between a Statesman and a Colonist," by E. G. Wakefield. (This is a book on colonisation generally.) "An Account of the Settlement of New Plymouth, from a residence of five years," by Hursthouse. "Journals of the Bishop of New Zealand's Visitation Tours," published in five sixpenny or shilling parts by Rivington. "New Zealand: sketches in Pen and Pencil," by Tyrone Power; the latter part of this volume—the first part being occupied with the campaign against the natives. "A Map of New Zealand, with enlarged plans of Port Nicholson, Wellington, Nelson, New Plymouth, and Otaga," advertised in Saunders's Catalogue of Recent Publications on Colonisation. The "New Zealand Journal" is published every alternate Saturday, and contains all the news and events affecting the island.—Perhaps the above list may not be without use to others of your readers; for if colonial legislation be once placed on a good footing, it cannot be doubted that the next 10 years will witness an astonishing emigration to lands where the advantages of abundance and comfort, a delightful climate, a civilised native population, religious ordinances, and educational institutions, are combined in a greater degree than in any other colony in the British dominions. *T. T.*

*** Communications reaching town after Wednesday cannot be answered the same week.

Markets.

COVENT GARDEN, Feb. 16.

The favourable change in the weather has made Vegetables plentiful, but many kinds of Fruit are scarce. Hothouse Grapes are over for a season, and Pine-apples are anything but plentiful, as are also Pears and Apples. Filberts, Walnuts, and Chestnuts are abundant, and Oranges and Lemons are sufficient for the demand. Amongst Vegetables, Turnips and Carrots are good, and there is some fine Cornwall Broccoli in the market. Potatoes are unaltered since our last account; foreign ones fetch from 50s. to 70s. a ton. Lettuces and other salading are cheaper, and so are Mushrooms. French Beans, Asparagus, Seakale, and Rhubarb may be obtained. Cut Flowers consist of Heaths, Pelargoniums, Bignonia venusta, Primulas, Camellias, Cinerarias, Christmas Roses, Azaleas, Lilacs, Lily of the Valley, Epacrises, Acacias, and Roses.

FRUITS.

Pine-apples, per lb., 6s to 9s	Almonds, per peck, 6s
Grapes, Portugal, p. lb., 9d to 1s	— sweet, per lb., 2s to 3s
Pears, per doz., 6s to 10s	Walnuts, p. 100, 1s 6d to 2s
Apples, kitchen, p. bsh., 4s to 6s	— p. bush., 16s to 24s
Lemons, per doz., 1s to 2s	Filberts, per 100 lbs., 60s to 65s
— per 100, 6s to 12s	Nuts, Bar., p. bush., 20s to 22s
Oranges, per doz., 9d to 1s 6d	— Brazil, p. bsh., 12s to 16s
Oranges, per 100, 5s to 12s	Kent Cobs, 65s to 75s p. 100 lbs

VEGETABLES.

French Beans, p. 100, 2s 6d to 3s	Carrots, per bun., 4d to 6d
Seakale, per punnet, 1s to 2s	Spinach p. sieve, 2s to 3s
Asparagus, p. bund., 1s 6d to 6s	Onions, p. bushel, 2s to 3s 6d
Rhubarb, p. bundle, 6d to 1s	— Spanish, p. doz., 1s 6d to 4s
Savoys, per doz., 6d to 9d	Shallots, per lb., 4d to 8d
Cauliflowers, p. doz., 1s to 4s	Garlic, per lb., 4d to 8d
Broccoli, p. doz. bundl., 8s to 12s	Lettuce, Cab., p. sc., 4d to 9d
Greens, per doz., 2s to 3s	Endive, per score, 1s 6d to 4s
Brussels Sprouts, p. hf. sieve, 1s 6d to 2s	Mushrooms, p. pot., 9d to 1s 3d
Sorrel, p. hf. sieve, 1s to 2s	Small Salads, per punnet, 2d to 3d
Potatoes, per ton, 60s to 120s	Watercress, p. 12 bun., 6d to 9d
— per cwt., 3s to 7s	Fennel, per bunch, 2d to 3d
— per bush., 2s 6d to 3s 6d	Savory, per bunch, 2d to 3d
Turnips, p. doz. bun., 1s 6d to 2s 6d	Thyme, per bunch, 2d to 3d
Red Beet, per doz., 9d to 1s	Parsley, p. doz. bun., 2s to 3s
Horse Radish, p. bdl., 1s to 4s	— Roots, p. bdle., 1s to 1s
Cucumbers, each, 3s to 5s	Marjoram, per bunch, 2d
Leeks, per bunch, 1d to 1½d	Mint, per bunch, 9d to 1s
Celery, p. bundle, 8d to 1s 6d	Corn Salad, p. hf. sieve, 9d to 1s

SMITHFIELD, Monday, Feb. 11.

The number of Beasts is rather smaller, and the average quality scarcely so good as on Monday last. Consequently choicest kinds are freely sold, but trade is dull for second-rate, of which some remain unsold. The supply of Sheep continues to be short; they are rather more in demand, and in a few instances a little more money is given, but on the average prices cannot be quoted higher. Calves are still scarce and quite as dear. Trade is very heavy for Pigs, and prices are low. From Holland and Germany we have 100 Beasts and 16 Calves; from France, 6 Beasts and 100 Sheep; from Scotland, 300 Beasts; from Norfolk and Suffolk, 2300; and 200 from the midland counties.

Per st. of 8 lbs.—	s	d	s	d
Best Scots, Herefords, &c.	3	8	to 3	10
Best Short-horns	3	6	— 3	8
2d quality Beasts	2	8	— 3	4
Best Downs and Half-breds	4	0	— 4	4
Ditto Shorn				

Per st. of 8 lbs.—	s	d	s	d
Best Long-wools	3	8	to 3	10
Ditto Shorn				
Ewes & 2d quality	2	10	— 3	4
Ditto Shorn				
Lambs				
Calves	4	0	— 4	10
Pigs	3	0	— 4	0

Beasts, 3416; Sheep and Lambs, 16,390; Calves, 63; Pigs, 195.

Friday, Feb. 15.

The number of Beasts is not very large, but it exceeds the demand. As is usual at the commencement of Lent, trade is very heavy. On the average prices are lower, and several remain unsold. The supply of Sheep, although not large, is a fair average for the time of year; however, the stock on hand being small, they are freely sold at rather higher rates. Calves are more plentiful; in consequence prices are fully 4d. per 8 lbs. lower for best kinds, and a still larger reduction is submitted to for inferior quality. Trade is heavy for Pigs. Foreign supply consists of 139 Beasts, 80 Sheep, and 75 Calves. The number of Milch Cows is 126.

Best Scots, Herefords, &c.	3	6	to 3	10
Best Short-horns	3	4	— 3	8
2d quality Beasts	2	6	— 3	2
Best Downs and Half-breds	4	2	— 4	6
Ditto Shorn				

Best Long-wools	3	8	to 4	0
Ditto Shorn				
Ewes & 2d quality	3	0	— 3	6
Ditto Shorn				
Lambs				
Calves	3	8	— 4	10
Pigs	3	4	— 4	0

Beasts, 862; Sheep and Lambs, 2750; Calves, 205; Pigs, 190.

Hops.—Friday, Feb. 15.

Messrs. Pattenden and Smith report that the market is in a very quiet state, at late prices.

ENGLISH TIMBER AND BARK.—Feb. 16.

	Round Timber, Per Load.	Plank, Per Foot Cube.	Inch Board, Per Foot Superf.
Oak	£5 10 0 to £8 0 0	3s. 0d. to 5s. 0d.	0s. 4½d. to 0s. 6d.
Ash	4 10 0 — 6 0 0	2 3 — 3 3	0 3 — 0 4
Elm	3 0 0 — 4 0 0	1 9 — 2 3	0 2½ — 0 3
Beech	2 10 0 — 3 5 0	1 6 — 2 0	0 2 — 0 2½
Lime	3 0 0 — 4 0 0	1 6 — 2 3	0 3 — 0 4½

Bark per load of 45 cwt, 14l. to 16l. The late severe weather having caused a partial suspension of operations in the tan yards, few transactions have occurred. J. S.

HAY.—Per Load of 36 Trusses.

Smithfield, Feb. 14.

Prime Meadow Hay	65s to 72s	Clover		60s to 75s
Inferior ditto	50 60	New Clover		— —
Rowen	50 60	Straw	21	25
New Hay	— —		J. Cooper.	

Cumberland Market, Feb. 14.

Prime Meadow Hay	66s to 72s	Inferior	60s to 75s
Inferior ditto	50 60	New Clover	— —
New Hay	— —	Straw	24 29
Old Clover	80 88	Joshua Baker.	

Whitechapel, Feb. 14.

Fine Old Hay	63s to 67s	New Clover	—s to —s
Inferior ditto	50 55	Inferior ditto	55 60
New Hay	— —	Straw	22 26
Old Clover	80 85		

POTATOES.—Southwark, Feb. 11.

The Committee report that the arrivals during the last week coastwise have been limited, notwithstanding which trade is heavy, and it with difficulty the following quotations are supported, in consequence of the very heavy supply per rail.:—Yorkshire Regents, 90s. to 120s. per ton; Wisbeach do., 70s. to 100s.; Scotch do., 70s. to 80s.; Scotch cups, 60s. to 70s.; French whites, 70s. to 80s.; Belgian do., 65s. to 75s.

MARK LANE.

Monday, Feb. 11.—The supply of Wheat by land carriage samples this morning being small it was realised at fully the prices of this day se'nnight; foreign also met an improved inquiry, but being held above the buyers' ideas, only a limited business was transacted.—We observe no alteration in the value of Barley, Beans, or Peas.—Oats meet a slow sale at our last week's quotations.

British per imperial Quarter.	s.	s.		s.	s.
Wheat, Essex, Kent, & Suffolk ...White	41	—43	Red	36	—38
— — fine selected runs ...ditto	42	—44	Red	38	—40
— — Talavera	48	—56			
— Norfolk, Lincoln, & York ...White	—		Red	—	
— Foreign	35	—54			
Barley grind. & distil., 19s to 22s...Chev.	24	—27	Malting	22	—24
— Foreign.....Grinding and distilling	18	—21	Malting	22	—24
Oats, Essex and Suffolk	15	—19			
— Scotch and Lincolnshire ...Potato	18	—22	Feed	16	—18
— Irish .....Potato	17	—20	Feed	15	—18
— Foreign .....Poland and Brew	16	—20	Feed	13	—17
Rye	20	—24	Foreign	20	—23
Rye-meal, foreign .....per ton	5l.	—6l.			
Beans, Mazagan .....21s to 23s.....Tick	24	—26	Harrow	24	—26
— Pigeon .....25s — 28s ...Winds	22	—28	Longpod	25	—28
— Foreign .....Small	24	—36	Egyptian	22	—23
Peas, white, Essex and Kent.....Boilers	24	—26	Suffolk	25	—27
— Maple .....24s to 26s.....Grey	22	—23	Foreign	21	—28
Maize .....White	22	—25	Yellow	24	—26
Flour, best marks, delivered ...per sack	36	—40			
— Suffolk .....ditto	32	—36	Norfolk	32	—36
— Foreign .....per barrel	22	—24	Per sack	31	—34

Arrivals in the Port of London last week.

	Wheat.	Barley.	Malt	Oats.	Beans.	Peas.
Flour, 8410 sks	Qrs.	Qrs.	Qrs	Qrs.	Qrs.	Qrs.
— — bls	1652	3445	2436	937	953	695
English	—	—	79	—	—	—
Irish	593	2800	—	—	3406	—
Foreign						

Friday, Feb. 15.—The arrivals of grain of all kinds during the week have been small. This day's market was but moderately attended, and the business transacted was quite of a retail character; we observe no alteration in the value of any description of Corn.—Flour continues difficult of sale.—Floating cargoes of Galatz Indian Corn are offered at 28s. 6d. per quarter.—During the week a firmer feeling has prevailed in the corn trade throughout the kingdom, and in some instances a slight improvement in the value of Wheat has been established. In the Baltic diminished supplies and the general opinion of the safety of present prices have prevented any decline of moment in the value of grain there. In Antwerp large arrivals were looked for, and it was expected that 62 lbs. Louvain Wheat would decline to 36s. 6d. per qr., f.o.b. In the French markets quotations continue unaltered.

Arrivals this week.

	Wheat. Qrs.	Barley. Qrs.	Oats. Qrs.	Flour.
English	1470	2260	5710	850 sacks
Irish	—	—	—	
Foreign	1680	400	—	— brls.

Imperial Averages.	Wheat.	Barley.	Oats.	Rye.	Beans.	Peas.
Jan. 5	40s 0d	25s 11d	15s 10d	24s 11d	26s 11d	28s 5d
— 12	41 1	26 4	15 6	23 4	26 6	28 6
— 19	41 0	26 3	16 0	23 9	26 6	27 6
— 26	40 1	25 9	15 10	21 2	26 1	28 5
Feb. 2	39 4	25 4	15 2	23 10	25 6	27 0
— 9	38 6	24 7	15 3	22 1	25 3	26 4
Aggreg. Aver.	40 0	25 8	15 7	23 2	26 2	27 8
Duties on Foreign Grain	1 0	1 0	1 0	1 0	1 0	1 0

Fluctuations in the last six weeks' Corn Averages.

Prices.	Jan. 5.	Jan. 12.	Jan. 19.	Jan. 26.	Feb. 2.	Feb. 9.
41s 1d	...		...	...	...	...
41 0	...	...	...	...	...	...
40 1	...	...	...	...	...	...
40 0	...	...	...	...	...	...
39 4	...	...	...	...	...	...
38 6	...	...	...	...	...	...

SEEDS.—Feb. 11.

Canary, per qr.	74s to 78s	Coriander, per cwt.	16s— 21s
Caraway, per cwt.	31 — 33	Mustard, white, p. bush.	6 — 7
Hempseed, per qr.	34 — 35	— brown, do.	7 — 9
Linseed, foreign, do.	37 — 45	Rape, per last	28l.—34l.
Clover, red, per cwt.	— —	Cakes, Linseed, p. 1000	9l. 12s
— — foreign, do.	— —	— — foreign, p. ton	6l. 15s
— white, do.	— —	— Rape, foreign, do.	4l. 5s
— — foreign, do.	— —	Tares, per bush.	4s 6d—5s 6d

Liverpool, Tuesday, Feb. 12.—The last week's arrivals of grain, meal, and flour are upon a very limited scale, but at the same time the general demand has been without animation, and there has been no observable alteration in prices. At this day's market there was a fair attendance of millers and dealers, but their operations were confined to mere retail purchases of Wheat and Flour, at similar rates to those paid on this day se'nnight. Oats were ½d. per bushel lower. In a few instances 3d. to 6d. per qr. reduction was submitted to on Indian Corn, but, on the whole, a fair quantity was taken by Irish buyers, and the decline was not general. Barley and Peas were dull, and unchanged in value. Egyptian Beans declined 6d. to 1s. per quarter.

HARTLEY'S PATENT ROUGH PLATE GLASS FOR CONSERVATORIES, &c.

See Article in The Gardeners' Chronicle of Saturday, December 8, 1849.

"Continued experience leaves us no room to doubt that this is the best material yet produced, and that it will in time supersede glass of all other kinds for the greater part of Gardening purposes." . . . "As for the article substituted for Rough Plate . . . it is wholly unfit for any horticultural purpose." . . . "The best sample of it which we have yet seen was Manufactured by Messrs. Hartleys, AND SOLD BY MESSRS. JAMES PHILLIPS & CO., 116, BISHOPSGATE STREET."

GLASS FOR CONSERVATORIES.

JAMES PHILLIPS and Co. have the pleasure to hand their New List of Prices of GLASS for Cash.

CUT TO SIZE.

16 oz. from 2d. to 3½d. per foot.
21 " 3½ " 5 "
26 " 3½ " 7½ "
32 " 4 " 9½ "

SHEET SQUARES.

In boxes of 100 feet.	s.	d.
Under	6 by 4	12 6
6 by 4 and under 7 by 5	16	6
7 by 5 " 8 by 6	18	6
8 by 6 " 10 by 8	20	6

100 feet and 200 feet cases of large Sheet Glass, for cutting up, at 2½d. per foot. British Plate Glass, from 1s. 2d. to 2s. per foot, according to size.

HARTLEY'S PATENT ROUGH PLATE, packed in boxes of 50 feet each:

6 by 4 and 6½ by 4½ ... 10s. 6d.
8 by 6 " 8½ by 6½ ... 13 6
7 by 5 and 7½ by 5½ ... 12s. 0d.
9 by 7 " 10 by 8 ... 15 0

MILK PANS.

12 in. diameter	...	2s.	0d.
14 "	...	2	6
16 "	...	3	0
18 "	...	3	6
20 "	...	4	0
22 "	...	4	6
24 "	...	5	0
26 "	...	6	0

CREAM POTS, from 2s. each.

PROPAGATING GLASSES.

2 in. diameter	...	0s.	2d.
3 "	...	0	3
4 "	...	0	4
5 "	...	0	6
6 "	...	0	8
7 "	...	0	10
8 "	...	1	0
9 "	...	1	2
10 "	...	1	4
11 "	...	1	6

BEE GLASSES, same price.

METAL HAND FRAMES.

12 inches	...	6s.	0d.
14 "	...	7	0
16 "	...	8	0
18 "	...	9	0
20 "	...	10	0
24 "	...	12	0

Open tops, 1s. extra.

CUCUMBER TUBES.

12 inches long	...	1s.	0d.
14 "	...	1	2
16 "	...	1	4
18 "	...	1	6
20 "	...	1	8
22 "	...	1	10
24 "	...	2	0

Glass Shades; Tiles and Slates of any size; Wasp Traps, 3s. 6d. per dozen; Lamp Shades; Rough Plate Glass of every thickness. Lactometers, for trying the quality of milk, 4 tubes, 7s. 6d.; 6 do., 10s. Glass Stands for Pianoforte, and every article in the trade.

JAMES PHILLIPS and Co., 116, BISHOPSGATE-STREET WITHOUT, LONDON.

GLASS FOR CONSERVATORIES, &c.

HETLEY and CO. supply 16-oz. Sheet Glass of British Manufacture, at prices varying from 2d. to 3d. per square foot, for the usual sizes required, many thousand feet of which are kept ready packed for immediate delivery. Lists of Prices and estimates forwarded, on application, for PATENT ROUGH PLATE, THICK CROWN GLASS, GLASS TILES and SLATES, WATER-PIPES, PROPAGATING GLASSES, GLASS MILK PANS, PATENT PLATE-GLASS, ORNAMENTAL WINDOW GLASS, and GLASS SHADES, to James Hetley and Co., 35, Soho-square, London.

See the *Gardeners' Chronicle* first Saturday in each month.

HOT WATER APPARATUS AND HORTICULTURAL BUILDING.



W. HILL begs respectfully to announce that his improved "FLUE BOILER" may now be had in sizes to suit every description of Apparatus, from that of 100 feet to 2000 feet of 4-inch pipe. Improved STEAM BOILERS, from one horse-power and upwards, adapted either for stationary or portable engines, and guaranteed to be most effective.

Every description of Horticultural Building constructed upon the best principle. Buildings of any kind heated by hot water.

*** A liberal Discount to the Trade.

W. Hill, Horticultural Works, Greenwich.

CROWN, SHEET, AND ROUGH PLATE GLASS, FOR HOTHOUSES, CONSERVATORIES, &c.

Of every manufacture FIT FOR USE, including the make of Messrs. Chance, Hartley, Swinburne, and others.

100 and 200 feet cases of large Sheet Glass, from 2½d. per foot. Small ditto, 10s. 6d. per 100 feet, packed in boxes ready for immediate delivery. Curators of Botanical Societies, Florists, Railway Agents, and others requiring large quantities, will, on sending dimensions, receive estimates at the lowest prices.

GLASS MILK PANS, CREAM POTS, Lactometers, Bee Glasses, Fish Globes, and all kinds of Dairy Glass, Propagating Glasses, Hyacinth Dishes, Cucumber Tubes, and every other description of Garden Glasses.

PATENT GLASS PENS, self supplying, never blot, never soil the ruler, and will write continuously for 12 hours.

Also, Glass Rulers, Glass Inks for office-stands, desks, &c. Stationers and Schools supplied. Wholesale Warehouse for Ornamental Shades, Lamp Shades, Gas Glasses, Genuine White Lead, Paints, Colours, and Pumps for Farm purposes.

Our Catalogue of 18 folios is the most complete ever published. No Gardener or Farm Bailiff should be without one. May be had Gratis on sending two postage stamps to Messrs. Cogan and Co., 48, Leicester-square, London.

GLASS FOR CONSERVATORIES AND HORTICULTURAL PURPOSES, &c.



T. MILLINGTON'S SHEET GLASS, which is of the best description, varying from 16 to 32 ounces, at from 2d. per foot and upwards; 100 feet and 200 feet cases of large Sheet Glass, for cutting up, at 2½d. per foot. British Plate Glass, from 1s. 2d. to 2s. per foot, according to size. Patent Rough Plate Glass, from ⅛ to 1 inch in thickness, from 4d. per foot upwards. Glass Slates and Tiles. Milk Pans from 12 to 24 inches diameter, from 2s. to 5s. each. Cucumber Tubes, from 12 to 24 inches long, at 1d. per inch. Lactometers, 7s. 6d. each. Wasp Traps.—Lists may be had, on application at the Warehouse, 87, Bishopsgate-street Without, same side as the Eastern Counties Railway.

Sales by Auction.

MESSRS. LODDIGES' CELEBRATED ARBORETUM FOR SALE BY AUCTION.

TO NOBLEMEN, GENTLEMEN, AND NURSERYMEN.

MR. J. C. STEVENS is favoured with instructions from Messrs. LODDIGES, of Hackney, to submit for unreserved competition, on the premises, on MONDAY, 4th March, and five following days, at 12 for 1 o'clock, in consequence of the decease of the Senior Partner, the FIRST PORTION OF THEIR UNRIVALLED ARBORETUM, comprising many thousand well-grown specimens of the rarest and most beautiful Trees and Shrubs, affording to noblemen and gentlemen engaged in Ornamental Planting an opportunity which has never before occurred.—Catalogues are preparing, and will be ready for delivery 10 days prior to the sale, on the premises, and of Mr. J. C. STEVENS, 38, King-st., Covent-garden, London.

AMERICAN PLANTS.

MR. J. C. STEVENS begs to notify that two days of the Sale at Messrs. LODDIGES will be devoted entirely to the American Plants, which comprise Azaleas full of flower-buds and well adapted for forcing, Kalmias, Andromedas, Ledums, &c.

TO NOBLEMEN AND GENTLEMEN ENGAGED IN ORNAMENTAL PLANTING, AND THE TRADE.

A large parcel of Araucaria imbricata, and Cedrus Deodara, two of the most noble Ornamental Trees ever introduced into Europe, and a few other hardy Coniferæ.

MR. J. C. STEVENS is directed to sell by Auction, at his Great Room, 38, King-street, Covent-garden, on THURSDAY, Feb. 21, at 11 for 12 o'clock precisely, 1100 Cedrus Deodara, 1 to 2 feet; 500 Araucaria imbricata, 1 foot to 18 inches; 12 fine specimens of Taxodium sempervirens, from 5 to 8 feet, and 100 strong plants 18 inches; 10 Taxodium pinnatum; 25 Pinus patula; 100 Cupressus torulosus; and 6 Gordon Island Cypress.—May be viewed the day prior and morning of sale, and Catalogues had (by enclosing a penny stamp) of Mr. J. C. STEVENS, 38, King-street, Covent-garden, London.

EAST INDIAN ORCHIDS OF THE GREATEST RARITY.

MR. J. C. STEVENS is instructed to sell by Auction, at his Great Room, 38, King-street, Covent Garden, on TUESDAY, Feb. 26, at 12 for 1 o'clock precisely, an importation just received from CENTRAL INDIA, and well deserving the attention of Orchid growers, as it comprises a most remarkable new Cælogyne with erect panicles of flowers 3 inches in diameter, Cælogyne maculata also a new and beautiful species, C. cristata, C. Wallichiana, Dendrobium Farmerii (true), D. Devonianum, D. Gibsonii, D. Dalhousianum, D. Cambridgeanum, D. Griffithianum, and several new and distinct species of Dendrobium, a splendid new Cymbidium with erect flower stems 2 feet in length, and other novelties and rarities, in the finest order.—May be viewed on the morning of Sale and Catalogues had.

MR. HASLAM will sell by Auction, at the Auction Mart, on THURSDAY, Feb. 21, and FRIDAY, Feb. 22, 300 Camellias, beautifully set with opening bloom, Azalea indica, Orange-trees, &c. Also, an extensive collection of Yellow and other Picotees, Carnations, Pansies, and Herbaceous Plants, cultivated by Mr. Thomas, of Greenwich, an importation of Flower Seeds, some Weeping and other Roses, &c.—Catalogues may be had at the Mart, and of the Auctioneer, South Essex Nurseries, Epping, Essex.

IMPORTANT SALE OF CAMELLIAS, ROSES, LILIUMS, &c.

MESSRS. PROTHEROE AND MORRIS will submit to public competition by Auction, at the Auction Mart, Bartholomew-lane, on THURSDAY, March 7, 1850, and following day, at 12 o'clock each day, about 600 Double Camellias, from 18 inches to 10 feet, beautifully furnished with bloom buds, 200 Strong Camellia Stocks, also 400 Standard and Dwarf Roses, consisting of Noisettes, Hybrids, Bourbons, Perpetuals, &c.; a fine collection of American Plants, comprising Ghent and other Azaleas, Andromeda Floribunda, Magnolias, &c.; 200 strong bulbs of Lilium Lancifolium Album, Speciosum, &c.—May be viewed the morning of Sale; Catalogues had at the Mart, and of the Auctioneers, American Nursery, Leytonstone, Essex.

BROMPTON-PARK NURSERY, KENSINGTON.

TO NOBLEMEN, GENTLEMEN, NURSERYMEN, & Others.

MESSRS. PROTHEROE AND MORRIS have received instructions from Mr. John Sangster, and Mr. Robert Donald, trustees for the above estate, to submit to an unreserved sale by Auction, on the premises, Brompton park Nursery, Kensington-road, Middlesex, on MONDAY, February 25th, and following days, at 11 o'clock each day, the whole of the remaining and valuable NURSERY STOCK, consisting of the well known celebrated collection of Standard, Dwarf, Maiden, and Trained Fruit Trees, and a rich assortment of Evergreens, Deciduous Shrubs, and Ornamental Trees; together with the Greenhouses, fitted up with new and improved Hot-water Apparatus, Pits, Frames, Carts, and Utensils; also a few Seeds.—May be viewed prior to the sale. Catalogues (1s each, returnable to purchasers) may be had of the principal Seedsmen in London; and of the Auctioneers, American Nursery, Leytonstone, Essex. If sent by post, 1s. 6d. each.

TO NOBLEMEN, GENTLEMEN, NURSERYMEN, & Others.

MESSRS. PROTHEROE AND MORRIS are favoured with instructions from Mr. John Smith, to submit to public competition by Auction, on the premises, Dalston Nursery, Middlesex, on MONDAY, March 11, and following day, at 11 o'clock (in consequence of the premises being required by the London and Birmingham West India Dock Junction Railway Company), the valuable NURSERY STOCK, consisting of a very superior assortment of large Evergreens, American Plants, Ornamental Trees, and Deciduous Shrubs, Fruit and Forest Trees in great variety, fine Ivies, Roses in pots, &c.—May be viewed prior to the sale. Catalogues may be had, 6d. each (returnable to purchasers), on the premises; the Shop, Covent-garden; of the principal Seedsmen in London; and of the Auctioneers, American Nursery, Leytonstone, Essex.

MR. PILE will sell by Auction, at the Mart, Bartholomew-lane, on WEDNESDAY, next, at 12 o'clock, 50 lots Standard Roses, 5 or 6 lbs. German Stock (24 varieties), 3 or 4 lbs. German Aster (16 varieties). Fifty other remainders of choice seeds, some hundreds of the scarce and beautiful White Turban Ranunculus (selling freely at 1s. each), Ditto Yellow Turban, and named varieties, Anemones, sundry Bulbs, Roots, and Effects, the remaining Stock of a retiring Florist, obliged to make a clearance—Catalogues on Tuesday of Mr. PILE, at the Mart, and at the Offices of the Gardeners' Journal, *Gardeners' Chronicle*, and the Country Gentleman.

TO GENTLEMEN, FLORISTS, AND OTHERS.

THE STOCK OF A FLORIST.

MR. D. A. RAMSAY will sell by Auction, at the Brompton Auction Ground, Fulham-road, Brompton (one mile from Hyde Park Corner), on WEDNESDAY, Feb. 20, 1850, at 12 o'clock precisely, without reserve, a quantity of large specimens of Camellia, Erica, Azalea indica, Acacia armata, Epacris, &c.; with 1500 Greenhouse Plants, in choice variety, comprising Camellia, Oleander, Epacris, Azalea, Crassula, Correæa, Cytissus, and other Plants in bloom; and also 300 Standard and Dwarf Roses.—May be viewed on the morning of Sale, and Catalogues had of the Auctioneer, Brompton Nursery, Fulham-road, Brompton, London.

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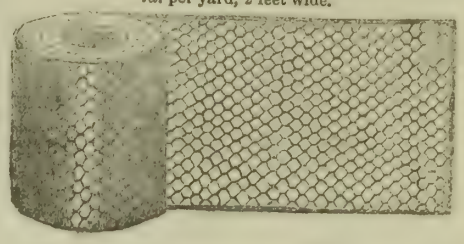
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London, February 16.

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		Galvanised.	Japanned Iron.
2-inch mesh, light, 24-inch wide	...	7d. per yd.	5d. per yd.
2-inch " strong "	...	9 "	6½ "
2-inch " extra strong "	...	12 "	9 "
1⅝-inch " light "	...	8 "	6 "
1⅝-inch " strong "	...	10 "	8 "
1⅝-inch " extra strong "	...	14 "	11 "

All the above can be made any width at proportionate prices. If the upper half is a coarse mesh, it will reduce the price one-fourth. Galvanised sparrow-proof netting for pheasantries, 3d. per square foot. Patterns forwarded post-free.

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(and Lecturer on Chemistry in the School of Medicine, Newcastle-on-Tyne)."

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THE ATHENÆUM,

JOURNAL OF ENGLISH AND FOREIGN LITERATURE, SCIENCE, AND THE FINE ARTS.
Twenty-four Large Quarto Pages.

Reviews OF, WITH EXTRACTS FROM—

History of England during the 30 Years' Peace. By Harriet Martineau.
Lives of Mahomet and his Successors. By Washington Irving. [Second Notice.]
Letters of Junius. Edited by J. Wade. [Second Notice.]
Considerations on the Franklin Expedition. By Rev. W. Scoresby.
Aben Ezra's Commentary on the Book of Esther. Edited by J. Zedner.

Original Papers.—Poetry: "The People's Appeal." By Frances Brown—The British Museum Library—Mr. Thompson's 'Austria.'

Our Weekly Gossip.—New Arctic Expedition—Death of Mr. John Caldecott—Funeral of the Danish Poet Oehlenschläger—Death of Miller, the American Prophet—Dr. Chalmers' Pension—Sale at Marlborough House—New Edition of King Alfred's Works—The Egyptian Challenge—St. Petersburgh Magnetical Observatory.

Societies.—Royal Institution (Mr. Faraday 'On the Electricity of the Air')—Geological (Mr. Prestwich 'On the Basement Bed of the London Clay')—Entomological.

Fine Arts.—Exhibition of Modern Art at the British Institution.

Fine Art Gossip.—Mosaic of Autun—Lectures at the Royal Academy—Death of Schadow, the German Sculptor.

Music and the Drama.—Drury-lane Theatre (Schiller's 'Fiesco')—Olympic ("A Dead Take-in")—Strand ('The Miser')—Haymarket—Sadler's Wells—Surrey.

Musical and Dramatic Gossip.—Sebastian Bach Society—Chamber Concerts—M. Scribe's 'Tempest'—'Le Prophete' in Paris—Death of M. Alizard—Opera Rumours.

Miscellanea.—New Houses of Parliament—British Institution.

Order The Athenæum of any Bookseller.

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THE GARDENERS' CHRONICLE
AND
AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 8—1850.] SATURDAY, FEBRUARY 23. [PRICE 6*d.*

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N.B. Inverness has direct communication by steam with London, Edinburgh, Glasgow, &c.

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OPINIONS OF THE PRESS.

Dr. LINDLEY, in the *Gardeners' Chronicle*, Dec. 22, 1849, says, "*This contains lists of good vegetables, with useful notes appended to the names of many of the sorts. . . . It is a well-arranged Catalogue, and will be found of service to all purchasers of Seeds.*"

The Editor of "The Midland Florist," for January, 1850, says, "*We have just received the General Catalogue of Garden, Agricultural, and Flower Seeds, sold by William E. Rendle and Co., Plymouth, which, from its excellence, well merits something more than a passing notice, and happy shall we be from time to time (with Messrs. Rendle's permission) to extract some of its valuable information for the benefit of our readers. . . . The Flower Seed List is peculiarly comprehensive, and gives to each variety its scientific name, hardihood, time of duration, colour, height, and time of flowering. Our readers will thus see that, from its immense utility, we can scarcely say too much in its recommendation; and we are sure that the name of the eminent firm will be a sufficient guarantee that every article they send out will not only be true to name, but also of the best possible quality.*"

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New Hardy Yellow Rhododendrons, each 7*s.* 6*d.* to		10	6
Hybrid Rhododendrons, extra fine, with 30 to 50 bloom buds, each 2*s.* 6*d.* to		3	6
6 Fine Hardy Magnolias, one of a sort, by name		10	6
Hardy Heaths and Vacciniums, ditto ditto, per doz.		8	0
Passifloras, Hardy and Greenhouse, each		1	6
50 Dwarf Roses, on their own roots, by name		16	0
12 Tea-scented Roses, one of a sort, by name, in pots		9	0
Standard and half-standard Roses, per dozen, 12*s.* and		15	0
Green and Black Tea plants, quite hardy, per dozen		15	0
Climbing Roses, of sorts, per doz.		6	0
Bourbon Roses, superior sorts, Rose La Reine and Perpetual Queen, for planting in beds, per dozen		10	6
12 Greenhouse Azaleas, one of a sort, blooming plants		25	0
12 Choice Camellias, by name, ditto ditto		30	0
50 Choice Greenhouse Plants, one of a sort, by name		45	0
24 Choice Ericas, one of a sort, by name		15	0
First-rate Show Pinks, per dozen 6*s.* and		9	0
First-rate Carnations and Picotees, per dozen 9*s.* and		12	0
First-rate Pansies, per dozen 6*s.* and		9	0
Cinerarias and Calceolariae, show varieties, strong plants, per dozen 9*s.* to		12	0
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12 Pæonies, new white, pink, and blush, of sorts		8	0
25 Choice Hardy Herbaceous Plants, named		7	6

Flower Seeds, 18 papers, 5*s.*; 36 ditto, 10*s.*; of the most approved varieties, sent free by post. Also Catalogues for 1850. Albion Nursery, Stoke Newington, London, Feb. 23.

ORANGE, LEMON, LIME, CITRON, AND SHADDOCK TREES.—The first importation of the above Trees, in most excellent and healthy condition, has arrived from Italy. They are from 2 to 4 feet high in the stems, very straight, and possess strong grafts, and will make splendid trees in two or three years; from 12*s.* to 25*s.* each. They may be seen at A. COBBETT'S Italian and Foreign Warehouse, 18, Pall-mall, London. Also Catalonian, Azorian, and Arabian Jessamine Plants. The Double Italian Tuberose Roots are still on sale, 4*s.* per dozen.

TO PEAR GROWERS.

RENÉ LANGELIER, St. Helier, Jersey, begs to state that he has still to dispose of, Trees of BEURRE ST. HELIER, a very valuable sort for its long keeping and melting qualities. Also BEURRE DELAVAL, as well as GABOURELLE SEEDLING, which is a great bearer, and fit for kitchen use.

R. L. wishes to draw the attention of amateurs to his unrivalled Collection, of which the trees are of unusual vigour. R. L. can meet any orders for what has been before advertised in this Paper.

BROMHAM-HALL GREEN-FLESH MELON IS THE FINEST FLAVOURED IN THE WORLD.

EDWARD TILEY having become possessed of the whole stock of Seed of that very superior MELON called "BROMHAM-HALL GREEN-FLESH MELON," he is now sending out good sound Seeds at 2*s.* 6*d.* per packet of 6 seeds; larger do. of 15 seeds, 5*s.* per packet. For further particulars of the above, see Advertisement in this Paper, February 9th. Also the following fine varieties can be highly recommended:

	s.	*d.*	
Queen Melon	1	6	per packet.
Bowood Green-flesh	1	0	,,
Beechwood do.	1	0	,,
Windsor Prize do.	1	0	,,
Emperor	1	0	,,
Fleming's Trentham Hybrid	1	0	,,
Duncan's Green-flesh do. improved ..	1	0	,,
Hampton-court Green-flesh	1	0	,,
Egyptian do. do. improved ..	1	0	,,
FIRST PRIZE CUCUMBERS.			
Victory of Bath	2	0	,,
Gordon's White Spine	1	6	,,
Lord Kenyon's Favourite	2	6	,,

A packet of each of the three varieties, 5*s.*; if preferred, also a packet of Bromham-hall Melon will be included with the three Cucumbers for 7*s.*

Sold by EDWARD TILEY, Nurseryman, Seedsman, and Florist, 16, Pulteney-bridge, Bath. A remittance must accompany the order, either in cash or penny postage stamps.

A BEAUTIFUL ORNAMENT FOR THE DRAWING-ROOM.
Send 24 penny postage stamps to

JOHN REID, Mount Scilla Nursery, near Chippenham, Wilts, and in return you will receive 12 Roots of DOUBLE LILY OF THE VALLEY, post free, to any part of the United Kingdom. The graceful habit and delicate appearance of the above Flower render it equally suitable for the Suburban Villa and the Nobleman's Parterre; while the delicious perfume it possesses will make it indispensable in the Lady's Posy and the Drawing-room Bouquet.

SEED POTATOES.

CHARLES SHARPE has much pleasure in announcing that he has got the under-mentioned sorts of POTATOES to offer again this season, which have for the last four successive years given general satisfaction in all parts of the kingdom. The first six sorts are very early and productive; those marked thus * are the best sorts for Frame Forcing; they are offered at the following prices, packing included:

Per bushel of 56 lbs.		Per bushel of 56 lbs.	
*Early Oxford Potatoes ...	8*s.*	Early Manleys*	7*s.*
*Early Round Frame ...	8*s.*	Early Cockneys	7*s.*
Early Ash-leaved Kidney	8*s.*	Fox's Seedling	7*s.*
Second Early Potatoes for Winter and Spring use:			
American Native Potatoes	5*s.*	Kentish Pink Kidney ...	4*s.*
York Regents	5*s.*	Forty Fold	4*s.*

Orders will be forwarded on the receipt of a Post-office order, and great care will be taken to ensure their safe delivery. A liberal allowance to the Trade.—Wisbeach, Cambridgeshire.

UNIVERSAL CATALOGUE OF VERBENAS, FUCHSIAS, DAHLIAS, CHRYSANTHEMUMS, PETUNIAS, &c.

G. SMITH'S Priced and Descriptive Catalogue contains the very best selections of the above; with a useful note and a marked List of the best Verbenas for exhibition in pots, with mode of training, and what is of great importance to exhibitors, the time of stopping back, so as to catch a sheet of bloom when it may be required; with descriptions of his superb Seedling Fuchsias, Verbenas, Petunias, &c.; and will be forwarded on the receipt of one postage stamp.—Tollington Nursery, Hornsey, Islington.

RENDLE'S TRUE WILLCOVE BROCCOLI.—*This superior variety has been proved by thousands to be the best late sort in cultivation, and can be recommended with much confidence. We have saved a small quantity this season on our own grounds, from some of the finest heads ever seen; price* 1*s.* *per packet, free by post.*

*** Twenty packets to the Trade for 12*s.*, or 50 for 2*l.* 10*s.* It will give the most complete satisfaction.

Our commercial stamp is on each packet.

COLE'S SUPERB RED CELERY, 1*s.* per packet.

Apply to WILLIAM E. RENDLE and Co.,
Seed Merchants, Plymouth.

FRUIT TREES, FLOWER-BEDS, &c.—Garden Netting, of superior quality, for preserving Fruit trees from frost, blight, and birds, or as a fence for rabbits, fowls, pigeons, Tulip and Seed beds, can be had in any length or quantity at 3*d.* per yard 2 yards wide, or 6*d.* per yard 4 yards wide, from JOHN KING FARLOWS, Fishing Rod and Net Manufactory, 5, Crooked-lane, London-bridge. The netting being tanned will stand exposure to the weather for many years. Forwarded to any part of the kingdom on receipt of post-office order, or reference in town. An allowance to gardeners and large consumers.—Copy the Address, 5, Crooked-lane, London-bridge.

EPPS' COLLECTIONS OF KITCHEN GARDEN SEEDS.

No. 1 contains the following quantities, and are of the best and newest kinds, being a sufficient supply for a nobleman's large establishment: 26 quarts Peas, 12 quarts Beans, 4 oz. Beet, 1 oz. Borecole, 6 oz. Broccoli, 1 oz. Brussels Sprouts, ½ oz. Buda Kale, 7 oz. Cabbage, 10 oz. Carrot, 2 oz. Cauliflower, 2 oz. Celery, 3 lbs. Cress, 4 pkts. Cucumber, 2 oz. Endive, 2 oz. Leek, 6 oz. Lettuce, 3 pkts. Melon, 2 quarts Mustard, 10 oz. Onion, 4 oz. Parsley, 6 oz. Parsnip, 2 oz. Savoy, 3 pints Radish, 1 oz. Scorzonera, 2 quarts Spinach, 2 lbs. Turnips, 1 pkt. Vegetable Marrow, 1 oz. Salsafy, and 12 pkts. Herbs, Chili, Capsicum, &c. £3 3 0
No. 2, two-thirds of the above 2 2 0
No. 3, one-third ditto 1 1 0
No. 4.—This collection is sufficient for a gentleman having a moderate sized garden 0 12 6

The great satisfaction these collections have given to some of the principal families in England, Ireland, Scotland, and Wales induces W. J. EPPS with confidence to solicit further patronage. The collections contain this year 15 per cent. more than last, and quite equal in quality. Descriptive Seed Catalogues may be had on application. All orders to be accompanied with a Post-office order from unknown purchasers. No charge made for packing, and delivered free of expense to any railway station in London.—Agricultural and Horticultural Seed Establishment, High-street, Maidstone.

*** Cole's Superb Dwarf Red Celery, 1*s.* per packet.

SAFFRON WALDEN.
SUPERB COLLECTION OF DOUBLE HOLLYHOCKS.

WILLIAM CHATER has a large and healthy stock of his unequalled collection of this splendid flower, and can supply good strong plants that will bloom well next autumn. For particulars, see printed Catalogue, which may be had on application by enclosing a postage stamp. Plants warranted true to name. A remittance requested on delivery of plants.

Post-office orders to be made payable at Saffron Walden.

EXHIBITIONS OF MELONS.

EDWARD TILEY begs to inform the Public that he will give a PRIZE of One Guinea for the best BROMHAM HALL MELON exhibited at the Chiswick Exhibition in July; and One Guinea for the best Bromham Hall Melon exhibited at the Regent's Park Exhibition in July. The money will be paid to the Committee before the exhibition. The above will prove to be the best Melon ever yet sent out. Sold in packets, seven seeds, 2*s.* 6*d.*, by EDWARD TILEY, Nurseryman, Seedsman, and Florist, 16, Pulteney-bridge, Bath.

A remittance must accompany the order, either in cash or penny postage stamps to the amount.

FRUIT TREES AND SHRUBS AT HALF PRICE,
NOW ON SALE FOR FOUR WEEKS, BY
WILLIAM E. RENDLE AND CO., PLYMOUTH.

In consequence of the South Devon Railway Company having taken away a large portion of our Union-road Nursery, we are compelled to make some EXTENSIVE ALTERATIONS, *and as the whole of the ground must be cleared within four weeks, we have come to the determination of offering the stock at* HALF *the usual prices.*

PEACHES, NECTARINES, and APRICOTS.—Dwarf *trained* trees, 2*s.* 6*d.* each; smaller ditto, 1*s.* 6*d.* each; nice cut backs, 1*s.* each. A few very large trained trees in a bearing state, from 5*s.* to 7*s.* 6*d.* each, comprising Royal George, Noblesse, Chancellor, Newington, and some of the best sorts in cultivation.

PEARS.—Several hundred fine round-headed trees at 1*s.* 6*d.* each, worth 3*s.* 6*d.* and 5*s.* each, comprising all the best sorts in cultivation.

GRAPE VINES.—All the best sorts, 4 to 6 feet, 1*s.* 6*d.* each.

ARBUTUS.—Fine plants in pots, 12 to 18 inches, 5*s.* per doz.

ILEX OAK.—Fine plants in pots, and bushy, from 15 inches to 24 inches in height, 5*s.* per dozen, worth 1*s.* each. Four-year-old seedlings, out of boxes, SIXPENCE per doz.

BOX EDGING, 3*d.* per yard.

RASPBERRIES, "RENDLE'S LARGE BEEHIVE."—This is a large handsome variety, very prolific, and delicious flavour, and has given the most complete satisfaction. Strong Canes, 20*s.* per 100, or 3*s.* per doz. "YOUELL'S FASTOLFF," 10*s.* per 100.

CEDARS OF LEBANON.—We have a large stock of these in pots. Good plants, 3 feet, 36*s.* per dozen. Large handsome plants in pots, 4 to 6 feet, 5*s.* each; or one quarter the price usually charged.

BLACK NAPLES CURRANTS.—Very superior to the old sort, 6*s.* per dozen.

GOOSEBERRIES.—Some of the very best varieties in cultivation, 30*s.* per 100.

PORTUGAL LAURELS.—An immense stock will be sold unusually low. Fine plants, 18-inch, bushy, 20*s.* per 100; 3 feet, 30*s.* per 100; 4 feet, 40*s.* per 100.

BERBERIS, or MAHONIA AQUIFOLIA.—A very large quantity, 18 inches, 16*s.* per 100. This is a fine shrub for underwood.

Weigela rosea, strong plants, 12 inches, 6*s.* per dozen; Parnettia mucronata and floribunda, 6*s.* per doz.; Ribes, double red, and albidum, strong plants, 18 inches, 9*s.* per dozen.

Remittance, or reference in London, from unknown correspondents.

All orders above 5*l.* *will be delivered free of carriage to any of the stations on the South Devon, Bristol and Exeter, or Great Western Railways. Steamers from this port to London, Dublin, Cork, Falmouth, Belfast and Glasgow, three times a week.*

The South Devon Railway is now open to Plymouth, the Station being adjoining our premises. For Catalogues, and further information, apply to

WILLIAM E. RENDLE and Co., Union-road, Plymouth.

FIRST ORDERS WILL HAVE THE PREFERENCE; AS THEY WILL BE EXECUTED IN STRICT ROTATION.

ESTABLISHED 1786.

SELECT FLOWER & KITCHEN GARDEN SEEDS,
ESPECIALLY RECOMMENDED BY THE
WRITER OF THE CALENDAR IN THE GARDENERS' CHRONICLE OF FEB. 9th, PAGE 86.

JOHN SUTTON AND SONS, *possessing all the kinds of Seeds* so strongly recommended in the *Gardeners' Chronicle*, page 86, can supply them at low prices, particulars of which appeared in the 1st page of last week's *Chronicle*. They can also supply Dr. LINDLEY's selection of the best six sorts of Peas, as stated in their Advertisement, in the 3d page of the *Chronicle*, of Feb. 9th; and most of the above sorts are included in MESSRS. SUTTON'S COMPLETE COLLECTIONS OF KITCHEN GARDEN SEEDS, now in course of delivery, at the under-mentioned Prices, Carriage free.

No. 1, 2*l.* 2*s.* No. 2, 1*l.* 1*s.* No. 3, 12*s.* 6*d.*

Reading Seed Warehouse, Reading, Berks.

CORNWELL'S "VICTORIA" RASPBERRIES.

G. CORNWELL is now sending out strong canes of the above, at 25*s.* per 100; or 3*s.* 6*d.* per dozen. To be had at E. CHARLWOOD'S, Covent-garden; Messrs. NOBLE, COOPER, and BOLTON, Fleet-street; and of GEORGE CORNWELL, Market-Gardener, Barnet, Herts.

G. C. has also a large quantity of Red and White Currants; also a quantity of large bushy Laurels.

EARLY MARROW CABBAGE.—THE BEST IN CULTIVATION.

EDWARD TILEY can confidently recommend the following first-rate varieties as the best in cultivation.

Early Marrow Cabbage, sold in packets 2*s.* 6*d.* per oz.; or half-ounce packets at 1*s.* 6*d.*

True Walcheren Cauliflower Broccoli, 1*s.* per packet; Willcove do., 1*s.* per packet; Tamworth do., 1*s.* per packet.

Coles' Superb Celery, from Mr. Coles, Dartford, 1*s.* p. packet.

The original true Bath Cos Lettuce Seed, 1*s.* per packet.

Antirrhinum Seed, saved from 24 of the best varieties in cultivation, 1*s.* per packet.

Sweet-William Seed, saved from extra fine semi-double varieties, 1*s.* per packet.

The whole or any part of the above will be sent postage and package free.

Sold by EDWARD TILEY, Nurseryman, Seedsman, and Florist, 16, Pulteney Bridge, Bath. A remittance must accompany the order, either in cash or penny postage stamps.

POTATO SEED: Selected Early, Kidney, and Round Varieties.—Packets of 4000 genuine Seeds, with directions for sowing, &c., 6*d.* Treatise on Potato Culture, 6*d.* Priced Seed Catalogue of Flowers and Vegetables, 1*d.* All post free.—Earliest Selected kinds of Kidney and Round Potatoes, 5*s.* per bushel, or 1*s.* 6*d.* per peck, packages included.—Orders of the value of 1*l.* carriage paid to London. Remittances requested in Post-office orders or postage stamps.

ABRAHAM HARDY and Son, Seed-growers, Maldon, Essex.

TWELVE EXTRA FINE DOUBLE BALSAMS.—Striped Scarlet, Striped Purple, Mottled Scarlet, Mottled Purple, Mottled Crimson, Rose, Purple, Scarlet, White, Rosy Purple, Crimson, Rosy Scarlet, 2*s.* 6*d.* the set, or 1*s.* 6*d.* a mixed packet or any selected six. The Trade served by the ounce. 100 packets of choice Flower Seeds, including the above, also choice Pansy, Cineraria, Geranium, Phlox, &c., for 10*s.*, or 50 for 7*s.*, including all enumerated, post free. Enclose stamps or money order to WILLIAM JONES, Seedsman and Florist, Stoke Newington-road, London.

WANTED TO PURCHASE, a large quantity of HOLLY, seven or nine years old, suitable for a hedge; state price, age, and height. Also BEECH 5 feet high, for a hedge. Delivered free to Bishop's Stortford Station, Eastern Counties Railway.—Address A. W., 103, Lisson-grove, London.

ABRIDGED FROM T. BARNES' GENERAL CATALOGUE.

THOMAS BARNES offers the undermentioned Articles, selected from his General List, for any of which T. B. will be happy to receive commands, and which will receive the best attention.

DAHLIAS, SHOW CLASS.

BARNES's George Glenny, bright pure yellow, the best ever offered to the public, 3 feet, each ...	10*s.*	6*d.*	
,, Snowball, pure white, best in its class, 4 feet	10	6	
,, William Bragg, bright vermilion, first class, 3 feet	10	6	
DAHLIAS, FANCY CLASS.			
BARNES's Lady Cullum, bright yellow, with tips of pure white, beautiful, 3 feet...	10	6	
,, Elect, black, tipped with pure white, 4 feet	7	6	
,, Picturata, cream, edged with bright scarlet, very distinct, fine, 3 feet	7	6	
,, Dandy, salmon-scarlet, tipped with pure white, very attractive, 4 feet...	7	6	

DAHLIAS IN COLLECTIONS.

12 first class Show Flowers, 24*s.*, including Fearless, Queen of the East, Duke of Wellington, Mr. Seldon, Negro, &c. 12 good old Show Flowers, 12*s.* 12 first class Fancy Dahlias, 24*s.*, including Keepsake, Discount, Candidate, Rainbow, Miss Jane, &c. 12 good old Fancy Flowers, 12*s.*

BARNES's Seedling Phlox Alba Magnaflora, pure white, large and round, unequalled; Plants in May, 7*s.* 6*d.* each.
Fine collection of Phloxes, by name ... per doz. 6*s.* to 24*s.*
Fuchsias, in fine show varieties, by name ,, 6*s.* to 24*s.*
Verbenas, in fine sorts, by name ... ... ,, 6*s.* to 30*s.*
Petunias, in fine sorts, by name ... ... ,, 6*s.* to 18*s.*

SPLENDID SEEDLING PETUNIAS. (Plants in May.)

BARNES's Amaranth, rosy crimson, large, round, and flat	3*s.*	6*d.*	each.
,, Beauty of Stow, rosy pink, with white centre, extra	5	0	,,
,, Delicata, peach, margined with pink...	5	0	,,
,, Lilacea, lilac, with blue throat & veins	3	6	,,
,, Madonna, peach, crimson throat & veins	5	0	,,
,, Tourist, crimson purple, clouded with white, of great substance	3	6	,,

Chrysanthemums, fine sorts, by name, 6*s.* to 18*s.* per dozen.
Antirrhinums, Ditto Ditto 6*s.* to 24*s.* ,,

*** General Descriptive Catalogues may be had on application.—Danecroft Nurseries, Stowmarket, Feb. 23.

TO GRAPE GROWERS.—THE BLACK BARBAROSSA.

JOHN BUTCHER has a limited stock of the above truly magnificent GRAPE, introduced by C. T. Ward, Esq., from the Continent, and now for the first time offered for sale. It has the following good properties: the Vine, a most luxuriant grower, a free bearer; bunches, large and finely shouldered; berries, large and globular; flavour, equal to the Hamburgh; will hang on the Vine for at least another month to come, without sinking in size of berry, or losing in flavour; as hardy as the Hamburgh. Mr. Bevington, gardener to Mark Philips, Esq., exhibited the above Grape at the Horticultural Rooms, Regent-street, London, January, 1849, for which a Certificate was granted; and again on the 19th of the present month, when a Banksian Medal was awarded it. Some idea may be formed of the magnificence of this Grape, by its being but the third year of the tree bearing fruit—21 bunches, averaging 4 lbs. per bunch, was the crop of 1849. To those families requiring late Grapes, it will prove a valuable acquisition. Good plants, from eyes, 21*s.* each, including package. —London Agent, Mr. FREDERICK WARNER, Seed Merchant, 28, Cornhill, London; and JOHN BUTCHER, Nurseryman, Stratford-on-Avon.

Also BUTCHER'S HYBRID BLACK SPINE CUCUMBER. Length, 18 to 30 inches. Exhibited at Regent's-park Royal Botanic exhibition, 1846, for which a Certificate was granted. Papers of Seeds, 2*s.* 6*d.* each.—Stratford-on-Avon, Feb. 23.

CEDRUS DEODARA OR HIMALAYA CEDAR.—The Subscribers beg to inform the admirers and planters of the above hardy Tree, that they have upwards of FIFTY THOUSAND, from one to five years old, in pots, grown from seed, constantly in the open ground, which they are now supplying on such terms as will induce their general introduction into all plantations, being of rapid growth, highly ornamental, and of great value as a Timber tree.

WM. MAULE and SONS, Stapleton-road Nurseries, Bristol.

RHODODENDRON PONTICUM FOR UNDER COVER, &c.

JOHN WATERER begs to state he has large quantities of the above, which is now universally acknowledged the best Evergreen for such purposes, being free from attacks of hares and rabbits. Strong plants, fit for immediate planting, 10*s.* 6*d.*, 15*s.*, to 21*s.* per 100.

Descriptive Catalogues of his well known collection of American Plants, &c., to be had on application.

American Nursery, Bagshot, Surrey.

TO PLANTERS.

W. DRUMMOND AND SONS, Stirling, have this season a large Stock of FOREST TREES, of fine quality, which they are offering at reduced prices. The Plants, from the free soil and exposure of their Nursery Grounds, are well rooted and hardy.

Priced Lists, including Shrubs and Fruit Trees, sent post free, on application.

N.B.—Priced Lists also of Seeds and Agricultural Implements sent free if required.—Stirling, Feb. 23.

EARLY TEN-WEEK POTATO, the earliest grown, will beat the Ash-leaved Kidneys by ten days—per bushel, 14*s.*; per peck, 4*s.*, bags included. Pure Stocks of ASH-LEAVED KIDNEYS, RED DITTO, BARHAM'S WALNUT-LEAVED, SHAWS, REGENTS, FORTY-FOLD, &c., at moderate prices.

Twelve of the newest and rarest Flower Seeds:

Nemophila maculata	Martynia angularis
Brachycoma, splendid hybrids	Portulaca Thorburnii (yellow)
Phlox Drummondii alba	,, alba striata
,, oculata	Podolepsis chrysanthemoides
,, Leopoldina	Schizanthus retusus alba
Martynia fragrans	Ipomœa Burridgii

One packet each 10*s.* 6*d.*

GERMAN STOCKS, from 2*s.* per collection.
,, ASTERS, from 3*s.* ,,
,, CARNATIONS, 2*s.* 6*d.* per 100.

DUNCAN HAINS, 109, St. Martin's-lane, Charing-cross, London.

BECK'S PELARGONIUMS, AND OTHER RAISERS' PRODUCTIONS.

The Selections advertised at Two Guineas are all sold.

Of the varieties 1847 and 1848, enumerated in E. BECK's Catalogue (to be had in exchange for one postage stamp) a good assortment remains. The varieties intended for sending out next autumn in the two guinea selection are now propagating, and will be ready in September, enabling purchasers to grow them on, and to make good plants for the following year.

N. B. The latter selection will be distinct and good.

Worton Cottage, Isleworth, Feb. 23.

RENDLE'S DESCRIPTIVE CATALOGUE OF AGRICULTURAL SEEDS IS JUST PUBLISHED, and can be had on application, GRATIS (for one penny stamp).

It contains a descriptive list of all the best Field TURNIPS, *with the lowest market prices, also a full descriptive price current of all the best sorts of* CARROTS, MANGOLD WURZEL, CLOVER, *&c., as well as all the best varieties of Permanent Pasture Grasses.*

The following is an extract from the Catalogue.

Rendle's Imperial Purple-top Swede Turnip	...	per lb.	0s. 8d.
Ditto ditto	...	per qt.	1 0
Skirving's Liverpool Swede ditto, per lb., 8d.		per qt.	1 0
Laing's Improved ditto ditto, per lb., 8d.		per qt.	1 0
Purple-top Scotch ditto ditto, per lb., 8d.		per qt.	1 0
White and Green Globe per lb., 6d.		per qt.	0 10
White Belgian Carrot	...	per lb.	0 10
Yellow Globe Mangold Wurzel ...	...	per lb.	0 8
True Italian Rye-grass		per bush.	7 0
Best English Red and White Clover		per lb., 5d. to	0 7
Large Cattle Parsnip		per lb., 1s. to	1 6

With every other kind of Agricultural Seeds at the lowest market prices. (See Catalogue.)

PERMANENT PASTURE GRASSES, sold in mixtures to suit various soils, at 30s. per acre, allowing two bushels of light seed and 12 lbs. of heavy seed to each acre.

BEST SIX PEAS, recommended by Dr. LINDLEY.—Prince Albert, Bishop's New Long-pod, Knight's Tall Marrow, Auvergne, Bedman's Imperial, Fairbeard's Champion of England.

One quart of each for 6s. 6d., or two quarts of each for 10s.

BEST FIVE BEANS.—Early Mazagan, Long-pod, Green Long-pod, Windsor and Green Windsor.

One quart of each for 2s. 6d., or two quarts of each for 4s.

ALL THE SELECT FLOWER AND KITCHEN GARDEN SEEDS recommended by the writer of the Calendar (See *Gardeners' Chronicle*, Feb. 9, page 86), can be obtained AT THE LOWEST PRICES.

Hairs' Dwarf Green Mammoth Peas, 5s. per quart.

ASPARAGUS, LARGE BATTERSEA GIANT, Strong roots, at 2s. 6d. per 100. *The best in cultivation.*

YORK REGENT POTATOES.—The best variety for general crop, 5s. per bushel of 56 lbs.

All orders above 2l. will be delivered free of carriage to any station on the Great Western, Bristol and Gloucester, Bristol and Exeter, or South Devon Railways; or to any town in Devon and Cornwall; or to Cork, Dublin, or Liverpool, by Steamers.

Railway and Steam communication to all parts of Great Britain and Ireland.

For Catalogues and further particulars apply to

WILLIAM E. RENDLE & CO., Union-road, Plymouth.
ESTABLISHED 1786.

H. LANE AND SON have great pleasure in recommending the following SEEDS, which may be had by unknown correspondents, by enclosing Postage stamps or Post-office order. Seymour's Celery and Fleming's Melons having been so successfully exhibited, require no comment.

CELERY—Seymour's White Champion ...	1s.	6d.	per packet.
,, ,, Superb White ...	0	6	,,
,, ,, Red Matchless ...	0	6	,,
,, ,, Golden Perfection ...	1	0	,,
MELONS—Fleming's, or Trentham Hybrid			
Persian	1	0	,,
,, ,, Genuine Sweet Ispahan	1	0	,,

Great Berkhampstead, Herts.

MYATT'S LINNÆUS RHUBARB.

J. MYATT AND SONS can confidently recommend this variety as the best in cultivation. The most satisfactory proof of this assertion is the fact that the Market Gardeners round London and Manchester have planted the Linnæus Rhubarb more extensively than any other variety. It is extraordinarily productive, and about a fortnight earlier than the Victoria; added to this, it is held in general esteem for preserving and all culinary purposes. One-year planted roots, 1s. 6d.; ditto, Mitchell's Royal Albert, 1s. 6d.; Victoria, 9d. The usual Trade allowance.—Post-office orders are requested to be made payable to JOSEPH MYATT, Manor Farm, Deptford.—Feb. 23.

The Gardeners' Chronicle.

SATURDAY, FEBRUARY 23, 1850.

MEETINGS FOR THE ENSUING WEEK.

MONDAY,	Feb.	25	Medical	8 P.M.
			Geographical	8½ P.M.
TUESDAY,	—	26	Civil Engineers	8 P.M.
			Medical and Chirurgical	8½ P.M.
WEDNESDAY,	—	27	Zoological	9 P.M.
			Geological	8½ P.M.
THURSDAY,	—	28	Royal Society of Literature	4 P.M.
			Numismatic	7 P.M.
			Antiquarian	8 P.M.
			Royal	8½ P.M.
FRIDAY,	March	1	Botanical	8 P.M.
			Royal Institution	8½ P.M.
SATURDAY,	—	2	Asiatic	2 P.M.
			Westminster Medical	8 P.M.

AT the last meeting of the Horticultural Society a plant was produced which illustrates in so striking a manner the true meaning of HIGH CULTIVATION in gardening as to demand from us special notice.

The plant in question was the well known showy Dendrobe (*Dendrobium speciosum*), an Orchid whose low price enables most growers to possess it, and whose peculiarities of constitution generally defy all efforts at making it blossom; the few have succeeded, the many have failed, although among the latter are to be reckoned some of the best gardeners in the world. And it is not a little singular that the two who have managed it best have been country clergymen; the Rev. J. B. HUNTLEY was among the first to succeed with it, and the Rev. C. Fox CHAWNER, of Bletchingly, produced the specimen on which these remarks are founded. The plant in question was about 12 feet in circumference, reckoning from the ends of the flower racemes, of which it had 35, each averaging about 75 flowers, of the most delicate cream colour, veined with violet. Therefore, about 2625 of these flowers were expanded or ready to expand at the same time. It is impossible to do justice by words to the appearance of such a specimen, nor is it easy even to imagine the extent of its beauty. It might be said to be a fountain of flowers.

The history of so few successes and so many failures is instructive, and briefly told.

Many Dendrobes inhabit the hottest and dampest parts of Asia, where the season of rest is short, and the temperature while they are growing excessive. Hence we find the warmest part of the stove their habitation, and moss perpetually moist their favourite soil. The object of the cultivator is to imitate the jungles of the Malay Archipelago, where there is not more than two or three degrees of difference in the quarterly mean temperature of the year. At Singapore, for example, it appears that the mean temperature ranges near 80° all the year round, there not being a difference of more than 3¾° between the means of the hottest and coldest months: and at Buitenzorg, the Botanic Garden of Java, the difference is said not much to exceed 2½°. But the family of Dendrobes is a very large one, comprising members of most dissimilar habits and constitution, some Alpine species appearing upon the branches of Oaks and tree Rhododendrons in the Himalayas, and others inhabiting the arid forests of New South Wales. It is, therefore, evident that the cultivation suited for species from Singapore, would be inapplicable to those from Australia and Northern India. Attention to this circumstance is what has produced the failure of so many, and the success of so few in the management of the showy Dendrobe.

That plant is wild in New Holland, where it is said to occur as far south as Port Jackson, and also within the tropic. We have it from Port Bowen in latitude 22° 50′ S. The characteristic of this Australian climate is long dryness, moderate mean temperature, and excessive difference between the cold and warm periods. It appears from Sir THOMAS MITCHELL's observations, as quoted in the Journal of the Horticultural Society, that in latitude 29° S., which may be taken as a middle point for the range of this species, in the summer there is a difference of 41° between the day and night, and the lowness of the night temperature throughout the year must greatly depress the average of diurnal temperature. Where this great explorer found an epiphytal Orchid in flower (*Cymbidium canaliculatum*), the night temperature was as low as 33°, and that of the day not more than 86°. It is therefore evident that the constitution of plants, placed by Nature in such a climate, must be essentially different from that of species from the jungles of India.

The following memorandum, by the Rev. Mr. CHAWNER's gardener, brief as it is, explains distinctly the history of this noble specimen:

"The plant has been grown in an intermediate house, varying from 45° to 55°, for the last three or four years; during the summer the house is kept from 65° to 75°. Last May the plant was put in a cold pit and exposed to the sun, with very little water; in September it was put back into the intermediate house, and has since that time had plenty of water."

Nothing can better express the conditions which are most favourable to the health of this and all such plants. During the season of rest, the Dendrobe is stowed away in an unheated pit, where its surface is acted upon freely by air, and such sunlight as the season naturally affords; at this time it has little water. In the month of September, the beginning of its own natural spring, it is introduced to a better climate, where the heat is 20° or 30° higher; water is gradually supplied; as it fully renews its vegetation, it receives this kind of food in abundance. Then it is that the latent vigour acquired during its rest begins to manifest itself; the organisable matter which was formed during a period of dryness and sun-warmth is rapidly converted into new parts; blossoms appear in profusion, and, by the month of February, they gush forth in one vast floral stream.

In May the new growth is accomplished; all the parts are fully organised and charged with the rich fluid which is to furnish further blossoms after some months' digestion in dryness and lethargy, under the influence of sun and air. In May the plant is transferred to the place whence it was taken in the previous September, and there it remains till the September following.

This would be the history of all New Holland plants, and of half the other plants in gardens, if means existed for carrying out the practice. This *is* the history of the noble specimens of Azaleas, Cactuses, and other prodigies which grace the Exhibition tents of the Horticultural Society in the months of May and June. Moreover, the principle upon which Mr. CHAWNER's gardener proceeded is applicable, with some modifications, to almost every plant that is known to us. To the Orchids from the highlands of Mexico and Guatemala it is indispensable; it is applicable to those of Brazil, Continental India, and China; it is applicable alike to greenhouse plants and stove plants, to forced fruits, and those which naturally inhabit climates which render "forcing," strictly so called, the only method of cultivation that is applicable in a country like England.

The reason of this is, that all plants, like all animals, require a season of rest. They cannot remain healthy if their vital forces are continually excited. They grow by day and rest at night; they are exuberant in summer, and in winter they are torpid. To quote the words of the "Theory of Horticulture"—

"If we look over the different climates of the world, we shall find that in each there are a season of growth and a season in which vegetation is more or less suspended; and that these periodically alternate, with the same regularity as our summer and winter. I do not know that there is in nature any exception to this rule: for even in the Tierra templada of Mexico, where it is said that, at the height of 4000 to 5000 feet, there constantly reigns the genial climate of spring, which does not vary more than 8° or 9°, intense heat and excessive cold being alike unknown, and the mean temperature varying from 68° to 70°, we cannot suppose that, even in that favoured region, a season of repose is wanting; for it is difficult to conceive how plants can exist, any more than animals, in a state of incessant excitement. Indeed, it is pretty evident that these countries have a period when vegetation ceases; for Xalapa belongs to the Tierra templada, and we know that the Ipomœa purga, an inhabitant of its woods, dies down annually like our own Convolvuli. But, although all plants have naturally a season of repose, their winter is not in all cases cold. In the tropics it is marked by coolness and dryness, while the summer is rainy and very hot; and in extra-tropical countries the two seasons vary in their character, according to latitude and local circumstances."

This is one of the cardinal points in gardening: well understood now a-days by our great cultivators, but still unthought of by many from whom better things might be expected. Mr. Fox CHAWNER's Dendrobe will, we trust, remind them that by attending to it rationally a country parsonage may be made to produce specimens of excellence such as we seek in vain in some imperial gardens.

IT is not a little curious that, gardeners as we are, the true mode of making a GRAVEL WALK should still be a matter of dispute. One would have thought that so simple a question, and one upon which personal comfort so greatly depends, would have been disposed of conclusively long ago.

Opinions may be said to be divided among the three following plans. In No. 1 the walk is excavated to the depth of 9 inches or more, and then is filled up with a layer of rough materials at the bottom, covered with finer gravel, the convexity being below or just up to the level of the adjoining

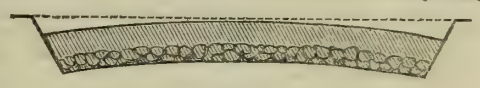


Fig. 1.

sides. In No. 2 the hollow for the walk is made to slope downwards from the sides to the centre, very coarse materials being employed at the lowest part, the convexity still being below or just up to the

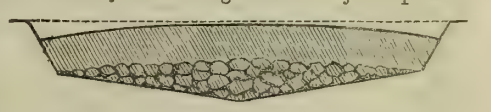


Fig. 2.

level of the adjoining sides. In No. 3 the walk is made upon the surface of the ground, the edges only being a little excavated, and the convexity is completely above the adjoining sides.

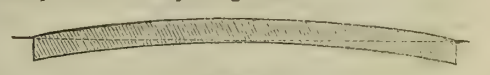


Fig. 3.

In all these methods the surface is hardened by a case of good binding gravel.

In Nos. 1 and 2 the rain which falls on the walk is detained by the sides, and sinks in; but it is supposed that the rough material carries it off as a drain —especially in No. 2. In No. 3 the rain which falls on the walk is immediately thrown off upon

the surrounding borders. The cost of materials is about twice as great in 1 as in 3, and about three times as much in 2 as in 3. The question is, which is the most efficient?

We should very much like to hear our correspondents' opinions on this subject, before we offer our own. For the present we shall only say that we know execrable walks made at great charge upon the plan of Nos. 1 and 2, and excellent walks made at small cost upon the plan of No. 3—the sides only being kept lower than in the figure, in which the dotted line represents the ground level.

Of course the question is, which is the best kind of walk in *wet weather?* In dry weather one kind of walk is as good as another, if the surface is but hard.

KIDNEY BEANS.

The varieties of these are very numerous. They may be distinguished into two classes by the colour of the Beans.

A. Beans *white.*

B. Beans *coloured.*

Class A. §. 1. Dwarf sorts.

1. *Early Dwarf Dutch*, aliàs Dwarf Dutch, Large White Dwarf Dutch, Dwarf White Dutch, White Long-pod Dutch, Early Dwarf White, Nain hâtif de Hollande, Nain de Hollande très hâtif. Pods long, narrow, excellent when green; Beans small, compressed. Suitable for forcing.

2. *Dwarf Canterbury*, aliàs Nain blanc sans parchemin. Pods narrow; Beans small, oblong, the plants branch much near the ground, bear abundantly and early. The *Dwarf Battersea*, aliàs Early Dwarf White, Earliest White Battersea, is scarcely different from the preceding; and the same may be said of the *Dwarf Sabre*, Sabre Nain, *Dwarf French White*, or Nain blanc très productif.

3. *Early Laon*, aliàs Early White, Dwarf White, Nain hâtif de Laon, ou Flageolet. Very dwarf, early, good for forcing, equally suited for eating green, and when the seeds are ripe.

Other varieties of less importance in this section are the *Nain de Bohemia à grosses cosses. Nain blanc d'Amerique, Large White*, aliàs Royal White, *Deux à la touffe*, and the *Soissons nain, ou gros-pied.*

§ 2. Runners.

Large Running White, aliàs Long White, White Long-pod, Large White Sugar, Tender-pod Bean Runner, De Soissons, Sabre à très grandes cosses. This is the common flat white Bean, generally cultivated for use in a dry state; but it acquires the finest flavour when grown at Soissons.

Sabre. Pods large, very long, excellent when young, even when nearly full-grown they are still tender and fleshy; and may be preserved for a length of time by being cut into pieces and salted; the Beans are excellent for use in a dry state.

Cranberry Runner. This is also used in a dry state.

Other sorts belonging to this section are the *Prédome*, aliàs Prudhomme, or Prodommet, *Sophie*, and the *Haricot Riz;* but they are unsuited to an English summer.

Class B.—Beans coloured.

§ 3. Dwarf Sorts.

Dwarf Speckled China, alias Dwarf China, Early China, Robin's Egg, Dwarf Robin's Egg, Early Dwarf Pink Spotted. An early sort, suitable for forcing. The *Haricot de la Chine* of the French, aliàs Polish Bean, is also dwarf and early, but it is sulphur-coloured, and not speckled with red.

4. *Wilmot's Forcing Cream Speckled.* Beans oblong, pale dun, speckled with dark chestnut; excellent for forcing.

5. *Dwarf Negro*, aliàs Early Negro, Early Black, Nain Noir, ou Nègre. Well known as one of the best for general cultivation; it is very productive, and the pods are very tender.

6. *Black Belgian*, or Haricot Noir de Belgique. An excellent sort, bearing considerable resemblance to the preceding, but differs in having darker green foliage, and it is dwarfer and earlier than the Dwarf Negro; very productive, and good for forcing.

7. *Fulmer's Early Dwarf*, aliàs Fulmer's New Dwarf, Fulmer's or Fulner's Dwarf Red, Early Dun, Dwarf Dun-coloured, Dwarf Forcing Dun-coloured, Early Frame, Earliest Forcing. Much esteemed for early crops, and forcing. Closely allied to the preceding is *Fulner's Speckled Dwarf*, aliàs Dwarf Red Speckled, Dwarf Light Red Speckled, Early Dwarf Forcing Speckled, Large Forcing Dark Red Speckled, Suisse rouge; and with Beans a shade darker, we have also very similar to the above the *Early Dwarf Purple Speckled*, aliàs Early Purple, Dwarf Purple Speckled, Dwarf Speckled; allowing for another shade darker, and we may include with these the *Dwarf Black Speckled*, aliàs Dwarf Black Mottled.

Other sorts belonging to this section are the *Jaune de Canada, Suisse gris, Suisse gris de Bagnolet, Ventre de biche, Dwarf Yellow*, aliàs Early Dwarf Yellow, Nain couleur d'Abricot, *Rouge d'Orléans, Nain du Canada rouge et jaspé, Suisse Nain rouge foncé.*

§ 4. Runners.

Prague or *Red Pea.* Pods tender, Beans round, when ripe rather thick-skinned, but mealy and well flavoured, similar to a Chestnut. Prague bicolor, Prague jaspé are varieties of the preceding. The Haricot d'Alger resembles the Prague. The green pods of the Prague Beans soon become unfit for use.

The *Lima*, the *Haricot du Cap*, or Venetian Sugar, and the *Sieva*, are all too tender for this climate. The preferable sorts amongst those above mentioned have numbers prefixed.

Scarlet Runner.—The Scarlet Runner and its varieties belong to a different species from that which has furnished the sorts of Kidney Beans above mentioned, and although usually considered an annual, it is, in fact, a perennial, having tuberous roots similar to those of the Dahlia, and like that may be preserved through the winter; when if planted out in April they soon make their appearance above ground, and produce an early and abundant crop. The principal sorts are the

8. *Scarlet Runner*, aliàs Tall Scarlet Runner, Haricot d'Espagne, ou écarlate. Flowers scarlet, Beans dark-red, pods rough on the outside, and therefore not so much esteemed as the Kidney Bean, although tender to eat; and the plants bear abundantly, even without stakes, if their tops are pinched off.

White Dutch Runner. Flowers and Beans white; does not continue so long in flower as the preceding.

Painted Lady, or Haricot d'Espagne à fleur bicolor. Flowers bright scarlet and pure white; is ornamental, but not so good, in an economical point of view, as the Scarlet Runner. *R. T.*

NOTES OF A TRAVELLER—No. IX.

The Enkianthus at Hong Kong.—The Enkianthus quinqueflorus is one of those few Chinese plants which will scarcely submit to cultivation, or perhaps it would be more correct to say that its proper management is not understood. A description of its habits, as observed on its native mountains in Hong Kong, will probably assist those who are trying to cultivate this beautiful plant in England. The island of Hong Kong has often been called a barren rock, an expression which, in our days at least, is not quite correct. When it was formed by some convulsion of Nature, in the earlier periods of the world's history, it was no doubt a barren chain of rocks of very irregular outline. Gradually, however, like those islands in the eastern seas which are every day forming by the agency of animals, a great portion of the surface of these rocks became partially covered with soil and vegetation, although many of their peaks are still uncovered, remaining as barren as they were when first formed, and bidding defiance to time and change.

On these mountains, from 1000 to 2000 feet above the level of the sea, the Enkianthus is found growing abundantly, and in great luxuriance. It is never seen in the valleys or low lands, unless when brought down by the natives. The soil is loamy, not unlike what we see at Shirley or Wimbledon, and mixed with stones and large pieces of granite which have become detached from the rocks. The plant delights in fixing itself in the crevices of the rock, and is often found in these situations with very little soil about its roots. About the end of April or beginning of May, at the change of the monsoon, the wet season begins. The Enkianthus then grows most luxuriantly, and all the leaves, buds, and shoots, are then fully formed. In the autumn, with the exception of a week or two in September, the weather is dry and very hot. At this period the branches and buds of the plants get perfectly ripened, many of the leaves fall off, and the plant having formed its secretions for the following year remains in a dormant condition during the winter, which, in Hong Kong, is cool and dry. In the hottest months in the year, namely, June, July, and August, the maximum temperature in the shade rarely exceeds 90° Fahr., but on a clear day one of my thermometers indicated 140° in the sun. In winter, although the north winds are cold and piercing, frost and snow are almost unknown in this part of China. When the first impulse is given to vegetation by spring the Enkianthus bursts into bloom, and the sides of the barren hills are seen gay with its flowers.

This is the way in which Nature treats this charming plant, and we must follow her example before we can hope to see it half so beautiful as it is on its native mountains. There are, however, two natural circumstances connected with success which are difficult if not impossible to imitate. The one is the bright sunshine which ripens the wood in autumn, and the other is the peculiar nature of the mountains on which the plant grows. In the hottest weather, even when no rain has fallen for months, and when the valleys are parched and burnt up for want of it, these mountain sides are always moist a few inches below the surface, and teem in all directions with cool and refreshing springs.

The Enkianthus is always in blossom at the time of the Chinese new year, when flowers are in great request for the decoration of the houses, boats, and temples. It is brought in large quantities from the hills, and sold in the streets, or sent about in presents, after the same fashion as the Holly and Mistletoe in England. If the branches are cut and placed in a jar in water, before the flowers are fully expanded, the latter will remain in perfection for a fortnight or three weeks. The pretty wax-looking globular flowers are very handsome, and are held in high esteem amongst the natives. *R. F.*

DISEASES OF PLANTS.

(*Continued from p.* 101.)

Genus XVI.; *one species.* (*Etiolement*) Blanching.—Some plants at the first period of their vegetation grow with great rapidity; their vigour is then checked, and they remain dwarf. Others in a short time attain a height quite disproportioned to their age, but are far from having the thickness or strength which they ought to have. Remaining thus slender, they shortly perish. This happens especially to those grown in close dark places, where they have been artificially forced by dung or other fermenting substances. This is the disease which the French call *Etiolement*, and which we Italians sometimes designate as a *smagrimento*, or more popularly as a *threading* of the plant, in allusion to the young shoots, which are slender enough to be compared to threads, as may often be observed in plants stowed in dark places for the winter.

The want of light, and often a superabundance of heat, may be considered as the causes of this disease, which must not be confounded with the weakness produced by the ill-judged pruning of young plants. It may generally be prevented, but when once developed it is difficult to arrest its evil consequences. It may be avoided by keeping the plants, as has been so repeatedly recommended, in places sufficiently lighted. Attention must also be paid in sowing seeds in hotbeds that the first fermentation of the manure be over.

To gardeners and amateurs, I would in these cases recommend that their seeds should be sown in pots or pans, so placed in a bed of earth covering the manure, that the young seedlings should enjoy a free circulation of air, with abundance of light and heat. And it will be a most useful practice to change daily, or at most every two or three days the position of those pots which require to be kept under cover or contain the most delicate seedlings. I have already alluded to the methods by which I have succeeded in saving so many. Moreover, that the cultivator may not be disappointed, he must attend to all the general directions for the sowing of seeds, and, above all, take care that the plants are all equally exposed to the rays of light.

Genus XVII.; Phytolithes, *or Vegetable Stones.*—This disease attacks the roots or fruits of some plants, which have in the inside of those organs bodies which in appearance, and especially in hardness, resemble little stones. I have thus established two species.

First species. Phytolithes of Roots.—The roots of the Potato are the most liable to this disease. The tubers attacked by it, when planted, throw out very small shoots, which grow exceedingly slowly, and their whole produce is most miserable. Inside they show black canker-like nodules, and become altogether harder and more filamentous than sound ones. The French call the disease *Poivre* or *Frisoleé.* It occurs also in other tuberous roots, and even, as I have reason to believe, in some roots not tuberous. These indurations appear to arise from too great a quantity of manure of a heating kind, as it is in very fertile soils much manured with stable dung that Potatoes are the most liable to them. Although the number of individual plants attacked be not numerous, the damage done on the whole is often considerable.

Second species. Phytolithes of Fruits.—There is no one who may not have met with the stony substances found in some fruits with fleshy pericarps; they are frequent in Pears, and occur almost always in Quinces. The works of Duhamel, so little known to cultivators, describe the anatomy of such fruits with great exactness, and are alone sufficient to give an idea of the elevated views of that celebrated man.

From the observation that Pears grown in fertile soils or on espaliers but very seldom show any signs of these indurations, which are abundant only in sterile situations, have convinced me that the disease is indeed among those arising from want of proper nutriment, or of the aid of the stimulants necessary to bring the fruit to perfection. I have read in a very respectable work that the great number of seeds which the Quince produces, and which are brought to perfection at the expense of the pulp, in our country where the fruit does not ripen perfectly, are the cause of these stones. But the celebrated Abbé Molini assures me that in Chili, his native country, there are two species of Quince which attain perfect maturity without any such stony concretions, from which I conclude that these are with us the result of our climate.

I do not enter into any details on the remedies for this disease, for if owing to climate there is of course no cure. Where the want or superabundance of manures are the cause, the cultivator will readily see how to prevent it. In the case of trees, measures must be taken whilst they are young. Transplantations, grafting, working about the roots, may induce them to bring their fruits to a better condition. It would be curious for those who have sufficient plant houses, to try whether the Quince may not be so cultivated as to ripen its fruit perfectly without these phytolithes.

CHEVREUL'S SCHEMES OF FLOWERS FOR JUNE, JULY, AND AUGUST.

June.—In this month we have Heartsease, white and yellow, that is to say of the same colours as Crocuses; the former may therefore be arranged similarly to the latter. A similar observation will apply to violet and white Rockets (Hesperis matronalis), and the double American Cress, or Barbarea, which is yellow. The following arrangements, too, will be found agreeable. 1, Flax, Golden Rod (Solidago multiflora), Flax, Golden Rod, &c. 2, Red Snapdragon (Antirrhinum majus), white Snapdragon, red Snapdragon, white Snapdragon, &c. 3, Siberian Larkspur and scarlet Lychnis alternately. 4, A row of red Foxglove and white Foxglove alternately.

July.—1, A row of red Malope (Malope trifida) and white Malope alternately. 2, Some plants of Zinnia violacea in the middle of a confused group of white and

red Malope look well. 3, The same is true of the blue Veronica (Veronica spicata), Fennel flower (Nigella damascæna), Siberian Larkspur, Coreopsis tinctoria, and Eschscholtzia californica. 4, Rows of China Asters, in the following orders, look well: 1, white, red, white, red, &c.; 2, white, blue, white, blue, &c.; 3, white, red, white, blue, white, red, white, blue, &c. 5, Borders of China Asters, sown thickly, produce a good effect. 6, Blue Canterbury Bells (Campanula medium) alternating with white of the same. 7, Flax, Eschscholtzia, Flax, Eschscholtzia, &c.

August.—1, Violet Phlox (Phlox decussata), white Phlox, violet Phlox, white Phlox, &c. 2, Violet Phlox and Golden Rod (Solidago humilis or integrifolia or recurvata), alternately. 3, Violet Phlox alternately with yellow Milfoil (Achillæa filipendula), or Eschscholtzia. 4, Siberian Aster, Rudbeckia speciosa, Siberian Aster, Rudbeckia, &c. 5, Siberian Aster, yellow Milfoil, Siberian Aster, yellow Milfoil, &c. 6, Convolvulus major purple, Eschscholtzia, Convolvulus, Eschscholtzia, &c.

A circular basket, in the middle of which is a tree, whose trunk is covered round with Colvolvulus major, and which is itself surrounded by Eschscholtzia, looks very well; so does a similar basket in which the Convolvulus is replaced by Nasturtiums and the Eschscholtzias by violet Heartsease. A border of dwarf Larkspurs, sown thickly, may be taken for this period of the year.

ON THE CONDITIONS ESSENTIAL TO THE MOST PERFECT CULTIVATION.—No. XII.

I hope that all who read these papers will have observed that while an external physiological character has been purposely avoided, their aim is to place the practice of gardening upon a scientific basis. My object for such a course is this: there are many excellent cultivators who, by the result of a long series of operations, are enabled to calculate with tolerable correctness upon the termination of their labours, and who from such conclusions are too prone to look upon scientific data as mere toys for the scientific, rather than as the alphabet of success in their own particular calling; forgetful or unwilling to acknowledge that the purposes of science are to teach by a short route the same lessons that mere practice imparts by a circuitous one. And it becomes difficult to convince them that the results of carefully digested and well understood facts, in the philosophy of vegetable life, and its relation to external circumstances; and the knowledge of cause and effect, as deduced from experience, are one and the same thing; always, awarding to scientific elucidations that superiority of being able readily to meet and to adapt a change of circumstances; and as it is much the better system to give a youth a tolerable idea of a language before we burden the mind with a host of dry grammatical technicalities, so in cases such as I have described it is preferable, and possibly the only means of success, to prove the truths of science by the light of practice, as a guide to further excellence, rather than to pursue an opposite mode of tactics.

Every gardener knows he cannot grow his plants in the dark, he is well aware that the results of such treatment would be elongation and etiolation in proportion as light is absent; yet how few of us calculate upon the value of the delicate and complicate apparatus—a leaf; how seldom do we adapt our artificial paraphernalia to meet its requirements, and to facilitate the healthy performance of its functions. Recollection recalls one or two instances of a lamentable deficiency in the knowledge of the office and nature of leaves. A governess, passing through a conservatory with her young charges, where a person was sponging the leaves of a Gardenia, and observing how bright their appearance while wet, very innocently asked if the leaves were being varnished. Here is a forcible instance of the great deficiency of a popular acquaintance with the leading facts in natural history. When will such be considered as a necessary appendage to an ordinary education? Another instance exhibits similar ignorance in a more lamentable degree, and in a case where one would least have thought of seeking it. A spruce young nurseryman, very busy in his own peculiar manners, replied to an interrogatory, as to why he was depriving a plant of many of its healthy leaves, that it had too much foliage. Now, as the plant was an Endogen, and the defoliated organs of a healthy green, I am at a loss to know upon what principle of physiology this operation was based. If I have exhibited an ignorance of some principle bearing upon such a practice, I shall be but too thankful to be set right.

It would appear upon a cursory review of solar and atmospheric influence in relation to the construction of our ordinary glass houses, that the admission of a constant supply of the latter is far from being necessary. Instances are on record where a supply of fresh air was apparently purposely excluded, and no bad results would appear to have followed. In the *Chronicle* for 1848, page 267, is a remarkable instance, to the comments upon which I beg to refer the reader; and I believe that Mr. Knight recorded similar cases. Now we know that the constitution of the atmosphere is such, that with all the appliances of science, and on a comparatively limited scale, it becomes next to impossible to produce a vacuum. Intruding itself into the most minute apertures, and mingling with and forming part of almost every ordinary substance we employ, we become forcibly reminded of its great importance in the economy of all beings endowed with organic or animal life.

It is no less necessary in the pulmonary circulation of the animal to free the system of its carbonaceous impurities than in the analogous functions of vegetable life, to enable the plant to form and fix the very bones and sinews of its system, and as a medium through which to rid itself of its superfluous moisture. The insinuating property of the atmosphere is perhaps one of the most beautiful adaptations in Nature. Its existence being only known to us by its effects, or through the result of experiment, and not rendering itself palpable to our grosser senses, we should often be led to exclude it where its presence is of vital importance; and, in many cases where we imagine we do exclude it, such is only apparent not real. And to refer to the cases of closed houses just cited, it is evident that a thousand apertures present themselves through which the atmosphere obtains an "exit and an entrance," carrying its vital influence where misguided intention would have excluded it. It is very questionable if plants more than animals could exist without a supply of fresh air. The "Wardian case" may seem to settle the point, but in a note to Dr. Carpenter's excellent and popularly written little work on Vegetable Physiology, he says, "The author has that gentleman's (Mr. Ward's) authority for saying, that the common notion that the external air should be completely excluded is quite an erroneous one." *G.*

VILLA AND SUBURBAN GARDENING.

Much attention has lately been paid to the subject of seed lists; and as I have had considerable experience in regard to seeds, I cannot perhaps render my amateur readers better service than to present them with such a list as may be suitable for their guidance, with some directions concerning the culture of the articles recommended.

Peas—Early Kent, 1st sowing
Scimetar, 2d do.
*Fairbeard's Champion
*Knight's Dwarf Marrow
*Bishop's New Longpod
* These will be found first-rate for summer crops

Beans—Mazagan, 1st sowing
Marshall's Prolific, 2d do.
Windsor, summer crop

Kidney Beans—†Dun
†Negro
†These are esteemed kinds, and abundant bearers.
Wilmot's Cream-speckled, best for forcing
Scarlet Runner

Beet—Barrett's Crimson

Broccoli—Grange's Early, 1st sowing, to come in during autumn
Walcheren, for autumn, winter, and spring, in mild seasons
Hammond's Cape, excellent at all seasons
Wilcove, for early spring use
Knight's Late Protecting
The value of Broccolis depends chiefly upon their being well saved

Brussels Sprouts—The tall kind grown by the London market gardeners is the most profitable. I have frequently found imported seeds to produce a dwarf variety

Cabbage—A well-saved York is a most valuable kind for all the purposes of the amateur. The variety under the name of Atkins's Matchless has proved generally good and true

Carrot—Early Horn, for first crop
Altringham, for winter use

Cauliflower—One variety is ample, if saved genuine

Celery—Seymour's White and Red are the best in cultivation

Cucumber—Victory of Bath

Endive — Green curled for autumn use
Batavian, for winter ditto

Lettuce—*White Cos
*Bath ditto
*Paris ditto
* These are good summer kinds
†Brown Dutch
†Hammersmith Hardy
†These stand the winter well

Melon—Beechwood

Onion—Portugal, for use before Christmas
Strasburgh, for use after Christmas
James's Keeping, for ditto
Silver-skinned, for pickling

Parsley—The quality of this depends exclusively upon how it is saved

Radish—Early Frame, 1st sowing
Scarlet Short-top, 2d do.
Red and white Turnip

Savoy—Green Curled

Spinach—Round, for summer
Prickly, for autumn sowing

Turnip—Early Dutch, 1st sowing
Early Stone, 2d do.
Yellow Garden, for winter use

The above list will serve to guide the amateur in his selection. All, however, depends upon how the various seeds have been saved. I apprehend that of late years a cheap article has been more aimed at than a genuine one. *Pharo.*

Home Correspondence.

Descent of the Sap.—You ask your correspondents to explain how it is that when a ring of bark is removed from a branch, the new growth takes place principally on the upper edge of the wood, and very slightly on the lower? Now, in this question it is assumed that in all cases the amount of matter formed at the upper edge of a wound in a branch is much greater than that at the lower, but, as I have before stated, the younger the branch is, and the fewer leaves there are above the wound than below it, the less disparity there will be between the quantities of matter thrown out by the upper and lower edges of the wound. The position also of the branch has an effect, as the disparity will be less in horizontal branches than in perpendicular ones. I speak here from only a limited number of experiments, and I wish some one would repeat these experiments on branches of all ages and in all positions, and let the results be known. Not admitting, then, the fact to be universal, I yet allow that in the great majority of cases there is (especially in ringed stems), a much greater accumulation of matter at the upper than at the lower lip of the wound, and you ask, if this does not depend on the descent of the sap, to what is it owing? If by "descent of the sap" is meant merely a passing out of organisable matter from the most dependent part of a wound, then I apprehend that no one will deny the fact; but if by "descent of sap," is meant an inference from such cases as this, that there is a general descent of the assimilable matters in the entire or unwounded plants, then I think this is unproved. As I before said, the entire want of evidence of the existence of a descending current in living entire plants, is one objection to the grand theory; and this one fact of the greater amount of wood formed in the upper lip of a ring can, I think, be fully explained by the effects of gravitation. When the bark of a tree is wounded, the continuity of the tissues by which the sap ascends is destroyed, and the physical law of gravitation operates, and a greater quantity than usual of assimilable matter is carried to the injured part, the consequence is, that cell growth goes on rapidly in proportion to the supply of the matter from which the cells are formed. This is my explanation of the phenomena in question. With regard to your second question, why "gum formed in the leaves of a Potato is afterwards found in the tubers in the final form of starch?" I certainly was not aware that such was the fact. If it can be proved in any way that the gum or dextrine found in the leaves of plants is really carried down to the stem or the tuber, as in the Potato, then a good case would be established for further inquiry into so curious a phenomenon. It certainly is not impossible to suppose that, to a limited extent, the soluble assimilable matters of plants may be carried from one cell to another within limited distances in all directions, but this is a very different movement of the fluids to that which is supposed to exist according to the theory of the descent of the sap. *E. Lankester.*——The sap descends freely, as it ascends; it will rise one day to the height of many feet, pass down the very next day by the same route, and yet ascend again to-morrow in another branch, provided it is compelled into these directions by artificial means, or by some derangement in the economy of the plant. Now, although this can be as clearly proved as the simplest axiom in Euclid, I dare say ninety-nine out of every hundred who think at all on the subject would call it rank heresy, or a thing impossible, contrary to all sound ideas and what not; but sound ideas and sound opinions are not what are required in these days; they have lost much of their former value in our estimation, since they have become articles of free-trade; facts, borne out to the evidence of our senses, we cannot resist; and by such facts, any one who is so minded, may prove to himself that the sap of plants descends in summer as surely as it rises in the spring, as you and many others know very well. But before I state how this experiment is easiest carried out, allow me to say what prompted me to try a question which amounted to self-evidence to my own mind for many years. Like other gardeners, I imbibed the doctrine of the circulation of the sap along with the rudiments of my garden education; but the first experiment in which I had a hand for a direct proof of the downward course of the sap was in the spring of 1827, just 23 years since. This experiment was at the instance of a worthy member of the Caledonian Horticultural Society, and was to be tried by Mr. Barnet, the Society's gardener at that time, in their Experimental Garden at Edinburgh; I was told at the time that the same experiment was recorded in some old author, but I either did not hear his name or I have forgotten it. I helped Mr. Barnet to plant three young Willow trees in a row, and about 2 or 3 feet apart, in the south-west corner of the Experimental Garden, and I well recollect that Mr. Barnet told me that these trees were intended for an experiment on the descent of the sap according to some author. The two outside trees, after a few years, were to be inarched into the centre one, and as high up as possible; the three trees were then to be allowed to grow until the two outside ones should become strong enough to enable them to hold up the centre one, which was then to be sawn off at the surface of the ground. I believe Mr. Barnet told me at the time that the trees mentioned by the old book were thus treated, and that the centre one remained alive—I forget how long—suspended between the other two, and thus the circulation, not up and down, but down and then upwards, must have gone on all this time. I never heard the issue of this experiment; indeed, I quite forgot all about it, until I read Mr. Caie's account of a nearly similar one on a Vine, page 103; but some of your correspondents at Edinburgh might inquire, and let us know about it. The next experiment on this subject in which I was engaged, brought out a new fact, besides proving the descent of the sap, which I never questioned; and this fact is, that the ascending current, without entering the leaves at all, will come back again under certain circumstances in the crude state, as we most erroneously call it when we mean to express a certain condition of it only. From this fact, which I shall presently show, I am led by analogy to infer confidently, that the rising sap is at the will of the leaves, if you allow the expression, and that, like the air, with respect to a vacuum, it can go about in any direction, up or down and sideways, wherever a vacuum in the cells offers a retreat, and when the leaves in the immediate neighbourhood, which caused such opening, are more powerful than their fellows to draw the current to themselves: but that part of the question is not of much practical value. What I had more immediately in view, when I tried this experiment, was to prove certain things which I did not then thoroughly understand, connected with a theory of pruning the Grape Vine, recorded in your pages by Mr. Fleming, of Trentham, for which he was smartly criticised by writers who did not throw any light on the subject, nor even appear to me to have comprehended it at all. I had too much faith in Mr. Fleming, to say nothing of the respect due to his authority, to mistrust what he said merely because I did not thoroughly understand the process by which he explained his views; and the following experiment was undertaken to arrive at the truth, if possible; and when the truth was revealed, I need hardly tell you how much I admired the sagacity of my esteemed friend in penetrating so far beyond his

brethren. A promising young shoot, from the bottom of an old Vine, in a late Vinery, was fixed on for the experiment; this was encouraged to grow on all the season, by keeping down all the laterals as they appeared. I know some will say that was not any encouragement, but the contrary; but let me have my own way so far this time. Before the end of the growing season, this shoot was nearly 16 feet long, not a bad growth, being only an extra shoot from an old plant in full bearing. After the fall of the leaf, I cut out all the buds on this shoot except the two at the very top; one bud would have been sufficient for my experiment, but I retained two, in case of accident. The wood was not nearly ripe at the top, but I wished to retain the greatest length of shoot. When these two buds started next season, their leaves had to draw up the sap through full 15 feet of naked young wood, and as soon as four leaves were expanded on each shoot I stopped both of them. The laterals made a vigorous effort to make up for this stoppage, but I cut them off also, and then I remained until the embryo buds were just bursting; by this time I knew the cells or tubes below them must be full of sap, in short, my bottle was nearly full; then I cut off all communication farther up by removing the two young shoots and a small portion of the older wood, to make sure that no more growth could be made there. You will perceive that I had thus provided a long piece of wood full of the ascending sap, or at any rate as full as our art could make it, and there was no possible outlet for it to escape in the upward direction; and now I thought to myself that as this sap did not reach the leaves to be elaborated, it must come back in nearly the same state as it ascended; that is, if it has the power to return at all. I left the whole for 24 hours, and next morning, as the clock struck seven, I cut off this bare shoot over the centre of the front path, and immediately a drop as clear as crystal fell from the upper part of the cut, and then drop, drop, drop, fell down in rapid succession, and I ran out to call two of the men to witness the curious experiment; but I had no occasion to hurry myself, for the wound kept dropping more or less until 11 A.M. The sap in this bare shoot must have been in active circulation downwards many hours before I cut it; as soon as the descending current reached the main stem of the plant, what became of it? It there met a much stronger current going in an opposite direction, and it must of necessity mix with it and turn up again; there is no other possible way of accounting for its final distribution. There are many other curious points that might have been ascertained if I had thought of them, but, as the experiment may easily be repeated next summer, I shall mention a few things which have since occurred to me, and no doubt some other things and modifications of the experiment will suggest themselves to those who will choose to put their heads a thinking on the subject. In the first place it would be interesting to know if gravitation played a part in the downward circulation, as seems very probable from the length of time the shoot kept bleeding after the supposed influence of the leaves in other parts of the tree were cut off. If I had reversed the ends of this shoot as soon as I saw the drops fall, and if the dropping then ceased at once, that would have established the fact of the current being in part at least owing to the law of gravitation. Again, suppose I had left one bud about the middle of the shoot, or nearer the bottom, and reduced the growth of this bud to one leaf on the day before I cut the shoot from the parent tree, would this one leaf balance the whole of the sap, or any part, or what? Indeed, the experiment might be tried under various modes to obtain more insight into difficult points, and even on points which we believe to be easily understood. When we hear some of our best gardeners say they encourage laterals on their Vines late in the autumn to help the formation of roots (!) surely we all of us want more insight into these things. In conclusion, pray urge your readers to repeat this experiment in various forms. It is not too late now to set about it, and a few months will suffice to prove it. Take any unpruned Vine against an open wall, disbud some of the longest of last year's shoots, except two or three at the top, and then repeat the rest of the experiment as stated above; the only precautions that I can now think of are, that the separation of the experimented shoots should take place out of doors after a few days of fine growing weather, and that the forenoon is better than early morning for cutting off such branches, as we know that a sudden chill during a cold night acts on the sap of the plants very powerfully. *D. Beaton.*

White Celery preferable to Red.—As articles named by the "Writer of the Calendar" are necessarily looked upon as coming from good authority, by those who are not so well versed in the theory and practice of gardening, considerable caution ought to be used in writing these notices. I supposed, as you have been sweeping the stray names from the antiquated lists of culinary seeds, the "Writer of the Calendar" would not be behind, and, consequently, I just looked among my old acquaintances to see who were gone and who were taking their places. I find white Celery clean gone, good, bad, and indifferent, and an excellent red sort mounted in its place. Now it so happens in real practice that red Celery, however large and fine, will not do the work of white; the one is rejected and the other must be had. I have served white Celery repeatedly where red was offered and rejected. Red Celery is hardier than white; it is also more rank in flavour and robust in habit. Delicate taste will try these qualities, especially where Celery is cooked as a dish. There is a sad mistaken notion in the growing of vegetables; for example, if Celery would not run, it never could be too large for a Lancashire grower; whereas Celery richly fed, quickly grown, blanched, &c., is infinitely more delicate than large old Celery, and white Celery is just as much preferable to red as Cauliflower is to Broccoli; and if you try purple Cape Broccoli you will find it but a sorry substitute for the snowy Cauliflower in summer. The same may be said of red for white Celery. *A. F.*

Food of Birds.—I am delighted to see such an authority as Mr. Doubleday speak in favour of birds. There are, however, two, condemned by "A. A." and his gardener, which he has omitted to defend—our noble songsters the thrush and blackbird. I will simply quote Yarrell's "British birds" on the feeding of these—1st, the thrush: "It feeds on insects, worms, and various species of garden snails, fruit, and in winter, various berries." 2d, the blackbird: "In the spring and early part of the summer, its food consists of the larvæ of insects, with worms and snails; as the season advances, they exhibit their great partiality for fruit of various sorts. When, however, the enormous number of insects, and their larvæ, with the abundance of slugs and snails, all injurious to vegetation, which are eaten by blackbirds throughout a great portion of the year, are duly considered, it may fairly be doubted whether the value of the fruit is not counterbalanced by services performed." And all this is independent of their noble song, which few can listen to but with delight. I could imagine some hedge popper from the town shooting them, but scarcely one who had any appreciation of the charms of the country. It is not for me to dictate or advise how gardeners should pass their time; but I am glad to say that mine is better employed than in prowling after birds, and picking up snails, which they would do for him if he would let them. I will just add, don't condemn a thrush whenever you see him near the Strawberries. If you will examine the fruit, you will see that the snail is oftener the offender, and the snail is his favourite morsel. *C. W.*

Pond Mud—Some months ago several notices appeared relating to pond mud, to which you assigned a much lower value as manure than it has hitherto held in public opinion; but, value or no value, it continues to accumulate, and the possessors of ornamental water have been wont to flatter themselves with the hope that the heavy expenses which they incur in cleansing it may be compensated by an increased return from their lands. This illusion you have done much to dispel, and I trust, therefore, you will permit me to inquire by what means this expensive work may be facilitated? how is it usually performed, and what improvements does the experience of any of your correspondents suggest? what estimate can be formed of the cost? and to what books can you refer me for information? The pond from which my mud was taken is about 300 yards long by 60 broad, situated in a flat meadow, and formed by damming up two small streams; the depth varies from 3 to 6 feet, with a clayey or gravelly bottom and a considerable quantity of black mud, which becomes brown on drying, when it forms a compact cake, which may be calcined into a light porous reddish brick, crumbling easily between the fingers. The gas emitted has a bad smell, but does not blacken whiteleaded paper. The water oozing from it is neutral to test paper, and gives indications of chloride of sodium and sulphate of lime. 1000 grains of the original mud lost by drying in the air 584 grains, and at the heat of boiling water an additional 37 grains. 1000 grains thus dried and powdered regained from the air, in 24 hours, 31 grains, while strong sulphuric acid gained 310 grains, their powers therefore being as 1 to 10.

Physical Texture.

	Grains.	Grains.
1. Flint stones	20	40
Pieces of wood	20	
2. Coarse sand, consisting of bits of quartz, with clay, which was either a cement to the quartz or mixed with the wood	2,113	2,480
Bits of wood, leaves, &c.	367	
3. Fine sand, the same as above, but rather more quartz	3,744	3,880
Decaying vegetable matter	136	
4. Impalpable matter, consisting of silica, and a most obstinate compound of silica and alumina	2,527	3,505
Organic matter	978	
Loss		95
		10,000

Chemical Composition.

	Grains.
Organic	870
Sulphate of lime	20
Carbonate of lime, little if any.	
Magnesia	4
Phosphates, about	50
Oxide of iron	120
Alumina	230
Quartz and fine clay	8,706
	10,000

The quantity of organic matter does not correspond with the sums of the first analysis, but it is difficult to ascertain it accurately in a soil so retentive of water. The iron appears to be retained as black oxide by the decaying organic matter, in which state it is allowed to be very injurious to vegetation. Now, do you consider that such a soil would have any value as a manure, either upon stiff clays or poor sands, both of which are within half a mile? and if so, how may its virtues be best exhibited? *Ruris Amator.*

A New Breed of Cockroaches. — On examining some of the Orchids the other day, William Johns discovered a colony of a species of cockroach very different from the common one; and as the same may probably be interesting to some of your entomological friends, I thought I could not do better than forward them. They are very nimble, and do a deal of mischief, living principally on the young roots, as well as on the old ones, when the plants are in a state of rest. The way in which they creep out of their shell is very remarkable. A short time before undergoing the change, a clammy substance seems to be emitted, by which the posterior part becomes attached. The insect then struggles to get free, and gradually works its way out, leaving its great-coat behind it. I was an eye-witness of one of these transformations, of which you will find the shells in a separate paper, and which will show the appearance of this variety of cockroach, without opening the box which contains the living specimens.—*W. B. Booth, Carclew.* [The specimens of a species of Blatta accompanying this communication are scarcely more than one-third of the size of the common Blatta of our houses, and rather broader in proportion. Some possess the rudimental wing scales, and all the specimens appear to be females. We shall be glad of any winged males if they make their appearance, for, until we see these (or are satisfied that the species never acquires wings), it will not be possible to determine the species. We should also be glad to learn from what country the plants attacked by them have been received. *J. O. W.*]

Origin of Hamburgh Grapes. — Seeing that the Hamburgh Grape has been recently the subject of speculation as to the derivation of its name, let me add my supposition that it may come from Alhambra—this species of Grape being abundant in the vicinity of that celebrated place. *Exeter, Feb.* 18.

On Plants adapted to Smoky and Confined Situations.—Referring to the questions and statements of "Leodiensis," at page 822 of your last year's volume, I beg to say that if the situation in which he has placed his Coniferæ is such that a current of wind is conducted and discharged on them, from the position of the adjoining buildings, he very likely is correct in his conjecture, namely, that the exposure to winds is as much the cause of failure as the density of the smoke; but I am aware that many of the Pine tribe, particularly the commoner sorts, are admirably adapted for rough situations, and far more likely to suffer from the effects of smoke and confinement, than from exposure. I had a hope that some correspondent would have answered "Leodiensis's" enquiries respecting plants suitable for smoky situations. I am particularly anxious to get information on this point. I should like to see a list of the evergreens and deciduous plants best adapted to stand the influence of smoke, accompanied with confinement, or the want of air. I entertain an idea respecting evergreens, that the thicker their leaves are, and the finer their polish, the better they are suited to resist the effects of smoke, and that all the Evergreen Oaks, Hollies (particularly the Laurel-leaved), Yew-tree, Spurge Laurel (Daphne), Portugal and common Laurel, Box, Aucuba, &c., are adapted for such situations. I know the Yew stands confinement as well as any plant, but I am not sure how it may get on when it becomes encased in soot. Does "Leodiensis" really mean to say that he has found the Camellia to be as hardy as the common Laurel? If so, what a splendid screen fence it must make! The formation of it, however, requires the exercise of a strong faith. *A Countryman.*

Classification of Roses.—It has been proposed, if I recollect rightly, to place all Roses in two grand classes—summer varieties and autumnals; but I fear that, if this plan was adopted, much confusion would ensue. I would not jumble together distinct and well-recognised groups, but I am of opinion that many that now exist might be united with advantage. Hybrid Provins, which are hybrids between the Provins and French, I would do away with altogether, placing the varieties nearly related to the Provins with them; the others with the French. Hybrid Chinas and Hybrid Bourbons are too much alike to be kept distinct, and might be put together. Instead of dividing Hybrid Perpetuals into three or four groups, it would be better to catalogue the habit of each variety; indeed, this should be done in all the classes, for without some such guide it is almost impossible to plant with propriety. I would put Damask Perpetuals with Hybrid Perpetuals, so few of the former being now worth growing; but I would keep Perpetual Moss Roses distinct; for we may yet expect some new and important additions to this class. With these alterations, the summer Roses would occupy six classes: 1, Provins and Hybrids; 2, Mosses; 3, French and Hybrids, 4, Alba; 5, Damask; 6, Chinese and Bourbon Hybrids; and the Autumnals would also occupy six, viz., 1, Hybrid Perpetuals; 2, Perpetual Mosses; 3, Bourbons; 4, Chinas; 5, Tea-scented Chinas; 6, Noisette. There would still remain the Climbing Roses, the Sweet and Austrian Briars, and perhaps a few others, which might be put in a miscellaneous class, and the purposes for which they are adapted stated. In addition to the above, the number of Roses catalogued should be very much reduced; the best sorts in each class should only be retained. *T. Allestree.*

Does the Leakage of Gas injure Timber-trees?—Such of your readers as have entered Southampton by the old London road, cannot have failed to admire the fine avenue of Elms at the entrance of the town, and must be sorry to hear that the trees on the south side of it are one after the other dying, and that unless the decay can be stopped, it is evident that in a few years all will be dead. By some persons it was supposed that the

injury done to the roots in laying a gas main along them a few years ago is the cause of this decay; and I have lately heard that the laying of a main along a line of trees at Blackheath was followed by their decay, and that a similar case has occurred at Paris. In both these places it was considered that the injury was caused by the leakage of gas, and the mains were accordingly removed, but with what success I do not know. It is stated that the leakage of gas amounts on an average to 20 per cent. of the whole quantity passing through the pipes. As this is a subject of much interest to the inhabitants of Southampton, and as no one has suspected the gas to be the cause of decay there, perhaps some of your correspondents would inform us whether such leakage is likely to injure the roots, and whether they have heard of similar cases. *Hantoniensis.*

Manuring Vines.—The following extract may be instructive to horticulturists. The experiment seems worth trying. "Nothing more," says a Vine grower on the banks of the Rhine, "is necessary for the manure of a vineyard, than the branches which are cut from the Vines themselves. My vineyard has been manured in this way for eight years, without receiving any other kind of manure; and yet more beautiful and richly laden Vines could scarcely be pointed out. I formerly followed the plan usually practised in this neighbourhood; and was obliged, in consequence, to purchase manure to a large amount. This is now entirely saved, and my land is in excellent condition. When I see the fatiguing labour used in the manuring of vineyards—horses and men toiling up the mountains with unnecessary materials—I feel inclined to say to all, come to my vineyard, and see how a bountiful Creator has provided that Vines should manure themselves, like the trees in a forest, and even better than they. The foliage falls from the trees in a forest, only when the leaves are withered, and they lie for years before they decay, but the branches are pruned from the Vine about the end of July or the beginning of August, while still fresh and moist. If they are then cut into small pieces, and mixed with the earth, they undergo putrefaction so completely, that, as I have learned from experience, at the end of four weeks, not a trace can be found." I could also give the evidence of a poorer Vine grower, but probably one is enough for your readers. *Falcon.*

The Winter at St. Petersburgh.—Our winter is exceedingly severe; we used to have every winter some mild days common to litoral climates; nothing of this kind happened since the beginning of the frost, and the mercury having been at—30° Fahr. (—27° to 28° Reau.), at several periods, is at this moment at —33° Fahr. Nevertheless, our great Palm-house (66½ feet high, 266 feet long, and 50 feet wide), keeps well an average temperature of + 59° to 60° when there is no sunshine, heated by hot water and steam. *F. E. L. Fischer, Imp. Bot. Garden, Jan.* 23 (*Feb.* 4), 1850.

Societies.

Horticultural, *Feb.* 19.—E. Brande, Esq., in the chair. Many beautiful plants were brought together on this occasion, but by far the most striking was a magnificent specimen of Dendrobium speciosum, from Mr. Duncan, gr. to the Rev. C. Fox Chawner, of Bletchingley. Further particulars concerning this will be found in a Leading Article. A large silver medal was awarded it.—Mr. Dobson, gr. to Mr. Beck, contributed a beautiful collection of Orchids, consisting of Cyrtochilum maculatum, four finely-blossomed Oncidiums, Cœlogyne flaccida, and the interesting fringe-lipped C. cristata. A Knightian Medal was awarded for these.—Messrs. Veitch had a small imported plant of the variety of Dendrobium aureum, called heterocarpum, from Moulmein, a cream-coloured kind, with a buff lip, and very sweet scented. Mr. White, gardener to A. Kenrick, Esq., of West Bromwich, produced an imported example of the beautiful Bornean Calanthe vestita, and with it a cut specimen of the tropical American Burlingtonia rigida. From Mr. Turner, of Slough, came a nicely bloomed plant of the purple-flowered Primula altaica, a species from the Asiatic side of the Bosphorus, in the way of our common Primrose. It is quite hardy, but on account of its flowering through the winter and early spring, plants of it potted and placed in the greenhouse serve to enliven it at a time when every fugitive blossom is an acquisition. Mr. Ingram, of the Royal Gardens, Frogmore, sent a specimen of Ceanothus dentatus, a dark blue Californian species, which is expected to be hardy. It was not sufficiently in bloom to show what its real merits may be; but its colour is good, and judging from the profusion of flower buds on the plant, it promises to become valuable in ornamental gardening. A purple-flowered Azalea, called Howardii, was exhibited by Mr. Frost, of Dropmore; and from Mr. Henderson, of St. John's-wood, came the unmanageable violet-purple Mirbelia floribunda, useful on account of its blooming in early spring; two Begonias, and Pimelea Verschaffeltiana, a glaucous-leaved unattractive sort, something in the way of P. spectabilis. In addition to his collection of Orchids, Mr. Beck exhibited a group of well-cultivated and nicely bloomed Cinerarias, for which a certificate of merit was awarded. They consisted of Cerito (one of the best of Cinerarias), Nymph, Maid of Artois, Bessy, Gem, and Adela Villiers.

Of Grapes Mr. Bevington gr. to Mark Philips, Esq., sent a bunch of Black Barbarossa, weighing 4 lbs. 13 oz. This is a Grape which was imported a few years ago from the continent by Mr. Philips, and about which very little is known. It grows to a large size, and is an excellent winter and early spring variety, keeping firm and good after other sorts are done. A Banksian Medal was awarded it. Two bunches, somewhat shrivelled, of a dark-coloured seedling, ripe in June, and stated to keep till now, were exhibited by J. B.; and Mr. Dunsford, of Chingford-green, sent a punnet of Black Hamburghs, which were reported to have been ripened on plants in pots.

Mr. Ingram produced a bundle containing 100 shoots of Asparagus, weighing 13 lbs. It was raised in low pits, heated with hot water, as described and figured at page 836 of our volume for 1847.

Mr. Kestell, of Dropmore, showed variously painted specimens of garden labels, some made of cast iron and others of zinc. They had oval heads with the front cast hollow, in which the name was painted, and then glazed over; but as the glass, lying hollow, is liable to be broken, and will permit water to condense beneath it, Mr. Kestell has tried another plan with these labels, which is, to imbed the glass in an elastic cement, which not only prevents it from being easily broken, but also preserves the letters better from external influences. Mr. Frost, gr. to Lady Grenville, stated that he had used these labels in the open air for three years, and had found them efficient. Mr. Morrell again exhibited some of his zinc-backed labels, whose cheapness and ready use render them convenient for many purposes.

From the garden of the Society came various plants, consisting of seven kinds of Orchids, among which was the seldom seen Spiranthes cerina, six varieties of Epacris, Porphyrocoma lanceolata, Franciscea latifolia, three Acacias, the tree Sempervivum, two Camellias, three Cinerarias, the pretty little Portuguese Violet Grass, described and figured at p. 239, vol. 1848, cut flowers of Chimonanthus fragrans and its larger flowered variety.

Linnean, *Feb.* 19.—W. Yarrell, Esq., V.P., in the chair. The Rev. J. Bedingfield was a elected a Fellow. Casts of the busts of the late Bishop of Norwich and the late Dr. Maton, formerly president and vice-president of the Society, were presented by the President. A series of portraits was presented by G. Ransome, Esq., of Ipswich. A packet of dried plants, collected by J. Ker, Esq., on the Mackintyre River, New South Wales, was presented by Mr. Pamplin. Flowering specimens of Canna latifolia, Begonia manicata, and Bilbergia iridifolia were exhibited by the Rev. J. Yates. A memoir of Dr. Schreber, who died in 1810, and was Professor of Botany and many other subjects in the University of Erlangen, was read by Dr. Wallich. Schreber was a pupil of Linnæus, and published an edition of the genera Plantarum and a natural history of quadrupeds. The author was indebted for the materials of his memoir, which contained many amusing recollections of Schreber, to an autobiography of Dr. Martius, who was his pupil, and the father of the great historian of the Palms. The secretary read two original letters of Sir J. E. Smith, to Dr. Dryander, one relating the discovery of galvanic action, by Galvani, and the other describing the procuring a charter for the Linnean Society. Specimens of Maize from the tomb of a Peruvian mummy were exhibited.

Botanical, of London, *Feb.* 1.—A. Henfrey, Esq., V.P., in the chair. The secretary read a letter from the President, nominating the Chairman Vice-President in the room of the late E. Doubleday, Esq. Several donations were announced. The continuation of Mr. W. H. Coleman's Paper "On the Plants indigenous to the neighbourhood of Horsham, Sussex," was read.

Miscellaneous.

Death of Mr. Smith, of Hopetoun.—We regret to announce that this well known Scottish horticulturist died at Hopetoun gardens on the 10th inst. He commenced his professional life at Ormiston Hall in 1790. He was afterwards promoted to the charge of the gardens there, and 1816 was removed to the more extensive sphere at Hopetoun House. With the exception of a few months, he was all his life in the employment of the noble family of Hopetoun. Mr. Smith was in many respects a self-educated man, and like most others of that class, he continued his pursuit of knowledge till late in life. He was a fair botanist, and had a general knowledge of plants both native and exotic. He was extremely fond of calculation, and even when far advanced in years, he added to his previous acquirements a knowledge of some of the higher branches of theoretical mathematics. He was an intelligent and zealous elder of the church of Scotland. Gifted with remarkable cheerfulness, and kindliness of disposition, he was greatly beloved by all his friends, and especially by the numerous young men who were trained under his care, and whose improvement and advancement in life he took pleaure in promoting. He was well acquainted with all the branches of his profession, and entered into all the modern improvements with interest, but his favourite line was the culture of hardy fruits, particularly Pears, of which he had formed a considerable collection. He became a member of the Caledonian Horticultural Society in 1809—the year of its formation; and he was one of the first professional men in Scotland, that were admitted Fellows of the Horticultural Society of London. He was a frequent contributor to the memoirs of the Northern Society; and several of his papers were inserted in the London Transactions. Retaining his active habits to the last, he was engaged in business within a few hours of his unexpected death. It may be added, as a very unusual occurrence, that his father-in-law, whom he succeeded at Ormiston Hall, and himself, made up continuously a period of service, wanting, it is believed, only a few months of a century.

Sale of Conifers.—A collection was sold by Mr. Stevens on Thursday last. It consisted for the most part of Deodars; Araucaria imbricata, varying from 1 foot to 18 inches high; a few examples of Taxodium sempervirens 6 and 8 feet high; T. pinnatum, 18 inches high; Pinus patula, Cupressus torulosa, and six plants of what were called "Gordon Island Cypresses." There were in all about 173 lots of 6 and 12 plants each (except the large Taxodium sempervirens which were sold as single specimens), and they fetched from 6*s.* to 12*s.* per lot.

Calendar of Operations.

(For the ensuing week.)

GENERAL REMARKS.

The correct labelling of the plants, otherwise carefully attended to, is a matter so generally neglected in gardens, that a few remarks on the subject may be of service. During rough weather, some of the hands may be usefully employed in preparing and writing labels. A beautiful display of flowering plants, tastefully arranged, is very gratifying; but, if we wish to give continued pleasure, to those who examine them more than once, it is necessary that nothing be left undone which can contribute to render them more interesting. Extra exertion of this kind is rendered more necessary by the spirit of intelligence which is so rapidly extending itself among all classes, who not only more fully appreciate the externally beautiful, but also seek gratification in entertainments of a mental kind. Gardeners therefore will, in general, find it to their advantage to meet as much as possible the wants of the day; one of which is obviously the neat and correct labelling of all their plants; and, as an additional motive, they will at the same time add to their own convenience. The object however will not be attained by merely affixing botanical names to them. To general observers—the English name, the native country, and year of introduction will also be interesting, and should be added, as well as the natural Order, accompanied by its anglicised form.

PLANT DEPARTMENT.

Plants which are beginning to grow should be critically examined at least once a week, and guided therein by frequently turning them round, judiciously stopping any shoots which are unduly taking the lead, and occasionally tying any that require it. A careful man, who takes a proper interest in his work, will notice these little matters when he is removing dead or decaying leaves or flowers; which, as well as sweeping up all litter, he will do before he commences watering. Another portion of the stock of Gesneras and Gloxinias should now be placed in heat, and the former lot of Achimenes will be ready for potting off. Let them be put at once into the size of pot in which they are to flower, as no plants suffer so much from the checks and sudden starts produced by being frequently repotted. If they are treated as recommended, the size of the plants will be proportionate to that of the pots; and when these are filled with roots, the plants will naturally arrive at a flowering state. The opposite method of frequently repotting these plants, causes the embryo flower-buds to be metamorphosed into small scaly bulbs. They are most useful for decorative purposes, when grown in a brisk bottom-heat, with a liberal supply of top-heat, and a free admission of air; as they make sturdier, better-shaped plants than when grown in a close temperature; besides which, they are better enabled to endure the cold currents of air in the conservatory and other places where they are generally placed when in flower.

FORCING DEPARTMENT.

In making new Vine borders, pay particular attention to forming a good sound bottom, and making provision for thorough drainage. The soil should consist principally of warm sandy loam; the Vine makes fibres much more freely in such soil than in that of a stiffer or more unctuous quality; and in the latter the roots go through the border almost without a single ramification. The admixture of manure is all very well, but is of less importance, as any quantity of richness can be added by means of top-dressings and liquid manure; the great desideratum being to form a warm porous border, which may serve as a medium by which suitable nutriment may be offered to the roots. If the loam is light and open in texture, some sheep, deer, or cow-dung, may be incorporated with it; and bone-dust is a suitable manure for soil of that description, and excellently adapted for the Vine, but should never be used with that which is already stiff and cold. Old lime rubbish and brick chippings are suitable materials for rendering the soil of Vine borders more porous. Look closely after Vines and Peaches, to see that the foliage is not being injured or destroyed; that of the former is liable to be attacked by a small beetle, which must be carefully sought for at night, as it commits its depredations at that time. Care must also be taken to prevent thrips establishing themselves, by fumigating with tobacco as soon as they are observed. The Peaches and Strawberries are very liable to be attacked by the green fly, and the same method will be found the most convenient for destroying this pest also. If any pot plants are growing in the forcing-houses, watch them closely.

In nine cases out of ten they bring mischief along with them. It is very necessary to nip all these plagues in the bud, before the infection has spread to any considerable extent, as by so doing much labour is saved, and the disappointment consequent upon the unchecked ravages of insects. Thinning the early forced Grapes will now require regular attention; it should be commenced as soon as they are fairly set, by judiciously removing all the berries that can with certainty be spared, and those that are left for future consideration should stand in such order that the removal of a berry at any time shall relieve the surrounding ones without disfiguring the bunch. The final regulation of the bunch need not take place till the berries are more than half swelled, but no sound reason exists why the first thinning should be postponed, as is frequently the case, until the berries have attained the size of large Peas, sharing in the nourishment which ought to have been directed solely to the berries which are to remain. The operation should be performed with a pair of clean, sharp, long-pointed scissors, and the whole of the footstalks should be removed along with the berry, but without damaging the footstalks of the other berries, and taking care not to touch any of the latter with the hand, as the tender skin of the young berries is liable to grow rusty where it has been rubbed.

FLOWER GARDEN AND SHRUBBERIES.

Propagating of half-hardy plants and shrubs should now be going on with activity. We have long since discontinued the use of pots in propagating plants for bedding purposes. We prepare our beds by filling up, to within a few inches of where the surface of the soil ought to be, with leaves and hot dung, which have been previously well fermented. The surface of the fermenting material should consist of leaves alone, as they are less liable to give off noxious exhalations; and, as an additional precaution, an inch of sand or coal-ashes may be laid over them. On this we lay 3 inches of light soil, and upon it 1 inch of sand, into which the cuttings are inserted. To assist in sustaining a strong bottom heat, we have a hot-water pipe passing beneath the bed, which we turn on when there are any symptoms of decline. The cuttings strike in this way very quickly; and, after being fairly rooted, they are taken up with balls of earth, and transplanted into cooler quarters. In this manner we save much time, as the labour attending the draining and filling of pots is all avoided. Instead of the old customary method of potting off the young stuff intended for masses in the summer, it will be found more economical to plant it out in prepared frames of suitable soil, consisting of one-third loam, one-third decomposed leaf-mould, and one-third sand, with a good drainage. The soil should not be more than 4 or 5 inches deep, and may rest on a bed of coal-ashes. The young plants should be set in rows from 4 to 6 inches apart, according to the habit of the plant and the length of time which will intervene before they are planted out. By passing a knife or sharp trowel down into the soil, between and across the rows, once or twice during this period, their roots will be prevented from intruding upon each other, and when required for planting out they will lift with nice balls of fibrous roots. Their tops also must be kept within bounds by timely and periodical stopping. It is true that one of these plants will occupy more space under glass than two thumb-pots; but it is no less certain that when turning-out season arrives, one of the plants grown as recommended will be worth half a dozen of the miserable things which have been starved in pots; besides which, the labour of watering is materially lessened—an important matter during the busy spring months. All kinds of plants intended for flower-garden masses come earlier into flower, and make greater progress, if treated on this plan, than when turned out of pots in which they have been growing any length of time. We recommend particular attention to this, as we have practised it extensively for some years, and have found it to answer extremely well.

FLORISTS' FLOWERS.

Ranunculuses should now be planted. It is not a good plan to dig the bed previously to doing so; but if unavoidable it should be well trampled, so that it may be solid for the fibres to strike into. A very old and successful exhibitor of these flowers always had a succession bed; this was the small offsets, and did one, more luxuriant than the rest, show a bloom, it was pulled off as soon as perceptible. Those roots which had not been exhausted were reserved for the best bed the succeeding year, and a mass of flowers was the consequence. We generally plant ours 4 inches asunder each way, burying them from 1½ to 2 inches. Seed should also now be sown in shallow pans, well drained. Polyanthus seed may also be got in. Pansies should be top-dressed with very rich compost. Seedlings will soon begin to bloom; if there is any symptom of excellence, pull off the early blooms, which only weaken the plant, without much chance (if unprotected) of withstanding March frosts and winds. Attend to Dahlias, Auriculas, Tulips, and Carnations, as previously advised.

HARDY FRUIT GARDEN.

To guard against the effects of late spring frosts, we again urge the necessity of affording artificial protection to the blossoms of our choice fruit trees, not on the walls only, but on those in the open ground also. This will be particularly required in damp low situations, where the slightest frosts do considerable damage. As a matter of course gardeners will make use of canvass and netting as far as it will go; but, as few have sufficient of this to protect all their trees, they will find the fan-shaped branches of Spruce or Yew a tolerable substitute. By applying these covering materials early in the season, the slight shade they afford prevents the untimely excitement which is the result of unseasonably warm weather during spring. The moderate sized espalier and pyramidal Pear trees, which have a sufficient quantity of flower-buds to make it worth the trouble, may be protected by rearing a few small poles over them, tent fashion, and thinly covering them with branches of evergreens; so disposed, they form an excellent shelter. Our success last year in protecting pyramidal Pears, and other fruit trees on trellises, induces us to press the necessity of protecting as many of these tender kinds of fruit trees as possible.

KITCHEN GARDEN.

As soon as the ground is sufficiently dry to allow of the surface being pulverised, the main crop of Onions should be sown. The piece of ground selected for this crop should be well drained, and sufficiently rich to prevent the bulbs being too small or strong flavoured; but at the same time, the opposite extreme must be avoided, or the produce will be watery, thick-necked, and less likely to keep well during winter. Early sowing of this vegetable is essential, in order to get the bulbs matured and housed before the short, sunless days of October. A secondary crop of Carrots may now be sown, but generally the main crop suffers less from the maggots when sown in April, or even in May, than those which are sown earlier; and although the roots of late sown ones are somewhat smaller, their good quality generally makes them more profitable. An early crop of stone Turnips should now be sown, and Asparagus seeds on the beds formerly prepared. Regular sowings of spring salads should be made in frames and warm borders. In planting out Cabbages, if you have more than enough for the regular crops, the rows may be planted only half the usual distance asunder, and the alternate rows drawn and used as Coleworts when about half grown. A sowing of one of the larger Cabbages should now be made in a frame, and also some Cauliflowers for the earliest spring sown crop, with some more under a warm wall to succeed them. A sowing of Celery should also be made on a moderate hot-bed; it should be sown very thinly, that the plants may not require pricking out so soon, and that when pricking out is necessary they may be moved with more soil to their roots. It is especially necessary to grow the earliest crop with as few checks as possible, to prevent its running to seed. A successional sowing of round Spinach should be made this week. Garlics and Shallots should now be planted on dry ground, if it were not done in November as recommended; they should be planted 6 in. asunder, on the surface of the soil, with merely sufficient fastening to keep the bulbs steady. Autumn-sown Tripoli Onions should now be transplanted, 6 inches apart, in rich soil, for Midsummer use; they should be secured in their places by closing the soil about the roots, not about the bulbs, the bases of which should always rest on the surface of the soil. The small button Onions which were sown very thickly in autumn, should also be transplanted in the same manner; if the ground is good, without being over rich, these will make fine specimens by autumn.

State of the Weather near London, for the week ending Feb. 21, 1850, as observed at the Horticultural Garden, Chiswick.

Feb.	Moon's Age.	Barometer. Max.	Barometer. Min.	Thermometer. Max.	Thermometer. Min.	Thermometer. Mean	Wind.	Rain.
Friday.. 15	3	30.007	29.952	56	43	49.5	S.W.	.14
Satur... 16	4	30.296	29.889	50	32	41.0	N W.	.00
Sunday . 17	5	30.300	30.209	50	42	46.0	S.W.	.00
Monday 18	6	30.199	30.146	54	43	48.5	S.W.	.00
Tues. .. 19	7	30.080	30.008	50	48	49.0	S.W.	.01
Wed. .. 20	8	30.143	29.999	51	30	40.5	S.W.	.20
Thurs....21	9	30.165	30.138	50	44	47.0	S.W.	.00
Average....		30.170	30.048	51.5	40.3	45.9		0.35

Feb. 15—Overcast; cloudy and mild; rain at night; boisterous.
— 16—Cloudy; rainbow at 8 A.M.; afterwards clear throughout.
— 17—Partially overcast; cloudy; overcast at night.
— 18—Cloudy; very fine; overcast.
— 19—Overcast and fine; mild at night.
— 20—Densely overcast; rain; clear.
— 21—Partially overcast; cloudy.
Mean temperature of the week. 7 deg. above the average.

State of the Weather at Chiswick during the last 24 years, for the ensuing week, ending March 2, 1850.

Feb. and March.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds. N.	N.E.	E.	S E.	S.	S.W.	W.	N.W.
Sunday 24	47.3	34.9	41.1	12	0.29 in.	—	2	5	2	5	1	3	6
Mon. 25	48.2	33.6	40.9	14	0.42	1	4	3	—	5	6	3	2
Tues 26	47.5	34.4	40 9	14	0.48	2	3	4	1	4	2	3	2
Wed. 27	48 0	35.5	41.7	12	0.40	1	4	3	1	5	6	3	1
Thurs. 28	49.0	35.5	42.3	10	0.84	—	5	4	—	2	5	3	5
Friday 1	47.3	35.6	41.4	10	0.23	—	4	3	—	6	5	4	2
Satur. 2	49.1	38.0	43.5	9	0.62	3	2	3	—	2	8	5	1

The highest temperature during the above period occurred on the 25th 1846—therm. 64 deg.; and the lowest on 25th, 1847—therm. 21 deg.

Notices to Correspondents.

Back Numbers. Full price will be given for the following Nos: 1843: 6, 49, 51, 52. 1844: 47. 1845: 24. 1846: 35. 1847: 7, 9, 18.

Apples: *T F B.* This correspondent asks for an analysis of the pulp and the seed of the Apple separately. Can any correspondent favour him with it? Good drainage and a dry climate, not exposed to late frosts, are far more important than manure in securing regular crops: but security is unattainable in so variable a climate as ours. If you want manure, take good farm-yard dung half rotted.

Aquatics: *A Sub.* We should much prefer a slate tank. Iron pipes will do no harm, but you can use lead if you prefer it. The pipes for heating may be under the tank or within it—which you like. The charge against the cement is perhaps well founded.

Bees: *Old Sub.* Now is a good time to feed weak bees. Your honey will be excellent for them; it should be placed in front of the hive in the forenoon of warm days. But if you have several colonies, in order to prevent tumult or plunder put the full dishes or feeding pans in the sun a few yards from the apiary, replenishing them according to your knowledge of the state of the bees; and though some of the strongest hives will be sure to share richly from the bounty, that will be no loss, but rather a gain, by affording them the greater means of rearing an early progeny. *W.*

Books: *Irish Sub.* If it is a catalogue you want, Donn's "Hortus Cantabrigiensis" (1845), or Paxton's "Botanical Dictionary," with Supplement (1849), will possibly suit you.‡ —*K K.* You will find that excellent practical instructions upon the cultivation and forcing of fruit-trees are given by the writers of the Calendar in the *Gardeners' Chronicle*. Loudon's "Suburban Horticulturist" will probably suit you, as you will there find the subjects of your enquiry treated of theoretically, and also practically as regards the details of successful routine. Most of the newest introductions of fruit trees are mentioned in Rivers' "Descriptive Catalogue."‖

Box Edging: *J L.* You have killed it with your salt. Lime-water would have been just as offensive to the worms, and would not have hurt your box. You will never get rid of these things unless your gravel is thick enough, and coarse enough, to prevent their boring upwards. You will, we fear, be obliged to remake your walks. If you can concrete the surface on which the gravel is laid, that would be most effectual.

Cucumbers: *W R.* Victory of Bath or Cuthill's Black Spine.‡

Damson Trees: *A M.* The right way to make them bear is to let them alone. If you prune them they will only run to wood. Probably your Quince has had its flowers destroyed by the frost, during the two last springs.

Emigrants: *Enquirer.* By all means go to New Zealand; your money will be a fortune to you; here you will only lose it in trade, in which very few gardeners are successful. Go at once, and apply at the New Zealand office for advice and instruction. There is no doubt about the matter, if you are industrious. Buy a small estate, and farm it on your own account.

Fuchsias: *Amateur.* Light: Purity, elegans, Gem of the West, One in the Ring, Spanish Infanta, and Exquisite. Dark: Elegantissima, Newtoniensis, Marchioness of Hastings, Comte de Beaulieu, Dr. Smith, and Criterion.‡

Gooseberries: *Q.* Early Sulphur, Rumbullion, Woodward's Whitesmith, Melling's Crown Bob, Red Warrington, and Farrow's Roaring Lion.‡

Grapes: *J B.* It is a very nice Grape, unknown to us. What are its history, its name, and its merits?

Insects: *W W.* Your Apple trees are infested not by lice but by the Mussel-scale insect (figures of which are given in our answers to correspondents on the 2d Feb. inst.) The worst parts of the trees should be scraped, and the scrapings burnt. Previous to the escape of the young active nits from beneath the scale, it would be serviceable to wash the parts effected with some glutinous lather, such as yellow soap-suds and gas-water, the object being to glue the edges of the scales to the bark and prevent the escape of the young; at the time when they make their escape they are very tender but active, and may be destroyed by hot water, lime-water, or gas-tar water. *W.*

Labourers: *W T C.* No answer can be given to such inquiries, as we have before stated, with skilful management and good men, a garden may be kept in perfect order with a number of labourers which under another kind of management would be wholly insufficient. We should say, however, that a good plain working gardener, and a handy-man, with perhaps a boy in summer, would be able to keep a place such as you describe in good order.‡

Larches: *X Y Z* will thank "U. L." and "Arborator" to give the expense of stripping the Larches and other trees whilst standing, and also the means of performing that operation.

Laurels: *J F.* Laurels are usually yellow when land consists chiefly of chalk. Cannot you plant them in something else? Cut your Myrtles down in the end of April.

Melons: *N B.* The size of the pot should be from 14 to 18 inches in diameter. Use turfy loam for potting in, and drain well. Keep the pot plunged, if convenient, in a mild heat of from 75° to 80°; although good Melons may be grown by setting the pot in front of the house, upon a shelf or a few bricks, and training the plants about 18 inches from the roof. It is impossible to tell you how often to water, so much depends upon circumstances. Exercise your own judgment, and by observation you will soon be able to know when water is necessary. After the fruit is set, use weak clear soot and guano water every second time of watering. Give enough at a time to moisten the entire mass, and no more until the state of the soil renders it necessary. The length of time between each watering will be sometimes more than a week. The top temperature should range from 65° at night to 75° without sun, and 85° with sun during the day.‡

Moss on Lawns: *W A.* A dressing of pounded quicklime in December, and rolling and bush harrowing afterwards, is said to kill it, or it may be scraped off now with garden rakes; but in whatever way you remove it, it will grow again if you do not drain your lawn.‡

Names of Fruits: *W P L.* Coe's Golden Drop Apple.‖—*J C X.* Hunt's Deux Ans ‖—*J F Wood.* Your seedling Apple is handsome, and doubtless good for kitchen use; but, owing to a slight astringency, it cannot rank as a dessert fruit.‖

Names of Plants: *Valencia.* Some moss without fructification; apparently Grimmia pulvinata.—*C R.* Pteris serrulata. *S.*

Oaks: *G M G.* Cut away all the rotten wood to the quick, with any sharp instrument. Be very particular in making the wound quite clean. Then fill it with a mixture of well worked clay, wood-ashes, charcoal-dust, and cow-dung; coating the whole with wood-ashes while the mixture is wet. Ivy does no harm.

Paint used for Iron-work at Trentham: One-third Stockholm tar, and two-thirds gas tar, laid on while quite hot, with a brush, and spread as thinly as possible.‡

Pine-apples: *B B H.* The Cayennes are among the best of all Pines for all purposes; large, high-flavoured, firm, handsome, and coming quickly to hand. The smooth is perhaps the best. The Sierra Leone Pine is not so good.

Shepherdia: *G S.* We believe the S. argentea has fruited in this country. It bears the sexes on different plants. Messrs. Osborn and Co. imported the female some years since. It may be propagated by layers. A Melon may be ripened in a greenhouse, trained up a rafter, and without artificial heat. The difficulty is to avoid red spider. Its roots must be kept constantly damp. For experiment take the hardy green-fleshed.

Strychnine: *X Y Z.* There is nothing to fear from the animals killed by this poison. Buried at the foot of your fruit trees they will probably cause excessive growth, or they may throw the trees into bad health; but the quality of the fruit cannot be affected by the poison, which has been long since decomposed. If the strychnine poisoned anything it would be the trees themselves.

The Ice Plant: *Powel Williams.* It is a common tender annual. Raise its seeds in a hotbed; put the seedlings into separate small pots, keeping them in the frame till they are established. Then turn them out in a warm sunny border. If you want them chiefly for garnishing, and your soil is very poor, manure it; but that is not required in England.

Vinery: *A B C.* By all means consult a skilful professional man. Give us your address, and we will put you in communication with such an one.

Ward's Cases: *S B.* Let your own carpenter make what you want. We know of no place where they are kept on sale.

Misc.: *Argo.* We have always understood that Walcheren Broccoli and Walcheren Cauliflower were one and the same thing.‡

HOT WATER APPARATUS AND HORTICULTURAL BUILDING.



W. HILL begs respectfully to announce that his improved "FLUE BOILER" may now be had in sizes to suit every description of Apparatus, from that of 100 feet to 2000 feet of 4-inch pipe. Improved STEAM BOILERS, from one horse-power and upwards, adapted either for stationary or portable engines, and guaranteed to be most effective.

Every description of Horticultural Building constructed upon the best principle. Buildings of any kind heated by hot water.

*** A liberal Discount to the Trade.

W. HILL, Horticultural Works, Greenwich.

BY HER MAJESTY'S  ROYAL LETTERS PATENT.

PATENT HOTHOUSE WORKS, KING'S ROAD, CHELSEA.

BENCH invites the attention of Gentlemen about to erect Hothouses, &c., to the vast superiority in every respect possessed by his PATENT HOUSES, which he will warrant superior in every respect to any others. Good Glass from 16 to 21 oz. per foot, 1 foot wide, 3 feet long, furnished, and the Houses when completed charged from 1*s.* 3*d.* to 1*s.* 6*d.* per superficial foot, according to size and quantity; one principle, the roof being formed without wood or putty, and the other principle being wood rafters and the glass put in with putty. Patent Sashes, requiring no paint, from 7*d.* to 9*d.* per ft.

HEATING BY HOT WATER.

THE LONDON MANURE COMPANY beg to offer as under, and pledge themselves that every Manure shall be perfectly Genuine:—Corn Manure for Wheat, Barley, Oats, Clover—most strongly recommended from its success last year; it will be found cheaper than Guano, and bear the strictest analysis. Also URATE, Superphosphate of Lime, Sulphate and Phosphate of Ammonia, Nitrate Soda, Fishery and other Salt, Gypsum, Sulphuric Acid, &c.

GENUINE PERUVIAN GUANO.—To insure this free from adulteration, all purchasers, if they prefer it, can receive their warrants from Mr. Purser, and remove the Guano direct from the Warehouses of Messrs. A. GIBBS and SONS, the Importers.

Bridge-street, Blackfriars. EDWARD PURSER, Secretary.

Country Dealers and Agents supplied.

GENUINE PERUVIAN GUANO, direct from the Importer's Stores, LINSEED CAKES, and all kinds of Artificial Manures, may be had at London prices, for Cash, of Messrs. ODAMS and PICKFORD, 15, Mark-lane, London.

POTTER'S GUANO.—This effective MANURE, now greatly Improved, is confidently recommended as a Dressing for all Spring Crops. It is equal to Peruvian Guano, and 25 per cent. cheaper. Also SUPERPHOSPHATE of LIME, GYPSUM, and SULPHATE of AMMONIA, all of guaranteed quality, and Cheaper than at any other establishment in town or country.

Factory, 28, CLAPHAM ROAD PLACE, LONDON.

PERUVIAN GUANO.—As Agents of the Peruvian Government for the importation and sale of this valuable MANURE, we think it right, for the protection of consumers and respectable dealers, to apprise them that the adulteration of the article is still extensively practised, and to recommend them to apply either to ourselves, to our agents, Messrs. GIBBS, BRIGHT, and Co., of Liverpool and Bristol, or to dealers of established character, in whose honesty and fair dealing they can place implicit confidence. ANTONY GIBBS and SONS.

London, February 23.

HYDRAULIC ENGINES, WATER RAMS, &c. on Improved Principles; Engines worked by Steam or Hydraulic power, to raise from 1 gallon to 1000 per minute to a height of 500 feet, and from a depth of 900 feet. Douche, Vapour, Hot-air, and all other kinds of Baths. Buildings, Conservatories, &c., heated by Steam, Air, or Water. Boring, Sinking, and Collecting of Water, &c. Towns supplied.—Direct to JOHN LEGG, Cheltenham.

IMPROVED FOUR-HORSE PORTABLE STEAM-ENGINES AND BOLTING OR THRESHING MACHINES.

FREEMAN ROE AND HANSON, Southwark Iron Works, and 70, Strand, beg to call attention to their Steam-Engines and Threshing Machines, which are more economical in fuel, for the quantity of work done, than any before the public. They may be seen any day at their works, Sumner-street, Southwark Bridge-road.—Water-rams for raising Water. Deep Well Pumps; Baths; Hot-water Apparatus; Fountains. Towns supplied with Gas or Water.

IMPORTANT TO AGRICULTURISTS.—COLLECTION AND DISTRIBUTION OF MANURES.

STRATTON'S AGRICULTURAL REPOSITORY, BRISTOL.

STRATTON, HUGHES, AND CO., have now ready their PATENT TUMBLER CART for the collection of Night-soil and other offensive matters; also their Iron Mill, to be worked by horse-power, water-power, or steam, for mixing and incorporating Nightsoil with Charcoal and other deodorisers. The Tumbler Cart has an iron body with a close cover; can be fitted if required as a Watering-cart, with a Valve and Delivery Pipe for distributing water or liquid manure, and also with an Apparatus for distributing dry manures in any given quantities per acre.

STRATTON, HUGHES, and Co.'s Tumbler Carts are used for scavenging purposes in Manchester, Bristol, Worcester, Harwich, Rochford, Cardiff, &c., and they are now building them for Chester, Oxford, Huddersfield, &c., besides many for Agricultural Colleges and private individuals. STRATTON, HUGHES, and Co.'s new illustrated Catalogue of Carts, Waggons, and Agricultural Implements will be forwarded to any address on receipt of 1*s.* 6*d.* in postage stamps.

STEPHENSON AND Co., 61, Gracechurch-street, London, and 17, New Park-street, Southwark, Inventors and Manufacturers of the Improved CONICAL and DOUBLE CYLINDRICAL BOILERS, respectfully solicit the attention of scientific Horticulturists to their much improved method of applying the Tank System to Pineries, Propagating Houses, &c., by which atmospheric heat as well as bottom-heat is secured to any required degree, without the aid of pipes or flues. S. and Co. have also to state that at the request of numerous friends they are now making their Boilers of Iron, as well as Copper, by which the cost is reduced. These Boilers, which are now so well known, scarcely require description, but to those who have not seen them in operation, prospectuses will be forwarded, as well as reference of the highest authority; or they may be seen at most of the Nobility's seats and principal Nurseries throughout the kingdom.

S. and Co. beg to inform the Trade that at their Manufactory, 17, New Park-street, every article required for the construction of Horticultural Buildings, as well as for heating them, may be obtained upon the most advantageous terms.

Conservatories, &c., of Iron or Wood, erected upon the most ornamental designs. Balconies, Palisading, Field and Garden Fences, Wire-work, &c.

MESSRS. NESBIT'S CHEMICAL AND AGRICULTURAL SCHOOL, 38, Kennington-lane, London.—A sound practical knowledge of Analytical and Agricultural Chemistry, Geology, Surveying, Levelling, Railway Engineering, &c., may be obtained in Messrs. NESBIT'S Academy, in addition to a good modern education.

Mr. NESBIT'S works on Arithmetic, Mensuration, Gauging, Land Surveying, English Parsing, &c., are published by LONGMAN and Co., and may be had of all Booksellers.

The terms of the School can be had on application either personally or by letter.

NATURAL GRASS SEEDS FOR PERMANENT PASTURES, AND IRRIGATED CATCH MEADOW.

Which may be had Separate or Mixed, expressly to suit the soil.

MESSRS. JOHN SUTTON AND SONS having for many years paid especial attention to the examination of Natural Pastures, and the collecting of various kinds of Grasses which grow naturally in the various soils of England and Wales, for the purpose of introducing an improved system of laying down land to permanent pasture, are thereby enabled to supply the sorts and quantities of Seeds best adapted to suit the soil for which they are intended; and *at much less expense* than is usually incurred. Particulars will be forwarded by post.

Also Finest Lawn Grasses and Mixtures for improving old Pastures. Ashcroft, Liverpool, and other Swedes, White Belgian and other Carrots, Yellow Globe and other Mangolds, True Italian Rye-grass, Drumhead Cow Cabbage, Kohl Rabi, &c.

Reading Seed Warehouse, Reading, Berks.

SUPERIOR BOLIVIAN GUANO.—This Guano is of a very superior quality, of a pale straw colour, and in the highest state of preservation. For the last five years the Worcestershire Agricultural Society has awarded the prize for the best 2 acres of Swedes grown with Guano only, to parties who have made use of this description of Guano. It has been analysed by Dr. ANDREW URE, London; and WM. HERAPATH, Esq., Bristol.

Dr. ANDREW URE remarks: "The best Peruvian Guano is inferior in power and value to this Guano as 17 is to 24. It is the pure excrement of the birds."

W. HERAPATH, Esq., states: "One pound of this Guano is equal in fertilising power to nearly 40 lbs. of Farm-yard Dung. Judging from its nitrogen alone, it is a very rich Guano."

Apply to H. and G. WEBB, Merchants, Worcester, who also hold a cargo of the same kind of Guano in Liverpool and in Glasgow.

MANURES.—The following Manures are manufactured at Mr. LAWES'S Factory, Deptford Creek:

Corn and Grass Manure, per ton	£10	0	0
Clover Manure, do.	11	0	0
Turnip Manure, do.	7	0	0
Superphosphate of Lime	7	0	0
Sulphuric Acid and Coprolites	5	0	0

Office, 69, King William-street, City, London.

N.B. Peruvian Guano (with an analysis), 9*l.* 15*s.* per ton, in dock. Sulphate of Ammonia, &c.

The Agricultural Gazette.

SATURDAY, FEBRUARY 23, 1850.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

WEDNESDAY, Feb. 27—Agricultural Society of England.
THURSDAY, — 28—Agricultural Imp. Society of Ireland.
WEDNESDAY, March 6—Agricultural Society of England.
THURSDAY, — 7—Agricultural Imp. Society of Ireland.

MR. HUXTABLE'S pamphlet is not permitted to lie quiet. Its power seems to be admitted by all, or it would not receive such general attention: but whether it be powerful for good or for evil seems to be matter of opinion. "PORCIUS," who has published a critique* upon it, is of the latter persuasion; he believes that it is of mischievous tendency, teaching mistaken doctrines, employing an erroneous logic, and building on baseless theories. "PORCIUS" is certainly a witty fellow, and he has done the best he could with the brief which has been given him; for we imagine that, whether *he* builds on facts or not, they are not his own. So long as he argues the general question of free trade, on the ground that whatever high farming may profess to do, as it confers no exclusive benefit on any one nation, it cannot enable that nation to fight the battle of low prices with other countries, he is evidently demonstrating a proposition of his own devising; but when he enters on the practical details of the art of agriculture, he is evidently dealing with things which he knows merely by hearsay; and we shall be very much surprised to learn that he is anything there more than a theorist himself. His assertion regarding the capital employed by the Scotch farmer—which he puts at 5*l.* per acre!—his remarks on the proportion between the live and dead weights of the hog—his arguments regarding the quantity of manure with which Mr. HUXTABLE'S pigs supply him, and regarding the humanity of the beef manufacture—all prove this. He disputes Mr. HUXTABLE'S proportion of $\frac{4}{5}\frac{9}{7}$ between the dead and live weight of the hog, because he can find no "testimony" to corroborate it. No such testimony was needed—the fraction was obtained from the animals themselves: our own experience has led to $\frac{2}{3}$ as being nearer the truth in in the case of pigs, while $\frac{3}{4}$, or a Smithfield stone of mutton out of an imperial stone of the living animal, may be taken as the truth regarding fat sheep. But Mr. HUXTABLE gives us this fraction as the result of actual experience: and we must accept it as true of the breed he feeds and the circumstances in which it is placed. Then how does "Porcius" dispute the assertion regarding the manure from the pigs? He takes Professor JOHNSTON'S per centage of nitrogen in fresh dung, and calculating from this the amount of manure with which Mr. HUXTABLE'S pigs must have supplied him, he shows that it must have been four times as much in weight as the food they ate!

* Mr. HUXTABLE and his Pigs. By PORCIUS. Blackwood and Sons.

This is not the style of a farmer's argument; and it is just as far from the style of the practical chemist, for *he* knows well that the nitrogen of the manure is a most variable ingredient, depending altogether upon the nature of the food from which the manure is derived, and therefore far more abundant than it in general is, wherever Mr. HUXTABLE'S method of feeding is adopted. The argument in condemnation of the method of beef-making adopted at Sutton Waldron is just as much in the amateur style as the rest of the pamphlet. No condemnation, on the score of humanity, of any system which results in a rapid growth of the animal, can stand for one instant. The rapidity of growth is the true test of animal comfort, and freedom from pain and annoyance; and to argue for the "natural" in preference to the "artificial" system, whether on the score of humanity or profit, is an egregious mistake.

The whole style of the work, indeed, proves it to be an amateur performance, so far as any practical knowledge of the details of the subject is concerned; the performance, however, of one who is no mere amateur as a literary man; for it is certainly a cleverly written production, and the writer is a master of the art of controversy, employing all its weapons, ridicule among the others, most skilfully.

Mr. HUXTABLE'S pamphlet is chiefly useful as an instance of the method in which the researches of the chemist may be used to strengthen the hopes, encourage the energy, and guide the efforts of the practical farmer; and we do not think that "PORCIUS" has fastened any such charge of error upon it, as will weaken its undoubted utility in any of these respects.

Low prices of grain—good for the buyer, bad for the seller—are to be met just by the farmer as much as possible assuming the former character and declining the latter. If under present circumstances any one cannot grow corn so cheaply as he can buy it, then let him not continue the ruinous experiment of attempting it. Let him buy corn and, growing green crops, feed beef and pork and mutton; and he will very soon create the circumstances under which it *is* more profitable to grow corn than to purchase it. And however desirable this result may be, he need not suppose that the expenditure which attends the process is an investment on *its* account alone. Such an expenditure may, we believe, be made profitable on its own account. We have a number of instances before us in which it has been so, and these we shall publish from time to time—confident that whether present prices shall materially change our agriculture or not, they cannot destroy it; and that the very cheapness which makes some of our agricultural products unprofitable will, if it be properly made use of, increase the profitableness of others.

For instance:—Five Hereford 3-year-old oxen were bought by auction last autumn for 56*l.* 5*s.*: and, now, after the lapse of 15 weeks, they are sold at 50*s.* per cwt. for 85*l.* During the first 5 weeks they had 3 lbs. of Bean-meal daily apiece, and 1 lb. of Linseed-meal boiled and given to them, thrown over straw chaff. During the last 10 weeks they have had 4 lbs. of Bean-meal and 1 lb. of Linseed-meal daily apiece. They have thus consumed 1925 lbs. of Beans and 700 lbs. of Linseed; a quantity equal to about 29 bushels of the former and 11 bushels of the latter, which are worth together about 8*l.* 10*s.*; leaving 20*l.* 5*s.* to pay for the Swedes and Mangold Wurzel they ate, and for the attendance, fuel, and other expenses connected with their management. They consumed in 15 weeks 28 tons of roots, being rather more than 1 cwt. a day each; and, setting aside a sufficient portion of the returns from them to pay for other expenses, we have no doubt that these oxen have made 12*s.* per ton for all the roots they have consumed. Now, we know very well that agricultural truth is not *determined* by single instances of this kind, but we may assume that it is pretty fairly indicated by them; and we may say that, supposing a small farmer to have obtained such a result as this, from the single acre of Swedes and Mangold Wurzel on which during the winter he has been feeding his five oxen, he is far more likely to be encouraged than cast down by his prospects under present prices. For not only has he obtained a remunerating price for his produce in the beef he has sold; but—in the large quantity of manure with which his cattle have also supplied him—he has the means either of replacing this produce of cattle food, and so of trying to recopy this experience or of growing a larger produce of corn.

These five oxen each made nearly 8*s.* per week, though fairly bought and cheaply sold; they were box-fed on what to a great extent was *bought* food, and they have amply repaid their expenses.

Now, we venture to ask our readers to give us their experience on this subject. It is, we believe,

one of the last chances of safety—the last resources against his present difficulties which the farmer has—and it deserves the anxious study and trial of all to make it, what we firmly believe it to be, a chance trustworthy enough, a resource ample enough to create his confidence.

BRICK AND TILE-MAKING.

The necessity of a brick yard on such properties as require drainage, appears to be lost sight of in the disputations concerning the application of tiles when made. The shape of the tile, the nature of the tile, its weight, its texture, have all in their turn had advocates and enemies, but it is seldom that the manufacture of so useful a commodity, let it come in what guise it will, has claimed sufficient attention to raise half a dozen arguments on the question. The various tile machines have certainly caused some "sensation," and are twice in the year, viz., at the Smithfield Club and Royal Agricultural Society Meetings, eyed with curiosity and surprise. "Are these * pipes ready to go into the ground?" was the question I heard put by a stout jolly-looking farmer to a pipe machine exhibitor last Christmas. "No, Sir, they must be dried and burnt in a kiln," was the courteous reply. "Do you sell kilns, too?" "No, Sir;" and here the conversation dropped, as may be supposed. Bless me, I thought, what must this man's land be like? Did he ever see clay before in his life? How I should like to pass half an hour with his landlord or his agent; I purpose to do so, if you will permit me, through the medium of your Paper.

Brick and tile making is not a mystery. It has no worshipful company. Clay is not found in California only, and coals are plentiful enough in England, but brick and tile yards, the natural result of the conjunction of two such materials, are not to be found at every turning, even in the wettest part of the country. The Bulrush still waves his head in defiance, and the frog croaks forth still a claim for protection to his marsh, and he has a good protection in the cost of seller's profit and carriage of tiles attaching to the reduction of his stronghold.

But though, as I have said, brick and tile making is not a mystery, it requires, like everything else, to succeed, much attention. The turning out those beautiful smooth tiles in Baker-street is a proof of machine and clay, not an effect of attention. The choosing a site for the yard, the digging the clay, the sorting it, the winter and the summer preparation, are all points requiring far more skill and attention than the mere turning a handle and depressing a cutting wire. I shall leave these matters for other Numbers.

Let us here see what hinders this good work beginning. Courteous reader, does your agent? He does, and he is a very shrewd man, doing business for half the country. He tells you "that brick-yards are very unsightly things, and cut up a property sadly, besides tiles are cheaper now, the yard only five miles off, and the tenants draw them for nothing." It is probable that in such a case as this, the agent or brick-yard must be given up. I never found yet I could draw tiles for nothing, though I have often heard of it being done. I do not think I could draw them any more than you could make them for nothing. "I have no money," says another. "Then how did you get those great hand-made tiles, selling at 25*s.* per thousand, that I see five men laying 1½ foot deep every morning I ride to N——? why, you will have a bill of 70*l.* to pay for those. And then your bricks; what with repairs to cottages, and building odd sheds, your team seems pretty often on the road. You must owe something, I think, for bricks." "Of course I do," is the answer. "Repairs are always necessary, but never tell me what little draining my land requires would pay for a brick-yard. It is all very well where you have two or three thousand acres of very wet land, I dare say, and plenty of money put in it." Many such cases as these exist; I trust it may be beneficially shown that making is cheaper than buying, without possessing even 1000 acres of very wet land.

Before we proceed to dig into the clay, let me observe that the average number of tiles a foot long used in draining an acre of land with a close soil is about 2000, the drains being 7 or 8 yards apart. One hundred acres of land thus drained will have used 200,000 tiles. We will admit that these are 1½-inch pipes, and that the kiln is only four miles from the land to be drained—that the roads are good, and that there are one-horse carts for carrying; these will carry about 1000 at a time, and will go twice to the kiln. I value the horse, cart, boy, and share of man overlooking, at 4*s.* per day, working till 2 o'clock. This adds 2*s.* a thousand to the price of the tiles, or 20*l.* to the cost of draining 100 acres of land. A turnpike on the road will possibly add another 50*s.* to the cost. With the kiln on the 100 acres, the same tiles would be moved to the drains by the same means at the cost of 4*l.* 3*s.* for the 100 acres of land. But 1½-inch pipes are not always to be recommended; many people (I do myself) prefer a 2-inch, or 2½-inch pipe. If these are used, 500 or 600 makes a load, and the cost of carriage becomes 40*l.* per 100 acres, against 8*l.* 6*s.* if the kiln be on the ground. The carriage of bricks is of more serious importance, from their greater weight.

But other reasons may be urged in favour of making at home; you are sure of having such tiles as your land really requires in quantity, quality, and at your own time. You are not obliged to leave an open trench for the main drain in the midst of a 20 acre ground, to be tiled next year, as they are *out* of main drain tiles at Mr. So-and-so's yard. You are not tempted to buy (or your tenant for you) some imperfectly burnt goods (the last lot), in order to finish the draining of the home close. You do not send your teams five or six miles on a frosty morning for a day's work to the nearest brick-yard, merely to learn that they are just out of tiles, that Mr. Squashland took the last 20,000 away yesterday, and that they have sent away dozens of people this morning; neither are you or your foreman carried away from home to see to a matter that you have the power of conducting within the limits of your daily business.

Taking therefore into consideration the cost of carriage, the loss occasioned by the using goods not exactly suited to the work, the demand made on the master's time away from home, I have very little hesitation in saying that, exclusive of the seller's profit, the purchaser of tiles incurs a cost peculiar to his position as a purchaser, of from 20*l.* to 40*l.* on every 100 acres he drains, and that to include the seller's profit in the cost, we must add from 60*l.* to 90*l.* to this amount. Thus in an estate, say, 500 acres of land to be drained with drains 7 or 8 yards asunder, it is probable that a saving by manufacture of tiles on the spot over purchase, at a reasonable distance, of 400*l.* to 650*l.*, would be effected. As draining almost invariably induces building, it is also probable that an additional benefit of some importance would be gained on this score. Will it then be too much to ask permission to carry your readers with me into the diggings this month? *A. P.*

(To be continued.)

* This is strictly true.

ON CATTLE FEEDING.

As I promised, I will now proceed to state what I think are some of the most obvious reasons why cattle feeding does not pay in some cases. The first is, irregularity in feeding. Although this is so common, and the consequences so palpable, yet it is a point very apt to be overlooked. I think it is omitted in nearly all the various receipts that we have for cattle feeding at the present day. We have receipts which include almost every cereal and vegetable which can lay claim to the least merit for that purpose, combined, and dressed up on the most scientific principle, and all said to possess great capabilities for fatting; but I think not the least important particular, the time and circumstances of application, are very often omitted, and without disputing on their various merits, I shall merely say that many of them may be good, if properly applied. The consequence of this is, that unless where the best method is found out by experience, sometimes dearly bought, people go on making the attempt only to end in disappointment, and then say it does not pay. If we were to ask six people how they use a certain kind of food for their stock, we should probably get as many different answers. Some may use hay and Turnips, giving plenty of the former, and sometimes of the latter, just as they find it convenient to provide them. The hay is given in large quantities at one time, with the injunction to let them have no more till they have finished what they have got. But the best method in this is on the principle of little and often. One day they get Turnips in such large quantities as to produce the symptoms, and no doubt some of the effects of scouring, and at another time they have so few that they are bound up in the bowels. And after trying this up and down way of it for a time, it is found out that the beasts hardly pay the expense of carrying the roots for them, and the whole plan is condemned as unprofitable. Perhaps some artificial food, such as cake, is used, but instead of giving it regularly as to time and quantity, they get it just as it suits the parties in charge; and as the beasts eat it readily, and are anxious to get it, having no stated time for that, they are always on the look-out whenever they see the feeder, and are deprived of that rest which they ought to enjoy. But I need not waste paper describing such a practice—suffice it to say that it most certainly will not pay, and no wonder; and yet I fear too many must admit that what I have described is not far from the system, or no system, that they are familiar with. But I must also say a few words on the accommodation provided for fatting beasts. On this I would observe, that the house should never be made to contain more than 10 or 12 together, and these ought to be divided off in pairs, so that they cannot disturb each other. As to yard fatting, I must discard that as unworthy of enlightened practice, as regards preparing cattle for the butcher; for if from 10 to 30 or 40 beasts are going loose, it is not likely that they will all feed alike; perhaps they will all require nearly the same quantity, but do not consume at the same speed, and the master cattle keep under ones at bay, until they have satisfied themselves and turned all the food upside down, leaving the worst for those that have most need of the best; but let them all be tied up, and each lot of 10 or 12 divided by a partition wall carried up at least higher than the beasts are, so that one lot may not see what the others are doing, for if there are 30 or 40 in one large open house, they must be deprived of some of the rest which they ought to have, and which conduces to their thriving more than we are aware of. Perhaps one may get choked, another may be hoven, a third may break loose, and presently all the rest are disturbed. But if houses must be large, let them never contain more than those that are fed, and treated exactly alike; the reason for this I need not stop to explain. As to the form of buildings best adapted for the purpose, I must not speak at present; but as I have spoken on what I think a bad system of fatting, I must now say a few words on what I consider a better way of carrying it out, in detail. I will give it as practised in the counties which I alluded to in your Paper of Jan. 12. One man has charge of from 16 to 24 large fatting beasts, and this is as many as he can attend to properly. He gives them a feed of straw in the morning as soon as it is light enough, as much as he thinks they will eat during the time that he is cleaning them out, which, when done, he cleans out their mangers properly, and gives them from 1 to 1½ bushel of Turnips each, then takes his own breakfast, comes back to them and gives them as many Turnips as he thinks they will eat before mid-day, which practice soon teaches him; he then litters them level, soft, and deep, gives them a little straw in their racks, and shuts the doors, or not, as the weather determines, and this not later than 9 or half-past 9 o'clock in the morning, leaving them to take their rest 3 or 3½ hours. He goes and pulls Turnips for them till 12 or half-past 12 o'clock, then again cleans out their mangers and gives them a feed of Turnips, and goes to his dinner. When he returns he cleans out their houses and gives them a few more roots if they want them, litters them, and gives a little straw to eat, then leaves them for a short time according to the length of the afternoon; this little spare time he employs in cleaning about the doors or in the Turnip sheds. Then before night he visits them again, which is the time they get their cake or whatever other artificial food may be given; if none, which is frequently the case, then some more Turnips, and their bed put right, and left till 7 or 8 o'clock, when they get what is called their supper of straw, and are well littered up. Thus ends the day's operations. Now, whatever sort of food be used, and whatever way prepared, if proper times be not appointed and strictly kept in supplying it, much of its good effect will be lost. I may at some other time say something regarding the most suitable age at which cattle should be fatted off; but I must not trespass further on your patience at present. *G. S.*

THE UNDER-DRAINING OF A DEAD-LEVEL.

All soil without moisture is perfectly sterile and unproductive; and, on the other hand, a soil completely saturated with water is of little service for the purposes of vegetation. The general object of land drainage, therefore, is to carry away that excess of water which would prove injurious to vegetable growth; and the first care of the husbandman, in reclaiming and cultivating any low lands, is to provide an adequate number of open drains or ditches for conveying away the surface water, and make them of suitable depth and capacity for keeping the head of water several feet lower than the surface of the land. When this has been accomplished, it is thought by many that nothing further need be done, in order to secure complete exemption from the numerous evils which arise from wet soil. In the marsh district of the fen country, it is said, if you can but keep the water sufficiently low in the ditches, the excess of moisture, not required by the soil, will sink through the porous silty subsoil, and ooze into them; on the peaty lands a similar soakage will take place; and on the clays and stiff loams, surface grips will take off the superabundance that may fall in winter, and thus keep the top sufficiently dry. Now it is easy to substantiate the reply that, even on the lightest of these soils, the under-drainage of soakage can only occur at the outsides of the fields near the ditches; that the outlet for the water which sinks into the land is thus incapable of preserving a right degree of humidity, so that by far too much moisture remains to be carried off by gradual evaporation; that on the heavier and more retentive soils, there is no proper way of drying the surface, unless the water be made to sink through the pan of clay beneath; and finally, that on all soils every particle of rain-water ought to be passed through the soil, and not any portion over it, because each drop so run off is a portion of valuable nutriment lost, and a useful chemical and mechanical agent wasted. Rain-water naturally percolates downwards into the soil, but it cannot do this efficiently unless a proper outlet be provided for it below; and accordingly, "under-drainage" undermines the soil with a number of subterranean conduits, which convey the filtered water to the ditches. The difference, therefore, between natural drainage and artificial subsoil drainage is, that the former leaves the soil with scarcely any means of getting rid of its excess of water but by evaporation at the surface, the latter provides a ready outlet for the water which has fulfilled its uses in the land, and would become injurious if allowed to stagnate; the one wastes great quantities of an invaluable element, for the want of the means of admitting and properly using it, the other applies every drop of rain to its right purpose, without drenching or saturating the soil.

The advantages of under-draining are obvious from the following considerations: soils appear to be the stomach in which the food of plants is prepared; and this preparation, which is a purely chemical process, has been found to occur indiscriminately all over the soil, provided heat, moisture, and air are present. One great evil, therefore, produced by an excess of moisture in soil, is the consequent diminution in the quantity of air within it; which air has been proved to be of the greatest consequence, not only in promoting the chemical changes requisite for the preparation of the food of

plants, but likewise to the roots of plants themselves; for eminent chemists have shown that oxygen and carbonic acid are absorbed by the roots, which gases, however, especially the former, can be conveyed to them only by the air. In a well-drained soil the constant descent of water causes a similar descent of air through its pores, from the surface to the depth of the drains; the air is in fact sucked in after the water, as the latter gradually passes downward.

Water is one of the worst conductors of heat with which we are acquainted—metals are the best, and the earths next; so that a soil holding an excess of wet will be longer in gaining an increase of temperature (which necessarily comes from the surface only), than if it were properly dry. And if it be still further considered that when the water is heated from above, the film of warm water floats on the top by virtue of its superior levity, so that there is no circulation downwards, it will be seen that nearly all the heat of the sun's rays is prevented by excess of water from entering into and being transmitted through the soil. But an excess of water also occasions a continual loss of temperature from the ground, the process of evaporation rapidly lessens the temperature of the soil by day, and it is still further cooled by the descent of cold currents of water from near the surface at night. In a well drained soil the spaces between the particles of soil are free from water, the moisture is all absorbed in the particles, so that the mass retains its porosity. Warm air circulates freely in the soil, and though evaporation at the surface may proceed more rapidly than on a wet soil, it soon leaves the surface and goes on much more slowly in the interstices of the earth beneath; whilst on wet land the process still remains active on the surface, being supplied by capillary attraction with constant currents of water from below. In drained land, where there are no continuous currents of this kind, evaporation continues very slowly to reach lower and lower, leaving the upper portions, so that the surface absorbs heat from the atmosphere, and the dried earth conducts it downward. So great is the amount of heat stolen from the soil in the process of evaporation, that it has been estimated, every drop of water prevented from evaporating, by being drained away, adds as much to the temperature of the soil as six drops of boiling water poured into it. But heat is carried to the under soil not only by currents of air and the earth's conduction, but also by the rain. When it reaches the surface of the earth, the rain water is usually of the same temperature as the air through which it has fallen—and as it sinks it gradually warms the soil through which it passes. In summer also when the hot sun has warmed the surface, the rain itself, when it reaches the earth, becomes sensibly warmed by the hotter soil, and descends to the subsoil with this greater warmth, imparting to it the effect of the sun's rays in its course to the drains, and giving the roots of plants the benefit of what the gardeners call "bottom heat."

A permanent excess of moisture in soil is deleterious to the growth of plants. The roots absorb nearly all their food in a fluid state, which food consists of various chemical ingredients, formed in a great measure by the process of putrefaction, and soluble by the water held by the soil, so that moisture is absolutely necessary for supporting their existence; but then the presence of a large quantity of water in soil alters the result of putrefaction, by which alteration some substances are formed which are in all probability useless to plants, and diminishes the proportion of more useful ingredients.

Again, the roots of plants have been proved to grow by their ends only, and the functions belonging to them are those of absorption and excretion. The spongioles of the roots are thus constantly presented with fresh food; and while the soil continues merely moist, the excreted matters, which have been proved to be injurious to plants, will be left behind. But when there is an excess of water in the soil, all the soluble matter must be continually descending, on account of the greater specific gravity of the solution, and all excretions of plants being at first soluble in water, it follows that the excrementitious matter will become mingled with the food and applied directly to the spongiole. Where there is an excess of stagnant water, the currents produced during the heat of summer, at the period when vegetation should be most active, will be entirely from below upwards, and the consequence will be that the roots of the plants, instead of being supplied with water charged with all the valuable gases of the atmosphere, will be bathed in water which has existed so long in the soil that it has lost all these valuable ingredients, and is, moreover, charged with excrementitious matters. But when the land is well drained, the currents of water (and these are the more fertilising for being occasionally excessive), are from the surface to the drains, and the roots are consequently in this manner supplied with fresh aërated water.

Wetness of soil has also another effect—it influences the various processes in vegetable nutrition which occur above the ground, by rendering the atmosphere moist. Although the rate of evaporation from a very wet soil is much slower than from a moist soil, owing to the greater extent of surface exposed to the action of the air in the latter, it is constant, and this produces a continual dampness in the atmosphere. This excess of moisture acts in a peculiar manner upon the leaves of plants, hindering the absorption of carbonic acid from the air and the emission of oxygen; and also preventing in a great measure the evaporation of water by the leaves—the free exercise of both which functions is needful to the health and growth of the plant.

The first effect of under-drainage upon the soil is the same as if it were removed to a warmer climate, and placed under a milder sky, where it could bring to maturity other fruits, and yield more certain crops. By the aid of good drainage, the permanent coldness of many soils disappears, and the backwardness of the crops in spring and the lateness of the harvests are less frequently complained of; take for instance, the following example: "In consequence of the drainage that has taken place in the parish of Peterhead, in Aberdeenshire, during the last 20 years, the crops arrive at maturity 10 or 14 days sooner than they formerly did." (High. Soc. Journ., 1830.) On land of every kind this removal of the superfluous water is equivalent to an actual deepening of the soil. Deep rooted plants often fail because an excess of water in the subsoil, or the presence of some noxious ingredient which hollow drains would remove, repel the descent of the roots, forcing them to seek their nourishment from the surface soil only. Where the subsoil is sound and dry, corn, Clover, and Flax will extend their fibres for 3 or 4 feet in search of food, and find a store of substance accumulated in the subsoil which are but sparingly present, it may be, in the soil above, from the long continued washing of the rains, or the demands of frequent crops. And the deeper the drains, therefore, provided the water have still a ready escape, the greater the depth of soil which is rendered available for the purposes of vegetable nutrition.

One of the practical benefits derived from underdraining may be seen in the improvements it effects on clay lands, and others of a close wet nature. These soils shrink and crack when dried by the drought of summer, compressing and parching the roots of plants; and in many parts of the fens water is admitted into the drains in such seasons, from the embanked rivers, to refresh the thirsty corn and pastures. But this is a very erroneous practice; for the cause of the mischief is the excess of water already in the soil. Dry lands do not parch and gape into wide fissures; and therefore the cultivators of wet soils should endeavour to remove water from their fields during the winter, rather than alleviate by a temporary remedy an evil which is needlessly incurred. The reason why a wet soil becomes "burnt up," is that it is so compact in summer as to be impervious to the atmosphere from which it might absorb moisture. But once thorough-drain it, and as certainly as the water obtains a free passage downward will air follow, and loosen and pulverise both the upper and lower soil. On stiff clays, and on those lands where continual ploughings have formed a "pan" of hardened earth below the surface tilth, although most impervious to water, the worms are the farmer's best friends, for they bore innumerable passages which the surface water can trickle down; and when a sufficiency of hollow drains have been laid, a complete current of water is thus established from the surface downwards. This is slight indeed, at first, owing to the tenacity and adhesiveness of the ground; but the action having been once begun in the worm-holes, every drop of water wears and enlarges a passage for others, continually increasing the porosity of the soil. The benefit on such lands, therefore, is not immediate; indeed, such is their closeness of texture that, on one hollow-drained field in a clay district of the fens, the water during the first rainy season did not sink through until a spade was thrust down a considerable depth at various intervals along the course of the drains.

This difficulty, however, may be overcome by working a subsoil plough at right angles to the direction of the drains; this, by stirring the subsoil to the depth of 15 or 20 inches, breaks up and loosens what had previously interposed an impenetrable barrier between the drowned and sodden surface and the drains beneath; when thus readily freed from the constant pressure of water, the soil gradually becomes drier, sweeter, looser, and more friable. The hard lumps of the stiff clay land more or less disappear. It crumbles more freely, offers less resistance to the plough, and is in consequence more easily and economically worked. These are practical benefits, equivalent to a change in the soil; and experience also proves that under-draining on clays is equivalent to a change of climate, for on such lands, well adapted for Wheat, wet weather in the autumn not unfrequently retards or completely prevents the sowing of winter corn, compelling the farmer to change his system of cropping, and sow some other grain, if the weather permit him, when the spring comes round; but an efficient drainage carries off the water so rapidly as to bring the land into a workable state soon after the rain has ceased. It is upon clay land that the greatest advantages are to be gained from under-draining; but as efficiency of drains underneath such stiff impervious soil is generally, though unwisely, doubted in this district, comparatively little has been hitherto done.

Upon peaty soils under-draining has produced invaluable results. The "black land" is recumbent upon clay, and as it is of a light spongy nature, with a bed of almost water-tight soil beneath, is continually saturated with moisture. The water thus held stagnant in the peat has a noxious astringent corrosive quality; and whenever the roots of cultivated crops penetrate down to it, the plants receive material injury—turning yellow and sickly. Hollow drains speedily remove this deleterious moisture, and by drying the porous mass, produce that firmness and consolidation of its substance which are necessary for the successful cultivation of grain crops on moory soil.

On the marsh lands in this neighbourhood underdraining has fully succeeded wherever it has been tried; although very little has been executed on a thoroughly complete and costly scale. A fair example of this success may be found on a farm near Long Sutton, where upwards of 230 acres of both arable and pasture land have been hollow drained.

The soil is an alluvial loam, with a subsoil of stiff loam and clay from 1 to 3 feet in thickness, resting upon silt. The ploughed land was drained, part with thorns, the rest with tiles and pipes; and the Grass was done, one portion with tiles and pipes, the other with wedge or sod. The drains are laid from 24 to 30 inches in depth, and about 20 yards apart—in various places following the course of the old hollows; so that while the depth is as great as the main drains and outfall will allow, the intervals between might have been made only half the present width, without occasioning an unnecessary outlay. However, the occupier is satisfied that the expense is fully repaid in a few years, by the numerous beneficial results.

Among the different improvements which have been thus made on the Grass land, one is that the Grass is materially improving in quality. The herbage naturally partakes of the nature of the soil upon which it grows; and from the excess of saline matter in the silt, possesses a laxative quality—often to such a degree as to render it unfit for food, particularly for young stock—as is evidenced by their looseness and scouring. The growth and increase of the inferior pasture which luxuriate in such saline soils, is fostered, and the vegetation of the more valuable kinds prevented by the presence of noxious stagnant water in the soil. But the superabundance of saline matter and impure water is now being continually conveyed away by the drains, and replaced by fresh rain water, and atmospheric air; the injurious properties of the herbage being gradually corrected, and made more nutritious. Pasture, formerly very wet, is now comparatively dry—so that the worthless Bents and Rush Grasses are being succeeded by the finer varieties, of greater nutritive value; there is much less of discoloured Grass, which was indicative of "poaching" from stagnant water; the land is less injured by the treading of stock; and lastly with the removal of stagnant moisture and pernicious Grasses, have disappeared in a great measure, the principal evils tending to produce those diseases which sheep and young cattle are peculiarly subject to, viz., inflammation, foot-halt, and rot.

As to the arable land, it will be almost sufficient to state that, there is rarely any water to be seen standing in the furrows of the drained fields during a rainy season, when other lands are all but flooded; and that the soil, even in very low situations, quickly dries, while the surrounding undrained lands still continue, for a long time, thoroughly saturated with wet. In the showery spring of 1848, the occupier was able to work, prepare for seed, and sow with Beans, a field that, in its former undrained condition, was very wet and sometimes had standing water upon various parts of it—some weeks before others could venture upon their land; and in consequence the Beans were harvested and thatched down by the second week in September.

In wet soils, bones, wood-ashes, rape-dust, nitrate of soda, and other artificial manures are almost thrown away; it is therefore to the superior dryness of the drained lands that the uncommon success of such manures on this farm may be attributed. The root crops and Coleseed are remarkably heavy, greatly owing to the extraordinary facility afforded for working the fallows after heavy downfalls, by the rapid drying of the land.

Under-draining has decidedly increased the produce of the grain crops.—That cold, damp, salty moisture (or "soak") which oozes from the silt, is partially carried away by the hollow drains; and in consequence, much less Wheat-straw is produced of a flaggy, fungous-bearing character; it is shorter, stronger, less liable to be "laid," and possesses more of that brightness which unquestionably diminishes its tendency to mildew. Now that the low places and hollows are relieved of their wetness, the corn is less patchy, growing equally over all the land; and cold damp plots, which brought only a failing and scanty produce, are now yielding abundantly, like the higher portions of the fields. Besides these palpable benefits, there is not the slightest doubt that, as a dry season is invariably found best for Wheat, the extra dryness of soil caused by under-draining conduces to a fuller development of the ear, and a corresponding increase in the yield.

There are also numberless minor advantages accruing from the practice of hollow-draining, which are valued most by the farmer during a rainy season, or under peculiar circumstances:—as for instance, when other fields are drenched and partially drowned in the winter, his sheep have a comparatively comfortable layer; when other farmers are unable to stir a plough, his land is friable and readily worked and pulverised;—and by sowing spring corn a week or two before his neighbours he will frequently be enabled to harvest it several weeks before them, if the autumn be wet;—and again, when other Potato crops yield perhaps only 15 sacks per acre, his drier soil being less favourable for the progress of the rot, will produce 20.

With regard to the length of time for which dead-level drains, in a silty soil, will continue to work efficiently, it will be quite enough to name the following particulars.—In October, 1848, an examination of the hollow-drains was made, on the above-mentioned farm. Owing to the defective condition of some of the main drains and tunnels, the inadequacy of the general drainage of the neighbourhood, and the unexampled

fall of wet,—the mouths of a great many under-drains were several inches lower than the surface of water in the ditches; but so great had been the fall of rain that notwithstanding the ends being covered with water, steady streams were being emitted from thorn drains which had been four years in operation. Where the tile-drains had a fall into the dikes, they were pouring out streams equal in capacity to nearly one-half the calibre of the pipes. In one field, several thorn drains had been laid in a clay subsoil nine years ago; and most of them were found to be still in a good working state, and running strong currents of water. On one side of the farm, where the main drains are good, and the water has ready passage from the hollow drains into them, the soil was found remarkably free from wet; but other fields though drying much more quickly than the undrained lands, have not an outfall sufficiently good to give the under-drains a fair trial—the rain and subsoil water being unable to soak away until that in the ditches has greatly subsided.

Such, then, being the results of a somewhat scanty and incomplete system of under-draining, on land which has the enormous disadvantage of a defective and incapable external dainage,—may not superior benefits be expected to follow from the laying of more "frequent" drains in soil of like character and situation; and must not incomparable advantages arise from the general adoption of under draining, whenever a more effectual exterior drainage shall be extended throughout the marsh district?

In conclusion;—the foregoing considerations have amply supported the reply that was given at the commencement of this paper;—it has been shown how an excess of stagnant water injures the soil and impedes cultivation; and that there cannot be too speedy a means of egress for the exhausted subsoil water, after it has permeated, warmed, and fertilised the superincumbent mass;—and still further, the enumeration of abundant practical benefits has distinctly proved, that the theoretical view is actually realised; crops are augmented, money saved, land improved, the air made drier, and the salubrity of the climate permanently increased. *I. A. C.*

Home Correspondence.

To make a durable Liquid Manure Tank.—After digging out ground of sufficient capacity to construct the tank required, say of a circular form, that being the strongest, and strutting up the ground in the same manner as is done in forming a cutting for a deep drain or sewer, hollow out the bottom of the excavation like an inverted dome or arch. Then place a layer of flat roofing tiles, or, as they are technically called, plain tiles, over the inverted bottom, and spread Roman cement, of the consistency of common mortar, over these tiles. While the cement is soft, with alacrity press into the cement another layer of tiles, breaking joint over the first. The tiles should be in all cases first soaked in water, to prevent the too rapid absorption of the moisture from the cement. When the cement has hardened, or become, as it is called, set, which, if the cement is good, will be in about 15 minutes, place tiles against the side endways, two rows deep; and to keep the tiles from falling inward in placing them, put a little cement (mortar will do as well for this purpose) at the back of each tile against the earth, then spread cement on the face of the tiles as before, and press another layer of tiles into this, breaking joint over the first. Do only as much of the cement work at a time as can be performed without risking the setting of the cement, as it is spoiled when set. Then place another course of tiles endways, as before, and proceed with another inner course, breaking joint as before, and so on to the top of the tank. Fill in the ground properly behind the tiles as the work proceeds, and remove the struts carefully; and if the earth be loose and faulty, replace the struts within the tile-work, and leave them there for a couple of days, when all will be firm and hard. Take care in placing struts within the tile-work not to drive them hard, or the new work will be cracked thereby. There will be at the bottom and at the top of the tank half tiles to fill in, in consequence of the inner course of tiles breaking joint over the outer tiles. For example, to break joint fully, one tile within covers the four corners of four tiles without. To make a dome or top to this tank, either fill in some centreing over the same, and lay tiles on that as before directed; or, which is by far the cheapest, take some earth and form a dome of the size required on the ground adjoining the tank; cover this with tiles and cement, leaving a hole for a man hole in the centre. This should have in all cases three courses of tiles at the least. When this has properly set, raise it by levers and remove it to the top of the tank, and bed it on to the same with cement. The earth on which it was formed will have answered the purpose of a mould, and saved the cost of centreing. If the tank is very large, make the dome in segments, and fix these together with cement on the tank, propping up the segments until they are firmly fixed. I have said two courses of tiles for the wall or side of the tank, and for tanks of 10 feet diameter I have found it sufficient; for very loose ground I would not venture a greater diameter with less than three courses of tiles. The tank will be stronger if the inside is "rendered" or plastered with cement and sand, in the proportion of two parts cement to one of clean sharp sand, and it will have then a smooth and uniform surface. A tank so made, with good cement, may be filled with liquid manure a week after it is finished, and will last for ages. A bushel of cement will "set" a square yard of tiles, allowing for all waste, and will cost about 1*s.* 6*d.*, of the best quality for such work. Tiles cost upon the average 30*s.* per 1000, and 1000 will cover 45 square yards. A tank to hold 4500 gallons, so made, would cost, including labour at the highest rate of wages, 14*l.* The strength of tile and cement is much greater than brick and cement, and, when thoroughly hardened, will bear an enormous pressure before it is crushed. *I. M. B.*

On Flax Growing.—The season is now advancing when Flax should be planted. I think it well to let the public know the result of my last year's crop, as far as I can inform them. I grew about 20 acres on my own farm, and took about 24 acres more. The expense of pulling and harvesting the crop was increased (the flax not being planted quite early enough), being obliged to do it in the midst of harvest. The pulling and tying cost 12*s.* and 14*s.* per acre, and I am paying 6*d.* a bushel for threshing. The yield will be quite 20 bushels an acre. On a farm adjoining, where an acre was planted, it was 22 bushels; on one more distant, 24. I have sold the seed at 6*s.* a bushel for cattle food, and when well cleaned, at 6*s.* 6*d.* per bushel. I planted mostly Riga seed, which yields best, and is now the finest seed. I found the greatest difficulty in separating the small seeds from the Flax, but now with Gooch's winnowing machine, I can do it effectually; and as the demand for sowing is so great in this country and Ireland, I have reserved all I have for that purpose. I strongly advise its being sown the end of March, broadcast, with light harrows, endeavouring to move the ground previous to sowing, to prevent the growth of annual weeds. I have not begun working up the fibre, but from the dry spring, the straw is short, yet if it only realizes 3*l.* or 4*l.* per acre after all expenses, what grain crop will pay like it, seed and fibre included? The use of Flax is being increased daily, and with the many millions we pay yearly for foreign seed, Flax, and cake, we need not fear overstocking the market. *T. B. Browne, Hampen, Andoversford, Gloucestershire.*

Subsoil Ploughing.—As this is a very expensive operation, it may be useful to some of your readers to state the precautions which I have found advantageous in preserving the tilths, which I have obtained by using the subsoil plough. The horses which draw the plough following the subsoil plough always walk upon the unploughed land. This is easily arranged by using Ransome's Y. Z. plough, and letting the horses draw from the left hand of the cock. The mould-board should be set as wide as possible, in order to clear sufficient spaces for the subsoil plough to work easily. I abandoned the system of putting my manure into the ridges, because I found that the horses and carts passing over the subsoil consolidated it too much. I think I obtain heavier crops both of Turnips and Mangold Wurzel by spreading the manure on the surface as it comes from the yard during the winter frosts, and breaking it well with the haymaking machine, after which it is easily covered by a 5-inch furrow. I formerly made a point of ploughing at least 10 inches deep when preparing for Turnips, but I think I am more successful in growing them by keeping the highly manured soil near the surface, than I was when I brought up the raw subsoil. I now therefore seldom plough more than 7 inches deep, and I find by using the precautions I have mentioned, the subsoil is kept in a state to benefit the roots of plants for several years after it has been stirred by the subsoil plough. *Charles Paget, Ruddington Grange, Nottingham.*

Carts.—Does "J. D." use his carts without frames in harvesting operations? One would suppose so, when he speaks of the smaller area, "the frequent falling of the load in the field," and "the coming to the ground of the person with or without the contents of the cart." His men must be great bunglers, at all events. Now, I have no hesitation in saying that the area is not so very much smaller, if the frames are made as they ought to be. There are some very tidy carts made in this county, but they have the same fault, the frames are not expansive enough; so that the prejudice against the carts is not so easily rooted out as otherwise would be the case. They ought to be 7 feet longer than the carts, to project 4 feet over the front and 3 feet over the back; and 3 feet, at the very least, wider—1½ foot at each side; and I think I am within the mark. "J. D." will perceive that this adds considerably to the area. He may say that a frame is also used with the waggon; yes, but it is very trifling. I need say nothing about the difference in the weight of the two carriages. As regards the convenience of taking out the horse, I can see nothing to justify him in doing so, except the weather were to put a stop to the operations; but at all events it would be a very simple affair to put in the horse again, previous to unloading. It is not so very long since we were told that the mode of travelling by stage coach was certainly safer than by rail, but doubtless "J. D." is aware that the railway is not only the most expeditious, but the safest. It is possible, I think, that "J. D." may be as much mistaken as the advocates of the stage coach. But we need not be astonished at accidents arising from the carelessness of the men, prejudiced as they are against all innovations, particularly if the master shows any symptoms of uncertainty. I know of nothing that would do many of the farmers in this country more good than a trip to East Lothian, now that they might go for a trifle. *J. H., Salop, Feb.* 8.

The Cart Controversy.—My carts are long, low, and light—not exceeding 7 cwt.—12 feet long, 7 feet wide; in fact, they are Mr. Hannam's harvest cart, but we use them for carting coals (2 tons), corn—Wheat 80 bushels, Barley 100 bushels, lime 80 to 100 bushels, hay 35 cwt., straw *ad libitum;* also for planks and bricks, when we require them. My man brought home 70 trusses of hay to-day, 56 lbs. to the truss—with a pony and old horse that cost together, years since, 18*l.* They never turned a hair, although they came 3 miles. My waggon neighbours so often wanted to borrow the said carts, that I now charge 1*s.* per day, in self defence. I do not find the Scotch cart so useful—it is not large or low enough. Our light Essex ¾ carts do well for dung only, but Hannam's are always wanting, and at harvest we never use more than one horse in them, and a boy to drive. With four horses, four carts, and two boys to drive, we harvested quickly 80 acres of mowed Wheat, and 20 acres of Beans and Peas. For carting home green crops they are most valuable. They are made for 10*l.* each; I used to pay 14*l.* or 15*l.* My labourer shrewdly observed to-day that there were 30 trusses of hay on the cart, before it attained the level of the floor of the ordinary Essex waggon. The use of the latter, except from necessity, I consider an act of agricultural insanity. I presume every one has read Mr. Hannam's admirable paper, with diagrams, at page 73, vol. ii. of the "Royal Agricultural Society's Journal." It exhausts the subject, and settles the question; I, for one, am grateful to him for his valuable facts. *J. J. Mechi, Feb.* 7.

Oxen versus *Horses.*—The writer of one of your leading articles, in your Number of the 2d instant, says: "We believe that as agriculture advances less horse-power will be employed, and more manual labour." Now without disparaging the latter (of which I am at this moment availing myself in the shape of spade husbandry), I wish to be informed whether the very ancient practice of using oxen for ploughing and other agricultural purposes may not be more generally revived with advantage. I am told that with a moderate extent of work the ox may be maintained not only in a state of fair growth, but also of fattening. If this is so, surely a material reduction may be effected in horse-power, "the great drawback in England to a farmer's prosperity." I understand that the ox may, without difficulty, be broken to draw carts also, and that, even for harvest purposes; but that there is one particular breed more tractable than others. What breed is it? [The Devon.] This subject strikes me as being worthy of an article in your useful journal. If you can show a farmer of 100 acres that he can carry it on with, say two horses, and two or four oxen instead of four horses, and that the oxen will, during their period of work (is it one or two years for each, at what age commencing?) be improving in value, whereas the horses are deteriorating, you will I think be entitled to our thanks in these times, calling as they do for economy. *C. R. S.*

[We never employed oxen, and should fear to alter our practice in the face of a universal tendency among farmers the other way, notwithstanding the apparent soundness of the argument in favour of the former, which might be presented; for we have had ample experience of the difficulty of giving all the particulars their due importance in an argument of that kind.]

Reduction of Rents.—I am much pleased to see in your last two Leaders that you are in favour of a reduction in rents as one all-important element to enable tenant farmers to meet "times prices," and hope you will give us a few further truths and arguments on that, to many of us, life or death question. To me the rent question appears to be one that rests entirely with tenant farmers, and I venture to state, without fear of contradiction, that had the tenant farmers of England been as unanimous as to the necessity and advantage of a reduction of rents as they are and have been on protection, there would have been, even before now, such arrangements made and reductions effected as would have enabled thousands to have weathered the storm, that, without this help, must be ruined. And here I would remind my brethren in distress that it is worse than idle to join in the popular cry of "The landlords ought to lower their rents," unless their tenantry are resolved to compel them to do so by offering less money in all cases where they are competing for fresh holdings, and in other cases demanding either a reduction in conformity with present prices, or giving notice to quit where the landlord refused to do so. If the tenantry of England will only act upon this common sense view of the question, the rental of the kingdom would be fixed in accordance with "times prices" before next Michaelmas. But while the tenants are foolish enough to offer the same (and occasionally I hear of higher rents being offered), it is not to be expected that landlords will, as a class, voluntarily reduce them. Let us, then, be up and doing, and acting like men of business, who, in every other trade, profession, or calling, when they find their expenditure exceed their income, endeavour at once to reduce the one and increase the other, so that between the two a surplus may accrue. I will not waste your space, and at the same time insult the common sense of your practical readers, by presuming to offer any reasons as to the necessity and justice of a general reduction of rents as being absolutely necessary to save the remaining property of the tenants, as this must be too obvious to all who are interested in the question; nor will I do more than merely remind the receivers of rents that they are in a position to afford a liberal reduction, seeing that the leading articles of their consumption are now reduced some 20 per cent. on the average. *A. D. B.*

Cost of Digging.—I find "A Suffolk Farmer" is not aware what our north country rood is, which I ought to

have explained before; it is 7 yards by 7 yards, being 49 square yards, consequently the acre contains 98 such roods, wanting a fraction, which at 4*d.*, would be 1*l.* 12*s.* 8*d.* the acre, that is for digging the top spit. The forking, if well done, is worth the same money, so that an acre subsoiled with the spade, in an effectual manner, fit for any crop, will cost 3*l.* 5*s.* 4*d.* I should like to know what "A Suffolk Farmer" could subsoil an acre of land for by horse power, and which work he would give preference to. The principal intention of my former communication was to show what can be done by good cultivation, in contrast to the generally adopted mode of the country. *Verax.*

Hybrid Pheasants.—Your correspondent, "L. V. R." may be informed, that on visiting the pheasantry of an intelligent breeder (Mr. Osmar, of Headcorn, Kent) last August, I found that he had succeeded, after repeated disappointments, in rearing one "Pharos" from the common pheasant and domestic fowl. This curious bird was then half-grown, the plumage dark. The eggs I was informed had, in the season of 1848, all proved bad; the cock and hen birds were isolated the following season; the eggs were numerous, the produce two chicks, one of which was accidentally killed. Mr. Osmar does not know of this communication, but I am sure he will readily answer any enquiries. *Amateur.*

Foreign Correspondence.

NAIR: *Holstein Dairy Management.*—You request me to furnish you with a detailed statement of the mode of feeding milch cows practised in our Schleswig-Holstein dairies; and although I cannot lay down any fixed rules on this subject, inasmuch as the great variety of soil which occurs in these Duchies necessitates a corresponding variety in the style of feeding. I will yet endeavour to meet your wishes with as much precision as I can, premising, however, that, as it is with us received as an incontestible fact, that first-rate butter cannot be produced on a farm where fewer than 100 cows are kept, my statement must be understood as referring to such large dairies, the preference given to which is grounded on the two following axioms; first, that, to obtain first quality butter, the cream must not be long kept, and secondly, that first-rate packed butter ought not to be composed of portions churned on successive days, but that each cask should be filled at once. Now, as we generally count on receiving an average of 1 lb. of butter per day from each cow, it follows that a dairy of 100 cows or upwards, delivering a 100 lb. cask daily, must furnish not only the best tasted, but the best keeping butter.

It is customary in almost all our larger dairies to put the cows to Grass in the middle of May, and retain them on it till the end of October. During this period they receive no additional food, excepting that, by way of change, they are permitted to graze off the Clover and corn stubbles, after the hay and grain harvests have been respectively carried. The usual allowance of pasture land is from 1½ to 2 acres per cow. But as, in consequence of our pursuing the 10-field rotation plan, one-tenth of our arable land is commonly occupied by Clover, and as we reckon on keeping one cow for every 5 acres of our aggregate farm superficies, the farther allowance of half an acre of Clover stubble falls to her share. The grain stubbles are not taken into account, since, although beneficial and grateful to the animals as a change of pasture, they cannot be regarded as affording any essential quantity of nutriment.

But the winter feeding is that which chiefly claims the attention of our dairy farmers, and this extends from the 1st of November till the cows exchange the stall for the pasture. Before our milch cattle can be housed, they have invariably suffered considerably from the effects of our boisterous and cold autumnal weather. Moreover, as it is usually arranged that they shall calve from January to April, very many are already heavy in calf, when they are taken from Grass, while in all the milk produce is greatly diminished; and as we hold that a good cow must be suffered to stand dry from six to eight weeks, in order to warrant the expectation of a large supply of milk when she does calve, the larger proportion of our dairy cows are nearly dry in January and their feeding is regulated accordingly. While a cow stands dry, she gets only hay, a little Oats (either in sheaf or chopped down by the straw-cutter, the former being in my opinion preferable), and straw. It is a dairy proverb with us that "the cow is milkish through her mouth," in other words, that her milk produce corresponds to the tendence she receives; and on this principle, we give comparatively little food to dry cows, first, in order that the after high feeding may operate more specifically on the milk vessels, and secondly, to guard against a too great growth of the fœtus, by which the difficulty and danger of calving are much increased.

So soon as a cow shows by the usual signs that she will calve within two or three weeks, her daily portion of hay is increased, to which some pollard is added; for our country being comparatively poor in meadows, a large proportion of grain-feeding is requisite to make up for our hay deficiency. I think I hear you ask, with a disapproving shake of the head, "Have those good folks no Turnips then?" and I must reply that, generally speaking, they are quite neglected. Not however altogether voluntarily, for the cause is to be sought partly in climate hindrance, which we are unable to counteract, and partly in the peculiarities of the here customary farm contracts (or leases), which present great difficulties to Turnip cultivation. It would lead me too far were I to attempt at present to explain the agrarian relations of this country, though it is my design to make them the subject of a future letter, in the supposition that it may possibly interest you to learn by what political causes one portion of the descendants of a common ancestry has been detained so unmeasurably behind their English brethren.

But, as I have already said, we are compelled to supply the want of Turnips by corn, which however is, as you well know, a much less sacrifice for us than it would be for you, on account of the comparatively small cost of production; not forgetting, moreover, that really good keeping butter is not attainable without feeding corn.

From the day of their calving, until sent to Grass, it is customary in all the large dairies to feed the cows twice (on some farms thrice) a day with hay, say from 4 lbs. to 5 lbs. at a time; twice with chopped straw mixed with pollard (about 3 lbs. at a time), and then with Oat-straw which has been more or less clean threshed. The mode in which this feeding is followed out partakes of the character which affixes to all our dairy management, viz., a division of from 12 hours to 12 hours, and is consequently subjected to a similar divisional arrangement. Hence the feeding of the animals proceeds thus.

At 5 o'clock in the morning a portion of hay is shaken down before the cows; after this they are watered, and in the water purposely left in the troughs after they have quenched their thirst, chopped straw mingled with pollard (as mentioned above) is well stirred in; lastly, follows the feed of straw. On those farms where hay is fed thrice a day, the second hay feed is given after the chopped straw; but this intermediate hay feed is only given in localities where hay is unusually abundant.

As we esteem it essential that the cattle should be left in perfect repose during the operation of chewing the cud, the cow-house is always closed between 9 and 10 o'clock and left so until 1 o'clock, when the same routine of feeding recommences. At 5 o'clock in the evening the last and largest portion of straw is shaken down before the cows, and with this they must content themselves during the night.

Opinions are divided as to the species of corn most profitable for dairy stock; some farmers preferring Oats and others Barley for their milch cows. Oats, undeniably, effects the larger milk production; Barley gives more flesh, and thereby a more enduring milk-productiveness after the cows come on the pastures; Peas and Rye are likewise occasionally given, in conjunction with either Oats or Barley, but it is to be noted that, unless an unusually large quantity of hay can be afforded to the cows, Peas and Rye are apt to impart a strong taste to the butter. The species of grain most advantageous for himself or his dairy cattle must however be after all left to the selection of each individual farmer, for as I have never yet been able to find unanimity of opinion in favour of any one sort of grain, I have come to the conclusion that the varied qualities of soil, water, and other local circumstances, must contribute in no inconsiderable degree to determine the comparative advantage of one corn species over another as food for dairy cattle. *F. Greenwold.*

Societies.

ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

A SPECIAL COUNCIL was held at the Society's House, in Hanover-square, on Wednesday last, the 20th of February, for the adjourned consideration of a communication from the Royal Commission for the Exhibition of the Works of Industry of all Nations in 1851, as connected with the general question of the most proper and convenient place for holding the Country Meeting of the Society in the same year: present, His Grace the Duke of RICHMOND, K.G., Trustee, in the Chair, Lord Hatherton, Hon. Robert Henry Clive, M.P., Hon. Capt. Dudley Pelham, R.N., M.P., Hon. H. W. Wilson, Baron Mertens, Sir Thomas Dyke Acland, Bart. M.P., Sir Charles Lemon, Bart. M.P., Sir John V. B. Johnstone, Bart. M.P., Mr. Raymond Barker, Mr. Bramston, M.P., Mr. Brandreth, Mr. French Burke, Colonel Challoner, Mr. Walbanke Childers, M.P., Mr. Evelyn Denison, M.P., Mr. Druce, Mr. Foley, M.P., Mr. Brandreth Gibbs, Mr. Grantham, Mr. Fisher Hobbs, Mr. Hudson of Castleacre, Mr. Jonas, Mr. Miles, M.P., Mr. Parkins, Mr. Pendarves, M.P., Mr. Pusey, M.P., Prof. Sewell, Mr. Shaw of London, Mr. Villiers Shelley, Mr. W. Simpson, Mr. Stansfield, MP., Mr. C. Hampden Turner, Prof. Way, and Mr. Wilson of Stowlangtoft.

The Secretary having laid before the Council the summons for the meeting, and the President's letter authorising its issue, as well as the communication from the Royal Commission laid before the Council, by Mr. Pusey, M.P., at their previous meeting, the Council received from Mr. Pusey a further communication from the Commission, in reply to enquiries for information, he was requested, as a member of the commission, to make on the part of the Council, and then proceeded to the mature consideration of the special business for which they had been summoned.

On the motion of Colonel Challoner, seconded by Mr. Evelyn Denison, M.P., it was resolved: "That the Royal Agricultural Society of England shall hold their Show of Cattle, under their own rules and regulations, in Kensington, in 1851; but that the Society will not hold a Show of Implements in that year."

On the motion of the Hon. Capt. Pelham, M.P., seconded by Mr. Childers, M.P., it was resolved: "That a Copy of the Resolution of the Council be communicated to the Royal Commission by Mr. Pusey, with the expression of the Council's willingness to confer further with the Commission, should they at any time desire it."

The Council then appointed a committee, consisting of the Duke of Richmond, Mr. Raymond Barker, Mr. Shelley, Colonel Challoner, Mr. Hudson of Castleacre, Mr. Jonas, Mr. Brandreth, and Mr. Shaw of London, to look over the Charter and Bye-laws of the Society, and take the necessary steps that may be required in consequence of the resolutions then agreed to by the Council.

Mr. Raymond Barker and Mr. Miles, M.P., gave notice that they should move, at the monthly council in April next, "That the order in council of 3d May, 1847, be rescinded, with a view to substitute for the counties therein named, the county of Middlesex, and that the successive years of the Exhibition be carried forward so as to maintain the rotation of districts as now constituted: namely—

1851.—*Metropolitan District*, comprising the county of Middlesex.

1852.—*South-Eastern District*, comprising the counties of Kent, Surrey, and Sussex.

1853.—*South Wales District*, comprising the whole of South Wales, with the addition of the counties of Monmouth, Gloucester, Hereford, and Worcester.

1854.—*East-Midland District*, comprising the counties of Leicester, Lincoln, Nottingham and Rutland.

THIBETIAN SHEEP.—His Royal Highness Prince Albert communicated to the Council, through the Hon. Colonel Phipps, a Report on Her Majesty's flock of Thibetian Sheep on the farm at Osborne, for which the Council directed their best thanks to be conveyed to his Royal Highness for the interesting details which it furnished, and for the assurance it implied of his Royal Highness's participation in the national objects of the Society. The Council directed this communication to be submitted for the consideration and discussion of their next weekly meeting on the 13th of March.

BELGIAN FIRE-PLACES.—The Secretary having informed the Council that the Belgian Fire-place, presented to the Society by their life-member, the Baron Mertens, of Oslin, in Belgium, and accepted by the House Committee, had been put up in one of the official rooms of the society, the Council offered their thanks to Baron Mertens, then present at the meeting, for this instance of his liberality and great attention to the Society. Baron Mertens then laid before the Council a work, by M. Jules Noirsain, on the construction and advantages of the new plan by which apartments could be aired and ventilated, in the most economical and agreeable manner, by means of this fire-place, which he hoped would prove, as he intended it should do, a great advantage to persons of every rank in England, but especially to the poorer classes. The Council directed this work to be received with their best thanks, and to be laid before the weekly Council on the 13th March, for the information of the members of the Society.

GUANO ADULTERATION.—Professor Way expressed his intention of making "Guano and its Adulteration," the subject of his Lecture, to be delivered before the Members, in the Council-room of the Society, on Wednesday, the 27th inst., at 12 o'clock, previously to his commencing the course of lectures, of which the arrangement was left to the Council at their next monthly meeting.

Notices to Correspondents.

A GARDEN FARM: *A Country Curate.* You had better no attempt anything beyond pigs and poultry, and the largest produce for both is to be obtained by growing Carrots, Mangold Wurzel, and Cabbages—buying bran and meal. You might begin to get up a stock of poultry pretty soon; but pigs need not be bought for some months; not, indeed, till you have a stock of Cabbages, &c., to feed them on. And probably the best plan will be to buy a sow in farrow, and afterwards to put her to the boar, in November and again in May; feeding the first litter up to bacon, and fattening the second as pork. The bulk of the garden which can be devoted to this purpose had better be divided into three equal parts, and sow one with Belgian Carrot seed; one, plant with Drumhead Cabbage plants, and the third sow with Globe Mangold seed. Shall we publish your letter? Paxton's "Cottager's Calendar" is the best book for you.

BURDENS ON LAND: *J R C.* Mr. Hoskyns has your note.

ESSEX BREED OF PIGS: *A Subscriber.* Fisher Hobbs, Esq., Boxted Lodge, Colchester.

FEEDING CATTLE: *X Y Z.* Procure full grown—say three years old short-horn oxen. Tie them up; unless you can give them a small yard or a box apiece.

GRASS SEEDS: *To Correspondents.* We shall be happy to answer inquiries regarding the right composition of mixtures for different circumstances; but beg to say, that they will in every case get these prescriptions properly prepared at the nearest respectable seedsman's. Or if they prefer dealing with firms of wider and more established reputation, let them consult our advertising columns for addresses.

GRASSES. Sow early in April, along with 1 bushel of Barley per acre, on a well harrowed soil, and bush harrow in, Aira cæspitosa *lutescens*, 1 lb.; Alopecurus pratensis, 2; Arrhenatherum avenaceum, 1½; Avena flavescens, 1 lb.; Dactylis glomerata, 2; Festuca duriuscula, 3; F. heterophylla, 1; F. loliacea, 1; F. pratensis, 2; Lolium italicum, 3; L. perenne, 5; Phleum pratense, 1; Poa nemoralis, 4; P. trivialis, 1½; Trifolium pratense *perenne*, 4; T. repens, 5; total, 38 lbs. per acre.

HYBRID PHEASANTS: *N F.* I beg to say that I have in several instances succeeded in obtaining a cross between the cock pheasant and common barn-door hen; and, if required, could give you the names of more than one gentleman in my neighbourhood who have been equally successful. Two hybrids of my own rearing I presented to Mr. C. Cobbold, for the Edinburgh Zoological Gardens. I have also hatched young ones from eggs between the gold pheasant and barn hen; but unfortunately did not rear them. *J Farr.*

INSURANCE: *B R.* We imagine not; but the thing is a matter more for the opinion of your lawyer than for determination by us.

Italian Rye-grass: *Anon.* Sow about 2 bushels per acre, on any light soil in good condition, over the young Wheat, just before the last hoeing you give it, and then hoeing will bury the seed. If not sown till the end of April (provided it be then done when the ground is damp), so much the better.

Mossy Pasture: *A M.* You had better drain, and apply wood-ashes at the rate of about two cart-loads per acre, and then fold sheep over it, giving them some Peas or other grain along with the Grass, during summer. That will be the cheapest way of getting the land in order.

Plans of Cottages: *A Subscriber.* They are published in the last number of the Journal of the English Agricultural Society.

Peruvian Barley: *Messrs. Lee and Son.* The following is the opinion of one who has studied Hordeum thoroughly. "The ear sent appears to answer with tolerable accuracy to the variety Hordeum gymno-hexastichon, or, as Lawson more properly calls it, Hordeum vulgare nudum, and commonly called four or six-rowed naked Barley, or Siberian Barley. Its similarity to Wheat in taste and flour is no proof of its being a new variety, for we find the Siberian naked Barley described in "Miller's Gardeners' Dictionary" as weighing 66 lbs. per bushel, and yielding 60.6 per cent. of flour equal to London "seconds;" 30 3 per cwt. of a coarser sort, and 9.1 per cent. of bran superior to that of Wheat. This flour made excellent bread, both by itself and when mixed with Wheaten flour, and more retentive of moisture than Wheaten bread. Two bushels of Siberian Barley were also malted, and made partly into ale, and partly into small beer, and both proved excellent. These experiments were made upwards of 80 years ago, so that unless the Messrs. Lee can substantiate better claims for their Peruvian Barley than merely being six-rowed, similar to Wheat in taste, and malting well, I fear it will share the fate of all the naked Barleys that have ever been tried in this country, and fall into oblivion, practically speaking."

Sheep on Turnips: *M P J.* The disease is evidently seated in the internal or mucous coat of the bowels, and the cause, though obscure, is probably connected with the food. Frozen Turnips is certainly a likely cause. We recommend a greater change of food, and the addition of Linseed or Linseed-cake. With regard to a remedy, the space of time between apparent illness and death is too short to be of much use, but we would recommend the following powder to be given in Linseed gruel twice a day: calomel, 1 gr; nitrate of potash, 1 scruple; tartarised antimony, 1 gr.; powdered opium, 1 gr. *W. C. S.*

Soot: *Timothy Clod.* Apply 20 to 30 bushels per acre, in wet weather, broadcast, in April, over young Wheat, Oats, Barley, or Grass.

Spade Husbandry: *A B* says, "My friend the carpenter informs me he is able to grow, by double culture, Beans at the rate of 10 coombs per acre, and Beet at 30 to 35 loads per acre. He has never tried Carrots." *T. R.*

Sulphur: *Ullswater.* The circumstance that any particular sort of atom is useful under certain circumstances of combination, is no proof of its being useful in any other state. The atoms of which prussic acid are made go to make the most wholesome food when otherwise arranged. And though sulphuric acid is useful with bones, you can draw no inference from that as to the usefulness of sulphur. In the practice of the farm, sulphur is of no use except in medicine.

Vetches: *Subscriber.* Sow Vetches now, they will be ready to eat off before August.

Markets.

COVENT GARDEN, Feb. 23.

Vegetables are plentiful, but many kinds of Fruit are scarce. Hothouse Grapes are over, and Pine-apples are anything but plentiful, as are also Pears and Apples. Filberts, Walnuts, and Chestnuts are abundant, and Oranges and Lemons are sufficient for the demand. Amongst Vegetables, Turnips and Carrots are good, and there is some fine Cornwall Broccoli in the market. Potatoes are unaltered since our last account; foreign ones fetch from 50s. to 70s. a ton. Lettuces and other salading are cheaper, and so are Mushrooms. French Beans, Asparagus, Seakale, and Rhubarb may be obtained at last week's prices. Cut Flowers consist of Heaths, Pelargoniums, Big-nonia venusta, Primulas, Camellias, Cinerarias, Christmas Roses, Azaleas, Lilacs, Lily of the Valley, Epacrises, Acacias, and Roses.

FRUITS.

Pine-apples, per lb., 6s to 9s	Almonds, per peck, 6s
Grapes, Portugal, p. lb., 9d to 1s	— sweet, per lb., 2s to 3s
Pears, per doz., 6s to 10s	Walnuts, p. 100, 1s 6d to 2s
Apples, kitchen, p. bsh., 4s to 6s	— p. bush., 16s to 24s
Lemons, per doz., 1s to 2s	Filberts, per 100 lbs., 60s to 65s
— per 100, 6s to 12s	Nuts, Bar., p. bush., 20s to 22s
Oranges, per doz., 9d to 1s 6d	— Brazil, p. bsh., 12s to 16s
Oranges, per 100, 5s to 12s	Kent Cobs, 65s to 75s p. 100 lbs

VEGETABLES.

French Beans, p. 100, 2s 6d to 3s	Carrots, per bun., 4d to 6d
Seakale, per punnet, 1s to 2s	Spinach p. sieve, 2s to 3s
Asparagus, p. bund., 1s 6d to 6s	Onions, p. bushel, 2s to 3s 6d
Rhubarb, p. bundle, 6d to 1s	— Spanish, p. doz., 1s 6d to 4s
Savoys, per doz., 6d to 9d	Shallots, per lb., 4d to 8d
Cauliflowers, p. doz., 1s to 4s	Garlic, per lb., 4d to 8d
Broccoli, p. doz. bundl., 8s to 12s	Lettuce, Cab., p. sc., 4d to 9d
Greens, per doz., 2s to 3s	Endive, per score, 1s 6d to 4s
Brussels Sprouts, p. hf. sieve, 1s 6d to 2s	Mushrooms, p. pot., 9d to 1s 3d
Sorrel, p. hf. sieve, 1s to 2s	Small Salads, per punnet, 2d to 3d
Potatoes, per ton, 60s to 120s	Watercress, p. 12 bun., 6d to 9d
— per cwt., 3s to 7s	Fennel, per bunch, 2d to 3d
— per bush., 2s 6d to 3s 6d	Savory, per bunch, 2d to 3d
Turnips, p. doz. bun., 1s 6d to 2s 6d	Thyme, per bunch, 2d to 3d
Red Beet, per doz., 9d to 1s	Parsley, p. doz. bun., 2s to 3s
Horse Radish, p. bdl., 1s to 4s	— Roots, p. bdle., 1s to 1s
Cucumbers, each, 3s to 5s	Marjoram, per bunch, 2d
Leeks, per bunch, 1d to 1½d	Mint, per bunch, 2d to 3d
Celery, p. bundle, 8d to 1s 6d	Corn Salad, p. hf. sieve, 9d to 1s

POTATOES.—Southwark, Feb. 18.

The Committee report that the arrivals from the Continent since our last report have been very limited, which is entirely owing to the boisterous weather; the supply coastwise and per rail is quite sufficient to prevent any improvement in price. The following are this day's quotations:—Yorkshire Regents, 90s. to 120s. per ton; Wisbeach do., 70s. to 100s.; Scotch do., 70s. to 80s.; Scotch cups, 65s. to 75s.; French whites, 70s. to 80s.; Belgian do., 70s. to 80s.

HOPS.—Friday, Feb. 22.

Messrs. Pattenden and Smith report that the market is steady and firm for the best class of Hops; the difference in price between new and yearling Hops is so great that buyers are turning their attention to the finest of the 1848's.

HAY.—Per Load of 36 Trusses.

Smithfield, Feb. 21.

Prime Meadow Hay	66s to 72s	Clover	60s to 80s
Inferior ditto	50 63	New Clover	— —
Rowen	50 60	Straw	23 27
New Hay	— —		J. Cooper.

Cumberland Market, Feb. 21.

Prime Meadow Hay	68s to 74s	Inferior	65s to 72s
Inferior ditto	55 63	New Clover	— —
New Hay	— —	Straw	25 30
Old Clover	80 86		Joshua Baker.

Whitechapel, Feb. 21.

Fine Old Hay ...	60s to 67s	New Clover	—s to —s
Inferior ditto ...	50 55	Inferior ditto	60 65
New Hay	— —	Straw	22 26
Old Clover	80 85		

SMITHFIELD, Monday, Feb. 18.

We have a good supply of Beasts, both as regards numbers and quality. The fine morning, and a tolerable clearance at the dead markets, cause a rather large attendance of buyers, and 4s. is realised for some of the choicest Scots; this is, however, too much to quote as average of the best qualities. The supply of Sheep is again short, and prices have somewhat advanced; still the trade is slow, and higher rates very reluctantly given. Trade is by no means brisk for Calves, and 4s. 6d. is an extreme quotation. Pigs are still making low prices. From Holland and Germany we have 54 Beasts, 120 Sheep, and 50 Calves; from Scotland, 200 Beasts; from Norfolk and Suffolk, 1800; and 700 from the midland counties.

Per st. of 8 lbs.—	s d	s d	Per st. of 8 lbs.—	s d	s d
Best Scots, Here-fords, &c. ...	3 8	to 3 10	Best Long-wools .	3 8	to 4 0
Best Short-horns	3 6	— 3 8	Ditto Shorn	...	...
2d quality Beasts	3 0	— 3 4	Ewes & 2d quality	3 0	— 3 6
Best Downs and Half-breds ...	4 4	— 4 6	Ditto Shorn	...	...
Ditto Shorn	...	...	Lambs	—	...
			Calves	3 6	— 4 6
			Pigs	3 0	— 4 4

Beasts, 3362; Sheep and Lambs, 17,300; Calves, 104; Pigs, 204.

Friday, Feb. 22.

We have a considerable supply of Beasts, and the demand very limited. There is great difficulty in obtaining our highest quotations of Monday for the choicest descriptions, and many of inferior quality remain unsold. Sheep are more plentiful than of late; trade is heavy at about Monday's prices. Calves are in abundant supply, owing to large importations from abroad; prices have consequently fallen fully 6d. per 8 lbs. From Holland and Germany there are 290 Beasts and 165 Calves; from Spain, 29 Beasts; from France, 180 Sheep and 35 Calves; and 132 Milch Cows from the home counties.

Best Scots, Here-fords, &c. ...	3 8	to 3 10	Best Long-wools .	3 8	to 4 0
Best Short-horns	3 6	— 3 8	Ditto Shorn	—	...
2d quality Beasts	2 8	— 3 2	Ewes & 2d quality	3 0	— 3 6
Best Downs and Half-breds ...	4 4	— 4 6	Ditto Shorn	...	...
Ditto Shorn	—	...	Lambs	...	...
			Calves	3 0	— 4 0
			Pigs	3 0	— 4 0

Beasts, 977; Sheep and Lambs, 3390; Calves, 308; Pigs, 210.

MARK LANE.

Monday, Feb. 18.—The supply of English Wheat by land carriage samples to this morning's market was very small, and found ready buyers at an advance of 1s. per qr. Foreign was also in improved demand at former prices.—Barley, Beans, and Peas were each more easily disposed of at our quotations.—Excepting for fine qualities of old Oats, the sale is heavy.

British per Imperial Quarter.	s. s.		s. s.
Wheat, Essex, Kent, & Suffolk ...White	41—43	Red	36—38
— — fine selected runs ...ditto	42—44	Red	38—40
— — Talavera	48—56		
— Norfolk, Lincoln, & York ...White	—	Red	—
— Foreign	35—54		
Barley, grind. & distil., 19s to 22s...Chev.	24—27	Malting	22—24
— Foreign....Grinding and distilling	18—21	Malting	22—24
Oats, Essex and Suffolk	15—19		
— Scotch and Lincolnshire ...Potato	18—22	Feed ...	16—18
— Irish .....Potato	17—20	Feed ...	15—18
— Foreign .....Poland and Brew	16—20	Feed ...	13—17
Rye	20—24	Foreign	20—23
Rye-meal, foreign .....per ton	5l.—6l.		
Beans, Mazagan .....21s to 23s.....Tick	24—26	Harrow	24—26
— Pigeon .....25s — 28s ...Winds	22—28	Longpod	25—28
— Foreign ..... Small	24—36	Egyptian	22—23
Peas, white, Essex and Kent.....Boilers	24—26	Suffolk	25—27
— Maple .....24s to 26s.....Grey	22—23	Foreign	21—28
Maize .....White	22—25	Yellow...	24—26
Flour, best marks, delivered ...per sack	36—40		
— Suffolk .....ditto	32—36	Norfolk	32—36
— Foreign .....per barrel	22—24	Per sack	31—34

Arrivals in the Port of London last week.

	Wheat.	Barley.	Malt	Oats.	Beans.	Peas.
Flour, 8446 sks	Qrs.	Qrs.	Qrs	Qrs.	Qrs.	Qrs.
— — bls						
English	1966	998	3212	3266	567	507
Irish	—	—	70	—	—	—
Foreign	1955	400	—	62	59	3

Friday, Feb. 22.—With the exception of 7220 qrs. of foreign Wheat, almost entirely from Odessa, the arrivals of Corn during the week have been trifling. This morning's market was thinly attended, and business in all articles limited. We observe no alteration in the value of anything.—The Flour market is dull; French is held at 30s. to 35s. per sack.—Floating cargoes of Indian Corn can be purchased at 28s. per qr., but there is very little demand.—The value of Wheat during the past week has been firmly maintained throughout the kingdom, and in some instances a slight improvement realised. We observe no alteration in the price of spring corn. The Wheat trade in Dantzic and Rostock, though inactive, is not cheaper. In Konigsberg, Stettin, and some of the Pomeranian ports, continued dull accounts from this country have caused a decline of about 1s. per qr. In Hamburgh and Rotterdam prices are a shade higher, and fully supported in Antwerp. The French markets are dull, but not lower. In Odessa some purchases of Wheat have been effected on improved terms, equal to 32s. 6d. per qr., f.o.b., having been paid.

Arrivals this week.

	Wheat.	Barley.	Oats.	Flour.
	Qrs.	Qrs.	Qrs.	
English ...	1580	2390	2980	5960 sacks
Irish	—	—	—	
Foreign ...	7220	—	600	— brls.

Imperial Averages.	Wheat.	Barley.	Oats.	Rye.	Beans.	Peas.
Jan. 12.....	41s 1d	26s 4d	15s 6d	23s 4d	26s 6d	28s 6d
— 19	41 0	26 3	16 0	23 9	26 6	27 6
— 26.....	40 1	25 9	15 10	21 2	26 1	28 5
Feb. 2.....	39 4	25 4	15 2	23 10	25 6	27 0
— 9.....	38 6	24 7	15 3	22 1	25 3	26 4
— 16.....	37 9	23 10	15 4	20 7	24 11	26 10
Aggreg. Aver.	39 8	25 4	15 6	22 6	25 9	27 5
Duties on Foreign Grain	1 0	1 0	1 0	1 0	1 0	1 0

Fluctuations in the last six weeks' Corn Averages.

Prices.	Jan. 12.	Jan. 19.	Jan. 26.	Feb. 2.	Feb. 9.	Feb. 16.
41s 1d	—	...	...	...	...	...
41 0	...	...	...	...	...	...
40 1	...	...	...	...	...	...
39 4	...	...	...	...	...	...
38 6	...	...	...	...	...	...
37 9	...	...	...	...	...	...

SEEDS.—Feb. 18.

Canary, per qr. .....74s to 78s		Coriander, per cwt. ...16s— 21s	
Caraway, per cwt. ...31 — 33		Mustard, white, p. bush. 6 — 7	
Hempseed, per qr. ...34 — 35		— brown, do. ..... 7 — 9	
Linseed, foreign, do. 37 — 45		Rape, per last .....28l.—34l.	
Clover, red, per cwt...—	—	Cakes, Linseed, p. 1000... 9l. 3s	
— — foreign, do.—	—	— — foreign, p. ton 6l. 15s	
— white, do. ... —	—	— Rape, foreign, do. 4l. 5s	
— — foreign, do.—	—	Tares, per bush.... 4s 6d—5s 6d	

Liverpool, Tuesday, Feb. 19.—The imports this week are moderate of Oatmeal and Flour, but small of other articles from Ireland and coastwise. The general demand was again very languid at this morning's market. There seemed even less disposition to purchase Wheat and Flour, and prices remain nominally as quoted last Tuesday. Oatmeal 3d. to 6d. per load cheaper. As regards Oats, Barley, Beans, Peas, and Indian Corn, no change was noted in prices.

HARTLEY'S PATENT ROUGH PLATE GLASS.

In submitting our list of prices, we would beg to direct attention to the Leading Article of the *Gardeners' Chronicle* of Saturday, Dec. 8, upon the subject of "Patent Rough Plate." Some alteration having been made in the mode of manufacturing this description of Glass, the quality is greatly improved, and we now supply it perfectly flat, and, by an arrangement with Messrs. Hartley and Co., precisely at their prices. Cut to order in panes of

8 by 6	and under 10 by 8	at 4½d.	per foot.
10 by 8	,, 14 by 10	at 5d.	,,
14 by 10	,, 1½ foot	at 5½d.	,,
1½ foot	,, 3 feet	at 6d.	,,

PACKED IN BOXES of 50 feet each.

6 by 4 and 6½ by 4½...10s. 6d. 8 by 6 and 8½ by 6½...13s. 6d.
7 by 5 and 7½ by 5½...12s. 0d. 9 by 7 and 10 by 8 ...15s. 0d.

Milk Pans from 2s. to 6s. each, Metal Hand-frames, Tiles, and Slates; Propagating and Bee Glasses from 2d. each; Cucumber Tubes, 1d. per inch; Peach Glasses, 10d. each; Wasp Traps, 3s. 6d. per dozen; Pastry Slabs, Hyacinth Glasses and Dishes, Shades for Ornaments, Fish Globes, Plate and Window Glass of every description, and Lamp Shades. Lactometers for trying the quality of Milk, 4 tubes, 7s. 6d; 6 tubes, 10s. Self-registering Thermometers for Greenhouses, Horticultural Glass, &c.

JAMES PHILLIPS and CO., 116, BISHOPSGATE STREET WITHOUT, LONDON.

CROWN, SHEET, AND ROUGH PLATE GLASS, FOR HOTHOUSES, CONSERVATORIES, &c.

Of every manufacture FIT FOR USE, including the make of Messrs. Chance, Hartley, Swinburne, and others.

100 and 200 feet cases of large Sheet Glass, from 2½d. per foot. Small ditto, 10s. 6d. per 100 feet, packed in boxes ready for immediate delivery. Curators of Botanical Societies, Florists, Railway Agents, and others requiring large quantities, will, on sending dimensions, receive estimates at the lowest prices.

GLASS MILK PANS, CREAM POTS, Lactometers, Bee Glasses, Fish Globes, and all kinds of Dairy Glass, Propagating Glasses, Hyacinth Dishes, Cucumber Tubes, and every other description of Garden Glasses.

PATENT GLASS PENS, self supplying, never blot, never soil the ruler, and will write continuously for 12 hours.

Also, Glass Rulers, Glass Inks for office-stands, desks, &c. Stationers and Schools supplied. Wholesale Warehouse for Ornamental Shades, Lamp Shades, Gas Glasses, Genuine White Lead, Paints, Colours, and Pumps for Farm purposes.

Our Catalogue of 18 folios is the most complete ever published. No Gardener or Farm Bailiff should be without one. May be had Gratis on sending two postage stamps to Messrs. Cogan and Co., 48, Leicester-square, London.

GLASS FOR CONSERVATORIES, &c.

HETLEY and CO. supply 16-oz. Sheet Glass of British Manufacture, at prices varying from 2d. to 3d. per square foot, for the usual sizes required, many thousand feet of which are kept ready packed for immediate delivery. Lists of Prices and estimates forwarded, on application, for PATENT ROUGH PLATE, THICK CROWN GLASS, GLASS TILES and SLATES, WATER-PIPES, PROPAGATING GLASSES, GLASS MILK PANS, PATENT PLATE-GLASS, ORNAMENTAL WINDOW GLASS, and GLASS SHADES, to James Hetley and Co., 35, Soho-square, London.

See the *Gardeners' Chronicle* first Saturday in each month.

GLASS FOR CONSERVATORIES AND HORTICULTURAL PURPOSES, &c.



T. MILLINGTON'S SHEET GLASS, which is of the best description, varying from 16 to 32 ounces, at from 2d. per foot and upwards; 100 feet and 200 feet cases of large Sheet Glass, for cutting up, at 2½d. per foot. British Plate Glass, from 1s. 2d. to 2s. per foot, according to size. Patent Rough Plate Glass, from ⅛ to 1 inch in thickness, from 4d. per foot upwards. Glass Slates and Tiles. Milk Pans from 12 to 24 inches diameter, from 2s. to 5s. each. Cucumber Tubes, from 12 to 24 inches long, at 1d. per inch. Lactometers, 7s. 6d. each. Wasp Traps.—Lists may be had, on application at the Warehouse, 87, Bishopsgate-street Without, same side as the Eastern Counties Railway.

FLEXIBLE INDIA-RUBBER HOSE PIPES.

JAMES LYNE HANCOCK, Sole Licensee and Manufacturer of the PATENT VULCANISED INDIA-RUBBER PIPES and TUBING. These Pipes are well adapted for watering Gardens, conveying Liquid Manure, for Breweries, Gas Fittings, Chemical and all purposes where a perfectly sound Waterproof and Flexible Pipe is required. Hot Liquors or Acids do not injure them. No oil or dressing is required in using them. They do not leak from remaining out of use, are permanently flexible in all temperatures, and are therefore particularly suitable for Fire-Engines; and from their not leaking, are found exceedingly useful in conveying hot or cold water to baths in dwelling houses and such like purposes. Being extremely portable, stowing closely without danger of injury, resisting the influence of climate, insects, and vermin, frequently so injurious to such articles on board ship, and retaining their virtues though long out of use, render them particularly adapted for exportation.

N.B.—VULCANISED INDIA-RUBBER GARDEN HOSE, fitted with Roses, Jets, and Branches, complete, with Union Joints, ready to attach to Water Cisterns.

All letters or Orders addressed to J. L. H. at the Manufactory and Warehouse, Goswell-mews, Goswell-road, London, will meet with immediate attention.

BAKER'S PHEASANTRY, Beaufort-street, King's-road, Chelsea, by special appointment to her Majesty and H. R. H. Prince Albert.—ORNAMENTAL WATER FOWL, consisting of black and white swans, Egyptian, Canada, China, barnacle, brent, and laughing geese, shieldrakes, pintail, widgeon, summer and winter teal, gadwall, Labrador, shovellers, gold-eyed and dun divers, Carolina ducks, &c., domesticated and pinioned; also Spanish, Cochin China, Malay, Poland, Surrey, and Dorking fowls; white, Japan, pied, and common pea-fowl, and pure China pigs; and at 3, Half-moon-passage, Gracechurch-street.

SLATE WORKS, ISLEWORTH.—The following articles, manufactured in Slate for Horticultural purposes by Edward Beck, may be seen in use at Worton Cottage, upon application to the Gardener, Sundays excepted. Orange Tubs, Plant Boxes, Tanks, Cisterns, Shelves, Garden Path Edging, Hot Water Tank Covers, Flower-beds for Balconies, Shelves fitted to hold water for Orchidaceous Houses, &c.

Estimates given for Work as shown upon Drawings and in Specifications. A large stock of Slate Slabs, of all sizes and thicknesses, kept on sale.

Sales by Auction.

MESSRS. LODDIGES' CELEBRATED ARBORETUM FOR SALE BY AUCTION.
TO NOBLEMEN, GENTLEMEN, AND NURSERYMEN.

MR. J. C. STEVENS is favoured with instructions from Messrs. LODDIGES, of Hackney, to submit for unreserved competition, on the premises, on MONDAY, 4th March, and five following days, at 11 for 12 precisely, in consequence of the decease of the Senior Partner, the FIRST PORTION OF THEIR UNRIVALLED ARBORETUM, comprising many thousand well-grown specimens of the rarest and most beautiful Trees and Shrubs, affording to noblemen and gentlemen engaged in Ornamental Planting an opportunity which has never before occurred.—Catalogues are preparing, and will be ready for delivery 10 days prior to the sale, on the premises, and of Mr. J. C. STEVENS, 38, King-st., Covent-garden, London.

AMERICAN PLANTS.

MR. J. C. STEVENS begs to notify that two days of the Sale at Messrs. LODDIGES will be devoted entirely to the American Plants, which comprise Azaleas full of flower-buds and well adapted for forcing, Kalmias, Andromedas, Ledums, &c.

EAST INDIAN ORCHIDS OF THE GREATEST RARITY.

MR. J. C. STEVENS is instructed to sell by Auction, at his Great Room, 38, King-street, Covent Garden, on TUESDAY, Feb. 26, at 12 for 1 o'clock precisely, an importation just received from CENTRAL INDIA, and well deserving the attention of Orchid growers, as it comprises a most remarkable new Cælogyne with erect panicles of flowers 3 inches in diameter, Cælogyne maculata also a new and beautiful species, C. cristata, C. Wallichiana, Dendrobium Farmerii (true), D. Devonianum, D. Gibsonii, D. Dalhousianum, D. Cambridgeanum, D. Griffithianum, and several new and distinct species of Dendrobium, a splendid new Cymbidium with erect flower stems 2 feet in length, and other novelties and rarities, in the finest order.—May be viewed on the morning of Sale and Catalogues had.

IMPORTANT SALE OF CAMELLIAS, ROSES, LILIUMS, &c.

MESSRS. PROTHEROE AND MORRIS will submit to public competition by Auction, at the Auction Mart, Bartholomew-lane, on THURSDAY, March 7, 1850, and following day, at 12 o'clock each day, about 600 Double Camellias, from 18 inches to 10 feet, beautifully furnished with bloom buds, 200 Strong Camellia Stocks, also 400 Standard and Dwarf Roses, consisting of Noisettes, Hybrids, Bourbons, Perpetuals, &c.; a fine collection of American Plants, comprising Ghent and other Azaleas, Andromeda Floribunda, Magnolias, &c.; 200 strong bulbs of Lilium Lancifolium Album, Speciosum, &c.—May be viewed the morning of Sale; Catalogues had at the Mart, and of the Auctioneers, American Nursery, Leytonstone, Essex.

BROMPTON-PARK NURSERY, KENSINGTON.
TO NOBLEMEN, GENTLEMEN, NURSERYMEN, & Others.

MESSRS. PROTHEROE AND MORRIS have received instructions from Mr. John Sangster, and Mr. Robert Donald, trustees for the above estate, to submit to an unreserved sale by Auction, on the premises, Brompton-park Nursery, Kensington-road, Middlesex, on MONDAY, February 25th, and following days, at 11 o'clock each day, the whole of the remaining and valuable NURSERY STOCK, consisting of the well known celebrated collection of Standard, Dwarf, Maiden, and Trained Fruit Trees, and a rich assortment of Evergreens, Deciduous Shrubs, and Ornamental Trees; together with the Greenhouses, fitted up with new and improved Hot-water Apparatus, Pits, Frames, Carts, and Utensils; also a few Seeds.—May be viewed prior to the sale. Catalogues (1s. each, returnable to purchasers) may be had of the principal Seedsmen in London; and of the Auctioneers, American Nursery, Leytonstone, Essex. If sent by post, 1s. 6d. each.

TO NOBLEMEN, GENTLEMEN, NURSERYMEN, & Others.

MESSRS. PROTHEROE AND MORRIS are favoured with instructions from Mr. John Smith, to submit to public competition by Auction, on the premises, Dalston Nursery, Middlesex, on MONDAY, March 11, and following day, at 11 o'clock (in consequence of the premises being required by the London and Birmingham West India Dock Junction Railway Company), the valuable NURSERY STOCK, consisting of a very superior assortment of large Evergreens, American Plants, Ornamental Trees, and Deciduous Shrubs, Fruit and Forest Trees in great variety, fine Ivies, Roses in pots, &c.—May be viewed prior to the sale. Catalogues may be had, 6d. each (returnable to purchasers), on the premises; the Shop, Covent-garden; of the principal Seedsmen in London; and of the Auctioneers, American Nursery, Leytonstone, Essex.

CLAPHAM RISE.
TO GENTLEMEN, NURSERYMEN, FLORISTS, & OTHERS.

MESSRS. PROTHEROE AND MORRIS will sell by Auction, on the premises, Bedford Nursery, Bedford-road, Clapham Rise, on TUESDAY, March 5, at 11 o'clock, by order of Mr. Connolly, a portion of the valuable NURSERY STOCK, consisting of Evergreens and Deciduous Shrubs, also a choice collection of GREENHOUSE PLANTS, comprising fine Ericas, Camellias, Azalea Indica, Epacris, Chorozema, Boronia, Geraniums, Cinerarias, Acacias, Cactus, Genistas, Neriums, Intermediate Stocks, &c.—May be viewed one day prior to the Sale; Catalogues on the premises, of the principal Seedsmen in London, and of the Auctioneers, American Nursery, Leytonstone, Essex.

FRENCH HORTICULTURE.
RARE PLANTS JUST IMPORTED.

MESSRS. ROBINS will sell by Auction, at the Cosmorama, 209, Regent-street, on TUESDAY NEXT, at 11 for 12 o'clock, and unreservedly, by order of M. Jodoux, the importer, a Large Collection of Rare Plants, just imported from France, in the highest condition and most thriving state. They comprise Magnolia, Camellia, Cactus, Orchis, Pæony, Azalea, Rhododendrons, New Grafted Roses, Dwarf Orange Trees, Amaryllis, Bulbs, Fruit Trees, and Flower Seeds.—On view on Monday, at the Cosmorama Rooms, 209, Regent-street.

MR. HASLAM will sell by Auction, at the Auction Mart, on THURSDAY, Feb. 28, and FRIDAY, March 1, 1850, Camellias, Azaleas, Picotees, Carnations, Hyacinths in Pots; Weeping, Climbing, Standard, and Dwarf Roses; Herbaceous Plants, German Flower Seeds, &c.—Catalogues may be had at the Mart, and of the Auctioneer, South Essex Nurseries, Epping, Essex.

TO AGRICULTURAL MACHINE AND IMPLEMENT MAKERS, MILLWRIGHTS, AND OTHERS.

TO BE LET, by Private Contract, with possession at Lady-day next, an old established and well-connected BUSINESS of the above description, with an excellent Residence and extensive ranges of Shopping, a Seven-horse power Steam Engine, large Yard, and every convenience for carrying on an extensive trade. The situation of the property is in the midst of an agricultural district in South Staffordshire. The business has been carried on very successfully for the last 35 years; and the Proprietor, who is retiring, has very extensive connections in most of the surrounding counties. The stock of Timber, Tools, and Machinery may or may not be taken, at the option of the purchaser.—For further particulars, and to treat, application is requested to be made to Mr. THOMAS PAGE, House and Estate Agent, Darlington-street, Wolverhampton, Staffordshire.

AMERICAN PLANTS, STANDARD ROSES, ORNAMENTAL TREES, EVERGREENS, &c.

MR. D. A. RAMSAY has been favoured with instructions, from an eminent Firm, to sell by Auction, on the premises, Brompton Nursery, Fulham-road, Brompton, on MONDAY, March 11th, and following day, at 12 o'clock each day, without reserve, a further consignment of choice AMERICAN PLANTS, comprising 700 Rhododendrons, 2 to 4 feet, 200 Scarlet Rhododendrons, a quantity of Azaleas, Andromedas, Hardy Heaths, Sedum, &c.; a quantity of strong Grape Vines, Figs, Standard and Dwarf-trained Fruit Trees, a choice assortment of Clematis, Jasmine, and other Creepers, 500 Standard, Dwarf, and Climbing Roses, 5000 large Evergreens in variety, 3000 Limes, Acacia, Willow, Poplar, and other ornamental Trees, with a quantity of Deciduous Shrubs, and other Nursery Stock.—May be viewed three days prior to the Sale, and Catalogues had, 6d. each, returnable to purchasers, at the usual Seed Shops, and of the Auctioneer, Brompton Nursery, Fulham-road, Brompton.

CHELSEA.
TO GENTLEMEN, NURSERYMEN, BUILDERS, and Others.

MR. D. A. RAMSAY has been favoured with instructions from Messrs. Wm. Dennis and Co., to sell by Auction, on the premises, King's-road, Chelsea, opposite Cremorne Gardens, on MONDAY, February 25th, 1850, and two following days, at 12 o'clock, each without reserve (to clear the land taken for building purposes), a large portion of the NURSERY STOCK, comprising a quantity of Aucuba, Holly, Box, and other Evergreens; Mulberry trees of all sizes; the prize collection of Gooseberries; the new silver striped Ivy; large Irish Ivies; yellow Jasmine and other Creepers; a quantity of ornamental trees and shrubs; a choice collection of standard Plums and other Fruit trees, with a quantity of Moss Rose stools and layers, and other Roses in choice varieties; also a quantity of Camellias, Azaleas, Geraniums, Aloe, Yucca, &c.—May be viewed two days prior to the Sale, and Catalogues had (6d. each, returnable to purchasers) on the premises; at the principal Seed-shops; and of the Auctioneer, Brompton Nursery, Fulham-road, Brompton, London.

FOR PUBLIC SALE, on MONDAY, March 4, at the New Corn Exchange Tavern, Mark Lane, at 2 o'clock precisely, by Order of Messrs. ANTONY GIBBS and SONS, the Importers, about 250 Tons of damaged PERUVIAN GUANO, in warehouses, ex sundry ships.—Catalogues, and further particulars in due time, from L. A. RUCKER and BENCRAFT, Brokers, 26, Commercial Sale Rooms, Mincing-lane, London.

TO BE LET, for a term of years, on a CORN RENT, a FARM, in one of the Midland Counties, within two miles of a Market Town and Railway Station. It consists of about 200 acres, 18 of which are in Water Meadow, 28 in Pasture, and the remainder are excellent Turnip and Barley soil. The whole is of a first-rate quality. The Farm Buildings have been lately erected, are on a most complete and comprehensive plan, and are in excellent repair; and the Farm-house possesses every convenience and accommodation required by a respectable family. This Farm is in an excellent state of cultivation. All the interior hedge-rows and timber have been grubbed up; and the arable land is formed into four fields, divided by excellent roads. The Farm is, and has been for some time, under the 4-field system of cultivation. To a gentlemen possessing the requisite capital and ability, who can carry out a good system of agriculture, this Farm is well adapted. Entry at Lady-day

Apply to Mr. JOHN MORTON, Whitfield, Berkeley, Gloucestershire.

TO MARKET GARDENERS, FRUITERERS, ROOT GROWERS, AND OTHERS.

TO BE LET, with immediate possession, at Stratford, Essex, about 2¾ acres of MARKET GARDEN LAND, well stocked with Fruit Trees and Flower Roots, with small Greenhouse and Dwelling-house on the premises. Further particulars may be had on application to MR. R. GOLLEDGE, 5, Surinam-terrace, Stratford, Essex.

TURNIP AND BARLEY FARM.

TO BE LET, and entered on at Lady-day next, a desirable BARLEY and TURNIP FARM, in Gloucestershire, of about 160 acres, with a comfortable House for a small family, 30s. per acre and tithe free. About 50 acres more may be had. The South Wales Railway will pass through the Parish.—Apply by letter to Mr. WM. MIDDLETON, Post-office, Stamford, Lincolnshire.

TO BE LET, for a term of 7, 14, or 21 years, and entered upon immediately, NORTHFLEET GREEN FARM, situate in the parish of Northfleet, Kent, containing 136 acres (more or less) of superior, dry, Arable and Hop Land, with suitable Dwelling-house and Agricultural Buildings. The incoming tenant will enter without valuation.—For particulars apply to WALTER D. JONES, Esq., Lancyck, near Newcastle Emlyn, Wales; and, to view the Farm, to J. BRENCHLEY, Esq., Wombwell-hall, near Gravesend, Kent.

TO NURSERYMEN AND FLORISTS.

TO BE LET, a Newly erected HOUSE and SHOP, with Plate Glass Front, large Walled Garden, &c., near Battersea-bridge, the New Park, surrounded by an improving neighbourhood. The House is arranged for letting the upper part, consisting of five rooms, with private entrance. Sewers formed by the Commissioners. Abundant spring water. Rent, 55l.—Apply personally, before 2 daily, or, by letter, to Mr. SMEADON, 12, Sloane-square, Chelsea.

WANTED TO RENT, 20, 30, or 40 acres of Good Arable Land, a sandy loam, thoroughly drained, and near a town or railroad station. If a House and buildings thereon it would be preferred.—Address, prepaid, X.Y.Z., Post-office, Prestbury, near Cheltenham.

TO GENTLEMEN'S GARDENERS, FLORISTS, and Others.

TO BE DISPOSED OF, A SMALL NURSERY, in a capital situation near London, well adapted for a gentleman's gardener about commencing business. To be had with or without stock.—For terms, &c., apply to PROTHEROE and MORRIS, Leytonstone; or to ROBERT J. GREEN, 28, Cannon-street, City, London.

STALLIONS FOR SALE.—Two five-year-old Suffolk Stallions, the property of T. BEALE BROWNE, Esq., Hampen, Andoversford, Gloucestershire. One is 17 hands high, the other over 16. They are sure foal getters, and were much admired and highly commended by the Judges at the Royal Agricultural Society's Show at York.

Also two very fine five-year-old Suffolk Geldings.

CORN MANURE.

BLASHFIELD'S PATENT COPROS.—A new Manure for Corn and other Crops, prepared from the nitrogenous matter deposited on the banks of the Thames, in combination with other substances essential for the growth of corn, &c., price 8l. per ton. Sold, in a finely ground state, at No. 3, New London-street, Mark-lane; also, at the Works, Mill-wall, Poplar; Waterloo Dock, Lambeth; and No. 1, Praed-street, Paddington Basin.

PATENT COPROS, for Corn crops, also for Turnips, &c.; Superphosphate of Lime, Gypsum, calcined and saturated with liquid manure. CEMENT for Liquid Manure Tanks, Malt House Floors, and Barn-floors, manufactured by J. M. BLASHFIELD, successor to Wyatt Parker and Co., Original Patentees—Parker's Cement. Established 1786. Drain Pipes, Tiles, &c.

NEW REGISTERED GARDEN POT.

OLIVER AND CO. beg respectfully to announce to the nobility, their patrons, and the public, that their newly-invented Graduated FLOWER POTS, for perfecting the growth of plants, will be ready for delivery on the 1st of March. Specimens on view at 210, Regent-street (opposite Conduit-street), London.

SILVER SAND, PEAT, &c.—REMOVAL.

EDWARD KEMP begs to thank his numerous friends for their kind support during the last seven years, and informs them that he has removed to No. 16, Ann's-place, East-street, Old Kent-road, where he respectfully solicits a continuance of their favours.

DR. NEWINGTON'S HAND-DRILL HOES, with their various fittings; Hand-Dibbles, with from 6 to 9 depositors each (as the Prize Dibble at Norwich), Wheel-Dibbles, Drop-drills, and Hand-sowing Implements for dropping seed at defined intervals in the seams of the plough, or in pressed land, or in drills. A Prospectus and Lecture on Seeding sent gratis on application to Messrs. DUFAIN and Co., Agricultural Depôt, 21, Red Lion-square, Holborn, London.

MR. EDWARD RYDE, LAND SURVEYOR, DRAINAGE and AGRICULTURAL ENGINEER, LAND AGENT, &c., will send free, on receipt of 14 postage stamps, "A READY RECKONER, with plain instructions for Measuring and Valuing Hay-ricks." Surveys, Maps, Sections, Specifications, and Estimates for Land Improvements. Agencies conducted by yearly contract. Estates sold or let.—Address, 14, Upper Belgrave-place, Eaton-square, London.

TO THE LOVERS OF FLOWERS.

COLES'S SOLUBLE COMPOUND ALKALINE POWDER.—Confidently offered as a most efficacious application for promoting the healthy growth and beauty of all kinds of HARDY OR TENDER PLANTS AND FLOWERS, requiring merely A SMALL TEASPOONFUL of it to be dissolved in every ENGLISH PINT OF WATER USED, and the solution to be applied occasionally, by means of a common rose watering-pan.

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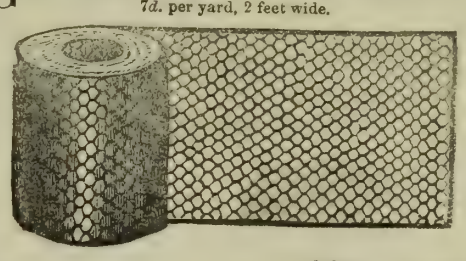
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prepared, in like manner, specially for FLOWERS, perfectly free from smell, to be used in a DRY STATE, and sold in TIN CANISTERS of 1s., 1s. 9d., and 2s. 6d. each, or COMPACT WOODEN BOXES of 5s., by taking which, a considerable saving in price is obtained.

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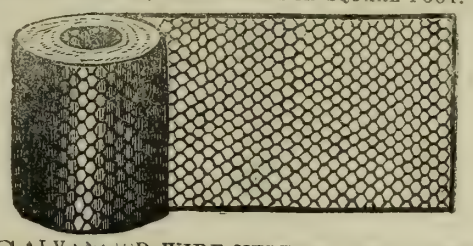


		Galvanised.	Japanned Iron.
2-inch mesh, light, 24-inch wide	...	7d. per yd.	5d. per yd.
2-inch " strong "	...	9 "	6½ "
2-inch " extra strong "	...	12 "	9 "
1⅝-inch " light "	...	8 "	6 "
1⅝-inch " strong "	...	10 "	8 "
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12 inches wide	3d. per yard	30 inches wide	7½d. per yard
18 " "	4½d. "	36 " "	9d. "
14 " "	6d. "	48 " "	1s. "

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Extra strong Imperial Wire Sheep Netting, 3 feet, 1s. 6d. per running yard; if galvanised, 2s. Also every description of Wire Nursery and Fireguards, Wire House Lanterns and Shades, Fly-proof Dish Covers, Meat Safes, &c.; Window Blinds, 1s. 10d. per square foot, with bolts complete, in mahogany frames; Gothic Garden Bordering, 6d. per running foot; Flower Trainers, from 3d. each; Garden Arches, 20s. each; Flower Stands, from 3s. 9d. each; Galvanised Tying Wire for plants and trees, Dahlia Rods, and every description of Wire-work; Weaving, for the use of paper-makers, millers, &c.—At the Manufactory of THOMAS HENRY FOX, 44, Skinner-street, Snow-hill, London.

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50 Splendid new varieties, with names	2	0	0
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25 do. do.	0	8	0
100 Finest mixed	0	10	0
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2d Early.—Soden's Early Oxford .. .. per bushel	6s.	6d.
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Do. Shaw's Early .. .. .. ,,	4	6
Late, very superior bearers, and very late keepers ,,	5	0

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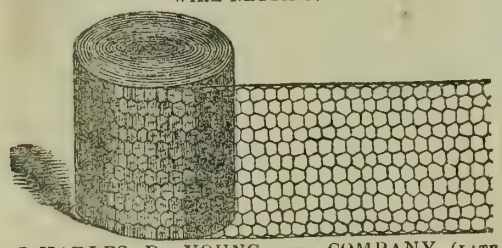
REWARD.—ALEXANDER RUSSELL, a Gentleman's Gardener. The said Alexander Russell is a native of Scotland, and was a few years back living with E. Brande, Esq., of Turnham-green; then with Lord Lonsdale, of Barnes, Surrey; recently with Mr. Lumley, of "The Chancellor's," Hammersmith. Any person giving information as to his present residence (if living), or as to the time and place of his burial (if dead), will be handsomely rewarded, by addressing T. G., at Mrs. Burgess's, the Castle Inn, Child's Hill, near Hendon, Middlesex.

EASTERN COUNTIES RAILWAY.—WANTED, about 75 loads of Meadow HAY of the best quality, free from mould, dust, and outsides; also 75 loads of good CLOVER, to be delivered at any of the Company's Stations within 30 miles of London. Samples to be sent to the Storekeeper at Stratford, and sealed tenders (for the whole quantity or for part) marked on the outside "Tenders for Hay," to be addressed to the undersigned not later than the 28th inst.

(By Order) C. P. Roney, Secretary.

Bishopsgate Station, Feb. 23.

STRONG PREMIUM HARE AND RABBIT PROOF WIRE NETTING.



CHARLES D. YOUNG and COMPANY (late W. and C. YOUNG),

MANUFACTURERS OF IRON AND WIRE WORK, &c., 22, Parliament-street, Westminster, London; Castle-Buildings, Derby-square, Liverpool; 128, High-street, Edinburgh; and 32, St. Enoch-square, Glasgow, beg respectfully to call the attention of Landed Proprietors and others to their strong Wire-Net Fence, for excluding Hares and Rabbits from Gardens, young Plantations, Nurseries, &c.

This Net was exhibited at the Show of the Highland and Agricultural Society of Scotland, held lately at Inverness, where its Efficiency, Great Strength, and Exceeding Cheapness attracted general attention, and had awarded from the Judges the Society's Silver Medals, with high commendations.

The immense damage done by Hares and Rabbits in Gardens and Young Plantations is often so great, that in the course of a year or two it will amount to more than the entire cost of protecting them with this Net. It is so durable, that when Plantations are sufficiently advanced to be independent of its protection, it can be removed to other exposed situations with the greatest facility, by any labourer. As a Fence against Hares and Rabbits, it is of itself quite sufficient, having only to be unrolled and attached, with small wire sent for that purpose, to wooden stakes driven into the ground, about every six or seven feet apart. It is, besides, peculiarly adapted for rendering Hedges, Paling, or other existing Fences, *completely impervious* to such vermin; and by being cut up into small pieces of three or more feet, as required, it forms a most efficient guard, at little expense, for individual Plants and Shrubs.

Prices.—18 ins. high, 9d.; 24 ins., 1s.; 30 ins., 1s. 3d.; and 36 ins., 1s. 6d. per lineal yard.

Or a web of 100 yards, 18 ins. wide, will cost ..	£3	15	0
Do. of 100 yards, 24 ins. wide	5	0	0
Do. of 100 yards, 30 ins. wide	6	5	0
Do. of 100 yards, 36 ins. wide	7	10	0

If more or less than a web is required, it would be charged at the same rate per yard.

This Netting is also admirably adapted for Pheasantries and Poultry-yards, and is charged at the same rate. As carriage has, in many instances, been an obstacle to parties at a distance requiring this Net, C. D. Y. and Co. have made arrangements by which they will undertake to deliver it at any of the principal ports of Scotland, England, and Ireland, for One Halfpenny per lineal yard.

C. D. Young and Co. cannot give a better idea of the great strength of their Premium Wire Netting than by stating that the weight of one yard of their 24-inch at 1s. is equal to 2¼ yards of another article in the market, the same width, at 9d. per yard. Samples for inspection sent free of expense.

C. D. Young & Co. manufacture every description of IRON and WIRE WORK required for this and foreign countries.

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"Familiar in their Mouths as HOUSEHOLD WORDS."

Shakespeare.

On Saturday, March 30, will be Published, Price 2d., or stamped for post, 3d.,
(Also in Monthly Parts,)

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HOUSEHOLD WORDS.

A Weekly Journal,

DESIGNED FOR THE INSTRUCTION AND ENTERTAINMENT OF ALL CLASSES OF READERS.

CONDUCTED BY CHARLES DICKENS.

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NEW WORK ON GARDENING AND BOTANY.

On the 1st of March will be published, price 2s. 6d., No. 1. of

PAXTON'S FLOWER GARDEN.

EDITED BY DR. LINDLEY AND JOSEPH PAXTON.

AND ILLUSTRATED BY HIGHLY FINISHED PLATES AND WOODCUTS.

This Work, for which Monsieur Constans, a French Botanical Draughtsman of great taste and skill, and a pupil of Mons. Decaisne, has been expressly engaged, will be confined to the proper business of an illustrated book, namely the representation and description of all new plants which may appear in gardens. The species which are of most importance will be illustrated by coloured plates, one species or genus only to a plate, with a leaf or more of letter-press, explaining the principal scientific and horticultural facts which belong to each plant. The species of less importance will be treated of more briefly, and will be illustrated when necessary by copious woodcuts and vignettes. The object, in short, will be to combine Scientific Botany with Gardening, and exact delineations of plants with pictorial effect. It is believed that by such means this periodical will not only be indispensable to the Botanist and Gardener, but be also a mine of invaluable hints by which the Artist and Manufacturer will be able to profit.

It is not intended to admit any other kind of matter than such as is now described. All special treatises on cultivation, and all disquisitions respecting subjects incidental to gardening, will be transferred to the *Gardeners' Chronicle* and similar periodicals, in which there is ample space for such discussions, and to which they have now become better adapted than to a pictorial work.

London: Bradbury and Evans, 11, Bouverie-street.

THE LADIES' COMPANION AT HOME AND ABROAD, Edited by Mrs. Loudon. Part II. will be published on the 28th instant, price Fourteen Pence.

London: Bradbury and Evans, 11, Bouverie-street, and sold by all Booksellers and Newsmen.

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Printed by William Bradbury, of No. 13, Upper Woburn-place, in the Parish of St. Pancras, and Frederick Mullett Evans, of No. 7, Church-row, Stoke Newington, both in the County of Middlesex, Printers, at their office in Lombard-street, in the Precinct of Whitefriars, in the City of London; and published by them at the Office, No. 5, Charles-street, in the parish of St. Paul's, Covent-garden, in the said county, where all Advertisements and Communications are to be addressed to the Editor.—Saturday, February 23, 1850.

THE GARDENERS' CHRONICLE
AND
AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 9—1850.] SATURDAY, MARCH 2. [PRICE 6*d.*

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BASS AND BROWN'S SEED AND PLANT LIST OR GENERAL DESCRIPTIVE PRICED SPRING CATALOGUE.—As copies of the above having the newspaper stamp are now all distributed, others will be supplied prepaid on application, by inclosing four postage stamps.
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JOHN HENCHMAN has to offer 2000 strong seedlings of the above, from 4 to 6 inches high, in their pots, at 15*d.* per 1000 : 25*d.* cash will be taken for the 2000.
Edmonton Nursery, March 2.

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NEMOPHILA MACULATA, at 1*s.* per packet. For General List of New Annuals, &c., see "Harrison's Cabinet."

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In the *Gardeners' Chronicle* of the 17th June, 1848, Dr. LINDLEY says, "This plant is perhaps the handsomest hardy perennial in cultivation."
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G. C. has also a large quantity of Red and White Currants ; also a quantity of large bushy Laurels.

SEED POTATOES.

CHARLES SHARPE has much pleasure in announcing that he has got the under-mentioned sorts of POTATOES to offer again this season, which have for the last four successive years given general satisfaction in all parts of the kingdom. The first six sorts are very early and productive ; those marked thus * are the best sorts for Frame Forcing ; they are offered at the following prices, packing included :

Per bushel of 56 lbs.		Per bushel of 56 lbs.	
*Early Oxford Potatoes	8*s.*	Early Manleys	7*s.*
*Early Round Frame	8*s.*	Early Cockneys	7*s.*
Early Ash-leaved Kidney	8*s.*	Fox's Seedling	7*s.*

Second Early Potatoes for Winter and Spring use :

American Native Potatoes	5*s.*	Kentish Pink Kidney	4*s.*
York Regents	5*s.*	Forty Fold	4*s.*

Orders will be forwarded on the receipt of a Post-office order, and great care will be taken to ensure their safe delivery. A liberal allowance to the Trade.—Wisbeach, Cambridgeshire.

FRUIT TREES AND SHRUBS, AT HALF THE USUAL PRICES, on sale for a short time only, by WILLIAM E. RENDLE and Co., Plymouth. For prices, see *Gardeners' Chronicle*, Feb. 23d, page 114.—Apply to WILLIAM E. RENDLE and Co., Union-road, Plymouth.
Imported GERMAN STOCKS AND ASTERS are now ready, and can be obtained, in Collections at 3*s.*, 4*s.*, 5*s.*, and 8*s.* each. See our Descriptive Catalogue.

SAFFRON WALDEN.
SUPERB COLLECTION OF DOUBLE HOLLYHOCKS.

WILLIAM CHATER has a large and healthy stock of his unequalled collection of this splendid flower, and can supply good strong plants that will bloom well next autumn. For particulars, see printed Catalogue, which may be had on application by enclosing a postage stamp. Plants warranted true to name. A remittance requested on delivery of plants.
Post-office orders to be made payable at Saffron Walden.

PELARGONIUMS AND NEW PLANTS, MANY OF THEM FROM CALIFORNIA AND CHINA.

H. GROOM, Clapham Rise, near London, by Appointment FLORIST TO HER MAJESTY THE QUEEN, and to HIS MAJESTY THE KING OF SAXONY, begs to say that his CATALOGUE OF PELARGONIUMS AND NEW PLANTS is ready, and will be forwarded by post on application.

VERBENA—"WONDERFUL."

G. MOORE begs to refer the readers of this Paper to his Advertisement of the 2d ult.
Perry Barr, near Birmingham, March 2.

THE WHOLE COLLECTION OF PLANTS BELONGING TO THE LATE QUEEN DOWAGER.

THE subscribers having purchased, by private contract, the whole of the above Collection of magnificent Plants, respectfully solicit the attention and inspection of noblemen, gentlemen, and amateurs furnishing Conservatories, Greenhouses, Pineries, Forcing-houses, &c., the present being an opportunity that rarely occurs of giving immediate effect at little cost. The Stock comprises many splendid Camellias, from 3 to 8 feet high ; Orange trees, 4 to 10 feet ; Scarlet Tree Rhododendrons, 3 to 9 feet ; clean Fruiting and Succession Pines, Large Vines and Figs in pots fit for immediate forcing, about 1200 strong Strawberries in pots for present forcing, fine American Aloes, &c. Also
THE WHOLE OF THE GARDEN MOVEABLES ; comprising Ornamental Seats and Tables in great variety, large and small Rollers, Hand-Glasses, &c. This great addition to the immense Stock of Plants previously held by the subscribers being more than they can accommodate, must be immediately sold. Any information as to price and size may be obtained (stating quantity required), by addressing THOMAS JACKSON and SON, Nurserymen, Kingston, Surrey.

NATURAL GRASS SEEDS FOR PERMANENT PASTURES, AND IRRIGATED CATCH MEADOW.
Which may be had Separate or Mixed, expressly to suit the soil.

MESSRS. JOHN SUTTON AND SONS having for many years paid especial attention to the examination of Natural Pastures, in the various soils of England and Wales, are enabled to supply the sorts and quantities of Seeds best adapted to suit the soil for which they are intended ; and *at much less expense* than is usually incurred. Any information required by post will be promptly attended to.
SUTTON'S RENOVATING MIXTURE, consisting solely of the finest and most nutritious Perennial Grasses and Clovers, will be found highly useful if sown early on old pastures which are become destitute of the best kinds of Grasses. Quantity required per acre, 6 to 8 lbs. Price, 1*s.* per lb. Also,
FINEST LAWN GRASSES, entirely free from everything but the finest and shortest growing kinds, price 1*s.* 3*d.* per lb., 3*s.* per gallon, or 21*s.* per bushel.
N.B. Carriage free by Great Western, South Western, or South Eastern Railways.
Also Ashcroft, Liverpool, and other Swedes, White Belgian and other Carrots, Yellow Globe and other Mangolds, True Italian Rye-grass, Drumhead Cow Cabbage, Kohl Rabi, &c., of home growth.
Reading Seed Warehouse, Reading, Berks.

A BEAUTIFUL ORNAMENT FOR THE DRAWING-ROOM.
Send 24 penny postage stamps to

JOHN REID, Mount Scilla Nursery, near Chippenham, Wilts, and in return you will receive 12 Roots of DOUBLE LILY OF THE VALLEY, post free, to any part of the United Kingdom. The graceful habit and delicate appearance of the above Flower render it equally suitable for the Suburban Villa and the Nobleman's Parterre ; while the delicious perfume it possesses will make it indispensable in the Lady's Posy and the Drawing-room Bouquet.

BROMHAM-HALL GREEN-FLESH MELON IS THE FINEST FLAVOURED IN THE WORLD.

EDWARD TILEY having become possessed of the whole stock of Seed of that very superior MELON called "BROMHAM-HALL GREEN-FLESH MELON," he is now sending out good sound Seeds at 2*s.* 6*d.* per packet of 6 seeds ; larger do. of 15 seeds, 5*s.* per packet. For further particulars of the above, see Advertisement in this Paper, February 9th. Also the following fine varieties can be highly recommended :

	s.	*d.*	
Queen Melon	1	6	per packet.
Bowood Green-flesh	1	0	,,
Beechwood do.	1	0	,,
Windsor Prize do.	1	0	,,
Emperor	1	0	,,
Fleming's Trentham Hybrid	1	0	,,
Duncan's Green-flesh do. improved	1	0	,,
Hampton-court Green-flesh	1	0	,,
Egyptian do. do. improved	1	0	,,

FIRST PRIZE CUCUMBERS.

Victory of Bath	2	0	,,
Gordon's White Spine	1	6	,,
Lord Kenyon's Favourite	2	6	,,

A packet of each of the three varieties, 5*s.* ; if preferred, also a packet of Bromham-hall Melon will be included with the three Cucumbers for 7*s.*
Sold by EDWARD TILEY, Nurseryman, Seedsman, and Florist, 16, Pulteney-bridge, Bath. A remittance must accompany the order, either in cash or penny postage stamps.

RENDLE'S DESCRIPTIVE CATALOGUE OF AGRICULTURAL SEEDS IS JUST PUBLISHED, and can be had on application, GRATIS (for one penny stamp).
It contains a descriptive list of all the best Field TURNIPS, *with the lowest market prices, also a full descriptive price current of all the best sorts of* CARROTS, MANGOLD WURZEL, CLOVER, *&c., as well as all the best varieties of Permanent Pasture Grasses.*
The following is an extract from the Catalogue.

Rendle's Imperial Purple-top Swede Turnip	per lb. 0*s.* 8*d.*	
Ditto ditto	per qt. 1	0
Skirving's Liverpool Swede ditto, per lb., 8*d.*	per qt. 1	0
Laing's Improved ditto ditto, per lb., 8*d.*	per qt. 1	0
Purple-top Scotch ditto ditto, per lb., 8*d.*	per qt. 1	0
White and Green Globe per lb., 6*d.*	per qt. 0	10
White Belgian Carrot	per lb. 0	10
Yellow Globe Mangold Wurzel	per lb. 0	8
True Italian Rye-grass	per bush. 7	0
Best English Red and White Clover	per lb., 5*d.* to 0	7
Large Cattle Parsnip	per lb., 1*s.* to 1	6

With every other kind of Agricultural Seeds at the lowest market prices. (See Catalogue.)
PERMANENT PASTURE GRASSES, sold in mixtures to suit various soils, at 30*s.* per acre, allowing two bushels of light seed and 12 lbs. of heavy seed to each acre.

BEST SIX PEAS, recommended by Dr. LINDLEY.—Prince Albert, Bishop's New Long-pod, Knight's Tall Marrow, Auvergne, Bedman's Imperial, Fairbeard's Champion of England.
One quart of each for 6s. 6d., or two quarts of each for 10s.
BEST FIVE BEANS.—Early Mazagan, Long-pod, Green Long-pod, Windsor and Green Windsor.
One quart of each for 2s. 6d., or two quarts of each for 4s.
ALL THE SELECT FLOWER AND KITCHEN GARDEN SEEDS recommended by the writer of the Calendar (See *Gardeners' Chronicle*, Feb. 9, page 86), can be obtained AT THE LOWEST PRICES.
Hairs' Dwarf Green Mammoth Peas, 5*s.* per quart.
ASPARAGUS, LARGE BATTERSEA GIANT, Strong roots, at 2*s* 6*d.* per 100. *The best in cultivation.*
YORK REGENT POTATOES.—The best variety for general crop, 5*s.* per bushel of 56 lbs.
All orders above 2l. will be delivered free of carriage to any station on the Great Western, Bristol and Gloucester, Bristol and Exeter, or South Devon Railways ; or to any town in Devon and Cornwall ; or to Cork, Dublin, or Liverpool, by Steamers.
Railway and Steam communication to all parts of Great Britain and Ireland.
For Catalogues and further particulars apply to
WILLIAM E. RENDLE & CO., Union-road, Plymouth.
ESTABLISHED 1786.

LAURELS. — FOR SALE, Several Thousands of well-grown and thriving LAUREL PLANTS, from 2½ to 3½ feet high. Delivered at the railway station, Salisbury, at 25*s.* per 1000.—Apply (if by letter post paid) to Mr. JEFFREY, Wardour, Salisbury, Wilts.

PINE PLANTS FOR SALE.—Apply to H. LANE and SON, Nurserymen, Great Berkhampstead, Herts. Various sorts, clean, healthy, and good.

LAWN TREES.—The following are grafted and budded on straight handsome stems, 5 to 6 feet in height, for Lawns, &c. :

	each—*s.*	*d.*
Union Standard Roses, crimson and white on the same stem	2	6
Standard Weeping Roses, on fine stout stems, fine vars.	3	6
1 Double-flowering Horse Chestnut	2	6
2 Red-flowering do., (Æ. rubicunda)	1	6
3 Pavia humilis pendula	2	6
4 ,, discolor	2	6
5 ,, carnea pubescens	2	6
6 ,, rubra	2	6

Nos. 3, 4, 5, and 6 are the American Chestnuts ; they bloom profusely, and form very ornamental and small-headed trees.

Ash, Golden-twigged, weeping	2	6
Beech, new weeping	3	0
Broom, cream-coloured	3	6
,, white Portugal	3	6
,, pink do.	3	0
Cotoneaster marginata	3	0
,, microphylla	2	0
,, rotundifolia	2	6
Cytisus elongatus	1	6
,, nigricans	2	6
,, purpureus elongatus (new)	3	6
,, purpureus major*	2	6
,, purpureus atropurpureus*	2	6
,, purpureus pendula*	2	0
,, supinus	2	6
New Weeping Thorn (Cratægus pendula nova)	7	6
Laburnum grandiflorum	3	6
Weeping Acacia (Robinia pendula nova)	5	0
Robinia inermis	3	6
,, tortuosa pendula	5	0
,, hispida major (large Rose Acacia)	3	6
,, macrophylla (large-leaved Rose Acacia)	3	6
Genista purgans	2	0
,, anxantica	2	0
Double Furze grafted on the Laburnum	3	6
Sophora japonica pendula, 8 feet	5	0
Purple-leaved Elm, 5 feet	5	0
American Weeping Willow	1*s.* 6*d.* to 2	6
Aucuba-leaved Ash	5	0
Willow-leaved do.	1	6
Ulmus rugosa pendula (new)	3	6
,, montana pendula (new variety)	2	6

* These are grafted on stems of the Purple Laburnum, which forms a very durable stock.
Carriage paid to London.
THOMAS RIVERS, Nurseries, Sawbridgeworth, Herts.

SELECT FLOWER & KITCHEN GARDEN SEEDS,
ESPECIALLY RECOMMENDED BY THE
WRITER OF THE CALENDAR IN THE GARDENERS' CHRONICLE OF FEB. 9th, PAGE 86.

JOHN SUTTON AND SONS, *possessing all the kinds of Seeds* so strongly recommended in the *Gardeners' Chronicle*, page 86, can supply them at low prices, particulars of which appeared in the 1st page of the *Chronicle* for Feb. 16. They can also supply Dr. LINDLEY's selection of the best six sorts of Peas, as stated in their Advertisement, in the 3d page of the *Chronicle*, of Feb. 9th; and most of the above sorts are included in MESSRS. SUTTON'S COMPLETE COLLECTIONS OF KITCHEN GARDEN SEEDS, now in course of delivery, at the under-mentioned Prices, Carriage free.

No. 1, *2l.* *2s.* No. 2, *1l.* *1s.* No. 3, 12*s.* 6*d.*

Reading Seed Warehouse, Reading, Berks.

KITLEY'S GOLIAH STRAWBERRY.

JAMES KITLEY, in again bringing his SEEDLING STRAWBERRY before the notice of the Public, takes this opportunity of thanking those Friends who so liberally purchased in the autumn, and it being now the best time for planting, begs to inform them that he has a fine stock of healthy plants, which have been transplanted. See extracts from the *Gardeners' Chronicle*.

From the *Gardeners' Chronicle*.—"STRAWBERRIES: *J. K.* Your Seedling Strawberry, 'Goliah,' judging from its size and appearance, is worthy of cultivation."

From the Gardeners and Farmers' Journal.—"STRAWBERRIES: *J. K.*, *Lyncombe Vale*. We have great pleasure in bearing testimony to the exquisite flavour of your Seedling Strawberry, 'Goliah.' In our opinion it combines the piquant flavour of the Strawberry with the richness of the Pine, the delicious aroma of which it partakes in equal proportion with the taste. Apart from the queen of fruits, we certainly do not remember anything in this way that conveyed to our senses so delicious a treat as the noble fruit to be known to the world as 'Kitley's Goliah Strawberry.'"

Plants, 12*s.* per doz., or 4*l.* per 100. A liberal allowance to the Trade in plants, when 100 are taken.

Cash orders expected from unknown correspondents.

Lyncombe Vale Nursery, Bath, March 2.

FINE SPECIMENS OF

ARAUCARIA IMBRICATA, 2 feet to 2 feet 6 ins., 10*s.* each.

CEDRUS DEODARA, 1½ to 2 feet, 24*s.* per dozen.

The above are in pots and raised from seed, and will be supplied on liberal terms, when a quantity is ordered. A list of various sizes may be had on application.

"TIGRIDIA CONCHIFLORA."

A beautiful hardy bulbous plant, producing, in long succession, large lemon-coloured flowers, spotted with crimson, and is well adapted for bedding. Strong flowering roots 6*s.* per dozen, or per post, free, 7*s.* per dozen.

30 packets of new and very choice Flower Seeds for 6*s.* per post, free.—YOUELL and Co., Nursery, Great Yarmouth.

EARLY TEN-WEEK POTATO, the earliest grown, will beat the Ash-leaved Kidneys by ten days—per bushel, 14*s.*; per peck, 4*s.*, bags included. Pure Stocks of ASH-LEAVED KIDNEYS, RED DITTO, BARHAM'S WALNUT-LEAVED, SHAWS, REGENTS, FORTY-FOLD, &c., at moderate prices.

Twelve of the newest and rarest Flower Seeds:

Nemophila maculata	Martynia angularis
Brachycoma, splendid hybrids	Portulaca Thorburnii (yellow)
Phlox Drummondii alba	,, alba striata
,, oculata	Podolepsis chrysanthemoides
,, Leopoldina	Schizanthus retusus alba
Martynia fragrans	Ipomœa Burridgii

One packet each 10*s.* 6*d.*

GERMAN STOCKS, from 2*s.* per collection.
,, ASTERS, from 3*s.* ,,
,, CARNATIONS, 2*s.* 6*d.* per 100.

DUNCAN HAIRS, 109, St. Martin's-lane, Charing-cross, London.

SAMUEL FINNEY AND CO.'S NEW CATALOGUE OF SEEDS is now ready, and will be forwarded gratis on the receipt of two penny stamps for postage. In forming our Collections of Seeds we have taken special care to include all the select and most approved kinds, and such as we can confidently recommend.

Of VEGETABLE SEEDS, our Collections contain a full supply of all that is requisite for the largest establishment, and the kinds and quantities for each collection are stated. No. 1, 2*l.* 10*s.*; No. 2, 1*l.* 10*s.*; No. 3, 1*l.*; and No. 4, 12*s* 6*d.*

Of FLOWER SEEDS, we have included all the most choice and showy kinds, particularly those we know to succeed well in the north, and a full list of all the best kinds of German Seeds, imported direct in sealed packets, with prices.

A Collection of 100 packets of the best hardy and half-hardy kinds for ... ... 15*s.* 0*d.*
Ditto of 50 ditto ditto ditto ... 8 0
Ditto of 25 ditto ditto ditto ... 5 0

We particularly recommend this Catalogue to residents in the north, as they will be enabled to purchase to advantage. All orders delivered free of carriage at any of the railway stations between Newcastle and York, Berwick and Carlisle, and by steam-boat to London, Hull, Whitby, Leith, Dundee, and Aberdeen. Railway and water communication to all parts of the kingdom.

SAMUEL FINNEY and Co., Gateshead, near Newcastle-on-Tyne

NEW SEEDLING PANSIES, &c.

HENRY MAJOR, Knosthorpe, Leeds, begs to announce that he has ready for sending out healthy plants of his Five beautiful Seedling PANSIES, a valuable acquisition to this lovely family; viz.—

MADAME SONTAG.— Upper petals rich puce; lower ones broadly belted with the same; centre straw; blotch fine and very distinct; size, usual; flower smooth.

*BLUE-EYED MAID.—A correspondent of the "Florist" for February, in speaking of this flower, says, "This is an excellent flower, and a decided beat on Hall's Rainbow, and more constant; in fact, it is showable all the season. It is indispensable as a self in any collection."

MAGNIFICENT. — Upper petals bluish lilac; lower ones broadly belted with the same; centre white; blotch very large and solid; size large; petals of great substance; flower smooth.

HEBE.—Upper petals red bronze; lower ones belted with the same; centre deep yellow; blotch good; size usual.

SIR J. FRANKLIN.—Upper petals bronzy purple; lower ones broadly belted with the same; centre rich yellow; blotch fine; size usual.

The set of Five for 1*l.*, post free.

* Plants of "Blue-eyed Maid" may be had separately at 5*s.* each, or four plants for 15*s.*, post free.

The following 20 fine Show Pansies, including "Blue-eyed Maid," for 25*s.*, post free: Indispensable, Jullien, William Henry, Sultan, Hector, Enterprise, Snowdrop, Milton, and Blue-eyed Maid (Major's), Canary, Cracker, Duke of Norfolk, Supreme, Negro, Alpha, Satirist, Superb, Androcles, Ariel, and Disraelii.

Select Calceolaria and Pansy Seed 2*s.* 6*d.* per packet.

H. M. will have ready the first week in May, his Ten beautiful new shrubby Calceolarias, price 40*s.* the set. Also Twelve very good Calceolarias, including four or five seedlings not yet let out, 25*s.* A descriptive Catalogue of Calceolarias and Pansies may be had on prepaid application.

From unknown correspondents, a remittance is respectfully requested with the order.

SEEDS.

PETER LAWSON AND SON'S LIST.—Nos. 5, 6, and 7, for 1850, are now ready, and may be had on application, or will be sent free of postage to any part of the United Kingdom or British Colonies.

AGRICULTURAL SEEDS.—No. 5 contains a Priced List of Seeds for the Farm, with the kinds, quantities, and prices of Grass Seeds for sowing down land to Pasture, and for fine Lawns and Bowling Greens.

FLOWER SEEDS.—No. 6 contains a List of Flower Seeds, annual, biennial, and perennial, for cultivation in the open ground, in frames, in conservatories, and hothouses.

ROSES.—No. 7 contains a Descriptive List of Roses, distinguishing those suitable for different soils and situations, with short notices as to their habit of growth and method of cultivation.

FOREST AND FRUIT TREES.—No. 2 contains a Priced List of Forest, Fruit, and Ornamental Trees, seedling and transplanted, suited for the climate of the United Kingdom, including also Plants for Hedging and Underwood.

GARDEN SEEDS.—Priced Lists may be had on application.

PETER LAWSON and SON, Nurserymen and Seedsmen to the Highland and Agricultural Society of Scotland, have appointed as their Agent in London, Mr. J. C. SOMMERS, 159, Fenchurch-street, who will afford every information as to supplies of Forest Trees, and Garden or Agricultural Seeds.

*** There are ready and economical means of transit from Edinburgh, by steam or railway, to all parts of England and Ireland.—George the Fourth Bridge, Edinburgh, March 2.

CARNATIONS, PICOTEES, AND PINKS. — March being the best month for planting the above beautiful Flowers, JOHN HOLLAND, Bradshaw Gardens, Middleton, near Manchester, respectfully informs gentlemen, &c., that he is sending out fine varieties at the following low prices:

25 pair of Carnations, in 25 varieties ... ... 20*s.*
25 pair of Picotees, in 25 do. ... ... 20*s.*
25 pair of Pinks, in 25 do. ... ... 8*s.*

Hamper, &c., included. Catalogues on application.
Post-office orders to be made payable at Manchester.

PROVIDENCE NURSERY, RAMSGATE.
(Late WM. MILLER.)

JAMES TURRELL having taken the above Business, lately conducted by Mr. J. G. HINE, he strongly recommends the following first-class PELARGONIUMS:

*VICTORIA, Improved.—This will prove a beautiful bedding variety; colour the same as the old Victoria, only brighter and improved in shape. Price 5*s.*

NEW SEEDLING PELARGONIUMS.

*ATTRACTION.—Large bold crimson scarlet flower, with white centre; free flowering variety, of fine habit.

SUNSET.—Fine rich scarlet, with broad under petals; very fine form, rather weak habit; a great improvement on scarlet Defiance.

ROSA ALBA.— This variety is very attractive, lower petals rose, with large white centre; upper petals dark rose, with fine dark spot.

KENTISH BEAUTY.—Pale pink, of very fine form, and free bloomer.

AURORA'S FLAG.—This flower is of extra size, novel and attractive colours, very bright; this flower is much after the style of Aurora.

BEAUTY OF THANET.— Lower petals, delicate pink; upper petals, black; of fine form.

*EXACTUM.—Pure white lower petals; upper petals crimson purple, with a fine margin of white. This flower is a perfect model, and was admired by all who saw it.

*MAJESTICA. — Superb dark purple flower, very round, equal to the best blooms of Distinctus; very true and free bloomer, of fine dwarf habit.

The set of Eight for 3*l.* 3*s.* Usual allowance to the Trade.

Those marked * have obtained First Class Certificates.

J. T. would also recommend the following, all of which will be found among the best of last season: Brilliant, Magnum Bonum, Childe Harold, Venusta, Ave Maria, Triumph, Nobilissima, Rodolphus (extra), Surprise, and Delight. The Ten for 30*s.*

Cash to accompany all orders from unknown correspondents. Post-office orders to be made payable to the name of JAMES TURRELL.

NEW AND STRIKING VERBENA.

ARTHUR MACKIE begs to offer the undermentioned to the attention of Florists, with the fullest conviction that it will give entire satisfaction.

WOODSTOCK'S MAGNIFICENT.—A. M. having purchased the entire Stock of this unrivalled Verbena, offers it to the Public with the utmost confidence, being fully persuaded that it will surpass everything yet out in its class. The individual flowers cover a sixpence, and sometimes a shilling. It is of a very free habit and growth, and well suited for grouping. See *Gardeners' Chronicle*, Sept. 15, 1849.—"*W. K. B.* Colour bright rose, fading to pink; a remarkably fine variety, with much the largest flowers we have yet seen."

Fine strong plants the 1st of April, at 5*s.* each, free by post. Where three are ordered four will be sent.

MACKIE'S Descriptive Catalogue of Flower and Vegetable Seeds is now ready, and will be forwarded on receipt of two stamps for postage.—Norwich Nursery, Norwich, March 2.

NOTICE.—The Partnership formerly carried on by JOHN ADAMS and ROBERT HOGG as Nursery and Seedsmen, at Brompton-park, Kensington-road, London, under the name of GRAY, ADAMS, and HOGG, was dissolved on the 21st day of April last, by mutual consent. (Signed)

WILLIAM CHAMBERS, witness. JOHN ADAMS.
THOMAS WESTCAR, witness. ROBERT HOGG.

In reference to the above, JOHN ADAMS begs to return his sincere thanks to his Friends and the Nursery Trade generally for the kind and liberal support he has received for a long period of years, during his connection with the Brompton-park Nursery, and to inform them that he has purchased the greater portion of the Stock, consisting of the extensive collection of Fruit Trees, &c. And as he intends carrying on the Business as formerly, on his own account, he hopes to receive a continuance of those favours he has so long enjoyed, and which he will always endeavour to merit.

Brompton-park, Kensington-road, March 2.

FRUIT TREES, FLOWER-BEDS, &c.—Garden Netting, of superior quality, for preserving Fruit trees from frost, blight, and birds, or as a fence for rabbits, fowls, pigeons, Tulip and Seed beds, can be had in any length or quantity at 3*d.* per yard 2 yards wide, or 6*d.* per yard 4 yards wide, from JOHN KING FARLOWS, Fishing Rod and Net Manufactory, 5, Crooked-lane, London-bridge. The netting being tanned will stand exposure to the weather for many years. Forwarded to any part of the kingdom on receipt of post-office order, or reference in town. An allowance to gardeners and large consumers.—Copy the Address, 5, Crooked-lane, London-bridge.

JOHN BAILY, PURVEYOR TO HER MAJESTY AND H.R.H. PRINCE ALBERT, 113, Mount-street, Grosvenor-square, London, Dealer in every description of Useful and Ornamental POULTRY and WATER-FOWL. Dorking, Hambro', Spanish, Polish, and Cochin China Fowls. Gold and Silver Spangled Bantams. All sorts of Pea Fowls. Gold, Silver, Pied, and Ring-necked Pheasants. Tame-bred Pheasants in any numbers. Live Partridges for turning out.—Priced Lists and Estimates forwarded by post, on application.

BECK'S PELARGONIUMS, AND OTHER RAISERS' PRODUCTIONS.

The Selections advertised at Two Guineas are all sold.

Of the varieties 1847 and 1848, enumerated in E. BECK's Catalogue (to be had in exchange for one postage stamp) a good assortment remains. The varieties intended for sending out next autumn in the two guinea selection are now propagating, and will be ready in September, enabling purchasers to grow them on, and to make good plants for the following year.

N. B. The latter selection will be distinct and good.

Worton Cottage, Isleworth, March 2.

NEW AND ESTEEMED FRUITS, which ought to be in every collection.

	PEARS.	Pyramids on Quince Stocks.	Dwarfs on Pear Stocks.
1	Belle de Noel, December and January ..	2*s.* 6*d.*	2*s.* 6*d.*
2	Bergamotte d'Esperen, April and May ..	3 6	2 6
3	Beurré Bretonneau, May and June ..	5 0	5 0
4	Beurré Giffart, August	2 6	1 6
5	Beurré Gris d'hiver Nouveau, February ..	2 6	1 6
6	Beurré Winter (Rivers's) Feb. and March. A seedling from Easter Beurré, tree thriving and very hardy	10 6	10 6
7	Cassante de Mars, April to July	5 0	5 0
8	Crassene d'hiver, Bruneau, March ..	2 6	1 6
9	Doyenné d'été, July, the best early Pear ..	2 6	1 6
10	Doyenné d'hiver, Nouveau, Jan. to May ..	2 6	2 6
11	Doyenné Goubault, January to March ..	3 6	2 6
12	Josephine de Malines, February to May ..	3 6	2 6
13	Onendaga, or Swan's Orange, October ..	3 6	3 6
14	Soldat d'Esperen, January	3 6	2 6
15	Susette de Bavay, March to May	3 6	2 6
16	Triumphe de Jodoigne, very large, Dec. ..	3 6	2 6

The above, with the exception of No. 7, are all melting Pears of first-rate quality; full Descriptions are given in Descriptive Catalogue of Fruits, sent per post, free, for four stamps. They are all hardy, and succeed well as Pyramids.

	PLUMS.	Pyramids.	Dwarfs.
1	Autumn Compote (Rivers's), October ..	2*s.* 6*d.*	2*s.* 6*d.*
2	Belgian Purple, September	....	3 6
3	Cloth of Gold (Esperen), September ..	....	5 0
4	Early Favorite* (Rivers's), July	2 6	1 6
5	Early Prolific* (Rivers's), end of July ..	2 6	1 6
6	Huling's Superb*, very large, September..	2 6	2 6
7	Jefferson*, most excellent, September ..	3 6	3 6
8	Quetsche St. Martin's*, October	2 6	2 6
9	Reine Claude de Bavay*, September ..	2 6	2 6
10	Reine Claude d'Octobre*, or October Greengage, October	2 6	2 6
11	Coe's Late Red*, October to November ..	2 6	1 6
12	De Montfort*, August	2 6	2 6

The above are all hardy varieties, and bear well as Standards or Pyramids. Of those marked thus *, dwarf trained trees can be supplied at 3*s.* 6*d.* each.

THE LARGE FRUITED MONTHLY RASPBERRY.

Fruit of this fine autumnal bearing Raspberry were exhibited at the meeting of the Horticultural Society, November 6th, and obtained a Certificate of Merit. Like other Raspberries, it will not give a full crop of fruit the first season after planting, but requires to be established one year, after which it will bear most abundantly from August to November. Canes 9*s.* per dozen; or 60*s.* per 100.

Belle d'Orleans, a new and fine very early Cherry, 3*s.* 6*d.* each. Carriage paid to London.

THOMAS RIVERS, The Nurseries, Sawbridgeworth, Herts.

KITCHEN GARDEN AND FLOWER SEEDS.

JOHN CATTELL, NURSERYMAN and SEEDSMAN, Westerham, Kent, begs to offer to the public a few very choice SEEDS, which may be had free by post at the prices annexed.

KITCHEN GARDEN SEEDS.

	per packet.—*s.* *d.*
Beet, Cattell's Dwarf Purple-top... 0	6
Broccoli, Elletson's April White 1	0
,, Wilcove Superb White 1	0
,, Chappell's Cream ... 0	6
,, Jones's Superior White 0	6
Cauliflower, Dwarf Late Walcheren ... 1	0
Cabbage, Cattell's Reliance 1	0
An improved early dwarf, in quality equal to his well known "Barnes," and may, like that, be sown the middle of July without fear of running to seed the following spring; it is particularly hardy, and being suitable for all seasons, may be depended on for being the earliest and best Cabbage known.	
Cabbage, Cattell's Green Colewort 0	6
,, Do., Dwarf Barnes 0	6
,, Do., Nonpareil ... 0	6
Savoy, Dwarf Drumhead 0	6
Scotch Kale, fine feathered 0	6
,, Dwarf curled ... 0	6
Celery, Cole's Superb Red 1	0
,, Red solid 0	6
,, Seymour's Superb White 0	6
Cucumber, Sion House ,, Do., Improved ... ,, Manchester Prize ,, Man of Kent ... ,, Bath Victory ... ,, Roman Emperor ,, Carpenter's Wonder ,, Warwickshire Hero ,, Cuthill's Blk. Spine	1*s.* per doz. seeds
Melon, Bromham-hall, 6 seeds 2	6
Lettuce, fine black seed Green Cos ... 0	6
,, Do., Brown Bath Cos 0	6
,, Marseilles (handsome Cabbage) ... 0	6
Parsley, exquisite curled 0	6
,, fine curled Giant ... 0	6
Vegetable Marrow, true white 0	6
Leek, Musselborough ... 0	6
Parsnip, Guernsey, fine large hollow-crowned... 0	6

FLOWER SEEDS.

Ipomœa Burridgii, splendid red variety of Convolvulus major 1	0
,, purpurea splendens, or new dark Convolvulus major ... 0	6
Ipomopsis elegans ... 1	0
Portulaca alba striata ... 1	0
,, Thorburnii 1	0
Pentstemon speciosum ... 1	0
Do., per half-ounce 7	6
Rhodanthe Manglesii ... 1	0
Coreopsis nigra speciosa, fine... 0	6
Nemophila maculata ... 1	0
Phlox Drummondii alba, true 1	0
Jacobæa, extra fine, dble. purple 0	6
Indian Pink, extra fine ... 1	0
,, ,, fine fringed 0	6
Calceolaria, from first-rate sorts, impregnated ... 2	6
Stock, red Intermediate; this is the best Stock for early spring flowering; more than two-thirds come double ... 0	6
Primula sinensis, extra fine fringed, red and white mixed 1	0
Larkspur, dwarf double Rocket, extra fine mixed 0	6

J. C. begs also to offer as usual fine strong plants of his true and improved sorts of Early and Cattle Cabbage, price, including package, 4*s.* 6*d.* per 1000, carriage paid to the Edenbridge station, South Eastern Railway. A Post-office order or postage stamps to accompany all orders from unknown correspondents.

HAYTHORN'S HEXAGON GARDEN NET.—Noblemen, Clergymen, and Gentlemen who have Gardens or Hothouses, are respectfully invited to transmit their address to Mr. J. W. HAYTHORN, 4, Clinton-street, Nottingham, who will forward free, by post, particulars and patterns of his HEXAGON GARDEN NET, the best and cheapest article, highly approved, and now generally used for the protection of bloom, fruit, and flowers, from frosts, birds, wasps, flies, children, and servants, and also for placing on Hothouses, effectually keeping out birds and insects, without preventing the admission of light and air. Parcels are sent, carriage paid, to London, Liverpool, Bristol, Newcastle, Hull, &c., and intermediate stations.

WHITE BELGIAN CARROT, 70*s.* per cwt., 9*d.* per lb.
YELLOW GLOBE and LONG RED MANGOLD WURZEL, 70*s.* per cwt., 9*d.* per lb.
CATTLE and HOLLOW-CROWNED PARSNIP, 60*s.* per cwt. 8*d.* per lb.
SKIRVING'S IMPROVED PURPLE-TOP SWEDE, 28*s.* per bushel, 9*d.* per lb.
GRASSES, for Permanent Pasture, 20*s.* per acre.
Fine selected LAWN GRASS, 1*s.* 2*d.* per lb., and all other Agricultural and Horticultural Seeds equally low.
The above Seeds have been grown from some of the finest stocks in the country, and may be depended on as new and genuine.—WM. JAS. EPPS, Seed Merchant, Maidstone, Kent.

UNIVERSAL CATALOGUE OF VERBENAS, FUCHSIAS, DAHLIAS, CHRYSANTHEMUMS, PETUNIAS, &c.
G. SMITH'S Priced and Descriptive Catalogue contains the very best selections of the above; with a useful note and a marked List of the best Verbenas for exhibition in pots, with mode of training, and what is of great importance to exhibitors, the time of stopping back, so as to catch a sheet of bloom when it may be required; with descriptions of his superb Seedling Fuchsias, Verbenas, Petunias, &c.; and will be forwarded on the receipt of one postage stamp.—Tollington Nursery, Hornsey, Islington.

RENDLE'S TRUE WILLCOVE BROCCOLI.—*This superior variety has been proved by thousands to be the best late sort in cultivation, and can be recommended with much confidence. We have saved a small quantity this season on our own grounds, from some of the finest heads ever seen; price* 1*s. per packet, free by post.*
*** Twenty packets to the Trade for 12*s.*, or 50 for 2*l.* 10*s.* It will give the most complete satisfaction.
Our commercial stamp is on each packet.
COLE'S SUPERB RED CELERY, 1*s.* per packet.
Apply to WILLIAM E. RENDLE and Co.,
Seed Merchants, Plymouth.

SUPERB RANUNCULI.—The present being the usual month for planting, we beg to recommend the following. The new varieties have been selected with great care, of first rate sorts, from immense quantities of seedlings; and for vigorous growth and free flowering are far preferable to the older varieties. Selections, in strong roots, at the following reasonable charges, with printed instructions for planting and treatment.

RANUNCULUS.—Free by post.	£	s.	d.
50 Splendid new varieties, with names	2	0	0
25 do. do. do.	1	2	0
50 Fine older varieties, do.	0	15	0
25 do. do.	0	8	0
100 Finest mixed	0	10	0
100 Fine mixed, 5*s.*; or free by post for	0	6	0

A Descriptive Catalogue of the seedling varieties may be had. Remittances are expected from unknown correspondents.
BASS and BROWN, Seed and Horticultural Establishment, Sudbury, Suffolk.

EARLY MARROW CABBAGE.—THE BEST IN CULTIVATION.
EDWARD TILEY can confidently recommend the following first-rate varieties as the best in cultivation.
Early Marrow Cabbage, sold in packets 2*s.* 6*d.* per oz.; or half-ounce packets at 1*s.* 6*d.*
True Walcheren Cauliflower Broccoli, 1*s.* per packet; Willcove do., 1*s.* per packet; Tamworth do., 1*s.* per packet.
Coles' Superb Celery, from Mr. Coles, Dartford, 1*s.* p. packet.
The original true Bath Cos Lettuce Seed, 1*s.* per packet.
Antirrhinum Seed, saved from 24 of the best varieties in cultivation, 1*s.* per packet.
Sweet-William Seed, saved from extra fine semi-double varieties, 1*s.* per packet.
The whole or any part of the above will be sent postage and package free.
Sold by EDWARD TILEY, Nurseryman, Seedsman, and Florist, 16, Pulteney Bridge, Bath. A remittance must accompany the order, either in cash or penny postage stamps.

CEDRUS DEODARA OR HIMALAYA CEDAR.—The Subscribers beg to inform the admirers and planters of the above hardy Tree, that they have upwards of FIFTY THOUSAND, from one to five years old, in pots, grown from seed, constantly in the open ground, which they are now supplying on such terms as will induce their general introduction into all plantations, being of rapid growth, highly ornamental, and of great value as a Timber tree.
WM. MAULE and SONS, Stapleton-road Nurseries, Bristol.

RHODODENDRON PONTICUM FOR UNDER COVER, &c.
JOHN WATERER begs to state he has large quantities of the above, which is now universally acknowledged the best Evergreen for such purposes, being free from attacks of hares and rabbits. Strong plants, fit for immediate planting, 10*s.* 6*d.*, 15*s.*, to 21*s.* per 100.
Descriptive Catalogues of his well known collection of American Plants, &c., to be had on application.
American Nursery, Bagshot, Surrey.

PANSIES, &c.
JOHN SCHOFIELD AND SON are prepared to send out the following set of 24 fine Show PANSIES for 1*l.* 1*s.*, viz.: Duke of Norfolk, Purple Standard, Caroline, Cracker, Blue Fringe, Milton, Paren, Jullien, Indispensable, Canary, Negro, Mrs. Bragg, Disraeli, Duchess of Norfolk, Perfection, Constellation, Zabdi, Candidate, Cypreus, Cossack, Supreme, Androcles, Alpha, Charmer. Post free.
A large stock of older varieties, 6*s.* per dozen.
J. S. and Sons have a few pairs left of their fine seedling PICOTEE, "MISS HOWARD." It was shown at the West Riding Central Floral Society Show, when a committee of seven was appointed to test the merits of the Seedling specimens, and to recommend such only as were worthy of being sold out, viz., Messrs. Smith, Dobbings, Stephenson, Oxley, Grey, Bramma, and Mansley. It was also submitted to Mr. Wood, in 1848; vide "Midland Florist," No. 21, under the letters J. S.: "12; an excellent light purple edge, good pod, broad and well-formed petals, crowns well; one of the most promising we have seen this season."
A fine healthy stock of the best varieties out, of Carnations, Picotees, and Pinks, 9*s.* to 20*s.* per dozen pairs. Dahlias, Verbenas, and Fuchsias, 3*s.* to 12*s.* per dozen.
Also a full descriptive Catalogue; and a few packets of very select Pansy and Calceolaria Seed, 2*s.* 6*d.* per packet. A remittance is respectfully solicited from unknown correspondents.
Knowsthrope, near Leeds, Yorkshire.

SEEDS.—A few select Seeds from the original raisers, which have now for several years given such general satisfaction to those who have grown them, viz.:
Elletson's (true) large Mammoth or April White Broccoli.
Elletson's (true) improved Wilcove White Broccoli.
Lindsay's imperial crimson Dwarf Beet.
Usher's "Exquisite" Curled Parsley.
Metcalfe's improved Dwarf Walcheren Broccoli.
Telford's superb early Dwarf Cabbage.
The above may be had at 1*s.* each, or the six sorts for 5*s.*, in Post-office order or postage stamps, on application to WILLIAM MAY, Hope Nurseries, Bedale, Yorkshire. W. M. begs to refer to former *Chronicles* for his Advertisements of select Pansy, Cineraria, Antirrhinum, and Hollyhock Seeds; also to his superb collection of hardy Herbaceous Plants, Hollyhocks, &c.

HORTICULTURAL SOCIETY OF LONDON.—The attention of the Fellows and their friends is invited to some remarkable specimens of the following three Plants now in Flower in the Society's Garden, viz.: Lælia superbiens, Dendrobium speciosum, and Phalænopsis amabilis.

EXHIBITIONS OF MELONS.
EDWARD TILEY begs to inform the Public that he will give a PRIZE of One Guinea for the best flavoured BROMHAM HALL MELON exhibited at the Chiswick Exhibition in July; and One Guinea for the best flavoured Bromham Hall Melon exhibited at the Regent's Park Exhibition in July. The money will be paid to the Committee before the exhibition. The above will prove to be the best Melon ever yet sent out. Sold in packets, seven seeds, 2*s.* 6*d.*, by EDWARD TILEY, Nurseryman, Seedsman, and Florist, 16, Pulteney-bridge, Bath.
A remittance must accompany the order, either in cash or penny postage stamps to the amount.

ORANGE, LEMON, LIME, CITRON, AND SHADDOCK TREES.—The first importation of the above Trees, in most excellent and healthy condition, has arrived from Italy. They are from 2 to 4 feet high in the stems, very straight, and possess strong grafts, and will make splendid trees in two or three years; from 12*s.* to 25*s.* each. They may be seen at A. CORBETT'S Italian and Foreign Warehouse, 18, Pall-mall, London. Also Catalonian, Azorian, and Arabian Jessamine Plants. The Double Italian Tuberose Roots are still on sale, 4*s.* per dozen.

SEEDS IN COLLECTIONS.
OF THE BEST WHICH CAN BE PROCURED.
BASS AND BROWN beg to offer the following CHOICE VEGETABLE SEEDS.
Complete Collections of the best and newest sorts, in proportionate quantities of each, suited for large or small gardens, at per collection, 1*l.*, 2*l.*, and 3*l.* A Collection for a small garden, of good sorts, at 10*s.* 6*d.* A List of the Collections furnished if required.

SELECT AND CHOICE FLOWER SEEDS,
Free by post, with full directions for sowing, heights, colours, &c.

	s.	d.
100 varieties best and newest Annuals	15	0
50 varieties for 8*s.* 6*d.*, 30 for 5*s.* 6*d.*, 20 for	4	0
20 varieties best dwarf kinds, in larger packets, suited for filling beds on lawns, 7*s.* 6*d.*, or 12 do. for ...	5	0
20 varieties best Greenhouse Annuals, 7*s.* 6*d.*, 12 for ...	5	0
20 varieties choice Greenhouse Perennials, 10*s.* 6*d.*, 12 for	7	6
20 vars. choice hardy Biennials and Perennials, 7*s.* 6*d.*, 12 for	5	0
36 varieties imported German Stocks	5	0
20 ditto ditto, 3*s.* 6*d.*, 12 for	2	6

Remittances with orders are requested from unknown correspondents. Goods carriage free to London, and with all orders of 2*l.* and upwards, articles presented extra. Post-office orders payable to BASS and BROWN or to STEPHEN BROWN.
Our Descriptive Priced Seed and Plant List will be forwarded, prepaid, on application, by forwarding four postage stamps, as copies having the Newspaper stamp are now all distributed.
SEED AND HORTICULTURAL ESTABLISHMENT, SUDBURY, SUFFOLK.

The Gardeners' Chronicle.
SATURDAY, MARCH 2, 1850.

MEETINGS FOR THE ENSUING WEEK.

MONDAY,	March	4	Entomological	8 P.M.
			Chemical	8 P.M.
			Medical	8 P.M.
			Pathological	8 P.M.
			British Architects	8 P.M.
TUESDAY,	—	5	Horticultural	3 P.M.
			Linnean	8 P.M.
			Civil Engineers	8 P.M.
WEDNESDAY,	—	6	Society of Arts	8 P.M.
THURSDAY,	—	7	Zoological	3 P.M.
			Antiquarian	8 P.M.
			Royal	8½ P.M.
FRIDAY,	—	8	Astronomical	8 P.M.
			Philological	8 P.M.
			Royal Institution	8½ P.M.
SATURDAY,	—	9	Royal Botanic	3½ P.M.
			Westminster Medical	8 P.M.

DR. LINDLEY will be greatly obliged to those correspondents of the Horticultural Society who propose to contribute to the next Number of the "Journal of the Society" if they will favour him with their papers in the course of a few days.

"I DON'T know how it is, but our PEACHES somehow never *will* STONE. We have always a beautiful bloom, but the fruit won't hold on. In course it's no fault of ours; we can't do more than get the trees to bloom and set; after that it's the constitution of the things that's in fault; that old JOB wore them out, with his heavy crops. Well, we can't help that."

Thus soliloquised a little horticultural WE, upon seeing the ruin of his crop of forced Peaches for the fourth time. He had succeeded an old-fashioned gardener who was no great scholar, and talked little of the reason why he did anything. What he had been taught to do he did, and as he had been taught to do it. Not that JOB wanted observation; on the contrary, he was a good physiologist in his way, although unenlightened by LIEBIG and HLUBEK; he watched the natural processes which he beheld around him, and he applied them, as well as he could, to the artificial circumstances of his garden. He saw that Nature never advances too fast, and is never too slow; but that she works silently, constantly, and without procrastination; so he, too, in humble and reverent imitation, worked silently and constantly, never putting off till to-morrow what could possibly be performed to-day. The old man troubled nobody, and nothing troubled him. He abused no neighbour, and listened to no gossip; if he found a man a tale-bearer and slanderer he turned him off, for, as he used to say, "an evil tongue covers a lying heart." If his flues cracked, he stopped the joints with mortar; if his glass was broken, he patched it as well as he could till the glazier came; if he ran short of stable litter for his "linings," because the family was away, he made shift with leaves. "'Tan't so good as it might be, master," he used to say, "but *we'll make it do.*" He thought his master's interest the same as his own; he obeyed orders whether he liked them or not, and without grumbling, for he knew that to be his duty, and he had an old-fashioned way of doing his duty. Poor good, old JOB TILTH! as he was born and bred, so he died in the same good old family, and was buried in the same old churchyard where his father laid before him.

It was to such a man as this that our clever friend succeeded. He was a *particularly* clever young man, and had a reason for everything; the only disadvantage was, that he sometimes forgot to what the reason belonged. He knew the Latin names of plants, especially of common ones, and was thought quite a botanist, till an acquaintance one day caught him calling Lovage Angelica. He had studied so much, and learned so much, that he felt above being taught any more; and he particularly despised the opinions of the quiet country gentlemen who sometimes looked over his master's garden. "Don't you think, Mr. SPRIGGINS," said a visitor who was famous for the excellence of his gardener, "don't you think you are keeping this Vinery too hot and close, now that the Vines are in flower?" "Too hot, sir! *we* think it rather too cold. When *we* were in the Vineries at Browston Wick, *we* always kept them much hotter." In short, the constant use of the plural in speaking of himself was a true index of his great qualities; he had as much experience as any two men, as much skill as any dozen, and therefore, as he represented several in his own person, it was impossible that he should belong to the singular number. "I" would not express the concentration which existed in him; if he was but one in person, he was many in spirit, and therefore "WE" was the proper word to use.

When he took in hand the Peach house in question, Mr. SPRIGGINS complained of the glass, which was small, and cracked, and patched, and here and there let in the rain. The glass was mended, but the fruit dropped without stoning, and for the first time for many years there was no crop. He then found that the house was out of repair; that the wall plate was rotten, and the rafters full of old cracks that had never been puttied up; and he also found that there had been strong frosts in March when his Peaches were in flower; so the place was repaired, and nicely stopped and painted; still ill-luck attended him; the Peaches dropped just the same, and there was no crop. At last, however, the real root of the mischief was found in the bad old flues, which were cracked, and let out smoke, and one night burst. It was necessary that hot water pipes should be immediately substituted: and the good-natured master complied. It was amazing the quantity of soot found in those flues! no wonder that they burst and spoiled the crop. Old JOB had always *seen* them cleaned: but a person of Mr. SPRIGGINS' genius was above that; he had told one of the men to look after it, and the man had looked after his dinner instead, which was natural. However the hot-water pipes were fixed; Messrs. BRIGHT, MASON, and STOKER'S best new boilers were employed, and this time all was sure to go right.

However, as we have seen, somehow or other, everything still went wrong, and Mr. SPRIGGINS was now inclined to condemn the old trees that old JOB had worked in the old houses for so many years; he thought it would be better to get some new ones for the houses with new glass, new woodwork, and new hot-water pipes. His master also came to the conclusion that novelty had not been carried far enough, and that, under all these circumstances, a new gardener would be advisable. So Mr. SPRIGGINS was promoted to another place——when he could find one.

Mr. SPRIGGINS (he always expected to be called Mister) was fond of saying "it is for man to subdue Nature;" he believed, like other vain and ignorant persons, in the potency of human skill, and thought he had only to command and be obeyed. One cannot wonder at the fate of such a horticultural CANUTE. Had he adopted old JOB'S rational maxim that "it is for man to obey Nature," he would have been nearer the truth.

JOB knew that Peach trees are slow, very slow, in getting ready their bloom; that they have many a cold night and chilly day to bear between the first swelling and the opening of their flowers. Mr. SPRIGGINS was always in a hurry, for he was always behind-hand; so he gave his trees plenty of heat, and coddled them nicely, and forced them hard, and got their flowers open in half the time that JOB required. Then JOB knew that the Peach flower is a long time open, and very slow in setting, and that a little cold air in the day does it no harm, provided it is dry—quite the contrary; and so he took his time

about it—for ready JOB had always plenty of time. Mr. SPRIGGINS, on the contrary, never had time to spare; and he still forced hard, and shut his trees up close, and on no account allowed them to be chilled: and thus far he beat JOB hollow. JOB knew that trees out of doors, when the setting is over, are a long time about getting ready for stoning: he had seen that their fruit stalks grow stiff and stout, and the wood that feeds them and joins them to the branch gets pretty firm, and he had watched with his own eyes how by slow degrees the tiny threads that bind the stone to the pulp grew larger, and branch day by day till all is safe; and so he never hurried his trees. But the great Mr. SPRIGGINS said that setting was setting, that he had got all right as soon as that was done; and on he went with his fires, and his close house, and his warm nights. JOB had heard that the slow movements of Nature were in part to give time for the earth to warm, and the roots to draw well by the time that the swelling fruit wanted plenty of sap. Mr. SPRIGGINS, who had been told this, enquired with a learned air wether the ovarium grew on the branch or on the root? he begged to know what the ovulum wanted more than to receive the influence of the pollen tubes? and he expressed his total disbelief in JOB's theory of roots. As for roots "drawing," as it was called, he presumed that allusion was made to "endosmotic action, which was needless for such points as the ovarium. Such fancies might do very well for the last generation, but are beneath OUR contemplation." Nevertheless, as we have seen, JOB's fruit set, and Mr. SPRIGGINS' didn't.

The truth was, that JOB TILTH was a philosopher in the garb of a "practical," while Mr. SPRIGGINS was a practical who shammed the philosopher.

IN another column will be found an announcement that three remarkable plants, now in flower in the Horticultural Society's Garden, deserve the attention of the Fellows and their friends. The following are the particulars of their dimensions:

LÆLIA SUPERBIENS has 9 flower-stems upwards of 6 feet long, with clusters of flowers varying from 8 to 14 on each; the total number of flowers on the 9 stems is 90; the plant measures upwards of 6 feet across.

DENDROBIUM SPECIOSUM has 18 flower-spikes, from 18 to 20 inches in length, and with from 80 to 100 flowers on each; the plant measures nearly 6 feet across, with leaves from 9 to 12 inches long and 3 inches broad.

PHALÆNOPSIS AMABILIS has upwards of 40 of its large white flowers now expanded.

It is superfluous to add that these are plants which have been many years in the Society's possession. The first and last were, in fact, gigantic specimens when imported.

WE must spare a little room for the purpose of drawing attention to the announcement, in another column, that the whole of Mr. LODDIGES' extensive Arboretum will be sold by auction next week. This has long been celebrated as the largest collection of hardy trees and shrubs in any nursery. The sale will extend over a week, and affords a great opportunity for buyers to avail themselves of.

Upon running the eye over the catalogue we find the number of lots in Acer to be 58, of Æsculus 51, of Alnus 42, of Betula 50, of Viburnum 66, of Azalea 218, and so on. We should also add, that this has the reputation of being one of the most correctly named collections in Europe.

VILLA AND SUBURBAN GARDENING.

HOVEA CELSI is perhaps one of the most beautiful plants we possess either for the greenhouse or the conservatory; but its habit of growth has hitherto stood in the way of its general cultivation. The difficulty appears to consist in keeping it near the pot in the form of a low bush. The great proportion of the specimens we see are either tied to a wire-frame, or distorted round stakes. Now, the plant is an erect growing shrub, and not a climbing or trailing one. Shrubs take different forms, and I am of opinion that all the skill that could be brought to bear upon Hovea Celsii, could not produce it in the form of a beehive. Nor is this desirable; cultivators have run into extremes in this particular, and have infringed every rule of nature and good taste, in training all their plants in hemispherical forms. As the Lombardy Poplar, together with the Oak and the Cedar, constitute a combination, in a park, much more effective and pleasing to the eye of taste than the Oak would of itself, so on an exhibition stage, or in a greenhouse or conservatory, the natural forms of plants would be more imposing and gratifying to men of judgment than if they all appeared as if cast in one mould. The hedgehog appearances which characterise what has been misnamed high cultivation, is one of the extremes into which men are likely to fall when emerging from the leggy pot-bound system of the old school. I, however, do not recommend a retrograde system of culture; but I should like to see some respect paid to the natural habit and character which has been distinctly given to all vegetable life. Let art and skill be brought into the field to develope natural forms aright, but not to distort them, and we shall see the unsightly stakes and trellises that are now misapplied, vanish from our greenhouses.

An "Amateur" complains that he cannot grow his Hovea Celsi in the form of a Primula. He will learn from the above, that such a shape for this fine shrub is neither natural nor desirable.

The soil best adapted for Hoveas is three parts fibry peat, one part mellow turfy loam, and a sixth part of the whole silver sand; these should be well mixed together before they are used. This compost will be found to suit the majority of New Holland plants. Hovea Celsi has a strong tendency to run up, and consequently to become naked at the bottom, therefore it should be carefully watched when the plant is very young, and the shoots pinched back frequently, or, in fact, at every second joint. It is difficult to get it to make more than one shoot at a time, owing to its tendency to break only at the leading eye; but perseverance will, in some measure, overcome this evil, if the plant is making vigorous root. It should be trained in the form of an irregular cone, and no more than one prop should be used.

This Hovea does not require very liberal potting, and the operation should be performed when the flowers die off, for at that period its growth commences. Any directions respecting the application of water can scarcely be given; but there is one important point to be attended to, and that is, to keep it rather dry during winter; when the flowers begin to expand in spring, be more liberal in the supply. The roots are apt to rot if kept wet in winter, consequently, it is one of those plants which must have at least an inch of drainage in the bottom of the pot.

In my next, I shall discuss the subject of potting more at length. *Pharo.*

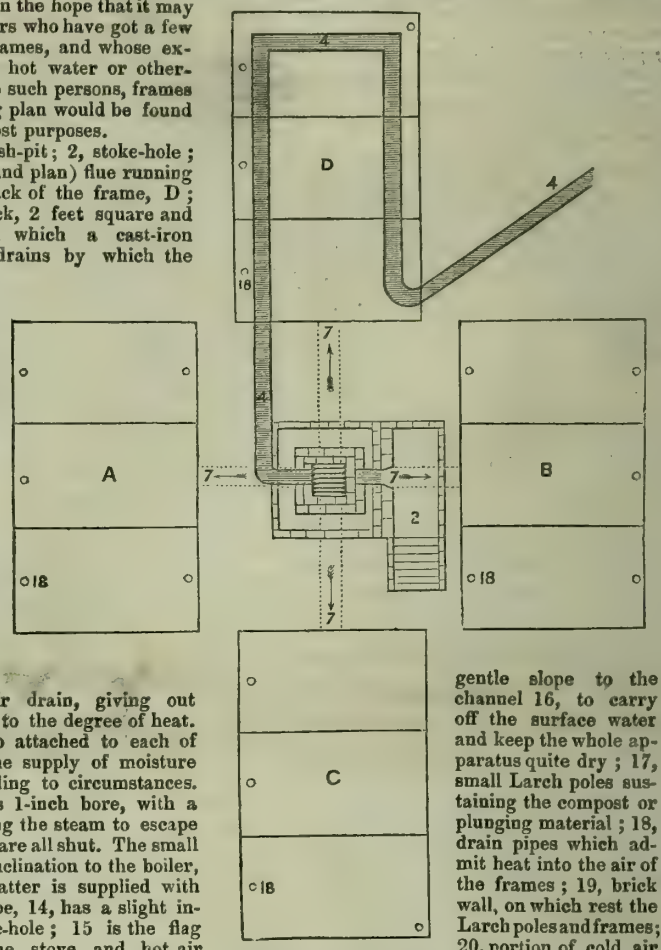
PLAN OF HEATING FRAMES AT CASTLE MALGWYN.

I BEG to send you the accompanying plan, by which top and bottom heat are obtained for four frames with one stove, in the hope that it may prove useful to amateurs who have got a few Cucumber or Melon frames, and whose extent of pits heated by hot water or otherwise is but limited. To such persons, frames heated on the following plan would be found very convenient for most purposes.

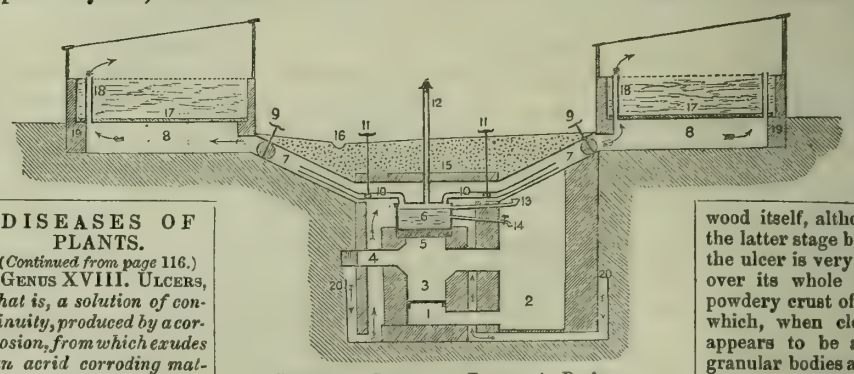
In section, 1 is the ash-pit; 2, stoke-hole; 3, furnace; 4, (in ground plan) flue running along the front and back of the frame, D; 5, (in section) fire brick, 2 feet square and 2½ inches thick, on which a cast-iron boiler (6) rests; 7, drains by which the hot air passes through from the stove into the chambers (8); three of these drains are formed with brick, the fourth, or one over the stoke-hole, is of cast iron; each drain is supplied with a damper, 9, to regulate or exclude the heated air.

The boiler has a moveable cover, to which are attached four cast-iron pipes (10), of 2 inches bore; one of these pipes is placed within each, and rests on the bottom of the hot-air drain, giving out moisture in proportion to the degree of heat. A damper (11) is also attached to each of these pipes, so that the supply of moisture can be adjusted according to circumstances. The waste pipe (12) is 1-inch bore, with a moveable cope, allowing the steam to escape when the dampers (11) are all shut. The small pipe, 13, has a slight inclination to the boiler, and through it the latter is supplied with water. The waste pipe, 14, has a slight inclination to the stoke-hole; 15 is the flag stone covering in the stove and hot-air chamber.

The space above the flag stone is levelled up with dry sand, and concreted over with a gentle slope to the channel 16, to carry off the surface water and keep the whole apparatus quite dry; 17, small Larch poles sustaining the compost or plunging material; 18, drain pipes which admit heat into the air of the frames; 19, brick wall, on which rest the Larch poles and frames; 20, portion of cold air drains, of which there are four, one from each frame. *W. Hutchison.*



GROUND PLAN OF STOVE, SHOWING THE POSITION OF FRAMES, A, B, C, D.



SECTION OF STOVE AND FRAMES A, B, &c.

DISEASES OF PLANTS.

(*Continued from page* 116.)

GENUS XVIII. ULCERS, *that is, a solution of continuity, produced by a corrosion, from which exudes an acrid corroding matter.* — This disease is in most instances the consequence of others, and it would be difficult, if not impossible, to show that it has not been produced either by checked perspiration, by laceration, amputation, or some other wound. As, however, it declares itself in trees growing with great vigour, and showing no distinct indications of any previous injury; and as it is also observed in poor localities on trees otherwise well conditioned, I have inserted it in the present class. I have been unwilling to increase the divisions of my Nosology, otherwise I might have established a distinct class of diseases the results of other diseases, amongst which ulcers would have had a place.

First species. INTERNAL ULCERS.—The internal ulcer invades at the same time not only the layers of bark but also the woody tissue. It is common in several plants, especially in those which are pruned immoderately. The Orange tree, which it is the custom to cut down to a symmetrical shape, is very subject to it. It shows itself generally by a whitish blotch on the stem, which soon turns black, and when the bark becomes disorganised, exudes the corroding humour. Fruit trees, especially Walnut trees, allowed to be ruined by injudicious amputations, or by the manner in which the fruit is gathered, without any care in pruning afterwards, are far more liable to ulcers than any other.

In the Apple tree the disease has been examined with great care. It generally shows itself at the origin of the roots, in the form of a rather large round black spot. The bark then begins to rot, and there runs out from it a humour, which rapidly taints, first the exterior then the interior layers, and finally corrodes the wood itself, although it reaches the latter stage but slowly. When the ulcer is very old, there forms over its whole surface a thin, powdery crust of a sooty colour, which, when closely examined, appears to be a mass of little granular bodies adhering to each other, and which many may, at first sight, take for some Byssoid fungus, but which are in fact, nothing but rotten and putrescent matter. In rich places not much exposed to the sun, fruit trees, growing in irrigated meadows, often show these ulcers, which are sometimes universal. They are seen also to occupy the centre of the stem, rather than the circumference. In Willows and Poplars, for instance, where we may find the bark entire and the inside quite rotting away, with a scarcely perceptible exudation. Any apertures by which wet or insects can penetrate into the interior of plants, by causing the disorganisation of the vegetable machine, produce ulcers.

Second species. EXTERNAL ULCERS. — I have doubts whether the external ulcer, attacking only the outer layers of the bark, be not the first stage of the internal one, but as it often arrests its progress without proceeding further, I have enumerated it as a distinct species. It abounds in gummy and resinous trees. It

is easily cured by cutting out the infected part in the manner I shall describe under the fourth class.

Third species. Saccharine Ulcers. — The exuding liquor, rotting and blackening the bark, and collecting on the surface, attracts wasps and flies, and has always a sweet taste, on which account I have called such ulcers *saccharine*. In ordinary ulcers the liquor is insipid, and of a blackish colour ; in the present case it is reddish, or scarcely coloured at all. The corrosion of the solid parts is so small in this case, that I might almost class it among hæmorrhages.

All writers on rural economy who have treated of diseases of plants, have entered into discussions on ulcers, which they appear to me to have sometimes confounded with gangrene. Others have described both diseases under different names, without giving any indications of how they are to be distinguished. One of the best treatises is a most useful one of Boucher on the Ulcers of the Elm, in the Memoirs of the Imperial Society of Agriculture of Paris. Vauquelin, one of the greatest luminaries of chemical science, has analysed the exuding humour. I shall add a few facts which I have frequently verified from my own observation, and which may throw some additional light on the subject.

Ulcers almost always show themselves on the south side of the plant, or towards the east or west, but very rarely on the north side. I have seen them most frequently towards the south-east; the exceptions may be due to the peculiarities of certain localities where the worst winds for vegetation may blow from the south. It is certain that trees growing in moist or swampy situations, or in the vicinity of torrents, are the most subject to ulcers. I should add those also which shed their leaves annually, and especially those which are stripped of their foliage twice in the year, or of which the fruit is gathered by beating. Trees are also more liable to ulcers in proportion as their texture is more porous and less compact, and their juices of a thicker consistence. The above-mentioned Boucher has observed that ulcers rarely show themselves above 6 feet from the ground, and are always not far from the soil. My observations confirm this ; only I have found some exceptions in trees of the first size, such as Oaks, or even Mulberries when trained very high.

As we have seen that trees which are the most stripped or pruned are the most liable to ulcers, it follows that the abuse of these operations must be avoided to prevent them. For their cure there are two methods. The first is the cutting them out, as I have already mentioned ; the other consists in that operation which the Romans called *terebratio*, and to which I would rather give the name of *boring*. With an auger of about two lines diameter, let a hole be bored in the trunk from two to three fingers deep, or even more, according to the size of the tree ; the hole being oblique, so as that the opening looks downwards. A tube of Elder wood, rather than of tin, is then inserted in the hole, and the sap will issue through this tube, gradually discharging the plant of its superfluous humours. This practice was well known to the Romans, for it is clearly spoken of by Pliny, lib. xvii. cap. xxvii., and by Columella, lib. v. cap. vi. in regard to the Elm ; and Palladius asserts, lib. xi. tit. xii., that if ever the Cherry tree becomes gangrened by a superabundance of sap, it must be bored, in order to give the juices an issue.

Authors, speaking of ulcers, generally confine themselves to those of the trunks of trees ; but roots have theirs also, especially those which are large and much branched running along near the surface of the soil. I believe that they are generally due to some laceration, and must be treated like those of the stem. Even in herbaceous plants ulcers are frequent on their roots. Insects gnawing them, instruments cutting them, the cultivator himself wounding them whilst destroying noxious weeds from amongst them, produce disorganisation, ulcers with a stagnation of humours and secretions, and a gradual disturbance of the vegetable functions, which, becoming general, ends in death. The ulcers of herbaceous plants are most fatal, from the rapidity with which they devour, as it were, the whole plant ; and it is very difficult to arrest their progress, unless they are cut out at the very beginning.

LETTUCES.

The varieties of these may be arranged in two classes :

A. Round-headed, spreading, or Cabbage Lettuces.

B. Upright, oblong, or Cos Lettuces.

Those sorts to which numbers are prefixed are considered the best.

Class A. Cabbage Lettuces ; *Laitues Pommées* of the French.

§ 1. Winter and Spring Cabbage Lettuces.

1. *Hammersmith Hardy Green*, aliàs Hardy Hammersmith, Hardy Green, Green Dutch, Green Cabbage, Early Frame, Early Dwarf Dutch, Prussian Cabbage, Roman Cabbage, Lattughe Verde. Of middling size for a winter Lettuce. Leaves dark green, much wrinkled and concave ; the hardiest in cultivation. Seeds white.

2. *Tennis Ball*, aliàs Green Ball or Button, Capucine. Heads small, firm, white and crisp. Hardy, and does not run to seed so soon as the preceding. Seeds black. These two sorts should be sown about the middle of August, and another sowing should be made a month later.

3. *White Dutch*, aliàs Early Cabbage, Early Green for forcing, Early Yellow, Prince, Laitue à bord rouge, ou cordon rouge. Somewhat larger than the preceding. Leaves yellowish green, sometimes tinged with reddish brown on the top. Hearts freely, and is of good quality. Seeds white.

4. *Brown Dutch.* Heads large, brown, cabbaging freely, hardy, and of excellent quality. It is not quite so hardy as some of those above described, but it is considered the hardiest of its size, and hence desirable for cultivation.

Common White Cabbage Lettuce, alias White Cabbage, Royal Cabbage, Hardy Honey, is not to be preferred to those already recommended.

Black-seeded Gotte, alias Laitue Gotte ou Gau, Gotte à graine noire ; and the *White-seeded Gotte*, Gotte à graine blanche, resemble the Tennis Ball, from which they differ in their leaves being more curled and of a lighter green colour ; a variety called *Gotte lente à monter* does not run so quickly to seed as the other Gotte Lettuces. *Laitue Passion, ou de la Passion, Grosse Crêpe, Petite Crêpe, Dauphine, Morine, Coquille à graine blanche, Coquille à graine noire, Laitue George*, are small varieties of winter Cabbage Lettuces, differing but slightly, and scarcely worth distinguishing. We observed the Laitue George was one of the sorts employed for early forcing in the kitchen garden of the palace of Versailles.

§ 2. Summer Cabbage Lettuces.

5. *Neapolitan Cabbage Lettuce.* This is, unquestionably, the best of all the summer Cabbage Lettuces ; it is large, firm, white, crisp, and of excellent quality ; it Cabbages early, yet it is longer in running to seed than any other. The seeds are white.

4. *Versailles*, aliàs Laitue de Versailles, L. de Versailles blonde. Leaves paler green than those of the preceding ; Cabbages white and crisp ; of excellent quality.

5. *Large White Cabbage Lettuce*, aliàs Swedish or Sugar, Saxony, Late White Cabbage, Princesse, Fine Large Mogul, Royale à graine blanche, Blonde Paresseuse, Blonde d'Eté ou Jaune d'Eté. Leaves smooth, head large, compact, rather flat ; not so early as the two preceding, but a good summer Lettuce, not running quickly to seed in hot weather. Seeds white.

Black-seeded Yellow, aliàs Blonde à graine noire, Royale à graine noire, Blonde de Berlin. Closely allied to the preceding, differing chiefly in the colour of the seeds.

White Silesian, aliàs Drumhead, Imperial, Spanish, Large Green Head or Cabbage, Batavia blonde ou Silésie. This is one of the largest ; leaves undulated on their margins, pale green, slightly tinged with reddish brown on the outside ; apt to acquire a bitterness in dry weather. Seeds white.

6. *Malta*, or Laitue de Malte, a superior variety of the preceding ; leaves pale green, smooth ; head flat, compact, blanching white and tender. Seeds white.

Imperial, aliàs Union, Impériale ou Grosse Allemande, and which differs only from the Laitue Turque or *Turque à graine noire* in having white, instead of black seeds ; is a good Lettuce, of large size, but not equal in quality to the Neapolitan, Versailles, and Malta.

Mogul, aliàs Superfine New French, Laitue de Hollande, Grosse brune paresseuse, Grosse grise ; the *Méterelle*, aliàs Nonpareil ; *Blonde Trapue ; La Cocasse à graine noire*, and *à graine blanche ; Palatine*, aliàs rousse, ou Petite brune ; *Sanguine ou Flagellée à graine blanche*, and *à graine noire* are names of Summer Cabbage Lettuces possessing less merit than the sorts above indicated.

Class B.—Cos Lettuces.

7. *White Paris Cos*, or Romaine blonde Maraichère. This is the very best Cos Lettuce ; very large, light green, leaves hooded at the top so that they close in without tying, blanching white, crisp, so excellent that one would suppose no higher degree of perfection could be attained as regards a summer Lettuce. Seeds white.

8. *Green Paris Cos*, aliàs Romaine verte Maraichère, Chicon, ou Romaine verte Maraichère, Kensington Cos, Sutton's Superb Green Cos, Ady's Fine Large Cos. This very much resembles the preceding ; but is of a darker green, and hardier, therefore is preferable for sowing early in spring, and also for autumn use ; in warm, sheltered situations, it will stand the winter, if the latter prove mild. For the generality of winters, however, a hardier Cos is required ; such is the following, the

9. *Brown Cos*, aliàs Bath Cos, Brown Bath Cos, White-seeded Brown Cos, Sutton's Berkshire Brown Cos, Wood's Improved Bath Cos. This is the best Cos for standing the winter ; it is large and of good quality, blanching very crisp, therefore its brown outside should not be considered objectionable.

10. *Artichoke-leaved Lettuce*, or Romaine à feuilles d'Artichaut ; leaves long, erect, much cut, somewhat resembling those of an Artichoke, the plant forming a large tuft, the central portions naturally blanching tolerably well ; but when the process is assisted by tying, it becomes exceedingly tender and excellent, retaining its qualities even after the first frosts have deteriorated other kinds. It is a new sort, which should be sown in June and July. The seeds are black.

The above are considered the best kinds of Cos Lettuces ; others in this class are the *Early Green Cos*, aliàs Egyptian Cos, Brighton Cos, Brighton Green Cos ; *Alphange Cos*, aliàs Alphange blonde à graine noire, and Alphange à graine blanche ; *Golden Cos*, aliàs Florence Cos ; *Romaine blonde de Brunoy*. There are also several varieties spotted or streaked more or less with red, amongst which may be enumerated the *Spotted Cos*, aliàs Aleppo, Bloody, Sanguine, ou panachée, Romaine panachée a graine blanche, *Romaine rouge dorée*. *R. T.*

Home Correspondence.

Boronias.—Most of the species of Boronia require great attention to grow them well ; and in consequence of this, except at the London exhibitions, they are rarely seen in a condition that would entitle them to the name of a perfect specimen. Taking the different species in alphabetical order, we have first the old Boronia alata, whose pinnated dark glossy green foliage emits a peculiar odour. Its growth is dwarf and bushy, and it forms naturally a compact plant, the dark foliage contrasting beautifully with the pale rose-coloured flowers. B. anemonefolia has the same pinnated foliage, of a dark purplish green. The flowers are pink, outside rusty in appearance, and rather small, compared with those of B. pinnata and serrulata. But it is nevertheless a pretty and conspicuous plant. It is a strong grower, but will, by frequent and judicious stopping, easily assume a bushy character and form a fine specimen. B. crenulata is a species of erect growth, whose weak and slender branches gain an unsightly length before they produce flowers ; this renders the plant unfit for specimen culture, for even by frequent stopping no favourable results can be obtained. B. denticulata, like the foregoing, cannot claim a place in a choice collection. It is of herbaceous character, likes a loamy soil, and differs in many respects from all other Boronias, except B. polygalæfolia and viminea, which are its natural allies, as regards character and treatment. B. ledifolia is still a rare plant, owing chiefly to its extreme tenderness, for it often dies suddenly, and without any apparent cause, even under the most careful treatment ; it is, however, just the kind of plant to attract the attention of such gardeners as wish to excel in growing choice specimens, not for their individual beauty, but in order to produce a proof of their skill in plant growing. B. pinnata is one of the finest plants of its kind. Its pale rose flowers are larger than those of any other Boronia, and it has a handsome foliage ; its young shoots are, however, very liable to damp off, and mildew frequently attacks and destroy the whole plant. It also soon drops its leaves if exposed to a dry heated atmosphere, and it is no small task to steer clear of these two extremes, in order to bring a full grown specimen safely through the dull and dreary months of an English winter. B. polygalæfolia, if I am not mistaken, is identical with B. spathulata ; at all events it is very much like it, and is a plant of no great beauty. It requires the same treatment as B. denticulata. B. serrulata, like B. pinnata, on account of its beauty, deserves all the attention that can be given it. In cultivating it the chief difficulty is to preserve the healthy green colour of the foliage, which is extremely liable to turn brown. This is occasioned by exposure to intense sunlight, by drought, by sudden atmospherical changes from hot to cold, or from dry to wet, by overwatering or extremes of dryness—in fact every too sudden change or check will act with surprising rapidity on its colour. These must, therefore, be avoided. After flowering, all long and straggling shoots should be cut back, and the plant allowed to rest, by gradually withdrawing water and keeping it cool. In spring a moist and warm atmosphere will greatly accelerate a free breaking of the side shoots, and a frequent but gentle syringing now and then will be of great benefit. As the new growths ripen, of course all these stimulants should be gradually withdrawn. B. tetrandra or microphylla is a new plant, said to have been obtained by crossing B. anemonefolia with pinnata, and indeed its general appearance verifies this assertion, for it is exactly intermediate between the two. I have as yet only seen it in a small state, but no doubt it will prove an acquisition, if it combines the more robust habit of B. anemonefolia with the graceful foliage and superior beauty of the flowers of B. pinnata. B. trifoliata or triphylla, like B. ledifolia, is one of the most capricious and whimsical of plants, yielding only to the most skilful and persevering cultivator. Its leaves are very liable to curl, even on vigorous plants, giving them a sickly appearance. This is a serious drawback to its beauty, but the bright deep colour of the flowers renders it a very interesting plant. B. trifoliata often suffers from the attacks of mildew ; it must be kept in winter as near the glass as possible, and very sparingly watered. It will require frequent stopping to keep it bushy; it likes a light fibrous peat, mixed with a liberal quantity of silver-sand. Lastly, B. viminea is a neat plant, though not strikingly beautiful, but it well deserves the little attention it requires. The minute foliage emits a Fennel-like odour, and its pale rose-coloured flowers are produced in great profusion nearly all the year round. It is more easily grown than most of the other Boronias. *E. Ortgies, Chatsworth.*

Origin of Hamburgh Grapes.—It is stated in your last *Chronicle* that the Black Hamburgh Grape may have taken its name from the Alhambra. I think the question easier of solution by supposing it derived its name from the port from which the Grapes might have been originally shipped. I ground my conclusion from an observation I made many years ago when I landed at Barcelona. I expected to see the neighbouring country covered with Barcelona Nuts ; it was quite the contrary. In my rambles in the vicinity, I never saw a Nut bush, and I found on inquiry, that they were called Barcelona Nuts from the port they were embarked from. *T. G. C.* [Surely our correspondent cannot have read the statements lately printed in our columns.]

Worthlessness of Spanish Chestnut, as Timber.—"U. L.'s" condemnation appears so sweeping a one, upon the experience of a couple of trees only, that my woodman suggests that these Chestnuts may have been

shaken in their growth, as Oaks frequently are, by the wind, or other causes, and so rendered of little value. The roofs of Westminster Abbey, the Parliament House in Edinburgh, and many other ancient works, are said [This statement has been shown over and over again not to contain a word of truth; it is one of the most vulgar of errors] to be constructed of it, and the character of the timber to have been too well established during so many ages to be now shaken by its present assailant. Professor Martyn, however, and Daines Barrington, according to Loudon, state, that what is by many taken for Chestnut is only Oak of a different grain. [Certainly.] *T. H., Feb.* 25.——I have read "U. L.'s" remarks, p. 102, and have to state that my experience of the wood of the Spanish Chestnut is quite contrary to his. I have it in buildings 17 years old quite as good and sound as when it was placed there. Many years ago I made a collection of transverse specimens of woods. That of the Spanish Chestnut is $1\frac{1}{2}$ inch thick and 11 inches in diameter, including the white wood and the bark. The white wood is an inch wide, and has been a little worm-eaten, but the rest of the wood is quite firm and sound, as is the bark. The white wood in my specimen of Oak has suffered more from worms than my specimen of Spanish Chestnut. I have lately made farming gates, with their posts of Spanish Chestnut, and about a year ago put up several planks for Vines to climb, and which are as much exposed to the weather as they can be. The Spanish Chestnut has very much less of white wood than an Oak of the same diameter. I would not recommend that they should be planted on damp soil, as my experience is against it; the young trees having died when thus treated. My Spanish Chestnut trees grow on a deep sandy soil, and are very much superior to Oak trees planted at the same time, viz., 1810, and in the same plantation. In Hunter's notes on Evelyn's "Sylva," it is stated that "This beautiful tree deserves to be ranked with timber trees of the first class, whether we consider its ornamental appearance when growing, or its uses when felled." "It is superior to the Oak for the making tubs to hold liquor, because when seasoned it will not shrink or swell. For smaller purposes it has its superior advantages. Poles of this tree for Hops or Vines will last longer than any other; and stakes of the underwood will last nearly twice as long as those of any other sort." I suppose "U. L.'s" failure must have arisen from the peculiar nature of the soil in which his trees grew. From what I know of this tree, if I could pass my life over again, I would make large plantations of the beautiful and useful Spanish Chestnut. *C. A. A. Lloyd Oswestry.*

The Circulation of the Sap.—The circulation of the sap in plants is intimately connected with vegetable development. It is not a mere botanist's question, but concerns the gardener in a more eminent degree. The existence of an upward current of sap, is established. The question is, do the elaborated materials out of which the plant is to build up every part of its structure form a descending current. I would not attempt to decide this; but my own opinion is, that it does not. The apparent descent is the mechanical action of a dense fluid-gravitation. There are so many examples, furnishing apparent proof on both sides of the question, that in the present state of botanical knowledge, I think it would be difficult to decide. Two plants of Melia Azedarach were growing in one pot. It was thought advisable to cut down one to the surface of the soil. As it was in the spring, a protuberance was in a few days perceptible immediately between the bark and alburnum. This gradually increased, as if to cover the wound with new wood. But in the course of the summer a bud was organised, which produced, not a shoot, but a raceme of flowers, without a leaf. A Horse-Chestnut tree of a foot in diameter was cut down in the winter, leaving a small portion of the old trunk above the collar, but no branch or leaf. In the following summer new wood was produced, rising in a protuberance from between the bark and the alburnum, and with which it held no connection, at the surface of the soil, both being dead for more than an inch from the surface. As I am interested in such inquiries, I detached a portion of the tree and preserved a drawing of it. From the new wood sprang several shoots, perfect in every part, and the pith disappeared at the junction with the wood from which it sprang. This was very confused in its organisation, being exactly similar to that produced where a branch is removed or a trunk injured. Now in these two instances there could be no descent of the sap, neither could the shoots or flowers spring from pre-organised buds. If there is a descent of the proper sap from the leaves of a plant to its roots, why does not the trunk of a grafted tree, below the point at which the union takes place, assume the character of the part producing leaves, and in which the elaboration of fluid is said to take place? *George Lovell.* [This question has been repeatedly answered.]

Peas.—I beg to inform you that I have had great experience with various new sorts, and that I consider the best three to be, Warner's Early Emperor, Fairbeard's Champion, and Ward's Incomparable. I suppose you will not think it strange that the last of the three is an old Pea with a new name. I have grown it for 10 years, and obtained it at Cambridge in 1840 with the name "Green's Superb Tall Marrow." I am quite confident it is the same Pea, and it has peculiarly good qualities as a late variety. *Clericus Rusticus.*

Strawberries succeed Planted on Onion-beds, and by this system a season in their growth is saved, an important point where land is scarce or high-rented. My plan is as follows: when I have sown my Onions (broadcast in March), and the beds are raked and finished, I take a line and dibble and plant the Strawberries in the usual way, regardless of the Onions, leaving 2 feet between the rows, and 18 inches between the plants in the row. Both grow very nicely together, but care must be taken to keep the beds free from weeds and Strawberry runners. When the Onions are ripe and removed, the beds are cleaned and some good rotten manure forked in; the plants, by this time, will have become well established, and in a fit state to produce a full crop the following season. If they bloom the first year, the flowers should be nipped off with the finger and thumb, in order to make the plants healthy and strong. *An Economist.*

Rain which fell at Cobham Lodge, Cobham, Surrey, in 1849, as measured by Howard's rain guage:

January	1.44	August	0.69
February	1.47	September	2.42
March	0.88	October	4.70
April	3.15	November	1.00
May	2.78	December	1.87
June	0.42		
July	3.66		24.48

Ditto at Swaffham Balbeck, Cambridgeshire:

January	1.377	August	2.782
February	2.419	September	2.856
March	0.811	October	2.365
April	1.658	November	1.135
May	2.993	December	2.650
June	0.577		
July	2.039		23,657

Ditto at Broadhembury, Devon;

January	3.09	August	1.47
February	1.55	September	3.02
March	1.49	October	2.27
April	3.20	November	2.79
May	4.05	December	4.86
June	0.68		
July	2.74		31.21

Henry H. Treby.

To make Skeleton Nests for Canaries to Build on.—Get a piece of wood turned so as to fit exactly the inside of a nest, then procure a piece of soft cow hide. The in-sole leather or belly part is the best, and cut it to the size required; put it into warm water to soften, and after that place it on the block, pulling it up and stretching it well, then tack it to the block all round, and rub the creases in with a round piece of wood or bone. When the creases are all well smoothed down, leave it near the fire to dry. After it is dry, cut it round to the depth of 2 inches, put a hoop of No. 12 wire round its mouth, and bind it round with a hazel binding. You may ruff the inside and line it if you please. When finished this nest has the appearance of half a nut shell, and canaries find much more pleasure in making their own nests when supplied with proper materials to build with, in the above shell nests, or nest shells, than they experience under any other method of treatment. *John Pell, Athlone.*

The Ageratum cœlestinum is, I fear, a much neglected plant, except, perhaps, for bedding out purposes. I have this season proved it to be a valuable winter-flowering conservatory plant, its beautiful blue flowers forming a pretty contrast with those of Salvia splendens, scarlet Pelargoniums, &c. Being deficient in winter-blooming plants last autumn, and being anxious to make up for the loss as far as possible, I took up many plants from the borders, and amongst them A. cœlestinum, and potted them in good-sized pots. I then placed them in a shady situation for few days, and afterwards put them into a cool house, removing them to the conservatory as they came into bloom. Previous to taking them up from the borders, I cut off all the old and crooked branches, leaving only those which appeared healthy and likely to produce a continuous bloom. They are now in full flower, and have been so for nearly three months past. *H.*

The Scarlet Runner.—In November of the year 1830, when I was at Lord Canterbury's, I saved a number of roots of Scarlet Runner, and stored them in moderately damp mould away from frost. These same roots were planted out in single rows, 1 foot asunder, some time in March or early in April, the crowns being placed half an inch below the surface. Beans (Scarlet Runners), were sown in rows at the same time. The transplanted roots came into bearing just one month before the sown seed. This afforded me a lesson which I did not forget; I have had several roots three years old, but one in particular I grew for seven years, and this one I exhibited at the May show at Chiswick in 1834. Many were surprised to see a Scarlet Runner 10 feet high full of flowers and Beans, the produce of a plant forced in a Vinery. From this little experiment I would infer that if cottagers saved their roots in autumn, and put them carefully by, they would have this valuable vegetable a month earlier on their tables than they now do. Another way of saving the roots is to leave them in the ground all winter; but this plan is not to be recommended, the plants will have exhausted the ground very much during the summer, therefore they should be replanted in fresh ground. I should mention here that if fine roots are wished for in autumn, care should be taken not to allow many seed pods to ripen, as the ripening process robs the roots of much of the returning and elaborated sap. I find another point worth recording with respect to dwarf French Beans. A few pans not wanted for potting were by chance placed out in a corner; this was in the beginning of April; they had been nearly killed by frost and red spider, &c.; ground was prepared for them on a south border, the plants before planting were dipped in strong brimstone water, in case any spider should be alive on them; two rows were planted, and two rows were sown with the early Dun Beans, the transplanted ones looked badly for a fortnight or so, but almost as soon as they began to grow they showed blossom, and came into bearing three weeks before those from seed. This was in a warm garden on the banks of the Thames belonging to the under secretary of war. *James Cuthill, Florist, Camberwell.* [Care must be taken that these roots are not eaten. They are poisonous.]

Begonias.—B. manicata, like other Begonias, is a very desirable plant, on account of its flowering in winter. I have several specimens of it now beautifully in flower, one more especially is a complete garland, bearing upwards of 100 spikes; this plant is about three years old. The merits, too, of Begonia fuchsioides cannot be too often pointed out; for it is nearly always in flower. I have plants of it here in beautiful bloom, and they have been in the same condition ever since last summer; two of them stand above 6 feet high. B. nitida and B. insignis are very desirable plants on this account, and ought to be in every collection. *C. Hewson, Newton-house.*

The Forcing of the common Laburnum, for the decoration of the conservatory during winter, is not so much practised as it should be. It is a most desirable plant for this purpose. I have three plants of it in beautiful bloom, one of them bearing about 150 racemes of flowers. The plants are young, and about 4 feet in height, dwarf standards. *C. Hewson, Newton-house.*

Vipers.—The fact of vipers casting their skins in an inverted state, may be satisfactorily proved by the inspection of one which has recently come into my possession, obtained from the Zoological Gardens in London. It was shed by a Cobra capello, and is 47 inches in length, and 6 inches in circumference in the largest part. The markings on it present a most beautiful appearance, and it does not present a fracture of any description. The delicate scale that covered the eyes, appearing concave on the outside, will decide the manner in which the reptile discharged his cast garment from his body. *E. M. B., Brighton, January* 31.

Johnson's Gardeners' Almanack.—It is curious to observe the various errors which creep into books, written by those who profess to be masters of the subjects on which they address the public. Thus Johnson, in his "Gardeners' Almanack" for the present year, gravely states, at page 22, that by planting Cabbages 3 feet apart, there will be 7400 required to plant an acre. Now as Cabbages standing 3 feet apart, will occupy each 9 square feet, or 1 yard; it follows, there being 4840 such yards in an acre, that the writer's imagination has added 2560 Cabbages to the quantity an acre will really contain! *A. B.*

Mistletoe on the Oak.—Some time ago there was a good deal said on this subject. A few years since fine bunches of it grew on an Oak in Saint Dials' farm, in the parish of Monmouth. This Oak was of the pedunculata or Robur kind; and although its branches were intertwined with those of other Oaks of the same sort, the Mistletoe confined itself to the different parts of the same tree, and would not travel beyond it. As the mosses which grow on the pedunculata Oak are very different from those which live on the sessiliflora in this district, I think it right to name the kind of tree which carried the Mistletoe. This was the only instance in which I ever noticed this parasite on the Oak. *U. L.*

Societies.

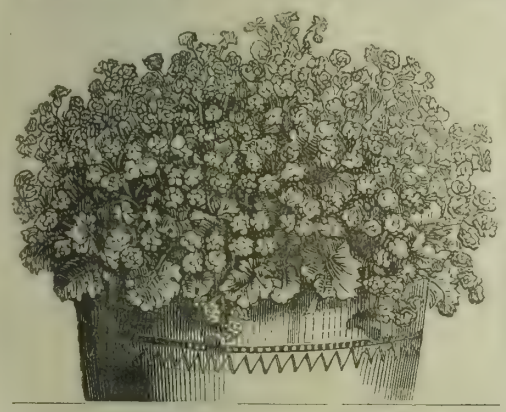
BOTANICAL OF EDINBURGH, *Jan.* 14.—Professor Fleming in the Chair. Specimens were exhibited from Lieutenant Robert Maclagan of Sorinjan tulk and Sorinjan sheeren, being the corms of Indian species of Colchicum, which are used as cures in rheumatism; also, a peculiar root, known in India by the name of Kaleekootkee, and used by the Hakeems in nervous diseases. Mr. M'Nab exhibited the flowering rachis, with terminal bracts of the red-fruited variety of Musa sapientum, or Banana. The fruiting plant was 14 feet 6 inches in height above the tub, exclusive of its leaves, which were 10 feet long and 2 feet 6 inches broad; the stem was 35 inches in circumference at its base. The weight of the head of fruit, when in its perfect state, was estimated at from 75 lbs. to 80 lbs. The plant is one of the largest in cultivation, and also one of the most prolific, the fruit ripening successively over a period of two months. The following papers were read:—1. Notice of some of the rare plants observed in Orkney during the summer of 1849. By J. T. Syme, Esq. 2. On the Embryogeny of Hippuris vulgaria. By J. S. Sanderson, Esq. 3. Account of an excursion from Simla to the Burenda Pass, and other parts of the Himalaya in July and August, 1847. By Lieutenant R. Maclagan, Bengal Engineers.

Garden Memoranda.

MESSRS. HENDERSON'S NURSERY, PINE-APPLE PLACE.—The show-house here is gay with Hyacinths, Narcissus, Tulips, Crocuses, Single-fringed Chinese Primroses of the white and pink kinds, Cyclamens, Cinerarias in great variety and perfection, Indian Azaleas, Camellias, Spring Heaths, as regerminans, gracilis, Willmorei, &c.; Kalmia glauca, Rhodora canadensis, the yellow-flowered Linum trigynum, Fairy Roses, Persian Lilacs, Acacias, such as armata and juniperina, and various plants, which, by a little forcing, prove ornamental at this season of the year. In the stove were one or two varieties of Hippeastrum aulicum, the last of a fine display of this showy Amaryllid, than which few things are more handsome during winter, and by a

little management it may be had in flower for several months in succession. The dark variety of Barbacenia squamata was in bloom here, in company with the pretty white-flowered Oldenlandia Deppeana, which keeps in blossom the whole winter through, and Bilbergia zebrina, whose beauty consists in the large pink floral leaves rather than in the little greenish-yellow flowers, was just going out of bloom. It generally flowers here twice a year—in spring and in autumn. In the Heathery we noticed a good plant of the rose-coloured Indian Daphne (D. indica rubra), whose fragrance perfumed the whole house. This is one of those plants which everybody might cultivate who possesses a cool greenhouse, for it is as easily managed as a Camellia, and its sweet scent will be sure to render it an universal favourite. Some small plants of it, apparently newly grafted, forming, as it were, little bouquets of pink flowers backed up by some half dozen bright green leaves, were very attractive.

In the specimen house there were some admirable examples of the different varieties of double Chinese Primrose, viz, the purple, white, and fringed white—the latter having an agreeable tinge of blush in it. Than these we have seldom seen better or more graceful specimens of this fine winter flower. One of the double red measured upwards of two feet across, and, although insufficiently in bloom, it had 130 fully expanded blossoms on it, of large size and fine colour. The latter is obtained by keeping the plants in a cool well aired house. It was in a 14-inch pot by 9 inches deep, and had been grown in about equal parts of fibry loam and flaky leaf-mould, mixed with a little sand. Our wood-



cut will give some idea of the appearance of a well grown specimen of one of the white-flowered kinds; the red sort is more diffuse and graceful in habit. The way in which these plants are cultivated here is to strike them from cuttings in spring, keep them growing slowly till August, when they are liberally shifted and more generously treated, and they blossom about Christmas. After they have done flowering they are placed near the glass, and kept rather dry and cool, so as to give them a season of rest, till the beginning of August, when they are repotted, their branches spread out, and pegged down; and under this kind of management they blossom in the second year, in the manner above described, beginning about Christmas, and continuing on in perfection till the following May. The old plants are thrown away after they have bloomed the second year, and their places are supplied by one-year-old plants. The latter are allowed to blossom the first season, but they are not so large and fine as they are the second year. In the same house were Hovea pungens major, a kind remarkable for its beautiful deep purple colour; but difficult to cultivate; a good specimen of Mirbelia grandiflora; Styphelia tubiflora, which has been in flower all the winter; Bossiæa lenticularis; the variety of Correæa called "Brilliant;" and last though not least, Eriostemon intermedium, one of the best of all greenhouse shrubs. Among the Orchids, which were in excellent health, there were in flower Phalænopsis amabilis and grandiflora, Phaius Wallichii, Odontoglossum pulchellum, some Oncids, and Dendrobes.

Reviews.

Paxton's Flower Garden for March. By John Lindley and Joseph Paxton. London: Bradbury and Evans.

The following memorandum published with the first Number of this new periodical explains the authors' views:

"The design of the work now offered to the public is to supply, in Monthly Parts, as full an account of all the new and remarkable plants introduced into cultivation as is necessary to the gardener, and as the price and extent of a periodical will permit. The history of such plants will be sought in the Botanical Works published on the Continent, to which English cultivators have little access, as well as in those of our own country, and in the Gardens or Herbaria from which they are derived. It is expected that by this means the English reader will be able by degrees, by mere reference to the indexes of matter which will accompany each Number, to ascertain the real horticultural value of the numberless so-called novelties with which the lists of dealers are crowded. The infinite number of double names, which botanists call synonymes, but which in common parlance are termed *aliases*, will also, it is hoped, be gradually referred to their true denomination, and the purchaser thus be spared the mortification of finding that after procuring half a dozen different names he is still in possession of but one species, and that perhaps one with which he was previously familiar. To effect this purpose it is proposed to separate each Number into two distinct parts. In the First Part will be found Three Coloured Plates of Plants, which from their beauty or remarkable tints especially demand this expensive style of illustration. Here it is not proposed to introduce any species which can be as well represented without colour; by which means a large part of the expense of Botanical periodicals will be saved for the purpose of being applied to the embellishment of the Second Part. Nor will the public be in any respect a loser by this arrangement, for it is doubtful whether more than three really fine New Plants appear in a month in this country, on an average. The title of the Second Part, 'Gleanings and Original Memoranda,' fully explains its purpose. It will consist of Notices, long or short, according to the importance of the subject, of as many plants published in contemporary publications, or observed by the authors, as can be enumerated in eight or ten pages. Unimportant species will be merely mentioned; those of higher interest will be described at greater length; and of the most remarkable there will be introduced Woodcuts, in which an attempt will be made to combine accurate representations with some pictorial effect. The effect of this arrangement is to introduce into the present number an account of 35 species, of which 11 are figured. Supposing each number to contain a similar amount of species, a yearly volume will include 420 accounts of plants, of which 132 will be illustrated; by far the largest number yet comprehended in any Scientific English Botanical Periodical.

"In the selection of species for full illustration, it is intended to divide the plants as nearly as possible between Stove, Greenhouse, and Hardy Plants; so that each department of the Flower Garden may be equally cared for. The editors, however, anticipate some occasional difficulty in accomplishing this part of their plan, in consequence of the much larger number of novelties annually introduced to the hothouse and greenhouse than to the open borders. In the present Number the species figured are, Stove three, Greenhouse two, and Hardy six. On no occasion will there be more than one coloured Orchid in each Number.

"Since this work is intended for English readers, the English language will be adopted, as far as possible, in all familiar names and descriptions. English names of the plants represented in the coloured plates will be given in preference to technical Latin ones, in the hope that by degrees the ear may be relieved from the necessity of dwelling upon sounds, which, even to the learned, are often harsh and unpleasant. There seems to be no valid reason why the system of talking Greek and Latin, without understanding it, may not be banished from familiar Natural History. At the same time, for the convenience of Foreign Naturalists, and of those who prefer technical to familiar words, the names employed in strict science are also given, and the distinctive characters of the species are added in Latin.

"The Proprietors also wish to state, that in order to spare their Subscribers the necessity of continuing to purchase a book of this nature for an unlimited series of years, and of thus incurring an expense of unknown amount, it is intended absolutely to terminate the present work with the tenth volume. But with the cessation of the present work it is intended that another, with a new title but upon a similar plan, shall immediately succeed it; so that those who may wish to extend their subscription will have the opportunity of doing so, while those who may be desirous of discontinuing their purchase will be in the possession of a complete work. In this way the necessity of breaking up a periodical into what are called series, or new issues—which are merely thin disguises, intended to conceal the purchase of fragments of a work—will be entirely avoided."

Personal considerations prevent our adding any remarks of our own, except that the coloured figures consist of Drummond's Side-saddle Flower (*Sarracennia Drummondi*), the glittering gland-bearing Trumpet-flower (*Adenocalymna nitidum*), and Walker's Cattleya (*Cattleya Walkeriana*), which, together with a pictorial title-page, confirm the opinion entertained of M. Constans' talents. The woodcuts represent *Aristolochia picta*, the fine new Berberries called *loxensis*, *Darwinii*, *tinctoria* and *japonica*, *Grammanthes gentianoides*, *Spiræa decumbens*, and *Calandrinia umbellata*.

A Short Treatise on the System of Wire Fencing, Gates, &c. With explanatory Copper-plate Engravings. By C. D. Young. Burness, Edinburgh.

The volume before us, although in some measure explanatory of the various articles manufactured by the eminent firm of which Mr. Young is a partner, enters into the history, adaptation, and qualities of the subjects represented by the illustrations. Mr. Young treats at length on the universal application of wire fencing in the arrangement of park and garden scenery. There can be no question that the use of iron fencing in the division of grounds, and in protecting masses of trees, is a very great improvement in a pictorial point of view, as compared with the old practice of protection by means of hedges and ha-has or stone walls. Cases, however, occur, in the vicinity of almost every mansion of any pretensions, in which we would by no means employ wire fencing, as for instance in gardens of an ornamental kind; propriety and good taste would suggest something different. Therefore Mr. Young's views and ours are at issue on this point. Many of his arguments, especially those that relate to the saving of land, durability, and economy of first erection, are invulnerable; and one of the most important uses of Mr. Young's treatise will be the aid which its numerous illustrations afford to country gentlemen, in enabling them to determine the kind of fencing or gates most eligible for their requirements. The prices, too, of all the forms of fences, gates, bridges, &c., are given in the catalogue annexed to the work—an important item, by which gentlemen, however remote, can ascertain to a shilling the expense of any work he may contemplate having executed, before he begins operations. On these, as well as on other grounds, we consider that Mr. Young's treatise will prove of much service to all landed proprietors. *R. G.*

The Catalogue of Seeds sold by J. C. Wheeler and Co., Gloucester, appears to us to deserve notice, because of the stand which its authors make, in common with ourselves and others, against the useless incomprehensible seed lists of the day. In this, as in all matters of taste, there will be a difference of opinion as to the relative quality of varieties; yet the mass of buyers, who have no fancies, but who dislike being perplexed, and are satisfied with what is excellent, will greatly prefer a short, select seed list to an interminable labyrinth of names, which, for the most part, represent nonentities, or rubbish. Messrs. Wheeler's little book will do something to satisfy their expectations.

Miscellaneous.

Death of Mr. Scott, gr. to Charles Barclay, Esq., of Bury Hill, Dorking.—We regret to announce the death of this intelligent and excellent gardener, which took place on the 22d ult. Some months before his decease he had an attack of paralysis, which so unfitted him for business that he had to leave Mr. Barclay's service, after he had lived with him nearly 20 years. The immediate cause of death was apoplexy. Mr. Scott bore an excellent character and was much respected by all who knew him.

Sale of Orchids.—A small importation, from central India, was sold the other day by Mr. Stevens, at the following prices:—Dendrobium Devonianum, from 1*l.* to 2*l.* 2*s.*; Cœlogyne maculata, a new kind, with flowers as large as C. Wallichiana, white and yellow, with large blotches of crimson purple on the lip, from 2*l.* to 3*l.*; the rare Dendrobium Cambridgeanum, from 2*l.* to 3*l.*; a large mass of Cœlogyne cristata, 5*l.* 10*s.*; smaller examples of the same, from 1*l.* to 5*l.*; C. Wallichiana, from 2*l.* 10*s.* to 6*l.* 10*s.*; Dendrobium Farmerii, from 2*l.* to 4*l.* 10*s.*; D. Dalhousianum, from 1*l.* 18*s.* to 2*l.* 4*s.*; D. Griffithianum, from 2*l.* to 4*l.* 10*s.*; D. Paxtonii, from 2*l.* 10*s.* to 4*l.* 5*s.*; D. Gibsonii, 1*l.* 10*s.*; "a new species of Cœlogyne," from 2*l.* 10*s.* to 4*l.*; ditto Cymbidium, from 1*l.* to 2*l.* There were in all 232 lots.

Calendar of Operations.

(For the ensuing week.)

PLANT DEPARTMENT.

Plants in general are now about to commence their new growth, and with the gradually increasing light will require a proportionate increase of heat and moisture. Encourage their healthy development by sufficient room, and by placing them as near the glass as circumstances will allow. Admit sufficient air at all times to ensure a circulation, and as much more as the weather renders necessary, but carefully avoid cold currents during the growing season. In repotting, be guided more by the state of the roots than by the tops, as the latter, when exposed to a disproportionate heat, are liable to start into growth without the roots progressing in a corresponding ratio, and they are therefore not so well prepared to take advantage of the new soil as those whose roots are in motion; these last may be repotted with safety and propriety, and when the plants are passing through your hands for this purpose, let everything needful in the way of pruning, tying, or freeing them from insects be done at once, that your work may progress in the most economical manner. Before any plant is potted the state of the soil should be carefully examined, and if the ball is dry it should be soaked in a pail of water, not too cold; after which it should stand long enough to allow the superfluous moisture to drain away. A sowing should now be made of Thunbergias, Ipomœas, and other stove annuals required for the decoration of the conservatory in summer and autumn; the two first, with others of a similar character, should be sown in three-inch pots, two seeds in each, and the rest in ordinary seed-pans; the whole should be plunged in a hotbed, and shaded till they make their appearance above ground. As the majority of plant houses are better adapted for small and moderate sized plants than for large ones, and as the same description of plants are most generally useful for placing in ornamental China vases in the drawing room, &c., it is important that, at this season, a young stock be raised of all the choice things which are ornamental and interesting as small plants. And this matter should be particularly attended to with reference to such as will be useful next winter; of a few of these we subjoin a list. Euphorbia fulgens, Gesnera elongata, Manettia bicolor, Begonia nitida and B. insignis, Abutilon venosum, Poinsettias, Polygalas, Francisceas, Tremandra verticillata, and T. Hugelii, &c. Such well-known favourites as Chrysanthemums, Cinerarias, Primulas, &c., will suggest themselves to every mind. All plants of which it is desirable to increase the stock should be propagated as soon as they

make shoots fit for the purpose; these should be watched and slipped off with a heel, when 2 or 3 inches long, as they will strike with great facility in that stage. The most suitable circumstances are, a temperature resembling as nearly as possible that in which they have been grown; taking care to keep them close, to shade them from sunshine, and to guard against damp, or excessive dryness.

FORCING DEPARTMENT.

VINERIES.—It is too common a practice to crop Vines to a greater extent than they are able to bear. It is thought that by leaving rather more than enough, even though some of them do shank, the greatest possible weight of good fruit will be obtained. This is of course a great mistake, as the portion of fruit which does not come to perfection has exhausted a considerable proportion of the strength of the plants to no purpose; besides which, their entire energy is monopolised by the fruit, and thus no stored up accumulation can be made to furnish the future crop. This evil should be prevented by reducing the bunches to a number consistent with the present and future strength of the plants. In the first place, the spurs should be limited to a number which will allow of their leaves being freely exposed to the influence of the sun and air; and of this number not more than half should be allowed to produce fruit this year; nor should any one of these be allowed to mature more than one bunch. The remaining half of the spurs ought to be confined to making wood for next year's crop. Weak spurs which are not to produce fruit this season should be encouraged, by allowing them to produce six or eight leaves before they are stopped; this practice will be particularly useful with Vines which are weakly from excessive cropping last year, or from other causes. To expose the foliage as much as possible to the action of light, the spur shoots should be tied at right angles with the main rods. Any plants in pots, under the Vines, will by this be much shaded; but if good Grapes be the chief object, other considerations must not be allowed to interfere with whatever is necessary for their perfect development. PEACHES.—In disbudding Peach trees it is desirable to retain as many of the side or even fore-right shoots as will fill with leaves any parts of the tree which would otherwise be bare; all the young shoots so retained, with the exception of those required for laying in, should be stopped above the third leaf, as in spurring. By this means the appearance of the trees will be improved, and a supply of fruit-bearing spurs secured, where there would otherwise be nothing but naked wood; and if at any time it be found necessary, they will be available for the production of young wood to fill up where old worn-out branches have been removed. We have generally found the largest and finest fruit in our Peach-houses upon these spurs; and sometimes on those situated very near the main stem of the tree. This is a new idea in Peach management, and it is one that when once known will be readily adopted in all fan trained trees. Constant attention must be paid to tying in the young shoots nearly parallel with those they proceed from, as much of the beauty of fan-trained fruit trees depends on early attention to this matter.

FLOWER GARDEN AND SHRUBBERIES.

If the soil of any of the beds or clumps for masses has not been prepared for its summer occupants, it should be immediately done. Where the same description of plants is grown successively in the same beds, it is advisable to remove the whole, or a large portion of the old soil, once in two or three years, and to fill up with new material. For some plants, however, as scarlet Pelargoniums, this practice would be injurious, unless the soil were very poor, for they generally grow too luxuriantly. Many mass plants, however, particularly annuals, take more from the soil than can be supplied to it in a moderate top-dressing. Where a certain kind of plant suits a particular situation, there is no impropriety in placing it there every year, provided the soil is frequently renewed. Pay extra attention to the propagation of the more excellent bedding plants, preferring those which combine a compact habit and hardy constitution with a decided colour. Dwarf, compact, blue beds will be best furnished by the different varieties which have originated from Lobelia gracilis; they are increased with great facility by cuttings or seeds; the latter should be sown immediately in boxes or pans, and pricked out into a frame of soil, as soon as they are large enough to handle. The best variety is the L. Erinus compacta grandiflora, than which a more beautiful plant for dwarf dense masses of a deep blue or violet colour does not exist. For a taller bed of pale blue the Ageratum mexicanum is not surpassed; and in damp situations, where many other things would prove a failure, nothing surpasses the late-flowering Forget-me-not (Myosotis scorpioides). Verbenas will supply beds of all shades and colours except yellow and good blue, but the greater portion of the varieties in cultivation are too diffuse in habit to make compact effective beds. These are plants of which gardeners are very liable to get too many varieties; if about a dozen of the most distinct, free-flowering, compact-growing kinds are selected, the rest may be very conveniently discarded. White is one of the most difficult colours to do satisfactorily; of flowering plants for this purpose, Verbena Mount Blanc is one of the best; and next to this, we may mention, the varieties of Pelargoniums with variegated leaves, or the variegated Alyssum; the latter planted thickly answers the purpose very well, as the flowers and leaves are both white. With these may be mentioned Lobelia Erinus compacta alba, which makes a nice dwarf bed if planted thickly. Get the fancy varieties of Pelargoniums as strong and bushy as possible, previous to planting out, so that they may begin to bloom evenly. They all flower in such abundance that there is little doubt of their continuing to make a good display throughout the season, particularly if the soil is light. Sandy peat, a little loam, and leaf-mould suit them best.

FLORISTS' FLOWERS.

The beautiful, the sweet-scented Auricula first claims our attention. They are now moving, and every day the foliage appears to freshen. Then comes the truss of flowers. To the amateur who exhibits, this is a most critical and interesting period; for as it rises, should a frost occur, a check inevitably takes place. To guard against this, as soon as the formation of the buds is perceptible, a careful covering of the frames is requisite, for we have, during a series of years that we have cultivated this beautiful spring flower, known the whole stock to be seriously damaged by a casual neglect. Every one knows that in windy and frosty weather, the lights should be kept on the frames, but we would advise that when they are of wood and easily moved, that, at the end of this week, a brick should be placed under each corner, so that, though the lights are down, a free circulation of air should take place; in fact, both for Polyanthuses and Auriculas, this is a *sine qua non*. In CARNATIONS AND PICOTEES we would pot off if the weather is suitable; and now let us advise those who are really fond of a first-rate Picotee to get Duchess of Sutherland, Lorina, and some few others that are offered by first-rate cultivators. We are sure their money will be well laid out, and their satisfaction great. These flowers are fashionable, and well they may be, combining as they do beauty, symmetry, and fragrance. Dahlias, Pinks, &c., next week.

HARDY FRUIT GARDEN.

The winter covering should now be removed from Figs and Vines on outside walls, and the trees should be retrained; but, as entire exposure will be too much at first, it will be necessary to cover slightly with evergreens, or let down a canvas in front of the walls during night, especially in cold localities. As the Apricots on flued walls are coming into blossom, it will be well to go over them, to see that the winter covering of branches does not hang so thickly in any place as to form a serious obstruction to the sun's rays. A little labour will be well expended in going over the Apples, Pears, &c., painting them over with a mixture of lime, sulphur, and tobacco liquid, with as much soot added as will take away the glaring colour of the lime. This will destroy lichens and mosses, as well as any insects which may be about the branches; and as the genial spring weather will soon cause these depredators to creep forth, this is an excellent time for the operation.

State of the Weather near London, for the week ending Feb. 28, 1850, as observed at the Horticultural Garden, Chiswick.

Feb.	Moon's Age.	Barometer. Max.	Barometer. Min.	Thermometer. Max.	Thermometer. Min.	Thermometer. Mean	Wind.	Rain.
Friday.. 22	10	30.316	30.254	51	23	39.5	N.W.	.00
Satur... 23	11	30.305	30.236	56	32	44.0	W.	.00
Sunday. 24	12	30.259	30.275	42	33	37.5	S.W.	.00
Monday 25	13	30.466	30.349	48	36	42.0	E.	.00
Tues. .. 26	O	30.374	30.328	50	30	40.0	S.W.	.00
Wed. .. 27	15	30.243	30.174	52	27	39.5	S.E.	.00
Thurs.... 28	16	30.202	30.141	52	37	44.5	E.	.00
Average....		30.305	30.251	50.1	31.8	41.0		0.00

Feb. 22—Overcast; cloudy and fine; clear; slight frost.
— 23—Overcast; fine; overcast.
— 24—Overcast throughout.
— 25—Foggy; overcast at night.
— 26—Foggy; overcast; clear.
— 26—Foggy; very fine; clear; frosty.
— 28—Foggy; hazy throughout.
Mean temperature of the week, equal to the average.

State of the Weather at Chiswick during the last 24 years, for the ensuing week, ending March 9, 1850.

March.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds. N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 3	49.9	35.2	42.5	11	0.45 in.	2	3	2	1	2	7	5	2
Mon. 4	49.5	33.2	41.3	10	0.48	2	7	—	3	2	5	4	1
Tues 5	48.3	32.5	40.4	7	0.40	2	5	3	—	4	5	3	2
Wed. 6	47.5	32.6	40.1	9	0.25	1	6	2	1	2	3	4	5
Thurs. 7	48.9	32.7	40.8	10	0.10	2	4	3	1	4	5	3	2
Friday 8	50.0	32.9	41.5	9	0.17	3	3	5	—	5	3	2	5
Satur. 9	50.4	32.3	41.3	6	0.47	2	3	1	2	2	7	3	4

The highest temperature during the above period occurred on the 9th 1826—therm. 68 deg.; and the lowest on 5th, 1845—therm. 13 deg.

Notices to Correspondents.

BACK NUMBERS. Full price will be given for Nos. 6, 18, 28, and 35, 1847.

OUR CORRESPONDENTS were, in one or two cases, accidentally overlooked last week, for which we beg to express our regret.

AQUILEGIA GLANDULOSA: *J O.* See Mr. Grigor's account of it at p. 420, 1848. He there states that the soil which he has found most suitable for it is a rich mellow earth, partaking a little of bog or peat earth, and rather cool and moist than otherwise—approaching to that usually termed swampy. He adds, however, that the age and condition of the plant is of more importance than the quality of the ground; for he has flowered young plants well for a few years on spots apparently very unsuitable for them.‡

ASPARAGUS KALE: *H B.* It has various names, as Egyptian, Jerusalem, and Buda Kale. It is a winter vegetable, and should be planted out in July and August, the second plantation being necessary only where late gatherings are required. Its treatment should be the same as that for winter Greens. We cannot recommend dealers. ‡

BOOKS: *J T.* No such book is accessible to you, unless you can read technical Latin, and have 20*l.* to spare. You had better be content with Loudon's "Encyclopædia of Plants."

BROCCOLI: *M.* Your Broccoli plants are affected by "club." Wood-ashes are largely used against it, and some have recommended nitrate of potash or salt-petre; but we are unacquainted with the effect of the latter, and would advise you to try it first on a small scale experimentally. ‡

BURNT CLAY: *J W H.* This is the surface soil of heavy land, with the roots, &c., found in it, pared off, dried in the wind and sun, and then thrown into heaps and burnt. Nobody sells such stuff. Your Peas, or *ceci*, are the Chick Pea, Cicer arietinum, or Pois chiche of the French. They are used in the preparation of purées. What is the meaning of the word Ceci?

CRUSHED LIMESTONE: *Anon.* Although you may crush this as fine as silver sand, it will not be beneficial for potted plants, quite the contrary. Nothing will answer such a purpose except nearly pure silex, such as silver sand is. Shell sand and all such calcareous substances are to be avoided.

ELVASTON: *A Lover of the Coniferæ.* We cannot say. Enquire.

EPACRIS: *Tauntoniensis.* Our eyes are not good enough to discover in what respect this is better than 20 other trifling varieties of Epacris impressa.

EMIGRATION: *D J H.* We should much advise you to take some Australian colony, in preference to the United States, in your state of health. New Zealand would be best in that respect.

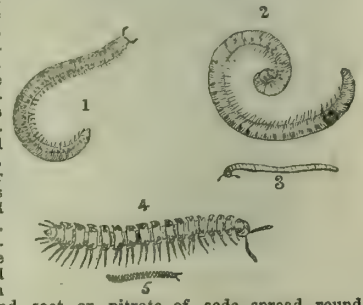
FORCED STRAWBERRIES: *W H.* Your employer is entirely wrong, as we will more particularly explain next week. The soot kill the plants! Oh! oh!

GARDENERS: *Old Sub.* The only "register for them" we know of is Messrs. Weeks'. (See an advertisement in another column.) But they may be had by applying to Messrs. Knight and Perry, Messrs. Henderson, or any other nurseryman.‡

GLASS FRAMES: *B D.* They may be attached to the wall by hooks and staples. The sooner they are on after the flower buds swell the better. When frosts are gone they may be removed. A fortnight or so before the fruit begins to colour they may be replaced; and after the fruit is gathered they may be allowed to remain till the wood is perfectly ripe—provided your season is wet or your climate a bad one.

GLASS PORCH: *G B K.* For training along the roof, try Bignonia grandiflora, B. capreolata, and Vitis odorata; but these are deciduous. If you must have evergreen climbers without heat, we have no idea what to advise. You might try Mandevilla suaveolens and Tacsonia pinnatistipula. ‡

INSECTS: *W G.* The larvæ sent to us, found in the bed of Rhubarb, are those of some species of two-winged fly, Musca, allied to the common house fly, which were probably bred in the decayed roots of the Rhubarb or in the manure. If in the latter, they are harmless; if in the former, the roots had better be examined, and the decayed parts removed. *W.*—*W D S.* The insects on the Salvia fulgens are a very minute frog-hopper (Eupteryx), whose habits are very similar to those of the common Thrips. The plant had better be removed apart, and then more carefully fumigated, either with tobacco smoke or pounded Laurel leaves, the fumes of which are a deadly poison to insects. *W.*—*J H.* The insects dug up at the roots of Endive are one of the species of Snake-millepedes (Julus). Figs. 2 & 3 in the annexed woodcut, are Julus pulchellus, natural size and magnified. Fig. 1 is the larger Julus terrestris of the natural size, and Fig. 4, Julus complanatus. The plants should be watered with lime-water, and soot or nitrate of soda spread round their roots; then water the plants. Those worst affected should, however, be pulled up and burnt. *W.*—*J C S.* Your Auricula roots are infested with the Julus pulchellus, described in the last answer. *W.*



NAMES OF PLANTS: *B L, Wrexham.* Leucoïum vernum, a rare and charming plant.—*A B.* We hardly understand what you proposed to send. Nothing could be found among the fragments except *seedling Ferns.*—*E D.* What a morsel! We believe it to be Senecio tussilagiuis.—*Amicus.* The fragments are in such a state, that we do not possess skill enough to name them. The Pinus is too young for determination, and the Oncid is as much dried up as if it had been in the engine-room of a steamer.

POULTRY: *Anon.* "Dixon, on Poultry," is reprinting, with additions and will be ready on the 21st inst.

PRIMROSES: *C C.* With us they were in flower about the 5th of February. You are therefore late, which is remarkable for Ireland.

RABBITS: *L N.* The only other hardy evergreen besides Rhododendrons that rabbits will not eat, is, we believe, the Spurge Laurel. In sowing the seeds of Mistletoe on the bark of trees, it is not necessary for the seeds to be fresh gathered, for if seeds gathered when ripe are kept about a month or so, they will grow very well.

RENANTHERA COCCINEA: *E K B.* This very common plant comes from Macao. It may be found in every nursery where Orchidaceous epiphytes are sold; and in all private collections where fine plants are kept.

ROOTS: *A Constant Reader* says, "Do the roots of a plant grow whilst the plant is blooming and ripening its seed?" Our answer is, Yes, but not so fast as when the plant is making wood; and not at all under unnatural circumstances.

RUSSIAN SUPERB VIOLETS: *Mr. R. Shackell*, of Bath, has sent us two or three times specimens of what he calls by this name. It is difficult to form a just opinion concerning Violets without growing them; but we should say that Mr. Shackell's have all the *appearance* of being a very fine robust variety, as we believe it to be.

TENANT RIGHTS: *T F A.* You should consult your solicitor upon a legal question. Newspaper opinions upon law are dangerous and generally bad. We believe the law to be against the tenant.

THE GOLYNOS OAK: *Diss.* Many thanks; but we have already pointed out the existence of the engraving, &c. What was wanted, was not the particulars attached to the engraving, but some proof of the truth of the particulars.

TOADS, LIZARDS, BLINDWORMS: *Anon.* These are not venomous; and that the toad can expel a poisonous liquor is a silly fable.

VINES: *Anxious.* You were too late in pruning. There is no help for it now. Get them into leaf as fast as you can, and the bleeding will cease.

VINE BORDERS: *A K.* It is a bad plan to crop them at all; but if you must have something on them, then sow them with Mignonette or other annuals, or plant them with Verbenas. ‡

WIRE SYSTEM OF TRAINING: *C S.* See Mr. Fleming's paper at p. 435, 1849.‡

MISC.: *A B.* Orange trees may be obtained of any of the large nurserymen. We never recommend dealers.‡—*Sub.* It is not unusual for Stephanotus floribundus to produce seed pods.‡—*Ravenswood.* Just stop the point of your Glycine; nothing more. ‡

SEEDLING FLOWERS.

CINERARIAS: *W F.* 1, colour deep blue, size and texture good, outline a little deficient, a nice variety, and the best of its colour we have yet seen. 2, a shade lighter and a little thinner in the petals, but similar in properties to 1; a nice variety. 3, white, tipped with rosy crimson; a neat flower, but rather small, and too common in colour.*

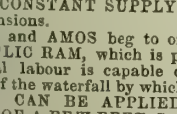
BY HER MAJESTY'S ROYAL LETTERS PATENT.

PATENT HOTHOUSE WORKS, KING'S ROAD, CHELSEA.

E. DENCH invites the attention of Gentlemen about to erect Hothouses, &c., to the vast superiority in every respect possessed by his PATENT HOUSES, which he will warrant superior in every respect to any others. Good Glass from 16 to 21 oz. per foot, 1 foot wide, 3 feet long, furnished, and the Houses when completed charged from 1*s.* 3*d.* to 1*s.* 6*d.* per superficial foot, according to size and quantity; one principle, the roof being formed without wood or putty, and the other principle being wood ratters and the glass put in with putty. Patent Sashes, requiring no paint, from 7*d.* to 9*d.* per ft.

HEATING BY HOT WATER.

HOT WATER APPARATUS AND HORTICULTURAL BUILDING.



W. HILL begs respectfully to announce that his improved "FLUE BOILER" may now be had in sizes to suit every description of Apparatus, from that of 100 feet to 2000 feet of 4-inch pipe. Improved STEAM BOILERS, from one horse-power and upwards, adapted either for stationary or portable engines, and guaranteed to be most effective.

Every description of Horticultural Building constructed upon the best principle. Buildings of any kind heated by hot water.

*** A liberal Discount to the Trade.

W. HILL, Horticultural Works, Greenwich.

MANURES.—The following Manures are manufactured at Mr. LAWES's Factory, Deptford Creek:

Corn and Grass Manure, per ton	£10	0	0
Clover Manure, do.	11	0	0
Turnip Manure, do.	7	0	0
Superphosphate of Lime	7	0	0
Sulphuric Acid and Coprolites	5	0	0

Office, 69, King William-street, City, London.

N.B. Peruvian Guano (with an analysis), 9*l.* 15*s.* per ton, in dock. Sulphate of Ammonia, &c.

LAWES'S PATENT MANURE.

WILLIAM E. RENDLE AND CO., Plymouth, are Mr. Lawes's Wholesale Agents for the Sale of his MANURES, and can supply them at Mr. Lawes's prices, delivered at his Factory, Deptford Creek.—Apply to WILLIAM E. RENDLE and Co., Union-road, Plymouth.

GIBBS' GENUINE PERUVIAN GUANO, *warranted*, at 9*l.* 15*s.* per ton. In the Import Docks.

THE LONDON MANURE COMPANY beg to offer as under, and pledge themselves that every Manure shall be perfectly Genuine:—Corn Manure for Wheat, Barley, Oats, Clover—most strongly recommended from its success last year; it will be found cheaper than Guano, and bear the strictest analysis. Also URATE, Superphosphate of Lime, Sulphate and Phosphate of Ammonia, Nitrate Soda, Fishery and other Salt, Gypsum, Sulphuric Acid, &c.

GENUINE PERUVIAN GUANO.—To insure this free from adulteration, all purchasers, if they prefer it, can receive their warrants from Mr. Purser, and remove the Guano direct from the Warehouses of Messrs. A. GIBBS and SONS, the Importers.

Bridge-street, Blackfriars. EDWARD PURSER, Secretary.

Country Dealers and Agents supplied.

POTTER'S GUANO.—This effective MANURE, now greatly Improved, is confidently recommended as a Dressing for all Spring Crops. It is equal to Peruvian Guano, and 25 per cent. cheaper. Also SUPERPHOSPHATE of LIME, GYPSUM, and SULPHATE of AMMONIA, all of guaranteed quality, and Cheaper than at any other establishment in town or country.

Factory, 23, CLAPHAM ROAD PLACE, LONDON.

GUANO AND OTHER MANURES.

PERUVIAN GUANO of the finest quality (as imported by the Contractors) on Sale; also Superphosphate of Lime, Gypsum, Nitrate of Soda, Salt, and all other Manures of known value.—Apply to MARK FOTHERGILL, 201A, Upper Thames-street, London.

PERUVIAN GUANO.—As Agents of the Peruvian Government for the importation and sale of this valuable MANURE, we think it right, for the protection of consumers and respectable dealers, to apprise them that the adulteration of the article is still extensively practised, and to recommend them to apply either to ourselves, to our agents, Messrs. GIBBS, BRIGHT, and Co., of Liverpool and Bristol, or to dealers of established character, in whose honesty and fair dealing they can place implicit confidence. ANTONY GIBBS and SONS.

London, March 2.

TO NOBLEMEN and GENTLEMEN who require a plentiful and CONSTANT SUPPLY of PURE WATER at their Country Mansions.

Messrs. EASTON and AMOS beg to offer their improved PATENT HYDRAULIC RAM, which is perfectly self-acting, and without manual labour is capable of lifting water to 30 times the height of the waterfall by which it is worked.

THIS MACHINE CAN BE APPLIED WHEREVER A FALL OF WATER OF A FEW FEET CAN BE OBTAINED, and its cheapness and durability, with the fact that upwards of 500 of them erected in England and other countries by Messrs. EASTON and AMOS have now been at work many years, afford ample proof of its great value and efficiency.

Estimates of the expense of the Machine, Pipes for the conveyance of Water, Tanks, and Reservoirs, may be had on application to Messrs. EASTON and AMOS, CONSULTING ENGINEERS to the ROYAL AGRICULTURAL SOCIETY, at their office in Orange-street, Trafalgar-square, or at the Works in the Grove, Southwark, London.

IMPORTANT TO AGRICULTURISTS.—COLLECTION AND DISTRIBUTION OF MANURES.

STRATTON'S AGRICULTURAL REPOSITORY, BRISTOL.

STRATTON, HUGHES, AND CO., have now ready their PATENT TUMBLER CART for the collection of Night-soil and other offensive matters; also their Iron Mill, to be worked by horse-power, water-power, or steam, for mixing and incorporating Nightsoil with Charcoal and other deodorisers. The Tumbler Cart has an iron body with a close cover; can be fitted if required as a Watering-cart, with a Valve and Delivery Pipe for distributing water or liquid manure, and also with an Apparatus for distributing dry manures in any given quantities per acre.

STRATTON, HUGHES, and Co.'s Tumbler Carts are used for scavenging purposes in Manchester, Bristol, Worcester, Harwich, Rochford, Cardiff, &c., and they are now building them for Chester, Oxford, Huddersfield, &c., besides many for Agricultural Colleges and private individuals. STRATTON, HUGHES, and Co.'s new illustrated Catalogue of Carts, Waggons, and Agricultural Implements will be forwarded to any address on receipt of 1*s.* 6*d.* in postage stamps.

GENUINE PERUVIAN GUANO, direct from the Importer's Stores, LINSEED CAKES, and all kinds of Artificial Manures, may be had at London prices, for Cash, of Messrs. ODAMS and PICKFORD, 15, Mark-lane, London.

STEPHENSON AND Co., 61, Gracechurch-street, London, and 17, New Park-street, Southwark, Inventors and Manufacturers of the Improved CONICAL and DOUBLE CYLINDRICAL BOILERS, respectfully solicit the attention of scientific Horticulturists to their much improved method of applying the Tank System to Pineries, Propagating Houses, &c., by which atmospheric heat as well as bottom-heat is secured to any required degree, without the aid of pipes or flues. S. and Co. have also to state that at the request of numerous friends they are now making their Boilers of Iron, as well as Copper, by which the cost is reduced. These Boilers, which are now so well known, scarcely require description, but to those who have not seen them in operation, prospectuses will be forwarded, as well as reference of the highest authority; or they may be seen at most of the Nobility's seats and principal Nurseries throughout the kingdom.

S. and Co. beg to inform the Trade that at their Manufactory, 17, New Park-street, every article required for the construction of Horticultural Buildings, as well as for heating them, may be obtained upon the most advantageous terms.

Conservatories, &c., of Iron or Wood, erected upon the most ornamental designs. Balconies, Palisading, Field and Garden Fences, Wire-work, &c.

TRUE ITALIAN RYE-GRASS.—A fine Stock of Italian Rye-Grass, clean and true, price 6*s.* 6*d.* per bushel, carriage free to London, Bristol, or Basingstoke. Also best new Clover, Mangold Wurzel, Swede Turnip, Belgian Carrot, and other Agricultural Seeds, at lowest market prices.—For particulars app'y to JOHN SUTTON and SONS, Reading, Berks.

The Agricultural Gazette.

SATURDAY, MARCH 2, 1850.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

WEDNESDAY, March 6—Agricultural Society of England.
THURSDAY, — 7—Agricultural Imp. Society of Ireland.
WEDNESDAY, — 13—Agricultural Society of England.
THURSDAY, — 14—Agricultural Imp. Society of Ireland.
FARMERS' CLUB.—March 4: London.

It is a hopeless attempt so to regulate the circumstances of any individual agricultural experiment, as that its result shall represent an agricultural truth capable of more than merely individual application; the only way to arrive at *that* is to ascertain the average of a large number of facts in farming which have occurred under all sorts of conditions, so that the special influences of these may be neutralised in the general result. And if this be the case with facts regarding soils, manures, plants, or farm profits generally, it must be especially true of experiments regarding animals, where, in addition to all those sources of error which affect all agriculture alike, we have that undefinable cause of difference which exists in the peculiarities of temperament. In comparing different breeds, very large numbers indeed must be described, or the conclusions arrived at will be of very little value. And we would, therefore, put the following more in the form of suggestions or questions than as professing any absolute truth.

At the late exhibition of fat cattle in Baker-street, under the auspices of the Smithfield Club, 11 short-horn oxen, in their fifth year, were shown; they had not been restricted as to food; their average dimensions were—girth 9 feet 1 inch, length 5 feet 8½ inches, their average weight, according to CARY'S cattle gauge* was 113 stones. Thirteen short-horn oxen in their fourth year were shown; their dimensions were—girth 8 feet 3 inches, length 5 feet 3½ inches, weight, therefore, 86 stones. Six short-horn oxen in the third year were shown; their dimensions were—girth 7 feet 10½ inches, length 5 feet 1½ inch, weight 76 stones. The question we would ask here is, whether the average in the first and second cases above may be supposed true for sufficiently large numbers to justify any inference from them as to the average growth in the last year of animals of that age and quality so fed. The growth was 27 stones of beef, which would fetch in the market, at present prices, probably one-third of the cost which during that year those animals incurred. We do not ask any such question of the second and third cases mentioned, for the number of animals in each is neither equal nor sufficiently great.

There were also exhibited on that occasion eight Hereford oxen in their fifth year—girth 8 feet 9 inches, length 5 feet 7½ inches, weight 104½ stones: and eight in the fourth year—girth 8 feet 1⅛ inch, length 5 feet 3½ inches, weight 83 stones: and three in their third year—girth 8 feet, length 5 feet, weight 79 stones. The difference between the three and four-year-old oxen is here only 21 stones, yet these animals, so far as one can judge from the printed statement regarding each, were fed as expensively as the short-horns. Compare the two breeds at similar ages: the average weight of the 4-year-old short-horns was 113 stones, of the 4-year-old Herefords 104½ stones, of the 3-year-old short-horns 86 stones, and of the 3-year-old Herefords 83 stones. The Devon breed did not appear in sufficient numbers to render any useful comparison possible. There were, however, eight 3-year-old Devon oxen exhibited; they measured—girth 7 feet 9 inches, length 5 feet ½ inch, and therefore weighed about 72½ stones; considerably less, it will be seen, than either Herefords or short-horns.

May we judge anything, as to the relative precocity of these breeds, from the numbers of the different ages shown? Of the short-horn oxen, 37 per cent. were in their fifth year, 43 per cent. in their fourth year, and 20 per cent. in their third year. Of the Herefords, 42 per cent. were in their fifth year, 42 per cent. in their fourth, and 16 per cent. in their third year. Of the Devons too few were present to render any such statement useful. This appears somewhat in favour of the short-horns; and the result, such as it is, was borne out by the figures obtained at Birmingham, where, of eight short-horn oxen, six were in their fourth year, while of 10 Herefords, eight were in their fifth year. In both of these instances the numbers were sufficient to confer a slight value on the averages of measurement and weight, which were, of the 3-year-old short-horn oxen, girth 8 feet 6 inches, length 5 feet 4½ inches, and weight 94 stones—greater by 6 stones than their weight at Baker-street; and of the 4-year-old Hereford oxen, girth 8 feet 3 inches, length 5 feet 5 inches, and weight 89 stones—less by nearly 6 stones than their weight at Baker-street.

We may also compare the cows of the different breeds. At the Smithfield Club exhibition nine cows or heifers, of the short-horn breed, under five years old, were shown; their average girth was 8 feet 6 inches, their length 5 feet 5 inches, their weight 94 stones: and 13 cows, over five years, measuring 8 feet 2 inches in girth and 5 feet 6 inches in length, weighing therefore 88 stones. Hardly any Hereford cows or heifers were exhibited. At Birmingham, again, of the cows and heifers shown, 16 were short-horns and nine Herefords; but excepting the short-horn cows over five years old, which numbered 10, none of the ages were present in numbers sufficient to compare. Those 10 cows averaged 8 feet 2 inches in girth, 5 feet 3½ inches in length, and were therefore 84 stones in weight—4 stones less than the weight of those shown in Baker-street.

The comparison of the breeds as to prizes is given merely as historically true of the last exhibition, and without any desire to draw inferences from it as to the quality of the breeds; for a single year is certainly no sufficient test. We remark, by the way, that the Smithfield Club is the only society under which this competition between breeds remains possible. All others keep the individuals of each breed to its own class; but if it be at all possible to obtain an unprejudiced judgment of merits in such a rivalry, it is very desirable that the competition between different breeds be extended; and we certainly regretted that the Midland Counties Society had not followed the example of the Smithfield Club in that particular. We find that among 5-year-old oxen, the 1st and 3d prizes, with the gold medal, for the best ox shown, were gained by the Hereford; and the 2d prize was gained by the short-horned breed. Among 3-year-old oxen, the 1st, 2d, and 3d prizes were gained by the short-horn, the Devon, and the Hereford breeds respectively; among 2-year-old oxen, the 1st and 2d prizes were gained by short-horns, the 3d by a Devon. These were the classes in which the three breeds came into fairest competition, and they seem to have effected a pretty even partition of the premiums. It may be interesting, as evidencing how far weight influences the award of the judges, to observe that in Class I., that is, among 4-year-old oxen, the 1st, 2d, and 3d prize animals weighed 111, 132, and 89 stones respectively, the average of the whole that were shown being 102 stones. In Class II. again, among 3-year-old oxen, the 1st, 2d, and 3d prize animals weighed 89, 89, and 82 stones respectively, the average of the whole shown in this class being 88 stones. And in Class III., among 2-year-old oxen, the 1st, 2d, and 3d prize animals weighed 85, 71, and 64 stones respectively, while the average of the whole class was 65 stones. It thus appears that it is held to be a defect not to come up to the average dimensions of the class: but that that alone will not destroy the exhibitor's chance is shown by the facts that in Class I. the third prize was won by what with one exception was the lightest ox there—that in Class II. the three heaviest oxen received no premium, while in Class III., as in Class I., one of the prize animals was below the average weight of those that were shown.

We may also refer to the fact brought out by these measurements, that, in the two classes of animals in which weight is a qualifying condition for competition, some animals were exhibited which undoubtedly ought not to have appeared. The average weight of the class under 80 stones was about 70 stones, but one of the oxen shown in it weighed at least 84 stones, for CARY'S gauge gives results below the truth in the case of fat animals, and the average weight of the class between 80 and 95 stones was about 88 stones, but that there were

* CARY'S cattle gauge does not indicate sufficient weight in the case of very fat cattle.

at least two individuals above 95 and one under 80 appears from our measurements.

We give the above figures as indicative of the sort of truth which a more accurately quantitative report of these exhibitions of fat cattle might ultimately lead us to. It is a great pity that no such record exists of the past shows of the Smithfield club, which, excepting the immediate impulse they may have communicated to feeders and breeders of live stock at the time of their occurrence, have been useless displays, when they might, as the only authorities on such a subject, have by this time given us definite and decided information on the relative merits of our different breeds of cattle.

INSTANCES OF CATTLE FEEDING.—No. I.

1. Forty head of cattle, rising three and four years old; all bought in quite lean; breeds various, Fife, Angus, and crosses.

2. Put up the latter part of September, and sold through the winter and spring, beginning in December.

3. A few fed in stalls, the rest in boxes; three or four cattle put in together; should prefer single boxes; the space for each beast 70 square feet.

4. Cut Turnips or Swedes, 100 lbs. per day to each beast, given in two meals; and also 2 lbs. cake crushed small, and 2 to 3 lbs. of ground grain, consisting of Beans, Oats, Barley, &c., well mixed up with 10 lbs. of one-inch straw chaff which has been thoroughly wetted with cold water before the meal and cake is thrown amongst it, divided into two meals.

Cost per week, cake and grain	2*s.* 0*d.*
Attendance, including cutting chaff by horse-power	0 5
Turnips, at 8*s.* per ton	2 7
Total cost per week	5*s.* 0*d.*

I have adopted the above plan for four years, and find it answer well, but never have tried boiling.

5. Wheat and Barley straw; quantity varies according to its dryness; takes more straw for boxes than the stalls.

6. I have found three Fife cattle rising three years old, fed as above, increase, according to measurement, 122 lbs. each in dead weight during 12 weeks. No allowance made for extra quality.

7. Cattle are much more cleanly and comfortable in boxes than in stalls, if ordinary management is pursued.

Feeding cattle are considered to pay very well in this district if they leave 20*s.* per month when fed on Turnips alone, and even when they receive a small quantity of artificial food during the ripening stages. I have observed lean beasts eat 224 lbs. of cut Swedes daily, besides 5 lbs. of cake, when first put up. When cake and grain are mixed up with chopped straw, a great saving of roots is effected, nearly one-half for the two first months they are fed on Turnips. *R. Russell, Kilwhiss, Cupar, Fife.*

CHRONICLES OF A CLAY FARM.

SECOND SERIES.—No. V.

IT requires no small experience of life, to fully *realise* the often heard and often repeated truth, that everything in this world goes by comparison. When the philosopher tells us that we only know the true value of a thing by the want of it, he does but reassert the same fact, that things can only be known by their opposites A man who has lived all his life in England has no adequate conception of the *English climate*. Including with it that of Scotland and Ireland, it stands alone in the world—in that part of it at least which most travellers visit—the Continental world. Its sudden smiles and sudden tears are something perfectly hysterical. Like some fair maiden who weeps she knows not why—then stops and smiles a bit—a fickle smile—then falls to weeping again; there is no knowing when or where or how, to be up to all her moods. She is the very April among nations. The Barometer, a tolerably steady-going guide elsewhere, she turns into a perfect laughing-stock. *Fourteen* times out of *fifteen*, it is said, she makes him play the fool. He is like an old Pointer—always making a dead set—at nothing:—indicating that which *was*,—and *is* no longer.

Is it a Vice or a Virtue? It does not come for nothing. It has its meaning. It is not sent 'promiscuous-like' to worry and perplex "us fools of Nature," to no object or intent. In her trickiest and wildest and most fantastic frolics, Nature is full of soul, full of deepest, and aye! of most loving *purpose*, man-ward. Under hotter skies, where the flesh of beasts is not so much a food as an unhealthy stimulant to the blood, and where the cool vegetable and farinaceous diet are all that man's strength or warmth or appetite requires, 'cats and dogs' indeed do sometimes come rattling down for days together: but they come in a pack, full cry: or in equally expressive Indian phrase, it pours 'monkeys with their mouths open' when it pours at all. But the gentle English sky alone "rains Turnips:" and English Legs o' mutton, and 'English Roast-beef,' were assuredly concealed behind the veil of centuries, when the first daring mariner that the oldest of Historians tells of was scared back by the 'Fog and *falling feathers*' from the sacred coast of Albion. Far away in the thirsty regions of the South, as sun rolled after sun, in dry and blazing sameness through the sky, unscreened by the mercy of a single cloud, I have gasped and pined for an English *Wetting*—for one day in the most dripping covert—for the murkiest downpour—for the darkest clouds that ever gathered in gloomy Council over a November day, —till the very memory of it seemed, like a dream too delightful to have been *ever* true! And often since, when the very drainers—(and they stand the waters from above the firmament, and under it, pretty well)—have cast furtive eyes up out of their soaking trenches to see if 'the Master budged,' giving sundry hints that 'it's a'most time to *give in*,' I've stood my ground for hours against the welcome fog and shower and darkness, from the sheer inward force of well-remembered contrast, determined to *have it out* with Nature, and come to a final arrangement—a sort of *water-level* with her, for having been cheated out of two or three English Winters. And I sometimes think she has whispered me a secret, in return, about those dark and mis-abused November days—as she is prone to do to those who persevere with her—which have made me prize her, and them, and the land they love, and love, the better; and feel that there is a rough poetry and truth in its iron-grey mists and showers, which has made true of the Farmer what was said of the good and brave man under life's trials:

> "He does not run all helter-skelter
> To seek a temporary shelter;
> For well he knows, each trouble past,
> He's sure to find a HOME—at last!"

It was to some such inward thought I was indebted—and as a faithful chronicler I ought to tell it—for the courage with which, after tossing off the blankets an hour earlier than usual, I threw my window open to—*such* a Monday morning! pre-falsified by the brightest stars and clearest sky that ever closed the day of Christian Rest.

One universal soaking drizzle seemed to have taken secure possession of earth, sky, and the day. The small rain gathering on the trees dripped larger from leaf to leaf, falling in the most hopeless and measured way, taking it *easy* as though for a week's continuance, and no hurry at all about the matter. A single red streak, much too red, lay along one part of the horizon, like a long-drawn smile, pregnant with malicious warning for the afternoon, and killing the faint hope that clings to 'twelve o'clock' as an alterative.

Now for my promised trespasser among the Swedes! No need for man-traps to-day in that quarter, thought I, preparing to meet the foe, with a pair of gaiters that seemed made for the Slough of Despond. The turf-ground weezed and yielded under every footstep, plainly dating back the rain to an early hour of the night, as I made my way to the field; and as my eye scanned its whole space over, the victory of the 'early-bird' seemed assured—when suddenly close to me, from the other side of the hedge, just where the master-drain opened out,—came a ringing "Good morning, Sir!" into my very ear, and Mr. Greening, rising from the bent posture in which he had been scrutinising the Drain, *looked* with mischievous unconcernment the victory he had promised, and accomplished.

"Not deep enough!" quoth he; laconically.

"*Which?*"

"Oh—the Drain—not you: and as for me, I *was* deep enough! You thought the drop o' rain had stopped me: no, no. I like a rainy day, to see this sort o' land. These are laid at three foot? Four's better."

"You really think so?"

"I'm sure of it. But I thought you was all for the deep drain? I heerd so, long afore I tried it."

"And that's why these were laid at *three*. This lower part, up to yonder Oak-tree is the first field I drained: and if you had seen the work I had, to get down *three* feet——"

"Oh! ay, ay! I remember now you mention it. Well, I like the four-foot. But not too wide, mind! I'll allow any man to tell me how deep to drain, if he'll leave me, on my own sile, to say the width. It's a pity to spare a line or two of tiles, to run a risk."

"Well: this is three feet, by twenty-one in width: down the furrows, in fact. And the worst of it is, it drains extremely well."

"'The best,' you mean?"

"The worst!—The good done by the shallow drain has been, in practice, the longest enemy of the deep one. A man who finds his field *improved* by the shallow drain, holds that as *a fact*. When you tell him that double the depth would have more than doubled the improvement, he treats that as a —— a *theory*. A DREADFUL thing, that Theory! I wonder how many who use the word—ab-use it rather,—know the meaning of it. But what say you to the dibbing?"

"Well, they're very reglar: hardly one miss'd. But I don't like to see 'em quite so high out of the ground. I fancy it makes a tough skin, and a bitter one. The drilled uns don't look so reglar, but they seem to hold the ground better. How's it done?"

"By the acre; after the first ridging-up, unmanured; a boy goes first, pressing the dib in with his foot. You shall see it presently; it is held by both hands at the top, with a spoke out for the foot, just above the ball of the dibber, to mark the next distance as its point meets the ground, in drawing it out, sideways, in going along. The hole takes about a half-pint,—more it should be. The women follow with the manure in a sort of hopper, toss a can-full in, which fills the hole, and drop the seed in. It is done very quick; but the mixing of the manure is the great point. You must come and see it done."

"I should like it better for light soils. I doubt its answering so well on this kind," said Mr. Greening, thoughtfully, and poking his stout stick under a Turnip which rose very slowly and reluctantly out of its bed. "What is to be done, Sir, with these Clay Siles!—I like 'em—I own I like the strong sile best—but what 's the use o' liking what don't *pay*? The labour 's double: everything 's double expense on 'em, and the time less to do it in: for drain 'em how you will, you *can not* make winter-work on 'em, as you can upon the light. Now don't you confess that?"

"Ah: thereby hangs a long tale! Chemistry on the Light Soils—*Mechanics* on the Clays! When will that great 'Chapter the Second' begin to open? We have n't quite found out everything yet, Greening! There 's something *to come*, I suspect, upon the Clays, that will startle you and me—wise as we are—some day. 'A thing to dream of—not to tell.' But come—you must put the *Beans*, meanwhile, against the *Barley*."

"Well, that 's true: but that wo'nt match it, I 'm afeard; not by a great deal. Here 's Wheat now down at five-and-thirty! Egad, I *can't give it* away! and I remember my poor old father—and that 's five-and-twenty year ago, in the war-time—as the bushel o' Wheat dropped into the sack, saying to me, '*There 's a guinea*, Ben!' *and* 'There 's another!' as the next fell in; and so it went on. That was *farming*, that was! I 'm blest if I don't think they got their own price, and *ours along!*"

"You 've hit the very truth, I do believe: they forgot to take their share of the *per contra*, when the war was over. They made A WILL, bequeathing that to us; for that, I imagine, will be the end of it."

"What 's the use of making a Will, when you 've nothing to leave? They should have left us another war, and short harvests; that 'ould have done better than any laws, I fancy, to keep up prices."

"Postponed the change, perhaps; not prevented it: it was inevitable some day. The fairer course would have been to have accepted it when it fell due, and begun afresh, with some of those guineas in hand that you speak of."

"Well: it has been but a crumbling wall for twenty years, ever since the war ended, with now and then a bit of a check, in spite of all the laws to prevent it: and these three fair harvests have laid us now as flat as we could lie, if the worst had come to the worst."

"It seems then that to inherit a falling market is worse than to be born into a low one. You're but right. The latter admits of hope; the other is continued miscalculation, and disappointment:—and something worse than either."

"And what's that?"

"I won't tell you till after breakfast! Come you old Grumbler, it's the driest subject in Creation, and will take you three cups of hot coffee to get it down. You shan't come into my Sanctum with those boots—boots! why, they're like barges, sunk to water's-edge! You bring to mind a certain Mr. Demos of old—

> —"'Twas ask'd through all the quarter,
> Came you in *Boots*, Sir, or in *Boats*—
> By *Land*, Sir, or by *Water*?'

off with 'em! they shall be cooked, under the mutton chops, and come in again with the muffins. You're in close custody; so peel off that patrimonial-looking great-coat, and send it after the boots. Why—it's as heavy as—those same guineas! I'll be bound the lining's stuffed with 'em!" [Mr. G. eyed it over, and shook his head, smiling grotesquely.] Well! come along—you shall abuse the Foreigners and Free-traders over the first two cups, and we'll drink 'Better prices for '36!' over the third." *Talpa.*

BRICK AND TILE MANUFACTURE.

THE chief considerations in choosing the situation for a brick-yard are, that it should be central, near a good road for bringing coals, on a bed of good clay, and with an absolute command of water; if these four considerations are complied with, the situation is all but perfect; to make it quite so, let it be on the side of a declivity facing the south-east, and sheltered from all quarters but that. Among all these the only condition that I make compulsory is that implying good clay; water, if not issuing from a spring in the yard, may with a little foresight in the winter be secured in the pit for the summer months. A bed of sand is valuable, and a bed of limestone desirable also in a brick-yard; the sand is useful in making clay goods, and both are obviously necessary for building. Lime burning is carried on with much economy in a brick-yard.

Much need not be said of the external indications of a bed of good clay, as such as is fit for making seldom comes to the surface. The best clay for keeping to its size when burnt, and for smoothness of texture, is found generally under a sand or sandy loam—a day or two with a good drainer, spade in hand, digging trial pits, and a little exploring along side ditches, and on the sides of watering pits or ponds, and half an hour's conversation with the nearest well-sinker, will do all that is necessary. Having decided on what is considered the proper situation, a pit may be sunk into the clay for the purpose of giving it a more careful examination. For pipe-tile making it should be thoroughly free from stones, particularly lime-stones, however small they may be, even as small as Tare seeds, and it should be of a smooth texture when worked in the hand; no clay with square "dicey" dry lumps in it is proper for tile-making, unless ground, pugged, or washed, which adds materially to the expense of production.

The nearer brick-clay approaches to the character of tile-clay the better, but it need not be so smooth or so free from stones, save and except always lime-stones or fossil shells burning to lime. In many places, under the cultivated soil and subsoil, and between that and the clear clay, is found an intermediate vein, partaking in colour and texture of the nature

of both its neighbours; thus if a red oolitic soil be on the surface, and blue clay below, or green sand above and gault below, there will probably be found in either case, as an intermediate stratum, a yellow loamy clay of from 1 to 4 feet in thickness; if this is free from stone it is a treasure, not a pound of it ought to be wasted, though many brickmakers cast it all with the spoil or waste. It is desirable to keep all goods, when burnt, as nearly of the size they were made as is possible, but many clays shrink in drying considerably, and this intermediate vein generally furnishes the means of partially obviating the calamity. If then, in the trial pit, there is this loamy clay, and under that 5 feet of good clear clay, blue or otherwise, there exists all that can be required on the score of clay. The depth to which it may be thought advisable to remove it cannot and need not be here decided on; 3 feet of spoil to cast away and 6 feet of clay to use is a very convenient arrangement for private yards; it has the advantage of frequently allowing the land to be drained and cultivated after the removal of the clay.

Having fully ascertained the presence of the material, the next step is to make arrangements for working it. In coming to a decision as to the relative spots on which to place the kiln and tile shed, let the former, if the yard is on a declivity, be at the lower end, and the latter across the declivity, if it is a sharp one, and so placed as not to interfere with any future digging of clay. The shed ought not to be more than 22 yards from the kiln, and the side of it should form part of the fence to the yard. For the manufacture of 1,000,000 pipe tiles, and about 150,000 bricks, a plot of ground, with a bed of clay of 6 feet thickness, containing the third of an acre will amply suffice; for example, 33 yards wide and 66 yards long. The raising of the clay may be begun before any fence is put up at that end of the yard which is the farthest from the proposed kiln, and adjoining the proposed shed. Brickmakers are proper for the work, as it is one requiring great care and some knowledge of brick earths; and even brickmakers must be constantly watched, or the clay will not be found clean in the summer. The bottom clay will probably be that least proper for tiles, from its containing dicey indigestible particles; let that when dug be kept in the pit for brickmaking, and let the loamy clay, and all that is approved and desired for tiles, be barrowed across the top of this brick clay, and deposited two feet or a yard thick as near to the proposed shed as circumstances allow; the vacancy that will finally occur in the pit from the removal of the tile stuff, and from flinging the brick clay together on one side, will, if there be no spring issuing in the yard, hold the water for the summer. There will then be brick clay in the pit, and the tile clay will be on the surface, between the end of the pit and the shed.

It is hardly possible to give any general rules for tempering of clay in winter; common sense and observation on the spot must direct this. Gault and gault-like clay requires turning over (and watering in the process) twice to make a good brick; tile clay of this nature needs it but once, as it must afterwards go into the pug-mill. Water is the great digester of all clays, and it may be noted that in turning clay, by heaping it high (six feet, if possible), it will come down with the water almost as fast as it is flung up, producing a settling that has a crunching effect on the mass; occasionally the skirts of the heap should be cast into the middle. The best covering to protect the heap from summer sun is very old rotten thatch or rotten stubble. Sand has been suggested, though I have never tried it; which sand, if the clay is devoid of any material quantity, may be mixed with it to advantage. The object of winter preparation is to thoroughly wet the whole mass of clay raised, and so to soak it that in cutting it down with a shovel it shows a surface of even texture. If turning, watering, and the action of frost will not effect this, the summer preparation to be afterwards described will do so, though at greater cost. *A. P.*

(To be continued.)

MR. MECHI'S LIVE STOCK ACCOUNT FOR 1849.

Dr.			
Grazing stock in hand 1st Oct., 1848, valued at the then market prices	£621	0	0
Ditto, purchased from 1st. of Oct., 1848, to 1st of Oct., 1849	306	17	0
Corn, hay, straw, Linseed, &c., bought	1037	4	6
Coals, millers' wages, repairs to engine, &c.	128	2	9
Labour, feeding and attending stock	50	0	0
	£2143	4	3

Farm produce consumed in addition to the above.

17 acres of Mangold Wurzel, 340 tons.
6 acres of Swedes, 90 tons.
8 acres of Rye and winter Oats, fed off.
4 acres of winter Tares, fed off.
13 acres of spring ditto, ditto.
6 acres of Clover hay, 10 tons.
20 acres of Clover, after feed.
5 acres of poor pasture.

79 acres.

Cr.			
Grazing stock in hand 1st of Oct., 1849, valued at the then market prices	£569	18	0
Cash received for live stock sold and slaughtered	1067	16	3
Cash for wool	24	1	6
Butter, poultry, eggs, milk, and cream	25	0	0
Cash received for Barley-meal sold	84	4	11
Hay, corn, &c., consumed by two nag horses, visitors' horses, &c.	75	0	0
Keep of eight farm horses out of purchased corn and hay	210	0	0
	£2056	0	8
Charge against manure kept	87	3	7
	£2143	4	3

The foregoing account shows a charge of 87*l.* 3*s.* 7*d.* for the manure, to which must be added the cost of cultivation and charges on 84 acres of green and root crops, which cannot be estimated at much less than 336*l.*, making a total charge against the future productions of the farm of upwards of 400*l.* In ordinary seasons about 100*l.* might be taken from this, because there was a diminution for depreciated prices of stock to that extent between the valuation of 1848 and 1849. On the other hand, the interest for capital invested would be an additional charge of 50*l.*

I should observe that I have been very fortunate in the management of my live stock, my losses from disease for the year being under 10*l.*

Now, is this stock account a satisfactory or unsatisfactory one? Let us see. We have 56 acres of green crops fed off with corn and Linseed, therefore sufficiently manured for the rotation; and we have 23 acres of root lands to manure. But what have we besides to pay for the 87*l.* 3*s.* 7*d.* lost in feeding out corn, &c.? Let us see.

700 quarters of Barley, Beans, Peas, Linseed, &c.,	Tons.
5 quarters to the ton	140
80 acres Wheat straw	100
12 acres Pea and Bean do.	18
Straw purchased	35
Hay do.	19
Hay, home grown	15
Bran and pollard, about	15
Dry tons	342
Mangold Wurzel and Swedes	430
Tons	772

Besides the ashes of 30 tons of coals used by engine, and the blood, &c., of hundreds of pigs, &c. I am not calculator enough to say what quantity of manure this should produce, but judging from the quantity I have carted, it is not less than 1200 tons, or carts, besides a considerable quantity of liquid, not a hogshead of which has been allowed to run to waste. However, it is quite clear that the essence of 700 quarters of corn, and other good things, will *tell* for years to come. It is only those who have witnessed the durable effects of good unwashed manure on tenacious and deeply cultivated soils, who can appreciate its value. I do not believe I could purchase and cart an equal quantity and quality of manure for 600*l.* For instance, my neighbours pay 17*l.* to 20*l.* a freight for London dung or sweepings, which is 6*s.* to 7*s.* a ton, without carting. I need hardly say that my land is in condition to carry out good crops, and no doubt will continue to do so, although naturally miserably poor, and although I crop half of it every year with Wheat.

It appears by my statement that after deducting the cost of live stock bought, that the actual money value of meat made and sold during the year was 710*l.* Now, I was curious to know how much per cent. of this was realised by my bullocks, sheep, and pigs. I easily ascertained it as follows:

Bullocks.			
Valuation, 1848	£249	Valuation, 1849	£127
Bought, 1849, none.		Sold, 1849	129
			286
	£249		249
		Increase	£37

Sheep.			
Valuation, 1848	£153	Valuation, 1849	£195
Bought, 1849	179	Sold, 1849	232
			427
	£332		332
		Increase	£95

Pigs.			
Valuation, 1848	£218	Valuation, 1849	£247
Bought, 1849	128	Sold, 1849	676
			923
	£346		346
		Increase	£577

So that in fact,

346*l.* in Pigs, produced over and above their cost			£577
332*l.* in Sheep,	do.	do.	95
249*l.* in Bullocks,	do.	do.	37
			709
Wool from Sheep			24
			£733

A pretty serious comparison of investment, but a true one. If my 581*l.* capital, instead of being in sheep and bullocks, had been in pigs, it would have made a very enormous difference in my favour. Of course we cannot all keep pigs, but whence does this great discrepancy arise? The sheep and bullocks ate up nearly all my root and green crops, hay, &c., and in addition a large quantity of meal, &c. The pigs had only corn meal, with a few roots. The breeding sows, pollard, corn, and roots. I breed nearly all my pigs. The sheep were folded during the summer, but in winter on Mr. Huxtable's boards, where I mean for the future to keep them entirely, as I can find it makes all the difference in their progression. (By-the-bye, sheep on boards want shearing much earlier than in the open fields, or they will not do well in close quarters. They must also have water.) I assume that pigs, sheep, and bullocks all ate in proportion to their weight and value, as they were not stinted. We know there was a ruinous depression in bullocks, and a considerable reduction in sheep. I see a great deal of my pork was sold at 5*d.* and 5½*d.* per lb. during summer. All my pigs and breeding sows are kept close confined in the yards summer and winter, and I will take especial care henceforth that my other animals shall not have much exercise.

In conclusion, I am satisfied there is nothing like plenty of stock. Bullocks, as I said before, are ungrateful fellows, and I do not wonder at it, for no gentleman eats shoulders or necks of beef although they do of mutton. I am also quite satisfied that our root and green crops must be made secondary and subservient to the larger consumption of corn or cake. In fact, I sincerely believe, from my own practice, that Mr. Huxtable is right, both in keeping his animals without exercise, breeding them at home, and feeding them bountifully. I may perhaps some day trouble you with an account of my management of pigs.

My object in publishing the foregoing account, which is a faithful extract from my books, is to show the means I am adopting for bringing my land into a fertile state, and to elicit from others such information as may be useful. It is quite clear that the corn side of our farms, if charged merely with the expenses of the year, is satisfactory in its return; but when we cannot make the green and root crops pay their own expenses, the loss or difference is a heavy tax on the succeeding corn crops. I see in Mr. Hewitt Davis's farm-accounts, published in the "Royal Agricultural Society's Journal" (Vol. VII., Part II., page 532), he charges the loss on the Turnip crop, fed off, at 6*l.* 9*s.* per acre, and on the green crop, 1*l.* 9*s.* 6*d.* Whether by Mr. Huxtable's plan we shall succeed in reducing that loss remains to be proved—I am trying it. One thing is certain, that, as our liquid and solid manures are so costly to produce, the notorious national waste of them is a ruinous prodigality—scarcely an act of sanity, and certainly one of most miserable miscalculation. Landlords and tenants must really lay their heads together to remedy this defect. *J. J. Mechi, Tiptree-hall, near Kelvedon, Essex, Feb. 2.*

Home Correspondence.

Draining is a subject which may claim the attention of farmers at all seasons of the year, and no doubt any enterprising tenant who has the "wherewithal" to do it, or is assisted sufficiently by his landlord, does direct a very considerable portion of his regard to this fundamental part of his business; but, although nearly every farmer has dabbled in draining more or less, and labourers pretend to know how to execute the work, yet there is a lamentable want of knowledge of the first principles of the art shown by the greater part of those engaged in ordering, planning, or manipulating the process. Landlords are heard of who, having some cash to spare, firmly believe they are improving their own property, and acting like benefactors to their tenants, by undertaking a system of drainage for which the occupiers are required to pay 4 or 5 per cent. upon the outlay, and if the work was done properly it might prove a beneficial arrangement for all parties; but the landlords themselves rarely take much pains to master the subject so as to determine rightly what depth can or ought to be obtained, the distance between the drains or their direction, the size or quality of the tiles, how to cover them, and other material particulars. If the owner has not the ability or resolution to plan or direct the proceedings rightly, still less is it likely to be done thoroughly by the present race of stewards or agents, whose qualifications seemed to be too often summed up in keeping accounts, extracting rent, and evading all expenses until dilapidation increases the liability fourfold; it need not therefore be a matter of surprise to hear a tenant assert, when he was charged 4 per cent. upon the cost of drainage, that it was equivalent to more than 7 per cent., considering the difference in expense and efficiency if the management had devolved upon him. Still it must be admitted that the first attempts of tenants in the art of draining are rarely so successful as might be desired, however careful they may be to expend their money with a watchful eye to economy and efficiency; and who can chronicle the abortive efforts of ignorant men who storm at the capital they have engulfed by draining too deep (yes, Mr. Mechi, they would tell you at Wood, Walton, or Sawtry, in Huntingdonshire, that you *may* drain *too* deep in their unfathomable and impervious gault!) or too shallow, by using inferior or unappropriate material, by inattention to the outfalls, or by not securing a regular fall in the land experimented on, and so fail in reaping a benefit corresponding with the money expended, and then they ever after feel they have earned a right to abuse science, new-fangled notions, and book-farming! There are four parishes near Peterborough in which draining has been carried on for nearly 20 years, from thorns and turf to stone and tiles, improving in plan, increasing in extent, and dug by better men, with better tools, each succeeding year; and what have they arrived at now? after some of the farmers positively having laid drains twice over in the same fields, they have at last acknowledged that the brook connecting the parishes, and which acts as a common outfall, requires to be kept at a lower level; and a project was I believe agreed upon two or three weeks since to have a steam-engine erected, which will pump the surplus water of the brook into the Welland river when required, and so effect an immense improvement. How many parish drains are there requiring to be deepened, straightened, and drained, that now occupy in their sinuosities three times the space they should do, frequently swamping a deep and valuable alluvial soil, as choked with overhanging trees and briars, grass and rubbish; perchance a tunnel stopped up or other modes of obstruction; pity that some cheap process could not traverse a county and compel some amendment in the management of parish drains, and at the county's expense; for the accident of a parish being located at a lower level increases both the cost and the necessity of constant attention to the outfall. *J. W., Peterborough.*

Beer.—The best advice I can give your correspondent who complains of acidity in beer, is to procure Black on Brewing, a 7*s.* book, to study it attentively, and follow Mr. B's. directions precisely. A common glass saccharometer (costing about 7*s.*), is almost necessary to ascertain the progress of fermentation, as well as the original strength of the wort. I suffered long all the evils of which "Cerevisium" complains. I have now attained perfectly sound and very excellent beer. My success arises entirely from having sat in my brew-house book in hand, and carefully followed Black's receipt. "Cerevisium" would do well to see that his under-back and coolers are thoroughly sweet; if there be any doubt about this, they should be soaked for 24 hours with lime-water, and afterwards well rinsed. The raw hops introduced as finings, I suspect are mischievous; I never use them now, but they are a favourite nostrum with some old hands. Of course I do not mean to say that beer brewed according to Black's directions will resist the effect of thunder, but all I can say is, I never had sound beer till I adopted his receipt, and I have never had any unsound beer since. One suggestion I will make which I think does not occur in Black's book, viz., that the mash tun should have a close fitting wooden cover, this saves some 10 per cent. in malt, and may have other advantages. If there be any point to which attention should be directed more than another, it is to the completeness of the fermentation. I use a pint of strong yeast to every bushel of malt wetted, and ascertain by saccharometer that the fermentation has been carried far enough. Black's instructions on this head are very full, but it may be well to call attention to them. *Barleycorn.*

Norfolk System.—In your Paper of February 9, Mr. Davis proposes the 4-course Norfolk shift as an improvement on Mr. Watson's 5-course shift. As far as Scotland is concerned, he appears to overlook that there it is necessary to manure for Wheat as well as green crop. By the 5-course shift, say 15 loads for 40 acres of Wheat, and 25 for 100 acres of Turnip = 3100 loads at 3*s.*, = 465*l.*; by the 4-course, say 15 loads for 125 acres of Wheat, 1875 loads, and 25 do. for 250 acres of Turnip, 6250 do., = 8125, at 3*s.*, = 1218*l.* As under the 5-course there are 300 acres under labour, and Mr. Davis's 4-course there are 500, has he not under-rated the expense of keep and labour? *G.*

Hybrid Pheasants.—If "N. F." will take the trouble to write to the Duke of Buccleuch's gamekeeper, at Langholm Lodge, Dumfriesshire, he may be likely to get the proper information respecting the breeding of hybrid pheasants; let him not rest contented, by supposing that such a thing is impracticable. I can assure him that it has been done 30 years ago, by the late Mr. Hardie, who was then and had been for many years gamekeeper at Langholm Lodge. It can hardly be supposed that the birds which Mr. Hardie reared at that time are still to be seen there, but it is likely that his successors have kept up the stock, or may have made themselves acquainted with Mr. H's. plan. I remember the birds well, they generally kept amongst the poultry, and would often attack the domestic cock; one bird in particular, which was much stronger than the rest, would always come upon the cock unawares, and hit him nearly heels over head, the poor cock would turn round, but could never catch hold of his more agile assailant, who would put himself in a fighting attitude for a minute or two, but would never rise to strike at the same time with the cock, which always flew over the mule's head without touching him. They were of different colours, some speckled white and brown, others yellow on the back, with black necks, breast and tails, larger than the common pheasant, which they resembled more than the domestic hen. *W. S.*

A Steam Cultivator.—Please to insert these few lines in your *Gazette* as a foreshadowing of what a steam plough, or rather a steam cultivator ought to be, and, I make no doubt, will ultimately be. I am no mechanic, but I know enough of mechanics to be aware that there is nothing in my proposal which skilful engineers cannot contrive. I propose a machine, somewhat in the shape of the patent street-cleaner; it would, however, be much larger in front; on being moved forward, it would take up the whole of the soil, which is to be pulverised. This would be moved upwards into the body of the machine, to be reduced by means of cutters, rollers, sieves, and other appropriate contrivances, to the state most suitable for the growth of the intended crops. The manures proper for the occasion, according to the most scientific principles, might be mixed with the soil, and the latter would then be deposited at the other extremity of the machine, in one broad sheet or layer, on the land, somewhat in the manner in which cotton comes out of the carding machine. There would be no difficulty, if desirable, to mix the seed at the same time, with the soil in the machine, or to drop it from the machine, and cover it with a second sheet of earth, and press the latter down with rollers, all in one operation. This ponderous machine ought to be 8 or 10 feet wide. It would be pulled to and fro across the field by steam-engines, moving along the two opposite sides on temporary rails. The wheels on which the cultivator would move ought to be so contrived that they should cut ruts, serving at the same time as surface drains, and also as paths for the weeders, who would have to preserve crops—sown with so much care and at so great an expense—from all injurious vegetation. The business of ploughing, manuring, and sowing, would become a separate trade; the proprietors of these machines, with their men, would travel over the country, and hire themselves out, where wanted. Agriculture would then become, indeed, both an art and a science. Instead of decreasing, it would increase the demand for labour, and the labourer would be advanced in the scale of society. I repeat that all this can be accomplished, and I make no doubt it will. Progress is the order of the day. We cannot stand still. We may not retrograde. Here is a proposal to advance. *P. S.*

Steam Engine.—I am induced to send you an account of what, since my last communication, I have done to my steam-engine, and I shall be pleased if it should benefit any person that has or is about putting up one; but I must first give you the particulars of my threshing-mill, to enable you to judge of the improvement; it was at first worked by four horses (who felt more fatigued after a day's threshing than when in pairs they had ploughed 1¾ acre of lea land); its drum is 4 feet long, and 3 feet 3 inches in diameter, and made 290 revolutions per minute; the edge of the beaters then travelled at the rate of 35.525 feet per minute, the rollers being 5 inches in diameter, made 71 revolutions, or their circumference going over a space of 1115 feet. This speed I give to calculate how long a sheaf of a given length is being held to the beaters; the engine now drives the drum 440 revolutions and the rollers about 110; the edges of my beaters now go 53,900 feet per minute, yours at Whitfield about 50,000 feet. Would you advise me to take away the rollers, and adopt the most approved concave to suit my drum, or adopt the peg system, as you will see how much longer a sheaf is in contact with the beaters, and how much power the rollers take to hold it there. [What do you thresh now—How many cubic yards of a six months old rick?] My steam cylinder is 9¼ inches in diameter, and the ports at first were 4 inches by ¾, and there was no more lap on the valve than allowed the steam port to open, just at the time the eduction port opened; this caused great back pressure, and required the steam to be about 55 lbs. pressure to work the mill, the passages being 4 inches by 1, the ports were enlarged to that size, and put as much lap on the valve, that when the steam port was opening, the eduction port was two-thirds open; the engine worked much better with only 40 lbs. pressure. From its success, I had new passages and ports made, 6 inches by 1¼, and the middle port 6 by 2, when its work was improved when only working with 30 lbs. pressure, and a further saving of fuel; but I found that to lift the enlarged valve when the pressure was 25 lbs. on the inch, it took 380 lbs., and to remedy which I had a 4-inch cylinder with a packed piston screwed on to the front of the valve chest, so connected that it pulled against the back of the valve; this so far relieved it that the engine started well to its work with 25 lbs. pressure, the adopted piston so far relieved the pressure on the valve that it took 190 less to lift it. The pressures mentioned were what I was obliged to get before the engine would work for any length of time, but after a short time the pressure decreased, and the engine went slower; but at my yesterday's trial I commenced when the steam was at 25 lbs., and it gradually increased to 30 lbs., when I opened the communication to the bone steaming boiler, and was steaming bones all the time I was threshing. *Richard Nicklin, Isle of Man, Feb.* 9.

Societies.

ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

Professor Way, the Consulting-Chemist to the Society, delivered a Lecture "on Guano and its adulteration," before the members of the Society, at their House, in Hanover-square, on Wednesday last, the 27th of February; Mr. Raymond Barker, Vice-President, in the chair.

LECTURE ON GUANO.

Mr. Way commenced his lecture by observing that he had been induced to make guano the subject of a lecture, partly because the present was the season when farmers were purchasing their supplies of the manure, partly on account of the insufferable extent to which the adulteration of guano was now carried, and which had been brought before the attention of the Council of the Society in so circumstantial a manner at a previous weekly meeting, as to induce them to refer the whole question to the serious consideration of a monthly meeting. Mr. Way would carefully avoid any remarks which should have the appearance of prejudging the case, or of dictating to the Council the line of conduct they should pursue; but he considered it his duty, as the Chemist of the Society, to bring the facts before them.

He should confine himself to Peruvian guano, the other varieties having comparatively ceased to be of importance; and 1st, he would endeavour to establish the fact, that the true Peruvian guano, as it reached this country, was not subject to much variation. By the examination of more than 30 specimens last year, he had found that the per-centages of ammonia and phosphate of lime, the most important ingredients of guano, were confined within narrow limits. A diagram before the meeting showed this plainly.

VARIATION IN THE COMPOSITION OF PERUVIAN GUANO.
(32 specimens examined.)

	Lowest.	Highest.	Mean.
Water	8.88	22.68	13.09
Organic matter and salts of ammonia	37.78	58.82	52.61
Sand	1.17	2.95	1.54
Earthy phosphates	19.46	34.45	24.12
Ammonia yielded by 100 parts	15.98	18.94	17.41

The specimens alluded to were carefully taken from ships in the river. Since the publication of these results in the Journal of the Society, he had made many more analyses of good guano, and was more than ever convinced of the uniformity of its composition. But whilst the authenticated specimens were very similar in composition, samples were continually reaching the laboratory, which, upon analysis, exhibited every shade of chemical characters—that these samples were adulterated, there could be no doubt. While good guano, when burnt, gave an ash almost entirely soluble in acids, and leaving only 1½ or 2 per cent. of sand, these adulterated specimens contained often from 25 to 35, or more, of insoluble matter—sometimes sand, sometimes clay. In proof of this, he submitted, in a diagram, the analysis of six specimens which had reached him within the last few weeks from different localities.

ADULTERATED GUANOS.

	1.	2.	3.	4.	5.	6.
Water	7.77	6.64	...	10.92	12.32	11.22
Organic Matter and Salts of Ammonia	36.18	29.42	...	32.44	34.86	34.68
Sand, &c.	23.14	7.84	25.34	32.50	27.23	5.44
Earthy Phosphates	6.80	10.24	16.40	10.60	13.30	21.09
Ammonia	10.10	8.37	12.20	10.29	8.96	27.57

In many cases these specimens had been sent to him in the belief that they were genuine, but there could be no hesitation in pronouncing them spurious. Of the loss to the farmer in the purchase of such sophisticated manures it was difficult to speak with any great degree of accuracy—the loss was not confined to that of the purchase-money—it was the disappointment and failure in the crops resulting from their use which constituted the severity of the evil. Of the loss on purchase-money, some notion might be formed by a calculation founded on the value as manures of ammonia and phosphate of lime. He estimated the ammonia at 6*d.* per lb., and the phosphate of lime at ¾*d.* per lb.; but it would be necessary to make a deduction from the value so obtained, inasmuch as guano at 10*l.* per ton furnished these substances at about one-sixth less than the above-named prices.

MONEY VALUE OF ADULTERATED GUANOS.

		Per cent.	Price. £ s. d.	Value. £ s. d.	Loss to Buyer. £ s. d.
1.	Ammonia	10.10	8 10 0	5 9 0	3 1 0
	Earthy Phosphates	6.80			
2.	Ammonia	8.37	7 10 0	4 10 0	3 0 0
	Earthy Phosphates	10.24			
3.	Ammonia	12.20	9 10 0	6 12 0	2 18 0
	Earthy Phosphates	16.40			
4.	Ammonia	10.29	.....	5 18 0	.....
	Earthy Phosphates	10.60			
5.	Ammonia	8.96	.....	5 14 0	.....
	Earthy Phosphates	13.30			
6.	Ammonia	8.14	.....	6 4 0	.....
	Earthy Phosphates	21.09			

The diagram which was formed from the analysis of the specimens just described, proved that whilst the dishonest dealer reduced the value of the guano by sand and other admixtures, to one-half, he only lowered the price by one-fourth. For 7*l.* 10*s.*, the farmer obtained, therefore, a guano which was intrinsically worth 5*l.* or less. It could not be too widely known that it was impossible in the general way of business that they should buy good Peruvian guano for less than 9*l.* 5*s.*, because the importers, Messrs. Gibbs, Bright, and Co., who had an exclusive agency from the Peruvian Government, never sold any sound guano below that sum. It was true indeed that there were sales now and then of damaged guano; that is, of the parts of the cargoes that had been subject to leakage on the voyage; but the competition for these lots was so great that they generally fetched a higher price than their intrinsic value justified; they were often mixed with some substance to dry them up, and then the farmer paid the cost. Nothing was a greater delusion than a cheap guano; if the farmer could not afford the full price, let him buy half the quantity.

Mr. Way then went on to mention the substances generally employed in the adulteration, and to remark that at present the methods employed were very gross, and comparatively easy of detection — yellow sand, ground limestone, yellow marls and clays, gypsum and ground coprolites; all and each of these had been detected in the analysis of samples he could bring forward. The adulteration was not confined to 10 or 15 per cent., which itself would seem to offer a fair remuneration for the fraud, but it was in most cases above 25 or 30 per cent. The use of ground coprolite was a certain step of refinement in this nefarious trade, because the coprolite consists in great measure of phosphate of lime—itself an ingredient of genuine guano. By-and-bye he feared that those who adulterated, being more closely watched, would become more clever in their calling, and the little chance (for unfortunately it was little) that the farmer, unaided, had of discovering the imposition would be still further diminished. He wished he could make known some easy and simple method by which the buyer could, for himself, make an examination of his purchases; but there would seem to be none short of chemical analysis, which met all cases.

The lecturer then went on to show, by specimens on the table, the difficulty of deciding between a good and bad specimen by external indications. The colour was usually considered a criterion, but a sample exposed for a short time to damp air, became dark and of a suspicious appearance, although in truth perfectly good, and really only containing 2 or 3 per cent. more water

On the other hand, guano adulterated with 40 per cent. of yellow clay, was in no respects distinguishable by its colour from the pure article. On the table were specimens purposely mixed with 10, 20, 30, 40, and 50 per cent. of white sand. This was a gross falsification, and yet he thought that gentlemen in that room would have a great difficulty to distinguish between any one of them containing less than 30 per cent. of sand and the pure guano lying beside them. The character of smell was also very deceptive. No doubt the pungency was reduced by mixture with most substances; but even good guano was not all alike in this respect; and if by accident it became slightly damp, the smell was greatly increased. The driest and the best, would therefore frequently have the least odour. Perhaps of all practical tests that of specific weight was the best. Adulteration was happily at present practised with substances heavier than guano, and therefore a great weight compared with equal bulk was a suspicious circumstance. By a great many weighings made under the directions of the importers, he was able to say that the average weight of a bushel of good Peruvian guano was about 68 lbs. The variation on these trials was, however, somewhat great—a bushel sometimes weighing as much as 73 lbs., at others not more than 61 lbs., a circumstance due to the lumpy and unequal character of guano, and to different methods employed by various persons in the experiment. A bushel of guano adulterated with 40 per cent. of any of the substances he had before named, would, however, greatly exceed the above weights, although he could not state the precise difference. Some value was, therefore, to be set on this method of judging, although eventually he feared it would not serve the purpose. Some simple experiments were in the reach of every farmer, and would serve to protect him against the more flagrant modes of falsification. Thus, when pure guano was burnt on a hot shovel till the blackening had gone off, the ash ought to be white—not yellow or brown: these latter appearances indicated an admixture of clay or coprolite. The ash, too, ought almost all to dissolve up in muriatic acid, leaving little residue insoluble.

A still better plan was to burn 100 grains of the sample with twice its weight of powdered nitre, and when the mass had ceased to swell up to dissolve the nitre in water. If pure guano had been used, the white phosphate of lime would easily float off in the water when decanted. On the other hand, a mass of yellow or black heavy stuff at the bottom of the glass would lead the experimenter to suspect adulteration. Having expressed his regret that the circumstances did not admit of an easy and certain test of good guano, to be applied by the farmer himself, Mr. Way said that it was some satisfaction that the fraud was open to detection by the aid of chemistry. There were numbers of chemists throughout the country quite competent to decide in these cases, and the farmer who purchased largely of guano without having recourse to the unerring guidance of analysis, was himself partly to blame if he lost his crops and his money. The Council of the Society had made arrangements by which the cost of analysis of all sorts to its members had been considerably reduced. If they should be able to strike out any plan by which the access of farmers to chemical aid would be facilitated and cheapened in regard to this particular manure, he was prepared on his part to co-operate with them in any way that his professional assistance might be useful.

Lastly, Mr. Way would advert to the practical result which might flow from a more general employment of analysis in the case of guano. Could the farmer refuse payment for an adulterated guano? or, could he recover from the fraudulent dealer for loss of money and loss of crop? These were the great questions. He did not profess to understand the law of the case, but he could not conceive that, in a common-sense country like England, deliberate fraud affecting the vital interests of a mass of the community could be allowed to flourish unchecked, and he believed, sooner or later, whatever the difficulties, the farmer would find his redress. Mr. Way stated that it had always appeared a difficulty to him how, in case of his being called upon to give evidence in a court of law, he should answer such a question as this, "You say that this guano has a different composition to the average cargoes, and therefore it is adulterated—have you analysed every cargo that has reached England during the last year?" This would be a troublesome question to answer, however much he might morally be convinced of the adulteration. This difficulty had, however, been entirely removed by a promise which he was authorised to make on the part of the importers—that samples of each cargo of Peruvian guano reaching England should be reserved with all proper authentications—not by persons in their employ, but by independent witnesses producible in a court of law, and that portions of these samples should be available for the establishment of any case of fraud. This arrangement was a great step. Let the farmer always insist upon knowing from the dealer the name of the ship, and the date of importation, and with a power of reference to the original cargo, the links of legal evidence would appear (at least to him, as a person unlearned in the law) to be complete.

Before he sat down, Mr. Way wished to say that in attacking the unprincipled dealers, he would distinctly express his conviction, that there were very many honest and upright men from whom guano could be purchased, and it was hard that the just should suffer for the unjust. The dealers had in great measure introduced this valuable manure into use, and should not hastily be deprived of their rightful advantages, because there were some black sheep amongst them.

On the motion of the Rev. James Linton, seconded by Mr. Slaney, M.P., the best thanks of the meeting were voted to Professor Way for his kindness in lecturing before them on that occasion. Colonel Challoner, Captain Wentworth Buller, Mr. Miles, M.P., Mr. Parkins, and Dr. Calvert, offered remarks to the meeting on topics connected with the lecture, and Mr. Barugh Almack suggested that an authorised list should be published of those dealers who had never been known to offer adulterated guano for sale.

Review.

The Plantation Scheme: or the West of Ireland as a Field for Investment. By James Caird, Farmer, Baldoon. Blackwood and Sons.

Mr. CAIRD spent the greater part of last autumn in examining the condition of Irish land, and Irish cultivation in the west. The idea and prosecution of this investigation were entirely his own; he obtained indeed the character of Sir Robert Peel's commissioner, by newspaper report. But he neither possessed, nor did he profess any claim to the title. This examination of estates in the counties of Mayo, Galway, Clare, Limerick, Kerry, and Cork, was undertaken originally for his own information, and the tour proved so interesting and instructive to himself, that it was thought its publication might in some degree supply the agricultural information in which other "tours" had been deficient, and hence the present volume. We do not mean just now to give any lengthened description of it, though we shall publish occasional extracts from its pages. It must suffice for the present to say, that it is a simple unpretending detail of what was seen by an intelligent practical farmer, who by introductions from the Lord Lieutenant, Sir Robert Peel, and others, enjoyed opportunities of information which other travellers have not experienced, and that it will no doubt be read with interest by any who may propose investing English capital in Irish soil.

Miscellaneous.

Atomic Character of the Food Manufacture.—It is not merely that the extra manuring induces the extra crop—the manuring furnishes the very building material out of which the increased produce is made. Those very atoms of nitrogen and of phosphorus you are adding in guano—those very particles of potash and soda you are detaching from impracticable positions in the soil by the influences which drainage has brought to bear upon them—those very atoms of carbon which your plants, vigorous owing to more thorough cultivation, are extracting from the air in the sunshine, may travel various roads, but they will come to an ultimate residence side by side in the flesh and the blood of the fattening animal. The various additions you make to your soil, the fertility you extract from it, may indeed be said to "occasion" the increased produce of meat which succeeds them, but it is in the same way as the stone and the lime occasion the buildings of which they are the very substance and material. *English Agricultural Society's Journal.*

Calendar of Operations.

FEBRUARY.

SUSSEX FARM, *Feb.* 25.—The weather being fine our horse teams are engaged harrowing in Tares, and drilling Peas, 9 inches apart. If fine, we shall continue drilling Peas and Beans all the week; the Beans we drill 15 to 18 inches apart; our ox teams are engaged ploughing Turnip land for Barley, and preparing the land for the Potatoes, part of which we shall plant this week. We plant all early sorts in the field now, as they are not so liable to be diseased as the late sorts. We have a good stock in hand for seed, and they keep much better than they have done for two years past. Men are engaged threshing and cleaning Wheat, turning mixens, digging Hops, and draining, &c. *J. B.* [Can you give us a comparison of ox and horse labour as to expense?]

Notices to Correspondents.

ACIDITY IN BEER: *Humulus* says, "'Prevention is better than cure!' Is not there a fault in the mashing? Except in very cold weather, the water should not remain on the malt, for the first mash, longer than half-an-hour; even at the end of that time, litmus paper will be turned pink by what runs off. In warm weather, 1½ lb. of Hops should be used to each imperial bushel of malt, exclusive of what are put into the barrel; 2 lbs. would not be too much in hot weather. Let air circulate freely in the cellar, except when the beer is working. Try this and speak again."

BONES, &c: *T Halford.* The way to reduce the time during which bones will act—that is, to increase their immediate efficiency—is to increase their solubility. You should either apply bone *dust*, first fermenting it in heaps soaked with liquid manure; or you should dissolve them in acid before application. The latter would be the best way in the case of one who has only a year's interest in the land. It ought to be applied at once to benefit this year's crop.—As regards your Clover plant, you may top-dress with manure, sow some perennial seeds, harrow in, and so procure a permanent sward; and as to manures, guano and superphosphate of lime for Turnips, guano and sulphate of ammonia for Barley and Wheat, at the rate of about 3 cwt. per acre, are most likely to answer.

DAIRY PRODUCE: *Dairy Maid.* One pound of butter is yielded by from 9 to 12 quarts of milk, according to the breed of the animal.

DISEASES IN PIGS: *Constant Reader.* Next week. Manningtree is in Essex.

EGYPTIAN WHEAT: *F G.* You had better apply to Mr. Wilkins; he may possibly have a little to spare.

HAND DIBBLE: *Minimus.* Dr. Newington's. See advertisement. About wire fences we cannot help you. Perhaps the advertisers on that subject would inform you.

HOSE PIPES: *M S.* Gutta percha is probably the best. Prices may be ascertained of the Gutta Percha Company, London.

HYBRID PHEASANTS: *A W* says: "I heard several gentlemen speak of some they saw upon the estate of Mr. Bate, of the Leasows, Penn, in Staffordshire. They were not named as beauties, for they were said to have pheasant's bodies and hen's tails, and were the progeny of a hen pheasant."

INDIAN CORN: *A Constant Reader* should procure Mr. Keen's tract, entitled "Facts for Farmers." He will find that the profitable cultivation of the plant is impossible in our climate.

ITALIAN RYE-GRASS: *Amateur.* We cannot say whether, if sown now, it would furnish anything like a swathe before the scythe by Midsummer; but it would, no doubt, be ready for soiling in autumn, and again before Turnip seed time next year. If you sow two bushels in the end of April or beginning of May among your Wheat, and hoe it in, you will have a good crop early in spring.

KOHL RABI: *W A C.* Sow in beds in early April; 2 lbs. of seed will furnish an acre of plants. You may transplant in rows 2 feet wide, at intervals of about 28 inches in the rows; the plants will be ready for transplanting in June. The land should be prepared as for Turnips.

LIME AND MANURE: *W W.* Do not put both on the same year. Try bones or superphosphate of lime, applied broadcast, in March. Feed sheep on it during summer, and apply lime in autumn. Turnips, chaff, and oilcake will make cheaper beef than chaff and oilcake alone. Galloways of 50 stones weight will eat 1 cwt. of Turnips, 5 lbs. of chaff, and 4 lbs. of oilcake a day; or probably 20 lbs. of chaff or 4 lbs. of oilcake a day. In both cases the oilcake will cost about 2*s.* 4*d.* a week. In the one there is a balance of, say 14 lbs. of hay against 1 cwt. of Turnips in the other. At 3*l.* and 10*s.* respectively per ton, the latter costs about 1*s.* more per week than the former. More straw is used as fodder in the former case.

LUCERNE: *E D.* In mid April sow in shallow drills, 18 inches apart, on a deeply tilled well manured loamy soil, about 10 lbs. of seed per acre. You had better not attempt to grow Barley too.

MADDER: *M.* Could any of our readers, acquainted with the cultivation of this plant, give us the details?

MALTING: *X Y Z.* What is the best book on this subject?

MOSSY PASTURE: *M A.* Slake lime with brine, and spread it over the field at the rate of 50 or 60 bushels per acre.

PARSNIPS: *A Sub.* Sow in shallow rows, 18 inches apart, on deeply tilled well manured clay loam soil, about 5 lbs. of seed per acre. They should be sown *now*—they ought to have been sown before this. Carrots may be sown similarly in all respects in the first week of April. Mangold Wurzel should be sown in April just as Turnips are, only the seed should be dibbled in about 18 inches apart.

PIGS: *A Constant Reader.* The late Mr. Youatt published a work on the subject; and there is a shilling volume by Richardson—M'Glashan, Dublin.

SHOULDER LAMENESS: *B A Clericus.* Next week.

SMALL FARM: *New Forest.* It is necessary that we should know what are the most saleable articles in your neighbourhood. Have you a good market for dairy produce?

WHITE POPPY: *J Sylvester* asks for information on the culture of the White Poppy. Can any of our readers state their experience?

WORCESTER AGRICULTURAL SOCIETY: *Somerset* may see a sample of the guano made use of by Mr. Oldacre, at the Office of the Editor, 5, Upper Wellington-street, Covent-garden. If "Somerset" has not yet received a reply from Mr. Oldacre, "H. Webb" will direct his attention to the inquiry, and no doubt the information will be immediately furnished.

Markets.

COVENT GARDEN, MARCH 2.

Vegetables are plentiful, but many kinds of Fruit are scarce. Hothouse Grapes, with the exception of the Barbarossa, are over, and Pine-apples are anything but plentiful; as are also Pears and Apples. Walnuts, and Chestnuts are abundant, more especially the latter, and Oranges and Lemons are sufficient for the demand. Amongst Vegetables, Turnips and Carrots are good, and there is some fine Cornwall Broccoli in the market. Potatoes are unaltered since our last account; foreign ones fetch from 50*s.* to 80*s.* a ton. Lettuces and other salading are cheaper, and so are Mushrooms. French Beans, Asparagus, Seakale, and Rhubarb may be obtained at about last week's prices. Cut Flowers consist of Heaths, Pelargoniums, Bignonia venusta, Primulas, Camellias, Cinerarias, Christmas Roses, Azaleas, Lilacs, Lily of the Valley, Epacrises, Acacias, and Roses.

FRUITS.

Pine-apples, per lb., 6s to 9s	Almonds, per peck, 6s
Grapes, Portugal, p. lb., 9d to 1s	— sweet, per lb., 2s to 3s
Pears, per doz., 6s to 10s	Walnuts, p. 100, 1s 6d to 2s
Apples, kitchen, p. bsh., 4s to 6s	— p. bush., 16s to 24s
Lemons, per doz., 1s to 2s	Nuts, Bar., p. bush., 20s to 22s
— per 100, 6s to 12s	— Brazil, p. bsh., 12s to 16s
Oranges, per doz., 9d to 1s 6d	Kent Cobs, 65s to 75s p. 100 lbs
— per 100, 5s to 12s	

VEGETABLES.

French Beans, per 100, 3s to 5s	Carrots, per bun., 4d to 6d
Seakale, per punnet, 1s to 2s	Spinach p. sieve, 2s to 3s
Asparagus, p. bund., 1s 6d to 6s	Onions, p. bushel, 2s to 3s 6d
Rhubarb, p. bundle, 6d to 1s	— Spanish, p. doz., 1s 6d to 4s
Savoys, per doz., 6d to 9d	Shallots, per lb., 4d to 8d
Cauliflowers, p. doz., 1s to 4s	Garlic, per lb., 4d to 8d
Broccoli, p. doz. bundl., 8s to 12s	Lettuce, Cab., p. sc., 4d to 9d
Greens, per doz., 2s to 3s	Endive, per score, 1s 6d to 4s
Brussels Sprouts, p. hf. sieve, 1s 6d to 2s	Mushrooms, p. pot., 9d to 1s 3d
	Small Salads, per punnet, 2d to 3d
Sorrel, p. hf. sieve, 1s to 2s	Watercress, p. 12 bun., 6d to 9d
Potatoes, per ton, 60s to 120s	Fennel, per bunch, 2d to 3d
— per cwt., 3s to 7s	Savory, per bunch, 2d to 3d
— per bush., 2s 6d to 3s 6d	Thyme, per bunch, 2d to 3d
Turnips, p. doz. bun., 1s 6d to 2s 6d	Parsley, p. doz. bun., 2s to 3s
Red Beet, per doz., 9d to 1s	— Roots, p. bdle., 9d to 1s
Horse Radish, p. bdl., 1s to 4s	Marjoram, per bunch, 2d
Cucumbers, each, 3s to 5s	Mint, green, per bunch, 9d to 1s
Leeks, per bunch, 1d to 1½d	Corn Salad, p. hf. sieve, 9d to 1s
Celery, p. bundle, 8d to 1s 3d	

POTATOES.—SOUTHWARK, Feb. 25.

The Committee report that there have been many arrivals this week, both coastwise and Continental, and a large supply by rail, which, with mild weather, has tended to lower prices in nearly every description of Potato. The following are this day's quotations:—Yorkshire Regents, 80*s.* to 110*s.* per ton; Wisbeach do., 70*s.* to 90*s.*; Scotch do., 70*s.* to 80*s.*; Scotch cups, 65*s.* to 75*s.*; French whites, 70*s.* to 80*s.*; Belgian do., 70*s.* to 75*s.*; Rhenish, 65*s.* to 70*s.*

HOPS.—FRIDAY, March 1.

Messrs. PATTENDEN and SMITH report that the market continues about the same, but if there is any difference there is a better demand for speculation. We expect as the spring advances the demand will increase.

HAY.—Per Load of 36 Trusses.

SMITHFIELD, Feb. 28.

Prime Meadow Hay	66s	to 72s	Clover	60s	to 84s
Inferior ditto... ...	50	63	New Clover	—	—
Rowen	50	60	Straw	23	28
New Hay	—	—			

J. COOPER.

CUMBERLAND MARKET, Feb. 28.

Prime Meadow Hay	68s	to 74s	Inferior	58s	to 70s
Inferior ditto... ...	50	63	New Clover	—	—
New Hay	—	—	Straw	27	30
Old Clover	78	86			

JOSHUA BAKER.

WHITECHAPEL, Feb. 28.

Fine Old Hay ...	63s	to 68s	New Clover	—s	to —s
Inferior ditto ...	50	55	Inferior ditto... ...	55	63
New Hay	—	—	Straw	24	28
Old Clover	80	85			

SMITHFIELD, MONDAY, Feb. 25.

The supply of Beasts is very large, and the quality of it good. Trade is dull, and prices are lower; 3s. 8d. is an extreme quotation. Several remain unsold. The number of Sheep is rather larger than of late; the demand is limited, and prices remain about the same. Calves are plentiful. Trade is slow at Friday's rates. From Holland and Germany we have 388 Beasts, 90 Sheep, and 53 Calves; from Spain, 42 Beasts; from France, 9 Beasts and 210 Sheep: from Scotland, 400 Beasts; from Norfolk and Suffolk, 2600; and 300 from the midland counties.

Per st. of 8 lbs.—	s	d	s	d
Best Scots, Herefords, &c.	3	6 to 3	8	
Best Short-horns	3	4 — 3	6	
2d quality Beasts	2	8 — 3	0	
Best Downs and Half-breds	4	4 — 4	6	
Ditto Shorn				

Per st. of 8 lbs.—	s	d	s	d
Best Long-wools	3	10 to 4	0	
Ditto Shorn				
Ewes & 2d quality	3	0 — 3	6	
Ditto Shorn				
Lambs				
Calves	3	0 — 4	0	
Pigs	3	0 — 4	0	

Beasts, 3922; Sheep and Lambs, 19,440; Calves, 108; Pigs, 185.

FRIDAY, March 1.

The supply of Beasts is not large; however, it exceeds the demand. The amount of business done is very small, at about Monday's quotations. Trade is exceedingly dull for Sheep; prices are fully 2d. per 8 lbs. lower. We have several shorn, which are readily sold at fair rates, owing to the present favourable weather. The supply of Calves is large; there is a fair demand for them, at advanced rates. From Holland and Germany there are 66 Beasts, 100 Sheep, and 113 Calves; from Spain, 29 Beasts; from France, 120 Sheep; from Scotland, 100 Beasts; and 119 Milch Cows from the home counties.

Best Scots, Herefords, &c.	3	6 to 3	8	
Best Short-horns	3	4 — 3	6	
2d quality Beasts	2	4 — 3	0	
Best Downs and Half-breds	4	2 — 4	4	
Ditto Shorn				

Best Long-wools	3	8 to 3	10	
Ditto Shorn				
Ewes & 2d quality	2	10 — 3	4	
Ditto Shorn				
Lambs				
Calves	3	4 — 4	4	
Pigs	3	0 — 4	0	

Beasts, 794; Sheep and Lambs, 3470; Calves, 239; Pigs, 204.

MARK LANE.

MONDAY, FEB. 25.—The supply of Wheat from Kent by land carriage samples to this morning's market was good, but small from Essex; the latter sold freely at fully the terms of this day se'nnight. The demand for foreign Wheat was limited, but the prices are unaltered.—The value of Barley and Beans remains the same.—White Peas are 1s. per qr. cheaper. —The Oat trade is not worse, and sweet old foreign rather more inquired after.

British per imperial Quarter.	s.	s.		s.	s.
Wheat, Essex, Kent, & Suffolk ...White	41	43	Red	36	38
— — fine selected runs ...ditto	42	44	Red	38	40
— — Talavera	48	50			
— Norfolk, Lincoln, & York ...White	—		Red	—	
— Foreign	35	54			
Barley, grind. & distil., 19s to 22s...Chev.	24	27	Malting	22	24
— Foreign.....Grinding and distilling	18	21	Malting	22	24
Oats, Essex and Suffolk	15	19			
— Scotch and Lincolnshire ...Potato	18	22	Feed	16	18
— Irish .....Potato	17	20	Feed	15	18
— Foreign .....Poland and Brew	16	20	Feed	13	17
Rye	20	24	Foreign	20	23
Rye-meal, foreign .....per ton	5l.	6l.			
Beans, Mazagan .....21s to 23s .....Tick	24	26	Harrow	24	26
— Pigeon .....25s — 28s ...Winds	22	28	Longpod	25	28
— Foreign ..... Small	24	36	Egyptian	22	23
Peas, white, Essex and Kent.....Boilers	23	25	Suffolk	24	26
— Maple .....24s to 26s.....Grey	22	23	Foreign	21	28
Maize .....White	22	25	Yellow...	24	26
Flour, best marks, delivered ...per sack	36	40			
— Suffolk .....ditto	32	36	Norfolk	32	36
— Foreign .....per barrel	22	24	Per sack	31	34

ARRIVALS IN THE PORT OF LONDON LAST WEEK.

	Flour, 15928 sks / — 603 bls	Wheat. Qrs.	Barley. Qrs.	Malt Qrs	Oats. Qrs.	Beans. Qrs.	Peas. Qrs.
English		2837	3771	7313	4175	1266	839
Irish		—	—	46	220	—	—
Foreign		8362	—	—	762	2875	—

FRIDAY, March 1.—The arrivals of foreign grain during the week have been very trifling. To-day's market was but thinly attended, and in the few sales made of Wheat prices must be considered nominally the same as on Monday.—We observe no alteration in the value of Barley, Beans, Peas, or Oats, and but a limited business doing in either.—The Wheat trade during the week in the principal markets of the kingdom has been extremely languid, with rather a tendency in prices to decline. Spring Corn has also continued very dull. By the last accounts the frost seems to have returned in the Baltic, and there appears little probablity that the ports of Memel, Konigsberg, and Dantzic will open prior to the beginning of April; the supplies there found buyers as fast as they arrived, at fully former prices. In Stettin, Anclam, Stralsund, Greifswald, and Rostock, the supplies continue too small to admit of any decline in prices, and 62—63 lbs. Wheat cannot be bought below 35s. to 36s. per qr., f.o.b. Prices in the French markets are too high to admit of profitable exportation to this country. In Holland the markets are firm at former prices.

ARRIVALS THIS WEEK.

	Wheat. Qrs.	Barley. Qrs.	Oats. Qrs.	Flour.
English	2540	6280	7320	6750 sacks
Irish	—	—	—	
Foreign	1560	1140	—	— brls.

Imperial Averages.	Wheat.	Barley.	Oats.	Rye.	Beans.	Peas.
Jan. 19	41s 0d	26s 3d	16s 0d	23s 9d	26s 6d	27s 6d
— 26	40 1	25 9	15 10	21 2	26 1	28 5
Feb. 2	39 4	25 4	15 2	23 10	25 6	27 0
— 9	38 6	24 7	15 3	22 1	25 3	26 4
— 16	37 9	23 10	15 4	20 7	24 11	26 10
— 23	37 11	23 7	15 6	20 11	24 8	26 0
Aggreg. Aver.	39 1	24 11	15 6	22 1	25 6	27 0
Duties on Foreign Grain	1 0	1 0	1 0	1 0	1 0	1 0

Fluctuations in the last six weeks' Corn Averages.

Prices.	Jan. 19.	Jan. 26.	Feb. 2.	Feb. 9.	Feb. 16.	Feb 23.
41s 0d	—	...	...	...	...	...
40 1	...		...	...	...	...
39 4	...	...		...	...	...
38 6	...	...	...		...	...
37 11	...	...	...	...		...
37 9	...	...	...	...	...	

SEEDS.—Feb. 25.

Canary, per qr.	74s to 78s	Coriander, per cwt.	16s— 21s
Caraway, per cwt.	31 — 33	Mustard, white, p. bush.	6 — 7
Hempseed, per qr.	34 — 35	— brown, do.	7 — 9
Linseed, foreign, do.	37 — 45	Rape, per last	28l.—34l.
Clover, red, per cwt.	— —	Cakes, Linseed, p. 1000	9l. 3s
— — foreign, do.	— —	— — foreign, p. ton	6l. 15s
— white, do.	— —	— Rape, foreign, do.	4l. 5s
— — foreign, do.	— —	Tares, per bush.	4s 6d—5s 6d

LIVERPOOL, TUESDAY, FEB. 26.—The supplies of grain and Flour during the past week are on a small scale, but our demand has been quite as limited, and no change of consequence has occurred in the price of any article. On Flour there was a marked decline of 6d. per barrel and 1s. per sack on the rates of this day se'nnight. Oats were ½d. to 1d. per bushel lower. Oatmeal declined 3d. per load, and Beans 6d. per qr. Indian Corn was also 6d. per qr. lower.

HARTLEY'S PATENT ROUGH PLATE GLASS FOR CONSERVATORIES, &c.

See Article in THE GARDENERS' CHRONICLE of Saturday, December 8, 1849.

"Continued experience leaves us no room to doubt that this is the best material yet produced, and that it will in time supersede glass of all other kinds for the greater part of Gardening purposes." . . . "As for the article substituted for Rough Plate . . . it is wholly unfit for any horticultural purpose." . . . "The best sample of it which we have yet seen was Manufactured by Messrs. HARTLEYS, AND SOLD BY MESSRS. JAMES PHILLIPS & CO., 116, BISHOPSGATE STREET."

CROWN, SHEET, AND ROUGH PLATE GLASS FOR HOTHOUSES, CONSERVATORIES, &c.

Of every manufacture FIT FOR USE, including the make of Messrs. CHANCE, HARTLEY, SWINBURNE, and others.

100 and 200 feet cases of large Sheet Glass, from 2½d. per foot. Small ditto, 10s. 6d. per 100 feet, packed in boxes ready for immediate delivery. Curators of Botanical Societies, Florists, Railway Agents, and others requiring large quantities, will, on sending dimensions, receive estimates at the lowest prices.

GLASS MILK PANS, CREAM POTS, Lactometers, Bee Glasses, Fish Globes, and all kinds of Dairy Glass, Propagating Glasses, Hyacinth Dishes, Cucumber Tubes, and every other description of Garden Glasses.

PATENT GLASS PENS, self supplying, never blot, never soil the ruler, and will write continuously for 12 hours.

Also, Glass Rulers, Glass Inks for office-stands, desks, &c. Stationers and Schools supplied. Wholesale Warehouse for Ornamental Shades, Lamp Shades, Gas Glasses, Genuine White Lead, Paints, Colours, and Pumps for Farm purposes.

Our Catalogue of 18 folios is the most complete ever published. No Gardener or Farm Bailiff should be without one. May be had Gratis on sending two postage stamps to Messrs. COGAN and Co., 48, Leicester-square, London.

GLASS FOR CONSERVATORIES, GREENHOUSES, PIT FRAMES, &c.

HETLEY AND CO. are supplying 16-oz. Sheet Glass, of British Manufacture, packed in boxes containing 100 square feet each, at the following REDUCED PRICES for cash, A reduction made on 1000 feet.

Sizes. Inches.				Inches.			Per foot.	Per 100 feet.		
			Under	6	by	4	at	1½d.	is £0	12 6
From	6	,, 4	,,	7	,,	5	,,	2d.	,, 0	16 8
	7	,, 5	,,	8	,,	6	,,	2½d.	,, 0	18 9
	8	,, 6	,,	10	,,	8	,,	2½d.	,, 1	0 10
	10	,, 8	,,	12	,,	9	,,	2¾d.	,, 1	2 11

Larger sizes, not exceeding 40 inches long.

16 oz. from 3d. to 3½d. per square foot, according to size.
21 oz. ,, 3½d. 5d. ,, ,,
26 oz. ,, 3½d. 7½d. ,, ,,

PATENT ROUGH PLATE, THICK CROWN GLASS, and PATENT PLATE GLASS for Horticultural purposes, at reduced prices, by the 100 square feet.

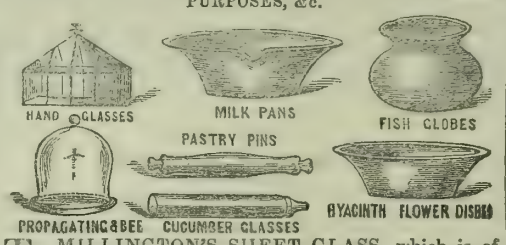
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Propagating Glasses, Bee-hive Glasses, Cucumber Tubes, Glass Milk Pans, Glass Water Pipes, and various other articles not hitherto manufactured in glass.

PATENT PLATE GLASS.—The present extremely moderate price of this superior article should cause it to supersede all other inferior window glass in a gentleman's residence. No alteration connected with the sash is required.

GLASS SHADES, as ornamental to, and for the preservation of every description of goods susceptible of injury by exposure. Prices, since the removal of the Excise duty, reduced one-half. List of Prices and Estimates forwarded on application to JAMES HETLEY and Co., 35, Soho-square, London.

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T. MILLINGTON'S SHEET GLASS, which is of the best description, varying from 16 to 32 ounces, at from 2d. per foot and upwards; 100 feet and 200 feet cases of large Sheet Glass, for cutting up, at 2½d. per foot. British Plate Glass, from 1s. 2d. to 2s. per foot, according to size. Patent Rough Plate Glass, from ⅜ to 1 inch in thickness, from 4d. per foot upwards. Glass Slates and Tiles. Milk Pans from 12 to 24 inches diameter, from 2s. to 5s. each. Cucumber Tubes, from 12 to 24 inches long, at 1d. per inch. Lactometers, 7s. 6d. each. Wasp Traps.—Lists may be had, on application at the Warehouse, 87, Bishopsgate-street Without, same side as the Eastern Counties Railway.

FLEXIBLE INDIA-RUBBER HOSE PIPES.

JAMES LYNE HANCOCK, Sole Licensee and Manufacturer of the PATENT VULCANISED INDIA-RUBBER PIPES and TUBING. These Pipes are well adapted for watering Gardens, conveying Liquid Manure, for Breweries, Gas Fittings, Chemical and all purposes where a perfectly sound WATERPROOF and FLEXIBLE PIPE is required. Hot Liquors or Acids do not injure them. No oil or dressing is required in using them. They do not leak from remaining out of use, are permanently flexible in all temperatures, and are therefore particularly suitable for Fire-Engines; and from their not leaking, are found exceedingly useful in conveying hot or cold water to baths in dwelling houses and such like purposes. Being extremely portable, stowing closely without danger of injury, resisting the influence of climate, insects, and vermin, frequently so injurious to such articles on board ship, and retaining their virtues though long out of use, render them particularly adapted for exportation.

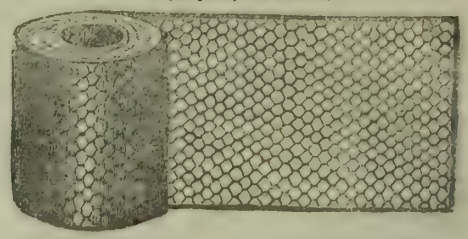
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All letters or Orders addressed to J. L. H. at the Manufactory and Warehouse, Goswell-mews, Goswell-road, London, will meet with immediate attention.

EMIGRATION to the AUSTRALIAN COLONIES. —For ADELAIDE, PORT PHILLIP, and SYDNEY, the fine, 1st-class, teak-built ship ORIENTAL, Capt. J. P. TAYLOR, 1000 tons, coppered and copper-fastened; will sail from the St. Katharine's Docks about the 5th March, calling at Plymouth. This very superior ship is fitted up expressly for the comfort and accommodation of passengers, with separate enclosed cabins of an extra size for families and married couples. She has upwards of 8 feet height in the 'tween decks, which are thoroughly lighted and ventilated. The passage money 20 guineas each adult, including bedding and mess utensils. There will be a library on board. She has a most magnificent poop and saloon, with elegant accommodation for cabin passengers. A skilful surgeon will proceed in the ship. For freight or passage apply to JOHN WHITTAKER, 78, Mark-lane; or to W. R. BRUFTON & Co., Great Tower-street, London.

GALVANISED WIRE GAME NETTING.—

7d. per yard, 2 feet wide.



		Galvanised.	Japanned Iron.
2-inch mesh, light, 24-inch wide	...	7d. per yd.	5d. per yd.
2-inch ,, strong ,,	...	9 ,,	6½ ,,
2-inch ,, extra strong ,,	...	12 ,,	9 ,,
1½-inch ,, light ,,	...	8 ,,	6 ,,
1½-inch ,, strong ,,	...	10 ,,	8 ,,
1½-inch ,, extra strong ,,	...	14 ,,	11 ,,

All the above can be made any width at proportionate prices. If the upper half is a coarse mesh, it will reduce the price one-fourth. Galvanised sparrow-proof netting for pheasantries, 3d. per square foot. Patterns forwarded post-free.

Manufactured by BARNARD and BISHOP, Market-place, Norwich, and delivered free of expense in London, Peterborough, Hull, or Newcastle.

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BY HER MAJESTY'S ROYAL LETTERS PATENT.

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Houses, Farm Buildings, Shedding, Workshops, and for Garden purposes, to protect Plants from Frost.

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And on the Estates of the Dukes of Sutherland, Norfolk, Rutland, Newcastle, Northumberland, Buccleuch (at Richmond), the late Earl Spencer, and most of the Nobility and Gentry, and at the ROYAL AGRICULTURAL SOCIETY'S HOUSE, Hanover-square.

It is half the price of any other description of Roofing, and effects a great saving of Timber in the construction of Roofs. Made to any length by 32 inches wide.

PRICE ONE PENNY PER SQUARE FOOT.

*** Samples, with Directions for its Use, and Testimonials of seven years' experience, with references to Noblemen, Gentlemen, Architects, and Builders, sent free to any part of the town or country, and orders by post executed.

☞ The Public is cautioned that the only Works in London or Great Britain where the above Roofing is made, are

F. M'NEILL AND CO.'S

Patent Felt Manufactory, Lamb's-buildings, Bunhill-row, London, where roofs covered with the Felt may be seen.

The new Vice-Chancellor's Courts, at the entrance to Westminster Hall, were roofed with F. M'NEILL and Co.'s Felt about two years since, under the Surveyorship of Chas. Barry, Esq., R.A. Her Majesty's Commissioners of Woods and Forests are so satisfied with the result that they have ordered the Committee Rooms at the Houses of Parliament to be roofed with their Felt. Quantity altogether used, 24,000 feet.

NOTE.—Consumers sending direct to the Factory can be supplied in lengths best suited to their Roofs, so that they pay for no more than they require.

Every information afforded on the construction of Roofs, or any proposed particular application of the Felt.

STALLIONS FOR SALE.—Two five-year-old Suffolk Stallions, the property of T. BEALE BROWNE, Esq., Hampen, Andoversford, Gloucestershire. One is 17 hands high, the other over 16. They are sure foal getters, and were much admired and highly commended by the Judges at the Royal Agricultural Society's Show at York.

Also two very fine five-year-old Suffolk Geldings.

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COLES'S SOLUBLE COMPOUND ALKALINE POWDER.—Confidently offered as a most efficacious application for promoting the healthy growth and beauty of all kinds of HARDY OR TENDER PLANTS AND FLOWERS, requiring merely A SMALL TEASPOONFUL of it to be dissolved in every ENGLISH PINT OF WATER USED, and the solution to be applied occasionally, by means of a common rose watering-pan.

Sold, in GLASS BOTTLES of 1s. 6d., 2s., 2s. 6d., 3s. 6d., and 5s. each, by HENRY COLES, Seedsman, &c., 32, Cranbourn-street, Leicester-square, bearing his seal, signature, and address upon the corks and labels (without which none is genuine), of whom also may be had the celebrated

CARBONIZED ANIMAL MANURE,

prepared, in like manner, specially for FLOWERS, perfectly free from smell, to be used in a DRY STATE, and sold in TIN CANISTERS of 1s., 1s. 9d., and 2s. 6d. each, or COMPACT WOODEN BOXES of 5s., by taking which, a considerable saving in price is obtained.

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AUSTRALIA, NEW ZEALAND, CAPE OF GOOD HOPE, NATAL, &c.

PASSENGERS to the COLONIES generally may obtain their OUTFITS from S. W. SILVER and CO., CLOTHIERS, &c., 66 and 67, CORNHILL, at wholesale prices. SILVER and CO. make nearly the whole of the articles comprised in an outfit, to secure durability, so that the Cabin Folding Furniture may become permanent Household Furniture on arrival in the colony.

They also engage PASSAGES, and give ship sailing INFORMATION, but they neither receive nor pay a commission—their object being to give PASSENGERS who place themselves in their hands every benefit; and they forward small packages for their customers (gratis) through their AGENTS in the COLONIES.

SILVER and CO. give DRAFTS on AUSTRALIA at sixty days' sight of 100l. for every 100l. paid here.

The EMIGRANT Fitting-out Branch is at No. 4, Bishopsgate-street, opposite the London Tavern, where a comfortable fit-out for male or female, including bedding, may be obtained for FOUR POUNDS.

A Branch of each at ST. GEORGE'S-CRESCENT, LIVERPOOL.

IMPORTANT SALE OF CAMELLIAS, ROSES, LILIUMS, &c.

MESSRS. PROTHEROE AND MORRIS will submit to public competition by Auction, at the Auction Mart, Bartholomew-lane, on THURSDAY, March 7, 1850, and following day, at 12 o'clock each day, about 600 Double Camellias, from 18 inches to 10 feet, beautifully furnished with bloom buds, 200 Strong Camellia Stocks, also 400 Standard and Dwarf Roses, consisting of Noisettes, Hybrids, Bourbons, Perpetuals, &c.; a fine collection of American Plants, comprising Ghent and other Azaleas, Andromeda Floribunda, Magnolias, &c.; 200 strong bulbs of Lilium Lancifolium Album, Speciosum, &c.—May be viewed the morning of Sale; Catalogues had at the Mart, and of the Auctioneers, American Nursery, Leytonstone, Essex.

TO NOBLEMEN, GENTLEMEN, NURSERYMEN, & Others.

MESSRS. PROTHEROE AND MORRIS are favoured with instructions from Mr. John Smith, to submit to public competition by Auction, on the premises, Dalston Nursery, Middlesex, on MONDAY, March 11, and following day, at 11 o'clock (in consequence of the premises being required by the London and Birmingham West India Dock Junction Railway Company); the valuable NURSERY STOCK, consisting of a very superior assortment of large Evergreens, American Plants, Ornamental Trees, and Deciduous Shrubs, Fruit and Forest Trees in great variety, fine Ivies, Roses in pots, &c.—May be viewed prior to the sale. Catalogues may be had, 6*d.* each (returnable to purchasers), on the premises; the Shop, Covent-garden; of the principal Seedsmen in London; and of the Auctioneers, American Nursery, Leytonstone, Essex.

CLAPHAM RISE.

TO GENTLEMEN, NURSERYMEN, FLORISTS, & OTHERS.

MESSRS. PROTHEROE AND MORRIS will sell by Auction, on the premises, Bedford Nursery, Bedford-road, Clapham Rise, on TUESDAY, March 5, at 11 o'clock, by order of Mr. Connolly, a portion of the valuable NURSERY STOCK, consisting of Evergreens and Deciduous Shrubs, also a choice collection of GREENHOUSE PLANTS, comprising fine Ericas, Camellias, Azalea Indica, Epacris, Chorozema, Boronia, Geraniums, Cinerarias, Acacias, Cactus, Genistas, Neriums, Intermediate Stocks, &c.—May be viewed one day prior to the Sale; Catalogues on the premises, of the principal Seedsmen in London, and of the Auctioneers, American Nursery, Leytonstone, Essex.

BRENTFORD.

To NOBLEMEN, GENTLEMEN, NURSERYMEN, FLORISTS, AND OTHERS.

MESSRS. PROTHEROE AND MORRIS are instructed to submit to public competition by Auction, on the premises, Brentford Nursery, Brentford, Middlesex, on MONDAY, the 18th March, and following days, by order of the Executors of the late Mr. JOHN RONALDS, the first portion of the valuable NURSERY STOCK, consisting of Evergreens and Fruit Trees, also the choice Greenhouse Plants, together with two Greenhouses, several two and three-light Boxes, Hand-lights, Hot-water Pipe, Boilers, Seed-shop Fixtures, Horses and Carts, capital Chaise, a quantity of Bricks, Garden-pots, &c. *** Further particulars will be given in next week's Paper.—American Nursery, Leytonstone, Essex.

TO GENTLEMEN, FLORISTS, AND OTHERS.

MESSRS. PROTHEROE AND MORRIS will sell by Auction, at the Auction Mart, Bartholomew-lane, on WEDNESDAY, March 6th, and on WEDNESDAY, 13th, at 12 o'clock, each day, a first-rate Collection of CARNATIONS and PICOTEES, the property of Mr. WILLMER (Sunbury); among the Carnations will be found Willmer's Defiance, Strong's Duke of York, Solander, Brookes' Flora's Garland, Cartwright's Rainbow, May's Ariel, Rosette, &c. The Picotees comprise Jenny Lind, Willmer's Princess Royal, Superlative, &c. &c.; also, fine Standard and Dwarf Roses, consisting of Bourbons, Chinas, Perpetuals, &c. Dahlias, Gooseberries, &c. &c. May be viewed the morning of sale. Catalogues had at the Mart, and of the Auctioneers, American Leytonstone, Essex.

MESSRS. LODDIGES' CELEBRATED ARBORETUM FOR SALE BY AUCTION.

TO NOBLEMEN, GENTLEMEN, AND NURSERYMEN.

MR. J. C. STEVENS is favoured with instructions from Messrs. LODDIGES, of Hackney, to submit for unreserved competition, on the premises, on MONDAY, 4th March, and five following days, at 11 for 12 precisely, in consequence of the decease of the Senior Partner, the FIRST PORTION OF THEIR UNRIVALLED ARBORETUM, comprising many thousand well-grown specimens of the rarest and most beautiful Trees and Shrubs, affording to noblemen and gentlemen engaged in Ornamental Planting an opportunity which has never before occurred. — Catalogues are preparing, and will be ready for delivery 10 days prior to the sale, on the premises, and of Mr. J. C. STEVENS, 38, King-st., Covent-garden, London.

AMERICAN PLANTS.

MR. J. C. STEVENS begs to notify that two days of the Sale at Messrs. LODDIGES will be devoted entirely to the American Plants, which comprise Azaleas full of flower-buds and well adapted for forcing, Kalmias, Andromedas, Ledums, &c.

CHOICE CAMELLIAS.

FOR SALE BY AUCTION, AT MESSRS. LODDIGES NURSERY, HACKNEY.

MR. J. C. STEVENS is directed by Messrs. Loddiges to sell by Auction, on their Premises at Hackney, on TUESDAY, the 19th, and WEDNESDAY, the 20th of March, at 12 for 1 o'clock, a selection of about 1000 CAMELLIAS, from 3 to 12 feet high, beautifully formed plants, well furnished with bloom-buds, and comprising many Double White, Candidissima, Donckelarii, Aulica, and other choice sorts; also a few fine specimens of Araucaria excelsa, 4 to 5 feet, Rhododendrons robustum and campanulatum, 3 to 5 feet. Handsome Plants of Andromeda floribunda in flower, and some Limes in fruit.—May be viewed the day before the Sale, and Catalogues had on the Premises, and of Mr. J. C. STEVENS, 38, King-street, Covent-garden.

AMERICAN PLANTS, STANDARD ROSES, ORNAMENTAL TREES, EVERGREENS, &c.

MR. D. A. RAMSAY has been favoured with instructions, from an eminent Firm, to sell by Auction, on the premises, Brompton Nursery, Fulham-road, Brompton, on MONDAY, March 11th, and following day, at 12 o'clock each day, without reserve, a further consignment of choice AMERICAN PLANTS, comprising 700 Rhododendrons, 2 to 4 feet, 200 Scarlet Rhododendrons, a quantity of Azaleas, Andromedas, Hardy Heaths, Sedum, &c.; a quantity of strong Grape Vines, Figs, Standard and Dwarf-trained Fruit Trees, a choice assortment of Clematis, Jasmine, and other Creepers, 500 Standard, Dwarf, and Climbing Roses, 5000 large Evergreens in variety, 3000 Limes, Acacia, Willow, Poplar, and other ornamental Trees, with a quantity of Deciduous Shrubs, and other Nursery Stock.—May be viewed three days prior to the Sale, and Catalogues had, 6*d.* each, returnable to purchasers, at the usual Seed Shops, and of the Auctioneer, Brompton Nursery, Fulham-road, Brompton.

FOR PUBLIC SALE, on MONDAY, March 4, at the New Corn Exchange Tavern, Mark Lane, at 2 o'clock precisely, by Order of Messrs. ANTONY GIBBS and SONS, the Importers, about 250 Tons of damaged PERUVIAN GUANO, in warehouses, ex sundry ships.—Catalogues, and further particulars in due time, from L. A. RUCKER and BENCRAFT, Brokers, 26, Commercial Sale Rooms, Mincing-lane, London.

TURNIP AND BARLEY FARM.

TO BE LET, and entered on at Lady day next, a desirable BARLEY and TURNIP FARM, in Gloucestershire, of about 160 acres, with a comfortable House for a small family, 30*s.* per acre and tithe free. About 50 acres more may be had. The South Wales Railway will pass through the Parish.—Apply by letter to Mr. WM. MIDDLETON, Post-office, Stamford, Lincolnshire.

TO BE LET, for a term of years, on a CORN RENT, a FARM, in one of the Midland Counties, within two miles of a Market Town and Railway Station. It consists of about 200 acres, 18 of which are in Water Meadow, 28 in Pasture, and the remainder are excellent Turnip and Barley soil. The whole is of a first-rate quality. The Farm Buildings have been lately erected, are on a most complete and comprehensive plan, and are in excellent repair; and the Farm-house possesses every convenience and accommodation required by a respectable family. This Farm is in an excellent state of cultivation. All the interior hedge-rows and timber have been grubbed up; and the arable land is formed into four fields, divided by excellent roads. The Farm is, and has been for some time, under the 4-field system of cultivation. To a gentlemen possessing the requisite capital and ability, who can carry out a good system of agriculture, this Farm is well adapted. Entry at Lady-day. Apply to Mr. JOHN MORTON, Whitfield, Berkeley, Gloucestershire.

TO AGRICULTURAL MACHINE AND IMPLEMENT MAKERS, MILLWRIGHTS, AND OTHERS.

TO BE LET, by Private Contract, with possession at Lady-day next, an old established and well-connected BUSINESS of the above description, with an excellent Residence and extensive ranges of Shopping, a Seven-horse power Steam Engine, large Yard, and every convenience for carrying on an extensive trade. The situation of the property is in the midst of an agricultural district in South Staffordshire. The business has been carried on very successfully for the last 35 years; and the Proprietor, who is retiring, has very extensive connections in most of the surrounding counties. The stock of Timber, Tools, and Machinery may or may not be taken, at the option of the purchaser.—For further particulars, and to treat, application is requested to be made to Mr. THOMAS PAGE, House and Estate Agent, Darlington-street, Wolverhampton, Staffordshire.

HAMPSHIRE.

TO BE LET, by tender, a good ARABLE FARM, of 680 acres, with immediate possession. It is within three miles of a railway station, and at an easy distance from Basingstoke, Andover, and Newbury Markets. Tenders, stating the amount of rent offered, and containing references as to the experience and capital of the applicants, must be sent in previously to the 20th of March next.—For particulars, and to view, apply to Mr. H. RAYNBIRD, Laverstoke, Andover-road.

TO BE LET, in the County of Surrey, a NURSERY, nine miles from town, containing nearly seven acres of land, well stocked with Shrubs, &c., a good Dwelling-house, five Greenhouses and three ranges of Pits, all in excellent repair.—Direct to R. C., at Messrs. Noble, Cooper, and Bolton, Seed-merchants, 152, Fleet-street, London.

THE BIRMINGHAM CATTLE SHOW, 1850.—The Prize Lists for Cattle, Sheep, Pigs, and Poultry are now ready, and may be had on application to the Honorary Secretary.
T. B. WRIGHT, Hon. Sec.
Union-street, Birmingham, March 2.

CORN MANURE.

BLASHFIELD'S PATENT COPROS.—A new Manure for Corn and other Crops, prepared from the nitrogenous matter deposited on the banks of the Thames, in combination with other substances essential for the growth of corn, &c., price 8*l.* per ton. Sold, in a finely ground state, at No. 3, New London-street, Mark-lane; also, at the Works, Mill-wall, Poplar; Waterloo Dock, Lambeth; and No. 1, Praed-street, Paddington Basin.

PATENT COPROS, for Corn crops, also for Turnips, &c.; Superphosphate of Lime, Gypsum, calcined and saturated with liquid manure. CEMENT for Liquid Manure Tanks, Malt House Floors, and Barn-floors, manufactured by J. M. BLASHFIELD, successor to Wyatt Parker and Co., Original Patentees —Parker's Cement. Established 1796. Drain Pipes, Tiles, &c.

MANURE IS MONEY.—MOST IMPORTANT TO LAND PROPRIETORS, FARMERS, GRAZIERS, GARDENERS, AND OTHERS. A new and excellent Treatise.

THE FARMER'S FRIEND AND COMPANION; showing how to farm to meet the times, and save money, by introducing, for the benefit of the agriculturists, a new and most valuable receipt for the manufacturing of the New Patent Manure, which will be sent gratis, and can be manufactured without a license by every farmer, as the preparation is most simple and cheap, and suitable for all seasons, soils, and crops, at the trifling expense of 1*l.* per acre, warranted equal to 12 loads of farm-yard manure, and a perfect substitute for all foreign manures. Also showing how to fatten every description of Stock and Poultry, at one-third the cost now adopted, the best and cheapest method of draining, &c. This valuable Treatise on Farming and Grazing, registered and entered at Stationers' Hall, contains also a collection of 150 of the most valuable receipts ever discovered in agriculture for profit, &c., with full directions for use, by the late celebrated agriculturist, Mr. Ellman, and others, and patronised and highly recommended by H. R. H. Prince Albert, at Windsor Farm, the Royal Agricultural Society of England, their Graces the Dukes of Richmond, Portland, and Bedford, &c., and will be forwarded, without fail, by return of post, free, to any part of the country, by enclosing 12 postage stamps, addressed, pre-paid, to Messrs. MORGAN and Co., Post-office, Lisson-grove, Marylebone, London. Mind the address.

N.B. The receipt for manufacturing the Patent Manure can be had alone, by forwarding six postage stamps.

SUPERIOR BOLIVIAN GUANO.—This Guano is of a very superior quality, of a pale straw colour, and in the highest state of preservation. For the last five years the Worcestershire Agricultural Society has awarded the prize for the best 2 acres of Swedes grown with Guano only, to parties who have made use of this description of Guano. It has been analysed by Dr. ANDREW URE, London; and WM. HERAPATH, Esq., Bristol.

Dr. ANDREW URE remarks: "The best Peruvian Guano is inferior in power and value to this Guano as 17 is to 24. It is the pure excrement of the birds."

W. HERAPATH, Esq., states: "One pound of this Guano is equal in fertilising power to nearly 40 lbs. of Farm-yard Dung. Judging from its nitrogen alone, it is a very rich Guano."

Apply to H. and G. WEBB, Merchants, Worcester, who also hold a cargo of the same kind of Guano in Liverpool and in Glasgow.

MR. EDWARD RYDE, LAND SURVEYOR, DRAINAGE and AGRICULTURAL ENGINEER, LAND AGENT, &c. will send free, on receipt of 14 postage stamps, "A READY RECKONER, with plain instructions for Measuring and Valuing Hay-ricks." Surveys, Maps, Sections, Specifications, and Estimates for Land Improvements. Agencies conducted by yearly contract. Estates sold or let.—Address, 14, Upper Belgrave-place, Eaton-square, London.

GLASS FOR CONSERVATORIES.

JAMES PHILLIPS AND Co. have the pleasure to hand their New List of Prices of GLASS for Cash.

CUT TO SIZE.

16 oz. from 2*d.* to 3½*d.* per foot.				
21	„	3½	„ 5	„
26	„	3½	„ 7½	„
32	„	4	„ 9½	„

SHEET SQUARES.

In boxes of 100 feet.	*s.*	*d.*
Under ... ... 6 by 4	12	6
6 by 4 and under 7 by 5	16	6
7 by 5 „ 8 by 6	18	6
8 by 6 „ 10 by 8	20	6

100 feet and 200 feet cases of large Sheet Glass, for cutting up, at 2½*d.* per foot. British Plate Glass, from 1*s.* 2*d.* to 2*s.* per foot, according to size.

HARTLEY'S PATENT ROUGH PLATE, packed in boxes of 50 feet each:

6 by 4 and 6½ by 4½	...	10*s.*	6*d.*	7 by 5 and 7½ by 5½	... 12*s.* 0*d.*
8 by 6 „ 8½ by 6½	...	13	6	9 by 7 „ 10 by 8	... 15 0

MILK PANS.

12 in. diameter	...	2*s.*	0*d.*
14 „	...	2	6
16 „	...	3	0
18 „	...	3	6
20 „	...	4	0
22 „	...	4	6
24 „	...	5	0
26 „	...	6	0

CREAM POTS, from 2*s.* each.

PROPAGATING GLASSES.

2 in. diameter	...	0*s.*	2*d.*
3 „	...	0	3
4 „	...	0	4
5 „	...	0	6
6 „	...	0	8
7 „	...	0	10
8 „	...	1	0
9 „	...	1	2
10 „	...	1	4
11 „	...	1	6

BEE GLASSES, same price.

METAL HAND FRAMES.

12 inches	...	6*s.*	0*d.*
14 „	...	7	0
16 „	...	8	0
18 „	...	9	0
20 „	...	10	0
24 „	...	12	0

Open tops, 1*s.* extra.

CUCUMBER TUBES.

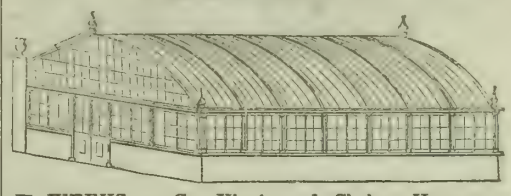
12 inches long	...	;	
14 „	...	...	
16 „	...	...	1
18 „	...	...	1
20 „	...	...	1 8
22 „	...	...	1 19
24 „	...	...	2 0

Glass Shades; Tiles and Slates of any size; Wasp Traps, 3*s.* 6*d.* per dozen; Lamp Shades; Rough Plate Glass of every thickness. Lactometers, for trying the quality of milk, 4 tubes, 7*s.* 6*d.*; 6 do., 10*s.* Glass Stands for Pianoforte, and every article in the trade.

JAMES PHILLIPS AND Co., 116, BISHOPSGATE-STREET WITHOUT, LONDON.

HORTICULTURAL BUILDING AND HEATING BY HOT WATER.

BOILERS OF ALL SIZES TO BE SEEN IN OPERATION, WARRANTED THE BEST.



J. WEEKS AND Co., King's-road, Chelsea, HORTICULTURAL ARCHITECTS, HOTHOUSE BUILDERS, and HOT-WATER APPARATUS MANUFACTURERS, solicit an inspection of their various Works completed and in progress. Horticultural Buildings of every variety. BOILERS of all sizes to be seen in operation, and which they warrant to be the most effective and economical of any in use. The largest size Boiler is now effectually heating three extensive ranges of Forcing-houses, 230 feet by 22 feet, all Span Roofs and lofty, containing upwards of 50,000 cubical feet of air. Also various small and intermediate size Boilers, some of all sizes in operation. The consumption of fuel is very moderate, and the fires will continue from 10 to 15 hours without attendance. The extensive arrangements now in full operation on their premises, enables them to build to any extent, and at very moderate prices. Hothouses, Greenhouses, Conservatories, Forcing-pits, Frames, Glass Lights, &c. A very extensive collection of Stove and Greenhouse Plants, which are sold at very low prices. Plans, Estimates, and Catalogues forwarded on application.
J. WEEKS and Co., King's-road, Chelsea.

MANGOLD SEED. — About 100 stones of the Yellow Globe MANGOLD WURZEL SEED for Sale, of last year's growth, carefully selected, and all transplanted.—Apply to Mr. GEO. JOHNSON, Morton, near Retford, Nottinghamshire.—March 2.

POULTRY.—For Sale, two pairs of pure American WILD TURKEYS, four GAME COCKS, bred in 1849 from a Japanese Jungle Cock and English Game Pullets; five BLACK SWANS.—Apply to the Superintendent at the Gardens of the Zoological Society, Regent's Park, London.

SILVER SAND, PEAT, &c.—REMOVAL.

EDWARD KEMP begs to thank his numerous friends for their kind support during the last seven years, and informs them that he has removed to No. 16, Ann's-place, East-street, Old Kent-road, where he respectfully solicits a continuance of their favours.

BRITISH SILK CULTIVATION.

WHITE MULBERRY TREES, & SILK-WORMS' EGGS.—The Advertiser begs to announce to the Public that he has on hand a most healthy Stock of White Mulberry Trees, the only proper food for the rearing of Silk Worms, at the following low prices:—1 year's growth, 10*s.*; 2 years', 15*s.*; 3 years', 25*s.*; 4 years', 30*s.*; and 5 years', 35*s.*, per 100. Silk-Worms' Eggs, best quality, 1*s.* 6*d.* per 1000. Orders, inclosing Post-office order, punctually executed.—Address JOHN RICHARD EVANS, 8, Cork-street, Bond-street, London; or GEORGE BALCHIN, Spring-place, Godalming, Surrey.

WIRE STRAND FENCING, as fixed by R. S. NEWALL and Co., is cheaper, stronger, more durable and elegant than any other Fence hitherto introduced.
COPPER WIRE HOTHOUSE SASH LINE.
LIGHTNING CONDUCTORS.
Office, 130, Strand, London; Warehouse, Brunswick-street, Blackwall; Manufactory, Gateshead, on Tyne.

IRON AND WIRE FENCING, AND METALLIC BEDSTEADS.

THOMAS PERRY AND SONS, 252, OXFORD-STREET (NEAR HYDE PARK), And Highfields Foundry and Wrought-iron Works, Bilston, Staffordshire, Manufacturers of all descriptions of PLAIN AND ORNAMENTAL IRON AND WIRE FENCING, Park Entrance, Carriage and Field Gates, Wickets, &c.; Deer, Sheep, and other Hurdles; Hare and Rabbit-proof Wire Fencing; Iron Bedstead Makers to the Board of Ordnance; And Government Contractors.

The works of Messrs. PERRY being situated in the heart of the best iron district, they are enabled to execute all orders with the greatest facility, and on the most moderate terms. Drawings made and estimates prepared, if required. The show rooms contain an immense variety of every description of Iron and Wire-work, and are the largest in London. An Illustrated Catalogue of Bedsteads, with dimensions and prices, sent on application, post-free.

LOANS TO FARMERS AND OTHERS.

MONEY TO BE ADVANCED, to any amount, in large or small sums, not less than 150*l.*, at interest varying from 4 to 5 per cent., and for long and short periods, to be secured upon FARMING STOCK personal securities &c., or upon Freehold, Copyhold, or long Leasehold property, to the extent of 30,000*l.*, upon Reversions to money in the Funds, Life Interests &c. Applications to be addressed, prepaid, in the first instance, to the care of Mr. Charles, 9, Great College-street, Westminster, London. All communications held strictly confidential, and to prevent unnecessary trouble it is requested that applicants send full particulars.

MARQUEES, SUN BLINDS, RICK CLOTHS, &c.—Manufactory, Old Kent-road (facing the Bricklayers' Arms Railway Terminus), and 17, Smithfield Bars, London.

The guests are arriving; my villa has got
Quite a park-like appearance—a beautiful spot;
The band on the lawn, in the spacious marquee;
This tent for our dinner, and that for our tea.

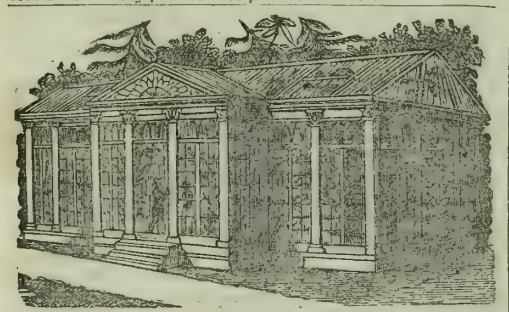
Marquees and temporary rooms superbly fitted up for Fêtes, &c., on most moderate terms, by THOS. EDGINGTON and Co. Tents of every description, Rick Cloths with Poles, &c. Tanned Netting for the protection of fruit trees from frost, blight, and birds, and for the security of fresh sown seed, either in gardens or fields, at unprecedented low prices, viz., 1*d.* per square yard, or 200 yards for 14*s.*, or 500 yards for 30*s.*, or 1000 yards for 58*s.* New Archangel Mats and Scrim Canvas for wall fruit. Tarpaulings for houses under repair on hire. Orders and inquiries per post immediately attended to.



CROSSKILL'S PRIZE AGRICULTURAL IMPLEMENTS, kept in stock for delivery from Hull to London, Southampton, Bristol, Liverpool, Leith, and all parts of the Kingdom. On receipt of six penny stamps, to cover postage, a *new* Illustrated Catalogue of CROSSKILL'S Field, Road, and Barn Implements of the newest and best construction, will be sent *gratis per post*. The new prize portable Farm Railway is expressly and admirably adapted for agricultural purposes, and will pay its cost the first year.

Address—Mr. CROSSKILL, Iron Works, Beverley.

PATENT SPADES, DAISY RAKES, SCYTHES, Draining, and other Garden Tools. Mole Traps, 6*s.* per dozen; Carpenter's and Smith's Tools, &c. Ladies' Garden Tools, 7*s.* 9*d.* a set. Sword-scrapers for gardens, 1*s.* 2*d.* each. Dr. Arnott's Ventilating Chimney-valves, plain, 5*s.*; Ornamental ditto for Drawing-rooms, at J. H. BOOBBYER and Co.'s (late STUNCH and BOOBBYER), Ironmongery, Brass-foundry, Nail and Tool Warehouse, 14, Stanhope-street, Clare-market, London. Established nearly 200 years for the sale of goods from the best Manufactories at the lowest prices. Goods forwarded to any part on receipt of remittance.



GRAY, ORMSON, AND BROWN, Danvers-street, Chelsea, solicit the attention of the Nobility, Gentry, and Gardeners, to their superior manner of Erecting and Heating every description of Building connected with Horticulture. The work done by them at the Right Hon. the Earl of Kilmorey's, to which they have had the honour of referring so long, still continues to give perfect satisfaction. Mr. Kinghorn will be happy to show the work and give any information.

They also beg to refer to the houses built by them during the past season, for the Worshipful Apothecaries' Company of London, in their Botanic Garden at Chelsea. Mr. Moore, the Curator, will kindly show the work, and answer any enquiries. They beg also to say the Building only is referred to, as the Heating Apparatus was not erected by them.

GRAY, ORMSON, and BROWN have also the honour of referring to many of the nobility and gentry in the country, and to several of the London Nurseries.

N.B. Plans and Estimates furnished free.

FLOOR CLOTHS.—
Best quality, warranted..... 2*s.* 6*d.* per sq yd.
Persian and Turkey pattern..... 2*s.* 9*d.* ditto.
Common Floor Cloth..... 2*s.* 0*d.* ditto.

COCOA-FIBRE Mats and Matting.—JAPANNED-FOLDING Screens from 32*s.*

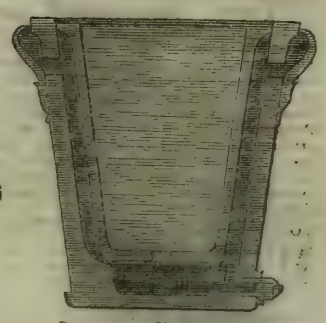
JOWETT Manufacturer, 532, New Oxford-street, London.

METCALFE'S ALKALINE TOOTH-POWDER will be found to be the best that has yet been produced; it contains no acids, nor anything that can injure the finest enamel; it thoroughly removes the tartar and all impurities, produces that beautiful white appearance so much to be desired, and its fragrant perfume tends to sweeten and purify the breath. M. and Co., from the many years they have been celebrated as Tooth-Brush Makers, have had opportunities (that occur to few) of testing the relative merits of those powders that have been brought before the public. They have now succeeded in procuring the receipt from which the above Powder is prepared, and confidently recommend its universal adoption. Wholesale and retail at METCALFE, BINGLEY, and Co.'s, Brush-Makers to H.R.H. Prince Albert, 2*s.* per box. Caution.—The genuine Powder will have the Royal Arms, combined with those of H.R.H. Prince Albert, on the lid of the box, and the signature and address of the firm, thus: "METCALFE, BINGLEY, and Co., 130 B, Oxford-street, London."



REGISTERED.

THE GRADUATED PLUG
FLOWER POT.



SECTION OF FLOWER POT.

MANUFACTURERS,

OLIVER and Co., 210, Regent Street,
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IT has been a source of great regret among Horticulturists that the most eminent manufacturers of Porcelain have failed to produce Flower Pots, in which the useful has been successfully blended with the ornamental, or in which perfect drainage and constant moisture are combined.

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Printed by WILLIAM BRADBURY, of No. 13, Upper Woburn-place, in the Parish of St. Pancras, and FREDERICK MULLETT EVANS, of No. 7, Church-row, Stoke Newington, both in the County of Middlesex, Printers, at their office in Lombard-street, in the Precinct of Whitefriars, in the City of London; and published by them at the Office, No. 5, Charles-street, in the parish of St. Paul's, Covent-garden, in the said county, where all Advertisements and Communications are to be ADDRESSED TO THE EDITOR.—SATURDAY, MARCH 2, 1850.

THE GARDENERS' CHRONICLE
AND
AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 10—1850.] SATURDAY, MARCH 9. [PRICE 6*d.*

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GARDENERS' BENEVOLENT INSTITUTION.—NOTICE is hereby given, that an Election of TWO PENSIONERS on the Funds of this Institution will take place in JUNE next. All persons desirous of becoming Candidates, are requested to forward their Testimonials to the Committee on before the 31st inst., after which time they will not be received. Printed Forms of Petition may be had on application.

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LETTUCE.—Brown Cos, black seeded; White Cos, Drumhead Cabbage.
MELON.—Fleming's Hybrid, Windsor Prize Green. [pickling.
ONION.—White Spanish, James's Keeping, Silver-skinned for
PARSLEY.—Weeks's Triple Curled, for garnishing.
PARSNIP.—Improved Hollow-crowned.
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TOMATOES AND NASTURTIUMS, for pickling.
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Nurseries, Worcester, March 9.

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,, Fairbeard's Champion of England	1	0	4
,, Thurston's Reliance	1	6	6
,, Hay's Mammoth Marrow	1	6	6
,, Knight's Dwarf Green Marrow	1	0	3

	Per packet—*s.*	*d.*
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,, Dickson's Waterloo large late white	0	6
,, Early Walcheren	0	6
Cauliflower, extra fine	0	6
Celery, Cole's Superb New Red Solid	1	0
Cucumber, Latter's Victory of England	0	6
,, Tiley's Victory of Bath	0	6
,, Mills's Jewess	0	6
Melon, Beechwood	0	6
,, Fleming's or Trentham Hybrid	0	6
,, Tiley's Queen	0	6

FLOWER SEEDS.

	Per packet—*s.*	*d.*
Amaranthus, Purple Globe	0	3
Balsam, fine double mixed	0	3
Brachycoma iberidifolia	0	3
Clintonia pulchella	0	3
Cockscomb, scarlet	0	3
,, yellow	0	3
Calceolaria, from best named flowers	1	0
Cineraria, Henderson's choicest sorts	1	0
Calempelis (Eccremocarpus scabra)	0	6
Chænostoma fastigiatum	0	6
Cobæa scandens	0	6
Humea elegans	0	6
Ipomœa Burridgii	0	4
,, rubra cærulea	1	0
Lobelia ramosus	0	3
Lophospermum scandens	0	6
Nemophila insignis alba	0	4
Nemophila maculata	1	0
Phlox Drummondii alba	0	6
,, ,, scarlet	0	2
,, ,, superb mixed	0	2
Portulaca alba striata	1	0
,, Thellusonii sulphurea	1	0
,, Thorburnii	1	0
Primula sinensis alba	0	6
,, ,, rosea	0	6
Rhodanthe Manglesii	0	6
Schizanthus retusus	0	3
,, ,, albus	1	0
Salpiglossis, new yellow	0	6
Thunbergia alata	0	6
,, ,, alba	0	6
,, ,, aurantiaca	0	6
,, ,, Fryerii	0	6
Viscaria Burridgii	0	6

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Duncan's Green-flesh do. improved	1	0	,,
Hampton-court Green-flesh	1	0	,,
Egyptian do. do. improved	1	0	,,

FIRST PRIZE CUCUMBERS.

Victory of Bath	2	0	,,
Gordon's White Spine	1	6	,,
Lord Kenyon's Favourite	2	6	,,

A packet of each of the three varieties, 5s.; if preferred, also a packet of Bromham-hall Melon will be included with the three Cucumbers for 7s.

Sold by EDWARD TILEY, Nurseryman, Seedsman, and Florist, 16, Pulteney-bridge, Bath. A remittance must accompany the order, either in cash or penny postage stamps.

FRUIT TREES AND SHRUBS, AT HALF THE USUAL PRICES, on sale for a short time only, by WILLIAM E. RENDLE and Co., Plymouth. For prices, see *Gardeners' Chronicle*, Feb. 23d, page 114.—Apply to WILLIAM E. RENDLE and Co., Union-road, Plymouth.

Imported GERMAN STOCKS AND ASTERS are now ready, and can be obtained, in Collections at 3s., 4s., 5s., and 8s. each. See our Descriptive Catalogue.

WHITE BELGIAN CARROT, 70s. per cwt., 9d. per lb.
YELLOW GLOBE and LONG RED MANGOLD WURZEL, 70s. per cwt., 9d. per lb.
CATTLE and HOLLOW-CROWNED PARSNIP, 60s. per cwt. 8d. per lb.
SKIRVING'S IMPROVED PURPLE-TOP SWEDE, 28s. per bushel, 9d. per lb.
GRASSES, for Permanent Pasture, 20s. per acre.
Fine selected LAWN GRASS, 1s. 2d. per lb., and all other Agricultural and Horticultural Seeds equally low.
The above Seeds have been grown from some of the finest stocks in the country, and may be depended on as new and genuine.—WM. JAS. EPPS, Seed Merchant, Maidstone, Kent.

AGRICULTURAL SEEDS.—The following delivered free to London, or any Station on the Bury line to Norwich, at the present prices, as annexed.

GRASS SEEDS.

The best selected varieties, mixed in proper proportions of such kinds as possess the most desirable qualities suited for PERMANENT PASTURES, and adapted to different descriptions of soils, per acre ... ... 24s. 0d.

Fine mixed dwarf varieties for lawns, per lb.		1	3
Ditto, per peck		5	0
RYE GRASS, True Italian	per bushel	6	6
,, Pacey	,,	5	0
,, Perennial	ditto, 3s. 6d. to	5	0
TURNIP—Skirving's Liverpool Swede, p. bu., 28s., p. qt.		1	0
,, Laing's Improved Swede, per bu., 36s., p. qt.		1	3
,, Purple-top Swede, per bush., 28s.	per qt.	1	0
,, Skirving's Improved Purple-top Scotch	,,	1	3
,, Norfolk White, Green, and Red Rounds	,,	0	9
,, Dale's Hybrid	,,	1	3
,, White and Red Tankards	,,	1	0
,, Yellow Tankard or Scotch Pudding	,,	1	3
LUCERNE	per lb.	0	10
CARROT—Large White Belgian	,,	0	8
,, Long Green-top Red Altringham	,,	1	0
PARSNIP—Large, for cattle	,,	0	8
MANGOLD WURZEL—Yellow Globe	,,	0	6
,, ,, Red Globe	,,	0	6
,, ,, Long Red	,,	3	6
,, ,, Long Yellow	,,	0	9

Best English Red and White Clovers, Trefoil, and all other Agricultural Seeds of the best stocks at the lowest market prices. PRICED CATALOGUES of AGRICULTURAL SEEDS sent prepaid on application; also prices to the trade.

Post-office orders payable to BASS and BROWN, or to STEPHEN BROWN. Remittances required from unknown correspondents.

BASS AND BROWN, SEED and HORTICULTURAL ESTABLISHMENT, Sudbury, Suffolk.

RARE FLOWER SEEDS.

HIBISCUS SPECIOSA, A STOVE SHRUB.

Bears a profusion of scarlet blossoms, measuring 6 inches across.

ÆTHIONEMA MEMBRANACEUM, HARDY PERENNIAL.

Pink blossoms, which succeed each other in great profusion all the summer months.

MYOSOTIS AZORICA, SUMMER BEDDING PLANT.

This is the most beautiful of the "Forget-me-nots," dwarf habit, profuse bloomer, and flowers of a brilliant deep amethyst colour.

PENTSTEMON MURRAYANUM, HARDY PERENNIAL.

This is the most beautiful of all its genus. Flowers of a long tubular shape, and bright scarlet colour. Very scarce.

CALANDRINIA UMBELLATA, HARDY PERENNIAL.

Dwarf habit, flowers profusely, claret colour blossoms, which spangle in the sun like a Mesembryanthemum. Quite new, and most beautiful.

The above may be had of Messrs. HURST and Co., 6, Leadenhall-street; W. DENYER, 82, Gracechurch-street; Messrs. NOBLE and Co., Fleet-street; and the growers, Messrs. JEYES and Co., Northampton.

Messrs. JEYES and Co., have also to offer a fine stock of Dwarf Trained Moor-park Apricots, Standard Greengage Plums, seedling Berberis aquifolia, common Laurels, and Evergreen Privet, at very cheap prices.

BOTANICAL EXPEDITION TO OREGON.—The Committee are glad to announce that the state of the Subscriptions is such as to warrant their engagement of a Collector. They have succeeded in securing the services of a young Botanist of zeal and talent, and one who has already proved his capacity to deal with and overcome difficulties. In doing this they have trusted to the remaining shares being speedily taken up.

The Committee are also glad to state that their Subscription List embraces the name of Prince Albert, and of many distinguished persons in both parts of the United Kingdom.

The Lords of the Admiralty have been pleased to give instructions to the commanders of her Majesty's vessels in the Pacific to give every facility to the expedition.

Names of Subscribers will still for a short time be received by Prof. BALFOUR, Chairman; Mr. A. MURRAY, W.S., 15, Nelson-street, Edinburgh; and Mr. C. M'INTOSH, Dalkeith Gardens. No Subscriber will be liable beyond the amount of his Subscription. The Subscription is 5l. per share, but any number may be taken, and the Seeds sent home will be divided in proportion to the number.—Edinburgh, March 9.

KITCHEN GARDEN AND FLOWER SEEDS.

JOHN CATTELL, NURSERYMAN and SEEDSMAN, Westerham, Kent, begs to offer to the public a few very choice SEEDS, which may be had free by post at the prices annexed.

KITCHEN GARDEN SEEDS.

	per packet.—s.	d.
Beet, Cattell's Dwarf Purple-top	0	6
Broccoli, Elletson's April White	1	0
,, Wilcove Superb White	1	0
,, Chappell's Cream	0	6
,, Jones's Superior White	0	6
Cauliflower, Dwarf Late Walcheren	1	0
Cabbage, Cattell's Reliance. An improved early dwarf, in quality equal to his well known "Barnes," and may, like that, be sown the middle of July without fear of running to seed the following spring; it is particularly hardy, and being suitable for all seasons, may be depended on for being the earliest and best Cabbage known.	1	0
Cabbage, Cattell's Green Colewort	0	6
,, Do., Dwarf Barnes	0	6
,, Do., Nonpareil	0	6
Savoy, Dwarf Drumhead	0	6

FLOWER SEEDS.

Ipomœa Burridgii, splendid red variety of Convolvulus major	1	0
,, purpurea splendens, or new dark Convolvulus major	0	6
Ipomopsis elegans	1	0
Portulaca alba striata	1	0
,, Thorburnii	1	0
Pentstemon speciosum	1	0
Do., per half-ounce	7	6
Rhodanthe Manglesii	1	0
Coreopsis nigra speciosa, fine	0	6
Nemophila maculata	1	0
Phlox Drummondii alba, true	1	0

	per packet.—s.	d.
Scotch Kale, fine feathered	0	6
,, Dwarf curled	0	6
Celery, Cole's Superb Red	1	0
,, Red solid	0	6
,, Seymour's Superb White	0	6
Cucumber, Sion House, ,, Do., Improved, ,, Manchester Prize, ,, Man of Kent, ,, Bath Victory, ,, Roman Emperor, ,, Carpenter's Wonder, ,, Warwickshire Hero, ,, Cuthill's Blk. Spine	1s. per doz. seeds	
Melon, Bromham-hall, 6 seeds	2	6
Lettuce, fine black seed Green Cos	0	6
,, Do., Brown Bath Cos	0	6
,, Marseilles (handsome Cabbage)	0	6
Parsley, exquisite curled	0	6
,, fine curled Giant	0	6
Vegetable Marrow, true white	0	6
Leek, Musselborough	0	6
Parsnip, Guernsey, fine large hollow-crowned	0	6

Jacobæa, extra fine, dble. purple	0	6
Indian Pink, extra fine	1	0
,, ,, fine fringed	0	6
Calceolaria, from first-rate sorts, impregnated	2	6
Stock, red Intermediate; this is the best Stock for early spring flowering; more than two-thirds come double	0	6
Primula sinensis, extra fine fringed, red and white mixed	1	0
Larkspur, dwarf double Rocket, extra fine mixed	0	6

J. C. begs also to offer as usual fine strong plants of his true and improved sorts of Early and Cattle Cabbage, price, including package, 4s. 6d. per 1000, carriage paid to the Edenbridge station, South Eastern Railway. A Post-office order or postage stamps to accompany all orders from unknown correspondents.

GRAYSON'S GIANT ASPARAGUS.—Fine Plants, with printed directions for planting, can be had, at 5s. per 100, of FREDERICK WARNER, Seedsman, No. 28, Cornhill, London.

NEMOPHILA MACULATA, at 1s. per packet. For General List of New Annuals, &c., see "Harrison's Cabinet."

SAMUEL FINNEY AND CO.'S DESCRIPTIVE CATALOGUE OF CHOICE FLOWER SEEDS may still be had on application, inclosing two penny stamps for postage.

100 fine, Hardy and Half-hardy kinds, for				15s.
50	do.	do.	do.	8s.
25	do.	do.	do.	5s.
12	do.	do.	do.	3s.

With a large assortment of German Stocks, Asters, &c., imported direct in sealed packets.

Gateshead Nursery, Newcastle-upon-Tyne.

FRUIT TREES, FLOWER-BEDS, &c.—Garden Netting, of superior quality, for preserving Fruit trees from frost, blight, and birds, or as a fence for rabbits, fowls, pigeons, Tulip and Seed beds, can be had in any length or quantity at 3d. per yard 2 yards wide, or 6d. per yard 4 yards wide, from JOHN KING FARLOWS, Fishing Rod and Net Manufactory, 5, Crooked-lane, London-bridge. The netting being tanned will stand exposure to the weather for many years. Forwarded to any part of the kingdom on receipt of post-office order, or reference in town. An allowance to gardeners and large consumers.—Copy the Address, 5, Crooked-lane, London-bridge.

DEANE'S WARRANTED GARDEN TOOLS.—Horticulturists, and all interested in Gardening pursuits, are invited to examine G. and J. DEANE'S extensive Stock of GARDENING AND PRUNING IMPLEMENTS, best London made Garden Engines and Syringes, Coalbrookdale Garden Seats and Chairs.

Averuncators	Garden Scrapers	Pick Axes
Axes	Grape Gatherers and Scissors	Potato Forks
Bagging Hooks	Gravel Rakes and Sieves	Pruning Bills
Bills	Greenhouse Doors and Frames	,, Knives, various
Borders, various patterns	Hammers	,, Saws
Botanical Boxes	Hand-glass Frames	,, Scissors
Cases of Pruning Instruments	Hay Knives	,, Shears [riety.
Chaff Engines	Hoes of every pattern	Rakes in great va-
Chaff Knives	Horticultural Hammers and Hatchets	Reaping Hooks
Daisy Rakes	Hotbed Handles	Scythes
Dibbles	Ladies' Set of Tools	Scythe Stones
Dock Spuds	Labels, various patterns, in zinc, porcelain, &c.	Shears, various
Draining Tools	Lines and Reels	Sickles
Edging Irons and Shears	Marking Ink	Sickle Saws
Flower Scissors	Mattocks	Spades and Shovels
,, Stands in Wires and Iron	Menographs	Spuds
Fumigators	Metallic Wire	Switch Hooks
Galvanic Borders and Plant Protectors	Milton Hatchets	Thistle Hooks
Garden Chairs and Seats	Mole Traps	Transplanting Tools
,, Loops	Mowing Machine	Trowels
,, Rollers		Turfing Irons
		Wall Nails
		Watering Pots
		Weed Extractors and Hooks
		Wheelbarrows
		Youths' Set of Tools

G. and J. DEANE are sole Agents for LINGHAM'S PERMANENT LABELS, samples of which, with the Illustrated List of Horticultural Tools, can be sent, post paid, to any part of the United Kingdom.—DEANE'S Horticultural Tool Warehouse, opening to the Monument, 46, King William-st., London-bridge.

DESTRUCTIVE ANIMALCULÆ.

READ'S GARDEN ENGINES AND MACHINES.—As spring approaches, the larvæ of destructive insects are propagated in infinite multitudes, and impregnate with millions of insects the very air we breathe, to the great injury of the young shoots of trees, Vines, plants, and every species of vegetation put into motion and growth by the genial influence of the season.—RICHARD READ, Instrument Maker (by special appointment) to Her Majesty, begs to inform Amateur and Practical Gardeners, &c., that he has made considerable improvements in his Garden Engines and Machines, which are now so perfect that he will warrant the valves to keep in repair during the term of the patent. Manufactured only at 35, Regent-circus, Piccadilly.

MEADOW AND PASTURE GRASS SEEDS.

GEORGE GIBBS AND Co. beg to notice their mixtures for laying Land down to Permanent Grass are now ready. The general satisfaction they have given for many years past, and the present low prices of 32s. per acre, allowing 2 bushels and 12 lbs. to each acre, they trust will ensure a continuance of orders. Mixed Seeds for improving old Grass Land, 1s. 3d. per lb.; fine sorts for forming Lawns, 1s. 4d. per lb. Their Priced List for the season of Turnips, Mangold Wurzel, and other Farm Seeds, will be forwarded on application to 26, Down-street, Piccadilly, London.

TO THE LOVERS OF FLOWERS.

COLES'S SOLUBLE COMPOUND ALKALINE POWDER.—Confidently offered as a most efficacious application for promoting the healthy growth and beauty of all kinds of HARDY OR TENDER PLANTS AND FLOWERS, requiring merely A SMALL TEASPOONFUL of it to be dissolved in every ENGLISH PINT OF WATER USED, and the solution to be applied occasionally, by means of a common rose watering-pan.

Sold, in GLASS BOTTLES of 1s. 6d., 2s., 2s. 6d., 3s. 6d., and 5s. each, by HENRY COLES, Seedsman, &c., 32, Cranbourn-street, Leicester-square, bearing his seal, signature, and address upon the corks and labels (without which none is genuine), of whom also may be had the celebrated

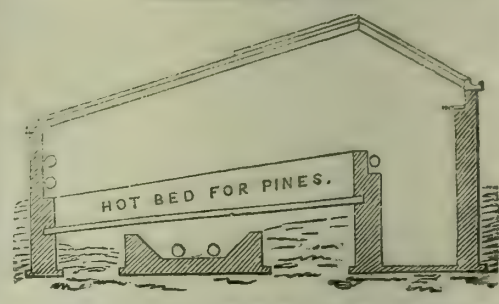
CARBONISED ANIMAL MANURE,

prepared, in like manner, specially for FLOWERS, perfectly free from smell, to be used in a DRY STATE, and sold in TIN CANISTERS of 1s., 1s. 9d., and 2s. 6d. each, or COMPACT WOODEN BOXES of 5s., by taking which, a considerable saving in price is obtained.

Wholesale Orders for the above, and the same prepared in a LESS REFINED STATE for AGRICULTURAL PURPOSES, FRUITS, AND VEGETABLES, also punctually executed, to any extent, upon application to the MANAGER at the MANUFACTORY, Middle Yard, Great Queen Street, Lincoln's Inn Fields, where may be seen analyses of the various sorts, made by Professor WAY (analytical chemist to the Royal Agricultural Society of England), and other eminent authorities.

HORTICULTURAL BUILDING AND HEATING BY HOT WATER.

BOILERS OF ALL SIZES TO BE SEEN IN OPERATION. WARRANTED THE BEST.



J. WEEKS AND Co., King's-road, Chelsea, HORTICULTURAL ARCHITECTS, HOTHOUSE BUILDERS, and HOT-WATER APPARATUS MANUFACTURERS, solicit an inspection of their various Works completed and in progress. Horticultural Buildings of every variety. BOILERS of all sizes to be seen in operation, and which they warrant to be the most effective and economical of any in use. The largest size Boiler is now effectually heating three extensive ranges of Forcing-houses, 230 feet by 22 feet, all Span Roofs and lofty, containing upwards of 50,000 cubical feet of air. Also various small and intermediate size Boilers, some of all sizes in operation. The consumption of fuel is very moderate, and the fires will continue from 10 to 15 hours without attendance. The extensive arrangements now in full operation on their premises, enables them to build to any extent, and at very moderate prices. Hothouses, Greenhouses, Conservatories, Forcing-pits, Frames, Glass Lights, &c. A very extensive collection of Stove and Greenhouse Plants, which are sold at very low prices. Plans, Estimates, and Catalogues forwarded on application.

J. WEEKS and Co., King's-road, Chelsea.

CUCUMBER AND MELON BOXES AND LIGHTS.

One hundred 1, 2, and 3-light Boxes and Lights of all sizes ready for immediate use. Warranted best materials, packed and sent to all parts of the kingdom; 2-light Boxes and Lights from 1l. 4s. Garden Lights of every description, Conservatories, Green and Hot-houses, made and fixed in all parts of the kingdom. References given to the Nobility, Gentry, and the Trade, in most of the counties of England. JAS. WATTS, Hothouse Builder, Claremont-place, Old Kent-road, London.

BAKER'S PHEASANTRY, Beaufort-street, King's-road, Chelsea, by special appointment to her Majesty and H. R. H. Prince Albert.—ORNAMENTAL WATER FOWL, consisting of black and white swans, Egyptian, Canada, China, barnacle, brent, and laughing geese, shieldrakes, pintail, widgeon, summer and winter teal, gadwall, Labrador, shovellers, gold-eyed and dun divers, Carolina ducks, &c., domesticated and pinioned; also Spanish, Cochin China, Malay, Poland, Surrey, and Dorking fowls; white, Japan, pied, and common pea-fowl, and pure China pigs; and at 3, Half-moon-passage, Gracechurch-street.

SLATE WORKS, ISLEWORTH.—The following articles, manufactured in Slate for Horticultural purposes by EDWARD BECK, may be seen in use at WORTON COTTAGE, upon application to the Gardener, Sundays excepted. Orange Tubs, Plant Boxes, Tanks, Cisterns, Shelves, Garden Path Edging, Hot Water Tank Covers, Flower-beds for Baiconies, Shelves fitted to hold water for Orchidaceous Houses, &c.

Estimates given for Work as shown upon Drawings and in Specifications. A large stock of Slate Slabs, of all sizes and thicknesses, kept on sale.

PURE WATER raised to any height from a small stream, where a fall can be obtained, by FREEMAN ROE and HANSON'S IMPROVED RAM less waste, by two-thirds, than those ordinarily in use. Portable Steam Engines for Agricultural purposes, Threshing Machines, Deep-well Pumps, Water-wheels, Baths, Hot-water Apparatus, and Fountains. Towns supplied with Gas or Water, Drawings and Estimates made.—FREEMAN-ROE and HANSON, Hydraulic and Gas Engineers; Office, 70, Strand, London.

Works, Sumner-street, Southwark-bridge-road.

GLASS FOR CONSERVATORIES, &c.

HETLEY AND CO. supply 16-oz. Sheet Glass of British Manufacture, at prices varying from 2d. to 3d. per square foot, for the usual sizes required, many thousand feet of which are kept ready packed for immediate delivery. Lists of Prices and estimates forwarded, on application, for PATENT ROUGH PLATE, THICK CROWN GLASS, GLASS TILES and SLATES, WATER-PIPES, PROPAGATING GLASSES, GLASS MILK PANS, PATENT PLATE-GLASS, ORNAMENTAL WINDOW GLASS, and GLASS SHADES, to JAMES HETLEY and Co., 35, Soho-square, London.

See the *Gardeners' Chronicle* first Saturday in each month.

VERBENA—"WONDERFUL."

G. MOORE begs to refer the readers of this Paper to his Advertisement of the 2d ult.

Perry Barr, near Birmingham, March 9.

HOLLYHOCK SEED, &c.

J. CHATER AND SON have for sale a few packets of Hollyhock Seed saved from their best named Flowers, at 2s. 6d. and 5s. per packet. Ditto mixed, from second rate flowers at 1s. 6d. and 2s. 6d. per packet.

Also One show PANSIES, 6s. to 9s. per dozen.

Nursery, Haverhill, Suffolk, March 9.

UNDER THE DISTINGUISHED PATRONAGE OF

SEVERAL INFLUENTIAL MEMBERS OF THE ROYAL AGRICULTURAL SOCIETY.

RENDLE'S DESCRIPTIVE CATALOGUE OF AGRICULTURAL SEEDS IS JUST PUBLISHED, and can be had on application, GRATIS (for one penny stamp).

It contains a descriptive list of all the best Field TURNIPS, *with the lowest market prices, also a full descriptive price current of all the best sorts of* CARROTS, MANGOLD WURZEL, CLOVER, *&c., as well as all the best varieties of Permanent Pasture Grasses.*

The following is an extract from the Catalogue.

Rendle's Imperial Purple-top Swede Turnip	...	per lb. 0s. 8d.
Ditto ditto	...	per qt. 1 0
Skirving's Liverpool Swede ditto, per lb., 8d.		per qt. 1 0
Laing's Improved ditto ditto, per lb., 8d.		per qt. 1 0
Purple-top Scotch ditto ditto, per lb., 8d.		per qt. 1 0
White and Green Globe per lb., 6d.		per qt. 0 10
White Belgian Carrot	...	per lb. 0 10
Yellow Globe Mangold Wurzel ...	...	per lb. 0 8
True Italian Rye-grass		per bush. 7 0
Best English Red and White Clover		per lb., 5d. to 0 7
Large Cattle Parsnip		per lb., 1s. to 1 6

With every other kind of Agricultural Seeds at the lowest market prices. (See Catalogue.)

PERMANENT PASTURE GRASSES, sold in mixtures to suit various soils, at 30s. per acre, allowing two bushels of light seed and 12 lbs. of heavy seed to each acre.

All orders above 2l. will be delivered free of carriage to any station on the Great Western, Bristol and Gloucester, Bristol and Exeter, or South Devon Railways; or to any town in Devon and Cornwall; or to Cork, Dublin, or Liverpool, by Steamers.

Railway and Steam communication to all parts of Great Britain and Ireland.

For Catalogues and further particulars apply to

WILLIAM E. RENDLE & CO., Union-road, Plymouth. ESTABLISHED 1786.

SEED POTATOES.

CHARLES SHARPE has much pleasure in announcing that he has got the under-mentioned sorts of POTATOES to offer again this season, which have for the last four successive years given general satisfaction in all parts of the kingdom. The first six sorts are very early and productive; those marked thus * are the best sorts for Frame Forcing; they are offered at the following prices, packing included:

Per bushel of 56 lbs.		Per bushel of 56 lbs.	
*Early Oxford Potatoes ...	8s.	Early Manleys	7s.
*Early Round Frame ...	8s.	Early Cockneys	7s.
Early Ash-leaved Kidney	8s.	Fox's Seedling	7s.

Second Early Potatoes for Winter and Spring use:

American Native Potatoes	5s.	Kentish Pink Kidney ...	4s.
York Regents	5s.	Forty Fold	4s.

Orders will be forwarded on the receipt of a Post-office order, and great care will be taken to ensure their safe delivery. A liberal allowance to the Trade.—Wisbeach, Cambridgeshire.

A. VAN GEERT, NURSERYMAN and FLORIST, Ghent, Belgium, begs to inform his friends and the trade generally, that his New Catalogue of Plants for 1850, is just published, and may be obtained on application to his Agents, BETHAM and BLACKITH, Cox and Hammond's Quays, Lower Thames-street, London.—Ghent, March 9.

TO NURSERYMEN, FLORISTS, AND OTHERS.

BETHAM AND BLACKITH (late JOHN BETHAM), CUSTOM-HOUSE, SHIPPING, INSURANCE, and GENERAL FORWARDING AGENTS, beg to inform the above that they continue to receive and forward consignments of Plants, Seeds, and General Merchandize, with due regard to economy and expedition. Constant communication maintained with all the Continental Nurseries, and information given respecting the arrival and departure of the vessels.—Address, Cox and Hammond's Quays, Lower Thames-street, London.

CEDRUS DEODARA OR HIMALAYA CEDAR. — The Subscribers beg to inform the admirers and planters of the above hardy Tree, that they have upwards of FIFTY THOUSAND, from one to five years old, in pots, grown from seed, constantly in the open ground, which they are now supplying on such terms as will induce their general introduction into all plantations, being of rapid growth, highly ornamental, and of great value as a Timber tree.

WM. MAULE and SONS, Stapleton-road Nurseries, Bristol.

GRIGOR'S AQUILEGIA GLANDULOSA.—The Subscribers beg to offer strong plants of this beautiful Columbine, post free, at 2s. 6d. per pair, or 9s. per dozen, and Seeds at 1s per packet, or for stamps of that value.

In the *Gardeners' Chronicle* of the 17th June, 1848, Dr. LINDLEY says, "This plant is perhaps the handsomest hardy perennial in cultivation."

True native Highland PINE and LARCH plants at unusually low prices. Early Prolific POTATOES for Seed, at 20s. per sack of 4 bushels, free on board.

JOHN GRIGOR and Co., Nurseries, Forres, N. B.

ORANGE, LEMON, LIME, CITRON, AND SHADDOCK TREES.—The first importation of the above Trees, in most excellent and healthy condition, has arrived from Italy. They are from 2 to 4 feet high in the stems, very straight, and possess strong grafts, and will make splendid trees in two or three years; from 12s. to 25s. each. They may be seen at A. COBBETT'S Italian and Foreign Warehouse, 18, Pall-mall, London. Also Catalonian, Azorian, and Arabian Jessamine Plants. The Double Italian Tuberose Roots are still on sale, 4s. per dozen.

UNIVERSAL CATALOGUE OF VERBENAS, FUCHSIAS, DAHLIAS, CHRYSANTHEMUMS, PETUNIAS, &c.

G. SMITH'S Priced and Descriptive Catalogue contains the very best selections of the above; with a useful note and a marked List of the best Verbenas for exhibition in pots, with mode of training, and what is of great importance to exhibitors, the time of stopping back, so as to catch a sheet of bloom when it may be required; with descriptions of his superb Seedling Fuchsias, Verbenas, Petunias, &c.; and will be forwarded on the receipt of one postage stamp.—Tollington Nursery, Hornsey, Islington.

CEDRUS DEODARA.

JOHN HENCHMAN has to offer 2000 strong seedlings of the above, from 4 to 6 inches high, in their pots, at 15l. per 1000: 25l. cash will be taken for the 2000.

Edmonton Nursery, March 9.

NEW AND STRIKING VERBENA.

ARTHUR MACKIE begs to offer the undermentioned to the attention of Florists, with the fullest conviction that it will give entire satisfaction.

WOODSTOCK'S MAGNIFICENT.—A. M. having purchased the entire Stock of this unrivalled Verbena, offers it to the Public with the utmost confidence, being fully persuaded that it will surpass everything yet out in its class. The individual flowers cover a sixpence, and sometimes a shilling. It is of a very free habit and growth, and well suited for grouping. See *Gardeners' Chronicle*, Sept. 15, 1849.—"*W. K. B.* Colour bright rose, fading to pink; a remarkably fine variety, with much the largest flowers we have yet seen."

Fine strong plants the 1st of April, at 5s. each, free by post. Where three are ordered four will be sent.

MACKIE'S Descriptive Catalogue of Flower and Vegetable Seeds is now ready, and will be forwarded on receipt of two stamps for postage.—Norwich Nursery, Norwich, March 9.

KITLEY'S GOLIAH STRAWBERRY.

JAMES KITLEY, in again bringing his SEEDLING STRAWBERRY before the notice of the Public, takes this opportunity of thanking those Friends who so liberally purchased in the autumn, and it being now the best time for planting, begs to inform them that he has a fine stock of healthy plants, which have been transplanted. See extracts from the *Gardeners' Chronicle*.

From the *Gardeners' Chronicle*.—"STRAWBERRIES: *J. K.* Your Seedling Strawberry, 'Goliah,' judging from its size and appearance, is worthy of cultivation."

From the Gardeners and Farmers' Journal.—"STRAWBERRIES: *J. K., Lyncombe Vale.* We have great pleasure in bearing testimony to the exquisite flavour of your Seedling Strawberry, 'Goliah.' In our opinion it combines the piquant flavour of the Strawberry with the richness of the Pine, the delicious aroma of which it partakes in equal proportion with the taste. Apart from the queen of fruits, we certainly do not remember anything in this way that conveyed to our senses so delicious a treat as the noble fruit to be known to the world as 'Kitley's Goliah Strawberry.'"

Plants, 12s. per doz., or 4l. per 100. A liberal allowance to the Trade in plants, when 100 are taken.

Cash orders expected from unknown correspondents.

Lyncombe Vale Nursery, Bath, March 9.

The Gardeners' Chronicle.

SATURDAY, MARCH 9, 1850.

MEETINGS FOR THE ENSUING WEEK.

MONDAY,	March	11	Medical	8 P.M.
			Geographical	8½ P.M.
TUESDAY,	—	12	Syro Egyptian	7½ P.M.
			Civil Engineers	8 P.M.
			Medical and Chirurgical	8½ P.M.
			Zoological	9 P.M.
WEDNESDAY,	—	13	Literary Fund (Anniversary)	2 P.M.
			London Institution	7 P.M.
			Society of Arts	8 P.M.
			Graphic	8 P.M.
			Ethnological	8 P.M.
			Geological	8½ P.M.
			Pharmaceutical	9 P.M.
THURSDAY,	—	14	Royal Society of Literature	4 P.M.
			Antiquarian	8 P.M.
			Royal	8½ P.M.
FRIDAY,	—	15	Statistical (Anniversary)	3 P.M.
			Royal Institution	8 P.M.
SATURDAY,	—	16	Asiatic	2 P.M.
			Westminster Medical	8 P.M.

THE following example of AMATEUR FORCING is so instructive that we cannot do otherwise than bring it prominently into notice; for it shows, what few would suspect, that in spite of the advice, the warning, the teaching of so many excellent gardeners, for so many years, persons are still to be found who read without understanding, who act without thinking, and upon whom advice, warning, and teaching are wholly thrown away.

A correspondent, whose accuracy we have no reason to doubt, makes this statement; we give it in his own words:

"A gentleman whose garden I superintend once a week built a new pit for forcing Strawberries in, the plan of which I always objected to. It is as follows:—The pit is of the usual size, having five lights and 4-inch walls. It is heated by a single flue, running through the middle from one end to the other, and has a set-off in the walls for slabs to rest upon, so as to form a chamber below, from which the plunging material above is heated. In the last week in January the slabs were covered with a foot in thickness of half-decayed leaves, on which were laid about 9 inches of leaf-mould, to plunge the pots in. The pots were placed in the pit the same day on which the leaves were put in. A fire was lighted, but it was two or three days before it raised the temperature in the pit a single degree; and as I attended only once a week, as already stated, I left directions to increase the temperature two or three degrees weekly; but when I went again I found the bottom-heat at 90°, and the top 70°. I ordered the fire to be put out directly, and I gave plenty of air at top; but notwithstanding this the bottom heat remained at 90°. I had no fire on all night. I went the next morning and still found the bottom heat at 90°; this circumstance led me to examine the plunging material, and I found the moist heat in the chamber (for there was a small tank of water over the furnace, and perhaps that sometimes boiled, as it evaporated 5 or 6 gallons of water daily) had caused a violent fermentation to take place in the decayed leaves; consequently I had all the pots raised and placed on the top of the leaf-mould, leaving directions for them to remain in that condition till I went again; but when I returned, to my astonishment, I found them all replunged and rapidly approaching their former state. They had now been in heat about a fortnight, or rather more. I again requested the bottom heat to be reduced to 70°, and the top heat to 55° or 60°, with sun; and on going again the following week, I found the lights entirely off the plants, and they had been so for two days, exposing the plants to an external atmosphere of 40°. I remonstrated, but was told a nurseryman at * * had recommended it; I then examined the bottom heat with the lights off; it stood at 80°. I had them put on again, but so that the plants had plenty of air; before night the bottom heat was again at 90°. During the last week it has been at 80°, with about one-fourth of the plants dying, as I predicted they would under such treatment. Now, my employer will insist upon it that the soot at the bottom of the pots has killed the plants."

Here we have the case of Mr. SPRIGGINS in another and more startling form; but with this essential difference, that the ignorance belongs to the master, which is excusable, and not to the gardener, in whom it would be inexcusable.

It appears that the owner of these Strawberry plants, interpreting the word "forcing" literally, as signifying "to compel, to constrain," in January last took some Strawberry plants in pots out of the open ground and plunged them in a pit, the bottom heat of which rose to 90° in the first week, the top heat being 70°; that, in spite of the remonstrances of the gardener, this temperature had been maintained till, at last, the plants received a cold-air bath of 40°, the bottom heat still remaining at 80°. Then succeeded another stewing at 90°; and at last, when a quarter of the plants were dying, the unhappy gardener is charged with having killed the plants by putting some soot in the bottom of the pots.

Did not our editorial experience teach us that such events are not uncommon, we should have altogether discredited this story, so contrary does it seem to common sense and common fairness. The master may be laughed at for his folly in attempting to grow Strawberries by par-boiling their roots; the plants were his, and, if he had thought fit to bake them, he had a clear right to do so; and any public expression of opinion would have been uncalled for. But when he turns round upon the gardener who had endeavoured to stop the proceeding, and who was in every respect blameless, and gets up a ridiculous charge of his killing the plants with soot, the matter becomes serious, and calls for public interposition. Such an assertion, made in a little country neighbourhood, with some important part of the facts unexplained, may ruin, or most injuriously affect, the occasional gardener against whom the complaint is brought.

If the Strawberry killer in this case had at all understood the nature of plants he would have known these things; 1, that a *sudden* application of high temperature to Strawberries, especially to their roots, will always destroy a crop; 2, that under no circumstances will they bear 90° at their roots, while growing, without suffering; 3, that a moist heat of 90° at their roots is destruction; and 4, that soot is very commonly employed in potting Strawberries with beneficial, not injurious, effects. And then, if he could reason, he would have seen that the blame was his own, and nobody's else.

The Strawberry is a northern plant; the temperature of the soil in which its roots are naturally placed, is to be judged of by that of London, where some of its finest fruit is annually produced. Now it appears from the careful observations of Mr. THOMPSON, in the Garden of the Horticultural Society,* that the mean temperature of the earth there is in March 41°.16, in April 46°.17, in May 53°.49, in June 61°.14, about from 30° to 50° less than that employed in the case above related, which would have been excessive even for Pine-apples.

As it is impossible to run counter to the rules prescribed by Nature, without certainly missing the object aimed at, it would be superfluous to remark further on this occurrence, if it were not for the purpose of once more urging upon public attention the indispensable necessity of attending to ground temperature, a necessity less obvious in farming than in gardening, but not to be safely disregarded in either; for a soil may be too cold as well as too hot, and a crop of corn may suffer from the first, in the same way as a crop of Strawberries from the second.

"NOTHING in England surprises one so much," said a clever foreigner the other day, "as the total want of taste evinced in England in the interior of PLANT-HOUSES. Here and there indeed, as at Chatsworth, Syon, &c., we see a successful attempt at carrying out, under glass, those principles of decoration which the English so well understand in the open flower garden; but they are mere exceptions. One would think that the pleasure-grounds belonged to one nation, and the glass buildings to another. You have the finest cultivation in the world, the most magnificent plants, and the most varied forms; but you huddle them all together upon a stage or a shelf, just as if a greenhouse were a shop, and the plants were objects placed for sale upon the counters. We, on the contrary, have no such materials at our command, nevertheless observe how gay and varied

* Journal of the Society, vol iii., p. 99.

is the scene in many a Continental garden without half the pretensions of an English country residence. What, for example, have you in London that can be compared with the *Jardin d'Hiver* at Paris?"

We could not deny the justice of the criticism. What M. RIVOLIÉRE alleged was true, and deserves to be made a matter of consideration. Admitting this, however, we must also add that taste in the interior of plant-houses is far more studied than it was, and that in many places a considerable approach has been made to the combination of the useful and beautiful, as at Kew, in one of Mr. HANBURY'S houses at Poles, contrived by Mr. GLENDINNING, and in some houses in the garden of the Horticultural Society.

The reason why the English have preferred their homely way of arranging plants, has been the convenience of it. Their object has been high cultivation; to secure which it is desirable that every plant should be readily accessible and removable, so that, if any symptoms appear of bad health, they may be inquired into and arrested; and also in order that each plant may receive the treatment which is most suitable to its peculiar habits. Where plants are arranged in masses, in earth, or attached to stems, in irregular groups, this is not so easy to accomplish. Another reason for our English method has been economy of space; a point of the first importance so long as glass bore the exorbitant price attached to it before Sir ROBERT PEEL'S removal of the excise duties; and not to be neglected even now, with our excise on bricks and our duties on timber, to hamper the funds at the command of the garden architect. The Jardin d'Hiver, which Mons. RIVOLIÉRE quoted in illustration of his meaning, chiefly consists of a lawn, of Lycopodium, and winding walks, decorated here and there with plants in pots, grown in the style observable in the garden of the Royal Botanic Society. Properly speaking, this place is more of a lawn under glass than a flower-garden; but extremely pretty and tasteful no doubt. In England, however, a very moderate selection of fine plants would require half-a-dozen such houses to hold them.

While, then, we English have generally preferred utility to mere beauty, our Continental neighbours have often sacrificed solid value to showy decoration. But there surely is a middle course, which may be steered with advantage. While we teach them what high cultivation is, we may gladly learn from their example how the principles of high art may be applied to gardening, and the interior of plant-houses be rendered picturesque.

To effect this it is necessary to acquire a distinct idea of what tropical picturesqueness consists in, and to study the nature of those marvellous groupings of foliage to which we have no parallel in European scenery. We must give up, too, our excessive fondness for mere flowers, and learn to appreciate the value of the Ferns, and Palms, and Arads, &c. &c., to which a tropical foreground owes so much of its peculiar beauty. Those who wish to study the possibility of producing great effects by such means, should study the admirable work of KITTLITZ,* or any other faithful representations of tropical scenery. To explain what we mean we reproduce the frontispiece of "The Vegetable Kingdom," in which the accuracy of the details is guaranteed by the authority of VON MARTINS.

Nor is this at all impossible of accomplishment. A very near approach has been already made to such a scene by Mr. DILLWYN LLEWELLYN, to whose house we shall probably refer next week, when we explain, in some detail, how such a plan may be worked out without interference with the possibility of that minute and special supervision to which our English system has sacrificed so much. In the meanwhile we shall be thankful for any hints or suggestions which the experience of our readers may be able to furnish.



GRAVEL WALKS AND ROADS.

IN the very humid and comparatively sunless climate of England, nothing conduces more to the enjoyment of a country residence than a good, firm, and dry walk, upon the surface of which the ladies of a family can, without annoyance from dirt or damp, take their daily exercise. To be what it ought, it should be available immediately a heavy shower has ceased; and to this end it is desirable to get a hard smooth surface, and to carry off the surface water by frequent gratings to an underground drain, not allowing it to saturate the materials of which the walk is composed, or the ground on which it rests; because in proportion to the absorbency of the materials will be the unsoundness of the walk after severe frosts. Both road making and walk making are frequently ill understood by those who attempt it.

In the ordinary course of proceeding to form a road or walk, it is usual to make a deep excavation, which, when filled (as is usual) with large and coarse gravel, becomes a receptacle for the drainage of the adjacent ground, thus securing the greatest evil which can happen, by the constant saturation of its foundation. A better plan is to raise the edges of it above the adjoining surface, which keeps it dry. It is necessary that there should be 6 inches in thickness of gravel, for otherwise, however firm and good the surface might be, the worms would cast through and disfigure it.

Nothing can be a worse practice than the employment of large bodies of rounded pebbles at the bottom of a road or walk. After all, it is the native soil which carries the road, and if this is covered or roofed with materials which exclude the surface water, it will last; 4 inches of hard materials is sufficient; if pebbles, they should be broken so as to form a compact solid body, which they do when angular. Rounded pebbles, independently of the facilities which their interstices afford for the lodgement of water, are ever rising upwards; when pressed upon any point of their circumference, they move and become wedged by the falling of finer materials around them; and as this is always going on, in time they get to the surface, making it rough and uneven. In no instance should any great amount of convexity be given to the surface of a walk; its crown should not be raised above the level of the margins; if the water will just fall to the sides where the gratings are placed, it is all that is necessary; its outline cannot be too accurately defined, it is avowedly a work of art, and should have the impress of the nicest artistical execution in all its details.

However good the material which forms the face of the walk may be, the action of the atmosphere, alternate frosts and rain, will in time decompose the surface, in the same manner as it decomposes the hardest rocks, and by its slow but sure agency effects vast changes in the surface of the earth; the particles of earth absorb water, they expand by freezing, and when they thaw become soft and friable, presenting a fit nidus for Lichens, Mosses, &c., to vegetate in; but with a well-made walk we have only to scatter a little bright and fresh gravel on the surface, previously loosening it slightly, and it is restored to its former beauty. I have long discontinued the old practice of breaking up the walks deeply; and the more ancient one of leaving them roughly broken and exposed to the frost, snows, and rains of winter, cannot be too highly deprecated.

Asphalte and paving have both been recommended for forming garden walks, but I think there are few persons who would not prefer the bright warm colour of good gravel, where it can be procured. I have been in the habit of forming a sort of concrete with the gravel we get here, which answers well; it is well watered and rolled to the consistency of puddle when wet; it is afterwards allowed to dry, and sets as hard as a rock—the first shower of rain restoring it to its natural appearance.

Walk making, if well done, is very expensive; of course varying with the facility of obtaining fit materials; so much depends on their proximity to the scene of operations, or having to be carted from a distance, that perhaps no two places would come under the same estimate. Both walks and roads should be made upon the same principle—that of preserving a moderately thick stratum of angular materials from absorbing the surface water; and yet so little is this understood that thousands of tons of stone are yearly thrown into deep trenches, to form, as it is supposed, the foundations for roads and walks, while at the same time they, instead of supporting them, secure the most effectual means of making them unstable and rotten; let a dry surface be obtained—if not naturally, artificially—and cover it with a thin coat of such material as will keep it so.

In the present depressed state of the agricultural interest this may be worth the consideration of such of our friends of that class as purpose making roads; because, the principle admitted, must cause a much less quantity of ponderous materials to be procured and hauled than is usually done in forming farm roads; and as economy is the order of the day, this is one item in which a saving of outlay may be made where such labour is necessary. Whether it be in an approach road to the residence of a gentleman, or upon his farm, or in his garden, nothing is more satisfactory than well-kept roads and walks. In the wilder scenes of nature we can admire rugged and irregular paths, but in what immediately relates to the comfort and enjoyment of the family of the man of wealth and taste, we look for perfection, as far it is attainable by human means.
Henry Baily, Nuneham.

DISEASES OF PLANTS.

(*Continued from p.* 133.)

GENUS XIX.; *one species.* GANGRENE, *that is, a soft, moist, putrefying corruption.*—To this disease also may be applied what I have said of ulcers, that it may be considered as the last stage of some other disorder. It rarely attacks the stems of plants, but appears frequently in fruits, flowers, leaves, and roots. Plains of excessive fertility, and gardens, offer the most frequent instances of gangrene, especially in rainy, cold seasons. In my own little garden I have frequently observed it

* *Vierundzwanzig Vegetations-Ansichten von Küstenlandern und inseln des stillen Oceans.* 4to. Siegen, without date.

on Hyacinths and many other garden plants. As it is here that its does most damage, I shall first enter into some details on this case, and then speak of the gangrene in trees.

Flowers, especially Carnations, when cultivated by the fair sex, are much subject to this kind of corruption. The fear that ladies have lest their favourites should perish from starvation or drought, induces them to give a surfeit of the richest manures, with copious daily waterings. Thus treated, the plants grow with great vigour, but are soon attacked by polysarcia, followed by gangrene, and the disease is without cure when in an advanced stage. It is only when the first symptoms appear, usually some yellowish spots, that a remedy may be tried; although, if the spots are surrounded by a blackish sooty discoloration, it may be already too late. The only course to pursue is entirely to change the earth of the plant, placing it in a more appropriate drier soil without manure.

The gangrene of the Hyacinth requires some further mention. As already mentioned, it attacks the bulb, where it shows itself in the form of a circle, sometimes of a blackish hue, but generally of the colour of dead leaves, appearing sometimes near the top, sometimes near the base of the bulb. Corruption then spreads gradually till it reaches the surface, when the bulb is generally irremediably lost. The disease generally attacks the bulb when it is yet in the ground, and some indication of it may be given by the facility with which the stem may be detached from it before it is quite dried up. If the circular spot shows itself at the base of the bulb whence the fibres spring, there is no cure; if it be at the upper end, the gangrene may be cut out so as to stop its progress, the wound being sprinkled with ashes, and the bulb exposed to the sun's rays. The disease is contagious, and roots planted every year in the same place, without changing the soil, have appeared to me to be more especially affected with gangrene.

Seasons which produce polysarcia, and cause fruits to burst from over-repletion, will readily generate gangrene. During protracted rains we see fruits rot and putrify on the trees. The same effect may be produced by contusions. Gangrene in fruits is not only irremediable, but what is worse, contagious. It is well known how a sound Apple placed between two rotten ones will become affected likewise. The careful economist will prevent the disease by gathering his fruit before it is over-ripe, and so placing in the fruit room, that no one shall ever be in contact with another.

VILLA AND SUBURBAN GARDENING.

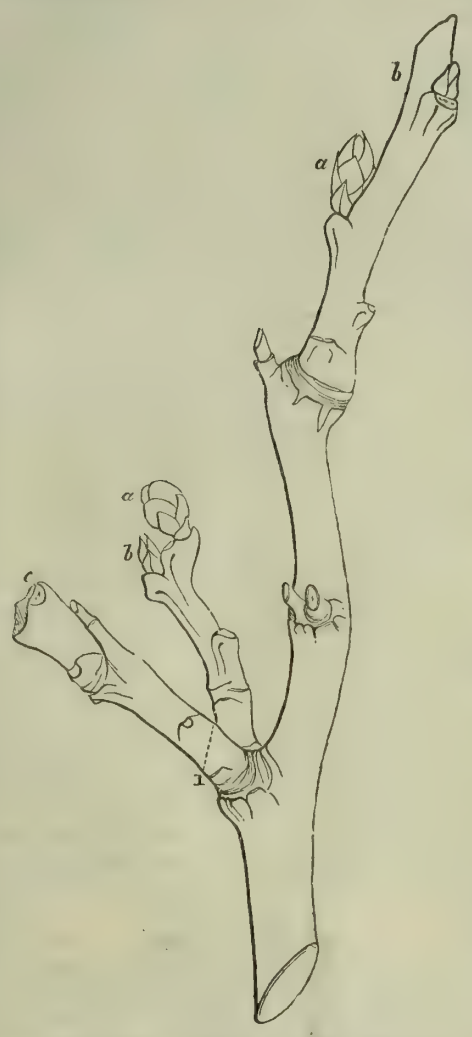
The successful cultivation of plants in pots depends in a great measure upon the proper placing of the materials employed in potting. The first condition essential to success is perfect drainage; if water-logged, no plant can continue long in a healthy state, whether it be in a pot or in the open ground.

The first thing to observe in potting is to place two pieces of broken potsherds over the hole in the bottom of the pot. Arrange them so that they may lay side by side. These pieces should have a slightly concave form, and the concave sides should be placed downwards; this will enable the water to pass off freely. The next point is the best kind of material to use above these pieces, and this is broken pots. For very small plants these may be reduced to the size of Peas, but they should be increased in proportion to the size of the pots. Four-inch and smaller pots would require the size mentioned, but from that to eight-inch pots may be drained with a coarser kind, say the size of Windsor Beans, and for larger pots, two or three times these dimensions will answer. The depth of the drainage must also be guided by the size of the pots—¾ inch will be enough for small pots, 1 inch for medium sizes, and for larger sizes 1½ inch and even 2 inches will occasionally be required. It is an error, however, to drain too much, as it must obviously be at the expense of the material in which the plant has to feed. A proper and careful regulation of the drainage is therefore necessarily required, in order that the object aimed at may be perfectly secured.

In collections in which little care has been bestowed upon the arrangement of the drainage, abundant evidence exists of the plants being in an unhealthy condition, an evil which arises not so much from an insufficient amount of drainage, as from a careless and injudicious application of it. Instead, therefore, of casting crocks into pots without thought or care, let them be regularly and evenly distributed. When this is done, the next point to consider is, how to maintain the whole in an efficient state. It cannot be maintained in that condition if the soil is thrust into the pot without any regard to consequences. Under such circumstances, it must be evident that the water supplied from time to time would soon wash portions of soil down amongst the draining materials, and render them ineffective. To obviate this, a little coarse turfy material should be carefully placed over them. If this is done with caution, the drainage will be perfectly and economically secured. *Pharo.*

PRUNING: THE QUINCE TREE.

On referring to the accompanying engraving, it may be remarked that in the preceding year, a blossom-bud, similar to those marked *a a*, and sessile like them, was situated at 1. In the course of last season that bud pushed a sort of shoot, furnished with leaves, and bearing at its extremity a single blossom, producing one fruit, which at its maturity had either been pulled or had dropped off, leaving a scar at *c*. The portion between 1 and *c* may be termed a branch, as it was furnished with leaves, and buds appear that were formed in the axils of those leaves; but still it is an imperfect branch, inasmuch as it has no terminal bud for its prolongation, the place of such bud having been occupied by the fruit. As this portion is only furnished with weak buds, it is not necessary to be retained, and should be cut off at 1.



a a, Blossom-buds; *b b*, Wood-buds; *c*, The place where fruit was attached last season.

In rearing the Quince tree, pruning is necessary in order to strengthen the stem, for otherwise it is very apt to be twisted or bent over by the winds. Presuming the tree has been planted in rich, rather moist soil, it will send up a long but flexible shoot; and if from this all laterals are pruned closely off, with the view of making a clean stem, the latter will be rendered much weaker than it would be if left to Nature. The plant should be cut back to within, say 18 inches of the ground, or more or less according to its strength. Generally three buds next the section will push in the following season; select the shoot best adapted for continuing the stem, and train it as upright as possible. Shorten this at the winter pruning, and spur in the laterals. In every successive year, a well-managed young tree of any kind ought to have an increased quantity of foliage; certainly not by any avoidable means should it be reduced to a condition under which it could only produce a decreased quantity. But such condition may be guarded against, and yet the stem can be cleared of such lateral shoots as may have been temporarily left to strengthen it and the roots, if their removal be gradually effected, of course from below upwards. A portion should be removed at every winter pruning, but the quantity should be more than compensated by that of the young shoots produced above in the preceding summer. By attending to this, and annually shortening the leading shoot, a stout stem, requiring no stake for support, will be the result. When the stem has attained the desired height, the formation of the head should be commenced. Three shoots, cut back at least to half their length, will afford two shoots each in the following season; and thus six principal branches will be originated. Afterwards very little pruning will be required. It will chiefly consist in early checking over-luxuriant up-starts, and thinning out cross-branches. *R. T.*

ONIONS.

All the varieties of the common Onion, even those considered the most distinct, are so easily modified by soil and climate, that one sort may produce what is here or elsewhere described as a different sort. It is possible that by saving seed from the palest bulbs of the Blood-red Onion, the Pale Red variety may be obtained; and by repeatedly saving from the palest of the Pale Red, James's Keeping may be obtained, and doubtless was so. Miller describes only three sorts of the common Onion, namely the Strasburg, Spanish, and White Egyptian; and he adds, "These varieties are not lasting; for if you save seeds of White Onions only, you will have a mixture of the Red ones amongst them; nor will the Strasburg keep long to its kind, but will by degrees grow flatter, as do the Large Portugal Onions when planted in our climate, which in a year or two will be so far degenerated as not to be known they were from that race."

1. *Blood-red,* aliàs French Blood-red, Dutch Blood-red, St. Thomas's, Oignon rouge foncé. Middle-sized, flat, deep-red, strong; keeps well.

Pale Red, aliàs Amiens, Rouge pâle ou de Niort. Similar to the preceding, but paler and not so flat.

2. *James's Keeping,* aliàs James's Long Keeping, Oignon Poire ou pyriforme. Large, pyramidal, outer skin brown; the second has a reddish cast; flavour strong; esteemed for its long keeping.

Madeira, aliàs Oignon de Madère, Romain ou de Bellegarde. Very large, roundish obovate, pale red; quality rather mild; does not keep long.

3. *Tripoli,* aliàs Besagnina. Resembles the preceding, very large, pale red, tinged with green and brown; soft and will not keep long; but whilst it lasts is much esteemed for its mildness.

4. *Strasburg,* aliàs Dutch, Flanders, Essex. This is the most generally cultivated sort; large, varies from flat to globular or oval; divested of its thick brown external coat, the colour is light red tinged with green; hardy, keeps well, but is strong. The two following are considered varieties of this.

5. *Deptford.* Skin thin, pale brown without any tinge of red; rather mild.

Globe. Skin rough, thick, pale brown with a tinge of red; hardy, rather mild.

6. *Spanish,* aliàs White Spanish, Reading, White Reading, Portugal, White Portugal, Cambridge, Evesham, Sandy, Oignon d'Espagne. Large, flat; outer skin loose, brown, falling off spontaneously, and exhibiting the next coat white tinged with green; considered the best for a general crop for early winter use; it is particularly mild.

Brown Portugal, aliàs True Portugal, Brown Spanish, Oignon jaune ou blond des Vertus, Catalogne, Cambrai, Oporto, Lisbon Viauna, Large St. Ubes. More brown than the preceding; in other respects very similar.

Lisbon, aliàs White Lisbon Florence, Oignon blanc de Florence, a variety of the following:

7. *Silver-skinned,* aliàs Large Silver-skinned, Large White, White Egyptian, Oignon blanc gros. Middle-sized, flat; skin thin, shining white; does not keep long, but is generally cultivated and esteemed for its mild quality, white colour, and for pickling.

8. *Early Silver-skinned,* or Oignon blanc hâtif. An early variety of the preceding.

9. *White Nocera,* or Blanc de Nocera, smaller and and still earlier than the Early Silver-skinned; excellent for pickling.

Fusiform Onion, aliàs Oignon fusiforme, Corne-de-bœuf, Druses Onion. From 6 to 12 inches in length, tapering and bent like a horn; does not keep well, and is, on the whole, more curious than useful.

Under-ground Onion, aliàs Potato Onion, Patate ou sous-terre. This forms its bulbs on the parent root, below ground; and comes in for use before any of the common Onions.

Tree Onion, aliàs Oignon bulbifère, à rocambole, Oignon d'Egypte; bears small bulbs, in clusters, on the stem above ground; being small, they may be employed for pickling.

The sorts numbered are either the best; or they possess peculiar properties which, in many cases, will render them desirable. Those who can only grow one sort should choose the Strasburg. *R. T.*

Home Correspondence.

Pond Mud.—I am much interested in the inquiries of "Ruris Amator," as to the best method of clearing the mud from ponds, and its value and proper application as a dressing for land. I have a large piece of water lying on flat ground, which is fed (for the most part in winter only, or in wet weather) by a small streamlet, the upper channel of which flows through uncultivated land of a light sandy texture. The water can be entirely drained off by a sluice at the lower end. It has not been cleaned out for some 20 or 30 years, and there is now more than 2 feet depth of mud in it. In fact, I have been deterred from making any attempt to clear it, by the certain expense and uncertain profit of the undertaking. I am aware that the best and most economical method of proceeding in cases where the width admits of it, is to work with the common hand-scoop, throwing the mud to the bank in one or perhaps two throws; but where there is a considerable area, and where the bottom is not hard and solid enough to admit of carting out, as in my case, there is a difficulty in performing the operation without some mechanical contrivance. Any information on the subject would oblige. *No Lover of Mud.*

Autumn Planting Potatoes.—On the 9th of August, 1849, a few Potatoes, the growth of the previous year, were planted in the usual manner in the open air. The stems were protected from frost by being covered with straw placed over loose stones, which were laid beside the plants. On the 26th of February, 1850, they were dug out, and the produce was abundant. The young Potatoes were each larger than a hen's egg, and very good food, being dry and having the flavour of new

Potatoes. The kind planted were what are called here "Baronets," and at the time of being planted were cut into four parts. None of the produce showed any appearance of disease. Are you aware of Potatoes having been grown in a similar way before, as to time of planting and age of seed? Would you recommend such a course for the purpose of obtaining a very early crop? Would the seed of the previous year be the best for forcing? *Martin J. Ffrench, Cashel, Tipperary.* [In some parts of England this is done regularly, for the supply of new Potatoes in winter. Old Potatoes are best for the purpose.]

Dendrobium speciosum.—A fine specimen of this handsome Dendrobe flowered in the garden of the Horticultural Society, in the spring of 1847, which was, I believe, the first time of its flowering there. Two or three words on the treatment it received during the spring and summer previous to blossoming therefore may not be out of place, more especially as they in part confirm the statement made by the Rev. Mr. Chawner's gardener, respecting the flowering of this plant. For two years before blooming it had been kept warm, and watered abundantly during the summer months; but, like other Orchids there, it was kept comparatively dry in winter. In the autumn of 1845 it was removed from the large curvilinear stove in the garden, and placed in an intermediate house (the old Pine stove), whose temperature was seldom higher than 45° in winter, and in summer it was as low as it could be kept, plenty of air being given, with occasional shading. Early in spring, while the plant was forming young pseudobulbs, an ample supply of water was given; but as soon as they had swelled out to their usual size, water was greatly withheld; in fact, it received no more during the summer than what was supplied by the atmosphere, or fell on it from the syringe. Under this treatment the flower-buds began to show themselves very prominently about August. I attributed its flowering to the low temperature in winter, and the drought in summer. *An Old Servant of the Society, Drayton, Feb.* 27.

Rhododendron zeylanicum.—This is now in great beauty in the open border, and proves to be a very fine thing, far surpassing, in my opinion, the old Rhododendron arboreum, or any of the numerous hybrid varieties that have originated from it. The rugged corky bark, and rough, wrinkled thick leaves, revolute at the margin, and clothed underneath with a somewhat rusty-coloured pubescence, give a peculiar character to the plant, by which it may be easily recognised. The head of flowers is round and compact, like that of R. arboreum, but the colour is much richer, being a deep blood red, with a few dark spots at the bottom of the tube. The plant we have under the name of R. Rollissoni I consider to be identical with R. zeylanicum [No doubt], although the former has not yet flowered with us. Both have been growing for several years in the open air, and although considered as being rather tender, they have been found sufficiently hardy to withstand 10 degrees of frost (the greatest cold experienced here last winter) without injury. *W. B. Booth, Carclew, Cornwall.*

Seedling Grape.—I exhibited at a late meeting of the Horticultural Society, under the initials "J. B.," two bunches of a dark-coloured seedling Grape, which is mentioned in the report of the meeting at p. 119. At p. 120 of the same Number you say "it is a very nice Grape, unknown to us. What are its history, its name, and its merits?" The bunches exhibited were from a seedling Vine, and were grown in a Pine-stove, in which there are a good many stove plants. In flavour we regard it as intermediate between the Black Hamburgh and West's St. Peter's, but it becomes more sugary the longer the fruit remains ripe before being cut. The length of time the Grapes will remain ripe on the Vine without spoiling forms one of its most remarkable characteristics. Those ripened last Midsummer were plump until about a month ago; and now that they are a little shrivelled, they are still in good condition for the table. We believe it to be a valuable addition to the varieties now in cultivation, and we intend to propagate it. *James Backhouse and Son, York.*

Peas.—You can do no one more good than the honest seedsman himself by reducing the number of Peas, Beans, or any other vegetables, within proper limits, and by telling the public that half those advertised under high sounding names, and which cause us much loss of time and much trouble to discover, are the same that have been grown and known for years past. At the same time your classifier may do much mischief where he intends otherwise if he should class together as identical (however botanically allied I don't pretend to pronounce) Peas or other vegetables which are decidedly dissimilar. I allude now to several sorts classed together in Mr. Thompson's list, and, with all due deference, assert erroneously. Among "Charltons," for instance, I find "Nimble Taylors." Every seedsman knows that these last are identical with Early Frame Peas; and any one sending "Charltons" for them would subject himself to an action. Scymetars and Imperials are classed together. Now every one knows that both in the shape of the pod, but above all in the time of their arriving at maturity, there is a difference of a fortnight—a long space in the calculations of a market-gardener, who has to send his produce to market; and there is no one more keen than the "podder" in knowing the difference of these two Peas. Emperors are put under the same head with Early Kent or Prince Albert; but they differ entirely in the habit of the Pea, and in the number of Peas in a pod, as you would soon learn to your cost, were you to be dependent upon their produce. These, and many mistakes like these, may do much mischief in our trade, and I fancy that either Mr. Thompson must have been deceived in the stock he tried, or that many which may be botanically the same, are, for all practical purposes, totally different, so that a list which, well arranged for practical purposes, might be a great boon to the vendor and the public, may, as it now stands, have just the contrary effect, making confusion worse confounded. Excuse, too, my surprise at your selection of Peas for your own eating. Where in it is that most useful, and by far the most used of Peas—the old Early Frame? This surely is indispensable in every garden, and there are two or three others for succession which I should recommend, but as tastes differ I will not enumerate them. Mr. Fleming, or one of your correspondents, is content with Hairs' Monster Marrow and Burbidge's Eclipse. Of the former I know nothing, but surely his is a wondrously small list, or his master cannot be very fond of Peas. *O. P.* [The "Nimble Taylor" is recorded as being the same as the Early Charlton in the "Transactions of the Horticultural Society," Second Series, vol. i., p. 376; and the Blue Scymitar the same as the Dwarf Imperial, p. 383. *R. T.*]

Rain at Pembroke from July to December (*inclusive*) 1849:

	Gauge 42 ft. 6 ins. above ground level.	Number of Wet Days.	Thermometer. Max.	Thermometer. Min.
July	1.358	12		
August	2.272	11		
September	3.870	14	72.5	39
October	3.807	19	63	31
November	3.287	21	57	33
December	2.844	21	56	23
	17.438			

Daily Maximum and Minimum during the severe Frost from December 30, 1849, *to January* 20, 1850.

	Max.	Min.		Max.	Min.
1849, Dec. 30 ...	39 ...	23	1850, Jan. 13 ...	34 ...	27
,, 31 ...	37.5 ...	25	,, 14 ...	31 ...	23
1850, Jan. 6 ...	40 ...	26	,, 15 ...	31 ...	23
,, 7 ...	38 ...	23	,, 16 ...	35 ...	21
,, 8 ...	39 ...	29	,, 17 ...	35 ...	25
,, 9 ...	38.5 ...	28	,, 19 ...	47 ...	30
,, 10 ...	35 ...	34	,, 20 ...	36 ...	30
,, 11 ...	36 ...	30	,, 26 ...	49 ...	25
,, 12 ...	34 ...	29			

On the 1st, 2d, 3d, 4th, 5th, 18th, 21st, 22d, 23d, 24th, and 25th, it did not freeze, nor has the temperature fallen to 32° since. *T. S. P.*

Rain which fell, in inches and hundredth parts of an inch, in the neighbourhood of Gloucester, in 1849.

January ...	...inches—0.65	July ...	...inches—3.08
February ...	... ... 1.62	August ...	... ... 1.14
March ...	... ... 0.35	September ...	... ... 2.90
April ...	... ... 3.00	October ...	... ... 2.10
May ...	... ... 2.50	November...	... ... 1.15
June ...	... ... 1.33	December...	... ... 1.70

A friend who resides nearer the river makes the quantity recorded by his gauge larger by 2.58 inches. This may be in part the effect of a greater attraction by the river upon thunder clouds. *C. B. H.*

Birds.—I have reared green linnets; after they could pick they would not take an insect. I did not offer them any from under the Polyanthus leaves. I have seen robins, titmice, hedge and eave sparrows, on the last few sunny mornings, on my flower borders, in goodly numbers, feeding busily apparently upon insects, the sparrows turning over leaves in quest of them. I admit that bullfinches destroy buds, but I doubt whether those which they break off are not so broken in pursuit of insects or their eggs. Thrushes and blackbirds are kind friends to man; they work without pay, early and late, only resting (sleeping) about noon, when his little enemies also "hide their diminished heads." We may surely allow some of them to partake of our fruit; though I must say I have felt great disappointment when my Currants have been all stripped from the trees in three days, ere they had become red. Gooseberries have gone as surely but less quickly. Strawberries for two years have gone too, my feathered friends only taking the ripe or partially ripe ones. The first year it puzzled me to discover what took the unripe fruit, but my perseverance leads me to believe that much of it is taken by the shrew (Sorex araneus), though this little animal is said only to be insectivorous. I found at the entrance of several of its nests or runs heaps of Strawberries, from which every seed had been eaten. Upon a Rhubarb bed I found a full pint, ripe and unripe. I took them up, after removing a toad which sat close by them; I perceived the hole of a shrew under him, and this exonerated the good toad from the suspicion of being a participator in the theft. I removed him to the other end of the garden; next morning I paid a visit to the same spot, and there the toad was as before, with more unripe Strawberries before him. I removed him; two hours afterwards I went there again, and after taking him away covered the hole. During the day I repeated my visits, found and removed him oft, but the orifice was not cleared or more fruit added till morning, when the robbery was again laid at the shrew's portal. I also found upon a raised border, under a Cotoneaster microphylla quantities of Strawberries collected and the seeds eaten off, which was the case in three other places, where there were also burrows or holes. A pasture adjoining the garden abounds with shrews. One winter the gentleman occupying it entertained the idea that the more Grass left in autumn the better his next year's crop would be, and he would not allow it to be entered after the 10th of October. When it was mown in the following June he found out his mistake; the old Grass had smothered the young that would have been a crop, and had formed coverts for myriads of shrews. I do not think that in the 4 acres there was more than a foot between their runs. I have watched these animals carefully; they can turn about the snout or proboscis at will, and it appears as useful to them as the trunk to an elephant, and equally under their control. ♂

Societies.

Horticultural, *March* 5.—Sir Charles Lemon, Bart., M.P., in the chair. H. H. Calvert, Esq., of Erzeroum, was elected a Foreign Corresponding Member. Among subjects of exhibition, Mr. Packman, gr. to J. Gadesden, Esq., produced a magnificent specimen of the old-fashioned Bletia Tankervilliæ, now called Phaius grandifolius. It was 4 feet in height, measuring from the surface of the pot to the top of the flower-spikes, and about as much through. It had about two dozen flower-spikes on it, all in the greatest perfection, and standing well up, as they did, above the large healthy foliage, they had a striking effect. A Banksian medal was awarded it.—Mr. Loddiges, of Hackney, contributed a nice collection of Orchids, which consisted of the rare Cymbidium eburneum; the variety of Epidendrum Stamfordianum called pictum; Oncidium longifolium, a pretty brown and yellow Onion-leaved kind; Brasavola venosa; Zygopetalum intermedium; Phaius intermedius; the ever-flowering Phalænopsis amabilis; a charming rose-coloured variety of Odontoglossum Cervantesii, and various Dendrobes, chiefly varieties of D. nobile, from which, however, they differed more or less in colour; among them was a brilliantly coloured kind from Darjeeling, for which, as well as for the Phalænopsis and Odontoglossum, a Banksian Medal was awarded.—Mrs. Lawrence of Ealing-park sent a cream-coloured Mormodes new to gardens, for which a Certificate of Merit was awarded.—Mr. Davis, of Regent's-park, had a dwarf Eucomis called nana, not so attractive as E. punctata, and a cut specimen of an apparently small-growing species of Acacia, very much in the way of A. paradoxa.—Mr. Layton, of Hammersmith, produced a blue Cineraria with a white disc, called "Hammersmith Beauty," striking, on account of its fine bright sky-blue colour, but too small to rank among first class florists' varieties.—G. Glenny, Esq., exhibited a collection of Hyacinths, being what remained of 170 kinds which he had forced this season. Though blues certainly prevailed, examples of other colours were not wanting. One called Satellite was a brilliant lake, and very striking; and there was another especially worthy of notice, called Alida Catherina, a double flesh-coloured kind, dwarf and compact. Among Whites, one of the best was perhaps Mount Blanc.—Mr. Roberts, of Eastcheap, sent specimens of what were called "ventilating flower-pots." These had a hole in the side, near the base, instead of in the bottom, like other pots, and were furnished inside with a moveable perforated drainage tile or stage, placed so as to leave a cavity between it and the bottom of the pots, the object being to afford perfect drainage, and to admit air to the roots as well as to provide a place for liquid manure to be poured into instead of over the surface of the soil. Mr. Roberts is of opinion that whatever decaying substance is placed in the bottom in a liquid state "will produce slow combustion, and generate carbonic acid gas; that the latter will be taken up by capillary attraction, and that the roots will find themselves in the best possible condition to ensure the health of the plants." The real value of the contrivance, however, has yet to be proved.—A cast-iron socket for placing Rose poles, &c., in, to keep them from rotting at their bases, the invention of W. Everett, Esq., of Enfield, was exhibited. This socket has three divisions, or feet, which, being driven into the soil, serve to keep it steady, and it is intended to fasten the poles in the socket with pitch or some other material that will keep out wet. The contrivance appears to be perfect of its kind, and if it can be made cheap enough it will no doubt be found an acquisition.—The garden of the Society furnished Dendrobium nobile and the pendulous D. cucullatum, Cyrtochilum maculatum, Lycaste cruenta, the sweet-smelling Epidendrum virens, the spring Heath (E regerminans), a new and promising Boronia called microphylla, two Epacrises, Franciscea Hopeana and the much handsomer F. latifolia, a well flowered plant of the brilliant scarlet Inga pulcherrima, whose correct management is now becoming better known; Siphocampylus Manettiæflorus, a new and pretty species, with shining Myrtle-like leaves, and long red tubular blossoms tipped with yellow; the handsome hybrid Polygala, called Dalmasiana; the sweet-scented Swan River shrub Trymalium odoratissimum, three Acacias, and a handsome flower spike from the fine plant of Lælia superbiens now in blossom in the Society's garden.

Linnean, *March* 6.—The Treasurer in the chair. Mr. Yates exhibited a cone and drawing of the male plant of Encephalartos horridus, from the Duke of Devonshire's collection at Chatsworth. Dr. Wallich read a letter from Dr. Lehmann, referring to an account, by Prof. Liebman, of a species of Cycas in the Botanic Garden at Copenhagen, which produced perfect seeds in the absence of any male plant of this order. Mr. Newport communicated a paper on the habits of Monodontomerus, with some account of a new Acarus (Heteropus ventricosus, Newp.), "a parasite in the nests of Anthophora retusa." After confirming some

of the observations he had last year communicated to the Linnean Society respecting the larvæ of Monodontomerus, more especially that these larvæ are external feeding parasites, and that some remains of the destroyed bee are always found with them in the cell; and showing that, as mentioned in the communication of another naturalist, they feed on the bee nymph, as well as the larva, the author proceeded to detail the circumstances connected with his discovery in Sept. 1849, of a new parasite in the nest of the same bee. This was a microscopic Acarus, of the tribe Sarcoptides, of Koch, for which he proposed the name of Heteropus ventricosus, a new genus, the chief characters of which are derived from the anterior pair of legs being palpiform, and the three posterior pairs having articulated and pad-like tarsi, similar to those of the larvæ of Stylops. The characters of the species were supplied by the arched and robust form of the femora and tibiæ of the legs, which are clothed with a few very long hairs; and the name was suggested by the enormous size to which the bodies of the females become expanded after they have affixed themselves and begin to drain the body of the bee larva, or of its parasite of its juices. The economy of this microscopic Acarus was traced to a considerable extent, and the young, at the time of their first appearance, were stated to measure only about a sixteen-thousandth of an inch in length. Yet they occur in such abundance as quickly to destroy the young bee. Drawings of the impregnated, and of the unimpregnated Acarus, were exhibited, as also a collection of bee larvæ, covered in great abundance with the pregnant females in a living state.

Royal Institution, *Feb.* 1.—Professor Faraday described the results of the recent investigations of Peltier and Quetelet, on the electricity of the air. He explained the method hitherto generally adopted for ascertaining the electrical condition of the atmosphere, by using a long pointed rod, in connection with an electrometer; and stated that no satisfactory results could be obtained by such means. Peltier had adopted quite a different method, which was much more accurate. He employed a very delicate electrometer, the action of which was indicated by the deflection of a very small magnetic needle; and this was surmounted by a metallic ball, which was electrified by induction. With this apparatus the electrical condition of any stratum of air could be determined with relation to the earth, by raising the apparatus into the space to be examined, uninsulating the ball, and then bringing the electrometer to the earth again, and observing the amount of deflection of the needle. The first important result obtained by Peltier with this apparatus was, that the electricity of the air at any one period is the same at equal altitudes from the earth, no difference being indicated on moving the apparatus in horizontal directions, although marked differences are found in the strata above or below. In making these experiments, it is important that the instrument should be placed on some building higher than all surrounding objects. Another very interesting fact, established by Peltier, from five years' observation, is much more highly electrical in winter than in the summer. The following table indicates, by the numbers, the relative electrical conditions of the air in each month of the year.

January	605	July	40
February	578	August	62
March	200	September	70
April	141	October	131
May	84	November	209
June	47	December	507

It had also been observed that the sky is more highly electrical in clear than in cloudy weather, as indicated in the following table:

	Cloudy.	Clear.		Cloudy.	Clear.
January ...	... 268	... 1133	July ...	... 41	... 35
February ...	... 220	... 493	August ...	... 56	... 64
March ...	... 129	... 261	September	... 42	... 78
April ...	... 71	... 149	October ...	... 75	... 168
May ...	... 46	... 63	November	... 109	... 226
June ...	... 36	... 37	December	... 181	... 571

There was found to be a difference in the electricity of the air during fog, snow, and rain, as indicated by the following numbers:

Fog ..... 54 | Snow ..... 64 | Rain 35

From the Pharmaceutical Journal.

Garden Memoranda.

Mr. E. G. Henderson's Nursery, Wellington-road, St. John's Wood.—We observed in the show-house here flowering plants of Rhododendrons, Primroses, Cyclamens, Hyacinths, Tulips, Cinerarias, Spring Heaths, a nice white Epacris called Candida, but not near so large or fine as Hyacinthæflora candidissima, which is the best of all the white Epacrises; Kalmia glauca, and the Myrtle-leaved Orange, &c. The latter is very sweet-scented, flowers here profusely, and has altogether a neater appearance than the common Orange. We also noticed in the same house some small plants of the very fragrant Daphne indica rubra, which flowers freely, and stands cutting well. A plant of it has stood out all last winter in the open border here, quite unprotected, and it appears to be uninjured, although we all know the frost has been severe. Among Cyclamens, of which there are several varieties here, we remarked the little compact growing C. cöum quite a mass of purple flowers. In the Geranium-house was a dwarf growing dark scarlet Geranium, called Queen of Summer, which is reported to be a free blooming and very ornamental variety, partaking of the close habit of Tom Thumb. It has variegated stems, and a semi-variegated foliage, something like that of the old "transparens." Various Tillandsias and other plants are grown in the stoves here, in what are called "galvanised iron-wire baskets," suspended from the roof by a handle. Where the plants admit of it, as in the case of the Tillandsias, the surface of the basket is covered with Lycopodium denticulatum, which hanging down over the sides, gives the whole a finished and neat appearance. Among Tillandsias was a new one named Morreliana, from which much is expected. Of other subjects in baskets, we observed Achimenes cupreata, Campylobotris discolor, producing deep violet-purple berries, which are very ornamental all the winter; the two Lycopodiums, denticulatum and stoloniferum, to which might be added cæsium; and various Æschynanths. Among Gesneras, a scarlet one named macrantha purpurea was just coming into bloom; it has a nice dwarf habit, and is apparently a very free flowerer. Associated with it was a Gloxinia named "argyrostigma," remarkable for its clear silvery-veined leaves, which are very handsome; and along with it was another Gloxinia named leuconerva, which possesses the peculiarity of throwing up all its flowers from the centre of the plant unintermixed with the leaves. The blossoms are produced in abundance, and they somewhat resemble those of Caulescens in colour. Two variegated Hoyas may be worthy of notice; one named carnosa picta had leaves with white centres, surrounded by green; the other, variegata, had a deep green foliage, margined with white. In addition to the three kinds of Allamandas, viz., carthartica, grandiflora, and Schottii, usually met with, there was another here named Neriifolia, which is expected to turn out distinct and good, and along with it a new Centradenia called floribunda, said to be handsomer than rosea, and a deeply cut Palm-leaved Begonia ("luxurians") worth growing for the beauty of its foliage alone. We remarked several small plants of Tropæolum Deckerianum, a new kind, stated to have a red calyx, with green-pointed sepals and a purplish blue corolla; a new continental Lilac, called "Liberti," will also soon be in flower. It is reported to be a very distinct kind. Among Cinerarias, many of which were in blossom, the best six, to our taste, were Adela Villiers, Flora Mc Ivor, Cerito, Climax, Vulcan, and Carlotta Grisi. On a shelf, in the end of a greenhouse, a new Conoclinium was producing a fine head of Ageratum-like flowers of a pink, or rather bluish-lilac colour. It has a good foliage, and from what flowers we saw open, we should imagine it will prove an acquisition. The young stock in the pits was in excellent condition; it comprised, among other things, some thousands of the spring flowering Erica regerminans, which is about the only Heath that is found to force well.

Miscellaneous.

Professor De Candolle.—We regret to learn that in consequence of the state of political affairs in Geneva, the excellent M. De Candolle has given in his resignation of the botanical professorship of that city, and of the direction of the Botanic Garden there; both, we believe, created purposely for his distinguished father. It is, however, on the other hand, some consolation to know that this retirement gives him leisure, which enables him to promise a visit to his friends in England during the present year. *Hooker's Journal of Botany.*

Death of Dr. Koch.—We are sorry to have to announce the death of Dr. and Professor Koch, of Erlangen, author of the "Synopsis Floræ Germanicæ et Helveticæ," and of many other useful and talented botanical disquisitions. His Memoir on the Umbelliferæ, published in 1824, in the 12th volume of the "Nova Acta Academiæ Nat. Curios," contributed more towards fixing the limits of the genera on a true and firm basis than the works of all preceding writers on the subject; and his knowledge of European plants was surpassed by few. *Hooker's Journal of Botany.*

Port Natal Agricultural and Horticultural Society.—A society has been formed at Port Natal, which is situated to the north-east of the Cape of Good Hope, and is between the 28th and 31st meridians of east longitude, of which Mr. Edward Morewood is president, which offers prizes, to be awarded in July or August, 1850, for specimens of cotton, indigo, coffee, sugar, tobacco, Wheat, Barley, Oats, Potatoes, Onions, butter, cheese, ham, and bacon; also for the best essay on the cultivation of cotton and on the agriculture of the district—to the introducer of the greatest number of useful plants and seeds not previously introduced—for the best kiln for drying grain—for the best horse-hoe or ox-hoe for weeding cotton, and for the best drill-machine for sowing Beans and other seeds. *Country Gentleman.*

Planting Trees.—1. It requires two persons to plant a tree properly. 2. The soil should be well prepared by deep trenching; pulverised and made rich by compost manure, before the planting is commenced. 3. The holes for receiving the trees should be sufficiently large to receive the roots entire, without bending or crowding them. 4. Trees should never be planted more than an inch deeper than they were in the nursery. Deep planting is often fatal and always injurious. 5. All broken roots should be pared off smoothly with a sharp knife, on the under side. 6. The tree, when planted, should be held upright in the hole prepared to receive it, and the roots spread out into their natural position; the soil should then be carefully introduced around and between all the roots and fibres, until the hole is completely filled up. 7. After the tree is thus planted, press the soil gently, but firmly down with your foot. Water is not often necessary. If the season should be very dry, for some 7 to 10 days, after the planting in the spring, one generous supply of rain or pond water, that has been exposed to the rays of the sun for some 24 hours, may be beneficial, if some litter or other such material is placed around the roots at the same time. 8. Trees planted in the fall should not be watered—the autumnal rains will be all-sufficient. Newly transplanted trees are like silk animals, they want care and attention;—but little food, and no more water than will keep the soil moist. It should be borne in mind that a tree can be drowned, starved, surfeited, bruised, and in other careless ways brought to an "untimely end," or, what is worse, rendered "a cumberer of the ground." 9. The fall and the spring are suitable periods for transplanting all kinds of fruit and ornamental trees. Evergreens succeed best when removed in the spring. 10. I should prefer to remove large trees in the fall (although they generally do well when transplanted in the spring), as the earth, during the winter, becomes settled about the roots, and they are ready to throw out fibres in the spring. A few leaves, or some litter, should be placed around the stem of the tree thus transplanted, and some stones put thereon to keep the covering from being carried away by the wind. In June, the stones and litter may be removed. 11. The roots to large trees when transplanted are not generally as long in proportion to their size as to smaller ones; it is therefore best to take off a part of the top, to correspond in some measure to the loss of the roots. 12. When a tree has been a long time out of the soil, and becomes more or less dry—it is well to bury the entire tree, "root and branch," in the earth, bringing the soil into contact with every part of the plant, and let it remain buried for some 7 to 10 days. Some cloudy or rainy day take it up and plant it; this is much better than a cold bath for its roots, with the burning rays of the sun on its top, for 24 hours, as is sometimes prescribed. *The President of the Massachusetts Horticultural Society, in Hovey's Magazine of Horticulture for Jan.* 1850.

Calendar of Operations.

(For the ensuing week.)

PLANT DEPARTMENT.

Orchids.—An increase of heat and moisture will now be required by the majority of this family; watch them carefully, and as they show signs of growth, place them in situations which are best calculated to produce a healthy development. Particular caution will be requisite to prevent moisture lodging in or about the young growths, as they are very liable to rot during that early stage. It is no less necessary to guard against slugs and woodlice; the young shoots and flower-stems are eaten by the former, which commit their depredations during the night, and must either be sought for at that time, or entrapped by slices of Carrot; the woodlice destroy the young points of the roots, and thereby prevent the plant from securing itself in its proper position. These enemies may be entrapped by halves of Turnips scooped out, or by placing a little hay between two plates or pans; the traps should be examined every morning, and the victims tumbled into a pot of hot water. Admit air with caution, and particularly avoid cold currents amongst the plants which have commenced growth; close early, and take advantage of the sun-heat on fine days, to indulge the plants with a gentle syringing. Avoid a high night temperature; 60° to 65° are sufficient for those in the most active state of growth. If there is only one house for the general reception of this family, the plants should be ranged from the warm to the cool end of the house, according to the natural habitats of the several kinds. The greater part of the Dendrobiums, the Vanda family, and some others, should, if possible, while making their growth, be removed to a higher temperature than that of the general house, which will contain the Oncidiums, Lycastes, Cattleyas, Lælias, &c. Get the shading in order, that it may be ready for use whenever it is required. We must not forget that many of the species are natives of dense forests, into which the rays of the sun never penetrate. These should be stationed near the back of the house, so that they can be shaded by partially unrolling the canvas, when it is not necessary, to shade those from more exposed localities.

FORCING DEPARTMENT.

Vineries.—As the succession and late Vines will soon be in motion, and as the ground is still cold, it will be of great advantage, where the roots are wholly outside, to afford them a gentle heat by laying tree leaves and stable litter over them to the depth of 15 or 18 inches. At the same time, the temperature within the house should be moderate, that the roots may make some progress before the buds begin to break. Care must be taken to prevent any injury to the tender skin of the young berries, as the disagreeable appearance known as rust is often produced by these means. Avoid handling the berries during the operation of thinning; and on no account permit a scalding steam to arise from the evaporating pans, as it is highly injurious to both leaves and fruit; and, as another necessary precaution, always give air before the sun's rays touch the house, early in the morning. Let the water used for syringing be quite clean, and of the same temperature as the atmosphere of the house. After the first general thinning, it should be discontinued, and the requisite amount of moisture obtained by evaporation. The syringing, if continued, will destroy the bloom of the fruit, which constitutes its chief beauty. Melons.—Attend to the training of the plants as they advance, and keep the shoots suf-

ficiently thin to enable every leaf to develop itself; maintain a moist atmosphere, or the red spider will soon make its appearance. Close early in the afternoon, and moisten the house and plants with the syringe. A small portion of air should be left on all night, to allow excessive evaporation to pass off, and thus prevent the first rays of the morning falling on damp leaves. Study well the state of the soil as to moisture. This is one of the main points in Melon-growing, especially during the swelling of the fruit. A medium and uniform state of moisture in the soil, a steady temperature, and air always, are indispensable in successful Melon-growing.

FLOWER GARDEN AND SHRUBBERIES.

The pruning of Roses may now be done with safety, and the operation should be brought to a conclusion as soon as possible. A distinction should be made between those families whose strong growths form wood, and those which produce flowers more freely on the strong than on the weak shoots. The latter consist principally of autumn flowering kinds, as Bourbons, Noisettes, Chinese and Tea-scented Roses. From these all the weakest wood, which is not likely to flower, should be cut away, and the stronger shoots shortened or thinned out, with the view to render the shape of the plant more symmetrical; for this reason the shortening should be proportioned to the strength of the shoots, reducing the weak wood to a few buds, to induce a stronger growth during the ensuing season, following the opposite practice with the strong shoots, and removing the very gross ones altogether. The summer blooming kinds do not flower on the strongest shoots of the same season; for which reason the production of exuberant wood should be as much as possible prevented. But if there are no objections against leaving unpruned the strongest shoots of last year, they will produce blossoms abundantly upon the laterals which proceed from them. If this is not convenient, it will be better to remove them entirely, to prune moderately the shoots of medium growth, and to leave the weakest entirely uncut. The less exuberant sorts may be pruned a little harder, and the very weak growing varieties harder still. A good deal will depend on the artificial habit of the plants, if they are trained against a wall or a pillar, many useful shoots may be retained, which would be objectionable in a standard, on account of appearance; but in both cases it should be a particular object to prevent anything like crowding amongst the shoots. By this time, many buds towards the points of the shoots have commenced growth; and, if early flowers are an object, a portion of these should be retained for this purpose, and by shortening the rest of the shoots a succession of blossoms may be produced. Avoid pruning too closely in all cases; if any error be committed, let it be on the safe side. It is no uncommon thing to see Noisette, Tea-scented, and China Roses entirely killed by being severely pruned. Standards of Hybrid China and Hybrid Perpetual Roses may safely be allowed to form large heads, when they look much more beautiful, and flower more abundantly than they do if pruned in close, as we often see them. Standard Roses, if of kinds with a drooping habit, should be worked on very high stems, and the long shoots allowed to hang down with their own weight. These kinds, along with the Banksian, Scotch, and Sweet Briar family, should not be pruned till they have done flowering. Dahlias, for general flower-garden decoration, should now be placed in a little heat; parted, and potted, as soon as they have made a few inches of growth. Marvel of Peru, Tigridias, Oxalis Deppei, Anomathecas, and other half-hardy roots may be started in a frame, and particularly the beautiful Salvia patens. If the stock of the latter is deficient, it may be readily increased at this season by cuttings from the strong young shoots.

FLORISTS' FLOWERS.

POLYANTHUSES.—It has often been a source of considerable speculation in our mind, how it is that so few novelties are produced in this class of plants. We appear contented with the same brown and yellow that were in vogue 20 years ago. Now in our experience during that period we have met with many seedlings which have exhibited fresh characteristics; but then they have been pin-eyed (to use a florist's term), when the very elongation of the pointal gives abundant opportunity for any one anxious to cross breed varieties to do so, while it would be attended with some difficulty if the stamens were most conspicuous (or the flower was thrum-eyed). We should not hesitate for a moment to save seed from pin-eyed flowers, if they had form, which is the *sine qua non* in our estimation, and we would leave it to the chapter of accidents after we had done our best—anxiously looking, however, for every fresh feature. PINKS.—Ours have suffered severely, and we have no doubt that it arises from having planted rather late; this, in conjunction with a severe winter, has made havoc amongst our plants; we therefore impress on our readers, from dear-bought experience, never to run the risk of spring planting, except to fill up vacancies. RANUNCULUSES.—After the very fine weather, no amateur can have any excuse for his roots being out of the ground. Dahlias and Carnations as in our last.

KITCHEN GARDEN.

CUCUMBERS.—That the fruit may be fine and abundant do not allow the vines or leaves to become crowded; take every pains to prevent the establishment of insects, especially of thrips, which must be destroyed by fumigating as soon as they appear. Let there be a constant circulation of air, and use every means to keep the house or pits sweet and clean. Take advantage of fine mild weather to wash the lights, which is rendered necessary by the very moist atmosphere necessarily kept up. Maintain the plants in a healthy state by top dressings of rich soil, consisting of loam, dung, and peat, if it can be obtained of good quality; or, in default of this, use about one-fourth leaf-mould. Prepare beds and plants for succession, according to the probable demand of the establishment. This week and next are very important ones in gardening matters, as many of the principal crops of the season require to be put into the ground; success will, in a great measure, depend on the condition the ground has been got into by winter digging and manuring, and by its being now in a good state of tilth for the reception of the seeds. Asparagus seeds should now be sown, and if the new beds for transplanting the two-year-old plants into are not ready, they should be immediately prepared, as they will require planting in most parts of England before the expiration of the present month; the right time for this purpose is when the young growths have started several inches. New beds should be set out 4 feet wide, and made good 2½ feet deep; the alleys between may be about 3 feet; of the old soil, the whole or a portion should be removed, according to its condition and quality, and replaced with some which is rich but not retentive; a sandy turfy loam, enriched with well rotted manure, is the best preparation that can be made in inland situations, but near the sea the kelp weed should be procured. Their natural habitat is the sandy shore, or the edges of rivers near their confluence with the ocean, always flourishing best where they are within the influence of salt water; we would not however recommend an application of salt at first planting, but would rather allow them to commence rooting first. Keep a careful eye to Cauliflowers under frames, &c., destroy insects, and harden the plants by using the protection as little as the weather will allow. Those from the frames, and the smaller ones from the handlights, where they were planted too thickly for standing, should be planted in favourable situations, in well enriched ground, and protected by means of evergreen branches. Spring sown Cabbage and Cauliflowers should be pricked out as soon as they are strong enough, and successional sowings made. Brussels Sprouts, Savoys, Curled Greens, &c., should now be sown for the earlier crops. Lettuce and Celery sown in frames some time since should now be transplanted, the latter into a prepared frame of light soil, and the former into a protected border for early use; successional sowings should be made of these, along with Radishes and other salads. A succession of Peas and Beans, Parsley, Spinach, and Turnips, should now be sown. Parsnips should be sown immediately in deeply trenched ground, with an additional small crop of Early Horn Carrots, and a small early crop of Beet. The main crop of Onions should now be sown, and a small bed of the Silver-skinned very thick, to produce small bulbs for pickling If the ground is rather stiff, the operations of sowing and digging should proceed together, that the soil may be left as loose as possible; but if light or sandy, it should be made moderately firm and compact by treading or rolling it after it has been dug; in the latter case it is most convenient to sow broadcast in beds, and rake the seed in; but in the former description of ground it is better to sow in shallow drills; the seed should not in any case be sown more than 1 inch or 1½ inch deep, and a liberal dressing of soot should be worked in along with it.

State of the Weather near London, for the week ending March 7, 1850, as observed at the Horticultural Garden, Chiswick.

March.		Moon's Age.	Barometer. Max.	Barometer. Min.	Thermometer. Max.	Thermometer. Min.	Thermometer. Mean	Wind.	Rain.
Friday..	1	17	30.332	30.309	53	38	45.5	S.W.	.00
Satur...	2	18	30.290	30.038	53	43	48.0	S.W.	.00
Sunday .	3	19	29.878	29.661	54	33	43.5	S.	.02
Monday	4	20	30.313	29.909	44	20	32.0	N.	.00
Tues. ..	5	0	30.536	30.526	48	26	37.0	W.	.00
Wed. ..	6	22	30.521	30.547	55	27	41.5	S W.	.00
Thurs....	7	23	30.600	30.470	56	31	43.5	S.W.	.00
Average....			30.375	30.291	52 0	31.1	41.5		0.02

March 1—Hazy; very fine; overcast.
— 2—Densely overcast; cloudy; overcast.
— 3—Uniformly overcast; densely clouded; overcast.
— 4—Cloudy; densely clouded; clear; sharp frost at night.
— 5—Frosty; fine; cloudy at night; slight frost.
— 6—Foggy; fine; clear, with slight frost at night.
— 7—Foggy; very fine; clear at night.
Mean temperature of the week, equal to the average.

State of the Weather at Chiswick during the last 24 years, for the ensuing week, ending March 16, 1850.

March.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds. N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 10	50.6	32.8	41.7	10	0.69 in.	3	4	—	3	3	5	3	3
Mon. 11	50 5	33.9	41.1	10	0.20	1	2	1	4	3	9	3	1
Tues 12	51.3	33.5	42.4	11	0.22	4	2	2	5	1	7	4	1
Wed. 13	50 4	35.5	42.5	11	0.30	—	2	3	3	1	6	6	3
Thurs. 14	51.4	36.4	43.9	9	0.48	—	3	3	—	4	8	4	2
Friday 15	51.3	35.2	43.2	13	0.49	2	5	2	—	3	5	5	2
Satur. 16	51.6	35.9	43.7	9	0.25	—	5	4	—	4	7	3	1

The highest temperature during the above period occurred on the 10th 1833—12th, 1841; and 15th, 1829—therm. 67 deg.; and the lowest on the 10th, 1817—therm. 7 deg.

Notices to Correspondents.

ANTS: *J G.* Scald them with boiling water, or pour turpentine in their runs.‡

BEES: *A Reader.* We are of your mind, and shall make a change.

BLACK POPLAR: *W C.* You may strike it from cuttings now, made of the two-year-old wood.‡

DESCENT OF THE SAP: *J C H.* We cannot answer your inquiry in its present form. You have no right to catechise A, B, or C. If you have any remarks to make, and will put them into A SMALL COMPASS, we will insert them; but a newspaper is not the place for discussions in the form of dissertations. What is wanted is something short, true, and to the purpose.

FLOWERS: *Z Z Z.* Buy all the sorts of cheap annuals you can command, and try them. It is impossible to advise you without experience of the place. The longest Cucumber is the *Snake*, which is not a Cucumber at all. Try the Manchester Prizefighter.

FRUIT TREE WALLS: *J E M.* The most handy way of screening them is to rest poles aslant against the face of the walls, and to cast a netting over the poles. The latter may be put far enough from the bottom of the wall to allow a man to creep beneath the netting. Pyramidal Pear trees are best screened by tucking Spruce Fir branches among those of the Pear tree.

GREENHOUSES: *Anon.* Hyacinths, Crocuses, Narcissi, &c., in the spring. Camellias and Geraniums in pots—with a few Cinerarias and Fuchsias. To these you may add anything you like. The nearest nursery will always afford you something gay to add as other things go off.

HEATING: *Inquirer.* A cast-iron boiler will suit your purpose best.

LAURELS: *N.* You may layer them now; cuttings strike most readily in autumn.‡

LAWN: *A C S.* Add plenty of Crested Dogstail Grass, white Clover, and if the land is heavy, Medicago lupulina. Rake it, roll it, and give a slight dressing of soot.

MANURES: *Mechanic.* Bones and sulphuric acid will be most useful to green crops—as Cabbages, Turnips, Beet, &c. Their effect on white crops is uncertain, and generally unimportant.—*O P W.* We have no authentic information about "Copros." You had much better buy Peruvian guano of the best quality; it is certain in its quality, and far cheaper in the long run. Our experience makes us distrust very much all sorts of artificial manures; the makers themselves, with the best intentions, are unable to insure uniformity in them, except in the case of Lawes's superphosphate, which is invaluable for green crops.

MILDEW: *E S.* Sulphur will kill it if it is applied *the moment the mildew appears.*‡

MOTHS.—*Vine Moths.* On referring to our volume for 1847, p. 388, where figures were given of the transformations of the Pyrale de la Vigne (Tortrix Pillerana), it will be seen that in the foot note we doubted the identity of the specimens figured in Westwood and Humphrey's "British Moths," pl. 79, figs. 13 and 14, with the true T. Pillerana. We learn, however, from an article by Mr. Curtis, in the "Annals of Natural History" for the present month, that several specimens of the real Vine Moth have been taken by W. W. Saunders, Esq, at the back of the Isle of Wight, and that its larvæ will also feed on Stachys germanica, and in the capsules of Iris fœtidissima. We also take this opportunity of mentioning that we have also lately received from a correspondent a caterpillar feeding on a growing bunch of Grapes (to which it occasioned much injury), which appears from the nature of its ravages to be identical with the Cochylis Omphaciella of Faure-Bignet, figured in Prof. Audouin's fine work on the Vine insects. Our caterpillars have, however, unfortunately died. *W.—Pea Moth.* In the article above noticed, Mr. Curtis states that the Tortrix nigritana of Haworth is the Pisana of Guenée, and that it is the parent of the maggots in Peas, which he, as well as ourselves, have so long, but unsuccessfully endeavoured to rear. *W.—Plum Moth.* The Tortrix nigritana of Haworth must not be confounded with the nigritana of Kollar, the larvæ of the latter of which feed upon the flesh of the fruit of the Plum. Our English micro-lepidopterists have not hitherto been able to identify the Plum Moth, not having reared it from the larva; but we learn from an article in the proceedings of the Stettin Entomological Society, just published, that it is the Tortrix funebrana. *W.*

NAMES OF PLANTS: *P P.* Catasetum purpuratum is a whole-coloured variety of C. tridentatum; 5, C. rostratum is very near C. planiceps, but different; 4, C. Russellianum is C. Pescatoreanum, *Lindl. sp. n.*; Brasavola appendiculata is right; B. No. 26, Brazil, is B. cordata; 19, Inconnu is Peristylus citrinus; 17, Bolbophyllum variegatum; 18, Angræcum monodon, *Lindl. sp. n.*; Barkeria melanocaulon is right; 24, Eria stellata; 22, the dark variety of Lælia autumnalis; 8, Calanthe sylvatica; 12, Bonatea gabonensis, *Lindl. sp. n.*; 7, Cirrhæa pallida; 9, Sarcoglossum suaveolens is some Cirrhæa, and apparently C. tristis; 21, Coryanthes maculata. —*M D.* Ruscus hypophyllum, an Italian plant.—*Chichester.* Peziza coccinea.—*P P.* A curious thing: you shall know next week.—*Catherine.* Very sorry: but, as we have often stated, we really cannot spare time to name Mosses; very curious and interesting plants no doubt, but having no relation to gardening or rural economy.—*J P, York.* What morsels! Cyanotis vittata, Epidendrum virens, Lycopodium denticulatum and compressum. If you sent any others, we cannot find them. As to numbers there was not one.—*H C Z.* Daphne collina, or some hybrid from it. Strawberries next week.

PIPES: *J S L.* We do not approve of zinc pipes. There is nothing like iron.

PRUNING: *O L.* You should not allow your Spanish Chestnuts to form more than one main stem. This will be readily managed by shortening or stopping the laterals; and if the main stem once gets the mastery, the laterals will dwindle away, or may be readily removed. If the trees are very young, then the strongest laterals may be cut clean out; but pinching the ends when growing is better, until the main stem is in full vigour of growth. We never yet saw a book on pruning which we could call a *good* one.

RATS: *H D.* We have sent your inquiry to Mr. Kidd.

SARRACENIAS: *W S.* The following is Elliot's account of the interior mechanism of the Sarracenias. "Drummond's," figured in the new Number of Paxton, is a plant of exquisite beauty, to which the colourers have by no means done justice in that work. "It may be sufficient here to remark that the throat or orifice of these leaves is generally covered with a saccharine secretion or exudation. Immediately below the throat, for the space of nearly an inch, the surface is highly polished, while the lower part of the tube is covered with hairs all pointing downwards. When an insect attracted in the first instance by the secretion of the plant, or perhaps even by the water, descends, as it easily can do, along this declining pubescence, it appears incapable of ascending by its feet alone, and can only escape by a flight so perpendicular as to surpass the power of most insects. Whenever they touch the bristly sides of the tube they are precipitated again to the bottom, and have to renew their efforts; and many insects, even of a large size, perish in this arduous and hopeless struggle."

SEEDS: *Aleph.* We are sure that you will agree with us in the propriety of our rule not to recommend tradesmen. Any of the seeds named in the lists which appear in our columns may be had of the principal London seedsmen, or through their country correspondents. Depend upon it there is no better seed in Brussels than in London.

WINDOW BOXES: *Phlanthos.* Plant Tropæolum canariense at either end of the box, to run round the window, and sow the centre with Mignonette, if you want something sweet-scented; if not, plant it with different kinds of Verbenas.‡

WORMS: *Scowles.* Try lime-water.‡

MISC: *Enquirer.* The air should enter at the end most remote from the door, and be 180° when it passes the aperture. Gladiolus cardinalis is tender, and can only be planted out when frosts are gone. Climbing Roses?—yes. The Ne Plus Meuris Pear does *not* require a wall near London.—*W E.* It is not too late for your Cinerarias to flower yet. Put six plants in a pot of Rhodanthe Manglesii; one is not enough.‡ —*Stocktonensis.* Place your Cucumber trellis about 9 inches from the glass.‡—*Sub.* Woollen nets make the best spring protection for fruit trees on walls.‡—*Reader.* The varieties of Japan Lily are hardy round London. Your Camellias have received some check, which has made them cast their flower-buds: you have possibly kept them either too wet or too dry.‡

TO OUR CORRESPONDENTS.—May we beg it to be understood that *we cannot answer inquiries privately through the post.* We are ready to give reasonable information through our columns, but we cannot consent to the labour of writing letters.

HOT WATER APPARATUS AND HORTICULTURAL BUILDING.

W. HILL begs respectfully to announce that his improved "FLUE BOILER" may now be had in sizes to suit every description of Apparatus, from that of 100 feet to 2000 feet of 4-inch pipe. Improved STEAM BOILERS, from one horse-power and upwards, adapted either for stationary or portable engines, and guaranteed to be most effective.

Every description of Horticultural Building constructed upon the best principle. Buildings of any kind heated by hot water.

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BY HER MAJESTY'S ROYAL LETTERS PATENT.

PATENT HOTHOUSE WORKS, KING'S ROAD, CHELSEA.

E. DENCH invites the attention of Gentlemen about to erect Hothouses, &c., to the vast superiority in every respect possessed by his PATENT HOUSES, which he will warrant superior in every respect to any others. Good Glass from 16 to 21 oz. per foot, 1 foot wide, 3 feet long, furnished, and the Houses when completed charged from 1*s.* 3*d.* to 1*s.* 6*d.* per superficial foot, according to size and quantity; on one principle, the roof is formed without wood or putty, and on another principle with wood rafters and the glass put in with putty. Patent Sashes, requiring no paint, from 7*d.* to 9*d.* per ft.

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THE LONDON MANURE COMPANY beg to offer as under, and pledge themselves that every Manure shall be perfectly Genuine:—Corn Manure for Wheat, Barley, Oats, Clover—most strongly recommended from its success last year; it will be found cheaper than Guano, and bear the strictest analysis. Also URATE, Superphosphate of Lime, Sulphate and Phosphate of Ammonia, Nitrate Soda, Fishery and other Salt, Gypsum, Sulphuric Acid, &c.

GENUINE PERUVIAN GUANO.—To insure this free from adulteration, all purchasers, if they prefer it, can receive their warrants from Mr. Purser, and remove the Guano direct from the Warehouses of Messrs. A. GIBBS and SONS, the Importers.

Bridge-street, Blackfriars. EDWARD PURSER, Secretary.

Country Dealers and Agents supplied.

GENUINE PERUVIAN GUANO, direct from the Importer's Stores, LINSEED CAKES, and all kinds of Artificial Manures, may be had at London prices, for Cash, of Messrs. ODAMS and PICKFORD, 15, Mark-lane, London.

PERUVIAN GUANO.—As Agents of the Peruvian Government for the importation and sale of this valuable MANURE, we think it right, for the protection of consumers and respectable dealers, to apprise them that the adulteration of the article is still extensively practised, and to recommend them to apply either to ourselves, to our agents, Messrs. GIBBS, BRIGHT, and Co., of Liverpool and Bristol, or to dealers of established character, in whose honesty and fair dealing they can place implicit confidence. ANTONY GIBBS and SONS

London, March 9.

POTTER'S GUANO. — This effective MANURE, now greatly Improved, is confidently recommended as a Dressing for all Spring Crops. It is equal to Peruvian Guano, and 25 per cent. cheaper. Also SUPERPHOSPHATE of LIME, GYPSUM, and SULPHATE of AMMONIA, all of guaranteed quality, and Cheaper than at any other establishment in town or country.

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MANURES.—The following Manures are manufactured at Mr. LAWES'S Factory, Deptford Creek:

Corn and Grass Manure, per ton	£10 0 0
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WILLIAM E. RENDLE AND CO., Plymouth, are Mr. Lawes's Wholesale Agents for the Sale of his MANURES, and can supply them at Mr. Lawes's prices, delivered at his Factory, Deptford Creek.—Apply to WILLIAM E. RENDLE and Co., Union-road, Plymouth.

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Dr. ANDREW URE remarks: "The best Peruvian Guano is inferior in power and value to this Guano as 17 is to 24. It is the pure excrement of the birds."

W. HERAPATH, Esq., states: "One pound of this Guano is equal in fertilising power to nearly 40 lbs. of Farm-yard Dung. Judging from its nitrogen alone, it is a very rich Guano."

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BLASHFIELD'S PATENT COPROS.—A new Manure for Corn and other Crops, prepared from the nitrogenous matter deposited on the banks of the Thames, in combination with other substances essential for the growth of corn, &c., price 8*l.* per ton. Sold, in a finely ground state, at No. 3, New London-street, Mark-lane; also, at the Works, Mill-wall, Poplar; Waterloo Dock, Lambeth; and No. 1, Praed-street, Paddington Basin.

PATENT COPROS, for Corn crops, also for Turnips, &c.; Superphosphate of Lime, Gypsum, calcined and saturated with liquid manure. CEMENT for Liquid Manure Tanks, Malt House Floors, and Barn-floors, manufactured by J. M. BLASHFIELD, successor to Wyatt Parker and Co., Original Patentees—Parker's Cement. Established 1796. Drain Pipes, Tiles, &c.

SILVER SAND, PEAT, &c.—REMOVAL.

EDWARD KEMP begs to thank his numerous friends for their kind support during the last seven years, and informs them that he has removed to No. 16, Ann's-place, East-street, Old Kent-road, where he respectfully solicits a continuance of their favours.

IMPORTANT TO AGRICULTURISTS.—COLLECTION AND DISTRIBUTION OF MANURES.

STRATTON'S AGRICULTURAL REPOSITORY, BRISTOL.

STRATTON, HUGHES, AND CO., have now ready their PATENT TUMBLER CART for the collection of Night-soil and other offensive matters; also their Iron Mill, to be worked by horse-power, water-power, or steam, for mixing and incorporating Nightsoil with Charcoal and other deodorisers. The Tumbler Cart has an iron body with a close cover; can be fitted if required as a Watering-cart, with a Valve and Delivery Pipe for distributing water or liquid manure, and also with an Apparatus for distributing dry manures in any given quantities per acre.

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The Agricultural Gazette.

SATURDAY, MARCH 9, 1850.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

WEDNESDAY, March 13—Agricu tural Society of England.
THURSDAY, — 14—Agricultural Imp. Society of Ireland.
WEDNESDAY, — 20—Agricultural Society of England.
THURSDAY, — 21—Agricultural Imp. Society of Ireland.
FARMERS' CLUB.—March 22: Hadleigh.

WE feel called upon to enter upon some analysis of the important volume,* alluded to last week, from the pen of Mr. JAMES CAIRD, of Baldoon.

The subject is of great interest to those farmers who, from any cause, may desire to emigrate from their country: and however suspiciously a statement might be received at this side of the Channel in favour of immigration to Ireland, no suspicion can be fairly attached to the able report of this Scotch gentleman, which bears internal evidence of a disinterested and correct judgment.

It is gratifying to learn that notwithstanding the partial desolation of the Irish soil, and the general pressure upon the landed interests, there are to be found in Ireland both landlords and tenants whose farming is of the highest order. Among the former there are many who manfully maintain their position and perform their duties. We are tempted to give a few instances of this from the pages before us, before we proceed to the far west, which will be the main point of the present notice. Mr. ST. JOHN JEFFRYES, of Blarney Castle, near Cork, cultivates about 2000 acres of his own estate in a very perfect manner. He maintains also a very large and prime stock, by the aid of 300 acres of irrigated meadows, and is about to adopt Mr. HUXTABLE'S plan of house feeding sheep. After having spent many years in bringing these farms to their present high state of improvement, Mr. JEFFRYES would not object to subdivide and let them to skilful and spirited tenants. It is not, however, either surprising, or by any means rare, to find examples of high and complete farming near the populous cities, but we find them also in the remotest district. The estate of Mr. HERBERT, of Mucruss, near Killarney, is, it appears, in a very improved condition. Mr. CAIRD saw there some Turnip crops "which would do no discredit to the best farm in East Lothian." His tenants, however, are dairy farmers, "which is probably the safest system that can be followed in their circumstances; they are comfortable, pay their rents with regularity, and there is no unoccupied land on this estate—a statement which cannot, perhaps, be made of any other considerable estate in the county" (Kerry). Mr. CAIRD attributes the happy circumstances of that property to the fact that Mr. HERBERT has for many years made it his study to understand and discharge his duties as a landlord: he also provides suitable farm buildings for his tenants—which is one of the exceptional cases in Irish landlord management.

We shall glance also at the case of Mr. CHRISTIE, a tenant farmer in the County of Limerick, who went from East Lothian to that neighbourhood 30 years ago. He holds two farms, one of which contains 400 Irish = 640 English acres. The extent of the other is not stated. He pays from 20*s.* to 30*s.* the English acre—besides poor rates and Grand Jury cess—and built his own farm-steading, and executed the fencing and draining also at his own expense. The people there are represented by Mr. CHRISTIE as well disposed and grateful for employment.

On large tracts of the finest soil of that county Mr. CAIRD found that no attempt had been made at high farming. The landlords have not the means of erecting proper farm buildings. This deficiency in fact presents throughout one of the greatest difficulties which any tenant farmer or purchaser will have to contend with. For though rich land at 30*s.* an acre, including all rates, may appear very cheap, yet if a great outlay be required for buildings, the case is reversed; and, upon this point, our author suggests the expediency of great caution in making offers for farms anywhere. We were until now in ignorance of the extraordinary manner by which tenants were enabled to get on without capital, when they had needy landlords to deal with:

"When a man manages to save 100*l.* or 200*l.* he goes to a landlord and offers a certain rent for a farm, backing his offer with all the capital he has, as a *douceur* or fine in hand, to induce the landlord to accept his terms. The offer is accepted, and the fine paid. Having thus exhausted his capital, the tenant then advertises that on the following Sunday he will set out a certain field for Potatoes. Several hundred people assemble, and each marks out the piece he wishes to have. A rent is fixed for it, possibly 10*l.* an acre (Irish), one-third of which must be paid before breaking the ground, and the other two-thirds before removing the crop. The tenant thus gets all his rent out of, perhaps, the fifth part of his holding. The same is repeated on the same field a second, and sometimes a third year, after which the tenant takes two or three crops of Oats, and then lets the land rest to recover itself. This process is pursued with other parts of the land till all is gone over, by which time the first is ready to begin upon again. The money paid in advance by the Potato-renters enables the farmer, with what credit he possesses, to stock the rest of his land, and in this way he manages to carry on without capital. But the Potato failure put an end to this rotten system; and the tenant who depended on it, and the landlord who was enriched by it while it lasted, are now equally helpless."

We cannot spare space to dwell upon the great merits of some other landlords in Munster; on the vast employment given by Mr. ST. JOHN BLACKER, near Tarbert, on the river Shannon, and on the pipe tilery which he has established; on the able management of Lord DEVON'S estates at Newcastle, and on the singularly effective improvements executed by the Misses GASCOIGNE, on the most extensive scale, in the county of Limerick.

Though there are many excellent landlords in the richest part of Munster ready to give reasonable encouragement to British or native farmers with capital, and either to guarantee that rates shall not exceed a fixed maximum, or pay them altogether from their own pockets, we must hasten on to the consideration of those portions of the work which bear upon the "plantation in the west;" and for this purpose we shall proceed with the author directly from Dublin to the heart of Connaught, not pausing to notice intermediate localities.

Mr. SPENCER LINDSAY, of Hollymount, county of Mayo, a decided improver, would let a farm of 400 acres of "rich, dry, hazelly land, admirably suited for sheep, intersected by good roads, and in excellent condition, and build the necessary farm-house and steading for a tenant of capital." Another farm of the same extent, in the same locality, which "forms quite an English scene," is also to be let. There are upon this farm, the greater part of which has been long in Grass, some farm buildings, originally designed for an agricultural school. The proprietor would complete them, and execute the draining that may be still required, and would "let the farm on a 19 or 21-years' lease, taking upon himself all rates and burdens whatsoever, at 25*s.* per English acre. Land of such quality, fenced in a way that we have no notion of in Scotland (with 5 feet of stone and lime walls), having abundance of lime and limestone, gravel beneath the surface, and plenty of turf to burn it; with a convenient homestead in a good neighbourhood, and the high road to Dublin as one of its boundaries, would be taken up at once at this rent in Scotland." A little farther south, one farm of 1000, or two farms of from 400 to 600 acres, with house, garden, and all suitable buildings, may be had. As it is capable of great improvement, Mr. CAIRD has "not a doubt of its proving an excellent investment to some tenant of capital and skill."

One of the peculiar advantages attending this, and many farms in the "far west," is, that it

* The Plantation Scheme; or, the West of Ireland as a field for investment. By JAMES CAIRD. Published by W. BLACKWOOD and SONS. Edinburgh: 1850.

contains within its area some of those periodically flooded lands, provincially called Turloughs, which generally consist of alluvial soil of the finest quality, the silt and *debris* for ages of a limestone country, and covered with a thick sward of Grass, which by the closeness with which it has been eaten indicates the rich feeding qualities it possesses." In many parts of Connaught the arterial drainage executed will permanently relieve most of these Turloughs from the water, which by bursting to the surface from limestone underground passages, inundated the low lands to a vast extent, and rendered them useless, except in the summer season.

Our tourist next inspected a farm of 500 acres within three miles of the upper end of Lough Corrib. "There is no wood here, but the stone walls are even more than usually substantial and good. The greater part of this farm is the finest feeding land for sheep and cattle—dry, friable, undulating land, all on limestone. The fields of rich old Grass are superior to anything we have, except in small patches, in any part of Scotland I at present remember. The best of it is too good for tillage, but about one-half of it might be profitably brought under the plough. The sheep and cattle then grazing on it were excellent. This is a very desirable farm, though the neighbourhood did not appear so inviting as in any of those which I had previously visited. The proprietor would erect all necessary buildings; and as there are none at present these could be constructed on the most approved plan. The present rent paid for this farm by an extensive grazier, an excellent tenant, is not more than 25*s.* per Irish acre, the owner paying all rates of every kind." As it is expected that the water communication with Galway through Lough Corrib will be open in two years, the lands adjacent to this Lough will obviously be enhanced in value, and the line of railway from Galway to Dublin will, it may be presumed, give an increased worth to all the tillage and dairy farms throughout the whole districts through which that important channel of intercourse will pass. Some of the soil which Mr. Caird examined in his day's ride from Hollymount, has a uniform depth of 18 inches, with limestone, sand, and gravel underneath. This locality in Mayo is described in the most tempting manner; "The winters are mild, and the climate most suitable for Grass and green crops; the soil is in every way adapted for feeding of green crops, if desirable, or for finishing sheep and cattle for the fat market. The milk and butter are of the richest quality. Labourers' wages are at present from 8*d.* to 10*d.* a day; the people most peaceable and very intelligent, though negligent and idle to an uncommon degree if not carefully superintended. Land may be dug over by contract, 12 inches deep, all the large stones laid on the surface, and the whole placed in fine state for further operations for about 1*l.* per English acre. Lime can be burned on every farm at from 5*d.* to 6*d.* a barrel of three imperial bushels. The rapidity with which the land on this limestone subsoil recovers itself, and without any seeds being sown, reverts to good pasture, is very remarkable." The subsoil of some of the Turloughs is shell marl several feet thick.

Lord Lucan has been so harshly spoken of on account of the clearances which he made of cottiers and other human live stock from his estate around Ballinrobe, that it is but justice to his lordship to state here what Mr. Caird has said of those evictions and their results. "Lord Lucan has been much blamed for dispossessing the people who formerly held the land. It is not for me to discuss that question; but when the amount of employment he is now giving, and the superior style of husbandry practised on his farms are taken into account, it may be doubted whether the former possessors could earn as much by the miserable cultivation of their own lands as they now do in the capacity of hired labourers. There can be no doubt of the vast increase of the total annual produce under the present system, and the gain to the entire community must be the greater by the amount of that increase. Lord Lucan is probably the most extensive tillage farmer in Great Britain. He has at present upwards of 10,000 acres under his personal superintendence, having farm stewards on the different farms, who all take their instructions from himself. He has this year upwards of 1000 acres of white crop, and between 400 and 500 acres of green crop. He has a stock of 800 cattle, 60 of which are working bullocks, and 600 sheep; he has 40 horses, and gives employment on his farms to 600 men, including those who are making drains." After some other observations to the effect that Lord Lucan's system of management is admirable as to agency and superintendence in every department, from his lordship's practical knowledge of "his own business," which he has not disdained to learn fully, our author subjoins the remark that "it may not be possible, and probably would not be desirable, that many should imitate Lord Lucan in the extensive occupation and cultivation of their own lands. But it would be of vast importance to themselves, their tenantry, and their successors, if our great landlords on both sides of the channel were in some degree to emulate him in the personal study and attention which he devotes to the practical business of his estates."

It is well for the labouring poor that Lord Lucan is a cultivator of the soil, for if, like the leviathan grazing farmers of Meath, he discarded tillage, woe to the people. Happily he gives great employment. But, as a general principle, we deprecate monopolies in the present state of Ireland—very moderately sized farms are what are there wanted, with due reference to the capital likely to be brought into action (we hope by many of the native farmers themselves), and to the abundance of available labour. Lord Lucan, however, proposes to let some of his farms. Those of Cloonagashel and Gallowshill are thus described: "A considerable part of both these farms (within two miles of Ballinrobe) which are nearly 2000 acres in extent, is under tillage; nearly all of it is divided into regular enclosures, with excellent stone and lime walls. The soil consists partly of a fertile black mould, of great depth, on a limestone gravel, with some stronger land, and some lighter, but all admirably adapted for green crops and Grass, and, from the level nature of its ground, and its gentle slopes to the sun, well suited for tillage. There are two farmsteadings, lately constructed with threshing-machinery. Two or three farms, of from 700 to 1000 acres of land, could be got here—as good land as the average of East Lothian, at a rent of 18*s.* the imperial acre, and the poor-rate guaranteed not to exceed 1*s.* per 1*l.* The tenant must also pay the county cess; but Lord Lucan hands his farms over to his tenants with every permanent improvement executed, so that the farmer may have nothing to do but to stock and work his farm."

It appears, also, that capitalists who may desire to take large farms of comparatively wild land near the sea-coast, may have it on very cheap terms. That energetic improver and good landlord, Sir R. O'Donnell, who has had to contend with bogs, heaths, mountains, and the rude gales of the Atlantic (though his own residence, near Newport, is low and sheltered by woods and the curvature of Clew Bay), offers 5000 acres, within a mile of Newport, part of it on a lease of 200 years, the rest three lives, or 31 years, at an annual rent of 2*s.* 2*d.* per acre, besides the rates. The land is all situated at a low elevation, ranging from 30 to 60 or 80 feet above sea level; half of it is said to be capable of regular cultivation; the rest is fair pasture for Highland cattle, and very improvable. Sea-weed and coral-sand can be got for about 1*s.* a boat-load. Upwards of 100 acres of this tract have been drained and enclosed with substantial stone fences; and a commodious barn and other houses have been erected. "Flax is cultivated on it with success; and I was assured, to my surprise, by a farmer of Sir Richard O'Donnell's, that the Oats here produced sometimes weighed as much as 46 lbs. a bushel. The same proprietor has plenty of other land to let; that which lies along the sea-coast appeared to be of good quality; and from the peculiar conformation of the coast, it did not seem to suffer from exposure to the Atlantic. On many parts of the sheltered sides of these bays and islands, wood grows to the water's edge; and under careful management they are capable of being made most picturesque. The climate is mild, and the soil very suitable for green crop husbandry."

The Marquess of Sligo, whose well-timbered and picturesque demesne is at Westport, which is also on Clew Bay, is anxious to let lands to tenants of capital and enterprise, and would "even sell a portion on any part of his estate if he could thereby induce the purchaser to reside in the country, and assist in its improvement." He offers one hill farm of 5000 acres for 120*l.* a year, and would give "a lease in perpetuity of the land on which the tenant built his house."

This brings us, in conclusion, to ask onrselves the very natural question why, with *so many* favourable locations (amidst much cheerless, elevated, barren, and very bleak land—yet never severe compared with hill farms in the north of Scotland), landlords have not yet succeeded in inducing British farmers to transfer their skill and enterprise there? One satisfactory reply is to be found in the fact, that generally the new-comer would have to build his own farmstead. This is a very serious disadvantage—so opposed to British practice. One case is related by Mr. Caird of a Lancashire farmer, who with his brothers expended capital, unprofitably it is feared, in the erection of expensive farm buildings, in a tract where the soil and climate forbid cultivation. "If the same energy and capital had been employed on some of the fine arable lands of Mayo or Galway, how different the result would have been! Strangers should not too rashly expend their capital in the vain hope that they can at once import the agricultural management of an English county into a region where the soil and climate are totally unsuited for such a change. But neither must any general conclusion be drawn from the result of such an experiment adverse to investments judiciously made in the more favoured districts of the west of Ireland." The pressure of the land rates has, no doubt, operated greatly against tenancy in Connaught, but by fixing a maximum as to their amount, the difficulty is removable.

The idea of agrarian outrages is, after all, one of the most serious obstacles in the way of a stranger meditating the occupation of land there; but though this is as yet a sufficient motive for discouraging Englishmen or any strangers from taking land in Tipperary—that plague-spot of the island—no such obstacle in reality exists, or has existed, in Connaught. The farms recommended are chiefly held by the landlords themselves, or by non-resident graziers, and the people are *peaceable*, and intelligent, and willing to work if properly looked after. "There is (we unwillingly conclude our remarks of this excellent publication) room in this country for hundreds of farmers of skill and capital to whom Nature affords a fair prospect of success. But they must select their locations with care and skill, having regard to both soil and climate; and let them not rashly expend the capital which they will require for cultivation in erecting farm buildings, which are solely the landlord's business; and let them come to a precise and definite understanding with their landlords as to a limitation of rates and taxes, until some provision shall be made by law for protecting those who expend their skill and capital in improving and cultivating the soil from excessive rates, and, above all, from an increase of rates, through the higher valuation consequent on their improvements." Appended to the volume is a plan and specification of farm buildings (not including a dwelling-house), capable of accommodating 10 horses and 80 head of cattle in stables, with all other necessary offices suitable to a farm from 200 to 400 acres, according to the mode of farming, and at the moderate estimate of from about 500*l.* to 600*l.*, according as stone-slates or pan-tiles may be employed for the roofing. *H.*

ON STORING TURNIPS.

Fully agreeing with you on the importance of paying a little more attention than is commonly done to the storing of Turnips, not only as it concerns the well-doing of the cattle by whom they are to be consumed, as also the preservation of the bulbs themselves in severe frost, allow me to pursue the subject a little further, by offering the following observations.

The laying up a stock of topped and tailed Turnips (Apples, they are termed in Norfolk) is all very well, as far as it goes, provided they are got up dry and clean, are carted in fine weather, before they are touched by frost, however slight; and, above all, are well protected during very severe weather, in the shed, or wherever they may be laid for use. I speak experimentally on this point, having noticed great injury to have arisen in certain cases from insufficient security in this respect, all the more mortifying from the roots being of first-rate quality, and carted in excellent condition. A mere wooden shed, anything but weather-tight perhaps, and a slight covering of straw or stubble, are insufficient to repel a long and sharp frost, and many a load of Turnips have I seen, if given to the cattle at all, so frozen as to render breaking necessary, or, which perhaps is the safest plan, thrown aside to rot when a thaw comes on, and ultimately consigned to the dungheap.

This plan, I repeat, is all very well for immediate use; but to preserve a crop of Turnips throughout the winter, and for early spring consumption, something beyond this is necessary. And here the question divides itself into two separate and distinct branches, according to the sort of Turnip intended to be preserved; what serves very well for Swedes not being suitable for white Turnips, and *vice versa*. My present object therefore will be to describe the plan I have myself adopted in each of these cases, and which I can attest as completely efficacious—and, first, of Swedes. Various plans have been and still are in operation; the main object being, as it appears to me, the safety of the soil rather than the crop, by preventing the exhaustion which must follow a return to mild weather after the suspension of vegetation by frost, especially in a plant so fibrous as the Swede generally is. To this end, with the majority of farmers, the one thing needful appears to be to pull the crop after the bulbs have attained their full size and goodness, and either throw them into heaps, or oftener still, to scatter them about just as they are drawn, with their tops and roots upon them; in both cases without any sort of covering against frost. In fact, judging from such wholesale exposure of a crop, the labour and expense, it would almost appear that covering of any kind was thought entirely useless. No doubt the Swede is a peculiarly hardy variety of Turnip, but it will be difficult to persuade me that it does not suffer materially from the action of the frost. I would

therefore, having obtained a good crop, omit no effort to secure that crop. The best method of doing this, is undoubtedly that recommended by my friend Mr. Blackie, then Steward to the Earl of Chesterfield, and afterwards to Mr. Coke, of Holkham—I will give his own words :

"We consider the early sown Swedes to be full grown by the middle of November, and in some seasons rather earlier ; we then take the first favourable opportunity of the land being in a proper state for our operations, when all spare hands (men, women, and children) are set to work ; the Turnips are pulled up, and the roots cut from the bulbs, the tops being left on : old gorse or bill hooks, broken sickles or reap hooks, and such like implements, answer for the purpose. The Turnips are thrown into carts and conveyed to an orchard, or some other piece of old turf land most convenient to where they are intended to be consumed ; they are there shot out of the carts in heaps, and afterwards *placed*, as we term it ; that is, the bulbs are placed close to, and touching each other, with the tops uppermost, and only one Turnip deep. [An acre of good Turnips from the field occupies a much less space when placed than can reasonably be imagined by those who have not tried the experiment.] In this manner we endeavour to secure one or two months' supply for the stock intended to be fed with them, and find them keep good the whole winter ; if the weather prove very severe, a slight covering of litter is thrown over them. The depôts are kept so far sacred as to be only resorted to in cases of emergency, such as when the land is too wet to be carted upon without doing injury, in time of severe frost, deep snow, &c., while, at every favourable opportunity, we keep adding to the store in the preserve. As soon as the Turnips are removed from the field the ploughs are set to work, and the land drawn into such sized ridges as are thought proper. By this means the strong soils become pulverised, and the spring work expedited, as the ground only requires to be scarified and harrowed to make it in a proper state to receive the succeeding corn crop, which is always drilled in."

I have little to add to the above details, except to confirm, by my own experience, their perfect accuracy. The quality of the roots, as Mr. Blackie says, remains uninjured throughout the severest frost, and what is remarkable, the bulbs will continue to throw out fibres so long as they are suffered to remain on the turf where they were placed. I hardly need add, that the sward, though checked if the Turnips are kept thereon late in the spring, is ultimately much benefited by the soil and manure brought to it by such a mass of fibrous-rooted plants. I have now to describe a process, that of ploughing in, by which, at a trifling cost, the safety even of the largest and finest white Turnips may be effectually insured. I do not claim the merit of the invention. It was rather a favourite practice with my father, on such of his land as was dry enough for the purpose ; but I remember as a lad taking great interest in the proceeding, and manually assisting thereat, surveying the crop at the winter's end with no small pride, and boasting, as lads will sometimes do, that "I had a finger in that pie!" But to my description of the plan, as afterwards pursued by me on the farm I then occupied at Ditchingham, in Norfolk. The winter of 1813-14 will long be remembered as one of the severest on record. I happened that year to have a field of 20 acres (light land) with white Globe Turnips, the finest crop, my neighbours were pleased to say, they had ever known the land to produce. I also happened at that particular juncture to be sorely annoyed by game, not my own, as you may suppose, especially in the vicinity of this identical field of Turnips ; insomuch that a friend who came to see me one evening in that winter exclaimed, on going away (it was a bright moonlight night, and the ground was covered with snow), "I have seen what I never saw before, till now, 20 acres of hares!" But I am forestalling the story of my crop. Early in December, I could not help regarding it with some anxiety ; for, come what come would, there was the game, which, unless circumvented, was sure to make great havoc amongst it. It was, therefore, rather as a measure of self defence against hares, wood-pigeons, and other marauders, than from any foresight of my own as to the severity of the coming season, that I was led to perpetuate the ploughing-in system. The process was as follows : the land had been ploughed on 12-furrow ridges, on which the Turnips had been drilled at 18-inch intervals, or, as we called it, flat work, in opposition to the Northumberland, or raised work. The requisite amount of help having been procured, advantage was taken of comparatively mild and dry weather to commence operations. The Turnips were pulled up on each side the furrows, and thrown on the tops or middle of the ridges ; so as to allow a space wide enough to admit a plough, and pair of horses abreast ; a bout of the plough, as deep as it could be fairly set, was the next process, leaving of course two open furrows instead of the original one. In these two furrows, the drawers forthwith proceeded to place the Turnips, packed closely together with their roots and tops on. When the rows were completed, the furrows appeared chock full from end to end ; the plough was then so adjusted as to allow both horses to walk on the land, in order to avoid touching the Turnips in each furrow—a bruise from the hoof being as bad as the bite of a hare. Another deep bout of the plough whelmed the soil over the buried Turnips, leaving only the tops visible as they stood back to back in the furrows. In these newly formed furrows were placed such Turnips as the first two were unable to hold ; and another bout of the plough completed the work of burying the entire crop ; for, be it observed, the produce of a twelve-furrow ridge, may, unless of extra sized bulbs, be always packed into two such rows as I have described. A man had better follow with a rake to level the mould in the rougher places, so as to leave no part of the bulbs exposed to the weather, or the game. The crop being thus under cover, as it were, there is nothing to prevent the whole of the space lately occupied by the Turnips, from being ploughed, and exposed to the action of frost and snow, but I did not stand to do this ; first, because the lightness of the soil did not render it essential ; secondly, because the unploughed space would, I thought, be more convenient for carting off the crop ; but chiefly and lastly, because the setting in of the frost effectually put a stop to all attempts at ploughing for upwards of 10 weeks from that time. As it was, about an acre of the field I was unable to finish, was totally destroyed—I could not save a single Turnip from off it. Now mark the result of this experiment! With the exception of the tops, I saved all my Turnips ; and, wonderful to say, with quality almost unaltered to the last!

I remember an old neighbour dropping in to see some beasts of mine, then (in the middle of March) feeding in one of my yards. The first thing that struck him was the size and soundness of the white Turnips on which these beasts were then feeding—I was pointing them out as a superior stock—"Stock!" he said ; "but how on earth do you manage to have them of this quality, thus late in the season, and after such a winter as we have had? Why they absolutely rive when you stick a fork into them." And so they did sure enough ; and were as juicy as the day they were first pulled and placed in the furrows! Observe, I do not recommend this plan for any but light, clean lands—they might and undoubtedly would, be preserved on strong clays, but think of the mess the roots would be in when taken from the furrows, and the difficulty and waste attending the getting them clean enough for the cattle bins! No—plough in on light land, and all will be right. If severe frost, the Turnips will be saved—in a mild, forward winter, the land will be saved. *Samuel Taylor, Barnwood, Gloucester, Feb.* 13.

P.S. It may excite surprise that so slight a covering of earth as I have mentioned should suffice for the preservation of so large a root as the white Turnip, when a thick coating of straw or stubble has proved insufficient for the purpose. In practice however, the fact is so ; and for myself, I would sooner depend on 6 inches of mould, than 6 feet of straw as a repellant of frost.

INSTANCES OF CATTLE FEEDING.—No II.

1. Lot 1st, 13 three-year-old heifers, mixed breed. Lot 2d, 7 three-year-old bullocks, mixed breed. Lot 3d, 9 three-year-old heifers, Hereford breed.

2. Lot 1st, soiled in yards during summer ; put up to fatten 6th October. Lot 2d, ditto, ditto. Lot 3d, Put into open yards as soon as bought.

3. Lot 1st, tied up in stalls 10½ ft. long by 4½ ft. wide. Lot 2d, ditto. Lot 3d, in open yard, with shed to lie under.

4. Lot 1st, each beast consumes daily 70 lbs. raw Swedes, 2½ lbs. Linseed-meal soaked in cold water, 2 lbs. Barley-meal, and 8 lbs. straw chaff. Lot 2d, each beast consumes daily 90 lbs. raw Swedes, 2½ lbs. Linseed-meal soaked as above, 2 lbs. Barley-meal, and 8 lbs. straw chaff. Lot 3, put in the yard to freshen up for stalls, receiving a small quantity of Turnips, with as much straw as they can consume, but no account taken of the quantity.

5. Little Wheaten straw, no account taken of the quantity.

6. Lot 1st, estimated increase in weight by Christmas, 10 imperial stones ; the value depends on the market-price when sold. Lot 2d, increase in size more than the first, but not so forward. Lot 3d, going on very well.

7. As clean as hunters ; very comfortable.

N.B. There are no cattle bred on this farm ; they are all bought regardless of breed, endeavouring to buy what will pay best. *James Laidlaw, Town-field Farm, Frampton-on-Severn, Gloucestershire.*

ON HIGH FARMING : AUCHNESS.

It is often alleged that farmers, as a class, are slow to follow out any improvements which may be brought before them. Now, without denying that this holds good in some instances, we are of opinion that a large number of them at the present day are quite willing to turn their pound into a guinea did they know how to do it ; but unluckily many schemes, many improvements, turn out mere alterations, and often they are disappointed of being benefited, while sometimes heavy losses arise from changes. Amongst many remedies for the present low prices none is in more general repute than high farming, which, when taken in the Auchnessian sense, means large outlays and large profits ; and I have never yet, notwithstanding the outlay, met with a farmer who was not most anxious to be able to convert his farm into such another California, only the uncertainty of the result deters many from attempting it, and with many others whom I could name, equal and larger outlays have been incurred, as skilfully perhaps, but with far less real success than what is apparent there. How comes it, then, that men have for years past been laying out the pound per acre on manure, and a similar sum on Linseed-cake, selling nothing but a few acres of Potatoes and the grain raised, turning all the Turnips into beef and mutton for sale, making all the straw into manure, and consuming with sheep the Grass on their fields, carting out the urine for top-dressing or on to the dunghills, purchasing the live stock with skill, feeding them with food increasing in richness as they advanced to maturity, and watching the favourable time to dispose of them ; besides bestowing a constant personal attendance on all the operations of ploughing, sowing, cleaning, reaping, threshing, and marketing the produce ; without obtaining results at all approaching to the profits at Auchness, or more than even a bare livelihood. We know several farmers who profess themselves perfectly willing to incur the same outlay for manure, labour, &c., as that incurred at Auchness, had they the probability of attaining half the profits there shown. We know one who is both able and willing to double the sum expended there for purchased food, bones, guano, &c., on his own farm, should there be another farmer or factor who can show from dry-field soil a return similar to that at Auchness. Many people say that as "one swallow does not make summer," there is little inducement to attempt such results. Now, as from my earliest acquaintance with land, I have lived among those not only speaking of liberal outlay on land, but following it out in practice by purchasing largely of manure, seldom giving their green crop less than 30 tons per acre, costing at least 6*s.* per ton, besides reckoning that every ton above that quantity paid them double to one below it, I begin to suspect that the system followed may be amended ; but of this we are sure, that it cannot be by the Potato, for previous to the "taint," with some 40 tons manure per acre, we tried to make our fortunes from it ; and although large crops were raised, yet the price became so miserably low that we found it prudent to consume a goodly number of them with cattle, in place of sending them to market, and the sums obtained did not often cover the outlay for manure.

Perhaps some of your kind contributors, Mr. Hewitt Davis say, who seems to have discovered a plan by which grain crops can be much more cheaply raised than through the intervention of green crops and Grass, may throw some light on our difficulties ; but I would just here hint also that it cannot be by increasing the amount of land under Wheat, as our climate does not permit its increase, neither would the soil, although dunged with 40 tons per acre every four years, enable us to have it oftener than once in that period. We are exceedingly desirous to be enlightened, and welcomed Mr. Caird's pamphlet when it appeared as a most hopeful production, and have also perused his new one with increasing interest, although we could have wished that he had obtained from Mr. M'Culloch his balance sheet for the years 1847 and 1848, instead of the yet to be realised returns for 1849, as our expense in farm profits is such that it is far pleasanter calculating what they ought to be than to look at the sum total actually realised. A friend of ours, so deeply taken with high farming, having a very fine crop of Turnips on some 60 acres of land, determined, in September last, at once to increase his outlay in that direction, and in place of purchasing the usual number of cattle he bought one-third more, but determined also that he would buy an additional quantity of Linseed cake, corn stuffs, &c., to be able to carry them all on to the usual period of selling them. He has now sold one-half of them, of as fine quality as could be wished, but the price of the best beef being now ½*d.* per pound less than what he paid for the half fat animals, he finds that high farming gives him low profit, and were he to sell all his cattle at the present time, he would just be minus any return for his fine crop of roots ; whereas his next neighbour who followed in the good old fashion, not much in vogue hereabouts now-a-days, of buying no more stock than the Turnips grown on the farm would feed, finds that from the cattle he has already sold, and those he still has to dispose of, he will have a return of 6*l.* per acre.

These are somewhat staggering facts, but they cannot be disputed ; the truth seems to be, that such attempts at high farming in the face of falling markets ought to be eschewed. What should we think of a merchant, aware that the articles in which he dealt were becoming of less value, yet bent on increasing his stock of them, or of the manufacturer employing the more people to make more goods to throw into an already overstocked market. It is not by such plans that the traders and manufacturers have made their fortunes. Just look what is the effect in regard to guano—the price of that article in December, 1848, was less than what it is now, and yet grain and anything that the farmer has to sell is nearly one-third lower. We are great admirers of cleverness, but somehow we do not reckon it any great mark of ability to recommend a plan by which our pound is changed into 15 shillings. I trust that some of your high profit finders may enlighten us as to such weighty matters. *Mic. M'Muck.*

Home Correspondence.

Influence of Light on plants, showing the necessity for early sowing of spring corn.—The influence of light on vegetation, and the mischief to young plants from too great exposure to its stimulating powers in their infant growth, is very clearly and beautifully presented to our observation, in the growth of Hyacinths, as seen in glasses, under different circumstances. Gardeners have found that to get strong self supporting stems, and fine healthy flowers, it is necessary when the bulbs are first brought in contact with water, that they should be placed in the dark for 3 or 4 weeks. Whilst treated

in this way, they make little shoot upwards—they are engaged in pushing strong roots down into the water. But great is the difference in those that are too early brought into the light; their progress upwards is much more rapid, but their stems will be weak, and their flowers ill developed, and tumbling about, from the inability of the drawn-out stalks to uphold them, and the whole plant shows the ill consequences of too excited a vegetation, and the want of support at the roots. In farming I have had frequently to remark the same difference of growth, and the same debility of stem in the late sown corn, as compared with the earlier. The cuckoo sown Barley, deposited when the duration of daylight much exceeds the night, is known by its weak straw, and liability to be laid, and the inferiority of its grain. Late sown Oats are comparatively but as tailings to ealier sown, and Beans and Peas are still greater sufferers from too late sowing. In a word, the growth above ground of late sown corn, from the longer exposure to the stimulating effects of daylight, is too much for the lesser growth of the roots underneath. Farmers often suppose, because there is comparatively little difference in the time of appearance above ground, between January and April sowings, and the two harvest nearly together, that there must be but little progress making in the seed during the period it is not visible. But this is not so, as any one may see, by taking up seed sown in the depth of winter, a month or so after it has been deposited. I believe the earth in England is never so cold as to wholly prevent roots from making some progress. For I have noticed grain that has been sown immediately preceding a long and hard frost, on the frost breaking, to have put forth its radicles whilst it was bound up in ice; and so it is with trees, and hence the necessity for autumn transplanting of many shrubs which will not bear late moving. Now if roots were idle in the winter, where would be the difference in transplanting between October and February. To the advantage from winter sowing of Barley, now so much practised in Essex, Suffolk, and the eastern counties, I have before referred. On this subject the farmers of the south and west of England, have much yet to learn. They frequently lose quarters an acre in their returns from not sowing sufficiently early. *Hewitt Davis, 3, Frederick's-place, Old Jewry, London, February 16.*

Grasses.—I have for some years studied with interest the Grasses growing in our pastures. It appears to me that proprietors, farmers, and land-agents, are little aware of the extent and importance of this subject. If land cannot be ploughed to profit in these times of transition, it should bear something, and what better than a productive sward? Now it is grievous to see the common way of laying land down to pasture, by sowing Rye-grass and white or red Clover. The farmer is unaware of the gregarious nature of Grasses. They will thrive only in societies. Sow any one, two, or even three sorts only, and they do not last long. They make room for more company and the natural weeds of the soil. Agrostis alba and rubra, Triticum repens or other worthless Couch-grasses, spring up and choke their more profitable neighbours. It is true these also give way in their turn, and a sward of mixed pasture Grasses is slowly formed. The seeds of these are brought in the dung from the yards where hay is fodder ed, on the droppings of cattle fed on other pastures, or spring from that wonderful stock which for ages has accumulated in the soil. Thus in many years a pasture is formed; it might have been gained in one by sowing at first a good selection of Grass seeds. Some Grasses grow in spring and again in autumn, others in the spring or autumn only, a few throughout the warmer months. They differ much in their qualities as food. Some are tonic or aromatic, some are mucilaginous, some are rich in starch or sugar, others combine these qualities in various degrees, or are deficient of valuable ones. The law of their growth in mixed societies, and at different seasons, makes our pastures always green; the variety of their qualities renders them grateful and wholesome. Is there not a beneficent provision, adapting the qualities of the Grasses to the periods of their growth? Is not, for example, the aromatic quality of the vernal Grass adapted to correct the too succulent condition of the herbage in spring and autumn, at both which seasons it grows vigorously? *H. R. Smithe, Eastling, Kent.*

Mr. Mechi and Mr. Huxtable.—No doubt others as well as myself are pleased to read any remarks from Mr. Mechi in the *Agricultural Gazette*; they are always fresh and off-hand. He and Mr. Huxtable (both of them too sensible I should hope to be vain), may be assured their opinions and practices attract much attention at present. The notion of the latter as to four sacks of Wheat being the natural production of land, cannot be maintained for a moment. A neighbour of mine, after a good crop of Turnips, regularly fed off, had but five sacks last harvest. Mr. Mechi suggests whether the Vetch does not "evaporate amazingly?" I fancy it does, from the following case, I will not call it experiment, as I had no object in view. Last autumn I planted three Vetches in a flower pot on a shelf in my dressing room; they have thriven in great luxuriance all the winter, but soon droop without a good supply of water. The plants are beautifully green, and hang down about 2 feet, delighting the eye by their verdure, and affording an anticipated pleasure of what my six acres will be by and bye. The precariousness of a pulse crop is proverbial; a farmer once told me he winnowed 10 sacks of Peas from one acre. The next year he hoped to make a fortune by sowing 10 acres, which yielded only one sack. Some years since I mixed one sack of partridge Peas with eight of Oats, and at harvest ruddered out 10 sacks of clean Peas, leaving more than sufficient in the Oats. Last year was also very favourable for pulse; I never expect to reap so large a crop. I bought 3 bushels of Early Royal Vetch, and added 1 bushel of winter Oats. Sowed the 4 bushels on two acres of ground; a fourth part was cut up for cattle, from the remainder I winnowed up 20 sacks and 1 bushel, 14 sacks to the acre; and this is not the very best course of husbandry, as I had taken two successive crops of Wheat from the same field, a load to the acre the first year, of Spalding's Prolific, manured for; 8 sacks 1 bushel the second year of White Navarre, by way of change; and now I propose sowing Barley—something very like four consecutive white crops, as the Oats were very stout. Were a tenant of mine to farm after this fashion, I should certainly remonstrate with him as contrary to the custom of the country, but should he in reply say he knew a very clever, intelligent, and scientific person who adopted that plan with great success, what could I say? *Quis.*

Acid Beer.—The only remedy I can recommend is to start with good materials, and let these be given into the hands only of a good brewer; no quantity of hops or malt will preserve beer without this aid. I have only been accustomed to brew twice a year, unless our table-beer required a fresh supply, which might occur both in winter and summer. April and the end of October or beginning of November, are the seasons for this vintage, when the barrels are all filled—some to stand for years, others for successive and immediate draught. I never knew well brewed ale or beer affected even by lightning. I have known them sensibly affected by hot weather adding to the consumption of them. When I was last in my late grandfather's cellar (he has been dead 50 years) there was fine old bottled ale, upon which old Bacchus would not have been satisfied merely to smile; this was of the startling strength of four gallons from the bushel of malt. October was the favourite month in those days. The danger of brewing in warm weather, and in summer, is, that when proper means are not adopted to cool the wort rapidly, by dividing it in small quantities in shallow coolers, it is liable to become what I have heard people denominate "summered," that is, it obtains a peculiar acidity which no alkali will overcome. If "Cerevisium" can be prevailed on to believe that the cause of the acidity of his beer lies with his artist, I could entertain a hope of securing him a good brewing in future. For 40 years the plan I adopt was practised in one family, without a failure; by them it was given to a reverend gentleman, who gave it me, after a full trial of it; and during 30 years I have tested its efficacy. Perhaps 'Cerevisium" may be surprised to hear that some families do not use any fermenting ingredient in their ale and beer; I do, but the quantity is so small that unless I superintend the working of it myself, till my brewer sees the power of a small portion of yeast, and the excellence of the vintage, I could not get it properly done. My ale is glass bright in a fortnight, if wanted so soon, and keeps well. The only fining admitted into my barrels, is fine wheaten flour—not sand, an article of too much gravity to admit other floating particles to accompany it in its precipitate precipitation. I should be glad to undertake the office of brewer in a nobleman's family, and if at liberty to engage my own subs, should fear no disappointments but the too quick emptying of the hogsheads. Cleanliness, quick cooling, quick fermentation perfectly carried on, quickly stopped, dry barrels, good cocks, sweet bungs, well secured to prevent the admission of air, will be found efficient aids in a good cellar, to prevent spoliation by lightning. There is more "barley bree" spoiled by excessive fermentation than belongs to the agency of electricity. I was at the house of a friend who had engaged a noted brewer, to fill his cellar; one half hogshead he was to brew thin; to ferment this we saw him take 6 quarts of yeast on the evening of the day after he had brewed. I made my observation to the host, who declared his ignorance of such matters, but we went to the cellar—the fermentation had not ceased at eight days from the brewing. It was his only performance, for the product of 5 bushels of malt, and 4 lbs. of hops, was muddy vinegar (alegar). ♁

Cultivation of Flax in Ireland.—At this moment, when a growing appreciation is experienced in foreign countries for our yarns and linens, and just before the Flax-growing season, the following particulars cannot fail to be interesting: At the monthly meeting of the Royal Flax Improvement Society, a gentleman present remarked, that he had sold his crops of Flax straw, grown near Carrickfergus, pulled and dried, to a steeping company at Cregagh, getting 12*l.* per Irish acre for it, which paid him better than any of his other crops. He had since been told by the purchasers, that they were offered 8*l.* for the seed of an acre of this Flax; and he had himself seen some of the fibre, which they had steeped and scutched, and which was of such good quality as to be valued by the spinners at 63*s.* per cwt. It was producing from the straw at the rate of about 80 stones of 16 lbs. to the acre, which would be 28*l.* worth of fibre, and, adding 8*l.* for the seed, the Irish acre would bring 36*l.* *T. S.*

Allotment System.—Having read several articles in your valuable publication (which I take in), on the subject of labourers' cottages and allotments of land, and having had many years of practical experience on these matters, and being deeply impressed with the extensive good that might be done for this class of the community, and without loss to the landed proprietor or the tenant farmer, but much to their interest every way, I trouble you with a few lines on the subject. I intend only to state "facts and practical results" which have passed under my own eye and management. I have ever found that a bit of land, attached to a comfortable dry and warm cottage, tends more than anything else to and raise the moral character of the family of the agricultural labourer, even if steeped in poverty, sickness, and distress. This certainly is worth an effort to accomplish, and I have found it far better to put a poor man in the way of earning a shilling than giving him one; it is more prized and valued, and not likely to be spent in drink, which is too often the fate of a given shilling. I will now just give you the result of an experiment I tried with a man about 45 years of age, of most depraved habits, so much so that he was shunned by every one, and was considered incorrigible. I undertook the task of endeavouring to save this poor fellow from ruin. Accordingly, meeting him one day, I said, "Well, Giles; will you take an acre of land?" He replied, "I don't know much about it. I should not like to lose anything by it." I replied, "Well, take the ground, and if there is any loss I'll bear it, and if there is any profit you shall have it." It was thus arranged, and, without a shilling, the man commenced his acre; his outgoing expenses being entirely lent him by a friend, according to the subjoined schedule:

1 acre of land, free from tax and tithe	£2	0	0
Advanced for seed Oats, for half an acre	0	12	0
" for Potato plants, ditto	0	17	3
" for purchase of a pig	0	13	0
" for ploughing half an acre for Oats, and bouting up half ditto for Potatoes	0	8	6
" for manure for Potatoes	2	8	0
" for cartage	0	18	6
" for mowing half an acre of Oats	0	1	3
" for threshing ditto	0	3	6
	£8	2	0

He repaid the whole of these advances in the following manner:

Two quarters of Oats	£2	4	0
105 bushels of Potatoes	5	5	0
Cash	0	13	0
	£8	2	0

All this was done without a single day's work by the man, as he was otherwise employed; his wife and children planted the Potatoes and dug them up. In answer to my inquiries as to his profits, his answer was, "I have 90 bushels of Potatoes on hand, and upwards of a quarter, that is 8 bushels, of head Oats, and a 35 stone hog in my sty—a thing I never had in my life before. I have Potatoes enough for my family for winter, and for seed next year." I observed that he had laid out a great deal for manure, and advised if a cesspool, &c., wanted emptying in the town, to offer to do it for the soil. He did so, and his children collected dung on the roads; and the next year, instead of buying dressing, he sold three loads to his neighbours, and reduced his expenses from 8*l.* 2*s.* to 4*l.* 13*s.*, and he does not owe his friend a shilling. This is now some years since, when I resided in the country. The man became an altered character, much to the comfort of his family, and also his employers. I can give you many other instances, with Dr. and Cr. accounts, of the great blessing of a bit of land to the labourer, if you think it likely to be interesting or encouraging to your readers. *Y. Z.* [We have no doubt they would.]

Ireland.—Although to rivet the attention of the public requires novelty, yet a constant recurrence to a subject which is progressing in favour with a few energetic spirits must eventually benefit society, by convincing the most desponding that truth will prevail, and produce fruit both pleasing to the eyes and valuable to the touch. The advance is slow but sure in agricultural pursuits, when carried out with prudence. Nevertheless, the disadvantage of refusing time to mature the results of rural speculations is apt to dishearten the farmer, impatient of delay, when he sees the manufacturer can turn his capital over two or three times in the year. I am again induced to trouble you with a few remarks, in consequence of reading the cheering accounts contained in a late *Gazette*, which told us of the settlement of two farmers in Ireland, whose prospects appeared to be most satisfactory, proving that hard working intelligent men with small capitals may, in that country, obtain a respectable and comfortable home. If a farmer can make up his mind to face boldly the annoyances of the first six months' residence in Ireland he will do well. There is no doubt he will meet with many things to try his equanimity during that period, but probably not more than in his own district, under the violent agitation and discontent occasioned by the useless attempt to revive protection. Should this letter meet the eye of any agriculturist who has lately established himself on the other side of the Channel, let me beg of him to publish in the *Gazette* a statement of his success or otherwise; a true account from the fountain head will be worth a dozen communications from anonymous correspondents, however persuasive and well meant. A few advertisements from known Irish landlords, offering farmers of the United Kingdom, who can command character and cash, land at a reasonable free-trade price, would be the means of facilitating the emigration to their estates of enterprising yeomen, whose example would soon be followed by dozens, who cannot decide for themselves, but would soon tread on the heels of their neighbours when once established. The sooner a thorough understanding is promulgated on this point the better, for it is quite certain an infusion of English and Scotch industry is the principal remedy to restore Ireland to its proper position, as one of the most

productive and salubrious islands in the world. Let us hope that the chance of procuring a sterling class of agriculturists will not be thrown away by any delay on the part of the powerful and influential landlords. Hundreds are ready and anxious to emigrate to distant lands, where peace and plenty, as in Ireland, will reward the active and honest farmer. Are some of our best men to be kept in ignorance of the blessings within their reach, and driven to seek subsistence in the colonies, when there are thousands of acres ready to bear abundant crops at the command of sturdy sinews and bold hearts? The motto England appears to have appropriated to herself is certainly not a wise one, but from the events of past years it is to be feared she has been infatuated, "Acting in haste, and having to repent at leisure;" her children are determined to follow her bad example. The landed interest must be satisfied for some years with a moderate per centage on money; the old calculation of these rents must be forgotten, or only considered as a pleasant dream, till land is worked up to its full bearing, when there is no saying what may be produced. *Falcon.*

Digging v. *Subsoiling.*—In the *Agricultural Gazette* of the 23d ult., page 124, your correspondent "Verax" says by way of explanation, "the principal intention of my former communication was to show what can be done by good cultivation, in contrast to the generally adopted mode of the country." With so laudable a motive it is a great pity that he did not take the trouble to inform himself a little better before broaching his theories in the columns of the *Agricultural Gazette.* Had he taken the precaution in his contrast of adopting statute measure instead of customary (an error very common, and which I consider cannot be too much deprecated), he might have saved himself from the odium which justly attaches to such want of common prudence, and have prevented the liability of misleading the credulous and uninitiated. By consulting the best dictionaries extant, "Verax" will find that (in addition to its being the recognised statute measure), it is by them laid down, that $16\frac{1}{2}$ feet, or $5\frac{1}{2}$ yards, multiplied by itself, is a rod of land, and the same authority will tell him that 40 of such rods is a rood or quarter of an acre of land. "Verax" wishes to know my estimate for subsoiling an acre by horse power, which I consider would amount to 1*l.* 13*s*, putting every item at full price, exclusive of wear and tear of harness and ploughs, and which I should consider but little inferior to the forking, with a balance in my favour of 1*l.* 12*s.* 4*d.*, as compared with the calculations of "Verax." *A Suffolk Farmer.*

Societies.

ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

A Monthly Council was held at the Society's House in Hanover-square, on Wednesday last, the 6th March. Present, his Grace the Duke of Richmond, K.G., trustee, in the chair; Lord Camoys, Sir T. Dyke Acland, Bart., M.P., Sir C. Lemon, Bart., M.P., Sir R. Price, Bart., M.P., Mr. R. Barker, Mr. C. Barnett, Mr. S. Bennett, Mr. Bosanquet, Mr. Bramston, M.P., Mr. Brandreth, Mr. F. Burke, Colonel Challoner, Mr. Garrett, Mr. B. Gibbs, Mr. Grantham, Mr. Hamond, Mr. F. Hobbs, Mr. Hudson, of Castleacre, Mr. Lawes, Mr. N. Malcolm, Mr. Miles, M.P., Mr. Milward, Mr. Pusey, M.P., Professor Sewell, Professor Simonds, Mr. Shaw of London, Mr. V. Shelley, Mr. Slaney, M.P., Mr. Stansfield, M.P., Mr. Turner of Barton, Mr. C. H. Turner, Professor Way, and Mr. J. Webb.

The following new members were elected:

Baxendale, Joseph, Woodside, Whetstone, Middlesex.
Gurney, Rev. Wm. Walter, Roborough, Torrington, Devon.
Bletchley, John, Buchover, Thornbury, Gloucester.
Heysett, L R., Boracott House, High Hampton, Crediton.
Edwards, Joseph, Hutton, Somersetshire.
Braddon, William, Blackland, Plympton St. Mary, Devon.
Wilson, Joshua, Islington, Middlesex.
Spragge, Francis, Torquay, Devonshire.
Tolcher, Edward, Ridgeway, Plympton, Devon.
Ormerod, Henry Mere, 85, Mosley-street, Manchester.
Brydges, Thomas, Marwood House, Barnstaple, Devon.

The names of 17 candidates for election at the next meeting were then read.

Finances.—Colonel Challoner, chairman of the Finance Committee, laid before the Council the monthly report on the accounts of the Society; from which it appeared, that on the last day of the month just ended, the current cash-balance in the hands of the bankers was 2634*l.* (including the subscription of 1260*l.* from Exeter). The chairman also reported the investment of 1247*l.* in the purchase of stock in the public funds, as ordered by the Council at their last monthly meeting; and laid on the table the bank receipt for such purchase.

Essays and Reports.—Mr. Pusey, M.P., Chairman of the Journal Committee, reported to the Council the receipt of 64 Essays and Report, in competition for the prizes of the Society in that department, for the current year. The Council referred these essays to the Journal Committee, with a request that they would take, as usual, the requisite steps for their examination by respective classes of Judges, and the adjudication of the prizes.

Country Meeting.—The Duke of Richmond, as Chairman of the Charter and Bye-law Committee, in reference to the Society's Country Meeting in 1851, laid before the Council the Report of that Committee, which was adopted by the Council. His Grace then favoured the Council with various suggestions, founded on an extensive enquiry he had made of the law-officers of the Crown, and other high legal authorities of the kingdom, connected with the measures it would be desirable for the Council to take, in consequence of the resolutions passed at their special meeting, on the 20th ult. The Council thanked the Duke of Richmond for the favour of these suggestions, which they ordered to be recorded in their minute-book for adoption when the proper time for their application should arrive.—Mr. Raymond Barker and Mr. Miles, M.P., renewed the notice they had given on the 20th ult., for a motion at the Monthly Council in April, to rescind the resolution of 3d May, 1847, and substitute an amended resolution in its place.—Mr. Grantham gave notice that at the proper time he should be prepared to submit to the Council a strong presumptive case in favour of Lewes as the place of one of the Country Meetings of the Society.

Chemical Lectures.—The Report of the Chemical Committee having been read, the Council accepted, with their best thanks, Prof. Way's offer to deliver a Lecture before the Members, in the Council-room of the Society, at 12 o'clock, on every third Wednesday of the month during the current session of the Society, namely, in the months of March, April, May, June, and July; the next lecture to be delivered on the 20th inst., "On the subject of a newly observed Property of Soils, affecting the use of Manures, Irrigation, &c."

Guano Adulteration.—The Council referred to the Chemical Committee the recommendation of the Weekly Council of the 13th ult., that Mr. Hunt's statement of the extensive adulteration of guano at present taking place in the neighbourhood of the Metropolis, should be taken into special consideration, with a view to the adoption, if possible, of a remedy for the evil.

Irrigation.—On the motion of Mr. Fisher Hobbs, seconded by Mr. Pusey, M.P., the Council resolved: "That an opportunity be taken, at the Exeter meeting of the Society in July next, to obtain information on the Theory and Practice of Irrigation and Catch-meadows; and that arrangements be made accordingly," referring to their General Exeter Committee the steps to be taken for effectively carrying out the details of the proposed measure. This subject led to an interesting discussion on the subject of irrigation, and to a communication of facts connected with the advantages derived from its application in localities where it had been adopted, and with the want of it experienced in those parts of the country into which it had not yet been extensively introduced.—Mr. Bennett gave a most favourable statement of the appearance of Grass crops in Cornwall and Devonshire during a recent journey he had made through those counties, and in envying their rich growth, he strongly felt the advantage to be derived by the transfer to his own county (that of Bedford) of a similar beneficial system of early, vigorous, and repeated growth of such crops.—Mr. Shelley had, last autumn, in Sussex, laid down 60 acres under irrigation, and the effect was most striking.—Mr. Slaney regretted that the system had not yet extended to Shropshire. An obstacle still existed to its adoption, arising from the refusal of intervening occupiers to join in carrying it out. This had long been provided for in Lombardy, and he hoped it would soon be so also in this country.—Mr. Turner, of Barton, gave an interesting statement of the nature of his own operations connected with irrigation in Devonshire and of its peculiar advantages.—Col. Challoner thought that as a new implement in the show-yard lost half its value when left unexplained by its inventor, so would these water-meadows in Devonshire, when seen by the members of the Society, unless the proprietor made arrangements for the details of their construction and operation being explained by their bailiffs, or other persons whom they would kindly direct to be in attendance.—Sir Thomas Acland and Mr. Turner expressed their entire willingness to afford every explanation in their power on this subject, and they each gave to the members of the Society a most hearty welcome to their respective establishments.—Mr. Pusey thought that the Society on this occasion might, with very great advantage, imitate the Archæological and British Associations, by paying personal visits in a body to the various objects of attraction to farmers in Devonshire, especially to an inspection of their system of irrigation.—Mr. Fisher Hobbs alluded to the excellent Paper on this subject, by Mr. Pusey himself, in the last Number of the Journal, which led strangers to the system to feel a strong desire to witness the reality. — Sir Thomas Acland could only express, on the part of the Devonshire farmers, his thanks to Mr. Pusey for that interesting statement, which brought into so prominent a notice this great feature of their agricultural operations.

Filling-in Drains. — The Council accepted, with their best thanks, the liberal offer of Mr. Slaney, M.P., to renew this year his prize of 10*l.* for the best Plough to fill-in the soil cast out of drains, with not more than four horses (two and two abreast); to be awarded at the Exeter meeting; referring the details and conditions of the prize to the Implement Committee.

Draining.—Mr. Bullock Webster addressed a letter to the Council, expressing his intention of justifying the statements he had made in his paper published in the Journal, and of correcting the misconceptions into which some parties had fallen who had called that paper in question.

South-Devon Cattle. — Mr. Phillips, of Broonborough, appeared before the Council, on the part of the Breeders of the South-Hams Cattle, and learned from the Council the conditions under which prizes for that class of stock could be offered at the Exeter meeting.

Miscellaneous.

Proportion of Live and Dead Weight in Sheep.—

	South-down Sheep.	Leicester Sheep.	Worcester Sheep.	Wiltshire Sheep.
	lbs. oz.	lbs. oz.	lbs. oz.	lbs. oz.
Weighed alive	155 0	152 0	161 0	175 0
Skin	17 8	20 0	23 0	23 0
Fat	13 2	11 8	12 8	13 8
Head and pluck.....	10 8	9 6	12 0	14 0
Entrails	13 4	11 2	15 0	17 10
Blood	5 14	6 0	8 0	8 2
Four quarters	92 6	92 0	89 0	97 0
	152 10	150 0	159 8	172 4
Waste; viz. urine and evaporation.	2 6	2 0	1 8	1 12
Bones, clean	6 $5\frac{3}{4}$	5 9	6 0	9 8
Fat, with the kidneys in.....	8 6	5 1	6 12	4 $3\frac{1}{4}$
Kidneys	0 $4\frac{3}{4}$	0 4	0 5	0 5
Proportion of live and dead weight.	20 gives $11\frac{3}{4}$	20 gives 12	20 gives 11	20 gives 11

—*Journal of the English Agricultural Society.*

Formula for making the boiled butter (beurre cuit) *of Vallais and Piedmont.*—"Into a clean copper pan (better, no doubt, tinned) put any quantity of butter, say from 20 to 40 pounds, and place it over a very gentle fire, so that it may melt slowly; and let the heat be so graduated, that the melted mass does not come to the boil in less than about two hours. During all this time the butter must be frequently stirred, say once in five or ten minutes, so that the whole mass may be thoroughly intermixed, and the top and bottom change places from time to time. When the melted mass boils, the fire is to be so regulated as to keep the butter at a gentle boil for about two hours more, the stirring being still continued, but not necessarily so frequently as before. The vessel is then to be removed from the fire, and set aside to cool and settle, still gradually; this process of cooling being supposed also to require about two hours. The melted mass is then, while still quite liquid, to be carefully poured into the crock or jar in which it is to be kept. In the process of cooling, there is deposited a whitish cheesy sediment proportioned to the quantity of butter, which is to be carefully prevented from intermixture with the preserved butter." *From a Physician's Holiday, by John Forbes,* M.D., F.R.S. 1849. Murray; page 494. In the next page he states that some add a little salt in the boiling.

Calendar of Operations.

MARCH.

Bedfordshire Farm, *March* 4.—The late favourable weather has allowed the various operations of the field to go on satisfactorily. The principal employment of the horses has been ploughing and preparing the land for Beans, Barley, Oats, &c. Bean and Pea planting and the sowing of spring Wheat is now generally concluded. Barley and Oat sowing has commenced. The horse labour on this farm will for some time prospectively be connected with the sowing of corn and seeds, harrowing Wheat, hoeing winter Beans, ploughing the Turnip fallows, &c., all of which operations can only be carried on perfectly during fine weather. Ploughing in wet weather or moving saturated land does harm generally, and instead of forwarding horse labour retards it in the end, and does injury to the succeeding crop. During wet weather our horses will be employed in carting dung and other manures, harrowing and rolling Grass land, and all such operations as can be done, to allow the horses, in full force, to get upon the land when fine. The following mixtures of Grass seeds have been found to answer very well on both light and heavy soils, sown with either Barley, Oats, or Wheat: 12 lbs. of Red Clover and 8 lbs. of Trefoil per acre for mowing or feeding off one year. For mowing or feeding for one, two, or more years: 8 lbs. of white Clover, 2 lbs. of Trefoil, 2 lbs. of Cow-grass, and 6 pecks of Perennial Rye-grass seed per acre. If early keep be required, Italian Rye-grass should be substituted for the Perennial. We have seen Italian Rye-grass, sown last April, already forward enough for feeding off with sheep. A top-dressing of from 50 to 80 bushels of wood or coal ashes does much good on seeds in all ordinary seasons. Soot and salt, applied as a top-dressing to green crops and corn, has a very fertilising effect, and is, we think, more certain in its result than guano or any of the very volatile "artificials," which lose so fast by exposure to drying winds or a warm temperature. About 30 bushels of soot and 5 of salt per acre is sufficient in most cases. The soot and salt should be well mixed and frequently turned for some weeks, or even months, before application. We transplanted Wheat last week to fill up some blanks caused by wireworm, &c. In former seasons the transplanted Wheat invariably succeeded, when seed in other instances failed, from the depredations of birds and other vermin. The young Wheats in this quarter are generally looking well; so are winter Beans and Tares. Turnips are likely to be scarce; but Mangold Wurzel growers have still a good stock of roots beside them. Potato planting has again commenced with almost undiminished ardour, although the speculation is most uncertain, to say the least of it. *R. V.*

Lammermuir Sheep Farm, *March* 1.—After six weeks' genuine winter weather, characterised by severe frosts, heavy falls of snow, hurricanes of wind, and a temperature varying daily, the thermometer at one time as low as 16°, and in the course of 48 hours up to 40°, we have had for the last fortnight what we would have been inclined to call "spring," had it not come on so suddenly, and so much earlier than we are accustomed to in these elevated parts. Still the change is most acceptable in the mean time—the snow is all gone, and the surface of the ground well dried, though it can scarcely be said that there is any spring on the Grass. There is one plant, however—Harestail-cotton-grass—which though delighting in a wet peaty soil on the bleakest parts of the hills, and to one ignorant of its value as a pasture Grass, of a very unpalatable appearance, is yet by far the earliest plant we have, and highly prized by the sheep during the spring months. This (provincially designated "Moss") is now nearly in perfection. The sheep are most of the day in search of it, and its nutritious qualities are abundantly evident in the improved condition of those on whose ground it grows profusely. A lot of ewes, intended for sale before lambing, are now receiving Turnips. They are netted on during one-half of the day, and then let off to a piece of heather. In the course of a few days the Cheviot shearling ewes will be put beside them; and afterwards, most of the older ewes of that breed will get a few daily for about three weeks before they begin to lamb. The black-faces, being much

hardier, will not get any; besides, we have found that a month or six weeks' Turnips, though only for one season during the four or five years they remain on the farm, is quite sufficient prematurely to destroy the teeth of a large number. Why this should happen with this breed, more than with any other with which we are acquainted, we cannot explain; but such is the case. Most of the Turnips were earthed up before the severe frost set in, the benefit of which is now very apparent. Among those so treated there is scarcely a damaged root, while of those left in their ordinary condition many are completely destroyed, and the rest very soft in their texture. Our ploughing is as far advanced as we can get at present. We have sown a few Peas and Oats, the latter more by way of experiment, the land being in beautiful condition, than because we consider the proper season. In another week, however, should the weather continue fine, we will begin in good earnest. The temperature during the month of February has been 35°, 40°, and 36° at morning, noon, and evening respectively. *A Lammermuir Farmer.*

Sussex Farm, *March* 4.—For the most part of this week our teams will be engaged harrowing and drilling in the remainder of the Beans, Peas, and Tares, and ploughing for the Barley and Oat crops; ploughing the Potato land, and drilling up the same with the swing plough. We make our Potato drills from 27 to 28 inches from row to row, and from plant to plant 12 inches. We have dunged part on the flat, and ploughed in the dung; on the other part we shall put the dung in the drills, and plant the Potatoes on the top of the dung, then cover up with the plough. The farmers and cottagers here, for the most part, put the dung upon the top of the Potatoes. Men are engaged threshing Oats, Beans, and Wheat, emptying the liquid manure tank on to the meadows, digging Hops, sorting Hop-poles, draining, ditching, &c. *J. B.*

Notices to Correspondents.

Cottage Chimneys: *Anon.* Ground floor, 18 inches from front to back; from 30 to 36 inches high, sufficient for the fire-place. Upper story, depth somewhat less, height not more than 24 inches, 20 may be better.

Disease in Lambs: *Aliquis.* The disease appears to be palsy. You are right in adopting external warmth, which may be assisted by the following: Gentian and ginger, of each, 1 scruple; spirit of nitrous ether, 1 do., to be given in warm water or gruel. The secretions, if amiss, of course must be regulated by suitable means. *W. C. S.*

Lame Pig: *Constant Reader.* The disease is probably rheumatism. Keep him warm and dry, and make him into bacon as fast as you can. *W. C. S.*

Mangold Wurzel: *J W.* The scheme of sowing Rape, sheeping and then fallowing it, is good; but we would not repeat the Mangold. Cabbages would pay as well, are as well suited to a clay soil, and are better as a change.

Shoulder Lameness: *B A, Clericus.* If the lameness is really in the shoulder, bleeding in the arm and blistering the shoulder will be the best remedy, followed by sufficient rest. If, however, the pony puts his foot forwards in the stable, and does not rest upon it, the lameness is not in the shoulder, but the foot. *W. C. S.*

Markets.

COVENT GARDEN, March 9.

Vegetables are plentiful, but many kinds of Fruit are still scarce. Hothouse Grapes, excepting the Barbarossa, are over, and Pine-apples are anything but plentiful, as are also Pears and Apples. Walnuts, and Chestnuts are abundant, more especially the latter, and Oranges and Lemons are sufficient for the demand. Amongst Vegetables, Turnips and Carrots are good, and there is some fine Cornwall Broccoli in the market. Potatoes are unaltered since our last account; foreign ones fetch from 50*s.* to 80*s.* a ton. Lettuces and other salading are sufficient for the demand, and so are Mushrooms. French Beans, Asparagus, Seakale, and Rhubarb may be obtained at about last week's prices. Cut Flowers consist of Heaths, Pelargoniums, Bignonia venusta, Primulas, Camellias, Cinerarias, Christmas Roses, Azaleas, Lilacs, Lily of the Valley, Epacrises, Acacias, and Roses.

FRUITS.

Pine-apples, per lb., 6s to 9s	Almonds, per peck, 6s
Grapes, Portugal, p. lb., 9d to 1s	— sweet, per lb., 2s to 3s
Pears, per doz., 6s to 10s	Walnuts, p. 100, 1s 6d to 2s
Apples, kitchen, p. bsh., 4s to 6s	— p. bush., 16s to 24s
Lemons, per doz., 1s to 2s	Nuts, Bar., p. bush., 20s to 22s
— per 100, 6s to 12s	— Brazil, p. bsh., 12s to 16s
Oranges, per doz., 9d to 1s 6d	Kent Cobs, 65s to 75s p. 100 lbs
— per 100, 5s to 12s	

VEGETABLES.

French Beans, per 100, 3s to 5s	Carrots, per bun., 4d to 6d
Seakale, per punnet, 1s to 2s	Spinach p. sieve, 2s to 3s
Asparagus, p. bund., 1s 6d to 6s	Onions, p. bushel, 2s to 3s 6d
Rhubarb, p. bundle, 6d to 1s	— Spanish, p. doz., 1s 6d to 4s
Savoys, per doz., 6d to 9d	Shallots, per lb., 4d to 8d
Cauliflowers, p. doz., 1s to 4s	Garlic, per lb., 4d to 8d
Broccoli, p. doz. bundl., 8s to 12s	Lettuce, Cab., p. sc., 4d to 9d
Greens, per doz., 2s to 3s	Endive, per score, 1s 6d to 4s
Brussels Sprouts, p. hf. sieve, 1s 6d to 2s	Mushrooms, p. pot., 9d to 1s 3d
Sorrel, p. hf. sieve, 1s to 2s	Small Salads, per punnet, 2d to 3d
Potatoes, per ton, 60s to 120s	Watercress, p. 12 bun., 6d to 9d
— per cwt., 3s to 7s	Fennel, per bunch, 2d to 3d
— per bush., 2s 6d to 3s 6d	Savory, per bunch, 2d to 3d
Turnips, p. doz. bun., 1s 6d to 2s 6d	Thyme, per bunch, 2d to 3d
Red Beet, per doz., 9d to 1s	Parsley, p. doz. bun., 2s to 3s
Horse Radish, p. bdl., 1s to 4s	— Roots, p. bdle., 9d to 1s
Cucumbers, each, 3s to 5s	Marjoram, per bunch, 2d
Leeks, per bunch, 1d to 1½d	Mint, green, per bunch, 9d to 1s
Celery, p. bundle, 8d to 1s 3d	Corn Salad, p. hf. sieve, 9d to 1s

POTATOES.—Southwark, March 4.

The Committee report that the arrivals during the last week have been very considerable, particularly from the Continent, which is larger than it ever has been in one week since the importation has been free; this, with the very mild weather, has caused trade to be very heavy, and a considerable reduction is submitted to with every description of Potato at the waterside. The following are this day's quotations:—Yorkshire Regents, 80s. to 110s. per ton; Wisbeach do., 60s. to 80s.; Scotch do., 60s. to 75s.; Scotch cups, 60s. to 70s.; French whites, 60s. to 70s.; Belgian do., 60s. to 65s.; Rhenish do., 50s. to 60s.

HOPS.—Friday, March 8.

Messrs. Pattenden and Smith report that the trade is very heavy, and what little demand we have is for 1847 and fine yearlings.

Mid. and East Kents ...	p. cwt. 160s to 240s	Farnhams, p. cwt.	—s — —s
Weald of Kents ...	140 — 160	Yearling Kents ...	45 — 80
Sussex	115 — 135	Yearling Sussex...	42 — 70
		Old Hops	20 — 60

HAY.—Per Load of 36 Trusses.

Smithfield, March 7.

Prime Meadow Hay	60s to 70s	Clover	60s to 80s
Inferior ditto... ...	50 63	New Clover	— —
Rowen	50 60	Straw	24 27
New Hay	— —		J. Cooper.

The trade very slow.

Cumberland Market, March 7.

Prime Meadow Hay	65s to 72s	Inferior	60s to 72s
Inferior ditto... ...	50 60	New Clover	— —
New Hay	— —	Straw	24 30
Old Clover	78 84		Joshua Baker.

SMITHFIELD, Monday, March 4.

The number of Beasts being much smaller than on Monday last, a little more money is obtained in a few instances, but generally the trade is dull; however, a fair clearance is effected. The supply of Sheep is about an average; the demand is small, consequently trade is dull, and our top quotations are with difficulty realised. We are but moderately supplied with good Calves; they are, in consequence, dearer. From Holland and Germany we have 503 Beasts, 300 Sheep, and 60 Calves; from France, 170 Sheep; from Scotland, 300 Beasts; from Norfolk and Suffolk, 2000; and 300 from the midland counties.

Per st. of 8 lbs.—	s	d	s	d	Per st. of 8 lbs.—	s	d	s	d
Best Scots, Herefords, &c. ...	3	6	to 3	8	Best Long-wools .	3	8	to 3	10
Best Short-horns	3	4	— 3	6	Ditto Shorn			...	
2d quality Beasts	2	8	— 3	2	Ewes & 2d quality	2	10	— 3	4
Best Downs and Half-breds ...	4	0	— 4	4	Ditto Shorn			...	
Ditto Shorn			...		Lambs			—	...
					Calves	3	4	— 4	6
					Pigs	3	4	— 4	4

Beasts, 3352; Sheep and Lambs, 19,300; Calves, 106; Pigs, 192.

Friday, March 8.

The supply of Beasts to-day is good, both as regards numbers and quality, and the demand is very limited. Our quotations are the same as on Monday, but they are not so currently obtained. We have an average number of Sheep; trade is very dull, and late rates are with much difficulty maintained. We have several Lambs on offer; the season cannot yet be said to have set in, the consumption is, in consequence, very small; a choice one makes about 6*s.* per 8 lbs. Trade is very dull for Calves, and late prices are scarcely maintained. From Holland and Germany there are 76 Beasts, 170 Sheep, and 109 Calves; from France, 120 Sheep; from Scotland, 350 Beasts; and 123 Milch Cows from the home counties.

Per st. of 8 lbs.—	s	d	s	d	Per st. of 8 lbs.—	s	d	s	d
Best Scots, Herefords, &c. ...	3	6	to 3	8	Best Long-wools .	3	8	to 3	10
Best Short-horns	3	4	— 3	6	Ditto Shorn			—	...
2d quality Beasts	2	8	— 3	2	Ewes & 2d quality	2	10	— 3	4
Best Downs and Half-breds ...	4	0	— 4	4	Ditto Shorn			...	
Ditto Shorn			—	...	Lambs			...	...
					Calves	3	4	— 4	4
					Pigs	3	4	— 4	4

Beasts, 911; Sheep and Lambs, 3930; Calves, 212; Pigs, 215.

MARK LANE.

Monday, March 4.—The supply of Wheat from Essex, Kent, and Suffolk this morning was small, and sold at the prices of this day se'nnight, excepting the Kent, which is written 1s. per qr. lower. There appeared to be a slightly increased inquiry for foreign, but buyers being only inclined to purchase on reduced terms, the business transacted was limited and quite in retail.—We make no alteration in our quotations of Barley, Beans, or Peas.—Oats are rather more in demand, but not dearer.—The top price of Flour is 2s. per sack lower, and settled at 38s.

British per imperial Quarter.	s.	s.		s.	s.
Wheat, Essex, Kent, & Suffolk ... White	41	—43	Red	36	—38
— — fine selected runs ...ditto	42	—44	Red	38	—40
— — Talavera	48	—56			
— Norfolk, Lincoln, & York ... White	—		Red	—	
— Foreign	35	—54			
Barley, grind. & distil., 19s to 22s... Chev.	24	—27	Malting	22	—24
— Foreign.....Grinding and distilling	18	—21	Malting	22	—24
Oats, Essex and Suffolk	15	—19			
— Scotch and Lincolnshire ...Potato	18	—22	Feed ...	16	—18
— Irish .....Potato	17	—20	Feed ...	15	—18
— Foreign .....Poland and Brew	16	—20	Feed ...	13	—17
Rye	20	—24	Foreign	20	—23
Rye-meal, foreign .....per ton	5*l.*	—6*l.*			
Beans, Mazagan .....21s to 23s.....Tick	24	—26	Harrow	24	—26
— Pigeon.....25s — 28s ...Winds	22	—28	Longpod	25	—28
— Foreign ..... Small	24	—36	Egyptian	21	—22
Peas, white, Essex and Kent.....Boilers	23	—25	Suffolk	24	—26
— Maple .....24s to 26s.....Grey	22	—23	Foreign	21	—28
Maize ..... White	22	—25	Yellow...	24	—26
Flour, best marks, delivered ...per sack	34	—38			
— Suffolk .....ditto	27	—34	Norfolk	27	—34
— Foreign .....per barrel	22	—24	Per sack	30	—33

Arrivals in the Port of London last week.

Flour, 20	20 sks	Wheat. Qrs.	Barley. Qrs.	Malt Qrs	Oats. Qrs.	Beans. Qrs.	Peas. Qrs.
—	60 bls						
English	.....	2717	6016	14286	5125	777	561
Irish	.....	—	—	46	—	—	—
Foreign	.....	5674	1152	—	112	2997	110

Friday, March 8.—The supplies of all grain during the week have been small. To-day's market was badly attended, and in the little business transacted in Wheat, Monday's prices were barely supported.—Spring corn of all descriptions continues a dull sale, but we observe no alteration in its value.—The corn trade continues in the same depressed state which has characterised it lately, and the value of Wheat in many of the leading markets of the kingdom has declined 1s. to 2s. per qr. during the past week. Spring corn has also been very dull, and prices the turn lower. The sale of Flour is still much interfered with by importations from France, and it is 1s. to 2s. per sack cheaper. From a statement lately published it appears that our chief supplies of Wheat last year were derived as follows:

France... ...	Qrs.—742,023	Hanse Towns and adjacent Ports	Qrs.—498,983
Prussia	618,735	Belgium	366,098
United States ...	617,181	Holland	308,482
Russia	600,375		

And further, that the average price for the last 10 years was—

France	Per qr.—51s. 2d.	Belgium ...	Per qr.—52s. 2d.
Amsterdam	50 5	Hamburgh	42 8

Arrivals this week.

	Wheat. Qrs.	Barley. Qrs.	Oats. Qrs.	Flour.
English ...	1720	4740	6690	5180 sacks
Irish	—	—	1600	
Foreign ...	2250	—	410	— brls.

Imperial Averages.	Wheat.	Barley.	Oats.	Rye.	Beans.	Peas.
Jan. 26.....	40*s* 1*d*	25*s* 9*d*	15*s* 10*d*	21*s* 2*d*	26*s* 1*d*	28*s* 5*d*
Feb. 2	39 4	25 4	15 2	23 10	25 6	27 0
— 9.....	38 6	24 7	15 3	22 1	25 3	26 4
— 16.....	37 9	23 10	15 4	20 7	24 11	26 10
— 23.....	37 11	23 7	15 6	20 11	24 8	26 0
March 2.....	38 6	23 9	14 11	21 11	24 4	25 11
Aggreg. Aver.	38 8	24 6	15 4	21 9	25 1	26 9
Duties on Foreign Grain	1 0	1 0	1 0	1 0	1 0	1 0

Prices.	Jan. 26.	Feb. 2.	Feb. 9.	Feb. 16.	Feb 23.	Mar. 2.
40s 1d—		...	...	...	...	...
39 4	...		...	...	...	...
38 6	...	...		...	...	...
33 6	...	...	...		...	
37 11	...	...	...	...		...
37 9	...	...	...	...	...	

SEEDS.—March 4.

Canary, per qr.....70s to 74s		Coriander, per cwt. ...16s— 21s	
Caraway, per cwt. ...31 — 33		Mustard, white, p. bush.	—
Hempseed, per qr. ...34 — 35		— brown, do.	—
Linseed, foreign, do. 37 — 45		Rape, per last .....28*l.*—34*l.*	
Clover, red, per cwt....—	—	Cakes, Linseed, p. 1000... 9*l.* 3*s*	
— — foreign, do.—	—	— — foreign, p. ton 5*l.* 15*s*	
— white, do. ... —	—	— Rape, foreign, do. 4*l.* 5*s*	
— — foreign, do.—	—	Tares, per bush.... 4*s* 6*d*—5*s* 6*d*	

Liverpool, Tuesday, March 5.—There was a better attendance at this morning's market, and business was on a moderate scale, at a decline on the rates of last week of 2d. to 3d. per bush. on Wheat, 1s. per sack on Flour, 1s. per qr. on Barley, 6d. per qr. on Beans and Peas, and 1s per qr. on Indian Corn.

HARTLEY'S PATENT ROUGH PLATE GLASS.

In submitting our list of prices, we would beg to direct attention to the Leading Article of the *Gardeners' Chronicle* of Saturday, Dec. 8, upon the subject of "Patent Rough Plate." Some alteration having been made in the mode of manufacturing this description of Glass, the quality is greatly improved, and we now supply it perfectly flat, and, by an arrangement with Messrs. Hartley and Co., precisely at their prices. Cut to order in panes of

8 by 6	and under 10 by 8	at 4½*d.* per foot.	
10 by 8	„ 14 by 10	at 5*d.*	„
14 by 10	„ 1½ foot	at 5½*d.*	„
1½ foot	„ 3 feet	at 6*d.*	„

PACKED IN BOXES of 50 feet each.

6 by 4 and 6½ by 4½...10*s.* 6*d.* 8 by 6 and 8½ by 6½...13*s.* 6*d.*
7 by 5 and 7½ by 5½...12*s.* 0*d.* 9 by 7 and 10 by 8 ...15*s.* 0*d.*

Milk Pans from 2*s.* to 6*s.* each, Metal Hand-frames, Tiles, and Slates; Propagating and Bee Glasses from 2*d.* each; Cucumber Tubes, 1*d.* per inch; Peach Glasses, 10*d.* each; Wasp Traps, 3*s.* 6*d.* per dozen; Pastry Slabs, Hyacinth Glasses and Dishes, Shades for Ornaments, Fish Globes, Plate and Window Glass of every description, and Lamp Shades. Lactometers for trying the quality of Milk, 4 tubes, 7*s.* 6*d*; 6 tubes, 10*s.* Self-registering Thermometers for Greenhouses, Horticultural Glass, &c.

JAMES PHILLIPS and CO., 116, BISHOPSGATE STREET WITHOUT, LONDON.

CROWN, SHEET, AND ROUGH PLATE GLASS FOR HOTHOUSES, CONSERVATORIES, &c.

Of every manufacture FIT FOR USE, including the make of Messrs. Chance, Hartley, Swinburne, and others.

100 and 200 feet cases of large Sheet Glass, from 2½*d.* per foot. Small ditto, 10*s.* 6*d.* per 100 feet, packed in boxes ready for immediate delivery. Curators of Botanical Societies, Florists, Railway Agents, and others requiring large quantities, will, on sending dimensions, receive estimates at the lowest prices.

GLASS MILK PANS, CREAM POTS, Lactometers, Bee Glasses, Fish Globes, and all kinds of Dairy Glass, Propagating Glasses, Hyacinth Dishes, Cucumber Tubes, and every other description of Garden Glasses.

PATENT GLASS PENS, self supplying, never blot, never soil the ruler, and will write continuously for 12 hours.

Also, Glass Rulers, Glass Inks for office-stands, desks, &c. Stationers and Schools supplied. Wholesale Warehouse for Ornamental Shades, Lamp Shades, Gas Glasses, Genuine White Lead, Paints, Colours, and Pumps for Farm purposes.

Our Catalogue of 18 folios is the most complete ever published. No Gardener or Farm Bailiff should be without one. May be had Gratis on sending two postage stamps to Messrs. Cogan and Co., 48, Leicester-square, London.

GLASS FOR CONSERVATORIES, HORTICULTURAL PURPOSES, &c.



TILLINGTON'S SHEET GLASS, which is of the best description, varying from 16 to 32 ounces, at from 2*d.* per foot and upwards; 100 feet and 200 feet cases of large Sheet Glass, for cutting up, at 2½*d.* per foot. British Plate Glass, from 1*s.* 2*d.* to 2*s.* per foot, according to size. Patent Rough Plate Glass, from ⅛ to 1 inch in thickness, from 4*d.* per foot upwards. Glass Slates and Tiles. Milk Pans from 12 to 24 inches diameter, from 2*s.* to 5*s.* each. Cucumber Tubes, from 12 to 24 inches long, at 1*d.* per inch. Lactometers, 7*s.* 6*d.* each. Wasp Traps.—Lists may be had, on application at the Warehouse, 87, Bishopsgate-street Without, same side as the Eastern Counties Railway.

GLASS PIPES.

MESSRS. COATHUPES and Co., Glass Manufacturers, of Bristol, and of Nailsea, Somerset, beg to inform Engineers and others, that they are prepared to supply GLASS PIPES of from 1 to 4-inch bore, in lengths of from 3 to 7 feet; the lengths being less as the diameters of the bores increase.

STEPHENSON and Co., 61, Gracechurch-street, London, and 17, New Park-street, Southwark, Inventors and Manufacturers of the Improved CONICAL and DOUBLE CYLINDRICAL BOILERS, respectfully solicit the attention of scientific Horticulturists to their much improved method of applying the Tank System to Pineries, Propagating Houses, &c., by which atmospheric heat as well as bottom-heat is secured to any required degree, without the aid of pipes or flues. S. and Co. have also to state that at the request of numerous friends they are now making their Boilers of Iron, as well as Copper, by which the cost is reduced. These Boilers, which are now so well known, scarcely require description, but to those who have not seen them in operation, prospectuses will be forwarded, as well as reference of the highest authority; or they may be seen at most of the Nobility's seats and principal Nurseries throughout the kingdom.

S. and Co. beg to inform the Trade that at their Manufactory, 17, New Park-street, every article required for the construction of Horticultural Buildings, as well as for heating them, may be obtained upon the most advantageous terms.

Conservatories, &c., of Iron or Wood, erected upon the most ornamental designs. Balconies, Palisading, Field and Garden Fences, Wire-work, &c.

DR. NEWINGTON'S HAND-DRILL HOES, with their various fittings; Hand-Dibbles, with from 6 to 9 depositors each, Wheel-Dibbles, Drop-drills, and Hand-sowing Implements for dropping seed at defined intervals in the seams of the plough, or in pressed land, or in drills. A Prospectus and Lecture on Seeding sent gratis on application to Messrs. Dufaur and Co., Agricultural Depôt, 21, Red Lion-square, Holborn, London. The above Dibbles received the prize given by the Royal Agricultural Society at Norwich.

EMIGRATION to the AUSTRALIAN COLONIES.—For ADELAIDE, PORT PHILLIP, and SYDNEY, the fine, 1st-class, teak-built ship ORIENTAL, Capt. J. P. TAYLOR, 1000 tons, coppered and copper-fastened; will sail from the St. Katharine's Docks on or about the 15th of March, calling at Plymouth. This very superior ship is fitted up expressly for the comfort of passengers, and from her great height 'tween decks, which are admirably lighted and ventilated, offers accommodation rarely to be met with. All the cabins are enclosed and of an extra size, for families and married couples. The passage money, 20 guineas each adult, including bedding, mess utensils, and provisions, which will be ample in quantity (see dietary scale), and excellent in quality, for which a guarantee will be given, and in addition, passengers are invited to be present at their inspection. There will be a library on board. There is a most magnificent poop and saloon of very large size, with elegant accommodation for cabin passengers. A skilful surgeon will proceed in the ship. For freight, passage, and all particulars, apply to John Whittakers, 78, Mark-lane; or to W. H. Brufton, 89, Great Tower-street, London.

Sales by Auction.

TO NOBLEMEN, GENTLEMEN, NURSERYMEN, & Others.

MESSRS. PROTHEROE AND MORRIS are favoured with instructions from Mr. John Smith, to submit to public competition by Auction, on the premises, Dalston Nursery, Middlesex, on MONDAY, March 11, and following day, at 11 o'clock (in consequence of the premises being required by the London and Birmingham West India Dock Junction Railway Company), the valuable NURSERY STOCK, consisting of a very superior assortment of large Evergreens, American Plants, Ornamental Trees, and Deciduous Shrubs, Fruit and Forest Trees in great variety, fine Ivies, Roses in pots, &c.—May be viewed prior to the sale. Catalogues may be had, 6*d.* each (returnable to purchasers), on the premises; the Shop, Covent-garden; of the principal Seedsmen in London; and of the Auctioneers, American Nursery, Leytonstone, Essex.

BRENTFORD.

To NOBLEMEN, GENTLEMEN, NURSERYMEN, FLORISTS, AND OTHERS.

MESSRS. PROTHEROE AND MORRIS are instructed to submit to public competition by Auction, on the premises, Brentford Nursery, Brentford, Middlesex, on MONDAY, the 18th March, and following days, by order of the Executors of the late Mr. John Ronalds, the first portion of the valuable NURSERY STOCK, consisting of Evergreens and Fruit Trees, also the choice Greenhouse Plants, together with two Greenhouses, several two and three-light Boxes, Hand-lights, Hot-water Pipe, Boilers, Seed-shop Fixtures, Horses and Carts, capital Chaise, a quantity of Bricks, Garden-pots, &c. *** Further particulars will be given in next week's Paper.—American Nursery, Leytonstone, Essex.

TO GENTLEMEN, FLORISTS, AND OTHERS.

MESSRS. PROTHEROE AND MORRIS will submit to public competition by Auction, at the Auction Mart, Bartholomew-lane, on WEDNESDAY, March 13th, and following day, at 12 o'clock, a first-rate collection of CARNATIONS and PICOTEES; also choice Camellias well set with bloom-buds, Standard and Dwarf Roses, Dahlias, Gooseberries, &c.—May be viewed the morning of sale. Catalogues had at the Mart, and of the Auctioneers, American Nursery, Leytonstone, Essex.

CHOICE CAMELLIAS.

FOR SALE BY AUCTION, AT MESSRS. LODDIGES' NURSERY, HACKNEY.

MR. J. C. STEVENS is directed by Messrs. Loddiges to sell by Auction, on their Premises at Hackney, on TUESDAY, the 19th, and WEDNESDAY, the 20th of March, at 12 for 1 o'clock, a selection of about 1000 CAMELLIAS, from 3 to 12 feet high, beautifully formed plants, well furnished with bloom-buds, and comprising many Double White, Candidissima, Donckelarii, Aulica, and other choice sorts; also a few fine specimens of Araucaria excelsa, 4 to 5 feet, Rhododendrons robustum and campanulatum, 3 to 5 feet. Handsome Plants of Andromeda floribunda in flower, and some Limes in fruit.—May be viewed the day before the Sale, and Catalogues had on the Premises, and of Mr. J. C. Stevens, 38, King-street, Covent-garden.

HARDY CONIFERS, WELL DESERVING THE ATTENTION OF THE GROWERS OF THIS INTERESTING TRIBE.

MR. J. C. STEVENS will sell by Auction, at his Great Room, 38, King-street, Covent-garden, on FRIDAY, 22d March, at 12 for 1 o'clock, the following HARDY CONIFERÆ, &c.: 2000 Cedrus Deodara, from 6 inches to 2 feet; 200 Araucaria imbricata, from 12 to 18 inches; 50 Abies Khutrow, 1 foot to 1½ foot; 200 Pinus Gerardiana, 4 years old; 100 Pinus excelsa, 12 to 18 inches; 40 Cupressus torulosa, 12 to 18 inches; 12 Picea cephalonica, 1 foot; 25 Picea Webbiana, 3 years old; 6 of the rare Araucaria Bidwellii, 8 inches; 25 Quercus Fordii, 1½ to 2 feet; and 100 Corræa speciosa major, 1 to 2 feet, well set with bloom.—May be viewed the day prior and morning of sale, and Catalogues had.

AMERICAN PLANTS, STANDARD ROSES, ORNAMENTAL TREES, EVERGREENS, &c.

MR. D. A. RAMSAY has been favoured with instructions, from an eminent Firm, to sell by Auction, on the premises, Brompton Nursery, Fulham-road, Brompton, on MONDAY, March 11th, and following day, at 12 o'clock each day, without reserve, a further consignment of choice AMERICAN PLANTS, comprising 700 Rhododendrons, 2 to 4 feet, 200 Scarlet Rhododendrons, a quantity of Azaleas, Andromedas, Hardy Heaths, Sedum, &c.; a quantity of strong Grape Vines, Figs, Standard and Dwarf-trained Fruit Trees, a choice assortment of Clematis, Jasmine, and other Creepers, 500 Standard, Dwarf, and Climbing Roses, 5000 large Evergreens in variety, 3000 Limes, Acacia, Willow, Poplar, and other ornamental Trees, with a quantity of Deciduous Shrubs, and other Nursery Stock.—May be viewed three days prior to the Sale, and Catalogues had, 6*d.* each, returnable to purchasers, at the usual Seed Shops, and of the Auctioneer, Brompton Nursery, Fulham-road, Brompton.

TO BE LET, for a term of years, on a CORN RENT, a FARM, in one of the Midland Counties, within two miles of a Market Town and Railway Station. It consists of about 200 acres, 18 of which are in Water Meadow, 28 in Pasture, and the remainder are excellent Turnip and Barley soil. The whole is of a first-rate quality. The Farm Buildings have been lately erected, are on a most complete and comprehensive plan, and are in excellent repair; and the Farm-house possesses every convenience and accommodation required by a respectable family. This Farm is in an excellent state of cultivation. All the interior hedge-rows and timber have been grubbed up; and the arable land is formed into four fields, divided by excellent roads. The Farm is, and has been for some time, under the 4-field system of cultivation. To a gentlemen possessing the requisite capital and ability, who can carry out a good system of agriculture, this Farm is well adapted. Entry at Lady-day. Apply to Mr. John Morton, Whitfield, Berkeley, Gloucestershire.

TO BE DISPOSED OF, a NURSERY, within two miles of London, with every convenience for carrying on an extensive business; it contains 10 large Greenhouses, and about 200 lights of Pits and Frames, all in excellent repair; together with many thousands of various plants in good order, and fit for immediate sale. Also two substantial Dwelling-houses let to respectable tenants, which nearly pay the rent. —For further particulars, application to be made personally to A. B., 14, Sommerford-grove, Stoke Newington-road, near London.

TO MANUFACTURERS OF MANURES AND PURVEYORS OF AGRICULTURAL STUFFS.

TO BE SOLD OR LET, SOME SPACIOUS MILLS, with Water and Steam Power, formerly occupied for the manufacture of cloth, with good Dwelling Houses, situate at Chalford, in the centre of the important and improving hill and vale agricultural district of Gloucestershire. This property is close to the Thames and Severn Canal, and to a station on the Great Western Railway; and this extensive field for such operations is unoccupied.—Apply to Messrs. Lawrence, Cirencester.

TO NURSERYMEN AND OTHERS.—LOUTH.

TO BE LET, from year to year, or for a Term of Years, from Old Lady-day next, all that old-established and well-accustomed NURSERY situate near the River Head in Louth, Lincolnshire, containing about six acres, together with a comfortable Dwelling-house standing thereon, and also a Garden House and various Brick and Glass Frames, now or late in the the occupation of Mr. Thomas Cocking. The land is in a good state of cultivation, has various fine Beech and Privet hedges thereon, and is well adapted for the raising of Plants, Shrubs, and Trees, and presents a rare opportunity for persons in the above Business taking an advantageous situation, there being no other Nursery of any magnitude within many miles of the town of Louth. The incoming tenant would most probably have the option of purchasing at a low valuation a quantity of Seedling and other plants and Trees, which may be on the premises undisposed of on the 6th of April next. —For further particulars apply to Goe and Wilson, Solicitors, Louth.

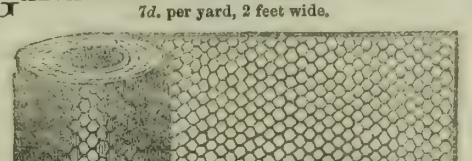
WANTED, a FARM of from 140 to 160 acres, not more than 15 or 16 miles from London, within an easy distance of a Station on the Croydon or North Kent Line of Railway. Light soil preferred. The dwelling-house to be a good one, with two sitting-rooms and six bed-rooms.—Apply, with full particulars, by letter, post paid, to A. B., 30, Leadenhall-street, London.

STALLIONS FOR SALE.—Two five-year-old Suffolk Stallions, the property of T. Beale Browne, Esq., Hampen, Andoversford, Gloucestershire. One is 17 hands high, the other over 16. They are sure foal getters, and were much admired and highly commended by the Judges at the Royal Agricultural Society's Show at York.

Also two very fine five-year-old Suffolk Geldings.

FOR SALE, THE GARDENERS' CHRONICLE, from 1843 to 1848 inclusive, handsomely half-bound, in six volumes, and perfectly new. Price 4*l.*—Apply to Smith, Elder, and Co., 65, Cornhill, London, where one of the volumes may be seen.

GALVANISED WIRE GAME NETTING.—7*d.* per yard, 2 feet wide.

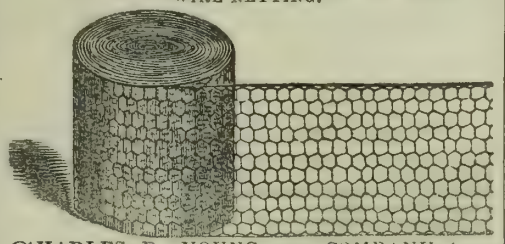


	Galvanised.	Japanned Iron.
2-inch mesh, light, 24-inch wide ...	7*d.* per yd.	5*d.* per yd.
2-inch .. strong ,, ...	9 ,,	6½ ,,
2-inch ,, extra strong ,, ...	12 ,,	9 ,,
1⅝-inch ,, light ,, ...	8 ,,	6 ,,
1⅝-inch ,, strong ,, ...	10 ,,	8 ,,
1⅝-inch ,, extra strong ,, ...	14 ,,	11 ,,

All the above can be made any width at proportionate prices. If the upper half is a coarse mesh, it will reduce the price one-fourth. Galvanised sparrow-proof netting for pheasantries, 3*d.* per square foot. Patterns forwarded post-free.

Manufactured by BARNARD and BISHOP, Market-place, Norwich, and delivered free of expense in London, Peterborough, Hull, or Newcastle.

STRONG PREMIUM HARE AND RABBIT PROOF WIRE NETTING.



CHARLES D. YOUNG AND COMPANY (late W. and C. YOUNG),

MANUFACTURERS OF IRON AND WIRE WORK, &c., 22, Parliament-street, Westminster, London; Castle-Buildings, Derby-square, Liverpool; 128, High-street, Edinburgh; and 32, St. Enoch-square, Glasgow, beg respectfully to call the attention of Landed Proprietors and others to their strong Wire-Net Fence, for excluding Hares and Rabbits from Gardens, young Plantations, Nurseries, &c.

This Net was exhibited at the Show of the Highland and Agricultural Society of Scotland, held lately at Inverness, where its Efficiency, Great Strength, and Exceeding Cheapness attracted general attention, and had awarded from the Judges the Society's Silver Medals, with high commendations.

The immense damage done by Hares and Rabbits in Gardens and Young Plantations is often so great, that in the course of a year or two it will amount to more than the entire cost of protecting them with this Net. It is so durable, that when Plantations are sufficiently advanced to be independent of its protection, it can be removed to other exposed situations with the greatest facility, by any labourer. As a Fence against Hares and Rabbits, it is of itself quite sufficient, having only to be unrolled and attached, with small wire sent for that purpose, to wooden stakes driven into the ground, about every six or seven feet apart. It is, besides, peculiarly adapted for rendering Hedges, Paling, or other existing Fences, *completely impervious* to such vermin; and by being cut up into small pieces of three or more feet, as required, it forms a most efficient guard, at little expense, for individual Plants and Shrubs.

Prices.—18 ins. high, 9*d.*; 24 ins., 1*s.*; 30 ins., 1*s.* 3*d.*; and 36 ins., 1*s.* 6*d.* per lineal yard.

Or a web of 100 yards, 18 ins. wide, will cost	..	£3	15 0
Do. of 100 yards, 24 ins. wide	.. ..	5	0 0
Do. of 100 yards, 30 ins. wide	.. ..	6	5 0
Do. of 100 yards, 36 ins. wide	.. ..	7	10 0

If more or less than a web is required, it would be charged at the same rate per yard.

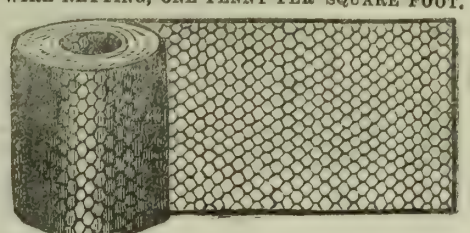
This Netting is also admirably adapted for Pheasantries and Poultry-yards, and is charged at the same rate. As carriage has, in many instances, been an obstacle to parties at a distance requiring this Net, C. D. Y. and Co. have made arrangements by which they will undertake to deliver it at any of the principal ports of Scotland, England, and Ireland, for One Halfpenny per lineal yard.

C. D. Young and Co. cannot give a better idea of the great strength of their Premium Wire Netting than by stating that the weight of one yard of their 24-inch at 1*s.* is equal to 2½ yards of another article in the market, the same width, at 9*d.* per yard. Samples for inspection sent free of expense.

C. D. Young & Co. manufacture every description of IRON and WIRE WORK required for this and foreign countries.

Workmen sent to all parts of Scotland, England, and Ireland

WIRE NETTING, ONE PENNY PER SQUARE FOOT.



GALVANISED WIRE NETTING, TWO-PENCE PER SQUARE FOOT.—This article requires no painting, the atmosphere not having the slightest action on it. It was exhibited at the late Metropolitan Cattle Show, and was highly eulogised both for its utility and pretty appearance, and acknowledged to be the cheapest and best article ever produced. It forms a light and durable fence against the depredations of hares, rabbits, and cats, and is peculiarly adapted for Aviaries, Pheasantries, and to secure poultry; and by the galvanised requiring no paint, it answers admirably for training all kinds of creeping plants. Large quantities always kept in stock, of 18, 24, 36, and 48 inches wide; it can, however, be made to any dimensions desired. Patterns forwarded free of expense.

12	inches wide	3*d.*	per yard	30	inches wide	7½*d.*	per yard
18	,, ,,	4½*d.*	,,	36	,, ,,	9*d.*	,,
14	,, ,,	6*d.*	,,	48	,, ,,	1*s.*	,,

Galvanised do., 1*d.* per foot extra.

Extra strong Imperial Wire Sheep Netting, 3 feet, 1*s.* 6*d.* per running yard; if galvanised, 2*s.* Also every description of Wire Nursery and Fireguards, Wire House Lanterns and Shades, Fly-proof Dish Covers, Meat Safes, &c.; Window Blinds, 1*s.* 10*d.* per square foot, with bolts complete, in mahogany frames; Gothic Garden Bordering, 6*d.* per running foot; Flower Trainers, from 3*d.* each; Garden Arches, 20*s.* each; Flower Stands, from 3*s.* 9*d.* each; Galvanised Tying Wire for plants and trees, Dahlia Rods, and every description of Wire-work; Weaving, for the use of paper-makers, millers, &c.—At the Manufactory of Thomas Henry Fox, 44, Skinner-street, Snow-hill, London.

MESSRS. NESBIT'S CHEMICAL AND AGRICULTURAL SCHOOL, 38, Kennington-lane, London.—A sound practical knowledge of Analytical and Agricultural Chemistry, Geology, Surveying, Levelling, Railway Engineering, &c., may be obtained in Messrs. Nesbit's Academy, in addition to a good modern education.

Mr. Nesbit's works on Arithmetic, Mensuration, Gauging, Land Surveying, English Parsing, &c., are published by Longman and Co., and may be had of all Booksellers.

The terms of the School can be had on application either personally or by letter.

WINDMILLS, for Raising Water and other agricultural purposes, for sale, at a very moderate expense. May be seen in working order by applying to Mr. W. Nash, Ball's-pond, Islington, opposite the Church.

N.B.—Estimates given for Fixing in any part of the country. The above are also manufactured for the Colonies.

STOUT AND PORTER.—JENNER, WICKING, and JENNER are now delivering, for cash, to private families, their celebrated PORTER at 1*s.*, and imperial Stout at 16*d.* per gallon. May be had in casks of 4½, 9, 18, and 36 gallons. N. B. Their Ales are now in very fine condition.

South London Brewery, Southwark-bridge-road.

ALLSOPP'S BURTON AND EAST INDIA PALE ALES.—Messrs. S. Allsopp and Sons beg to call the attention of the public to their East India, Pale, and other Burton Ales, which may be obtained in casks of 18 gallons and upwards, either singly or in any quantity, by application to the Brewery, Burton-on-Trent, or on the same terms at their respective Stores, as follows:—61, King William-street, London; Cook-street, Liverpool; under the Exchange, Ducie-place, Manchester; and at the Market-place, High-street, Birmingham.

NEWS, NEWS, NEWS.—The best, cheapest, and largest Newspaper in the World.—LLOYD'S WEEKLY LONDON NEWSPAPER contains 60 large columns of the latest intelligence from all parts of the Globe, price only Threepence, postage free. Send Three Postage Stamps to E. Lloyd, 12, Salisbury-square, London, and receive one copy as a sample.

BEAUTIFUL TEETH.

ROWLAND'S ODONTO, OR PEARL DENTIFRICE. A white Powder, compounded of the choicest and most *recherché* Ingredients of the Oriental Herbal, of inestimable value in preserving and beautifying the Teeth, strengthening the Gums, and in giving sweetness and perfume to the Breath. It extirpates all tartarous adhesions to the Teeth, and ensures a pearl-like whiteness to the enamelled surface. Its Anti-Septic and Anti-Scorbutic properties exercise a highly beneficial and salutary influence; they arrest the further progress of decay of the Teeth, induce a healthy action of the Gums, and cause them to assume the brightness and colour indicative of perfect soundness; while, by confirming their adhesion to the Teeth, they give unlimited enjoyment and fresh zest to appetite, by perpetuating effective and complete mastication. The Proprietors of this Dentifrice pledge themselves that its efficacy in preserving and embellishing the Teeth far surpasses anything of the kind ever yet offered to the public, and has, in consequence, obtained its selection by Her Majesty the Queen, the Court and Royal Family of Great Britain, and the Sovereigns and Nobility of Europe.—Price 2*s.* 9*d.* per box.

CAUTION.—To protect the public from fraud, the Hon. Commissioners have directed the Proprietors' Name and Address, thus—"A. ROWLAND and SON, 20, Hatton Garden," to be engraved on the Government Stamp, which is affixed on each box. Sold by the Proprietors and by Chemists and Perfumers.

A WONDERFUL WORK-BOX.—According to an Enigma, to be published in No. 18 of *The Family Friend*, for March the 15th, an ordinary Work-box is capable of containing a Lion, an Elephant, a Tiger, a Stag, a Dragon, a Peacock, a Goat, and numerous other animals, all alive, and to each one may be allowed a cage. In addition to this menagerie, there may be exhibited, within the work-box, a Magic Lantern, by which may be shown a Living Ghost—

"And as uncommon things the most make common people stare,
(And giants are uncommon) great Goliah shall be there!"

A Gold Watch, value Ten Guineas, is offered to the person who produces the best Solution: there are two other Prizes for the Second and Third-best Solutions. The readers of the *Gardeners' Chronicle* may obtain the Number which contains this interesting Enigma, and the Conditions of the Award, by order of any bookseller, price Twopence. The competition will remain open until the 10th of April. The Editor guarantees that the Enigma is capable of a fair Solution. *The Family Friend* is published upon the 1st and 15th of each month, and enjoys a circulation of 60,000. New subscribers are advised to order Vol. I. price 2*s.* 6*d.*; and Nos. 13 to 18, price 2*d.* each, they will thus have the Work complete up to the present date.

London: Houlston and Stoneman, 65, Paternoster-row.

"FAMILIAR IN THEIR MOUTHS AS HOUSEHOLD WORDS."
Shakespeare.

On Saturday, March 30, will be Published, Price 2*d.*, or stamped for post 3*d.* (also in Monthly Parts), No. I. of

HOUSEHOLD WORDS.

A WEEKLY JOURNAL, designed for the Instruction and Entertainment of all Classes of Readers. CONDUCTED BY CHARLES DICKENS.

London: Office, No. 16, Wellington-street, North (where all Communications to the Editor must be addressed); and Sold by all Booksellers and Newsmen.

LETTICE ARNOLD.—A New Tale by the Authoress of "Two Old Men's Tales," "Emilia Wyndham," &c. &c.

Mrs. LOUDON'S LADIES' COMPANION, No. 11, published this day, contains a new story called "LETTICE ARNOLD," by the above popular writer. Also the continuation of "SELF LOVE AND TRUE LOVE," by Mrs. JAMES WHITTLE; "MADAME RECAMIER," by Mrs. PERCY SINNET, &c. &c., with a fine Engraving, after Guido, and various illustrations of the Garden, Fashions, &c. Published Weekly, price 3*d.*, stamped 4*d.*, or in Monthly Parts, 1*s.* 2*d.* each. Parts I. and II. are now ready.

London: BRADBURY and EVANS, 11, Bouverie-street, and sold by all Booksellers and Newsvendors.

Now ready, price 12*s.* 6*d.*, Vol. I. of

HOOKER'S JOURNAL OF BOTANY; being the Volume for 1849. Edited by Sir W. JACKSON HOOKER, F.R.S., Director of the Royal Gardens, Kew. Among the Contributions are Papers by the Editor, Professor Henslow, F.R.S., Drs. Braün, Bromfield, F.L.S, Gardner, F.L.S., J. D. Hooker, F.R.S., Asa Gray, Thomson, and Wallich, F.R.S.; the Rev. M. J. Berkeley, F.L.S., and B. Clarke, J. Miers, F.R.S., B. Seeman, and J. E. Stocks, Esqs.

London: REEVE, BENHAM, & REEVE, King William-st., Strand.

Now ready, No. 2, price 5*s.*, of

A CENTURY OF ORCHIDACEOUS PLANTS, selected from Curtis's "Botanical Magazine." The Descriptions entirely re-written by Sir W. J. HOOKER, F.R.S. With Instructions for Culture, by J. C. LYONS, Esq. Royal 4to. Five Coloured Plates, 5*s.*

*** To be completed in 20 Numbers, containing 100 Plates.

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No. 11—1850.] SATURDAY, MARCH 16. [PRICE 6*d.*

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ROYAL BOTANIC SOCIETY, Regent's Park.—The following are the days appointed for the Exhibitions at the Gardens this season:—

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FUCHSIA, from named show flowers.

GERANIUM, from all the best and choicest varieties.

PANSY, saved by the best growers from the choicest varieties.

PICOTÉE AND CARNATION, from the best show flowers.

PINK, saved by a celebrated florist from choice named show flowers. The above Six varieties, including postage, for 5*s.*, or 1*s.* each packet.

Calandrinia umbellata, Centranthus macrosyphon, Gramanthes gentianoides, Heliaphila trifida, Ipomœa formosa, a new dark variety; Nemophila maculata, Phlox Drummondii Leopoldii, Tropæolum speciosum.

The last named Eight sorts, including postage, for 7*s.*, or 1*s.* each paper.

To be had of WILLIAM DENYER, Seedsman and Florist, 82, Gracechurch-street, London.

N.B.—A Descriptive and Priced Catalogue may be had on application.

FLEMING'S TRENTHAM SCARLET GERANIUM.

J. AND J. FAIRBAIRN having purchased the stock of the above unrivalled SCARLET GERANIUM, which for brilliancy of colour, profuseness of bloom, or adaptation for bedding, far surpasses any other variety yet introduced. This fact was amply borne out by the gorgeous effect produced by this over every other new kind in the magnificent flower garden at Trentham, last summer.

J. and J. F. have much pleasure in announcing that they are prepared to send out strong established plants on and after the 25th inst., at 3*s.* 6*d.* each, or four plants for 10*s.* 6*d.*

AGENTS FOR THE SALE OF THE PLANTS.

Austin and M'Aslin, Glasgow
Backhouse, Jas., & Son, York
Dickson and Co., Edinburgh
Dickson, Messrs. F. and J., Chester
Dixon, E. P., Hull
Garraway and Mayes, Bristol
Henderson, Mr. E. G., Wellington Nursery, St. John's Wood
Jeffries, James, Ipswich
Little and Ballantyne, Carlisle
Mackie, Mr. A., Norwich
Pontey, Alex., Plymouth
Ross and Wear, Shrewsbury
Rider, W. L., Leeds
Thynne, James, Glasgow
Veitch, Messrs., and Sons, Exeter
Watkinson, J. D., Manchester.

Nurseries, Clapham, near London, March 16.

CABBAGE PLANTS.—Genuine Early Battersea, Early York, Early Imperial, and Cattle Drumheads, at the Surrey Gardens, by THOMAS WELLAND, Wheeler-street, Godalming, Surrey. Packed and delivered at the Godalming Station, 3*s.* 6*d.* per thousand.

Money orders made payable at the Godalming Post-office.

MITRARIA COCCINEA (strong plants 1st April), at 7*s.* 6*d.* each.

BENJAMIN R. CANT, St. John's-street Nursery, Colchester, begs to offer this new and beautiful Plant at the reduced price named.

The usual Discount to the Trade, with a further reduction when ordered by the dozen.

TRUE "DURMAST" ENGLISH OAK.—A large quantity of this valuable species of Oak, "Quercus Sessiliflora," 3 to 5 and 6 feet high, 40*s.* to 80*s.* per 1000, adapted for planting out at once, may be obtained of W. ROGERS, Nurseryman and Contracting Planter, Red Lodge, near Southampton; this being now the best season for transplanting them.

MAHONIA (Berberry) aquifolia (for cover) Seedlings, 15*s.* per 1000.

STONE PINE, Seedlings, 8*s.* per 100.
Ditto, transplanted, 6 inches, 16*s.* per 100.

ABIES DOUGLASII (from seed), from pots, 9 to 12 inches, 10*l.* per 100; 30*s.* per dozen.

PINEASTER SEEDLINGS, 3*s.* 6*d.* per 1000.
Red Lodge, near Southampton, March 16.

MESSRS. J. AND H. BROWN are now sending out the undermentioned choice Shrubs and Plants, carefully packed, to any part of the Kingdom or the Continent.

	s.	*d.*
25 Azaleas, new hardy Belgian varieties, on their own roots, with flower-buds, one of a sort, by name ..	20	0
25 American Azaleas, do. do. do. ..	15	0
6 Andromedas of sorts, including floribunda ..	8	0
6 Kalmias, and 6 Ledums, one of a sort, by name ..	10	0
25 Hardy American Shrubs, one of a sort, by name ..	10	6
12 Rhododendrons, including scarlet, white, and rose, hardy varieties	12	0
New Hardy Yellow Rhododendrons, each 7*s.* 6*d.* to	10	6
Hybrid Rhododendrons, extra fine, with 30 to 50 bloom buds, each .. .. 2*s.* 6*d.* to	3	6
6 Fine Hardy Magnolias, one of a sort, by name ..	10	6
Hardy Heaths and Vacciniums, ditto ditto, per doz. ..	8	0
Cryptomeria japonica and 6 Choice Hardy Pinus, for	10	0
Glycine sinensis, extra fine in pots, 15 to 30 feet each ..	3	6
Passifloras, Hardy and Greenhouse, each	1	6
50 Dwarf Roses, on their own roots, by name	16	0
12 Tea-scented Roses, one of a sort, by name, in pots ..	9	0
Standard and half-standard Roses, per dozen. 12*s.* and	15	0
Green and Black Tea plants, quite hardy, per dozen ..	15	0
Climbing Roses, of sorts, per doz.	6	0
Bourbon Roses, superior sorts, Rose La Reine and Perpetual Queen, for planting in beds, per dozen ..	10	6
12 Greenhouse Azaleas, one of a sort, blooming plants..	25	0
12 Choice Camellias, by name, ditto ditto ..	30	0
50 Choice Greenhouse Plants, one of a sort, by name ..	45	0
24 Choice Ericas, one of a sort, by name	15	0
First-rate Show Pinks, per dozen 6*s.* and	9	0
First-rate Carnations and Picotees, per dozen 9*s.* and	12	0
First-rate Pansies, per dozen .. .. 6*s.* and	9	0
Cinerarias and Calceolarias, show varieties, strong plants, per dozen .. .. .. 9*s.* to	12	0
Verbenas and Petunias, best new sorts, per dozen ..	5	0
The New Fancy Geraniums, by name .. 9*s.* to	12	0
New Scarlet Geraniums and Heliotropiums, per doz. ..	6	0
12 Pæonies, new white, pink, and blush, of sorts ..	8	0
25 Choice Hardy Herbaceous Plants, named	7	6
Hardy Ferns and other plants for rock-work, per doz.	8	0

Flower Seeds, 18 papers, 5*s.*; 36 ditto, 10*s.*; of the most approved varieties, sent free by post. Also Catalogues for 1850.
Albion Nursery, Stoke Newington, London, March 16.

J. C. WHEELER AND CO.'S SELECT LIST OF THE BEST SEEDS IN CULTIVATION, will be sent free by post on receipt of two postage stamps.

"THE CATALOGUE OF SEEDS SOLD BY J. C. WHEELER AND CO., GLOUCESTER, appears to us to deserve notice, because of the stand which its authors make in common with ourselves and others against the useless, incomprehensible Seed Lists of the day. In this, as in all matters of taste, there will be a difference of opinion as to the relative qualities of varieties; yet the mass of buyers who have no fancies, but who dislike being perplexed, and are satisfied with what is excellent, will greatly prefer a short select Seed List to an interminable labyrinth of names, which, for the most part, represent nonentities or rubbish. Messrs. WHEELER'S little book will do something to satisfy their expectations."—Dr. LINDLEY in the *Gardeners' Chronicle* of the 2d inst.

Kingsholm Nursery, Gloucester.

HART AND NICKLIN, Guildford, having a large and healthy Stock of the undermentioned Plants, offer them at the following low prices:

	£	*s.*	*d.*
GERANIUMS.			
20 First-rate Show Flowers	1	0	0
20 ,, (smaller plants)	0	10	0
12 ,, ,, ,, ...	0	7	6
PANSIES.			
20 New and first-rate Flowers	1	0	0
20 New and good Flowers	0	10	0
12 Good Border Flowers	0	4	0
FUCHSIAS.			
20 New and good varieties	0	10	0
12 ,, ,, ,, ...	0	6	0

VERBENAS.—The following at 6*s.* per doz.:—Louis Napoleon Buonaparte, John Salter, Royal Purple, Brilliant, Princess Alice, Lord of the Isles, Shylock, Viscount de Sourval, Mountain of Snow, Bride, Eyebright, Duchess of Northumberland, La Villageoise, Clotilda, Tommy, Cardinal, Emperor of China, Minerva, Lady of the Lake, and Heloise. Warranted young healthy plants.

Lilium lancifolium album, 9*s.* per doz.; Phlox of vars., 4*s.*; double white Rockets, 3*s.*; border Carnations, 3*s.*

H. and N. beg to observe that they have a good stock on hand of all the above, so that purchasers may rely upon being served with plants immediately. No charge for hamper, &c.; free to any station of the South-Western or South-Eastern Railways. The three last named collections may be sent by post, free. A remittance from unknown correspondents.

MEADOW AND PASTURE GRASS SEEDS.

GEORGE GIBBS AND Co. beg to notice their mixtures for laying Land down to Permanent Grass are now ready. The general satisfaction they have given for many years past, and the present low prices of 32*s.* per acre, allowing 2 bushels and 12 lbs. to each acre, they trust will ensure a continuance of orders. Mixed Seeds for improving old Grass Land, 1*s.* 3*d.* per lb.; fine sorts for forming Lawns, 1*s.* 4*d.* per lb. Their Priced List for the season of Turnips, Mangold Wurzel, and other Farm Seeds, will be forwarded on application to 26, Down-street, Piccadilly, London.

CHOICE GERANIUMS AND FANCY GERANIUMS.

HOLDER AND CARROD, NURSERY and SEEDSMEN, Bedford Road, Clapham Rise, beg to offer 12 of the following varieties (strong plants), for 21*s.*, cash. Armida, Superb, Anais, Ariel, Alonzo, Forget-me-Not, Jenny Lind, King Hudson, Lamartine, Lallah Rookh, Marian, Minna, Norah, Ondine, Phyllis, Queen Victoria, and Sylvia.

N.B. Post-office orders payable at Clapham Rise.

PRIMULA ALTAICA,

Figured in the August No. of "Paxton's Magazine of Botany."

C. TURNER has a few strong plants left of the above Hardy Winter Flowering Plant (which is now in bloom), at 3*s.* 6*d.* each.—Royal Nursery, Slough.

WHITE BELGIAN CARROT, 70*s.* per cwt., 9*d.* per lb.

YELLOW GLOBE and LONG RED MANGOLD WURZEL, 70*s.* per cwt., 9*d.* per lb.

CATTLE and HOLLOW-CROWNED PARSNIP, 60*s.* per cwt. 8*d.* per lb.

SKIRVING'S IMPROVED PURPLE-TOP SWEDE, 28*s.* per bushel, 9*d.* per lb.

GRASSES, for Permanent Pasture, 20*s.* per acre.

Fine selected LAWN GRASS, 1*s.* 2*d.* per lb., and all other Agricultural and Horticultural Seeds equally low.

The above Seeds have been grown from some of the finest stocks in the country, and may be depended on as new and genuine.—WM. JAS. EPPS, Seed Merchant, Maidstone, Kent.

PELARGONIUMS AND NEW PLANTS, MANY OF THEM FROM CALIFORNIA AND CHINA.

H. GROOM, Clapham Rise, near London, by Appointment FLORIST TO HER MAJESTY THE QUEEN, and to HIS MAJESTY THE KING OF SAXONY, begs to say that his CATALOGUE OF PELARGONIUMS AND NEW PLANTS is ready, and will be forwarded by post on application.

BASS AND BROWN'S SEED AND PLANT LIST OR GENERAL DESCRIPTIVE PRICED SPRING CATALOGUE.—As copies of the above having the newspaper stamp are now all distributed, others will be supplied prepaid on application, by inclosing four postage stamps.

Seed and Horticultural Establishment, Sudbury, Suffolk.

GRAYSON'S GIANT ASPARAGUS.—Fine Plants, with printed directions for planting, can be had, at 5*s.* per 100, of FREDERICK WARNER, Seedsman, No. 28, Cornhill, London.

NEMOPHILA MACULATA, at 1*s.* per packet. For General List of New Annuals, &c., see "Harrison's Cabinet."

EXHIBITIONS AT THE GARDEN OF THE HORTICULTURAL SOCIETY OF LONDON, FOR THE YEAR 1850.

THE EXHIBITIONS WILL TAKE PLACE ON THE FOLLOWING SATURDAYS:—

MAY 18, JUNE 8, AND JULY 13.

SCHEDULE OF THE PRIZES.

FLOWERS.

Division I.—In which Nurserymen and Private Growers exhibit independently of each other.

A Pelargoniums; in collections of 6 new and first-rate varieties, with perfectly distinct colours, cultivated with superior skill, in 8-inch pots. SG—CE—LS

N.B. The collections in which the varieties are most distinct *will have the preference.*

B Pelargoniums; in collections of six varieties, in 11-inch pots. SG—CE—LS

N.B. Any plant that shall not have been actually grown in 11-inch pots will be disqualified.

C Roses, in pots; in collections of 12 distinct varieties. GB—SG—CE

N.B. To be shown in May and June only, and in 13-inch pots. The Judges will disqualify any collection that shall be found to contain a plant which has been recently placed in the pot from the open ground, or that is shown in a pot of any other size than 13 inches.

D Yellow Roses, best six varieties. SK—SB—C

N.B. To be shown in June only, and really to be yellow; pale cream colours are inadmissible.

E Cape Heaths; in collections of 10 entirely distinct varieties. GB—SG—CE

N.B. It is expected that the same plant shall not be exhibited on more than one occasion. The Judges, in making their award, will give, both in this and the next letter, a marked preference to plants grown in their natural forms, without stakes or stays; and will also take distinctness of species into favourable consideration. No duplicate will be allowable.

F Cape Heaths; in collections of 10 entirely distinct varieties in 11-inch pots. SG—CE—LS

G Carnations, in pans of 24 distinct varieties. SB—C. (*In July only.*)

H Picotees, in pans of 24 distinct varieties. SB—C. (*In July only.*)

I Pinks; in pans of 24 distinct varieties. SB—C. (*In June only.*)

N.B. Carnations, Picotees, and Pinks must be shown without cards, in boxes of four sizes, of the following dimensions:—From centre to centre, 3½ ins.; from centre to outside, 2½ do.; depth at back, 7 ins.; ditto front, 3½ ditto. The face to be painted light green. *No collections will be allowed to exhibit in which these conditions are not complied with.*

Division II.—In which Nurserymen alone can show.

K Exotic Orchids; in collections of 15 species of superior cultivation. GB—SG—CE.

Division III.—In which all persons are admitted to equal competition.

L Calceolarias, in sixes; in 11-inch pots. LS—SK—SB

N.B. To be shown in May and June only.

M Single specimens of very superior cultivation, excluding everything which can be shown singly in other letters, and plants not in flower. CE—LS—SK

N Stove or Greenhouse plants; in collections of 20 plants. LG—GK—GB

N.B. Calceolarias, Fuchsias, Orchids, Pelargoniums and duplicates are excluded from all the four classes of Stove or Greenhouse plants.

O Stove or Greenhouse plants; in collections of 15 plants. GK—GB—SG

P Stove or Greenhouse plants; in collections of 10 plants. GB—SG—CE

Q Stove or Greenhouse plants; in collections of 6 plants. SG—CE—LS

N.B. Exhibitors cannot show in more than one of the classes of Stove or Greenhouse plants.

R Greenhouse Azaleas; in 12 distinct varieties. GB—SG—CE

S Greenhouse Azaleas; in six distinct varieties. SG—CE—LS

N.B. No one can show in both classes of Azaleas.

T Greenhouse Rhododendrons; in six distinct varieties. (*In May only.*) SG—CE—LS

Collections of 6 New Hardy Evergreens grown in pots; Conifers excluded. LS—SK—SB

N.B. Nothing will be regarded as new which has been in the nurseries more than three years.

V Conifers, in sixes, of new or very rare species, in not less than the third year of their growth. LS—SK—SB

N.B. *U* and *V* can only be shown at the exhibition in July.

W Exotic Orchids; in collections of 20 species of superior cultivation. LG—GK—GB

X Exotic Orchids; in collections of 10 species of superior cultivation. GB—SG—CE

Y Exotic Orchids; in collections of six species. SG—CE—LS

N.B. Nurserymen cannot show in either of these three classes of Orchids. No exhibitor can show in more than one of them.

Z Exotic Orchids; single specimens displaying *very* superior cultivation. SK—SB—C

N.B. No duplicate Medals can be here awarded.

AA Fuchsias; in threes, of three distinct colours; *in July only.* LS—SK—SB

BB Pelargoniums; in six DISTINCT SPECIES, exhibiting superior cultivation. CE—LS—SK

N.B. By the word species is meant the wild kinds imported from the Cape of Good Hope, or New Holland, tuberous species inclusive, and not garden cross-breds.

CC Fancy Pelargoniums; in sixes, in 8-inch pots. SG—CE—LS

N.B. No duplicate Medals can be allowed here.

DD Achimenes; in collections of six distinct varieties, exhibiting superior cultivation. CE—LS—SK. (*In July only.*)

EE Six distinct varieties of Tall Cacti in flower. GB—SG—CE

FF Roses of 50 varieties in loose bunches, each consisting of three trusses as they are gathered, so as to exhibit, as far as possible, the habit of the variety. CE—LS—SK

N.B. In July only. No one who exhibits in this letter can also compete in the following.

GG Roses, exhibited as in the letter *FF*, and in 25 varieties. LS—SK—SB. (*Private growers only can exhibit here*).

N.B. In June and July only. If Roses are brought for exhibition without attention to the regulations here explained, they will not be allowed to compete.

HH Helichrysums. CE—LS—SK

I I Kalosanths; in sixes. (*In July only.*) LS—SK—SB

KK Statices; in collections of six species. CE—LS—SK

LL Ferns, in collections of 10 hothouse species of very superior cultivation. LS—SK—SB.

N.B. To be shown in July only.

MM New Hybrid Plants, exclusive of Roses, Rhododendrons, Azaleas, and Garden cross-breds, such as Gloxinias and the like. SG—CE—LS

N.B. It is certain that much may be effected by hybridising plants in common cultivation, such as Lilacs, Honeysuckles, &c. &c. This class will be judged by the Society's officers.

NN Epacrises; in sixes. (*In May only.*) CE—LS—SK

OO Newly introduced or extremely rare ornamental plants in flower; not introduced by the Society. SG—CE—LS

N.B. These Medals will be awarded by the Society's Officers, and not by the usual Judges. Exhibitors will particularly observe that none but new or rare plants can be exhibited under this letter. *Nothing will be regarded as new which has been exhibited in the Garden or Regent-street in a previous season*, nor garden seedlings, hybrids, nor domesticated varieties of any kind. No prizes will be given to New Plants which have been introduced through the Society.

PP Miscellaneous subjects, exclusive of Ferns. SK—SB—C

N.B. Exhibitors under *P P* will not be thereby *entitled* to a pass ticket. Cockscombs, Heartsease, Hydrangeas, and bouquets, together with all plants for which separate prizes are offered as single specimens, are altogether excluded.

QQ Seedling Hybrid Pelargoniums, of entirely new crosses. SB—C

N.B. Every seedling must be shown singly, and marked with the name it is to bear. The same seedling cannot gain a prize more than once in the season. The plants must be shown in pots, and not in a cut state.

RR Alpines; in twelves. SK—SB—C

SS Cinerarias; in sixes, in 6-inch pots. (*In May only.*) SK—SB—C

N.B. Prizes will only be given to extremely fine specimens.

TT Hardy Heaths; in sixes. SB—C.

UU Seedling Florists' Flowers.

A tent will be provided for the exhibition of these; but no medals will be awarded; the Society not wishing to express any opinion upon the merits of seedlings.

FRUIT.

Market Gardeners, or Growers (not Fruiterers), in the habit of supplying the Market, and Private Gardeners, exhibit independently of each other. Fruiterers are not allowed to exhibit at all. No duplicate awards can be made in any case whatever, except in P. No person can take more than one award in each letter except in B, E, K, M, O, P.

N.B. All Fruit must be sufficiently ripe for Market, WELL COLOURED, and PROPERLY NAMED by the Exhibitor, as far as practicable; if the contrary, it will be disqualified.

A Peaches or Nectarines in pots. SK—SB—C

B Pine Apples, in single specimens:—

1. Queens. LS—SK—SB.
2. Enville, Cayennes, Sugarloafs, Black Jamaicas, Otaheites, &c. LS—SK—SB
3. Providences. LS—SK—SB

C Grapes in pots; three specimens to be shown. CE—LS—SK

D Grapes, the heaviest single bunch of any kind. SK

E Grapes; in three bunches for private growers, and six bunches for Market Gardeners:

1. Black Hamburgh, Black Prince, &c. LS—SK—SB
2. White Muscadines, Sweetwaters, &c. LS—SK—SB
3. Muscats. LS—SK—SB
4. Other sorts, distinct from the foregoing. LS—SK—SB

F Peaches, in sixes. SK—SB—C

G Nectarines, in sixes. SK—SB—C

H Apples and Pears of the previous year. SB—C

I Figs, in sixes. SB—C

K Cherries, in dishes of 1lb. each:

1. Black. SB—C
2. White. SB—C

L Strawberries, in pots; six pots to be shown. SK—SB—C

N.B. They must have grown in the pots in which they are shown.

M Strawberries, one dish each:

1. British Queen, &c. SB—C
2. Keens' Seedling, &c. SB—C

N Oranges, Citrons, &c., in pots; no one to show more than one pot. LS—SK—SB

NB. This class of Fruits is excluded if gathered.

O Melons, one specimen each:

1. The heaviest. SK
2. The best flavoured. SK—SB—C

P Other kinds of fruit of peculiar excellence and value.

N.B. The medals under this head will be given at the discretion of the Society's officers.

ADMISSION OF VISITORS.

The Garden will be opened, on each day, to Fellows and to Visitors, at ONE o'Clock, under the following Regulations:—All Fellows of the Society will be admitted without tickets, from One till Six o'Clock, on signing their names in a book at the entrance. Visitors can be admitted only by tickets, to be obtained by the personal or written orders of Fellows of the Society. Upon this subject the Council would observe, that the interests of the Society require Orders for Tickets to be filled up with the NAME and ADDRESS of the parties to whom they are given. The Council also express a hope that the Fellows of the Society will not give orders for tickets to persons with whom they are unacquainted. N. B. *The presentation of the visiting card of a Fellow of the Society cannot be regarded as an authority to receive tickets.* All Fellows who shall apply, on or before Tuesday, the 23d of April, may obtain, at the rate of Three Shillings and Sixpence each, any number of Tickets not exceeding TWENTY-FOUR; but no application for such tickets will be received after that day. *Fellows of the Society subscribing for tickets at this price will be allowed a clear week from the 23d of April, during which they may claim them.* AFTER THAT PERIOD ALL THE 3*s.* 6*d.* TICKETS SUBSCRIBED FOR, BUT NOT ISSUED, MAY BE CANCELLED. After the 23d of April any further number of tickets will be delivered to Fellows on their personal application or written order, at the price of *Five Shillings* each ticket. Each ticket will be available for the admission of one Visitor, after One o'clock, to either of the Three Exhibitions, at the option of the Visitor. All applications for tickets must be made at the Society's Office, 21, Regent-street. NO TICKETS WILL BE ISSUED IN REGENT-STREET ON THE DAYS OF EXHIBITION; but, on those days two Offices, near the Garden Gates, will be opened at noon for the issue of tickets at 7*s.* 6*d.* each; but strictly under the regulations above stated.

CEDRUS DEODARA OR HIMALAYA CEDAR. — The Subscribers beg to inform the admirers and planters of the above hardy Tree, that they have upwards of FIFTY THOUSAND, from one to five years old, in pots, grown from seed, constantly in the open ground, which they are now supplying on such terms as will induce their general introduction into all plantations, being of rapid growth, highly ornamental, and of great value as a Timber tree.

WM. MAULE and SONS, Stapleton-road Nurseries, Bristol.

NEW AND STRIKING VERBENA.

ARTHUR MACKIE begs to offer the undermentioned to the attention of Florists, with the fullest conviction that it will give entire satisfaction.

WOODSTOCK'S MAGNIFICENT.—A. M. having purchased the entire Stock of this unrivalled Verbena, offers it to the Public with the utmost confidence, being fully persuaded that it will surpass everything yet out in its class. The individual flowers cover a sixpence, and sometimes a shilling. It is of a very free habit and growth, and well suited for grouping. See *Gardeners' Chronicle*, Sept. 15, 1849.—"*W. K. B.* Colour bright rose, fading to pink; a remarkably fine variety, with much the largest flowers we have yet seen."

Fine strong plants the 1st of April, at 5*s.* each, free by post. Where three are ordered four will be sent.

MACKIE'S Descriptive Catalogue of Flower and Vegetable Seeds is now ready, and will be forwarded on receipt of two stamps for postage.—Norwich Nursery, Norwich, March 16.

DWARF PEAS.

HAIRS'S Dwarf Green MAMMOTH KNIGHT'S MARROW PEA is perfectly distinct from any other in existence; grows 2 feet, is 3 weeks earlier than the old dwarf Green Knight's, and the Peas and pods are twice the size. 5*s.* per quart.

BISHOP'S LONGPOD.—Grows 2 feet high, early as Early Frames, pods as large as Scymetars, and 20 to 24 per stem. 2*s.* per quart.

BURBIGE'S ECLIPSE.—Grows 1 foot high, pods larger than Imperial, greater bearer, and altogether superior to that variety. 1*s.* per quart.

The above are three of the best Dwarf Peas ever introduced. Full particulars can be had of DUNCAN HAIRS, Seedsman, &c., Wholesale and Retail, 109, St. Martin's-lane, Charing-cross, London.

Catalogues can be furnished on application, and every article connected with the trade supplied on terms to defy competition. Garden Tools, Nets, Mats, Mushroom Spawn, and Potatoes saved from selected stocks at moderate prices.

SEEDS IN COLLECTIONS.
OF THE BEST WHICH CAN BE PROCURED.

BASS AND BROWN beg to offer the following CHOICE VEGETABLE SEEDS.

Complete Collections of the best and newest sorts, in proportionate quantities of each, suited for large or small gardens, at per collection, 1*l.*, 2*l.*, and 3*l.* A Collection for a small garden, of good sorts, at 10*s.* 6*d.* A List of the Collections furnished if required.

SELECT AND CHOICE FLOWER SEEDS,

Free by post, with full directions for sowing, heights, colours, &c.

	s.	*d.*
100 varieties best and newest Annuals	15	0
50 varieties for 8*s.* 6*d.*, 30 for 5*s.* 6*d.*, 20 for	4	0
20 varieties best dwarf kinds, in larger packets, suited for filling beds on lawns, 7*s.* 6*d.*, or 12 do. for ...	5	0
20 varieties best Greenhouse Annuals, 7*s.* 6*d.*, 12 for ...	5	0
20 varieties choice Greenhouse Perennials, 10*s.* 6*d.*, 12 for	7	6
20 vars. choice hardy Biennials and Perennials, 7*s.* 6*d.*, 12 for	5	0
36 varieties imported German Stocks	5	0
20 ditto ditto, 3*s.* 6*d.*, 12 for	2	6

Remittances with orders are requested from unknown correspondents. Goods carriage free to London, and with all orders of 2*l.* and upwards, articles presented extra. Post-office orders payable to BASS and BROWN or to STEPHEN BROWN.

Our Descriptive Priced Seed and Plant List will be forwarded, prepaid, on application, by forwarding four postage stamps, as copies having the Newspaper stamp are now all distributed.

SEED AND HORTICULTURAL ESTABLISHMENT, SUDBURY, SUFFOLK.

KITCHEN GARDEN AND FLOWER SEEDS.

JOHN CATTELL, NURSERYMAN and SEEDSMAN, Westerham, Kent, begs to offer to the public a few very choice SEEDS, which may be had free by post at the prices annexed.

KITCHEN GARDEN SEEDS.

per packet—	*s.*	*d.*
Beet, Cattell's Dwarf Purple-top...	0	6
Broccoli, Elletson's April White	1	0
„ Wilcove Superb White	1	0
„ Chappell's Cream ...	0	6
„ Jones's Superior White	0	6
Cauliflower, Dwarf Late Walcheren ...	1	0
Cabbage, Cattell's Reliance An improved early dwarf, in quality equal to his well known "Barnes," and may, like that, be sown the middle of July without fear of running to seed the following spring; it is particularly hardy, and being suitable for all seasons, may be depended on for being the earliest and best Cabbage known.	1	0
Cabbage, Cattell's Green Colewort	0	6
„ Do., Dwarf Barnes	0	6
„ Do., Nonpareil ...	0	6
Savoy, Dwarf Drumhead	0	6

per packet—	*s.*	*d.*
Scotch Kale, fine feathered	0	6
„ Dwarf curled ...	0	6
Celery, Cole's Superb Red	1	0
„ Red solid	0	6
„ Seymour's Superb White	0	6
Cucumber, Sion House	1*s.* per doz. seeds	
„ Do., Improved ...		
„ Manchester Prize		
„ Man of Kent ...		
„ Bath Victory ...		
„ Roman Emperor		
„ Carpenter's Wonder		
„ WarwickshireHero		
„ Cuthill's Blk. Spine		
Melon, Bromham-hall, 6 seeds	2	6
Lettuce, fine black seed Green Cos ...	0	6
„ Do., Brown Bath Cos	0	6
„ Marseilles (handsome Cabbage) ...	0	6
Parsley, exquisite curled	0	6
„ fine curled Giant ...	0	6
Vegetable Marrow, true white	0	6
Leek, Musselborough ...	0	6
Parsnip, Guernsey, fine large hollow-crowned...	0	6

FLOWER SEEDS.

Ipomœa Burridgii, splendid red variety of Convolvulus major	1	0	Jacobæa, extra fine, dble. purple	0	6
„ purpurea splendens, or new dark Convolvulus major ...	0	6	Indian Pink, extra fine ...	1	0
Ipomopsis elegans ...	1	0	„ „ fine fringed	0	6
Portulaca alba striata ...	1	0	Calceolaria, from first-rate sorts, impregnated ...	2	6
„ Thorburnii	1	0	Stock, red Intermediate; this is the best Stock for early spring flowering; more than two-thirds come double ...	0	6
Pentstemon speciosum ...	1	0			
Do., per half-ounce	7	6			
Rhodanthe Manglesii ...	1	0			
Coreopsis nigra speciosa, fine...	0	6	Primula sinensis, extra fine fringed, red and white mixed	1	0
Nemophila maculata ...	1	0	Larkspur, dwarf double		
Phlox Drummondii alba, true	1	0	Rocket, extra fine mixed	0	6

J. C. begs also to offer as usual fine strong plants of his true and improved sorts of Early and Cattle Cabbage, price, including package, 4*s.* 6*d.* per 1000, carriage paid to the Edenbridge station, South Eastern Railway. A Post-office order or postage stamps to accompany all orders from unknown correspondents.

BROMHAM-HALL GREEN-FLESH MELON IS THE FINEST FLAVOURED IN THE WORLD.

EDWARD TILEY having become possessed of the whole stock of Seed of that very superior MELON called "BROMHAM-HALL GREEN-FLESH MELON," he is now sending out good sound Seeds at 2*s.* 6*d.* per packet of 6 seeds; larger do. of 15 seeds, 5*s.* per packet. For further particulars of the above, see Advertisement in this Paper, February 9th. Also the following fine varieties can be highly recommended:

	s.	*d.*	
Queen Melon	1	6	per packet.
Bowood Green-flesh	1	0	„
Beechwood do.	1	0	„
Windsor Prize do.	1	0	„
Emperor	1	0	„
Fleming's Trentham Hybrid	1	0	„
Duncan's Green-flesh do. improved ..	1	0	„
Hampton-court Green-flesh	1	0	„
Egyptian do. do. improved ..	1	0	„

FIRST PRIZE CUCUMBERS.

Victory of Bath	2	0	„
Gordon's White Spine	1	6	„
Lord Kenyon's Favourite	2	6	„

A packet of each of the three varieties, 5*s.*; if preferred, also a packet of Bromham-hall Melon will be included with the three Cucumbers for 7*s.*

Sold by EDWARD TILEY, Nurseryman, Seedsman, and Florist, 16, Pulteney-bridge, Bath. A remittance must accompany the order, either in cash or penny postage stamps.

RHODODENDRONS AND AMERICAN PLANTS. —An unlimited supply always on sale, at the low scale of prices quoted, delivered in London, if ordered in quantity, free of carriage.

RHODODENDRON PONTICUM, 2 to 6 inches, 20*s.*, 40*s.*, and 80*s.* per 1000; 1 foot, single stems, fit for working, 10*s.* per 100; 1½ to 2 feet, very fine, fit for planting out for cover, 20*s.* to 40*s.* per 100; 4 to 6 feet, single stems, adapted for working the beautiful new scarlet and other rare species, 50*s.* per 100.

SCARLET RHODODENDRONS, of the finest varieties, 18*s.* per doz., on their own roots.

WHITE RHODODENDRONS, 18*s.* per doz.

KALMIA LATIFOLIA, 6 to 9 inches, 25*s.* per 100; 1½ to 2 feet, blooming, 12*s.* per doz.

Dwarf ROSE Stocks, fit for working, 8*s.* per 100.

Single CAMELLIA Stocks, fit for working, 42*s.* to 50*s.* p. 100.

PINUS (Abies) Douglasii (from seed), 10*l.* per 100, 30*s.* per doz.

ARBUTUS, 12 to 15 inches, fine, 25*s.* per 100; 6 inches, 8*s.* per 100.

LAURESTINE, two sorts, 8*s.* per 100, bedded, 1 foot.

TREE ROSES of the most esteemed kinds, 12*s.* to 18*s.* p. doz.

A large and fine Stock of the true "Durmast" English OAK, transplanted, 3 to 5 feet, 40*s.* to 60*s.* per 1000. With every description of Fruit and Ornamental Trees.—For Catalogues and prices apply to W. ROGERS, Nurseryman and Contracting Planter, Red Lodge, near Southampton.

RICHARD SMITH begs to call attention to the following New and desirable Plants, which will be sent out by him early in April.

PETUNIA ECLIPSE.—This is a very beautiful variety, which will give general satisfaction. The flower is large and of good texture; ground colour pale rosy flesh, very fully marked with rich crimson maroon veins, forming in their density and peculiar shape a perfect star in the centre of the flower; it is a free bloomer, of good habit, and unquestionably the most beautiful light variety hitherto sent out.

CACTUS (EPIPHYLLUM) MAXIMUS.—This is a hybrid, of enormous size, between Speciosissimus and Ackermanni major, of a bright deep red colour, slightly tinged with purple in the centre; it is very showy, an opinion of which may be formed when it is mentioned that the flower when expanded measures 10 inches across. See Notice to Correspondent "S.," *Gardeners' Chronicle* of July 5th, page 460.

Price of Petunia and Cactus, 5*s.* each. Where three or more are ordered of either or both they will be charged 3*s.* 6*d.* each.

Nurseries, Worcester, March 16.

HORTICULTURAL SOCIETY OF LONDON.—The EXHIBITIONS OF FLOWERS, &c., in the Society's Garden, will take place on the following SATURDAYS, viz.: May 18, June 8, and July 13. TUESDAY, April 23, *is the last day* on which privileged tickets, at 3*s.* 6*d.* each, are issued to Fellows of the Society, Every Fellow is entitled to 24 such tickets, if paid for on or before that day.—21, Regent-street.

The Gardeners' Chronicle.

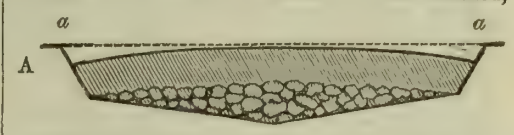
SATURDAY, MARCH 16, 1850.

MEETINGS FOR THE ENSUING WEEK.

MONDAY,	March	18	Chemical	8 P.M.
			Pathological	8 P.M.
			Medical	8 P.M.
			Statistical	8 P.M.
			British Architects	8 P.M.
TUESDAY,	—	19	Horticultural	3 P.M.
			Linnean	8 P.M.
			Civil Engineers	8 P.M.
WEDNESDAY,	—	20	Microscopical	8 P.M.
			Society of Arts	8 P.M.
THURSDAY,	—	21	Antiquarian	8 P.M.
			Royal	8½ P.M.
FRIDAY,	—	22	Philological	8 P.M.
			Royal Institution	8 P.M.
SATURDAY,	—	23	Royal Botanic	3½ P.M.
			Westminster Medical	8 P.M.

THE remarks of Mr. BAILEY (see p. 148), upon WALK-MAKING, excellent as they are, will probably not meet with universal approbation; for they are opposed to long and vicious practice and to deeply-rooted prejudices. He objects to the use of rounded pebbles, that is to say of coarse gravel, as a foundation for a walk; yet it is the usual custom to employ them. He says that "thousands of tons of stone are yearly thrown into deep trenches, to form, as it is supposed, the foundations for roads and walks, while at the same time they, instead of supporting them, secure the most effectual means of making them unstable and rotten." Nothing can be more true, nothing more just, and nothing can, at the same time, be more directly opposed to the opinion of half the walk makers in the kingdom. It is true that the worst gravel walks are made at the largest expense, and unfortunately it is also true that those who have made them are the loudest in proclaiming their efficiency. If you point to such walks in wet weather, when they are mere troughs of mud, the answer is "yes, that's very well, but see what capital walks they are when it is dry."

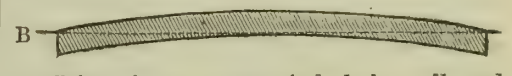
The old receipt for making walks was something of this sort. "Scoop out a trench to any depth you please, not less than a foot; if 18 inches deep so much the better. Make it hollow at the bottom. Fill it half full of coarse gravel; then fill it up to within 4 inches of the top with fine gravel; cover the whole with a layer of binding gravel; roll well, and leave it to settle till wanted." When finished,



a walk of this kind was what is represented at A. Rain, when it falls upon it, reaches the edges at *a a*, and then settles back towards the middle till the whole mass becomes soft; the round gravel at the bottom begins to slip, the fine gravel above slides down into the interstices, water rises through the mass, the surface subsides, water oozes up, footsteps puddle it, and the first person who passes over it renders it impassable for those who follow. This is no exaggeration of what occurs in walks, the merits of which are most loudly asserted by those who have made them.

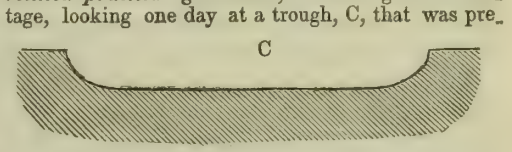
The true principle of making gravel walks is to render it difficult for them to become wet. In order to effect this, they must not only throw off rain as fast as it falls, but they must be so contrived as not to receive it back again laterally. The first condition is usually satisfied by a case of hard binding gravel, which absorbs water slowly, and acts as a rude cement; the second condition is what is generally forgotten, and what renders all other precautions useless.

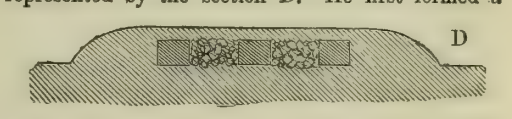
There are two ways of preventing the lateral ingress of water after sudden rain; namely, by side drains expressly constructed to remove rain rapidly, and by raising the walk so far above the surrounding borders that they can receive the water and carry it off by mere soakage. The first is the best, but is very expensive; the latter, B, although not always



so efficient, is very economical, looks well, and answers the purpose in most cases. In porous soils it is quite sufficient, and so it is on heavy land, provided some additional precautions, rendered necessary by the nature of such soil, can be taken.

A friend of ours who lives upon a soapy clay of the most undrainable kind, and who had spent much money in walk-making, under the advice of *experienced practical* gentlemen, without great advantage, looking one day at a trough, C, that was prepared for a new walk, thought that, when he constructed another, he would dispense with advice, and follow his own unpractical judgment. As advice seemed to be, and indeed had proved to be, the reverse of satisfactory, he resolved to make his next walk the exact reverse of what was so unsatisfactory; by changing a concavity into a convexity of equal amount, and by placing drainage above ground, instead of under ground. The result was what is represented by the section D. He first formed a





slight convexity, by throwing upon the intended walk some of the clay on each side. He then placed upon the surface, in three parallel lines, pieces of brick separated by intervals of a few inches. These intervals were filled with coarse cinder-siftings. The sides were built up with clay, falling gradually away towards the border itself, and over the whole was thrown a mixture of road-sand and fine cinders, or breeze, procured in a neighbouring brick-field. When finished, the centre of the walk was about 8 inches above the surrounding land. Success was complete, for these walks have proved to be so dry in the wettest weather, that they can at all times be walked upon with comfort. In this experiment broken bricks were used for the centre, because the owner happened to have them, and it was necessary to employ some material hard enough to prevent the surface of the walk from wearing away, and becoming hollow in the middle. Coarse gravel mixed with clay and water, and applied in the form of grout or concrete, would possibly have done as well. Cinder siftings were introduced between the bricks in order to secure the immediate removal of rain in the centre of the walk, there being no hard binding material at hand, and bricks themselves

forming with clay a surface through which rain would pass with much difficulty.

We do not mention this case as a model of walk making, but as an illustration of the principles which should guide us. It secured the immediate removal of rain from the surface as fast as it fell, and rendered it impossible that it should by degrees collect. That is the real object to attain, and provided it be attained, it is immaterial by what means. Those who study economy will probably agree with us that the cheapest method is the best. This indeed is the only point in which we differ from Mr. Bailey. He says that "Walk making, if well done, is very expensive; of course varying with the facility of obtaining fit materials; so much depends on their proximity to the scene of operations, or having to be carted from a distance; so that perhaps no two places would come under the same estimate." We, on the other hand, believe that in most cases the best walks are the least expensive, and that a perfectly sound walk may in many cases be made at no greater cost than a little labour, and some hardening or other material which will prevent the surface from becoming sticky. As to the tons of gravel that are employed in this operation, there can be no doubt that the greater part is mere waste.

The stove constructed by Mr. Dillwyn Llewellyn, to which we referred last week as an example of the possibility of introducing tasteful and natural arrangements in plant houses, was described in the Journal of the Horticultural Society some years since.

From a pond, at a level higher than that of the stove, a pipe was carried into a boiler, and thence conducted to the top of a mass of rockwork, as is represented in the accompanying cut. "Thence," says Mr. Llewellyn, "it pours a constant supply of water over three projecting irregular steps of rough stone, each of which catches the falling stream, dividing it into many smaller rills and increasing the quantity of misty spray. At the bottom the whole of the water is received into the pool which occupies the centre of the floor of the stove, where it widens out into an aquarium ornamented with a little island overgrown like the rock-work with Orchids, Ferns, and Lycopods."

By this simple means the first element demanded in a house intended for the imitation of a little tropical forest scene, was simply and effectually secured.

"The account," continues Mr. Llewellyn, "of the splendid vegetation which borders the cataracts of tropical rivers, as described by Schomburgk, gave me the first idea of trying this experiment. I read in the 'Sertum Orchidaceum' his graphic description of the falls of the Berbice and Essequibo, on the occasion of his first discovery of Huntleya violacea. I was delighted with the beautiful picture which his words convey, and thought that it might be better represented than is usual in the stoves of this country.

"With this view I began to work, and added the rock-work which I describe to a house already in use for the cultivation of Orchideous plants. I found no difficulty in re-arranging it for its new design, and after a trial now of about two years can say that it has entirely answered the ends I had in view.

"The moist stones were speedily covered with a thick carpet of seedling Ferns, and the creeping stems of tropical Lycopods, among the fronds of which many species of Orchids delighted to root themselves.

"Huntleya violacea was one of the first epiphytes that I planted, and it flowered and throve in its new situation, as I hoped and expected. The East Indian genera, however, of Vanda, Saccolabium, Aerides, and other caulescent sorts, similar in habit and growth, were the most vigorous of all, and many of these in a very short time only required the use of the pruning-knife to prevent their overgrowing smaller and more delicate species.

"Plants that are grown in this manner have a wild luxuriance about them that is unknown to the specimens cultivated in the ordinary manner, and to myself they are exceedingly attractive, more resembling what one fancies them in their native forests—true air-plants, depending for their subsistence on the humid atmosphere alone.

"Different species thus intermingle together in a beautiful confusion—Dendrobium, and Camarotis, and Renanthera, side by side, with wreaths of flowers and leaves interlacing one another, and sending their long roots to drink from the mist of the fall, or even from the water of the pool below.

"Many species are cultivated upon the rocks themselves, others upon blocks of wood, or baskets suspended from the roof, and thus sufficient room is secured for a great number of plants. At the same time the general effect is beautiful, and the constant humidity kept up by the stream of falling water suits the constitution of many species in a degree that might be expected from a consideration of their native habits; and I would strongly recommend the adoption of this or some similar plan to all who have the means of diverting a stream of water from a level higher than the top of their stove."

It may be alleged that this experiment was conducted under peculiarly favourable circumstances. The head of water was at hand, and the rock-work was readily formed from the sandstone of the country. But a little ingenuity would provide an ample supply of water anywhere; for no great quantity is really required, and warmed water is always useful in gardening for other purposes besides making an artificial cascade. As to real rock being indispensable, in the first place, railways or trading vessels can generally bring it for an inconsiderable expense; or half-burnt bricks consolidated into masses with Roman cement, or the artificial stone now so common, might be employed with equal advantage; the only real difficulty is, to find the taste required to put such materials together skilfully.



Mr. C. Warner has contrived a similar house at Hoddesdon, in which we understand that the difficulty of combining horticultural convenience and graceful arrangement has been happily overcome. At one end of his house there is a small piece of water surrounded by rock-work, on which he grows some of the larger Ferns—Tillandsias, Lycopods, Æschynanths, small Palms, with the Bamboo, &c. Here parts of the wall are becoming covered with climbing Ferns; on the pillars supporting the roof various Orchids are growing, along with Lycopods. We hope to give a more particular account of this house on a future occasion.

The real inconvenience of managing houses thus constructed consists in the difficulty of dealing with the swarms of insects which secrete themselves by day in the crevices of stones, and sally forth at night in search of food. When Orchid-growing was in infancy we witnessed an experiment like that of Mr. Warner's, which totally failed from this cause. The plants introduced into the house had a charming appearance at first. Everything that before was yellow became green, and plants which had been torpid for months threw out in abundance their green delicate roots into the warm damp air. But alas! in a few weeks every root was devoured, the plants again sickened, and the insects being inexpugnable, the place was pulled down again.

The only mode of dealing with this obstacle is by utterly destroying all insects and their eggs before plants are introduced into such a house. All earth should be roasted, or burnt; all turf should be baked; all Moss, all pots, baskets, willow-work, logs of wood, should be boiled; every plant should be washed perfectly clean, doubtful pieces being cut out, and then plunged in warm water for a few hours before it is permitted to enter the house. If doubts exist of a plant being clean, it should be put into hospital, and watched till the certainty is acquired that no insects are there. The roasting, burning, baking, and boiling, together with washing and steeping in warm water, costs little trouble, does no harm to the substances acted upon, but, on the contrary so much improves their quality that even in other places than such as are now described it should always be practised when the necessary means exist.

We refrain from pointing out in detail what plants are best suited for cultivation in these miniature forest scenes. Everyone can determine that, according to his taste and means. We would only observe that unusual forms of foliage, a plentiful mixture of pointed with rounded figures, creeping and climbing plants with those which grow erect, and party-coloured or velvety leaves contrasting with the pale, the shining, or the whole coloured, will produce the best effect. Ferns of all sorts, Tillandsias, Pitcairnias, Marantas, Caladiums, small Palms, Dwarf Bamboos, Side-saddle Plants, Pitcher Plants, trailing Endogens with coloured leaves, stiff leaves like sword blades, and similar things, will readily present themselves to all who seek for materials.

We have only to add that when houses of this kind are to be kept continually gay, it is absolutely necessary that an auxiliary house should be provided, in which various plants can be placed while at rest, and when their beauty has necessarily departed for a season.

DISEASES OF PLANTS.

(*Continued from p.* 149.)

Genus XX. Hæmorrhage; *that is, flow of a lymphatic juice from some part of the plant.*—This disease is very nearly allied to the ulcer, and might be reckoned among the species of the latter, but that its chief symptom lies in the flow of the juice, and not in the solution of continuity, which is always very slight. Two species may be distinguished.

First species. Ordinary Hæmorrhage.—Some gummy plant, like the *Penæa sarcocolla*, abound in sap, which burst through the vessels of the bark, and issues drop by drop. In most cases no mischief is produced by it, but if the flow of this gum resin is inordinately great, it will cause too much laceration, and, preventing the wound from properly healing, generally affect the plant. In some countries these hæmorrhages are produced intentionally; thus, in America, they bore the Sugar Maple, a tree which might be advantageously cultivated by us in Italy, in order to extract a liquor which is drank. But when the flow is too great the tree suffers, or even perishes. Excessive vigour of growth being the cause of this distillation of gummy fluids, it follows that a proper diet is the means to be resorted to to prevent it.

Second species. Injurious Hæmorrhage. — This disease very frequently affects trees growing in low swampy situations, and is often confounded, as I have observed, with the ulcer. The sap becomes corrupted and somewhat acrid, but without staying to corrode the substance of the plant, opens itself a passage through it. Plenck says there is no remedy for the disease. I have myself had no opportunity of treating it, but I imagine that if taken from the commencement it might be stopped, by opening out an incision to the seat of the disease, cutting out the affected parts, and stopping up the wound with Forsyth's cement. It is true this may not suffice where the primary cause of the evil is the inundated state of the soil the tree grows in; in such case nothing can be done till the water is first drained off. I have observed, in places where the trees have

been affected with hæmorrhage, that they were generally growing in stagnant water. Perhaps running water would not produce the same mischief..

Genus XXI.; *one species.* Faintness (*Deliquio. Defaillaure*, a word of more extended meaning than ours.)—Plenck understands by faintness of vegetables, a feeble connexion between the leaves or flowers and their stalks. I would rather define it to be that state of the plant which impedes the exercise of any of those functions which have an appearance of animal life, such as irritability. This may be caused by excessive stimulus, or by the want of it. Instances may be observed in the Mimosa pudica, or Sensitive Plant.

In the great heat of summer, under a mid-day sun, this plant folds its leaflets and becomes insensible, or at most a strong shock will affect the youngest leaves which may not have been closed. A strong hot wind will have the same result. The plant will not then show the usual phenomenon. So also if the plant is much electrified, and in the contrary case if the atmosphere becomes very cold, or rain falls, the irritability will be equally lost. But there is a difference observable in the two cases. When the irritability is lost by excess of stimulus, it is immediately recovered as soon as the plant is in the atmosphere that suits it; but when the effect is produced by any considerable diminution of stimulus, it is with great difficulty that the former vigour is restored. My own observations have confirmed this, and shown that a slight degree of cold is enough to destroy entirely the irritability of vegetables.

The phenomenon called by Linnæus the sleep of plants is well known. Many of our field plants, such as Saintfoin, Beans, Clover, Vetches, &c., afford very good examples to the agriculturist. Open in the day-time, the approach of evening, a high wind, or even the ardent mid-day rays of the sun, will cause them to contract their foliage, folding down their leaflets on the footstalk or stem. But from the moment that a sudden cold causes their vegetation to languish, they no longer exhibit these contractions. The same thing happens with exotics preserved in plant houses from the rigour of our winters. Their weakened vegetation deprives them of irritability. The organs of generation are well known to lose it the most readily, and never to recover it.

The observation of this disease, carried on with great care, through a long course of seasons, might throw some additional light on the question of vegetable irritability, which has been the subject of so much discussion as to whether it has in reality any analogy with animal life. On this point I cannot refrain from quoting the following passage from Sennebier's Vegetable Physiology. "If by irritability," he says, "we are to understand the faculty of being affected by the contact of external bodies, it is to be found in all organised beings. But if we mean by it the will which commands muscular action, the analogy subsists no longer. The fibres of plants are capable of extension and contraction, but they are strongly combined together, and are not merely connected as animal fibres are by a soft and flexible cellular tissue; thus the muscles are flexible whilst the vegetable fibre is rigid." The excellent observations of Mirbel have not yet enabled us to come to any conclusion as to vegetable sensibility, which has been supposed to bear some analogy to that of animals. (Here follow seven or eight pages of general observations on the cure of the diseases enumerated in these three first classes. These relate chiefly to the manner of changing the soil of plants, draining, and manuring—mostly repetitions of what has been said already, and containing nothing worth translation.)

Class IV. Mechanical injuries (*Lesions*).—Under this name must be understood not only injuries caused by a mechanical violence wounding the whole or part of that plant, but also any mechanical force or pressure which impedes its development, or prevents the full and ready performance of its functions. Diseases of this class, on account of their frequent occurrence, require careful attention on the part of cultivators.

THE BEE KEEPER.

It is of great moment, at this season, to feed any stocks that do not feel weighty to the hand. The best artificial food is made of 6 lbs. of *best Jamaica* sugar, 3 pints of sweet ale, and about a tablespoonful of salt; these should be well boiled up; when cold, add 2 oz. of rum, or 4 oz. of sherry, and keep in bottles.

The proper time for feeding is just after dark, and what is not consumed should be removed very early the next morning; this should be repeated every night as long as the bees remove or consume it, which will be till about the end of April. If you have the improved cottage or other hives, with a board and glass at the top, then you may let the tin feeders remain on the hives, and only replenish them as you find necessary; also taking care to do this after dark. This precaution is necessary, as otherwise you entice the bees of the other stocks to invade the weaker ones you are feeding, which generally ends in the destruction of the weaker and considerable loss to the stronger ones. The attempting to feed bees in common straw hives by a trough put in at the entrance is generally worse than useless, unless with great vigilance in removing the troughs, and what is not consumed, by or before daylight the next morning.

Tin feeders are generally made with a float of wood perforated with holes; these have the disadvantage that the bees get under the float, and are drowned. It is better to fit the tin with a piece of empty honey-comb, and then pour the food over it, which sinks into the cells; the bees are then able, by walking on the edges of the cells, to obtain the food without the chance of smearing themselves.

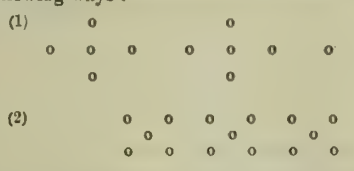
It is also proper to keep a constant supply of salt (about a teaspoonful dissolved in about a pint of water), within reach. Garden-pot pans filled with clean pebbles, and the solution poured among them, so that the stones form resting places for the bees to drink from, and placed a few yards from the hives, form a good mode of offering it to them. These pans should be constantly replenished with a fresh solution of salt till about the end of May. *Y.*

CHEVREUL'S SCHEMES OF FLOWERS FOR SEPTEMBER.

The month of September is the best in the year for obtaining beautiful arrangements of flowers. The numerous varieties of Dahlia, which are in perfection this month, enable gardeners to ornament large pieces of ground with different varieties of one species of plant, presenting every colour except blue. The arrangement of Dahlias seems to have pre-eminently occupied M. Chevreul's attention, and he recommends the following sequences:

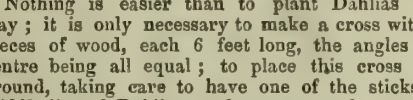
A. *For Lines of Dahlias.*—1. White, scarlet, white, lilac-rose, yellow, violet or purple, orange, white, scarlet, white, &c. 2. White, scarlet, dark purple, lilac-rose, yellow, violet or purple, orange, white, scarlet, dark purple, &c. 3. White, scarlet, dark purple, lilac-rose, white, yellow, violet or purple, orange, white, scarlet, dark purple, &c. In these lines the Dahlias should be about a yard the one from the other.

B. *For Groups of Dahlias.*—Dahlias may be arranged in groups of five or seven; each group of five should be a quincunx, and each quincunx should be placed with regard to its neighbour in one of the two following ways:



There being in either case three parallel rows of Dahlias, with the plants in each row equidistant from each other.

The arrangement of seven is also composed of three parallel lines, the plants in the middle line being equidistant from each other, thus—



Nothing is easier than to plant Dahlias in this way; it is only necessary to make a cross with three pieces of wood, each 6 feet long, the angles at the centre being all equal; to place this cross on the ground, taking care to have one of the sticks in the middle line of Dahlias, and to put a stake at each end of every stick and a stake in the middle; the cross is then shifted to the place in which the second group is to be, that is to say until the centre of the cross is three yards from the centre of the first group, and one of the pieces forming the cross coincides with the middle row of Dahlias as before.

To avoid any mistake in planting the groups, it is as well to make a plan of them on a piece of paper with wafers, the colours of which are as nearly as possible the same as those of the Dahlias which are to be employed. Then at the bottom of each stake plant a root of a Dahlia of the proper colour. If a group of seven Dahlias consists of six plants of the same variety, one root should if possible be divided into six parts, so that all the six plants may be as nearly alike as possible. If the root is too small to be divided into six equal parts, it is better to divide it into three parts only, and to alternate them with some other sorts. This precaution should be taken whenever complete symmetry is desired.

Groups of seven Dahlias, the six outside ones being exactly similar.—1, six orange, with a purple or violet centre; 2, six purple or violet, with a yellow centre; 3, six yellow, with a purple or violet centre; 4, six scarlet, with a white centre; 5, six white, with a scarlet centre; 6, six rose-coloured, with a white centre; 7, six purple or greenish black, with an orange centre.

If the above arrangement occurs in a straight border whose centre corresponds with a principal point of sight, the 7th group should be placed in the middle, and to the right of it the groups should be placed in the following order, starting from No. 7, 6, 5, 4, 3, 2, 1, supposing the border to hold only 13 groups; if it will hold 15 a white group should be placed at each end.

If the border is circular and there is no central point of sight after No. 7, begin by 1, 2, 3, 4, 5, 6, 7 and so on.

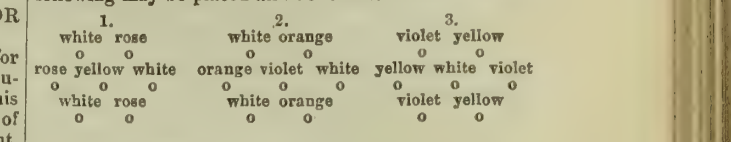
The following are different groups symmetrically arranged:—I. 1, six purple or violet, with a yellow centre; 2, six orange, with a white or very dark purple centre; 3, six white, with a scarlet centre; 4, six orange with a white or very dark purple centre; 5, six purple or violet, with a yellow centre. II. 1, six yellow, with a purple or violet centre; 2, six lilac, with a white or yellow centre; 3, six white, with a scarlet centre; 4, six lilac, with a white or yellow centre; 5, six yellow, with a purple or violet centre. III. 1, six very dark purple, with a yellow centre; 2, six scarlet, with a white centre; 3, six white, with a scarlet centre; 4, six scarlet, with a white centre; 5, six very dark purple, with a yellow centre.

In a straight border capable of containing more than five groups, any one of the three preceding arrangements I., II., or III. may be taken with the following additions:

If the border can hold seven groups it is best to end arrangement I. with two white or yellow groups; arrangement II. with two white or violet groups; and arrangement III. with two white or yellow groups.

The arrangement I. may be followed by arrangement II., and that by arrangement III.

If the Dahlias are not to be seen from a considerable distance, and it is not necessary that the arrangements above described should be viewed very distinctly, the following may be placed all in one line.



If nine groups are required, after No. 5 add groups 4, 3, 2, and 1. If there is room for 11 groups, group 5 should be placed at each end of the arrangement for 9.

C. *Basket of Dahlias.*—The only observation required here is that all the individuals of the same variety should be placed symmetrically, and that the precautions before given for the purpose of ensuring symmetry should be attended to.

In September a line of common Laurels, and of Pyracanthas with their red berries, looks well. Privets, with their blackish-blue fruit, contrast equally well with the Pyracantha or with Holly.

CELERY.

The varieties of Celery may be divided into two classes:

A. White Solid.

B. Red Solid.

The Celery with hollow stalks, formerly known as the Common Red and Common White, is now considered unworthy of notice, and ought to be excluded from cultivation.

A. White Solid.

White Solid, alias Fine White Solid, Celeri Turc, Celeri plein blanc. Of strong and rather tall growth, blanches readily and comes into use earlier than the Red Solid varieties.

1. *Seymour's Superb White*, an excellent variety of the preceding. Stalks broad, flat at the base, closely overlapping and forming a compact, well-blanched, crisp heart, with ordinary care. Tips of the serratures pale.

Italian, alias Italian Upright, Upright, Large Upright, Giant, Patagonian. Tall, strong, erect, deeply furrowed, not so crisp as the preceding.

Wall's White is an improved variety of the Italian, which is esteemed by the growers of Celery for competition.

Curled White, alias Nain frisé. Leaves much curled, resembling Parsley, and like those of the latter might be employed for garnishing; it is dwarf, hardy, and crisp, but not fine flavoured.

2. *Early Dwarf Solid White*, alias Court hâtif, Celeri Turc, of some. Dwarf, but very solid, and forms a compact heart; excellent for early use.

B. Red Solid.

3. *Red Solid*, alias New Large Red, New Large Purple, New Russian, Cole's Red, Cole's Superb Solid Red, Striped Solid, Violet de Tours, Gros Violet de Tours. Dark Red or purplish, but the completely blanched portion is very pure, crisp, and of excellent flavour; the best red Celery. The *Manchester Red* is scarcely different, and may be considered the same variety, excepting that it has acquired a stronger habit and rounder stalks. *Shepherd's Red* is now preferred to the Manchester Red by the prize growers, because it has flatter stems, and consequently blanches better.

The sorts considered of best quality have numbers prefixed.

Celeriac, or *Turnip-rooted Celery.*

This is a sort of Celery which forms a knob at the root under favourable circumstances. It is much esteemed on the Continent, where its cultivation is well attended to; the roots are taken up and stored out of the reach of frost, usually so severe as to destroy other kinds of Celery. It is also called Knob Celery, Knoll Celery, Celeri Rave, Celeri Navet. There is a sub-variety veined with red; and another with curled leaves, or Celeri Rave à feuilles frisées. *R. T.*

VILLA AND SUBURBAN GARDENING.

Having secured perfect drainage, the next point to draw attention to is the condition of the soil to be used in potting. It is of importance that the latter should be in proper order; for potting with soil either in a wet or perfectly dry state is for obvious reasons to be avoided. If soil too wet is pressed into the pot, the plant, even if a free-growing kind, will very rarely succeed. The moisture renders the compost so compact when the latter is pressed, that it takes a long time to dry; it even not unfrequently becomes sour, and the young roots perish; under such conditions too the roots are entirely cut off from air, and no plant will remain long in health when that is

the case. It is necessary therefore to guard against such a state of things, by having at command, and in a mellow-working condition, a portion of all the kinds of soils that are likely to be required. Those who have open sheds to protect their compost from rains should avail themselves of them; but those who have no such accommodation must resort to other expedients for keeping their soil dry. A few rods, with a piece of asphalte fastened over them, will throw off water; or even a few large slates, which can be moved at pleasure, will effect the same purpose. As potting is required to be done at all seasons, and in all kinds of weather, the absolute necessity of having soil in a condition fit for immediate use must be obvious.

It has been a matter of some dispute as to whether soil for potting should be used in a rough, half unbroken state, or in a perfectly reduced condition. In my opinion this will depend on the character of the plant to be potted, as well as upon the texture and constitution of the soil employed. If the latter is naturally of a free, turfy kind, it may be used in a pretty rough state, but if the contrary, it must be well broken up, and a portion of sand added to it, in order that roots, water, and air may pass freely through all its parts; for on this the well-being of all plants depends in a very material degree. As regards potting, no plant ought to be placed deeper when repotted than it was in the smaller pot; but a slight portion of the surface soil may be carefully removed, to make room for about half an inch of fresh material. This not only improves the appearance of the plant, but also acts as a dressing to it. It is sometimes injudicious to disturb the old ball much; but in most cases the roots may be slightly relieved, so as to give them a better chance of striking at once into the new soil; the previous drainage ought also to be carefully removed. *Pharo.*

Home Correspondence.

Gravel Walks.—In your article on gravel walks, you put the question, I think, too generally; and, besides, do not give Nos. 1 and 2 fair play, as there are two questions—Whether the convexity should be above the adjoining ground or not? and, Whether there should or not be a substratum of stones? The object of the convexity is to prevent rain from penetrating, and for that purpose cause it to run off as quickly as possible. It cannot do so unless either the convexity is above the adjoining sides, so that the water may run on to the adjoining soil, or there are every here and there drains along the sides to carry it off; or the adjoining soil is porous enough to carry it off without. Again, no gravel, however binding, is perfectly waterproof, and some wet will, in long continued wet weather, soak through; and the most essential point is, that that wet should be as quickly carried off as possible. In some soils the porousness of the soil itself will be sufficient; but not in clayey soils, unless there be a substratum of coarse materials in the form of No. 1 or No. 2 (both of which are equally good), with proper drains for carrying it off. The result is, as far as my experience goes—and it is the only part of gardening in which I have any experience—that in light porous soils, where good binding gravel is to be had, No. 3 is the best; but in our soil and bad gravel it will not hold at all. The wet that soaks through the gravel is retained as in a trough by the clayey soil, and the whole mass of gravel gradually sinks into the clay. Whether there be an understratum or not, wherever the edges of the convex surface are below the adjoining soil, there must in stiff soils be surface drains on the sides. *M.*

Descent of the Sap.—This seems to be a question upon which practical men very widely differ; without, therefore, entering into the *pros* and *cons* of the subject, I shall give the particulars and results of some experiments made by me on Vines—in the first place, to test the fact of the sap's descent, and in the second place, to ascertain the possibility of buds attracting sap from distant parts of the same plant; and, having stated these, I shall leave your readers to draw their own conclusions. In my first experiment I removed a circle of bark off a main branch of a Vine, half an inch broad, scraping every particle of the thin bark off the alburnum; this circle is only one inch from the fork or junction with another main branch, so that the descending sap (if there were a circulation) could easily find its way up that very short distance, to effect the annular deposit; but while the lip above the circle now measures 6 inches in circumference, the lip below it measures only 4¼ inches in circumference; thus we find the annular deposits exclusively above the circle—none whatever below it. In my second experiment, I cut clear off all the swelling buds but two from a young shoot at the bottom or base, from whence a second young shoot also proceeded, the buds of which I also cut clean off; these two buds had each three young leaves, consequently they were able to exercise all the influence of swelling buds, such as attracting sap from above their position. I then cut one shoot to within 2½ inches of these two twin buds, and the other shoot within 6½ inches of the same buds, and these shoots, be it observed, were trained at an angle of 45°, so that the force of gravity would be in favour of the bud's influence. Well, the result was that each shoot kept "drop, drop, dropping," not for a few hours of one day, but for eight successive days; in fact, until bleeding gradually ceased in the usual way. Do these experiments and their results bear in any way upon the question of the sap's descent or the influence of "buds commanding the sap" in Vines? *J. C. Humphreys, Cork Abbey, March* 10.

Pond Mud.—In reply to "Ruris Amator," I beg to state that I conceive it possible to make his "mud" a desirable addition to his "poor sands," by the addition of about 20 per cent. of lime and salt, in equal quantities. Of course the "mud" must be previously drained comparatively dry, and then well mixed with the salt and lime. Another correspondent refers this week to his pond as containing another kind of mud, which can be of no value except on "heavy clays." His difficulty appears in choosing the best method of removal. It occurs to me that he had better scoop it in one or more "lifts" into a trough, which could be made to lead to any necessary distance, or into a cart having the joints well "plastered" or "luted" with clay. As this mud, or rather "silt," is "all alive," the scooper, troughs, &c., may remain in the same position to the end of the job. Much of this trouble may be obviated by sinking a "catch pit," rather longer than wide, and shallow, with its length in the direction of the stream, and so close to it that its channel could be readily diverted into or rather through this pit, where the "silt" would have the opportunity of falling to the bottom instead of being carried on into the pond. Of course this shallow pond or pit could be easily emptied as soon as it gets full of "silt." *W. E. Gill, Truro, March* 12.

Disease in the Roots of Forced Strawberries.—I am forcing about 1000 pots of Strawberries, which were plunged in the open ground (gravelly bottom) during autumn and winter. In the beginning of February some were put in a Vinery upon a back shelf close to the glass; the rest were introduced three weeks later. They have had every attention paid them, and to the eye they look pretty well; but when they are turned out of the pots their roots are found to be decaying, mildewed, and to smell very mouldy. I have never seen or heard of any disease of the kind before, nor has my foreman—a man of long practice. It commences on the young roots in the form of small black spots, which soon spread and destroy them. We are quite at a loss to account for the evil, and can only attribute it to the soil in which the plants were potted, which consisted of rich light garden mould, mixed with some stiff loam or clay, the raised bank of an old hedge, which was turned over several times and exposed to the weather some months before using. I send some pieces of the roots for inspection, and shall be glad of your opinion on the subject. *Constant Reader, Deptford.* [These roots are dead and have a musty smell; that is all that we perceive.]

Amount of Rain which has fallen during these last five years at Bognor, Sussex.

	1845.	1846.	1847.	1848.	1849.
	Inches.	Inches.	Inches.	Inches.	Inches.
January	2.54	3.92	1.73	2.10	2.11
February	2.02	1.68	1.85	4.21	2.79
March	0.89	2.57	1.04	3.42	0.48
April	1.32	2.06	1.04	3.29	3.20
May	3.21	1.84	2.10	0.22	2.80
June	1.12	1.01	1.34	4.25	1.35
July	2.19	1.79	0.77	3.19	1.74
August	2.54	4.48	1.37	4.53	0.31
September	2.63	3.06	1.32	2.10	2.94
October	2.41	6.31	2.37	4.51	3.49
November	3.43	2.12	1.57	1.65	1.20
December	2.90	1.80	3.88	3.73	2.90
	27.20	32.64	20.33	37.20	25.31

It is perhaps worthy of mention that this place is within 250 yards of the sea, and that this part of Sussex is very level, being about 10 miles from the Downs. *James Graham, Bersted Lodge, Bognor.*

Rats: their Destruction by Phosphorus easy and certain.—Having already detailed at some considerable length, in your Paper of Feb. 9, the success—I may say the complete success—of my experiments in the destruction of a colony of rats by the use of carbonate of barytes, I will now, according to promise, tell you how to handle with unfailing effect, under certain circumstances, another fatal weapon—phosphorus. I publish this at once, and through the medium of your columns, for a most particular reason. Very considerable attention has been directed to the subject, by the quotation in nearly every paper in the kingdom of my two several contributions to the *Gardeners' Chronicle* of Jan. 12 and Feb. 9. This has brought me such a multitude of letters, every successive post adding to their number, and has involved me in consequence in so extensive and serious a correspondence, that I positively begin to despair of ever again being *in equilibrio.* I can only hope for repose by seeking the aid of the press, whose power of extending information I can, alas! but too feelingly vouch for; and which power I trust to their generosity again to accord me, seeing the peculiar "fix" in which I am placed. Their timely assistance will prevent the necessity for providing myself with an amanuensis, *Mais, revenons à nos Rats!* The phosphoric compound is as follows. I have purposely divided the materials into small quantities. According to the number of the enemy to be vanquished they must be lessened or increased. Procure of lard or dripping a quarter of a pound, of phosphorus 1 drachm, of spirit of wine 1 gill; place the whole of these in a pint wine bottle, thoroughly cleansed previous to use. This should be covered, up to its neck, or rather middle, with hot water, which may be managed by putting the bottle into a saucepan deep enough to hold it; and by gradually heating the water. When the lard or dripping is dissolved, remove the bottle from the water, cork it firmly, and shake it until the contents are thoroughly incorporated. When cool, pour off the spirit of wine. By this time, the "charm" will have nearly been "worked." Little more remains to be done. Procure some Wheaten flour, and having rubbed sugar into it, warm the contents of the "charmed" bottle, and pour sufficient from it to make the whole into a paste of ordinary consistence. Flavouring the above is the "seventh bullet," the master-piece. To this much attention must be paid. Get some oil of rhodium and some oil of aniseed, both powerful oils; and dividing your dough into two portions, "charm" the one half with rhodium, the other with aniseed. The quantity of oil requisite is very trifling. Having made up the paste into a number of small globular pieces (like marbles), place them carelessly wherever the rats abound, and the existence of the latter will soon become a mere "matter of history." I need only add, that when rats are running about, and revelling in an abundance of animal food, the barytes only must be used in conjunction with garbage, fish, the entrails of rabbits, poultry, &c. These, if untouched by the human hand, are subtle emissaries, and deal destruction right and left. Where, on the contrary, the rats have little to prey upon in the form of flesh, phosphorus, cooked as per receipt, will be esteemed a dainty luxury, worthy of our own Soyer, and they will sit down to it with the appetite of a London alderman. Would, for their sakes, that their digestion were equally good! I should be glad to have it in my power to *rat*-ify the fact. *William Kidd, Sanders' Cottage, New Road, Hammersmith, March* 13.

Diseased Apple-tree.—What had I better do with a young Apple-tree, the trunk of which has been pierced, as I suppose, by some insect immediately below the branches, where there are two or three small holes about the size of a common quill pen? My attention was first directed to it last autumn by seeing a glutinous reddish matter on the ground immediately under the tree, and casting my eyes upwards I observed a small hole in the trunk where this reddish matter was oozing out. I bound the wounded part over with tow dipped in oil; but on removing this bandage the other day, I observed that a fresh hole had been pierced immediately above the bandage, and that a dry dusty substance was escaping by this aperture. The tree notwithstanding is now opening its buds. *A Subscriber, Hackney.* [If the case was ours we would take off the bark, destroy the grub or insect whatever it may be, and then carefully replace the bark, binding it down and claying it over like a graft. The bark, if thrown into milk-warm water while this is doing, will take no harm, and will join the wood again in a short time.]

Glass Water Pipes.—Can any one inform me if glass pipes have been laid down for the conveyance of water anywhere with success; if so, by whom? and also the amount of pressure they will bear on the square inch. *N. E. A., Bath.*

Moths (see p. 152).—Mr. Westwood having stated in your last Number, on the authority of Mr. Curtis, that the Tortrix nigricana (not nigritana) of Haworth, is synonymous with the Endopisa pisana of Guenée, I beg to say that this is an error. Tortrix nigricana of Haworth is identical with Endopisa nebritana of Guenée. The larva of this species probably feeds upon the seeds of some Vicia or Lathyrus, the perfect insect being generally found where these plants grow. Endopisa pisana of Guenée is probably identical with the Tortrix proximana of Haworth; but as this can perhaps never be ascertained with certainty, it will be better to adopt Guenée's most appropriate name. The larva of this insect feeds upon the seeds of the common Pea, and in some seasons is very destructive. When full fed, it descends into the ground, forming a cocoon of small particles of earth, in which it remains till May of the following year, when it changes to a pupa, and the perfect insect appears in about three weeks. It is very similar to E. nebritata, but smaller, paler in colour, and has whiter palpi. Several other species probably occur in this country, feeding upon the seeds of various Tares. *Henry Doubleday, Epping.*

A word or two on the Qualifications of Gardeners.—As some discussion has lately arisen in your columns respecting gardeners being entitled to the term professional, may I beg your insertion of the following suggestions, as a mode whereby a line may be drawn between gardeners properly so called, and that large class of individuals embraced by the term, "gardener." I have no wish to undervalue the services of a body of men, a large portion of whom have many qualities in common with gardeners of a high grade, but would make education, as in other professions, the standard whereby to judge of a man's abilities. At present young men as gardeners obtain situations [more frequently through interest than merit, and stand their chance of succeeding afterwards, by trusting to expedients, which if gentlemen knew of them, would not be tolerated for a moment. I shall not allude to this more particularly now, but proceed to explain my plan, which would both protect gentlemen seeking gardeners, and the really deserving gardeners themselves. Here it is. All young men who have been educated as gardeners, and have undergone the usual training, to be examined by a board sitting sometimes in London, something in the way in which young men are examined in the Society's gardens, and (modified to suit the case) similar to that practised by the College of Surgeons or the Apothecaries' Company, the board to consist of an equal number of scientific and practical men. The examination to be carried through every branch of science connected with gardening, and through the detail of each practical operation. All persons passing this examination to the satisfaction of the board, and

whose moral character was good, to be furnished with a diploma, certifying as the case might be. An ordeal like this would soon separate so-called gardeners into two classes—a small select one, and, I imagine, a rather large class, who might either by industry mend their position, by presenting themselves again for examination, or occupy that position their abilities had made for them, as possibly useful men enough in their way, but certainly not entitled to be termed professional gardeners. *Obitur dictum.*

"*Maxima est veritas et prævalebit:*" *Britannia's Protest against Dry-rotten Timber, &c.*—I have long since retired from the public arena, which no more concerns me than the man in the moon, yet I still survive to boast of three score and three years full of "vanity and vexation;" and at this no uncommon age, I have survived nearly all the celebrated controversialists that once surrounded me like a hornet's nest; but, I thank God, I have outlived them sufficiently to see the ruinous and foolish system of our former navy boards undone by their successors in a great degree, against which I earnestly protested in 1823 and 1824, and though at several thousand pounds expense, without any good effect at that time, when the renowned Lord Melville, Admiral Dundas, Mr. Croker, Sir T. B. Martin, John Knowles, and Co. reigned over our dockyards. The Admiralty now purchase winter-felled or winter-hewn Oak timber at a premium of 12*l.* 10*s.* per cent. more than for Oak hewn in summer at bark harvest! This is exactly the object I pressed before Parliament by memorials to both houses ("a plague on both," as Shakspeare write. in 1823 and 1824, without any good effect then, which compelled me, as a simple patriot, at that time to publish a treatise on the "Origin, Nature, Effects, and Danger of the Dry-rot—Remedies, &c.," which proved the late John Knowles' treatise (then Secretary to the navy board) quite contradictory in itself and most delusive, by extracts from different pages, but which, although most important, are too voluminous for me to wade through all this naval mire again. The object of my present letter is to state that the public generally labour under Mr. John Knowles' delusion as to the Hawk, which that gentleman urged as conclusive proof against winter-hewn Oak. But the fact is, that ship was not built with Oak hewn in the winter, with the bark on (when the sap or the seed of dry rot has returned to the roots to renew the next year's growth), but with timber that was cut at bark harvests, as then usual (at Deptford in 1793), on one of her sides, and with experimental timber on the other side, that had been barked (while standing) three years before, and then felled in the winter; and when broken up in 1803 both sides appeared equally defective. And this was pronounced positive proof against winter-hewn Oak by Mr. Knowles, in defence of the system then practised, contrary to the old system of building our navy with Oak cut in winter with the bark on, for which former navy boards paid 7½ per cent. extra till 1792, I believe. All this was done as experiments in building the Hawk, though the very same thing had been attempted at Portsmouth docks and failed in 1718, according to Jacob Acworth's letter to Sir Isaac Townshend, then commissioner at that port, a copy of whose letter is before me, extracted in my treatise before mentioned. The Montague was the last ship of 74 guns built at Chatham with winter-hewn Oak with the bark on (between 1775 and 1779, when 7½ per cent. was paid as then equivalent to the bark), and she, instead of lasting 10 years, like the Hawk (and the present navy generally, on a fair average, as I verily believe), was not broken up till 1818, after all the war, and after 39 years' service or duration. There is no doubt upon these subjects. Why do the Admiralty now allow 12½ per cent., one-quarter extra, for timber hewn in the winter, with bark on, if not better than bark-harvest timber? To confirm all these facts, I must mention that King James, in 1603, made a law to build our navy with winter-hewn Oaks in the bark, which (strange to record) was repealed in 1808, when the utmost need existed for sound Oaks. Ships then lasted 40 years, instead of 10 now. I believe the expense of rebuilding the navy, miscalled repairs, is equal to the building expense. I remember John W. Croker pronounced me mad, for this cause, when he defended the system I always condemned; and now (if you will do us both the justice to insert this letter) let the survivors judge fairly between the three Johns, and let him who deserves the mad-cap always wear it properly, without such outrages and insults as he offered to me where I had no power to redress myself. Nothing but sentiments of common justice influence me in addressing this letter, as this is the proper season to hew Oaks for ship building, whose durability entirely depends on this whole practice. I never saw Mr. Croker nor Mr. Knowles (who is dead), and have no personal animosity against either, or any other man, but truth demands this *exposé*, and which (in the course of my life) has often placed me under anxieties and duties, which I trust I have always endeavoured to discharge, as every reasonable, sober, and honest man is bound to do, well knowing that all get their due rewards here or hereafter. P.S. I am glad to find the leather tax has been repealed, as I also recommended cheap substitutes for bark in the tanner's key. It is in consequence now manufactured in three months, instead of three years, under the old ignorant process; so that I now have double reason to find that my dear hard labours are at last crowned with double success, after an expenditure of above 5000*l.*, to my deep sorrow and loss, although I have certainly learnt to despise all human honour. This is written disinterestedly, as I have no books extant to sell now, and disdain all paltry, selfish, and worldly motives whatever, or I could give you plenty of strange and curious details, but I have compressed as much as possible in one sheet of paper. "Sic transit gloria mundi." *John Burridge.*

Societies.

Entomological, *Feb.* 4.—The President in the Chair. Mr. Weir exhibited a box of Micro-lepidoptera, illustrating his new method of arranging series of specimens of separate species on detached cork-boards, for facility of transposition in the cabinet. Mr. Douglas exhibited a new British Tortrix, allied to Stigmonota redimitana, which he proposed to name Weirana, after its captor, Mr. Weir; likewise specimens of Cosmopteryx pinicolella of Zeller, a species new to this country, found on Fir trees. Mr. Stephens exhibited specimens of Orthosia ruticilla of Esper, another new British species, from Yorkshire. Mr. S. Stevens exhibited a fine specimen of the extraordinary Australian Eurycantha horrida; also various new and beautiful Lepidoptera, from the neighbourhood of Para, collected by Mr. Bates; and a specimen of Lamia textor, which he had kept alive since last October. A paper was read by Mr. Stainton on the genus Micropteryx of Zeller. And a conversation ensued relative to the supposed injury done to Pears by the larvæ of Ditula angustiorana; several members concurring that there was but little ground for this opinion, as, except in the instance quoted by Mr. Curtis, the insect had not been observed to attack fruit trees, and, in fact, that it was seldom seen in gardens, although its larva was polyphagous; the perfect insect had also been found in the greatest abundance in the neighbourhood of Firs and Yews by Messrs. Stainton, Weir, and Douglas, and Mr. Shepherd had bred it from the buds of the Fir. Tortrix lævigana, on the other hand, was known to be very destructive to fruit trees, attacking both the foliage and young fruit; and it was supposed that some of the ravages attributed to Ditula angustiorana might have been the work of this species.

March 4.—G. R. Waterhouse, Esq., in the Chair. Among the donations were a case of insects from Demerara, presented by Mr. Dalton. Mr. Bond exhibited a portion of the stem of a small Ash tree, on the lower part of which was a mass of the empty larva—and pupa-cases of a species of Chilocorus, about 200 in number, attached head downwards, and occupying not more than the space of 4 inches of the stem. He also exhibited some of the web of the social moth, Ilythia sociella, which had been found between two deal planks laid upon each other, the larvæ of the moths having formed burrows in the substance of the planks. Mr. Wilkinson exhibited specimens of the cocoons of the beautiful little Plutella harpella, found in crevices of the bark of Lime trees, from the extremity of one of which the chrysalis had half protruded itself. Mr. S. Stevens exhibited specimens of several species of Noctuæ from Venezuela, absolutely identical with the British species, N. saucea, suffusa, &c., and also a beautiful living specimen of Ceropacha flavicornis, taken the preceding day. Mr. Stainton exhibited specimens of four species of Lithocolletes, reared by him during the preceding month from the leaves of various trees mined by the larvæ, and collected during the last autumn, these moths not ordinarily making their appearance until May, their development having been accelerated by being kept in an inhabited room during the winter. Mr. Douglas exhibited a new British Œcophora, named senescens, from the Island of Portland, and Mr. Stainton read a paper on six new British Tineæ.

*** In our report of the Linnean Society last week, p. 151, it is stated that the young Heteropus measured about a "sixteen-thousandth" of an inch in length. This is a mistake; it should have been "sixteen thousandths of an inch."

Garden Memoranda.

Horticultural Society's Garden, Turnham green.—Since we last visited this establishment, some important alterations have been made. A large portion of the old fruit trees in the middle of the orchard within the Apple belt, more especially on the west side, has been removed, the ground has been all levelled and trenched 3 feet deep, and young trees have been planted. The condition into which the old trees had fallen rendered these operations necessary, more especially in the case of Cherries and Plums, for the roots of both of these fruits had got down into the dry yellow loamy subsoil, and the tops were in consequence rapidly getting into ill health. The new plantations are to be divided into several compartments by 4 feet Grass walks. One of these compartments is planted with young Pear trees, chiefly for the purposes of espalier training; another is occupied with Plums, a third with Cherries, and a fourth is set apart for making experiments with regard to the different modes of training. A portion of the ground on the east side of the orchard has also been remodelled, and is to be employed as trial ground for new and unknown kinds of fruit trees. A number of these trees formerly planted here have been rearranged and placed wider apart, with a view to give them a better chance of fruiting than they would have had in their former over-crowded condition. Nearly half an acre, in the form of a parallelogram running parallel with the Peach wall has also been cut off this part of the orchard, for the better accommodation of vans which bring plants to the exhibitions. This is surrounded by a Holly hedge about 6 feet high, which was lifted from the east side of the arboretum, and planted here last autumn, and it is entered opposite the tents by a wide gateway through the Peach wall a short distance above the "Duke of Devonshire's walk." A border on the outside of the Holly hedge, surrounding the van ground, is being planted with all the newest and best kinds of Strawberries, for the purpose of trial. Although these improvements have to a considerable extent cleared the main body of the orchard of old trees, yet a large mass in the centre still remains untouched. All the young trees have been planted in rows 15 feet apart, and they stand 20 feet from each other in the row. It may perhaps be worth mentioning that horizontally trained Pear trees on walls show bloom thickly from their stems, and even on the stems, to the very extremities of the branches. This may no doubt be attributed to the system of summer pruning which is carried out here. The latter consists in going over the trees at intervals, gradually shortening the fore-right shoots along the upper half of the tree several days before those on the lower part are touched. In this way less disturbance is occasioned to the movements of the sap. We observed some of Mr. Roberts' tiles placed round Strawberry plants, by way of trial; they have a clean and neat appearance, and by the sides of walks in cropped ground form by no means unsightly edgings.

In addition to the work in the orchard, alterations and improvements are being skilfully carried out in the arboretum, under the direction of Mr. Glendinning. A new gravel walk 15 feet wide has been formed from the principal entrance in the Duke of Devonshire's road up to the iron tent, where it ends in a circle surrounded by raised beds; and out of the same circle another walk, of similar width, leads up to the end of the large conservatory. The exhibition tents are to be placed on either side of this latter walk, to which the iron tent stood obliquely; and in order to obviate the incongruity which this would have occasioned in the new arrangement, the latter has been removed and placed parallel with it, so as to range with the other tents. An entrance gate from, and an egress gate to, the Duke of Devonshire's road have also been made immediately opposite the ends and in a line with the tents, by which means the latter can easily be entered in wet weather. The strip of flower-garden which lies between the iron tent and the "Duke's entrance" is likewise being entirely remodelled. As has been stated, the Holly hedge which divided it from the arboretum has been removed; the shrubbery has been set back to the boundary fence; the ground in front is being levelled for Grass, in which flower beds will be disposed along the side of the new walk, intermixed here and there with rare Conifers, standard Roses, and other ornamental shrubs; and altogether this will soon be one of the most interesting parts in the garden.

From the above it will be seen by those who are acquainted with the garden that the main body of the lawn in the arboretum is now thrown into the form of a large square, surrounded by broad gravel walks. It might also perhaps be added that it is intended to place the summer-house, which formerly stood on the lawn in the east side of the garden, at the head of the broad walk which leads from the Duke's entrance to the Council-room, the walk being altered there so as to pass it on either side.

Miscellaneous.

Cheap Microscopes.—Ten years ago, M. Gaudin presented to the Academy of Sciences at Paris, cast lenses of crown glass and rock-crystal, with which cheap microscopes might be made. After many attempts to bring these lenses to greater perfection, M. Gaudin has at last succeeded in producing an instrument which is within the reach of everyone, and which perfectly answers all ordinary purposes. Although it was found very difficult to obtain a perfect glass sphere of the requisite polish and homogeneity, and free from air bubbles, yet M. Gaudin has learned that by using rock crystal, lenses may be obtained which, though not entirely free from bubbles, give such pure images, that one would scarcely believe they were seen through a refracting medium. M. Gaudin has also succeeded in obtaining spherical glass globules, without any appendage; these form his biconvex lenses. The magnifying power of these lenses is from 50 to 400 diameters. The low powers are obtained by plano-convex lenses, that is to say globules with one half, viz., that by which they were suspended, cut away. The horizontal position, as being more simple and less fatiguing, is adopted in these microscopes, so that to see with them they are turned towards the source of light. The lenses are brought to their places by a sliding motion instead of by a rack, the former being quicker and less liable to accident in the hands of an inexperienced observer. These microscopes are intended as auxiliaries to greater instruments, and to render microscopical observations more common than they at present are or can be, from the high price of the instruments. *Comptes Rendus.*

Wild Animals of Ancient Britain.—"To the Notes in Vol. III. Ser. I. p. 356 and Vol. IV. Ser. II. p. 423, on the Wild Animals of Britain, and the Huntings of the Citizens of London, may be added the following, in which it appears that the Wild Cat is enumerated.—R. T. *Rotuli Hundredorum.* 3° *Edwardi I. Membr.* 13.—Item dicunt, Quod Libertas Civitatis Domini Regis talis est: Quod Cives, cum canibus suis possunt currere ad Lepores Vulpes Cuniculos et Murelegos [Catos*] usque ad Pontem de Stanes; et ad januam Parci de Enefende, et ad Arcubus de Stratforde, et ad Crucem de Wautham; sed ista libertas impeditur per Warennam Comitis Cornubiæ, apud Histleworth †, et Warrenam Willielmi de Say, apud Edelmeton ‡; nesciunt quo warranto. "Wild cats," says Pennant, "were formerly reckoned among the beasts of chase; as appears by the charter of Richard the Second to the Abbot of Peterborough, giving him leave to hunt the hare, fox, and wild cat. The use of the fur was in lining of robes, but it was esteemed not of the most luxurious kind; for it was ordained 'that no abbess or nun should use more costly apparel than such as is made of camel's or cat's skins.' In much earlier times it was also the object of the sportsman's diversion.

Felemque minacem
Arboris in trunco longis præfigere telis.
Nemesiani Cynegeticon, L. 55."

—*Annals of Natural History.*

Calendar of Operations.

(For the ensuing week.)

PLANT DEPARTMENT.

General Stoves.—To plants which have been recently potted, a somewhat closer atmosphere, with shading during the hottest part of the day, is necessary, in very fine weather; but the latter should be cautiously used, and only when the plant would be liable to flag without such protection. Heat and moisture may be applied more freely to plants which are in progress; but for economy's sake, make the best use of the sun's rays in furnishing the necessary amount of heat, by closing early, and thus retaining that generated during the day. Make another sowing

* In the copy of the roll in the Chapter-house, Westminster, Membr. 3, the reading is "Catos."—Murilegus, *Voss.* Felis.—*Du Cange*, v. Catta, Cattus.

† Isleworth. ‡ Edmonton.

of Mignonette in boxes, to carry on the supply till the earliest sowing in the open air is fit for use. Fuchsias, Pelargoniums, and other soft-wooded greenhouse plants, whose flowers will not be required for the next two or three months, should be kept in a healthy growing state, by shifting them into larger pots. Use a rich compost, that fine healthy plants may be obtained in moderate sized pots. Let the training of the plants have due attention, as their creditable appearance depends as much upon this matter as upon the colour or shape of the flower. Those plants which are required for present display should neither be stopped nor repotted, but nourished with occasional waterings of liquid manure if they have filled their pots with roots. Attend to the propagation of greenhouse plants, particularly of Fuchsias for autumn and Chrysanthemums for winter display. As Cinerarias go out of bloom, let them have a few weeks' partial repose, to prepare them for commencing their new growth with increased vigour. Seeds of Cinerarias, Calceolarias, Petunias, Humeas, and other soft-wooded greenhouse plants, should now be sown in a gentle heat.

FORCING DEPARTMENT.

PINERIES.—Where Pines are still grown on the pot system, shift such plants as require it into larger pots, using three-fourths peat for the youngest plants, and increasing the proportion of loam as the plants advance towards the fruiting state. If the bottom-heat is supplied by fermenting material, it will require to be frequently examined, to see that the heat does not decline, and thereby check the plants while in an active growing state. Equal caution will be necessary to prevent an excessive or burning heat, which will materially injure the roots, and very probably throw the plants into fruit, whether they are wanted or not. The object should be to maintain in all cases a steady bottom-heat of from 75° to 80°. A little air at the back should be left on night and day, excepting in frosty or windy weather, and for an hour or two on fine afternoons, when the pits are closed and syringed. Assist Pine-apples whose fruits are swelling with clarified liquid manure; but give no water of any kind after they begin to change colour. The manure water should be made in a tank, and clarified by adding some lime or coarse charcoal; as soon as the liquid has become clear it should be drawn off into a second tank, the top of which is nearly on a level with the bottom of the other one. FIGS.—Let the amount of air to Figs in progress be gradually increased, using the syringe in fine weather to keep the red spider down, but it is necessary to avoid excessive use of the instrument, as too much moisture frequently causes the swelling fruit to turn black and fall off; maintain an equable moderate state of moisture about the roots, as the same misfortune not unfrequently results from extremes of drought and moisture. Stop the young growths at the fourth or fifth eye, by breaking, not cutting, the points out, as they do not, if broken, bleed so much. As the stopping of the young shoots goes on, look carefully into the state of the older wood; and where they stand too thickly to admit of the healthy development of the foliage, remove a few at a time of those shoots which seem the least likely to be fruitful. This will be carrying out the principle of summer pruning, or rather thinning, to its fullest extent; and with no tree is it more requisite. It is however important that it be done gradually, otherwise it will cause much bleeding.

FLOWER GARDEN AND SHRUBBERIES.

Those who do not possess a sufficient extent of glass frames for the propagation of Verbenas, Calceolarias, and other half-hardy bedding plants, may make a splendid display by masses of the more durable annuals sown in the places in which they are to remain. It is not to be expected that their beauty will be as permanent as that of the plants for which they are substituted, but with proper exercise of taste in arranging them, the result will be much more satisfactory than many suppose. For white beds use Clarkia pulchella alba, Nemophila atomaria, or white Virginian Stock; for pink or rose colour, Clarkia p. rosea, Saponaria calabrica, or rose Virginian Stock. For yellow or orange, few things make a more splendid bed than Eschscholtzia for summer and early autumn; but if it be more desirable to make a late autumn display, the different varieties of Marigolds are excellently adapted for the purpose; but as their peculiar odour is not in general esteem, they should not be planted too close to walks which are much frequented. For a dwarf very compact bed of yellow, the common Mimulus moschatus is well adapted, if the situation is not too shady; for blue beds, Nemophila insignis, Lupinus nanus, the late blue Forget-me-not, or the beautiful but rather scarce Centaurea depressa. For dwarf scarlet beds, Verbenas, or Geraniums are indispensable, but a taller bed may be made of Pentstemon gentianoides; the different varieties of Antirrhinum majus are also very useful, particularly the dwarf early flowering double white variety; the taller and later blooming kinds may easily be made dwarfer by pegging them down. For a purple bed, nothing surpasses the branching Larkspur, if raised from seed on a small border, planted out 8 inches apart, and pegged down twice during the growing season. The other annuals mentioned above may be sown at once in their places, and thinned out to proper distances. Musk and Forget-me-not are hardy perennial plants, as are also the Antirrhinums and Pentstemons in most parts of the country. The time for sowing annuals must be regulated by the period at which the greatest display will be most useful; and as this will generally vary from the middle of July to the middle of September, the seeds should be sown from the middle of March to the end of June.

KITCHEN GARDEN.

As appearances are so very important in everything connected with a garden, this should be particularly borne in mind in the management of this department, as a considerable quantity of the work is of such a nature as to give at times an unsettled and somewhat untidy appearance; and as the majority of these operations must be performed strictly in season, they do not leave the manager power to wait till his employer's family takes up its quarters elsewhere for a short period, and he must therefore do his best to keep the place neat and orderly, without suspending the work. Much may be done towards keeping things at all times creditable, by a systematic arrangement of the work, and by a steadfast adherence to the simple rule of doing everything well which is taken in hand, and finishing it off in a workmanlike manner before proceeding to another job. This mode of carrying on the work is the most satisfactory, as it allows of concentrated force and greater energy being devoted to that which is still to be done. Let the various quarters, as they receive their crops, be neatly finished off by raking or forking the ground, straightening the edges of the paths, and cleaning and gravelling the principal alleys. After these the main walks in the immediate vicinity, which will be free from dirty traffic for some time to come, should be cleaned, slightly surfaced with new gravel, and rolled; and at the same time the edgings of all the walks should receive any attention which they may require, either by replanting or thoroughly repairing them. If thrift is used as an edging, about one-half of it should be taken up and replanted every season, as it wears a very unsatisfactory appearance if allowed to remain undivided more than two years. Forward Cauliflowers should have some good rotten dung forked in about them, and the soil drawn up round their stems; if the ground is not over-moist let them be watered with liquid manure.

State of the Weather near London, for the week ending March 14, 1850, as observed at the Horticultural Garden, Chiswick.

March.	Moon's Age.	Barometer. Max.	Barometer. Min.	Thermometer. Max.	Thermometer. Min.	Thermometer. Mean	Wind.	Rain.
Friday.. 8	24	30.433	30.352	47	38	42.5	N.E.	.00
Satur.. 9	25	30.237	30.178	50	27	38.5	E.	.00
Sunday . 10	26	30.258	30.243	54	28	41.0	N W.	.00
Monday 11	27	30.467	30.414	48	20	34.0	N E.	.00
Tues. .. 12	28	30.554	30.549	51	21	36.0	N.	.00
Wed. .. 13	●	30.523	30.454	57	30	43.5	N.W.	.00
Thurs....14	1	30.175	30.458	47	34	40.5	N.E.	.00
Average....		30.421	30.374	50 5	28.3	39.4		0.00

March 8—Foggy; hazy; overcast at night.
— 9—Slight fog; fine; hazy at intervals; clear; slight frost.
— 10—Slight fog; very fine; overcast.
— 11—Clear; very fine; clear; sharp frost.
— 12—Frosty; very fine; clear and frosty.
— 13—Frosty with slight fog; very fine; clear; slight frost.
— 14—Overcast and cold throughout.
Mean temperature of the week, 2½ deg. below the average.

State of the Weather at Chiswick during the last 24 years, for the ensuing week, ending March 23, 1850.

March.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds. N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 17	50.7	31.6	42.6	6	0.36 in.	3	3	2	—	3	5	5	3
Mon. 18	50.6	34.0	42.3	5	0.06	3	5	—	1	2	5	3	2
Tues 19	51.8	33.8	42.8	5	0.13	1	3	4	—	2	7	5	2
Wed. 20	51.8	34.8	43.3	10	0.36	1	1	4	—	—	10	2	6
Thurs. 21	52.0	35.8	43.9	11	0.21	4	1	1	2	3	5	5	2
Friday 22	50.3	36.6	43.7	10	0.25	3	1	3	1	5	6	4	1
Satur. 23	50.5	35.8	43.2	11	0.60	4	3	2	1	4	6	3	1

The highest temperature during the above period occurred on the 19th and 20th, 1836—therm. 69 deg.; and the lowest on the 17th and 20th, 1813—therm. 16 deg.

Notices to Correspondents.

BOOKS: *Plod.* Why not take Glenny's "Horticultural Magazine," now issuing in shilling numbers? It tells you all about common things, in a clear and familiar style.—*Medicus.* The books used by Dr. Lindley in his lectures are, "School Botany," "Elements of Botany," "Medical and Œconomical Botany," "Vegetable Kingdom," "Theory of Horticulture," and "Introduction to Botany." The three first are for junior students, the three last for those advanced in the science.

CAMELLIAS: *J M S.* You may drive worms out of your pots by the use of lime-water; but you will not keep them out unless you pot the plants skilfully—closing the hole by a flat crock, and putting plenty of others over it. Consult "Pharo's" excellent directions as to potting in this and a late *Chronicle.*

CATS: *T H.* Take them in pitfalls, or gins of any kind, and do not let their owners have them again till they have made compensation. If they refuse to do so, send the traps, cats and all, to the pound.

CHINA GRASS: *J W O.* The substance you have sent is of animal origin. China Grass thread is obtained from a kind of Nettle.

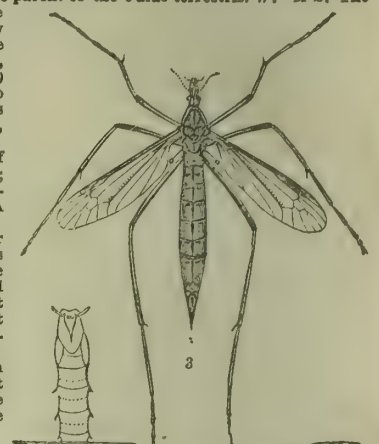
DISEASES: *H P G.* Your Aerides leaf looks as if it was naturally dying. If that is not so, it has too much water, without light enough to consume the water.

GLASS: *John Keys.* Apply to Mr. Hartley, Glass Works, Sunderland. It is entirely false that there is only one substance and quality of rough plate.

GRASS CUTTERS: *A H, R E.* Budding's is that most generally used. If lawns are kept very close, thoroughly swept from stones, and the weather is dry, it answers well. But we much prefer the scythe in the hands of a good mower, if there is much work to do. Certainly a scythe will not keep a lawn quite so even, but it is more convenient. We do not believe that such machines effect any saving whatever in labour.

NAMES OF PLANTS: *S* Dendrobium macrophyllum.—*M—l.* Oncidium barbatum; Huntleya candida is Warrea candida. Nothing can be a Huntleya without the great fleshy hooded column of H. violacea.—*P P.* 2, Brassia Cowani is B. verrucosa; B. havanensis is either B. angusta or a new species; 16, Osmophytum is Epidendrum inversum; 14, E. polyanthum is E. fucatum; E. Lunæanum is E. varicosum; 25 is E. ellipticum; 13, Maxillaria Parkeri? seems to be M. ochroleuca; M. picta *var.* is not distinguishable from that species; M. lineata is the darker variety of M. punctata; 3, Cattleya piperita is a plant we do not recognise; it requires to be studied while alive; 15, Cœlogyne fuscescens (?) is C. fuliginosa; 11, G. Shepherdi (?) looks like a flower of G. Jenischii; Oncidium macranthum (?) is a much finer thing, viz., the O serratum; 23, Huntleya candida of *Morel* is Warrea candida, *Lindl.*; 10, Bletia pulchella is one of the many varieties of B. verecunda; 20, B. Galeottiana is a plant we are unacquainted with. Will you have the kindness to order "Paxton's Flower Garden" through the booksellers. It cannot be sent to Paris under band without injury and needless expense.—*X Y Z.* Aponogeton distachyum.—*S K.* Tecoma australis.

INSECTS: *S F.* Your larva is not the true wireworm, which is more cylindrical, with the tail not forked, as in yours, which is however the larva of an allied species of Elater, although probably not so injurious as the wireworm. *W.*—*M S.* The black Tipulidan larvæ are much smaller than those of the common daddy long-legs, but they are those of a much smaller species of Tipula. Lime-water will probably be effectual, if you can contrive that it shall reach the grubs. *W.*—*Mechanic.* Gas-tar water will be effectual in destroying the Julus terrestris, if you can make sure of its reaching the insects. A better plan is to sink chip pottles, filled with moss or damp vegetable matter, into the neighbourhood of their retreats. They will be decoyed to these receptacles, which must be examined from time to time, and the insects destroyed. The beetle figured in our Notices of Feb. 16, 1850, is not the parent of the Julus terrestris. *W.*—*M S.* The larvæ of the common daddy long-legs (See *Gard. Chron.*, 1841, p. 612) are difficult to destroy. 1 is the larva; 2, the pupa, sticking out of the ground; and 3, the perfect insect. A mixture of gas-tar water and lime is perhaps the most effectual remedy; but the lawn must be quite saturated; the larvæ will even then crawl out of reach of the effects of the mixture. A more serviceable method seems to be to pare off the Grass, turn up the earth, and send in a lot of ducks. You will thus kill two birds with one stone—that is, kill the larvæ and then the ducks, which will soon be fat enough. Otherwise employ children to catch the flies in gauze bag nets as soon as they make their appearance. *W.*



PEARS: *Anon.* The Shobden Court and March Bergamot Pears are almost equal in quality to the Monarch. They seem to bear the high winds in September better; but having only seen them fruited on dwarfs we have not full experience on this point. They are valuable on account of their hardiness and long keeping. They are good bearers. It is difficult to say whether the Eyewood or Norris's Pear is the best; they are both excellent in their respective seasons; if you cultivate both, the Eyewood will succeed the other. The Captif de St. Hélène is the Napoleon. The Duchesse de Mars will do as a standard; good, but there are better. Broom Park and Orpheline or Beurré d'Aremberg will succeed as standards; but the Broom Park is the hardiest.‖

PITS: *Irish Amateur.* Cucumbers will bear a much higher bottom-heat than Strawberries; for they are natives of the East Indies, and 75° are not too much for them when forced. What appears to have happened to your plants is that the roots have become dry; a circumstance very likely to occur with your arrangements. A cold current of air would not affect a single leaf at a time, but would act upon every leaf it touches. Read Moore on the Cucumber, a very cheap little book.

PLUMBAGOES: *Lover of Flowers.* Your P. capensis is too luxuriant to flower, and you have kept it growing too late in the autumn. As soon as it has made its young wood, endeavour to get the latter well ripened by gradually withholding water, but not altogether, and by exposing it to sun and air. The flowering depends greatly on the wood being well ripened.‡

QUICK GROWING PLANTS FOR A WALL: *Anon.* Tropæolum canariense, Lophospermum Hendersoni, and Eccremocarpus scaber will answer your purpose.‡

RAIN: *C B H.* The following are the monthly quantities of rain which fell at Chiswick in 1849:

January	...inches—1.73	August	...inches—1.60
February	... ... 2.52	September	... ... 2.49
March	... ... 0.85	October	... ... 2.18
April	... ... 2.21	November	... ... 1.32
May	... ... 3.53	December	... ... 1.28
June	... ... 0.31		
July	... ... 2.82	Amount for whole year...	22.84

You will find a tabular statement of the monthly depth of rain from 1841 to 1849, inclusive, at p. 8 of the present vol.‖

VINE BORDERS: *C D E.* It is a very bad practice to turf them. If you must have something on them, then sow them with the more slender growing annuals, as Mignonette, &c., or plant them with Verbenas; but they should never be cropped, if it can be avoided.‡—*J D.* There can be no harm in removing the top soil carefully, and replacing it by degrees with rich compost, with a view to induce the roots to approach the surface; but if you can go to the expense, we would advise you to lift the Vines in autumn, concrete the bottom of the border, and then replant them.‡

VIOLETS: *A and V.* If double Violets become single, it is probably because the ground they are grown in is not in good heart. They will not succeed where the soil is very poor. If you wish to keep them in tufts, and to have them fine, you must lift them occasionally, and plant the runners in well prepared beds of fresh soil; or else top-dress them with rich earth mixed with bone-dust.‡

MISC: *W P.* You quite mistake the matter. We do not in the least complain of it; we have no cause to do so. Every one has a clear right to employ his talents in the most advantageous way he can consistently with fair dealing. There is no unfair dealing at present on this gentleman's part; and we wish him success. Do you think it respectable to act like a dog in a manger?—*L L.* The Winter Violet Grass is the Cochlearia acaulis, *alias* Ionopsidium acaule. It may be had of any great nurseryman, and all little ones can procure it, if they will take the trouble.—*J W.* We cannot recommend dealers.‡—*V P T.* Succulents are the most suitable plants for growing on the leads of your town house. Try different kinds of hardy Sedums, as S. acre, Sieboldii, Fosterii, rupestre, and others; the common Houseleek, Sempervivum tectorum, arachnoideum, Penthorum sedoides, Umbilicus pendulinus, Mesembryanthemum pyropæum, &c. Some annuals, as Nemophila insignis, Collinsia bicolor, Clarkia pulchella, Leptosiphon densiflorus, Phlox Drummondii, and Mignonette may also flower with you. The adhesive composition used on the postage stamps is probably gum arabic and brown sugar, with a little Tragacanth powder.‡

SEEDLING FLOWERS.

CINERARIAS: *M B.* Petals blue, fading to white in the centre; shape and texture good, size middling, a nice showy variety.*

LUCERNE.—JUST IMPORTED a large quantity of excellent new Lucerne Seed, price 80*s.* per cwt., in quantities not less than 28 lbs. Also the best Perennial GRASS SEEDS AND CLOVERS FOR PERMANENT PASTURE at very low prices; and SUTTON'S RENOVATING MIXTURE for improving old Pastures, price 1*s.* per lb., consisting of the finer sorts of Perennial Grasses and Clovers.

Address: JOHN SUTTON and SONS, Reading, Berks.

*** *Carriage free by Great Western, South Western, or South Eastern Railways.*

GLASS FOR CONSERVATORIES.

JAMES PHILLIPS AND Co. have the pleasure to hand their New List of Prices of GLASS for Cash.

CUT TO SIZE.

16 oz. from 2*d.* to 3½*d.* per foot.
21 „ 3½ „ 5 „
26 „ 3½ „ 7½ „
32 „ 4 „ 9½ „

SHEET SQUARES.

In boxes of 100 feet.

	s.	*d.*
Under ... ... 6 by 4	12	6
6 by 4 and under 7 by 5	16	6
7 by 5 „ 8 by 6	18	6
8 by 6 „ 10 by 8	20	6

100 feet and 200 feet cases of large Sheet Glass, for cutting up, at 2½*d.* per foot. British Plate Glass, from 1*s.* 2*d.* to 2*s.* per foot, according to size.

HARTLEY'S PATENT ROUGH PLATE, packed in boxes of 50 feet each:

6 by 4 and 6½ by 4½ ... 10*s.* 6*d.*
8 by 6 „ 8½ by 6½ ... 13 6
7 by 5 and 7½ by 5½ ... 12*s.* 0*d.*
9 by 7 „ 10 by 8 ... 15 0

MILK PANS.

	s.	*d.*
12 in. diameter ...	2	0
14 „	2	6
16 „	3	0
18 „	3	6
20 „	4	0
22 „	4	6
24 „	5	0
26 „	6	0

CREAM POTS, from 2*s.* each.

PROPAGATING GLASSES.

	s.	*d.*
2 in. diameter ...	0	2
3 „	0	3
4 „	0	4
5 „	0	6
6 „	0	8
7 „	0	10
8 „	1	0
9 „	1	2
10 „	1	4
11 „	1	6

BEE GLASSES, same price.

METAL HAND FRAMES.

	s.	*d.*
12 inches	6	0
14 „	7	0
16 „	8	0
18 „	9	0
20 „	10	0
24 „	12	0

Open tops, 1*s.* extra.

CUCUMBER TUBES.

12 inches long ...			
14 „			
16 „	1		
18 „	1		
20 „	1	8	
22 „	1	19	
24 „	2	0	

Glass Shades; Tiles and Slates of any size; Wasp Traps, 3*s.* 6*d.* per dozen; Lamp Shades; Rough Plate Glass of every thickness. Lactometers, for trying the quality of milk, 4 tubes, 7*s.* 6*d.*; 6 do., 10*s.* Glass Stands for Pianoforte, and every article in the trade.

JAMES PHILLIPS AND Co., 116, BISHOPSGATE-STREET WITHOUT, LONDON.

HARTLEY'S PATENT ROUGH PLATE GLASS FOR CONSERVATORIES, &c.

See Article in THE GARDENERS' CHRONICLE of Saturday, December 8, 1849.

"Continued experience leaves us no room to doubt that this is the best material yet produced, and that it will in time supersede glass of all other kinds for the greater part of Gardening purposes." . . . "As for the article substituted for Rough Plate . . . it is wholly unfit for any horticultural purpose." . . . "The best sample of it which we have yet seen was Manufactured by Messrs. HARTLEYS, AND SOLD BY MESSRS. JAMES PHILLIPS & CO., 116, BISHOPSGATE STREET."

CROWN, SHEET, AND ROUGH PLATE GLASS, FOR HOTHOUSES, CONSERVATORIES, &c.

Of every manufacture FIT FOR USE, including the make of Messrs. CHANCE, HARTLEY, SWINBURNE, and others.

100 and 200 feet cases of large Sheet Glass, from 2½*d.* per foot. Small ditto, 10*s.* 6*d.* per 100 feet, packed in boxes ready for immediate delivery. Curators of Botanical Societies, Florists, Railway Agents, and others requiring large quantities, will, on sending dimensions, receive estimates at the lowest prices.

GLASS MILK PANS, CREAM POTS, Lactometers, Bee Glasses, Fish Globes, and all kinds of Dairy Glass, Propagating Glasses, Hyacinth Dishes, Cucumber Tubes, and every other description of Garden Glasses.

PATENT GLASS PENS, self supplying, never blot, never soil the ruler, and will write continuously for 12 hours.

Also, Glass Rulers, Glass Inks for office-stands, desks, &c. Stationers and Schools supplied. Wholesale Warehouse for Ornamental Shades, Lamp Shades, Gas Glasses, Genuine White Lead, Paints, Colours, and Pumps for Farm purposes.

Our Catalogue of 18 folios is the most complete ever published. No Gardener or Farm Bailiff should be without one. May be had Gratis on sending two postage stamps to Messrs. COGAN and Co., 48, Leicester-square, London.

GLASS FOR CONSERVATORIES, HORTICULTURAL PURPOSES, &c.



T. MILLINGTON'S SHEET GLASS, which is of the best description, varying from 16 to 32 ounces, at from 2*d.* per foot and upwards; 100 feet and 200 feet cases of large Sheet Glass, for cutting up, at 2½*d.* per foot. British Plate Glass, from 1*s.* 2*d.* to 2*s.* per foot, according to size. Patent Rough Plate Glass, from ¼ to 1 inch in thickness, from 4*d.* per foot upwards. Glass Slates and Tiles. Milk Pans from 12 to 24 inches diameter, from 2*s.* to 5*s.* each. Cucumber Tubes, from 12 to 24 inches long, at 1*d.* per inch. Lactometers, 7*s.* 6*d.* each. Wasp Traps.—Lists may be had, on application at the Warehouse, 87, Bishopsgate-street Without, same side as the Eastern Counties Railway.

HOT WATER APPARATUS AND HORTICULTURAL BUILDING.



W. HILL begs respectfully to announce that his improved "FLUE BOILER" may now be had in sizes to suit every description of Apparatus, from that of 100 feet to 2000 feet of 4-inch pipe. Improved STEAM BOILERS, from one horse-power and upwards, adapted either for stationary or portable engines, and guaranteed to be most effective.

Every description of Horticultural Building constructed upon the best principle. Buildings of any kind heated by hot water.

*** A liberal Discount to the Trade.

W. HILL, Horticultural Works, Greenwich.

MANURES.—The following Manures are manufactured at Mr. LAWES'S Factory, Deptford Creek:

Corn and Grass Manure, per ton ...	£10	0	0
Clover Manure, do.	11	0	0
Turnip Manure, do.	7	0	0
Superphosphate of Lime	7	0	0
Sulphuric Acid and Coprolites ...	5	0	0

Office, 69, King William-street, City, London.

N.B. Peruvian Guano, guaranteed to contain 16 per cent. of Ammonia, 9*l.* 15*s.* per ton; and for 5 tons or more, 9*l.* 10*s.* per ton, in dock. Sulphate of Ammonia, &c.

LAWES'S PATENT MANURE.

WILLIAM E. RENDLE AND CO., Plymouth, are Mr. Lawes's Wholesale Agents for the Sale of his MANURES, and can supply them at Mr. Lawes's prices, delivered at his Factory, Deptford Creek.—Apply to WILLIAM E. RENDLE and Co., Union-road, Plymouth.

GIBBS' GENUINE PERUVIAN GUANO, *warranted*, at 9*l.* 15*s.* per ton. In the Import Docks.

GUANO AND OTHER MANURES.

PERUVIAN GUANO of the finest quality (as imported by the Contractors) on Sale; also Superphosphate of Lime, Gypsum, Nitrate of Soda, Salt, and all other Manures of known value.—Apply to MARK FOTHERGILL, 201A, Upper Thames-street, London.

POTTER'S GUANO. — This effective MANURE, now greatly Improved, is confidently recommended as a Dressing for all Spring Crops. It is equal to Peruvian Guano, and 25 per cent. cheaper. Also SUPERPHOSPHATE of LIME, GYPSUM, and SULPHATE of AMMONIA, all of guaranteed quality, and Cheaper than at any other establishment in town or country.

Factory, 28, CLAPHAM ROAD PLACE, LONDON.

GENUINE PERUVIAN GUANO, direct from the Importer's Stores, LINSEED CAKES, and all kinds of Artificial Manures, may be had at London prices, for Cash, of Messrs. ODAMS and PICKFORD, 15, Mark-lane, London.

THE LONDON MANURE COMPANY beg to offer as under, and pledge themselves that every Manure shall be perfectly Genuine:—Corn Manure for Wheat, Barley, Oats, Clover—most strongly recommended from its success last year; it will be found cheaper than Guano, and bear the strictest analysis. Also URATE, Superphosphate of Lime, Sulphate and Phosphate of Ammonia, Nitrate Soda, Fishery and other Salt, Gypsum, Sulphuric Acid, &c.

GENUINE PERUVIAN GUANO.—To insure this free from adulteration, all purchasers, if they prefer it, can receive their warrants from Mr. Purser, and remove the Guano direct from the Warehouses of Messrs. A. GIBBS and SONS, the Importers. Bridge-street, Blackfriars. EDWARD PURSER, Secretary.

Country Dealers and Agents supplied.

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BLASHFIELD'S PATENT COPROS.—A new Manure for Corn and other Crops, prepared from the nitrogenous matter deposited on the banks of the Thames, in combination with other substances essential for the growth of corn, &c., price 8*l.* per ton. Sold, in a finely ground state, at No. 3, New London-street, Mark-lane; also, at the Works, Mill-wall, Poplar; Waterloo Dock, Lambeth; and No. 1, Praed-street, Paddington Basin.

PATENT COPROS, for Corn crops, also for Turnips, &c.; Superphosphate of Lime, Gypsum, calcined and saturated with liquid manure. CEMENT for Liquid Manure Tanks, Malt House Floors, and Barn-floors, manufactured by J. M. BLASHFIELD, successor to Wyatt Parker and Co., Original Patentees of Parker's Cement. Established 1796. Drain Pipes, Tiles, &c.

The Agricultural Gazette.

SATURDAY, MARCH 16, 1850.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

WEDNESDAY, March 20—Agricu tural Society of England.
THURSDAY, — 21—Agricultural Imp. Society of Ireland.
WEDNESDAY, — 27—Agricultural Society of England.
THURSDAY, — 28—Agricultural Imp. Society of Ireland.
FARMERS' CLUB.—March 22: Hadleigh.

IT is not very many years since THE RELATIONS OF GEOLOGY TO AGRICULTURE were first to any extent developed. And then the novelty of the proposition, as well as the ability of those who enunciated it, made people attach too high an importance to the subject. But the usual fate of whatever excites unreasonable expectations, has already befallen agricultural geology, and from the rank of a first-class topic in agricultural literature, it has fallen far below its rightful status.

There were two principal doctrines on which its reputation stood: 1st, That the nature of the soil was accurately indicated by that of the rock on which it lay; and 2d, That the mixture of earths was essential to the attainment of a perfect texture of soil. And two inferences were immediately drawn from them—viz., That a geological map was at once and cheaply the equivalent for a land-surveyor's report—that, in fact, given the nature of the soil in any locality and the boundaries of the formation on which it was situated, and you immediately had the character of the soil throughout the whole space they included: and—that a knowledge of the various strata which English geology includes, and of their mineral contents, was of essential importance to the true economy of English agriculture. Now it is unquestionable that a knowledge of the mineral structure of the island will be of material value to landowners, whether in relation to its agriculture or its manufactures; but the immediate influence of such knowledge on the texture of the soil is rarely possible. In some localities, as along either side of the chalk formation, where on the one side the clays and sands of the gault and green sand, and on the other those of the plastic clay, are capable of mixture with the soil of the chalk, or with one another, without great expense of carriage; no doubt this point, which geologists insist upon, is practically useful; and in other districts, too, where the study of the subsoil has revealed the existence of marl beds, the use of this knowledge has been apparent. But the exclusive importance of this method of altering a faulty texture has fallen before the more generally useful methods which the drainage of wet lands and the burning of stiff clays present. And to this in some measure, no doubt, is due the diminished reputation of geology as the assistant of agriculture. But it is chiefly from the failure of the first named of its pretensions that its lower character is owing. Geological maps, as at present constituted, rarely give anything more than the structure of the land so far as rocks *in situ* are concerned. Above these, in many instances, beds of transported material lie between them and the soil; and thus, for instance, the marl of the red sandstone group has often had no influence at all upon the nature of the soil above it; for it was obscured by the accumulations of boulder stones and drift before that soil was made. And even where no such obliterations of the older geological features of the land had taken place, and the soil might be supposed to have been derived wholly from the disintegration of the rocks below it, this appears to be by no means the case; transported particles are mixed with others of an origin less remote; and it appears that there is a complete gradation in the series between the few cases of soil which have been formed wholly by the disintegration of the immediate subsoil, and the few where it has been formed wholly by the disintegration of rocks at a distance whose wreck has been brought down from the uplands by the floods and deposited along the shores of more quiet waters. Besides the smaller relative importance now attached to the mixture of the soils as a means of improving their texture, we thus have the proved inaccuracy of the idea that a geological map is also in any respect an agricultural one—indicating the nature of the soils by that of the rocks below them; and to both of these circumstances must be attributed the partial failure of geologists as agricultural instructors; to both we attribute their diminished reputation in the eyes of farmers. And thus it is unfortunately the case that the latter now attach far less importance to geological knowledge than is properly its due; for to give the facts and doctrines of geology their proper rank and position among the facts and doctrines of agriculture, certainly appears a very desirable thing.

There are two grounds on which the value of geological knowledge to the farmer may be contended for; and these are precisely those on which its advocates have already stumbled. The knowledge of the mineral contents of any formation has of late years, in some instances, proved of far higher agricultural importance than ever was the acquaintance with merely its sand, or its clay, or its lime, on which geologists used to rely. Mr. PAINE, of Farnham, has lately given agricultural significance to certain facts which had previously been known to geologists regarding the strata immediately under the chalk; and the vast accumulation of phosphoric acid, which they are now known to contain, may well encourage search in other formations also after a raw material of such inestimable value in the agricultural manufacture. And as regards the composition of soils, the knowledge of the proportion in which the disintegration of the subjacent rock has contributed to the formation of the soil above it, and of the extent to which the drifted material is present will, when the composition of each is known, be of the very same value which a knowledge of the rock alone was formerly believed to possess.

These remarks are suggested by the perusal of a pamphlet lately published by Mr. TRIMMER, of the national geological survey, entitled "Proposals for a Geological Survey," specially directed to agricultural objects.* It was Mr. TRIMMER who first drew particular attention to the imperfections of the older geological features of a district as guides to its agricultural character: and in the pamphlet referred to he developes the nature of the information which an examination of the superficial deposits and their influence on the soil is likely to afford. We strongly recommend the pamphlet to the notice of those landowners who are desirous of a more than surface knowledge of their property.

ON A SPINELESS VARIETY OF FURZE.

By M. L. VILMORIN.

I HAVE the honour to lay before the Academy some specimens of an accidental variety of Furze, Ulex europæus, which is of considerable interest, as well in an agricultural as in a scientific point of view.

A few years ago M. Frochu, the celebrated agriculturist, showed me in his fields a few plants of the common Furze without any spines whatever. It is from him that I have obtained the present specimens, which were accompanied with the following details:

"Specimen No. 1 was taken from some plants of the herbaceous variety, the spines of which had lost their sharpness and become fit for fodder. Cattle of all descriptions eat it, without any preparation, as they would Clover; it grows in tufts instead of sending out long shoots which soon become woody, as is the case with

* RIDGWAY, Piccadilly.

the common species. One circumstance which assists its taking this form is the avidity with which hares, rabbits, and other animals devour it. This kind of pruning being continually repeated gives the plant the appearance of a bush that has been clipped by a gardener. The present variety is, however, very scarce. On the whole of my property, comprising an extent of three or four leagues, there are hardly two dozen plants of the herbaceous, although there is a large quantity of the common variety. A considerable number of plants evidently approach the herbaceous state, but there are very few which have completely attained it. I never succeeded in reproducing this variety from its seeds, of which there are very few. About four years ago, I found several plants much more herbaceous than the accompanying specimens, but they have all disappeared, probably in consequence of the soil around them having been disturbed in removing their spiny neighbours to prevent hybridising.

The interest attaching to this remarkable variety is, in an agricultural point of view, very considerable, when it is remembered that the common Furze, in consequence of its spines, has to be well bruised before it can be eaten. A variety which does not require such a preparation may be regarded as one of the best kinds of fodder, equalling, if not surpassing Lucerne itself; it would indeed be the Lucerne of poor lands.

It may be as well to add that in consequence of the presence of organs which appear to be true leaves, bearing buds in their axils, M. Frochu's spineless Furze has a branched and tuft-like appearance, which contrasts with that of the common variety; for in the latter, the spiny axillary branches once formed are no longer susceptible of elongation, and the plant only grows at the extremities of its principal branches.

The method of reproducing a spineless Furze from seed is one of the most important problems to which scientific farmers can turn their attention; and although M. Frochu's first attempt has been unsuccessful, everything leads him to believe that such a thing will ultimately be done. It is not improbable that the process of budding, made use of in England for the propagation of the variety known as Ulex hibernica, may be employed with success for propagating the spineless variety, and for extending the advantages it offers as a valuable food for cattle. *Comptes Rendus.*

REPORT TO A LANDOWNER.

This farm rests on the new red sandstone formation, but the sandstone is generally covered with the drift peculiar to this formation, composed of sandy gravel. The active soil upon this drift is of a good depth, from 1 to 2 or more feet in depth, of a sandy loam, or of a sandy gravelly loam, which is a productive soil in moderately dry or in damp seasons, although on some parts, where the gravel is nearest the surface, the crops burns in very dry seasons, from want of moisture. The whole of the land is in an excellent state of cultivation. I have very seldom seen a farm in such a highly cultivated state; every field is clear from weeds, except about 14 acres of Wheat stubble, in which there is some Couch, and which is being cleaned.

The interior hedge-rows and timber have been grubbed up at a considerable expense, to form the arable part of the farm into four fields, averaging about 38 acres each; land has thus been gained by the removal of the hedgerows. The system of farming which the present tenant has adopted (the four-field or Norfolk system), is the best which could be adopted on this dry Turnip and Barley soil. The meadows are under the same excellent management; the whole of them have been drained at a considerable expense. The river has been cleaned out, straightened, deepened, and a river wall built, all the old water-courses filled up, the ground levelled, and the whole formed into an excellent productive water meadow, able to produce more hay than is required for the stock on the farm. All the water courses are now cleaned out, and ready to put the water on. There are also about 32 acres of rough meadow and rough pasture. The rough meadow (about 4 acres), has been drained, and is now productive of large crops of coarse hay; the remaining 28 acres, some of which, by the buildings, produce good crops of pasture, but the remainder was originally coppice, which was grubbed up, and is now converted into pasture; this makes a good sheep walk, which has been greatly improved in value as such, by adding two or three pieces to it, so as to make it surround all the arable land, thus enabling the sheep to be taken from it into any of the arable fields without driving them on to the road.

All the fences are in the best possible state of repair; there is, however, a good extent of old pit-iron chain, and iron hurdles, of which the fences by the river and by the building are composed, and which belong to the tenant, but which should be taken to by the landlord, and left as fixtures.

The buildings are the best I have ever seen on a farm of this extent; I do not think there is anything wanting, and the whole are built most substantially; indeed too much so, for all the roofs have king posts, which is seldom or ever used for sheds. The whole is in a most perfect state of repair.

The house is of a character equal to a farm of more than double the size of this, and will accommodate a family, and is altogether such a residence as will command a man of capital and respectability, or a tenant who may farm for his amusement, and who will not only farm it well, but may greatly increase its productiveness. The house and farm buildings, according to the account I have received, were in a most ruinous state when the last tenant left it, and the expense of putting them into their present state has been very great; the whole of the land was completely run out, foul, and badly cultivated, and it took three or four years to get it into its present state of cultivation, and at an expense of from 2*l.* to 3*l.* per acre.

In estimating the value of land we have not only to take into account the nature of the soil and subsoil, and the best mode of cultivation, which will make and keep it in the most productive state; but to whatever state of productiveness we may have brought it, it is the market price of the produce which regulates the money value of our crop. It is the money we get for our produce which enables us to pay for horse and manual labour we employ, the implements and manure we use, the interest on our capital which we employ, upon which we live, as well as the rent, rates, and taxes we pay. It must, therefore, appear that whatever portion of the produce may be fixed on as a fair rent for land, it is the money price only of this portion which the farmer is able to pay in money as rent; and as the price of grain is so variable, a corn or produce-rent is the only fair and equitable one. The price of Wheat has varied from 5*s.* to 25*s.* per bushel within the last 40 years.

The average price of Wheat for the seven years previous to 1843, when the last tenant left, was 7*s.* 7½*d.* per bushel, and the rent was 316*l.* in money, which was the money he received for 840 bushels of Wheat at 7*s.* 6*d.*; and the tithes and parochial taxes were at that period 112*l.* 10*s.*, which was covered by the price he got for 300 bushels of Wheat, so that 1140 bushels of Wheat at 7*s.* 6*d.* produced a sum equal to the rent and taxes paid for this farm, amounting to 428*l.* 10*s.* The price of Wheat and other corn crops, and also of beef, mutton, and pork, have gradually fallen; the average of the six years previous to 1849 was 6*s.* 9*d.* for the bushel, and the price of Wheat in 1849 has come down to 5*s.* 3*d.*, as the average of the year. So that if the land was not more productive now than it was when the present tenant entered upon it, in 1843, the rent of 316*l.*, which was then represented as the price of 840 bushels of Wheat, would now, at 5*s.* 3*d.*, only amount to 221*l.* 0*s.* 6*d.*

I have been thus particular that you may see the principle upon which rents are fixed; but landlords prefer money rents, because, as they say, they like to have their incomes fixed, whereas a corn rent must necessarily fluctuate as the price of corn fluctuates. Some tenants prefer a money rent, for the reason, they say, that they know what they have to pay; but then the tenants must be convinced in their own minds that the money rent they agree to pay during the period of their lease will be within the price which they expect to get for that quantity of Wheat which they have fixed on as a fair rent. I went over the farm on the 22d ult., and examined every field minutely, and fixed what I conceived the value of each field should be in produce, and on the day following Mr. —— came, and I went over the whole with him, and got his account of the state of the arable fields, the buildings, and meadows in 1843, when the last tenant left. My valuation of the farm consisting of 196 acres (exclusive of the mill), reducing all the produce to Wheat, is equal to 1332 bushels of Wheat, out of which the tithe and other parochial rates are to be paid; the remainder will be for the rent. The tithes and parochial taxes are now reduced to 107*l.* 18*s.*, which will require the sale of 392 bushels of Wheat to give this sum at what I think the average price may be for some years longer, viz., 5*s.* 6*d.*, and there will, therefore, be 940 bushels for rent, which, at 5*s.* 6*d.*, is 258*l.* 10*s.*; to this must be added the seven cottages which the present tenant lets to his labourers at 23*l.* 5*s.*, but as he has to keep them in repair, say, 18*l.* 10*s.*; making a total of 277*l.*

The price of grain at this present time being so low, I think there will be a greater difficulty in getting 250*l.* of rent for this farm than there will be in getting a rent of 940 bushels of Wheat at the average of the kingdom; and by a grain rent you would have the advantage of the rise in Wheat, and if it should in any one year get up to 7*s.* 6*d.* per bushel, the 940 bushels would give you 352*l.* 10*s.*; but you will also suffer by the fall in the price of grain. I think it possible to get a good tenant to give 1000 bushels of Wheat, including the cottages, which at 5*s.* 6*d.* would amount to 275*l.*, and which at 6*s.* would be 300*l.*, and at 5*s.* would be 250*l.*

Valuation of the live and dead stock on this farm. As all kinds of stock are low and falling in price, it is probable that my estimate may not give a correct idea of what it will fetch if put up to sale, or if taken at a valuation by the in-coming tenant.

There are 181 sheep, which we have put at		£341	2 0
9 horses and a pony		218	0 0
61 pigs of various sizes		207	5 0
2 cows and 6 heifers		61	0 0
Live Stock		£827	7 0
The Implements cost 1000*l.*; the wear and tear will reduce their value 60 per cent., so that they may now be worth		400	0 0
Corn, 500 bushels of Wheat, at 5*s.*	£125 0 0		
630 ditto Barley, at 3*s.* 4*d.*	105 0 0		
270 ditto Buckwheat, at 3*s.*	41 0 0		
		271	0 0
35 tons of hay, at 3*l.*	£105 0 0		
Straw and manure in the yard	119 5 0		
Unexhausted cultivation in the land worth	366 7 6		
		590	12 6
		£2088	19 6

In Sussex, Kent, Essex, and some other counties this sum would be given, as the custom of these counties is to value all the hay, straw, manure, and the unexhausted cultivation left in the land by the out-going tenant for the profit of the in-coming tenant, but in Shropshire the straw, the manure, and all the cultivation is claimed as belonging to the in-coming tenant without any payment, and hence the land is run out. Everything is taken out of the land by the out-going tenant, and it is left in as bad a state as the present tenant found it in. The manure, straw, and unexhausted cultivation, which I have put at 485*l.* 12*s.* 6*d.*, would be lost by the custom of Shropshire, and the out-going tenant would get one half the value of the Wheat crop, which might amount to 133*l.*, so that there would be a complete loss to the present tenant of 352*l.* 12*s.* 6*d.* I would therefore advise you to bind the new tenant to take to these things at a valuation, and in his lease give him the power of getting it back again at the end of the lease.

The following account is a statement of monies expended in the permanent improvement of the land and buildings on this farm:

To expense of draining the meadow, deepening and straightening the river, filling up the old water courses, and making it into a water meadow, in addition to the tiles and bricks paid for by the landlord		£383	10 0
To draining mill meadow, making pig sty and shed		22	7 6
To horse and manual labour in carting 550 loads of earth, and filling up a pond and old quarry, and making land of them, at 1*s.* 6*d.* per perch		41	5 0
To grubbing up the roots in the coppice, 5½ acres, at 7*l.* 10*s.* per acre		41	5 0
To grubbing up roots in the coppice, and preparing posts for fence		30	2 1
To grubbing up the internal fences, 655 days, say 2*s.* per man		65	10 0
To expense of making a new fence on both sides of the new road, and also by the buildings, and preparing and morticing posts and rails, and for the iron chain, digging the ground, and planting; in all		153	18 7
To making a new road from the farm to the river, and to the meadow		118	10 0
To quarrying 975 yards of stone—building the river wall—sand and lime—carrying the stone to the river wall and farm buildings—and building three bridges to the meadow		316	17 3
		£1173	5 5
To building the new part of the house and repairing the old (this you have seen) £904 8 8			
Of this sum the landlord paid 205 0 0		699	8 8
To hauling all the timber and other materials, 20 days of seven hours—10 men—at 20*s.* per day		20	0 0
		£719	8 8
To the expense of farm-building—the old part was fresh roofed, and much new was added—15,000 bricks, 13,000 tiles, including hauling, builder's bill, &c.		1244	0 1
To building, in addition to the 21 pigsties, a dwarf wall around the sheds and barn, including 30,000 bricks, bricklayer's bill, lime, sheet-iron for a roof, and making three stack staddles		153	15 1
		1407	15 2
Of this sum the landlord paid		928	3 5
The remainder was paid by the tenant		£479	11 9
Recapitulation:			
Draining meadow, river, and building river wall; making road, quarrying, hauling stone, &c. See above		1173	5 5
Paid for house over what was allowed by landlord		719	8 8
" farm-buildings over what was allowed		479	11 9
		£2371	17 2

This was a large sum expended by the tenant. I have the detail of each item, which I can send you if you wish it.

In Lincolnshire, and some other parts, where the tenants lay out money, with the consent of the landlord (when the tenant holds from year to year), the tenant is allowed to occupy them for 21 years; or if he leaves with the landlord's consent, then he is allowed $\frac{1}{21}$ part of the sum he has expended for every year short of 21 years; so that, if the present tenant had occupied this land and buildings for seven years, then he would be entitled to two-thirds repaid him, because seven is one-third of 21 years. I mention this in case you wished for my opinion as to the money laid out on the buildings and other permanent improvements. *J. M.*

INSTANCES OF CATTLE FEEDING.—No. III.

1. Four three-year-old strong Scots.
2. From the fourth week in January to the first week in April.
3. Fed in stalls; two beasts to 5 square yards. (Query 5 yards square).
4. Fed completely on Bean, Barley, and Tare meal mixed dry with hay and straw chaff, varying from 4 to 6 pecks per diem for four bullocks, with from 18 to 20 pecks of chaff.
5. Two good cart-loads weekly of Wheat straw.
6. Put up at 17 stones (imperial), valuing 6*l.* 7*s.*; sold out at 40 stones (imperial) valuing 15*l.* 7*s.*, the four having cost 2*l.* 8½*d.* per week.
7. The condition of the animals as to cleanliness and comfort during feeding excellent.

This experiment was tried in 1844. *Howard Reed, Long Sutton, Lincolnshire.*

PRICES OF WHEAT.

I send you another Table relating to the Prices of Wheat, from the official reports obtained by Mr. Wilson, and alluded to in the Debate in the House, on the 21st ult. As a multitude of figures, however, are not very attractive reading, I have shortened it as much as possible, merely stating what is absolutely necessary to make the results clear to the eye. I believe the accuracy of the figures may be depended on.

It gives the prices of Wheat, for the last 10 years, in France, Belgium, the Prussian provinces (averaged on those of Pommerania, Posen, Saxony, Silesia, Westphalia, and the Rhenish districts), and also the shipping prices, during the winter season, at the ports of Amsterdam, Lubeck, Hamburgh, and Dantzic.

These afford, together, a fair average of what may be called the European prices, for the period referred to. I should be glad if the port of Odessa was included; but its great distance, the less suitable quality of the Wheat, and its comparative independence of our consumption, from its contiguity to the Mediterranean demand, render its influence not so great as that of the Baltic ports upon the English market. The table will repay study.

Price of Wheat per quarter in	1840.	1841.	1842.	1843.	1844.	1845.	1846.	1847.	1848.	1849.
	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
France	51 6	43 3	46 9	49 5	47 3	47 3	57 6	69 7	39 9	33 9
Belgium	51 6	48 0	53 0	46 9	42 6	49 0	58 0	74 6	43 3	38 3
Prussian Provinces	36 5	34 3	37 9	32 0	29 9	34 2	44 5	57 4	32 2	30 0
Amsterdam	53 10	60 4	41 6	43 0	36 6	58 2	58 10	63 2	50 0	40 6
Hamburgh	40 0	57 0	36 0	35 9	29 0	49 0	51 0	48 0	45 0	38 0
Lubeck	36 0	50 6	30 6	36 0	29 2	48 10	53 4	48 0	40 10	35 4
Dantzic	55 0	54 0	44 0	38 0	34 0	48 0	55 0	75 0	44 0	40 0
Average	46 4	49 8	41 3	40 2	35 5	47 9	54 0	62 3	42 2	36 6
England	66 4	64 5	57 5	50 2	51 3	50 9	54 9	69 5	50 6	44 6
Difference	20 0	14 9	16 2	10 0	15 10	3 0	0 9	7 2	8 4	8 0

It will be seen from the above Table that the two years of greatest plenty over Europe, during this decennial period, have been 1844 and 1849. What the European average would have been in the latter year, with so unusual an abundance in France and Belgium, —had it not been for the opening of the English market—it would be difficult to conjecture: for these two, despite their *dense* cultivation, are generally importing countries. (I use the word dense in allusion to their population, for the acreable grain-produce, in both, is far inferior to that of England.) It is quite plain that the *continued* depression of prices in England latterly is due not so much to the abundance over the wide area of the Prussian provinces as to that in France, which since 1847 has been almost unprecedented: the price of Wheat having sunk, there, from 20 francs the hectolitre (about 2½ bushels), which had been the *average* price for the 20 years previous, to only 13 francs, a fall greater than that which we have suffered, in the ratio of 21 to 16. Indeed our chief imports since Christmas have been of French flour.

But I think anybody who looks at the column under the year 1849, and marks the general and extraordinary abundance and resulting cheapness last year which it exhibits over the Continent, and that, too, in spite of the export to England of nearly six million quarters of Wheat, will cease to apprehend the likelihood or possibility of such a state of things continuing. If he will cast his eye along the line of averages, the tale will speak for itself; and on comparing the year 1849 with the other low year (1844), he will see that the English price of the latter year stood only seven shillings a quarter higher than in the former. Our Corn-law abolition has fallen on a most unlucky juncture!

But these two years are entirely exceptional. The average of the whole line of European averages (from 1840 to 1849 inclusive), is 46*s.* 7*d.* a quarter, and it need not be objected that the year of scarcity (1847) is included in this average, for if that and the other highest year be taken with the two lowest before named, the average still comes out 47*s.*

Here, curiously enough, we again come into that seemingly 'magic circle' of 47*s.* a quarter, as an upset average price. It comes out upon the cards, examine them how one may. I am far from thinking that the price will never be higher than that point in England. But my object is to get at a fair approximate average, such as a Landlord and Tenant can reasonably go upon as the basis of a lease. It is idle to agitate the question, on chemical or any other principles, as to the possibility of growing corn at 5*s.* a bushel, unless you have some ground for showing the possible permanence of such a price. Look where I will, I cannot find the slightest evidence or grounds for it. In referring to these tables I have said nothing of the expenses of transport or shipment to England, for they vary so much, and are so differently stated, that it is almost hopeless to get at anything like accuracy. It is better to face the subject in its simplest shape; and indeed the more it is examined, the better it will be found to bear the light. My belief is, that the turning point will be, not 5*s.* but 6*s.* a bushel: and that that will be the *centre* round which the variations will range. Nor do I think it will be very long before that begins to manifest itself. France has had *two* abundant harvests in succession: it *may* have a third in succession, but this is a very rare occurrence, as the whole history of prices will shew. As soon as she becomes an importer again, the change will be very strongly felt, as the supply we have received this year from thence is an occurrence quite unprecedented, and due solely to the two large harvests that have succeeded the general scarcity which France experienced, more than any other country, in 1847. She has not followed the example of Belgium, but retains her old Corn-law: but that could not protect her *from herself* during the past year. She may thank us for her only market: as we received from France nearly one-sixth of our whole importation.

The great, and legitimate source of relief for seasons of unusual abundance and consequent cheapness, is the Speculation of the market. It operates more naturally and more usefully than all the State-granaries that ever existed. The unreasonable apprehensions at present existing in this country, as to the range of future prices, have completely paralysed it, for this year; as if a year of general abundance—or scarcity—had never happened before. The thing is not new, however: it must never be forgotten that the word '*Panic*' is derived from *Panis*, Bread. *C. Wren Hoskyns.*

Home Correspondence.

Carts again.—"J. D.," invites "J. H." of Salop, to the harvest field, to witness the casualties of carting Oats. Now my lad take care how you load, as the keystick being easy, makes the cart play about a good deal, or you and the load will fall together. Now observe going down the slope, the weight presses heavily on the horse's back; ascending the other way, he is nearly slung up by the load resting backwards; and getting into a rut on the way home, it settles there. We call a council whether the load should be taken off at once, but it is agreed that master shall take the horse's head, and the two men shall hold the load up with their pitchforks, and so we reach the barn, wanting to carry more before the rain; in less than 20 minutes, the two men and master bolster up the cart before and behind, and take the horse out. The men have an extra pint of beer each for their exertions, and we go on with the other cart, but the raves make such a clatter, there is no hearing each other speak. Just as we reach the field, the off wheel runs over a large flint, and jerks out the fore rave on the horse's back! My beautiful horse, so quiet in general, cannot stand this, but sets off kicking like mad, shakes himself out of the harness, and leaves the cart *hors de combat.* We now return to the load in the barn, and find the prop in front has run aside on the slippery floor, let the cart down and broke both the shafts. N.B. For sale two harvest carts, with raves complete; a bargain to "J. H." Apply to—*J. D.*

Cumberland Carts.—"X. Y. Z." says that "L. V. R." has not a perfect cart to recommended; if so, I think it unworthy of the name of a Cumberland cart, as the wright whom we have now working will make a first-rate article for 9*l.* 9*s.* to tilt, and with moveable broad side; shelvings for coals, lime, &c., and also shelving to go all round the cart, for leading hay and corn, and this sum too shall include all the trimmings "X. Y. Z." speaks of. These carts shall hold as much coals, or lime, hay, or corn, as any reasonable person would wish his horse to draw, and as to their durability, I can only say that no carts can be more constantly at work than ours have been, and they are now sound and good after being in use for the last 10 years (of course under going a slight repair occasionally), having led thousands of loads of stones, besides the usual farm work. Some of our carts do not tilt, but we certainly approve of their doing so for many purposes. Their weights run from 5 cwt. 2 qrs. 14 lbs., to 6 cwt. 14 lbs. "J. D." says that nothing gives a lad more trouble than to load a cart with hay or corn; surely he must have been a clumsy fellow, for here lads and women generally load, and a female servant of ours loaded in one day 40 carts of hay, giving over work before 6 o'clock P.M. As to the "accidents and the difficulty of loosing the horse out of a cart you wish to unload afterwards," I can only say that we have met with none of the former yet, and that our men consider it but one person's work to unloose a horse out of a cart, first placing what we call a dead horse within reach previous to loosing out the horse, and then using a little craft as to balancing the cart by means of one of the shafts over his shoulder, whilst replacing the live horse with the dead one. *Cumbrian.*

[Messrs. Handford and Co. are probably sufficiently well known by this time. We have sent your letter to the Manchester Guardian Society.]

Directions as to the Quantities of Guano and Ground Bones necessary for any given space of ground.—As guano and crushed bones are now in general use, and will no doubt become permanent applications, from the experience that has already tested their high utility, the following Tables have been carefully constructed for the purpose of preventing possible waste, and assisting ploughmen and others who have little time for minute calculation. As regards the manures named, the Tables annexed are intended as a sort of ready reckoner, which, by simply leaving out fractional parts, show at a glance how much of each will be required by the yard, drill, rood, or acre, no matter how extensive the fields cleaned and dunged for green crop:

Table, *showing the quantity of Guano required to be sown in a certain number of yards, equal to 1 cwt. to the acre, in Scotch and Imperial Measure, in drills from 36 to 22 inches apart.*

Scotch Statute Measure.			Imperial Standard Measure.		
Distance of Drills in inches apart.	No. of the Lineal Yards in the Scotch Acre.	Length of Yards for lbs. equal to 1 cwt. of Guano.	Distance of Drills in inches apart.	No. of the Lineal Yards in the Imperial Acre.	Length of Yards for lbs. equal to 1 cwt. of Guano.
*36	6104	*54	36	4840	43
35	6278	56	35	4978	44
34	6463	57	34	5124	45
33	6659	59	33	5280	47
32	6867	61	32	5445	48
31	7088	63	31	5620	50
30	7324	65	30	5808	51
29	7577	67	29	6008	53
28	7848	70	28	6222	55
27	8138	72	27	6453	57
26	8451	75	26	6701	59
25	8789	78	25	6969	62
24	9156	81	24	7260	64
23	9554	85	23	7575	67
22	9988	89	22	7920	70

* Example.—Suppose the drills to be 36 inches apart—1 lb of guano to 54 yards is equal to 1 cwt. per acre; 2 lbs. to 54 yards is equal to 2 cwt. per acre, and so on; every pound for 54 yards being equal to 1 cwt. per acre.

Tables, *showing the Distance a Bushel of Bones will reach in Lineal Yards, from 10 to 25 bushels per acre, in drills from 36 to 22 inches apart, in Scotch and Imperial Measure.*

SCOTCH STATUTE MEASURE.

Distance of Drills in inches apart.	No. of the Lineal yards in the Scotch Acre.	Quantities per Scotch Acre.															
		10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
36	6104	610	555	509	469	436	407	381	359	338	321	305	290	277	265	254	244
35	6278	627	570	523	483	448	418	392	369	349	330	313	299	285	273	261	251
34	6463	646	587	538	497	461	431	404	380	359	340	323	307	293	281	269	258
33	6659	665	605	555	512	475	444	416	391	370	350	332	317	302	289	277	266
32	6867	686	624	572	527	490	457	429	404	381	361	343	327	312	298	286	274
31	7088	708	644	590	545	506	472	443	417	393	373	354	337	322	308	295	283
30	7324	732	666	610	563	523	488	457	430	407	385	366	348	333	318	305	293
29	7577	757	688	631	583	541	505	473	445	421	398	378	360	344	329	315	303
28	7848	784	713	654	603	560	523	490	461	436	413	392	373	357	341	327	313
27	8138	813	739	678	626	581	542	508	478	452	428	406	387	369	353	339	325
26	8451	845	768	704	650	603	563	528	497	469	444	422	402	384	367	352	338
25	8789	878	799	732	676	627	586	549	517	488	462	439	418	399	382	366	351
24	9156	915	832	763	704	654	610	572	538	508	481	457	436	416	398	381	366
23	9554	955	868	796	735	682	637	597	562	530	502	477	455	434	415	398	382
22	9988	999	908	832	768	713	666	624	587	555	525	499	475	454	434	416	399

IMPERIAL STANDARD MEASURE.

Distance of Drills in inches apart.	No. of the Lineal Yards in the Imperial Acre.	Quantities per Imperial Acre.															
		10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
36	4840	484	440	403	372	345	320	302	284	268	254	242	230	220	210	201	193
35	4978	497	452	414	382	355	331	311	292	276	262	248	237	226	216	207	199
34	5124	512	465	427	394	366	341	320	301	284	269	256	244	232	222	213	204
33	5280	528	480	440	407	377	352	330	310	293	277	264	251	240	225	220	211
32	5445	544	495	453	418	388	363	340	326	302	286	272	259	247	236	226	217
31	5620	562	510	468	432	401	374	351	336	312	295	281	267	255	244	234	224
30	5808	580	528	484	446	416	387	363	347	322	305	290	276	264	252	242	232
29	6008	600	546	500	462	422	400	375	353	333	316	300	286	273	261	250	240
28	6222	622	565	518	478	444	414	388	371	345	327	311	296	282	270	259	248
27	6453	645	586	537	496	460	430	403	379	358	339	322	307	293	280	268	258
26	6701	670	609	558	515	478	446	418	394	372	352	335	319	304	291	279	268
25	6969	696	633	580	536	497	464	435	409	387	366	348	331	316	303	290	278
24	7260	726	660	605	558	518	484	453	427	403	382	363	345	330	315	302	290
23	7575	757	688	631	582	541	505	473	445	420	398	378	360	344	329	315	303
22	7920	792	720	660	609	562	528	495	465	440	416	396	377	360	344	330	316

I have often thought of sending you the annexed tables, which were prepared for me soon after I first began to use guano, and which I and numerous friends to whom I gave a copy have found most useful. I doubt not that many of your agricultural readers would be thankful for the information they contain, and if you have any wish to publish the tables, I believe the author of them, Mr. W. M'Gowan, Dumfries, will have no objection. *Max, The Grove, Dumfries.*

Farm Estimates.—Under the above title in the *Agricultural Gazette* of the 9th February, there is a paper of much interest by Mr. Hewitt Davis, in which attention is drawn to the great sacrifice on live stock, in proportion to the corn grown, involved in the Scotch 5-course rotation. In the Scotch system, by Mr. Watson's estimate, 200 acres Grass and 100 acres greens, give 800*l.* in increased value of stock, leaving on a 500 acre farm 200 acres for corn crops. Mr. Davis, taking three-fifths of the gross general expenses of the farm, and adding the estimate of 100*l.* given by Mr. Watson to meet loss on stock by disease and accident, shows that the stock stand in 1350*l.*, and being sold at 800*l.*, leave a balance of 550*l.* to be charged against the corn crops, which Mr. Davis considers disproportionately small. To meet this defect, he proposes altering the rotation by giving 250 acres to corn, and 250 to roots; by which means he nearly doubles the money returns of the corn crops, while he also diminishes the balance against stock. Neither of the two rotations implies more than the best common farming; and if the Scotch farmer can adopt the proposal, it certainly holds out promise of more profit than his own. But the point to which I wish to advert, and on which I would gladly see a discussion in the *Agricultural Gazette*, is the great balance by loss on stock which both systems impose upon the corn crops. Leaving the Scotch system, take Mr. Davis's for examination. Now, charging against his stock the same items of account which he has charged against Mr. Watson's stock, we find (without allowing 100*l.* for loss by disease or accident, as Mr. Watson does), that stock kept at a cost of 1125*l.*, produce 750*l.*, leaving a balance of 375*l.* of loss to be deducted from 1684*l.* gross return for corn, making the net return only 1309*l.* Mr. Davis puts Oats at 7 quarters per acre, Barley at 5 quarters, and Wheat at 3½ quarters. Now, but for the loss on stock, which the corn crops have to compensate, 6 quarters of Oats, 4½ Barley, and 2½ Wheat severally per acre, would about give the same net return. It would, therefore seem to be a question worth investigation, whether farmers should not cease to aim at large corn crops got by means of fallow crops which stock cannot pay for; and, on the contrary, content themselves with such an amount of corn per acre, as land kept clean, carefully cultivated, and dressed with the manure resulting from the consumption of the offal only of the farm, either alone or aided perhaps by a small cost of artificial manure, would give; while instead of cultivating roots, they would apply their fallows to Peas and Beans, which admit of hoeing and weeding, and to Vetches and Clover for seed, or hay, or green fodder as facility of sale would determine. These green crops, it is presumed, would, on an average of years, pay their own expenses. Such a system would require much less capital in a farmer and less outlay in buildings by a landlord, and thus in both ways decrease the cost of production; while the products of the farm being multiplied in number, and most of them somewhat lessened in quantity, there would be a better chance of remunerative prices. *A. H. Hall, Watergate, Petersfield, Feb.* 20.

Sour Beer.—I fancy there must be a misprint in your correspondent's communication respecting the acidity of his beer, in regard to the quantity of liquor drawn from four bushels of malt; if is stated correctly, as far as my experience goes, I should consider it wonderful if any beer, of the strength specified, would keep sound any length of time. Let "Cerevisium" add two bushels of malt and a pound or two more Hops, and he may then have a chance of having sound beer for twelvemonths. *Buffer.*

Societies.

ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

A Weekly Council was held at the Society's House in Hanover-square, on Wednesday last, the 13th of March: present, Mr. Raymond Barker, Vice-President, in the chair; Sir John V. B. Johnstone, Bart., M.P., Mr. Almack, Mr. French Burke, Dr. Calvert, Mr. Colthurst, Mr. Capel Cure, Mr. Dyer, Mr. Majendie, Mr. C. E. Overman, Mr. Parkins, Mr. Slaney, M.P., Mr. Augustus Smith, Professor Sewell, Professor Simonds, Mr. Reynolds Solly, and Professor Way.

The following new members were elected:

Colston, W. H. Morris, Lydford, Somerton, Somerset
Hamling, Henry, Dean's Prior, Ashburton, Devon
Shaw, John, Beddington Lodge, Croydon, Surrey
Pedler, John, Baron's Wood, Zeal-Monachorum, Crediton
Burnett, Alexander, Merton, Crediton, Devon
Farthing, S., Stowey-court, Nether-Stowey, Bridgewater
Chilcott, Rev. Wm. Francis, Rectory, Monksilver, Taunton
Heseltine, Samuel Richard, Chase Side, Enfield, Middlesex
Counsell, W., St. Mary Church, Torquay, Devon
Palk, Lawrence, Haldon House, Exeter
Moon, John, Laxford, Crediton, Devon
Clarke, Thomas, Tremlett House, Wellington, Somerset
Morse, Arthur, Swaffham, Norfolk
Carter, Henry, Milton House, Pembridge. Leominster
Clare, Charles Leigh, Hindley House, Liverpool
Abrey, T. Shaw Hellier, Nether Hall, Bradfield, Manningtree
Hanbury, Sampson, Bedford-lane, Clapham.

The names of 10 candidates for election at the next meeting were then read.

Thibetian Sheep.—Colonel the Hon. C. B. Phipps communicated to the Council, on the part of H.R.H. Prince Albert, further information connected with her Majesty's flock of Thibetian Sheep at Osborne; which was received with the best thanks of the Council, and referred to the Journal Committee.

Warmth and Ventilation.—M. Noirsain, the inventor of the Belgian Fire-place presented to the Society, requested leave to postpone the presentation of his Report on its operation, until his arrangements for its adaptation, and the experiments he had in progress connected with its action, should be completed. —Mr. Slaney, M.P., took that opportunity of referring to a very simple, economical, and effective mode of warming the upper chamber of cottages, and the store-rooms connected with stables, coach-houses, granaries, and other outbuildings, which he had adopted on his own estate with great comfort to his cottagers and advantage to the store articles contained in those rooms. Having remarked that in building a cottage with the fire-place in the outside wall all warmth from the back part of the fire was carried off by the external air and lost to the inmates, he had tried the experiment of placing the chimneys of his cottages in the mid-wall dividing two of their rooms, one the kitchen, the other the wash-house or scullery. In building the chimney he had a small hollow recess, forming an air-chamber, left in the wall at the back of the kitchen chimney, into which the external air was introduced, by means of a flue of common drain-pipe tiles, 2 inches wide, placed under the floor; and becoming heated by the fire, it passed on continuously by means of a small aperture into the back adjoining room, and conveyed into it a warm, fresh, and uncontaminated atmosphere. The room was thus constantly kept moderately warm and dry, and the wet shoes and clothes of the labourer being hung in a row during the night on pegs placed above the aperture, were made perfectly dry for his use by the next morning. The upper rooms could also, at any time, be warmed from the same source, by temporarily closing the aperture of the flue leading to the adjoining lower room, and leaving a half-brick flue open above the air-chamber into either of the upper rooms, the lower opening being always shut for the time the upper one was kept open. The cost of this arrangement was very trifling, and the comfort great. —Sir John Johnstone had employed a similar plan in his cottages, in Yorkshire; but he had constantly found the apertures for the admission of the warm air into the chambers adjoining those in which the fire was placed, as carefully closed up as a draught of cold air would be in ordinary cases, the occupiers having a prejudice or dislike to a mode of warming their rooms in which the source of heat was not immediate and obvious. He had seen a very agreeable and effectual mode of warming large bodies of ascending air, as in halls, vestibules, staircases, and galleries, where there was a free passage for the ascent or outlet of the warm air, by means of an iron pillar formed of a double cylinder, open at the bottom and throughout along the line of their common axis, but closed by the junction of their upper edges, placed above a ring of jets of burning gas laid on from the street.—Mr. Majendie, Prof. Sewell, and Prof. Way also favoured the meeting with remarks on the subject of warming and ventilating rooms.

South-Devon Cattle.—Mr. John F. P. Phillips, of Broomborough, as Secretary and Treasurer to the Local Committee of the South-Devon Association, transmitted to the Council the acquiescence of that committee in the suggestions offered to them by the Council at their last monthly meeting, in reference to the prizes which that Association wished to offer for South-Hams cattle at the Exeter meeting, under the 18th regulation of the Prize-sheet. The following is accordingly the schedule of prizes to be adopted for that occasion, the competition to take place, as in the case of the other prizes for that meeting, subject to all the rules and regulations of the Society:

South-Devon, or South-Hams Cattle.

Class 1.	To the owner of the best bull, calved previously to the 1st January, 1848	£20
	To the owner of the second best do. do.	10
Class 2.	To the owner of the best bull calved since the 1st January, 1848	10
	To the owner of the second best, do. do.	5
Class 3.	To the owner of the best cow, in-calf or in milk, having produced a living calf within the previous 12 months ...	15
	To the owner of the second best do. do.	5
Class 4.	To the owner of the best in-calf heifer, not more than 3 years old	15
	To the owner of the second best do. do.	5
Class 5.	To the owner of the best yearling heifer	10
	To the owner of the second best do. ...	5
		£100

Mr. Phillips further communicated the following suggestion, on the part of the South-Devon Association, namely, "That any person exhibiting in these classes shall be required to sige a certificate, that the animal exhibited is directly descended from South-Hams cattle." The Council referred this suggestion to their General Exeter Committee, which they directed to be summoned for that day week.

Armenian Wheat.—Professor Lindley favoured the Council with a specimen of Wheat grown at Erzeroom, on Mount Ararat, and with a communication from James Brant, Esq., H. M. Consul at that place, relating to its cultivation. The seed had been obtained from Trebizond, and the variety was supposed to be that of the Triticum compositum. The Council ordered their thanks to be sent to Dr. Lindley for the favour of this communication. The presentation of this Wheat led to a discussion on the produce of Wheat grown under different circumstances, and on the relation between the produce per acre and average number of grains in a single Wheat-ear of the crop.—Mr. Slaney gave an interesting detail of his cultivation of a piece of very bad land, in Shropshire, which by draining and subsoiling had now, for the first time, borne Turnips, and the best crop of Barley in that part of the country. He particularly dwelt on the peculiar advantage to be derived from *subsoiling*, in addition to draining and general cultivation. —Sir John Johnstone had employed Wilkie's plough across the drains with great advantage.—Mr. Overman and Mr. Slaney favoured the members with the result of their experience in the use of Garrett's horse-hoe and its adaptation to their respective purposes; although Mr. Slaney conceived that improvement was still required in the means for hoeing Wheat.—Mr. Dyer had, in his own case, observed for the last 10 years a curious law to hold in the ratio between the average number of grains of Wheat in a single ear of the crop, and the number of bushels in the produce, each such grain in the ear being correspondent to a bushel per acre in the produce when threshed out. In his crops the average number of grains in the ear had been 28, while the bushels per acre produced had also been 28. He did not mean to express his belief in the generality of such law, but he merely referred to it as a curious case occurring within his own observation.—Mr. Barugh Almack entirely concurred with Mr. Slaney in his remarks on the advantages of subsoiling and draining; and he had every reason to think highly of Mr. Garrett's horse-hoe. With regard to Mr. Dyer's interesting statement on the correspondence between the number of grains in the ear and the number of bushels per acre, he thought the fact must be taken as a singular case under given limitations and conditions. He conceived, to obtain a correct general result, that not only should the average number of grains in each individual ear be taken, but also the number of ears themselves in a crop; otherwise the rate of bushels per acre would be dependent on the size of the ear, and irrespective of the total number of the ears, which might easily be shown to lead at once to incorrect conclusions. He thought that, assuming in some cases the rule to hold good as to there being as many bushels of Wheat per acre as there are grains in an average ear, yet that it was quite clear no additional number of grains per acre could make up for the fact of the ears being as wide apart as Apple trees, for instance, usually are; and accordingly that the rule could not be relied on in extreme cases of thin sowing. He had alluded to an extreme case, in order that the fallacy of the rule might, in some cases, be made more obvious. Mr. Dyer had remarked that he sowed 3 bushels per acre; consequently, in Mr. Almack's opinion, Mr. Dyer's case proved two remarkable facts: 1. That as he generally finds as many bushels per acre as there are grains in an average ear, it follows that he usually has about as many Wheat ears per acre as there are grains in a bushel of Wheat; 2. That as he only obtains as many ears of Wheat per acre as there are grains of Wheat in one bushel, although he sows 3 bushels per acre, it seems that he sows three grains of Wheat for each ear that he obtains. He thought that something similar had been stated by one of the advocates for thin sowing, and he had no doubt it would be a very interesting matter for consideration if all would reflect on it with due caution, and without taking it for more than it proves. Mr. Almack would not at that time offer an opinion as to the question of thick or thin sowing. Although he thought that some experienced farmers would at once, on seeing the crop, give a better guess at the number of bushels per acre than any one could do by merely counting the grains in an average ear, he was still glad to learn from Mr. Dyer the singular law which he had found to hold good in his own case. He conceived that practical farmers would always be desirous of having their attention drawn to similar facts; it was only necessary that inexperienced farmers should be cautioned against the probability of the rule holding good in all cases. He would endeavour to show in another form that the rule in question could only be fairly expected to hold good where the number of ears per acre are the same, or nearly so. He would suppose that a given acre of land was accurately measured and divided into two equal parts, and that on one of these parts there are 30 ears of Wheat, each containing 40 grains, the total produce would be 1200 grains; on the other part, 40 ears containing 30 grains, of which the total produce would also be 1200 grains: and as in both cases the quantities of land were equal, the produce per acre would in each case be the same, unless we assume the grains to vary in size. Mr. Almack concluded by observing, that if we suppose these last cases to represent two fields occupied by different farmers, he thought it obvious that if one expected to have 10 bushels per acre more than his neighbour, he would be disappointed.

Communications were received by the Council, from Mr. Warry on drainage, covenants, and agricultural education; from Mr. Loomes on Prizes; and from Mr. Fulbrook on Meteorology.

Prof. Spooner and Prof. Morton, of the Royal Veterinary College, made presents to the Society of their respective works; the former of a copy of his introductory Lecture on Veterinary Science; and the latter of copies of his works on Veterinary Pharmacy and Calculous Concretions, and of his Veterinary Toxicological Charts. Mr. Roberts presented a copy of his work on the Dwellings of the Poor. For all which, and other presents made to the Society, the Council ordered their best thanks.

The Council then adjourned to their weekly meeting on that day fortnight, Prof. Way's Lecture being fixed for that day week, the 20th inst., at 12 o'clock.

Miscellaneous.

Conclusion on Meat-making.—That box-fed or shed-fed animals of good breed, fed on purchased food properly prepared, in addition to the utmost produce of the best grown crops which a thorough fertile farm can yield, will turn out more meat per acre than is possible by any other animals under any other circumstances. That land must be raised to the highest fertility which the cost of drainage or burning, or marling or liming, of manuring and cultivation, permits—that it must then be made to yield alternately with grain crops, the best descriptions of Swedish and other Turnips, of Mangold Wurzel, of Carrots, of Clover, Vetches, Rape, or other green crops, which skilful cultivation can produce, and the best crops of each that cost and climate allow : that, with this produce, Linseed and, say, Beans, must be bought (or grown) for consumption in the proportion of 1 of the former, and about 3 of the latter, with every 100 of the green food : that this, properly prepared, must be given to good individuals of the short-horn, Hereford, or Devon breeds of cattle, kept in clean, well-littered boxes, or to good individuals of the Leicester, South Down, long-woolled, or cross-bred breeds of sheep, in well-littered and well-sheltered sheds, before a maximum of meat can be expected. *English Agricultural Society's Journal.*

Varieties of Barley.—The different varieties of Barley comprise the old common Barley, Chevalier, Brewers' Delight, Oakley, American, Nottingham Long-ear, Berkshire, &c. The Chevalier decidedly ranks first for malting purposes, and is most eagerly sought after by the brewer in every district. The objections urged against it are, that it does not produce so much per acre as some of the other varieties. I am, however, inclined to think that, under proper cultivation and with occasional change of seed, there are few sorts that can be compared with it. I will give the result of some experiments carefully tried between 1836 and 1845 :

	Corn.		Straw.		
In 1836.	Bush.	pecks.	Tons.	cwt.	lbs.
Chevalier	42	0	0	14	1
Common Barley	42	0	0	15	6
American	40	0	0	14	4
1841.					
Brewers' Delight	57	1	1	6	6
Berkshire	56	2	1	6	2
Chevalier	60	1	1	7	6
Nottingham	56	3	1	8	0
1845.					
Brewers' Delight	52	0			
Chevalier	48	3			

H. W. Keary in the English Agricultural Society's Journal.

The Business of Landowners.—Landlords generally, even those of the highest class in the empire, might do well to taken a lesson from the example of Lord Lucan. He has not thought it beneath his station to acquire an intimate practical knowledge of his own business—the management of his estate. The want of this essential requisite to the profitable ownership of land, has done more to retard the agricultural advancement of the country than can well be calculated. It has led to the very general appointment of a class of agents unqualified by previous education for the important duties they ought to perform. It has exhibited an unreasoning jealousy towards prosperous farmers, whose exertions, instead of being encouraged, are only regarded as a source of increased rent. It has crushed, by culpable negligence, the efforts of the industrious tenant, willing to struggle against adverse times, if only fairly met by a considerate landlord. It forms the true solution of the different success which distinguishes the commercial and manufacturing capitalist from the great landlord. The first makes his business a study, and developes it to the utmost ; the last too often thinks it beneath his notice, and trusts it to persons who are frequently as ill qualified for its duties as himself. *The Plantation Scheme, by Mr. Caird.*

Calendar of Operations.

MARCH.

East Lincolnshire Farm, *March* 8.—Seed time has commenced under most favourable circumstances, and there is reason to hope for a continuance of the fine dry weather we at present enjoy. We are now busy sowing our Barley on seed land and Wheat stubble (manured), reserving the Turnip land for Oats, as they generally succeed better here, after Turnips, than the Barley. The land having been well frosted in winter, works as fine as a garden. Turnips have been very plentiful with us, as well as in most of Lincolnshire, there being in some districts more than could be consumed ; they have on this farm probably averaged a weight of 30 tons to the acre, and it will be the latter end of this month before we shall get through them. The time has now arrived for our most forward ewes to lamb ; they and the hogs were all dipped last month, and, with the exception of the latter being rather crippled in the feet, probably from the change of weather from wet and snow to extreme dry, are healthy and in good condition. During the severe frosts which we experienced here in winter, when prevented from ploughing and threshing, we were employed manuring the Turnip fallows, which, with us, is always performed at that season, in preference to doing it just before the time for sowing Turnips arrives, by which means the manure gets well incorporated with the soil, and it is all ready for the Turnips in summer without any hurry at that period ; by the other method the seed must be some time before it gains any benefit from the manure, when put on the land hastily, just before sowing. In conclusion, our work next week will be drilling Barley, threshing Oats for seed ; and, through the month, ploughing for and drilling Oats, sowing Grass seeds on the Wheat. *H. E.*

Notices to Correspondents.

Artificial Manures : *J S F.* We do not know them. See a notice at page 152, to "O. P. W." We should be delighted to have your account of Caithness farming.

Calf, Tickling Cough in : *J H.* The cough is probably from the presence of small worms in the windpipe, and the disease is commonly termed hoose. Give oil of turpentine, 1 oz. ; oil of linseed, ½ oz. ; oil of aniseed, 10 drops, well mixed and shaken together, every week till the evil is removed. *W. C. S.*

Estate Agency : *C N E.* We know of no published estate agency accounts. See article "Agent" in Blackie's "Cyclopedia of Agriculture." We are not acquainted with the agricultural literature of France.

Food for Laying Hens : *A Lady.* If they have the range of a field, they will need but little food. In one case 60 fowls, 8 or 9 months old, were kept during winter in a room, and separately fed, solely on corn. They consumed 6 quarts daily of mixed Indian Corn, Oats, and Buckwheat.

Grass Seeds : *Constant Reader* and *V A N.* For a permanent pasture on medium soils, sow per acre, with a crop of Barley, Aira cæspitosa lutescens, 1 lb. ; Alopecurus pratensis, 1½ lb. ; Arrhenatherum avenaceum, 1 lb. ; Avena flavescens, ½ lb. ; Dactylis glomerata, 2 lbs. ; Festuca duriuscula, 3 lbs. ; F. heterophylla, 1 lb. ; F. loliacea, 1 lb. ; F. pratensis, 2 lbs. ; Lolium italicum, 3 lbs. ; L. perenne, 5 lbs. ; Phleum pratense, 1 lb. ; Poa nemoralis, 3 lbs. ; P. trivialis, 1 lb. ; Trifolium pratense perenne, 3 lbs. ; T. repens, 4 lbs. ; total, 33 lbs. In the case of very light soils, the 1st, 3d, 8th, 9th, 12th, and 14th of these may be omitted, and 2 lbs. of Festuca rubra, 1 lb. of Poa pratensis, and 1 lb. of Medicago lupulina added in their stead.

Guano : *A Novice.* Mix 3 cwt. of it per acre with a lot of mould, free from the seeds of weeds, and spread it broadcast over the Grass towards the end of this month.

Hydro Incubator : *E B H.* The discussion on this subject last year ended unfavourably to the invention. The difficulty is not in hatching, but in rearing the chickens.

Highland Tenantry : *A W.* We have not the honour of acquaintance with Dr. M'Kenzie.

Liquid Manure : *Cumbrian.* We think you might lay pipes for an acre or two close around the stalls, economically. If any one would give us their experience of cost, we should be much obliged.

Mangold Wurzel : *Housekeeper.* The root is changed during and after sprouting. It loses much of its most valuable part.

Oats : *Scotus* inquires if any varieties are considered particularly adapted for human food or horse feed respectively. The Black Tartarian is a large coarse variety—filling the bushel rapidly. [Your question has been forwarded to a competent judge.]

Shed Feeding Sheep : *Friday.* The end of a barn would do very well for the experiment. The manure should be removed from below the sparred framework ; when it becomes offensive, that period may be delayed by the use of sprinkled gypsum over the floor.

Small Farm : *New Forest.* You will probably make the largest money produce from the land by the sale of vegetables ; next by the sale of milk, butter, and eggs. If the latter be the method adopted, then your land should be devoted to the growth of Cabbages and Mangold Wurzel on the clayey part ; Italian Rye-grass, Rape, and Vetches on the light land. You may grow 30 to 40 tons per acre of green food per annum by constant cropping. A cow will eat from 25 to 35 tons of green food in the year.

Storms : *A Correspondent* asks if any meteorological observers in the north of England will be good enough to consult their notes of the weather of 1846, and especially any record they may have of a storm which traversed the east and north of England on the afternoon of Saturday, April 25th in that year. He would be much obliged for information regarding the course and intensity of that storm.

Threshing Machine : *Devon.* There was a mistake. The threshing drum revolves 1000 times in a minute, and its circumference is about 5 feet, so that it should be 5000 not 50,000 feet per minute. This is not too great a velocity. Cole and Rape seed are names given indifferently to the same thing. They should be confined, the former to a variety whose leaves are rough when young, and the latter to a variety always smooth leaved. You cannot sow Rape along with the Wheat in May, with any prospect of a satisfactory result.

Turkeys : *Constant Reader.* We give the following extract from Mr. Dixon's work on Poultry ; "When the hen has once selected a spot for her nest, she will continue to lay there till the time of incubation, so that the eggs may be brought home from day to day, there being no need of a nest egg, as with the common fowl. She will lay from 15 to 20 eggs, more or less. If there are any dead leaves or dry Grass at hand, she will cover her eggs with these ; but if not, she will take no trouble to collect them from a distance. Her determination to sit will be known by her constantly remaining on the nest, though empty ; and as it is seldom in a position sufficiently secure against the weather or pilferers, a nest should be prepared for her by placing some straw, with her eggs, on the floor of a convenient outhouse. She should then be brought home and gently and kindly placed upon it. It is a most pleasing sight to witness the satisfaction with which the bird takes to her long-lost eggs, turning them about, placing them with her bill in the most suitable positions, packing the straw tightly around and under them, and finally sinking upon them with the quiet joy of anticipated maternity. In the south of England from 15 to 20 eggs may be allowed ; but with the Norfolk variety, which is the smallest, and in a northern or eastern county, it is found that moderation succeeds better than over-greediness of chicks. In this case 13 eggs are enough to give her ; a large hen might cover more ; but a few strong, well-hatched chicks are better than a large brood of weaklings that have been delayed in the shell, perhaps 12 hours over the time, from insufficient warmth. At the end of a week it is usual to add two or three fowls' eggs, 'to teach the young Turkeys to peck.' The plan is not a bad one ; the activity of the chickens does stir up some emulation in their larger brethren ; the eggs take but little room in the nest ; and at the end of the summer you have two or three very fine fowls, all the plumper for the extra diet they have shared with the little turkeys. Some ladies believe it necessary to turn the eggs once a day ; but the hen does that herself many times a day. If the eggs are marked, and you notice their position when she leaves the nest, you will never find them arranged in the same order. A person who obtained 99 chicks from 100 eggs, took the trouble to turn every egg every day with her own hand, during the whole time of incubation. The result *appears* favourable ; but, in fact, only amounts to this, that such officiousness did no harm with such a good, patient, quiet creature as the sitting Turkey is, but it would probably have worried and annoyed any other bird into addling her whole clutch. We will at once reject, as utterly absurd and unnatural, all directions to immerse or 'try' the eggs in a pail of water, hot or cold. In four weeks the little birds will be hatched ; and then, how are they to be reared ? Some books tell you to plunge them in cold water, to strengthen them : those that survive will certainly be hardy birds. Sir J. S. Sebright exposes the folly of endeavouring to make young creatures robust by undue exposure to cold and hardship, an experiment which some men and women are cruel enough to try upon their own offspring. Air and exercise increase the strength of any growing animal, but cold and hunger only dwarf and weaken. We see robust children in extremely poor families, not because they are poor, but because, if they were not robust, they would not be alive at all. Sir John, in his 'Treatise on Improving the Breeds of Domestic Animals,' pp. 15, 16, says : 'In cold and barren countries no animals can live to the age of maturity but those that have strong constitutions ; the weak and the unhealthy do not live to propagate their infirmities, as is too often the case with our domestic animals. To this I attribute the peculiar hardiness of the horses, cattle, and sheep, bred in mountainous countries, more than to their having been inured to the severity of the climate ; for our domestic animals do not become more hardy by being exposed, when young, to cold and hunger ; animals so treated will not, when arrived at the age of maturity, endure so much hardship as those who have been better kept during their infant state.' Others say, 'Make them swallow a whole pepper-corn ;' which is as if we were to cram a London pippin down the throat of a new-born babe. Others, again, say, 'Give them a little ale, beer, or wine.' We know, unhappily, that some mothers are wicked enough to give their infants gin, and we know the consequences. Not a few advise that they be taken away, and kept in a basket by the fire-side, wrapped in flannel, for eight or ten hours. Why take them away from her ? She has undergone no loss, or pain, or labour : she wants no rest, having had too much of that already. All she requires is the permission to indulge undisturbed the natural exercise of her own affectionate instinct. Give them nothing ; do nothing to them : let them be in the nest under the shelter of their mother's wings at least eight or ten hours ; if hatched in the afternoon, till the following morning. Then place her on the Grass, in the sun, under a roomy coop. If the weather be fine, she may be stationed where you choose, by a long piece of flannel list tied round one leg, and fastened to a stump or a stone. But the boarded coop saves her ever-watchful anxiety from the dread of enemies above and behind—the carrion-crow, the hawk, the rat, the weasel ; and also protects herself (she will protect her young) from the sudden showers of summer. Offer at first a few crumbs of bread : the little ones for some hours will be in no hurry to eat ; but when they do begin supply them constantly and abundantly with chopped egg, shreds of meat and fat, curd, boiled Rice mixed with Cress, Lettuce, and the green of Onions. Melted mutton-suet poured over Barley-meal, and cut up when cold ; also bullock's liver boiled and minced, are excellent things. Barley-meal, mixed thick and stiff with water or milk, Nettle-tops, Leeks, Goose-grass, or Cleavers, and many other things, might be added to the list ; but it is probable that a few of these may now and then be refused by some fanciful little rogues. I think I have observed that little Turkeys do not like their food to be minced much smaller than they can swallow it ; indolently preferring to make a meal at three or four mouthfuls to troubling themselves with the incessant pecking and scratching in which chickens so much delight. But at any rate, the quantity consumed costs nothing ; the attention to supply it is everything."

Wattled Hurdles : *H C W.* Your question is properly the subject of an advertisement.

Wheat Hoeing : *O N R.* You may commence early in April. It is possible to be too early, because a sudden relapse to wintry weather would nullify the operation of loosening and stirring the land.

Markets.

COVENT GARDEN, March 16.

Notwithstanding the coldness of the weather, Vegetables continue to be plentiful, but many kinds of Fruit are still scarce. A few new Hothouse Grapes have made their appearance. Pine-apples, though far from being plentiful, are nevertheless sufficient for the demand. Walnuts and Chestnuts are abundant ; of the former we observed some fine examples from Naples. Oranges and Lemons are sufficient for the demand. Amongst Vegetables, Turnips and Carrots are good, and there is some fine Cornwall Broccoli in the market. Potatoes are unaltered since our last account. Lettuces and other salading are sufficient for the demand, and so are Mushrooms. French Beans, Asparagus, Seakale, and Rhubarb may be obtained at about last week's prices. Cut Flowers consist of Heaths, Pelargoniums, Bignonia venusta, Primulas, Camellias, Cinerarias, Christmas Roses, Azaleas, Lilacs, Lily of the Valley, Epacrises, Acacias, and Roses.

FRUITS.

Pine-apples, per lb., 6s to 10s	Almonds, per peck, 6s
Grapes, Portugal, p. lb., 9d to 1s	— sweet, per lb., 2s to 3s
Pears, per doz., 6s to 10s	Walnuts, p. 100, 1s 6d to 2s
Apples, kitchen, p. bsh., 4s to 6s	— p. bush., 16s to 24s
Lemons, per doz., 1s to 2s	Nuts, Bar., p. bush., 20s to 22s
— per 100, 6s to 12s	— Brazil, p. bsh., 12s to 16s
Oranges, per doz., 9d to 1s 6d	Kent Cobs, 90s to 100s p. 100 lbs
— per 100, 5s to 12s	

VEGETABLES.

French Beans, per 100, 3s to 4s	Carrots, per bun., 4d to 6d
Seakale, per punnet, 1s to 2s	Spinach p. sieve, 2s to 3s
Asparagus, p. bund., 2s to 7s	Onions, p. bushel, 3s 6d to 4s 6d
Rhubarb, p. bundle, 6d to 1s	— Spanish, p. doz., 1s 6d to 4s
Savoys, per doz., 6d to 9d	Shallots, per lb., 4d to 8d
Cauliflowers, p. doz., 1s to 4s	Garlic, per lb., 4d to 8d
Broccoli, p. doz. bundl., 8s to 10s	Lettuce, Cab., p. sc., 4d to 9d
Greens, per doz., 2s to 3s	Endive, per score, 1s 6d to 3s
Brussels Sprouts, p. hf. sieve, 1s 6d to 2s	Mushrooms, p. pot., 9d to 1s
Sorrel, p. hf. sieve, 1s to 2s	Small Salads, per punnet, 2d to 3d
Potatoes, per ton, 60s to 120s	Watercress, p. 12 bun., 6d to 9d
— per cwt., 3s to 7s	Fennel, per bunch, 2d to 3d
— per bush., 2s 6d to 3s 6d	Savory, per bunch, 2d to 3d
Turnips, p. doz. bun., 1s 6d to 2s 6d	Thyme, per bunch, 2d to 3d
Red Beet, per doz., 9d to 1s	Parsley, p. doz. bun., 2s to 3s
Horse Radish, p. bdl., 1s to 4s	— Roots, p. bdle., 9d to 1s
Cucumbers, each, 3s to 5s	Marjoram, per bunch, 2d
Leeks, per bunch, 1d to 1½d	Mint, green, per bunch, 9d to 1s
Celery, p. bundle, 8d to 1s 3d	Corn Salad, p. hf. sieve, 9d to 1s

POTATOES.—Southwark, March 11.

The Committee report that the arrivals from the Continent continue to be very extensive, much beyond the demand, consequently many are obliged to be stored. Trade is very heavy, and it is with difficulty the following prices have been obtained : York Regents, 80s. to 100s. per ton ; Wisbeach do., 60s. to 80s. ; Scotch do., 60s. to 70s. ; Scotch cups, 60s. to 70s. ; French whites, 60s. to 70s. ; Belgian do., 55s. to 60s. ; Rhenish do., 50s. to 55s.

HOPS.—Friday, March 15.

Messrs. Pattenden and Smith report that theer is more doing in Hops, particularly in fine yearlings.

HAY.—Per Load of 36 Trusses.

Smithfield, March 14.

Prime Meadow Hay	66s	to 72s	Clover	60s	to 80s
Inferior ditto... ...	50	63	New Clover	—	—
Rowen	50	60	Straw	23	28
New Hay	—	—		J. Cooper.	

The supply short, but trade very slow.

Cumberland Market, March 14.

Prime Meadow Hay	68s	to 72s	Inferior	60s	to 70s
Inferior ditto... ...	50	63	New Clover	—	—
New Hay	—	—	Straw	24	28
Old Clover	75	84		Joshua Baker.	

Whitechapel, March 14.

Fine Old Hay ...	68s	to 68s	New Clover	—s	to —s
Inferior ditto ...	50	55	Inferior ditto... ...	60	65
New Hay	—	—	Straw	24	28
Old Clover	80	84			

SMITHFIELD, Monday, March 11.

We have rather more Beasts than on Monday last, although the supply falls short of what was expected. Trade is very dull, and late prices are with difficulty maintained for the choicest kinds. The number of Sheep is larger, but the quality generally middling ; the best Downs, consequently, are readily sold ; trade is, however, slow for other descriptions. Trade is heavy for Calves ; the supply is not excessive, they are, there-

fore cleared off, but at no higher prices. From Holland and Germany we have 138 Beasts, 380 Sheep, and 66 Calves; from France, 200 Sheep; from Spain, 28 Beasts; from Scotland, 500; from Norfolk and Suffolk, 2100; and 300 from the midland counties.

Per st. of 8 lbs.	s	d	s	d
Best Scots, Herefords, &c.	3	6	to 3	8
Best Short-horns	3	4	— 3	6
2d quality Beasts	2	6	— 3	0
Best Downs and Half-breds	4	0	— 4	4
Ditto Shorn	...	...	...	

Per st. of 8 lbs.	s	d	s	d
Best Long-wools	3	6	to 3	8
Ditto Shorn	...	...		...
Ewes & 2d quality	3	0	— 3	4
Ditto Shorn	...	...		...
Lambs	...	...	...	— ...
Calves	...	...	3	4 — 4 4
Pigs	...	...	3	0 — 4 0

Beasts, 3600; Sheep and Lambs, 20,200; Calves, 108; Pigs, 185.

FRIDAY, March 15.

The supply of Beasts is as large as of late, owing to a considerable arrival of foreign cattle; the number fresh up from our own grazing districts is smaller. The trade is exceedingly heavy, and Monday's quotations cannot on the average be supported. Although the number of Sheep is not large, it exceeds the demand, and late prices are with great difficulty realised. Only small choice Lamb is saleable, and these barely make 6s. per 8 lbs. Trade is very slow for Calves, and Pigs at about late rates. From Holland and Germany there are 241 Beasts, 280 Sheep, and 132 Calves; from France, 100 Sheep; from Scotland, 200 Beasts; from the midland counties, 150; and 115 Milch Cows from the home counties.

Per st. of 8 lbs.	s	d	s	d
Best Scots, Herefords, &c.	3	6	to 3	8
Best Short-horns	3	2	— 3	4
2d quality Beasts	2	4	— 3	0
Best Downs and Half-breds	4	0	— 4	4
Ditto Shorn	...	...	—	...

Per st. of 8 lbs.	s	d	s	d
Best Long-wools	3	6	to 3	8
Ditto Shorn	...	...	—	...
Ewes & 2d quality	3	0	— 3	4
Ditto Shorn	...	...		...
Lambs	...	...	...	...
Calves	...	...	3	4 — 4 4
Pigs	...	...	3	0 — 4 0

Beasts, 906; Sheep and Lambs, 3320; Calves, 240; Pigs, 205.

MARK LANE.

MONDAY, MARCH 11.—The supply of Wheat from the neighbouring counties this morning was small, and disposed of at about the same prices as this day se'nnight. The demand for foreign was extremely limited, and in the few sales effected rather less money was accepted. — Fine English malting Barley is unaltered in value, but inferior and foreign are almost unsaleable.—Beans and Peas are a slow sale, the former at 6d. to 1s. per qr. decline.—The Oat trade is exceedingly heavy, and late rates barely obtainable.

BRITISH PER IMPERIAL QUARTER.	s.	s.		s.	s.
Wheat, Essex, Kent, & Suffolk ...White	41	43	Red	36	38
— — fine selected runs ...ditto	42	44	Red	38	40
— — Talavera	48	50			
— Norfolk, Lincoln, & York ...White	—		Red	—	
— Foreign	35	54			
Barley, grind. & distil., 19s to 22s...Chev.	24	27	Malting	22	24
— Foreign....Grinding and distilling	18	21	Malting	22	24
Oats, Essex and Suffolk	15	19			
— Scotch and Lincolnshire ...Potato	18	22	Feed ...	16	18
— Irish .....Potato	17	20	Feed ...	15	18
— Foreign .....Poland and Brew	16	20	Feed ...	13	17
Rye	20	24	Foreign	20	23
Rye-meal, foreign .....per ton	5l.	6l.			
Beans, Mazagan .....21s to 22s.....Tick	24	26	Harrow	24	26
— Pigeon.....25s — 28s...Winds	22	28	Longpod	25	28
— Foreign ..... Small	24	36	Egyptian	21	22
Peas, white, Essex and Kent.....Boilers	23	25	Suffolk	24	26
— Maple .....24s to 26s.....Grey	22	23	Foreign	21	28
Maize .....White	22	25	Yellow...	24	26
Flour, best marks, delivered ...per sack	34	38			
— Suffolk .....ditto	27	34	Norfolk	27	34
— Foreign .....per barrel	22	24	Per sack	30	33

ARRIVALS IN THE PORT OF LONDON LAST WEEK.

	Wheat.	Barley.	Malt	Oats.	Beans.	Peas.
Flour, 13772 sks	Qrs.	Qrs.	Qrs	Qrs.	Qrs.	Qrs.
— 1534 bls						
English	2057	4006	5026	4895	882	547
Irish	—	—	20	1630	—	—
Foreign	4024	730	—	2251	3118	698

FRIDAY, March 15.—The supplies of English grain during the week have been small, those of foreign moderate. This day's market was thinly attended, and a general indisposition evinced for business in corn of all kinds. Prices of each description may be considered nominally the same as on Monday. —Throughout the kingdom the same dulness has prevailed in the corn trade during the last week which has characterised it for some time past, and the tendency of prices for all descriptions continues rather in favour of the buyer. In Dantzic and Konigsberg prices of grain remain nominally the same. In Stettin no arrivals from the interior have yet come forward, and holders of Wheat continue unwilling to submit to a sacrifice; two or three cargoes of Rye have been purchased for Ireland, at 17s. to 17s. 6d. per qr., f.o.b. In the lower Pomeranian and Mecklenberg ports the lightness of stocks and short supplies of Wheat have prevented any decline in prices. In Hamburg and Altona the arrivals of Wheat are only adequate to the consumption in those cities, and its value is consequently maintained. In Antwerp prices of Wheat are a shade lower. The French markets are heavy, but we do not observe any reduction in the price of Wheat and Flour. Prices of Wheat in the Dutch markets have receded 1s. per qr.

ARRIVALS THIS WEEK.

	Wheat. Qrs.	Barley. Qrs.	Oats. Qrs.	Flour.
English ...	2910	4270	4740	3310 sacks
Irish	—	—	—	
Foreign ...	6350	4210	13440	— brls.

IMPERIAL AVERAGES.	WHEAT.	BARLEY.	OATS.	RYE.	BEANS.	PEAS.
Feb. 2.....	39s 4d	25s 4d	15s 2d	23s 10d	25s 6d	27s 0d
— 9	38 6	24 7	15 3	22 1	25 3	26 4
— 16.....	37 9	23 10	15 4	20 7	24 11	26 10
— 23.....	37 11	23 7	15 6	20 11	24 8	26 0
March 2.....	38 6	23 9	14 11	21 11	24 4	25 11
— 9.....	38 6	23 10	15 2	23 3	24 7	25 4
Aggreg. Aver.	38 5	24 2	15 3	22 1	24 10	26 3
Duties on Foreign Grain	1 0	1 0	1 0	1 0	1 0	1 0

Fluctuations in the last six weeks' Corn Averages.

PRICES.	FEB. 2.	FEB. 9.	FEB. 16.	FEB. 23.	MAR. 2.	MAR. 9.
39s 4d		...	...	...	...	...
38 6	...		...	...	...	...
38 6	...	...	...	...		...
38 6	...	...	...	...	...	
37 11	...	...	...		...	...
37 9	...	...		...	...	...

SEEDS.—MARCH 11.

Canary, per qr.	70s to 74s	Coriander, per cwt.	16s — 21s
Caraway, per cwt.	31 — 33	Mustard, white, p. bush.	—
Hempseed, per qr.	34 — 35	— brown, do.	—
Linseed, foreign, do.	37 — 45	Rape, per last	28l. — 34l.
Clover, red, per cwt.	— —	Cakes, Linseed, p. 1000	9l. 3s
— — foreign, do.	— —	— — foreign, p. ton	5l. 15s
— white, do.	— —	— Rape, foreign, do.	4l. 5s
— — foreign, do.	— —	Tares, per bush.	4s 6d — 5s 6d

LIVERPOOL, TUESDAY, MARCH 12.—Scarcely any variation occurred in prices during the past week, but the demand has still been without the slightest animation, and purchases only made as pressing necessity required. There was an improved demand for Indian Corn, at Friday's decline of 6d. per qr. All kinds of Wheat were 1d. per bushel cheaper than on this day se'nnight. Good brands of American Flour supported late value. There was a decline of 1s. per qr. on Beans and Peas, and 1d. per bushel on the lower quality of Oats.

BY HER MAJESTY'S ROYAL LETTERS PATENT.

PATENT HOTHOUSE WORKS, KING'S ROAD, CHELSEA.

E. DENCH invites the attention of Gentlemen about to erect Hothouses, &c., to the vast superiority in every respect possessed by his PATENT HOUSES, which he will warrant superior in every respect to any others. Good Glass from 16 to 21 oz. per foot, 1 foot wide, 3 feet long, furnished, and the Houses when completed charged from 1s. 3d. to 1s. 6d. per superficial foot, according to size and quantity; on one principle, the roof is formed without wood or putty, and on another principle with wood rafters and the glass put in with putty. Patent Sashes, requiring no paint, from 7d. to 9d. per ft.

HEATING BY HOT WATER.

STEPHENSON AND Co., 61, Gracechurch-street, London, and 17, New Park-street, Southwark, Inventors and Manufacturers of the Improved CONICAL and DOUBLE CYLINDRICAL BOILERS, respectfully solicit the attention of scientific Horticulturists to their much improved method of applying the Tank System to Pineries, Propagating Houses, &c., by which atmospheric heat as well as bottom-heat is secured to any required degree, without the aid of pipes or flues. S. and Co. have also to state that at the request of numerous friends they are now making their Boilers of Iron, as well as Copper, by which the cost is reduced. These Boilers, which are now so well known, scarcely require description, but to those who have not seen them in operation, prospectuses will be forwarded, as well as reference of the highest authority; or they may be seen at most of the Nobility's seats and principal Nurseries throughout the kingdom.

S. and Co. beg to inform the Trade that at their Manufactory, 17, New Park-street, every article required for the construction of Horticultural Buildings, as well as for heating them, may be obtained upon the most advantageous terms.

Conservatories, &c., of Iron or Wood, erected upon the most ornamental designs. Balconies, Palisading, Field and Garden Fences, Wire-work, &c.

CHEAP AND DURABLE ROOFING.

BY HER MAJESTY'S ROYAL LETTERS PATENT.

F. M'NEILL AND Co., of Lamb's-buildings, Bunhill-row, London, the Manufacturers and only Patentees of THE ASPHALTED FELT FOR ROOFING

Houses, Farm Buildings, Shedding, Workshops, and for Garden purposes, to protect Plants from Frost.

At the Great National Agricultural Shows, it is this Felt which has been exhibited and obtained TWO SILVER MEDAL PRIZES, and is the Felt SOLELY patronised and adopted by

HER MAJESTY'S WOODS AND FORESTS,
HONOURABLE BOARD OF ORDNANCE,
HONOURABLE EAST INDIA COMPANY,
HONOURABLE COMMISSIONERS OF CUSTOMS,
HER MAJESTY'S ESTATE, ISLE OF WIGHT,
ROYAL BOTANIC GARDENS, REGENT'S PARK,

And on the Estates of the Dukes of Sutherland, Norfolk, Rutland, Newcastle, Northumberland, Buccleuch (at Richmond), the late Earl Spencer, and most of the Nobility and Gentry, and at the ROYAL AGRICULTURAL SOCIETY'S HOUSE, Hanover-square.

It is half the price of any other description of Roofing, and effects a great saving of Timber in the construction of Roofs. Made to any length by 32 inches wide.

PRICE ONE PENNY PER SQUARE FOOT.

*** Samples, with Directions for its Use, and Testimonials of seven years' experience, with references to Noblemen, Gentlemen, Architects, and Builders, sent free to any part of the town or country, and orders by post executed.

☞ The Public is cautioned that the only Works in London or Great Britain where the above Roofing is made, are

F. M'NEILL AND CO.'S

Patent Felt Manufactory, Lamb's-buildings, Bunhill-row, London, where roofs covered with the Felt may be seen.

The new Vice-Chancellor's Courts, at the entrance to Westminster Hall, were roofed with F. M'NEILL and Co.'s Felt about two years since, under the Surveyorship of Chas. Barry, Esq., R.A. Her Majesty's Commissioners of Woods and Forests are so satisfied with the result that they have ordered the Committee Rooms at the Houses of Parliament to be roofed with their Felt. Quantity altogether used, 24,000 feet.

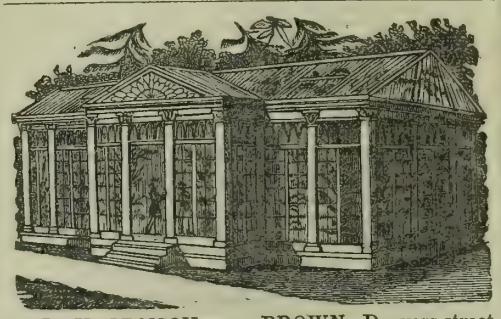
NOTE.—Consumers sending direct to the Factory can be supplied in lengths best suited to their Roofs, so that they pay for no more than they require.

Every information afforded on the construction of Roofs, or any proposed particular application of the Felt.

WIRE STRAND FENCING, as fixed by R. S. NEWALL and Co., is cheaper, stronger, more durable and elegant than any other Fence hitherto introduced.

COPPER WIRE HOTHOUSE SASH LINE.
LIGHTNING CONDUCTORS.
GILT AND PLATED CORD FOR HANGING PICTURES.

Office, 130, Strand, London; Warehouse, Brunswick-street, Blackwall; Manufactory, Gateshead, on Tyne.



GRAY, ORMSON, AND BROWN, Danvers-street, Chelsea, solicit the attention of the Nobility, Gentry, and Gardeners, to their superior manner of Erecting and Heating every description of Building connected with Horticulture. The work done by them at the Right Hon. the Earl of Kilmorey's, to which they have had the honour of referring so long, still continues to give perfect satisfaction. Mr. Kinghorn will be happy to show the work and give any information.

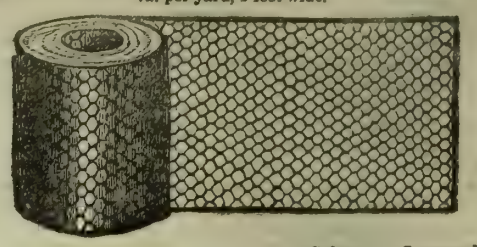
They also beg to refer to the houses built by them during the past season, for the Worshipful Apothecaries' Company of London, in their Botanic Garden at Chelsea. Mr. Moore, the Curator, will kindly show the work, and answer any enquiries. They beg also to say the Building only is referred to, as the Heating Apparatus was not erected by them.

GRAY, ORMSON, and BROWN have also the honour of referring to many of the nobility and gentry in the country, and to several of the London Nurseries.

N.B. Plans and Estimates furnished free.

NOTICE. — One Hundred packets of FLOWER SEEDS for 5s., 50 for 3s., or 32 for 2s. 6d., sent free by post on receipt of Money Order. The Advertiser, having a very large Collection of really new and genuine Seeds, begs to offer them at the above very moderate prices; a small packet of 12 kinds will be sent for 12 stamps. A List of Flower Garden and other Seeds, with a sample packet, may be had for two stamps, from which the selection may be made. Also packets of Garden Seeds, free to any railway station in London, at 5s., 10s., 15s., and 20s. each.—Address JOSEPH GOLDING, Seedsman, Hastings, Sussex.

GALVANISED WIRE GAME NETTING.—7d. per yard, 2 feet wide.



		Galvanised.	Japanned Iron.
2-inch mesh, light, 24-inch wide	...	7d. per yd.	5d. per yd.
2-inch " strong	...	9 "	6½ "
2-inch " extra strong	...	12 "	9 "
1⅝-inch " light	...	8 "	6 "
1⅝-inch " strong	...	10 "	8 "
1⅝-inch " extra strong	...	14 "	11 "

All the above can be made any width at proportionate prices. If the upper half is a coarse mesh, it will reduce the price one-fourth. Galvanised sparrow-proof netting for pheasantries, 3d. per square foot. Patterns forwarded post-free.

Manufactured by BARNARD and BISHOP, Market-place, Norwich, and delivered free of expense in London, Peterborough, Hull, or Newcastle.

IMPORTANT TO AGRICULTURISTS.—COLLECTION AND DISTRIBUTION OF MANURES.

STRATTON'S AGRICULTURAL REPOSITORY, BRISTOL.

STRATTON, HUGHES, AND CO., have now ready their PATENT TUMBLER CART for the collection of Night-soil and other offensive matters; also their Iron Mill, to be worked by horse-power, water-power, or steam, for mixing and incorporating Nightsoil with Charcoal and other deodorisers. The Tumbler Cart has an iron body with a close cover; can be fitted if required as a Watering-cart, with a Valve and Delivery Pipe for distributing water or liquid manure, and also with an Apparatus for distributing dry manures in any given quantities per acre.

STRATTON, HUGHES, and Co.'s Tumbler Carts are used for scavenging purposes in Manchester, Bristol, Worcester, Harwich, Rochford, Cardiff, &c., and they are now building them for Chester, Oxford, Huddersfield, &c., besides many for Agricultural Colleges and private individuals. STRATTON, HUGHES, and Co.'s new illustrated Catalogue of Carts, Waggons, and Agricultural Implements will be forwarded to any address on receipt of 1s. 6d. in postage stamps.

TO NOBLEMEN and GENTLEMEN who require a plentiful and CONSTANT SUPPLY of PURE WATER at their Country Mansions.

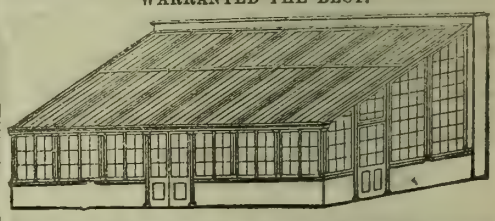
Messrs. EASTON and AMOS beg to offer their improved PATENT HYDRAULIC RAM, which is perfectly self-acting, and without manual labour is capable of lifting water to 30 times the height of the waterfall by which it is worked.

THIS MACHINE CAN BE APPLIED WHEREVER A FALL OF WATER OF A FEW FEET CAN BE OBTAINED, and its cheapness and durability, with the fact that upwards of 500 of them erected in England and other countries by Messrs. EASTON and AMOS have now been at work many years, afford ample proof of its great value and efficiency.

Estimates of the expense of the Machine, Pipes for the conveyance of Water, Tanks, and Reservoirs, may be had on application to Messrs. EASTON and AMOS, CONSULTING ENGINEERS to the ROYAL AGRICULTURAL SOCIETY, at their office in Orange-street, Trafalgar-square, or at the Works in the Grove, Southwark, London.

HORTICULTURAL BUILDING AND HEATING BY HOT WATER.

BOILERS OF ALL SIZES TO BE SEEN IN OPERATION, WARRANTED THE BEST.



J. WEEKS AND Co., King's-road, Chelsea, HORTICULTURAL ARCHITECTS, HOTHOUSE BUILDERS, and HOT-WATER APPARATUS MANUFACTURERS, solicit an inspection of their various Works completed and in progress. Horticultural Buildings of every variety. BOILERS of all sizes to be seen in operation, and which they warrant to be the most effective and economical of any in use. The largest size Boiler is now effectually heating three extensive ranges of Forcing-houses, 230 feet by 22 feet, all Span Roofs and lofty, containing upwards of 50,000 cubical feet of air. Also various small and intermediate size Boilers, some of all sizes in operation. The consumption of fuel is very moderate, and the fires will continue from 10 to 15 hours without attendance. The extensive arrangements now in full operation on their premises, enables them to build to any extent, and at very moderate prices. Hothouses, Greenhouses, Conservatories, Forcing-pits, Frames, Glass Lights, &c. A very extensive collection of Stove and Greenhouse Plants, which are sold at very low prices. Plans, Estimates, and Catalogues forwarded on application.

J. WEEKS and Co., King's-road, Chelsea.

STALLIONS FOR SALE.—Two five-year-old Suffolk Stallions, the property of T. BEALE BROWNE, Esq., Hampen, Andoversford, Gloucestershire. One is 17 hands high, the other over 16. They are sure foal getters, and were much admired and highly commended by the Judges at the Royal Agricultural Society's Show at York.

Also two very fine five-year-old Suffolk Geldings.

ALLSOPP'S BURTON AND EAST INDIA PALE ALES.—Messrs. S. ALLSOPP and SONS beg to call the attention of the public to their East India, Pale, and other Burton Ales, which may be obtained in casks of 18 gallons and upwards, either singly or in any quantity, by application to the Brewery, Burton-on-Trent, or on the same terms at their respective Stores, as follows:—61, King William-street, London; Cook-street, Liverpool; under the Exchange, Ducie-place, Manchester; and at the Market-place, High-street, Birmingham.

Sales by Auction.

TO GENTLEMEN, FLORISTS, AND OTHERS.

MESSRS. PROTHEROE AND MORRIS will sell by Auction, at the Auction Mart, Bartholomew-lane, on FRIDAY, March 22d, at 12 o'clock, about 150 Double Camellias of various sizes, well set with bloom buds; 200 Standard and Dwarf Roses, selected varieties; choice American Plants, Dahlias, Verbenas, Fuchsias, &c.—May be viewed the morning of Sale; Catalogues had at the Mart, and of the Auctioneers, American Nursery, Leytonstone, Essex.

BRENTFORD.—TO NOBLEMEN, GENTLEMEN, NURSERYMEN, FLORISTS, AND OTHERS.

MESSRS. PROTHEROE AND MORRIS are instructed to submit to public competition by Auction, on the premises, Brentford Nursery, Brentford, Middlesex, on MONDAY, March 18th, and two following days, at 11 o'clock precisely, by order of the Executors of the late Mr. J. Ronalds, the first portion of the valuable NURSERY STOCK, consisting of Evergreens and Fruit Trees; also the choice Greenhouse Plants, together with two Greenhouses, several two and three-light Boxes, Hand-lights, Hot-water Pipes, Boilers, Seed-shop Fixtures, Horses and Carts, a capital Chaise, a quantity of Bricks, Garden-pots, &c.; also the Stock of Seeds.—May be viewed prior to the sale; Catalogues may be had, 1s. each (returnable to purchasers), of the principal Seedsmen in London; and of the Auctioneers, American Nursery, Leytonstone, Essex.

CHOICE CAMELLIAS FOR SALE BY AUCTION, AT MESSRS. LODDIGES' NURSERY, HACKNEY.

MR. J. C. STEVENS is directed by Messrs. Loddiges to sell by Auction, on their Premises at Hackney, on TUESDAY, the 19th, and WEDNESDAY, the 20th of March, at 12 for 1 o'clock, a selection of about 1000 CAMELLIAS, from 3 to 12 feet high, beautifully formed plants, well furnished with bloom-buds, and comprising many Double White, Candidissima, Donckelarii, Aulica, and other choice sorts; also a few fine specimens of Araucaria excelsa, 4 to 5 feet, Rhododendrons robustum and campanulatum, 3 to 5 feet. Handsome Plants of Andromeda floribunda in flower, and some Limes in fruit.—May be viewed the day before the Sale, and Catalogues had on the Premises, and of Mr. J. C. STEVENS, 38, King-street, Covent-garden, London.

HARDY CONIFERS, WELL DESERVING THE ATTENTION OF THE GROWERS OF THIS INTERESTING TRIBE.

MR. J. C. STEVENS will sell by Auction, at his Great Room, 38, King-street, Covent-garden, on FRIDAY, 22d March, at 12 for 1 o'clock, the following HARDY CONIFERÆ, &c.: 2000 Cedrus Deodara, from 6 inches to 2 feet; 200 Araucaria imbricata, from 12 to 18 inches; 50 Abies Khutrow, 1 foot to 1½ foot; 200 Pinus Gerardiana, 4 years old; 100 Pinus excelsa, 12 to 18 inches; 40 Cupressus torulosa, 12 to 18 inches; 12 Picea cephalonica, 1 foot; 25 Picea Webbiana, 3 years old; 6 of the rare Araucaria Bidwellii, 8 inches; 25 Quercus Fordii, 1½ to 2 feet; and 100 Corræa speciosa major, 1 to 2 feet, well set with bloom.—May be viewed the day prior and morning of sale, and Catalogues had.

CAMELLIAS, STANDARD ROSES, AND CRYPTOMERIA JAPONICA.

MR. J. C. STEVENS is directed to sell by Auction, at his Great Room, 38, King-street, Covent Garden, on WEDNESDAY, March 27, at 12 for 1 o'clock, a collection of 250 Camellias, from 1 to 6 feet, 300 Standard Roses of the finest sorts of Hybrid Perpetual and Bourbon, and 200 fine seedling Cryptomeria Japonica from 1 to 3 feet.—May be viewed on the morning of Sale, and Catalogues had of Mr. J. C. STEVENS, 38, King-street, Covent Garden, London.

TO THE NOBILITY, GENTRY, WIRE-WORKERS, &c.
KING'S ROAD, CHELSEA.—ORNAMENTAL, DOMES, PHEASANTRIES, ARCADES, &c.

MR. KIRKE has been favoured with instructions from Mr. Butler (who is retiring from business), to sell by Auction, on the premises, 1 and 2, Beaufort-terrace, King's-road, Chelsea, on THURSDAY, March 21, at 11 for 12 o'clock, all the STOCK, comprising Ornamental Domes, Pheasantries, Arcades, Columns, and Arches, wrought-iron Greenhouse, Stages, Stands (circular, oval, and elliptic, to divide), Standard Rose Trainers, large Umbrella ditto, large and small Coops, large and choice Collection of Flower Stands, Tree Guards, Iron Garden Chairs, Rustic Seats and Chairs, Wire Fence, a great variety of Bird-cages, &c.—May be viewed the day prior and morning of Sale. Catalogues had on the premises, and at the Office of the Auctioneer, 19, Brompton-row, Brompton.

TO GENTLEMEN'S GARDENERS, FLORISTS, AND OTHERS.

TO BE DISPOSED OF, a Small NURSERY, in a capital Situation, near London, well adapted for a Gentleman's Gardener about commencing business.—For terms, &c., apply to Messrs. PROTHEROE and MORRIS, Leytonstone, or to ROBERT J. GREEN, 28, Cannon-street, City, London.

TO MARKET GARDENERS, &c.

TO BE DISPOSED OF, the Materials of an Old VINERY, 60 feet long and 20 feet wide.—Apply to ASHBY and HORNER, Builders, No. 7, Aldgate, London.

TO GARDENERS, SEEDSMEN, AND FLORISTS.

TO BE LET, with immediate Possession, an old established Concern in the principal and most fashionable thoroughfare in Brighton, the Western Road; comprising the Seed, Fruit, and Florist Business, with excellent Vinery, Show-house, and Stove. In-coming moderate.—Apply to Messrs. ROGERS and AYLING, Nurserymen, Withdean, near Brighton.

TO NURSERYMEN AND OTHERS.—LOUTH.

TO BE LET, from year to year, or for a Term of Years, from Old Lady-day next, all that old-established and well-accustomed NURSERY situate near the River Head in Louth, Lincolnshire, containing about six acres, together with a comfortable Dwelling-house standing thereon, and also a Garden House and various Brick and Glass Frames, now or late in the the occupation of Mr. Thomas Cocking. The land is in a good state of cultivation, has various fine Beech and Privet hedges thereon, and is well adapted for the raising of Plants, Shrubs, and Trees, and presents a rare opportunity for persons in the above Business taking an advantageous situation, there being no other Nursery of any magnitude within many miles of the town of Louth. The incoming tenant would most probably have the option of purchasing at a low valuation a quantity of Seedling and other plants and Trees, which may be on the premises undisposed of on the 6th of April next.—For further particulars apply to GOE and WILSON, Solicitors, Louth.

TO MANUFACTURERS OF MANURES AND PURVEYORS OF AGRICULTURAL STUFFS.

TO BE SOLD OR LET, SOME SPACIOUS MILLS, with Water and Steam Power, formerly occupied for the manufacture of cloth, with good Dwelling Houses, situate at Chalford, in the centre of the important and improving hill and vale agricultural district of Gloucestershire. This property is close to the Thames and Severn Canal, and to a station on the Great Western Railway; and this extensive field for such operations is unoccupied.—Apply to Messrs. LAWRENCE, Cirencester.

ST. IVE'S, CORNWALL.

TO BE LET, from Lady-day next, for such term of years, and on such conditions, as may be mutually agreed upon, all that excellent Messuage, Tenement, and Farm, called BICTON and REDLANDS, situate in the Parish of St. Ive, in the county of Cornwall, containing about 421 acres of Arable and Pasture Land. This Farm is well situated for markets, being only 5 miles from Liskeard and Callington, and within easy distance of several navigable ports.—For further particulars, apply to Messrs. H. T. and A. SMITH, Solicitors, Devonport.

GLASS FOR CONSERVATORIES, &c.

HETLEY AND CO. supply 16-oz. Sheet Glass of British Manufacture, at prices varying from 2d. to 3d. per square foot, for the usual sizes required, many thousand feet of which are kept ready packed for immediate delivery. Lists of Prices and estimates forwarded, on application, for PATENT ROUGH PLATE, THICK CROWN GLASS, GLASS TILES and SLATES, WATER-PIPES, PROPAGATING GLASSES, GLASS MILK PANS, PATENT PLATE-GLASS, ORNAMENTAL WINDOW GLASS, and GLASS SHADES, to JAMES HETLEY and Co., 35, Soho-square, London.
See the *Gardeners' Chronicle* first Saturday in each month.



CROSSKILL'S PATENT ROLLER.—For Rolling Spring Wheat, Growing Crops, Grass Lands, Compressing Soft Soil, and Crushing Clods. Prize Patent Wheels, Carts, and Waggons—awarded 30 sovs. prizes at Norwich. Prize Portable Farm Railway, will pay its cost the first year. &c. &c. On receipt of six penny postage stamps, a new Illustrated Newspaper and Catalogue will be sent gratis per post, with full particulars of the newest and best Field, Road, and Barn Implements, now kept in Stock, for delivery from Hull by water or rail to all parts of the kingdom.
Address Mr. CROSSKILL, Iron Works, Beverley.

IRON AND WIRE FENCING, AND METALLIC BEDSTEADS.

THOMAS PERRY AND SONS,
232, OXFORD-STREET (NEAR HYDE PARK),
And Highfields Foundry and Wrought-iron Works, Bilston, Staffordshire, Manufacturers of all descriptions of
PLAIN AND ORNAMENTAL IRON AND WIRE FENCING,
Park Entrance, Carriage and Field Gates, Wickets, &c.;
Deer, Sheep, and other Hurdles;
Hare and Rabbit-proof Wire Fencing;
Iron Bedstead Makers to the Board of Ordnance;
And Government Contractors.
The works of Messrs. PERRY being situated in the heart of the first iron district, they are enabled to execute all orders with the greatest facility; and on the most moderate terms. Drawings made and estimates prepared, if required. The show rooms contain an immense variety of every description of Iron and Wire-work, and are the largest in London. An Illustrated Catalogue of Bedsteads, with dimensions and prices, sent on application, post-free.

AGRICULTURAL SEEDS.

WM. DRUMMOND AND SONS' PRICED LIST of the above is now ready, and may be had free by post on application. Their stocks of Swede and Yellow TURNIP, ITALIAN RYE-GRASS, and NATURAL GRASSES for Permanent Pasture deserves special attention.
FREE DELIVERY.—Seeds forwarded carriage-paid to a number of places throughout the kingdom. For particulars, see the priced List.
Agricultural Museum, Stirling, N. B.

BEE HIVES.

GEORGE NEIGHBOUR AND SON respectfully announce that they have prepared for this season an extensive supply of their various IMPROVED BEE HIVES, which are offered to all who are desirous of cultivating that pleasing and profitable branch of rural economy—the Honey Bee. The collection consists of "Nutt's Collateral Hives," "The Single Box Hive," "The Amateur Bar Hive," "The Improved Cottage Hive," &c., from either of which the honey may be taken at any time without injury to the Bees, and may be worked with safety, humanity, and profit, by the most timid and unaccustomed to Bee manipulation. A descriptive paper, with drawings and prices, will be forwarded on the receipt of two postage stamps.—GEORGE NEIGHBOUR and SON, 127, High Holborn, London..
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JOHN BAILY, PURVEYOR TO HER MAJESTY AND H.R.H. PRINCE ALBERT, 113, Mount-street, Grosvenor-square, London, Dealer in every description of Useful and Ornamental POULTRY and WATER-FOWL. Dorking, Hambro', Spanish, Polish, and Cochin China Fowls. Gold and Silver Spangled Bantams. All sorts of Pea Fowls. Gold, Silver, Pied, and Ring-necked Pheasants. Tame-bred Pheasants in any numbers. Live Partridges for turning out.—Priced Lists and Estimates forwarded by post, on application.

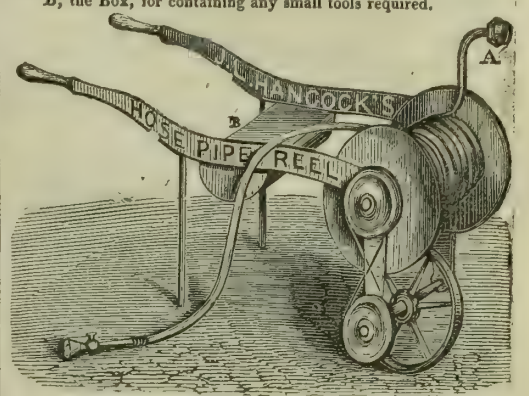
PATENT SPADES, DAISY RAKES, SCYTHES, Draining, and other Garden Tools. Mole Traps, 6s. per dozen. Carpenters' and Smiths' Tools, &c. Ladies' Garden Tools, 7s. 9d. a set. Sword-scrapers for Gardens, 1s. 2d. each. Dr. Arnott's Ventilating Chimney-valves, plain 5s; Ornamental ditto for Drawing-rooms: at J. H. BOOBBYER and Co's (late STURCH and BOOBBYER), Ironmongery, Brass-foundry, Nail and Tool Warehouse, 14, Stanhope-street, Clare-market, London. Established nearly 200 years for the sale of goods from the best Manufactories at the lowest prices. Goods forwarded to any part on the receipt of remittance.

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FRUIT TREES, FLOWER-BEDS, &c.—Garden Netting, of superior quality, for preserving Fruit trees from frost, blight, and birds, or as a fence for rabbits, fowls, pigeons, Tulip and Seed beds, can be had in any length or quantity at 3d. per yard 2 yards wide, or 6d. per yard 4 yards wide, from JOHN KING FARLOWS, Fishing Rod and Net Manufactory, 5, Crooked-lane, London-bridge. The netting being tanned will stand exposure to the weather for many years. Forwarded to any part of the kingdom on receipt of post-office order, or reference in town. An allowance to gardeners and large consumers.—Copy the Address, 5, Crooked-lane, London-bridge.

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One hundred 1, 2, and 3-light Boxes and Lights of all sizes ready for immediate use. Warranted best materials. packed and sent to all parts of the kingdom; 2-light Boxes and Lights from 1*l.* 4*s.* Garden Lights of every description, Conservatories, Green and Hot-houses, made and fixed in all parts of the kingdom. References given to the Nobility, Gentry, and the Trade, in most of the counties of England. JAS. WATTS, Hothouse Builder, Claremont-place, Old Kent-road, London.

THE IMPERIAL COVERLETS, now so universally admired and appreciated, as a Cheap, Durable, LIGHT, Warm, and Elegant COVERING for the BED, can be had, Wholesale and Retail, of W. H. BATSON and Co., 1, Princess-street, Manchester; and 499, Oxford-street, London.
"I disapprove exceedingly of thick heavy Quilts and Counterpanes; they should always be avoided, especially by invalids, as they irritate delicate frames and prevent sleep."—*Dr. Graham's "Domestic Medicine,"* pages 192, 729.

GREY GOOSE FEATHERS, 1s. per lb.—HEAL AND SONS' present prices for Bed Feathers are:—

Poultry	0s. 8d.	Best Grey Goose	1s. 10d.
Grey Goose	1 0	White ditto	2 2
Foreign ditto	1 6	Best Dantzic ditto	3 0

Purified by steam, and warranted sweet and free from dust.—HEAL and SONS' List of Bedding, containing full particulars of weights, sizes, and prices, sent free by post, on application to their Factory, 196, Tottenham-court-road, London.

"Where cruder juices swell the leafy vein,
Stint the young germ, the tender blossom stain."

DR. SCOTT'S Aperient Tablets (of a delicious flavour) will be found a prompt, efficacious, and invigorating alterative aperient Medicine, correcting those crudities of the vital fluids which constitute the primary cause of every disease, and, by assisting Nature in all her requirements, speedily restores the patient to health. They are also the safest and best medicine for children. "A new Medicine, called Dr. Scott's Aperient Tablets, has, by its extraordinary virtues, taken the public by surprise. It is a mild, aromatic, tonic aperient, of a pleasant flavour; and to such as suffer from indigestion, impaired appetite, bilious or liver complaints, inactive bowels, nervous affections, impurities of the blood and secretions, gout, dropsy, worms, &c., we strongly recommend it. It is also a safe, pleasant, and efficacious medicine for children."—*Morning Chronicle*, Jan. 25. Sold in boxes, at 1s. 1½d. and 2s. 9d. Agents: RUDD and Co., 151, Strand (of whom they may be had for 15 postage stamps); and sold by all Dealers in Patent Medicines throughout the Kingdom.

EMIGRATION to the AUSTRALIAN COLONIES.—For ADELAIDE, PORT PHILLIP, and SYDNEY, the fine, 1st-class, teak-built ship ORIENTAL, Capt. J. P. TAYLOR, 1000 tons, coppered and copper-fastened; will sail from the St. Katharine's Docks on the 23rd inst., calling at Plymouth. This very superior ship is fitted up expressly for the comfort of passengers, and from her great height 'tween decks, which are admirably lighted and ventilated, offers accommodation rarely to be met with. All the cabins are enclosed and of an extra size, for families and married couples. The passage money, 20 guineas each adult, including bedding, mess utensils, and provisions, which will be ample in quantity (see dietary scale), and excellent in quality, for which a guarantee will be given, and in addition, passengers are invited to be present at their inspection. There will be a library on board. There is a most magnificent poop and saloon of very large size, with elegant accommodation for cabin passengers. A skilful surgeon will proceed in the ship. For freight, passage, and all particulars, apply to JOHN WHITTAKERS, 78, Mark-lane; or to W. R. BRUFTON, 89, Great Tower-street, London.

NEW PHLOXES.

ROBERT M. STARK, Edgehill Nursery, Edinburgh, begs to intimate that he is now prepared to send out the under-mentioned Seedling PHLOXES, raised by R. Girdwood, Esq., F.C.H.S. They where exhibited, and awards made to several, at various shows last summer. Among other encomiums, Mr. G. was congratulated on his "unexampled success in raising such a batch of seedlings," by the Floricultural Editor of the Gardeners' Journal. The descriptions below are in part extracted from that Paper of August 4th. In form the pips are all finely circular; limbs flat, smooth, and of proper thickness.

CLEOPATRA.—"An exquisite bloom, form perfect, colour pearl white, eye distinct." *3s. 6d.*

DIANA.—"Form excellent, colour lilac blush, eye circular." *3s. 6d.*

EDGEHILL BEAUTY.—"Nice white flower, petals not very large, but a noble trusser, and very attractive flower." *2s. 6d.*

GIRDWOODII.—"Very pretty thing, ground colour lilac shaded to white, eye distinct, size large." *3s. 6d.*

JOAN.—"Form good, colour bright lilac, inclining to purple at the centre, large." *3s. 6d.*

MIRABILIS.—"Form desirable," colour pale lavender, eye circular. *2s. 6d.*

RADIANCE.—"Colour lilac blush, a fine trusser." *2s. 6d.*

SNOW FLAKE.—Pure white, form good, also producing noble trusses. *2s. 6d.*

The set of Eight for *20s.*

For other varieties, R. S. begs to refer to his Catalogue of Florists' Flowers, which is now ready, and may be had on application.—Hope-street, Edinburgh, March 16.

THOMAS CRIPPS respectfully announces to his Friends that he has now ready for sending out strong healthy plants of those unique and matchless half-shrubby CALCEOLARIAS raised by Mr. Cole, gardener to the Right Hon. Lady Maria Meade.

To enter into details of the respective merits of these floral beauties will, I trust, be deemed unnecessary, further than to state that, amongst hundreds of eminent judges who visited the collection during the two past seasons, may be enumerated the following nurserymen, gentlemen's gardeners, &c., from some of whom letters have been received expressive of their desire to arrange for the purchase of the whole stock of plants, viz., Messrs. Henderson, Nurserymen, Pine-apple-place; Mr. Ayres, Blackheath; Mr. Gibbs, late foreman to Mr. Epps, Maidstone; and Mr. Ogle, gardener, Eridge Castle. Mr. Woodhouse, of York, in reply to specimens of cut flowers submitted, says, "I have visited most of the Calceolaria growers' collections during the past season, but have seen nothing equal to the specimens received from you." Editor of the Gardeners and Farmers' Journal, June 16th last: "We congratulate you on your good fortune in raising such a batch of flowers. If they are seedlings of your own sowing, and of one sowing, we can only say you are very lucky, and it must be your own fault if you do not avail yourself of such unexampled success."

The above in sets of six plants, *1l. 10s.*, with the usual discount on three sets.—Tunbridge Wells Nursery, Kent.

FLOWER SEEDS, POST FREE.

G. BAKER begs to recommend to the Nobility, Gentry, and his friends in general, the following very choice and superior assortment of FLOWER SEEDS, which are now ready to be sent out in sealed packages, at the prices affixed, post free.

				s.	d.
100 packets choicest Annuals, including the newest and most approved varieties				10	0
50 Ditto	ditto	ditto ...	...	5	0
25 Ditto	ditto	ditto ...	...	2	6
12 Ditto	ditto	ditto ...	...	1	6
20 Ditto, choicest dwarf kinds, for filling beds ...			...	5	0
20 Ditto, half hardy and tender Annuals			...	5	0
12 Ditto, distinct varieties of Hollyhock ...		...	...	2	6
12 Ditto	ditto	Balsams ...	...	2	6
12 Ditto	ditto	Larkspur ...	...	2	6
12 Ditto	ditto	German Aster ...	...	2	6
12 Ditto	ditto	German Stocks ...	...	2	0
12 Ditto	ditto	German Larkspur ...		2	6
8 Ditto	ditto	Zinnias	...	2	0
20 Ditto	ditto	Perennials, including splendid mixed varieties of Verbena, Petunia, Hertsease, Pentstemon, Calceolaria, &c.		5	0

Remittances expected from unknown correspondents (either by post-office order or postage stamps).

GEORGE BAKER, Seedsman, Wells, Somerset.

NEW CATALOGUE OF CHOICE GERANIUMS, FUCHSIAS, VERBENAS, PANSIES, PETUNIAS, CHRYSANTHEMUMS, PHLOXES, &c.

HENRY WALTON begs to inform the Public that his Priced and Descriptive CATALOGUE, containing the very best selections of the above, is now ready, and can be had for one stamp.

Twelve of the best Fuchsias sent out last season *12s.*, or Six for *7s. 6d.*, can be sent by post, free. All the fine older varieties at *5s.* per dozen. 12 of the best Show Pansies, *6s.* to *9s.* 12 of the best Show Pinks, *6s.* post free. Also fine plants of Mitraria coccinea, first week in April, at *5s. 6d.*, can be sent by post.

H. W. has been favoured with the stock of two beautiful CALCEOLARIAS, raised by Mr. Gordon, of Foxhill-bank, near Accrington, Lancashire, viz., "Fairy Queen," creamy ground, with large purple spots in the centre, small pink spots round the margin; form excellent. A very distinct variety, *3s. 6d.* "Beauty," a very pretty flower, of fine form; ground colour creamy, with pink spots, *3s. 6d.*

The above have been seen by competent judges in different parts of the country, who have pronounced them first-rate, and decided acquisitions to any collection. As numerous orders have been received from parties who have seen them, and the stock is small, early orders will have the best plants. Now ready and sending out.

All orders must be prepaid, and made payable at Burnley.

Edgend Marsden, near Burnley, Lancashire.

ROBERT THOM, MARKET GARDENER, Cornhill, Aberdeen, is now sending out plants of his Strawberry, "THOM'S SEEDLING," which is one of the finest under cultivation, at *1l. 1s.* per 100; 25 plants sent post free, *7s. 6d.*

Agents: Messrs. Hurst and M'Mullen, Seedsmen, Leadenhall-street, London; Mr. John Scott, Landscape Gardener, Chester-road, Manchester; Mr. John M'Lane, Gardener and Florist, Camera-square, Chelsea.

Orders addressed to R. THOM, Cornhill, will be punctually attended to.—Cornhill Gardens, Aberdeen, March 16.

"SUNSET" VERBENA.

MESSRS. JEYES AND CO. have much pleasure in offering for Sale the above Verbena. The two eminent growers named below have described its character.

"Your Verbena 'Sunset' is quite distinct from any other scarlet. Its habit for bedding is the best we know of. The name is well applied, for a mass of its flowers has all the appearance of a declining sun.—DANIEL JUDD, Gardener to the Right Honourable Earl Spencer, K.G.; WALTER GREY, Gardener to the Right Honourable Sir James Parke."

Plants *5s.* each; if two are ordered three will be sent.

P.S.—The Prices of the Rare Flower Seeds advertised and described in this Paper of March 9 are—Hibiscus speciosa, *2s. 6d.*; Æthionema membranaceum, *6d.*; Myosotis azoricus, *2s. 6d.*; Pentstemon Murrayanum, *2s. 6d.*; Calandrinia umbellata, *2s. 6d.* per paper.—Northampton, March 16.

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THEIR HISTORY AND MANAGEMENT.

By the Rev. EDMUND SAUL DIXON, M. A., Rector of Intwood with Keswick.

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- The Malay Fowl
- The Pheasant Malay Fowl
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- The Egyptian, or Cape Goose
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- The Grey China Goose
- The White Fronted or Laughing Goose
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- The Teal and its congeners
- The White China Goose
- The Tame Duck
- The Domestic Goose
- The Bernicle Goose
- The Brent Goose
- The Turkey
- The Pea Fowl
- The Golden and Silver Hamburgh Fowls
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A BEAUTIFUL HARDY BULBOUS PLANT, producing, in long succession, large lemon-coloured flowers, spotted with crimson, and is well adapted for bedding. Strong flowering roots *6s.* per dozen, or per post, free, *7s.* per dozen.

30 packets of new and very choice Flower Seeds for *6s.*, per post, free.

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Y. and Co. beg to announce they are now executing orders for the above, in fine strong Canes, of the same stock as they had the honour of supplying Her Majesty's Gardens and most of the Nobility. *15s.* per 100.

Fine large WHITE RASPBERRY, *3s.* per dozen.

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PEACHES, NECTARINES, AND APRICOTS, 3 years trained, and forward for bearing, *5s.* each.

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The above are of the most select kinds, and worked from the Stock of the Horticultural Society of London, and are warranted correct to their sorts.

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RHUBARB.—Myatt's Linnæus, *1s. 6d.*; Mitchell's Prince Albert, *1s. 6d.*; Myatt's Victoria, *1s.* each. Tobolsk (earliest), *9s.* to *12s.* per dozen.

ASPARAGUS.—Giant (strong), 2 and 3 years, *2s. 6d.* and *3s. 6d.* per 100.

SEAKALE (strong), *1s. 6d.* per dozen.

WHITETHORN, 3 years old, very fine and clean, *2s. 6d.* per 1000; fine 2 and 3 years transplanted, *6s. 6d.* and *8s. 6d.* per 1000.

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(Including their fine Red-edged Picotee, "The Gem," by far the most perfect Picotee yet raised, and shown in all the winning stands at the Metropolitan Exhibitions during last season.)			
25 pairs of very fine show varieties of do. do. ...	3	0	0
12 do. do. do. do. do. *1l. 4s.* to	1	10	0
Fine mixed border ditto—per dozen pairs ...	0	12	0
True old Clove—per pair	0	2	0

PINKS, finest first-class show flowers, *12s.*, *18s.*, and *24s.* per dozen pairs.

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Mrs. LOUDON'S LADIES' COMPANION, No. 12, published this day, contains Chapter II. of a new story called "LETTICE ARNOLD," by the above popular writer. Also, How should Girls be Educated—Letters on Geology—The Botany of Spring Flowers—The Work Basket, with illustrations, &c. &c. Published Weekly, price *3d.*, stamped *4d.*, or in Monthly Parts, *1s. 2d.* each. Parts I. and II. are now ready.

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"In our opinion both gardeners and farmers cannot do better than to make themselves well acquainted with the 'Guide' thus offered them."—*Gardeners' Chronicle and Agricultural Gazette, Sept.* 8, 1849.

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"Decidedly the most simple and concise treatise that has appeared on the subject."—*Darlington and Stockton Times.*

"Assay Office and Laboratory, Newcastle-on-Tyne, Sept. 27, 1849.

"I have read Mr. Martindale's 'Farmers' and Gardeners' Guide to Agricultural Chemistry' with great pleasure. It is an excellent compendium, and embraces all our present information in this branch of applied chemistry, arranged in a very methodical manner, and well adapted for parties just commencing the study of this science.

(Signed) "THOMAS RICHARDSON, Ph.D.
(and Lecturer on Chemistry in the School of Medicine, Newcastle-on-Tyne)."

Just published, for distribution,

A PLAIN ADDRESS TO THE LABOURING CLASSES ON THE ADVANTAGES OF SAVINGS' BANKS AND FRIENDLY SOCIETIES.

"Of all the plans devised for bettering the condition of the labouring classes, not one has so successfully promoted that end as the establishment of Savings' Banks."—*Walker's Original.*

"A useful little tract, intended for distribution among those whom it is likely to benefit, viz., the industrious classes."—*Agricultural Gazette.*

Copies of the above Tract supplied for circulation at the rate of *6s.* per 100.

Reading: J. HATTON; or of any Bookseller.

Printed by WILLIAM BRADBURY, of No. 13, Upper Woburn-place, in the Parish of St. Pancras, and FREDERICK MULLETT EVANS, of No. 7, Church-row, Stoke Newington, both in the County of Middlesex, Printers, at their office in Lombard-street, in the Precinct of Whitefriars, in the City of London; and published by them at the Office, No. 5, Charles-street, in the parish of St. Paul's, Covent-garden, in the said county, where all Advertisements and Communications are to be ADDRESSED TO THE EDITOR.—SATURDAY, MARCH 16, 1850.

THE GARDENERS' CHRONICLE
AND
AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 12—1850.] SATURDAY, MARCH 23. [PRICE 6*d.*

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ROYAL BOTANIC SOCIETY, Regent's Park.—GENERAL EXHIBITIONS, WEDNESDAYS, MAY 8th, JUNE 12th, and JULY 3d.

AMERICAN PLANTS.—SATURDAYS, May 25 and June 1. Tickets to be obtained at the Gardens, by orders from Fellows of the Society, price, on or before Saturday, April 27, 4*s.* each; after that day, 5*s.*; or on the days of Exhibition, 7*s.* 6*d.* each; and such Tickets will admit to the Collection of American Plants, from the 3d of June to the 8th, both included.

N. B. Fruit will be exhibited on June 12 and July 3.

RAY SOCIETY (ESTABLISHED 1844) for the publication of Works on Natural History.

Subscribers are informed that a volume of Papers on Botany, edited by A. HENFREY, Esq., and a History of the British Entomostraca, with 36 plates, by D. BAIRD, for the year 1849, are now ready, and will be forwarded to members who have paid their subscriptions.

The Society, since its establishment in 1844, has published 17 volumes, 15 of which are illustrated mostly by coloured plates, on various branches of natural history. A list of these works may be obtained by application to the London Secretary. A very few complete sets of the works may be still had, or for any particular year. Subscription for one year, 1*l.* 1*s.*

By order of the Council, EDWIN LANKESTER, M. D., Secretary.
22, Old Burlington-street, London.

JOHN CATTELL begs to offer the following superb CALCEOLARIAS, at 2*s.* 6*d.* each, viz, Madame Merric, Superb, Emperor, Sir Harry Smith, Beauty Supreme, Standishii, Supreme, Exemplar, Masterpiece, and Lydia.

Also the following fine bedding varieties:

KENTISH HERO, 9*s.* per dozen.

INTERMEDIA, rich yellow, 9*s.* per dozen.

CATTELL'S HERO, rich velvety crimson, of the same size and form as the Kentish Hero, of which it is a seedling; in habit it is not quite so shrubby as Kentish Hero, consequently there is little else but flowers to be seen. It was greatly admired by all who saw it in bloom last summer, and continued in flower from June till October. 7*s.* 6*d.* each, no discount to the trade, excepting when three are ordered four will be sent.

The above are all young healthy plants, in good condition for travelling.

TIGRIDIA CONCHIFLORA, 2*s.* 6*d.* per dozen.
" PAVONIA, 1*s.* 6*d.* per dozen.

J. C. has a large stock of strong plants of Delphinium Barlowii and grandiflorum maximum, worth the attention of the trade. A remittance or reference is expected from unknown correspondents.—Westerham, Kent.

SUPERB NEW VERBENA, ADAMS'S "MISS PAYNE."

The above beautiful variety was raised by Mr. W. Adams, Gardener to W. Hogg, Esq., Bigglesw ade, and will be found the best White Verbena of the season. To flowers of an extraordinary size it unites a delicious fragrance, which adds much to its attractions.

Extract from the *Gardeners' Chronicle*, Oct. 13, 1849. "W. A. A. Colour pale blush, fading to white; flowers very large, but narrow in the lobes; a good variety, on account of the size of its flowers, both individually and collectively."

Extract from a letter from Mr. J. Bundy, Gardener to — Trevor, Esq., Bromham Hall, Beds. "I beg to say I saw your seedling Verbena, and must say it was remarkably fine, much more so than any I had ever seen before, therefore you are at liberty to make what use of my name you may think proper."

Opinions, equally favourable, have also been expressed by Mr. Pullen, Gardener to the Hon. and Rev. H. C. Cust, Cockayne, Hatley, near Potton, Beds.; Mr. Pope, Gardener to Mrs. Harvey, Ickwell Green, Beds.; and many other gardeners, to whom reference is kindly permitted. Good Plants, post free, 5*s.* each; when two are ordered three will be sent.

London Agents: Messrs. HURST and M'MULLEN, 6, Leadenhall-street.

Address, SUSAN WOOD, Nurseries, Huntingdon.

P.S. Postage stamps received as payment.

"SUNSET" VERBENA.

MESSRS. JEYES AND CO. have much pleasure in offering for Sale the above Verbena. The two eminent growers named below have described its character.

"Your Verbena 'Sunset' is quite distinct from any other scarlet. Its habit for bedding is the best we know of. The name is well applied, for a mass of its flowers has all the appearance of a declining sun.—DANIEL JUDD, Gardener to the Right Honourable Earl Spencer, K.G.; WALTER GREY, Gardener to the Right Honourable Sir James Parke."

Plants 5*s.* each; if two are ordered three will be sent.

P.S.—The Prices of the Rare Flower Seeds advertised and described in this Paper of March 9 are—Hibiscus speciosa, 2*s.* 6*d.*; Æthionema membranaceum, 6*d.*; Myosotis azoricus, 2*s.* 6*d.*; Pentstemon Murrayanum, 2*s.* 6*d.*; Calandrinia umbellata, 2*s.* 6*d.* per paper.—Northampton, March 23.

FLOWER SEEDS.

RENDLE'S DESCRIPTIVE CATALOGUE can still be had for two postage stamps (to pay the postage).

"The Flower Seed List is peculiarly comprehensive, and gives to each variety its scientific name, hardihood, time of duration, colour, height, and time of flowering. Our readers will thus see that from its universal utility, we can scarcely say too much in its recommendation, and we are sure that the name of the eminent firm will be a sufficient guarantee that every article they send out will not only be true to name, but also of the best possible quality."—MIDLAND FLORIST for January, 1850.

FLOWER SEEDS.

We have a superior stock of all the newest kinds, and as some of the choicest varieties are grown under own inspection, we can warrant them to be quite new and correct to name.

SCALE OF PRICES SENT POSTAGE FREE.

No. 1.—100 Packets choice sorts, including all the best Hardy, Half-hardy, and Greenhouse Annuals, Biennials, and Perennials, ... 18*s.*; larger packets, 25*s.*
No. 2.—50 Ditto ditto ditto 10*s.*; ditto 15*s.*
No. 3.—25 Ditto ditto ditto 6*s.*; ditto 8*s.*

Complete lists of the sorts included in each collection will be found in the Book Catalogue; or, if preferred, a selection may be made from it, at the purchaser's option.

IMPORTED GERMAN SEEDS,

In the original Sealed Packets.

We have concluded an arrangement with one of the largest growers of Flower Seeds on the Continent for a large supply of imported German Seeds, and we have much pleasure in stating that we can with confidence recommend them as being of very superior quality, and such as we are sure will give the most complete satisfaction.

ALL FLOWER-SEEDS SENT FREE BY POST.

No.		s.	d.
	GERMAN STOCKS.		
	DWARF GERMAN TEN-WEEK STOCKS.		
4.	An assortment of 36 varieties	8	0
5.	" 24 varieties	5	0
	DWARF GERMAN TEN-WEEK STOCKS, WALLFLOWER-LEAVED.		
6.	An assortment of 16 varieties	4	0
7.	" 12 varieties	3	0
	BRANCHING GERMAN TEN-WEEK STOCKS.		
8.	An assortment of 12 varieties	3	0
	AUTUMNAL FLOWERING STOCKS.		
9.	An assortment of 20 varieties	5	0
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10.	An assortment of 16 varieties	4	0
	GERMAN ASTERS.		
	QUILLED DOUBLE GERMAN ASTERS.		
11.	An assortment of 24 varieties	5	0
12.	" 12 varieties	3	0
	DWARF DOUBLE GERMAN ASTERS.		
13.	An assortment of 16 varieties	4	0
14.	" 12 varieties	3	0
	GLOBE-FLOWERED DOUBLE GERMAN ASTERS.		
15.	An assortment of 12 varieties	3	0
	PYRAMIDAL-FLOWERED DOUBLE GERMAN ASTERS.		
16.	An assortment of 24 varieties	5	0
17.	" 12 varieties	3	0
	WALLFLOWERS.		
18.	An assortment of 10 distinct varieties	3	0
	BALSAMS.		
19.	An assortment of 12 varieties	4	0
	DWARF DOUBLE BALSAMS.		
20.	An assortment of 10 varieties	3	0
	CAMELLIA-FLOWERED DOUBLE BALSAMS.		
21.	An assortment of 8 varieties	3	0
	LARKSPURS.		
22.	An assortment of 10 varieties	4	0
	TALL DOUBLE LARKSPURS.		
23.	An assortment of 8 varieties	4	0
	STOCK FLOWERED.—TALL DOUBLE LARKSPURS.		
24.	An assortment of 6 varieties	3	0
	HOLLYHOCKS.		
25.	An assortment of 24 varieties	5	0
	MARVEL OF PERU.		
26.	An assortment of 8 varieties	3	0
	SCABIOUS.		
27.	An assortment of 8 varieties	3	0
	ZINNIA ELEGANS.		
28.	An assortment of 8 varieties	4	0
	GREENHOUSE OR TENDER ANNUALS.		
29.	An assortment of 20 varieties	7	0
30.	" 12 varieties	4	0
	GREENHOUSE PERENNIALS.		
31.	An assortment of 20 varieties	10	0
32.	" 12 varieties	6	0
	HARDY BIENNIALS AND PERENNIALS.		
33.	An assortment of 20 varieties	7	0
34.	" 12 varieties	4	0

ALL FLOWER SEEDS SENT FREE BY POST.

For Catalogues and further particulars apply to
WILLIAM E. RENDLE AND Co., Union-road, Plymouth.
ESTABLISHED 1786.

NEW AND STRIKING VERBENA.

ARTHUR MACKIE begs to offer the undermentioned to the attention of Florists, with the fullest conviction that it will give entire satisfaction.

WOODSTOCK'S MAGNIFICENT.—A. M. having purchased the entire Stock of this unrivalled Verbena, offers it to the Public with the utmost confidence, being fully persuaded that it will surpass everything yet out in its class. The individual flowers cover a sixpence, and sometimes a shilling. It is of a very free habit and growth, and well suited for grouping. See *Gardeners' Chronicle*, Sept. 15, 1849.—"*W. K. B.* Colour bright rose, fading to pink; a remarkably fine variety, with much the largest flowers we have yet seen."

Fine strong plants the 1st of April, at 5*s.* each, free by post. Where three are ordered four will be sent.

MACKIE'S Descriptive Catalogue of Flower and Vegetable Seeds is now ready, and will be forwarded on receipt of two stamps for postage.—Norwich Nursery, Norwich, March 23.

NEW AND RARE SEEDS.—DAHLIA, saved from the best and newest varieties, including the fancy sorts.

FUCHSIA, from named show flowers.

GERANIUM, from all the best and choicest varieties.

PANSY, saved by the best growers from the choicest varieties.

PICOTEE AND CARNATION, from the best show flowers.

PINK, saved by a celebrated florist from choice named show flowers. The above Six varieties, including postage, for 5*s.*, or 1*s.* each packet.

Calandrinia umbellata, Centranthus macrosyphon, Gramanthes gentianoides, Heliaphila trifida, Ipomœa formosa, a new dark variety; Nemophila maculata, Phlox Drummondii Leopoldii, Tropæolum speciosum.

The last named Eight sorts, including postage, for 7*s.*, or 1*s.* each paper.

To be had of WILLIAM DENYER, Seedsman and Florist, 82, Gracechurch-street, London.

N.B.—A Descriptive and Priced Catalogue may be had on application.

NEW CATALOGUE OF CHOICE GERANIUMS, FUCHSIAS, VERBENAS, PANSIES, PETUNIAS, CHRYSANTHEMUMS, PHLOXES, &c.

HENRY WALTON begs to inform the Public that his Priced and Descriptive CATALOGUE, containing the very best selections of the above, is now ready, and can be had for one stamp.

Twelve of the best Fuchsias sent out last season 12*s.*, or Six for 7*s.* 6*d.*, can be sent by post, free. All the fine older varieties at 5*s.* per dozen. 12 of the best Show Pansies, 6*s.* to 9*s.* 12 of the best Show Pinks, 6*s.* post free. Also fine plants of Mitraria coccinea, first week in April, at 5*s.* 6*d.*, can be sent by post.

H. W. has been favoured with the stock of two beautiful CALCEOLARIAS, raised by Mr. Gordon, of Foxhill-bank, near Accrington, Lancashire, viz., "Fairy Queen," creamy ground, with large purple spots in the centre, small pink spots round the margin; form excellent. A very distinct variety, 3*s.* 6*d.* "Beauty," a very pretty flower, of fine form; ground colour creamy, with pink spots, 3*s.* 6*d.*

The above have been seen by competent judges in different parts of the country, who have pronounced them first-rate, and decided acquisitions to any collection. As numerous orders have been received from parties who have seen them, and the stock is small, early orders will have the best plants. Now ready and sending out.

All orders must be prepaid, and made payable at Burnley.
Edgend Marsden, near Burnley, Lancashire.

SEEDS IN COLLECTIONS.
OF THE BEST WHICH CAN BE PROCURED.

BASS AND BROWN beg to offer the following CHOICE VEGETABLE SEEDS.

Complete Collections of the best and newest sorts, in proportionate quantities of each, suited for large or small gardens, at per collection, 1*l.*, 2*l.*, and 3*l.* A Collection for a small garden, of good sorts, at 10*s.* 6*d.* A List of the Collections furnished if required.

SELECT FLOWER SEEDS,

Free by post, with full directions for sowing, heights, colours, &c.

	s.	d.
100 varieties best and newest Annuals	15	0
50 varieties for 8*s.* 6*d.*, 30 for 5*s.* 6*d.*, 20 for	4	0
20 varieties best dwarf kinds, in larger packets, suited for filling beds on lawns, 7*s.* 6*d.*, or 12 do. for ...	5	0
20 varieties best Greenhouse Annuals, 7*s.* 6*d.*, 12 for ...	5	0
20 varieties choice Greenhouse Perennials, 10*s.* 6*d.*, 12 for	7	6
20 vars. choice hardy Biennials and Perennials, 7*s.* 6*d.*, 12 for	5	0

IMPORTED GERMAN SEEDS.

20 varieties splendid double Stocks, 3*s.* 6*d*; 12 ditto ...	2	6	
12 vars. splendid China Asters	2	6	
12 vars. fine globular Asters	2	6	
12 vars. Dwarf Rocket Larkspurs	2	0	
9 vars. Tall ditto	1	6	

Remittances with orders are requested from unknown correspondents. Goods carriage free to London, and with all orders of 2*l.* and upwards, articles presented extra. Post-office orders payable to BASS and BROWN or to STEPHEN BROWN.

Our Descriptive Priced Seed and Plant List will be forwarded, prepaid, on application, by forwarding four postage stamps, as copies having the Newspaper stamp are now all distributed.

SEED AND HORTICULTURAL ESTABLISHMENT, SUDBURY, SUFFOLK.

NEW GLOBE FUCHSIA, "KIMBERLEY'S INACCESSIBLE."—This splendid variety was raised from Williamsii, and is far superior, the blooms being twice the size of that variety; sepals very broad; tube rather short, of a bright glossy crimson; corolla rich deep velvety purple; habit very fine, and a free bloomer; foliage rich glossy green; will prove one of the greatest ornaments ever offered. Strong plants 10*s.* 6*d.* each, the 15th of April, may be obtained of C. KIMBERLEY, Florist, &c., Pinley, near Coventry, and of the following gentlemen, who have kindly ordered it: Messrs. WOOD and SON, Maresfield, Sussex; Mr. IVERY, Peckham, near London; Mr. GAINES, Surrey-lane, Battersea; and Messrs. WIDNALL and DAVIS, Grantchester, Cambridge.

RICHARD SMITH begs to call attention to the following New and desirable Plants, which will be sent out by him early in April.

PETUNIA ECLIPSE.—This is a very beautiful variety, which will give general satisfaction. The flower is large and of good texture; ground colour pale rosy flesh, very fully marked with rich crimson maroon veins, forming in their density and peculiar shape a perfect star in the centre of the flower; it is a free bloomer, of good habit, and unquestionably the most beautiful light variety hitherto sent out.

CACTUS (EPIPHYLLUM) MAXIMUS.—This is a hybrid, of enormous size, between Speciosissimus and Ackermanni major, of a bright deep red colour, slightly tinged with purple in the centre; it is very showy, an opinion of which may be formed when it is mentioned that the flower when expanded measures 10 inches across. See Notice to Correspondent "S.," *Gardeners' Chronicle* of July 5th, page 460.

Price of Petunia and Cactus, 5*s.* each. Where three or more are ordered of either or both they will be charged 3*s.* 6*d.* each.

Nurseries, Worcester, March 23.

BEAUTIFUL FLOWERS.—A few Packets of superior DOUBLE BALSAMS at 1s. per packet; also some fine DOUBLE SWEET WILLIAMS at 6d., post-free. 100 packets of Flower Seeds, for 5s.; 70 for 4s.; 32 for 2s. 6d.; or 12 for 14 postage stamps, post free, warranted. A List, with directions for sowing, may be had, inclosing a sample packet for 2 stamps.
Address, JOSEPH GOLDING, Seed Merchant, Hastings.

TURNIP SEEDS.—The Subscribers have for Sale 200 Bushels of fine large GREEN-TOP BULLOCK YELLOW TURNIP SEEDS of crop 1849, and warranted genuine.—J. MORRISON and SON, Seedsmen, Banff, March 23.

THOMAS CRIPPS respectfully announces to his Friends that he has now ready for sending out strong healthy plants of those unique and matchless half-shrubby CALCEOLARIAS raised by Mr. Cole, gardener to the Right Hon. Lady Maria Meade.

To enter into details of the respective merits of these floral beauties will, I trust, be deemed unnecessary, further than to state that, amongst hundreds of eminent judges who visited the collection during the two past seasons, may be enumerated the following nurserymen, gentlemen's gardeners, &c., from some of whom letters have been received expressive of their desire to arrange for the purchase of the whole stock of plants, viz., Messrs. Henderson, Nurserymen, Pine-apple-place; Mr. Ayres, Blackheath; Mr. Gibbs, late foreman to Mr. Epps, Maidstone; and Mr. Ogle, gardener, Eridge Castle. Mr. Woodhouse, of Whitby, in reply to specimens of cut flowers submitted, says, "I have visited most of the Calceolaria growers' collections during the past season, but have seen nothing equal to the specimens received from you." Editor of the Gardeners and Farmers' Journal, June 16th last: "We congratulate you on your good fortune in raising such a batch of flowers. If they are seedlings of your own sowing, and of one sowing, we can only say you are very lucky, and it must be your own fault if you do not avail yourself of such unexampled success."

The above in sets of six plants, 1l. 10s. From unknown correspondents a remittance is requested.
Tunbridge Wells Nursery, Kent.

GIANT SAINFOIN.—The Advertiser having grown the above valuable Plant for some years, begs to offer it to his agricultural friends. It has proved invaluable to farmers, as it can be grown on either light or heavy soils, if well drained, producing a crop of Hay, Seed, and Sheep-feed in the same year. The advertiser gave 3l. per bushel to the original grower, and now offers it at the reduced price of 10s., at which price any quantity above 3 bushels may be obtained on application, with a post-office order for the amount of the seed and sacks, to Mr. W. DOGGETT, Newnham, near Baldock, Herts. If any information is required, W. D. will be happy to give it.

BROMHAM-HALL GREEN-FLESH MELON IS THE FINEST FLAVOURED IN THE WORLD.

EDWARD TILEY having become possessed of the whole stock of Seed of that very superior MELON called "BROMHAM-HALL GREEN-FLESH MELON," he is now sending out good sound Seeds at 2s. 6d. per packet of 6 seeds; larger do. of 15 seeds, 5s. per packet. For further particulars of the above, see Advertisement in this Paper, February 9th. Also the following fine varieties can be highly recommended:

	s.	d.	
Queen Melon	1	6	per packet.
Bowood Green-flesh	1	0	"
Beechwood do.	1	0	"
Windsor Prize do.	1	0	"
Emperor	1	0	"
Fleming's Trentham Hybrid	1	0	"
Duncan's Green-flesh do. improved	1	0	"
Hampton-court Green-flesh	1	0	"
Egyptian do. do. improved	1	0	"
FIRST PRIZE CUCUMBERS.			
Victory of Bath	2	0	"
Gordon's White Spine	1	6	"
Lord Kenyon's Favourite	2	6	"

A packet of each of the three varieties, 5s.; if preferred, also a packet of Bromham-hall Melon will be included with the three Cucumbers for 7s.

Sold by EDWARD TILEY, Nurseryman, Seedsman, and Florist, 16, Pulteney-bridge, Bath. A remittance must accompany the order, either in cash or penny postage stamps.

EDWARD BECK, SLATE WORKS, ISLEWORTH. SLATE CISTERNS, &c.; COLE'S PATENT.

E. BECK informs Horticulturists and the Public generally that Mr. COLE has granted him the use of his Patent for the unexpired term, and he is now able to supply SLATE CISTERNS fastened without iron bolts or the usual oil cement, thereby doing away with the difficulty which has hitherto existed of forwarding such articles by rail or waggon, fixed and ready for use instead of in pieces, as heretofore.

E. B. will be happy to answer any inquiries as to the price of Cisterns, or any other Slate articles manufactured by him, such as Orange Tubs, Plant Boxes, Tanks, Shelves, Garden-path Edging, Hot-water Tank Covers, Flower Boxes for Balconies, Shelves fitted to hold water for Orchidaceous Houses, &c., all of which may be seen in use at Worton Cottage, Isleworth, on application to the Gardener, Sundays excepted.

Estimates given for Work as shown upon Drawings, and in specifications. A large stock of Slate Slabs of all sizes and thicknesses, kept on sale.

DEANE'S WARRANTED GARDEN TOOLS.—Horticulturists, and all interested in Gardening pursuits, are invited to examine G. and J. DEANE'S extensive Stock of GARDENING AND PRUNING IMPLEMENTS, best London made Garden Engines and Syringes, Coalbrookdale Garden Seats and Chairs.

Averuncators
Axes
Bagging Hooks
Bills
Borders, various patterns
Botanical Boxes
Cases of Pruning Instruments
Chaff Engines
Chaff Knives
Daisy Rakes
Dibbles
Dock Spuds
Draining Tools
Edging Irons and Shears
Flower Scissors
" Stands in Wires and Iron
Fumigators
Galvanic Bordersand Plant Protectors
Garden Chairs and Seats
" Loops
" Rollers
Garden Scrapers
Grape Gatherers and Scissors
Gravel Rakes and Sieves
Greenhouse Doors and Frames
Hammers
Hand-glass Frames
Hay Knives
Hoes of every pattern
Horticultural Hammers and Hatchets
Hotbed Handles
Ladies' Set of Tools
Labels, various patterns, in zinc, porcelain, &c.
Lines and Reels
Marking Ink
Mattocks
Menographs
Metallic Wire
Milton Hatchets
Mole Traps
Mowing Machine
Pick Axes
Potato Forks
Pruning Bills
" Knives, various
" Saws
" Scissors
" Shears [riety.
Rakes in great va-
Reaping Hooks
Scythes
Scythe Stones
Shears, various
Sickles
Sickle Saws
Spades and Shovels
Spuds
Switch Hooks
Thistle Hooks
Transplanting Tools
Trowels
Turfing Irons
Wall Nails
Watering Pots
Weed Extractorsand Hooks
Wheelbarrows
Youths' Set of Tools

G. and J. DEANE are sole Agents for LINGHAM'S PERMANENT LABELS, samples of which, with the Illustrated List of Horticultural Tools, can be sent, post paid, to any part of the United Kingdom.—DEANE'S Horticultural Tool Warehouse, opening to the Monument, 46, King William-st., London-bridge.

ZOOLOGICAL GARDENS, REGENT'S PARK.—The Admission will be SIXPENCE for each person on EASTER MONDAY and TUESDAY.

SEEDLING FOREST TREES.—The Subscriber offers to the Trade as follows:

		s.	d.	
From 300,000 to 500,000	Larch, 1 year, very fine	1	6	per 1000
Do.	do. smaller size	1	2	"
200,000	Spruce, 2 years, fine	2	4	"
300,000	Scotch Fir, 1 year, fine, first size	1	6	"
Do.	do. second size	1	2	"
100,000	Do. 2 years	2	6	"
100,000	Beech, very fine, 2 years	4	0	"
100,000	Ash, fine, 2 years	2	6	"
100,000	Sycamore, 1 year, fine	1	6	"
100,000	Alder, 1 year	1	6	"
30,000	Silver Fir, 2 years, fine	5	0	"

On receipt of Cash. Orders for any quantity of the above will be shipped on two days' notice.
THOMAS BARNES, Merrion Nurseries, Booterstown, Dublin.

COCHIN CHINA FOWLS.—New laid EGGS for setting, may be had, by applying by letter post paid, to "W. O.," at Mr. M'LACHLAN'S, 6, Birchin-lane, Lombard-street, London.

HORTICULTURAL BUILDING AND HEATING BY HOT WATER.

BOILERS OF ALL SIZES TO BE SEEN IN OPERATION, WARRANTED THE BEST.



J. WEEKS AND Co., King's-road, Chelsea, HORTICULTURAL ARCHITECTS, HOTHOUSE BUILDERS, and HOT-WATER APPARATUS MANUFACTURERS, solicit an inspection of their various Works completed and in progress. Horticultural Buildings of every variety. BOILERS of all sizes to be seen in operation, and which they warrant to be the most effective and economical of any in use. The largest size Boiler is now effectually heating three extensive ranges of Forcing-houses, 230 feet by 22 feet, all Span Roofs and lofty, containing upwards of 50,000 cubical feet of air. Also various small and intermediate size Boilers, some of all sizes in operation. The consumption of fuel is very moderate, and the fires will continue from 10 to 15 hours without attendance. The extensive arrangements now in full operation on their premises, enables them to build to any extent, and at very moderate prices. Hothouses, Greenhouses, Conservatories, Forcing-pits, Frames, Glass Lights, &c. A very extensive collection of Stove and Greenhouse Plants, which are sold at very low prices. Plans, Estimates, and Catalogues forwarded on application.
J. WEEKS and Co., King's-road, Chelsea.

STATUES, VASES, FOUNTAINS, GARDEN ORNAMENTS, COATS OF ARMS, &c., and ARCHITECTURAL EMBELLISHMENTS in Imperishable Stone, by VAUGHAN and Co., 60, Stones End, Borough, London. T. J. CROGGON, late of Coade's, Superintendent. A Pamphlet, containing Drawings of a portion of the Stock, forwarded on application.

WANTED IMMEDIATELY, Eight Bushels of good JERUSALEM ARTICHOKES. Cash on receipt of roots.—Apply to SAMUEL FINNEY and Co., Nursery, Gateshead, stating price per bushel.

TO BOTANISTS.—The Subscriber begs to inform Students of Botany and others that he has on hand a full supply of every description of APPARATUS required for the field or study, of which a Priced List may be had on application.
Catalogues of every article connected with the Nursery or Seed trade now ready.—ROBERT M. STARK, Nurseryman and Seedsman, 1, Hope-street, Edinburgh.
Agent for London, Mr. W. PAMPLIN, Frith-street, Soho.

LINGHAM BROTHERS, 170, Hampton-street, Birmingham, sole Manufacturers of the improved WOOD and ZINC MENOGRAPH, or Label for Garden Borders, Flower-pots, &c., in boxes of 100, &c. The Zinc Labels are highly approved of for their lasting durability; can be written upon with the greatest ease, and, when dry, a permanent inscription is secured. Directions for use sent with each box, including bottle of Metallic Ink.
Sole agents in London, G. and J. DEANE, Horticultural Implement Warehouse, 46, King William-street, London-bridge.

GLASS FOR CONSERVATORIES, &c.

HETLEY AND Co. supply 16-oz. Sheet Glass of British Manufacture, at prices varying from 2d. to 3d. per square foot, for the usual sizes required, many thousand feet of which are kept ready packed for immediate delivery. Lists of Prices and estimates forwarded on application, for PATENT ROUGH PLATE, THICK CROWN GLASS, GLASS TILES and SLATES, WATER-PIPES, PROPAGATING GLASSES, GLASS MILK PANS, PATENT PLATE-GLASS, ORNAMENTAL WINDOW GLASS, and GLASS SHADES, to JAMES HETLEY and Co., 35, Soho-square, London.
See the *Gardeners' Chronicle* first Saturday in each month.

GLASS FOR CONSERVATORIES, HORTICULTURAL PURPOSES, &c.



T. MILLINGTON'S SHEET GLASS, which is of the best description, varying from 16 to 32 ounces, at from 2d. per foot and upwards; 100 feet and 200 feet cases of large Sheet Glass, for cutting up, at 2½d. per foot. British Plate Glass, from 1s. 2d. to 2s. per foot, according to size. Patent Rough Plate Glass, from ⅛ to 1 inch in thickness, from 4d. per foot upwards. Glass Slates and Tiles. Milk Pans from 12 to 24 inches diameter, from 2s. to 5s. each. Cucumber Tubes, from 12 to 24 inches long, at 1d. per inch. Lactometers, 7s. 6d. each. Wasp Traps.—Lists may be had, on application at the Warehouse, 87, Bishopsgate-street Without, same side as the Eastern Counties Railway.

HARTLEY'S PATENT ROUGH PLATE GLASS.
In submitting our list of prices, we would beg to direct attention to the Leading Article of the *Gardeners' Chronicle* of Saturday, Dec. 8, upon the subject of "Patent Rough Plate." Some alteration having been made in the mode of manufacturing this description of Glass, the quality is greatly improved, and we now supply it perfectly flat, and, by an arrangement with Messrs. HARTLEY and Co., precisely at their prices. Cut to order in panes of

8 by 6	and under 10 by 8	at 4½d.	per foot.
10 by 8	" 14 by 10	at 5d.	"
14 by 10	" 1½ foot	at 5½d.	"
1½ foot	" 3 feet	at 6d.	"

PACKED IN BOXES of 50 feet each.
6 by 4 and 6½ by 4½...10s. 6d. 8 by 6 and 8½ by 6½...13s. 6d.
7 by 5 and 7½ by 5½...12s. 0d. 9 by 7 and 10 by 8 ...15s. 0d.
Milk Pans from 2s. to 6s. each, Metal Hand-frames, Tiles, and Slates; Propagating and Bee Glasses from 2d. each; Cucumber Tubes, 1d. per inch; Peach Glasses, 10d. each; Wasp Traps, 3s. 6d. per dozen; Pastry Slabs, Hyacinth Glasses and Dishes, Shades for Ornaments, Fish Globes, Plate and Window Glass of every description, and Lamp Shades. Lactometers for trying the quality of Milk, 4 tubes, 7s. 6d; 6 tubes, 10s. Self-registering Thermometers for Greenhouses, Horticultural Glass, &c.
JAMES PHILLIPS and CO., 116, BISHOPSGATE STREET WITHOUT, LONDON.

CROWN, SHEET, AND ROUGH PLATE GLASS, FOR HOTHOUSES, CONSERVATORIES, &c.
Of every manufacture FIT FOR USE, including the make of Messrs. CHANCE, HARTLEY, SWINBURNE, and others.
100 and 200 feet cases of large Sheet Glass, from 2½d. per foot. Small ditto, 10s. 6d. per 100 feet, packed in boxes ready for immediate delivery. Curators of Botanical Societies, Florists, Railway Agents, and others requiring large quantities, will, on sending dimensions, receive estimates at the lowest prices.
GLASS MILK PANS, CREAM POTS, Lactometers, Bee Glasses, Fish Globes, and all kinds of Dairy Glass, Propagating Glasses, Hyacinth Dishes, Cucumber Tubes, and every other description of Garden Glasses.
PATENT GLASS PENS, self supplying, never blot, never soil the ruler, and will write continuously for 12 hours.
Also, Glass Rulers, Glass Inks for office-stands, desks, &c. Stationers and Schools supplied. Wholesale Warehouse for Ornamental Shades, Lamp Shades, Gas Glasses, Genuine White Lead, Paints, Colours, and Pumps for Farm purposes.
Our Catalogue of 18 folios is the most complete ever published. No Gardener or Farm Bailiff should be without one. May be had Gratis on sending two postage stamps to Messrs. COGAN and Co., 48, Leicester-square, London.

BY HER MAJESTY'S ROYAL LETTERS PATENT.
CROGGON'S PATENT ASPHALTE ROOFING FELT has been extensively used and pronounced efficient, and particularly applicable for warm climates.
1st. It is a non-conductor.
2d. It is portable, being packed in rolls, and not liable to damage in carriage.
3d. It effects a saving of half the timber usually required.
4th. It can be easily applied by any unpractised person.
5th. From its lightness, weighing only about 42 lbs. to the square of 100 feet, the cost of carriage is small.
Price One Penny per Square Foot.
CROGGON and Co.'s. PATENT FELTED SHEATHING for COVERING SHIPS' BOTTOMS, &c., and NON-CONDUCTING FELT for STEAM BOILERS, PIPES, &c., preventing the radiation of Heat, and saving 25 per cent. of Fuel.
Samples, testimonials, and full instructions, on application to CROGGON and Co., 2, Dowgate-hill, London.

HOTHOUSES AND CONSERVATORIES made and fixed complete in all parts of the Kingdom, at a considerable reduction. One, two, and three-light Cucumber and Melon Boxes and Lights of all sizes, kept ready for use, packed, and sent to all parts of the Kingdom; warranted best material. Garden-lights of every description, at JAMES WATTS', Hothouse Builder, Claremont-place, Old Kent-road. Reference may be had to the Nobility, Gentry, and the Trade, in most of the counties in England.

MARQUEES, SUN-BLINDS, RICK-CLOTHS, &c.—Manufactory, Old Kent-road (facing the Bricklayers' Arms Railway Terminus), and 17, Smithfield-bars, London.

The guests are arriving; my villa has got
Quite a park-like appearance—a beautiful spot;
The band on the lawn, in the spacious marquee;
This tent for our dinner and that for our tea.

Marquees and temporary rooms superbly fitted up for Fêtes, &c., on most moderate terms, by THOMAS EDGINGTON and Co., Tents of every description, Rick Cloths with Poles, &c. Tanned Netting, for the protection of fruit trees from frost, blight, and birds, and for the security of fresh sown seed, either in gardens or fields, at unprecedented low prices, viz., 1d. per square yard, or 200 yards for 14s., or 500 yards for 30s., or 1000 yards for 50s. Gardeners and shopkeepers supplied by the cwt. New Archangel Mats and Scrim Canvas for wall fruit. Tarpaulings for houses under repair or hire. Orders and inquiries per post immediately attended to.

FLEXIBLE INDIA-RUBBER HOSE PIPES.
JAMES LYNE HANCOCK, Sole Licensee and Manufacturer of the PATENT VULCANISED INDIA-RUBBER PIPES and TUBING. These Pipes are well adapted for watering Gardens, conveying Liquid Manure, for Breweries, Gas Fittings, Chemical and all purposes where a perfectly sound WATERPROOF and FLEXIBLE PIPE is required. Hot Liquors or Acids do not injure them. No oil or dressing is required in using them. They do not leak from remaining out of use, are permanently flexible in all temperatures, and are therefore particularly suitable for Fire-Engines; and from their not leaking, are found exceedingly useful in conveying hot or cold water to baths in dwelling houses and such like purposes. Being extremely portable, stowing closely without danger of injury, resisting the influence of climate, insects, and vermin, frequently so injurious to such articles on board ship, and retaining their virtues though long out of use, render them particularly adapted for exportation.
N.B.—VULCANISED INDIA-RUBBER GARDEN HOSE, fitted with Roses, Jets, and Branches, complete, with Union Joints, ready to attach to Water Cisterns.
All letters or Orders addressed to J. L. H. at the Manufactory and Warehouse, Goswell-mews, Goswell-road, London, will meet with immediate attention.

EMIGRATION to the AUSTRALIAN COLONIES.—For ADELAIDE, PORT PHILLIP, and SYDNEY, the fine, 1st-class, teak-built ship ORIENTAL, Capt. J. P. TAYLOR, 1000 tons, coppered and copper-fastened; will sail from the St. Katharine's Docks on the 23rd inst., calling at Plymouth. This very superior ship is fitted up expressly for the comfort of passengers, and from her great height 'tween decks, which are admirably lighted and ventilated, offers accommodation rarely to be met with. All the cabins are enclosed and of an extra size, for families and married couples. The passage money, 20 guineas each adult, including bedding, mess utensils, and provisions, which will be ample in quantity (see dietary scale), and excellent in quality, for which a guarantee will be given, and in addition, passengers are invited to be present at their inspection. There will be a library on board. There is a most magnificent poop and saloon of very large size, with elegant accommodation for cabin passengers. A skilful surgeon will proceed in the ship. For freight, passage, and all particulars, apply to JOHN WHITTAKERS, 78, Mark-lane; or to W. R. BRUFTON, 89, Great Tower-street, London.

CHOICE GERANIUMS AND FANCY GERANIUMS.

HOLDER AND CARROD, NURSERY and SEEDSMEN, Bedford Road, Clapham Rise, beg to offer 12 of the following varieties (strong plants), for 21*s.*, cash. Armida, Superb, Anais, Ariel, Alonzo, Forget-me-Not, Jenny Lind, King Hudson, Lamartine, Lallah Rookh, Marian, Minna, Norah, Ondine, Phyllis, Queen Victoria, and Sylvia.

N.B. Post-office orders payable at Clapham Rise.

UNIVERSAL CATALOGUE OF VERBENAS, FUCHSIAS, DAHLIAS, CHRYSANTHEMUMS, PETUNIAS, &c.

G. SMITH'S Priced and Descriptive Catalogue contains the very best selections of the above; with a useful note and a marked List of the best Verbenas for exhibition in pots, with mode of training, and what is of great importance to exhibitors, the time of stopping back, so as to catch a sheet of bloom when it may be required; with descriptions of his superb Seedling Fuchsias, Verbenas, Petunias, &c.; and will be forwarded on the receipt of one postage stamp.—Tollington Nursery, Hornsey, Islington.

UNDER THE DISTINGUISHED PATRONAGE OF

SEVERAL INFLUENTIAL MEMBERS OF THE ROYAL AGRICULTURAL SOCIETY.

RENDLE'S DESCRIPTIVE CATALOGUE OF AGRICULTURAL SEEDS IS JUST PUBLISHED, and can be had on application, GRATIS (for one penny stamp).

It contains a descriptive list of all the best Field TURNIPS, *with the lowest market prices, also a full descriptive price current of all the best sorts of* CARROTS, MANGOLD WURZEL, CLOVER, *&c., as well as all the best varieties of Permanent Pasture Grasses.*

The following is an extract from the Catalogue.

Rendle's Imperial Purple-top Swede Turnip	per lb.	0*s.* 8*d.*
Ditto ditto	per qt.	1 0
Skirving's Liverpool Swede ditto, per lb., 8*d.*	per qt.	1 0
Laing's Improved ditto ditto, per lb., 8*d.*	per qt.	1 0
Purple-top Scotch ditto ditto, per lb., 8*d.*	per qt.	1 0
White and Green Globe per lb., 6*d.*	per qt.	0 10
White Belgian Carrot	per lb.	0 10
Yellow Globe Mangold Wurzel	per lb.	0 8
True Italian Rye-grass	per bush.	7 0
Best English Red and White Clover	per lb., 5*d.* to	0 7
Large Cattle Parsnip	per lb., 1*s.* to	1 6

With every other kind of Agricultural Seeds at the lowest market prices. (See Catalogue.)

PERMANENT PASTURE GRASSES, sold in mixtures to suit various soils, at 30*s.* per acre, allowing two bushels of light seed and 12 lbs. of heavy seed to each acre.

All orders above 2l. will be delivered free of carriage to any station on the Great Western, Bristol and Gloucester, Bristol and Exeter, or South Devon Railways; or to any town in Devon and Cornwall; or to Cork, Dublin, or Liverpool, by Steamers.

Railway and Steam communication to all parts of Great Britain and Ireland.

For Catalogues and further particulars apply to WILLIAM E. RENDLE & CO., Union-road, Plymouth. ESTABLISHED 1786.

AGRICULTURAL SEEDS.

WM. DRUMMOND AND SONS' PRICED LIST of the above is now ready, and may be had free by post on application. Their stocks of Swede and Yellow TURNIP, ITALIAN RYE-GRASS, and NATURAL GRASSES for Permanent Pasture deserves special attention.

FREE DELIVERY.—Seeds forwarded carriage-paid to a number of places throughout the kingdom. For particulars, see the priced List.

Agricultural Museum, Stirling, N. B.

AGRICULTURAL SEEDS.—The following delivered free to London, or any Station on the Bury line to Norwich, at the present prices, as annexed.

GRASS SEEDS.

The best selected varieties, mixed in proper proportions of such kinds as possess the most desirable qualities suited for PERMANENT PASTURES, and adapted to different descriptions of soils, per acre ... ... 24*s.* 0*d.*

Fine mixed dwarf varieties for lawns, per lb. 1 3

Ditto, per peck 5 0

RYE GRASS, True Italian ... per bushel 6 6

" Perennial 5 0

TURNIP—Skirving's Liverpool Swede, p. bu., 28*s.*, p. qt. 1 0

" Laing's Improved Swede, per bu., 36*s.*, p. qt. 1 3

" Purple-top Swede, per bush., 28*s.* per qt. 1 0

" Skirving's Improved Purple-top Scotch " ... 1 3

" Norfolk White, Green, and Red Rounds " ... 0 9

" Dale's Hybrid ... ... " ... 1 3

" White and Red Tankards ... " ... 1 0

" Yellow Tankard or Scotch Pudding " ... 1 3

LUCERNE ... ... per lb. 0 10

CARROT—Large White Belgian ... ... " ... 0 8

" Long Green-top Red Altringham ... " ... 1 0

PARSNIP—Large, for cattle ... ... " ... 0 8

MANGOLD WURZEL—Yellow Globe ... " ... 0 6

" " Red Globe ... " ... 0 6

" " Long Red ... " ... 0 6

" " Long Yellow ... " ... 0 9

Best English Red and White Clovers, Trefoil, and all other Agricultural Seeds of the best stocks at the lowest market prices. PRICED CATALOGUES of AGRICULTURAL SEEDS sent prepaid on application; also prices to the trade.

Post-office orders payable to BASS and BROWN, or to STEPHEN BROWN. Remittances required from unknown correspondents.

BASS AND BROWN, SEED and HORTICULTURAL ESTABLISHMENT, Sudbury, Suffolk.

FLOWER SEEDS, POST FREE.

G. BAKER begs to recommend to the Nobility, Gentry, and his friends in general, the following very choice and superior assortment of FLOWER SEEDS, which are now ready to be sent out in sealed packages, at the prices affixed, post free.

					s.	*d.*
100 packets choicest Annuals, including the newest and most approved varieties					10	0
50 Ditto	ditto	ditto	...	...	5	0
25 Ditto	ditto	ditto	...	...	2	6
12 Ditto	ditto	ditto	...	...	1	6
20 Ditto, choicest dwarf kinds, for filling beds			...	...	5	0
20 Ditto, half hardy and tender Annuals ...			...	...	5	0
12 Ditto, distinct varieties of Hollyhock ...			...	...	2	6
12 Ditto	ditto	Balsams	...	...	2	6
12 Ditto	ditto	Larkspur	...	...	2	6
12 Ditto	ditto	German Aster	...	...	2	6
12 Ditto	ditto	German Stocks	...	...	2	0
12 Ditto	ditto	German Larkspur		...	2	6
8 Ditto	ditto	Zinnias ...	...	...	2	0
20 Ditto	ditto	Perennials, including splendid mixed varieties of Verbena, Petunia, Hertsease, Pentstemon, Calceolaria, &c. ...	...	...	5	0

Remittances expected from unknown correspondents (either by post-office order or postage stamps).

GEORGE BAKER, Seedsman, Wells, Somerset.

MEADOW AND PASTURE GRASS SEEDS.

GEORGE GIBBS AND Co. beg to notice their mixtures for laying Land down to Permanent Grass are now ready. The general satisfaction they have given for many years past, and the present low prices of 32*s.* per acre, allowing 2 bushels and 12 lbs. to each acre, they trust will ensure a continuance of orders. Mixed Seeds for improving old Grass Land, 1*s.* 3*d.* per lb.; fine sorts for forming Lawns, 1*s.* 4*d.* per lb. Their Priced List for the season of Turnips, Mangold Wurzel, and other Farm Seeds, will be forwarded on application to 26, Down-street, Piccadilly, London.

SAMUEL FINNEY AND Co's DESCRIPTIVE CATALOGUE OF CHOICE FLOWER SEEDS may still be had on application, inclosing two penny stamps for postage.

100 fine, Hardy and	Half-hardy	kinds, for		15*s.*
50 do.	do.	do.		8*s.*
25 do.	do.	do.		5*s.*
12 do.	do.	do.		3*s.*

With a large assortment of German Stocks, Asters, &c., imported direct in sealed packets.

Gateshead Nursery, Newcastle-upon-Tyne.

KITLEY'S GOLIAH STRAWBERRY.

JAMES KITLEY, in again bringing his SEEDLING STRAWBERRY before the notice of the Public, takes this opportunity of thanking those Friends who so liberally purchased in the autumn, and it being now the best time for planting, begs to inform them that he has a fine stock of healthy plants, which have been transplanted. See extracts from the *Gardeners' Chronicle.*

From the *Gardeners' Chronicle.*—"STRAWBERRIES: *J. K.* Your Seedling Strawberry, 'Goliah,' judging from its size and appearance, is worthy of cultivation."

From the Gardeners and Farmers' Journal.—"STRAWBERRIES: *J. K., Lyncombe Vale.* We have great pleasure in bearing testimony to the exquisite flavour of your Seedling Strawberry, 'Goliah.' In our opinion it combines the piquant flavour of the Strawberry with the richness of the Pine, the delicious aroma of which it partakes in equal proportion with the taste. Apart from the queen of fruits, we certainly do not remember anything in this way that conveyed to our senses so delicious a treat as the noble fruit to be known to the world as 'Kitley's Goliah Strawberry.'"

Plants, 12*s.* per doz., or 4*l.* per 100. A liberal allowance to the Trade in plants, when 100 are taken.

Cash orders expected from unknown correspondents.

Lyncombe Vale Nursery, Bath, March 23.

HOME GROWN SEEDS, CARRIAGE FREE,

By the Great Western, South Western, and South Eastern Railways.

JOHN SUTTON AND SONS being daily in the receipt of numerous orders from various parts of the kingdom, beg respectfully to intimate that they execute all orders in strict rotation, and with as little delay as possible. J. S. and SONS having a large stock of all the articles named in their Advertisements which have appeared in previous Numbers of the *Gardeners' Chronicle*, can still supply any of those articles.—Reading Seed Warehouse, Reading, Berks.

MEETINGS AT WORTON COTTAGE, ISLEWORTH, for the Display and Examination of SEEDLING FLORISTS' FLOWERS, and other objects of Horticultural Interest.

The Editor of the FLORIST AND GARDEN MISCELLANY particularly requests that all Seedlings for the opinions of the Censors of that work may be posted, as far as practicable, so as to reach Mr. BECK, Isleworth, Middlesex, on the Wednesday morning of each week. Parties desirous of attending personally with their productions, by taking the 4 o'clock train for Isleworth from the Waterloo Station, will be put down within a few minutes' walk of Worton Cottage.

The Meetings will be held on Wednesday, April 3d, and each succeeding Wednesday, at 5 o'clock, P.M.

An Artist will attend these Meetings, to take coloured memoranda of anything particularly striking.

The Gardeners' Chronicle.

SATURDAY, MARCH 23, 1850.

MEETINGS FOR THE ENSUING WEEK.

MONDAY,	March 25	Medical	8 P.M.
		Geographical	8½ P.M.
TUESDAY,	— 26	Civil Engineers	8 P.M.
		Medical and Chirurgical	8½ P.M.
		Zoological	9 P.M.
WEDNESDAY,	— 27	Society of Arts	8 P.M.
		Geological	8½ P.M.
THURSDAY,	— 28	Royal Society of Literature	4 P.M.
		Numismatic	7 P.M.
SATURDAY,	— 30	Chemical (Anniversary)	8 P.M.
		Westminster Medical	8 P.M.

"PRAY, Mr. EDITOR, what is MACHE?" "*Mache,* Madam, is Corn-salad." "I mean that beautiful Lettuce-like plant that one sees everywhere in Paris in the winter." "That, Madam, is Mache or Corn-salad" "Well, but what is Corn-salad?" "It is a very old vegetable, a sort of Valerian, which once was cultivated by everybody, and now is seldom seen." "And why not seen? I am sure we have nothing half so good in England." "Pardon me, Madam, we have *it* in England; you may buy its seed in every shop, and the salad itself in Covent Garden." "How very strange! our gardener knows nothing about it, nor how to manage it; and it is most provoking, for we are all lovers of salad, and in winter we have nothing but Celery and bitter Endive, with Mustard and Cress. If we see a Lettuce, it is a poor wretched thing, too tough to eat, and too ugly to admire." "Then, Madam, I would order the gardener to grow Corn-salad, as his grandfather did, if his grandfather was a gardener. It is as well however that he should have what is called *Mache d'Italie,* which is much better than our own Corn-salad, and is what has attracted your attention in Paris." "But where can I buy the *Mache d' Italie*? I dare say our seedsman never heard of it." "Perhaps not, but he may procure it from Paris in these railway days, without difficulty, or from his London correspondent, who will obtain it for him."

"Another thing, Mr. Editor. Pray tell me why we never have Lettuces in winter, like those we have in summer." "The reason, Madam, is that gardeners don't grow them." "And why not?" "Because they don't generally know how. The Dutch have them in great excellence; we seldom have. Perhaps if you insisted you might succeed."

"One word more, Mr. Editor—I really am very troublesome—and I have done. As I have said, we are all such great lovers of salad, and that must be my excuse. I wish to ask you what is meant by *Scarolle,* another winter vegetable one sees in Paris?" "Scarolle, Madam, is Batavian Endive." "But it is not much like Endive; it is not so curled, and not so bitter, and much larger, and more tender." "All very true, Madam, still it is a kind of Endive; well known in England, but little cultivated. It is more hardy as well as more delicate." "Then, why do not our gardeners produce it?" "Some do; but we suppose it is not the fashion in the kitchen; and if we might hazard a supposition on the subject, it would be that it is not thought to look so well." "But I want a salad that is good to eat, as well as to look at." "You will find it difficult, Madam, to overcome the prejudices of your servants. They will not permit you to have green Asparagus; and they will not permit you to have Scarolle." "I shall, however, insist upon it." "Then, Madam, we have the honour to assure you, that if you will *really* insist, your gardener may produce you as good salad here as in France."

THE facts connected with GROUND TEMPERATURE are so seldom studied, and so little appreciated, that we are induced, in consequence of the remarkable depression of the thermometer since the beginning of the present month, to draw attention to the facts which a comparison of the evidence before us elicits.

The temperature of the air, and of thermometers sunk 1 and 2 feet respectively in thoroughly-drained land, since the beginning of the present year, is as follows:

1850.	Temperature of the Air. Max.	Min.	Mean.	Ground Temperature, at the depth of 1 foot.	2 feet.
Jan..	38.58	27.64	33.11	36.35	37.98
Feb.....	50.21	35.29	42.60	41.98	41.71
March 1	53	38	45.5	43	43
— 2	53	43	48.0	44	43½
— 3	54	33	43.5	45	44
— 4	44	20	32.0	44	44
— 5	48	26	37.0	42½	44
— 6	56	27	41.5	42	43
— 7	56	31	43.5	42	43
— 8	47	38	42 5	43	43
— 9	50	27	38.5	43½	43½
— 10	54	28	41.0	42½	43½
— 11	48	20	34.0	43	44
— 12	51	21	36 0	42	43½
— 13	57	30	43.5	41½	43
— 14	47	34	40.5	42	43
— 15	47	18	32.5	43	43
— 16	48	23	35.5	41	43
— 17	48	17	32.5	39⅓	42
— 18	44	24	34.0	38¼	41⅓
Average	50.27	27.66	38.96	42.33	43.18

The next Table gives a Comparison of the average Ground Temperature, at 1 foot and 2 feet of depth, in March, 1850, and previous years.

	1 foot deep.	2 feet deep.
Mean of March, 1838.....	41°.48	41°.46
" " 1839.....	41 .46	41 .93
" " 1840.....	39 .24	41 .71
" " 1844.....	41 .55	42 .14
" " 1845.....	37 .79	38 .37
" " 1846.....	44 .47	45 .55
" " 1847.....	40 .22	41 .03
Mean of the preceding years ...	41 .16	41 .74
Mean of the first 18 days in March, 1850	42 .33	43 .18

From this we learn the very unexpected fact, that, notwithstanding the low range of the thermometer in the present month, the mercury having sunk below 26° on seven nights out of 18, and on one occasion as low as 17°, yet the average ground temperature for the *first* 18 *days in March* is actually higher than for the *whole of March*, in any recent year except 1846, and that it is more than 5° above the average of the whole of March, 1845.

Hence we arrive at the unexpected information that, notwithstanding occasional severe frosts, probably of very short duration, and towards morning, an unusual amount of warmth is accumulating in the soil, ready to force vegetation into great activity as soon as any permanent advance takes place in heat and light. It is evident that if Almonds are not in flower, and Apricots are scarcely opening their bloom on the 18th of March, it is not because of any unusual deficiency in the temperature of the soil, but because the nights are so cold as to act as a diurnal check upon the progress of vegetation, while the days are not warm enough or bright enough to cause any diurnal counteraction. In fact the tem-

perature of the air by day has in no one instance during March exceeded 57°.

The inference that we venture to draw from this is, that we have now before us unusually cheering prospects of a fine, vigorous, and rapid growth whenever vegetation shall begin, and that crops of all kinds will be abundant, unless some disaster, not to be foreseen or arrested, should blight them. With such an accumulation of heat as nearly 43¼° in the ground by the 18th of March, it is improbable that the free action of roots, upon which the prosperity of cultivators so essentially depends, should be impeded by any ordinary event.

These tables moreover show that the mean temperature of the air in January was 33.11°, or about 3½° below the mean of the month for 23 years. The temperature of the earth at one foot below the surface was about 3½° above that of the air; and at two feet it was nearly 5° warmer than the air.

In February the air was 3° above the average for the month. The earth, although several degrees warmer than in the preceding month, averaged somewhat lower than the air. From the 1st to the 18th of March, inclusive, the temperature of the air, 3½° below the average of the period, was upwards of 3° colder than the earth at one foot below the surface; and more than 4° colder than the earth at two feet deep.

Taking the whole period since the commencement of the year, the temperature of the air has averaged 38.22°; that of the earth, at one foot deep, exactly 2° warmer than the air; and about 2¾° warmer at two feet deep. Usually, as the spring advances the mean temperature of the air and earth comes to an equality; in summer the air is warmer than the earth; but in autumn, when the sun-heat has begun to decline, an equality may be again remarked; and in winter the earth is somewhat warmer than the air.

According to tables published in the Journal of the Horticultural Society, vol. iii. pp. 99–109, the earth at the above depths averages on the whole year from 1 to 1½° higher than the mean of the air; and, generally, in other parts of the globe, the earth, if accessible to air, preserves a temperature differing little from that of the mean temperature of the air of the locality.

Therefore we must infer that plants have, generally, their roots in a medium between those extremes of heat and cold to which their tops are exposed. Roots are not naturally subjected to a temperature equal to the extreme heat of the day; nor to a cold corresponding with that of the night; their natural temperature is doubtless that to which they are most generally exposed; and this, it appears, lies about midway between the two extremes. This, then, is the mean which should be sought for the roots of plants under artificial treatment; and yet how differently are they often situated! Many unfortunate Vines have doubtless their roots at the present moment in an outside border far below the lowest night temperature kept up in the house; under such circumstances, the roots act very imperfectly: and the colder the border the more nearly is the Vine reduced to the state of a cutting, which may be made to grow without roots till it exhausts itself; and it is well known that if precautions are not taken to keep Vine borders warm whilst hard and early forcing is carried on, Vines do become much exhausted. Roots cannot be well formed in soil exceedingly cold compared with the temperature in which the top is vegetating. When the latter is early forced its vegetation is almost ready to cease before midsummer, when the border would naturally be sufficiently warmed to encourage the growth of roots; and such roots as are then made cannot be so fully matured as not to be liable to perish in winter. When that happens we hear loud complaints of the composition of the borders; whereas, in nine cases out of ten, their coldness in the early part of the season, compared with the heat inside the house, is their only fault.

ROSES.

General Remarks.

The generality of Rose-growers, as we have already shown, have spoiled their gardens by the introduction of many worthless varieties, by the choice of sorts which do not uniformly bloom at the same time, and attempting to have some of these varieties in bloom all the summer and autumn. With regard to the worthless varieties, all we need say is, that by such name we denounce those Roses which have no one claim that give them a place by the side of others of the same colour, and in all respects better. For instance, if a Rose with a thick petal, abundant bloom, double flowers, and always blooming, is in a garden, every Rose of the same colour that has none of these points become worthless in the same establishment. All Roses that are fairly beaten by others in all respects are worthless, and there is scarcely one garden among the hundreds we have seen, where an attempt is made to grow Roses, but what we have observed many so flimsy that an hour's sun spoils them; others, so far from double, that they look poor and miserable; others, again, so excessively rambling, that they cannot be kept commonly tidy for a week together in the growing time; others of the most awkward and eccentric growth and habit, that they defy all the skill of the most practised gardener to form a handsome head, or to make them look well as a bush or shrub; some which yield but few flowers, and they soon over, yet in a Rosery of any pretension as to number of specimens, we are sure to find all these, and many more, very remarkable for their bad qualities and the absence of any redeeming points. These ought to be removed at once, and be for ever discarded.

The Rose catalogues require weeding, for they make young beginners anxious to grow many more varieties than are good or even tolerable, and have already led to the evils which we have stated to exist. The second evil, the want of uniformity in the time of blooming, may exist with a collection of good Roses, and nothing more completely mars the general effect. Above all considerations the Rose cultivator should be careful that all the Roses that form a particular feature should bloom at once; can there be anything so ludicrous as a row of pillars and festoons of Roses with some in flower and others not? The whole design is marred by such an oversight, because it is not right at any time; when the late ones are come into flower the early ones have gone out, so that the effect is still spoiled, see them when you will. Again, see, as we have seen, a covered archway with the majority of Roses in flower and here and there large blanks occasioned by Roses not yet in bloom or gone by altogether. Nothing goes further towards spoiling everything.

The third evil is universal, and runs through every establishment we have seen—an attempt to prolong the blooming season of Roses by having spring, summer, and autumn varieties, so that two kinds are always out of flower. It is undoubtedly very pretty to come across a stray perpetual or other Rose in flower amidst a host that have passed their bloom, but it would be infinitely better to come to a walk where all were in perfection. If it be determined to have all these classes of Roses, let them be placed in departments, that they shall at least form something like a feature. It may be tolerated in a nursery to plant the whole collection in a continuous row, and show off such as happen to be in bloom, but even in a nursery it would be far better to have the collections separate. It is true persons order from those they see in flower, and perhaps the contrast between those which have lost all their beauty and the few that are in perfection may show off the latter to advantage; but a gentleman's garden ought never to look desolate. There is no excuse but the want of means for having a garden untidy for any length of time; but to have it always faulty, because of an injudicious selection of plants, is too bad. We would willingly persuade every Rose cultivator to look to his garden, and if he have the Roses all about the place among other flowers, to gather them altogether as soon as the season arrives, and form such as are good for anything into a Rosery of some kind, even if it be of the most simple description; and if he value as we do the continuous blooming, to make such changes in his stock as may enable him to compass that object, but at all events to so classify what he has, that whatever portion of them are seen, they may be all in one condition, and not some in flower and some out. Above all things we would recommend those who wish to begin growing Roses, to plant them together, to let no other flower divide the attention, to appropriate some portion of the garden to those Roses which, like the common China, is never out of bloom while it is growing. If, in addition to those which should form the great feature, he likes to appropriate other departments to the mere volatile varieties that are here to-day and gone to morrow, to let them be grown where they will not interfere with the brighter and more constant tenants of the Rosery. If any one who grows many varieties would pay attention to those which are always blooming, and observe how they continue to grow and flower from month to month, he would not be long in deciding the fate of the more fickle sorts. Much might be done towards improving a Rosery if the old and worthless kinds were budded with better ones, but it is preferable to bud on new Briars, which should be procured in the autumn, at the nurseries, or of the hawkers who carry them about, and be planted in rows for the convenience of working, in the same way that standard Roses are planted, except that the application of dung is unnecessary, and the Briars may be planted as near as 18 inches; or in case room were a great object, even 1 foot apart in the rows, and the rows 3 feet from each other. In the season we propose to give a descriptive list of a few of the most unexceptionable Roses of the description we have mentioned, that is, Roses which bloom as soon as they begin to grow well, and continue growing and flowering more or less until the frost cuts them off, and noticing some few of the most remarkable in each of the distinguished sections or classes. The former will be useful to those who can grow but few, and want flowers all the summer; the latter will be a guide to those who grow more extensively, and can give up a department for the best of other families. *Crito.*

DISEASES OF PLANTS.

(*Continued from p.* 165.)

Genus I. Knotted Roots. — It frequently occurs that the roots of plants, instead of extending freely, form into knots or tufts at their extremities, which end by being a certain cause of death to the individual. This happens when they are confined in too small a space, which prevents their development. The most frequent examples are those of plants left in pots by gardeners, which, especially those endowed with great vigour of vegetation, readily become thus pot-bound, as it is termed. It also happens sometimes to trees, when their roots meet in the ground with obstacles to their due extension. The evil may be prevented by proportioning the pots to the plants. For its cure, it suffices to prune off the knotted tufts and remove the plant to a proper recipient. I have often restored diseased plants by this operation, and, on the other hand, have lost many a one from neglecting it.

Genus II. Flatness of Form.—Academical Transactions, especially German ones, memoirs of literary societies, and scientific journals, are full of instances of what are usually called whims or monsters of the vegetable race; but which are no other than stems, branches, petioles, or peduncles, which, instead of retaining their natural cylindrical form, become flattened and more or less cracked. Sometimes they exhibit the most singular forms, as where the dilatation is extreme, the edges very thin and curved inwards, like the volutes in architecture. We observe it especially in the Elm, in its lowest branches near the ground, or in the hedges, particularly when grown in rocky ground. Herbaceous plants also afford frequent instances. I know that the general opinion attributes this phenomenon to a defect in the germ. But having impartially studied what has been written on the subject, and examined numerous instances myself, I believe that it is due for the most part to causes purely external. Mœrhingius asserts that he never saw more flattened stems than in gardens, and on succulent delicate herbaceous plants endowed with a vigorous vegetative force, which in issuing from the ground, and in their first development, had encountered stones or bits of wood *quæ tenello surculo illerum interstitia perforanti hanae figuram conciliabant.* Asparagus and other plants of a similar mode of growth are liable to these flattened stalks. When two stems growing close together meet with some obstacle, they will combine into a number of singular forms without any predisposition in the germ. So roots of trees, growing against walls or other obstacles, will become flattened or combined into a variety of forms, and roots which have penetrated into pipes afford another example. But as these deformities are of little interest to the cultivator, it is needless to dwell further upon them.

Genus III. Strangulation. — I here enumerate a genus of disease, of which one species has been classed by other authors among infirmities derived from weakness, and the other under Necrosis. I call strangulation the disease under which a plant is impeded in its free growth by some external purely mechanical cause, whether it be by some other plant attacking its roots underground, and causing it to perish, or twining round and enveloping it above ground, or other analogous modes.

First species. Strangulation of Roots.—There are many plants that are thus injurious to others; some which are called parasitical, by feeding on the sap itself of other plants; others attack the roots so as to prevent their growing. Thus the *Lycoperdon* and the *Orobanche*, growing about the roots of other plants, strangle them till they die, as was the case in the year 1806 with a large number of Hemp fields of the province of Bologna. We know also that Saffron is liable to a disease called *Fausset*, in which a tumour, like a little Radish, grows upon the bulb of the Crocus, sucks up its sap, and causes it to perish. Sometimes the destruction of these bulbs is accompanied by a change in colour, the greater part of their bulb being converted into a black earthy substance. But often also they are merely dried up and reduced in bulk. The same thing may be said of the roots of Beans and Hemp infested with the Orobanche. Duhamel's observations show that the Lycoperdon which attacks the Crocus kills other bulbs also, such as Lilies and Tulips. I have shown the extreme difficulty of obviating this evil in a memoir on the parasites which injure Hemp. I am of opinion that the only remedy is the burning the soil, which will destroy the germinating power of the seeds, and thus effectually clear the field of them.

The roots of corn are often prevented from growing by being too closely pressed by the earth, especially in clayey soils whose molecules adhere so closely. When the heavy rains of spring are followed by long droughts or parching winds, the soil in drying strangles the roots. Hence the excellent rules for treating such stiff soils with admixtures which shall prevent the too close adherence of their particles.

Second species. Strangulation of the Stem.—The Cuscuta or Dodder, germinating in the ground, extends over the stems of plants in a sort of network, which impedes their growth. Flax, Clover, and Lucerne are three plants upon which it commits great havoc with us. Fields not well levelled and rather moist appear to be most subject to it. If it appears in one corner only the surface soil of the affected part of the field must be immediately dug up and burned, as the only means of arresting the rapid progress of the evil. If it shows itself at once in many parts of the field there is no remedy but destroying the whole crop and cultivating something else for a few years; otherwise there is great danger that the seeds will not be entirely extirpated. Sometimes spiders and insects will injure leaves and delicate parts of plants by spreading their webs over them. The injury done to trees by Misletoe, Ivy, &c., which either attach themselves or cling round them, is

well known, and proves the necessity of cutting off these parasites in the early stage of their growth.

In fields some plants will, if not quite, choke each other, at any rate impede much each other's growth, if genera or species that do not suit each other are planted together. Thus plants of vigorous and rapid growth, if intermingled with others of slow development, will more and more injure the latter as their roots extend, rob all nutriment from them, and finally choke them. This shows how important it is for those who delight in uniting a great variety of crops in one field to attend to this mutual interference of the different plants, and also how essential it is to keep all crops free from weeds.

M. CHEVREUL'S SCHEMES OF FLOWERS FOR OCTOBER.

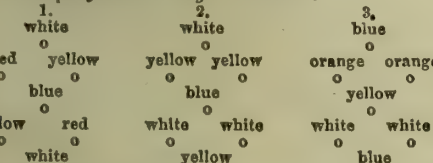
In the month of October Chrysanthemums are in perfection, and beautiful arrangements can be made with the white, red, rose, orange, and yellow varieties, with which too can be associated with considerable advantage the great blue-flowered Aster; these arrangements are the more easy to realise, as Chrysanthemums can be fully developed in pots.

The following arrangements will be found to be of considerable beauty; the colours to which the name of no flower is attached, refer to Chrysanthemums.

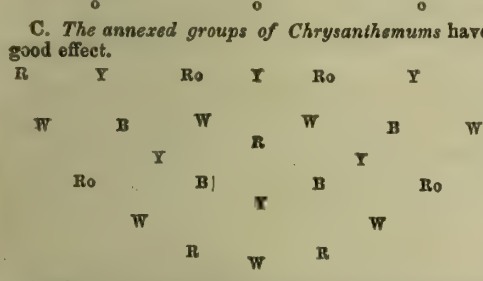
A. *Chrysanthemums in lines.*—1. White, red, white, rose, yellow, large blue-flowered Aster, orange or mahogany coloured Chrysanthemum; then repeat in the same order. 2. White, red, yellow, large blue-flowered Aster, orange Chrysanthemum; then repeat.

For linear arrangements, with a symmetrical centre, the following are recommended. 1. Red, yellow, white, orange, large blue-flowered Aster, orange, white, yellow, orange. The same arrangement may also begin and end with a white Chrysanthemum. 2. White, orange, large blue-flowered Aster, yellow, white, yellow, large blue-flowered Aster, orange, white. And Chrysanthemums may be added to the beginning and end of the last arrangement, if there is room.

B. *Groups of seven Chrysanthemums.*



C. *The annexed groups of Chrysanthemums* have a good effect.



In the above diagram the colours are marked by their respective initial letters, R standing for red and Ro for rose.

Concluding Remarks.—The plants composing each assortment above described, observed for several years in the environs of Paris on an elevated spot of ground, have usually flowered at the same time; but in some years this may not always be the case, and then the advantage of the contrast of their colours is no longer obtained; this however does not in the least affect the principles on which the arrangements are made; and, indeed, even if the plants do not all flower at the same time, the arrangements above pointed out will be preferable to the ordinary methods of planting, inasmuch as the plant which does not flower at the same time as its neighbour will present, by its symmetrical position, something more agreeable to the eye than if there were no symmetry between the plants in and those out of flower.

If, in consequence of a difference of climate or other circumstances, those plants which are above stated as being in flower at the same time, are not so as a general rule, the one offering the exception must be replaced by something else of the same colour and of the same general appearance as itself.

The arrangements of plants recommended for the early months of the year are more likely to differ in the times of their flowering than the others, in consequence of the mildness or severity of the winter; and it must not be forgotten that many plants stated to flower in one month often continue in flower in the succeeding months.

Home Correspondence.

Pear Moths.—I did not intend to trouble you again on this subject, thinking that the facts previously stated by me were sufficient to clear up any doubts which might be fairly entertained as to the habits of Tortrix angustiorana. But as certain members of the Entomological Society are reported in your last week's Paper, to have still expressed doubts as to its "ravages," perhaps you will allow me to state a few additional particulars. Notwithstanding I have three years' experience, it is still insisted upon that the larva of this moth occupies the calyx of the Pear merely by accident. Now if repeated accidents of this kind are not to be considered habits, I shall feel obliged if some member of the Society will inform me how many years' probation does constitute a habit. Mr. Doubleday also thinks the larvæ must spin a leaf to the fruit; such is not the case, although I am fully aware of the injury done to Pears and Apples during the spring and summer months under cover of the leaf. Mr. Doubleday also states that he has never observed these larvæ on the Pear tree in his garden, yet finds it abundant on Privet and Laurel trees. On the contrary, I have found hundreds of them (as near as I can judge in the larva state), on my standard and wall Pear trees; yet after carefully searching an extensive Laurel belt east, west, north, and south, I cannot find one; and only one on the Apricot, which Mr. Westwood considers their legitimate provision. It appears, therefore, that these caterpillars have different tastes in different places. I have, however, found similar larvæ on two other shrubs, and placed them upon Pears, in the crevices of which they spin, and feed on the rind. It is clear, therefore, that they are not very particular, which I never asserted they were. I am fully aware that insects will live a long time without food, but in all the trials which I have made, and they are not a few, I have not myself been able to induce a young larva to pass through his several stages, and become a perfect imago without feeding him; and I am certain that many of these larvæ feed during the winter months on the young bark of the Pear trees. Still the injury done to the full grown Pears is not to be compared with the loss sustained in the spring by the larvæ of this or some other Tortrix, which feed on the young fruit as soon as they are formed, and sometimes destroy the entire crop. I cannot say whether this is the same species or not, as I have not bred them; but it has been my practice for some years to have my trees examined, so that these destructive creatures may be destroyed. I much regret that any gentleman who professedly delights in tracing the natural history even of an insect, should boldly put forth an opinion that his own failure in observing certain phenomena is sufficient to justify him in believing that no one else can be more successful; for if every man has to go over the same ground, we shall recede instead of advancing. While I have the pen in hand, I beg to inform Mr. Doubleday that he is most decidedly in error, in stating that the titmouse does not feed on buds, as it is well known to every gardener that no bird destroys more. *F. J. Graham, Cranford.*

What kind of Piping answers best for the conveyance of Water?—I want to lead some water from a pond to a tank about 120 yards distant. There is a good fall. Have any of your readers any experience of guttapercha piping for this purpose? and can they say which is the cheapest, gutta percha or iron? and what is the smallest size which, for the distance (assuming sufficient fall), may be used? and how deep, so as to avoid frost? Is it necessary to bury the tubes? *Dodman.*

Rough Plate Glass.—In reply to your observation that "it is entirely false that there is only one substance and quality of rough plate," we beg to observe that there is but "one substance and quality of *patent* rough plate" *manufactured by Messrs. Hartley* for horticultural purposes, and that is one-eighth of an inch thick, and about 26 oz. to the foot Patent rough plate is made of various substances, from $\frac{1}{2}$, $\frac{3}{16}$, $\frac{1}{4}$, $\frac{3}{8}$, $\frac{5}{8}$, $\frac{3}{4}$, $\frac{7}{8}$, and 1 inch in thickness, but the $\frac{1}{8}$ is what is intended for conservatories. The rough plate manufactured by Messrs. Hartley and sold by us is quite a separate and distinct article in quality and in its character from rough plate made by other manufacturers. *James Phillips and Co., Bishopsgate-street.*

Spotting of the Leaves in Forced Strawberries.—Within the last week the leaves of my Strawberries have become so much marked with black spots as to resemble the foliage that has been on the plants all winter. Peradventure this may meet the eyes of some in similar circumstances, so that, by comparing notes, we may arrive at some knowledge of the cause of this evil. My own opinion is that, during the mild weather in February, and in the beginning of this month, they should have been allowed a little air, night and day, which would have given the young leaves sufficient strength to have enabled them to withstand the effects of the late very cold winds, to which they were in a great measure exposed on giving air—being placed on a shelf along the back of a late Vinery. I do not think that we have erred in keeping them too warm, as (although they have been showing bloom a fortnight) the glass has scarcely ever stood above 50° at night, averaging about 45° in the morning: I mean, that this would not have been too much with a circulating atmosphere; but experience teaches me that the temperature in which the majority of plants respectively rejoice, would, without ventilation, be positively injurious. For my own part, I feel very much inclined to attribute the rottenness of the roots complained of by a "Constant Reader," to his plunging the pots, without any means of throwing off the rain. I prefer laying the pots on their sides; but perhaps the system of keeping them in a cold frame is better than either. I find that the soil in the best drained pots is by far too wet after heavy rains. But after all there may be other causes than this. It is singular that the plants do not show symptoms of a falling off. I hope a "Constant Reader" will let your readers know how they ripen their crop. *Ventilator. March* 20.

Garden Walks.—Good drainage, imperviousness to worms, and a binding surface, are the principal requisites in a good walk. The last must depend on the quality of the gravel, the two first are secured by the use of gas tar concrete, at a nominal expense. To renew an old walk, reduce it an inch below the adjacent soil; or to make a new walk, level the earth to that height, sloping only so much as will allow water to trickle to one or both sides; then lay on 1 inch of concrete, and roll till quite hard and close; cover with a good coat of binding gravel. The concrete surface underneath the gravel serves as a drain to carry the water to the loose earth at the sides, into which it sinks; whilst no worm can pierce or will touch the gas tar. As the greater portion of the rain strains through the surface, till it meets the concrete, there is the advantage that channels are not made in the gravel. Again, the concrete presents a hard surface, between which and the roller the gravel is pressed into a round mass after frost or snow. The objection made to gravel walks over gas tar, that black patches are produced, does not apply to this plan. The mode in which the concrete is made and applied precludes the possibility of its appearing at the surface, unless, indeed, the upper coat of gravel is stinted of its due thickness. For the mode of making the gas tar concrete, see *Gardeners' Chronicle*, p. 637, 1849. *J. P. B.*

Way in which Toads shed their Skins.—I have a small house under my care for growing Cucumbers. There is a bed in the middle of it, and the soil is about 3 feet high from the ground (*i. e.*, to the top of the hills where the plants are in). A person therefore standing in the house can examine an object placed on the hill with ease. Last Saturday, about 7 o'clock A.M., I uncovered the house, and went in to see that all was right, when to my surprise I saw my pet companion, a fine toad, apparently in the agonies of death. It was seated at the end of the ridge or hill of soil; its mouth or rather under jaw opening every few seconds (the top jaw did not move), the eyes shut, and the body violently convulsed each time the jaw opened, and with each convulsion of the body the right fore foot was raised to the head. I placed myself in front of it, and perceived that it was drawing something into its mouth each time the jaw moved; at that instant the right eye opened, it then inflated the body on the left side, and drew in the right, placing at the same time the left fore foot on the head behind the eye and drawing it down to the mouth; it then appeared to hold its foot in the mouth for about a second, when it drew it out, and I distinctly saw the three points of skin that came off its toes outside its lips till the next opening of the jaw, when they were drawn into the mouth. When it drew its foot over its left eye (which before was shut), it broke out as bright as ever. Some folds of the skin adhered to the left leg, but by two or three motions of the jaw they were gone, and in about a minute the skin was drawn off the lips—the toad had eaten its own skin, and there it stood with its new covering as bright as if it had been fresh varnished. I endeavoured to touch it, to feel if it was clammy, but the creature gave a vigorous jump, and the soil adhered to its legs. I looked at it in an hour afterwards; it had then begun to resume its dingy brown colour. The time it took to get off its head dress was only a few minutes. It appeared to me that each time its jaw opened it drew the skin forward, while it distended the body on the side to be uncovered. *W. Turner.*

Hybridising the Polyanthus.—I shall be glad if the following statement has the effect of drawing attention to the further development of the capabilities of this favourite. In the autumn of 1846, I obtained a plant of "Buchanan's seedling," which at that time was the deepest yellow, and crossed it with the view of producing new colour and larger size, it being a large sized, five-petalled, pin-eyed flower and coarse in habit. It was kept by itself in a 5-inch pot, in which it flowered and seeded in the spring of 1847. I had crossed most but not all of the pips with other border (not florists') varieties, one of which was a white hose in hose. The plant bearing the seed being pin-eyed I did not attempt to cut away the anthers, as should always be done, and which I now do by splitting the tube before the flower has expanded or the pollen is scattered, and removing the stamen with a pair of fine pointed scissors. The seed obtained was sown in pots; as soon as it was ripe the young seedlings were pricked out into larger pots that autumn and transplanted, and flowered the succeeding spring (1848). Their characteristics were, that in robustness of growth and enlargement of flower, they strongly partook of the female parent; but in shape, colour, and markings, they bore the impress of the male, and this in so remarkable a degree that the fathers and their progenies (the mother-plant being the same to all) could be eas ly recognised; many were thrum-eyed, and several were even hose in hose like the fecundating flower, yet partaking of the larger size and yellow colour in different proportions of the seed-bearing plant. I fertilised one of these seedlings of a mahogany colour, yellow centre, and a little yellow on the outer edge, but not laced down the middle of each petal, with pollen from a shrivelled flower which by accident fell in the way, and it has produced a seedling flower precisely like the corolla of the male, with a broad outer yellow edge, differing only in being increased in size and deeper and brighter in the yellow. I would suggest three objects to be worked out year after year, always selecting the seedlings and even single flowers to cross or take pollen from which may evince a disposition to sport in the direction of the properties tending

towards each aim. 1st, Doubling the Polyanthus. This I feel confident may be done ; 2d, Working the perfect florist flower into the larger, although coarser, and differently coloured classes ; and 3d, Opening up a higher standard of perfection. The latter would consist in adapting the properties of the Auricula, as far as could be done, to the Polyanthus. The desiderata would be —foliage not too coarse ; footstalk strong, and well up above the leaves ; flowers to expand without overlaying each other ; the single pips to be large, faultlessly round, flat (perhaps six-petalled), or rather the edge bending down and giving the corolla a slight convexity ; outer edge smooth and well finished, with a clear distinct border, of a uniform width, of the same shade, density, and brightness as the centre, or of a pure white with a dark yellow clear centre, but not passing at all down the middle of each division, or at all towards the centre, rendering the outer edge of the pip as nearly circular as possible ; the eye to be quite round, with a well defined rim, well filled with thrums or anthers. The centre of a clean bright colour, of a uniform width round the tube, clear and sharp at its junction with the ground colour, and all free from specks or blemishes, but pure and entire. The whole to form a compact globular head, each flower of equal size, and similar in properties. *Wissingham.*

Pond Mud.—I have cleaned out a great many ponds, and applied the mud as a top dressing for land. It is of very little value. I have mixed it with lime, sawdust, &c., but I consider it does not pay the expense. I am now engaged in clearing out a large pond on the following system : the mud is wheeled out to the side of the pond, where it will lie one year. It then becomes mellow and workable, when a crop of Potatoes and Beans will be taken off it, some little dung being put in along with the crop. A field near will then be top dressed with part of it, and the rest will be planted. *W. B., Liverpool.*

Growing Pine-apples on Hamilton's Plan, and in less Bottom-heat than usual.—Some time back I expressed an opinion that the bottom-heat usually applied to this fruit was extreme, and I likewise stated that this opinion was founded upon my own practice, having cultivated the Pine successfully with a bottom-heat not exceeding the average temperature of the house they grow in. Now, after another year's experience, these views are unchanged. I will, therefore, state what I have done, and at the same time notice one or two of the arguments used against the Hamiltonian system. The variety which I most approve of is the true Black Jamaica, which swells its fruit better than any other in winter ; it likewise retains its flavour and eating properties, after being cut, longer than any common variety, and it does not send forth such a quantity of suckers as Queens do after being turned out. Next in value is the Cayenne. I have only cut one fruit of this variety, but it has proved most promising ; its weight was about 4 lbs. 2 oz., and the report of its flavour by a competent judge was that it was equal to the Jamaica. Grown in a bed of earth, its habit is low and "stocky," with a nicely proportioned crown. I have long discontinued Providences, on account of their coarseness and want of flavour. An Enville or two may be grown for exhibition, but they will not stand the test of a gentleman's table. Queens find favour with the best cultivators, but their great disposition to multiply when planted out, together with their other properties not being equal to those of the Jamaica, have militated against their usefulness with me. It is no uncommon thing to see six or more suckers spring from a single plant ; to allow these to remain would be injudicious, and to be continually wounding the stem of the plant by their removal cannot be less so. I have never found any such difficulty with the Black Jamaica ; it invariably produces a successional sucker, at the time the fruit begins to show. A strong off-set then springs from the roots of the old plant, or a good sucker from the lower part of the stem, showing clearly that this is their natural method of propagation. One plant of the Black Jamaica ripened a fruit with me in September 1847, whose weight was 4 lbs. 8 oz. ; in August 1848, another fruit 5 lbs. 10 oz. ; in July 1849, two fruit weighing respectively 4 lbs. 2 oz. and 4 lbs. 5 oz.,* and the plant still looks strong and healthy. In this point the Hamiltonian system has an advantage over the Meudon, or transplanting plan. As soon as the old plant approaches maturity, its successor makes a natural effort to supplant it, and by the time the fruit is cut, the young plant is in full vigour, but even then I do not consider it advisable to cut down the old stem too hurriedly ; in some cases I have found this proceeding bring the young plant to a stand-still. I have found the greatest advantage in tying the old leaves together, in order to let as much light and air as possible surround the sucker, when it has gained strength sufficient to support itself, and the old leaves begin to show that they will soon be of no further use, I then remove them, making as clean and close a cut as I can. The heat I employ varies from 55° to 75° in winter, and in the growing months from 75° to 95°, the extremes being 50° and 100°, with moisture in proportion. It will thus be perceived that our average bottom heat is 65° in winter, and 85° during the growing months, and I know that this heat is sufficient for the roots of the Pine-apple. I might give instances where I have seen this fruit wintered without injury, in a night temperature of 45°, but such a course of argument is unnecessary. The temperature here in summer ranges high, and in winter rather low, and this, with an abundance of moisture at all times, is a point on which success hangs. The top-dressing of the bed every spring is also an operation of the greatest importance. My manner of doing this is to tie up the leaves of each plant with broad bast, as if they were about to be removed to the potting bench, then to remove all the soil possible, taking care not to materially injure the roots, filling up again to the requisite height with fresh light rich earth, not chopped too fine ; the object being to allow the water to pass readily away, and to admit abundance of air to the roots. The application of liquid manure has a very beneficial effect during the summer months. I have no particular time or manner of applying it—say once a week if the weather is hot and drying, or once in two or three weeks if the contrary. Sometimes we use guano, or guano and soot, purified with lime, the drainings of the dunghill ; "all's fish that comes in the net," and I have found a change from one to another of advantage. I never use shading, indeed the greatest difficulty we have to contend with is a want of light and air, and every means by which these can be increased should be taken advantage of. By attention to these simple directions I have proved that the Pine-apple can be grown successfully without a bottom heat of 85° in winter or 95° in summer, and, simple though they appear, they bring the cultivation of this fruit within the profitable reach of every owner of a hothouse. All I contend for is a bottom heat equal to the average temperature of the house, and the stool system of propagation. Let there be a free circulation of air underneath the bed ; let the air be as sweet there as in any other part of the house, which is really necessary to the health of the plants : place the pipes under the bed, or along the pathway on each side of it, it matters not, and if the circulation is good the heat will equalise itself. One objection brought against this system is, that that richness of flavour so much to be desired cannot be acquired in a growing atmosphere. This is an objection worthy of every consideration, and to a person who has not proved the disposition of the Pine-apple to accommodate itself to different circumstances, it seems a most serious one. All experience is in favour of a dry season for the ripening of almost all fruits, and we well know that Grapes or other soft pulpy fruits become insipid and watery, unless ripened in an atmosphere nearly approaching dryness ; but there is a vast difference betwixt showers of water overhead, and that dew-like moisture accumulated during the night, to be again dispersed the following morning. Withdraw this moisture, and allow the Pine-apple to be ripened in a parched atmosphere, and instead of having fruit full of juicy richness, you will have a dry hard substance not fit to be compared with the other. There are cultivators who recommend showers of diluted manure-water, overhead, up to the time the fruit changes colour, arguing that by so doing they add to the weight of the fruit. I very much doubt the utility of such an operation, and I could not expect fruit of high flavour after such treatment, but I apply it to the roots and lower part of the stem and leaves up to the time the fruit is cut, and I have always found advantage from such a proceeding. So far as I am aware, there is only one good objection to Hamilton's system, and that is the ripening or retarding the fruit at pleasure ; by the planting-out method we have power only over the fruit, the plant is stationary ; and this is one reason why I prefer the Black Jamaica to any other variety. I have had it after being cut six weeks, and knew no difference in its flavour or appearance ; and should a longer period be desirable, by cutting a little green, with a good lengthy footstalk, I think it might be kept much longer. *John Richardson, Gardener to Henry Sharples, Esq., Oswald's Croft, near Liverpool.*

Monthly Summary of Rain which fell here in 1849 :

January	Inches 2.82	August	Inches 0.78
February	1.90	September	3.24
March	0.98	October	4.49
April	4.68	November	1.59
May	2.55	December	3.78
June	1.11		
July	2.47		30.39

E. Penny, gardener to Gen. Trevor, Glynde-place, Lewes, Sussex.

What is the Best Material for Indian Tents.—I received by the last mail from India a letter from a friend, asking me to make some inquiries in London respecting the best materials for tents. My correspondent, who holds a situation under the East India Company, is obliged, at certain seasons, to make journeys through his district, and live for weeks together "under canvass." The stuff of which his tents are made is the same as that used by the natives. It is called "Numbda"—a sort of woollen fabric, about half an inch thick, very heavy, cumbrous, and expensive to boot, as it is soon destroyed by insects, and of course has to be replaced by new about once a month. He wishes me to find out if there is not a "patent felt" manufactured here, "kyanized" (*i. e.* saturated in some mixture which would preserve it from the attacks of those insects.) As the thermometer, in the district my friend passes through, is often at 140°, the "patent felt" should not of course be too thin ; but if of a close texture, it might be lighter than the numbda, and yet afford quite as good protection from both the glare and heat of an Indian sun. If you can refer me to any manufacturer of this "patent felt," or give me any hints as to the best material for Indian tents which are intended for hard service, and not for show, you will much oblige your correspondent — *Guzerat.* [Perhaps some of our friends who have lived in tents in India will afford an answer to this important inquiry.]

Death of large Elms at Southampton.—"Hantoniensis" thinks it remarkable that the Southampton people should not have suspected that an exudation of gas was killing their Elm trees which constitute "the Avenue." I beg to inform him that a Southampton gentleman has laid before the corporation his ideas as to the death of those trees. His first report stated that oxide of iron was the evil, and to prove his assertion the gas-pipes were laid bare ; but, very unfortunately for him, there were too many fibrous roots emitted, where the main roots had been severed to make way for the pipes, to render that opinion tenable ; he then discovered a smell of gas, and at once settled the point at issue by giving an exudation of gas as the cause. The ground was opened in several places, but still he was wrong ; the trees had died alike where there was a smell of gas and where there was none. Had Southampton been the only place at which Elms had died these visionary causes might have been excusable, but many of your readers have witnessed the decay of a favourite Elm miles beyond the range of gas-pipes ; and therefore I trust you will throw some light upon the matter, in order that the corporation may not attribute the loss of their avenue to imaginary causes. Another person states that the Scolytus destructor really killed the trees, but he must account for the partial appetite of his guest, for the trees have died only on the south-west side. The bark becomes loose ; it has no vitality in it, and the tree eventually dies. I believe some of these fine Elms have died, and the corporation are very desirous to save the remainder. *W. T. Good, Southampton.*

Societies.

HORTICULTURAL, *March* 19.—W. W. SALMON, Esq., in the chair. C. S. P. Hunter, J. Spode, W. S. Orr, F. Crockford, J. Whatney, D. B. Chapman, S. Maw, Esqrs., the Rev. J. L. Petit, and M. Vilmorin, of Paris, were elected Fellows. Mrs. Lawrence exhibited a specimen of the long-tailed Ladies' Slipper (Cypripedium caudatum), an extraordinary looking species, which has just flowered at Ealing-park for the first time in England. As far as colour is concerned, the flowers have little to recommend them, being, as near as possible, greenish yellow ; their peculiarity consists in the petals being extended into two long brown narrow tails, which hang down from either side of each blossom, and keep on growing and growing as the flower gets older, till it is difficult at present to say what length they may eventually reach. Those in the specimen exhibited were nearly 18 inches long, and when the flowers are elevated, as they should be, some 2 or 3 feet above the foliage, these tails must give them a most remarkable appearance. Dr. Lindley stated that the existence of tails was not uncommon among Orchids, and that an unimported species of Uropedium named Lindenii inhabiting the Cordilleras, near the lake of Maracaybo, possessed these appendages even in a more remarkable degree than this Cypripedium caudatum. The latter comes from Peru, and may now be met with in one or two collections in this country. A Large Silver Medal was awarded it.—The halberd-lipped Odontoglossum (O. hastilabium), another new Orchid, or at least comparatively new, was exhibited by Mr. Ivison, gr. to the Duchess Dowager of Northumberland, at Syon. Like the Ladies' Slipper just mentioned, this is not distinguished by brilliancy of colour ; but it is, nevertheless, a pretty species. It had a fine spike of flowers on it, whose sepals and petals were pale green, transversely marked with brown dots or lines ; the lip was large, pure white, and pale red at the base. It comes from New Grenada. A Certificate of Merit was awarded it.—Messrs. Henderson, of Pine-apple-place, produced a most beautifully grown and flowered Acacia diffusa, for which a Certificate of Merit was awarded ; and along with it small plants of Boronia triphylla, Epacris hyacinthiflora candidissima, and the red variety of Eriostemon cuspidatum.—Mr. Henderson, of St. John's Wood, sent Gesnera macrantha purpurea, a brilliant scarlet variety, with a dwarf habit ; a winter blooming Heath, in the way of Linnæoides, called Burnetti ; Siphocampylus lanceolatus, and an example of Conoclinium ianthinum, a new Composite, in its present state not so handsome as the blue Ageratum (A. cælestinum).—Mr. Fry, gr. to Miss Dent, Manor House, Lee, Kent, exhibited a self-acting contrivance for fumigating glass houses. It was made of sheet iron, cylindrical, and had a grate at the bottom lifted up on feet sufficiently high to allow a current of air to pass through the fuel on which the fumigating material is placed. It was stated that its chief advantage was that it would burn readily the very cheapest and coarsest tobacco that could be obtained.— The garden of the Society furnished a beautifully bloomed specimen of the orange-flowered Epidendrum (E. aurantiacum), a species which few can flower at all ; two Dendrobes, Stanhopea grandiflora, Lycaste macrophylla, two Epacrises, three Acacias, Eriostemon scabrum, four nicely flowered Cinerarias, the Shanghae Azalea obtusa, Henfreya scandens, Forsythia viridissima, and Hovea chorozemæfolia. The latter formed a nice little greenhouse shrub, covered with brilliant purplish-blue flowers ; but like all Hoveas it is somewhat difficult to manage. Though the Forsythia is quite hardy, it was mentioned that the blossoms required some protection in early spring, otherwise the cold and stormy weather of that season renders them ineffective.

* This is not a solitary instance ; for, with the exception of the two fruit in 1849, the next plant to it has done the same thing, allowing a few ounces more or less in different years.

Linnean, *March* 19.—The President in the chair. G. R. Dodd, Esq., was elected a fellow. A list of works presented since the last meeting was read by the Secretary. The Assistant-Secretary read a paper communicated by Sir W. Jackson Hooker, consisting of notices of some plants by the gentleman sent out from the Kew Gardens as collector, in the expedition in search of Sir John Franklin, in H.M.S. Herald. These notices were few and unimportant, and not intended for publication in the Society's Transactions.

Caledonian Horticultural. *March* 7. — Sir J. Russell, Bart., in the chair. The display of Hyacinths and other spring flowers was extensive and varied, and numerous prizes were awarded. For the six best varieties of Camellia, 1st prize to Mr. M'Lean, gr. to W. F. Mackenzie, Esq., M.P., for Carswelliana, Double White, Saccoi, Fimbriata, Imbricata, and Hendersonii; 2d, to Mr. Rooney, gr. to Prof. Dunbar, for Imbricata, Jeffersonii, Double White, Prince of Wales, Monterini, and Carswelliana. For Cinerarias: 1st to Mr. Henderson, gr. to C. K. Sivewright, Esq., for Beauty of St. John's-wood, Cerito, and Cleopatra. The prize offered for the best forced plant of a hardy tree or shrub was gained by Mr. Sleigh, gr. to the Lord Advocate, with a fine specimen of Andromeda floribunda. For the 12 finest Hyacinths in pots, six single and six double: 1st to Mr. Douglas, gr. to Sir J. Dick Lauder, with Prince Albert, Voltaire, Lord Wellington, Duke of Wellington, Grande Vidette, La Candeur, Perruque, Anna Maria, Triumph, Blandeisa, Gros Herzogen, and Grand Lillas. For the heaviest six stalks of forced Rhubarb: 1st to Mr. Henderson, Cargilfield, for Victoria, all from one plant, and weighing upwards of 9 lbs.; 2d, to Mr. Goodall, gr. to the Marquis of Lothian, for five stalks of the same variety. For the best three stalks of Celery, with an account of the mode of culture: 1st to Mr. Sinclair, gr. Tillichewan Castle, with Cole's Superb Red; 2d, to Mr. Henderson, for Cole's Dwarf. Of productions for exhibition only, Messrs. Dicksons and Co. sent two large hampers of Hyacinths in pots. Messrs. Dickson and Sons, also exhibited a collection of Hyacinths, a beautiful Begonia manicata, Dielytra spectabilis, and other plants. Mr. Carstairs produced forced stalks of Myatt's Victoria Rhubarb, along with specimens of Mitchell's Royal Albert from the open ground, without covering or protection of any kind, some stalks of the latter being more than 7 inches long. Mr. Handasyde exhibited a mass of Saxifraga oppositifolia, 3 feet in length by 2 feet in breadth, and completely covered with blossoms; also a basket of spring-flowering herbaceous plants, including Helleborus purpurascens, Sisyrinchium grandiflorum, Colchicum vernum, &c. A silver medal was voted for the Saxifrage. Mr. Methven, Stanwell-lodge, sent Hyacinths, Camellias, Heaths, and Epacrises. There were beautiful plants of Milla uniflora and Dondia Epipactis from the garden of Dr. Neill, and a beautiful Rhododendron from the garden of I. Anderson, Esq. Prof. Syme sent a seedling Epacris, for which a certificate of merit was granted, along with an honorary award to Mr. Reid, his gardener. There were two stands of beautiful cut flowers of Camellias from the gardens of W. F. Mackenzie, Esq., M.P.; and from Mr. Maclachlan, gr. to W. R. Ramsey, Esq., well forced plants of the Cabbage Rose. Mr. Ritchie, gr. to W. M. Innes, Esq., exhibited a pot of the white-flowered variety of Saxifraga oppositifolia, and also a finely flowered double white Primula sinensis. Mr. Burns, Malleny, exhibited a Rhododendron. Hyacinths were shown by J. Aitken, Esq., T. Oliver, Esq., Mr. Nicoll, and Mr. Douglas. Besides these, there were placed on the table fine specimens of Begonia manicata and Chorozema Laurenceanus, also Cyrtopodium Andersonii and Dendrobium cærulescens, from the Society's collection. Mr. Jaffrey, Experimental Garden, exhibited a number of mezzotint figures of Apples and Pears made by him, and Mr. Shanklie sent samples of the hexagon garden net, for protecting fruit trees. Specimens of rough plate glass, and other horticultural articles in glass, by Messrs. Hartley, were on the tables. Eleven new members were elected.

Royal South London Floricultural.—The 14th Annual General Meeting of this Society was held at the Horns Tavern, Kennington, on the 7th inst. M. Sangster, Esq., in the Chair. The report of the committee for the past year was read and adopted. The society then proceeded to ballot for officers for the ensuing year, when R. Seldon, Esq., was appointed treasurer in the room of J. Bright, Esq. resigned, and Mr. J. T. Neville was re-elected secretary. The committee reported that in addition to the annual subscription of the late Queen Dowager, they had received the subscriptions of 213 members, of whom 43 had joined the Society since the last general meeting, and that the total prizes given by the Society during the year amounted to 323*l.* 7*s.* 6*d.* By the auditor's report, which was read, it appeared that there is a balance of 12*l.* 17*s.* 5*d.* due to the treasurer, against which there are outstanding subscriptions amounting to 23*l.*, of which about 15*l.* is considered good, all the liabilities of the Society having been discharged.

Garden Memoranda.

C. B. Warner's, Esq., Hoddesdon, Herts.—We proceed to redeem our promise, made last week at p. 164, viz., to give some account of the Orchid-house here. The glass houses stand on the face of a hill which looks to the west. The range we are now more particularly about to describe consists of two long Vineries, leaning against a wall and facing south; and at a right angle with these, at their lower end, stands the Orchid house—a span-roofed structure, the top of which meets the continuation of the roof of the Vineries in a rafter in the latter, about 4 feet from its top. The houses being on a slope, and the roof of the Orchid-house being run into that of the lean-to Vineries, in the manner we have mentioned, breaks the uniformity of construction, and offers in the interior of this part of the Orchid-house facilities for carrying out the natural style of gardening, which would not have obtained under a different arrangement; and it is this portion which strikes the visitor as being most remarkable, for the rest is merely a common, neatly-constructed, span-roofed house.

Entering from the Vinery, which is quite 4 feet above the floor of the Orchid house, at the ornamental end, one suddenly finds oneself on the top of a flight of stone steps, looking over Palms, Marantas, Orchids, and Ferns, all growing in Nature's wild luxuriance among large masses of rock, whose bases encircle a small piece of water. Immediately in front of the water, and supporting the angular beams of the roof, which meet in the rafter already noticed, are two rustic oaken pillars, 9 feet apart, covered with moss, from among which issue pendulous Dendrobes, Ferns (as Polypodium aureum, Aspidium exaltatum), and Æschynanths, producing a charming effect, while overhead hang Columneas, Æschynanths, huge Stanhopeas in baskets, and other Orchids, altogether forming an assemblage of magnificent vegetation very gracefully disposed, and affording a good example of the kind of arrangement contended for in the leading articles at pp. 147 and 164. A Bamboo reaches from the edge of the water to the top of the house; and on the surrounding rocks we observed Tillandsias, Bilbergias, Maranta zebrina, Dracænas, Begonia hydrocotylifolia, Polypodium effusum, Adiantum formosum, gold and other Ferns, among which was a splendid specimen, 9 feet across, of the Crow's-nest Fern (Asplenium Nidus), whose fronds were 5 feet long and 8 inches wide. A fine tree Fern, 8 feet across, filled one corner; and against the wall, above the rockwork, Polypodium phymatodes, 8 feet high and 7 feet across, was growing in great luxuriance, in company with Acrostichum scandens, a capital wall Fern, some of the pendulous Dendrobes, as pulchellum and Pierardi, and a Passion-flower or two. It may be well to observe that Polypodium phymatodes and the climbing Acrostichum are beautiful objects, on damp, rather shaded, stone walls, to which they attach themselves without any assistance, and they grow so rapidly that they will cover a large surface in a very short time. Anybody therefore who has a stove may possess them, and they are exceedingly clean, being never subject to scale, as some Ferns are. In the water, which is heated by a two-inch iron pipe, were Caladium bicolor, the blue and red Water Lilies, and a few other stove aquatics. Groups of Ferns in pots, consisting of Adiantum formosum, A. trapeziforme, and the glaucous Polypod, surrounded the bases of pillars, &c.; and opposite the ends of the main plant stages were nice specimens of Littæa geminiflora, together with upright blocks of wood placed in pots, and covered with Lycopods, intermixed with Camarotis purpurea and Orchids of that nature. The extreme length of the house is 40 feet, and it measures 24 feet in width. A passage runs round it, and up the centre, dividing the latter into two beds, on which the plants in pots are staged; the latter are placed on rough pebbles, which keep the bottoms of the pots dry and clean. Among the plants here we observed a specimen of the long-tailed Ladies' Slipper (Cypripedium caudatum) just coming into bloom. It has been urged as an objection against such houses as Mr. Warner's, that they afford great harbour for insects, which they no doubt do; but by cleanliness, and carefully watching for them and killing them when they sally forth at night in quest of food, Mr. Williams finds that they may be kept in complete subjection; and the beautiful specimens of plants which the house everywhere contained, fully confirmed the truth of the statement. A dry "retarding" house is attached to the south end of the Orchid-house; and even here, where the walls are irregularly covered with "clinkers" set in cement, no more annoyance is felt from insects than what would be experienced in an ordinary house.

Before leaving the Orchid-house, which is one of the nicest houses of the kind we have seen anywhere, we must not forget to mention that the fragments of rock employed in it, which have all the appearance of stone, are in reality not stone at all, but large masses of spoiled bricks obtained from the kiln, and coated over with Roman cement. These are found to be just as durable as stone, from which, after a short time, it is almost impossible to distinguish them. It should also be remarked, that the glass above the ornamental part of the house is painted over with white-lead, to give shade, without which the Ferns do not thrive.

We will endeavour next week to find room for some account of the other houses, and of the open grounds.

Miscellaneous.

Rose Stocks.—My object on the present occasion is to draw attention to the different kinds of stocks upon which Roses are generally worked in the nurseries—a point of no little importance when we consider that upon the stock much of the future well-being of the plant depends. In the "Theory of Horticulture" we are told that "mere propagation is by no means the only object of the grafter [substitute budder]. Another and still more important one is to secure a permanent union between the scion and stock, so that the new plant may grow as freely and as long as if it were on its own bottom under the most favourable circumstances. If this is not attended to, the hopes of the cultivator will be frustrated by the early death of his plant." This is perfectly true of Roses. Many cultivators take strong vigorous stocks, such as crimson Boursault, Celine, and others, and work on them the delicate Bourbons, Chinas, Teas, &c.; for, say they, "the stocks are vigorous and free growers. See what an amount of root they possess! look at their lungs and stomach, in the form of leaves, to carry on respiration and digestion freely! how rapidly they assimilate the food which is transmitted to them by such powerful feeders!" And upon such stocks are budded delicate Roses. During the first year all goes on well; the stock having been in vigorous health when headed back, the bud is pushed out strongly, and in general many of the sorts I have named will bloom profusely the first season. But will this continue? It will if the variety is a free grower; but should the contrary be the case, it will go back, even more rapidly than it progressed. This is, theoretically, what we might expect, and practice amply confirms the hypothesis. The lungs so much talked about are cut off with the heading back of the stock; the plant, with its thin, small, delicate leaves, has now to digest and assimilate all the gross food forced into them by such a mass of coarse and abundant feeders; the leaves are gorged to such an extent as to impede their healthy action; respiration and digestion go on slowly; and this continues to increase until all the functions of the plant are totally suspended, and death puts an end to its existence. I have frequently heard complaints made respecting the loss of valuable Tea and other Roses, which have been purchased, it may be, at considerable expense; and surprise has been expressed at their early death; but if people would only examine the stocks on which the plants were worked, the fact of their living so long would be more a matter to be wondered at. The Dog Rose (Rosa canina), is the kind of stock which is so extensively employed for Roses in the nurseries of this country. It is almost exclusively used for standards and half-standards, and to an unlimited extent for dwarfs. All things considered, it is greatly superior to every other stock; with the exception of a few, which shall be hereafter noticed, most classes will grow well upon it. Provins, Gallica, Moss, Hybrid Provins, Alba, Hybrid China, Hybrid Bourbon, Damask, Austrian, Damask Perpetual, Hybrid Perpetual, with many of the free-growing Bourbon and Noisette kinds, will grow vigorously upon it. Many of the delicate varieties in the two latter classes, as well as a few sorts scattered through the others, will, however, not succeed upon this stock; but they are scarcely worth mentioning. The Manettii stock claims attention next; it stands at the head of all cultivated stocks (not, of course, including the above), and is very superior to the crimson Boursault, Celine, &c. Its good properties consist in its free, vigorous, and continuous growth; in this latter property it is superior to every other stock, continuing to grow until it is stopped by the winter's cold; it also ripens its wood well, becomes hard, firm, not subject to decay, nor are the shoots gross and pithy. On dry, warm, or sandy soils it is the best of all stocks; I have also seen it succeed well on stiff soils not over wet. It is the best of all stocks for Hybrid Perpetuals, and they force well upon it. It suits Bourbons and Noisettes equally well, and many of the dwarf and delicate varieties of these classes which will not succeed upon the Dog Rose will grow admirably upon this. Teas and Chinas will grow better and live much longer upon it than on either the crimson Boursault or Celine. I must not, however, be understood to say that no Teas or Chinas will succeed on the latter stocks; some of the free growing kinds will do on it, and exist for a considerable time, but they would do better on the Manettii. Many delicate Teas and Chinas, which will live only a year or two on crimson Boursault and Celine, will thrive pretty well upon the Manettii; but they are much better worked upon the Rosa indica (common Monthly), or grown upon their own roots. This stock strikes as freely from cuttings as a Willow. It was introduced from Italy by Mr. Rivers, and is worthy of the extensive cultivation he has given it. The crimson Boursault stock should be used with caution. I am aware that some growers speak highly of it, and have used it extensively; but it is nothing more than a good nurseryman's stock, namely, one on which delicate Roses will grow beautifully for a time, but on which they will soon perish. Many strong-growing Perpetuals, Bourbons, Noisettes, &c., will grow well upon it, though not so well or so long as on the foregoing. This stock is softer, more subject to decay, and, in every point worth considering, inferior to the Manettii; it should consequently give way to the latter. For the beautiful and delicate varieties of Perpetuals, Bourbons, Noisettes, Teas, &c., it is infinitely inferior to Manettii, and should never be used where the latter stock can be obtained. Some few years back nurserymen were in the habit of growing Peaches on what is called the Brompton Plum stock, a very free growing variety, on which the Peach grew beautifully for a season, but in many instances they had commenced decaying before they left the nursery; very few respectable nurserymen grow this stock now. The crimson Boursault occupies the same place as a Rose-stock which the Brompton Plum does as regards the Peach.

Gardeners who would object to have their Peaches worked upon the latter stock, should pause and consider what sort of Roses they would have worked upon the other. Celine is a very vigorous growing Hybrid China. Mr. Rivers considers it to be the best stock for the Cloth of Gold, and it suits many others equally well. In a general way it may be used for the same purposes, and the same classes of Roses, as the crimson Boursault and Manettii; it is very inferior to the latter, which must take precedence of all. Duc Decazes is a vigorous growing Hybrid Bourbon, having many good qualities to recommend it, namely, free growth, firmness, and solidity of wood. I have seen Bourbons, Chinas, and many Teas and Noisettes succeed admirably on it. Rosa indica, or Monthly, I have already noticed. This is suitable for delicate Teas, Chinas, &c.; and if they were more extensively cultivated on this or on their own roots, amateurs would not have so frequently to lament their losses. Blush and other Boursaults I notice merely in order to caution growers against using them; they are at all times extremely subject to mildew, and when worked are liable to decay; indeed, they but seldom grow well. The old Rose, Ornement de Parade, is sometimes employed as a stock in nurseries; it has very little to recommend it, consequently the sooner its cultivation for that purpose is discontinued the better. I have offered these few remarks on Rose stocks with the view of drawing attention to the subject, because of the indiscriminate manner in which stocks are used for Roses. If we could but induce our great Rose-growers to give us the result of their experience, a correct knowledge of this favourite flower would be speedily diffused, and those mistakes (the unsuitability of stocks) put an end to. *John Saul, Durdham Down Nursery, in the Journal of the Horticultural Society.*

Calendar of Operations.

(For the ensuing week.)

GENERAL REMARKS.

THE severe weather which has visited us during the last week will have afforded good cause for self-gratulation, to those who had adopted the course we recommended in guarding the tender unfolding buds of fruit trees; those who have neglected such precautions will do well to put them in practice, lest worse weather should yet come, and at a time when the trees are still less able to endure it. Very great care should be taken at this advanced season to prevent injury from sudden variations in the weather, which is apt sometimes to take even careful managers a little by surprise. Plenty of mats, canvas, and other covering materials should always be at hand, that they may be made immediately useful in cases of emergency.

PLANT DEPARTMENT.

As vegetation is now commencing its summer progress in earnest, one of the most important points requiring attention is, to give all plants sufficient room to develope themselves, without crowding or being crowded by their neighbours. A collection of plants too large for the extent of glass is the common evil of nearly all gardens; and, in consequence of this, they are crammed together during winter to preserve them from the frost. Injurious as this is to their health during the dull months, the evil is ten times greater when they commence their spring growth, and for this reason they must be placed at proper distances asunder without further delay, even if the operation should involve a reduction in the collection; for it is far more satisfactory to all parties concerned to have a few well grown specimens, than several times the number of lanky etiolated plants, not one of which will stand the scrutiny of individual examination. As the spring is so far advanced, much may be done by removing many half-hardy or frame plants to favourable situations in the open air, where they can be slightly protected in case of very severe weather by mats, canvas, or other contrivances; this will make room for some of the hardier greenhouse plants in the frames, where they will be much improved by their close proximity to the glass. The forcing houses, also, as they gradually come into work, will afford room for plants which require a stove temperature. If a sufficient quantity of young stove plants has not yet been propagated, no time should be lost, as cuttings will root with greater facility now than a month or two hence.

FORCING DEPARTMENT.

As Vines are so often troubled with thrips, and as they do such serious injury if allowed to increase, which they soon do to an alarming extent, energetic measures should be taken for their extermination. Fumigation with tobacco is the best method of destroying them; but to render this mode effectual, the following points should be attended to. A quiet evening should be selected for the operation, when the leaves of the plants are quite dry; the house if convenient should be covered with canvas, or something similar, to prevent the escape of the smoke through the laps; during the whole of the next day it should be kept close, and the shading should be kept on, to prevent the necessity of giving air, and also the more completely to retain the fumes of the tobacco within the house. This course checks the revival of some of the insects which were merely sickened by the previous evening's smoking; but to make sure of destroying all, the house should be fumigated again on the second evening. On the second morning the plants should be syringed, and receive air as usual; but if the day prove very hot, a slight shading will be necessary. If pure tobacco be used, it will kill all the insects in existence at the time; but it will be necessary to repeat the process three times, with an interval of eight or ten days between each fumigation, to destroy those which proceed from the eggs laid by the old insects before their destruction. In fumigating houses in general, a board should be fixed over the top of the smoking pot, about six inches above the rim, to diffuse the smoke, that it may not injure the leaves, by coming directly in contact with them, before it has been sufficiently cooled by diffusion through the atmosphere. This plan has completely destroyed the thrips, and we are happy to recommend it to others, as so many are complaining of the ravages of these miniature locusts. Though individually minute, they soon commit fearful havoc, not only upon Vines, but also amongst our choicest stove and greenhouse plants. Even the fruit of Pines is often attacked by these insects, and completely disfigured by them. STRAWBERRIES.—These are generally placed on shelves in Vineries and in similar places to set their fruit; but as a drier atmosphere is necessary, and a free admission of air, while they are flowering, and as it is not always convenient to make the necessary variation in the state of the atmosphere in these houses, it will be better to keep them in the forcing pit until their fruit is set, after which they may be removed to the shelves of the forcing-houses, to mature their berries. During the swelling of the fruit, they should be watered twice a week with liquid manure of moderate strength.

FLOWER GARDEN AND SHRUBBERIES.

Herbaceous plants, which are now appearing above ground, will require a little attention to guard them against the ravages of the snail family. A timely dressing of soot and lime, sprinkled over the crowns of the plants, will not only prevent their depredations on the surface, but, being washed in by the rain, will preserve the bases of the young growths from their attacks also. Box edgings are notorious as a harbour for these plagues, and where beds containing choice plants are thus surrounded, it will be useful to lay a line of the above mixture along the inside, in order to insulate the plants. It will also be useful to hoe and rake the beds, both for neatness sake and to disturb the underground retreats of our slimy friends, so as to expose them to the weather and to the bills of their natural enemies. Biennials (as Wallflowers, Sweet-Williams, Scabiosas) should be brought from the nursery-beds and arranged in their summer quarters; beds of Pinks, Picotees, and Carnations should also be made; these things are invaluable for supplying flowers for glasses, bouquets, &c. All dressed turf should now be well swept, rolled, and, if necessary, mown; it is a great drawback in the present appearance of the pleasure-ground, and a disadvantage in the after-keeping, to allow Grass to grow too long before it is first cut in spring. Where there is a large extent of open lawn to be kept in first-rate order, the horse-mowing machine is an invaluable assistant, as by it the Grass can be cut once in 10 days or a fortnight, at much less cost than it can be done once a month by the scythe. For firm, well-drained ground, the 42-inch machine will be found most economical; but, for softer ground, the medium-sized machine is preferable, as the latter may be worked with a lighter horse, and consequently less damage is done to the turf in damp weather. It is necessary to mention that not more than a fortnight should elapse between the different cuttings, or the work will be more difficult to do, and unsightly when done.

FLORISTS FLOWERS.

DAHLIAS.—Those roots which have been placed in heat will require considerable attention, and as the shoots spring forth they should be cut off immediately below a joint and inserted in small pots filled with sand; placed in a brisk bottom heat they soon strike root. Seed should also be sown directly. CARNATIONS and PICOTEES should be potted off forthwith; we usually plant a pair of layers in each pot; in removing them from the store pot it is advisable to retain the ball unbroken, giving them a slight elevation above the surface, for as the soil settles down they come to a proper level. The layers should be thoroughly divested of all portions of decayed foliage; but we by no means recommend the shortening of the tips, as some are in the habit of doing. AURICULAS must be carefully protected from frost; one and often two mats will be requisite, for a check will prove highly injurious to the coming bloom. Give more water, and occasional gentle showers will prove highly beneficial, in which the plants may be indulged as the trusses rise; at the same time they should never be closed quite, when wet. RANUNCULUSES.—Seed will now be making its appearance; they should occasionally be moistened by dipping a brush in water and sprinkling them; it is a bad plan to use a watering pot for this purpose, as the young plants are often washed out of the soil. TULIPS.—Cover carefully with lace, or very fine net; they will repay the attention, as there will be much competition amongst exhibitors this season.

HARDY FRUIT GARDEN.

Let all training and pruning be assiduously proceeded with, that it may as soon as possible be brought to a conclusion, particularly where the advice given in an early calendar has been followed, by leaving unpruned those fruit trees of which the buds are liable to be injured by the bulfinches. Any trees which are furnished with a tolerable quantity of blossom buds, and are not yet protected, should be immediately attended to. If canvas or netting is not available, evergreen branches must serve as a substitute. In applying them use as many as will protect the blossoms effectually without depriving them of light, and let great care be taken that the buds are not broken or injured in fixing the branches, and also that the latter are fastened so securely that the wind may not be able to blow them about.

State of the Weather near London, for the week ending March 21, 1850, as observed at the Horticultural Garden, Chiswick.

March.	Moon's Age.	Barometer. Max.	Barometer. Min.	Thermometer. Max.	Thermometer. Min.	Thermometer. Mean	Wind.	Rain.
Friday.. 15	1	30.419	30.399	47	18	32.5	N.E.	.00
Satur.. 16	2	30.279	30.142	48	23	35.5	N E.	.00
Sunday . 17	3	30.403	30.301	48	17	32.5	N E.	.00
Monday 18	4	30.286	30.197	44	24	34.0	N.E.	.00
Tues. .. 19	5	30.131	30.111	49	34	41.5	N.	.00
Wed. .. 20	6	30.194	30.162	45	33	39.0	N E.	.00
Thurs....21	7	30.224	30.162	44	19	31.5	N.	.00
Average....		30.268	30.210	46.4	24.0	35.2		0.00

March 15—Overcast throughout the day; clear, with sharp frost at night.
— 16—Frosty; overcast; clear and frosty at night.
— 17—Frosty; cloudy; sunshine occasionally; severe frost.
— 18—Frosty; fine; air cold and dry; overcast; frosty.
— 19—Overcast; cloudy; overcast.
— 20—Overcast and cold; cloudy; overcast.
— 21—Cloudy and cold throughout; frosty at night.
Mean temperature of the week 7 deg below the average.

State of the Weather at Chiswick during the last 24 years, for the ensuing week, ending March 30, 1850.

March.	Average Highest Temp.	Average Lowest Temp	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds. N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 24	50.0	32.5	41.3	7	0.11 in.	3	4	2	—	4	2	4	5
Mon. 25	51 2	33.5	42.4	10	0.50	2	5	5	—	3	1	6	3
Tues 26	52.4	34.1	43.3	9	0.12	—	3	4	2	4	2	3	5
Wed. 27	54.3	34.3	44.3	9	0.37	1	5	3	3	1	4	7	—
Thurs. 28	53.5	34.6	41.1	10	0.68	2	5	4	2	3	3	4	1
Friday 29	54.8	33.8	43.8	6	0.12	1	3	5	2	1	5	3	4
Satur. 30	53.7	31.7	44.2	9	0.50	3	4	3	1	4	4	3	2

The highest temperature during the above period occurred on the 27th 1830—therm. 75 deg.; and the lowest on the 30th, 1817—therm. 20 deg.

Notices to Correspondents.

ACANTHODIUM: *R M S.* You will not find seeds of this in the trade. Your only way of obtaining it will be to apply to the possessors of herbaria.

BOOKS: *C K S.* Roberts on the Vine, with the exception of putting carrion into borders.—*A Z.* The "Manse Garden."

EMIGRATION: *A Subscriber.* Apply to the Commissioners of Emigration, London. But no men, not even paupers, are sent out absolutely free of charge.

GLADIOLI: *Constant Reader.* The leaves look as if they had been injured by cold; but it is probable that something is wrong with the roots. The real cause of the evil can only be discovered by careful examination on the spot.‡

HEATING: *J N* Gas is unsuitable for heating glass houses. It burns and dries the air, and renders it unfit for plants, and besides it is always escaping. A small boiler and a set of 4-inch iron pipes run round your greenhouse will prove far more satisfactory.‡

HYBRID VEGETABLE. We have received from *Union* a pod of a seedling Pea impregnated with a speckled French Bean. Having only two seeds he could not spare any this year, but he describes the seed to be of a dingy white, stained with the speckled Bean. It was originally a green Marrow. We fear this is not likely to be useful; but it is a curiosity of a very strange nature, to which we may allude hereafter.

MELILOTUS LEUCANTHA: *K.* It is Bokhara Clover, a very strong-growing variety, and a good bee flower.‡

MICROSCOPES: *J H.* You will have to inquire for Gaudin's microscopes in Paris. If you have no correspondent there, and are not going, you might perhaps obtain one through the agency of Mr. Redfern, Rue de la Paix.

NAMES OF PLANTS: *Dee.* Sisyrinchium grandiflorum.—*C.* Senecio Petasites.—*J T C.* Omphalodes verna.—*A G.* We cannot name florists' flowers.——An accident prevents our answering this week one or two other inquiries under this head.

PEAS: *O P.* Seeds under the name of "Nimble Tailor" were received from Linwood, and proved to be the Early Charlton. The Sabre and Blue Sabre were received from Falla, and the Blue Scymetar from Masters; these proved to be the same as the Blue Imperial. The seeds having been obtained from highly respectable authorities, the synonymes were admitted. If doubts should arise with regard to the identification of the numerous synonymes which appear in the lists of vegetables given in our columns, a statement of such will be duly attended to, as far as possible, in the way you suggest.‖

PELARGONIUMS: *E G.* The whiteness on the leaves appears to be some substance brought by the water employed in syringing them. Their death is probably owing to insufficient ventilation, dark weather, and too much water, either in the air of the house or in the soil, or in both.

POTS: *F P.* They are named 3-inch pots or 11-inch pots according to the number of inches they measure "*across the top.*"

POTTING: *Amateur.* If the plants you have just bought in from the nursery are pot-bound, you had best shift them into larger pots at once, and in doing this you cannot do better than observe the rules laid down by "Pharo," in "Villa Gardening," at pp. 149, 165.‡

SCALE ON ORANGE TREES: *J D.* Washing the trees with water of the temperature of from 130° to 140° will perhaps kill it at once; but if any still remain give them a second dose of hot water.‡

STUDY OF BOTANY: *G V.* The text-book used by Dr. Lindley for the juvenile class of botany in University College is his "School Botany" No other is required by the *beginner.* All sorts of apparatus, such as paper, lenses, drying-boards, &c., can be purchased on very reasonable terms of Mr. R. M. Stark, 1, Hope-street, Edinburgh, who will furnish lists upon application.

THE TREE ROSE: *W D.* At the request of numerous subscribers the price of this work is now reduced from 4*s.* 6*d.* to 3*s.* 6*d.*, post free; it can be forwarded to any address by a Post-office order being sent to James Matthews, at the Office of this Paper.

TROPÆOLUMS: *W W.* T. tuberosum is, we believe, quite hardy, but we fear it will not bloom with you. Try pentaphyllum, or, still better, speciosum.‡

VINES: *J M R.* You have poisoned your Vines with your salt. That is all. To recover them you must take them up carefully, wash the roots quite clean, and remove all the soil before you replant them.

MISC.: *T W.* Silver sand is a very different thing from sea sand. You may strike Fuchsia cuttings in the latter, if you wash it well first, to clear it of salt. Start Anomathecas now, and take down your cellar-wintered Geraniums, remove the dead tops, pot them, and prepare them for planting out after all danger of frost is over.‡—*J W.* Start your Gesneras in heat now—potting in a mixture of loam, peat, leaf-mould, and silver sand. We never put prices on articles or recommend dealers.‡—*Alton.* The Water Lemon is a stove plant, and is all the better for bottom heat. The cultivation of the Tuberose is given at p. 101 of our volume for 1847. The Coniferous plants are as hardy as Larch or Scotch Firs. Cornus macrophylla is probably too tender for England.—*A Subscriber.* The number of Chestnuts required to plant an acre of land will depend upon the distance at which you place them. There is no difference between English and Spanish Nuts. Sow them in seed beds, about 6 inches apart; let them stand till the autumn. Then lift them, shorten the tap root, and replant them in rows, in light rich soil. After they have stood two years, cut them down in April; single off the shoots to the best, and by the autumn you will have nice straight plants ready for putting into a plantation.

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The Agricultural Gazette.

SATURDAY, MARCH 23, 1850.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

WEDNESDAY, March 27—Agricultural Society of England.
THURSDAY, — 28—Agricultural Imp. Society of Ireland.
WEDNESDAY, April 3—Agricultural Society of England.
THURSDAY, — 4—Agricultural Imp. Society of Ireland.

"WASTE NOT—WANT NOT." It is an old maxim; but, though ancient, it was never more useful than at the present day. In these times of competition and frugality in all departments of industry, it is the spirit of all improvements; and in agriculture, manufactures, and government, it is found to embody itself in cheaper methods, saving systems, and financial reforms. Economy, or the prevention of waste, is what we must rely upon for making up the deficiency in the difference between our expenses of cultivation and the value of our produce, when both shall have fallen to the lowest point.

How comes it, then, that farmers, though otherwise thrifty, should be found to violate the above time-honoured and now momentous truth whilst struggling against a falling market, especially with respect to their manures? Certainly it arises in a great measure from ignorance of the facts of the case. But have they not books, pamphlets, and societies? True—these are doing a great work; few, however of the smaller occupiers read our agricultural publications, partly owing to their dearness; and clubs for diffusing the knowledge of husbandry are unhappily rare. We must look to private endeavours; "example teaches more than precept," and one successful adopter of printed recommendations will have a host of imitators around him, though the sources from whence he derived his information be carelessly neglected. We have known men who were advised by others to sprinkle their manure-heaps with dilute sulphuric acid, because from several trials they "had found that the dung was wonderfully improved at a trifling expense;" they had *read* of the advantages to be gained by applying sulphuric acid or gypsum to manure, but had never set about using it; a word, however, from a neighbour, who had actually profited by the practice, determined them at once to adopt it.

The value of good manure and the best methods of preserving it are old subjects; and it is not because the better modes of management are undetermined that this source of the farmer's wealth is so grievously neglected. The sewerage of towns is still allowed to depart unused for the fertilising purposes for which it is available, and a great economical improvement in agriculture is thus completely lost. As regards the manure of the farm-yards, the greater part of the men who should have long ago commenced the more profitable systems of management are yet doubtful as to their adequacy, and require, upon contiguous farms, ocular pecuniary proof of their efficiency, before they will venture an experiment. And agricultural journals must therefore continually urge the more reflecting portion of the agriculturists at once to step forward as fuglemen. In no better way can this be effected than by placing before them the best plans to be pursued, with accompanying reasons for recommending them. Much is wasted in the *manufacture* and *preparation* of manure, and an incredible quantity of material is actually passed over, or else thrown away, of which enriching compounds might be easily and profitably made. This point involves a consideration of box-feeding, manure-reservoirs, urine-pipes, Linseed-food, mown fodder, &c. Another kind of waste is in the *application* of manure, leading to a notice of ridge culture, top-dressing, &c. We shall now, however, confine our remarks to waste in the *means employed for the preservation* of manure. In travelling through any agricultural district, even in the first-class counties, judging from the majority of the farmsteads, it really seems as if *no means at all* were being taken to preserve manure; and muck-heaps by the road side, exposed to evaporation by the sun and wind, and to the frequent washings of the rain—ponds black with the drainings of the straw-yards — yards entirely open, and receiving, in addition to the rain-water that falls upon their whole area, the drip from great barn and stable roofs; all bear witness of the little worth which is commonly assigned to the husbandman's best treasure.

We observe then, that, after the general way of keeping manure, there is a waste *downwards*. Fermenting farm-yard dung abounds with all the salts and mineral ingredients that a plant requires, and as these are chiefly yielded in a soluble state, they can be washed out from the straw and solid portions of the mass. Chemical analysis shows that the drainings of dung-heaps are exceedingly rich in these useful substances; and common sense therefore decides upon the advisability of either preventing this soakage or preserving the liquid which thus drains away. To effect these objects let the yards in which the manure is to be accumulated be properly "dished" and bottomed. The ground after becoming solid will not permit much of the liquor to pass away. Let the roots, weeds, &c., cleaned out of the fields be placed upon this bottom, in order to absorb the juices of the superincumbent dung. On no account let the yard be lowest at one side, lest the precious liquid escape; but in the centre construct a tank, or else lay a covered drain from this point to a covered cesspool outside the yard, and let any fluid which may drain into the receptacle be either pumped up upon the dry surface straw, or carried in buckets and thrown over it when the manure is being "turned" in spring. This may be done by those who object to the expense of carting the liquid manure to the land from which Tares, Clover, or other green forage has been cut for the purpose of soiling. Water and air being necessary to the progress of putrefaction, it is not desirable to exclude all moisture from the manure while in course of formation; but on the other hand, if every drenching shower and the full heat of the burning sun be suffered alternately to weaken and waste the soluble and aeriform particles of the dung, a considerable loss is obviously incurred. Therefore where "Auchness" receptacles and reservoirs are not obtainable, it is well to cover in a large proportion of the straw yards with open sheds, which of course will be of little service unless "spouted." The rain which descends upon the remaining area will always keep the manure sufficiently wet, especially when the cattle are allowed a proportion of roots with their dry food.

There is likewise a waste *upwards*. The food for vegetation contained in manure is liable to escape, both in a liquid and volatile form, whilst the much greater bulk of comparatively useless carbon with which it is united remains subject to no such diminution. This arrangement of Nature seems to thwart the farmer in a vexatious manner; but the same substances have other distinct properties that tell a little in his favour—the less valuable ingredients may be dispelled by fire, while the requisite chemical food will remain as ash. In Mr. HOSKYN'S Introductory Essay to the "Cyclopædia of Agriculture," it is hinted that in future times some means of dispensing with the labour of carrying about the useless load of carbon may probably be resorted to; but at present it appears very unlikely

that a farmer should burn all his straw-yard manure, having first completely drained and dried it. Perhaps the same inventive faculties which have extracted the "quinine," dispensing with the grosser parts of the Peruvian bark, will, ere long, light upon the idea of purging farm-yard manure by a simple process and obtaining all its virtues in a concentrated and most portable form. As it is, we ought to use every method to retard the flight of fertilising matter from the manure. Fresh cow-dung undergoes in 40 days a loss of one-fifth of its solid matter; and if horse-dung be left in a heap for two or three weeks, it evolves much ammonia, and scarcely seven-tenths of its original weight will remain. Ammonia, which is of the greatest value in the soil, readily and continually escapes and ascends from exposed manure in the form of gas. The falling rain washes it out of the atmosphere, and brings it down again to the earth. In this state it is carbonate of ammonia, or "common smelling salts," very volatile, as everybody knows; but this may be easily changed into sulphate of ammonia, which does not quickly volatilise, or rise into the air. To effect this, gypsum (sulphate of lime) or sulphuric acid may be employed. Probably one of the best preventives of this kind of waste is the placing of layers of soil, refuse of ditches, or other material, between alternate layers of manure in constructing the muck-heap, and then covering the whole with a light coating of earth—by which the gases will be in a great measure absorbed and arrested. In the yards, and also in the hovels when box-feeding is practised, the evaporation is hindered by the trampled upper stratum of bedding. The dung, when removed from the feeding-houses and made into a suitable heap, besides being mingled and covered as above, may be sprinkled with diluted sulphuric acid—say one pint of acid to seven or eight gallons of water.

The erection of new-fashioned farm-buildings and even of spouted sheds is often an insuperable obstacle to the good management of manure, owing to the reluctance of many landlords to do anything for their tenants; and the apparatus of pipes, pumps, covered dung receptacles, liquid manure carts, &c., are of too costly or too questionable a nature to ensure a general adoption by our present British farmers. In most cases, however, the dishing and bottoming of yards, the digging of mere drainage tanks, and the proper formation and treatment of muck-heaps, are matters which concern the tenant only, and could be easily accomplished by only a little extra care and labour. Good managers may, perhaps, ridicule these plain remarks as being what everyone knows and practises: not so! the *generality* of farmsteads in most counties exhibit a vast neglect of such simple means of preservation; and at a period when "agricultural distress" has become exceedingly distressful every mode of alleviation is important. These things have assuredly been known long enough, they have been reiterated until the agricultural press is well-nigh wearied of them, and why then are they not more widely appropriated to the individual benefit of approving readers? *I. A. C.*

DRAINING MEMORANDA.

THE surprising amount of benefit derived from draining land properly, that previously had no outlet for water, offers such irresistible evidence of its utility, that the most devoted adherent to old customs, the admirer of "grips," the stickler for rigs and furrows, high, wide, and sweeping, is smitten with a desire for improvement. No matter whether he or his landlord is to provide the needful; but it is of consequence that a fall should be obtained, that no more tiles should be used than are necessary, that they should be laid deep enough, that the best outfall should be selected, and proper attention paid to the composition of the subsoil. It is true that these conditions of draining might be complied with by an engineer, and as soon as the drains got out of order or the least addition or alteration was required, an engineer might issue directions to put all right; but the fee for this farm physician cannot be always spared, and it is questionable if hired intellect in such cases is preferable to the awkward attempts, the failures, and finally the hard-earned experience of the practical man who chooses to set his wits to work to devise the best means of encountering difficulties. And fortunately a few general rules are sufficient to secure an efficient clearance of water; the first object should of course be to find the lowest part of the field, then the lowest accessible level at the edge of the field. I go frequently through a field where above an acre descends to a sort of cavity from which there is no escape unless the tenant chose to cut an outfall 10 feet deep at least (for 200 or 300 yards), through the lowest part of the surrounding eminence; this is an exception: the best plan in such a case would probably be to run a few short drains into a pond or soak well in the centre, but it more often happens that in a large field there shall be midway a slope that requires one deep main drain, or a great portion of the field, by the sponginess of this hole, remains imperfectly drained; every part suspected of retaining moisture should be tapped. You may then, after such draining, safely proceed with the process of levelling the surface, for if a natural drainage is established with well-laid tiles, moderate attention will maintain it for any period. It cannot be denied that the safest plan, particularly in our level country, is to find out to an inch how much fall you can obtain by spirit level or finely adjusted implement; but one well executed drain in wet weather will discover by the course of the water near enough to determine how deep you may go, thence the distance between the drains; if done in dry weather and no water flow, even with the aid of a theodolite, the bottom of the drain is at the mercy of a (perchance unskilful) workman. A brick-layer's level should be brought into action, and with careful use would be found nearly as good as the admonitory ripple, which may veil a quicksand, and into which the tile may incontinently sink and interrupt the efficacy of the drain.

I came into occupation of, among other pieces, a 14 acre field last year; the former tenant had drained it, and there being no running water at Michaelmas, it was valued to me as an unexhausted improvement. The rains came, and the land appearing to be uncommonly wet, I took the main drain up, through which the water seemed to run well. I found the running water proceeded from a dike at the upper end, and on examining the side drains, of which there might be about a dozen, not above two or three gave passage to any water at all, and very little from them. The tiles, 3 inches wide, were many of them so far apart you might get your finger between them; they were not more than from a foot to 15 inches deep (although with the same outfall I have now sunk them 3 feet, 4 feet, and in one place 5 feet deep) and 3 yards from the point of contact with the main drain; they were, at a lower level than at the mouth, nearly choked with a muddy deposit, and instead of running at right angles with the main drain, they were placed some at acute and others at an obtuse angle to the line of fall, and diverging irregularly into the field. I have the tiles for my money, and I shall be at the expense of relaying the whole. I saw two years ago another remarkable instance of a waste of tiles and labour by the proprietor, who was also the occupier; the tiles were laid not more than from 6 to 9 inches below the surface in a Grass field, and they were done in squares; the water stood in the drains before the tiles were laid, and I could not discover an outfall, except into a sort of pond or cesspool, from which proceeded no other channel. Now, if these people had only been commonly careful, had only applied the very rudiments of such knowledge as is deemed requisite in any other calling, had employed common tools with common sense, and thought ever so little upon the phenomena which attends any rational trial of drainage, they might, with the aid of hints from friends, and the thousand channels of information now pressing upon them for conviction and approval, have turned to account their little stock of science, and obtained a motive for striving for greater profit, which would have acted as an example to others and spared them mortification and disappointment. In all fields there should be at least one main drain, more than one will depend upon the size of the field, the irregularity of the surface, and the amount of water derived from springs or other sources; I would gladly lay down large main drain pipes in a ditch I have made to receive the water flowing from other land, but a neighbour has availed himself of my deepened water course so as to send such a current down after a heavy rain that no pipe would convey without the risk of blocking up the smaller side drains and flooding the whole arrangement. I shall in this case, at some future time, have to lay down two main drains within a few feet of each other, one connected with the small drains of the piece itself, and another to take off the outpourings of my over-running friends.

A word on subsoil. It often happens here that a vein of shaly limestone crops out and requires the pick-axe to penetrate it,* the man of task-work grumbles, complains of his arms being jarred, and will not if he can help it go deep enough; an extra small bounty will make all straight, and should not be withheld, for the efficacy of the whole scheme is at stake for a few feet of hard rock, and as it is generally dry work, the spirit or common level with a long straight spar should be in constant requisition; alternating also with tough clay, suddenly appears sand or silt, down goes the tool, the sides fall in, the spring gushes forth, and you are floundering in a loose semi-fluid; a barrowful of slaty stone is necessary to preserve the integrity of the passage, and should be packed with the greatest care: the best tiles for such unsolid earth is the flat-bottomed pipe, of which we get an excellent article from a brick-kiln at Woodstone. They are of uniform texture, of good substance, and straight; they are also brought by water from Ramsey: the round pipe-tiles are perhaps as good for clay, and are something cheaper. There are other kilns in the neighbourhood, but, whether from a defect in the material or workmanship, they offer no security for permanent drainage, being many of them mis-shapen and easily broken, consequently they will not bear pressure, and the channel will be distorted, lay them as you may. A well considered plan is of the first importance, and to have the work executed by skilful and conscientious men is also necessary; the best materials you can obtain is the wisest economy, and a master's eye to scan irregularities, approve regularity, smooth obstacles, and finish effectually, can only superintend where intelligence is exerted, where diligence is felt, and where patience and liberality bring all things "in tune." *J. W., Peterborough.*

* Only last week a great number of good workmen from all parts of the country competed at Upton for prizes offered for draining by our Agricultural Society; the work was distributed by the stewards, and was executed with skill and spirit until about the last "draw" was to be taken out, when, to the mortification of all, it was found they had to penetrate several inches of shaly limestone; this was new work to most of them, and as it had not been anticipated by anyone, proper tools were wanting, and scarcely any could finish the drains within the prescribed time.

THE BRICK AND TILE MANUFACTURE.

WHILE the raising the clay is in progress, it will be proper to commence operations for building a kiln (if one is to be used), erecting sheds, selecting a pipe tile machine, fencing the yard in levelling the ground for brick making, &c. On the point of kiln building much might be said, but it would hardly fall within the limits of such papers as these to do more than point out the prominent considerations affecting the question. Is a kiln necessary or not to burn tiles? I think it is, but I would not here advocate the erection of an expensive building, such as is seen in sale yards; a very much slighter building will suffice when the yard is established only for temporary purposes. If bricks alone are to be burnt, I think a kiln may be dispensed with; but I shall defer giving any description of the method of burning in clamps for a future period. There are two descriptions of kilns in general use, the one sunk somewhat into the ground, having long furnace holes opening on one side only, and having furnace bars running from these openings completely across the kiln, with ash pits below, and requiring a long shed equivalent to double the length of the furnace holes to be erected in front of the openings. The advantages of these kilns I believe to be these—less coal is consumed, and less bricks are used in building it, as the part below ground need not be of that thickness which without the support of the earth it would require to be. The shed might be of rough wood, the eaves touching the surface soil, and the sides constructed to keep the ground from slipping in. The iron work for the furnace bars used to add most materially to the cost of these kilns, being made of thick cast iron, under the impression that such resisted the perishing effect of the heat. It is found however, and I speak from experience, that thin bars are the more durable, and I recommend ⅝ by 2 inch wide bars of wrought iron, running the full length of the furnace hole, and resting at every 2 feet on bearers of the same thickness and width, set edgeways, as a most economical and effective arrangement. Every other bearer should have short ½ inch square stubbs welded on its upper edge, for the purpose of holding the bars apart and admitting the draught. The objections to this kiln are, that some sorts of coal are not proper to burn on bars. The other sort of kiln, built on the level ground, is in very common use; its walls must be of considerable thickness below, and from so much of its surface being exposed to the wind, I conceive that much waste of heat is occasioned. In this the furnace holes are narrow, and are on both sides of the kiln; the coal is burnt on the ground, those that burn to a white ash being requisite for the work. Supposing that no stone fit for resisting fire be on the property to be drained, some bricks must be procured, and I should, for temporary purposes, construct a kiln partaking somewhat of the character of both the above. One with six holes in each side, to burn coal on the ground, and having a low arched doorway at each end, one doorway level with the rising ground at the upper end of the kiln, and the other 6 feet high, reaching to the very bottom at the lower end. The ground must be excavated along the sides to the width of the kiln on each side, and two lean-to sheds be built against the sides. The sides and roofs to be made of rough strong stuff, and on them should be placed, against the kiln, earth, with layers of bushes to prevent it slipping down.

The shed for tile making may be constructed very cheaply, the sides of rough post, 8 feet asunder and 6 feet out of the ground; the width of the building should be 12 or 14 feet clear inside, the length about 90 feet. Some spars laid on the plates, and on them hedge-stuff or furze, packed well, and rough thatched, with the eaves hanging well over, make a good roof. If an old pan-tiled lodge is coming down, borrow the pantiles for a few months, and with some Larch poles a cheaper roof and shed may be made than by drawing hedge stuff about. The sides must be wattled, not too closely, with Blackthorn or any straight wood. Along the full length of the shed, as soon as ever it is erected, on either side, under the drip, dig a good narrow open ditch, throwing the earth well away that comes out, or it will check the air. As close to the line of posts as it can be got, inside the shed, must be cast up a neat table of dry earth, perfectly level, 28 or 30 inches wide, and 4 inches deep, with a smooth coating of sand on the surface of it. Between the two tables in the middle of the shed, the ground must also be levelled and smoothed, for the machine and barrows bringing clay to travel on. Shelves are perfectly unnecessary for making any sort of draining tile. The shelves for pantiles, made with common laths and bricks, I will describe hereafter. Scragg's tile machine is an excellent tool and very strongly made. Williams, of Bedford, makes a very good machine, and its low price is greatly in its favour; for although it does not produce in a given time so many pipes as its higher priced rivals, still it will be found that its powers of delivering tiles are sufficient for a very large demand: indeed, so much attention has of late years been given to tile machines, that their capabilities of supply, if fully exerted, are larger than

yards have room for. The stage on which the tiles are cut to their length ought to be long enough to admit of four lengths at least being on it at one time ; this gives work to the carrier away, while the machine is stopped for filling with clay ; besides, the cutting close to the die causes the tiles to issue unevenly.

With regard to fuel, peat or wood may do for drying, but the full fires are the best made with coal. About eight tons of coal will be consumed in a kiln charged with 9000 bricks and 40,000 of 2 inch pipes, or a ton of coal may be reckoned to dry and burn 3000 or 3300 bricks, according to its quality and the nature of the clay. It is advisable to compute what quantity of fuel will be required for the year, and make one contract for the supply, to come in at stated periods. *A. P.*

(To be continued.)

OXEN ON BOARDED FLOORS.

I PROCEED to detail the progress of my experiment. My Warnes's boxes, 8 feet by 9 feet, contain comfortably a pair of bullocks, weighing when fat from 40 to 50 score. Four of the boxes are now covered with planks 2½ feet wide 2 inches thick, with an open space of 2½ inches between each plank. Six other boxes, 2 inch openings and 3 inch planks. As soon as the bullocks were transferred to their new stage they seemed quite astounded ; their performance was pitiable and ludicrous. The sense of danger and insecurity was very apparent, and they seemed afraid to move. Still their appetite did not fail them ; all their excrement, solid as well as liquid, passed readily through the openings into what was formerly their bed. But, would they lie down ? Certainly not. For 24 hours they resolutely maintained their standing, one only excepted. I then spread a light forkful or network of straw under them, and in a few minutes they were all comfortably at rest. The straw soon worked through the openings, and now for the last fortnight they repose comfortably on the bare boards. The bullocks on these open floors are cleaner than those on the straws, although the former are never swept. The heavy pressure forces the liquid to the surface through the layers of our long glassy reedy Wheat-straw, and keeps the animals wet. It probably is not so with soft Barley or Oat-straw. When the open boards are first tried, there is nothing pleasing to the grazier's eye, especially when compared with the unlimited supply of the ordinary straw sheds. The edges of the boards are new and sharp, and the frequent lifting of the foot indicates fear and discomfort. In lying down and rising up the sharp edges probably give pain, but in two or three weeks all this passes off, the edges get smooth, and you will find your animals lying in various and easy positions. The 2 inch openings and 3 inch laths I prefer to the 2½ openings and 2½ laths. The former are easier to the animal's feet, and, besides, although the foot is 4 inches wide, the hoof is wedge-shaped from front to back. For calves, I find 1½ inch openings answer well.

I attach great importance to these open floors ; they will enable us to keep almost any quantity of stock. The manure requires no turning or fermenting, there is no expense of littering or frequent removal, and no loss of ammonia by fermentation. The comfort is great in every respect. Some of my pigs and sheep have been six weeks over my liquid manure tank without the slightest symptom of ill health, although I feared it when I made the trial. Gypsum is sown on the boards every morning. Burned earth is an essential auxiliary to boarded floors ; although I burned 1800 cubic yards last year, unfortunately I did not reserve enough to carry me through the winter. Next season I shall slightly thatch a few of the heaps, to keep them dry, ready for absorbing the winter's supply of manure in the boarded boxes. Gypsum is another necessary appendage to this system. A little sprinkled every morning on the boards is highly necessary and beneficial ; about a peck to 10 bullocks. Every manger should have in it a large lump of rock salt, and a water trough always supplied—the animals will not drink more than is proper for them. The same remark applies to pigs and sheep : with horses, a little discretion is required, should they come in over-heated.

The following instance of the effect of salt is interesting. Six store bullocks from marshes and straw-yard were purchased and placed in three boxes. The manger of one box contained a large lump of salt. The other two boxes, being just finished, had none. The boys who attended them observed that the two which had salt ate freely, whilst the other four scarcely would look at their new food under confinement. I observed that the two having access to salt were constantly licking it. We are using Cabbage as well as roots. Now I do protest against giving fattening animals roots or green food enough to make them purge. The state of their dung must be our guide. When about the consistence of thick batter, having a certain appearance of cohesion, we are right, but when it falls in a weak splashing condition, indicating diarrhœa, the animal cannot thrive, any more than ourselves under similar circumstances. I have great difficulty in restraining my worthy old bailiff in this matter, the old custom hereabout being to cram them and scour them with an unlimited supply of "green wittles." A very moderate quantity of Cabbage is sufficient, and we seldom exceed 1 bushel of roots daily to each bullock. The remaining food consists of fine cut straw and hay chaff sprinkled with Barley and Bean-meal, and soaked crushed Linseed soup poured over it. If there is a disposition to scour, the roots or green food are withheld for a day or two It frequently happens that confinement and good living cause the newly purchased animals to rub excessively. We immediately, in such cases, administer a pound of Epsom or Glauber salts in about a quart of water. This is repeated, if required, in a few days. This allays the excessive heat and irritation of the skin. If an animal looks dull and does not feed well, the dose of salts is administered. Very poor animals are sometimes lousy ; wash well with tobacco-water, to remove them. We find no inconvenience from having two horned bullocks in one box ; although one will probably be the master bullock, we never can discern any advantage in its condition ; this is because both have enough food, were they scantily supplied this system would not do. It is very necessary to question your stock-man daily as to the condition and health of the animals, as they are apt to forget to tell you if an animal shows a deviation from his healthy habits.

Animals arriving from a long journey should have their feet well washed out with strong salt and water, with a ready access to water, and a lump of salt to lick. A dose of salts tends to remove their feverish symptoms. In conclusion, where 6 to 10 sacks of meal are used daily, I consider a steam-engine indispensable, especially as there is in addition so much chaff cutting, pumping, Linseed crushing, and threshing. The mere convenience of its sack tackle is considerable. N.B. I mentioned before that the thickness of the yellow deal is 2 inches. There should be no knots in it, or the weight of the oxen might break it. If slated roofs are too warm in summer, they have the advantage of transmitting heat in spring and autumn, when it is a desideratum. *J. J. Mechi, Tiptree Hall, Kelvedon, Essex.*

Home Correspondence.

Roots per Acre.—A correspondent states that an acre will contain 4840 plants at 1 yard apart, and so it will do if the plants are placed opposite each other, but if each plant be placed in the interval between the two in the adjoining row, or what is termed *quincunx*, an acre will contain 5588 plants, and the distance from row to row will be a trifle over 2 feet 7⅞ inches. *Lusor.*

Cattle Insurance Company.—There are some poor men in my neighbourhood, who have one and two cows each (of small value, some 8*l.* or so), who insured them in 1848, with the Farmers and Graziers' Mutual Cattle Assurance Association, for one year only ; they have now been called on to pay 30*s.* each, to make up losses of the association, it is said. The men were quite ignorant of the rules of the association, and did not (many could not) sign them. They are honest and willing to try and pay what is due, but they certainly considered they would only have their first premium to pay, and had nothing more to do with the society, and so the agent here told them. What appears most unfair is that these poor men with only one cow of little value is called on to pay for that one cow the same sum as large farmers, who have a whole herd insured, and only called on to pay 30*s.* also. They have asked me for advise (a small farmer), could you kindly tell me what to advise them, whether they must pay the 30*s.* or not ? *M. Y.* [We know of large insurers who have not been so called upon : and this, with the obvious injustice you allude to, would make us suspect the demand. But you had better obtain the advice of an attorney.]

On Brewing.—The inquiries of "Cerevisium" having received no satisfactory answer, I think a few plain directions for brewing may be acceptable to your readers. There is no mystery whatever in the process, which is as simple as making tea, when properly understood. Common sense and common care is all that is requisite ; but a knowledge of the true principles will prevent errors which may arise in following the best receipt ignorantly. I shall endeavour to point out these principles, and then give the receipt I follow. The operation of brewing consists in obtaining the largest quantity of saccharine matter from malt ; in boiling that extract quickly with hops, and fermenting the decoction thoroughly, and allowing no opportunity for acid fermentation to take place. The largest quantity of saccharine matter is obtained by keeping the infusion of malt, for three or four hours, between the temperatures of 170° and 145° ; below or above these temperatures there is loss or risk, and at any rate little gain. The safest and most effective range at first is between 167° and 148° ; that is to say that the mash tun should never be raised above 167°, nor allowed to fall below 148° ; and the longer any given mash can be maintained between these temperatures the better. Below 148° you run risk of acidity ; above 170° of producing gum, not sugar. The course I adopt to attain this is as follows, for which purpose it is necessary to have a close fitting wooden cover to the mash tun, divided into two halves, and made like a copper lid. Having got my copper full of boiling water, I run into my mash tun 9 gallons for every bushel of malt I mean to wet, and immediately put on the covers. The copper is then filled again, and whilst it is heating, the water in the mash tun is slowly cooling. I endeavour that the copper shall reach 170° by the time the mash tun has fallen to 167°. At this latter temperature I mash, stirring the malt in thoroughly but quickly. The addition of the malt brings the mash tun down to 144° or 140°, according to the season and state of the malt. My copper meantime has reached 180° or 183°. I immediately add about 6 gallons more for every bushel of malt wetted, stirring it in carefully, which brings the mash up again to 165° or 167°. At this temperature I cover it close, putting sacks over the cover, and refill the copper. I allow the mash to stand till it has fallen to 148°, which it does in about three hours, more or less, according to the weather ; but be the time what it may, as soon as it reaches 148°, I let the wort run, and drain it pretty close. The copper, meantime, has been again gaining heat, and when the mash tun is pretty well drained—say in half an hour, I again run on 10 gallons more for every bushel wetted, at a temperature of 195°, or thereabouts. This again when stirred in raises the mash tun to 172° or 173°, which is now not dangerous. The instant this is done, having re-covered the mash tun, I pump the first wort into the copper, now empty, and make up the fire, and as soon as the wort begins to simmer, I add 1 lb. of hops for every bushel of malt, and boil for one hour and a quarter. At the end of this time, the second wort, which has been about 2½ hours on the malt is allowed to run, and the beer is at the same time run off into the coolers. As soon as the copper is empty, this second wort is pumped up and treated as the first, except that the hops are in it from the first, and it is boiled 2½ hours. It is very important not to allow the first wort to remain in the under back one minute longer than necessary, nor to expose it at all to air. When the second wort has been sufficiently boiled, it also is run into the coolers. The more rapidly it can be cooled the better, provided it be not messed about, or put into metal vessels. The first wort is set at about 61°, the second at 63° or 64°, with rather more than a pint of yeast to every bushel of malt wetted—say 2 quarts to a hogshead. In 24 hours it goes into the casks, the two worts being mixed equally together, and in about 72 hours more the active fermentation is over. I use no finings. The beer is always bright, and fit to drink in a month, but is better at the end of two, and gets brighter the longer it is kept. I brew with rain water, and next to that should prefer pond water if sweet. All utensils must be kept thoroughly clean, as clean and sweet as for milk ; and if there be any suspicion of acidity, they should be washed with lime-water two or three days before using. For any further details I refer to Black on Brewing, whose instructions I follow, though he does not clearly assign the reason for them, as I have endeavoured to do above. By the aid of that work I have learnt myself to brew, and have taught a labourer, so that he now, with certainty, brews some of the best beer in the neighbourhood ; and I have no hesitation in saying that everyone may have as good beer as they can wish to drink by following the foregoing receipt. Of course, the best materials accessible must be obtained, and the malt should never be kept more than a few hours after it is ground. The rapidity with which wort will become acid in certain states of weather is inconceivable. Of this, grains afford the strongest proof. I have known them become as acid as vinegar within one hour after they were taken out of the mash tun. Wort is equally susceptible ; and, once tainted, is incurable. Probably a great deal of beer is spoiled before it ever gets into the wort-copper. That is to say, acetous fermentation has begun in the wort, which interferes with the vinous fermentation, and goes on in the cask as soon as the imperfect vinous fermentation has ceased. For ascertaining the strength of wort a saccharometer is necessary ; but it is still more valuable for noting the progress of fermentation and detecting sluggishness or defect. It would be impossible in these columns to enter into further details. Those who desire them should procure the work above referred to, which contains much information on the whole subject ; but the rationale of a simple process is explained above. I believe it to be impossible to cure acid beer ; you may neutralise some of the acid by alkali, or you may disguise it by fresh wort ; that is to say, you may spoil good beer to make bad drinkable, but acetous fermentation once begun will go on, and neutralised or disguised acid is little less unwholesome than that which is patent. The only wise plan is to take care that your beer does not get acid ; and, if that misfortune does befall you, to throw it away, unless you make up your mind to drink it. *Barleycorn.*

Guano.—In reply to the wish of "Somerset" as to what quantity of guano, and how it was applied to the crop of Swedish Turnips, which exceeded 36 tons per acre (including tops), and for which the premium was awarded by the Worcestershire Agricultural Society last autumn, to my neighbour Mr. Oldaker—I beg to inform him that they were planted on the ridge, at about 30 inches apart, and that the guano was applied as a top dressing after the plants well covered the ground, immediately before each hoeing, and after rain or a heavy dew, the total quantity applied being about 3½ cwt. per acre. The plan which I have uniformly adopted is to sow the guano broadcast at the rate of about 2 cwt. per acre, and lightly harrow it in the land immediately it is ready to form the ridges, and plant the seed, by which means the manure is well distributed throughout the soil in the ridge, and not only stimulates the plant in the early stages of its growth, but gradually dissolving in the soil assists it through the latter. I also apply, by the hand, about 1 cwt. per acre, very finely powdered, as a top dressing, when the plants are fairly above ground, and when the soil is damp or during a heavy dew ; this promotes a rapid growth, and places them quickly beyond the ravages of the fly. *J. Webb, Colaines, near Worcester, March* 13.——My method has always been to apply about 3 cwt. or 3½ cwt. to the acre when the plants well cover the ground, and to hoe the ground as soon after as possible—and I do not like applying the guano unless there has been rain or a heavy dew. I have tried all distances, but am inclined to think that from 25 to 30 inches is the best distance for heavy crops. *Thomas Oldaker.*

Irish Linen.—The following extract, written about the year 1775, cannot fail to be highly interesting at this time. "It is of great importance to Ireland, that Flax, the basis of this manufacture, is of home growth, and of the most excellent quality. From the very moment of the seed being put into the ground, to the time of its being exhibited in the market, in the form of a piece of white linen, everything is the native growth of the soil, everything the productive labour of the inhabitant." The exports of linen from Belfast in 1775, were 147,278 pieces; one firm is now turning out more than that number of pieces annually; and we pay to the foreigner for Flax, Flax-seed, and oil-cake, upwards of six millions sterling per annum. From the constabulary returns of the breadth of Flax sown in Ireland in 1848, the total is given of 53,863 acres. The entire quantity of Flax required for British manufacture, would occupy from 350,000 to 400,000 acres. *T. S.*

Mr. Mechi's Live Stock Account for 1849.—As Mr. Mechi is a good accountant, I think he would confer a benefit on your readers, if he would analyse a little more of his account given in the *Agricultural Gazette* of March 2d, by giving the cost of bought food consumed by the bullocks, sheep, and pigs separately. I think if I divine rightly, that it will then be seen that pigs paid a fair profit; but sheep and bullocks, besides giving no return for any part of the green crops of the farm, did not even pay for their bought food. By his own showing there is from 300*l.* to 400*l.* to be met by his corn crops, which are I believe about 100 acres in Wheat *i. e.*, each acre in Wheat ought to produce from 3*l.* to 4*l.* more than in good common farming. As his purchase of corn is so great, this clearly is no question of free trade or protection, but a plain question as to a system of farming. Can it be profitable? *Alexander Hall Hall, Watergate, Petersfield, March* 9.

Pheasants and Domestic Fowls.—Your correspondent "J. B. B." doubts whether the pheasant ever breeds with the domestic fowl. I send you for his information the following. I live in a very retired situation; the nearest place at which fowls are kept, is a mile and a half from me. The fowls I used to keep were the silver Hamburgh, or Bolton Grey breed, but disliking them they were all killed off except a couple of hens, and I then kept fowls of the black Poland breed. I had no game fowl on my place or near me. Last summer one of my men told me he had seen one of the hens, a cross between the Poland and Hamburgh, repeatedly keping company in the woods with a cock pheasant. Others of the men saw this hen constantly with the cock pheasant. A short time after they saw her with a large batch of young chickens, I saw her and her chicks, but being very wild, she did not come down to the house until winter, when she brought down 5 cocks and 10 hens. The cocks exactly like game cocks, except that two of them had from 50 to 100 very beautiful spots on their necks, which since they moulted have disappeared; the hens are all much alike, dark brown bodies with yellow necks. I gave a cock and hen away, they were turned out by themselves, and I was told that the hen laid a very great number of eggs last year. For those I kept, I built a pen, and they have not laid well in it, probably from the confinement, but we have plenty of eggs ready to be set, and shall set them as soon as any hens are ready to set. I believe these to be a cross between the pheasant and the fowl. They are in my opinion very handsome birds. *A. K.*

Durable Paint for Iron Railing.—This subject having several times appeared in your columns, I am disposed to recommend the iron paint of the patent alkali company, as standing better than any other I have tried; not only the weather, but even considerable degrees of heat and corrosive matters; as it is used for lining the iron flues of my laboratory. It does not blister, nor crack and moulder in the sun, like white-lead; is considerably cheaper, goes further, more effectually protects the iron from rusting, and does equally well on wood, as gates, doors, &c. The colour is against it, being a deep purple red, but there is also a black made by the same company, which can be mixed with the red to deaden the colour. Of the black, I have no experience, but from the published specification (the red ignited with coal tar), see no doubt of its being equally durable with the red; and shall mix them the next occasion. It stands very well too mixed with half its weight of white-lead, to pale the colour while deadening the red. It does not seem yet to have found its way much into the country, but the London Office, is (or was), 20, Fenchurch-street. *J. Prideaux.*

A Garden Farm.—I am a country curate of very small means. In the autumn of last year I entered on my present curacy, and found a garden of full half an acre, which for a course of years has been allowed to grow wild. I am at a loss how to make the most of it—to make it remunerative; and it will be an act of charity in any of your correspondents to inform me. My family does not exceed three, and we do not require the luxuries of the table, vegetable or other. I am very remote from markets, and the poorest of my parishioners has a garden, and an allotment besides, if he chooses; so that I have no way of disposing of the produce of a garden—to sell, or give away to advantage. I have the use of the churchyard, about a quarter of an acre. I would add that the soil is light, *i. e.* of a sandy nature, and said to be rich. There is much fine pasturage all around me. As yet I have done nothing beyond ridging up, in November, the whole garden, having all the fruit trees pruned by an experienced hand, and collecting leaves for compost, cutting the old hedges into some form, and planting new. I would ask—what stock I should keep to consume the produce of my garden profitably. The best crops to attempt to raise for this purpose; and when to buy in. It has occurred to me that half an acre, well cultivated, simply with a view to profit, might serve as a good model for my parishioners who have allotments. I have not the means to exceed their outlay. I shall work myself, and my intention is to have a poor man's garden. Can you recommend to me any works likely to inform one who has no practical knowledge? I have the "Cottager's Calendar," by Joseph Paxton [It is the best for your purpose]. Is there any crop that can be raised profitably in a garden for poultry, where there are means to keep them outside of it. Cobbett, in his "Cottage Economy," speaks of fatting geese on boiled or raw Swedish Turnips, or Carrots, or white Cabbage, or Lettuce, with some Oats. He likewise speaks of Buckwheat for ducks. I shall look very anxiously for some answer to this communication. I scarcely need add that, to be useful, it must be full and prompt. *A Country Curate.*

Societies.

ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

PROFESSOR WAY, the Consulting Chemist to the Society, delivered a lecture, "On the Action of Soils upon the constituents of Manure," before the members of the Society, at their house, in Hanover-square, on Wednesday last, the 20th of March, Mr. RAYMOND BARKER, Vice-President, in the chair.

LECTURE ON SOILS AND MANURE.

Mr. WAY stated that he had on that occasion to bring before the Society some facts and observations in regard to the action of soils upon the constituents of manure. These observations he believed to be perfectly new to the agricultural public, and he hoped to show that they would throw much light on some of the operations of practical agriculture. As, however, he was preparing a paper for the next Journal of the Society, in which he would go minutely into the subjects and give the results of the investigations which had been proceeding for the last eight or nine months in his laboratory, he should that day merely give an outline of those results, avoiding everything in the shape of detail. It had often been observed that the dark liquid from a manure heap, if by chance placed upon a bed of soil through which it could filter, issued from the bottom almost or altogether deprived of colour. Again, the water of drainage, especially in heavy clay soils, was observed to be free from colour, and often beautifully clear and limpid. What was the nature of these actions? Were they the effect of mere mechanical filtration and the separation of the solid substances suspended in the water? Most persons would answer in the affirmative, and such had been the general impression hitherto, but it did not meet all the circumstances of the case.

On the table were glass filter-jars, containing a red soil from Mr. Pusey's estate in Berkshire. The soil, as the gentlemen present would see, occupied the jars to the depth of 5 or 6 inches. Upon one of these Mr. Way poured water obtained from one of the sewers of London. To another filtering jar he added a quantity of the fetid liquid produced in the steeping of Flax. Both of these liquids were turbid, highly coloured, and exceedingly offensive to the smell; but it would be seen that, so soon as having passed through the soil they began to drop from the jar, they were no longer the same. The resulting liquid had an earthy smell it was true—a smell always accompanying soils—but was no longer offensive to the nose. Now to what ingredient of the soil was this metamorphosis due? Was it due to the sand acting as a filter? It was easily proved that such was not the cause, and that there might be no doubt on this subject, Mr. Way would pass through a filtering-jar containing more than 9 inches depth of fine white sand, a quantity of cow's urine taken from a tank in the country. The liquid was so far altered by the filtration that the turbidity was removed, as it would be by filtration through paper, but the colour and disgusting smell remained in all their intensity. Sand, therefore, obviously was not the active ingredient in soils in respect to the power under discussion. The same must be said of the different forms of gravel, which were only coarse sand. The other great ingredient of soils was clay, and to this Mr. Way attributed the power in question. As an experiment comparative with the last, he would pass the same tank water through sand, mixed with one-fourth of its weight of white clay in powder, and they would observe the result was very striking. The liquid coming through was clear, and free from smell; indeed, it was hardly to be distinguished by its external characteristics from ordinary water. There could be no doubt, then, that the property of soils to remove colouring matters, and organic matters yielding smell from solution, was due to the clay contained in them. Filtration was only a method of exposing the liquid in the most perfect form to the action of the clay, but it was not necessary to the success of the process. In proof of which Mr. Way stirred up a quantity of soil with putrid human urine, the smell of which was entirely destroyed by the admixture, and upon the subsidence of the earth the liquid was left clear and colourless. It appeared, therefore, that the clay of soils had the property of separating certain animal and vegetable ingredients from solution, but was this property the only one exhibited? Mr. Way had found that soils had the power of stopping also the alkalies, ammonia, potash, soda, magnesia, &c. If a quantity of ammonia, highly pungent to the smell, was thrown upon a filter of soil, or clay made permeable by sand, the water first coming away was absolutely free from ammonia. Such was the case also with the caustic or carbonated alkalies, potash, or soda. This was a very wonderful property of soils, and appeared to him as an express provision of Nature. A power, he remarked, is here found to reside in soils, by virtue of which not only is rain unable to wash out of them those soluble ingredients forming a necessary condition of vegetation, but even those compounds, when introduced artificially by manure, are laid hold of and fixed in the soil, to the absolute preclusion of any loss either by rain or evaporation.

But Mr. Way had found that this property of clay did not apply only to the alkalies and their carbonates, but to all the salts of these bases, with whatever acid they were combined. Here again was a beautiful provision; sulphate of ammonia, when filtered through a soil, left its ammonia behind, but the sulphuric acid was found in the filtered liquid—not, however, in the free state, but combined with lime; thus sulphate of lime was produced, and brought away in the water. In the same way muriate of ammonia left its ammonia with the soil, its acid coming through in combination with lime, as muriate of that base. The same was true of all the salts of the different alkalies, so far as he had yet tried them. Thus lime in the economy of nature was destined to one other great office besides those which had already been found for it—it was the means by which the salts ministering to vegetation became localised and distributed through the soil and retained there until they were required for vegetation. Mr. Way pointed out that, from what he had just shown, it must be obvious that there was no provision for the ordinary salts of lime themselves. It was necessary that when the alkali of a salt is laid hold of by a soil, some provision should exist for the neutralisation of the acid with which it was combined; for all other salts lime performed this useful office, but it had nothing to fall back upon for its own salts. Sulphate, muriate, or nitrate of lime, when passed through a soil, would come through unchanged. This, however, did not extend to lime itself, or to its carbonate, when dissolved in carbonic acid, as it is found in most waters. Quicklime, when dissolved in water, is removed by passing the water through clay or through most soils containing clay; and carbonate of lime in solution is so effectually removed that hard water may be softened by the same process.

With regard to the extent to which these actions were capable of being carried. It was not to be supposed that we could go on filtering indefinitely with the separation of the salts contained in the liquid. On the contrary, the limit was soon reached; but although small in per centage quantity, the power was in reference to the bulk of the soil enormously great. He had found that a pure clay would absorb, perhaps, two-tenths per cent. of its weight of ammonia—that is to say 1000 grains would separate 2 grains of ammonia; and from reasons which need not then be noticed, a loam or a well cultivated clay soil would absorb nearly twice as much. Now every inch in depth of soil over an acre of ground weighed about 100 tons. Consequently 10 inches of depth of such soil would weigh 1000 tons, and would be adequate to combine with and retain 2 tons of ammonia, a quantity which would be furnished by about 12 tons of guano. Now one-sixtieth of this power would suffice for the preservation of the ammonia of an outside dose of guano, consequently he was justified in saying that the property was practically of immense activity. Mr. Way stated that he had ascertained the extent of the power in different soils and for the different alkalies. The property was decidedly a chemical one; and although he intended only to state the facts, without entering upon their explanation, he might say that he had every reason to believe that he should be able to develope that satisfactorily at the proper time.

Having thus endeavoured to call their attention to this highly interesting subject, the lecturer went on to point out very shortly the different operations of practical agriculture, upon which it was likely to throw light.

First, as to Manuring: Obviously if there was a provision in the soil for the retention of the salts of manure, and for the ammonia and other products of the decomposition of animal and vegetable matter, the soil was the proper place for those decompositions to go on, and no matter how remote the period when the crop would be taken, it would be perfectly safe to get the manure into the land as soon as practicable after its production. Again, the equable distribution was a point also which seemed of considerable importance; for, if it was an absolute necessity that a new class of compounds was found in the soil immediately the manure reached it, it seemed to follow that those compounds furnished the elements of nutrition to plants; consequently we should seek to produce them by every means in our power. Liquid manuring, wherever practicable, was an effectual way of securing this distribution. In the case of artificial manures, that is to say, manures composed of chemical salts, much simplicity was introduced by the new discovery. Henceforth we must regard the different salts (those of ammonia, for instance) as of value in relation to the price of the ammonia, or other base contained in them, since they are all alike when incorporated with the soil.

In liquid manuring it had been usual to think that

the application must be made to Grass, or to land bearing some crop; but now that it was known that the land, not the plant, retains the manure, no theoretical difficulty could arise in the use of liquid manure for arable land.

In Irrigation the principle now illustrated must certainly be of great importance, if, as there is but little doubt, the chemical characters of the water are of consequence, and that the soil is the means by which the salts and organic matters are separated for vegetation; then it will be obvious that the water should be made to flow *through* rather than *over* the soil. This reasoning is consistent with the observation, that to produce the full effect irrigated land should be well drained.

The application of water to land, not at the time bearing a crop, would be clearly admissible under this view, and is indeed practised extensively in Germany and some parts of Italy. Mr. Way also pointed out that the proper depth for drainage must be materially influenced by this property of soils to absorb manure. Without asserting that this or that depth was the most advisable, he thought it would be admitted that the water of drainage should pass through a depth of soil regulated, amongst other circumstances, by its particular power of detaining the manures placed upon it.

To the question of the application of Sewer refuse from towns these experiments brought much light, as they clearly proved that the sewer water might be applied in an unintermittent way, provided that a due relation were maintained between the capacities of retention of the soil—the quantity of manure applied, and the amount of crop taken in a given period. The great obstacle to the use of sewer manure, based upon the belief that it must be applied to the plant in actual growth, or it would otherwise escape in the drains, is thus removed. Lastly, after adverting to the probability that the power of soils to remove carbonate of lime, and thus soften water, might be turned to account for the supply of towns with pure water, Mr. Way said that he had great hope that with the clue he now possessed some material progress might be made in the elucidation of the action of lime itself upon soils, which he had reason to believe was closely connected with the phenomena which he had that day had the pleasure of explaining.

On the motion of Mr. Fisher Hobbs, seconded by Mr. Paine, the best thanks of the Meeting were voted to Prof. Way, for his kindness in delivering another lecture before the Members, and for the newly discovered and important agencies of the soil, in reference to manure, which he had so ably explained to them on that occasion.

A very interesting discussion then ensued, on the manner in which particular well-known facts in the cultivation of land were elucidated by the results thus obtained by Prof. Way in his chemical investigations.—Colonel Challoner had frequently been at a loss to account for the action produced by clay, or other aluminous matter, on manures applied to a portion of his property on Bagshot-heath, where, as it was well known, the soil was light and sandy, and through which the manure, without such application, passed off and was lost: he now could understand the reason why, in the course of three years, such soil, from the circumstance of the manuring elements being arrested by the clay, became capable of bearing crops.—Prof. Way considered the presence of clay necessary to retain manure; not only that immediately applied by the farmer to the land, but that which was known to exist in the atmosphere in the form of soot and ammonia, and to be brought down into the soil by showers of rain. —Mr. Raymond Barker referred to the improvement of chalk lands improved by claying them. — Mr. Barclay had found some of the most fertile soils on chalk subsoils.—Prof. Way's specimen of the clay then employed in his experiments, was obtained from Dorsetshire; and the more permeable clay was, the more nutriment it would derive from the greater amount of impregnated liquid passing through it. Burning clay nearly destroyed the peculiar property to which he had alluded, of arresting manuring matter; but it had been found very advantageous to have a portion of the clay burnt, and to intermix the indurated fragments (or coarse brick-dust, as it might be considered), resulting from such burning, with the remaining raw clay of the land. — Captain Wentworth Buller, R.N., was much interested in the lecture they had just heard. The new agency to which Prof. Way alluded threw much light on the question of liming, which, to himself as well as to others, had been hitherto a most perplexing one. They all knew that light soils did no good until clay was put upon them, and then they bore excellent crops; that bad meadows were only relieved by draining, for the purpose of allowing the confined water to escape, and new supplies to be constantly filtered through the pores of their soil; and that old pasture-ground, when broken up, would go on from year to year, without manure, yielding crops equal to those derived from lands to which manure had been regularly applied; and these several effects he thought might be mainly ascribed to the ammonia which, under the new conditions of each case, was retained by the soil.—Sir John Johnstone conceived that under drainage was the first essential in water-meadows. He had himself several near Leominster, and for some time it was thought merely necessary to put the water on them for the purpose of producing the effects required. He found, however, that the result was very unsatisfactory, under such conditions; but now, since they had been underdrained, they had become very valuable. He then proceeded to make some remarks on the quality of water, and its mode of action on water-meadows. The effect had been ascribed to the warmth of the water, and to its impregnation with manuring elements. He had no doubt that both these causes were favourable to the production of the effects required. About 20 years ago, Dr. William Smith, the well-known geologist, had laid out catch-meadows for him in Yorkshire, on the sides of hills of moderate land of a dry sandy quality on the calcareous grit, where the soil was porous, and without clogging. It having been imagined that warmth was the only requisite in the water employed, irrespective of the chalk or calcareous matter held in solution, it was not considered what might be the effect of such mineral impregnation; it proved however that the water partook of the nature of the mineral formation, on which the catch-meadows were made, and although earlier crops were obtained than on land not irrigated, the effect of this water was to destroy all the finer Grasses, and to leave only the rougher and inferior herbage on the meadows. The irrigation of these meadows had accordingly been discontinued.—Mr. Barker made some observations on the common opinion of the mode in which plants derived their nutriment on water-meadows.—Dr. Calvert would furnish Professor Way with specimens of soil from two contiguous pieces of land of his own in Yorkshire, one of which bore the heaviest crops of any land for miles round, while the other yielded only the poorest herbage; although the soils in appearance were exactly similar. —Mr. Barker thought it essential to ascertain whether the manure was applied in equal quantities to these soils.—Professor Way cited a corroborative instance of the latent causes of fertility and sterility in soils of apparently the same character. Two soils were sent to him from Sussex, with a request that he would submit them to scientific examination, and report the difference between their qualities. He found them in appearance exactly alike, their mechanical characters being identical in every respect; and chemically analysed, they were found to contain similar proportions of clay, sand, chalk, and organic matter. He reported this result accordingly; when the gentleman who had sent the specimen to him informed him that one of the soils was one of the best in the county, yielding 5 quarters of Wheat; while the other was one of the worst, yielding only 2 quarters; on which Professor Way recommended him to try liming on the poorer soil.—Colonel Challoner enquired whether acidity in the land might not often exercise a great influence over the quality of the soil and crops; and whether chalk would not remove such acidity as readily as lime.—Professor Way replied that caustic lime had an effect that chalk had not.—Colonel Challoner observed that quick-lime, on exposure to the atmosphere, soon became converted into the carbonate of lime, or chalk; but he was not aware whether the same conversion would take place when lime was mixed with the soil.—Professor Way remarked that lime, when only imperfectly excluded from the atmosphere, retained its causticity for a great length of time; for instance, in the mortar of buildings erected 500 years ago, the lime was found to have remained in its simple state without having combined with the carbonic acid of the atmosphere.—Mr. Rigby Wason then made some observations on the bearing of these new principles on the question of deep or shallow drainage. He conceived that we ought to drain as shallow as we could do, so as to drain effectually, in order to keep the arrested manuring matter more nearly to the crop growing on the surface, and thus render the whole of it available for the purposes of vegetation.—Mr. Barker referred to Sir H. Davy's advice to cart out all the manure, and mix it with the soil, on the day it was made.—Mr. Fisher Hobbs had never heard a lecture on chemistry of more importance to the practical farmer than the one with which Prof. Way had just favoured them; nor one from which the practical farmer would eventually derive more essential advantage. By the agency pointed out to them, not only colour and smell were removed from manuring matter, but that all-important volatile substance ammonia was fixed and arrested in its passage through the soil, and retained in such combination until required as pabulum for the growing plant. He could not agree with Mr. Wason in reference to shallow draining, when it was known that a depth of 30 inches gave off thick and turbid drainage water, while a percolation 4 feet deep had the effect of entirely removing the manuring matter, and allowing the water to pass away clear and limpid. Mr. Hobbs then gave an interesting statement of the depth to which he had known roots, especially those of Wheat, would penetrate, for the purpose of deriving nourishment to the plant; and of the result of his own experience in applying lime to the clays of Essex, which were almost unprofitable until that application had been made. He conceived that irrigation had not its proper effect, unless the lands to which it was applied were underdrained; and alluded to Mr. Parkes's recommendation of sub-irrigation, or the carrying of water by sluices to the roots of the plant, and allowing it to remain below the surface a sufficient time to enable the "mother earth" to abstract the warmth and nourishment required for the plants. He hoped, now, that chemistry, by its immediate application to practical purposes, would become an important aid to agricultural improvement.—Mr. Wason, in justification of the opinion he had offered respecting shallow draining, would remark, that the better the soil the shorter the root, for it would not be required to proceed far in search of its food; and the worse the soil, the longer the root, which, in this case, would exhaust the plant of its energies by creating the means for its radical extension, for the purpose of acquiring nutriment from the barren soil.—Mr. Paine stated the result of his experience on the application of clay to sandy land; and the abiding effects of high manuring. For several years he had known 50 or 60 tons of gault clay per acre applied to sandy soils, of which the effect was evident 25 years after the application, and was not due, as we found from Prof. Way's lecture that day, to the merely mechanical action of the soil, but to its chemical agency in arresting ammonia. Hops, it was well known, required rich manuring, and a piece of Hop-ground having been grubbed up, and the ground cultivated for farming purposes, the exact line of demarcation between the manured and unmanured portions of the farm was most striking. In fact, Mr. Paine observed, manure was never lost, for the soil was a magazine for its safe retention.—Prof. Way remarked that the power of clay to retain ammonia was astonishing. He had a piece of plastic pottery clay given him by Mr. Paine, dug up in its hard dry state, from a depth of 25 feet below the surface, in the very centre of which, when broken up, he detected a very sensible quantity, namely one-tenth per cent., of that volatile alkali, obtained by the clay from some animal source at a very remote period in the geological history of the world.—Mr. John Bethell enquired of Prof. Way, whether, as an arable field, from the principles deduced from his researches, and laid down in the lecture just delivered, might be regarded as a reservoir for manuring matter, he thought that clay fallows in summer might be frequently watered with ammonical liquids without injury to the subsequent crop.—Prof. Way considered that they might be so watered, provided sufficient time was allowed for the ammonia to become combined with decomposing salt contained in the clay, and thus have its caustic action prevented. — Mr. Bethell further inquired, whether Prof. Way would advise liming previously to the application of ammonia?—Prof. Way would, in all cases, recommend the use of lime first, and then the application of manures; the lime and manures not to be mixed together, but to be applied separately. — Mr. Bethell remarked that, as arable fallows, after being ploughed up, were frequently left in a plastic state, it would perhaps become a question, whether scarifying them several times during the year would not render them better filters for the liquid manure applied to them; and if so, what Prof. Way would consider the proper depth for such filtration.—Prof. Way felt a difficulty in answering any inquiry that would lead him to give an opinion on the contested question of deep and shallow draining.—Mr. Bethell was aware that guano was applied to the growing crop in damp weather; but he thought it would be well to mix guano up with the soil.—Mr. Brandreth Gibbs thought much would depend upon the point, whether the application was made to the immediate crop, or otherwise.—Prof. Way considered that it might be applied in any weather, provided it were well mixed with the soil.—Colonel Challoner applied tank-water to his fallows. He had that morning directed that two carts should convey the contents of three tanks on his Turnip land; and that the liquid should be turned in with the soil. He had found manure water applied to Grass land in dry weather burn up the Grass, while the same application after a shower always did much good.—Mr. Barclay stated his experience to the same effect; but having named the circumstance to Col. Le Couteur, that distinguished cultivator had informed him, that in Jersey he had carried liquid manuring to a great extent; but he had made it a rule never to apply it in dry weather.—Mr. Fisher Hobbs had been constantly told by the late Lord Western that he would not succeed with liquid manure; but he had nevertheless persevered, and had been successful. He inquired of Prof. Way, whether, in the case of gravels and sands, where there was no clay conveniently at hand, charcoal or charred peat would not retain the ammonia, and might be employed as a substitute. He had largely, and with great effect, employed the fish-salt of pilchard curers, as a manure. He had found, that when guano was sown in the field, and this fish-salt sown over it, that the salt had the property of depriving the guano of nearly the whole of its smell; and as the salt in question contained 10 per cent. of oil, he thought it probable that this oil might have the power of fixing the volatile alkali.—Prof. Way replied, that charcoal or charred peat had certainly the power of absorbing a considerable quantity of ammonia, and would no doubt have a similar effect to that of clay in retaining that substance, although its mode of action would be quite different. He also thought it very possible that an empyreumatic oil like that to which Mr. Fisher Hobbs had alluded, would have a strong tendency to remove the causticity of the ammonia, by forming a saponaceous compound with it.

Mr. Raymond Barker then left the chair, and the meeting broke up, with the understanding that the next weekly Council (at which all members have the privilege of being present), would be held on the following Wednesday, the 27th inst., at 12 o'clock.

Calendar of Operations.

Sussex Farm, *March* 18.—Our horses are engaged in sowing Oats and Tares, ploughing for and sowing Barley, also ploughing for the Mangold Wurzel crop, sowing seeds amongst the Wheat, Oats, and Barley, and harrowing and rolling the same.

We have sown part of Carrots, and planted between 4 and 5 acres of Potatoes; and as the Potatoes are sound and good, when late, we shall plant more. Early-ploughed ground works beautifully. Men are engaged in threshing Wheat and Oats, planting Potatoes, filling dung and carting Turnips, dressing Hops, preparing Hop-poles for the gardens, draining, &c. The men are turning Mangold Wurzel and Turnip heaps, picking stones off the young Clover, and Couch off the land intended for Turnips and Mangold Wurzel. Our ewes have now commenced to lamb, and as far as yet the lambs are strong and healthy. *J. B.*

Notices to Correspondents.

Bone-dust: *O P.* We should prefer guano for Lucerne.

Canary-seed: *Subscriber.* Sow 10 lbs. per acre in rows a foot apart, on a clay loam, in October, and treat the growing crop exactly as you treat Wheat.

Cheeses: *N P T.* What is the best way of packing cheeses to be sent to the West Indies?

Gypsum: *Anon.* Of the common sulphuric acid, sold at 1*d.* per lb., it would take about 130 lbs. to saturate 100 lbs. of dry chalk. It can never be your interest to *manufacture* gypsum; unless, indeed, it should be in the case of a chalk soil, which it is barely possible might, under certain circumstances, pay for a watering of dilute sulphuric acid.

Heifers: *A B.* If the meadow is good feeding ground, you may turn in the cattle early in May, and they may receive the bull.

Italian Rye-grass: *E D.* You may sow 6 or 7 pecks of seed over your Wheat some day soon when the ground is damp; hoe or harrow it in, and if next winter be mild, you will have some very useful "keep" in April next year. Your Drumhead Cabbage plants are forward enough to have a ripe crop in November next.

Oats: *Scotus.* If your climate is moderately early, sow one-third of your Oat break either with Late Angus or Blainsley Oats; one-third with Black Tartarian, and the remainder with Sandy Oats; but if late, sow one-half with Sandy and the other with Tartarian. The supposition that the last-mentioned sort yields a bitter flavoured meal, you will find on trial to be a mistake—the meal is of very superior quality, but does not look so fair as that made from the white-skinned Oats, in consequence of small portions of husk being ground down amongst it. The straw, however, makes but indifferent fodder, while that of the other varieties mentioned is excellent for this purpose. *H.*

Pond Mud: *Ruris Amator.* If our correspondent will send his real name and address to George Singer, Bockhampton, Dorchester, he may hear of something to his advantage, as George Singer's master cleaned out a pond of 9 acres about five years ago, and will have much pleasure in giving to "Pond Mud" any information he may wish.

Rooted Weeds: *J F S.* You must persevere in hand pulling—that *must* ultimately succeed. About fencing next week.

Rural Chemistry, by R. Solly, price 4*s.* 6*d.*, second edition, revised and enlarged, may be had of all booksellers, and at the Office of this Paper.

Wheat: *T D.* It is a specimen of Triticum turgidum, one of the bearded cone Wheats.

Winter Beans: *W J C.* Five pecks per acre, in rows 2 feet apart, would have been ample seeding. You had better hoe out a large number of the plants.

Markets.

COVENT GARDEN, March 23.

Notwithstanding the continued coldness of the weather, Vegetables are plentifully supplied, but many kinds of Fruit are still scarce. A few new hothouse Grapes have made their appearance. Pine-apples, though far from being plentiful, are nevertheless sufficient for the demand. Walnuts and Chestnuts are abundant; and Oranges and Lemons sufficient for the demand. Amongst Vegetables, Turnips and Carrots are good, and there is some fine Cornwall Broccoli in the market. Potatoes are unaltered since our last account. Lettuces and other salading are sufficient for the demand, and so are Mushrooms. French Beans, Asparagus, Seakale, and Rhubarb may be obtained at about last week's prices. Cut Flowers consist of Heaths, Pelargoniums, Bignonia venusta, Primulas, Camellias, Cinerarias, Azaleas, Lily of the Valley, Epacrises, Acacias, Lilacs, and Roses.

FRUITS.

Pine-apples, per lb., 6s to 10s	Almonds, per peck, 6s
Grapes, Portugal, p. lb., 9d to 1s	— sweet, per lb., 2s to 3s
Pears, per doz., 6s to 10s	Walnuts, p. 100, 1s 6d to 2s
Apples, kitchen, p. bsh., 4s to 6s	— p. bush., 16s to 24s
Lemons, per doz., 1s to 2s	Nuts, Bar., p. bush., 20s to 22s
— per 100, 6s to 12s	— Brazil, p. bsh., 12s to 16s
Oranges, per doz., 9d to 1s 6d	Kent Cobs, 90s to 100s p. 100 lbs
— per 100, 5s to 12s	

VEGETABLES.

French Beans, per 100, 3s to 4s	Carrots, per bun., 4d to 6d
Seakale, per punnet, 1s to 2s	Spinach p. sieve, 2s to 3s
Asparagus, p. bund., 2s to 7s	Onions, p. bushel, 3s 6d to 4s 6d
Rhubarb, p. bundle, 6d to 1s	— Spanish, p. doz., 1s 6d to 4s
Savoys, per doz., 6d to 9d	Shallots, per lb., 4d to 8d
Cauliflowers, p. doz., 1s to 4s	Garlic, per lb., 4d to 8d
Broccoli, p. doz. bundl., 8s to 10s	Lettuce, Cab., p. sc., 4d to 9d
Greens, per doz., 2s to 3s	Endive, per score, 1s 6d to 3s
Brussels Sprouts, p. hf. sieve, 1s 6d to 2s	Mushrooms, p. pot., 9d to 1s
Sorrel, p. hf. sieve, 1s to 2s	Small Salads, per punnet, 2d to 3d
Potatoes, per ton, 60s to 120s	Watercress, p. 12 bun., 6d to 9d
— per cwt., 3s to 7s	Fennel, per bunch, 2d to 3d
— per bush., 2s 6d to 3s 6d	Savory, per bunch, 2d to 3d
Turnips, p. doz. bun., 1s 6d to 2s 6d	Thyme, per bunch, 2d to 3d
Red Beet, per doz., 9d to 1s	Parsley, p. doz. bun., 2s to 3s
Horse Radish, p. bdl., 1s to 4s	— Roots, p. bdle., 9d to 1s
Cucumbers, each, 3s to 5s	Marjoram, per bunch, 2d
Leeks, per bunch, 1d to 1½d	Mint, green, per bunch, 9d to 1s
Celery, p. bundle, 8d to 1s 3d	Corn Salad, p. hf. sieve, 9d to 1s

POTATOES.—Southwark, March 18.

The Committee report that the arrivals during the last week were, with the old stock, much above the wants of the trade, which have been very small, and a reduction has again been submitted to with nearly every description of Potato. Stale Yorkshire Regents are scarcely saleable at any price. The following are this day's quotations:—York Regents, 70s. to 100s. per ton; Wisbeach do., 60s. to 70s.; Scotch do., 60s. to 65s.; Scotch cups, 50s. to 65s.; Scotch common whites, 40s. to 45s.; French whites, 50s. to 65s.; Belgian do., 50s. to 55s.; Rhenish do., 50s. to 55s.; Dutch, 40s. to 45s.

HOPS.—Friday, March 22.

Messrs. Pattenden and Smith report that prices and demand continue about the same as for some time past.

HAY.—Per Load of 36 Trusses.

Smithfield, March 21.

Prime Meadow Hay	65s to 75s		Clover	60s to 80s	
Inferior ditto... ...	55	63	New Clover	—	—
Rowen	50	60	Straw	23	28
New Hay	—	—		J. Cooper.	

The supply short, but sufficient for the demand.

Whitechapel, March 21.

Fine Old Hay ...	63s to 68s		New Clover	—s to —s	
Inferior ditto ...	50	55	Inferior ditto... ...	55	60
New Hay	—	—	Straw	24	28
Old Clover	80	84			

SMITHFIELD, Monday, March 18.

Our supply of Beasts is about the same as on Monday last. The demand is very small; however, owing to favourable weather, the trade is cheerful for the best descriptions, and prices are more firmly maintained. Trade is exceedingly dull for Sheep, although the numbers have not much increased. Our highest quotations are with difficulty reached. The supply of Calves is moderate; they are more freely disposed of at late rates. From Holland and Germany we have 559 Beasts, 640 Sheep, and 50 Calves; from Scotland, 300 Beasts; from Norfolk and Suffolk, 2000; and 300 from the midland counties.

Per st. of 8 lbs.—s d	s d	Per st. of 8 lbs.—s d	s d
Best Scots, Herefords, &c. ... 3 6	to 3 8	Best Long-wools . 3 6	to 3 10
Best Short-horns 3 4	— 3 6	Ditto Shorn	...
2d quality Beasts 2 6	— 3 0	Ewes & 2d quality 2 10	— 3 4
Best Downs and Half-breds ... 4 0	— 4 4	Ditto Shorn	...
Ditto Shorn	...	Lambs	— ...
		Calves 3 4	— 4 4
		Pigs 3 0	— 4 0

Beasts, 3578; Sheep and Lambs, 19,840; Calves, 102; Pigs, 190.

Friday, March 22.

The supply of Beasts to-day is good, and the demand still small for choice Scots; 3s. 8d. is an extreme quotation, although they make over 3s. 6d. Trade is very dull for other kinds at late rates. The number of Sheep is only moderate; it is, however, difficult to effect a demand at Monday's prices. There is more demand for Lamb, Easter being near, and the supply scanty. Some choice ones have made rather over 6s. Calves are not plentiful for the time of year; trade is brisk, but it is exceedingly difficult to advance prices. From Holland and Germany there are 65 Beasts, 160 Sheep, and 127 Calves; from France, 150 Sheep; from Scotland, 300 Beasts; and 125 Milch Cows from the home counties.

Best Scots, Herefords, &c. ... 3 6	to 3 8	Best Long-wools . 3 6	to 3 10
Best Short-horns 3 2	— 3 4	Ditto Shorn	— ...
2d quality Beasts 2 6	— 3 0	Ewes & 2d quality 2 10	— 3 4
Best Downs and Half-breds ... 4 0	— 4 4	Ditto Shorn	...
Ditto Shorn	— ...	Lambs	...
		Calves 3 4	— 4 4
		Pigs 3 0	— 4 0

Beasts, 889; Sheep and Lambs, 3370; Calves, 231; Pigs, 195.

MARK LANE.

Monday, March 18.—The supply of Wheat from Essex, Kent, and Suffolk, by land carriage samples to this morning's market was small, and disposed of at the prices of this day se'nnight. The attendance was rather larger than of late, and there appeared a somewhat increased disposition to purchase foreign Wheat; nevertheless, the business transacted was quite in retail, and without improvement in price.—Barley and Peas are unaltered in value, but a slow sale; new Beans (Tick and Mazagan), must be written 1s. per qr. cheaper.—There is a fair trade for Oats, at late rates.

British per imperial Quarter.	s. s.		s. s.
Wheat, Essex, Kent, & Suffolk ...White	41—43	Red	36—38
— — fine selected runs ...ditto	42—44	Red	38—40
— — Talavera	44—50		
— Norfolk, Lincoln, & York ...White	37—40	Red	36—37
— Foreign	34—52		
Barley, grind. & distil., 19s to 22s...Chev.	24—27	Malting	22—24
— Foreign.....Grinding and distilling	18—21	Malting	21—23
Oats, Essex and Suffolk	15—19		
— Scotch and Lincolnshire ...Potato	17—22	Feed ...	16—20
— Irish .....Potato	17—20	Feed ...	15—18
— Foreign .....Poland and Brew	15—20	Feed ...	13—17
Rye	20—24	Foreign	20—22
Rye-meal, foreign .....per ton	5*l.*—6*l.*		
Beans, Mazagan .....20s to 21s .....Tick	23—25	Harrow	23—25
— Pigeon .....25s — 37s ...Winds	22—28	Longpod	25—28
— Foreign ..... Small	24—36	Egyptian	20—22
Peas, white, Essex and Kent.....Boilers	23—25	Suffolk	24—26
— Maple .....24s to 26s.....Grey	22—23	Foreign	20—28
Maize .....White	24—26	Yellow...	24—25
Flour, best marks, delivered ...per sack	34—38		
— Suffolk .....ditto	26—34	Norfolk	26—34
— Foreign .....per barrel	22—24	Per sack	28—33

Arrivals in the Port of London last week.

	Wheat.	Barley.	Malt	Oats.	Beans.	Peas.
Flour, 12889 sks	Qrs.	Qrs.	Qrs	Qrs.	Qrs.	Qrs.
— — bls	3477	6325	6598	4110	1192	370
English	—	—	108	170	—	—
Irish	8764	5140	—	14279	1557	290
Foreign						

Friday, March 22.—The quantities of corn arrived this week are small, but we believe there is a large number of vessels in the river. Business continues very inanimate in all articles, and sales of foreign Wheat are difficult to effect, even at the above reduction.—Barley, Beans, and Peas are unaltered in value.—The Oat market is very heavy, and the turn cheaper.—The value of Flour is unaltered.—Galatz Maize has been sold at 27s. per qr. afloat.—By accounts just received from the Baltic, great apprehensions are entertained of the Rye and Wheat plants having suffered severely from frost, and the rivers are again covered with ice. Throughout the provincial markets of the kingdom fully former prices have been realised for Wheat during the week, and the turn of the trade has perhaps been slightly more favourable. Spring corn of all kinds continues depressed.

Arrivals this week.

	Wheat. Qrs.	Barley. Qrs.	Oats. Qrs.	Flour.
English ...	1950	3160	2540	1460 sacks
Irish	—	—	—	
Foreign ...	3420	4590	8670	— brls.

Imperial Averages.	Wheat.	Barley.	Oats.	Rye.	Beans.	Peas.
Feb. 9.....	38*s* 6*d*	24*s* 7*d*	15*s* 3*d*	22*s* 1*d*	25*s* 3*d*	26*s* 4*d*
— 16.....	37 9	23 10	15 4	20 7	24 11	26 10
— 23.....	37 11	23 7	15 6	20 11	24 8	26 0
March 2.....	38 6	23 9	14 11	21 11	24 4	25 11
— 9.....	38 6	23 10	15 2	23 3	24 7	25 4
— 16.....	38 1	23 8	14 11	22 7	24 1	25 2
Aggreg. Aver.	38 3	23 10	15 3	24 11	24 8	25 11
Duties on Foreign Grain	1 0	1 0	1 0	1 0	1 0	1 0

Fluctuations in the last six weeks' Corn Averages.

Prices.	Feb. 9.	Feb. 16.	Feb. 23.	Mar. 2.	Mar. 9.	Mar. 16.
38*s* 6*d*		...	...	...	...	...
38 6	...	...	...		...	...
38 6	...	...	...	...		
38 1	...	...	...	...	...	
37 11	...	...		...	...	...
37 9	...		...	...	...	...

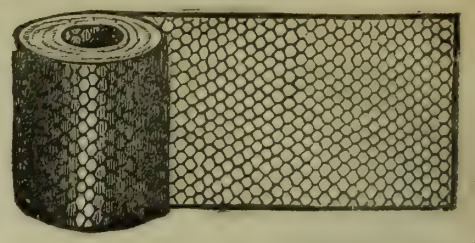
SEEDS.—March 18.

Canary, per qr.....70s to 74s		Coriander, per cwt. ...16s— 21s	
Caraway, per cwt. ...31 — 33		Mustard, white, p. bush. 7 — 9	
Hempseed, per qr. ...34 — 35		— brown, do. .....10 — 13	
Linseed, foreign, do. 37 — 45		Rape, per last .....28*l.*—34*l.*	
Clover, red, per cwt....24 — 46		Cakes, Linseed, p. 1000...8*l.*	5s
— — foreign, do.— —		— — foreign, p. ton 6*l.*	0s
— white, do. ... 36 — 48		— Rape, foreign, do. 4*l.*	5s
— — foreign, do.— —		Tares, per bush.... 3s 0d—5s 6d	

Liverpool, Tuesday, March 19.—The supplies of grain and Flour during the past week are on a moderate scale, but the demand has been quite limited, and scarcely any change has occurred in the price of any article. Wheat was without any change in price, and Barley, Beans, and Peas were in slow demand. Indian Corn was 6d. per qr. dearer, with more doing in it than last week.

Galvanised Wire Game Netting.—

7d. per yard, 2 feet wide.

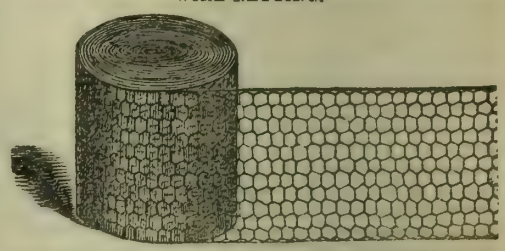


	Galvanised.	Japanned Iron.
2-inch mesh, light, 24-inch wide ...	7*d.* per yd.	5*d.* per yd.
2-inch .. strong ,, ...	9 ,,	6½ ,,
2-inch ,, extra strong ,, ...	12 ,,	9 ,,
1½-inch ,, light ,, ...	8 ,,	6 ,,
1½-inch ,, strong ,, ...	10 ,,	8 ,,
1½-inch ,, extra strong ,, ...	14 ,,	11 ,,

All the above can be made any width at proportionate prices. If the upper half is a coarse mesh, it will reduce the price one-fourth. Galvanised sparrow-proof netting for pheasantries, 3*d.* per square foot. Patterns forwarded post-free.

Manufactured by BARNARD and BISHOP, Market-place, Norwich, and delivered free of expense in London, Peterborough, Hull, or Newcastle.

Strong Premium Hare and Rabbit Proof Wire Netting.



Charles D. Young and Company (late W. and C. Young),

Manufacturers of Iron and Wire Work, &c., 22, Parliament-street, Westminster, London; Castle-Buildings, Derby-square, Liverpool; 128, High-street, Edinburgh; and 32, St. Enoch-square, Glasgow, beg respectfully to call the attention of Landed Proprietors and others to their strong Wire-Net Fence, for excluding Hares and Rabbits from Gardens, young Plantations, Nurseries, &c.

This Net was exhibited at the Show of the Highland and Agricultural Society of Scotland, held lately at Inverness, where its Efficiency, Great Strength, and Exceeding Cheapness attracted general attention, and had awarded from the Judges the Society's Silver Medals, with high commendations.

The immense damage done by Hares and Rabbits in Gardens and Young Plantations is often so great, that in the course of a year or two it will amount to more than the entire cost of protecting them with this Net. It is so durable, that when Plantations are sufficiently advanced to be independent of its protection, it can be removed to other exposed situations with the greatest facility, by any labourer. As a Fence against Hares and Rabbits, it is of itself quite sufficient, having only to be unrolled and attached, with small wire sent for that purpose, to wooden stakes driven into the ground, about every six or seven feet apart. It is, besides, peculiarly adapted for rendering Hedges, Paling, or other existing Fences, *completely impervious* to such vermin; and by being cut up into small pieces of three or more feet, as required, it forms a most efficient guard, at little expense, for individual Plants and Shrubs.

Prices.—18 ins. high, 9*d.*; 24 ins., 1*s.*; 30 ins., 1*s.* 3*d.*; and 36 ins., 1*s.* 6*d.* per lineal yard.

Or a web of 100 yards, 18 ins. wide, will cost ..	£3 15 0
Do. of 100 yards, 24 ins. wide	5 0 0
Do. of 100 yards, 30 ins. wide	6 5 0
Do. of 100 yards, 36 ins. wide	7 10 0

If more or less than a web is required, it would be charged at the same rate per yard.

This Netting is also admirably adapted for Pheasantries and Poultry-yards, and is charged at the same rate. As carriage has, in many instances, been an obstacle to parties at a distance requiring this Net, C. D. Y. and Co. have made arrangements by which they will undertake to deliver it at any of the principal ports of Scotland, England, and Ireland, for One Halfpenny per lineal yard.

C. D. Young and Co. cannot give a better idea of the great strength of their Premium Wire Netting than by stating that the weight of one yard of their 24-inch at 1*s.* is equal to 2½ yards of another article in the market, the same width, at 9*d.* per yard. Samples for inspection sent free of expense.

C. D. Young & Co. manufacture every description of IRON and WIRE WORK required for this and foreign countries.

Workmen sent to all parts of Scotland, England, and Ireland.

Iron and Wire Fencing, and Metallic Bedsteads.

Thomas Perry and Sons,

252, Oxford-street (near Hyde Park), And Highfields Foundry and Wrought-iron Works, Bilston, Staffordshire, Manufacturers of all descriptions of PLAIN AND ORNAMENTAL IRON AND WIRE FENCING, Park Entrance, Carriage and Field Gates, Wickets, &c.; Deer, Sheep, and other Hurdles; Hare and Rabbit-proof Wire Fencing; Iron Bedstead Makers to the Board of Ordnance; And Government Contractors.

The works of Messrs. Perry being situated in the heart of the first iron district, they are enabled to execute all orders with the greatest facility; and on the most moderate terms. Drawings made and estimates prepared, if required. The show rooms contain an immense variety of every description of Iron and Wire-work, and are the largest in London. An Illustrated Catalogue of Bedsteads, with dimensions and prices, sent on application, post-free.

Bee Hives.

George Neighbour and Son respectfully announce that they have prepared for this season an extensive supply of their various IMPROVED BEE HIVES, which are offered to all who are desirous of cultivating that pleasing and profitable branch of rural economy—the Honey Bee. The collection consists of "Nutt's Collateral Hives," "The Single Box Hive," "The Amateur Bar Hive," "The Improved Cottage Hive," &c., from either of which the honey may be taken at any time without injury to the Bees, and may be worked with safety, humanity, and profit, by the most timid and unaccustomed to Bee manipulation. A descriptive paper, with drawings and prices, will be forwarded on the receipt of two postage stamps.—George Neighbour and Son, 127, High Holborn, London.

"Nutt on Bees" (6th edition), now published.

TO GENTLEMEN, FLORISTS, AND OTHERS.

MESSRS. PROTHEROE AND MORRIS will sell by Auction, at the Mart, Bartholomew-lane, on WEDNESDAY, March 27th, and THURSDAY, 28th, at 12 o'clock, a first-rate collection of Carnations, Picotees, and Auriculas. Among the Carnations will be found Defiance, Strong's Duke of York, Solander, Flora's Garland, Cartwright's Rainbow, &c. The Picotees comprise Jenny Lind, Willmer's Princess Royal, Superlative, &c. Together with Standard and Dwarf Roses, Dahlias, Gooseberries, &c.—On view the morning of sale. Catalogues had at the Mart, and of the Auctioneers, American Nursery, Leytonstone, Essex.

CAMELLIAS, STANDARD ROSES, AND CRYPTOMERIA JAPONICA, WITH SOME STOVE AND GREENHOUSE PLANTS FROM A GENTLEMAN'S COLLECTION.

MR. J. C. STEVENS is directed to sell by Auction, at his Great Room, 38, King-street, Covent Garden, on WEDNESDAY, March 27, at 12 for 1 o'clock, a collection of 250 Camellias, from 1 to 6 feet, 300 Standard Roses of the finest sorts of Hybrid Perpetual and Bourbon, 200 fine seedling Cryptomeria Japonica from 1 to 3 feet, and a small collection of Stove and Greenhouse Plants.—May be viewed on the morning of Sale, and Catalogues had of Mr. J. C. STEVENS, 38, King-street, Covent Garden, London.

BUSHEY GROVE, NEAR WATFORD.
IMPORTANT SALE OF SHORT-HORNS.

MR. H. STRAFFORD has the honour to announce that he has received instructions from Stewart Marjoribanks, Esq., of Bushey-grove, near Watford, to sell by Auction, without reserve, on WEDNESDAY, May 1, 1850, his entire Herd of very superior and well bred SHORT-HORNED CATTLE, consisting of about 60 Bulls, Cows, and Heifers, descended from the celebrated stocks of the late Earl Spencer, Earl Carlisle, Lord Feversham, the Right Hon. W. G. Hayter, M.P., W. C. R. Stansfield, Esq., M.P., Harvey Combe, Esq., J. B. Stanhope, Esq., Messrs. Dudding, Jobson, Stokes, Sutton, &c.

Catalogues with the pedigrees are now printing, which will shortly be issued, and may be had on application to Mr. F. FERON, the Bailiff, at the Bushey Grove Farm, near Watford; and of Mr. STRAFFORD, 3, Camden Villas, Camden Town, London.

MR. HASLAM will sell by Auction, on WEDNESDAY, March 27, and THURSDAY, March 28, at the Auction Mart, a choice selection of Azalea indica, Roses, Carnations, Herbaceous Plants, Flowering Shrubs, Ranunculus, Flower-seeds, &c. Catalogues to be had at the Mart; and of the Auctioneer, South Essex Nurseries, Epping and Ongar, Essex.

AMERICAN PLANTS, EVERGREENS, STANDARD ROSES, RHUBARB, FRUIT TREES, SEED POTATOES, &c.

MR. D. A. RAMSAY has received instructions to sell by Auction, at the Brompton Auction Ground, Fulham-road, Brompton (1 mile from Hyde-park-corner), on THURSDAY, March 28, at 12 o'clock precisely (on account of the number of lots), without any reserve, 400 Rhododendrons, 2 to 4 feet; 100 scarlet do., with a quantity of Azalea and other American plants; 500 Aucuba, 2 to 4 feet, with 5000 Evergreens, Shrubs, and Ornamental Trees; 250 Irish Ivies from pots, 1000 Standard, Dwarf, and Pillar Roses, a quantity of Mulberry Trees, Dwarf Trained Fruit Trees, Grape Vines, 500 Victoria and Tobolsk Rhubarb, Ash-leaf Potato, and other Miscellaneous Stock.—May be viewed one day prior to the sale, and Catalogues had (free by post), of the Auctioneer, Brompton Nursery, Fulham-road, Brompton.

EXCELLENT NURSERY STOCK.

MR. T. BAXTER will sell by Auction, on THURSDAY, March 28, on the premises, Bromley, Kent, in consequence of the decease of the proprietor, the whole of the well rooted Plants, including Laurels, Hollies, Laurestinas, Arbor-Vitæs, Box, Yews, Cedars, Phillyreas, and other Shrubs; also a quantity of Forest and Fruit Trees.—May be viewed, and Catalogues had, at the "Castle," Deptford; and of the Auctioneer, Estate Agent, &c., Bromley, Kent.

TO NURSERYMEN AND OTHERS.—CHELMSFORD, ESSEX.

TO BE DISPOSED OF, with immediate possession, in consequence of the death of the Proprietor, an old established NURSERY and SEED BUSINESS, carried on by the late Proprietor and his Father for many years. In-coming Valuation very low.—For particulars apply to Mr. W. W. DUFFIELD, Solicitor, Chelmsford.

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TO BE LET, and entered upon immediately, about 7 acres of MARKET GARDEN GROUND, within 6 miles of London, and contiguous to Water and Rail. The Land is rich and well stocked—a large portion furnished with productive Fruit Trees, and held at the low rent of 45*l.* per annum, for a term of 13 years, with Cottage, Greenhouse, Pits, Utensils, &c., to be obtained for 150*l.*—For address, apply, post free, to Mr. BARRETT, 2, Bell-yard, Doctors'-commons.

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TO BE LET, a NEW HOUSE AND SHOP, with Plate Glass Front, large walled Gardens, &c., near Battersea-bridge and the new Park, surrounded by a rapidly improving neighbourhood. The house is arranged for letting the upper part (5 rooms), with private entrance. Well drained, and abundant spring water. Rent low.—Apply before 3 o'clock daily, to Mr. SMEEDON, 12, Sloane-square, Chelsea, London.

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TO BE LET, with immediate Possession, an old established Concern in the principal and most fashionable thoroughfare in Brighton, the Western Road; comprising the Seed, Fruit, and Florist Business, with excellent Vinery, Show-house, and Stove. In-coming moderate.—Apply to Messrs. ROGERS and AYLING, Nurserymen, Withdean, near Brighton.

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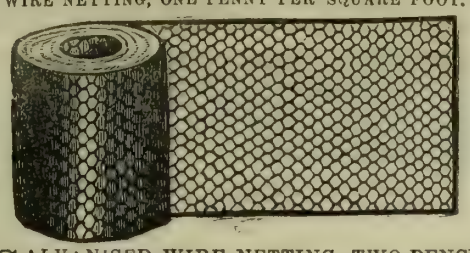
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CHEMICAL INSTRUCTION AND ANALYSIS.—Mr. CHARLES L. BLOXAM, Assistant to the Royal College of Chemistry, London, CONDUCTS AGRICULTURAL, Medical, and General ANALYSES, and gives private evening instruction in analytical and general chemistry, at his laboratory, 23, Duke-street, Grosvenor-square.

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12	inches wide	3*d.*	per yard	30	inches wide	7½*d.*	per yard
18	"	4½*d.*	"	36	"	9*d.*	"
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CRISP'S EASTER EXCURSION TO PARIS will leave London on WEDNESDAY EVENING, the 27th inst., arriving in Paris viâ Southampton, Hævre, and Rouen, the next afternoon, with the option of remaining at either of those delightful places for a day or more. FIRST CLASS to PARIS and BACK, including Passports and bed and breakfast at first-rate hotels for a week, 5*l.*; SECOND CLASS, ditto, 4*l.*—Tickets and full particulars at CRISP'S Excursion Office, 51, Bedford-street, Strand; and, for the convenience of city gentlemen, at HAMMOND'S Town and Country Advertisement Office, 27, Lombard-street, London.

LADIES AND GENTLEMEN'S DRESSING CASES. MECHI, 4, Leadenhall-street, London, invites an inspection of his STOCK, which possesses peculiar advantages both in quality and price. There is a general complaint that the internal fittings of dressing cases are often very inferior. Those who purchase at MECHI'S will be sure of having everything of the best, because he has long been celebrated for the superiority of his cutlery, and has bestowed equal pains in bringing to perfection his tooth, nail, hair, and shaving brushes, and other necessaries. In fact he considers it essential that each article in a dressing-case should be perfect in itself, so as to render the whole useful and complete. Those who desire to have particulars may obtain a catalogue gratis. The largest assortment in London of papier-mache manufactures, and the usual stock of articles suited for presents. MECHI'S peculiar steel razors 7*s.* and 10*s.* per pair. His magic strops 2*s.* 6*d.* to 6*s.* 6*d.*; paste 6*d.* and 1*s.* per cake. Cutlery ground and repaired daily on the premises.

REPEAL OF THE ADVERTISEMENT DUTY.—The London Committee respectfully request their friends to continue their efforts in this matter. The question will certainly be brought before the House of Commons at the earliest opportunity during the present session, by Wm. Ewart, Esq., M.P.

It is of importance that petitions for the abolition of the tax be forwarded to local members for presentation; at the same time a request should be made that its prayer may be supported by their votes. Petitions ready for signature may be obtained on application to this office.

By order. THOS. M'ENTEER, Hon. Sec.
16, Salisbury-street, Strand.

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PASSENGERS to the COLONIES generally may obtain their OUTFITS from S. W. SILVER and CO., CLOTHIERS, &c., 66 and 67, CORNHILL, at wholesale prices. SILVER and CO. make nearly the whole of the articles comprised in an outfit, to secure durability, so that the Cabin Folding Furniture may become permanent Household Furniture on arrival in the colony.

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The EMIGRANT Fitting-out Branch is at No. 4, Bishopsgate-street, opposite the London Tavern, where a comfortable fit-out for male or female, including bedding, may be obtained for FOUR POUNDS.

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CAUTION.—Be sure to ask for "NORTON'S PILLS," and do not be persuaded to purchase an imitation.

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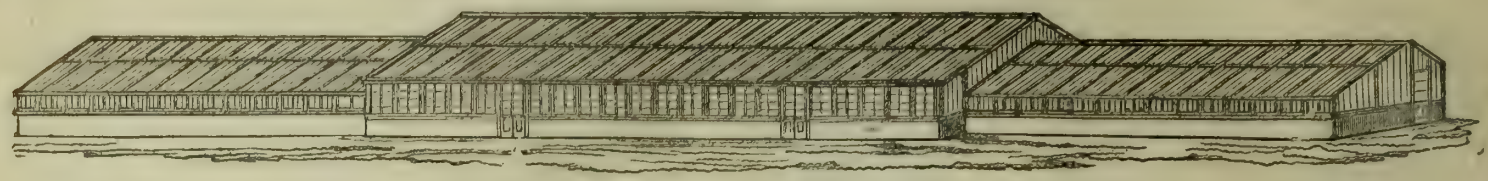
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THE GARDENERS' CHRONICLE
AND
AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 13—1850.] SATURDAY, MARCH 30. [PRICE 6*d.*

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ROYAL BOTANIC SOCIETY, Regent's Park.—GENERAL EXHIBITIONS, WEDNESDAYS, MAY 8th, JUNE 12th, and JULY 3d.

AMERICAN PLANTS.—SATURDAYS, May 25 and June 1. Tickets to be obtained at the Gardens, by orders from Fellows of the Society, price, on or before Saturday, April 27, 4*s.* each; after that day, 5*s.*; or on the days of Exhibition, 7*s.* 6*d.* each; and such Tickets will admit to the Collection of American Plants, from the 3d of June to the 8th, both included.

N. B. Fruit will be exhibited on June 12 and July 3.

CHELTENHAM GRAND HORTICULTURAL SHOW.—A Premium for the best SCHEDULE of PRIZES for the above Exhibition, to be held on or about the 20th June.

The Cheltenham Town Committee, determined that the Exhibition shall be as effective as possible, will give a Premium of Two Guineas for the best Schedule, and One Guinea for the next best; the Sum devoted for Prizes being Two Hundred Pounds. Schedules to be marked with a motto, and the owner's name in an envelope, bearing the same motto. None but the successful ones to be opened; the Committee being at liberty to adopt any portion of the two successful Schedules, which must be forwarded to Mr. FAGART, Honorary Secretary, Cheltenham, on or before the 8th of April.—Cheltenham, March 30.

WARWICKSHIRE HORTICULTURAL EXHIBITION.—ROYAL LEAMINGTON SPA.

The First GRAND HORTICULTURAL EXHIBITION, open to all England, is fixed to take place on WEDNESDAY, June 12, 1850, at the Jephson Gardens, Leamington, under the especial patronage of many of the resident Nobility and Gentry of the county of Warwick, when prizes will be awarded on the most liberal scale for Stove and Greenhouse Plants, Geraniums, Roses, Fuchsias, Pansies, Pines, Grapes, and various miscellaneous productions, a Schedule of which may be had on application to Mr. OWEN WHITE, Honorary Secretary, Jephson Gardens and Parade, Leamington, and is advertised in the "Horticultural Magazine" for April.

The Second Grand Horticultural Exhibition is fixed for Wednesday, August 28, 1850.—Jephson Gardens, March 30.

HALSTEAD AND NORTH ESSEX FLORAL AND HORTICULTURAL SOCIETY.

The next Meeting will be held on TUESDAY, July 2d, in the Old Baronial Hall of Hedingham Castle, near Halstead, Essex, when Three Extra Prizes (Open to all England), will be awarded to the best Seedling of any kind of flower, viz.:

First Prize, Two Guineas; Second Prize, One Guinea; Third Prize, Half-a-Guinea. G. P. ARDEN, Hon. Sec.

ZOOLOGICAL GARDENS, REGENT'S PARK.—The Admission will be SIXPENCE for each person on EASTER MONDAY and TUESDAY.

ART-UNION OF LONDON.—The last day of March being Sunday, the SUBSCRIPTION LIST WILL REMAIN OPEN till 6 o'clock on Monday evening next.

GEORGE GODWIN, LEWIS POCOCK, } Honorary Secretaries.

444, West Strand, London, March 30.

UNEQUALLED NEW SEEDLING ANTIRRHINUMS.

ROBERT WHIBLEY begs to refer the readers of the *Gardeners' Chronicle* to his Advertisement in this Paper of the 9th of February last. To the Trade, terms as usual when the set are taken.—Nursery, Kennington, London.

OAKS.—Three Thousand Evergreen Oaks, 2-year Plants, either fit for Potting or Planting out, or for EVERGREEN HEDGES, for Sale at 30*s.* per 1000.—Direct, prepaid, G. RUSSELL, 20, Sussex-road, Brixton, Surrey.

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TO SEEDSMEN, GARDENERS, AND FLORISTS.

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N. GAINES begs to inform the admirers of the Fancy GERANIUMS, he intends sending out on Monday next the following Seedlings: Gaines's Parodi, do. Lady Louisa Cornwallis, do. Elegans, do. Priam, do. Nina, do. Queen Superb, do. Signora Carolinii, do. Oderata variegata; also he has good strong plants of his Hero of Surrey and Cerise Unique. On the 1st of May will be ready for delivery, his superb new Seedling DAHLIAS Lady Auckland, Empress of Yellow, Lord Hardinge, Fancy do., Princess Louisa, Hero, Desdemona, Rotundiflora and Atalanta. Opinion of this Paper (1849), see August, No. 34; September, No. 38. Gardeners and Land Stewards' Journal, August, No. 32; September, No. 35.—A Descriptive Catalogue of the above, including Calceolarias, Dahlias, Pelargoniums, Fuchsias, Cinerarias, Chrysanthemums, Azaleas, Verbenas, Rhododeadrons, &c., may be had by applying at the Nursery, Surrey-lane, Battersea, March 30.

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JAMES TURRELL begs to offer to the Public his new and choice Seedling PETUNIAS, which he can recommend with the greatest confidence, feeling assured they will give to all who purchase them great satisfaction. They were selected from a number of fine Seedlings bloomed in 1849; they are perfectly distinct, and of the most refined colours, and in shape unequalled.

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LAVENDULA PENCILLATA.—A fine, large, bold flower, veined with dark purple; colour lilac. See *Gardeners' Chronicle* of 5th May, 1849:—"*H. J. H.* Lavendula Pencillata, large pale lilac, nicely veined all over the flower with deep violet; a pretty variety, but rather thin." Price 5*s.* each.

EYEBRIGHT.—This Petunia is of extra size, and novel in appearance; ground colour pale pink, shading to white, with a very fine dark eye. See *Gardeners' Chronicle* of 22d Sept. 1849:—"*H. J. H.* Pale blush with dark eye, slightly feathered with violet veins; good in shape and texture." Price 5*s.* each.

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Providence Nursery, Ramsgate, March 30.

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From the *Gardeners' Chronicle*—"STRAWBERRIES: *J. K.* Your Seedling Strawberry, 'Goliah,' judging from its size and appearance, is worthy of cultivation."

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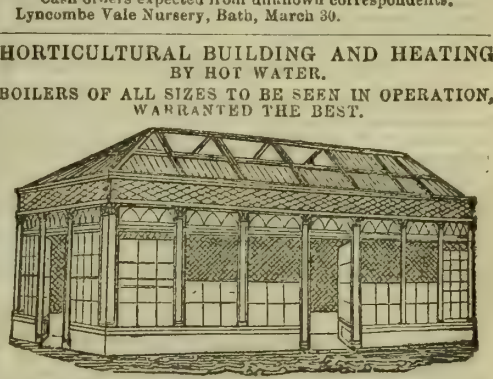
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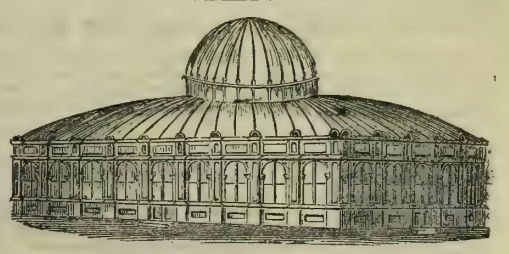
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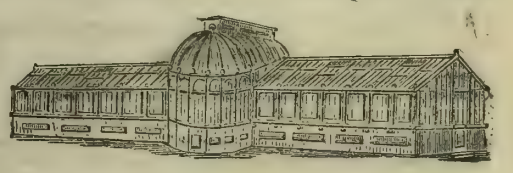


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EXTRACT FROM THE BERKSHIRE CHRONICLE, DECEMBER 4th.

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Hardy Bronze-top Swede	4	10	0
Fettercairne Swede, fine hardy	4	10	0
Sutton's Purple-top Hybrid Yellow Turnip. (This is the best substitute for Swedes; it attains to a large size, even when late sown, and keeps well till spring)	Per lb. 0	1	0
Sutton's Green-topped Hybrid, similar to the preceding, except in colour	0	1	0
Dale's Hybrid	0	0	10
Yellow Aberdeen, Yellow Bullock, and Yellow Scotch	0	0	9
Early Six Weeks, may be sown earlier or later than any other	0	0	10
Pomeranian, fine large white	0	0	10
White Globe, fine stock	0	0	9
Green ditto, ditto	0	0	9
Prussian White, large early	0	1	0
Hertfordshire White	0	0	9
*Lincolnshire Red, a superior Turnip, (THE STOCK PRESENTED TO J. S. and SONS BY P. PUSEY, Esq., M.P.)	0	1	0

	Price per lb.—£	s.	d.
Green Round, fine stock	0	0	8
Norfolk White	0	0	8
Tankard, red, green, and white	0	0	9
Yellow Tankard, or Tankard Swede	0	1	0

* NEW SEED OF THE LINCOLNSHIRE RED WILL BE READY EARLY IN JULY.

MISCELLANEOUS.

Cattle Parsnip, from Guernsey	0	1	0
Cow Cabbage (selected)	0	2	6
Ditto (Thousand-headed)	*		
Kohl Rabi, purple and green	0	2	6
Furze or Gorse (Ulex europæus)	0	1	0
Broom	0	0	9
Rape or Cole, Dwarf, Broad	0	0	3½
White Mustard, first quality	0	0	4
Ditto, second quality	0	0	3
Buckwheat Per bushel.	0	5	0
Vetches or Tares	*		
St. John's Day Rye	*		
Linseed or Flax, imported	*		
Ditto, English	*		

N.B. *A superior Stock of Broccoli and all other kinds of Garden Seeds of Home Growth, priced Catalogues of which may be had on application.*

Messrs. SUTTON and SONS having for many years paid especial attention to the examination of Natural Pastures, and the collecting of various kinds of Grasses which grow naturally in the various soils of Oxfordshire, Berkshire, Hants, Bucks, Wilts, AND MANY OTHER PARTS OF GREAT BRITAIN, for the purpose of introducing an improved system of laying down land to Permanent Pasture, are thereby enabled to supply the sorts and quantities of Seeds, varied to suit the soil for which they are intended; and the cost this season will be from **24s.** to **28s.** per acre, ACCORDING TO SORTS AND QUANTITIES THE SOIL REQUIRES.

NATURAL GRASSES, PERENNIAL CLOVERS, &c.

The following sorts MAY BE HAD SEPARATE at the low prices annexed to each. All the best and most suitable of them are contained in Messrs. SUTTON'S Mixtures for the several purposes described below.

	Price per lb.—s.	d.
Achillea millefolium (Yarrow)	3	0
Agrostis stolonifera (Creeping Bent Grass)	1	3
Anthoxanthum odoratum (Sweet Vernal)	1	9
Alopecurus pratensis (Meadow Foxtail)	1	3
Avena flavescens (yellow Oat Grass)	2	6
Aira cæspitosa (Tufted Hair Grass)	1	3
Cynosurus cristatus (Crested Dogstail)	1	3
Dactylis glomerata (round-headed Cocksfoot)	0	9
Ditto ditto ditto per bushel	6	0
Festuca duriuscula (Hard Fescue)	ditto 10	0
Ditto ditto per lb.	1	0
Festuca loliacea (Darnel Fescue)	1	3
Festuca ovina (Sheep's Fescue)	1	3
Festuca rubra (Red Fescue)	1	3
Festuca pratensis (Meadow Fescue) per bushel	9	0
Ditto ditto ditto per lb.	0	10
Festuca elatior (Giant Fescue)	1	0

	Price per lb.—s.	d.
Festuca tenuifolia (fine-leaved Fescue)	1	3
Festuca heterophylla, various leaved	1	3
Glyceria fluitans (Floating Sweet Grass)	1	6
Glyceria aquatica (Water Sweet Grass)	2	0
Holcus avenaceus (tall Oat-like Grass) per bushel	5	0
Ditto ditto ditto per lb.	0	9
Holcus lanatus (Woolly Grass)	0	9
Ditto ditto ditto per bushel	5	0
Lolium perenne (Perennial Rye-grass) ditto	6	6
Ditto ditto ditto per lb.	0	5
Lolium perenne sempervirens	0	6
Lolium perenne Paceyanum	0	6
Lolium perenne Stickneyanum	0	8
Lolium perenne tenue	0	9
Lolium italicum (Italian Rye-grass)	0	9
Lotus corniculatus (Birdsfoot Trefoil)	0	9

	Price per lb.—s.	d.
Medicago lupulina (Black Medick Grass, or Yellow Trefoil)	*	
Milium effusum (Wood Millet Grass)	2	6
Phleum pratense (Timothy)	0	9
Poa nervosa (Nerved Meadow Grass)	2	0
Poa nemoralis (Wood Meadow Grass)	1	9
Poa pratensis (Smooth Meadow Grass	1	6
Poa trivialis (Rough Meadow Grass)	1	3
Poa angustifolius (narrow leaved)	1	9
Poa fertilis (Fertile Meadow Grass)	1	9
Poa sempervirens (Evergreen)	2	0
Trifolium minus (Red Suckling)	*	
Trifolium pratense perenne (Perennial Red Clover)	*	
Trifolium repens (White Clover)	*	
Trifolium hybridum (Alsike Clover)	*	

And many others.

As some Agriculturists feel a pleasure in making their own selection of Grass Seeds, the above List is presented with the lowest Market Prices; but the greatest economy and certainty of success will be obtained by procuring Messrs. SUTTON'S Mixture as under. Any other particulars required by post will be promptly given.

Mixtures for laying down to Permanent Meadow or Pasture.

The sorts contained in these Mixtures are grown in different localities and gathered separately by the hand, expressly for this purpose, by which means all noxious weeds are excluded; and each sort being kept separate, they are subsequently mixed in such sorts and proportions as are most natural to the soil to be laid down. The annually increasing demand for Messrs. SUTTON'S Seeds, has enabled them on a large scale to grow and collect the Seeds at much less expense than formerly; so that a mixture of the most suitable kinds can be supplied for **24s.** to **28s.** per acre, according to the sorts which the soil may require.

Mixtures for Reclaimed Marshes and Heath Lands.

Many acres of Land of this description have been successfully laid down to Permanent Pasture by Messrs. SUTTON with Seeds which they have found invariably to thrive on such soil; and THE COST FOR THIS PURPOSE WILL BE BUT **22s. 6d.** per acre.

Mixtures for Laying Down Gravelly or Chalky Uplands, and Sheep Downs.

For this purpose Grass Seeds are annually collected from dry and hilly districts, where they are found growing spontaneously; and, after many years' experience, Messrs. SUTTON can confidently assure their friends that a GOOD and PERMANENT Sward may be obtained on any upland, however dry or poor the soil. Cost of Seed, 28s. per acre.

Mixtures for forming Irrigated or Catch Meadows.

In this department also Messrs. SUTTON have been very successful, many customers having expressed their great gratification at the effect of these Seeds; one of these, an eminent Agriculturist, and MEMBER OF THE COUNCIL OF THE ROYAL AGRICULTURAL SOCIETY, has contributed A VALUABLE ESSAY ON THIS SUBJECT, which has been recently published by that Society in their Journal (Vol. X., Part II., page 462). COST OF SEED NOW REDUCED TO **26s.** PER ACRE.

Mixtures to lay down New Park Lawns.

For this purpose all coarse growing kinds are carefully excluded, and the Sward will at all seasons present a luxuriant verdure so desirable in Parks contiguous to the Mansion. The cost of Seeds for this purpose will vary according to the nature of the soil, and other circumstances.

Renovating Mixture for Improving old Pastures.

Many old Upland Pastures, Parks, and Meadows, are nearly destitute of Clovers, and the finer and more nutritious sorts of Grasses, in which case Messrs. SUTTON are in the practice of furnishing such sorts only as are wanting; if these Seeds are sown EARLY IN THE SEASON, the improvement in the Pasture will be very considerable, and at a small expense. Quantity of Seed required, 6 to 8 lbs. per acre. **Price 1s. per lb.**

Fine Grass Lawns in Flower Gardens, &c.

The great expense of cutting and carting turves from a distance may be avoided, and a SUPERIOR turf produced in a few months, by sowing Messrs. SUTTON'S LAWN GRASS SEEDS, which consist solely of the finest and shortest growing kinds, perfectly free from moss and other weeds. **Price 3s. 6d. per gallon, or 1s. per lb.**

SEEDS FOR EXPORTATION TO INDIA AND THE COLONIES,

Properly packed to arrive in good condition, price 1*l.* 10*s.*, 1*l.*, and 15*s.*, for choice and useful Collections.

EXPERIENCED FARM BAILIFFS AND GARDENERS RECOMMENDED.

*** *Sacks and Bays are charged at cost price only, and the full amount allowed if they are returned. N.B. Remittances with the orders are not required where satisfactory references are given.*

READING SEED WAREHOUSE, READING, BERKS.

CABBAGE PLANTS.—Genuine Early Battersea, Early York, Early Imperial, and Cattle Drumheads, at the Surrey Gardens, by THOMAS WELLAND, Wheeler-street, Godalming, Surrey. Packed and delivered at the Godalming Station, 3*s.* 6*d.* per thousand.

Money orders made payable at the Godalming Post-office.

TURNIP SEEDS.—The Subscribers have for Sale 200 Bushels of fine large GREEN-TOP BULLOCK YELLOW TURNIP SEEDS of crop 1849, and warranted genuine.—J. MORRISON and SON, Seedsmen, Banff, March 30.

SEEDS IN COLLECTIONS.

OF THE BEST WHICH CAN BE PROCURED.

BASS AND BROWN beg to offer the following CHOICE VEGETABLE SEEDS.

Complete Collections of the best and newest sorts, in proportionate quantities of each, suited for large or small gardens, at per collection, 1*l.*, 2*l.*, and 3*l.* A Collection for a small garden, of good sorts, at 10*s.* 6*d.* A List of the Collections furnished if required.

SELECT FLOWER SEEDS,

Free by post, with full directions for sowing, heights, colours, &c.	*s.*	*d.*
100 varieties best and newest Annuals	15	0
50 varieties for 8*s.* 6*d.*, 30 for 5*s.* 6*d.*, 20 for	4	0
20 varieties best dwarf kinds, in larger packets, suited for filling beds on lawns, 7*s.* 6*d.*, or 12 do. for ...	5	0
20 varieties best Greenhouse Annuals, 7*s.* 6*d.*, 12 for ...	5	0
20 varieties choice Greenhouse Perennials, 10*s.* 6*d.*, 12 for	7	6
20 vars. choice hardy Biennials and Perennials, 7*s.*6*d.*,12 for	5	0

IMPORTED GERMAN SEEDS.

20 varieties splendid double Stocks, 3*s.* 6*d*; 12 ditto ...	2	6
12 vars. splendid China Asters	2	6
12 vars. fine globular Asters	2	6
12 vars. Dwarf Rocket Larkspurs	2	0
9 vars. Tall ditto	1	6

Remittances with orders are requested from unknown correspondents. Goods carriage free to London, and with all orders of 2*l.* and upwards, articles presented extra. Post-office orders payable to BASS and BROWN or to STEPHEN BROWN.

Our Descriptive Priced Seed and Plant List will be forwarded, prepaid, on application, by forwarding four postage stamps, as copies having the Newspaper stamp are now all distributed.

SEED AND HORTICULTURAL ESTABLISHMENT, SUDBURY, SUFFOLK.

NEW AND STRIKING VERBENA.

ARTHUR MACKIE begs to offer the undermentioned to the attention of Florists, with the fullest conviction that it will give entire satisfaction.

WOODSTOCK'S MAGNIFICENT.—A. M. having purchased the entire Stock of this unrivalled Verbena, offers it to the Public with the utmost confidence, being fully persuaded that it will surpass everything yet out in its class. The individual flowers cover a sixpence, and sometimes a shilling. It is of a very free habit and growth, and well suited for grouping. See *Gardeners' Chronicle*, Sept. 15, 1849.—"*W. K. B.* Colour bright rose, fading to pink; a remarkably fine variety, with much the largest flowers we have yet seen."

Fine strong plants the 1st of April, at 5*s.* each, free by post. Where three are ordered four will be sent.

MACKIE'S Descriptive Catalogue of Flower and Vegetable Seeds is now ready, and will be forwarded on receipt of two stamps for postage.—Norwich Nursery, Norwich, March 30.

BROMHAM-HALL GREEN-FLESH MELON IS THE FINEST FLAVOURED IN THE WORLD.

EDWARD TILEY having become possessed of the whole stock of Seed of that very superior MELON called "BROMHAM-HALL GREEN-FLESH MELON," he is now sending out good sound Seeds at 2*s.* 6*d.* per packet of 6 seeds; larger do. of 15 seeds, 5*s.* per packet. For further particulars of the above, see Advertisement in this Paper, February 9th. Also the following fine varieties can be highly recommended:

	s.	*d.*	
Queen Melon	1	6	per packet.
Bowood Green-flesh	1	0	,,
Beechwood do.	1	0	,,
Windsor Prize do.	1	0	,,
Emperor	1	0	,,
Fleming's Trentham Hybrid	1	0	,,
Duncan's Green-flesh do. improved ..	1	0	,,
Hampton-court Green-flesh	1	0	,,
Egyptian do. do. improved ..	1	0	,,

FIRST PRIZE CUCUMBERS.

Victory of Bath	2	0	,,
Gordon's White Spine	1	6	,,
Lord Kenyon's Favourite	2	6	,,

A packet of each of the three varieties, 5*s.*; if preferred, also a packet of Bromham-hall Melon will be included with the three Cucumbers for 7*s.*

Sold by EDWARD TILEY, Nurseryman, Seedsman, and Florist, 16, Pulteney-bridge, Bath. A remittance must accompany the order, either in cash or penny postage stamps.

MEADOW AND PASTURE GRASS SEEDS.

GEORGE GIBBS AND Co. beg to notice their mixtures for laying Land down to Permanent Grass are now ready. The general satisfaction they have given for many years past, and the present low prices of 32*s.* per acre, allowing 2 bushels and 12 lbs. to each acre, they trust will ensure a continuance of orders. Mixed Seeds for improving old Grass Land, 1*s.* 3*d.* per lb.; fine sorts for forming Lawns, 1*s.* 4*d.* per lb. Their Priced List for the season of Turnips, Mangold Wurzel, and other Farm Seeds, will be forwarded on application to 26, Down-street, Piccadilly, London.

RICHARD SMITH begs to call attention to the following New and desirable Plants, which will be sent out by him early in April.

PETUNIA ECLIPSE.—This is a very beautiful variety, which will give general satisfaction. The flower is large and of good texture; ground colour pale rosy flesh, very fully marked with rich crimson maroon veins, forming in their density and peculiar shape a perfect star in the centre of the flower; it is a free bloomer, of good habit, and unquestionably the most beautiful light variety hitherto sent out.

CACTUS (EPIPHYLLUM) MAXIMUS.—This is a hybrid, of enormous size, between Speciosissimus and Ackermanni major, of a bright deep red colour, slightly tinged with purple in the centre; it is very showy, an opinion of which may be formed when it is mentioned that the flower when expanded measures 10 inches across. See Notice to Correspondent "S.," *Gardeners' Chronicle* of July 5th, page 460.

Price of Petunia and Cactus, 5*s.* each. Where three or more are ordered of either or both they will be charged 3*s.* 6*d.* each.

Nurseries, Worcester, March 30.

NEW GLOBE FUCHSIA, "KIMBERLEY'S INACCESSIBLE."—This splendid variety was raised from Williamsii, and is far superior, the blooms being twice the size of that variety; sepals very broad; tube rather short, of a bright glossy crimson; corolla rich deep velvety purple; habit very fine, and a free bloomer; foliage rich glossy green; will prove one of the greatest ornaments ever offered. Strong plants 10*s.* 6*d.* each, the 15th of April, may be obtained of C. KIMBERLEY, Florist, &c., Pinley, near Coventry, and of the following gentlemen, who have kindly ordered it: Messrs. WOOD and SON, Maresfield, Sussex; Mr. IVERY, Peckham, near London; Mr. GAINES, Surrey-lane, Battersea; and Messrs. WIDNALL and DAVIS, Grantchester, Cambridge.

MEETINGS AT WORTON COTTAGE, ISLEWORTH, for the Display and Examination of SEEDLING FLORISTS' FLOWERS, and other objects of Horticultural Interest.

The Editor of the FLORIST AND GARDEN MISCELLANY particularly requests that all Seedlings for the opinions of the Censors of that work may be posted, as far as practicable, so as to reach Mr. BECK, Isleworth, Middlesex, on the Wednesday morning of each week. Parties desirous of attending personally with their productions, by taking the 4 o'clock train for Isleworth from the Waterloo Station, will be put down within a few minutes' walk of Worton Cottage.

The Meetings will be held on Wednesday, April 3d, and each succeeding Wednesday, at 5 o'clock, P.M.

An Artist will attend these Meetings, to take coloured memoranda of anything particularly striking.

UNDER THE DISTINGUISHED PATRONAGE OF SEVERAL INFLUENTIAL MEMBERS OF THE ROYAL AGRICULTURAL SOCIETY.

RENDLE'S DESCRIPTIVE CATALOGUE OF AGRICULTURAL SEEDS IS JUST PUBLISHED, and can be had on application, GRATIS (for one penny stamp).

It contains a descriptive list of all the best Field TURNIPS, *with the lowest market prices, also a full descriptive price current of all the best sorts of* CARROTS, MANGOLD WURZEL, CLOVER, *&c., as well as all the best varieties of Permanent Pasture Grasses.*

The following is an extract from the Catalogue.

Rendle's Imperial Purple-top Swede Turnip ...	per lb. 0*s.*	8*d.*
Ditto ditto	per qt. 1	0
Skirving's Liverpool Swede ditto, per lb., 8*d.*	per qt. 1	0
Laing's Improved ditto ditto, per lb., 8*d.*	per qt. 1	0
Purple-top Scotch ditto ditto, per lb., 8*d.*	per qt. 1	0
White and Green Globe per lb., 6*d.*	per qt. 0	10
White Belgian Carrot	per lb. 0	10
Yellow Globe Mangold Wurzel	per lb. 0	8
True Italian Rye-grass	per bush. 7	0
Best English Red and White Clover	per lb., 5*d.* to 0	7
Large Cattle Parsnip	per lb., 1*s.* to 1	6

With every other kind of Agricultural Seeds at the lowest market prices. (See Catalogue.)

PERMANENT PASTURE GRASSES, sold in mixtures to suit various soils, at 30*s.* per acre, allowing two bushels of light seed and 12 lbs. of heavy seed to each acre.

All orders above 2l. will be delivered free of carriage to any station on the Great Western, Bristol and Gloucester, Bristol and Exeter, or South Devon Railways; or to any town in Devon and Cornwall; or to Cork, Dublin, or Liverpool, by Steamers.

Railway and Steam communication to all parts of Great Britain and Ireland.

For Catalogues and further particulars apply to WILLIAM E. RENDLE & CO., Union-road, Plymouth. ESTABLISHED 1786.

FLOWER SEEDS, POST FREE.

G. BAKER begs to recommend to the Nobility, Gentry, and his friends in general, the following very choice and superior assortment of FLOWER SEEDS, which are now ready to be sent out in sealed packages, at the prices affixed post free.

				s.	*d.*
100 packets choicest Annuals, including the newest and most approved varieties				10	0
50 Ditto	ditto	ditto ...	...	5	0
25 Ditto	ditto	ditto ...	...	2	6
12 Ditto	ditto	ditto ...	...	1	6
20 Ditto, choicest dwarf kinds, for filling beds ...			...	5	0
20 Ditto, half hardy and tender Annuals			...	5	0
12 Ditto, distinct varieties of Hollyhock			...	2	6
12 Ditto	ditto	Balsams	...	2	6
12 Ditto	ditto	Larkspur	...	2	6
12 Ditto	ditto	German Aster ...	...	2	6
12 Ditto	ditto	German Stocks ...	...	2	0
12 Ditto	ditto	German Larkspur ...		2	6
8 Ditto	ditto	Zinnias	...	2	0
20 Ditto	ditto	Perennials, including splendid mixed varieties of Verbena, Petunia, Hertsease, Pentstemon, Calceolaria, &c.		5	0

Remittances expected from unknown correspondents (either by post-office order or postage stamps).

GEORGE BAKER, Seedsman, Wells, Somerset.

SUPERB NEW VERBENA, ADAMS'S "MISS PAYNE."

The above beautiful variety was raised by Mr. W. Adams, Gardener to W. Hogg, Esq., Biggleswade, and will be found the best White Verbena of the season. To flowers of an extraordinary size it unites a delicious fragrance, which adds much to its attractions.

Extract from the *Gardeners' Chronicle*, Oct. 13, 1849. "W. A. A. Colour pale blush, fading to white; flowers very large, but narrow in the lobes; a good variety, on account of the size of its flowers, both individually and collectively."

Extract from a letter from Mr. J. Bundy, Gardener to — Trevor, Esq., Bromham Hall, Beds. "I beg to say I saw your seedling Verbena, and must say it was remarkably fine, much more so than any I had ever seen before, therefore you are at liberty to make what use of my name you may think proper."

Opinions, equally favourable, have also been expressed by Mr. Pullen, Gardener to the Hon. and Rev. H. C. Cust, Cockayne, Hatley, near Potton, Beds.; Mr. Pope, Gardener to Mrs. Harvey, Ickwell Green, Beds.; and many other gardeners, to whom reference is kindly permitted. Good Plants, post free, 5*s.* each; when two are ordered three will be sent.

London Agents: Messrs. HURST and M'MULLEN, 6, Leadenhall-street.

Address, SUSAN WOOD, Nurseries, Huntingdon.

P.S. Postage stamps received as payment.

BEAUTIFUL FLOWERS.—A few Packets of superior DOUBLE BALSAMS at 1*s.* per packet; also some fine DOUBLE SWEET WILLIAMS at 6*d.*, post-free. 100 packets of Flower Seeds, for 5*s.*; 70 for 4*s.*; 32 for 2*s.* 6*d.*; or 12 for 14 postage stamps, post free, warranted. A List, with directions for sowing, may be had, inclosing a sample packet for 2 stamps.

Address, JOSEPH GOLDING, Seed Merchant, Hastings.

TO THE LOVERS OF FLOWERS.

COLES'S SOLUBLE ALKALINE POWDER.—A highly stimulating and nourishing COMPOUND, for promoting the healthy growth and beauty of all kinds of PLANTS and FLOWERS, whether of hardy or tender nature, as well as a most efficacious application to Pines, Melons, Cucumbers, Strawberries, and every description of FRUIT and VEGETABLE. Sold, in Bottles at 1*s.* 6*d.*, 2*s.*, 2*s.* 6*d.*, 3*s.* 6*d.*, and 5*s.* each, by HENRY COLES, Seedsman, &c., 32, Cranbourne-street, Leicester-square, and to be had of all respectable Seedsmen and Chemists throughout the Kingdom.

Also supplied *wholesale* only, upon application to the MANAGER, at the MANUFACTORY, Middle Yard, Great Queen-street, Lincoln's-inn-fields. TERMS.—Cash on delivery. Post-office orders to be made payable at Charing-cross.

ROSEA STRIATA.—The Subscriber begs to inform the admirers of PELARGONIUMS that he has a few strong Plants of the above left at 10*s.* 6*d.* each, with an allowance to the Trade—with a few hundred of first-rate sorts to spare, at 5*l.* per 100 (strong plants) of Beck, Foster, Hoyle, and other raisers.—EDWARD PARKINS, Leamington, March 30.

SCARLET GERANIUMS, &c.

MARY CONWAY begs to offer good plants of the following:

SCARLET GERANIUM, "PRINCESS ROYAL," (Conway's), a splendid bright scarlet variety, of dwarf habit, and a very free and early bloomer, with a handsome horse-shoe leaf. A variety that lovers of scarlet Geraniums ought to possess. Plants 7*s.* 6*d.* each, and usual discount to the trade when three are taken.

QUEEN OF SUMMER (Henderson's), 5*s.* each.

The following 15 scarlets for 14*s.*: Eclipse, Goliah, Ivery's Scarlet, Ibrahim Pacha, Gem of Scarlets, Mrs. Maylor, Phenomenon, Punch, Royalist, Shrubland Superb, Symmetry, Tam o' Shanter, Tom Thumb's Master, Tom Thumb Improved, and Brompton Hero. With the following seven pink varieties for 21*s.*: viz., Cherry Cheek, Judy, Jenny Lind, Lucia rosea, Pet, Pink Nosegay, and Rosy Morn.

The following VERBENAS 12*s.* per dozen, or two dozen for 20*s.*: viz., Adonis, rose, fine; Apollon, clear dark purple; Bauces, dark violet, fine; Belle de Cointe; Criterion; Chauveerii, crimson scarlet, splendid; Eclipse, delicate pink, striped with rose; Favourite, dark purple, white eye; Gracieuse, blush lilac; Heroine, lilac, dark rose centre; Lord of the Isles, deep rose, fine, large truss; General Lamoriciere; Malvina, carmine; Morphee, blue, with white centre; Madame Gabrielle de Vandeva, rose centre; Madame Rattier, light pink, bright eye; Princess Alice, white, deep cherry centre; Reine Bacchanal, vivid scarlet; Royal Purple; Virgil, violet amaranth; Vesta, rosy purple, white centre; War Eagle, dark scarlet, maroon centre; Reine du Jour, blush white, rose centre; Monsieur Affré, crimson, fine.

The following Verbenas 6*s.* per dozen, autumn-struck plants, viz., Clotilde, pink striped; Emperor of China; Empress of Scarlets, Eppsii, Gem of the West, Grandiflora, Madame Passy, Vulcan Superb, Excelsa superba, Vampa, Marchioness of Ailsa, Defiance, St. Margaret, Picta, Speciosissima.

CALCEOLARIAS.—Shankleyana, new and shrubby, 12*s.* per doz.; Kentish Hero, 6*s.* and 9*s.* per doz.; amplexicaule, 9*s.* per doz.; Viscosissima, 6*s.* per doz.; Kayii, 6*s.* per doz.; and Aurantia multiflora, 6*s.* per doz.

PETUNIA "Beauty Supreme" (Conway's), 9*s.* and 12*s.* p. doz.

HELIOTROPIUMS.—Grisan, 9*s.* per doz.; Triomphe de Liege, 9*s.* per doz.; Souvenir de Liege, the best for bedding, 12*s.* per doz.

M. C. has also a good stock of the newest and best Ph'oxes, Salvias, Œnotheras, Antirrhinums, and Chrysanthemums, at moderate prices.

Earl's Court Nursery, Old Brompton, near London.

HORTICULTURAL SOCIETY OF LONDON.—The EXHIBITIONS OF FLOWERS, &c., in the Society's Garden, will take place on the following SATURDAYS, viz.: May 18, June 8, and July 13. TUESDAY, April 23, *is the last day* on which privileged tickets, at 3*s.* 6*d.* each, are issued to Fellows of the Society. Every Fellow is entitled to 24 such tickets, if paid for on or before that day.—21, Regent-street.

The Gardeners' Chronicle.

SATURDAY, MARCH 30, 1850.

MEETINGS FOR THE ENSUING WEEK.

MONDAY,	April 1	Entomological	8	P.M.
		Pathological	8	P.M.
TUESDAY,	— 2	Horticultural	3	P.M.
		Linnean	8	P.M.

"HAVE you heard," says a writer in "Chambers' Edinburgh Journal," "what the Recueil of the Societé Polytechnique" says about a new mode of turning WASTE STEAM to account? The proprietor of a factory took it into his head to introduce his waste steam under the roots of Pine-apple plants; and such was the combined effect of heat and moisture that a magnificent crop of ripe fruit was the speedy result, and of a much finer flavour than usual, owing to the growing part of the plant having been daily exposed to the open air."

This is a subject to which we gladly direct attention, for we have long felt convinced that the true places for forced vegetables and fruits of all kinds are near fixed steam-engines, whose waste steam will supply all the heat that is required, without the cost of a farthing for fuel. While glass was dear this was a suggestion which it would have answered no good purpose to have made: but now that timber is cheap, glass about one-sixth of its former price, and that bricks may be expected to fall 50 per cent., it is evident that we want no Lisbon for early Peas, or New Providence for Pine-apples, or even Penzance for winter Broccoli, but that all such produce may be grown cheaper, and as well or much better in every manufacturing town.

As matters are now arranged the heat belonging to the waste water of steam-engines is utterly lost, instead of being economised, and applied to the production of food, or luxuries, in both the animal and vegetable kingdom. There is no conceivable reason why ponds should not be warmed, and made to produce magnificent marketable fish, bred beneath the foliage of Water Lilies and other beautiful aquatics of hot countries, while the ponds themselves impart a gentle warmth to the neighbouring soil, teeming with early Kidney Beans, early Lettuces, early Asparagus, early Salads, Green Peas in March; Peaches, Plums, and Apricots in May, with Grapes and Pine-apples at all seasons. To effect this, little labour is wanted, no great elevation of roof, no wide span, involving costly rafters of timber or metal; but a series of low span-roofed pits, half sunk in the earth, to save materials. In such places the waste water would give warmth and moisture; the moisture might be regulated by various cheap mechanical contrivances; and by the application of a little steam power the atmosphere of such places could be kept in any degree of agitation that might be required for the healthiness of

the vegetation. In short, summer breezes might blow, at the command of a screw, even though the external air was that of Iceland at Christmas.

The difficulty that gardeners experience with forced crops arises from the impossibility of ventilating them—from the difficulty of keeping the earth, in which the roots grow, warm without over-heating—the air, in which the leaves grow, dry without withering—and in maintaining a proper temperature without such a consumption of labour and fuel as render the charges to a consumer such as to excessively limit all sales. At the side of manufactories all such difficulties vanish. The power which works the looms and the spinning-wheels will also work the houses in which plants are grown for market, without the effort being felt, and with little aid from manual labour. Canadian timber cut at the saw-mills, duty-free bricks, glass at 4*d*. a square foot, a little engineer's work, and a clever gardener, will furnish all the rest.

Suppose that a tank made of bricks, lined with inch Canadian planks, and 6 feet wide, were caused to enclose a given area; that the tank were surrounded by 12 feet beds separated by pathways from the outside walls, and that the area enclosed by the tank were divided into 6 feet beds accessible by narrow sunken paths. It is evident that by a series of ridge and furrow roofs any such area may be perfectly covered over; and it is equally evident that, by some mechanical contrivance, such for instance as Hurward's screw or Jones and Clark's rack and quadrant, the whole of such roofs could be opened or closed at pleasure, without the least difficulty. The water from such roofs might be carried off through hollow brick supports, upon which the wall plates might be made to rest; and if the soil were dry enough, the whole structure, except the roof, might be sunk, so as to avoid the cost of thick outside walls, and to retain the heat extricated from the tanks. Head-room for working under might be obtained by excavation, and the earth so excavated would make the raised beds, which would be necessary in order to bring the crops close to the light. It is probable that air-heat enough for most crops would be obtained by this arrangement alone; but if it were otherwise, glazed pipes could be adapted laterally to the tanks, and made to convey more heated water to any place in which it could be required. In the same way subterranean irrigation might be effected; and in short every application of heat and water of which a gardener has need.

In such buildings plants would be grown as in the open fields, beds of Radishes and Spring Onions in the coldest parts, beds of Strawberries in others somewhat warmer; Seakale and Rhubarb in chambers under the footpaths; Lettuces, Endives, and all sorts of Winter Salads in the same quarters with Radishes and Spring Onions; Pine-apples in the warmest parts; Vines on the rafters, at such a distance as not to overshadow the crops beneath them; Peaches and Nectarines and Apricots, with Figs, Plums, Cherries, Raspberries, and the like, in dwarf orchards apart, with the same crops beneath them as in the open fields. All this might happen in winter; in May the glass roof might be wholly removed, and the ground cropped as a market garden, with this great advantage that still there would be an advance upon the seasons, and that the genial warmth of the tanks and under-ground channels of heat would give to English crops an excellence now only known in the sun-heated soil of southern countries. The experiments upon out-of-doors cultivation of the Pine-apple in summer, so cleverly tried at Bicton by Mr. Barnes, the gardener to Lady Rolle, have conclusively established the fact that Pine-apples thus produced are infinitely better in flavour than such as are nursed in a common hothouse. It is probable that they would not cost much more than Cabbages; and at all events that if sold at the price of the wretched things called West Indian Pine-apples, they would yield a great return to the grower.

In this way quite a new description of market gardening would spring up, a new employment for labour be discovered, and a new field for the profitable investment of capital. When carried out, Paris and Berlin and Brussels may be supplied with forced fruits and vegetables from Manchester, and new elements of national competition be thus introduced, by which all may largely benefit.

This kind of gardening is not, however, precisely what the writer in Chambers' has referred to. The subject of his remarks is gardening without protection of any sort, by aid of earth-heat alone; quite a distinct question, to which we may address ourselves next week.

SALADS, MACHE, AND SCAROLE.

There is certainly not the same amount of attention given to the cultivation and extended production of salads in this country as in France, and the reason I apprehend exists in the circumstance of a more limited demand for the article on this side of the channel. Everyone eats salad in France; hence extraordinary attention is paid by the market-gardeners to its culture. Les Jardins Maraîchers, about Paris, are exceedingly well managed, and I have often wondered at the abundance, cheapness, and excellence of the salads in early spring in Paris. Both Lettuce and Endive may be obtained for one or two sous in February and March. On inquiry, the market-gardeners, who form, by the way, a distinct and peculiar class, have always been quoted as examples of industry and skill in their business; the truth of which encomiums subsequent visits to their gardens fully proved.

Although I am prepared fully to admit that we may have as good a salad in the winter, or indeed at any season, in England as in France, yet I submit that as the production of salad throughout the winter season requires in France especial skill and attention, and means to boot, so we cannot secure an abundant supply without similar means and appliances, which with *their* care they are obliged to employ. The French market-gardener has generally an unlimited supply of hand-glasses, "Cloches," which resemble in shape our bell-shaped propagating glasses, and can be bought for about 1*s*.; these he finds of wonderful use in advancing his early salading; added to this, extensive ranges of frames are at command, and for protective purposes, instead of employing Russian mats, the warm cheap paillisson or straw mat is brought into use. The "Bon Jardinier" gives an account of the system pursued in the cultivation of Mache and Scarole, which may afford some desired hints to those of your readers who are interested in the matter, and which therefore in effect I have translated, and subjoin.

"*Mache* is a small salad which is sown every eight or ten days, commencing from the middle of August and continued till the end of October, broadcast, in light friable mould which has been manured the preceding year. The soil should be lightly raked over it, and it should be watered when it becomes necessary. As Mache is used entirely while young, in gathering the forwardest parts it will be kept sufficiently thinned.

"*Scarole.*—The ordinary cultivation of this new Endive is precisely similar. There are several methods employed for securing a supply during the winter and spring months. For early forced Scarole they sow in a strong heat under glass in January; 15 or 20 days after the seeds have vegetated they are pricked out, on another hotbed, where a less heat is necessary; air is freely given when the weather permits. When the plants are sufficiently full they are tied up as they are out of doors.

"Another method now used by several cultivators consists in sowing in October on a bed slightly warm, and pricking out the plants subsequently in a similar situation, covering them with *cloches*, and taking care to provide them with a moderate amount of warmth, and so securing them from severe weather. There exists a third method, called 'culture à froid,' since practised several years with success. They sow about the 10th or 15th of September, in a cold frame; about three weeks after they prick out, also under glass; then again replant in November and December, close together, keeping the lights constantly closed, and in severe weather keeping the frost from them by ample coverings."

It will be thus seen that with hand-glasses and a frame at disposal, which nearly every gardener possesses, the above salads may be commanded at the season they are required. *W. I.*

ENDIVES.

Endives are divided into two classes:

A. Curled.

B. Batavian, or Broad-leaved.

Complete descriptions of most of the varieties of Endives, now, or formerly cultivated, are to be found in the Transactions of the Horticultural Society, vol. vi., p. 133. Twelve varieties are there enumerated, but three of them are all that are usually kept by English seedsmen, namely, the Green Curled, White Curled, and the Broad-leaved Batavian.

Class A. Curled Endives (Chicorée Frisée, of the French).

French Small Green Curled, alias Fine Curled, Chicorée frisée fine d'Italie, Chicorée d'Été, C. fine d'Eté. A small, very dwarf sort, which cannot be tied up, but blanches readily when covered. It is only fit for early use.

1. *Small Green Curled*, alias Green Curled, Chicorée frisée, Chicorée de Meaux, Chicorée Endive. Leaves much cut and curled, from 6 to 7 inches long, lying flat on the ground, heart-leaves full and close. Formerly this was the sort chiefly cultivated in France; but for early sowing the preceding sort is now preferred, because it does not run so readily and hearts sooner.

2. *Large Green Curled*, alias Green Curled, Cut Yellow Winter Endive (of the Germans). Leaves longer and rather more upright than those of the Small Green Curled. It ties up well to blanch, is hardy, and not subject to rot.

Italian Green Curled, or Indivia Riccia. Leaves narrow, divided to the very midrib, segments also much cut and curled; whole plant dark green.

Dutch Green Curled, alias Large Green Curled (of the Dutch). Scarcely worth distinguishing from the Large Green Curled above enumerated; it differs in the outer leaves being broader, deeper cut, and not so much curled. It blanches well, and is hardy.

Long Italian Green Curled, or Indivia Longa. Resembles the Italian Green Curled, the leaves being deeply cut, but their segments are not disposed to curl, and is, on the whole, inferior.

White Curled Endive, alias White Endive, Chicorée toujours blanche, Chicorée blanche. Leaves 7 or 8 inches long, with a very open heart, growing flat on the ground. The whole plant is of a pale yellowish colour. It is best when cut young for salads, as the French use it. In a full-grown state the leaves are tough, very bitter, and do not form a good heart; therefore it should not be sown with the view of using it otherwise than for the purpose above mentioned.

Stag-horn Endive, alias Corne de Cerf ou Rouennaise. Leaves deep green, finely cut, but not much curled; heart full, yellow, and tender. Preferred at Rouen, but not at Paris, where they find it more apt to run to seed, or otherwise it decays sooner, than the French Small Green Curled.

Chicorée Mousse. A new sort; a finely curled variety of the preceding.

Class B. Batavian or Broad-leaved Endives; Scaroles of the French.

3. *Broad-leaved Batavian*, alias Broad-leaved Endive, Double Yellow, and Common Yellow of the Dutch. Leaves long and broad, the edges somewhat ragged, the outer ones particularly upright. It is the sort of Batavian Endive most commonly cultivated, and requires to be tied up for blanching. *Curled Batavian*, alias Fine Curled and Yellow Curled Batavian. Leaves not so large as those of the preceding; they grow flat on the ground, and are curled at the edges. The heart forms of itself; is small, and lies close to the ground.

4. *Small Batavian*, alias Scarole petite, Scarole courte, Scarole ronde. Leaves pale green, broad, of moderate length, slightly ragged at the edges, inner leaves hooded at the top, naturally forming a good heart, blanching with little trouble, and is mild and sweet, compared with many others.

Large Batavian, alias Scarole grande, Scarole de Hollande. This can only be described as a large variety of the preceding, scarcely hearting so well.

Lettuce-leaved Batavian, alias White Batavian, New Batavian, Scarole à feuille de Laitue, Scarole blonde. Leaves large, obtuse, ragged at the edges, of a pale colour even when young; require to be tied up for blanching. This should only be cultivated for early use, as it is tender both as regard damp and severe weather.

Numbers are prefixed to such of the above as are considered the best for general cultivation. *R. T.*

DISEASES OF PLANTS.

(*Continued from page* 181.)

Genus IV. Incisions.—By incisions I mean a solution of continuity effected by a sharp instrument such as an axe or knife, without laceration or removal of any portion of the substance. There are two species, first the *longitudinal*, and second the *transverse* incision. The cure of the first may be for the most part left to Nature, as the wound heals most readily, especially in indigenous plants. Occasionally, however, some attention is requisite, in the case of delicate plants from hot countries, or where the juices are gummy or resinous, as in such plants the incision is apt to open too much, and the accumulation of sap may be productive of injury. The second species may be readily cured if taken early. Every delay may be fatal. A transverse wound made by an axe if neglected, will either never heal, or at any rate leave a lasting defect with a prominent scar. But if, while the wound is fresh, the parts be united and covered over with a cement of cow-dung and clay, it will heal without further trouble. It will sometimes be necessary to bind the parts together with strips of bark, bass, or some such material.

Genus V. Amputations, *or separation of a part of the body of a plant from the remainder by some instrument. First species.* Simple Amputation.—Under this name I designate such separations of a healthy portion of the tree as are made by pruning or taking grafts. Although these are really mutilations, they are much less injurious than those of the second species. Nevertheless, it is certain that our practice of cutting off heedlessly so many roots and branches of the trees we transplant, and the pruning trees every year so close, without any consideration, are productive of much mischief. Some, if not all, French writers on rural economy enumerate amongst the causes of disease in trees, especially fruit trees, the *abreuvoir*; that is, the facility which amputated branches give to wet to penetrate into the inner parts. We see instances of it every day in our own trees. Moschettini attributes the *celone* of Olives to injudicious amputations. Thence, obliged, as we are, to make simple amputations, are derived the two following important rules. First, let the cut be always made on an inclined plane downwards, in such manner that the bud destined to form the new branch should never be on the lower side of the section, but always on the upper one. Secondly, let the cut be flat and smooth, the edges of the wound as even as possible, and, if the branch is of any size, let some appropriate cement be applied.

Some persons, persuaded that the way to have a tall tree is to prevent its growth in thickness, are all day with the pruning knife in their hand, cutting off all the small branches which shoot from the stem. The tree grows in height, but does not thicken in proportion; it remains weak and slender, and, though apparently vigorous at first, it is checked and becomes unhealthy. Besides that, we err frequently in the time of year for pruning, which, for the early trees, such as the Peach

and Apricot, should be from the end of June during the whole of July; and for Pears, Apples, and Plums, from the end of July during all August. The same rule applies to forest trees. Let prunings be as moderate as possible, and at their proper season, and so regulated as that all the branches of the tree be not cut down at once, commencing at the bottom and proceeding upward.

Second species. NECESSARY AMPUTATIONS.—There are many cases where the preservation of the plant absolutely requires amputation. By this course alone can it be freed from ulcers, carcinomy, or hæmorrhage; or the sad consequences of contusions, lacerations, punctures, or fractures, averted. If the plant cannot entirely resume its pristine vigour, at any rate it may thus be restored to a life of many years, and may fructify almost as before. The importance of these amputations induces me to enter into the subject with some detail.

I refer to Roger Schabol's treatise on wounds those who love to compare the operations of a surgeon on animals to those of the cultivator on plants, and they will there find, that according to this author, what happens in the healing of animal wounds occurs also in those of plants. It will be seen that the learned Boerhaave did not disdain to undertake to cure certain trees of the public walks of Leyden, which a miller had cut down in the middle, because they intercepted the wind from his windmill. I will confine myself, before speaking of the mode of curing vegetable wounds, to an allusion to the mode in which, according to physiologists, the closing of such wounds is effected by Nature. Where a portion of substance has been cut off, a callus is formed both above and below the wound; these calli gradually approach each other till they touch and unite over the scar. Nature does not always take the same time for this purpose, it is sometimes the work of a few months, sometimes of a year or more; and if the wound is large it never closes. It must be observed, also, that when any portion of the woody tissue is affected it is never cured, but merely covered over by the fresh wood.

The cultivator who is under the necessity of making amputations should do all in his power to assist Nature in healing over the wound, and for this there are two points to be specially attended to. First, the reducing the amputation as much as possible to a state of simplicity. Let the edges of the wound be pared clean, so as not to leave any loose strips of bark or fibres, any corrosions, &c.—cutting with a sharp knife the whole wound to a smooth surface, and if possible inclined, so that the section shall be so directed as to be least exposed to the prevailing winds. If it be an old, thick-barked tree, it will be necessary to examine around the cut, to see that there are no insects harboured. The next care is to apply some one of the cements I am about to speak of.

In all injuries, where any humours are exuded, or where there is any rotten matter, the injured part should be carefully cut out to the quick. There is nothing more certain nor better established by experience than that vegetable ulcers cannot be cured unless all the diseased portion be cleared out.

All agricultural writers recommend some different kind of plaster for covering wounds of all sorts; and if we believe their different proposers, all these plasters must be equally good. They may be reduced to two classes. Some lay down as the basis of their cements or plasters, wax, turpentine, pitch or some such bituminous matter. Others make use of much more simple materials. I am not at all disposed to recommend those substances which, when exposed to the sun, are liable to liquify and injure the plant. I do not approve therefore of the use of wax for covering grafts. Edelcrante has invented one of this class, however, which is less liable to inconvenience. It consists of a mixture of Flax, litharge, and calcined bones.

It is, however, Forsyth's cement that deserves the preference. Take one measure of fresh cow-dung, half a measure of lime rubbish, half a measure of wood-ashes, and a sixteenth of a measure of pure river sand. Pass the three last ingredients through a fine sieve, and mix them well up with the cow-dung till the whole has acquired the consistence of plaster of Paris when being put into the mould. For this purpose it must be kneaded up in soap-suds, or, still better, in urine. The cement must then be laid on the wound to the thickness of about the eighth of an inch with a little brush. When thus laid on it must be sprinkled over with a powder composed of five parts of wood-ashes to one of calcined bones. Every half hour this sprinkling of the powder must be repeated till the whole surface is dry and smooth. Cadet-de-Vaux, in the first number of his journal, entitled "Bibliothèque des Propriétaires Ruraux," recommends an analogous cement, but composed of a greater number of materials. The merits of Forsyth's, however, is sufficiently established by long experience, and there is no use in seeking another. It is only the Orange tribe that it does not appear to suit very well. If all the cement prepared is not used, the remainder may be kept in an earthen vessel, keeping it covered with urine. Where lime rubbish is not to be had, fresh lime will answer the purpose. Some particular people, instead of urine, use blood of oxen diluted with water. When the wound is hollow, or the wood must be deeply scooped out in order to remove the diseased part, then, before applying the cement, the inside of the part cut must be well washed with a rag steeped in some of the mixture made fluid. The whole of the cavity must then be filled with the cement. Some have recommended plastering over the young shoots of trees with this cement in autumn, when it is feared, from their natural weakness or accidental unhealthiness, that they may suffer from the winter frosts. I myself have had no opportunity of judging of the success of this practice.

Forsyth strongly recommends attention to the state of the roots, which will suffer more or less from the diseased state of the trunk. They should in such cases be opened out and examined with care, the affected parts cut out from the main branches, and the hollows filled up with the same cement, mixed up with clay. The mass of cement must be strongly pressed in with the hand, to prevent the wet from penetrating, and raised beyond the diameter of the root, the surface being so inclined as to facilitate the draining off of water, and the whole covered up again with good soil. Some mix up a portion of fine gypsum with the composition.

The experiments of Dondi, and many others, have with us fully confirmed the advantage of the above-mentioned cement. I have also found the composition so well known under the name of Onguent de St. Fiaere, made up of a mixture of cow-dung and clay, to be an excellent one to apply in cases of amputation. Some cultivators cover the wounds left on cutting off large limbs, either with cow-dung or with clay, but without mixing them. This is a bad practice, because the sun will cause it to crack, giving access to wet, and above all to insects, who will soon do much mischief to the tree.

VILLA AND SUBURAAN GARDENING.

WATERING is an important operation in gardening, but it is one in which it is difficult to give precise directions for the guidance of the inexperienced amateur. On account of their artificial position, plants in pots require to be watered with great care and caution. The capabilities of the plant to take up water must be determined, the nature of the soil in which it is growing, the conditions under which it is potted, whether in a state of rapid or slow growth, the season of the year, the temperature to which it is subjected, are all matters of great importance, requiring much consideration. Nevertheless, watering generally is heedlessly and incautiously performed, as if its due application had no relation to the plants' well-doing. Half the plants put into pots are either killed, glutted, or starved by injudicious watering. One thing should be rigidly observed in giving liquids of any kind to plants, and that is, their temperature should never be lower than that of the atmosphere in which the plants are growing; if otherwise the roots get chilled, the growth receives a check, and the whole system is violently paralysed. No immediate ill effects may be visible, but ultimate injury is certain and unquestionable. Another rule which may be laid down in watering plants in pots, consists in never giving water until it is actually required, and then enough should be given to reach every part of the ball. Watering by driblets is the worst of all practices. By such a system one portion of the roots is perishing with drought, while the other is surfeited with water. To determine therefore when a plant requires water is not so difficult as may at first appear. It is not always when the surface soil looks dry that the roots are in that condition, and to administer water on that evidence alone would be, to say the least of it, a bad practice, more especially as regards plants which require considerable care in their cultivation. The plant itself will frequently indicate its wants in this respect, but it not always judicious to wait for such proofs, neither would it be prudent to turn the plant out of the pot, in order to ascertain its condition; although in nice cultivation, and in some especial cases, this is occasionally done, but in general practice it is to be avoided. A little careful observation is of course necessary, especially with respect to plants grown in peat soil; and if any uncertainty exists as to whether or not the plant wants water, strike the pot with the knuckle on the side; the ring produced will, with a little practice, prove an unerring guide. If this plan is followed for a short time, the ring of the wet pot will be readily distinguishable from that of the dry one; this, therefore, taken in conjunction with the appearances which the plants exhibit, must determine when water is to be applied or not; but be it remembered that the mere appearance of a dry surface is a false and fatal guide with respect to the requirements of the plant. *Pharo.*

Home Correspondence.

A Country Curate's Garden (see p. 188).—In reply to the request made by a "Country Curate," as to the most remunerative method of managing his garden, permit me to say, keep bees! And in regard to the immediate stocking of his little garden plot: Let the ground be first made level; and at 1 foot distant within the boundary-line of the same, let a dry walk be made with gravel or coal-ashes (edged with bricks), 2 or 3 feet wide, as may best suit the dimensions of the area. Within this walk, at 1 foot distant from its edge, let bushes of the small red Gooseberry, and of white, red, and black Currants, be planted at 6 feet distant from each other. Within the lesser area, surrounded by these bushes, let the ground be divided into three portions; one to be occupied by early Potatoes, a second by summer and winter Cabbages, and a third by Turnips. The little border, on the outer side of the walk, to be planted with Thyme, Sage, and other herbs, and patches of Mignonette, and other flowers suitable or bees. Between every bush, above mentioned, let a bee-hive be placed. Each hive should be of moderate size; that is, containing, by measure, about 2 gallons, and be occupied by a strong swarm of bees that has issued naturally, or been taken from its parent hive, artificially, early in the month of May. The bushes, above noticed, besides producing fruit for the table, will ensure an early repast for the bees, when they put forth their first blossoms in spring. The Potatoes will furnish a seasonable supply when they are dear in price; the Cabbages will be serviceable at all times, and of the Turnips, after they have been culled for the table, there will be a sufficiency left to produce an ample store of bloom for the support of the brood of the bees in the autumn, or in the ensuing spring. The keeping of bees turns to a far better account than that of maintaining poultry; it is a far more profitable and constant source of interesting amusement to a cultivated mind. Poultry disfigure a garden, and do much injury to all its fruit. Bees, on the other hand, are always an ornament, as well to the rich man's nice parterre, as to the more humble cottager's dear little plot—and never do harm to the produce of either. Their honey is ever to the richer man an agreeable luxury, it being considered, of old, the chiefest of all sweet things, and to the poorer man, besides being often a medicine in sickness, is, when hives are properly managed, an annual source of profit. But in order to obtain this profit, the bees must, like everything else, be attended to; there are some little cares requisite, such as keeping their hives quite dry, at all times, and clean, and guarding them from any interruptions or any annoyance during their daily innocent occupations. They should never be disturbed during the day, unless some necessary operation is required. The approach to the hive should always be at the back part, for then the bees will not resent anything being quietly done to them or for them. For instance, if after having worked a considerable time in their hive, they appear to want more room, a raiser may be added, without fear of molestation; or an artificial swarm may be made with the greatest facility; or the hive may be lifted and weighed, by being poised in the hand at any time; or the bees may be fed; or may be deprived of part of their store; or glasses may be added; in fact, anything may be done with a hive of bees, if easy access be had to it at the back, at all times. With regard to books on the subject of bees, there are many worthy the attention of the curious, such as Bevan on the Honey Bee, and Scudamore on Artificial Swarms; and many also which may prove serviceable to the cottager, such as Bonner, Wildman, Keys, and Wighton, on the general management, all of which may be had of any of the London booksellers. *Apiarius.*

Death of large Elm Trees at Southampton: Vines Killed by Gas.—The remarks at p. 182, respecting the destruction of Elms by gaseous influence, have brought to my recollection a fact I learnt at Plymouth from a gentleman who had suffered through the escape of gas into his Vine-house (the back of this house forms the street boundary, along which was led a gas-pipe in the usual way). His Vines a year or so since began to flag, the gardener was considered the culprit and dismissed for neglect; another took his place, still the Vines did not improve, but he observed a strong smell of gas on opening the house in the morning, and told his master. This led to investigation, and it was discovered that the roots had found their way beneath the wall, and had reached the gas-pipe, from which there happened to be an escape of gas—the fibres of the root perished by the contact, and shrunk. The gas rushed into the vacancy thus created, literally eating its way onward, by means of this shrinking process, until it had destroyed the Vine, and found its way into the house, carrying death in its train. Should this help our Southampton friend, I doubt not the case from Plymouth would be willingly confirmed by others. *E. T. W.* —— Some three or four years ago I observed Elms, in the neighbourhood of Wandsworth-common, attacked by great numbers of a small coleopterous beetle, which perforated the bark in all directions, from whence the sap flowed profusely. In the day time these perforations were visited by myriads of flies, wasps, butterflies, &c.; and at night by nocturnal lepidopteræ. Since these minute enemies have made their appearance, many fine specimens of Elms have died, and I certainly lay the burden of the mischief on the shoulders of the Scolytus destructor. *C. Wood, Wandsworth-common.*

State of the Thermometer, against a north wall, at Killerton, Devon, between March 7 and 13, inclusive:

	Max.	Min.		Max.	Min.
7th	48	44	11th	52	31
8th	53	41	12th	49	30
9th	51	35	13th	51	33
10th	51	35			

Phosphoric Rat Poison.—Many complain that it is useless. Perhaps the reason is its being used when old and stale; then the vermin will not touch it, but if fresh it is most destructive. The only drawback, which applies to all poisoning of vermin, is that the dead animals are sometimes eaten by pigs, which are also poisoned, and that the rats now and then die under the floors of houses, causing intolerable stench. *Sigma.*

Doubling the Polyanthus.—Being not much more than a cottage gardener, with 6 or 7 frame lights, made by myself in a rough manner, out of odd pieces of wood, and glazed by hook and by crook, Polyanthuses have been very eminent among the chiefs which my turf-built frames have given protection to. I am therefore naturally interested in the observations which this flower has received in your two last numbers, particularly "Wissingham's" suggestion of doubling and

obtaining a higher standard of perfection ; but although I can appreciate the beauty this standard would produce, yet "Wissingham" does not favour us with such undeviating directions as a plain grower like myself can at once follow. Perhaps, however, he will be good enough to fill up the deficiency. Nevertheless I fear that doubling is a task beyond even the originality of "Wissingham," although, if effected, nothing could equally add to the improvement of this plant as an early bloomer, border, or a bouquet flower. *Flora, Camden-town, March* 26.

Birds : Food of Titmice—Mr. Graham having called in question the accuracy of my statement, respecting the food of titmice, I feel bound to reply to him. I state most positively that no British species of titmouse ever feeds upon the buds of trees. Let Mr. Graham use a small telescope, and he will find that it is insects alone for which these useful birds are searching. The utmost injury they ever do, is displacing a bud or two in search of their food, and this is a very rare occurrence. I have examined the stomachs of every British species of titmouse, except the crested tit, and no portion of a bud did I ever find, and having for many years paid close attention to our British birds, and having set up for my collection about four-fifths of our native species, I have had ample opportunities of examining the contents of their stomachs at all seasons of the year, and I never found the buds of trees in the stomachs of any birds, except those of the bullfinch and common sparrow. If Mr. Graham depends upon the authority of gardeners, he will often be in the wrong. I have myself tried in vain to convince a gardener here, that the larvæ of the lady-birds are his friends, and feed upon aphides. He insists that they destroy the plants. This is one out of numberless similar instances which I could adduce. *Henry Doubleday, Epping.*

Glass Pipes for the Conveyance of Water.—I have devoted much time in trying experiments with glass tubes, in order to ascertain if possible the plan of making them suitable for locomotive engines, as the heat and pressure they have to stand is very great. I tried the process of annealing, which is keeping them in a furnace for 24 hours and gradually cooling them down. I also tried boiling them from 24 to 48 hours in oil, strong solution of soda, and a variety of other plans, without success. I have however discovered the secret at last ; or, at least, I have found a plan of making them by which they stand very well, although they are still liable to break ; but if they will stand in a locomotive engine they will do for most purposes to which they can be applied. I have just executed an order for glass tubes for conveying water in a nobleman's mansion, but as I executed it for another party, I am not at liberty to mention names. My glass tubes are used by the South-Western Railway Company, and I believe give satisfaction. Your correspondent may rest assured that properly made glass pipes will answer the purpose of conveying water. *Henry Baker*, 90, *Hatton-garden, London.*

Spent Tanner's Bark a good Manure for Strawberries.—Perhaps the following experiment with Strawberries in tan, which I saw made near Edinburgh, may prove useful. The soil was very light, and appeared unfit for their growth, yet finer fruit or of better flavour I have seldom seen. This was entirely owing to a covering of old tanner's bark, about an inch thick, being applied between the rows. The bark not only kept the ground moist and the fruit clean, but it is the material of all others in which this plant most delights. Many persons may have remarked how almost all plants, but particularly the Strawberry, will root into the old tan of a bed in which they have been forced, and yet because they know new tan will kill weeds, they do not think it valuable as a manure. In the same garden were beds of Strawberries which had not been covered, but after growing and flowering well, these bore no fruit worth gathering (a very common thing if the soil is too light) ; others were almost burnt up, whilst those to which the tan had been applied were luxuriant, and the ground was covered with fine runners fit to plant out, though the fruit was just in perfection—an uncommon circumstance near Edinburgh. *I. R. Pearson, Chilwell.*

Vinery and Cow-house.—I have just started something novel in a glazed cow-house, which it has occurred to me you might like to hear of. The cow-house is 96 feet long, span-roofed, the roof being made the same as for slating, but the rafters (supplied by Mr. Lewis, of Stamford-hill), rebated. It is glazed with Hartley's patent rolled plate in panes, 24 inches long by 29 inches wide, so that it is very light. An iron bar is run across midway between the ridge and the eaves, to supply the place of a purlin. The roof cost a few pounds more only than slate. Very ample ventilation is provided for, all round the house, by a ventilator along the whole ridge. Vines are planted in front of the house at every two feet (the distance between the rafters), and it is presumed that the shade from these, and an abundant supply of fresh air, will prevent the cattle from suffering from heat, even in the height of summer. There will not be much escape of ammonia, as gypsum diluted with sulphuric acid will be used on the floor ; and if some little does rise, probably it will be of service to the Vines. I have been a good deal twitted as to how I mean to prevent the farm people from helping themselves to the Grapes, but with an honest cowman who may keep the key in his pocket, that is surely an easy matter. For the first two years, until the border Vines bear, the house will be supplied with pot Vines. *Llandilo.*

Garden Walks.—It appears to me that both Mr. Baily and yourself recommend that walks should be made higher than the adjacent ground. Mr. Baily tells us that their outline ought to be clearly and distinctly defined, but I confess that I am puzzled to know how a clear outline (which I take to mean edging) can be maintained where the gravel is higher than the turf or border ; such a walk may have its advantages, and be useful enough, but it must be very unsightly. When it is intended to make an entirely new walk through a Grass-plot or lawn, care should be taken to ascertain the nature of the ground through which it has to pass. A porous, sandy, or gravelly soil is in itself a walk almost half prepared, while a tenacious loam or clay requires quite a different kind of treatment. I find from experience that the formation of a good dry walk is, on clay, very uncertain, except a considerable amount of earth be excavated. I go further than some who think that digging out a sort of canal-looking trough and filling it up again with stones is sufficient. My walks are made and drained on a regular plan, as the annexed sketches will show. Some recommend a bed of concrete or asphalte to be placed 2 or 3 inches below the intended surface level, covering thickly with good gravel. I have no experience of this plan. I have often seen an old hard-worn walk coated over with new gravel, but the old and new material never properly united, and the result was anything but satisfactory. The concrete will certainly prevent water from sinking through it, and therefore a considerable time must elapse before it can reach the sides through the mass of gravel ; and it is expensive. Walks may be made so as to throw all the water off to their sides without being rounded too much, which would be unsightly ; but I have come to the conclusion that it is better to allow the wet to percolate through as quickly as possible and then dispose of it by one or more drains below the foundation, taking care in removing the earth to have the bottom sloping towards the centre, as in fig. 1. I dig the middle about a foot deeper, and



Fig. 1.

put down a 2-inch drain tile ; continuing it down the centre of the walk, and leading it out to some land drain, or other outlet, as the case may be. Where the walk is broad, say 12 or 14 feet, and the ground clayey or wet, it is advisable to put in two drains ; or in an open

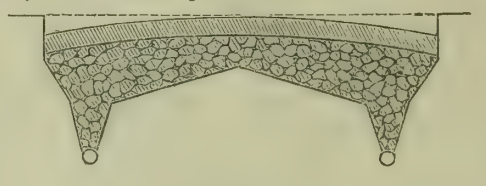


Fig. 2.

area or parade I have put in a great number, often ranging not more than 6 or 8 feet apart ; but in all cases I would advise the ground, *i. e.* the bottom of the excavated portion, to be sloped to the drain, as represented in Figs. 1 and 2, and as the whole need not be deep, it would be better to fill all above the drain-tiles with loose stones, brick-bats, or similar substances, in order to ensure a quick drainage for the water which falls on the walk. To facilitate the latter object, where the walk leads along a perfect level, let the tile drain dip or fall to the places you have arranged for its discharge ; and to ensure efficiency these had better not be too far apart. It is not necessary to make a walk constructed in this manner very deep. I have made many not more than 8 or 10 inches in the deepest part, and only half that in other places ; but where the grounds are in the course of alteration, it often happens that abundance of rough stones can be obtained, which are difficult otherwise to get rid of ; in such a case you may make it as deep as you please. Where it is possible to choose the material on which to make or lay the foundation, there is nothing better than brick-bats or rough stones from an old building, to which a considerable portion of mortar attaches. Worms, which are great enemies to a well kept walk, dislike lime ; clinkers, or the refuse lumps from an iron foundry, glass or chemical works, are also very good; but if such things cannot be had, scatter some lime amongst the stones which form the foundation. Salt will also do for a time, but the best foundation is to be obtained from old buildings. *S. N. V.*

Pipes for Conveying Water.—I apprehend that "Dodman," p. 181, would find common clay pipes of the kind denominated "Spigot and Faucet," the most economical for his purpose. They are made of various sizes, from 3 inches up to 12 inches in diameter, and are extensively used in this part of the country, for carrying off sewage water from dwelling houses, leading water for mill dams, and also for distributing liquid manure, and various other purposes. The size I would recommend, as being sufficiently large for "Dodman's" intended purpose, is 3 inches in diameter. They may be placed from 2 to 3 feet below the surface, and if properly jointed with cement, and the soil firmly pressed round them, will be found to answer every purpose required of them. If thought requisite they may be glazed both inside and out, but I am of opinion that if they are glazed in the inside only, it is all that is requisite. The cost of the 3 inch diameter is 6*d.* per yard ; if glazed inside 8*d.*, and glazed on both sides 11*d.* per yard. The prices I have given are those charged at a distance of from 70 to 80 miles from the works. I am unacquainted with the prices in the neighbourhood of London. *T. D. Wishaw, Lanarkshire.*

Planting Potatoes.—I have again carried out this year the plan of early planting, having already put in upwards of 300 acres. It having been stated last year that deep planting was highly desirable, I put in a few as deeply as 14 inches, and the produce was by far the finest, and freest from disease, of any I grew. This year I shall institute a series of experiments to test this plan fully, commencing at 4 inches deep, and going down to 14 inches. I was also, in one instance, very successful in pursuing the plan of laying down the tops, and covering up with earth. The produce was entirely free from disease, whilst others, treated differently, alongside of these, were as much affected as usual. I found the Breadfruit much more diseased than any other sort, especially a small plot from seed I had given me, they being half bad. *John Fryer, jun., Chatteris, March* 23.

Does Chloride of Lime impair the Colours of Flowers?—One of my Camellias, which has hitherto produced bright crimson flowers, is this year changed to a pale blush streaked with red. My gardener, when taking them into the greenhouse in the autumn, watered the surface of the earth in the pots with diluted chloride of lime, to extract worms, &c. Can this have caused the change in the colour of the flowers? *Constant Reader.*

[Your gardener was a blockhead.]

Bees.—In "Y.'s" account (p. 165) of feeding at night, he says nothing about closing the door of the hive ; if open, the bees will sally out next day, attract others by their sound, and in that way their hives will be more likely to be attacked than if the food had been placed abroad. Besides, the nights are often too cold for bees to descend and leave their brood uncovered. As they seldom or never frequent water during the spring months, why does "Y." recommend giving salt water in pans and withdrawing it in May—the very time in which bee-keepers begin to expect to see them at putrid water. *A Peebles Bee-keeper.*

Killing Rats.—Have any of your correspondents tried to chloroform them, and with what success? I am confident that chloroform if rightly applied will kill them. *A Reader.*

Winter-felled Larch.—I have used Larch much for gates and rails, and found it answer well, and warp very little, though used immediately after it had been felled. I always cut in winter, with the bark on. *J. W. H.*

[To be sure.]

Peas.—The searching, testing inquiry about our variations of Peas, and other vegetables, will, in the end, be productive of much good. The self-same kind is constantly put before the public under a new name, till purchasers begin to ask themselves "What's in a name?" By placing these side by side with our old acquaintances, under like conditions, as has been done at the gardens of the Society, the truth is revealed ; and scores of sorts which figure in the seed catalogues, and joy in the names of the Smiths and Joneses, the Browns and Robinsons—Imperial, Royal, Matchless, *cum multis aliis*—are proved identical, let them have come from whom they may, and whether the name attached has been affixed by the vendor or by the purchaser. But John Bull, and especially that section who "are very fond of gardening," delights in running after a Will o' the Wisp ; and no sooner has he chased one down, and proved it airy nothing, than he is ready for a new race, to end in like disappointment. Novelty, I have been told, is the life of trade ; but novelty of this kind, so to speak, ought to be its death. My object, however, in writing was to say a word or two on the variations of Peas. And first, let me give you my pretensions to pass an opinion upon the matter, that, with your readers (to whom I am unknown), I may stand in a fair position. Be it known, then, that 40 years ago, my father, of good memory, employed my then young eyes to detect the differences of the Peas he intended for seed, and many a patient hour was devoted to this most necessary operation under his guidance. It was at this school, then, that I learned to detect the difference between Charlton and Frame Peas, between Blue Prussian and Imperial, &c. Be assured, then, that Early Charlton is not identical with Early Frame—that gardeners would complain, and justly, if one of the former was found in a row of the latter ; for the Charlton overtops all kinds of Frames, produces its pods later, and lasts picking longer, frequently even after the Frame has withered. Some will say that there is an advantage in all this ; but no, all that we want with a round white Pea is its property of yielding its crop earlier than those of finer flavour, as the varieties of Marrows, Blues, &c. And as we have now kinds that will be in pod *pari passu* with the old Charlton, it is no longer a desideratum. The blue Prussian is undoubtedly the parent of all the Sabre Blues, blue Imperials, and the like. In my early days we had only Prussian Blues, and they were prone to run into a white variety, which, however, had the peculiar glaucous habit of the variety they sprung from when in growth. Soon after the blue Imperial appeared, and was distinguished by the greater breadth of its pod and larger size of the seed ; its shape also differed, the Prussian being by far the rounder. This, the Imperial, has always had a tendency to revert to its original, and, without care, a good stock would soon become half mixed with the kind it sprung from. This occurs in this manner : The last Pea in the pod is frequently much smaller than the rest—the little Anthony of the team. If these are carefully collected and sown separately, very many more, in proportion, will revert to their origin, than those taken from the other part of the pod. But now there is yet another, to which my name has been not *un*courteously attached in your "Notices to Correspondents," that requires a word or two. I allude to the Sabre or Scimetar Blue, which I find myself given as authority for its being identical with the blue Imperial. How this occurred I know not ; but certain it is that there is a clear distinction between them. The pod of the Sabre is gracefully curved ; it is also more rounding, and contains more Peas in the pod than the Imperial. A poor soil, however, has the effect of reducing this variety to a Prussian more quickly even than the Imperial. If I might, without offence, offer a word of advice on the matter, it would be—to my fellow seedsmen, not to be too eager to rush to print with a new name ; and to my customers, not to be so hasty in purchasing novelties, but wait the time till their worth has been acknowledged. *William Masters, Exotic Nursery, Canterbury.*——In some of your recent leading articles you appear to us to have charged the seed trade with multiplying names of Peas and other vegetables for unworthy purposes, and this upon the authority of an anonymous correspondent who has sheltered

himself under the initials "R. T." Press of business has hitherto prevented us from having taken notice of the innumerable blunders that he has made in his classifications, and were we to notice the whole of them we should fill the whole of your Paper. We will, however, endeavour to correct some of the most prominent. We are the more induced to do so as you have, in your last publication, in answer to a correspondent, said: "The seeds having been obtained from highly respectable authorities, the synonymes were admitted." We would ask what man of common sense who knows a Pea-pod when he sees it, could for a moment say that the dwarf blue Imperial and the blue Sabre or Scimitar, or more properly Cimeter, are synonymous? They are as dissimilar as the Charlton and your favourite Auvergne, or perhaps more so. Now for "R. T." We will begin with his list of White Peas, which require sticks. No. 1, § 1: Here he has confounded single blossomed Peas (that is, Peas having only one blossom, and consequently only one pod on each side of the joints of the haulm), double blossomed (that is, Peas having two blossoms, &c.) early, and late, in one heterogeneous mass as Frame Peas. Some of the names are unknown to us; many of the others, such as Superfine Early, Early Nicholas, Perkin's Frame, are all but obsolete, and are retained in some of our lists because still ordered by some of our correspondents, but which are now considered third or fourth-rate Peas. 2: Prince Albert, a variety of the preceding, ripening about 10 days earlier. The Early Kent is very similar to this, as is also Warner's Early Emperor. In this comparison "R. T." has shown great want of knowledge of his subject. Prince Albert is a single blossomed Pea, being a selection from the Early Kent, and being two or three days earlier, but bearing no resemblance to the Emperor beyond the fact that they are both white Peas. The Emperor is double blossomed, as early as Prince Albert, a heavy cropper, with very large pods; its merits are well known. 3. Charltons: Amongst the aliases in this category are placed as early Peas, *Late* Dwarf, and Twesley Dwarf, which we suppose to be Tewsley Dwarf; if so, it is a late Pea, and very properly placed in No. 11, it being an old synonyme of the White Prussian. Many of the names in this list are also obsolete. 5. Early Hero, not known to us, but if it is as late as Auvergne, it surely can have no right to the prefix of early. No. 1, § 2.—8. In this number are also several blunders. "R. T." has confounded the old Spanish Dwarf, or Dwarf Fan, with the Early Spanish Dwarf, two distinct varieties, the latter being longer in the haulm, and earlier than the other. He also says that these and Bishop's Dwarf, which resemble each other, are inferior to the Early Dwarf, aliàs Nain hâtif Lévégue, mentioned at the beginning of this paragraph. In this he has shown want of knowledge of the French language, for he has evidently mistaken Lévégue for L'évêque, which is the mode by which the French translate Mr. Bishop's name. If our conjecture is correct, we do not see how Bishop's Dwarf can be inferior to Nain hâtif Lévégue, which are identical. 11. The White Prussian, with its aliàses, is quite distinct from the Royal Dwarf, this having much larger pods and larger seeds when ripe, neither of them exceeding 3 feet in height. Beans: Green Windsor, aliàs Toker; this mistake is worse than the others, the latter having white seed, the former green, also differing in shape. Were we not afraid of trespassing too much upon your space, we could give you the origin of many of the synonymes, and the reasons why they are retained in the lists of many of the most respectable houses in the trade. *Beck, Henderson, and Co., Middle Wharf, Adelphi.*

Societies.

Botanical, of Edinburgh, *March* 14.—The President in the chair. Several donations were announced. Dr. M'Donald exhibited a leaf of Phormium tenax, grown in Argyleshire. The leaf was 6 feet 3 inches long and 5½ inches broad. He stated that the plant thrives well in that part of Scotland, without any protection during winter. He also mentioned that in many places on the Mull of Cantyre, Myrtles, Hydrangeas, Fuchsias, and other delicate plants, succeed admirably, without protection.—Specimens of plants from Simla were exhibited from Lieut. R. Maclagan, Bengal Engineers. Simla is in lat. 31° 6′ N.; long. 77° 13′ 22″ E. Altitude 7040 feet.

Temperature.

	Maximum.	Minimum.	Rain in inches.
1841.	83°5, June 8.	29° Jan. 22 and 23.	
1842.	82. May 31.	27.5, Feb. 5.	61.226
1843.	81.8, June 19.	31.5, Jan. 10.	93.147
1844.	77.3, — 22.	24.3, Jan. 13 and 15.	103.938
1845.	78.2, — 20.	29.3, Feb. 17.	116 363
1846.			113.145

Mean 51°.29.

Dr. Balfour read descriptions of Sabal umbraculifera, a Palm now in fruit in the Botanic Garden, and of Phœnix sylvestris, another Palm which is flowering at present in the same garden.—Dr. Maclagan made the following remarks regarding some articles of the vegetable materia medica. *Prunus virginiana.*—Under this name, borrowed from the United States' Pharmacopœia, a bark has, during the last year or so, been employed in considerable quantity in this country as a medicine, and has found favour with several medical men. This, it is presumed, is the bark which is officinal in the United States, and which, though bearing in the Pharmacopœia, U.S., the pharmacological designation of Prunus virginiana, is not the bark of the plant which was so named by Linnæus. *Triosteum perfoliatum, Linn.*—The bark of the root of this is cathartic, and in large doses emetic, and as such is employed in America under the name of Fever-root. *Phytolacca decandra, Willd.*—Poke-weed. The root and berries are emeto-cathartic, and somewhat narcotic, and have been used in America in chronic rheumatism. In many of its actions it appears to resemble Mezereon. *Eupatorium perfoliatum, Linn.*—Thorough-wort. The leaves are esteemed tonic and diaphoretic, and have been used with success in intermittent fever. It appears from the statements of Wood and Bache to have arrested intermittent fevers, chiefly by acting as an emetic, and can hardly be looked upon as possessing the properties of an anti-periodic. *Arisæma atrorubens, Blume; Arum triphyllum Willd.*—Indian Turnip. The recent root of this is extremely acrid, but when dried becomes bland, and yields its starch readily, quite white and pure. The half-dried root has been used as a stimulant expectorant in chronic catarrh, and when mixed with sugar, as a stimulant application to sore mouths in children. The starch of this resembles under the microscope that of Arum maculatum, being in small grains of a rounded form, but frequently presenting a somewhat angular aspect. *Podophyllum peltatum, Linn.*—May Apple or Mandrake. The root is an effective purgative, acting very like jalap, and applied to the same class of cases in which that drug is used. The leaves have the character of being somewhat narcotic, but the fruit, which is sometimes called Wild-lemon, is eaten with impunity.—Mr. M'Nab read the following list of plants as they appeared in flower in the open borders of the Royal Botanic Garden, Edinburgh, from 15th February till 14th March, 1850.

Feb. 15.	Hepatica triloba, varieties.
,, 16.	Crocus Susianus (Cloth of Gold).
,, ,,	Corylus avellana
,, 18.	Leucoium vernum
,, ,,	Symplocarpus fœtidus
,, ,,	Viola odorata
,, 20.	Capsella Bursa-pastoris
,, 21.	Arabis albida
,, ,,	Bellis perennis
,, ,,	Lamium purpureum
,, 22.	Daphne Mezereon
,, ,,	Knappia agrostidea
,, 23.	Primula denticulata
,, ,,	Vinca major
,, 24.	Petasites vulgaris
,, 25.	Daphne Laureola
,, ,,	Dondia Epipactis
,, ,,	Potentilla Fragariastrum
,, 26.	Crocus sulphureus, and other garden vars.
,, 27.	Tussilago Farfara
,, 28.	Nordmannia cordifolia
March 1.	Hyoscyamus Scopolia
March 1.	Primula nivalis
,, 2.	Doronicum caucasicum
,, ,,	Tussilago nivea
,, 4.	Narcissus pumila
,, 5.	Anemone pulsatilla
,, 7.	Asarum europæum
,, 8.	Omphalodes verna
,, 9.	Iberis sempervirens
,, 11.	Cardamine hirsuta
,, ,,	Erythronium Dens-Canis
,, ,,	Scilla bifolia alba
,, ,,	Do. cærulea (13th March)
,, ,,	Pulmonaria mollis
,, ,,	Vinca major
,, 12.	Tussilago alba
,, ,,	Sisyrinchium grandiflorum
,, 13.	Hyoscyamus physaloides
,, ,,	Cheiranthus Cheiri
,, 14.	Draba aizoides
,, ,,	Aponogeton distachyon (in open-air pond)
,, ,,	Symphytum caucasicum
,, ,,	Ribes sanguineum

Mr. Evans stated that he had made similar observations on the flowering of plants in the Experimental Garden. In a warm situation Sisyrinchium grandiflorum and Primula denticulata were in flower on 19th February. Bellis perennis flowered on 25th February and the Apricot on 1st March.—Five new Fellows were elected.

Reviews.

Counsel to Inventors of Improvements in the Useful Arts. By T. Turner. London: Elsworth. 12mo, pp. 101.

The aim of the author of the present little work is, he tells us, "1st, to offer some suggestions as to the cultivation of the fields of useful invention, and the settlement of new tracts of its territory; and, 2dly, to exhibit the inventor's legal position in the general features of its privileges and conditions, leaving its forms and minutiæ to be dealt with when the special circumstances arrive." The author has consequently divided his book into two parts corresponding to this two-fold division of his subject. The second part contains some useful information, and may be perused with advantage by those who, in the words of the author, are at once denoted and reproached by the word projectors.

Oceanus; or a Peaceful Progress o'er the unpathed Sea. By Mrs. D. Osborne. Longmans, square 8vo, is a dialogue, the object of which is to give children a taste for the study of geography, for which purpose several amusing stories are introduced, along with clever woodcuts.

The Unity of Nature. By the late J. W. Howell. 8vo, pp. 143. Jackson.

The object of the present work is to show the relation which exists between the different branches of natural science. "No attempt is made to prove anything new, or to aspire to the deeply scientific character of many larger works of a similar nature; but only to employ and arrange the numerous facts with which persons who possess even a moderate degree of acquaintance with the sciences are already familiar, and to exhibit their novel, and perhaps unexpected relations, in a manner somewhat similar to that by which we form numerous and beautiful landscapes by the repeated combinations of the same objects, which result from beholding them from different points of view."

With this intention the author considers the general relation of the sciences, and then the particular relations of Geometry to Astronomy, Mechanics to Astronomy, Optics to Astronomy, Astronomy to Geology, Botany to Geology, Optics to Geology, Botany to Animal Physiology, Physiology to Practical Religion, and Life to Organisation.

The "unity of Nature" is pointed out by the author in an easy and familiar style, and the work is worthy of being perused by those who think the world, with the various objects upon and around it, was made by chance.

Garden Memoranda.

John Warner's, Esq., Hoddesdon, Herts.—The grounds here lie on the two sides of a valley, whose hollow is occupied by a long irregular piece of water, at the upper end of which, near the house, is a fine fountain issuing from a piece of tasteful rockwork, surrounded by islands clothed with weeping and other trees. The house is conspicuously placed on a commanding eminence at the N.E. corner of the grounds, overlooking a varied and rather extensive lawn, the water, and the rising ground on the opposite side of the valley. It has a neat conservatory attached to it, furnished with a fountain and gay with spring bulbs, Roses, and other early flowering plants. Immediately in front of it is a small rectangular flower-garden, cut off from the lawn by an evergreen hedge, and containing flower-beds in Grass, some nice ornamental shrubs, a long piece of rock-work, and terminating in the end farthest from the house in a range of glass houses, in the centre of which is a handsome Orangery. The latter, being lofty, and having a highly decorated architectural front, is a conspicuous and striking object. In this house were some large and beautiful Orange trees covered with handsome fruit in all stages of growth. Some of the trees were growing in slate tubs, painted ornamentally, and having a moulding round the top, which greatly improves their appearance. This range of houses stands about half way down the hill, between the dwelling-house and the Orchid-house, described last week. On the upper side of the latter are two long Vineries, the first one a late house, in which Mr. Williams grows his pot Ferns; and the second an early house, filled with Muscats, which were breaking strongly, and showing well for a good crop of fruit. A tan bed in the centre of this house offers convenience for striking cuttings in, and for starting some of the stove plants, as Allamandas, and things of that kind, into early growth. In front of these Vineries is a range of pits for wintering soft-wooded plants in. The glass of these is covered in severe weather with asphalte shutters, which are found to make cleaner and more effective protecting material than mats. A small piece of fruit garden along the canal or water-side carries us out to the lawn, which is embellished with a neat fountain, and some fine specimens of shrubs and ornamental trees. Among the latter was a spreading Cedar of Lebanon, measuring more than 2 feet through the bole, though only turned out of an 8-inch pot 28 or 29 years ago. So much for the rapidity of growth of this kind of Cedar. Pursuing our way by a little bridge across the lake or "canal," we reach the "bath garden," where, by the side of the bath house, a water-wheel, turned by a stream led through a small pipe from the upper ground, throws the water up to the top of the dwelling-house, and supplies the fountains in its vicinity. Shady walks through a belt of plantation lead to the springs from whence this water is obtained. These rise out of romantic dells near the top of the hill, decorated with rockwork, fragments of ancient building, and planted with the various kinds of British Ferns, whose culture Mr. Williams perfectly understands. Following the belt of plantation which encompasses two ample Grass fields, we now descend the hill, pass through a little Pinetum, enter what is called the "Dahlia garden" noticed at p. 7, recross the canal, and now we are on a fine raised terrace walk which leads to and is on a level with the mansion. Such is a cursory account of the general features of this interesting place, which is every year assuming a more highly decorated character, and for which it has great capabilities. Those who wish to make themselves more conversant with details, will find a good description of this garden at p. 7 of the present year's volume.

Miscellaneous.

Time of Flowering of Certain Plants, at Gratz, during the Last Five Years.

	1845.	1846.	1847.	1848.	1849.
Apricots	April 26	March 26	April 15	April 5	April 8
Cherries	,, 28	April 6	,, 28	,, 17	,, 25
Plums	,, 29	March 27	,, 30	,, 14	,, 27
Pears	May 4	April 13	May 4	,, 16	,, 30
Apples	,, 8	,, 17	,, 6	,, 21	May 5
Quinces	,, 22	,, 28	,, 14	May 5	,, 14
Medlars	,, 29	May 7	,, 21	,, 17	,, 24
Rye	June 1	,, 12	,, 20	,, 16	,, 23
Wheat	,, 10	,, 25	,, 29	,, 27	June 2
Maize	July 5	June 17	June 25	June 18	,, 26
Vines	June 18	,, 1	,, 3	,, 1	,, 8
Lime Trees	July 5	,, 15	,, 29	,, 14	,, 25

Dr. Marco.

Calendar of Operations.

(For the ensuing week.)

FORCING DEPARTMENT.

Vineries.—Attend regularly to stopping and tying the shoots and thinning the berries. In regulating the bunches, it is well to consider whether a few very large ones will or will not be more desirable than a greater number of smaller bunches. Gardeners usually find those of a moderate size, averaging little more than a pound in weight, more generally useful than very large ones, from the greater facility with which they may be set on the dessert dishes. For this reason, the long, diffuse shoulders of very large shows should be removed; and the loss in the weight of individual bunches will be amply compensated for by the greater number of useful bunches, and the larger size of the berries. Examine the state of the inside borders as regards moisture; and in this do not be satisfied with the appearance of the surface, which is frequently kept moist by syringing, but examine the soil 10 or 12 inches lower down. If any water is necessary, use manure-water at 80°. If the border has become rather dry, the impulse given by this will be immediately visible in the vigorous and rapid expansion of shoots and leaves. Peach-houses.—Take care that the inside borders do not get too dry, but supply them with liquid manure as often as the state of the soil requires it, previously loosening the surface, that the water may penetrate all parts of the border equally. The period between the setting and the stoning of the fruit is a critical one, and during that time they should not be hurried forward by undue excitement, or they are very liable to cast their fruit: but after this stage is securely passed, they

will stand almost as much heat as a Pine. They delight in a high humid atmosphere, if accompanied with abundant ventilation. CHERRIES AND APRICOTS.—Where fruit is swelling maintain a night temperature of about 55°. Give abundance of air, and on fine afternoons close at 80°, and syringe immediately with clean water. These fruits require to be forced very gradually, and a high night temperature should be carefully avoided.

FLOWER GARDEN AND SHRUBBERIES.

Finish planting out biennials and perennials from reserve-garden, and dividing large batches of herbaceous plants. Plants of these kinds, including Hollyhocks, Delphiniums, &c., must be carefully guarded against the attacks of snails, by forming a ring of soot and lime round the plants, and scattering a little over the surface of the soil. The decaying remains of last year's stems should also be removed, and the soil neatly levelled round them, to destroy any lurking places which the enemy may have about the crowns of the plants. The Hollyhock is now becoming a general favourite in the flower-garden, owing to the pains which florists have lately taken to improve upon the old common varieties. To grow them in perfection, a deep rich soil is necessary; and if the ground about the old plants does not answer to this description, let it be improved by forking in some well-rotted dung; and, during the growing season, let the plants have frequent waterings of liquid manure. Borders of mixed herbaceous plants are very appropriate and beautiful in certain situations, if tastefully arranged as regards height and habit of growth, colour, and season of flowering; owing to a want of attention to these particulars, beds of this kind are considered dull and uninteresting. The arrangement of the plants cannot be rectified during the season of growth, nor yet during the season of rest, unless some means be adopted of distinguishing them when they are in a dormant state. They should be correctly named as they come into flower, and memoranda taken of their height, colour, season, and other peculiarities, that, with the assistance of this information, they may be systematically arranged when the proper season for moving them arrives.

FLORISTS' FLOWERS.

The prevalence of north-easterly winds, accompanied with severe frost, has been a serious drawback on vegetation, and unless Tulips have been well protected they must have suffered severely. We hope, however, our cautions have been fully carried out; if so, but little harm will ensue. As for Carnations and Picotees, the sooner they are planted in the pots in which they are to flower the better. We like early potting, and if the plants have been well hardened, no extra shelter will now be required. Auriculas and Polyanthuses in frames will now be starting, and as this is a most critical period, much care will be requisite. We fear that during the few past frosty nights, unless the frames were well covered, much injury would result; at all events, this attention must be carefully seen to. Water may, when the weather is fine, be given copiously (when moisture is requisite); but we would by no means recommend frequent and slight attention in this particular; when water is given let the ball of soil be thoroughly saturated. Dahlias, Pinks, and Pansies may be attended to, as in our previous Calendars. In 10 days we shall have something more to say on these favourites.

KITCHEN GARDEN.

Young seeds of the Brassica family should be carefully guarded against the depredations of birds, by covering them with netting, and from the attacks of slugs by sprinkling a little lime and soot amongst them. Tomatoes and Capsicums should be sown in heat and potted off, three plants in a 4-inch pot, in a rich loamy soil, as soon as the young plants will bear handling.

State of the Weather near London, for the week ending March 28, 1850, as observed at the Horticultural Garden, Chiswick.

March.	Moon's Age.	Barometer. Max.	Barometer. Min.	Thermometer. Max.	Thermometer. Min.	Thermometer. Mean	Wind.	Rain.
Friday.. 22	8	30.214	29.784	49	30	39.5	W.	.00
Satur... 24	9	29.529	29.301	44	27	35.5	N.	.01
Sunday . 24	10	29.692	29.492	42	22	32.0	N W.	.01
Monday 25	11	29.769	29.736	42	14	28.0	N.	.00
Tues. .. 26	12	29.791	29.767	42	19	30.5	S.W.	.01
Wed. .. 27	O	29.937	29.710	44	16	30.0	E.	.00
Thurs....28	14	30.106	30.012	49	16	32.5	W.	.00
Average....		29.862	29.719	44.5	20.5	32.5		0.03

March 22—Hoar frost; cloudy.
— 23—Heavy clouds; sleet with cold wind; clear; frosty.
— 24—Some snow flakes; slight snow; cloudy; frosty.
— 25—Clear and frosty; white clouds with clear intervals; clear; severe frost at night.
— 26—Clear and frosty; overcast; snow showers in evening; frosty.
— 27—Foggy; slight haze, with very dry cold air; clear; severe frost.
— 28—Slight frosty haze; bright sun; clear and frosty.
Mean temperature of the week, 10½ deg. below the average.

State of the Weather at Chiswick during the last 24 years, for the ensuing week, ending April 6, 1850.

March and April.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds. N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 31	55.2	35.8	45.5	10	0.30 in.	2	6	2	2	4	2	4	2
Mon. 1	54.2	35.2	44.7	13	0.76	3	3	3	2	3	5	1	4
Tues 2	55.2	36.5	45.8	11	1.19	4	2	3	1	2	6	2	3
Wed. 3	56.5	34.2	45.3	4	0.07	4	3	2	1	1	5	5	3
Thurs. 4	56.1	37.0	46.5	10	0.46	5	5	2	1	1	6	2	3
Friday 5	56.2	36.9	46.6	12	0.65	—	3	3	1	2	5	8	2
Satur. 6	56.3	36.5	46.4	9	0.30	3	6	2	1	4	7	1	—

The highest temperature during the above period occurred on the 3d in 1848—therm. 78 deg.; and the lowest on the 1st, 1833—therm. 16 deg.

Notices to Correspondents.

AMERICAN BLIGHT: *C H.* Destroy it by means of spirits of tar applied with a common painter's brush.‡

AZALEAS: *Sub.* Assist them to make their wood early in the season, by placing them in heat when they begin to show signs of growth. Keep them in a growing heat till their young shoots have attained their full size; then harden them off, by gradually decreasing the temperature, and finally place them out of doors, in order that their wood may be thoroughly ripened early in autumn, and their flower-buds set. Under this treatment, if their roots are in good condition, they will flower with you the following year.‡

BEES: *Old Sub.* A cup or glass should always be put on as soon as the swarm is off, and if this has occurred in June, will, even in moderate seasons, be filled and sealed in time (about the middle of July) to place a second one on; but this second one should not be removed in the middle of August, the proper time, unless the weight in the hands of the stock leads you to think that the bees have stored a sufficient quantity for the autumn and spring consumption. It is better to preserve this second one till late in the autumn, for should September or October prove very wet and unfavourable, you will benefit the stock more by replacing the second cup or glass than by artificial food. On a swarm which has been hived in June or early in July, it is proper to place a cap or glass, and you will have it filled shortly after the one placed on the stock hive, and in time for a second one, which also preserve for the same purpose as that from the stock hive. But to assist the bees in making comb, it is advisable immediately after the swarm is moved to its permanent place to put a feeder on with a syrup of sugar, as directed in artificial feeding at page 165; but this is to be made of 2 lbs. loaf sugar, dissolved in a pint of water, boiled up briskly, removing the scum as it rises; when cold to be bottled for use. The feeder should be replenished for three or four days, then removed, and the cup or glass placed in its stead. This management will not in the least weaken the stock, but otherwise, as it gives more room for breeding. *Y.*

BLACK BARBAROSSA GRAPE: *Sub.* The bunches grow to a great size. One exhibited at a late meeting of the Horticultural Society weighed 4 lbs. 13 oz. It is middling well flavoured; but its chief merit consists in its hanging late, keeping plump and good, even almost up to the present time.‡

BOOKS: *Lutonian.* The best general introduction to entomology is Kirby and Spence's "Introduction," 4 vols. 8vo; that on the families is Westwood's "Introduction," 2 vols. 8vo; that on the British genera, Curtis's "British Entomology;" that on the species of beetles, Stephens's "Manual of British Beetles;" that on butterflies and moths, by Humphreys and Westwood; and those for beginners, are Newman's "Grammar" and Westwood's "Entomologist's Text-book." *W.*—*An Irish Sub.* There is no such book. "Paxton's Botanical Dictionary" and "Sweet's Cultivator" are the nearest to what you want.

BROWN'S FUMIGATOR: *R E.* We have not yet tried this sufficiently, but it seems to be a very nice useful instrument. As soon as we have given it a proper trial, we shall report further upon it.

CAMELLIAS: *A Constant Reader.* Do you think that these are stove plants, that you treat them in the manner that you describe? The wonder is that you have not killed them outright. Your temperature is 20° too high.

DEODARS: *Cambro Britannicus.* Never stake the young drooping shoot; it will stiffen in time from its own unaided efforts. If there is a double leader, then pinch the end off the worst, so as to allow the other to go a-head, and do no more to the top. Mind that the roots do not remain cork-screwed when the young plants are put out.

DRAINS: *W R M.* The roots are not from any aquatic plant, but from something that grows near your drains. Roots are so much alike that they cannot be distinguished; those of all plants will choke drains—Carrots are quite as likely as Mangold. If we were on the spot we would engage to discover your enemy, but at this distance it is impossible. Cannot you trace them back? What is growing rankest near the drains? That would be suspicious. Are there no trees, or Thistles, or Docks, or coarse rank Grass? In other words, is the land *clean?* We venture to ask this, because we have sometimes thought that Irishmen really must grow Thistles as a field crop.

GESNERA ZEBRINA: *I O P.* Place those in a dormant state in gentle heat; keep the plant which appears to have flowered lately on a cool shelf near the glass, and let it remain dry until it shows signs of growth. Then encourage it to grow, by giving it more heat, and watering it when it requires it.‡

HEATING: *P P.* One of Rogers's conical boilers will heat a hothouse and Melon pit standing near each other, but in opposite directions, provided the house and pit are not very large. You do not mention their size.‡

INSECTS: *P D.* The beetle which has scooped out the pith of the shoots of the two-year-old Scotch Firs is the Hylurgus



piniperda, described in the *Gardeners' Chronicle* for 1846, p. 740. Fig. 1 is a shoot with the burrow shown at the bottom; 2, ditto opened; 3, the beetle of the natural size; 4, ditto magnified; *e, e, f, g, g*, parts of its mouth. The diseased shoots should be cut off and burned before the females deposit their eggs. *W.*—*W B B.* The winged cockroach sent seems to be of a different species from the small wingless specimens sent before. It seems identical with a species we have received from New Holland, and we think it is a female and not a male. *W.*—*J S H.* We should be glad to see the two species of cockroach from Messrs. Loddiges' Orchid-house. We have no doubt that there are numerous species with the same habits, and only hope that the Orchid growers will not let them gain a head, as has been the case with the common cockroach imported from the East, and the larger species from America, now becoming much more common than formerly. *W.*—*Sub.* The brown cases like bits of cigar formed on Whitethorn hedges are the cocoons of the large sawfly (Trichiosoma lucorum), which we shall shortly illustrate in our series of entomological articles. *W.*

JUNIPERUS EXCELSA: *C R D.* It will stand the winter and thrive near London, where Cupressus sempervirens and torulosa do well.‡

NAMES OF PLANTS: *H D.* Senecio Petasites.—*Addio.* We don't know.—*P J N.* Erythronium Dens Canis, the Dog's-tooth Violet.—*S B.* Cornus Mas.—*Zouch.* Campanula hybrida.—*J Ellis.* Erica versicolor, Dendrobium excisum.—*Cymro.* Salvia pseudo-coccinea.—*G M.* Is it not a starved state of Cochlearia anglica? Its oval silicles refer it to that species, and not to grönlandica, which it a good deal resembles.—*Anon.* A Gonolobus, and apparently G. diadematus.—*P B.* 1. Schomburgkia undulata, a beautiful Dendrobe, quite new; can you not send us it, or a sketch of it, for publication in Paxton's Flower Garden? It is a charming thing; where from?—*T D, Pembroke.* 1, Acacia macradenia; 2, A. decipiens.

RUELLIA MACULATA: *J L.* We believe this to be Strobilanthes maculata. You probably do not give it heat and light enough when growing. Try this plan; put it in the stove close to the light, when it is beginning to grow, choosing a well ventilated place; give it plenty of water, and keep it growing as strong as you can; a little weak guano water twice in the course of the first six weeks will do it good. When it has made its wood place it in a dry greenhouse to rest. Then start it in the next season, as before, and it will probably flower.

SEEDS: *Keswick.* We print some letters on this subject, and shall return to it as soon as we have time. In the meanwhile, the quality of some of the criticism which has been offered may be judged of without our assistance. What is to be said of differences!! about which seedsmen themselves cannot agree?

THE SNOWFLAKE: *G S V.* The Vernal Snowflake, Leucoium vernum, of which the following is a representation, is a rare



bulbous plant, perfectly hardy, but impatient of wet in winter. You will see that it is totally different from a Snowdrop, and much prettier; the Snowdrop has three long sepals and three short petals; the Snowflake has sepals and petals of the same length, collected into a bell.

THE WEATHER: *A B.* You are lucky—as you will see by examining our weather register. We have had near London a temperature of 14°, and 4 inches of snow in some places.

TIMBER: *J W H.* The timber of Abies Douglasii is among the finest of all kinds of deal. We have now before us a plank an inch thick, almost as hard as Yew, which has stood in a warm dry room for 24 years without warping or splitting, or being in any way affected. The statement that you have received is the reverse of the fact in all the districts watered by the Columbia River.

WALLS: *L L.* On no account use coal tar upon your walls, at least at this season. Many a fine tree has been killed by its vapour. If applied at all it should be late in the autumn, when the walls are quite dry, and the trees are sinking to rest. Then the fumes from it will have been dissipated before the trees bud in the succeeding spring.

WALKS: *A Man in daily practice* may be a "*practical*" person, but he is not a very intelligent one. Like many other men, he persuades himself that what he has never tried cannot answer; and then when he is told that it does answer, he, with the civility belonging to his breed, is satisfied with giving the statement a flat contradiction.

WEEPING ASH: *North Briton.* It will not injure a Weeping Ash, grafted last year, to allow Scarlet Runners to entwine themselves round the stems, which look naked, for a year or two. We would rather be the Ash than the Runners.

WINTER SALAD: *P Q.* We shall not lose sight of this question; and we confidently look for much information from our correspondents. Mache, is Lamb's Lettuce; *Mache d'Italie* is, we believe, *Valerianella carinata.* Sprue Grass is the small Asparagus, too slender to be used at table, except when cut to pieces. The two best public collections of Orchids are at the Horticultural Society's Garden, and at Kew. We cannot with any propriety give you an answer to the same inquiry respecting *private* collections. That mode of heating answers perfectly with some, and fails with others; for the same reason, apparently, as belongs to Arnott's stoves, and the opposite opinions entertained about them.

MISC: *Sub.* Orange trees and Camellias will succeed perfectly in a well drained conservatory bed 2½ feet deep, made with peat, leaf mould, and sandy loam. It is just the place for them. A visit to the nearest large conservatory will give you a better idea of the kind of arrangement to be followed, and the plants most suitable for your large houses, than we can furnish you with. What do you mean by New Zealand Flags?‡—*A Sub.* Ferula communis is a hardy herbaceous plant, requiring no other care than room enough to grow in, and a warm thoroughly drained soil, more light than heavy. Cupressus sempervirens is the common evergreen Cypress, an evergreen tree too tender for any climate north of Kent, except some warm places on the western coast.—*H G.* We cannot advise you better than you have been doing. Pigeon dung is a powerful manure, and is best mixed with something of a less stimulating character.‡—*E S.* Shake the sulphur on your mildewed Roses out of an old tin pepper-box, if you have one. Syringe the plants first, that it may adhere to the leaves. The Cloth of Gold being a strong growing Rose, should not be too highly manured. For the treatment of Azaleas see next column. Mandevilla suaveolens succeeds best planted out in the border of a greenhouse, and trained up the rafter. For directions about watering, see "Villa Gardening," in another page. ‡—*Ravenswood.* Veronica speciosa is not hardy. It will succeed in almost any kind of soil. Ranunculuses may be benefited by watering them with *weak* guano water when they are in bloom; but it should not be done oftener than once a week at most.‡

SEEDLING FLOWERS.

CINERARIAS: *L.* A nice bright-coloured variety, but much too small.*

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22 „ 4 6	7 „ 0 10
24 „ 5 0	8 „ 1 0
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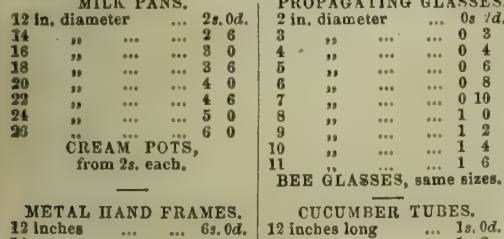
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T. MILLINGTON'S SHEET GLASS, which is of the best description, varying from 16 to 32 ounces, at from 2d. per foot and upwards; 100 feet and 200 feet cases of large Sheet Glass, for cutting up, at 2½d. per foot. British Plate Glass, from 1s. 2d. to 2s. per foot, according to size. Patent Rough Plate Glass, from ¼ to 1 inch in thickness, from 4d. per foot upwards. Glass Slates and Tiles. Milk Pans from 12 to 24 inches diameter, from 2s. to 5s. each. Cucumber Tubes, from 12 to 24 inches long, at 1d. per inch. Lactometers, 7s. 6d. each. Wasp Traps.—Lists may be had, on application at the Warehouse, 87, Bishopsgate-street Without, same side as the Eastern Counties Railway.

BEE HIVES.

GEORGE NEIGHBOUR AND SON respectfully announce that they have prepared for this season an extensive supply of their various IMPROVED BEE HIVES, which are offered to all who are desirous of cultivating that pleasing and profitable branch of rural economy—the Honey Bee. The collection consists of "Nutt's Collateral Hives," "The Single Box Hive," "The Amateur Bar Hive," "The Improved Cottage Hive," &c., from either of which the honey may be taken at any time without injury to the Bees, and may be worked with safety, humanity, and profit, by the most timid and unaccustomed to Bee manipulation. A descriptive paper, with drawings and prices, will be forwarded on the receipt of two postage stamps.—GEORGE NEIGHBOUR and SON, 127, High Holborn, London.

"Nutt on Bees" (6th edition), now published.

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CRUSHED BONES, and all other artificial MANURES, at Messrs. HUNTS' Bone Mills and Manure Works, High-street, Lambeth, London. Established 1816.

MANURES.—The following Manures are manufactured at Mr. LAWES'S Factory, Deptford Creek :

Corn and Grass Manure, per ton £10 0 0	
Clover Manure, do. 11 0 0	
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Superphosphate of Lime 7 0 0	
Sulphuric Acid and Coprolites 5 0 0	

Office, 69, King William-street, City, London.

N.B. Peruvian Guano, guaranteed to contain 16 per cent. of Ammonia, 9l. 15s. per ton; and for 5 tons or more, 9l. 10s. per ton, in dock. Sulphate of Ammonia, &c.

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WILLIAM E. RENDLE AND CO., Plymouth, are Mr. Lawes's Wholesale Agents for the Sale of his MANURES, and can supply them at Mr. Lawes's prices, delivered at his Factory, Deptford Creek.—Apply to WILLIAM E. RENDLE and Co., Union-road, Plymouth.

GIBBS' GENUINE PERUVIAN GUANO, *warranted*, at 9l. 15s. per ton. In the Import Docks.

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POTTER'S GUANO.—This effective MANURE, now greatly Improved, is confidently recommended as a Dressing for all Spring Crops. It is equal to Peruvian Guano, and 25 per cent. cheaper. Also SUPERPHOSPHATE of LIME, GYPSUM, and SULPHATE of AMMONIA, all of guaranteed quality, and Cheaper than at any other establishment in town or country.

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GENUINE PERUVIAN GUANO, direct from the Importer's Stores, LINSEED CAKES, and all kinds of Artificial Manures, may be had at London prices, for Cash, of Messrs. ODAMS and PICKFORD, 15, Mark-lane, London.

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THE LONDON MANURE COMPANY most confidently recommend the above, as they are daily receiving very satisfactory accounts from parties who used it with great success last season. It will be found fully equal to and much cheaper than Peruvian Guano, and is not so liable to produce so large a growth of straw. Price Seven Guineas per ton, 3 cwt. per acre. They also beg to offer their Concentrated Urate, Superphosphate Lime, Nitrate of Soda, Sulphate and Phosphate of Ammonia, Fishery and other Salt, Gypsum, Sulphuric Acid, and genuine Peruvian Guano. To insure this free from adulteration, all purchasers can receive it direct from the Warehouses of the Importer.

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BLASHFIELD'S PATENT COPROS.—A new Manure for Corn and other Crops, containing Ammonia, Phosphate of Lime, Potash, Soda, Magnesia, Soluble Silica, or Silicate of Potash, &c. Price, delivered alongside a vessel, or any Wharf in London, 8l. per ton. It is sold in a finely-ground dried powder, by the Patentee, at No. 3, New London-street, Mark-lane, London.

Superphosphate of Lime, Gypsum, Sulphate of Ammonia, Sulphate, and Nitrate of Soda.

TO AGRICULTURISTS.

COMPOUND CARBONISED ANIMAL MANURE.—This MANURE is composed of a combination of highly fertilising artificial substances with natural animal products, so as to contain, in a concentrated state, all the elements that are best calculated, not only for promoting the germination of seeds and luxuriance of growth in vegetation, but increasing the produce, as well as improving the quality, of the crop to which it has been applied. It is prepared either to be suitable for general purposes, or expressly for each particular kind of crop, as may be required, and its beneficial effects upon the soil will continue for several years. Price (net cash) per ton, from 7l. 10s. to 10l.; the quantity to be applied from 3 to 4 cwt. per acre, according to circumstances.

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BY HER MAJESTY'S  ROYAL LETTERS PATENT.

PATENT HOTHOUSE WORKS, KING'S ROAD, CHELSEA.

E. DENCH invites the attention of Gentlemen about to erect Hothouses, &c., to the vast superiority in every respect possessed by his PATENT HOUSES, which he will warrant superior in every respect to any others. Good Glass from 16 to 21 oz. per foot, 1 foot wide, 3 feet long, furnished, and the Houses, when completed charged, from 1s. 3d. to 1s. 6d. per superficial foot, according to size and quantity; on one principle the roof is formed without wood or putty, and on another principle with wood rafters, and the glass put in with putty. Patent Sashes, requiring no paint, from 7d. to 9d. per foot. HEATING BY HOT WATER.

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THIS MACHINE CAN BE APPLIED WHEREVER A FALL OF WATER OF A FEW FEET CAN BE OBTAINED, and its cheapness and durability, with the fact that upwards of 500 of them erected in England and other countries by Messrs. EASTON and AMOS have now been at work many years, afford ample proof of its great value and efficiency.

Estimates of the expense of the Machine, Pipes for the conveyance of Water, Tanks, and Reservoirs, may be had on application to Messrs. EASTON and AMOS, CONSULTING ENGINEERS to the ROYAL AGRICULTURAL SOCIETY, at their office in Orange-street, Trafalgar-square, or at the Works in the Grove, Southwark, London.

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The works of Messrs. PERRY being situated in the heart of the first iron district, they are enabled to execute all orders with the greatest facility; and on the most moderate terms. Drawings made and estimates prepared, if required. The show rooms contain an immense variety of every description of Iron and Wire-work, and are the largest in London. An Illustrated Catalogue of Bedsteads, with dimensions and prices, sent on application, post-free.

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BY HER MAJESTY'S  ROYAL LETTERS PATENT.

F. M'NEILL AND Co., of Lamb's-buildings, Bunhill-row, London, the Manufacturers and only Patentees of THE ASPHALTED FELT FOR ROOFING Houses, Farm Buildings, Shedding, Workshops, and for Garden purposes, to protect Plants from Frost.

At the Great National Agricultural Shows, it is this Felt which has been exhibited and obtained TWO SILVER MEDAL PRIZES, and is the Felt SOLELY patronised and adopted by

HER MAJESTY'S WOODS AND FORESTS,
HONOURABLE BOARD OF ORDNANCE,
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HONOURABLE COMMISSIONERS OF CUSTOMS,
HER MAJESTY'S ESTATE, ISLE OF WIGHT,
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And on the Estates of the Dukes of Sutherland, Norfolk, Rutland, Newcastle, Northumberland, Buccleuch (at Richmond), the late Earl Spencer, and most of the Nobility and Gentry, and at the ROYAL AGRICULTURAL SOCIETY'S HOUSE, Hanover-square.

It is half the price of any other description of Roofing, and effects a great saving of Timber in the construction of Roofs. Made to any length by 32 inches wide.

PRICE ONE PENNY PER SQUARE FOOT.

*** Samples, with Directions for its Use, and Testimonials of seven years' experience, with references to Noblemen, Gentlemen, Architects, and Builders, sent free to any part of the town or country, and orders by post executed.

☞ The Public is cautioned that the only Works in London or Great Britain where the above Roofing is made, are F. M'NEILL AND CO.'S Patent Felt Manufactory, Lamb's-buildings, Bunhill-row, London, where roofs covered with the Felt may be seen.

The new Vice-Chancellor's Courts, at the entrance to Westminster Hall, were roofed with F. M'NEILL and Co.'s Felt about two years since, under the Surveyorship of Chas. Barry, Esq., R.A. Her Majesty's Commissioners of Woods and Forests are so satisfied with the result that they have ordered the Committee Rooms at the Houses of Parliament to be roofed with their Felt. Quantity altogether used, 24,000 feet.

NOTE.—Consumers sending direct to the Factory can be supplied in lengths best suited to their Roofs, so that they pay for no more than they require.

Every information afforded on the construction of Roofs, or any proposed particular application of the Felt.

The Agricultural Gazette.

SATURDAY, MARCH 30, 1850.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

WEDNESDAY, April 3—Agricultural Society of England.
WEDNESDAY, — 10—Agricultural Society of England.
THURSDAY, — 11—Agricultural Imp. Society of Ireland.

ARTIFICIAL LAKES AND PONDS made in aid of landscape gardening, or as decorative objects in pleasure-grounds, are almost necessarily so circumstanced, that in the course of a few years they become clogged by the deposits from the streams that supply them, and would be eventually filled up by alluvial and vegetable matters, were they not periodically emptied, and their concavity renewed, by throwing out the intrusive materials. Inquiries are often made as to the profitable application, &c., of such mud. It is of course right to make the most of it; but supposing it to be of *no* value, a pond in a gentleman's pleasure-ground must be decently clean, or it had better take itself elsewhere, after the fashion of an African *mirage*. If it cannot be made respectable at a profit, it must at an outlay. The greenhouse is not expected to turn out a remunerative part of the establishment, nor may the ornamental water be viewed rationally with a mercenary eye. Boccius's speculations about fresh-water fish will not stand the scrutiny of their balance-sheet in England, and the mud itself ought in fact to be taken as so much manure gained, while the cleaning it out belongs to the regular expense of keeping up the domain.

But pond-mud of any long standing accumulation is, we believe, of greater value as manure than is currently suspected. It consists of minute, finely-divided particles of earths, and of the remains of

decayed vegetables and of defunct living creatures—materials which a very slight preparation renders the most suitable food for plants. It contains a considerable proportion of animal matters; in proof whereof, any time during the months of May, June, July, or August, take a landing-net lined with cloth, fish out a few samples of this mud, and empty them on the grass; you will soon see scores of swimming, crawling, and even flying things (very curious and interesting too*) struggling to escape: next day break up these half-dried patches of mud, and you will find other living creatures; besides all which, it may be assumed that there are thousands of others, "invisible or dimly seen,"—millions more probably—objects for the microscope, in these three or four netfuls of mud. Even these organised atoms when dead, must, to a degree, animalise the mud as manure. In the winter months they have all perished, or are dormant. Let not the farmer suppose that by scattering them on his Grass lands, or mixing them in his dung-heap, he will thus be introducing destructive grubs; he will no more make them assume that character than he can make the Victoria regia take the place of the Wallflower on a ruin. Removed from their proper element they perish and decay. Pond-mud thus containing an appreciable per-centage of animal matter, it must be contrary to good practice to mix lime with it, as is usually recommended.

To cleanse a long-neglected piece of shallow water of any extent, is a task which requires a thoughtful steady determination, and will not succeeed well if thrown off in a hurry. It is not the gangs of men, and the tubs of beer that will suddenly effect the clearance satisfactorily. It must be a work of some time, and therefore cannot well be commenced in the spring, as the increasing power of the sun would soon raise offensive and unwholesome exhalations from the exposed surface. The time of year most suitable to make a beginning—and the writer has tried both the summer and the winter practice—is in October, as soon as the grand autumnal fall in temperature has taken place. Then open the sluice-gate at the lower end of the lake, having placed a wire guard before it to prevent the escape of fish, and let every drop of water that will, run off. From this time the sluice must be kept constantly open, for drainage. At the end of a week, or before, if the weather be fine, a few experimental cuts may be made into the mud, to try its stiffness, and act as side drains; that within reach of the bank may be thrown out with the spade. If the bottom be sufficiently hard, the mud further in may be barrowed up, as soon as it has attained a sufficient consistency; if the bottom be soft, planks must be laid down, and shifted as ocasion requires, for broad-wheeled barrows to travel on. Cuts extending into the body of the mud will continually be made, as judgment dictates, so that it may be brought as near as may be at least to the stiffness of a Cambridge cheese; that first thrown out on the bank will be carted away, as soon as it is firm enough, to make room for a second casting to lie, and drain a few days in its turn. The mud thus becomes as manageable as any other earthy manure; but the process cannot be rapid. The proprietor must be content to behold, for a season, a dark hollow, instead of a bright sheet of water. It will be found that the work never goes on better (after this drainage), or with less discomfort to the men, than during a hard frost; and as the winter advances, the materials, losing the water with which they were saturated, become still more easy to deal with. It is better to finish the work as it proceeds, leaving the bottom in the state in which it is finally to remain, than to do things by halves; and the forwarder the task advances, the more quickly it will be found to run off. But if there has been a heavy crop of perennial waterweeds, two clearances will have to be made (of the weeds first, and of the mud afterwards), unless there is sufficient room on the spot for the whole mixed mass that is thrown out, to lie and consolidate. The water, of course, will not be turned in again till the cleansing is complete, even if it be continued till next April or May.

There is a machine called the Didling Machine, used for deepening the courses of slow-running navigable rivers, and bringing up the mud that is perpetually deposited there. Its origin is this: at first, on such streams, men, called "didlers" (the first syllable pronounced like the word *die*), were employed to hoe up the mud from the bottom of the river, by means of an iron pouch at the end of a long pole. The mud so brought up was deposited in the flat open barges in which the didlers moved up and down the stream, and was discharged at certain stations; but it was a slow and laborious proceeding. Afterwards a contrivance for more efficient work was made by attaching a number of large iron pouches or buckets to an endless chain traversing perpendicularly on a frame-work in a large barge. The motive power is, in some cases horses, in others steam. The barge, or Didling Machine, is moored so that the lowest bucket cuts into the mud, the endless chain revolves, the bucket rises on the outward side laden, and is followed by the others; in passing the highest point of the chain, it is reversed, and discharges its cargo into the barge, and then redescends to the bed of the stream.

These bulky machines cannot easily be brought to bear upon lakes that are inaccessible to them by water conveyance. We have seen an attempt to drag the mud on shore, by horse-power, with an iron bucket similar to those of the Didling Machines. But the barrow and spade perform their task more neatly, as well as more efficiently: and the plan here recommended supplies employment during the dead months of winter. It appears to the writer, that mixing the mud with lime, salt, &c., is a needless expense, and at best does no good; Nature does not make these mixtures with her alluvial deposits. In his own case, as soon as the first casting of mud was firm enough to cart, it was set out in heaps, both on pasture land, and on the layer (mixed seeds) for next year's upland hay, as thickly as appeared safe to avoid killing the plant or preventing the Grass from getting through. In a few days the heaps had still further drained off their moisture, and were spread. In frosty weather the mud adhered in solid lumps; still it was carted and spread as before; with a thaw the lumps fell to pieces. In due time, bush-harrowing, and stone-gathering, and rolling took place. The effect has been most beneficial. In very early spring both the length and colour of the herbage showed to an inch where their mud had been applied, reminding us of Dr. FRANKLIN's writing GYPSUM in immense capitals on a roadside Cloverfield. What is not wanted for these purposes goes to the manure heap, either to make bottoms, sides, or top, or to be mixed with the entire compost, and so increase (what after all is a material point, especially on light lands) the *bulk* of the year's manure. A slight addition of more highly-seasoned matters from towns, then makes the whole into a valuable fertilising mass; and thus we have the pleasure of again beholding our lake clear and brilliant and pure, a luxuriant crop of meadow Grass and upland hay, and a mountainous muck-heap to cut at and cart from, for Turnips or other green crops. *D.*

* Once or twice in the summer the writer entertains a fishing party, consisting of a few little children, by thus capturing all small possibly obtainable water-creatures, and depositing the entire catch in a glass vessel filled with clear water, to be kept as a raree-show as long as the things survive. The reader would be astonished at the immense number and variety of specimens thus collected in an hour; their movements and habits afford amusement for days.

ARE not poor's-rates in many districts a burden of serious weight upon the cultivators of the soil? And—THE CONDITION OF THE LABOURER—is it not a subject interesting to agriculturists on other grounds as well as the merely economical, on which the poor's-rate aspect of it rests? What subject can commend itself more fully to the sympathies of farmers? for agricultural labourers are their neighbours—the population amongst whom they dwell. And what subject is more important to a full consideration of the *business* of farming; for upon the character and ability of the labourer, and, therefore, upon the circumstances affecting his character and ability, farm profits in a great measure depend. We certainly think that agriculture generally would greatly benefit—if the right means were indicated and adopted for improving the condition of the agricultural labourer.

Now, few things would tend more powerfully to the attainment of this end, than a knowledge of the actual circumstances in which labourers exist throughout the country. We should then be able to trace the causes of the striking differences which, in different localities, those circumstances display; and we should also be able to trace the connection, if any, between the circumstances of the labourer and those of the farmer—both matters of first importance to the full discussion of the subject. Well!—with a view of acquiring such a knowledge, we lately sent a list of questions to gentlemen residing in the different counties of England and Scotland, who had before kindly answered inquiries issued from the office of this Paper; and we have received a good many very instructive replies, of which we hope soon to make use. The idea entertained was, that the information thus obtained would be agriculturally useful; no theory was held connecting the subjects of wages and prices—none, indeed, upon any other of the relationships which wages and employment no doubt possess. The answers asked for were not expected to illustrate the soundness of any preconceived idea upon the subject at all—they were only expected to tell the TRUTH upon a topic of unequalled importance; and its usefulness on this ground alone, it was supposed, would justify all the trouble of the inquiry, whether to those who instituted it, or to those who should kindly forward it. How grotesquely absurd then is the mistake which sees in this inquiry a deeply-laid scheme for the injury of agriculturists—"an engine to be used for their destruction!" We refer to the following letter which appeared last Monday prominently placed in the columns of the *Mark Lane Express*:

"BEWARE OF FALSE FRIENDS.

"TO THE CULTIVATORS OF THE SOIL IN GREAT BRITAIN.

"BROTHER FARMERS,—The editor of a free-trade Paper has issued circulars requesting answers to a string of questions proposed in reference to the value of labour. And if it shall appear that wages have not fallen commensurate with the price of produce, your laudable but mistaken zeal to employ the labourers at a higher rate than you can afford will be used as an engine for your own destruction, in an endeavour to show that distress, deep and wide spread, does not exist amongst agriculturists. To those who have received circulars permit me to say, Do not reply to them. I am, gentlemen, most truly yours, "SUSPICION."

Following immediately the issue of our circulars upon the subject it names, we must suppose that the letter of "Suspicion" here alludes to the *Agricultural Gazette;* and if any doubt existed on the subject it would be removed by *Bell's Weekly Messenger*, which introduces our title, without reserve, into the same letter. The description thus given of us, inaccurate as it is, will probably serve the purpose better than any other would have done. But we assure the writer that he is entirely mistaken in attributing to us any object whatever beyond that of ascertaining the truth. He judges of our conduct by his own, and fancies that all men's ways are as crooked as those along which he stumbles. "To those who have received the circulars permit me to say, Do not reply to them!!" What a paltry display this is! Suppose that "Suspicion" shall have succeeded in entering the minds of our correspondents: they will, no doubt, act upon this advice—and our humble attempt to ascertain the facts regarding the condition of the agricultural labourer will for the present have failed. But is any one the better for ignorance on this subject? Will suspicion, tending to perpetuate ignorance, have benefited the party entertaining it?

We do not, however, fear its influence on the present occasion. We believe that there are too many entertaining a cordial anxiety for the attainment of the truth, too many with a confident determination to publish it whatever it may say, and to follow it wherever it may lead—for the efforts of one against so good a tendency to prevail.

LODGING AND BOARDING LABOURERS.

WHEN Mr. Sotheron took his farm in hand about four years ago, he found, as usual, a barn of double the size required, and divided one end of it into three compartments, a dining hall, a sleeping room containing six beds, a washing room with a loft over it, for keeping chests of clothes, and a sink communicating with the tank in the yard. The barn doorways are walled up with brick and fitted with glass casements, a large window with a swing sash is opened over the sleeping apartment, one of the threshing floors forms the dais of the dining hall, on which stand a plain large table and some wooden chairs. A lamp, and a long pole for drying clothes, are let down by pulleys from the tie-beams of the roof, a plain hearth and chimney-corner have been added at the end, and a cupboard completes the furniture. In this building from five to seven lads have been housed and fed during the last four years. Their wages commence at 4*l.*, and rise gradually to 8*l.* 10*s.* per annum. They purchase their own clothing out of their wages. The married man is a good workman and manages the steam-engine. Several of the boys have become excellent ploughmen and have won prizes. After work they occasionally amuse themselves with cricket or other games, or with reading and writing, playing the flute, &c. The weekly expenses of their board per head are as follows: Bread and flour, 1*s.* 1*d.*; Meat and bacon, 2*s.*; Groceries, 1*s.* 0½*d.*; Beer, 1*s.*; Total, 5*s.* 1½*d.**

They are allowed to come at 16 years of age, and remain till they marry or obtain situations. The youngest boy cleans out the room, and they take it in turns to prepare the table for meals, which are cooked by the wife of the bailiff, who lives in an adjoining house, and has the assistance of one female servant, who is not allowed to go into the building where the young men live. The bailiff's wife also provides for their washing. The young men are under the superintendence of the

* The following details are taken from the average of the consumption for several weeks:

38 lbs. of bread, at 1½*d.*	£0	4	9
4¾ lbs. of flour, at 1½*d.*	0	0	7¼
9½ lbs. of butcher's meat, at 5*d.*	0	3	11½
14½ lbs. of bacon, at 5*d.*	0	6	0½
5½ lbs. of cheese, at 6½*d.*	0	3	0
2¼ lbs. of sugar, at 4*d.*	0	0	10
⅝ lb. of coffee, at 1*s.* 2*d.*	0	0	5½
¼ lb. cocoa, at 8*d.*	0	0	4
2 lbs. rice, at 2*d.*	0	0	4
Pepper, salt, &c.	0	0	3
Board of five boys	1	0	6½
Board of one boy	0	4	1½
Beer in addition	0	1	0
Actual food of each boy	0	5	1½

To this must be added a small sum per head for washing, soap, and candles and firing.

bailiff, who presides at their meals, and reads prayers with them morning and evening. A bell rings at meal times, and those who are absent from a meal without leave or good cause, go without it. They are required to observe some rules, few and simple, tending to order and cleanliness—such as sit down to their meals in clean smock frocks, which they put off when they go out again to work. I ascertained that these rules are in no way irksome to them, but have inspired them with a feeling of self-respect—as their phrase is, they are glad to keep themselves respectable. I sat with them at their breakfast table, and conversed with them while the bailiff was out of the room, and can therefore testify to their demeanour being at once intelligent and respectful. There can be little doubt that such a plan, carried on with kindness and good sense, must tend to the best results, and such, in fact, have been produced.

Of the total number of youths who have been admitted, two have married, one of whom works on the farm, the other for a neighbouring gentleman; four have been placed out in good situations; three, having absented themselves without leave, were not taken back; one left owing to ill health, and afterwards died; five are now at the farm. None have misconducted themselves, nor been discharged for any fault.

In connection with these arrangements for the boarding of the farm servants who live in the house, two advantages are provided for the other labourers. A cup of cocoa is given to every person employed on the farm at the time appointed for the beginning of work; and during the winter months nourishing soup is offered to those who choose to pay for it, at the rate of one halfpenny per quart, which covers the actual cost, and is even more valued than it would be if it were given without payment. The early cup of cocoa is found to have the great merit of allaying the feeling of thirst during the day, which is so great a temptation to labourers: this probably is owing to the irritation of the stomach caused by beginning the day's work fasting being prevented.

The receipt for the soup, which is made *à la Soyer*, is as follows: Meat, 2 lbs. minced, 9*d.*; Sago, 6 lbs., 1*s.* 6*d.*; Pepper and salt, 1*d.*; Total, 2*s.* 4*d.* Making 16 gallons, which are sold for 2*s.* 8*d.*, leaving 4*d.* to set against the value of the vegetables grown in the garden, fuel, and the time of the servant who makes it.

The merit of these plans, especially of the boarding of the boys, seems to be, that they are natural and simple, in fact a revival of an old English habit, universal some years ago, and still practised, even on very large farms, in the north of England, but driven out in the southern counties partly by the encouragement given to early marriages under the old Poor-law, and partly by the refinement of modern habits, which have banished the labourer from the society of his master, whereas he would derive great advantage from it, and be made a more useful servant. *T. D. Acland, in the Journal of the English Agricultural Society.*

RELATIVE MERITS OF ROTATIONS.

a The first Norfolk, or four-course rotation, may be supposed able to yield in the

1st year. 25 cwt. of Wheat straw per acre.	3d year, 20 cwt. of Barley straw.
2d, 19 tons of Swedish Turnips	4th, 11 tons of Clover and Grass.

This is equal to 30 tons of green food in four years, or 7½ tons per acre per annum, a quantity which, at the rate of 1 for every 150 lbs., is able to produce about 1 cwt. of beef per annum.

b In the second, when this rotation is extended one year, by keeping down the Grass two years, we may suppose a somewhat larger acreable produce of green crop. Thus—

1st year, 25 cwt. of Wheat straw.	3d year, 20 cwt. of Barley straw.
2d, 20 tons of Swedes.	4th, 11 tons of Clover.
	5th, 7 tons of Clover.

Giving 38 tons as the produce of five years, or nearly the same acreable produce per annum as in the former case.

c We now may take the Dunbar six years' course of crops as our third rotation, and here we may expect

1st year, 20 tons of Swedes.	4th year, 25 cwt. of Wheat straw
2d, 20 cwt. of Barley straw.	5th, 25 cwt. of Bean straw.
3d, 12 tons of Clover.	6th, 25 cwt. of Wheat straw.

Which will yield 32 tons of green food, or 478 lbs. of meat per acre in six years, a quantity equal to about 80 lbs. per acre per annum.

d In our fourth instance we take the eight years' course followed on the farm from which we write. It may produce

1st year, 25 cwt. of Wheat straw.	5th year, 25 cwt. of Wheat straw.
2d, 25 cwt. of Bean straw.	6th, 12 tons of Clover.
3d, 25 cwt. of Wheat straw.	7th, 25 cwt. of Wheat straw.
4th, 24 tons of Mangold Wurzel.	8th, 20 tons of Swedes.

Or, in eight years, 56 tons of green food, corresponding, according to our original datum, to 104 lbs. of meat per acre per annum.

e As regards heavy land rotations of crops, we take the following from Mr. Stace's Essay on that subject in the 4th vol. of the Journal. It will produce probably

1st year, 12 tons of Vetches and 16 tons of Rape and Turnips.	4th year, 25 cwt. of Wheat straw.
2d, 25 cwt. of Wheat straw.	5th, 25 cwt. of Bean straw.
3d, 12 tons of Clover and Tares.	

Or 40 tons of green food, *i. e.* about 600 lbs. of meat per acre in five years, equal to nearly 120 lbs. per acre annually.

f Our last instance shall be selected from Professor Low's work, where it is praised for its suitability to rich clays. It may yield

1st year, nothing — summer fallow.	4th year, 25 cwt. of Oat straw.
2d, 25 cwt. of Wheat straw.	5th, 25 cwt. of Bean straw.
3d, 12 tons of Clover.	6th, 20 cwt. of Barley straw.

It thus produces 12 tons of green food in six years, or 30 lbs. of meat per acre per annum. It is proper to remark that the above estimates are more likely to be relatively than positively true; the datum on which their produce of meat is calculated is, of course, subject to the vicissitudes which affect all agriculture, and stultify all farm estimates. The herd which is to convert this food may be carried off by disease, and its produce of meat will then of course be anything rather than 1-150th the weight of the food. But all the rotations named are liable to this risk alike, and it may therefore be useful to compare them:

Name.	Period.	Pounds of Meat produced per acre per annum.
a Norfolk	4 years.	110
b Ditto	5 ,,	110
c Dunbar	6 ,,	80
d ——	8 ,,	104
e Stace	5 ,,	120
f Low	6 ,,	80

Of these the 5th is less likely to realise its estimate than any of the others, as its large produce depends upon the possibility, on an average number of years, of obtaining 16 tons of Rape or Turnips on a clay soil after a spring crop of Vetches, and this is extremely doubtful. Of the fourth rotation—our own—we would only say that we have grown in the past year 30 acres of Clover (15 of them for horses), 30 acres of Mangold Wurzel, 15 acres of Swedes and Turnips, 14 acres of Carrots and Potatoes (of which at least 12 acres have been sold, or eaten by horses), so that on three-eighths of the farm we have had a produce for consumption of 960 tons of green food; and if all had been converted into meat, as it might have been, the produce available for that purpose would have been—

30	acres of	Clover	= 360 tons.
30	,,	Mangold Wurzel...	= 420 ,,
15	,,	Swedes	= 300 ,,
14	,,	Carrots, &c. ...	= 280 ,,
		Total	1360

The meat made from 960 tons has been as follows:

	lbs.
70 sheep bought at probably 15 lbs. a qr., are being sold now at 25 lbs., = 70 × 40	2,800
About 160 sheep bought at 13 lbs. a qr., will be sold in April at probably 23 lbs., = 160 × 40	6,400
10 oxen weighing 5 cwt. have become 6 cwt. each ...	1,120
20 oxen weighing 6 cwt. have become 8 cwt. each ...	4,480
6 cows weighing 5 cwt. have become 7 cwt. each ...	1,344
Add say 30 cwt. of bacon and pork	3,360
Total meat made	19,504

But at least 240*l.* worth of food have been purchased, and if it be supposed to have made its worth of meat, which is, by the way, a very doubtful thing, then at 6*d.* per lb. we must deduct at least 9504 lbs. from the amount of meat made, leaving 10,000 lbs. as the produce of 960 tons, or about 13,000 lbs. as the produce of 1360 tons—the produce, in fact, of a farm of 240 acres. This is only about 60 lbs. of meat per acre; it is only 1 lb. of meat produced by the consumption of about 200 lbs. of green food. It is a result, however, probably as near the truth as we can attain; including the circumstances of illness suffered by stock, and of a deduction of the whole value of cattle-food purchased.

In the sixth rotation named, the small produce of meat illustrates the effect of the naked fallow. I believe that there is no more effectual method of increasing our supplies of animal food than the substitution of a green crop, such as the Vetch, the Cabbage, or the Mangold Wurzel—all clay soil plants—for the naked fallow. This substitution could be effected without expense, that is at a cost paid for by the additional returns it would produce; a crop of 24 tons per acre once in four or six years would be a clear gain of animal food to the amount of 90 or 60 lbs. respectively per acre annually over those districts which admit of the change. *English Agricultural Society's Journal.*

Home Correspondence.

Prices.—In a letter from C. Wren Hoskyns, Esq., in a late Number, he gives the average prices of Wheat at the various European ports; upon reading this statement I was greatly surprised, having during the debates upon the Corn-laws been engaged in committee with several merchants and agriculturists to investigate what had been the average prices of corn (for the 10 years preceding that period) at the foreign ports referred to in this letter; and the conclusion arrived at was 28*s.* 6*d.* per quarter. After I had read Mr. Hoskyns' letter in your Paper, the debates which took place upon the budget on Friday last came to hand, in which Mr. Newdegate in his speech contradicts the statements of Mr. Wilson, as quoted by Mr. Hoskyns, and which not only disproves the accuracy of Mr. Wilson's statements, but corroborates those which myself and the gentlemen appointed upon the committee had obtained. I give Mr. Newdegate's speech, as extracted from the *Morning Herald*, verbatim, as best explaining the subject. "The hon. member for Westbury, Mr. Wilson, had on a former occasion stated that the average price of Wheat from 1839 to 1846 was 43*s.* 4*d.*, whereas, according to the statistical archives, it was 27*s.* 3*d.* The hon. gentleman had cited the authority of the Prussian Government, and he (Mr. Newdegate) held in his hands the official documents—the statistical archives—contradicting such a statement. He would now give the average prices set forth in the statistical archives between 1837 and 1846. In Hamburgh, it was 26*s.* 3*d.*; Lubeck, 29*s.* 4*d.*; Dantzic, 25*s.*; Stettin, 23*s.* 8*d.* For some years he had been studying this question, and he said, when he looked at the information upon which public men relied, he could not be surprised at their mistakes." He proceeds by stating that "the average price of Wheat in New Orleans from Sept. 1, 1843, to the end of 1845, was 24*s.* 8*d.* the quarter, the expense of freight to this country was 10*s.*, giving an average of 35*s.* per quarter." I have no desire to enter into any controversy upon the subject, nor to advance any opinion contrary to what I consider the facts will justify, but at this momentous period, when rents are becoming adjusted throughout the kingdom, it is most important both to landlords and tenants to obtain correct information upon the subject; and, therefore, still more important whether the pivot or price upon which such arrangements are to be based shall be assumed at 38*s.* or 48*s.* per quarter. My own opinion coincides with the former, and in Mr. Newdegate's words, having many years made it a study, I, from these investigations, feel confident that the price of foreign Wheat, free in British ports, will range between 35*s.* and 40*s.* per quarter, and this independent of quality—an element rarely taken into consideration by writers and speakers upon the subject—as for some time past, and at the present moment, Dantzic Wheat of 63 lbs. per bushel is worth 1*s.* per bushel or 8*s.* per quarter more than Wheat grown in this country of the same weight. This difference in the quality will always give an advantage to the foreign grower in favourable seasons, but in unfavourable seasons the preponderance in favour of foreign Wheat will be still greater. As I am deeply interested in this question, from having been of late called upon to make new adjustments of rent between landlords and tenants, I feel the importance of the question, and therefore claim the indulgence of the insertion of this letter in your widely circulating paper. *Robert Baker, Writtle.*

Spade Labour &c.—As it is admitted by all agriculturists that the spade is a superior cultivator to the plough, it would be well for the manufacturers of farm machines to turn their attention to that implement. The facility with which machinery has been made to turn any number of spindles, could also be applied to spades. In your *Gazette* for March the 2d "P. S.," in his article on a steam cultivator, draws the mechanic's attention to the mud scraper used on roads, gathering up the soil, and mixing it with manure in the machine. If this plan could be carried out, it would be necessary to pass the soil over a second roller, with forks to loosen the subsoil; the revolutions required to carry it through the machine, that it might fall after the fork roller, would also pulverise the soil. The manure to be spread on the ground previous to using the machine. What would our manufactories be, if a person was required to spin each thread as in days of yore; and yet the spade was quite as good a tool at that time as now, and a labourer could turn up as much ground in a day. From the irregularities in land, the machine perhaps should not be broader than a common roller, but that would carry a great number of spades. Like "P. S.," I am no mechanic, but one that delights in everything that tends to raise the labourer, and therefore consider the use of the spade and flail a disgrace to the present age. Now although machines of this description would require men of a different calibre to the present farm labourer, I should be sorry to see them worked by any other than those that are continually employed on the farm. And nowhere would an intellectual person improve the home as in a farm house, from necessity isolated, filled with beings whose employments are a continual source of health and excitement, to whom a few hours' mental study in the evenings would be the most agreeable relaxation. An intellectual person to work the steam engine (that might be made applicable to other laborious work, as well as the spade cultivation), should be a continual teacher of useful knowledge, and I hope soon to see such a schoolmaster on every farm containing 100 acres. A knowledge of chemistry would show that Nature's laboratory acts in their dung pits as in the growth of crops; that allowing the gases to be washed away by rain, or to escape in the air, is as foolish as to leave their ricks exposed to the depredations of vermin. With knowledge they would require no recommendation to cover the dung pit, or make manure tanks, but be as careful of the gases that are so ready to fly off, as a lover of perfume is to secure the stoppers of his bottles. *Anon.*

Water-wheels for Driving Farm Machinery.—I am anxious for information with respect to the applicability of water as an impelling power for farm machinery. Having a very large and deep pond of water, supplied by a moderate but constant stream, and being about to erect a farmstead near to this reservoir, it has been suggested that this water should be applied as a motive power to a threshing-machine, chaff-cutter, &c. There is a fall of upwards of 9 feet. The question is, what would be the expense of putting down a wheel, and which is the best description? I am told that the horizontal wheels (Whitelaw's patent, or the turbine) are better, much cheaper, and more simple, than the vertical overshot, or breast-wheels. The supply of water would not be sufficient in this case for the undershot wheel. Would anyone acquainted with the working of a wheel put up on a modern principle, at an expense that a tenant-farmer might encounter, capable of threshing and driving other machinery, inform me of the working of it, and where one might be seen in operation? Mr. Whitelaw, I understand, states in his pamphlet (published some years ago, and which I have not yet seen) that he can erect one of his patent mills equal to the power of eight horses for 40*l.* The situation of the pond and the premises are as favourable as if formed originally for the purpose now contemplated. Any

information from practical parties would be esteemed a great favour, and might be of much service to—*Aqua Pura.*

Intrinsic v. *Economical Values.*—The proportion of nutritive matter found in different kinds of grain is stated by Einhof, a German chemist, to be as under: Peas, per cent., 75; Wheat, 74; Rye, 70; Beans, 68; Barley, 65; and Oats, 58. But as the preference of one grain over another, as an economical food for cattle, is also dependent on their price, it may be interesting to see the feeding value of each grain, at the prices here supposed:

Oats, at 20*s.* a quarter	2.9	Beans, at 30*s.* per quarter	2.2
Peas, at 30*s.* ,,	2.8	Barley, at 30*s.* ,,	2.1
Rye, at 25*s.* ,,	2.8	Wheat, at 40*s.* ,,	1.8

Whence it appears that Oats are the cheapest and Wheat the dearest article of food, and that the proportion between their feeding values is rather more than 3 to 2. *Mordaunt Barnard.*

The Growth of Flax in Kerry.—The Rev. B. O'Connor has, with his accustomed energy, given the first impulse to a more extended cultivation of Flax in this county. Nothing has tended more to raise the physical condition of the people of the north, than the successful cultivation of this important element of the national resources of Ireland. The climate and soil of Kerry are peculiarly suitable, and capable of producing the very best qualities. The Flax will always meet with a ready sale through commission agents in Belfast, charging a small per-centage, and the seed may be turned to advantage in various ways. The heaviest and best can be retained till the next spring, and given out to the tenants for sowing. Any quantity of the remainder will find a market with the oil-crushers of Dublin, Belfast, or Liverpool. The value of the seed in all kinds of stock is so fully established, that it is unnecessary to do more than refer to the report of the Flax Society, and the publication of Mr. Warnes of Trimingham. It may be added that upwards of half the rental of Ireland is annually paid to foreigners for Flax, Flax seed, and oilcake. *T. S.*

Societies.

ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

A WEEKLY COUNCIL was held at the Society's-house, Hanover-square, on Wednesday last, the 27th of March: present, Mr. RAYMOND BARKER, V.P., in the chair; Sir Robert Price, Bart., M P., Mr. B. Almack, Mr. Wyrley Birch, Mr. Bosanquet, Mr. Burke, Mr. Clavering, Mr. H. Dixon, Mr. Dyer, Mr. W. Hutley, Mr. Majendie, Mr. W. Marshall, M.P., Mr. C. E. Overman, Mr. Parkins, Prof. Sewell, Mr. C. Hampden Turner, and Prof. Way.

The Earl of Falmouth, of Tregothnan, Cornwall, and St. James's-square, London, was elected a Governor of the Society.

The following new members were elected:

Maskelyne, A. M. Story, M.A., Bassett-Down House, Swindon, Wiltshire.
Vidal, Edward Urch, Comborough, Bideford, Devon.
Wood, John, Thedden Grange, Alton, Hants.
Carmichael, John, Tilmouth Park, Coldstream, Berwickshire
Parrott, Edward, Buckingham
Dine, Bradley, Gore Court, Sittingbourne, Kent
Beckett, Richard, Doncaster, Yorkshire
Bennett, Luke, Dimsdale Hall, Newcastle, Staffordshire
Edwards, Joseph Priestley, Darcy Hey, Halifax, Yorkshire

ASPHALTIC MANURE.—The Earl GREY, H.M.'s Principal Secretary of State for the Colonial Department, favoured the Council with a statement of the satisfactory results obtained by Vice-Admiral the Earl of Dundonald, in command of H.M.'s naval forces on the West Indian station, from manure prepared from the asphaltum of the great Pitch Lake in the Island of Trinidad, and tried in the Government gardens at Bermuda. His Lordship further stated to the Council, that Lord Dundonald had sent to the Colonial-office a box containing three specimens of the manure in question, and which would be forwarded to the Society for the information of its members.—The Council ordered their best thanks to be transmitted to Earl Grey for the favour of this communication, and gave directions that the specimens referred to by his Lordship should, on their arrival, be placed in the hands of Prof. Way, the consulting chemist of the Society, with a request that he would make a chemical examination of the new manure, and report to the Council his opinion of its value in an agricultural point of view.

MISCELLANEOUS COMMUNICATIONS.—Letter from Sir John Tylden, suggesting that Locomotive Steam Engines, for agricultural purposes, should be made of smaller size, so as to be capable of being drawn by a single horse from barn to barn on farms of moderate size; that Threshing Machines of a more portable character should be constructed, to be attached to the steam-engine, and capable of threshing and cleaning about 10 or 12 qrs. a-day; and that a fixed mill for grinding corn and breaking oil-cake should be more generally adopted in homesteads.—A Report from Mr. R. W. Baker of his further trial of the Australian Barley furnished to him by the Society.—A copy of the Farm Account Book prepared for the use of the National Agricultural Schools in Ireland, and transmitted to the Society by the Board of Education in Dublin.—Impressions of the dies of the Prize Medals of the Birmingham and Midland Counties Exhibition of Live Stock, Poultry, &c., from Mr. Ottley, of Birmingham, the artist to whom their execution was entrusted.—Statement by Mr. Wyrley Birch, of the working of a model he had seen of a plan for ploughing by steam power; for all which communications and presents the Council ordered thanks to be returned.

HIGHLAND, *March* 13: *The Best Variety of Oats to Sow.*—Mr. FINNIE, of Swanston, said:

Assuming the data of those held to be authorities, we find that the arable lands in Scotland are estimated at about 2,400,000 acres, which are distributed as follows:

In Wheat	220,000	In Potatoes	130,000
,, Barley	280,000	,, Turnips	350,000
,, Oats	1,275,000	,, Flax	16,000
,, Beans and Peas ...	100,000	,, Gardens	32,000

Now, with reference to these extents, agriculturists are called upon to bring their skill, judgment, and enterprise, to bear upon, I believe, about 55 varieties of Wheat, 17 of Barley, 38 of Oats, 163 of Potatoes, 13 of Beans, 20 of Peas, 39 of Turnips, 17 of Clovers, and a much extended and yearly cultivation of natural permanent Grasses. It may indeed be said that there is no situation suitable for cultivation where a variety may not be sown, which, in an average of years, will mature and make a moderate return. According to the information contained in that invaluable work published by Messrs. Peter Lawson and Son, Seedsmen to the Highland Society of Scotland, termed their "Manual," I find there are 40 different varieties or kinds embraced, to a greater or smaller extent, in the cultivation of what may be termed the Oat break of Scotland. I shall enumerate them:

1. The Potato Oat
2. Potato Oat of the French
3. Hopetoun Oat
4. Early Kent
5. Georgian
6. New Early Essex
7. Blue Major Oat
8. Strathallan Early Oat
9. Early Angus
10. Late Angus
11. Grey Angus
12. Cupar Grange
13. Blainslie
14. Kildrummie
15. Common Irish
16. Drummond
17. Macbie Hill, or Red Macbie Oat
18. Loudon Oat
19. Danish
20. Holland
21. Friesland, or Dutch Oat
22. Three Grained White Oat
23. Early White Irish Oat
24. Tam Finlay Oat
25. Argyleshire Oat
26. Red Essex
27. Common Dun Oat
28. Dun Winter Oat
29. Brown or Black Riga or Archangel Oat
30. Common or Old Black Oat
31. Common White Tartarian
32. Black Tartarian
33. Early White Tartarian
34. Short Oat
35. Common Naked Oat
36. Small Naked Oat
37. Animal or Fly Oat
38. Wild Oat
39. Common Denthonia or Bristle-pointed Oat
40. Argyleshire Small Oat.

There is likewise the Barbachlaw, Berlie, or Barley, or Providence, or, as it is often called, the Russell Oat, and there may be others; but really as the same kind often goes under very different names, it is impossible to say whether those I have last mentioned are not already embraced in Mr. Lawson's list. With such a list as I have enumerated, it may appear to some no very difficult matter to make a selection so as to meet the case of every field on a farm; but we practical farmers find, that the earliness or lateness of the seed time, the earliness or lateness of time at which the land has been ploughed, and which is in a great measure regulated by the nature of the winter, the dryness or wetness of the weather at seed time; for sometimes it does occur, from the advanced period of the season, and protracted wet weather, that the old saying of sowing through dub and mire is literally fulfilled—the general character of the summer—the earliness or lateness of the harvest, and the weather that then prevails—the very changing of seed often produces results the very contrary of what occurred in previous seasons. In order, therefore, to induce gentlemen having experience under different circumstances, to favour this meeting with their remarks, I will arrange what I have further to say under the three following heads or divisions: under the first, I will state briefly what appear to me the best varieties of Oats to sow where the land has every advantage from climate; secondly, where the climate happens to be rather of a medium character; and, thirdly, where, from altitude, great risk exists in having the crop matured in even the most favourable seasons. In addressing myself to the first of these, I would say that, on the first class land, the Potato Oat has been found, generally speaking, the most remunerative. It is no doubt true that this Oat has likewise its drawbacks—sometimes it suffers from tulip-rooting—it sheds its seed very easily, and, consequently, there is much loss in both shearing and stalking; by cutting a little quick, the latter evil may, to a certain extent, be avoided; but where the former is found to prevail, I would be much disposed either to substitute the Hopetoun or sow a mixture of the Potato and Hopetoun in the proportions of one-half. I am inclined to think tulip-rooting is often occasioned by the land being ploughed too wet. In the event, however, of this class of land being rather soft, and the Potato when tried liable to lodge, which it very readily does, I would substitute the Berlie. We have likewise the Early Angus and the Sandy. I prefer the Berlie, as it stands up better, and has fewer green pickles in the sample than the Early Angus, and it is a more prolific variety than the Sandy. The Black Tartarian is very answerable for the description of land I am talking of, but being black, it is not very marketable. Mr. Sheriff, to whom we are indebted for the Hopetoun, lately introduced an Oat, which he named the Sheriff Oat; it is an early variety, and not liable to lodge, but some allege the miller complained it was thick in the husk, and did not meal well, but with what correctness I cannot say. I grew it one year as a comparative trial with the Hopetoun, but having none of the first-class land I am now referring to on my farm, I found it unsuitable in my own particular case; but unless for the objection stated by the millers, it appeared to me likely to succeed well on land where the crop was liable to lodge. On the second-class land under this division, I would be partial to the later varieties, such as the Grey Angus, the late Angus, and Hopetoun. The Grey Angus I have always held in great estimation; it gives, on an average of years, excellent produce and good quality of straw. I would prefer, however, as the rule, to adopt a mixture, and for this purpose would select the Hopetoun, with the Berlie or the Early Angus, or the Sandy, or Kildrummie, and these in the order I have mentioned them, as the land declines in fertility; the Hopetoun may be mixed with any of these in the proportion of four of Hopetoun to two parts of the kind selected, or in equal proportions, or even in that of five of Hopetoun to one. For many years on the best managed farms in East Lothian it was customary to sow a mixture of Potato and Early Angus. The Hopetoun, however, is better adapted for such a purpose; 1st, because it is more suitable for the land under consideration; and 2d, it does not tiller out like the Potato; the crop in consequence is not so liable to become too thick—it is a tall growing Oat, and thus shades and retards the ripening of the Early Angus. Berlie or Sandy, which are rather earlier, and besides as the Hopetoun should be cut before being quite ripe, in which case the whole admits of being reaped advantageously at one time. I would therefore conclude, if a mixture is preferred, the Hopetoun and Berlie is most suitable. If, on the other hand, pure seed is sown, I would fix upon the Hopetoun for what I would call, in farmer's language, soft clay land; the Grey Angus for hard clay land, and the latter, even though the soil should be of a lightish character; but take such a district as the Carse of Falkirk or Stirling, I would say that on good land after pasture, the Potato Oat will be often found best, but if after hay stubble, the Berlie, Sandy, or Early Blainslie will be safer. On the inferior land in the last-mentioned district, I believe the Tam Finlay is the favourite. I now come to the second division, that is, where the climate is of rather a marshy character, and here I would be disposed to start with the Hopetoun on the best soils, as I am much inclined to think the tendency to tulip-root in the Potato increases as the climate falls off. The mixture of Hopetoun and Potato may, however, be found answerable. Should the land be rather soft, the Berlie, Early Angus, or Sandy, would be a better substitute. The Sandy is now sown to a considerable extent, but there is a general complaint, and I believe not without foundation, that it is not the most productive kind that may be grown. In one respect, however, I think it suits well, that is, wherever Oats are sown immediately after Turnips I have observed, it does not take on that yellow tinge at an early stage of its growth, as others are too liable to do after Turnips, and bleeds well, but when sown after lea it produces less than what is obtained from either the Hopetoun, Berlie, Grey Angus, or late Angus. Then, on the secondary description of soils under this division, and when it is desirable to sow each kind separately, there is the Early Blainslie, the Kildrummie, the Hopetoun, the Dun Oat, and even the Grey Angus, when the seed time is early, and the field has a favourable exposure. From any of those a selection may be made to suit the particular state of fertility of each field. Should a mixture not be objected to, which sometimes happens where the Oats are generally sold for seed, then four parts of Hopetoun, with two either of Berlie, Early Angus, Sandy, or Early Blainslie, or in the proportion of five of Hopetoun with one part of any of those kinds; or even take Hopetoun and either of them in the proportion of a half; should the land, however, not be in the highest order, Hopetoun and Kildrummie, or Hopetoun and Early Blainslie might suit better. The Dun Oat is another variety that might answer well on the description of land I am talking of. I know no kind that can withstand unfavourable changes of weather better; where others become yellow and sickly, it maintains a good colour. The straw, however, is not of the finest; the Dun Oat meals well, but I have an objection to both Black and Dun Oats, for two reasons—the first is, if in the habit of selling for seed, black pickles lodging about the mill, barn, or sack, and finding their way into a stock of white corn, destroys it when exposed for seed. Another is, the manufacture of meal, like other things, is much improved; there is a black tick or seed which the millers find great difficulty in getting rid of, and this injures the market value. For the lowest class soil, under this division, I believe the Barbachlaw or Tam Finlay may be a good selection. I come now to the last division, and here I would simply remark in the first place, that the earliest varieties must be taken; and 2d, if the land is good and in proper condition, the Early Angus, Berlie, and Sandy, will be the most proper to select. I would give my preference to the two latter in all cases where a Turnip crop is the immediately preceding one; but if the field is much exposed to the wind, or of inferior quality, the Barbachlaw will be found more profitable; it produces a crop under the most unfavourable circumstances, and has excellent straw, and in high winds it does not shed its seed so readily as any I have mentioned. The red Oat may likewise suit this district well. Some allege that it is just another name for the Sandy, but I satisfactorily proved the reverse one season, as I found it to be rather earlier, and straw of good quality, which in a high land district is always an object of great importance. I am humbly of opinion the only way in which a farmer can arrive at the varieties most profitable for him to sow, is for a series of years to test on his own farm the results obtained by comparative trial of the different kinds, both separately and in mixture, and then judge, from an average of years, which of them prove most remunerative. I fear I have already intruded too much on the time of the meeting, and will therefore conclude by stating what results were obtained from two comparative trials I had upon my farm. The first was made with reference to what was likely to answer the lowest and best land upon my farm. The same extent of land produced as follows:

	Bolls.	Bush.
1. Hopetoun and Kildrummie—five parts of the former and one of the latter	14	1
2. Hopetoun and Sandy—five of Hopetoun and one of Sandy	13	2
3. Kildrummie—alone	12	5
4. Early Angus—alone	12	5
5. Hopetoun and Early Angus—five of Hopetoun and one of Early Angus	12	4
6. Dun Oats—alone	12	4
7. Potato—alone	12	2

Mr. SADLER, Norton Mains, said: Never having made any accurate comparative trials of the returns from the different varieties, I feel some hesitation in recommending any particular sort as the most profitable generally to sow. I will, however, state my opinion of those with which I am acquainted, and have grown during the last 20 years; and the first I notice is the Dun Oat, which, although very prolific, both in regard to its yield of grain and straw, has been almost entirely abandoned, owing to its having become so much infected with smut. A few years ago a large proportion of the breadth I had under Oats consisted of the Barbachlaw, Blainslie, and Late or Grey Angus. The first of these is, I think, particularly well adapted for all cold, late soils, as it is a sure grower, and very early. It yields a fair acreable return, but the grain weighs very light; it is in great demand after a late harvest for seed for the upland districts. I have frequently sold them at as high a price as the best Potato Oats. This demand, for some years back, has in a great measure fallen off, owing, I have no doubt, to the early seasons we have lately been favoured with, and the introduction of other and as early varieties. The Blainslie, about the time referred to, was extensively cultivated on most clay soils, and yielded average crops of grain and straw. It is a much finer Oat than the Barbachlaw, and weighs more per bushel; but it is at least fully a week later in coming to maturity. Although also a certain grower, and still raised by some farmers, it has to a great extent been superseded by earlier, and I think also more profitable varieties. The last of these, viz, the Late or Grey Angus, was at this time, in the lower districts of Mid-Lothian, cultivated to a very great extent, and produced abundant crops, without even showing any appearance of degeneracy. Objectionable from its lateness, it gave way to earlier varieties. Notwithstanding, I think it is still a safe Oat to grow on all early soils, and I would not be surprised although it came into general use again. The Early Angus is a finer variety than any of those I have mentioned, and has been long and successfully cultivated upon deep rich soils, for which, or for land broken up from old pasture, it is peculiarly fitted, and will be found to give large returns of grain, and beautiful white straw. The Potato Oat is still, I think, deservedly the most esteemed in cultivation, although less productive in straw, perhaps, than some of the others I have mentioned, and more liable to be shaken than any of them; none yields a greater quantity of grain, or surpasses its milling qualities. It is only suited for good deep soils; owing to its having shown a tendency to thick or sedge root, its growth has in a great measure been abandoned. It may, however, I think, still be safely cultivated upon fresh new land. The Oats which I have mostly sown for some years back, and which have, with the exception of last year, yielded fair crops, are the Hopetoun and Sandy; both are great favourites with the millers, and will generally be found adapted for most soils. The Sandy gives the largest return in a moist season. The exception referred to was two fields of Hopetoun, which were much infected with thick root, and did not yield half a crop. I could not account for it, except that this variety had begun to degenerate, as the seed with which they were sown was brought from a distance, and the land in fairish order. The Hopetoun requires more seed per acre than perhaps any other sort, as they almost invariably come up thin on the ground; and to guard against this, it has become a general, and I think an excellent practice, to mix them either with Early Angus or Sandy, in the proportion of 4 bolls of Hopetoun to 2 of either of the latter, when they generally yield a full crop; it has also the effect of preventing the Hope-

toun from lodging, which they are apt to do, as they are soft in the straw. Three years ago I tried a small quantity of the Sheriff Oats—they ripened very early, but turned out so very unsatisfactorily, the grain being so husky, the straw so short, and the millers so shy about purchasing them, that I have not grown them since. The last I notice is the Berlie Oat. I have not tried it, but intend doing so this year; it is a fine grained Oat, very early, but said not to produce much straw.—Mr. SINCLAIR SUTHERLAND, Dalmore, said: In the Journal of Agriculture for June, 1849, I find a prize report by Mr. A. Gorrie, Annat Cottage, Perthshire, which, besides other interesting matter, contains particulars of seven varieties of Oats, the greater number of which are now generally known. In the "Transactions" for October, 1849, there are two reports on the comparative productiveness of different varieties of Oats. Mr. Mitchell, Wester Alves, Elgin, on a soil of a "clayey nature," in 1848, found the Potato Oat the most profitable. The Hopetoun the least so. The Dun Oat most productive, but not most valuable. Siberian, Sandy, and Berlie sorts, occupying intermediate places. The Late Angus, Mr. Mitchell recommends for quantity of grain and straw. Mr. James Melvin, Bonnington, Ratho, found the Sheriff the most productive of five or six varieties in 1847 and 1848. You all know the great personal interest taken in agriculture by Sir John S. Forbes, Bart., of Fettercairn, who, in a communication with which I was recently honoured, intimates that in the Fettercairn district, for lightish peaty loam, with a coarse, sandy clay subsoil, lately drained, the Sandwich Oat is the most esteemed variety, as it produces grain at least 1½ lb. per bushel heavier than the Sandy or any other; and the straw, though longer, stands better. The Scots Barley Oat is the second favourite, but softer, and does not stand up so well. The Kildrummie Oat ranks third, and has taken the place of the Potato Oat on the exposed coast, because strong and tough in the panicle, and little liable to shake from the action of wind. The Early Angus Oat is much sown on the rich soil of the coast, but does not yield a large crop on medium quality land. I am sure this meeting feel under obligations for this information to Sir John, who observes, in conclusion, that the Late Angus Oat is preferred for clay land in Forfarshire. I have been informed by a well-known extensive agriculturist, Mr. Gow, factor, Raith, that in the Kirkaldy district, on clay loam in high condition, the Potato Oat is found the best; and I notice this particularly, because it agrees with the results obtained on a similar soil by Mr. Mitchell. In the county of Ross, I experimented last season with eight varieties of Oats, and the Society has been pleased to approve of the report which I furnished. The field, a sandy loam of 2 feet deep, situated within half a mile of the sea, and 40 feet above its level, was in the very highest condition, having been two years in Grass, and in addition to the droppings of the stock, had 30 puncheons of liquid manure poured over each acre. With this treatment, I obtained the following results per imperial acre:

Name of Variety.	Quantity of Grain.		Straw.	Quantity of Meal from each qr.
	qrs.	bush.	Stones.	lbs.
The Berlie yielded	9	6	358	198
The Dyock ... ... ,,	11	4	320	198
The Hopetoun ... ,,	9	4	388	180
The Sandy ... ... ,,	7	6	406	202
The Early Angus ... ,,	8	4	296	206
The Late Angus ... ,,	9	5	397	194
The Potato ... ... ,,	8	2	318	182
The Dun ... ... ,,	9	1	332	204

I should state that all these varieties, with the exception of the late Angus and Potato, were procured from Messrs. Lawson and Son, and that I consider the Sandy Oat unsuited for soil in such high condition, as the excess of growth is straw, not grain. But the results must speak for themselves. The Potato Oat I have always found least adapted for profitable cultivation on a sandy soil. The Dyock Oat was then quite new to me, and I do not know that ever there was a second sample sown in the county of Ross.—Mr. M'LEAN, Braidwood, said: My experience and observation in cultivating the Oat, ranges over a period of upwards of 30 years, in a high altitude, from 600 to 800 feet above sea-level, comprising great diversity of soil, situated under a variable and unpropitious climate, yet better adapted for the growing of Oats than any other of the cereal grains; to varieties best suited for seed in these alpine districts, my remarks shall more particularly refer. It must be obvious under such changes of soil, climate, and circumstances, the proper selection of the best variety for seed must be a matter of some difficulty. In the earlier stages of agriculture the later varieties were found more productive of straw, and better fitted to resist the vicissitudes of weather, to which they were constantly exposed. The Barbachlaw, Blainslie, and Tartarian Oat, were in general use; besides affording ample supplies of straw for the use of cattle, their mealing qualities were excellent, though they were deficient in quantity to some of the early varieties. The Barbachlaw was undoubtedly the favourite, and long stood a successful competitor with all other varieties. Its thin and lengthy shape made it eagerly bought for the feeding of horses, as inducing better mastication than any other. While the sowing of the late Oat was persisted in on high districts, they were sown upon the middling or exhausted soils in better climates, for the purpose of supplying their more elevated brethren with good seed corn in bad seasons, when their own was not fitted for that purpose. There are two varieties of the Barbachlaw, the "white awned" and the "black awned," but the latter is inferior to the former, and never used unless by those who prefer cheapness to more important considerations. The Blainslie is principally sown in the south of Scotland, and ranks high as a good mealing and productive Oat. The Potato Oat was the first sown, instead of the later and native varieties, and produced in good seasons, and upon kindly soils, abundant crops, but being easily shaken by the prevailing winds, unless in sheltered situations, great loss was often sustained, and unless in the most favoured spots nearly abandoned. It must still, however, be pronounced the finest variety in cultivation; its plump and compact appearance makes it well adapted for milling, and though requiring strong conditioned land, the improvement by drainage has been conducive to its more general use. The Hopetoun has been pretty generally tried in years past, but seems best suited for kindly soils and favourable seasons. It is rather dorty, and thin in brairding, grows long, though rather coarse in the straw, bleeds well to the acre, and commands a ready sale after harvest, from its plump appearance, but in a bad season loses more in the estimation of the farmer than it gains in many years afterwards. The Early Angus has been long sown, and found to succeed well upon strong soils, and peculiarly adapted for newly improved land, where lime has been liberally applied, ripens early, and seems well suited to promote the growth of the artificial Grasses; upon damp soils, it is apt to produce more greens at ripening, but has long proved a great favourite with the upland farmer. The Sandy Oat was introduced into our district about 10 years ago, and has been extensively grown ever since. It seems well adapted for climates naturally cold and humid, upon poor soils it produces less return per acre than the Barbachlaw; but its fine straw, and early ripening, entitle it to a favourable reception by the farmer. It seems to be losing gradually in its producing qualities amongst the lowland agriculturists. The Berlie Oat is the variety last introduced into the high districts, and though only of few years' standing, the result of that trial justifies me in speaking highly in its favour. In its growth and time of ripening, it much resembles the Early Angus; but excels in the quality as well as the quantity of the straw, besides, ripens more regularly, and always commands a ready market, for making into meal; the increasing demand for it at this season for seed, testifies, that year after year it is becoming a greater favourite with the corn growing farmer. There are many other varieties, such as the Kildrummie, the Halkerston, the Red, the Georgian, the Sheriff, and the Swedish Oat, and an endless variety of names which appear to have been given more from a desire of novelty in the grower, than any distinct difference in their kind, quality, or productiveness, but which all seem to be lost in the more distinct varieties of the Potato, the Early Angus, the Blainslie, and the Barbachlaw. Having thus briefly given a short description of the varieties of the Oat used in the higher districts, I may state that, as far as my experience has ascertained, I would give the preference to the Barbachlaw, the Early Angus, Berlin, Berlie, and the Sandy Oat. There is no Oat so shamefully treated as the Barbachlaw; when any mishap or neglect on the part of the farmer takes place, he covers that neglect by consoling himself that it is good enough for Barbachlaws, and no wonder, often produce a poor crop; but if sown upon good sharp soil, or tenacious clays in fresh condition, it will stand comparison with any other; and if the produce in grain and straw be honestly tested, in nine cases out of ten be declared the victor. The great change in the productiveness of the soil by extensive draining, has allowed the earlier varieties of Oats to be sown to great advantage, the Barbachlaws not exempted, and the later sorts have been gradually wearing out of cultivation. The earlier varieties of Oats prove more advantageous than the later ones for nourishing the young Grass plants; this of itself is a valuable recommendation when permanent pasture is intended, but when prices are so very low upon poor soils; where a scanty crop may be anticipated, it becomes a matter of grave consideration, whether a crop of Oats should be taken along with the finer Grasses. Any experiments I have tried corroborate this opinion, and if sown in the latter end of March or April, in ordinary seasons, will afford a good bite for sheep by the end of July, or middle of August, resists the alternate changes of the weather during the winter, and produces more luxuriant herbage in the next and following years; this may be said to shorten the supply of food for stock. Oats intended for seed should not be allowed to be too ripe before cutting, as considerable loss is sustained in all the various processes of manufacture, and if sown upon damp soils and ungenial climates, are apt to burst, especially if the seed has been grown in the neighbourhood of the sea-board; another reason why they should not be too ripe is their aptitude to sheel, by the powerful steamers so generally in use for threshing.—Mr. LAWSON then read a valuable paper on the variety of the Oat, which we must postpone.—The CHAIRMAN then remarked—As this is the last meeting of the season, I cannot allow you to separate without congratulating you, and the Highland Society in general, on the success which has attended these meetings. They are of great value, not only from the amount of practical knowledge which they elicit, but also from the opportunities they give for an interchange of kindly feeling among the members. I hope they will be equally successful next season, and that they will long continue to sustain the character and efficiency which have characterised them.

Farmers' Clubs.

NEWCASTLE, *October: Farming Accounts.*—Mr. WILLIAM ANDERSON, V.P., said: Farmers are frequently deterred from keeping regular accounts, from the idea that it would occupy too much of their time; but very little reflection will show them that the books are really not numerous, nor the quantity of writing so onerous, as they appear. Still, a certain number of books are necessary; and it is surely highly desirable for farmers to be able to tell whether they are gaining or losing by their business, so as not to allow their affairs to get into confusion; and if we can assist farmers who have not paid so much attention to the minutiæ of bookkeeping, and encourage them to keep accounts of some sort, some good will be obtained. To maintain that any farmer cannot find leisure to write a few lines in one, two, or three books, during the course of a whole week, is to maintain an absurdity. Perhaps I may mention the late Lord Barrington, who occupied a good deal of land in the county of Durham, and who took great interest in agricultural pursuits. When obliged to reside at Florence (on account of his health), his lordship had duplicates of his farm accounts and transactions forwarded to him every week, and he knew quite well everything done upon the farm. Upon one occasion he sent back to say that he observed that Robin Goodfellow, on a certain day, had been ploughing on the Ox Close half a day, and requested to know where he was employed the other half of the day; when the farm manager begged to apologise to his lordship for having omitted to mention that Robin had a christening in his family, and was allowed half a holiday on the occasion. It is not to the foregoing-mentioned class of farms, but to the class of small farms, of from 200 to 300 acres, of mixed husbandry, that I shall beg to direct the attention of the Club at present, and shall not further trespass on your time with any observations, but proceed to mention a few books, the smallest number that ought to be kept even on small farms: 1. The Journal, or Memorandum-book, will be found very useful for noting down temporary proceedings, to be afterwards copied at leisure into the proper books; noting down every sale, purchase, or engagement made in the way of business. 2. The Cash-book, where all sums of money paid and received are placed; of course, the sums received on one side, and those sums paid in the opposite page; and the book should be balanced at least once a week. 3. The Ledger. A farmer's transactions are mostly in ready money (and it is most desirable that they should be so), yet there must always be current accounts, as much business is still conducted on credit. Were it entirely on ready money, a ledger would be unnecessary. The ledger exhibits the state of every account as it stands between you and the person in whose name the account is opened—as the seed merchant, the guano dealer, &c. These accounts, if not closed within the year, the balance will have to be carried forward to the succeeding year. 4. The Pocket Cash-book, or Petty Cash-book. In this book are entered all payments and receipts as they arise, and which, if not put down at the time, might very probably be lost sight of. From this book the entries are to be transferred to the general cash-book at short intervals. A pocket cash-book is liable to be lost, and, of course, all account of the entries with it; but if entered in the general cash-book at home, there is a permanent record of them. This book will contain the petty expenses, such as tolls, postages, travelling and market expenses, and other small sums, which may be entered into the general cash-book in large sums, to save the columns of the cash-book being encumbered with so many small items. 5. A small book is quite essential to contain an account of all produce consumed in the farmer's house by his family—the amount at the year's end to be carried to the credit of the farm, less the amount expended in boarding farm servants in the farmer's house. 6. A General Account Book. It shows on the debtor side every expense that has been incurred on account of the farm, and on the creditor side the whole of the incomings or receipts; and, consequently, by balancing this book, the exact profit or loss of a farm may be ascertained. When a sale of farm produce is made on credit, it appears on the credit side of this account. An account is then opened in the ledger, in the name of the party to whom the sale has been made, charging the amount to their debit, and giving them credit for the same when paid. All monies received are placed also on the credit side, and cash paid on the contrary side. At the end of the agricultural year the ledger is carefully gone over, and the balance on every open account entered on a balance sheet. To these arrears is added the cash in hand, as shown by the cash-book: and the difference in the amount of these sums, and corresponding amount of the year the account is balanced, provided it is done at the same period in each year. As farms in this district are generally entered upon at May, that time, at the following May, will probably be found a convenient period; the more especially as the stock yard is usually much reduced by that time, and the winter-fed cattle disposed of. Of course all the stock of horses, cattle, sheep, pigs, &c., must be separately valued; as also any corn, hay, or other produce, of what kind soever, belonging to the farm. The corn saved for seed, and the implements, and also any credit balances in the ledger, must be placed on the credit side of the account. The amount of stock at the previous May, or other period of balancing, must be placed at the debit side of the account—and the balance of the cash-book, on such side of the account as may happen, according to the state of the account. The difference in amount between these columns will then be the sum gained or lost by the farmer during the last year. It would facilitate the ascertaining the quantity of corn at any time in the stack-yard, and be otherwise useful, if a plan of the stack-yard were kept, numbering the stacks, with remarks as to the quantity and quality of each stack.

BALANCE SHEET.

Dr.				Cr.			
May 12, 1849.				May 12, 1849.			
To stacks, as per valuation, May 12, 1848	£950	0	0	By Wheat, 500 bolls at 12s. per boll ...	£300	0	0
To ledger balances	100	0	0	By Barley, 200 do., at 8s. per boll ...	80	0	0
To balance of the cash-book	56	0	0	By Oats, 400 do., at 5s. per boll.....	150	0	0
Balance gained.....	204	10	0	By 10 horses	250	0	0
				By cattle	304	0	0
				By 120 sheep, at 20s. each	120	0	0
				By hay, 20 tons, at 4l. per ton	80	0	0
				By implements.....	56	0	0
				By seed corn saved	20	10	0
	£1310	10	0		£1310	0	0

Mr. Anderson having brought his paper to a close, resumed his seat amidst expressions of approbation.—Mr. G. H. RAMSAY, V.P., observed that the keeping of farming accounts, with any great degree of precision, was attended with many difficulties; but that was no reason why as near an approximation should not be made as possible; and as the farmer generally carried on a ready-money trade, that certainly rendered it easier for him to keep an account of his transactions. But it was very difficult for him to ascertain what sort of produce yielded the most profit. Buying oxen and sheep, and feeding them together, he could know little more than that he had paid so much for them, and sold them for so much more; it was impracticable for him to determine how much it had cost him to realise the increased value of each animal. Nor could he separate the amount of his domestic expenses, or say how much labour he got from his household in return for their maintenance. The farmer stood, in this respect, in a very different position to that of the merchant or the manufacturer. But, making every allowance for the peculiarity of their position, the farmers were undoubtedly much more careless accountants than they need be.—Mr. BROWN said he knew two farmers (we withhold their names), who farmed alongside of each other. One day they met on the boundary line, and had a crack with the fence between them. One of them said to the other, "They tell me thou keeps a b'yuik?" "Yes," was the reply, "I do." "Why," rejoined the first speaker, "aw keeps ne b'yuik, but aw always tak's care to hev a good balance at year's end." Now, the man who "kept a b'yuik" became bankrupt, and the other realised a fortune. He did not mean to say that the bookkeeper failed because he kept accounts; but, undoubtedly, desirable as it was to keep books, it was more desirable to have a balance in hand at the year's end.

Review.

An Account of the King's Somborne School. [Extracted from the Minutes of the Committee of Council on Education. 1847-8. R. Groombridge and Sons.

WE advise all who are interested in the education of the labouring population to procure this tract. It is the most interesting and encouraging report on such a subject that we ever read. Probably no one has ever undertaken the establishment or management of schools for the children of labourers in a country district without either ultimate and entire, or, at the least, periodical and partial disappointments, arising from the wearing out of that novelty which had at first given the appearance of so much prosperity, and from the withdrawal of the children at the busy periods of the agricultural year. Now, in the report of King's Somborne School, where no such periodical failures appear to occur, the causes of that seemingly small interest taken by labourers in the education of their children, to which these failures are attributed, are most usefully discussed.

"If our education," it says, "has failed of its results, if we find the poor but little benefited by our schools, careless of sending their children to them, and ready to take them away on the least chance of profitable employment, let us remember that they have themselves had no voice in the matter; that in the education we offer to their children, the springs of opinion among them have never been considered, nor their wants consulted. It is in this that the secret of Mr. Dawes's success appears to me to lie. He has shown his knowledge of the springs of opinion amongst the poor by consulting their independence, and adapted the education he offers to their wants, by a careful study of their condition. The King's Somborne school was commenced in the exercise of abundant faith in the affection of a labouring man for his children; and, notwithstanding that the wages of labour in the parish of King's Somborne are very low, the school fee was fixed at double that of other neighbouring schools, under the impression that he would be willing to pay more than is usually claimed of him for what he believed to be a really good and useful education, and that the higher fee would tend to create this belief in his mind."

And the fact is, that this school, situated in a poor and exclusively agricultural parish, where wages vary from 6s. to 9s. a week, where, excepting the rector, there is no person resident above the condition of the farmer, is wholly self supporting.

"The children buy their own books, and their fees pay the salaries of the teachers. No child is admitted to the school free of charge. No arrears of the school

fee are allowed. The following is the scale of payments: For the labourers' children, 2*d.* per week for one, and 1*d.* for every additional child in the same family. For the children of all those above the mere labourer, and whose parents are living in the parish, 6*s.*; and for those of a similar class out of the parish, 10*s.* per quarter. The school opened in October, 1842, with 38 children, of whom 11 paid by the quarter. The following Table exhibits its subsequent progress:

Years from the Commencement of the School.		Whole Number of Children.	Number of Children paying by the Quarter. From Somborne.	Number of Children paying by the Quarter. From other parishes	Sum received for Fees. £	s.	d.	Sum received for Books. £	s.	d.
1st	Year to Michaelmas. 1843	106	24	1	56	17	3	7	5	5
2d	1844	110	24	3	68	11	7	8	0	6
3d	1845	144	24	10	84	6	1	11	5	3
4th	1846	158	22	14	93	5	5	15	8	0
5th	1847	219	23	26	145	6	6	24	18	1

Mr. Dawes, the vicar of King's Somborne, has published several works on the subject of elementary schools and the education they impart; thus contributing by precept as influentially as in the instance before us he does by example, to the furtherance of this important matter. We shall be glad if the notice of his efforts in this journal shall spread the knowledge of them in any of the many quarters where imitation of them is desirable.

Calendar of Operations.

MARCH.

Dorset Farm, *March* 25.—If March dust still retains the value once attached to it, we ought to be enriched this year, for never has there been a drier month than the present; for we have not had any rain in it except on the 23d, when we had a slight rain, which terminated in a fall of snow. But although it has been dry it has been very cold, with sharp frosts at night, and vegetation is very backward; the pastures look worse now than they did a month ago. But work is very forward, and Barley sowing is far advanced by most, some having finished. We have finished ours, and are now getting the land intended for Mangold Wurzel and other roots prepared. We intend to sow a piece of Rape in the course of a week; it may be too early, but we sowed some about three weeks later last year which did very well. We have got part of our ewes and lambs in the water meadows, which get in addition to the Grass 1 lb. of oilcake each per day; these are preparing for the market. The rest of our flocks are eating Rape by day, and run in the Grass fields at night getting some Mangold Wurzel. The Wheat, on the whole, looks well; that which was sown early looks a little too thick, but the later sown is rather the reverse; a chief cause of it no doubt is, that it was sown when the land was too wet, which, forming a crust over the seeds, prevents it obtaining the benefit of the air, without which the seed will not germinate so quickly, and some of it will rot before it is able to push itself through the stratum of hard earth that covers it. Our work will now be ploughing and otherwise preparing the land for the different root crops. *G. S.*

Notices to Correspondents.

Bones and Acid: *F G.* We would dilute the superphosphate with vegetable mould, or old ashes, rather than with the dust of lime got from the kiln; this would reduce the soluble biphosphate to its original insoluble condition again.

Brewing: *Inexperience.* See last week's Paper on this subject. Probably the wort is not thoroughly fermented.

Landlord and Tenant: *A.* We cannot give answers to legal questions. The point should be referred to your solicitor.

On Packing Cheeses: *N P T.* The cheese should be packed in tin boxes fitting close to the cheese, and well soldered, so as to exclude the air. *J. W. H.*—Another says: "Lead or zinc is the best package for cheese sent to a tropical climate, and, as the material is saleable in all parts of the world, perhaps the cheapest."

Ornamental Poultry, by the Rev. E. S. Dixon, is now re printing, with additions, and will shortly be published, price 5*s.* 6*d*, cloth. May be had of all booksellers, and at the Office of this Paper.

Present Prices: *J R C.* If you would forward your address, we could explain satisfactorily. About fencing next week.

Stagnant Water: *B M T.* Its offensiveness is removed by throwing any charred matters into it.

Steam: *J D.* Will some one kindly name a work that will assist an amateur engineer in carrying out the use of steam to agricultural purposes, without danger? He has constructed an apparatus that answers admirably both as regards cheapness and efficiency in cooking cattle food; and wishes to be enabled to judge of its safeness by referring to some practical book on the strength of material used in boilers, &c. [Tredgold's book does not touch the point.]

To Correspondents: The answers to some of the inquiries received are unavoidably postponed for a week.

Markets.

SMITHFIELD, Monday, March 25.

We have not a large number of Beasts on offer to-day, sufficient, however for the demand. Trade on the average is slow, at about former prices. The supply of Sheep has increased; this being the last week in Lent very few are wanted, and it is with difficulty the choicest kinds realise last Monday's quotations. Trade is dull for Lamb; 6*s.* is the top price.

Per st. of 8 lbs.	s	d	s	d	Per st. of 8 lbs.	s	d	s	d
Best Scots, Herefords, &c.	3	6	to 3	8	Best Long-wools	3	6	to 3	10
Best Short-horns	3	4	— 3	6	Ditto Shorn				
2d quality Beasts	2	6	— 3	2	Ewes & 2d quality	3	0	— 3	4
Best Downs and Half-breds	4	0	— 4	4	Ditto Shorn				
Ditto Shorn					Lambs	5	4	— 6	4
					Calves	3	4	— 4	4
					Pigs	3	0	— 4	0

Beasts, 3395; Sheep and Lambs, 22,050; Calves, 108; Pigs, 184.

Friday, March 29.

The supply of Beasts is not excessive; however, this being Good Friday, very few are wanted, some therefore remain unsold, but prices generally are about the same as on Monday. Although the number of Sheep is not large, it exceeds the demand; there is no disposition to take lower prices, and consequently some are not disposed of. Lamb is the only article which commands particular attention to-day. This is considered the commencement of the season. Considering Easter falls early this year and the extreme cold weather, the quality and quantity of the Lamb are quite equal to expectation. The sale of them also, under these circumstances, is satisfactory.

Best Scots, Herefords, &c.	3	6	to 3	8	Best Long-wools	3	6	to 3	10
Best Short-horns	3	4	— 3	6	Ditto Shorn				
2d quality Beasts	2	6	— 3	2	Ewes & 2d quality	3	0	— 3	4
Best Downs and Half-breds	4	0	— 4	4	Ditto Shorn				
Ditto Shorn					Lambs	5	4	6	4
					Calves	3	4	— 4	4
					Pigs	3	0	— 4	0

Beasts, 787; Sheep and Lambs, 7870; Calves, 266; Pigs, 100.

COVENT GARDEN, March 30.

Notwithstanding the severity of the weather, Vegeables are pretty well supplied, but many kinds of Fruit are still scarce. A few new hothouse Grapes have made their appearance. Pine-apples, though far from being plentiful, are nevertheless sufficient for the demand. Walnuts and Chestnuts are abundant; and Oranges and Lemons sufficient for the demand. Amongst Vegetables, Turnips and Carrots are good, and there is some fine Cornwall Broccoli in the market. Potatoes are unaltered since our last account. Lettuces and other salading are sufficient for the demand, and so are Mushrooms. French Beans, Asparagus, Seakale, and Rhubarb may be obtained at about last week's prices. Cut Flowers consist of Heaths, Pelargoniums, Bignonia venusta, Primulas, Camellias, Cinerarias, Azaleas, Lily of the Valley, Epacrises, Acacias, Lilacs, and Roses.

FRUITS.

Pine-apples, per lb., 6s to 10s	Almonds, per peck, 6s
Grapes, Portugal, p. lb., 9d to 1s	— sweet, per lb., 2s to 3s
Pears, per doz., 6s to 10s	Walnuts, p. 100, 1s 6d to 2s
Apples, kitchen, p. bsh., 4s to 6s	— p. bush., 16s to 24s
Lemons, per doz., 1s to 2s	Nuts, Bar., p. bush., 20s to 22s
— per 100, 6s to 12s	— Brazil, p. bsh., 12s to 16s
Oranges, per doz., 9d to 1s 6d	Kent Cobs, 90s to 100s p. 100 lbs
— per 100, 5s to 12s	

VEGETABLES.

French Beans, per 100, 3s to 4s	Carrots, per bun., 4d to 6d
Seakale, per punnet, 1s to 2s	Spinach p. sieve, 2s to 3s
Asparagus, p. bund., 2s to 7s	Onions, p. bushel, 3s 6d to 4s 6d
Rhubarb, p. bundle, 6d to 1s	— Spanish, p. doz., 1s 6d to 4s
Savoys, per doz., 6d to 9d	Shallots, per lb., 4d to 8d
Cauliflowers, p. doz., 1s to 4s	Garlic, per lb., 4d to 8d
Broccoli, p. doz. bundl., 8s to 10s	Lettuce, Cab., p. sc., 4d to 9d
Greens, per doz., 2s to 3s	Endive, per score, 1s 6d to 3s
Brussels Sprouts, p. hf. sieve, 1s 6d to 2s	Mushrooms, p. pot., 9d to 1s
Sorrel, p. hf. sieve, 1s to 2 s	Small Salads, per punnet, 2d to 3d
Potatoes, per ton, 60s to 120s	Watercress, p. 12 bun., 6d to 9d
— per cwt., 3s to 7s	Fennel, per bunch, 2d to 3d
— per bush., 2s 6d to 3s 6d	Savory, per bunch, 2d to 3d
Turnips, p. doz. bun., 1s 6d to 2s 6d	Thyme, per bunch, 2d to 3d
Red Beet, per doz., 9d to 1s	Parsley, p. doz. bun., 2s to 3s
Horse Radish, p. bdl., 1s to 4s	— Roots, p. bdle., 9d to 1s
Cucumbers, each, 3s to 5s	Marjoram, per bunch, 2d
Leeks, per bunch, 1d to 1½d	Mint, green, per bunch, 9d to 1s
Celery, p. bundle, 8d to 1s 3d	Corn Salad, p. hf. sieve, 9d to 1s

POTATOES.—Southwark, March 25.

The Committee report that the arrivals during the last week, both coastwise and Continental, are very considerable, and more than adequate to the wants of the trade, and it is with difficulty the following prices are realised:—York Regents, 70s. to 100s. per ton; Wisbeach do., 60s. to 70s.; Scotch do., 60s. to 65s.; Scotch cups, 50s. to 60s.; Scotch whites, 40s. to 45s.; French whites, 50s. to 65s.; Belgian do., 40s. to 55s.; Rhenish do., 40s. to 55s.; Dutch, 40s. to 45s.

HOPS.—Wednesday, March 27.

Messrs. Pattenden and Smith report that there is a firm and steady trade for the best coloured Hops, both of 1847 and 1848. The quantity of the new growth on hand is very small, and diminishes daily.

Mid. and East Kents ... p. cwt.	160s to 240s	Farnhams, p. cwt.	—s — —s
Weald of Kents	135 — 160	Yearling Kents	42 — 84
Sussex	115 — 140	Yearling Sussex	40 — 70
		Old Hops	20 — 70

HAY.—Per Load of 36 Trusses.

Smithfield, March 23.

Prime Meadow Hay	68s to 74s	Clover	60s to 85s
Inferior ditto	55 65	New Clover	— —
Rowen	— —	Straw	22 27
New Hay	— —		J. Cooper.

MARK LANE.

Monday, March 25.—The supply of English Wheat by land carriage samples from Essex and Kent was again a small one, and, the condition being good, it realised rather more money than on Monday last. For foreign Wheat there was a better demand, and an improved sale at the rates of this day se'nnight. Choice qualities of English Barley maintained their value, but secondary sorts of English, and all descriptions of foreign, must be quoted 1s. cheaper.—The arrival of foreign Oats during the past week have exceeded 29,700 qrs., and the display of samples being large the dealers and consumers were more free buyers than of late, and took off the bulk of the supply at a reduction of 6d. to 1s. per qr.—Beans a slow sale, at 1s. per qr. decline.—Peas maintained last week's prices.

British per imperial Quarter.	s.	s.		s.	s.
Wheat, Essex, Kent, & Suffolk ...White	40	44	Red	36	38
— — fine selected runs ...ditto	42	45	Red	38	40
— — Talavera	43	46			
— Norfolk, Lincoln, & York ...White	37	42	Red	36	39
— Foreign	34	52			
Barley, grind. & distil., 18s to 22s...Chev.	23	27	Malting	23	24
— Foreign....Grinding and distilling	17	20	Malting	20	22
Oats, Essex and Suffolk	15	18			
— Scotch and Lincolnshire ...Potato	16	21	Feed	16	19
— Irish ...Potato	16	20	Feed	15	17
— Foreign ...Poland and Brew	15	20	Feed	13	16
Rye	22	24	Foreign	20	22
Rye-meal, foreign ...per ton	5*l.*	6*l.*			
Beans, Mazagan ...19s to 20s...Tick	22	24	Harrow	22	24
— Pigeon ...24s — 36s ...Winds	22	27	Longpod	24	27
— Foreign ...Small	24	35	Egyptian	20	22
Peas, white, Essex and Kent...Boilers	24	26	Suffolk	24	26
— Maple ...25s to 27s...Grey	23	24	Foreign	20	28
Maize ...White	24	26	Yellow	24	25
Flour, best marks, delivered ...per sack	34	38			
— Suffolk ...ditto	27	33	Norfolk	27	33
— Foreign ...per barrel	21	23	Per sack	28	33

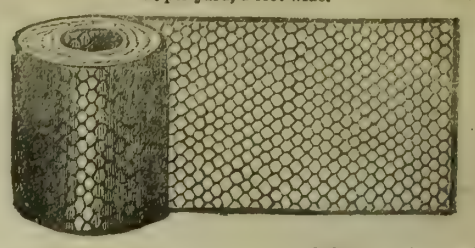
Wednesday, March 27.—The attendance of buyers this morning was very small, and the business transacted of a very limited character. The few parcels of English Wheat on sale were disposed of at about Monday's rates. In foreign Wheat but few transactions took place, and its value underwent no change.—English Barley supported previous quotations.—The receipts of foreign Oats are again large, and late rates with difficulty maintained.—No change in Beans, Peas, and Flour.

Imperial Averages.	Wheat.	Barley.	Oats.	Rye.	Beans.	Peas.
Feb. 9	38*s* 6*d*	24*s* 7*d*	15*s* 3*d*	22*s* 1*d*	25*s* 3*d*	26*s* 4*d*
— 16	37 9	23 10	15 4	20 7	24 11	26 10
— 23	37 11	23 7	15 6	20 11	24 8	26 0
March 2	38 6	23 9	14 11	21 11	24 4	25 11
— 9	38 6	23 10	15 2	23 3	24 7	25 4
— 16	38 1	23 8	14 11	22 7	24 1	25 2
Aggreg. Aver.	38 3	23 10	15 3	24 11	24 8	25 11
Duties on Foreign Grain	1 0	1 0	1 0	1 0	1 0	1 0

Prices.	Feb. 9.	Feb. 16.	Feb. 23.	Mar. 2.	Mar. 9.	Mar. 16.
38*s* 6*d*						
38 6						
38 6						
38 1						
37 11						
37 9						

Liverpool, March 28.—There has been no corn market held here since Tuesday. A steady business was going forward in Brunswick-street on Wednesday and Thursday, at full prices for every article of the trade, and the tone of the market is towards improvement. Good qualities of Flour are getting into a smaller compass.

GALVANISED WIRE GAME NETTING.—
7d. per yard, 2 feet wide.



	Galvanised.	Japanned Iron.
2-inch mesh, light, 24-inch wide ...	7*d.* per yd.	5*d.* per yd.
2-inch ,, strong ,, ...	9 ,,	6½ ,,
2-inch ,, extra strong ,, ...	12 ,,	9 ,,
1½-inch ,, light ,, ...	8 ,,	6 ,,
1½-inch ,, strong ,, ...	10 ,,	8 ,,
1½-inch ,, extra strong ,, ...	14 ,,	11 ,,

All the above can be made any width at proportionate prices. If the upper half is a coarse mesh, it will reduce the price one-fourth. Galvanised sparrow-proof netting for pheasantries, 3*d.* per square foot. Patterns forwarded post-free.

Manufactured by BARNARD and BISHOP, Market-place, Norwich, and delivered free of expense in London, Peterborough, Hull, or Newcastle.



CROSSKILL'S PATENT ROLLER.—For Rolling Spring Wheat, Growing Crops, Grass Lands, Compressing Soft Soil, and Crushing Clods. Prize Patent Wheels, Carts, and Waggons—awarded 30 sovs. prizes at Norwich. Prize Portable Farm Railway, will pay its cost the first year, &c. &c. On receipt of six penny postage stamps, a new Illustrated Newspaper and Catalogue will be sent gratis per post, with full particulars of the newest and best Field, Road, and Barn Implements, now kept in Stock, for delivery from Hull by water or rail to all parts of the kingdom.

Address Mr. Crosskill, Iron Works, Beverley.

IMPORTANT TO AGRICULTURISTS.—COLLECTION AND DISTRIBUTION OF MANURES.

STRATTON'S AGRICULTURAL REPOSITORY, BRISTOL.

STRATTON, HUGHES, and CO., have now ready their PATENT TUMBLER CART for the collection of Night-soil and other offensive matters; also their Iron Mill, to be worked by horse-power, water-power, or steam, for mixing and incorporating Nightsoil with Charcoal and other deodorisers. The Tumbler Cart has an iron body with a close cover; can be fitted if required as a Watering-cart, with a Valve and Delivery Pipe for distributing water or liquid manure, and also with an Apparatus for distributing dry manures in any given quantities per acre.

Stratton, Hughes, and Co.'s Tumbler Carts are used for scavenging purposes in Manchester, Bristol, Worcester, Harwich, Rochford, Cardiff, &c., and they are now building them for Chester, Oxford, Huddersfield, &c., besides many for Agricultural Colleges and private individuals. Stratton, Hughes, and Co.'s new illustrated Catalogue of Carts, Waggons, and Agricultural Implements will be forwarded to any address on receipt of 1*s.* 6*d.* in postage stamps.

BY HER MAJESTY'S ROYAL LETTERS PATENT.

CROGGON'S PATENT ASPHALTE ROOFING FELT has been extensively used and pronounced efficient, and particularly applicable for warm climates.

1st. It is a non-conductor.

2d. It is portable, being packed in rolls, and not liable to damage in carriage.

3d. It effects a saving of half the timber usually required.

4th. It can be easily applied by any unpractised person.

5th. From its lightness, weighing only about 42 lbs. to the square of 100 feet, the cost of carriage is small.

Price One Penny per Square Foot.

CROGGON and Co.'s. PATENT FELTED SHEATHING for COVERING SHIPS' BOTTOMS, &c., and NON-CONDUCTING FELT for STEAM BOILERS, PIPES, &c., preventing the radiation of Heat, and saving 25 per cent. of Fuel.

Samples, testimonials, and full instructions, on application to Croggon and Co., 2, Dowgate-hill, London.

ALLSOPP'S BURTON and EAST INDIA PALE ALES.—Messrs. S. Allsopp and Sons beg to call the attention of the public to their East India, Pale, and other Burton Ales, which may be obtained in casks of 18 gallons and upwards, either singly or in any quantity, by application to the Brewery, Burton-on-Trent, or on the same terms at their respective Stores, as follows:—61, King William-street, London; Cook-street, Liverpool; under the Exchange, Ducie-place, Manchester; and at the Market-place, High-street, Birmingham.

AUSTRALIA, NEW ZEALAND, CAPE of GOOD HOPE, NATAL, &c.

PASSENGERS to the COLONIES generally may obtain their OUTFITS from S. W. SILVER and CO., CLOTHIERS, &c., 66 and 67, CORNHILL, at wholesale prices. SILVER and CO. make nearly the whole of the articles comprised in an outfit, to secure durability, so that the Cabin Folding Furniture may become permanent Household Furniture on arrival in the colony.

They also engage PASSAGES, and give ship sailing INFORMATION, but they neither receive nor pay a commission—their object being to give PASSENGERS who place themselves in their hands every benefit; and they forward small packages for their customers (gratis) through their AGENTS in the COLONIES.

SILVER and CO. give DRAFTS on AUSTRALIA at sixty days' sight of 103*l.* for every 100*l.* paid here.

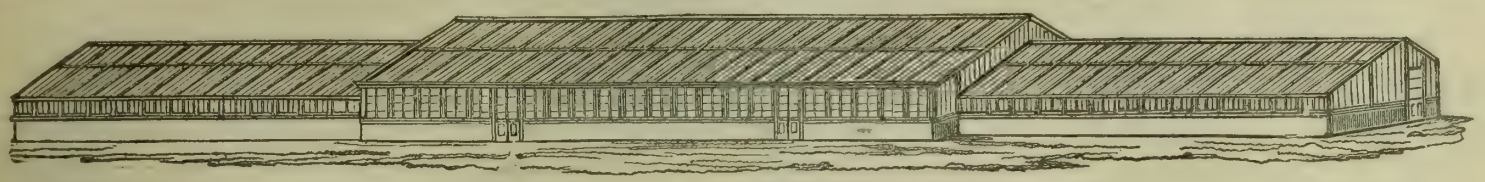
The EMIGRANT Fitting-out Branch is at No. 4, Bishopsgate-street, opposite the London Tavern, where a comfortable fit-out for male or female, including bedding, may be obtained for FOUR POUNDS.

A Branch of each at ST. GEORGE'S-CRESCENT, LIVERPOOL.

GRAY, ORMSON, AND BROWN,

DANVERS STREET, CHELSEA,

Respectfully solicit the attention of the Nobility and Gentry to their superior manner of Erecting and Heating every description of Building connected with Horticulture. They have much pleasure in giving the following testimonial referring to the range of houses shown below.



Peach House, 30 by 16 feet. | Vinery, 30 by 16 feet. | Stove, 45 by 20 ft. | Greenhouse, 45 by 20 ft. | Vinery, 30 by 16 ft. | Vinery, 30 by 16 ft.

[Erected for John Shaw Leigh, Esq., Luton Hoo.]

Extract of a Letter from Mr. Fraser.—"I have much pleasure in expressing my entire satisfaction with the range of houses you erected here. I may also state that my honoured employer, John Shaw Leigh, Esq., is perfectly satisfied. I have no hesitation in stating, that to the best of my knowledge, there is not a more complete range of glass in the country, as regards both building and heating. I may add that they are admired by every Gardener who has seen them. I shall have much pleasure in answering any references you may please to direct.

(Signed.) "James Fraser, Gardener, Luton Hoo Park."

TO GENTLEMEN, FLORISTS, AND OTHERS.

MESSRS. PROTHEROE and MORRIS will submit to public competition by Auction, at the Mart, Bartholomew-lane, on WEDNESDAY, April 3, and THURSDAY, April 4, at 12 o'clock each day, a first-rate collection of Carnations, Picotees, and Auriculas, selected Standard and Dwarf Roses, choice Dahlias, Fuchsias, Verbenas, Pæonia; also a few Camellias well set with bloom buds, &c.—May be viewed morning of sale. Catalogues had at the Mart, and of the Auctioneers, American Nursery, Leytonstone, Essex.

TO GARDENERS, SEEDSMEN, AND FLORISTS.

TO BE LET, with immediate Possession, an old established Concern in the principal and most fashionable thoroughfare in Brighton, the Western Road; comprising the Seed, Fruit, and Florist Business, with excellent Vinery, Show-house, and Stove. In-coming moderate.—Apply to Messrs. Rogers and Ayling, Nurserymen, Withdean, near Brighton.

CUCUMBER AND MELON BOXES AND LIGHTS.

One hundred 1, 2, and 3-light Boxes and Lights of all sizes ready for immediate use. Warranted best materials, packed and sent to all parts of the kingdom; 2-light Boxes and Lights from 1*l.* 4*s.* Garden Lights of every description. Conservatories, Green and Hot-houses, made and fixed in all parts of the kingdom. References given to the Nobility, Gentry, and the Trade, in most of the counties of England. Jas. Watts, Hothouse Builder, Claremont-place, Old Kent-road, London.

IMPORTANT TO DRAIN TILE AND PIPE MANUFACTURERS.

SMART AND CREWTHERS beg to intimate that they are now prepared to send out their newly-invented Machine for the Manufacturing of DRAIN TILES and PIPES; these Machines have been fairly tested in Northumberland and Berwickshire, and are allowed to be the best yet produced.—For particulars apply to Messrs. Wm. Wilson and Son, Ironmongers, Bridge-street, Berwick-on-Tweed.

Testimonial.—"Gentlemen,—After working your Machine for five months, it is the best Machine I have ever had or seen,—we are making 10,000 per day.—George Phillips, Flodden Tile Works."

PATENT SPADES, DAISY RAKES, SCYTHES, Draining, and other Garden Tools. Mole Traps, 6*s.* per dozen. Carpenters and Smiths' Tools, &c. Ladies' Garden Tools, 7*s.* 9*d.* a set. Sword-scrapers for Gardens, 1*s.* 2*d.* each. Dr. Arnott's Ventilating Chimney-valves, plain 5*s.*; Ornamental ditto for Drawing-rooms: at J. H. Boobbyer and Co.'s (late Sturch and Boobbyer), Ironmongery, Brass-foundry, Nail and Tool Warehouse, 14, Stanhope-street, Clare-market, London. Established nearly 200 years for the sale of goods from the best Manufactories at the lowest prices. Goods forwarded to any part on the receipt of remittance.

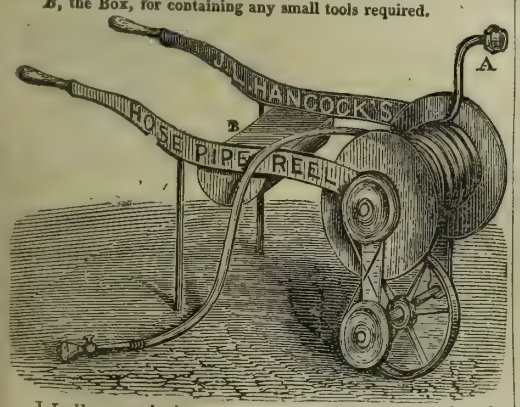
FLEXIBLE INDIA-RUBBER HOSE PIPES.

JAMES LYNE HANCOCK, Sole Licensee and Manufacturer of the PATENT VULCANISED INDIA-RUBBER PIPES and TUBING. These Pipes are well adapted for watering Gardens, conveying Liquid Manure, for Breweries, Gas Fittings, Chemical and all purposes where a perfectly sound Waterproof and Flexible Pipe is required. Hot Liquors or Acids do not injure them. No oil or dressing is required in using them. They do not leak from remaining out of use, are permanently flexible in all temperatures, and are therefore particularly suitable for Fire-Engines; and from their not leaking, are found exceedingly useful in conveying hot or cold water to baths in dwelling houses and such like purposes. Being extremely portable, stowing closely without danger of injury, resisting the influence of climate, insects, and vermin, frequently so injurious to such articles on board ship, and retaining their virtues though long out of use, render them particularly adapted for exportation.

N.B.—VULCANISED INDIA-RUBBER GARDEN HOSE, fitted with Roses, Jets, and Branches, complete, with Union Joints, ready to attach to Water Cisterns.

A, represents the Union-joint, for effecting the communication between the Hose-reel and the Tank, or Reservoir.

B, the Box, for containing any small tools required.

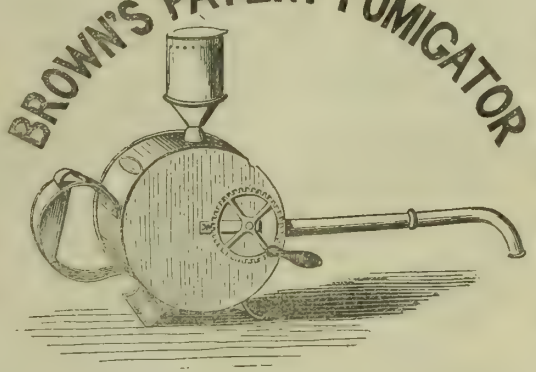


J. L. Hancock invites attention of parties using long lengths of the Flexible Garden Hose, to his SELF-ACTING HOSE PIPE REEL, which is found a most convenient machine for winding up and conveying away the Hose when out of use.

All letters or Orders addressed to J. L. H. at the Manufactory and Warehouse, Goswell-mews, Goswell-road, London, will meet with immediate attention.

PRICE TEN SHILLINGS AND UPWARDS.

A PORTABLE INSTRUMENT, FOR FUMIGATING GREENHOUSES, STOVES, and FRAMES, OR SHRUBS & FLOWERS, IN THE OPEN AIR,



Without injuring the most Delicate Plant;

Delivering the smoke cool, in a dense mass, and effecting a great saving of Tobacco.

MANUFACTURED AND SUPPLIED to the TRADE BY MESSRS. BARBER and GROOM, LONDON;

And may be had of all IRONMONGERS, SEEDSMEN, AND FLORISTS.

DR. NEWINGTON'S HAND-DRILL HOES, with their various fittings; Hand-Dibbles, with from 6 to 9 depositors each, Wheel-Dibbles, Drop-drills, and Hand-sowing Implements for dropping seed at defined intervals in the seams of the plough, or in pressed land, or in drills. A Prospectus and Lecture on Seeding sent gratis on application to Messrs. Dufaur and Co., Agricultural Depôt, 21, Red Lion-square, Holborn, London. The above Dibbles received the prize given by the Royal Agricultural Society at Norwich.

FARMING IN SCOTLAND.—A Gentleman farming upwards of 500 acres of land, in one of the best districts of East Lothian, can accommodate one or two gentlemen who are desirous of gaining an intimate knowledge of practical agriculture. The house is commodious and finely situated, within two miles of a railway station; there is a also a large garden, vineries, &c. References given and required. For further particulars, application may be made to William Alexander, Esq., W. S., Register-street, Edinburgh; or Thomas Burn, Esq., Solicitor, Sunderland.—March 30.

DEANE'S WARRANTED GARDEN TOOLS.—Horticulturists, and all interested in Gardening pursuits, are invited to examine G. and J. Deane's extensive Stock of GARDENING AND PRUNING IMPLEMENTS, best London made Garden Engines and Syringes, Coalbrookdale Garden Seats and Chairs.

Averuncators	Garden Scrapers	Pick Axes
Axes	Grape Gatherers and Scissors	Potato Forks
Bagging Hooks	Gravel Rakes and Sieves	Pruning Bills
Bills	Greenhouse Doors and Frames	,, Knives, various
Borders, various patterns	Hammers	,, Saws
Botanical Boxes	Hand-glass Frames	,, Scissors
Cases of Pruning Instruments	Hay Knives	,, Shears [riety.
Chaff Engines	Hoes of every pattern	Rakes in great va-
Chaff Knives	Horticultural Hammers and Hatchets	Reaping Hooks
Daisy Rakes	Hotbed Handles	Scythes
Dibbles	Ladies' Set of Tools	Scythe Stones
Dock Spuds	Labels, various patterns, in zinc, porcelain, &c.	Shears, various
Draining Tools	Lines and Reels	Sickles
Edging Irons and Shears	Marking Ink	Sickle Saws
Flower Scissors	Mattocks	Spades and Shovels
,, Stands in Wires and Iron	Menographs	Spuds
Fumigators	Metallic Wire	Switch Hooks
Galvanic Borders and Plant Protectors	Milton Hatchets	Thistle Hooks
Garden Chairs and Seats	Mole Traps	Transplanting Tools
,, Loops	Mowing Machine	Trowels
,, Rollers		Turfing Irons
		Wall Nails
		Watering Pots
		Weed Extractors and Hooks
		Wheelbarrows
		Youths' Set of Tools

G. and J. Deane are sole Agents for LINGHAM'S PERMANENT LABELS, samples of which, with the Illustrated List of Horticultural Tools, can be sent, post paid, to any part of the United Kingdom.—Deane's Horticultural Tool Warehouse, opening to the Monument, 46, King William-st., London-bridge.

GREY GOOSE FEATHERS, 1*s.* per lb.—HEAL and SONS' present prices for Bed Feathers are:—

Poultry	0*s.* 8*d.*	Best Grey Goose	1*s.* 10*d.*
Grey Goose	1 0	White ditto	2 2
Foreign ditto	1 6	Best Dantzic ditto	3 0

Purified by steam, and warranted sweet and free from dust.—Heal and Sons' List of Bedding, containing full particulars of weights, sizes, and prices, sent free by post, on application to their Factory, 196, Tottenham-court-road, London.

NEWS, NEWS, NEWS.—The best, cheapest, and largest Newspaper in the World.—LLOYD'S WEEKLY LONDON NEWSPAPER contains 60 large columns of the latest intelligence from all parts of the Globe, price only Threepence, postage free. Send Three Postage Stamps to E. Lloyd, 12, Salisbury-square, London, and receive one copy as a sample.

LINGHAM BROTHERS, 170, Hampton-street, Birmingham, sole Manufacturers of the improved WOOD and ZINC MENOGRAPH, or Label for Garden Borders, Flowerpots, &c., in boxes of 100, &c. The Zinc Labels are highly approved of for their lasting durability; can be written upon with the greatest ease, and, when dry, a permanent inscription is secured. Directions for use sent with each box, including bottle of Metallic Ink.

Sole agents in London, G. and J. Deane, Horticultural Implement Warehouse, 46, King William-street, London-bridge.

STEPHENSON and Co., 61, Gracechurch-street, London, and 17, New Park-street, Southwark, Inventors and Manufacturers of the Improved CONICAL and DOUBLE CYLINDRICAL BOILERS, respectfully solicit the attention of scientific Horticulturists to their much improved method of applying the Tank System to Pineries, Propagating Houses, &c., by which atmospheric heat as well as bottom-heat is secured to any required degree, without the aid of pipes or flues. S. and Co. have also to state that at the request of numerous friends they are now making their Boilers of Iron, as well as Copper, by which the cost is reduced. These Boilers, which are now so well known, scarcely require description, but to those who have not seen them in operation, prospectuses will be forwarded, as well as reference of the highest authority; or they may be seen at most of the Nobility's seats and principal Nurseries throughout the kingdom.

S. and Co. beg to inform the Trade that at their Manufactory, 17, New Park-street, every article required for the construction of Horticultural Buildings, as well as for heating them, may be obtained upon the most advantageous terms.

Conservatories, &c., of Iron or Wood, erected upon the most ornamental designs. Balconies, Palisading, Field and Garden Fences, Wire-work, &c.

WIRE STRAND FENCING, as fixed by R. S. NEWALL and Co., is cheaper, stronger, more durable and elegant than any other Fence hitherto introduced.

COPPER WIRE HOTHOUSE SASH LINE.
LIGHTNING CONDUCTORS.
GILT AND PLATED CORD FOR HANGING PICTURES.

Office, 130, Strand, London; Warehouse, Brunswick-street, Blackwall; Manufactory, Gateshead, on Tyne.

PROTECTION FROM FIRE.—Fire Annihilator Company.—MACHINES of various sizes, suited for rooms in private houses, for shops, or for cabins, or holds of ships, are now on SALE; larger machines are made, adapted for warehouses, factories, and extensive premises. Particulars and estimates, and cards for witnessing demonstrations of powers of the invention, may be had at the office, 105, Leadenhall-street, London.

THE IMPERIAL COVERLETS, now so universally admired and appreciated, as a Cheap, Durable, LIGHT, Warm, and Elegant COVERING for the BED, can be had, Wholesale and Retail, of W. H. Batson and Co., 1, Princess-street, Manchester; and 499, Oxford-street, London.

"I disapprove exceedingly of thick heavy Quilts and Counterpanes; they should always be avoided, especially by invalids, as they irritate delicate frames and prevent sleep."—*Dr. Graham's "Domestic Medicine,"* pages 192, 729.

MARQUEES, SUN-BLINDS, RICK-CLOTHS, &c.—Manufactory, Old Kent-road (facing the Bricklayers' Arms Railway Terminus), and 17, Smithfield-bars, London.

The guests are arriving; my villa has got
Quite a park-like appearance—a beautiful spot;
The band on the lawn, in the spacious marquee;
This tent for our dinner and that for our tea.

Marquees and temporary rooms superbly fitted up for Fêtes, &c., on most moderate terms, by Thomas Edgington and Co., Tents of every description, Rick Cloths with Poles, &c. Tanned Netting, for the protection of fruit trees from frost, blight, and birds, and for the security of fresh sown seed, either in gardens or fields, at unprecedented low prices, viz., 1*d.* per square yard, or 200 yards for 14*s.*, or 500 yards for 30*s.*, or 1000 yards for 50*s.* Gardeners and shopkeepers supplied by the cwt. New Archangel Mats and Scrim Canvas for wall fruit. Tarpaulings for houses under repair or hire. Orders and inquiries per post immediately attended to.

A DANGEROUS WOUND IN THE THIGH CURED BY HOLLOWAY'S OINTMENT AND PILLS.—About three years ago, Mr. Acton, of Melbourne, had his thigh most fearfully lacerated when out riding, his horse running away and his leg coming in violent collision with a wall. He was confined to his bed for nearly 18 months' suffering from the accident, and notwithstanding the best medical advice every effort proved unsuccessful in healing the wound, and his health became so impaired that his life was despaired of; in this state he commenced using Holloway's Ointment and Pills, which had the effect of healing the wound with wonderful rapidity, and restoring him to sound health.—Sold by all Druggists, and at Professor Holloway's Establishment, 244, Strand, London.

JOHN KERNAN

4, GREAT RUSSELL STREET, COVENT GARDEN, 1850.

Begs to offer a Select List from his

GENERAL CATALOGUE OF VEGETABLE AND FLOWER SEEDS,

WHICH MAY BE RELIED ON WITH CONFIDENCE AS THE MOST DESIRABLE FOR CULTIVATION.

Peas.

	Per qt.—s.	d.
Prince Albert ...	0	9
Early Racehorse ...	0	9
Shilling's Early Grotto ...	1	0
Thompson's Early Dwarf	0	9
Fairbeard's Early Surprise ...	1	0
Fairbeard's Champion of England ...	1	0
Bedman's Improved Imperial ...	0	9
Blue Scimetar ...	0	9
Woodford, or Nonsuch ...	0	9
Knight's Dwarf Green Marrow ...	1	0
Knight's Tall Green ditto	1	0
Victoria Marrow ...	1	0
British Queen ...	1	0

With all other varieties worth cultivating.

Beans.

	Per qt.	
Early Mazagan ...	0	8
Sword Longpod ...	0	8
Haugdown ...	0	8
Taylor's Windsor...	0	8
Johnson's Wonderful ...	0	8
Green Genoa ...	0	9
All the varieties of dwarf French Beans ...	1	0
Painted Lady and Scarlet Runners... ...	1	0

	Per oz.	
Beet, fine London Red ...	0	6
Beet, Silver, or Seakale	0	6
Beet, Castelnaudary ...	0	6
Borecole, dwarf curled ...	0	6
Borecole new heading, per paper	0	6
Brussels Sprouts (foreign seed, fine)	1	0
Kohl Rabi, per paper ...	0	6
Borecole, red and white, variegated, for garnishing (very beautiful) ...	0	6

Broccoli.

	Per oz.	
Myatt's Early Purple Cape	1	0
Miller's Dwarf	1	0
Chappell's Cream ...	1	0
Bowles's Sulphur ...	1	0
Somner's Late White ...	1	0
Grange's Early White,—from the original raiser	1	0
Invisible White	1	0
Purple Sprouting ...	1	0
Brimstone	1	0
Walcheren	1	0
Imperial Winter ...	1	0
Hampton Court ...	1	0
Dwarf Siberian	1	0
Purple Syrian	1	0

Cabbage.

	Per oz.	
Nonpareil	0	9
Shilling's New Queen, fine	1	0
Atkin's Matchless ...	1	0
Heart-shaped	0	6
Knight's Early Dwarf ...	1	0
Early York	0	6
Early Battersea ...	0	6
Peake's Incomparable ...	1	0
Robert's Emperor ...	1	0
True Cornish, per packet	0	6
Perpetual	1	0
Vangirard (Winter) per packet	0	6
Large Drumhead — (for cattle), per lb. ...	2	6

And all other kinds in cultivation.

Carrot.

	Per oz.	
Early Scarlet Horn ...	0	4
Long Orange	0	4
Fine Surrey	0	4
Parsnip, Hollow crown	0	3
Altringham, per lb. ...	1	0
White (for Agriculture), per lb.	1	0

Cauliflower.

	Per oz.	
Mercer's fine Pearly ...	1	0
London Particular ...	1	0
Large Asiatic	1	0
Walcheren	1	0
Fine late	1	0

Cress.

	Per oz.	
Plain, per pint	0	6
Curled	1	0
American, per oz. ...	0	3
Broad-leaved, per oz. ...	0	3
Water, per paper ...	0	6
Mustard, per pint ...	0	6

Parsley.

	s.	d.
Plain, for feeding early lambs, per bushel ...	16	0
Extra Curled, per oz. ...	0	3

Celery.

	Per paper	
Cole's Superb Red ...	1	0
Seymour's Superb White	0	6
New Rose, solid	0	6
Dwarf White Siberian, very solid, per packet .	0	6
Seymour's Superb Red, per packet	0	6
New Giant	0	6

Cucumber.

Victory of Bath ...	1	0
Acme of Perfection ...	1	0
Syon House	1	0
Weedon's Free bearer ...	0	6
Early Frame	0	3
Kerrison's	1	0
Walker's Rambler ...	0	6
Windsor Prize	0	6
Early Handglass ...	0	3
Early Ridge	0	3

Melons.

Seymour's Golden Perfection	0	6
True Syon House ...	0	6
Snow's Hybrid Green flesh, per packet	0	6

And all the better sorts cultivated for this market.

Endive.

New Imperial, per packet	0	6
Batavian ... per oz.	0	6
Green curled	0	6
White curled	0	6
Herbs, all the kinds, per packet	0	6

Lettuce.

Brighton Cos, per oz. ...	1	0
Imperial Cos	1	0
Artichoke-leaved, a fine new hardy sort, per pkt.	0	6
Victoria Cabbage, p. paper	0	6
Green Paris Cos	0	6
White Summer Cabbage	0	6
Fine London White Cos, per oz.	0	9
Paris Cos, per oz. ...	1	0
Ady's Cos	1	0
Drumhead	0	9
Bath Cos, & others, p. oz.	1	0

Onion.

	Per oz.	
James's Long Keeping ...	0	6
Fine White Spanish ...	0	6
Globe	0	6
Strasburgh	0	6
Deptford	0	6
Silver-skin	0	9
Tripoli	1	0
Blood-red	0	6
Two-bladed, for pickling	0	8

Radish.

New Scarlet Olive-shaped, a delicious new variety, per packet	0	6
New rose, per packet ...	0	6
Early Frame, per pint ...	1	0
Long Scarlet	1	0
Red and White Turnip	1	0
Black Spanish, per oz. ...	0	3

Spinach.

New Flanders, per pint	0	6
Round, or Summer ...	0	6
Lettuce-leaved (new), per paper	0	6
New Zealand, per oz. ...	0	6

Turnips.

Early Snowball	0	3
Red American Stone, p.oz.	0	3
Teltow, for stewing ...	0	3
Early Dutch	0	3
Yellow Maltese ...	0	3
,, Stone	0	3
Early Snowball, per lb....	1	6
Early Dutch (earliest), true imported ...	2	0

AGRICULTURAL TURNIPS.

Yellow Bullock per lb.—	1	0
Skirving's Swede ...	1	0
Laing's ditto	1	0
Ashcroft ditto	1	0
Dale's Hybrid	1	0
Red Round	1	0
White Round	1	0
White Globe	1	0
Oxheart	1	0

Furze, per lb., 1*s.*; Broom, per lb., 1*s.*
Coarse Grasses for Game Covers, 8*s.* per bushel.
Long Red and Globe Mangold Wurzel, per lb., 1*s.*
White Silesian, or Sugar Beet, per lb., 2*s.*
Chevalier Barley; Hopetown, Tartarian, Sandy, and other Oats; Tick Beans; Field Peas, &c.
A fine Collection of all the best permanent Grasses (hand picked), separate or mixed; if mixed, per bushel, 10*s.*
Sweet Vernal, the earliest and most suitable Grass for early Lambs, clean seed, 5*s.* per lb.
Ditto, seed in pod, 2*s.* 6*d.* per lb.
White and Red Clover, 3*d.*; Lucerne, 1*s.*; and Trefoil, 6*d.* per lb.
Kohl Rabi, for Agriculture, per lb., 2*s.* 6*d.*
New Tartarian Buckwheat, per packet, 6*d.*
Italian Rye Grass. Spring and Winter Tares.
A few of the very finest Grasses for Lawns, per lb., 1*s.* 6*d.*

Myatt's fine new Strawberries.
Asparagus plants, according to age, per 100, 2*s.* 6*d.* to 5*s.*
Seakale do. do. do. 5*s.* to 10*s.*
Dulley's Early Scarlet Admirable Rhubarb, per root, 1*s.* 6*d.*
Myatt's Victoria do. (the largest in cultivation), 1*s.* 6*d.*
Mushroom Spawn, per bushel, 5*s.*
Cornwell's Victoria Raspberry, per dozen, 4*s.*
All the fine new Raspberries, 2*s.* 6*d.* to 3*s.* per dozen.
Seeds of all the new Strawberries, Raspberries, Gooseberries, and Currants, per paper, 6*d.*

Potatoes. per bushel

	s.	d.
Soden's Early Oxford, per bushel	10	0
Barnard's Early Frame	8	0
Shilling's Early Prolific, per peck	2	6
Kirke's True Ash-leaved Kidney, per bushel ...	10	0
England's Fair Beauty Kidney	6	0
Walnut-leaved Kidney,	10	0
Jackson's Ash-leaved Kidney	10	0
Ash-leaved Kidney, bshl.	10	0
Forty-fold	7	0
Early Hen's Nest do.	8	0
Early Shaw ... do.	6	0
Prince Regent's ... do.	6	0
Kentish Mignon ... do.	6	0
Albany Kidneys ... do.	6	0
Flour-ball ... ... do.	6	0

And many other most productive late kinds; also seed saved from the best varieties, 6*d.* per packet.
Garlic, per lb., 6*d.* Shalots, per lb., 6*d.*
Budding and Pruning Knives.
Russia Mats, 1*s.* 6*d.* each.
Cuba Bass, per lb., 2*s.*
Buckwheat, Indian Corn, Rape, Hemp, &c., for Aviaries.
The trade supplied on moderate terms, with every article true to its kind.
Catalogues may be had on application.

Flower Seeds.

Asters, 20 distinct German varieties, in sealed packets, suitable for exhibition, the collection 10*s.*
A mixture, including all the colours of the above, per paper, 6*d.*
Do. in 12 distinct colours, the collection 5*s.*
Superb German and Prussian Stocks, 25 distinct varieties, for exhibition, the collection 10*s.*
12 varieties of do., distinct in colours, 4*s.*
12 autumn flowering do., in distinct colours, 4*s.*
A mixture of all the finest varieties of Ten-week, per paper, 6*d.*
A mixture of Brompton do., per packet, 6*d.*
12 named varieties of Hollyhocks, 5*s.*

Per packet—s.	d.
Achimenes, seeds & bulbs of all the varieties.	
Anagallis Phillipsii ...	0 6
,, superba grandiflora ...	0 6
,, indica	0 3
,, carnea	0 3
,, latifolia	0 6
Amethystea cærulea ...	0 6
Anemone, fine mixed ...	0 6
Antirrhinum (all the new kinds)	0 3
Argemone grandiflora ...	0 3
,, Barclayana ...	0 3
,, speciosa	0 3
Aquilegia glandulosa ...	1 0
,, siberica ...	0 3
,, fine mixed German varieties	0 6
Auricula, from fine named flowers ...	1 0
,, alpine	0 6
Brachycome iberidifolia .	0 6
,, alba, new ...	1 0
Balsams, 12 very fine distinct colours, all double ...	5 0
,, mixture of above	0 6
Bartonia aurea	0 3
Blumenbachia insignis...	0 6
Browallia, of sorts ...	0 6
Calceolarias, from a collection of named shrubby kinds	1 0
Calceolarias, from Herbaceous do.	1 0
Calceolaria pinnata ...	0 6
Calendrinia discolor ...	0 3
,, grandiflora...	0 3
,, umbellata — (new), fine for rockwork ...	1 0
Callichroa platyglossa ...	0 3
Campanula pulcherrima.	0 6
,, Loreii, blue...	0 6
,, ,, white.	0 6
,, stricta ...	0 6
,, sylvatica new	0 6
And many other sorts, fine, as a contrast with bedded out Verbenas, &c.	
Canananche bicolor ...	0 3
Cistus guttatus, very dwf.	0 6
Clintonia pulchella ...	0 6
,, elegans ...	0 3
Cockscomb, Dwarf Scarlet	0 6
Cuphea viscosissima ...	0 6
,, silenoides ...	0 6
,, platycentra new	1 0
,, miniata ...	0 6
Cineraria, selected from 36 of the latest new kinds	1 0
Commelina cœlestis ...	0 3
Carnation, from named flowers	1 0
Clarkias, all the varieties	0 3
Coreopsis, new marbled .	0 6
,, tinctoria ...	0 3
,, Drummondii...	0 3
Candytuft, new crimson .	0 3
,, purple ...	0 3
,, white ...	0 3
,, Sweet scented	0 3

Per packet—s.	d.
Convolvulus major ...	0 3
,, minor ...	0 3
,, do. new dark	0 6
CLIMBERS.	
Cobœa scandens ...	0 6
Calampelis scaber ...	0 6
Lophospermum erubescens	0 6
,, Hendersonii	0 6
Loasa aurantiaca ...	0 6
Maurandya Barclayana .	0 6
,, new scarlet...	0 6
Tropæolum peregrinum .	0 6
,, pentaphyllum	0 6
,, Jarrattii ...	1 0
,, tricolorum grandiflrm.	1 0
,, trimaculatum, new ...	1 0
Ipomœa rubra cærulea...	0 6
,, punctata ...	0 6
,, nil	0 6
,, rosea	0 6
,, striata & others	0 6
Thunbergia alata ...	0 6
,, ,, alba	0 6
,, aurantiaca .	0 6
,, Fryerii ...	0 6
,, new yellow...	0 6
Cleome pentaphylla ...	0 6
,, rosea	0 6
Collinsia grandiflora ...	0 3
,, bicolor	0 3
,, ,, new dwarf	0 3
Dahlia scabigera (dwarf lilac)	0 6
Datura fastuosa, purple...	0 6
,, ,, white ...	0 6
Delphinium or Larkspurs, distinct or mixed ...	0 3
Ditto, biennial and perennial varieties	0 3
Digitalis grandiflora ...	0 3
,, new spotted ...	0 3
,, fulgens ...	0 3
Dianthus, double white. Indian pink	0 6
,, Knight's new hybrid ...	0 6
,, double Indian	0 3
,, latifolia ...	0 3
,, Cherii	0 6
and others.	
Didiscus cæruleus ...	0 6
Dahlia, fine mixed ...	1 0
Eucharidium grandiflorum	0 6
Eutoca viscida	0 3
Egg plant, white	0 6
,, purple ...	0 3
Eschscholtzia, 3 sorts ...	0 3
Erysimum Perofskianum	0 3
Fuchsias from named sorts	1 0
Gaillardia picta	0 6
,, bicolor ...	0 3
,, Richardsonii .	0 3
,, aristata ...	0 3
Globe Amaranthus, of sorts	0 3
Gentianas, of sorts ...	0 6
Geum splendens	0 6
,, Wicei	0 6
Geranium, from fine sorts	1 0
Grahamia aromatica ...	0 6
Godetia, all the new sorts	0 3

Per packet—s.	d.
Heartsease, from first-rate prize flowers	1 0
Humea elegans	0 6
Helichrysum macranthum	0 6
,, bracteatum album	0 3
Heliotropium Peruvianum	0 6
,, Voltareanum	0 6
Hibiscus Richardsonii ...	0 6
,, africanus ...	0 3
,, Humboldtii ...	0 6
Heliophila araboides ...	0 3
Helianthemum (Rock Cistus) 6 vars. for rockwork, each	0 3
Do., all the vars., mixed	0 6
Hollyhock, Chinese ...	0 6
,, fine mixed ...	0 3
Hydrolea spinosa ...	1 0
Ipomœa Burridgii ...	0 6
,, quamoclit ...	0 6
,, And others ...	0 6
Ipomopsis elegans ...	0 6
,, Berichii, new	1 0
Isotoma axillaris ...	0 6
Jacobæa, double crimson	0 3
,, ,, purple...	0 3
,, new lilac ...	0 3
Kaulfussia amelioides, for edging ...	0 3
,, tracheliodes...	0 6
HANDSOME ORNAMENTAL GRASSES.	
Lagurus ovatus (Hare's-tail Grass)	0 6
Agrostis pulchella ...	0 6
Briza gracilis	0 6
,, maxima	0 6
Stipa pinnata	0 6
Larkspurs, 12 distinct German vars.	4 0
,, mixed dwarf Rocket ...	0 3
Leptosiphon densiflores .	0 3
,, androsaceus .	0 3
Loasa pentlandica ...	0 6
,, aurantiaca ...	0 6
Linum monogynum, fine	0 6
,, grandiflorum ...	0 3
,, perenne	0 6
,, album	0 3
Lymnanthus grandiflora	0 6
,, Douglasii...	0 3
Lobelia heterophylla major, fine ...	0 6
,, bicolor	0 3
,, gracilis, for edging	0 3
,, ramosus	0 6
,, erinoides	0 3
,, rosea	0 6
,, propinqua ...	0 6
And many other biennial and perennial varieties.	
Lisianthus Russellianus, in plants (seed does not vegetate well).	
Lupinus Hartwegii ...	0 3
,, nanus	0 3
,, Cruikshankii ...	0 3
,, Dicksonii and many others ...	0 3
Lychnis speciosa, new ...	0 6
,, flos Jovis ...	0 3
,, cœli-rosa ...	0 3
,, prostrata ...	0 3
,, chalcedonica, scarlet	0 6
Malope grandiflora ...	0 3
Mallow, new zebra ...	0 3
Malva miniata	0 6
Marvel of Peru, 6 distinct colours, each	0 3
Marigold, dwarf pigmy French	0 6
Other varieties	0 3
Mesembryanthemum tricolor	0 6
Mignonette, per oz. ...	0 9
Mimosa sensitiva (Sensitive plant) per packet	0 6
Mimulus, from 12 distinct named varieties ...	0 6
Mimulus regina, strongly scented of Musk ...	0 6
Martynia fragrans ...	0 6
Nasturtiums, all the sorts	0 3
Nemesia floribundus ...	0 6

Per packet—s.	d.
Nemophila insignis major	0 3
,, insignis alba (new)	0 6
,, discoidalis (new)...	0 6
,, Cramboides, and others ...	0 6
,, maculata	1 0
Neirembeia splendens ...	0 6
,, violacea ...	0 3
,, fine mixed	0 6
,, nyctaginiflora	0 3
Nolana atriplicifolia ...	0 3
,, paradoxa ...	0 3
Œnothera Sellowii ...	0 6
,, Drummondii ...	0 6
,, densiflora ...	0 3
,, macrocarpa ...	0 6
,, and others ...	0 3
Papaver Marcelli ...	0 3
,, nudicaulis ...	0 3
,, 16 new Prussian varieties, very showy for borders	5 0
Peas, sweet, all the colours separate or mixed ...	0 3
Pentstemon, of sorts ...	0 6
Phlox Drummondii, various shades...	0 6
,, Drummondii, white	1 0
,, Leopoldii, new ...	1 0
,, new, scarlet ...	0 6
Picotee, from named flowers	1 0
Platystemon californica	0 3
Potentilla Garnieriana ...	0 3
,, Russelliana ...	0 3
,, insignis, fine new	0 6
Polyanthus, fine mixed...	0 6
Portulaca splendens ...	0 6
,, Thellusonii ...	0 6
,, grandiflora ...	0 6
,, striata alba ...	0 6
,, Gilliesii ...	0 6
,, yellow ...	0 3
Primula sinensis (white fringed) ...	1 0
,, lilac	1 0
,, cortusoides ...	0 6
Rhodanthe Manglesii ...	0 6
Salvia patens	0 6
,, bicolor	0 6
Sanvitalia procumbens. .	0 6
Schizanthus Hookerii ...	0 6
,, Grahamii...	0 6
,, humilis & others	0 3
,, Priestii ...	0 3
,, venustus ...	0 3
Schixopetalon Walkerii, very sweet	0 6
Sphænogyne speciosa ...	0 3
Streptocarpus Rexii ...	0 6
Silene shatta	0 6
,, compacta	0 6
Stock white pyramidal...	0 6
,, Buck's Intermediate, 16 out of 20 will come double...	0 6
,, Chapman's Scarlet 10-week	0 3
,, Shepherd's White and Purple... ...	0 3
Sedum cæruleum, for rock-work	0 6
Sultan, yellow	0 3
,, white and purple	0 3
Tagetes, signata ...	0 6
,, lucida ...	0 6
Thunbergia (*see* Climbers.)	
Tropæolum (*see* Climbers).	
Viscaria oculata	0 3
,, new dwarf ...	0 6
,, white	0 6
Violet, Russian (everflowering)	0 6
Verbena, a mixture of 6 best sorts	0 6
Veronica Lindleyana ...	0 6
Wahlenbergia grandiflora	0 6
Wallflower, blood red ...	0 3
,, Double German, of sorts	1 0
,, changeable	0 6
Zinnia elegans coccinea	0 6
,, purpurea... ...	0 6
,, aurea	0 6
,, mixed, from 20 separate varieties	0 6

Ornamental Trees and Shrubs of all descriptions.
Cedrus Deodara, Cryptomeria japonica, Taxodium sempervirens, } 2*s.* 6*d.* to 10*s.* 6*d.* each.
Named Double Anemones and Ranunculuses; Gladiolus ramosus and floribundus; Tigridia pavonia and conchiiflora; with many other flowering Bulbs and Herbaceous Plants, which may be planted out till the middle of May.
Carnations, Picotees, and Pinks, per pair, from 1*s.* to 3*s.* 6*d.*
All the better named Heartsease from 6*s.* to 30*s.* per dozen.
Fine named Dahlias, per dozen, 12*s.*
,, Chrysanthemums, new kinds, 12*s.*
Standard Dwarf and Climbing Roses, 1*s.* to 2*s.* 6*d.* each.
Rivers' Miniature Fruit Garden, with directions for culture and root-pruning, 2*s.*
Rivers' new edition of the "Rose Amateur's Guide," 6*s.*
Paxton's "Cottagers' Calendar," 3*d.*, which ladies and gentlemen should distribute to cottagers.
Collection of 24 Annuals, mixed, recommended by Dr. Lindley as suitable for Shrubberies, 5*s.*
Seeds for distribution by Gentlemen to their Tenants and Cottagers on the most liberal terms.
24 papers of Hardy Annuals, 5*s.*
Seeds selected and carefully packed for North and South America, India, New Zealand, and Australia, in the most secure way to arrive safe at any of the above places.

Where a post-office order accompanies an order for any of the above-named Seeds, J. KERNAN will allow, as discount, additional articles to the amount of 2*s.* in the pound.

Ladies and Gentlemen relying upon the judgment and experience of JOHN KERNAN, instead of being supplied (as is often the case) with what is neither useful nor ornamental, may depend upon having a selection of the most useful and indispensable Vegetables to the amount named, by the parties forwarding him their orders. The same economy will be observed in the choice of Flower Seeds. J. K. feels it almost needless to observe that the liberality of discount will be with the amount.

Old meadow turf, which will take a considerable time to decompose and char by the regular or natural means, may be produced by the following simple and short process. Place four bricks, raised two on two, about 3 feet distant from four others similarly arranged, upon which place a sheet of iron large enough to rest fully on the bricks. By making a fire under this simple machine, and allowing your turf to remain until charred, it will, when bruised, make an excellent stimulant for Annuals, Herbaceous and Pot Plants of all sorts. If the vermin or the season do not disturb them, you will not require more than one plant in a hundred of those that come up. Be careful to begin thinning when the plants are quite young.

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AND
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A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 14—1850.] SATURDAY, APRIL 6. [PRICE 6*d.*

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Drying plants	215 *c*	Sainfoin, to sow	222 *b*
Ealing-park, noticed	215 *a*	Salads, winter	214 *b*
Emigrants, information for	217 *c*	Seeds, tests for the vitality of	212 *a*
Farm, garden	221 *a*—222 *a*	Spinach	213 *a*
— Sir J. Conroy's	221 *b*	Tenant and landlord	221 *c*
Farmers, Hertfordshire	217 *c*	Threshing machine	220 *b*
Fortune (Mr.), news from	211 *b*	Trees, fruit, to protect	214 *a*
Frames, covering for	216 *c*	Turnips, to store	220 *b*
Fruit trees, to protect	214 *a*	Villa gardening	212 *b*
Fumigator, Browne's	213 *c*—214 *c*	Walks, gravel	212 *c*—214 *a*
Garden farm	221 *a*—222 *a*	Water, glass pipes for	213 *c*
Glass pipes	213 *c*	Weather, the	214 *b*
Grass seeds	222 *a*	Worton Cottage, florist meeting at	214 *c*
Gravel walks	212 *c*—214 *a*		

HORTICULTURAL SOCIETY OF LONDON.—The EXHIBITIONS OF FLOWERS, &c., in the Society's Garden, will take place on the following SATURDAYS, viz.: May 18, June 8, and July 13. TUESDAY, April 23, *is the last day* on which privileged tickets, at 3*s.* 6*d.* each, are issued to Fellows of the Society. Every Fellow is entitled to 2½ such tickets, if paid for on or before that day.—21, Regent-street.

ROYAL BOTANIC SOCIETY, Regent's Park.—GENERAL EXHIBITIONS, WEDNESDAYS, MAY 8th, JUNE 12th, and JULY 3d.

AMERICAN PLANTS.—SATURDAYS, May 25 and June 1. Tickets to be obtained at the Gardens, by orders from Fellows of the Society, price, on or before Saturday, April 27, 4*s.* each; after that day, 5*s.*; or on the days of Exhibition, 7*s.* 6*d.* each; and such Tickets will admit to the Collection of American Plants, from the 3d of June to the 8th, both included.

N. B. Fruit will be exhibited on June 12 and July 3.

ROYAL SOUTH LONDON FLORICULTURAL SOCIETY.
UNDER THE PATRONAGE OF HER MOST GRACIOUS MAJESTY THE QUEEN.

THE FIRST EXHIBITION for the Season will be held in the Assembly Rooms at the HORNS TAVERN, Kennington, on WEDNESDAY, April 17, 1850 (open to all Exhibitors), when Prizes will be awarded for the following productions, viz.:—Miscellaneous Plants, Azaleas, Cinerarias, Auriculas, Hearts-ease, Polyanthuses, and Specimen Plants; in addition to which, a Silver Cup, value 5*l.* 5*s.*, presented by the Committee, will be awarded for the best collection of Miscellaneous Plants, by Mr. Wm. Ivery. For the best 8 Cinerarias, in pots, small Silver Victoria Medal, by Mr. H. Chapman. For the 2d best ditto, small Silver Albert Medal, by R. W. Dutton, Esq. For the best 3 Plants of Oliver's Lovely Ann Auricula, small Silver Albert Medal. And by the Proprietors of the "Gardener's Hive," for the best Seedling Cineraria (not sent out), the Hive Medal, value 10*s.*

Mr. Oakey's band will be in attendance. Admission to Non-Members, from 1 to 6 o'clock, at 1*s.* each. List of Prizes, and the Rules of the Society, may be obtained from

JOHN TAYLOR NEVILLE, Secretary.
Ebenezer House, Peckham, Surrey.

WARWICKSHIRE HORTICULTURAL EXHIBITION.—ROYAL LEAMINGTON SPA.

The First GRAND HORTICULTURAL EXHIBITION, open to all England, is fixed to take place on WEDNESDAY, June 12, 1850, at the Jephson Gardens, Leamington, under the especial patronage of many of the resident Nobility and Gentry of the county of Warwick, when prizes will be awarded on the most liberal scale for Stove and Greenhouse Plants, Geraniums, Roses, Fuchsias, Pansies, Pines, Grapes, and various miscellaneous productions, a Schedule of which may be had on application to Mr. OWEN WHITE, Honorary Secretary, Jephson Gardens and Parade, Leamington, and is advertised in the "Horticultural Magazine" for April.

The Second Grand Horticultural Exhibition is fixed for Wednesday, August 28, 1850.—Jephson Gardens, April 6.

UNEQUALLED NEW SEEDLING ANTIRRHINUMS.

ROBERT WHIBLEY begs to refer the reader to his Advertisement of the 9th of February last.
Nursery, Kennington, London.

JAMES WHOMES, Royal Pelargonium Nursery, Windsor, can supply fine Plants of HOYLE'S "CRUSADER" GERANIUM at 36*s.* per dozen; and every other fine variety equally cheap.—April 6.

MAIZE CORN, grown by a farmer, with the same cultivation as for Peas or Beans, with instructions for growing it. It has produced 60 bushels per acre in the cold wet summer of 1848, and 64 bushels in 1849. The above may be had at Mr. BENNETT'S, Centre Avenue, Covent-garden.

NEW FUCHSIAS, CHEAP, CHEAP!—Twelve of the following splendid new FUCHSIAS for 12*s.*; Six for 7*s.* 6*d.*, post free, viz.:—Alboni, Chateaubriand, Caractacus, Elegantissima, Elegans, Fire-king, Gem of the West, General Negrier, Lord Nelson, Model, Newtonensis, Perfection, Sapphire, Splendida, Sir C. Napier, Isabella, President, and Gem; if including Spectabilis, 15*s.* per doz. Strong plants sending out. The finer older varieties at 5*s.* per dozen. It is requested that all orders be prepaid. Apply to HENRY WALTON, Edgend Marsden, near Burnley, Lancashire.
Descriptive priced Catalogues for one stamp.

VERBENA—"WONDERFUL."

G. MOORE begs to refer the Readers of this Paper to his Advertisement of the 2d of February.
Perry Barr, near Birmingham, April 6.

GERANIUMS.
A LARGE AND SPLENDID STOCK OF STRONG PLANTS, AT LOW PRICES.

BASS AND BROWN beg to offer the following from their superb collection.

12	all new varieties of last season			2	2 0
12	superb show varieties			1	1 0
25	Ditto ditto			2	0 0
50	Ditto ditto			3	15 0
12	fine show varieties			0	12 0
25	Ditto ditto			1	2 0
50	Ditto ditto			2	0 0

Best older varieties, 6*s.* to 9*s.* per dozen.

FANCY GERANIUMS.

The following 12 new and other choice fancy varieties for 15*s.*

Annais	Jenny Lind (Ambrose's)
Beauty of Winchester (Shepherd's)	La Belle d' Africana
Bouquet tout fait	Lady Flora Hastings
Jehu	Maid of Anjou
Jehu improved	Statuiskii
Jehu Superb (Cheuvier's)	Yeatmannianum

NEW PLANTS.

Geranium Foquet's Magnificent	21*s.* 0*d*	Liebegia speciosa	3*s.* 6*d*
Gloxinia Grandis (Henderson's)	5 0	Luculia Pinciana	2 6
Gloxinia Wortleyana	2 6	Siphocampylos microstoma rubra	2 6
Æschynanthus speciosa	3 6	Tritonea aurea, 3*s.* 6*d.* to	7 6
Chirita Moonii	2 6	Fuchsia spectabilis, 2*s.* 6*d.* to	3 6

DESCRIPTIVE PRICED CATALOGUES OF OUR EXTENSIVE COLLECTION OF SEEDS AND PLANTS supplied, prepaid on receipt of four penny stamps.

Remittances requested from unknown correspondents. Post-office orders to be made payable to BASS and BROWN, or to STEPHEN BROWN. Goods carriage free to London, and with orders of 40*s.* extra plants presented.

BASS and BROWN'S Seed and Horticultural Establishment, Sudbury, Suffolk.

NEW PETUNIAS.

THOMAS BARNES will commence sending out on the 20th inst. his Splendid Seedling PETUNIAS, viz.

Amaranth, rosy crimson	3*s.* 6*d.*
Beauty of Stowe, rose, white centre	5 0
Delicata, peach, margined pink	5 0
Lilacea, lilac and blue	3 6
Madonna, peach, crimson veins and throat	5 0
Tourist, crimson purple	3 6

The above are all of first-rate form and very distinct.
General Descriptive Catalogues may be had on application, including all the novelties of the season.
Danecroft Nurseries, Stowmarket.

HART AND NICKLIN, FLORISTS, Guildford, can supply the following, strong and healthy:

PANSIES.—Duke of Norfolk, Aurora, Gem, Orestes, Blooming Girl, Example, Matilda, Caroline, Ondine, Ophir, Juventa, and Constellation, 12*s.* the dozen. Free by post, or to London.

GERANIUMS, new and good, per doz.	12*s.* 0*d.*
VERBENAS, best named, per doz., free by post	6 0
FUCHSIAS, " " "	6 0

MESSRS. J. AND H. BROWN are now sending out the undermentioned choice Shrubs and Plants, carefully packed, to any part of the Kingdom or the Continent.

25	Azaleas, new hardy Belgian varieties, on their own roots, with flower-buds, one of a sort, by name	*s.* 20 *d.* 0
25	American Azaleas, do. do. do.	15 0
6	Andromedas of sorts, including floribunda	8 0
6	Kalmias, and 6 Ledums, one of a sort, by name	10 0
25	Hardy American Shrubs, one of a sort, by name	10 6
12	Rhododendrons, including scarlet, white, and rose, hardy varieties	12 0
	New Hardy Yellow Rhododendrons, each 7*s.* 6*d.* to	10 6
	Hybrid Rhododendrons, extra fine, with 30 to 50 bloom buds, each 2*s.* 6*d.* to	3 6
6	Fine Hardy Magnolias, one of a sort, by name	10 6
	Hardy Heaths and Vacciniums, ditto ditto, per doz.	8 0
	Cryptomeria japonica and 6 Choice Hardy Pinus, for	10 0
	Glycine sinensis, extra fine in pots, 15 to 30 feet each	3 6
	Passifloras, Hardy and Greenhouse, each	1 6
50	Dwarf Roses, on their own roots, by name	16 0
12	Tea-scented Roses, one of a sort, by name, in pots	9 0
	Standard and half-standard Roses, per dozen, 12*s.* and	15 0
	Climbing Roses, of sorts, per doz.	6 0
	Bourbon Roses, superior sorts, Rose La Reine and Perpetual Queen, for planting in beds, per dozen	10 6
12	Greenhouse Azaleas, one of a sort, blooming plants	25 0
12	Choice Camellias, by name, ditto ditto	30 0
50	Choice Greenhouse Plants, one of a sort, by name	45 0
24	Choice Ericas, one of a sort, by name	15 0
	First-rate Show Pinks, per dozen 6*s.* and	9 0
	First-rate Carnations and Picotees, per dozen 9*s.* and	12 0
	First-rate Pansies, per dozen 6*s.* and	9 0
	Cinerarias and Calceolarias, show varieties, strong plants, per dozen 9*s.* to	12 0
	Verbenas and Petunias, best new sorts, per dozen	5 0
	The New Fancy Geraniums, by name 9*s.* to	12 0
	New Scarlet Geraniums and Heliotropiums, per doz.	6 0
12	Pæonies, new white, pink, and blush, of sorts	8 0
25	Choice Hardy Herbaceous Plants, named	7 6
	Hardy Ferns and other plants for rock-work, per doz.	8 0
	Strawberry Plants, newest and best sorts, per 100, 3*s.* 6*d.* to	5 0

Considerable reduction in the price of bedding out plants when taken in large quantities, or by the hundred.
Flower Seeds, 18 papers, 5*s.*; 36 ditto, 10*s.*; of the most approved varieties, sent free by post. Also Catalogues for 1850.
Albion Nursery, Stoke Newington, London, April 6.

SUPERB PICOTEE—"THE GEM."—By far the most perfect light red-edged PICOTEE yet raised, and shown in all the winning stands at the Metropolitan Exhibitions of last season, and is pronounced by all the leading publications of the day as "a perfect gem." May now be had, in fine strong plants, per post free, at 5*s.* 6*d.* per pair, or well established in small pots at 5*s.* per pair.
YOUELL and Co., Nursery, Great Yarmouth.

EXHIBITION SPECIMEN PLANTS.

W. P. AYRES has received instructions from a Gentleman, declining their cultivation, to offer the following first-class EXHIBITION SPECIMENS OF GREENHOUSE PLANTS for sale. They are in splendid condition, and well set with bloom, and may be seen at the Brooklands Nursery, Blackheath.

	Height. ft.	in.	Circumference. ft.	in.
*Azalea indica lateritia, a pyramid	3	0 —	8	0
*A. i. variegata, depressed cone	2	0 —	8	0
*A. i., double red, a splendid plant	2	6 —	8	0
*A. i. refulgens (Knight's)	2	0 —	5	6
*A. i. vivicans, a bush	2	0 —	5	6
A. i. exquisita, a bush	1	6 —	6	0
A. i. optimea, a pyramid	2	6 —	7	0
A. i. Minerva, a pyramid	2	6 —	7	0
A. i. Apollo, a pyramid	2	9 —	7	0
A. i. delicata (Ivery's)	1	10 —	5	0
*Leschenaultia formosa, a pyramid	1	9 —	6	0
L. biloba grandiflora	1	8 —	5	0
*Boronia serrulata	1	6 —	6	0
" anemoniflora	2	6 —	6	0
*Epacris miniata, a splendid plant	2	6 —	9	0
*Helichrysum argenteum, a fine plant	2	0 —	7	6
*Pimelea decussata	1	0 —	4	6
*Eriostemon buxifolium, a beautiful plant	3	6 —	7	0
Ditto ditto, a neat plant	2	9 —	4	0
Zichya longipedunculata, on trellis	3	6 —	5	0
Podolobium chorozemifolium	3	6 —	4	6
Polygala oppositifolia	1	10 —	6	0
Dilwynia juniperina	1	6 —	6	0
Erica Pattersoniana	3	0 —	6	0
" elegans stricta, a lovely plant	1	0 —	4	6
" fastigiata lutescens	1	6 —	4	6
" Parmenteriana rosea	1	4 —	5	0
" mirabile	1	3 —	4	6
" vestita rosea, a splendid plant	1	4 —	6	0
" propendens	1	4 —	6	0

The above plants are all fit for exhibition, and are in every respect first-rate. Of the plants marked thus (*) not less than six will be sold. Further particulars and the price will be supplied by W. P. AYRES, as above.—April 6

STORY'S SUPERB SEEDLING FUCHSIAS.—2-48 SOUTH DEVON.—A very distinct and elegant flower; tube and sepals light rosy crimson, long and well reflexed, showing a most compact elegantly formed light blue corolla. The flowers are produced on long footstalks and in great abundance. This is a most distinct variety, and one that will give satisfaction to purchasers.—Strong plants, 7*s.* 6*d.*

* 3-48 DUPLEX.—A most remarkable variety, from its invariably producing a double rich deep purple corolla. The tube and sepals are bright scarlet, well reflexed, of good substance. It is a dwarf, compact grower, and an abundant bloomer. It will be a general favourite.—Strong plants, 10*s.* 6*d.*

6-48 MULTIPLEX.—This, as the name designates, is another double corolla flower, but perfectly distinct from Duplex. The tube and sepals are bright crimson, and well reflexed, shewing to a great advantage the intense purple corolla, which, for doubleness, resembles a large double Violet. It is a very free bloomer, and a variety that was greatly admired by those parties who saw it in flower.—Strong plants, 10*s.* 6*d.*

7-48 IGNEA.—A most splendid flower of extra size, and extraordinary brilliancy, both in its crimson tube and sepals, and deep purple corolla. The tube is long, symmetrical, and of great substance, without excrescence of any kind. Sepals sufficiently reflexed to show to advantage its beautifully formed corolla. It is certainly a first-class flower, and warranted to give satisfaction.—Strong plants, 10*s.* 6*d.*

* 8-48 UNIQUE.—This is a beautiful flower, of large size; tube and sepals bright glossy scarlet, of great breadth and substance, without the least wortiness or roughness of any kind. Corolla deep purple and well formed. A most abundant bloomer, two flowers being produced at the axil of the leaves. In the "Florist" for September and November last, it is highly commended, and described as a "very fine flower." The habit of growth and blooming is excellent. It is altogether a first-rate flower, and strongly recommended.—Strong plants, 10*s.* 6*d.*

9-48 MIRABILIS.—A great favourite with those parties who saw it in bloom. An early bloomer, tube and sepals scarlet, well formed and reflexed, corolla fine lively purple, bell-shaped, a most abundant bloomer, and a striking plant. Habit and foliage very good; a most distinct variety.—Strong plants, 7*s.* 6*d.*

* 11-48 STRIATA.—A most novel variety. The corolla which is crimson, being singularly striped with purple like a flake Carnation. It is an abundant bloomer, and invariably comes true to its striped character. It was much admired when in flower.—Strong plants, 7*s.* 6*d.*

The three sorts marked thus * are figured in "The Florist," for March last. The set of seven for 2*l.* 10*s.* for cash (prepayment). A selection of either four for 1*l.* 15*s.* for cash (prepayment.) The usual discount to the trade.

Messrs. VEITCH and SON have much pleasure in offering the above beautiful FUCHSIAS. They are Seedlings raised in 1848, and proved in 1849, by W. H. Story, Esq., of Whitehill, Newtown Bushell, and were selected from a vast number of Seedlings. They are all perfectly distinct, and worthy of general cultivation. Mr. Story's well-known character as a raiser of Seedlings will be a sufficient guarantee that he would permit nothing to be sent out with his name attached that was not of first-rate character, and calculated to give satisfaction.

Strong well-established plants will be ready for delivery on and after Monday the 15th of this month.

N. B. A remittance or reference from unknown correspondents required; this will be strictly adhered to.
Exeter, April 6.

MEETINGS AT WORTON COTTAGE, ISLEWORTH, for the Display and Examination of SEEDLING FLORISTS' FLOWERS, and other objects of Horticultural Interest.

The Editor of the FLORIST AND GARDEN MISCELLANY particularly requests that all Seedlings for the opinions of the Censors of that work may be posted, as far as practicable, so as to reach Mr. BECK, Isleworth, Middlesex, on the Wednesday morning of each week. Parties desirous of attending personally with their productions, by taking the 4.35 o'clock train for Isleworth from the Waterloo Station, will be put down within a few minutes' walk of Worton Cottage.

The next Meeting will be held on Wednesday, April 10th, and each succeeding Wednesday, at 5 o'clock, P.M.

An Artist will attend these Meetings, to take coloured memoranda of anything particularly striking.

N. GAINES begs to inform the admirers of Fancy GERANIUMS, he intends sending out on Monday next the following Seedlings: Gaines's Farodi, Lady Louisa Cornwallis, Elegans, Priam, Nina, Queen Superb, Signora Carolinii, Oderata variegata; also he has good strong plants of his Hero of Surrey and Cerise Unique.

On the 1st of May will be ready for delivery, his superb new Seedling DAHLIAS Lady Auckland, Empress of Yellow, Lord Hardinge, Fancy do., Princess Louisa, Hero, Desdemona, Rotundiflora, and Atalanta. Opinion of this Paper (1849), see August, No. 34; September, No. 38. Gardeners and Land Stewards' Journal, August, No. 32; September, No. 35.—A Descriptive Catalogue of the above, including Calceolarias, Dahlias, Pelargoniums, Fuchsias, Cinerarias, Chrysanthemums, Azaleas, Verbenas, Rhododendrons, &c., may be had by applying at the Nursery, Surrey-lane, Battersea, April 6.

GREENHOUSES, SUMMER HOUSES, &c.—Gentlemen wishing to have the above done by contract, and thus saving fifty per cent., can be supplied with design and specification for One Guinea, on application to W. SOANE, 28, St. John-street, River-lane, Islington.

SPLENDID NEW PETUNIAS (strong plants will be ready the last week in April).

EXQUISITE.—Peach, veined and striped with carmine, rich purple throat, most profuse bloomer. 2*s.* 6*d.*

KING OF CRIMSONS.—Very rich and velvety crimson, with dark throat, first-rate form. 3*s.* 6*d.*

MAGNUM BONUM.—Rosy purple, of extraordinary size and substance, extra fine. 3*s.* 6*d.*

MRS. BOWLES.—Bright pale lilac, suffused with crimson stripes, large dark throat, splendid form. 3*s.* 6*d.*

QUEEN OF ENGLAND.—Rose, veined throughout with crimson, large and conspicuous purple throat, first-rate form and habit. 3*s.* 6*d.*

The above were selected from a large number of Seedlings, and are warranted as described.

Orders addressed to MISS H. STEWART, Salt-hill Nursery, Slough, will be received thankfully, and punctually attended to. The usual allowance to the trade by taking the set, or three plants of a sort.

A Descriptive Catalogue of Fuchsias, Verbenas, Petunias, Chrysanthemums, Cinerarias, Shrubby Calceolarias, Dahlias, Antirrhinums, Phloxes, Hollyhocks; with Priced Lists of Geraniums, Greenhouse Plants, Hardy Perennials, Azaleas, Hybrid Rhododendrons, &c., may be obtained on application, inclosing six postage stamps, about the middle of April.

Salt-hill Nursery, April 6.

This Advertisement will not be repeated.

CHOICE SEEDLING PETUNIAS.—We have the pleasure to offer the following varieties of our own raising, which have been selected as first-rate from a large number of other Seedlings, and we trust will give equal satisfaction to the varieties we have hitherto sent out. To be sent out on April 20.

Magnificent, a fine rich crimson, colour and shape of "Brilliant" sent out last year, but having darker veins	5*s.* 0*d*
Castor, a large and distinct lilac, with a very rich dark purple throat	3 6
Pollox, a large silvery blush, with a dark rich purple throat	3 6
Orion, a rich lively crimson lake, of fine form	3 6
Syren, pure white, with a rich bright pink throat, good round form	3 6
Cassandra, French white, lilac pink throat, veined, edges of the corolla blotched with lively pink, large and fine	3 6

The usual allowance to the trade by taking the set, or for three plants of a sort.

12 new varieties of last season	12 0
12 superior varieties	9 0
12 fine ditto	5 0
25 varieties in choice assortment	15 0

The above free by post if required.

BASS AND BROWN,
Seed and Horticultural Establishment, Sudbury, Suffolk.

THE FINEST CARNATIONS, PICOTEES, AND PINKS, &c. &c.

YOUELL AND CO.'S Extensive and Celebrated Collection of the above are this season unusually strong and healthy, and are ready for sending out, in fine well-rooted plants, to any part of the United Kingdom, or for exportation, at the following prices:

25 pairs of finest first-rate show varieties of Carnations and Picotees	£5 0 0
12 pairs do. do. do.	2 10 0

(Including their fine Red-edged Picotee, "The Gem," by far the most perfect Picotee yet raised, and shown in all the winning stands at the Metropolitan Exhibitions during last season.)

25 pairs of very fine show varieties of do. do.	3 0 0
12 do. do. do. do. do.	1*l.* 4*s.* to 1 10 0
Fine mixed border ditto—per dozen pairs	0 12 0
True old Clove—per pair	0 2 0

PINKS, finest first-class show flowers, 12*s.*, 18*s.*, and 24*s.* per dozen pairs.

PANSIES, the finest first-class show flowers, comprising all those exhibited in the winning stands at the Metropolitan Exhibitions, 10*s.* to 18*s.* per dozen, well established in small pots, or per post, free.

FUCHSIAS, all of the very best sent out last season, 12*s.* and 18*s.* per dozen.

VERBENAS, " " " 6*s.* to 12*s.* per doz.
PETUNIAS, " " " 6*s.* to 12*s.* per doz.
CINERARIAS, " " " 9*s.* to 18*s.* per doz.
CHRYSANTHEMUMS, " " 6*s.*, 9*s.*, & 12*s.* p. doz.

ERICAS, comprising the most showy spring-flowering kinds, 9*s.* to 12*s.* per dozen.

"TIGRIDIA CONCHIFLORA."

A Beautiful Hardy Bulbous Plant, producing, in long succession, large lemon-coloured flowers, spotted with crimson, and well adapted for bedding. Strong flowering roots 6*s.* per doz., or per post, free, 7*s.* per doz.

Thirty packets of new and very choice FLOWER SEEDS for 6*s.*, per post, free.

Their Descriptive Spring Catalogue is just published, and will be forwarded free on receipt of two postage stamps. It will be found indispensable for the present season, as it contains all the latest deserving introductions (home and continental), in obtaining which no expense has been spared in forming a selection of such as will prove satisfactory to purchasers, and to their very obedient servants, YOUELL and Co.

Nursery, Great Yarmouth.

GRASS SEEDS TO SUIT ANY SOIL.

J. G. WAITE, SEED MERCHANT, 181, High Holborn, London, begs to inform the Nobility, Gentry, Farmers, and others, that he has spared neither time nor expense in collecting all the best kinds of GRASS SEEDS in cultivation, to suit any soils, which enables him to offer on the following terms, viz.:

Seeds for Permanent Pasture, light soil		25*s.*	per acre.
Do.	do. heavy soil	27*s.*	"
Do.	do. medium soil	26*s.*	"
Do.	do. Lawns, light soil	35*s.*	"
Do.	do. do. heavy soil	32*s.*	"
Do.	do. do. medium soil	30*s.*	"
Do.	do. in Orchards, or other grounds overshaded by trees, any soil	25*s.*	"
Do.	do. for Marshy Grounds, such as are occasionally overflowed by fresh water, any soil	24*s.*	"
Do.	do. for improving Lawns	14*s.*	per bush.
Do.	do. Old Pasture	10*s.*	"
Rye-grass, perennial		6*s.*	"
Do.	Italian, imported seed	7*s.* 6*d.*	"
Do.	English seed	6*s.*	"
Clover, Red		42*s.*, 44*s.*, and 48*s.*	per cwt.
Do.	White	45*s.* and 50*s.*	"
Lucerne		56*s.*	"
Tares, Spring		5*s.*	per bush.

With every other kind of Seeds in cultivation. Catalogues can be had on application.

J. G. WAITE, Seed Merchant, 181, High Holborn, London.

GERMAN SEEDS.—IMPORTED ORIGINAL SEALED PACKETS.

GERMAN STOCKS.	*s.*	*d.*
50 Varieties, separate, 100 seeds of each, splendid	8	0
36 Ditto, ditto, ditto	6	0
25 Ditto, ditto, ditto	4	0
15 Ditto, ditto, ditto, the brightest and most beautiful colours	2	6
12 Ditto, ditto, ditto, splendid colours	2	0

All the above mixed, per oz., 4*s.*

BROMPTON STOCKS.		
12 Varieties, separate, 100 seeds of each	2	0
18 Ditto, ditto	3	0

ASTERS.		
30 Varieties, splendid German, 100 seeds of each colour, separate	5	0
24 Ditto, ditto, ditto	4	0
20 Ditto, ditto, ditto, selected from the above	3	0
16 Ditto, new double pyramidal, very showy	2	6
10 Ditto, quilled and striped, in distinct colours	1	9
8 Ditto, new dwarf, extra	1	6
6 Ditto, new globe and pyramidal	1	0

All the above mixed, 3*s.* per oz.

COCKSCOMB.		
6 Varieties, distinct colours	1	6

HOLLYHOCK.		
20 Varieties, double, in distinct colours	3	0

LARKSPUR.		
12 Varieties, dwarf, brightest colours	1	6
8 Ditto, tall ditto	1	3

WALLFLOWER.		
5 Varieties, double	1	0
24 Ditto, single, mixed per oz.	1	6

ZINNIA ELEGANS.		
8 Varieties, brightest colours	1	3

GERMAN SCABIOUS.—10 varieties	1	6
SALPIGLOSSIS.—16 varieties	2	6
CAMPANULA.—16 varieties	2	0
ŒNOTHERA.—12 varieties	2	0
CAPSICUM.—10 varieties	1	6
PENTSTEMON.—12 varieties	2	0
ANTIRRHINUMS.—20 varieties	3	0

With a variety of other Flower Seeds of the most esteemed kinds in cultivation.

J. G. WAITE, Seed Establishment, 181, High Holborn, London.

WOODLANDS NURSERY, MARESFIELD, NEAR UCKFIELD, SUSSEX.

WM. WOOD AND SON are now issuing copies of their new CATALOGUE OF STOVE AND GREENHOUSE PLANTS, to which is added Descriptive Lists of all the newest Camellias, Cinerarias, Fuchsias, Verbenas, Petunias, and Chrysanthemums, with a very extensive collection of plants adapted for bedding.

W. W. and S. have a large stock of Dwarf Roses in pots. April and May are the best months for planting out the above. They will be supplied as under, the selection being left to themselves.

Hybrid Perpetual and Bourbon Roses	12*s.* to 18*s.* per dozen.
Tea-scented and Noisette do.	12*s.* to 18*s.* "
China and Climbing do.	9*s.* to 12*s.* "

Catalogues will be forwarded, GRATIS, on application.

NEW PHLOXES.

ROBERT M. STARK, Edgehill Nursery, Edinburgh, begs to intimate that he is now prepared to send out the undermentioned seedling PHLOXES, raised by R. Girdwood, Esq, F.C.H.S. They were exhibited, and awards made to several, at various shows last summer. Among other enconiums, Mr. G. was congratulated on his "unexampled success in raising such a batch of seedlings" by the Floricultural Editor of the "Gardeners' Journal." The descriptions below are in part extracted from that paper of August 4.

In form the pips are all finely circular, limbs flat and smooth, and of proper thickness.

CLEOPATRA.—"An exquisite bloom; form perfect; colour, pearl white; eye distinct." 3*s.* 6*d.*

DIANA.—"Form excellent; colour lilac blush; eye circular." 3*s.* 6*d.*

EDGEHILL BEAUTY.—"Nice white flowers; petals not very large, but a noble trusser, and very attractive flower." 2*s.* 6*d.*

GIRDWOODII.—"Very pretty thing; ground colour lilac, shaded to white; eye distinct; size large." 3*s.* 6*d.*

JOAN.—"Form good; colour bright lilac, inclining to purple at the centre; large." 3*s.* 6*d.*

MIRABILIS.—"Form desirable;" colour pale lavender; eye circular. 2*s.* 6*d.*

RADIANCE.—"Colour lilac blush; a fine trusser." 2*s.* 6*d.*

SNOW-FLAKE.—"Pure white; form good; also producing noble trusses." 2*s.* 6*d.*

The set of eight for 20*s.*

For other varieties R. S. begs to refer to his "CATALOGUE OF FLORISTS' FLOWERS," which is now ready, and may be had on application.

1, Hope-street, Edinburgh, April 6.

JOHN VICKERY, NURSERYMAN, FLORIST, &c., begs to draw the attention of the Public in general to his splendid Seedling FUCHSIA "QUEEN OF THE FAIRIES," which he can highly recommend as a great acquisition to that beautiful tribe, as its colours are pure; tube and sepals pure white, corolla bright carmine, habit very compact, and an abundant bloomer. It obtained the First Class Certificate at the Royal South London Floricultural Society at the last September Show. To be sent out on the 15th of April. Strong plants 7*s.* 6*d.* each. The usual allowance to the Trade where two or more are taken. A remittance is requested from unknown correspondents.—Grove-road Nursery, Brixton, Surrey.

IMPROVED FORTY-DAY MAIZE, 6*s.* per dozen Ears. One dozen Ears will grow 4000 Plants. With every other kind of Seeds in Cultivation at such prices, to meet the times.

J. G. WAITE, Seed Merchant, 181, High Holborn, London.

FOR SALE, 80 bushels of Green-top Yellow Bullock, and 40 ditto of Purple-top Swedish TURNIP SEED, the growth of 1849, transplanted and carefully selected. For price, &c., apply to Mr. BRYAN CLARKE, Farmer, Tuxford, Nottinghamshire.

AGRICULTURAL SEEDS.—The following delivered free to London, or any Station on the Bury line to Norwich, at the present prices, as annexed.

GRASS SEEDS.

The best selected varieties, mixed in proper proportions of such kinds as possess the most desirable qualities suited for PERMANENT PASTURES, and adapted to different descriptions of soils, per acre 24*s.* 0*d.*

Fine mixed dwarf varieties for lawns, per lb.	1 3
Ditto, per peck	5 0
RYE GRASS, True Italian per bushel	6 6
" Perennial	5 0

TURNIP—Skirving's Liverpool Swede, p. bu., 28*s.*, p. qt.	1	0
" Laing's Improved Swede, per bu., 36*s.*, p. qt.	1	3
" Purple-top Swede, per bush., 28*s.* per qt.	1	0
" Skirving's Improved Purple-top Scotch "	1	3
" Norfolk White, Green, and Red Rounds "	0	9
" Dale's Hybrid "	1	3
" White and Red Tankards "	1	0
" Yellow Tankard or Scotch Pudding "	1	3
LUCERNE per lb.	0	10
CARROT—Large White Belgian "	0	8
" Long Green-top Red Altringham "	1	0
PARSNIP—Large, for cattle "	0	8
MANGOLD WURZEL—Yellow Globe "	0	6
" " Red Globe "	0	6
" " Long Red "	0	6
" " Long Yellow "	0	9

Best English Red and White Clovers, Trefoil, and all other Agricultural Seeds of the best stocks at the lowest market prices. PRICED CATALOGUES of AGRICULTURAL SEEDS sent prepaid on application; also prices to the trade.

Post-office orders payable to BASS and BROWN, or to STEPHEN BROWN. Remittances required from unknown correspondents.

BASS AND BROWN, SEED AND HORTICULTURAL ESTABLISHMENT, Sudbury, Suffolk.

BEE HIVES.

GEORGE NEIGHBOUR AND SON respectfully announce that they have prepared for this season an extensive supply of their various IMPROVED BEE HIVES, which are offered to all who are desirous of cultivating that pleasing and profitable branch of rural economy—the Honey Bee. The collection consists of "Nutt's Collateral Hives," "The Single Box Hive," "The Amateur Bar Hive," "The Improved Cottage Hive," &c., from either of which the honey may be taken at any time without injury to the Bees, and may be worked with safety, humanity, and profit, by the most timid and unaccustomed to Bee manipulation. A descriptive paper, with drawings and prices, will be forwarded on the receipt of two postage stamps.—GEORGE NEIGHBOUR and SON, 127, High Holborn, London.

"Nutt on Bees" (6th edition), now published.

BAKER'S PHEASANTRY, Beaufort-street, King's-road, Chelsea, by special appointment to her Majesty and H. R. H. Prince Albert.—ORNAMENTAL WATER FOWL, consisting of black and white swans, Egyptian, Canada, China, barnacle, brent, and laughing geese, shieldrakes, pintail, widgeon, summer and winter teal, gadwall, Labrador, shovellers, gold-eyed and dun divers, Carolina ducks, &c., domesticated and pinioned; also Spanish, Cochin China, Malay, Poland, Surrey, and Dorking fowls; white, Japan, pied, and common pea-fowl, and pure China pigs; and at 3, Half-moon-passage, Gracechurch-street.

CUCUMBER AND MELON BOXES AND LIGHTS.

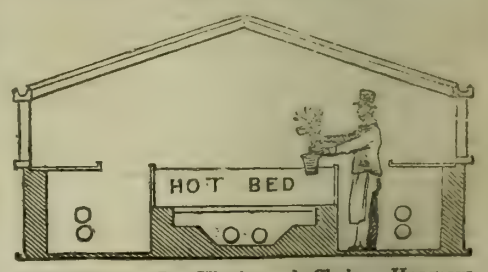
One hundred 1, 2, and 3-light Boxes and Lights of all sizes ready for immediate use. Warranted best materials, packed and sent to all parts of the kingdom; 2-light Boxes and Lights from 1*l.* 4*s.* Garden Lights of every description, Conservatories, Green and Hot-houses, made and fixed in all parts of the kingdom. References given to the Nobility, Gentry, and the Trade, in most of the counties of England. JAS. WATTS, Hothouse Builder, Claremont-place, Old Kent-road, London.

HORTICULTURAL TOOLS.

GREEN AND CONSTABLE, 36, King William-street, five doors from London Bridge, have a large assortment of GARDEN TOOLS, containing all the recent inventions, and including Lyndon's Patent Cast Steel Spades, Shovels, and Garden Forks, Lord Vernon's Hoe, Jointed Hothouse Syringes, Transplanting Tools, Registered Garden Labels, Ladies' sets of Gardening implements, Pruning Sheare, Knives, &c. Agents for the Vitreous Porcelain Garden Bordering.—36, King William-st., five doors from London Bridge.

HORTICULTURAL BUILDING AND HEATING BY HOT WATER.

BOILERS OF ALL SIZES TO BE SEEN IN OPERATION, WARRANTED THE BEST.



J. WEEKS AND Co., King's-road, Chelsea, HORTICULTURAL ARCHITECTS, HOTHOUSE BUILDERS, and HOT-WATER APPARATUS MANUFACTURERS, solicit an inspection of their various Works completed and in progress. Horticultural Buildings of every variety. BOILERS of all sizes to be seen in operation, and which they warrant to be the most effective and economical of any in use. The largest size Boiler is now effectually heating three extensive ranges of Forcing-houses, 230 feet by 22 feet, all Span Roofs and lofty, containing upwards of 50,000 cubical feet of air. Also various small and intermediate size Boilers, some of all sizes in operation. The consumption of fuel is very moderate, and the fires will continue from 10 to 15 hours without attendance. The extensive arrangements now in full operation on their premises, enables them to build to any extent, and at very moderate prices. Hothouses, Greenhouses, Conservatories, Forcing-pits, Frames, Glass Lights, &c. A very extensive collection of Stove and Greenhouse Plants, which are sold at very low prices. Plans, Estimates, and Catalogues forwarded on application.

J. WEEKS and Co., King's-road, Chelsea.

FLOWER SEEDS FREE BY POST. — One Hundred packets of the newest and best sorts for 18*s.*; Fifty for 10*s.*; Twenty-five for 6*s.* Selection can be made from RENDLE'S Descriptive Catalogue of Flower Seeds.

GERMAN SEEDS.—*We have a large stock of all the best varieties* (*See our Advertisement, page* 177, *March* 23, "Gardeners' Chronicle"), *including Stocks, Asters, Wallflowers, Balsams, Larkspurs, Hollyhocks, Zinnias, &c.*

For particulars apply to WILLIAM E. RENDLE and Co., Seed Merchants, Plymouth. Established 1786.

NEW GLOBE FUCHSIA, "KIMBERLEY'S INACCESSIBLE."—This splendid variety was raised from Williamsii, and is far superior, the blooms being twice the size of that variety; sepals very broad; tube rather short, of a bright glossy crimson; corolla rich deep velvety purple; habit very fine, and a free bloomer; foliage rich glossy green; will prove one of the greatest ornaments ever offered. Strong plants 10*s.* 6*d.* each, the 15th of April, may be obtained of C. KIMBERLEY, Florist, &c., Pinley, near Coventry, and of the following gentlemen, who have kindly ordered it: Messrs. WOOD and SON, Maresfield, Sussex; Mr. IVERY, Peckham, near London; Mr. GAINES, Surrey-lane, Battersea; and Messrs. WIDNALL and DAVIS, Grantchester, Cambridge.

SUPERB NEW VERBENA, ADAMS'S "MISS PAYNE."

The above beautiful variety was raised by Mr. W. Adams, Gardener to W. Hogg, Esq., Biggleswade, and will be found the best White Verbena of the season. To flowers of an extraordinary size it unites a delicious fragrance, which adds much to its attractions.

Extract from the *Gardeners' Chronicle*, Oct. 13, 1849. "W. A. A. Colour pale blush, fading to white; flowers very large, but narrow in the lobes; a good variety, on account of the size of its flowers, both individually and collectively."

Extract from a letter from Mr. J. Bundy, Gardener to — Trevor, Esq., Bromham Hall, Beds. "I beg to say I saw your seedling Verbena, and must say it was remarkably fine, much more so than any I had ever seen before, therefore you are at liberty to make what use of my name you may think proper."

Opinions, equally favourable, have also been expressed by Mr. Pullen, Gardener to the Hon. and Rev. H. C. Cust, Cockayne, Hatley, near Potton, Beds.; Mr. Pope, Gardener to Mrs. Harvey, Ickwell Green, Beds.; and many other gardeners, to whom reference is kindly permitted. Good Plants, post free, 5*s.* each; when two are ordered three will be sent.

London Agents: Messrs. HURST and M'MULLEN, 6, Leadenhall-street, and Messrs. HUGH LOW and Co., Clapton.

Address, SUSAN WOOD, Nurseries, Huntingdon.

P.S. Postage stamps received as payment.

KITLEY'S GOLIAH STRAWBERRY.

JAMES KITLEY, in again bringing his SEEDLING STRAWBERRY before the notice of the Public, takes this opportunity of thanking those Friends who so liberally purchased in the autumn, and it being now the best time for planting, begs to inform them that he has a fine stock of healthy plants, which have been transplanted. See extracts from the *Gardeners' Chronicle.*

From the *Gardeners' Chronicle.*—"STRAWBERRIES: *J. K.* Your Seedling Strawberry, 'Goliah,' judging from its size and appearance, is worthy of cultivation."

From the Gardeners and Farmers' Journal.—"STRAWBERRIES: *J. K., Lyncombe Vale.* We have great pleasure in bearing testimony to the exquisite flavour of your Seedling Strawberry, 'Goliah.' In our opinion it combines the piquant flavour of the Strawberry with the richness of the Pine, the delicious aroma of which it partakes in equal proportion with the taste. Apart from the queen of fruits, we certainly do not remember anything in this way that conveyed to our senses so delicious a treat as the noble fruit to be known to the world as 'Kitley's Goliah Strawberry.'"

Plants, 12*s.* per doz., or 4*l.* per 100. A liberal allowance to the Trade in plants, when 100 are taken.

Cash orders expected from unknown correspondents.

Lyncombe Vale Nursery, Bath, April 6.

MEADOW AND PASTURE GRASS SEEDS.

GEORGE GIBBS AND Co. beg to notice their mixtures for laying Land down to Permanent Grass are now ready. The general satisfaction they have given for many years past, and the present low prices of 32*s.* per acre, allowing 2 bushels and 12 lbs. to each acre, they trust will ensure a continuance of orders. Mixed Seeds for improving old Grass Land, 1*s.* 3*d.* per lb.; fine sorts for forming Lawns, 1*s.* 4*d.* per lb. Their Priced List for the season of Turnips, Mangold Wurzel, and other Farm Seeds, will be forwarded on application to 26, Down-street, Piccadilly, London.

SEEDS IN COLLECTIONS.

OF THE BEST WHICH CAN BE PROCURED.

BASS AND BROWN beg to offer the following CHOICE VEGETABLE SEEDS.

Complete Collections of the best and newest sorts, in proportionate quantities of each, suited for large or small gardens, at per collection, 1*l.*, 2*l.*, and 3*l.* A Collection for a small garden, of good sorts, at 10*s.* 6*d.* A List of the Collections furnished if required.

SELECT FLOWER SEEDS,

Free by post, with full directions for sowing, heights, colours, &c.

	s.	*d.*
100 varieties best and newest Annuals	15	0
50 varieties for 8*s.* 6*d.*, 30 for 5*s.* 6*d.*, 20 for	4	0
20 varieties best dwarf kinds, in larger packets, suited for filling beds on lawns, 7*s.* 6*d.*, or 12 do. for ...	5	0
20 varieties best Greenhouse Annuals, 7*s.* 6*d.*, 12 for ...	5	0
20 varieties choice Greenhouse Perennials, 10*s.* 6*d.*, 12 for	7	6
20 vars. choice hardy Biennials and Perennials, 7*s.* 6*d.*, 12 for	5	0

IMPORTED GERMAN SEEDS.

20 varieties splendid double Stocks, 3*s.* 6*d*; 12 ditto ...	2	6
12 vars. splendid China Asters	2	6
12 vars. fine globular Asters	2	6
12 vars. Dwarf Rocket Larkspurs	2	0
9 vars. Tall ditto	1	6

Remittances with orders are requested from unknown correspondents. Goods carriage free to London, and with all orders of 2*l.* and upwards, articles presented extra. Post-office orders payable to BASS and BROWN or to STEPHEN BROWN.

Our Descriptive Priced Seed and Plant List will be forwarded, prepaid, on application, by forwarding four postage stamps, as copies having the Newspaper stamp are now all distributed.

SEED AND HORTICULTURAL ESTABLISHMENT, SUDBURY, SUFFOLK.

FERN SEEDS.

GEORGE BENNET begs to inform the lovers of Ferns that he has still a large quantity of NEW ZEALAND FERN SEEDS, and has much pleasure in announcing that they have vegetated. Price 2*s.* 6*d.* per packet. The names of the varieties are as follows: No. 1, Todia sp., variety australis; No. 2, Alsophylla medullaris, fine variety; No. 3, Cyathea dealbata; No. 4, mixed varieties of Hymenophyllum, Trichomanes, Adiantums, &c.; No. 5, mixed varieties of Alsophylla dealbata, or Silver Tree Fern; No. 6, Cyathea medullaris. A remittance must accompany the order either in postage stamps or Post-office order, made payable at Coventry, to GEORGE BENNET, Brandon, Warwickshire.

ROSEA STRIATA.—The Subscriber begs to inform the admirers of PELARGONIUMS that he has a few strong Plants of the above left at 10*s.* 6*d.* each, with an allowance to the Trade—with a few hundred of first-rate sorts to spare, at 5*l.* per 100 (strong plants) of Beck, Foster, Hoyle, and other raisers.—EDWARD PERKINS, Leamington, April 6.

EDWARD BECK, SLATE WORKS, ISLEWORTH. SLATE CISTERNS, &c.; COLE'S PATENT.

E. BECK informs Horticulturists and the Public generally that Mr. COLE has granted him the use of his Patent for the unexpired term, and he is now able to supply SLATE CISTERNS fastened without iron bolts or the usual oil cement, thereby doing away with the difficulty which has hitherto existed of forwarding such articles by rail or waggon, fixed and ready for use instead of in pieces, as heretofore.

E. B. will be happy to answer any inquiries as to the price of Cisterns, or any other Slate articles manufactured by him, such as Orange Tubs, Plant Boxes, Tanks, Shelves, Garden-path Edging, Hot-water Tank Covers, Flower Boxes for Balconies, Shelves fitted to hold water for Orchidaceous Houses, &c., all of which may be seen in use at Worton Cottage, Isleworth, on application to the Gardener, Sundays excepted.

Estimates given for Work as shown upon Drawings, and in specifications. A large stock of Slate Slabs of all sizes and thicknesses, kept on sale.

N.B.—Dairies fitted either with Shelves or Milk Pans, of very neat appearance.

The Gardeners' Chronicle.

SATURDAY, APRIL 6, 1850.

MEETINGS FOR THE ENSUING WEEK.

MONDAY, April 8—Medical....8 P.M.
British Architects .....8 P.M.
Geographical .....8½P.M.
TUESDAY, April 9—Zoological 9 P.M.
Syro Egyptian .....7½P.M.
Civil Engineers.....8 P.M.
Medical and Chirurgical..8½P.M.
WEDNESDAY, April 10—Graphic 8 P.M.
Literary Fund .....3 P.M.
London Institution.....7 P.M.
Ethnological .....8 P.M.
Geological.....8½P.M.
THURSDAY, April 11—Royal ..8½P.M.
Royal Soc. of Literature ..4 P.M.
Antiquarian .....8 P.M.
FRIDAY, April 12—Astronomical .....8 P.M.
Philological .....8 P.M.
Royal Institution .....8½P.M.
SATURDAY, April 13—Royal Botanic.....3½P.M.
Westminster Medical ....8 P.M

THE last visit of Mr. FORTUNE to the port of Shanghae seems likely to be productive of no small benefit to gardens. We have already noticed the importance of the *Funereal Cypress*, there obtained by him, the perfect hardiness of which has now been conclusively proved by the late winter; and in another column will be found his own account of the *Japan Berberry*, one of the most beautiful of all evergreens, a figure of one of whose leaves has been given in "Paxton's Flower Garden." We can now announce the arrival of other plants scarcely inferior in interest, figures and descriptions of which will appear in the same work. Among those already living in Messrs. STANDISH's Nursery may be more especially noticed some new *evergreen Oaks*, a fine arborescent *Juniper*, several *Hollies* perfectly new in gardens, the true *yellow Camellia*, and the marvellously beautiful *Rhodoleia*, just figured by Sir W. HOOKER in the "Botanical Magazine." Of this last plant it is enough to say that, if drawings can be trusted, it is a rival to the finest of our Camellias and Roses. A more particular account of it will be given in "Paxton's Flower Garden."

MESSRS. BECK, HENDERSON and Co., the seedsmen in the Strand, have criticised, with no remarkable civility, the valuable attempts which our correspondent "R. T." has made, at our request, to reduce to something like order the polyonymous chaos of the seed-shops. They charge him with sundry inaccuracies, and tell us there are plenty more that could be pointed out; nevertheless, while indignant at his criticism, they in the main admit his accuracy, and vow that if they do sell trash it is to oblige their customers. They are astonished that the Augean stable, which they have for half a century been lending their aid to fill, should not be cleaned out with more dexterity, and they express by implication their contempt for the honest workman who, in sorting the rubbish that he finds there, has now and then mismatched, as they say, the worthless lumber.

It is quite possible that he has, although neither we nor the public will recognise the authority of interested parties. We have no doubt that errors have found and will again find their way into all attempts to identify things which have little or no fixity of character about them. Mistakes must necessarily be made in ascertaining what is meant by the name given in the trade to a particular sort of Pea; for the seedsmen themselves are not agreed about it. They either do not themselves know how to apply the name, or if they do know they consider it entirely unimportant, and substitute one thing for another. If any one doubts this let him try the experiment of purchasing a parcel of (say) "Nimble Taylor" Peas from 20 different seedsmen, and of sowing them side by side. He will then learn what sort of uniformity there is in the application of such a name. Or, as we have before said, let him collect from the trade all the Peas they sell under different names, and see what differences he will find among them. If he wishes to push his curiosity a little further, let him obtain from Messrs. VILMORIN, of Paris, a parcel of their finest Michaux précoce Peas, and sow them at the same time; the result will be more instructive than would be readily believed.

Everybody knows, although interested parties may deny it, that the quality of Early Peas is greatly influenced by the soil and climate in which the seed is saved. No seedsman of experience can be ignorant that if the same Pea is sown in the south of France, or in the warm sandy fields of the Suffolk coast, or in some parts of Kent, or on the cold heavy clays of Middlesex, the crop of seed will be entirely different as regards earliness; the French seed producing the earliest crop, and that from Middlesex the latest. But is the public, on this account, to be imposed upon by the invention of as many different names as there may have been fields in which the Peas were grown? An Early Frame Pea is an Early Frame Pea, whether it is raised in Narbonne or the Lothians, and no honest purpose is served by disguising it under a dozen aliases. There will be *temporary* differences in quality, which will last for a season, and have considerable practical value; but this does not by any means justify such distinctive names as are employed. All that can be sanctioned is some term of qualification, like Narbonne, Essex, Kent, Suffolk, to point out where the samples are from. In Mark Lane the Wheats from Essex, Kent, Lincoln, Norfolk, York, &c., are separately quoted; but what would be said of the corn-merchants if, instead of these terms, having a plain intelligible meaning which can mislead nobody, they employed the jargon of Nimble Taylor Wheat, double grained Wheat, single grained Wheat, thin-eared, thick-eared, and so on?

A race-horse in condition will beat the field; the same race-horse worse fed and unskilfully groomed will be distanced by the whole field. Plain people think that the horse is the same horse nevertheless; but there are dealers in seeds who would have us believe that the horses are quite different, and they call the horse Nimble when he is fast, and Charlton when he is slow.

To unstable qualities of this fleeting nature distinctive names ought never to be applied; names of qualification can alone be tolerated. Thus such shopkeepers' terms as "double blossomed," applied to Peas, are most objectionable; for they denote a permanent, and if permanent a valuable, quality; whereas nothing can be more uncertain or less permanent. Some samples produce a majority of double blossomed, and some samples a majority of single blossomed plants; while in others we find as many of one as of the other. If they are sold as different qualities of the same thing, and the samples are true, nobody suffers: but as soon as a peculiar fixed name is given to that which is in its nature fugitive and uncertain, confusion without end is introduced, and the public is imposed upon. Well may gardeners protest against such a state of things, and cry to us for aid. In the face of such a system no gardener knows what to do, or what to purchase, and, when his crop turns out the reverse of what he expected, he has no redress. It is in vain for him to say that the seeds he bought are untrue; the seller calls upon him to prove his case, and his proof necessarily fails, because no two seedsmen will agree as to what is what.

Mr. MASTERS' letter is just what might be expected from his high character; he admits the importance of our inquiry, and readily lends his assistance in promoting it. We recommend his observations to the attentive consideration of our readers; they will well repay perusal. He frankly admits that *the self-same kind is constantly put upon the public under a new name;* and he furnishes his experience and authority to the correction of the abuse—not in a carping tone, and with all the reluctance which it is prudent to show in the face of an unmistakeable determination of the public no longer to be trifled with—not throwing blame upon his customers because they will continue to order nonentities; but plainly telling the truth, as a man like him will always do. It is to the MASTERSES of the United Kingdom that the public must look, if the trammels of the "Trade" are to be shaken off; and not to those who evidently prefer to let things remain comfortably as they are, supplying 20 different kinds of seed out of the same bag, charging 20 different prices for their trouble, taking good care not to make their customers too knowing, and, above all things, detesting the impertinent curiosity of the public press.

We can assure those gentlemen that they much mistake their "own interest;" and that it is not impossible that their house may be set in order by their customers, unless they undertake the work themselves. With them lies the duty of establishing the identity and the quality of all the articles they sell; of making such facts honestly and fearlessly known to the public; and of refusing to deal in that which only ignorant men think of buying. The example has been set them well by several of those whom they presume to designate as "little people," and they

are not unlikely to find, unless they follow our advice, however unpalatable it may be, that the "little people" will eventually swallow up the "great ones."

It may be interesting to the growers of tropical fruits to learn the present condition of Sir GEORGE STAUNTON'S celebrated MANGO TREE. And we are happy to gratify their curiosity, by publishing the following memorandum, which we owe to Mr. SCOTT, gardener to the Right Hon. Gentleman. "The number of flowers on the large Mango Tree may be stated at near a quarter of a million. There are 108 heads or panicles of flowers. The number of flowers on each panicle exceeds, on an average, 2100: but only a small proportion of these are *perfect*, and capable, even under the most favourable circumstances, of producing fruit."

THE season at which SEEDS of all kinds are to be sown in heat having now arrived, and almost every gardener having bad or doubtful samples entrusted to his care, we venture to draw attention to an old subject, concerning which no recent information has been gained, and which is nevertheless a very important one.

It is now many years since Mr. OTTO, of Berlin, stated that he had employed oxalic acid in order to make old seeds germinate. The seeds are put into a bottle filled with oxalic acid, and remain there till the germination is observable, which generally takes place in from 24 to 48 hours, when the seeds are taken out, and sown in the usual manner. Another way is to wet a woollen cloth with oxalic acid, on which the seeds are put, and it is then folded up and kept in a stove; by this method small and hard seeds will germinate equally as well as in the bottle. Also very small seeds are sown in pots and placed in a hotbed; and oxalic acid, much diluted, is applied twice or thrice a day till they begin to grow. Particular care must be taken to remove the seeds out of the acid as soon as the least vegetation is observable. Mr. OTTO found that by this means seeds which were from 20 to 40 years old grew, while the same sort, sown in the usual manner, did not grow at all.

It is said that others have derived great advantage from this plan, to which our attention has been more particularly drawn in consequence of Mr. VAN HOUTTE, a most intelligent and skilful cultivator, having only a few months since spoken of it in terms of commendation.

Other agents have been also used, with apparent advantage, for the same purpose. A seed cannot germinate until the carbon with which it is loaded is to a considerable extent removed; the removal of this element is effected by converting it into carbonic acid, for which purpose a large supply of oxygen is required. Under ordinary circumstances, the oxygen is furnished by the decomposition of water by the vital forces of the seed; but, when those forces are languid, it has been proposed to supply oxygen by some other means. HUMBOLDT employed a dilute solution of chlorine, which has a powerful tendency to decompose water and set oxygen at liberty, and his report was extremely favourable.

In like manner, Mr. LYMBURN, of Kilmarnock, mixed newly slaked lime with old Spruce Fir seeds, and he asserts that, although under ordinary circumstances they would hardly grow at all in the second year, yet when even three years old, having been first damped and then mixed with newly slaked lime, they produced an average crop of healthy plants. This result is attributed to the fondness of lime for carbonic acid; and it has been supposed that the beneficial result, said to have been obtained, arose from the carbonic acid formed by the seeds, when germinating, having been abstracted by the lime as fast as it was extricated.

Now these are little experiments which amateurs can try better than gardeners; and to them we more especially commend them. Only we hope that those who shall engage in the proposed trials, will take care that the experiments are not left open to future cavil. To avoid which, it is indispensably necessary that each trial should be made against the same number of seeds, from the same parcel, sown in the same earth and treated alike in all respects, except in the administration of the proper dose of lime, or chlorine, or oxalic acid, to one of the two parts. Then indeed we shall know what the processes are worth, and not till then. If they have the value assigned to them it will be an important gain to our stock of practical knowledge; if they prove valueless others will be spared the necessity of repeating the experiments.

NOTES OF A TRAVELLER.—No. X.

AN ACCOUNT OF THE DISCOVERY OF A FINE NEW EVERGREEN SHRUB NAMED BERBERIS JAPONICA — My Chinese coolie and myself were busy collecting Tea seeds on a small hill, not far from the town of Tun-che, in the green Tea country of Hwuy-chow. While so engaged I accidentally caught a glimpse of a very fine specimen of the Funereal Cypress, described in my next letter. I was so charmed with this new tree that I determined on going to the spot where it was growing, to enjoy a nearer view. I desired my attendant to accompany me in case any ripe seeds might be found upon it. As we approached the village we discovered that the tree was inside a garden, which was surrounded by a high wall. Naturally supposing that there must be a gate somewhere, we walked round the walls until we came to a little cottage, which seemed to serve the purposes of a lodge. We passed in here with all the coolness of Chinamen, no one asking any questions, and soon found ourselves in the middle of a dilapidated old garden. A large house which had been the mansion in former days was, like the garden, in a ruinous condition. The Funereal Cypress grew in the middle of the place and was covered with ripe seeds, which increased the collection I had formerly made. Its height was about 50 feet, the branches grew horizontally from the trunk, then curved upwards, and were again pendulous at their points. The long branchlets hung straight down, and many of them nearly reached the ground.

Having taken a survey of the place, we were on our way out when an extraordinary plant, growing in a secluded corner, met my eye. When I got near to it I found that it was a very fine evergreen Berberis, belonging to the section of Mahonias, and having, of course, pinnated leaves. Each leaflet was nearly as large as the leaf of an English Holly, spiny, and of a fine, dark, shining green colour. The shrub was about 8 feet high, much branched, and far surpassed in beauty all the known species of Mahonia. It had but one fault—it was too large to move and bring away. I secured a leaf, however, and marked the spot where the plant grew, in order to get some cuttings of it when I was ready to leave that part of the country.

Travelling onward until I reached the far-famed Sung-lo mountain, where the green Tea plant is said to have been first found and cultivated,* I took up my quarters in a farm-house which belonged to a man named Wang, the father of one of my servants. Amidst other avocations I did not lose sight of my beautiful shrub, which I was most anxious to possess, and, if possible, introduce to Europe. I had frequently desired my servants to procure some young plants from the neighbouring gardens, as I could not believe the species so rare as only to be found in the old garden where I had first met with it. However, they either could not find it, or, what was more probable, they gave themselves no trouble about the matter. Knowing the potent influence of dollars, I called three or four of the family around me one morning, and showing them the leaf which I had preserved, promised a dollar to any one of them who would bring me a small plant of the same thing. One of them immediately went out, and to my surprise and pleasure returned in less than five minutes with a fresh leaf of the plant in question. "That will do," said I, "that is just the thing I want; bring me a young plant with good roots, and I shall give you the promised reward." They now held a consultation amongst themselves in a low tone, and at last said, the plant had some peculiar medical virtues, and that the possessor would not part with it. "Sell me this one," I replied, "and you will be able to buy a dozen with the money." "No," one of them replied; "my uncle, in whose garden it grows, does not want money, he is rich enough, but he requires a little of the plant now and then when he is unwell, and therefore he will not part with it." This was very provoking, but as the Chinese were firm in their refusal, there was nothing for it but "going upon another tack," as sailors say, and trying my luck in that way. This I determined to do. "Well, at all events," said I, "let me see the plant, don't be afraid, I shall not touch it." They refused even to do this for some time, but were induced to consent at last, and led the way down to a small cottage garden, nearly overgrown with weeds. Here the beautiful shrub was growing, apparently neglected, and left to "bloom unseen." I tried hard to induce the uncle to part with it, but could not succeed. It might be that he really valued its medical properties, or, what was just as likely, he perhaps supposed I might be induced to offer some extravagant sum. He told me that it had produced most marvellous effects upon patients who had received blows or concussions of a serious nature, and that it was also useful in cases of rheumatism. The roots are cut into small pieces and boiled, and the decoction is taken inwardly. If the eyes are weak, or have been injured by a blow, they are rubbed with a decoction made from the leaves.

On the following day another relation of Wang's came to me in a secret manner, and informed that he knew where the same species was to be procured, and that he was willing to go and fetch some of it for me. I engaged his services at once, merely stipulating for young plants with good roots, as others would have been quite useless to me. These he promised to bring, and he kept his word. In the course of the day he returned with several good plants, which he sold to me, and which I afterwards succeeded in getting down in good order to Shanghae, to Mr. Beale's garden.

Sir Wm. Hooker informs me that this may be the plant which Thunberg calls Ilex japonica, and which is only known by a figure and description. I have not seen the figure, but the description is now before me, and does not agree with my plant in several important matters. I have therefore named this species Berberis Bealei,* and thus describe it: An evergreen shrub, 8—10 feet high. Leaves 12—18 inches long, pinnate (four pairs and an odd one), leaflets large, oblique a cordate at the base, odd one ovate and cordate, pointed and spiny, smooth, of a shining green, and very like the English Holly. Flowers in terminal spikes, spikes about 12 in number, each 6—9 inches long, yellow. Fruit of a glaucous blue. Flowers in winter, Dec.—March. From the district of Hwuy-chow, China. Chinese name *Shae-ta-kong-la*. *R. F.* [There is no doubt about this being Berberis japonica. The *learned* Professor Thunberg did not know the difference between a Holly and a Berberry.]

* See "Ball on the Cultivation and Manufacture of Tea."

GRAVEL WALKS.

IN the various communications which have yet appeared on this subject, one or two points—not without interest or importance—do not seem to have been discussed. The principal of these are, the appearance of the walks, as parts of a landscape composition, and the kind of gravel of which they are formed.

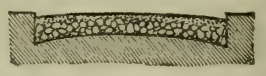
Although a walk is essentially intended for use and comfort, it will be admitted that it may exercise a considerable influence on a garden scene; and that, therefore, its usefulness is not alone to be considered. According as a walk is or is not artistically treated, the beauty and character of a garden may be either preserved or marred.

In the two different styles of landscape gardening—the old geometrical and the modern English—walks have, I conceive, to play a very different part. Of the formal style, good bold walks are necessary and prominent features, by which alone can be sufficiently indicated the lines of which that style is composed. To the English manner, on the other hand, the obtrusion of walks, with their serpentine lines, into a general view, would be a blemish rather than a merit; irregularity and indefiniteness, breadth and intricacy of lawn being the leading characteristics of this system.

Now it must be obvious, if these premises be conceded, that raised walks, much rounded in the centre, will be alike unfitted to harmonise with the general flatness and smoothness and dignity which form the very essence of the geometrical style, and with the demands of the English manner for the quietness and concealment of walks. In the latter case, it is true, the walk might be wholly planted out from the lawn by shrubs of various heights and characters; but this would involve carrying the walk close to the boundary of a place, or would otherwise greatly curtail the size of the lawn, and be destructive of anything like effective variety along its margin. Walks that are raised above the surface of the ground, and much rounded up in the middle, are, consequently, by no means artistic in a gardener, or capable of being nicely adapted to either of the prevailing styles of treatment. A broad and straight walk, in a formal garden, appears to call for a great degree of flatness (though it need not be absolutely level, or it will never be dry), to make it correspond with the extreme regularity and evenness of everything else in the garden; and a serpentine walk, amidst the flowing outlines of the more natural style, would seem to want keeping down more or less below the general level, that it may be as inconspicuous as possible.

If it be urged that these requirements of art are incompatible with convenience and dryness, I venture to allege that they need not be so, when the foundation of the walk is properly formed and drained, and the gravel used is of a sufficiently porous description. We have had several miles of walks in use here for five or six years, and I have formed quite as many more in different parts of the neighbourhood; and though the soil is mostly a stiff clay, and the surface of the middle of the walks is from 1 to 4 inches below the general level, being only raised about 2½ or 3 inches in the centre in a width of 10 feet, we never know what it is to have wet walks, unless for half an hour after a heavy storm, or when a series of sharp frosts and sudden thaws slightly disturbs the surface. And yet we have scarcely any gratings to take off the surface water.

The annexed section will show the manner in which I usually have walks made. It is to a scale of 10 feet to an inch, and represents a walk 10 feet wide, raised



3 inches in the centre, with 9 inches of broken stone as a foundation, and a coating of gravel 3 inches thick. The deeper cutting (8 or 9 inches below the rest), on either side is filled with rather larger stones, for drainage, and should communicate, in the lowest parts, with the general land drains. The plan is quite as well adapted for a private road as for a walk, and with a little larger material a foot in depth, as a foundation, would answer for a public road also. The side edgings of Grass or soil should be about half an inch above the gravel only, and quite flat for the width of from 9 to 18 inches; after which they may take any required level or direction. When there are high banks near the side of the walk, a small rubble drain in the flat edging between the bank and the walk, will intercept the soakage from the corner.

Walks thus made have been put from 4 to 6 inches below the general level without becoming at all damp. But then, the gravel here being chiefly obtained from

* Named in compliment to my friend Mr. Beale, of Shanghae, in whose garden many of my finest plants have been preserved.

the sea-shore, or the beds of rivers, is generally of a very loose and porous texture, and requires the addition of a fifth or sixth part of finely powdered stiff loam, in order to make it bind. Gravel of a more binding nature, however, obtained from Staffordshire and elsewhere, keeps equally dry on such a foundation. It is gravels that contain a large proportion of aluminous matter, or chalk, or lime-stone, that in general become so wet and dirty in rainy weather. And walks in districts where such kinds of gravel only can be procured will require to be made of the more solid parts of the gravel, leaving out the finer and more decidedly earthy portions. For it is in attention to the texture of gravels, and the rejection of the clayey and chalky parts, that a dry material for walks can alone be obtained.

We are fortunate here in readily procuring good sandstone as a bed for walks and roads. This, when broken to pieces of from 3 to 6 inches in diameter, has all the angularity and dryness which can be desired. In other places, however, I have used coarse coal-ashes and scoriæ, or an inferior kind of chalk which abounds in some districts, or limestone, with similar advantage. Around London, or where pebbly stones are got from the sea-shore, or the channels of rivers, these, or coarse gravel, can easily be broken to any required roughness and angularity; and nothing could be better than flint or strong gravel thus broken.

The proportion which the height of a walk in the centre should bear to that of the sides, is, as far as I have tested it, about one inch to every yard in width. *Edward Kemp, Birkenhead-park, March 27.*

DISEASES OF PLANTS.

(*Continued from page 197.*)

Genus XVI. Fractures.—I understand by this term a solution of continuity effected, not by a sharp instrument, but by some violent force, which either entirely or partly breaks the plant. Thus, the wind, lightning, the weight of snow, hailstones, the hand of man, a sharp blow, will break a tree or an herb, lacerating its fibres. I distinguish two species.

First species. Total Fracture.—When from any of the above causes a portion of a plant is completely separated from it, it becomes necessary to heal the branch that remains, in order to prevent the evil consequences of the fracture. This must be done by cutting down the wounded part, so as to reduce it to an amputation with a smooth surface, and applying the cement as above directed. The neglect of this operation is the cause of the loss of many trees, especially fruit trees. The lacerated portions become a harbour for insects, and a means of admitting wet into the heart of the tree; the majority of the trees which we see infested by ants, and eaten through by larvæ of other insects, owe the presence of these unwelcome guests to neglect after similar accidents. I have seen numerous examples in Chestnut groves of trees thus destroyed.

Second species. Partial Fracture.—Sometimes the fracture does not wholly separate the branch, but it is only separated to the centre, or a small portion of the bark only remains entire. In such cases the general practice is to depair of the whole and condemn the branch entirely; yet, in nine cases out of ten, the mischief may be successfully repaired. A tall Bignonia radicans, and a Justicia adhatoda of 2 inches in diameter, which the wind had broken half through in their main stems, and many others similarly injured and successfully healed, have encouraged me always to make the same attempt after such accidents. If the fracture is not very complicated, it will be the less difficult to join the parts together again, removing any fibres which most impede the union. If, however, the sound parts are very few, the operation is more difficult; but with patience, especially if it happens to be at the time when the sap is rising, the broken parts may generally be sufficiently united, provided a small portion of the bark at least has remained intact; nature will do the rest. The first point to be attended to is to see whether the branch can be so fixed, that when the wound is bound up, it may remain perfectly steady, and neither torn down by its own weight, nor agitated by winds. Then, after the parts have been carefully united, they should be bound round with Willow twigs split in half; or better, in the case of small branches, with worsted, or lastly with strips of bark; this last substance, however, is not so good, as by drying up it may bind the branch too tight. Sometimes it may be necessary to cover the part with moss and bind it strongly to a piece of wood, when it is not certain that a simple ligature will keep the parts well united. I have never found it necessary to add any clay or wax or glutinous substances, as some persons recommend.

SPINACH.

The varieties of Spinach are but few. Their seeds are either Smooth or Prickly. One of the varieties with smooth seeds is adapted for summer use; all the others, and the Prickly, afford a supply for winter.

A. Seeds smooth; *Graines lisses, ou sans piquants.*

1. *Summer Spinach*, aliàs Round Spinach, Spring Spinach, Thick-leaved Round Spinach, Épinard d'Hollande, ou Épinard rond. The name we have adopted amongst these denotes the period of use; and frequent sowings, which may be made between the rows of Peas or other crops, are necessary. The leaves are large, roundish, and thick.

2. *Flanders Spinach*, Épinard de Flandres, Épinard de Flandres à très larges feuilles. This is a winter Spinach; leaves large, hastate, from 6 to 8 inches in breadth.

3. *Lettuce-leaved Spinach*, aliàs Épinard d'Esquermes, ou à feuilles de Laitue. This is an excellent new variety, which has lately been distributed by the Horticultural Society. The leaves are somewhat rounder than those of the Flanders Spinach, of thick substance and dark green colour. It is perhaps not quite so hardy as the Flanders, but it usually stands the winter sufficiently well, and from its superior quality it deserves to occupy at least half the ground allotted for the winter crop of Spinach. A variety called *Épinard Gaudry*, if not identical, is very similar to the preceding.

B. Seeds Prickly; *Graines épineuses.—Prickly-seeded*, aliàs Winter Spinach, Bordeaux, Épinard commun. This is readily distinguished by the seeds being prickly. The leaves are smaller and thinner than those of the Flanders, and very much thinner than those of the Lettuce-leaved, consequently these varieties must be accounted preferable.

4. *New Zealand Spinach.* This, though a species of a different genus from that of the preceding varieties, is now generally included in the lists of Spinach. The great advantage it possesses is that of supplying fresh leaves, fit for use, through the whole summer, even in the driest weather, when the crops of Summer Spinach are useless. But it is only in such a case that it can be estimated as useful; for, under other circumstances, the varieties of the common Spinach are superior to it in quality. It must be raised in heat, in March, kept in small pots till the end of May, and then planted out 3 or 4 feet apart, for it spreads much. Of course, the richer the soil the more succulent the foliage. The seeds should be steeped for 24 hours before sowing. *R. T.*

VILLA AND SUBURBAN GARDENING.

In out-door gardening, watering and mulching are operations intimately connected. Where a mulching of half-decomposed litter is used, evaporation will be greatly retarded; but it is not in every case that mulching can be applied, more especially in ornamental gardening. In the kitchen garden mulching is often neglected, when it would be found of great service in protecting the roots of vegetables from drying winds and scorching sunshine. One good watering with mulching is at least equal to three waterings when no covering is used; besides, if the litter is of an enriching nature the water poured upon it will convey its good properties to the roots, and it will have the same effect as a dressing of liquid manure. In new plantations of fruit trees, whether of the larger or smaller fruits, covering the roots for some distance, say 3 feet from the stem, will prove more beneficial to the trees in promoting their growth than a daily supply of water would be.

In the flower garden and other ornamental ground, where mulching cannot be used, if high keeping is desired, it will be of importance to stir the ground where it can be done before water is administered. Some advise water to be given little at a time and often; others, on the contrary, insist upon giving a good soaking at once, and then discontinuing it for some time. The former method is said to represent the natural dews, and not to cool the earth so much; but I recommend the latter system, if it be rightly practised. In the first place, the water should not be pumped from a well, and used in a cold state; that would be contrary to Nature and opposed to all the best principles of cultivation. It should be exposed for some time to the action of the sun, or its temperature should be raised to 80° by artificial means; it will then have no injurious tendency. Water in this condition may be used until it reaches every fibre, and with the best results, especially if vegetation is progressing rapidly. It is clear that growth cannot proceed kindly unless the roots are all supplied with moisture at the same time, and for this reason let all your waterings be effectual. Continued soaking, however, must not be practised; time ought to be given for the plants to absorb the moisture thus applied, or the air to expel it, for unless air as well as water reaches the roots vegetation will not thrive, and our labour will be thrown away. The amateur must therefore exercise his own judgment and discretion in determining when plants are suffering from drought, and when the soil is in a condition to receive an artificial supply of moisture. Much will depend upon the natural temperature of the atmosphere; if the weather is hot, rapid growing vegetables may be watered plentifully with impunity. It should be done in the afternoon or evening. *Pharo.*

Home Correspondence.

Vegetable Seeds.—No one can deny that great confusion has long existed amongst these in consequence of a multiplicity of names having been given, in many instances, to the same sort; and the evil has been complicated by the application of the same name to different things. When I commenced with the series of lists which have appeared in the columns of this Paper, I did not think it possible that anyone could effectually clear up these matters by a first attempt; or that in this attempt the utmost perfection should be indisputably attained. I cannot therefore be astonished if some errors should be pointed out with the view of correcting them; but I trust they will prove few, and individually not very important as regards the usefulness of the lists in question. At p. 199, I am accused by Messrs. Beck, Henderson, and Co., of having confounded single blossomed with double blossomed Peas. The fact is, there is no really permanent distinction between them. Let any one get "single blossomed Peas," and he will probably have an Early Frame, or perhaps a Charlton, with several of the first blossoms single, the others double. With regard to Warner's Early Emperor being widely different from the Early Kent, I have found it to grow stronger, its habit of growth being intermediate between that of the Early Kent and Early Frame; the latter has doubtless been the origin of all these, and likewise Prince Albert. I question much whether they might not be all correctly enough designated as varieties of that old variety the Early Frame. The Scimetar, Late Dwarf, Tewsley Dwarf, the Spanish Dwarf, and Royal Dwarfs, are placed on the authority of a paper on the variety of Peas in the "Transactions of the Horticultural Society," second series, vol. i. If this paper contained errors, Messrs. Beck and Co. should have corrected them long since. The Early Hero is certainly not a very early Pea. I have stated its season, I believe, correctly, and it is no fault of mine if its season and name do not exactly correspond. At p. 53, I enumerated—8. *Early Dwarf*, aliàs Nain Hâtif, or L'évêque (Lévégue was a misprint), and mentioned that the Spanish Dwarf and Bishop's Dwarf, "which sorts resemble each other, are inferior to the Early Dwarf, and must now be considered as entirely superseded by—9. *Bishop's New Long-pod.*" I admit that it is possible, nay probable, that Mr. Bishop's name would be translated *L'Évêque* by the French; yet I know from experience that Bishop's Dwarf, as we now have it, is inferior to the Nain Hâtif received from Paris. In "*Le Bon Jardinier Almanach pour l'Année* 1850," the *Pois L'évêque* is stated to be the same as the *P. nain hâtif.* Treating of the latter, it is added, "*Il a été reproduit depuis quelques années comme un nouveauté (bien qu'il soit fort ancien), sous le nom de P. L'évêque.*" The Nain Hâtif is doubtless a very old variety. It is described in the "Bon Jardinier" for 1818; whereas Bishop's Dwarf, or Bishop's Early Dwarf, was only first made publicly known in 1825, by Mr. D. Bishop, near Perth, in Loudon's "Gardener's Magazine," vol. i. p. 126. Its history, description, and mode of treatment are there given. It was obtained by Mr. Bishop, a few years previous to 1825, from a large sowing of the Spanish Dwarf (I have placed both in the same category). The variety was saved from a single plant of that sowing. Now, I cannot see that I should be justified in making a sport of the Spanish Dwarf synonymous with a much older variety, the Nain Hâtif. As to the Toker Bean, it was received from an old established firm as the "*Green Windsor or Toker;*" and from other sources it proved the same as the Green Longpod. *R. T.*

Glass Pipes for the Conveyance of Water.—Seeing an enquiry in your Paper for glass pipes (which we believe were advertised in the *Chronicle* for months), we shall be obliged by your referring the party enquiring in your Number of the 16th ult., to us as manufacturers. We have laid them down in various places with perfect success; and with regard to the pressure they sustain, with our best joints they will bear from 200 to 300 lbs. to the inch, according to their diameters. *Coathupes and Co., Glass Works, Bristol.*—Messrs. Hetley and Co., 35, Soho-square, sent some last summer to Walcot-park, near Stamford, where they were laid down by the gardener and joined together by a plumber with cement, sent by Messrs. Hetley. They have answered perfectly in bringing water from a spring in the garden to the scullery window, a distance of more than 400 feet. There is a little fall the whole way; the pipes will not bear much pressure. *A Subscriber.*

Birds: Food of the Titmouse.—If Mr. Doubleday has succeeded by the aid of his telescope in observing what insect the titmouse (Parus cæruleus) feeds on when he pecks off the blossom buds of the Cherry tree, I shall feel much obliged if he will favour me with the name of it, as I feel much interest in the subject, and have entirely failed in discovering the presence of any larva or insect whatever about them, although I have repeatedly examined them with a pocket lens on the trees, and dissected them under a compound microscope. In two or three other instances I have found no difficulty in discovering the objects of his search, without the aid of any glass at all. Mr. Doubleday states that he only removes a bud or two in search of his food, but I have seen for the last 20 years the ground under Cherry trees covered with the blossom buds, and often watched him doing it, and it appears to me that no necessity exists for his pulling off these buds for this purpose, as there is plenty of space for a much more clumsy performer than he is, to pick out insects, if they were there. I am willing to admit that insects form the chief part of his food; still the loss of many a fine Pear and Apple (for he generally selects the best) are a sufficient proof that he has also a taste for dessert. Notwithstanding this, and his decimating the Cherry buds, of which there are always plenty to spare, I would by no means persecute, but rather encourage this sprightly and most useful race of birds, being well convinced, by close observation of their habits, that they do at least ten times more good than harm. *F. J. Graham, Cranford.*

Brown's Fumigator.—Within the last few days I have been enabled to give this invention a fair trial. The principles upon which it acts are admirable, causing a most complete, and hence economical combustion of the most essential portions of the tobacco, and emitting a dense column of smoke in a perfectly cool state, so that all fear of scorching is avoided. To those who think of obtaining a machine, I would recommend the larger sizes, being more efficient for the fumigating of

greenhouses and hothouses, or similar erections, the smaller being only adapted for frames. *Frank Masters, Exotic Nursery, Canterbury.* [We believe the praise thus given to Mr. Brown's invention to be perfectly well merited.]

Protecting Fruit Trees.—The following kinds of protection have been recommended: 1st, canvas; 2d, netting; 3d, Fir branches. The last (the Fir branches) is by far the best; if carefully put on, the air will circulate freely through them. Last year we had some Apricot trees in full bloom early in March, I covered them with Spruce branches, and by that means alone obtained a good crop, besides having many for tarts; this year the trees were covered with nets, and the top of the wall was loaded with Spruce branches, which projected more than 2 feet over the trees, yet all is useless, for we have had 12° of frost, but we had 8° last year when the fruit was setting, and yet we saved a good crop. One morning early last week, when the quicksilver was standing at 20° Fahr., I examined the trees, everything appeared right, with the exception of the petals, which looked a little brown. When the sun made its appearace, however, the mischief became apparent, 9 out of every 10 blossoms were spoiled. Had there been 15° of frost, and the trees been carefully covered with branches, so as to keep the stamens and pistils dry, and to prevent the sun from taking effect on them, the fruit would have been safe. I will venture to say that if all had been entrusted to the Fir branches, I should have had plenty of fruit. *Bedale.* [We quite agree with you that there is nothing like Spruce Fir branches. But where are small folks to get them? If they trespass on their neighbours' plantations, they carry their horticultural zeal somewhat beyond what the law permits. In country places there may be no difficulty, but near towns there is a good deal.]

Garden Walks.—I stated at p. 198, col. *b*, that the foundation or bottoming should be made with any description of stone or brick rubbish, to which mortar was attached; the latter being a preventive of worms. I will now offer a few remarks on gravelling. It is almost useless to recommend any particular description of gravel, for necessity generally compels people to make use of what their locality affords; but it is worth while to observe that the kind of gravel which binds firmest in dry summer weather clings most to the feet in wet weather, while that which has a tendency to become loose in dry weather is driest and cleanest in wet. This invariably holds good, and the reason is obvious. We all know that the material we call gravel is a mixture of stones and finer matter. Now, when this fine matter has a sharp gritty character, it requires very little judgment to foretel that it will allow water to percolate freely through it, while every shower of rain will settle or solidify it; on the contrary, if the fine matter be of a loamy adhesive nature, it is equally certain that it will bind firm and hard when dry, while its property of retaining water, or rather preventing its percolation, makes it sure to be dirty when wet; but certain modifications may neutralise both these evils. A judicious mixture of the two kinds of gravel will make a tolerably good walk at all seasons; or even the loamy gravel may be made pretty clean in wet weather, by having plenty of stone in it—I mean by adding some more small stones before laying it on, otherwise sift some of the fine matter out, so that no more is left in than is sufficient to bind the stones together. A very useful and good walk may be made in that way; and as the first heavy rain after making is sure to wash a great portion of the finer material downwards, the surface of the walk will then present the appearance of a pavement in miniature, and in walking over it the foot will rest on the stones only; such a walk is generally clean except after frost. It is needless to add, that the smaller the stoney portion of such walks is, the more agreeable they are to walk upon. The principal thing, however, is to lay the gravel on pretty thickly, to roll it well, and whether large or small stones are at the top, it does not signify, provided the walk be smooth. When the gravel is of a sharp or gritty nature, something like very coarse sand, you may rest assured that in spite of daily rollings it will become loose in dry weather, while after rain it will be smooth and pleasant. If you have no means of neutralising it by mixing it with some more adhesive kind, you must sift it much finer than I recommended for the other sort, and let no stones larger than a boy's marble be near the top, because the wear and tear of the walk will be sure to raise them to the surface, and anything larger than that size would look bad, independent of being unpleasant to walk upon. I have been the more explicit on this matter, because I think there is often a wrong impression entertained respecting the properties of gravel. Many people seem to think that the firmest binding material must necessarily be the best in all weathers, but such is not the case. Although the above remarks apply to pit or drift gravel, yet they hold equally good when other substances are employed. I have seen a very nice walk made of a peculiar kind of factory ashes; and the chippings, or what are called the cuttings, of the lead mines, make beautiful walks. I am told there is a kind of spar gravel suitable for walks in some of the midland counties, but I have never seen it. The chippings of blue stone, used for building purposes, make a good firm walk, but they are liable to get mixed with dirt, and near the sea coast fine walks are formed of decayed cockle shells, whose clean white appearance makes them general favourites for that purpose. *S. N. V.* [Certainly you are *not* the person answered last week.]

Bees.—In his observations upon "Y.'s" account of feeding bees at night, "A Peebles Bee-Keeper," leaves it to be inferred that he advises the shutting bees in when feeding. Knowing that this, whether by day or night, is a very dangerous practice, I beg to caution your apiarian readers against its use. Whenever bees are fed, the stir and bustle always raises the temperature of the hive very considerably. A large proportion of the bees, as if only made aware that food is to be had for the fetching, rush out of the hive, and much danger would be incurred if they were prevented doing so. Feed just before dusk, when the bees, if abroad, are about to retire for the night. Those fed will then have time to make their tumultuous rush out of doors, and return ere it is dark; while other bees will not be made aware of their neighbours having been fed, and all will be cleared up before morning. *R. Golding, Author of the "Shilling Bee-Book."*

Winter Salads.—The "Corn-salad" commonly used in the north of France under the name of Salade de Blè, is, according to Loudon, the Valerianella olitoria. Sow it in August, in shallow drills, 6 inches apart. A bed 20 feet by 4 feet will supply a moderate family well all through the winter. The Corn-salad with roasted Onions and baked not boiled Beet, mixed with three parts of oil to one of vinegar, is as nice a salad as one can wish for. The amateur should cut it off, not pull it up when wanted, as it sends up fresh heads, and will last from November till the end of April. *W. H., Horsham.*

Mowing Machine v. *Scythe.*—Both should be used for lawns. In wet weather, on moist soils, it is almost impossible to get the machine to work well, whilst in droughts it is nearly as difficult to make the scythe cut the Grass. In dry weather the machine acts most beautifully, cutting so close and even, and with such trifling labour, that every one who has a chain of lawn to be kept in order will find it profitable to purchase one. I use Budding's. *Sigma.*

The Weather.—As it may be interesting to compare the temperature during the last few days in different places, I annex an extract from a register carefully kept at this town, north aspect.

		Thermometer.		Wind.
		Minimum.	Maximum.	
Friday ...	March 29	20	48	E.N.E.
Saturday.	,, 30	33	48	E.
Sunday ...	,, 31	38	57	E.
Monday ...	April 1	39	58	E.S.E.
Tuesday...	,, 2	45	61	S.E.
Wednesday	,, 3	45	59	S.

E. Copland, Chelmsford, Essex, April 3.

Societies.

HORTICULTURAL, *April* 2.—E. BRANDE, Esq., in the chair. Messrs. Veitch, of Exeter, exhibited an extraordinary Melastomaceous plant, belonging to the beautiful genus Medinilla. It measured 4 feet high and as much through, and from the ends of the branches, which were clothed with large rich green leaves, hung down noble panicles of rosy pink flowers. The main peduncle and secondary branches of these panicles were also rosy pink, and they were furnished near their base with large pink bracts, which gave them an amount of gaiety they would not otherwise have possessed. It was stated to be a plant of easy management, and is altogether one of the handsomest additions our stoves have received for some time. A large Silver Medal was awarded it.—Mr. Plumbly, gr. to E. J. Dimsdale, Esq., received a Banksian Medal for four large specimen Heaths, consisting of Willmoreana, transparens, triumphans, and penicillata.—Messrs. Jackson, of Kingston, showed a nice light-coloured seedling Camellia, named Countess of Ellesmere; and Mr. Ambrose, of Battersea, a variety of Gledstane's Azalea, called Magnifica.—Mr. Henderson, of the Wellington-road Nursery, had several small plants in their cutting pots of Cantua bicolor, which were sent to show that it will bloom in a very small state, and along with them a light-coloured continental Gloxinia, called Frederick Leming.—Messrs. Rollisson, of Tooting, produced the pretty yellow-flowered Alpine Epimedium pinnatum, and a double-flowered dark purple Auricula called Primula auricula nigra plena. Also a well flowered plant of the Rhubarb-scented Dendrobium macrophyllum, a good specimen of Oncidium sphacelatum, and an example of Mr. Lowe's Cypripedium (C. Lowei), of which the accompanying woodcut is a representation. It is difficult to imagine anything more beautiful in its way than this Bornean Lady's Slipper. The lip is a purplish green, and smooth as if French polished; the sepals are green, with a purple tinge near their base; the petals are quite 3 inches long, spreading, and then curving gracefully inwards and upwards, narrow near the base, pale greenish yellow, blotched with deep brown, and rose-coloured at the ends, which are twice as broad as the other parts. It is said to be a plant of easy cultivation, and is a great acquisition. A Banksian Medal was awarded for these.—Mr. Glendinning, of the Chiswick Nursery, received a Certificate of Merit for a long-tubed, bright red coloured seedling Heath, apparently a cross between E. Hartnelli and E. aristata.—Various Orchids were exhibited. Messrs. Loddiges sent a pink-spotted Trichopilia from Costa Rica, for which a Certificate of Merit was awarded.—Mr. Williams, gr. to C. B. Warner, Esq., produced small examples of Oncidium tetrapetalum, Saccolabium denticulatum, Batemannia Colleyi, Cœlogyne cristata, and the long-tailed Cypripedium (C. caudatum). A Certificate of Merit was awarded for the two last plants

A fine branching cut spike of Ansellia africana was exhibited from Chatsworth. This Ansellia was stated to have been in blossom in the middle of January last, and to have continued in flower up to the present time.—Small bunches of Black Hamburgh Grapes, but well coloured and covered with bloom, were produced by Mr. Mitchell, of Kemp-town, Brighton, to whom a Certificate of Merit was awarded; and Mr. Higgs, gr. to J. Barchard, Esq., sent good examples of forced Keens' Seedling Strawberries.—Mr. Halliman, of Kensington, showed some glass "fruit protectors." They were shaped like common striking glasses, but were furnished with a moulding or rim round the mouth, in order to detain a piece of wire with which they were fastened to the wall, the fruit being previously placed inside the glass—Another invention was produced in the shape of Brown's fumigator, a representation of which may be seen in our advertising columns.



The tobacco is placed in the receptacle at top in the same manner as in an ordinary smoking-pipe. A draught of air is obtained for its combustion by the revolutions of a fan or wind wheel in the cylinder underneath, which has the effect of drawing the smoke in at the upper part and driving it out at the spout. In its transmission through the machine the smoke is cooled, being driven by the fan against the cold sides of the cylinder, and it is rendered thereby incapable of scorching the plants. The ejection tube or spout can be turned up or down, at the option of the operator. Houses or frames may be fumigated from the outside by passing the nozzle of the spout through a small hole in the door, or other aperture. Experience is wanted to test the real value of this, but at present it appears as if it would be extremely useful.—From the Garden of the Society came Henfreya scandens, two Cape Heaths, a red Azalea, three Oncids, Blandy's variety of Dendrobium nobile, the orange-flowered Epidendrum aurantiacum, Dielytra spectabilis, a beautiful Chinese Fumewort, which is expected to prove hardy, Boronia tetrandra, a species in the way of B. pinnata, and sold in the nurseries under the name of B. microphylla, two Acacias, Nuttallia cerasiformis, a green-flowered Californian shrub, of no beauty, five Cinerarias, Eutaxia myrtifolia and the sweet scented Rhynchospermum jasminoides.

April 3.—MEETING AT WORTON COTTAGE for the display and examination of seedling florist flowers and other productions.—A nice little collection of seedlings was placed upon the tables. Conspicuous amongst them were two noble trusses of seedling Rhododendrons, which, by the kind permission of the Duchess Dowager of Northumberland, were supplied by Mr. Iveson from the gardens at Syon. One of them was a pyramidal truss of 26 flowers, in character much like Cliveanum, but of a lighter ground colour, with darker spots and much less distributed than in that variety—very handsome and very fragrant. The other presented a fine head of flowers formed by five trusses massed together, of a rich crimson colour, and was a gorgeous object. Mr. Thomson, of Iver, sent several seedling Pansies—one, Penelope, was a flower of good size, white ground, broad belting of rich purple, top petals of the same shade, similar in style to Almazor, but superior to that variety in many respects. Mr. Turner, of Slough, exhibited his Mr. Beck, a seedling having a deep yellow ground, broad maroon belting, top petals of same shade, full size, edge exceedingly smooth, and good substance. Several other promising seedlings were shown with the above in Mr. Turner's stand of 24 varieties, amongst which we noticed, among older sorts, Ophir (Widnall),

remarkably fine, also Disraeli (Hunt), Supreme (Youell), Duke of Norfolk (Bell), Constellation (Thomson), Miss Edwards (Turner), Queen of England (Fellowes), Climax (Bell), and Model of Perfection (Chater).—Mr. Edwards, of Wace-cottage, Holloway, also supplied a stand of 24 varieties, equally fine in size and condition, which was extraordinary, considering the unfavourable weather we have so long had. Amongst them were Mrs. Beck, and Addison (Turner), Ellen (Hunt), Juventia (Hooper), and other favourite sorts.—Seedling Epacrises came from Mr. Story; one marked 2-49, a very fine blooming variety, of a peculiar deep crimson colour, was much admired; another, named Alba, was equally prolific in bloom, but inferior in several points to Hyacinthæflora candidissima, of which beautiful variety a branch was exhibited. Eclipse, a coloured figure of which will be found in the "Florist and Garden Miscellany," Vol. 1849, maintained its character; and another, 4-50, of a pale pink colour, is a free bloomer and delicately pretty.—Seedling Chinese Primulas were received from the Rev. A. Mathews; one, named "Superba," is a fine, rich, dark crimson variety; the others are of a curiously delicate mottled lilac colour—a pretty addition to the sorts in general cultivation.—Mr. Biddiscomb, gr. to C. Farrell, Esq., sent a very beautiful azure blue seedling Cineraria, named "Ultra-marine," and a rosy-purple variety—"Corinne," both of which we must see again. Two other raisers sent seedlings, but nothing worthy of particular remark, as they were inferior to the finest varieties in cultivation, a collection of which was on the table for the purpose of comparison. D. sent a pretty little seedling Cyclamen persicum, but it possessed no particular merit. Amongst miscellaneous plants were Gesnera bulbosa lateritia, bearing several spikes of light salmon-coloured flowers with purple spot on the throat; also Anguloa Clowesii, having several flowers of a bright yellow. An interesting feature of this plant is the singular manner in which the small labellum of the flower moves backwards and forwards, as on a hinge, with the motion which may be given it; these were supplied from Syon Gardens.—Haythorn's garden net, Turner's scissors, and Broom's fumigating apparatus were sent for inspection; the latter instrument was put in operation to fumigate a span-roofed house, 26 feet long by 14 feet wide; the pipe was introduced through a small hole made in the door, and in a few moments it was filled with tobacco smoke, most easily and most effectually, to the great satisfaction of the observers. The instrument used was of the largest size. We may mention, in conclusion, that the place in which the seedlings, &c., are placed for examination is a span-roofed erection, about 24 feet long by 10 feet wide, fitted with every arrangement for seeing them to the greatest advantage.

Linnean, *April 2.* — The President in the Chair.—Part of a paper was read by J. Miers, Esq., on the Natural order Triuridaceæ. After alluding to a paper by Captain Champion, on two new Ceylon plants related to Sciaphila of Blume in the "Calcutta Journal of Natural History," the author proceeded to describe the species of Sciaphila. He also described the genera Hyalisma and Soredium, the latter being the name proposed by the author for the plant called by Mr. Gardner Peltophyllum. The species of these genera have been found in both the Old and New World. The remainder of the paper will be read at the next meeting of the Society.

Garden Memoranda.

Mrs. Lawrence's, Ealing-park.—Generally speaking the plants here appear to be in a thriving condition. In the specimen house we observed some huge examples of Pimelea spectabilis covered with bloom buds. Some of these plants have not been repotted since they were last exhibited; nothing has been done to them beyond removing the decayed flowers, watering them when they wanted it, and top-dressing them with leaf soil. Polygala acuminata, 5 feet high, and as much through, was equally well furnished with flower buds, as were also Eriostemon buxifolium, E. neriifolium, E. myoporoides, Bossiæa disticha, plumosa, Adenandra fragrans, a pretty pink flowered kind, and many others. Beautiful bushes of Chorozema macrophyllum were in full blossom, as were also some nice specimens of Boronia pinnata. The New Holland house contained a large and fine Epacris grandiflora, and smaller plants of the beautiful Epacris miniata, and some other kinds. Boronia anemonæflora was in full blossom, as were also small plants of the pretty yellow spring-flowering Mirbelia grandiflora, Eriostemon intermedium, the best of all the Eriostemons, and the pale-green flowered Illicium religiosum. The large yellow flowered Gompholobium barbigerum was covered with flower-buds and promised to make a fine display. This is one of the handsomest species of the genus. We noticed here some admirably grown plants of Boronia serrulata, some 18 inches high, and as much through, thick and bushy, and supporting themselves almost without the aid of sticks. The seldom seen Chorozema ovatum was flourishing here in company with some beautiful Leschenaultias, which measured 2 feet through and almost as much high, though only shifted out of an 8 inch pot two years ago. Several of the finest specimen plants are already in the "retarding house" (a lean-to erection, having a north-west aspect), in order to keep them back for the exhibition at Chiswick on the 18th of May next. Among these one or two bushes of Chorozema Lawrenceanum, one of the best Chorozemas of its class, were in full bloom. Some large Epacrises, Pimeleas, Podolobiums, Azaleas, &c., also promised to do good service. In an intermediate house, which was filled with young stock, were nicely managed plants of Chorozema Dicksoni, Pimeleas, Boronias, red and blue Leschenaultias, &c. The comparatively new Ixora javanica was producing fine heads of rich orange flowers in a small stove, and the white trumpet flowered Portlandia grandiflora was also in blossom under similar circumstances. The Azalea-house was filled with nice specimens of that showy genus. The plants were in excellent health, and covered with flower-buds. The Heaths in the Heath-house generally looked well, and among them Willmoreana and nitida were in full blossom. The latter is a pretty, small, round, white-flowered variety, which should be in every collection. In the large stove on either side of the doorway were two beautiful plants of Begonia manicata in full flower; and, in front, a large white Indian Azalea. These were backed up by Francisceas, the brilliant Inga pulcherrima, than which, when well-flowered, nothing can look handsomer; the red-berried Ardisia serrulata, and other plants. Passing through the stove we enter the Orchid-house, which is divided into three parts by means of glass partitions, the centre being the "Amherstia house." The elegant stove tree Amherstia nobilis, which Mrs. Lawrence was the first to flower in this country, fills one end of this division. It blossomed last year about this time, and it is now in flower again. One spike has been cut, and two more are coming forward. The flowers are individually large, as will be seen by the annexed woodcut, rosy pink, and scentless, with the vexillum (*a*)



and two wings (*b*), tipped with yellow. They are borne in loose pendulous bunches beneath the profuse and elegant foliage. Behind it were Palms and plants of that kind, and the back wall of this house is covered with Ferns, the lively green colour of whose fronds, contrasted with that of the other plants, had a fine effect. In front of the Amherstia is a small piece of water containing aquatic plants, rockwork, and gold fish, and it is ornamented about the edge with a low ledge of rockwork covered with Ferns. On the shelves in this division of the house were some nice Ferns in pots. Among Orchids we observed noble specimens of Aerides, Stanhopeas, Cattleyas, Sobralia macrantha, and many other sorts. Some were in flower, but among them was nothing remarkable, except the long-tailed Lady's Slipper, which was still in blossom. We may mention, for the information of those who buy newly imported Orchids, that as soon as they are received here they are fastened to boards of charred cork and hung up against the wall of the house; the plants themselves receive no water for a time, but the surface of the cork to which they are attached is kept slightly damp. Under this treatment they soon recover from the effects of their journey. Two new avenues, about 28 feet broad, have been formed on the lawn since we last visited this establishment. One is planted with Araucaria imbricata 25 feet apart, to be intermixed with Cypresses and Junipers; and the other is formed of Hollies, Pinuses, Irish Yews, and Arbor-vitæ, &c. These avenues intersect each other at about right angles, the object in view being to convert the lawn, as far as practicable, into a Pinetum for select Conifers.

Miscellaneous.

On Drying Specimens of Flowers.—As the season for collecting plants is approaching, may I be permitted to give the particulars of the process I have adopted in drying specimens for the Hortus Siccus, especially the more delicate and succulent ones, for which I have found it peculiarly adapted, as it combines the greatest equality of pressure with despatch in drying. My method is as follows:—The apparatus required is very simple, consisting of a few canvass or linen bags, of such size that, when laid flat, they will rather more than cover a sheet of demy paper, a quantity of clean sand, an old saucepan, or other convenient vessel, to heat it in, and a few quires of blotting-paper. Having provided these, first put a sufficient quantity of sand in the saucepan, over the fire, and, while this is heating, take a quire of blotting-paper, on which arrange the plants, covering them with two or three sheets of blotting-paper. When the sand is sufficiently heated, and uniformly so (which may be promoted by stirring it with a stick), pour into one of the bags enough to fill it to one-third. The mouth of the bag being closed, by tying or folding back, it is then to be laid carefully over the plants arranged between the paper, and the sand contained in it to be spread out by the hand, and pressed with a board, so as to form a flat uniform surface. This process may be repeated, several layers of paper, plants, and sand-bags being laid on one another. If this is done, no extra weight will be required—the smallest and most delicate plants being placed in the uppermost layers; but if the subject be large and thick, a board and weight will be generally necessary. Unless they are very thick and succulent, in which case they may require a second application of hot sand, the plants will generally be found quite dry within twenty-four hours, and often much sooner. This is one advantage; as, by this rapid desiccation, the colour is preserved in the greatest perfection—*i. e.*, if the temperature be well regulated. The second, and perhaps of more importance as regards the botanical value of the specimen, is, that the sand, by adapting itself to the inequalities of the object under pressure, prevents any crushing of the stems, receptacles, &c.; while the parts of the leaves in juxtaposition with a hard, thick stem, which, by the ordinary method, escape any pressure, and consequently shrivel up, are all equally flattened. *W. S. Coleman, in Pharmaceutical Journal.*

Calendar of Operations.

(For the ensuing week.)

PLANT DEPARTMENT.

Heaths and other hard-wooded greenhouse plants should be potted as they require it. Generally speaking the most suitable time is immediately after they have done flowering, the energies of the plants being directed to the formation of a new growth; but the operation may be performed with propriety at any season when the roots are making progress, without being induced thereto by unnatural excitement. Before potting, take care that the old ball is sufficiently moist; for if it is potted in a dry state, it will be impossible afterwards to moisten it properly, without souring and saturating the new soil. The Epacris family is now so numerous, so beautiful, and so valuable for winter flowering, that for country establishments they outrival Heaths. Let them have all possible attention in repotting, and let them be kept rather close and moist, until they have commenced a free growth. At this season we give these plants a slight forcing; and they amply repay us for this more liberal treatment, by a splendid growth and abundance of early flowers. As soon as the flowering is over, the future shape of the plants should be adjusted, by removing a portion of the old flowering stems; and, that their energy may be devoted solely to the growth of the plant, seeds should never be allowed to come to maturity, unless they are very valuable. Let climbers both in pots and borders have due attention with regard to training, and retain no more shoots than the allotted space will afford room for. A succession of Achimenes, intended to flower late in the autumn, should now be placed in heat, and treated according to the directions given in former Calendars. Some of those of former successions may be potted for hanging vases, for which the A. longiflora and cupreata are particularly adapted. Pans or broad shallow pots are preferable for their general cultivation, and, as they require an abundant supply of moisture when they are in flower, let the drainage be very perfect, that they may be freely watered without stagnating the soil.

Conservatory.—Besides the permanent plants in this structure, many choice plants in pots will be required to keep a succession of gay flowers throughout the summer. Amongst the finest for this purpose are Brugmansias, Erythrina Crista-galli, Thunbergias, Achimenes, Ipomœas, with Heaths and Geraniums. Let these have all possible attention, and bring them forward in several lots, so that one set may succeed another. Pay particular attention to the Liliums now in pits, by giving them a liberal supply of water, and by neatly staking them. A top dressing of turfy peat, sand, and well decomposed cow-manure will be of great benefit to them; and they will be very useful for conservatory

and drawing-room decoration late in the autumn. Let Fuchsias, which are so useful for summer and autumn flowering in the conservatory, be repotted, as they require it, in rich compost; watering them occasionally with liquid manure. Nearly all the varieties have a natural tendency to form conical bushes, and by a very little attention they may be guided into this appropriate form; one strong shoot should be selected to form a leader, and should be trained perfectly upright; the remaining shoots being regulated by stopping any which are growing more luxuriantly than is consistent with the proper shape of the plant. VIOLETS.—These are everybody's flowers, and therefore well worth a little attention to produce them in first-rate excellence. A frame of light rich compost, consisting of loam and leaf-mould under the shade of a north wall, should be prepared for their summer quarters; as in such a situation they are more easily preserved from the ravages of the red spider, which will certainly attack them if they are exposed to scorching sunshine. In this frame the offsets from the old beds should be planted about 4 inches asunder, and the sashes placed over them till they have begun to form new roots. The best varieties are the Neapolitan and the Tree Violet.

FORCING DEPARTMENT.

PINERIES.—Keep up a high day temperature to fruit which are now swelling, and admit air freely, so that a circulation may be produced to resemble the sea breeze of their native isles. If the latter be not attended to, the plants will grow weakly, and have an unhealthy drawn-up appearance; and, with regard to fruiting plants, the crowns will increase in size, instead of the fruit itself, which will be watery and deficient in flavour. Take advantage of every fine afternoon to syringe the pits, and close them for two or three hours before sunset. Remove all gills and useless suckers, that the whole energy of the plant may be occupied in perfecting the fruit. VINERIES.—Successional Vines which are just starting may be indulged with a good heat, and particularly Muscats which were ripened late last year, as the wood of such is not generally so well matured as that of the earlier forced Vines; and unless they are encouraged by a temperature rather higher than usual, until their blossoms are fairly set, the shows for fruit, however strong they may be to all appearance, not unfrequently prove abortive. A somewhat higher temperature is not only admissible but beneficial, through the whole routine of starting and forcing Vines at this season, than would be safe or prudent two months earlier, accompanied of course by a proportionably liberal circulation of fresh air to prevent the scorching which is so much complained of. Attend punctually to the stopping and training of the shoots, and thinning of the berries on the Vines, in the earlier stages; maintain a moist atmosphere by evaporation where the berries are swelling, particularly in fine clear weather, but this must be moderated as soon as they begin to change colour, and air must be more freely given. PEACHES.—Let all very vigorous growths be stopped as soon as they have made six or eight leaves, to divert the flow of sap into the weaker growths; this is a much better plan than allowing them to make long Willow-like shoots, to be removed by the knife at the end of the season. Avoid a high night temperature, or the fruit, though ripened considerably earlier, will be obtained at a sacrifice of size and flavour.

FLOWER GARDEN AND SHRUBBERIES.

BEDDING PLANTS.—Lose no time in potting off, or pricking out into frames or boxes, young cuttings as soon as they are sufficiently rooted, and seedlings as soon as they will bear handling. As the potted off plants become established with new roots, they should be gradually inured to the open air. The hardier kinds if in pots may be set upon a bed of coal ashes, or plunged in the open air, and protected at night by hoops and mats. If plunged in old tan, ashes, or some other light material, much of the labour of watering will be saved, and the plants will be in a better state when planting out season arrives. But, as we mentioned in a former Calendar, the most economical plan is to plant them out in frames, and, at the proper season, to remove them to the beds with balls. Patches of some of the more showy of the hardy annuals should now be sown in vacant places, which usually exist in the herbacous beds and in the edges of clumps and borders in the Shrubbery. Among the many kinds excellently adapted for this purpose we may mention the following:—Double Poppies of various colours, Lupins, Sunflowers, African and French Marigolds, Godetias, Erysimum, Clarkia, Gilia, Collinsia, Silene, Eschscholtzia, Nemophila, Nolana, Kaulfussia, &c., not forgetting the old fashioned favourite Mignonette. A sufficient quantity of cuttings and seedlings of half-hardy climbers should now be potted for planting out in May; with such plants as Cobœas, Maurandyas, Lophospermums, Calampelis, Loasas, Tropæolum canariense, &c., many bare places on the walls and trellises may be covered and made ornamental, which would otherwise be unsightly blemishes on the general appearance of the place.

FLORISTS' FLOWERS.

DAHLIAS.—Continue to put in cuttings as they get long enough: they will now strike root readily. Pot off those which are already rooted, and place them in a close frame for a few days. When they have "rallied," the frame may be opened by tilting the lights, and from this period every care must be taken that they are not drawn. Healthy stiff plants are always in requisition, being planted out with greater safety, and are less susceptible of frost and wind than those which have been more tenderly dealt with. AURICULAS.—Critical is now the period of the existence of these beautiful flowers. The slightest neglect, in the way of covering, would be attended with serious results. Water freely in fine weather; give all the air possible. Before the buds expand, showers of gentle rain will be highly beneficial. Look over the trusses, and, with a sharp-pointed pair of scissors, cut away all imperfect and superfluous buds. The same advice may be taken in regard to Polyanthuses. CARNATIONS.—Pot off without delay, and, for the first fortnight, give them all the protection possible from cutting winds.

KITCHEN GARDEN.

Continue to make periodical sowings of the different culinary vegetables, of which a successional supply is required. Spinach should be sown once in a fortnight; and Peas, Beans, and Turnips, once in three weeks; sowings of all Salads should be made with strict regularity; and proper attention should be paid to protecting all kinds of seeds from the ravages of birds and insects. If the crops of Onions, Leeks, Parsnips, Beet, Salsafy, Scorzonera, and Skirret, are not yet sown, it should be no longer delayed; and the main crop of Carrots should be sown this month if the ground is good. A sowing of tall Kidney Beans may now be made in early localities; the early sowing of this useful vegetable not unfrequently gets cut off by late spring frosts; but when this happens the ground should be left undisturbed, as that part of the plant beneath the surface of the ground generally throws up shoots, from which a crop will be produced nearly as soon as it would have been if the leaders had remained uninjured. In sowing Peas, it is the most workmanlike method to put the stakes to them at once. The barren appearance of the ground is thus removed, and no more trampling on it is necessary for a long time; besides which, they afford a slight shelter to the young plants on their first appearance above ground. Transplanting of autumn-sown Cabbages and Cauliflowers should be finished, and the spring-sown ones encouraged. FORCING VEGETABLES: FRENCH BEANS.—Let these have an abundant supply of water at the roots, and use the syringe freely amongst the foliage; no description of plant is more liable to be infested by the red spider; and if other species of plants are grown in the same house or pit, it is scarcely possible to prevent the spread of the disease. When the structure in which they are growing is heated by other contrivances than flues or hot-water pipes, a wash of lime and sulphur should be applied to the walls in the inside, especially upon those parts upon which the sun can shine; the fumes arising therefrom are very efficacious in destroying the red spider.

State of the Weather near London, for the week ending April 4, 1850, as observed at the Horticultural Garden, Chiswick.

March and April.	Moon's Age.	Barometer. Max.	Barometer. Min.	Temperature. Of the Air. Max.	Of the Air. Min.	Of the Air. Mean	Of the Earth. 1 foot deep.	Of the Earth. 2 feet deep.	Wind.	Rain.
Friday.. 29	15	30.104	30.008	49	29	39.0	38	40	S.E.	.00
Satur.. 30	16	29.935	29.744	52	37	44.5	39	40½	S.E.	.00
Sunday . 31	17	29.751	29.737	55	33	44.0	40¾	40½	S.E.	.08
Monday 1	18	29.638	29.303	61	44	52.5	42	41½	S.E.	.02
Tues. .. 2	19	29.210	29.199	62	42	52.0	43½	42	S.E	.00
Wed. .. 3	20	29.413	29.193	57	45	51.0	46	45½	S.W.	.30
Thurs.... 4	21	29.324	28.974	57	43	50.0	46	44	S.W.	.03
Average....		29.625	29.451	56.1	39.0	47.5	42.1	41.7		0.49

March 29—Foggy; cloudy; clear at night.
— 30—Overcast throughout; cloudy at night.
— 31—Overcast; rain at night.
April 1—Overcast; cloudy; rain.
— 2—Overcast and mild; cloudy; clear.
— 3—Fine; cloudy; heavy rain at night; boisterous.
— 4—Boisterous with rain; densely clouded.
Mean temperature of the week 2½ deg. above the average.

State of the Weather at Chiswick during the last 24 years, for the ensuing week, ending April 13, 1850.

April.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds. N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W
Sunday 7	56.7	36.9	46.8	12	0.40 in.	2	5	2	2	1	8	4	—
Mon. 8	56.0	35.9	46.0	9	0.30	1	5	4	—	3	5	5	1
Tues 9	54.7	36.1	45.4	10	1.26	3	4	5	—	3	4	4	1
Wed. 10	55.0	34.0	44.5	9	0.26	1	6	4	1	4	3	4	1
Thurs. 11	54.3	35.8	45.3	12	0.51	2	5	2	1	2	7	2	2
Friday 12	55.2	38.4	46.8	17	0.56	—	5	3	—	2	8	1	5
Satur. 13	55.9	35.5	45.7	10	0.12	6	4	1	1	1	5	6	—

The highest temperature during the above period occurred on the 9th 1844—therm. 73 deg.; and the lowest on the 11th, 1843—therm. 22 deg.

Notices to Correspondents.

BEES: *Peebles Bee-keeper.* If you will refer again to "Y.'s" remarks you will find that it is not thought advisable to feed bees unless there is convenience for doing so at the top of the hive. The feeder is covered with a piece of glass, and then by the straw cover, as when used over a glass or cap, by which means no scent of the artificial food gets abroad to attract stranger bees, and those alone intended to be fed have all the advantage. The placing of food abroad must not be considered as only feeding one's own stocks, but as a general feeding of all the stocks belonging to one's neighbours within a circle of at least half a mile. A most praiseworthy act, but, to be carried out with a chance of being of any benefit to any one hive, rather costly. "Y." certainly "says nothing about closing the door of the hive," because it is an appendage to their domicile they will not brook on this side of the Tweed. English bred bees must and will have free egress and ingress to their castle at all times and seasons, and the attentive English bee-master merely opens or contracts the entrance to the hive according to the season, or to assist them in defending their stores from plunderers, and has no fear that his industrious and well regulated large little family will ever, under any circumstance, neglect the duty at the time appointed to them but with loss of life, and that they will wait their proper turn in partaking of the food offered them. If you are "a gardener, and grow Asparagus and Seakale, manuring the same by sprinkling salt over the beds in the spring," your bees will soon give you ocular demonstration of their desire for it; but if you do not so manure your Asparagus, and will do as directed by "Y.," you will soon find your pans of brine thronged by them. For "cup," twice at page 200, col. *b*, read "cap." *Y.*

BOOKS: *Novice.* Any bookseller will answer your inquiries. We cannot reply to mere trade questions. Paxton's Dictionary does *not* give the pronunciation of names, and it would only mislead you, as all such schemes do, if it pretended to it. It gives the *accents*, which is all that you need; and is a catalogue. Use carbonate of ammonia once a week, and always in cloudy or damp weather, if you can.—*P O J.* Dr. Lindley's "School Botany."

CAMELLIAS: *P O J.* Your Camellias which have just done flowering should be kept a little warmer than usual till they have made their wood and set their flower buds. A moist top heat of 60° will suit them while they are growing; they need no bottom heat. Whether they require repotting or not can only be determined by inspection; but if you do not repot them, a little *weak* guano water given them now and then might prove of service. ‡

GLASS: *R.* Rolled rough plate-glass is coming into general use for conservatory roofs, much exposed to the sun, as a preventive of burning. Its excellence has now become a matter of certainty.

GLAZE FOR CALICO: *R C.* Three pints old pale linseed oil, 1 oz. sugar of lead, and 4 oz. white resin. The sugar of lead must be ground with a small quantity of the oil, and added to the remainder, incorporated with the resin by means of gentle heat. Lay it on the calico with a brush. One coat annually is sufficient.‡

LINARIAS: *A H.* It is possible, but not probable, that your seedlings may push again. All depends upon the vigour of the cotyledons and their power to generate fresh buds in their axils. Cupressus macrocarpa is more hardy than an Ash tree.

MAGNOLIAS: *J S.* The best of the varieties of Magnolia are those with a brown down on the under side. The broader the leaves the handsomer are the sorts. They are all equally hardy, or if there be a difference the downy ones are the most so.

MARKET PLANTS: *W H P.* You are very late for the market. At present you may force Seakale, Kidney Beans, Rhubarb, and take a crop of Grapes, but the produce will not fetch much, now that the warm weather of spring has come on. All your preparations for forcing should have been made in January. If your house is adapted to the purpose, you may perhaps add Cucumbers and Melons.

NAMES OF PLANTS: *Reader.* 1, Athyrium axillare; 2, Lastrea affinis; 3, Lastrea affinis; 4 (?), Asplenium viride; 6, Lastrea patens; 7, Asplenium ebeneum; 9, Lastrea Fœnisecii. *S.—Erzeroum.* 600, Tussilago Farfara; 626, Elæagnus orientalis; 633, Oporanthus luteus; 642, Rhododendron caucasicum; 644, Rhod. ponticum; 678, Cyclamen cöum; 683, Veronica Chamædrys; 693, Cornus sanguinea; 686, Vinca major; 716, Anagallis arvensis; 727, Chelidonium majus; 735, Potentilla fruticosa; 764, Datura stramonium; 437, Castilleja; 260, Butomus umbellatus; 237, Cicer arietinum; 601, Equisetum arvense; 602, Oporanthus (?); 603, Pedicularis; 632, Spiræa filipendula; 646, Pinguicula vulgaris; 680, Leucoium æstivum; 687, Staphylea pinnata; 694, Periploca græca; 698, Viburnum Opulus; 752, Plumbago europæa; 760, Cleome ornithopodioides; 769, Atraphaxis spinosa.—*Enquirer.* 1, Hippeastrum aulicum; 2, H. vittatum; 3, Phaius grandifolius; 4, Phaius, unknown to us, and apparently new; can you supply a good specimen, with the history of the plant? 5, not recognised. Six good Begonias are coccinea, fuchsoides, manicata, parviflora, nitida, and ramentacea.—*A Regular.* It is Phormium tenax and *not* hardy. You are not to blame for the plant having died. It will no doubt stand mild winters but not hard ones. Edwardsia grandiflora.—*Y.* We presume it is a bit of Lachnæa tetragona.—*J T.* Seems to be nothing more than Malva pusilla—crushed to pieces.

OIL SEEDS: *J W M.* Til is the Guizotia oleifera, Sesame is Sesamum indicum; of Chinchilla we have never heard. The two first are very important oil-plants. We prefer the Beechwood Melon.

ORCHIDS: *T D H.* As *general* rules to persons abroad sending home these things, the following are the more important:—1. Collect them just as they are going to rest. 2. Pack them in chests with thick sides, well closed up, and if Usnea is to be had strew it among them; if not, any sort of *dry* leaves or shavings may be used. 3. Send them home as quickly as possible; they should not be more than three months on their passage. 4. Above all things take care that they are *not put into the hold*, nor, if in a steam-boat, anywhere within the reach of the heat of the furnace and boilers.

PICOTEES, &c.: *J W.* Next week.‡

POTATOES: *W Street.* We will try the Potatoes, and after the crop has been raised give you our opinion of them.

RAISING POTATOES FROM SEED: *Sub.* See pp. 118, 176, and 239, vol. for 1847. Sow now on a slight hotbed. When up air freely on fine days, and water sparingly. Transplant as soon as all danger of frost is over.‡

RUSSIA MATS: *Protector.* There are conveniences in Russia mats which are not afforded by other kinds of covering. What is wanted is that they should be two or three times as thick. For *mere protection*, frames thatched with straw, or *paillasses* such as French gardeners use, or frames covered on both sides with thick felt or asphalte, are preferable. Any of these may be made at home.

SASH-LINES: *R A H.* The wire lines do not answer. Chains are sometimes employed; but upon the whole the patent sash-line is the best and cheapest, especially if previously steeped in a tan-pit. In an ordinary forcing house a bottom heat of 50° is ample.

SEEDS: *L B S.* If we received the question we certainly answered it. We answer *all* questions. In the North of India every kind of European seed is welcome, provided it is of very fine quality. Seeds of *fine* vegetables, *fine* fruit trees, *fine* varieties of common flowers, Fuchsias, and plants from America that ripen seeds in England. Send them in packets, loose in a canvas bag, suspended in some passenger's cabin. On no account put them into tin. You must start your Hyacinths in dampness and light, not in water or wetness, nor must you feed them until their growth has been fairly established. Then water them with water containing a *minute* quantity of carbonate of ammonia and saltpetre. Hollies, Camellias, dwarf Conifers, Yews, evergreen Oaks, Ivy, Laurustinus, Laurels, and all such things.

STRAWBERRIES: *N C.* The plants seem to have died from the opposite of too much wet. They have been potted in poor light sandy stuff, incapable of retaining sufficient moisture for any length of time—"never staying five minutes" you say. You should pot in well-enriched friable loam.‖

VENO BENO: *Emily.* This material is probably the ground leaves of the common Rhubarb, taken out of market gardens when they are of no other use than to be conveyed to the dunghill.

VINERY AND COWHOUSE: *Llandilo.* Why not call it the Grape Cowhouse or the Garden Cowhouse?

VIOLETS: *Lancashire.* The Neapolitan is the best for forcing. The Russian is most suitable for planting out of doors. They succeed in any light rich soil.‡

YEW HEDGES: *Lopez.* In trimming them, manage so that the top is only half the breadth of the bottom. The Snowdrops *may* be too deep, but it is more probable that their leaves were destroyed last year before they had withered.

WEEPING WILLOW: *W B.* Pruning has not hurt your Willow. It is more likely that the roots are injured. At the same time such appearances are very common in this tree after hard winters. The *causes* can only be judged of by inspection.

MISC: *Sub.* Pigeon dung is a powerful manure, and should be used with caution. If it is given to Carnations, Picotees, &c., it must be in water. Apply it now and then in June, to assist them in throwing up their blooming shoots; but it must not be strong. The *Gardeners' Chronicle* cannot be supplied *without* the Newspaper. We know nothing of the party you mention; you had better, perhaps, apply to him again.‡

FLORISTS' FLOWERS.

POLYANTHUSES: *H H.* All crushed and withered up when received. They should have been sent either in damp paper or moss, and in a stronger box.*

BY HER MAJESTY'S ROYAL LETTERS PATENT.

PATENT HOTHOUSE WORKS, KING'S ROAD, CHELSEA.

EDENCH invites the attention of Gentlemen about to erect Hothouses, &c., to the vast superiority in every respect possessed by his PATENT HOUSES, which he will warrant superior in every respect to any others. Good Glass from 16 to 21 oz. per foot, 1 foot wide, 3 feet long, furnished, and the Houses, when completed charged, from 1*s.* 3*d.* to 1*s.* 6*d.* per superficial foot, according to size and quantity; on one principle the roof is formed without wood or putty, and on another principle with wood rafters, and the glass put in with putty. Patent Sashes, requiring no paint, from 7*d.* to 9*d.* per foot. HEATING BY HOT WATER.

HOT WATER APPARATUS AND HORTICULTURAL BUILDING.

WHILL begs respectfully to announce that his improved "FLUE BOILER" may now be had in sizes to suit every description of Apparatus, from that of 100 feet to 2000 feet of 4-inch pipe. Improved STEAM BOILERS, from one-horse power and upwards, adapted either for stationary or portable engines, and guaranteed to be most effective.

Every description of Horticultural Building constructed upon the best principle. Buildings of any kind heated by hot water.

*** A liberal Discount to the Trade.

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Conservatories, &c., of Iron or Wood, erected upon the most ornamental designs. Balconies, Palisading, Field and Garden Fences, Wire-work, &c.

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IMPORTANT TO AGRICULTURISTS.—COLLECTION AND DISTRIBUTION OF MANURES.

STRATTON'S AGRICULTURAL REPOSITORY, BRISTOL.

STRATTON, HUGHES, AND CO., have now ready their PATENT TUMBLER CART for the collection of Night-soil and other offensive matters; also their Iron Mill, to be worked by horse-power, water-power, or steam, for mixing and incorporating Nightsoil with Charcoal and other deodorisers. The Tumbler Cart has an iron body with a close cover; can be fitted if required as a Watering-cart, with a Valve and Delivery Pipe for distributing water or liquid manure, and also with an Apparatus for distributing dry manures in any given quantities per acre.

STRATTON, HUGHES, and Co.'s Tumbler Carts are used for scavenging purposes in Manchester, Bristol, Worcester, Harwich, Rochford, Cardiff, &c., and they are now building them for Chester, Oxford, Huddersfield, &c., besides many for Agricultural Colleges and private individuals. STRATTON, HUGHES, and Co.'s new illustrated Catalogue of Carts, Waggons, and Agricultural Implements will be forwarded to any address on receipt of 1*s.* 6*d.* in postage stamps.

MANURES.—The following Manures are manufactured at Mr. LAWES's Factory, Deptford Creek:

Corn and Grass Manure, per ton	£10 0 0
Clover Manure, do.	11 0 0
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N.B. Peruvian Guano, guaranteed to contain 16 per cent. of Ammonia, 9*l.* 15*s.* per ton; and for 5 tons or more, 9*l.* 10*s.* per ton, in dock. Sulphate of Ammonia, &c.

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WILLIAM E. RENDLE AND CO., Plymouth, are Mr. Lawes's Wholesale Agents for the Sale of his MANURES, and can supply them at Mr. Lawes's prices, delivered at his Factory, Deptford Creek.—Apply to WILLIAM E. RENDLE and Co., Union-road, Plymouth.

POTTER'S GUANO.—This effective MANURE, now greatly Improved, is confidently recommended as a Dressing for all Spring Crops. It is equal to Peruvian Guano, and 25 per cent. cheaper. Also SUPERPHOSPHATE of LIME, GYPSUM, and SULPHATE of AMMONIA, all of guaranteed quality, and Cheaper than at any other establishment in town or country.

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PERUVIAN GUANO.—As Agents of the Peruvian Government for the importation and sale of this valuable MANURE, we think it right, for the protection of consumers and respectable dealers, to apprise them that the adulteration of the article is still extensively practised, and to recommend them to apply either to ourselves, to our agents, Messrs. GIBBS, BRIGHT, and Co., of Liverpool and Bristol, or to dealers of established character, in whose honesty and fair dealing they can place implicit confidence. ANTONY GIBBS and SONS.

London, March 9.

CORN MANURE.

BLASHFIELD'S PATENT COPROS.—A new Manure for Corn and other Crops, containing Ammonia, Phosphate of Lime, Potash, Soda, Magnesia, Silicate of Potash, &c. Price, delivered alongside a vessel, or any Wharf in London, 8*l.* per ton. It is sold in a finely-ground dried powder, by the Patentee, at No. 3, New London-street, Mark-lane, London.

Superphosphate of Lime, Gypsum, Sulphate of Ammonia, Sulphate, and Nitrate of Soda.

CORN MANURE FOR WHEAT, BARLEY, OATS, BEANS, &c., &c.

THE LONDON MANURE COMPANY most confidently recommend the above, as they are daily receiving very satisfactory accounts from parties who used it with great success last season. It will be found fully equal to and much cheaper than Peruvian Guano, and is not so liable to produce so large a growth of straw. Price Seven Guineas per ton, 3 cwt. per acre. They also beg to offer their Concentrated Urate, Superphosphate Lime, Nitrate of Soda, Sulphate and Phosphate of Ammonia, Fishery and other Salt, Gypsum, Sulphuric Acid, and genuine Peruvian Guano. To insure this free from adulteration, all purchasers can receive it direct from the Warehouses of the Importer.

Bridge-street, Blackfriars. EDWARD PURSER, Secretary.

Country Dealers and Agents supplied.

The Agricultural Gazette.

SATURDAY, APRIL 6, 1850.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

WEDNESDAY, April 10—Agricultural Society of England.
THURSDAY, — 11—Agricultural Imp. Society of Ireland.
WEDNESDAY, — 17—Agricultural Society of England.
THURSDAY, — 18—Agricultural Imp. Society of Ireland.

A PROFESSIONAL MAN will do the thing more cheaply than an amateur, whatever the thing may be; both because of the more economical methods which his experience has taught him, and because of the more perfect result to which his educated skill will lead him. An extensive operation may be executed more cheaply than one of limited extent, because, independently of the cost per unit of measure, which is in the two cases the same, there is a certain expenditure of time or superintendence, or machinery, which is relatively far greater in the smaller than in the larger instance.

On these two grounds, no doubt, the principle of Mr. C. LEWIS's bill for the better management of HIGHWAYS may be amply vindicated. To place the highways of each Union under the superintendence of an experienced officer, appointed by the guardians of the poor, is likely to be a great improvement, whether as regards cost or efficiency, upon the system which places the highways of each parish annually under the superintendence of a new man—of one, indeed, who frequently knows nothing of road management whatever. The subject is of material importance to the farmer, for he pays directly large sums every year as his share of the expenditure incurred, and, indirectly, still larger sums as his share of the injury sustained under the present miserable result of it. Messrs. STRATTON and Mr. CROSSKILL have laboured, perhaps successfully, to send out carts which, at a minimum expenditure, whether of force or of cash, shall carry a maximum of load; but whether the farmer be supplied with these or not, bad roads in all cases enforce short loads and occasion heavy repairs. Another point of equal if not greater importance in any general system of ROAD REFORM, is that which concerns the method of collecting the requisite funds. For the Grass land farmer, because he pays as large a rental, to be called upon to pay as large a contribution for the maintenance of the parish roads as the arable farmer who employs three times the number of horses, seems manifestly unjust. And as regards turnpike roads, where an *ad valorem* taxation is more accurately attained, the system of collection adopted labours under the imputation of being the most expensive possible. Mr. PAGAN, of Fifeshire, has had the merit of drawing attention to this subject, and of suggesting a direct tax upon horses for the maintenance of all roads, as in every respect superior to the imperfect and wasteful method now followed. We called attention, some time ago, to the facts on which he rests his case. The subject caused at the time of its promulgation considerable excitement in Scotland, and though now comparatively in obeyance, it still deserves serious attention. And having lately obtained the road statistics of a considerable district in Gloucestershire, which bear out many of Mr. PAGAN's proposals, we shall endeavour next week to bring the subject fully before our readers.

WE learn from the *Bucks Advertiser* that the farmers attending Hertford market lately held a meeting for the purpose of reducing the payments made to tradesmen for work performed by them. And it was resolved that, "As the value of agricultural produce has fallen so low, that farmers in general must adopt a system of wise and vigilant economy, extending to every branch of expenditure unavoidably incurred, and that accordingly the tradesmen in this neighbourhood be requested to reduce their charges in the following ratio:

Blacksmith to ...	6*d.* per shoe.
,, ...	3*d.* removes.
,, ...	6*d.* coulters.
(All ordinary work 15 per cent.)	
Collar-maker reduced by ...	15 per cent.
Wheelwright ...	20 per cent.
Carpenter, reduced to ...	3*s.* per day.
Bricklayer ,, ...	3*s.* per day.
Ditto labourer ,, ...	1*s.* 8*d.* per day.
Hurdle-maker ,, ...	3*s.* 6*d.* per doz.
Thatcher ,, ...	9*d.* per square foot.

"Resolved,—In order to carry out the above resolution, an association be formed in this district, including the parishes of Ware, &c. Resolved,—That the tenant farmers in the neighbourhood be invited to become members of the association. That the members determine not to employ any tradesman whose prices do not conform with the above scale. That the landowners be requested to give their assistance in furtherance of the object of this association."

Now, unquestionably, where employment of the kinds named is sufficient in quantity to maintain a number of the employed, the competition among these will soon of itself give the employer the advantage of any reduction in their expenses; yet he is quite right to insist upon the reduction being immediately submitted to, and if the demand be reasonable, the threat of employing other hands will at once successfully enforce it. And this being right in individual cases, the subject seems perfectly proper for entertainment by an association. Whether the precise reductions insisted upon be those to which the natural process of competition would ultimately lead, and below which no amount of arbitrary enforcement can in the long run be influential, we do not know; but the mere fact of an association being formed to ensure that the whole effect of reduced prices be not borne by the farmers' shoulders will, of itself, tend to distribute the burden. And we refer to the matter here, because the principle guiding the resolutions which have been arrived at by the farmers of Hertfordshire, and by others who have met with the same object in view, at St. Peter's in the Isle of Thanet, and elsewhere, seems deserving of general adoption.

WE refer once more to the circulars lately issued on the subject of AGRICULTURAL LABOUR, for the purpose of asking the assistance of any who, though not personally applied to, may yet be willing to furnish information on the subject. The following are the questions which the circular asked:

I. As regards DAY WORK: What are the—
  1. Present wages of able-bodied men per week.
  2. Their wages during harvest month.
  3. Perquisites, as beer, &c., in addition to (1).
  4. Wages of female labourers.

II. As regards PIECE WORK: As specimens under this head the following instances are chosen. What is paid for,
  1. Mowing Clover per acre.
  2. Mowing Meadow Grass per acre.
  3. Reaping and tying Wheat per acre.
  4. Threshing and cleaning Wheat per bushel.
  5. Digging drains; say 3½ feet deep, 14 inches wide at top, and 3 inches wide at bottom. Clay subsoil, free from stones.

Of course any further information bearing upon the condition of the labourer, including the particulars of House-rent, Garden, Allotment, Schools, &c., would be most acceptable: but the main purpose of the inquiry is to ascertain the wages in different parts of the country, in order to see how the condition of the labourer is affected by the different circumstances amid which he is placed. If any one will kindly furnish answers to these questions, specifying the locality of which his answers are true, and adding his own name and address, we shall be greatly obliged.

TO INTENDING EMIGRANTS.

A PERSON who intends emigrating ought to consider well what his prospects are likely to be in the country of his birth, and in the district to which he is to move, and be guided by a balance of their advantages and

disadvantages. The influence which wealth has attained in Britain merits the consideration of all young men without capital. Personal exertion is often considered degrading, and visited with the contumely of former associates. In the remoter parts of America wealth is not idolised. The industrious youth may therefore follow any occupation without being looked down upon or sustain loss of rank, and may occasionally anticipate raising himself. The plain style of buildings and household furnishings of such places are favourable to young people, and in almost every particular their situation may be said to be the reverse of what it is in Britain. A young man without capital and of good character is almost sure to gain but cannot lose rank by emigrating to America, and will rarely retain his rank by remaining in Britain. Farming in most parts of the world ranks low in the scale of professional remuneration, and in America, as elsewhere, I cannot hold out an immediate or ultimate prospect of great wealth, as the low price of produce and high labour renders this improbable. Animals of every description are not to be compared even with the second and third class breeds of England, and no great improvement can be effected with them until proper winter food and shelter are supplied. The want of Grass and root crops is one of the greatest privations of first settlement. In the old cultivated districts manure is sometimes applied to land; gypsum is frequently used successfully to Clover and Indian Corn. The robbing system has long been followed, and its effects are everywhere apparent. I do not think that lime is often tried. It is better to restore the most exhausted than clear forest land of the same quality. Nature never becomes exhausted, and the farmer has only to do his part to obtain her bounty. It has often been said by writers on emigration that manufacturers and artisans of all kinds make better Canadian farmers than agriculturists do. This seems to me part of the deception which has been played off on the people of Great Britain. Knowledge is power in all things, and however prejudiced agriculturists may be, their acquaintance with the time and mode of sowing, harvesting, and many et ceteras, must give them advantages over other classes. I can conceive few situations more trying than a person without capital totally unacquainted with farming placed in the midst of a forest to live by his own exertions. The man without capital ought to consider well before engaging with forest land, however cheap and advantageous the terms may appear. Almost all who do so can scarcely avoid being ruined. The soil on the eastern side of the Alleghanies on the Atlantic is generally of an inferior description, with the exception of lands on the banks of rivers; the cleared lands having been long cropped under the robbing system, and far from being productive. The prices of farms with their tenements varies from 5*l.* to 30*l.* sterling per acre. Labour can at all times be had, and every description of produce finds a ready market. Manures are chiefly employed in growing vegetables; market gardening, early fruits and vegetables, is the most profitable department of farming, and the growing of Grass ranks next.

Land which has been impoverished by a long succession of crops under this robbing system, will not yield much grain without a plentiful supply of manure, which the rate of labour may frequently prevent being applied without incurring loss. Suppose an acre of Wheat to yield, with a moderate application of manure, 24 bushels of Wheat per acre, which is worth one dollar or 4*s.* 2*d.* per bushel, the cost of producing the crop, including twice ploughing, harrowing, seed, sowing, harvesting, and carrying home, threshing, dressing, and marketing, will amount to 2*l.* 18*s.* 4*d.*, leaving only 10 dollars, or 2*l.* 2*s.* 6*d.*, to meet the interest of capital employed in the purchase and cultivation of the land, taxes, professional profit, and the purchase and application of manure. If the purchase-money of the land and capital invested in cultivation amount to 60 dollars, that is, 12*l.* 15*s.* per acre, the interest may be taken at 16*s.* 8*d.*, leaving only 1*l.* 5*s.* 6*d.* sterling for taxes and manure. The cost of manure may be estimated—gypsum 4*d.* per bushel, but the expense of its carriage and application are so high as often to forbid its use. On the above assumed data, there will only remain about 18*s.* sterling per acre to meet the carriage and spreading of the manure. The expense of labour is strikingly exhibited in contrast with the value of the crop—the wages of a labourer may be stated at 3*s.* 1*d.* per day, and the value of an acre of Wheat would employ a man about 32 days. The difficulty of transporting certain kinds of Grass produce from a distance, such as hay and fresh dairy produce, keeps up the price of these commodities.

It is possible to purchase exhausted sandy soil, Cotton and Tobacco lands, in Virginia, near to Petersburgh and to good markets, at the price of 1*l.* per acre; but the difficulty will be something like this: money is worth 10 per cent., and it is doubtful whether an investment in Virginia lands can be made profitable; the most prudent course will be to calculate every expense in bringing the acre of land into cultivation.

	£	s	d
Acre, freehold, bought at	£1	0	0
Log hut per acre, cost	0	2	0
The land and its buildings	£1	2	0
1*l.* at 10 per cent. interest per annum	0	2	0
To be redeemed in 7½ years do.	0	3	3½
Life assurance (collateral security)	0	0	9
Local taxes, schools, roads	0	0	9
2*s.*—Hut for crop (its proportion per acre being a tenth of the value of land)	0	1	4
Carried over	£0	8	1½
Brought forward	£0	8	1½
To be redeemed in 7½ years, say	0	0	4
Fire assurance	0	0	1
Life assurance (collateral)	0	0	1
	£0	8	7½
Cultivation and harvest	1	7	0
Gypsum or lime, &c.	1	0	0
Seed—Indian Corn, 2 bushels	0	4	0
	2	19	7½
Returns, perhaps 30 bushels, at 2*s.*	3	0	0
	£0	0	3½

Your little capital of 250*l.* must realise 10 per cent., and your labour ought to be paid at least 50*l.* per annum—here will be a charge on a certain sized farm—75*l.* per annum. What system of farming will admit of a charge equal to 33 per cent.? Let us look to the market value of produce, and the price of labour. Wheat, 3*s.* 6*d.*; flour, 286 lbs., 17*s.* 6*d.*, equal to 5 bushels of Wheat; Maize, 1*s.* 10*d.*; Barley, 1*s.* 10*d.*; Oats, 1*s.*; hay, 6*d.* per stone; Buckwheat, 1*s.* 10*d.*; Rye, 1*s.* 10*d.*; Parsnips, 4*d.* per bushel; Carrots, 5*d.* per cwt. [?]; Beans, 2*s.* per bushel; Turnips, 1*s.*; Beets, 2*s.* per cwt.; Mangold Wurzel, 2*s.* per cwt.; Cabbages, 1*l.* per ton; Pumpkins, 10*s.* per ton; Prickley Comfrey, Millet, Artichokes, Chicory, Potatoes, 1*s.* 3*d.* Root of Plenty: Banana yields the greatest proportion of aliment with the least culture—the amount of nutritive substance yielded by it is to that of Wheat as 133 to 1, and to that of Potatoes 44 to 1. Ground Nuts, famous feed for cattle; Clover, Italian Rye-grass, Timothy Blue Grass, Herds Grass, Bermuda Grass, Ruta Baga, Kohl Rabi, Peas, Tares. Beef, veal, mutton, pork, average 2½*d.* per lb.; bacon and ham, 3*d.*; fowls and ducks, 1*s.* each; chickens and pigeons, 4*d.* each; geese, 2*s.*; turkey, 3*s.*; eggs, 6*d.* per dozen; milk, 3*d.* per quart; butter, 6*d.* per lb.; carts, 8*l.*; ploughs, 3*l.*; double harness, 4*l.*; log chains, 6*d.* per lb.; scythe and snath, 6*s.*; rakes, 10*d.*; pitchforks, 3*s.*; shovels and spades, 4*s.*; axes, 6*s.*; hoes, 3*s.*; and as iron work is very dear, all other farming utensils are considerably dearer than in England. Persons employed on a farm get board, lodging, and their washing, and about 3*s.* per day; gardeners, 4*s.* per day; cutting hay, per acre, 6*s.*; threshing with the flail—Barley, 2*d.*; Oats, 2*d.*; Rye, 8*d.*; Wheat, 6*d.* per bushel; workmen assisting at farm work get 50*s.* per month with maintenance. Landlords in Virginia will furnish stock and implements to cultivate the soil on receiving half of the produce when sold. There is a considerable loss of time, and a great expense, in sending produce to market, and English farmers in America must make up their minds to pay double wages to good servants, and to receive for crops at least 33 per cent. less than the London prices. It is a difficult task to purchase good land, near to a good market, at such a price as will admit of skilful cultivation, money being borrowed at 10 per cent. for the term of seven and a half years. Property secured by fire and life assurance and other collateral security. Farm horse, 20*l.*; cow, 3*l.*; calf, 10*s.*; hog, 12*s.*; sheep, 6*s.*; beef, mutton, veal, pork, bacon, ham, lard, butter, cheese, eggs, milk, poultry, and all manner of produce, 50 per cent. less than in the London market. The average of crops are, Wheat 20 bushels, Oats 30, Indian corn 30 per acre. Wages are so high, say 3*s.* to 4*s.* a day, that a farmer must not lavish capital on fanciful improvements, or employ much labour on finical operations. The farmer must calculate the value of every day's labour. Farming cannot be pursued on a large scale with a prospect of success, as a great many of the workmen are idle and unsteady, and there is a difficulty of superintending the operation and forming a proper division of labour with unskilful and untractable workmen. There is, however, an excellent field for prudent skill and industry near to all manufacturing towns, approached by railroad, canal, and river. Science seems scarcely to have been thought of in American farming, and a cautious application of it in draining and other improvements, in particular situations, would be remunerating. The small farms, fairly cultivated, pay the best. The value of farm produce and land in different sections of the country will be affected in opposite ways by the opening of the communication between the east and the west. By lessening the expense of transport, a greater produce will flow from the west to the east, and there will be less difference in price, either by produce falling in the east or rising in the west. If prices fall in the east, the value of land will fall there, and if prices rise in the west the value of land will increase there. Facilitating the intercourse between the countries will extend the market for western produce and operate like an influx of inhabitants, and the natural effects will be a rise in the value of produce and land in that quarter.

We will now draw another comparison between these opposite localities. In the west, land is bought for 10*s.* an acre, and the produce we will say is Indian corn, valued on the farm at 50*s.*, being 1*s.* per bushel. In the east, land is bought at 1*l.*, and we will have as a crop 25 bushels of Indian corn, at 2*s.* per bushel, near to market; but the land requires manure and better cultivation, and a large outlay, agriculture being little known as a science in any part of America, and but imperfectly understood as an art; the same diversity of opinion and modes of management prevails as in Britain, with greater difficulty of becoming acquainted with them. The following particulars relate to the neighbourhood of the city of New York.

Grass crops are mown for hay five or six years in succession, without being top-dressed or manured in any way; the aftermath, which is seldom abundant, being depastured. Five pounds of red Clover and half a peck of Timothy seeds, Phleum pratense, are sown on an acre, and also occasionally small quantities of Herd-grass and Red-top, two kinds of Poa. I believe the red Clover lives longer than it commonly does in the cultivated fields of Britain, having seen many plants after five successive crops of hay. The Grass on being ploughed is followed in the 1st year by Indian Corn, without manure—by Potatoes, with manure, in the second year—and if early they are followed by Buckwheat. Barley is taken in the third year; and in the fourth, Oats accompanied with Grass seeds. Potatoes are grown in drills, as in Britain, and sometimes in hills 3 or 4 feet distant, formed by the surface being marked into squares by the plough; a whole Potato or three cuttings are placed above manure, and both covered over with the spade. The fruit crop is often injured by spring frosts (April), and Wheat by mildew (rust), it is liable to be killed in winter by heaving, the Hessian fly, and army worm. The best crops are spring Wheat, Buckwheat, Rye, Oats, Barley, Turnips, Peas, Grass, and garden vegetables. Cattle and sheep are fed on Indian Corn, Ruta Baga, Hay, Grains, crushed Oats, and Barley. The prices of farm horses are, 15*l.*; oxen, 5*l.*; cows, 5*l.*; calves, 1*l.*; hogs, 12*s.*; sheep, 6*s.* to 12*s.*; turkeys, 3*s.*; geese, 2*s.*; ducks, 1*s.*; fowls, 1*s.*; chickens, 6*d.*; pigeons, 4*d.*; rabbits, 6*d.*; eggs, 6*d.* a dozen; milk, 3*d.*; cheese, 3*d.*; butter, 6*d.*; hams, 4*d.*; bacon, 4*d.*; beef, 2*d.*; pork, 2*d.*; veal, 2*d.*; mutton, 2*d.*; flour, 186 lbs., 17*s.* 6*d.*; lard, 3*d.*; candles, 3*d.*; tea, 2*s.*; coffee, 10*d.*; beer, 1*s.* per gallon; spirits and wines, 50 per cent. less English price; house rent full 25 per cent dearer; labourers, 3*s.* to 4*s.* per day; hire of plough and two horses, to work an acre of land, 10*s.*; house servants, 2*l.* to 3*l.* per month; gardeners, 4*s.* per day; garden seeds generally very bad; American iron ploughs, 4*l.* to 6*l.*; wagons, 10*l.*; double harness, 4*l.*; log chains, 6*d.* per lb.; scythe and snath, 8*s.*; rakes, 10*d.*; brooms, 10*d.*; pitchforks, 3*s.*; shovels and spades, 5*s.* to 6*s.*; axes, 8*s.*; hoes, 3*s.*; Wheat, 3*s.* 6*d.*; Indian Corn, 2*s.*; Buckwheat, Barley, Rye, 1*s.* 6*d.* to 2*s.*; hay, 4*l.* per ton. Swede Turnips are sown in August and stored before winter. Geese are plucked three times a year, live goose feathers being a general article of commerce. Farm labourers away from New York (150 miles), get 50*s.* a month, with bed and board, including washing; and a deduction is made for sickness or voluntary absence. A married man is allowed double wages to board and lodge himself apart from the family, and pays the landlord 5*l.* per annum for cottage and garden. The hours of labour are from sunrise to sunset, without any specified time for meals, to which they are commonly summoned by sound of horn. Hired men do not consider themselves bound for any length of time, and occasionally absent themselves for a day or two, without giving notice of their intention. Hired spade men get 3*s.* a day, without board, all the year round. Threshing machines are common, but not good; and when the flail is used, Barley and Oats cost 1½*d.*; Rye, 3½*d.*; Wheat, 6½*d.* per bushel, and then require to be fed. From the high price of human labour, compared with the price of food, Indian Corn is often trodden out by oxen. Craddlers generally mow round the field when the crop admits of doing so. Hay costs in cutting from 5*s.* to 6*s.* an acre; sometimes labourers can be found who will craddle an acre of Rye at a charge of 3*s.* per acre. In the neighbourhood of Philadelphia, land of fine quality, and in high condition, may be had from 20*l.* to 25*l.* with the tenements, per acre. Produce of all descriptions is high, and the straw of a Wheat crop sold at 6*l.* per acre. Wheat is often mildewed. Mr. A. grows excellent Swede Turnips after his Wheat crop, and this is the only succession of crops he gets in one year; he ploughs in green vegetable matter, such as Clover aftermath, French Beans, Lupins, and Indian Corn, for manure to other crops. Horses and cattle are soiled with green food in summer. Sheep are generally a mixture of Leicester and Cotswold breeds, the pure blood of the former not being found to answer; the flock was miserably low in condition, and the ewes were followed by large and not fat-looking lambs. Smaller and more hardy breeds of cattle and sheep are found to answer best (Devons). Pastures suffer from want of drainage and top dressing. Hay is the best paying article of farm produce, which induces the farmer to mow their Grass lands when first sown down, year after year, so long as the herbage can be collected with the scythe, after which it is converted into pasturage. Mr. Buel's farm consists of inferior sand, and extremely wet, though capable of being drained. Notwithstanding these disadvantages, some good crops were seen, more especially Indian Corn and Swede Turnips, the latter sown after a hay crop, with bone manure. Another farmer on clay lands sows Clover among Wheat, which affords good pasturage during autumn, and is fed off in the following spring; the land is ploughed in the end of June, and after an imperfect fallowing, sown with Wheat in autumn. The Dutch farmers also sow Clover with the Wheat crop, which in spring is ploughed down for manure without being fed off. This shows how much Nature does for the farmer, one year providing manure, and the next a Wheat crop. Skill might improve the system followed; but the period of introducing improved agriculture into the United States (1840) has not arrived. (Read "A Tour through North America," by Patrick Sherriff, farmer, Mungoswells, East Lothian, published by Simpkin, Marshall, and Co., London.) This gentleman was ap-

pointed by a party of East Lothian farmers, to visit and report on the Canadas and the United States; and his younger brother having expressed a wish to try his fortune as an American farmer, Mr. Sherriff resolved to explore the country for thousands of miles, for the purpose of enabling him to give an opinion on the step which his brother contemplated. Dutch farmers in the state of New York apply 50 heaped Winchester bushels of lime to an acre; gypsum costs 7*d.* per bushel, and is only used for Clover and Indian Corn; people carry it in baskets, and put a pinch on each hill, or cluster of plants, half a bushel is sufficient for an acre. Labourers are found their victuals and paid 4*s.* a day for cutting an acre of Wheat with the craddle scythe, and two bonders follow the craddler at 2*s.* 10*d.* each. Sheep, a mixture of Saxon and merino blood, are kept in courts during winter, fed on hay, and lamb between the 20th of April and the 20th of May. The lambs, starvelings when compared with those of England; the price of ewes, when lambs are weaned, is 12*s.*, and that of two years old wedders, 8*s.* to 10*s.* Fleeces weigh 3½ lbs., worth 2*s.* per lb. *T. W.*

ON THE VARIETIES OF THE OAT.

The Oat may emphatically be called the staple agricultural product of Scotland—a country admittedly the best fitted for its growth, and hence the importance of it comparatively with the other cereals. No soil in this country is found either too rich or too poor, too hot or too cold for it; within the range of the altitude for the cereals, the most tenacious clays, meagre gravels, or other light lands, moss or bog, when sufficiently drained, will all produce fair crops of one variety or another, if the tillage be properly attended to, and the seed judiciously sown and covered. In the gradations from rich to poor soils, in upland and lowland districts, a corresponding change of variety is, doubtless, rendered necessary; but a long series of experiments, conducted by shrewd men in every district of Scotland, has so nicely adjusted the distribution of these varieties, according to the nature of the soil and other circumstances, that, except in the way of improvement, little remains to be effected. It will be therefore my object—1st, to enumerate the districts of Scotland, and the varieties of Oats cultivated therein; and, 2d, to consider, with regard to these districts, how far these varieties may be profitably changed, or other kinds introduced. I may, in the first place, mention that the varieties of Oats at present known are about 60. Some confusion exists in the identity of many of them, from the close approximation to each other in external appearance, as also from the use of synonyms. Of this number, judging from the experience there has been of them, about one-half may be readily dispensed with in this country, being of trifling importance even as forage plants. About 30 distinct varieties are, however, grown in Scotland, but about a dozen only are in general cultivation. The remainder of these 30, comprising many valuable kinds, are at present confined to small localities. The following list includes the 12 varieties alluded to:—Potato, Hopetoun, Sandy, Early Angus, Late Angus, Grey Angus, Blainslie, Berlie, Dun, Friesland, Black Tartarian, and Barbachlaw. These are so well known that any descriptive account of them is quite unnecessary. I have classed them in the order of their general cultivation throughout Scotland; the same arrangement applying nearly to the order of their economical value, as well as their fitness for soil and situation, in regard to shelter, ranging from the best to the worst. To render the distinction of varieties somewhat more intelligible, I have proposed a synoptical table, on reference to which these varieties will be found classed according to their adaptation: 1st. To the best soils and sheltered situations; 2d. To intermediate soils and situations; 3d. To high altitudes and exposed situations:

Synoptical Table of the varieties of Oats cultivated in Scotland, classed according to their adaptation.

1st. To the best soils and sheltered situations.

1. Potato.

Hopetoun	Early Angus
Flemish	Cupar Grange.

2d. To the intermediate soils and situations.

2. Sandy.

Dyock	Drummond
Berlie	Dun
Red Mackbiehill	Sheriff
Blainslie	Cumberland Early
Grey Angus	Cleland
Late Angus	Siberian
Poland	Georgian
Friesland	Blue Major
Lancashire Witches	Church's.
Tam Finlay	

3d. To high altitudes and exposed situations.

Kildrummie	Barbachlaw
Strathallan	Black Murkle
Black Tartarian	Bristle Pointed.
Old Black	

In enumerating the different districts, and the varieties cultivated therein, I shall commence with Orkney and Zetland. In these isles, in the better and more sheltered districts, the Sandy, Angus, and Hopetoun are successfully cultivated. In a few sheltered localities of the mainland of Orkney, Potato Oats are grown. In what may be termed secondary localities, the Black Murkle Oat (Avena fatua, or wild Oat), and the Black Tartarian (Avena orientalis), are grown, while in the upland and most exposed districts, the common Bristle-poiuted Oat (Avena strigosa), the Danthronia strigosa of modern botanists is cultivated, from a conviction that no other kind will thrive in so exposed a locality. This sort, I may incidentally mention, is cultivated in some parts of France as forage. It is quite distinct from the Avena brevis, or Short Oat of that country, although there is a close resemblance in the grain, and it is considered by some to have been the original cultivated Oat of Scotland.

Caithness.—In this county, a district peculiarly fitted for the growth of the Oat, the whole of the sorts previously enumerated are grown, and, with the exception of the late Angus, Berlie, Friesland, and Barbachlaw, are well-known throughout the whole country. The variety called Black Murkle, the common wild Oat (Avena fatua), highly improved, is cultivated in many secondary localities. It is readily distinguished from all other dark coloured cultivated Oats, by the presence of a tuft of hair at the base of the grain, which is the principal characteristic of the species. Various trials have been, and are still occasionally made, of other kinds. The Potato, Hopetoun, Sandy and Dun, however continue the favourites.

Sutherland.—This may be considered more a Barley district, the Oat being comparatively of minor consideration. The Potato, Hopetoun, and Sandy are the principal varieties; while the Angus and Dun are cultivated to a limited extent only.

Ross, Cromarty, and Inverness.—These three counties may be divided into upper and lower districts. In the former we find the Wild Oat, the Black Tartarian, and the Barbachlaw (under the name of the Common White Oat), occupying the poorer soils, the Early Angus and the Sandy the intermediate; while in the lower district, the Angus, Sandy, Hopetoun, and Potato, are generally grown. The Black Tartarian is also grown to a considerable extent even in the lower district, especially on improved peat soils.

Argyle.—The whole of the 12 kinds previously named are cultivated here, but the Potato to a more limited extent than in the neighbouring counties—the Friesland, and varieties under the names of Poland and Flemish, taking its place. The Flemish is a hardy, free-growing sort, with long straw; grain fully equal to the Friesland, and ripens somewhat earlier. The Poland in grain resembles an inferior sample of Potato, and in other respects is similar to it. In these northern counties the White Siberian Oat, brought from Russia about a dozen years ago, has been introduced, but does not appear to have made much progress in the estimation of the farmers. It belongs to the class known under the name of Georgian, remarkable for its earliness, ripening fully a fortnight sooner than the Potato. Its weight of grain is frequently 46 lbs. per bushel, although the skin is as thick as the Old Georgian. As a proof of its earliness, in comparison with the Potato, I may mention, that, many years ago, my friend, Mr. George Watson, at Liberton Mains, who first grew it for me here, had it sown at the same time as Potato Oats, and he nearly lost the whole, from the grain having fallen out before the Potato had lost their green colour.

Nairn, Banff, and Moray.—The common Wild Oat was formerly cultivated in the higher districts of these counties; but the progressive development of the resources of the soil, and the introduction of improved varieties, has led gradually to its relinquishment, and now all the 12 varieties are grown; but the Potato, Hopetoun, Sandy, Angus, and Berlie, form the staple. In some districts the variety known under the name of Kildrummie is a favourite; it is an early, long-strawed excellent sort for high districts.

Aberdeen.—This county, from its extent, presents a great variety of soil and exposure, and consequent diversity of circumstance relative to the adaptation of varieties; and we find the whole of the kinds originally enumerated in very general cultivation. The Sandy generally takes the lead, and is known in some localities of the county under the name of the Rhynie Oat, having been originally discovered in 1824, on a farm in that parish.

Kincardine and Forfar.—Here we find the Hopetoun, Sandy, and Angus, in general cultivation, while a considerable breadth is occupied by the Potato. In some districts, and especially about Brechin, a variety known as the Dyock, and in some places as Davidson's Oat, is much esteemed, being considered earlier, and even more prolific than the Sandy. It is, however, more liable to shake, and should be cut before being fully ripe. A very excellent variety, both for meal and straw, known by the name of the Cupar Grange Oat, is cultivated in some of the best localities in these counties. It has large grain, generally well filled, moderately thin skin; but late in ripening.

Perthshire, Stirling, Clackmannan, Kinross, Fife, Dumbarton, and Bute.—This extensive district of country presents a wide field for the favourable growth of all the known varieties; and we consequently find that not only are the 12 enumerated kinds generally cultivated, but many others, though confined, perhaps, to limited localities, are also grown. Of these additional kinds, I shall mention two much estmeemed, viz., the Drummond Oat and the Strathallan Oat; the former well adapted for strong clay soils, the grain of a reddish colour, and ripening about a week later than the Potato; the latter extensively cultivated in the higher parts of Strathearn and west of Perthshire, where it is also known under the name of the Irish Oat, but supposed to be a corruption of earish, of earlyish, or from its early ripening property. It is even calculated to withstand rough, windy, and wet weather, but its culture is only advisable in exposed and late situations. The Black Tartarian is profitably grown in some of the higher districts. The Naked Oat (Avena nuda), formerly cultivated to a limited extent, appears now to be altogether abandoned.

Ayrshire.—The Hopetoun, Sandy, and Angus, take the lead in this county, although the rest of the 12 enumerated varieties are also grown. In some localities a variety, known under the name of the Tam Finlay Oat, is much esteemed by cultivators. It was formerly known as the old Poland Oat, is hardy, ripens about a week later than the Potato, and yields particularly well in straw, and also in meal, in proportion to its weight. Is apparently well adapted to several localities in this country; but it is a circumstance worth noticing, that although tried in other parts of the kingdom in similar soils, the yield has not equalled that obtained in Ayrshire.

Lanark and Renfrew.—All the enumerated varieties are grown, but the Blainslie fully to a greater extent than in the neighbouring counties; and in some localities a variety, under the name of the Cleland Oat, is deservedly appreciated, from its hardy and prolific nature, and being one of the earliest sorts in existence.

Lothians.—In the lower districts we find the Potato and the Hopetoun most generally cultivated, while the Sandy is extending, to the exclusion of sorts for which the locality was found by experience not to be so well adapted. All the other enumerated kinds are grown in fair proportion, while, in the late and colder districts we find occasionally, with the Friesland, Black Tartarian, and Barbachlaw, the old common black Oat, a distinct variety of the Avena sativa, with spreading panicles; a very prolific, early sort, not easily shaken by wind. In some parts of East Lothian an early variety, resembling the Hopetoun in the red spot in the bosom, and known under the name of the Sheriff Oat, is also met with. In the neighbourhood of Edinburgh, the leading sorts are Potato, Hopetoun, Sandy, Angus, Berlie, and Blainslie; and although the other varieties may be productive in other localities, they have not been found more profitable by the farmers who have grown them for us. Besides, most of the varieties cultivated throughout Scotland, we have also had occasionally grown in this neighbourhood the following, viz.: the Danish, a hardy yellowish Oat; the Early Essex, an early prolific long grained sort; the Black Riga or Archangel; the Georgian, the white Tartarian, the Early Tuscany, the Winter Dun, and the French Potato. They have not been found, however, by the farmer so profitable as the sorts in general cultivation; and when we have them grown in this neighbourhood for seed, we have always been obliged to pay for them at the rate of the market price of Potato Oats.

Berwick and Roxburgh.—The Potato and the Hopetoun are the varieties in general cultivation, the remainder of the enumerated kinds being grown to a limited extent. An early prolific variety, under the name of the Red Kent, is grown successfully in some parts; and in Lauderdale the Blue Major, a variety allied to the old Georgian, is occasionally met with. The Cumberland Early, one of the earliest varieties in existence, and the Lancashire Witches, also an early sort, and superior both in straw and grain, are cultivated towards the border.

Selkirk and Peebles.—The Sandy is now extensively grown in these counties; but the Hopetoun and Angus are also pretty general. A hardy, prolific variety, known under the name of the Red Macbie Hill Oat, used to be much esteemed, and continues a favourite in some districts.

Dumfries, Kircudbright, and Wigton.—Besides the enumerated varieties, the first six more especially, there is one occasionally met with under the name of Church's or Churick's Oat. It is a large-grained, thick-skinned sort, evidently allied to, if not the same, as the Georgian, and quite distinct from the variety described under the name of Church's, in the Society's Transactions, published in 1816. I have now enumerated all the varieties grown in the different districts of this country; and, in the cursory remarks I made upon their characteristic qualities, and adaptability to soil and situation, I am glad to find they agree with the observations of the gentlemen who have preceded me; and borne out also, to some extent, by Mr. John Mitchell, Wester Alves, and Mr. James Melvin, Bonnington, two experienced farmers, whose experiments on the comparative earliness, productiveness, and profit in grain and straw of different cultivated varieties of Oats, are published in the last number but one of the Society's Transactions. This, I think, exhausts the first part of the subject. There are, doubtless, other varieties grown than those I have mentioned, but their cultivation is simply experimental, and limited to those scientific farmers, the result of whose experiments I may be permitted to say, all are anxious to avail themselves of, but which few care about instituting for themselves. I now come to the second head, viz., to consider how far the varieties presently cultivated in the several localities, may be profitably changed or supplemented. I have before stated that the soil and climate of Scotland is peculiarly adapted to the production of Oats in perfection; consequently, until we arrive at excellence, the field is open to improvement, and our progress must be in the ratio of our success in establishing those varieties in which are combined the most profitable qualities compatible with fitness for the given localities. Now, in order to arrive at this, we have first to consider the capability of the situation for the production of the most profitable combination of qualities, a correct knowledge of which can only be obtained by much care, attention, and frequently repeated trials. These qualities may be thus enumerated: Quantity and quality of grain, quality and bulk of straw, early ripening, power of resistance to wind and water, &c., adaptation

to the exposure and altitude of different soils, and freedom from disease.

Having possessed ourselves of this knowledge, we have next to ascertain whether there is a variety known combining the requisite qualities in the desired degree. If such a variety is not to be found, we must proceed to obtain one, either by the improvement of an old variety, or, by cross-impregnation, to generate a new one.

This course must be followed in order to reach the point in view—a result certainly within our power, although only to be arrived at after a second course of carefully conducted experiments. The quantity and quality of grain, even of the Potato Oat, may be advanced nearer perfection, by selecting the largest grains from the panicle, as the progenitor of an improved variety. Early ripening will be induced by selecting the earliest ripened grain from each panicle, and preserving it for seed. Quality and bulk of straw, hardiness and adaptation to locality, are also affected by selection; and the desired degree of any quality, which may not be obtained by this mode, cannot fail ultimately to be produced by hybridising those varieties approaching nearest to what is aimed at. This procedure will involve a long course of experiments extending necessarily over many years—experiments not confined to a single locality, but systematically carried out upon every description of soil and situation; indeed, to insure certain success upon every farm.

We must, therefore, in the meantime (while these experiments are in progress), make the most judicious application of the knowledge we at present possess, by selecting for particular localities those varieties already known to us, and are most likely from their properties to approach perfection. For example, in situations where the Black Murkle and Barbachlaw Oats are now grown, there is every probability that the Kildrummie, Strathallan, Cumberland Early, and Cleland would thrive; and even our Ayrshire Friend, Tam Finlay, might probably be profitably supplemented by the Cupar Grange or the Berlie, and in most localities a progressive improvement would certainly be made by a more judicious selection of the present varieties.

Agriculture is confessedly but yet in its infancy. Its exaltation to the class of sciences is comparatively recent. We should all, therefore, cheerfully lend a helping hand in solving the great problem which science has propounded—and by experiment alone can this be done. Experiments, as Von Thaer tells us, are not easy; still they are in the power of every thinking man. He who accomplishes but one, of however limited application, and takes care to report it faithfully, advances the science and consequently the practice of agriculture, and acquires thereby a right to the gratitude of his fellows, and of those who come after. *Mr. Lawson, at the late Monthly Meeting of the Highland Society.*

Home Correspondence.

Potato Disease.—Being a grower of nearly 150 acres of Potatoes myself, and having the partial superintendence and power of closely observing 200 acres more, I have had ample opportunity of testing the different plans propounded as cures for the disease; but, alas! all have proved unavailing. The "excess of top plan" produced by stimulants, and the "no top at all system" of Mr. Lomba were equally accompanied by disease. The only conclusion I have arrived at with anything like certainty is this—that early planting and preventing the access of moisture to the tuber until fully grown alone secure anything approaching to freedom from disease. In no instance have I known late planted crops free from an unusually large proportion of unsound tubers. So convinced am I of the fact that the first great step to a sound crop is early planting, that I had 100 acres planted a month back, and I have now 50 acres more in the ground. I would therefore advise all who would secure every chance of a sound crop, to get to work directly. In this one respect of early planting, the results of my experiments were invariable—the crops being worse and worse, just in proportion to the lateness of planting—the last piece finished in the end of April last year was not worth digging up. With respect to the after management of the crop, I find that too early moulding up the plants, before the tubers are sufficiently developed, much retards their growth, and tends to produce a second formation of tubers, which never attain their full size, nor do they ripen so early as the first developed ones. This was fully tested on a series of beds, planted on the Irish "lazy-bed" system, besides other similar experiments on a larger scale. By this lazy-bed system I conceived I should secure a greater dryness and warmth of soil for the roots to work in, the set being placed upon the surface of the land, and covered by the soil thrown out of the alleys between each bed; these alleys also acting as perfect drains to the beds. I commenced by planting large whole Potatoes, weighing from 1½ lbs. to 2lbs. each, gradually decreasing the size till the sets of the last bed were no larger than sparrow's eggs. The result showed, that beyond a certain point the ordinary rule did not obtain with Potatoes as with other seed—that the finer selected seed gave proportionably improved produce. For the produce of the largest sets degenerated most strikingly—down to a certain point about midway between the largest and smallest sets—the produce from the sets about the size of a hen's egg being by far the finest Potatoes. Whereas from this middle point, downwards to the smallest sized set, the produce, both in size of tubers and bulk of crop, was "small by degrees and beautifully less," till the lowest in the scale was but a caricature of a Potato crop in every way. The greatest yield was found to be in the two following instances: 1st. From whole sets the size of a hen's egg, not moulded up until the tubers were as large as the original set—when a slight moulding up was given—and another more deeply when the Potatoes were fully grown. This bed was found to be much superior to those on each side of it, one of which was not moulded up at all; and the other was moulded up when the shaws were 6 inches high, and again at 10 inches, and lastly at their full growth. The second instance of superiority was shown in the bed planted with sets weighing half a pound each, and put in rather over 12 inches deep. The produce of this bed was very fine in size, and showed fewer diseased tubers than any others. The whole of the beds had some few diseased tubers, but the crop altogether was singularly free from disease, as compared with the main crop on the farm. This I attribute much to the extreme dryness produced by the beds being raised above the surface of the soil, like Asparagus beds. The only striking and decided variation from the main result of the experiments, was in one instance in which I adopted the plan of laying down the shaws when the Potatoes were nearly ripe. It was, I believe, first suggested by Mr. Martin, of Muirhead, Liff, near Dundee, who propounded the idea in one of the Scotch papers, where I first saw it. I afterwards corresponded with Mr. Martin, and obtained from him some very intelligent and useful hints on the general management of the Potato. This plan of laying down the shaws has been so fully described before, that I need say no more of it now, except that it consists in laying down, with the plough or otherwise, the stems, all in one direction, and covering them up with earth nearly to the very tips. Those I treated in this way, carefully and thoroughly, certainly did not produce one single diseased tuber, the only instance in which this was the case. I therefore intend putting into practice this treatment much more extensively during the present season. All I will now urge on the Potato grower is to plant directly; use whole middle-sized sets; place the manure over the whole of the land, instead of immediately in contact with the set; and plant part of the crop, by way of experiment, at least 8 inches deep. I am inclined to believe that the last month of splendid weather has decided the fate of the coming Potato crop, if planted with due regard to all the above precautions, for the land is now so dry and warm that the plants will grow strongly and rapidly, and the crop attain, in all probability, to more than usually early maturity. *J. Fryer, jun., Isle of Ely.*

Steam Threshing Machine.—As Mr. Richard Nicklin, in a late number of the *Gazette*, gives the particulars of his threshing machine, with calculated velocities of the drum and rollers, so outrageously far from the truth, it may not be amiss to set him to rights on the subject. He states the drum to be 3 feet 3 inches in diameter, and to have made 290 revolutions per minute; and from thence deduces the velocity of the beaters to be more than 35,000 feet in the same time; and the rollers, 5 inches diameter, with 71 turns, to move at the rate of 1115 feet per minute; of these, and the calculation of the present rate of speed of the drum at 440 revolutions, the whole results are entirely wrong; in fact, Mr. Nicklin seems to have mistaken inches for feet, as his numbers are about 12 times more than the truth. I calculate the real velocities to be 3.25 feet $\times$ 3.1416 $\times$ 290 = 2960.9 feet, as the velocity of the beaters in the first statement; and that of the rollers 5 inches diameter, making 71 revolutions, at 5 inches $\times$ 3.1416 $\times$ 71 = 1115.26 inches = 92.93 feet. The present speed of the drum, at 440 revolutions, will be 3.25 feet $\times$ 3.1416 $\times$ 440 = 4492.48 feet, and that of the rollers at 110 revolutions at nearly 144 feet. I should not trouble you with these corrections; but from the tenor of Mr. Nicklin's communication, he seems to think his statement correct, although a moment's consideration would serve to convince that such velocities as 30,000 to 50,000 feet per minute are perfectly unattainable in threshing machines. As Mr. Nicklin's rollers require so great an expenditure of power to drive them (probably one-sixth of the whole), he will find it worth his while to discard them altogether; but, in this case, the feed should be near the summit of the drum, and he will find the machine thresh equally clean. I think the cleanness of the work depends chiefly on the velocity of the beaters, and the position of the breast. Mr. Nicklin's machine, making 440 revolutions per minute, will be effectual, and it is undesirable to go much faster, as too great speed renders the machine liable to break and damage the grain. *Lusor.* [The whole error arises from the word feet having been accidentally used in place of inches.]

Storing Turnips.—In my letter on this subject in your Paper of March 9, I find I have omitted to state the expense of the operation of preserving a crop by ploughing in. At the time when my experiment was made labour was very much higher than it is now; but even then, I reckoned the total cost of securing a crop at only 5*s.* an acre. Now, of course it would be much less; say, at most, 4*s.* an acre: and what is this compared with the advantage of the system? Pray may I ask what particular object you have in changing my friend *Blaikie*'s name to *Blackie*? An acquaintance of some 35 years ought surely to be some warranty for the correctness of the name of a friend. *Samuel Taylor.*

Roots per acre.—The words of the Farmer's Almanack are, "plant out Cabbages on land dressed and ridged as for Swedes, putting the plants 3 feet apart." Now the usual distance of ridges for Swedes is 2 feet; an acre, therefore, thus planted, would contain 33 rows, each having 220 plants, or 7360 Cabbages *i. e.* about 7400. Consequently the almanack is not in error. *Sigma.*

Cattle Insurance Company.—Your correspondent "M. Y." asks if all the members of the Farmers and Graziers' Cattle Insurance Company are liable to the demand made upon them of 30*s.* to make up the alleged insufficiency of their funds to pay the losses. I think certainly not; for there is a clause in all their policies which says, "But the premiums of the Association shall alone be answerable for such payment (*i. e.* losses), and no director nor any party effecting an insurance in the said association, the premiums thereon having been duly paid, shall be individually responsible for the payment of a contribution towards such losses, or be liable to any demand against the association, on any pretence whatever, beyond the premiums of the association." When on a similar demand being made upon me I drew the attention of the manager to this clause, his reply was that this demand was not to be considered as a contribution, but as the premium upon the insurance, which, in the first instance, had been taken too low. This is very poor reasoning; but admitting it to be correct, it follows that each member should have been called upon for a *pro rata* contribution, according to his original premium, whether 10 or 50 per cent., instead of demanding 30*s.* from the insurer of a cow and a like sum from the insurer of a large herd. But if, as you say, there are large insurers who have not been so called upon, then I can only characterise the proceeding as unjust and dishonest. I drew the attention of his Grace the Duke of Richmond to this matter some months since, and have no doubt that he has, as a patron of the Society, looked into it, and that a more just course will in future be pursued; but I much fear the Society is destroyed by the system adopted, which is much to be regretted, as it was calculated to be of great general utility, if honestly and fairly worked. *W. H. L.* [Our remark had reference to the Agriculturist Mutual Company for the Insurance of Cattle, &c.]

Acidity in Beer.—It is the common practice to tun the beer the next day after brewing, and let it ferment in the cask in which it is kept. Now, although a large quantity of yeast is forced out, a very great quantity remains in the cask, notwithstanding its being filled up; this yeast settles at the bottom of the cask, and gives the beer an unpleasant bitter taste; besides, it makes it thick and unwholesome. Now, yeast being a fermenting principle, it only requires a slight rise in the temperature to bring it into action; and if within the influence of atmospheric changes, is certain to be roused to activity, sending up small bubbles of air, and at last turns the whole to vinegar; and beer with such an active agent in it as yeast must be unwholesome; when taken into the human stomach it is placed at once in a temperature favourable to its action, thus accounting for flatulence and acidity. Now, instead of tunning the beer the next day after brewing, it should be allowed to remain in a large tub or vat until the fermentation is complete, when all the yeast that rises to the surface should be skimmed off, but the greater part will settle at the bottom, the tub or vat being raised a foot above the ground, to allow the beer to be drawn carefully off, without disturbing the sediment; it should then be put into the cask, with a few new Hops, which will gradually yield the bitter principle as it is required. The beer cannot be tunned too fine and free from yeast. It may be bunged down in a day or two after tunning. I may observe that the highest medical testimony is given in favour of the ales brewed expressly for hot climates; these also owe their superior anti-acid and wholesome qualities to their complete fermentation, and consequent freedom from anything calculated to excite a second fermentation. *B.*

Hybrid between Pheasant and Domestic Fowl.—Lately many articles have appeared in your Paper on this subject, many of which I have read. From my observation, I should say such an occurence (if it ever happened at all), is extremely rare. In the first place the progeny of such cross would be very remarkable looking creatures, partaking equally of each species, not having the head or tail of either, but resembling one as much as the other; so it is with the hybrid between the capercail and black grouse, so in the hybrid between the pheasant and black grouse (two of which are in the Newcastle Museum), so in the hybrid between the pintail and common wild ducks, so in the hybrid between the wigeon and pintail duck, all of which have occurred in a wild state in England. I should remark that all the hybrids of the gallinaceous birds I have seen are males. Many persons ridiculously suppose that what are commonly called pheasant hens, and which have black tipped feathers on the breast, resembling those on the breast of a cock pheasant, have a cross of the pheasant in them; now this supposition is absurd, because the cock bird only would resemble the cock pheasant, and the hen birds would resemble the hen pheasant, which has no such marks. The improbability of such hybrids ever being produced is demonstrated by hybrids not occurring frequently under the most favourable circumstances, where both bantams and common fowls stray where they please into woods and plantations full of pheasants. Probably if either a cock pheasant and domestic hen, or a domestic cock and hen pheasant are confined together, eggs would be layed, which if they could be hatched would produce hybrids, but any further than merely trying such an experiment for curiosity sake, cannot answer any good purpose; for even if such hybrids were brought to maturity, it is highly improba-

ble that they would be capable of reproducing, and if they were so we should run the chance of losing the original species of pheasant altogether, and get a clumsy mongrel in its place. It really does seem a pity to waste either time or expense in trying to make hybrids. Improve breeds of animals of the same species as much as possible, but why try to do what Nature does not approve, the mixing of species. Luckily Nature has defined certain bounds, beyond which all man's projections and imaginations cannot exceed. *C., Newcastle.*

Garden Farm.—As the son of a clergyman interested in farming, but as yet not very deeply versed either in its science or practice, I venture to offer a few suggestions to "A Country Curate" (an enquiring correspondent in a late Number), as to the cultivation of his garden farm. It may appear presumptuous that one confessedly a learner should make such an attempt, especially as your correspondent has already the advantage of a companionship with "Paxton," and is I imagine, after all, not so much of a novice himself, as his letter at first sight might lead one to suppose. If my communication is not so "full" as he expects, I trust at all events he will give me credit for "promptness" in according with his request. We will suppose the quantity of land to amount to 3 roods or 120 poles, and to be cropped as in the following table, and I calculate the money value to be, as also therein stated. My estimate both as to quantities and price are moderate, as I wished rather to keep within the range of probabilities than possibilities. I think there will be no question as to these results being obtained any season, and of course there will be several successions, such as Stone Turnips after Peas, &c., which increases the value.

Poles.	Crops.	Estimated yield.	Market value.
20	Beans	4 bushels	£0 14 0
10	Peas	2 „	0 7 0
20	Barley	5 „	0 15 0
20	Potatoes	30 „	3 0 0
10	Cabbages	30 cwt.	0 15 0
20	Carrots	2 tons	2 10 0
20	Mangold Wurzel	2 „	0 15 0
			£8 16 0

The important question then is, how to consume the produce most profitably at home, as the markets near home appear to be well supplied. Several plans might be suggested, but bearing in view the cottager (and his allotment) who will be looking on, I propose to invest money only in pigs. (I shall add a small sum for poultry, which I suppose to be supplied in part from the produce of the farm.) I recommend, then, that about July, according to the market, 6 store pigs are purchased, at from 20*s.* to 30*s.* each, say the average 25*s.*; these will be supplied with the thinnings and leaves of the vegetable crops, with a little whole corn (Peas), till the beginning of October, when the Potatoes, Carrots, and Mangold Wurzel will be lifted, the corn having been previously housed; the animals at this period will be put upon a more forcing diet, say steamed roots and meal, and by Christmas my calculation of their value is as follows:

6 pigs, 8 score each, 7*s.* 6*d.*	£18	0 0
Cost price 7*l.* 10*s.* 0*d.*	8	10 0
Seeds, &c. 1 0 0		
	£9	10 0
Market value of produce	8	16 0
	£0	14 0

Besides most valuable manure for succeeding crops, with 10*s.* worth of tail corn for poultry. *T. P. H.*

Societies.

ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

A Monthly Council was held at the Society's House in Hanover-square, on Wednesday last, the 3d of April: present, the Marquis of Downshire, President, in the Chair; Colonel Austen, Mr. Raymond Barker, Mr. Blanshard, Mr. Bramston, M.P., Mr. Brandreth, Mr. French Burke, Colonel Challoner, Mr. Garrett, Mr. Brandreth Gibbs, Mr. Fisher Hobbs, Mr. Jonas, Mr. Milward, Mr. Pusey, M.P., Professor Sewell, Mr. Shaw, of London, Mr. Simpson, Mr. Jonas Webb, and Mr. Wibraham.

The following new members were elected:

Franklin, Thomas, Poltimore, Exeter
Praed, Wm. Mackworth, Delamore, Ivy-bridge, Devon
Hallett, Frederick Francis, Sussex-square, Brighton
Hole, William, The Park, Chudleigh, Devon
Middleton, Charles, Branthill, Holkham, Norfolk
Oliver, James, Hulton Park, Lancaster
Blackburn, Rev. Thomas, Clothall Rectory, Baldock, Herts
Du Châtelet, M. Le Roux, Reux, near Arras, Normandy
Dixon, J. Thomas, Dunterley, Bellingham, Northumberland
Girardot, Rev. J. Chancourt, Car-Colston Vicarage, Bingham, Notts

Finances.—Colonel Challoner, Chairman of the Finance Committee, presented to the Council the Report of the Committee on the accounts of the Society, from which it appeared that, at the end of the previous month, the current cash-balance in the hands of the Society's Bankers was 2285*l.* He explained that this general balance included 1260*l.* on the Exeter subscription account, and 110*l.* as the amount of life compositions to be invested, leaving 915*l.* as the balance available for current purposes. The Report stated that agreeably with the order of Council, proceedings were about to commence in the County Courts for the recovery of the arrears of subscription remaining still unpaid, and the Committee hoped to be able to report at the next meeting of the Council the full particulars connected with the legal decisions about to be obtained in each of the courts of law where the first actions were about to be brought. Colonel Challoner then entered into a detailed statement of the financial condition of the Society, and concluded by congratulating the Council on the healthy and flourishing condition of the Society: all debts had been paid, a large current cash-balance was in hand, and a considerable addition had been made to the invested capital in the public funds. — The Report of the Committee was adopted and confirmed.

Exeter Meeting.—Mr. Raymond Barker (in the absence of Lord Portman) presented the Report of the General Exeter Committee, in which was detailed the progress made in the preparations for the ensuing Country Meeting of the Society, to be held in that city in the middle of July next, in reference to the plan and erection of the Show-yards and Dining Pavilion, the transit of implements and live stock by railway, the inspection and explanation of the water-meadows in Devonshire, the exhibition of South Hams cattle for the prizes of the South Devon Association, and the insertion of the name of Mr. John Gould, of Poltimore, in the list of the General Exeter Committee to fill the vacancy occasioned by the decease of Mr. Stafford Northcote.—This report was adopted and confirmed by the Council.

Country Meeting Districts.—On the motion of Mr. Raymond Barker, seconded by Col. Challoner, the Council rescinded their resolution of May 5, 1847, by which the South-Eastern counties of England constituted the district for the Country Meeting in 1851; and then proceeded to decide that the county of Middlesex should comprise the metropolitan district for that year; the counties of Kent, Surrey, and Sussex the south-eastern district for 1852; the whole of South Wales, with the addition of the counties of Monmouth, Gloucester, Hereford, and Worcester, the South Wales district for 1853; and the counties of Leicester, Lincoln, Nottingham, and Rutland, the East Midland district for 1854.

Inspection Committee.—On the motion of Colonel Challoner, seconded by Mr. Brandreth, the following Committee was appointed "to inspect any site or sites of ground proposed for the Show-yard in 1851, and to report to the Council their suitableness or otherwise for the purposes of the Society, namely, the Stewards of the Cattle and Implement Departments, with the members of the Yard Committees, and the addition of Lord Portman, Mr. Pusey, M.P., Mr. Raymond Barker, Mr. Fisher Hobbs, and Mr. Shaw of London.

The Council then adjourned to their weekly meeting on Wednesday next, the 10th of April. On the following Wednesday, April 17, at 12 o'clock, Prof. Way, Consulting Chemist to the Society, will deliver a Lecture to the members, in the House of the Society, "On the Chemical Principles of Cheese and Butter making."

Farm Memoranda.

The Farm of Sir John Conroy, about four miles to the south-east of Reading, is managed in such an admirable manner, that we shall devote a brief space to its description.

It consists of various soils, but principally fair stock land, not very deep in staple, some of which lies on a retentive substratum of clay, and some on an open gravel. Four years ago (for Sir John is a farmer of only four years' standing) the whole of the arable farm, comprising about 320 acres, exclusive of the park surrounding the mansion, was divided into numerous small fields by high wooded banks, every one of which has been removed, the soil in them being scattered over the adjoining land, while a sufficient number of the best trees were left to give variety and charm to the landscape. Every acre of the land was then drained with inch pipes, laid 4 feet deep, the drains being 15 feet apart in the stiffer lands, and 30 feet apart in those which were of a drier character. Further experience leads Sir John to think that a greater distance would have sufficed on the latter, much of which is of that nature which most farmers would consider a waste of money to drain at all, and probably nothing could better convince them of the incorrectness of such an opinion than a peep into what Sir John calls "the bigot's hole," a square box, in which, at a depth of between 4 and 5 feet, two main pipes are to be seen constantly pouring the drainage of 40 acres of this description of soil. Immediately following the drainers the whole farm was trenched by forks to a depth of 22 inches, the surface being carefully retained uppermost by being thrown forward to cover the previously trenched portion of subsoil. The cost of both operations, drainage and trenching, was nearly 12*l.* an acre, so that if a great improvement has been effected it must not be overlooked that it has been done by a large outlay of capital. Farm roads were at the same time made, which serve the double purpose of accommodating the different fields, and separating the one from the other. Commodious farm buildings were also erected. The land is managed strictly on the four-course system, every modern improvement which is applicable to this system, and has been previously proved to be profitable, being adopted. The Swedes, of which we saw an excellent crop, are manured with yard dung of the richest kind, and 4 cwt. of superphosphate to the acre. A portion is drawn for consumption in the stalls, and the rest are eaten on the ground by sheep, that part which is still to be eaten having been laid in heaps and covered with a little earth, to shield them from the changes of weather, and to prevent them from exhausting themselves and injuring the ground by running to seed. The sheep are a southdown ewe stock, crossed with a short-woolled Leicester, the produce being a half-bred lamb which grows and fattens very rapidly. At the end of the fold, next the untouched Turnips, spaces are left through which only the lambs can pass in and out, and here boxes are placed containing an unlimited supply of bruised Beans, Peas, and oilcake, of which they partake liberally, besides nibbling at the green Turnip-tops, and at the Turnips themselves as their mouths get strong. They are ready for the London market by Good Friday, and as soon after that as possible, the ewes being immediately afterwards put on the best feeding, to hurry them on for the market with the utmost despatch, the great object being to turn the capital over in the shortest possible time in which a profit can be secured. A new stock is again purchased at the first favourable opportunity after the old has been disposed of. As the Turnips are consumed the land is ploughed and sown with Barley, drilled in rows 6 inches apart, by Garrett's drill, two bushels of seed having been last year used to the acre, though, considering the high condition of the land, and its perfect drainage, that quantity is thought too much, 1½ bushel is to be tried this season. The produce last year was seven quarters an acre. The Barley is followed by Clover and seeds, part of which is fed and part mown. After the second crop is fed or mown the ground is ploughed (Howard's Bedford two-horse plough being in all cases used and much approved), and then rolled by Crosskill's clod-crusher. The ground is then harrowed, and one bushel of Wheat per acre drilled in in rows 22½ inches apart, and nothing can exceed the regularity and beauty of the plant at this moment. But those who may wish to imitate Sir John in the economical use of seed must not forget the important adjuncts of that system already described, the perfect drainage and disintegration of surface and subsoil, the subsequent manuring of the Turnip crop, the corn and cake fed sheep, and the final consolidation of the furrows, by all of which, as far as possible, security is taken that nearly every grain sown shall vegetate. As soon as necessary in spring the crop is hoed by Garrett's horse-hoe, two of which are used on this farm, and by them 20 acres a day can be got over. Sir John thinks very highly of this implement, not more from the speed and economy than from the efficiency with which it does its work. The Wheat crop last year averaged 6 quarters an acre of very superior quality, and it has hitherto varied with Sir John from 4 to 5 and 6 quarters an acre. Previous to his taking the farm in hand, the produce seldom exceeded 2 to 2½ quarters an acre. Adjoining the farm buildings is the farm garden, a plot of six acres, where vegetables, such as Cabbages, Mangold Wurzel, Potatoes, &c., are cultivated, chiefly by manual labour, for the consumption of the house-fed stock and pigs. Near this is a pump, communicating with the liquid manure tank, from which, by a hose attached to the pump, the surrounding land, to the extent of 20 acres, can be watered. The hose has been in use for the last two years without being much worn out. It is manufactured by Paterson, of Manchester, and costs 5*d.* a foot. The rick-yard next demands notice, as a new space, as large as the original yard, has been cleared in order to afford room for the increasing bulk of the crops. Resting on the outer wall of the rick-yard is a light thatched sheep-shed, with well littered yards, into which the ewes are brought for shelter to drop their lambs, and where they remain for a few days till the lambs are strong enough to follow them to the Turnip-fold. When the whole of the ewes have lambed the hurdles enclosing the yard are removed, the solid dung is carted out, and the land beneath is then dug and planted with Potatoes, for which it is sufficiently manured by the liquid which has penetrated it. The shed, of course, remains for use in the same way in subsequent years. Next the rick-yard is the barn, the whole machinery of which is driven by a 10-horse steam-engine, the cost of working which is 2*d.* an hour for labour and 10*d.* for coals, or 1*s.* an hour altogether. A covered gallery extends along the back of the barn, through the length of which the driving-shaft of the engine passes, with pulleys and belts at intervals for attaching the power to the several machines as they are wanted. In this gallery Sir John proposed to erect steaming chests, should he adopt the plan of giving his stock cooked food. The threshing machine is an inferior one, but it is fitted with an excellent shaker, by Garrett, the double motion of which at once separates the grain from the straw, and causes it to fall lengthways from the machine. It is then passed to a straw-cutter, by which it is cut as required, either into 4-inch lengths for litter, in which state all the litter of the farm is used, or into half-inch lengths for food, a hopper from each side of the machine carrying the respective kinds into separate compartments of the building beneath. A corn and cake bruiser and Turnip-cutter are all attached, when requisite, to the shaft of the steam-engine. Immediately opposite to the barn door is a high open shed, in which straw is stored dry. One side of the square is the implement shed, in which every implement not in use is kept under cover; and it is proper to mention here that Sir J. Conroy has disposed of all his waggons and adopted Crosskill's one-horse carts, having fully persuaded himself, after trial of both, that there is no comparison in point of economy of labour between the two, this being a level part of the country, with good roads through the farm. The more intricate machines are kept under lock, the house being provided with shelves, on which the different parts of the machines not required for the particular work in hand are carefully arranged. Adjoining this is a carpenter's shop, and at another part of the buildings a smithy. The farm stable has at one end of it a harness-room, well lighted, where all the cart and plough harness is kept, and which is cleaned every Saturday afternoon. Water is supplied by pipes to the stable and harness-room, and indeed to every part of the farm buildings. The fattening oxen are kept in loose boxes, under cover, with a passage before them for the convenience of the feeder. Each box is supplied with water, all soft water, which Sir John rightly considers of much importance to the thriving condition of his stock. The centre compartment of the building is occupied as a store for preparing the food, cutting Turnips, mixing meal, cake, &c. — the "kitchen," as it is termed. The next yard is the great feature of the in-door management—the pig establishment—upon which great attention is bestowed. It should have been mentioned before that the only things sold off this farm are live stock and Wheat, everything else, including the Barley, being consumed on it. Of course, when a fine malting sample of Barley is produced it is sold, and an equivalent quantity of feeding Barley bought to replace it. Besides this, Sir John buys a large quantity of cheap grain and oilcake for his stock. He endeavours to fatten, every year, as many hogs as he has acres, and has therefore always on the farm between 300 and 400, 80 of which are in the fattening pens to be finished. The only food they receive is Barley-meal and water, a "kitchen" being conveniently placed for each pig-yard, with a trough sunk in the ground into which the requisite quantity of meal is put among water, in the evening, for the morning's feed, and the trough again filled in the morning for the evening's meal. Each pig is calculated to consume about 10 bushels of Barley in the course of feeding, that is, from its birth till it is sent off fat. The 80 fattening pigs are kept in three yards, with a shed, all well littered with cut straw. There are many other interesting points of detail which we have not space to enumerate. The houses are all spouted to carry off rain-water, and every particle of liquid as it escapes from the feeding-houses is secured in drains and carried to the tank. An eating-room, with benches and a table, is provided for the people to eat their mid-day meal, in which there is a fire for cooking, and a wash-hand basin in the corner, with water laid on, which is regularly used at night after work is over. The same orderly precision which regulates all the departments of the farm is pre-eminently displayed in the management of the farm servants. These are engaged by the week, the present rate of wages being 10*s.* They are paid every Saturday in small silver, so that they may have no necessity to go for change to the public-house. A serious fault is never passed over (about which rule, however, we desire to express no opinion); no high words or abusive language is permitted to be used to any person engaged on the farm; but, should any misconduct occur, or any serious neglect of duty, the offender receives with his pay on Saturday a notice that his further services are dispensed with. All extra time is paid for, and every man made to feel that, while the exact performance of his duty is required, he is at the same time treated with perfect fairness. We can testify to the intelligent appearance of the men, and the cheerful *esprit* with which they seemed to be animated. Such is the style of farming adopted by a gentleman bred in the camp and the Court—a farmer of four years' practice, but of many years' observation; who, notwithstanding all the outlay he has made, finds the business remunerative. We have been thus minute in our description, in the hope that other country gentlemen, now compelled by necessity to look strictly to their own business, may be tempted to take a lesson from Sir John Conroy, and to learn from him how much healthful excitement is to be obtained by personal attention to the business of farming. *Times.*

Miscellaneous.

Landlord and Tenant.—This man came to the country 13 years ago, with not more than 100*l.* of

capital. His landlord lent him 300*l.*, and with this he contrived to stock and carry on a farm of 300 acres. He was very skilful in the management of sheep-stock, and introduced the best rams from England, with which he improved his own stock, and then sold their produce at high prices in the surrounding country. So well did this succeed, that in a few years he repaid his landlord the borrowed money, besides, at the same time, greatly increasing the numbers and quality of his farm-stock. The frightful increase of rates, with diminished prices of produce, alarmed him: he found the capital which he had accumulated by skill and industry slipping away; he could not get what he considered an adequate abatement of rent from his landlord, though the increase in his rates amounted to nearly a second rent; so, availing himself of the power of surrender, which is fortunately a clause introduced into most Irish leases, he determined to sell all off, and quit the country for New Zealand. After paying all his debt, he has retired with a capital of 1000*l.*, and his farm is abandoned to the landlord, who is now anxious to get a solvent tenant at a lower rent than, I am assured, this man would have gladly paid, and remained in the country. But how much does this single example teach! First, that the soil yields a grateful return to industry and skill; second, that these are marred by the impolicy of placing the pressure of the rates exclusively on the tenant (which is unhappily the law in Ireland), thereby driving out of the country a prosperous, skilful farmer, whose example was of the utmost benefit in a district where these qualities are so deficient, but who felt himself compelled to remove his capital from the danger in which it stood of being absorbed in the general poverty of the country; and third, the short-sighted policy of the landlord (too common, I lament to say, and mainly to be attributed to a want of that knowledge of the proper business of a landlord, to which I have already had occasion to refer), in refusing to share the difficulties of the times with his tenant, because he was a solvent man,—and the natural consequence of this in disgusting the tenant, who then abandoned the farm, for which its owner cannot now get a solvent tenant at the greatly reduced rent he is at length willing to accept for it. *The Plantation Scheme, by Mr. Caird.*

Notices to Correspondents.

To Correspondents: The answers to some of the inquiries received are unavoidably postponed for a week.

Churn: *C J W.* We use one of Attwood's, of Lewes. It answers very well. The "Anthony" churn just introduced from America has a high character.

Compost: *A.* The gas lime is not proper for immediate application to the land. You might water your dry manure with ammoniacal liquor, and turn it over, and let it remain for 3 weeks before applying it. That would do. But your lime contains very little ammonia, if any. It is useful, because by exposure to the air it ultimately becomes, in a great measure, gypsum; and it should be exposed to the air long before it is used.

Cow: *Sigma.* If you can manage to water the plot after every cutting with dilute liquid manure, nothing will pay better than Italian Rye-grass as cow food. For winter food, Mangold Wurzel is far better than Swedes, which latter are, we believe, not so good as Carrots.

Farm Dung: *J C S.* You might throw very dilute acid over the heap, from a bucket, in winter. A gallon of acid to every ton of dung would not be enough, according to the ordinary composition of farm manure; but it would be enough to determine the feasibility of the practice. You should dilute it with 12 or 14 gallons of water, and see that the whole is wetted. But to cover up the heaps with clayey and vegetable mould is the cheapest method of detaining the products of decomposition.

Garden Farm: *C J W* says, I would recommend "A Poor Curate" to sow it forthwith with Parsnips and Carrots, digging in a good dressing of soot and salt, say 15 bushels of soot and 4 of salt, or perhaps he would prefer to dig it a second time. Let him distribute the dressing over the rough dug ground, as it has laid, he says, all the winter; then level finely, and sow the seed in drills. With the stock of food, say 15 tons (or 10 more probably, if shaded by any Apple trees, &c.), I propose he should fatten pigs in the winter, by which time I shall be happy to afford him further information, if spared.

Grasses: *A B C.* Sow per acre, along with 1 bushel of Barley per acre, as soon as possible, if your land is in good tilth, Aira cæspitosa *lutescens*, 2 lbs.; Alopecurus pratensis, 2; Anthoxanthum odoratum, ½; Avena flavescens, 1; Festuca duriuscula, 3; F. pratensis, 2; F. heterophylla, 2; F. rubra, 1; Lolium italicum, 3; L. perenne, 5; Phleum pratensis, 1½; Poa nemoralis, 4; P. trivialis, 2; Lotus corniculatus, ½; L. major, ½; Trifolium pratense *perenne*, 3; T. repens, 5; total, 37½ lbs.

Green Crops: *Rusticus.* By the use of abundant manuring, liquid and other, you can grow per acre, on a fertile loam, 40 or 50 tons of the Drumhead Cabbage—30 or 40 tons of Mangold Wurzel—3 or 4 cuttings of Italian Rye-grass, each weighing 8 or 9 tons—10 or 12 tons of Rye, followed by 20 to 24 tons of Swedes, the Mangold Wurzel, or Cabbage—10 or 12 tons of Winter Vetches, followed by either of these crops. Any of them would do for dairy food. For many of them you could get direct sale; but properly consumed on the farm, their consumption would furnish the means of a constantly increasing fertility. We should like to see a small beef-factory established on some small farm, where cattle food alone should be grown, and cattle food bought, the manure being applied all in the liquid form by pipe. Such a scheme, we believe, might be profitably carried out.

Guano: *Irish Subscriber.* Dr. Ure's analysis of a first-rate Bolivian guano, and of "Chincha guano" from Peru, respectively give the following results:

	Bolivian.	Peruvian.
Per centage of ammonia	15.244	16.25
Phosphate of lime, magnesia	26.5	22 5
Water	6.5	10

Professor Johnston gives the following account of guanos:

Variety.	Water, p. cent. from	Organic Matter, from	Phosphates, from
Bolivian	5 to 7	56 to 64	25 to 29
Peruvian	7 — 10	56 — 66	16 — 23
Chilian	10 — 13	50 — 56	22 — 30
Ichaboe	18 — 26	36 — 44	21 — 29
Saldanha Bay	17 — 34	14 — 22	45 — 56
Patagonian	14 — 40	16 — 38	17 — 40

Irrigation: *Inquirer.* If the water can be directed over it, so as everywhere to keep moving, no doubt the pasture will benefit.

Labourers: *A Saul.* Thank you: but the letter would be more properly confined to the *Mark Lane Express* than made the subject of discussion here.

Large Poultry: *A Z.* The largest geese (of the domestic sort) are the Toulouse geese. The largest hens are certain Malays imported from Shanghae, also certain fowls likewise from Shanghae, which we have named Shanghae fowls. [See the second edition of Dixon's Poultry.] Some of these appeared at the Birmingham Show, under the name of American fowls. The largest Turkeys are the oldest: a bird must live four or five years to attain his full size: but the genuine Norfolk Turkeys never acquire weights equal to those of either the Cambridge or American breed of the same age.

Maize: *C A.* Sow towards the end of May, in rows 26 inches apart, and the seeds being about 2 or 3 inches apart in the rows. It will be a bulky crop of green food in July.

Mangold Wurzel: *J E M.* Choose the yellow globe seed. Apply as much farm-yard dung as you can spare, up to 20 cubic yards per acre, and put it in the drills, and before splitting the drills, sow 2 cwt. of guano mixed with 2 cwt. of salt per acre, broadcast, over the ground. You may sow in the middle of this month. Dibble 15 inches apart, the rows being 26 inches wide. Do not cover the seed more than half an inch. You will need 6 or 7 lbs. per acre.

Ornamental Poultry, &c.: *A Subscriber.* A full Index is given with the second edition of "Ornamental and Domestic Poultry," but there are difficulties in the way of preparing one for the first.—If the volatile salts have to pass through a damp coating of clayey material, the same rule will no doubt hold true of them as obtains in the process of filtration. But we agree with you that this might usefully have been made the subject of specific experiment during Mr. Way's most interesting and successful investigation.

Ornamental Poultry, by the Rev. E. S. Dixon, is now reprinting, with additions, and will shortly be published, price 5*s.* 6*d.*, cloth. May be had of all booksellers, and at the Office of this Paper.

Prices: *W R.* You will see something about American prices in this Number.

Rearing Lambs: *A X Y.* Having some lambs to bring up by hand—we give them new milk from the cows (warm); can any one inform us if there is any better method, or what is the best method to adopt to fatten them, so as they would be in good condition, in three months' time, fit for the butcher? Would anything mixed in the milk, in the way of flour assist in the process? [Try Oatmeal and water along with a less quantity of milk.]

Rural Chemistry, by R. Solly, price 4*s.* 6*d.*, second edition, revised and enlarged, may be had of all booksellers, and at the Office of this Paper.

Sainfoin: *Cornwall.* Sow it towards the end of April, at the rate of 3 bushels per acre, just as Vetches are sown. It will do very well to sow along with Barley, in rows 6 inches apart, crossing the Barley drills. It should be sown on a calcareous, rocky, or chalky soil. Giant Sainfoin is sown just in the same way. Both sorts will occupy the ground for five years, and should be treated during that time as you would treat Grass land, dressing it well at least every other year with farm manure or guano.

Steam Power: *A Subscriber.* Can you give information as to the best mode of applying steam power on a moderate scale, say 3 or 4-horse power, to the purposes of threshing, winnowing, grinding, sawing, Flax scutching, and any other purposes for which there are portable machines, which can, when required, be successively brought into relation with the moving power, the waste steam to be applied to the cooking of the food of cattle, also to steeping Flax upon the new system. [The subject seems one on which our correspondent should consult an engineer. Perhaps, however, some of our correspondents may have experience on the subject which they may be willing to communicate.]

Yeast: *H G.* We never knew of its being used as a manure. Perhaps some may have tried it.

*** Communications reaching town after Wednesday, cannot be answered untill the following week.

Markets.

SMITHFIELD, Monday, April 1.

The supply of Beasts is very large and the demand is small, owing to the change of weather and this being Easter week. Many remain unsold, and a reduction of fully 2d. per 8 lbs. is submitted to, to effect sales. The number of Sheep is also large; a few choice Downs are pretty readily sold at rather less money, but many cannot be sold at any price. Lamb is selling lower than on Friday. Calves are not plentiful, but trade is no better. From Holland and Germany there are 277 Beasts, 610 Sheep, and 44 Calves; from Scotland, 400 Beasts; from Norfolk and Suffolk, 2200; and 150 from the midland counties.

Per st. of 8 lbs.	s	d	s	d
Best Scots, Herefords, &c.	3	4 to 3	6	
Best Short-horns	3	0 — 3	2	
2d quality Beasts	2	6 — 2	10	
Best Downs and Half-breds	4	0 — 4	2	
Ditto Shorn				

Per st. of 8 lbs.	s	d	s	d
Best Long-wools	3	6 to 3	8	
Ditto Shorn				
Ewes & 2d quality	2	10 — 3	2	
Ditto Shorn				
Lambs		5	4 — 6	0
Calves		3	6 — 4	4
Pigs		3	0 — 4	0

Beasts, 3513; Sheep and Lambs, 19,960; Calves, 95; Pigs, 190.

Friday, April 5.

Although the supply of Beasts is not very large, it far exceeds the demand, and on the average prices are lower. The number of Sheep is only moderate, but they cannot all be sold, notwithstanding lower rates are submitted to. It is difficult to make 6s. of the choicest Lambs. Trade is very dull for Calves, and only a few make anything over 4s. From Germany and Holland there are 21 Beasts, 30 Sheep, and 97 Calves; from Scotland 200 Beasts; and 132 Milch Cows from the home counties.

Per st. of 8 lbs.	s	d	s	d
Best Scots, Herefords, &c.	3	4 to 3	6	
Best Short-horns	2	10 — 3	2	
2d quality Beasts	2	4 — 2	8	
Best Downs and Half-breds	4	0 — 4	2	
Ditto Shorn				

Per st. of 8 lbs.	s	d	s	d
Best Long-wools	3	6 to 3	8	
Ditto Shorn				
Ewes & 2d quality	2	10 — 3	2	
Ditto Shorn				
Lambs		5	0 — 6	0
Calves		3	4 — 4	0
Pigs		3	0 — 4	0

Beasts, 811; Sheep and Lambs, 5130; Calves, 203; Pigs, 135.

POTATOES.—Southwark, April 1.

The Committee report that the market is well supplied both coastwise and Continental. Trade is very heavy, which has compelled salesmen to store more than is desirable at this time of year. The following are the present prices:—York Regents, 70s. to 190s. per ton; Wisbeach do., 70s. to 80s.; Scotch do., 60s. to 70s.; Scotch cups, 50s. to 65s.; Scotch whites, 40s. to 45s.; French whites, 55s. to 70s.; Belgian do., 40s. to 55s.; Rhenish do., 40s. to 55s.; Dutch, 40s. to 45s.

HAY.—Per Load of 36 Trusses.

Smithfield, April 4.

Prime Meadow Hay	66s to 72s	Clover	60s to 84s
Inferior ditto	50 63	New Clover	— —
Rowen	— —	Straw	23 27
New Hay	— —		J. Cooper.

Trade very dull.

Cumberland Market, April 4.

Prime Meadow Hay	68s to 74s	Inferior	60s to 70s
Inferior ditto	50 63	New Clover	— —
New Hay	— —	Straw	25 30
Old Clover	75 84		Joshua Baker.

Whitechapel, April 4.

Fine Old Hay	60s to 66s	New Clover	—s to —s
Inferior ditto	50 55	Inferior ditto	60 70
New Hay	— —	Straw	20 26
Old Clover	75 84		

COVENT GARDEN, April 6.

Vegetables are well supplied, but many kinds of Fruit are still scarce. A few Strawberries have made their appearance. Hothouse Grapes are not very plentiful. Pine-apples are scarce and inferior in quality. Walnuts and Chestnuts are abundant; and Oranges and Lemons sufficient for the demand. Amongst Vegetables, Turnips and Carrots are good, and there is some very good Broccoli in the market. Potatoes are unaltered since our last account. Lettuces and other salading are sufficient for the demand, and so are Mushrooms. French Beans, Asparagus, Seakale, and Rhubarb are becoming very plentiful. Cut Flowers consist of Heaths, Pelargoniums, Bignonia venusta, Primulas, Camellias, Cinerarias, Azaleas, Lily of the Valley, Epacrises, Acacias, Lilacs, and Roses.

FRUITS.

Pine-apples, per lb., 6s to 10s	Almonds, per peck, 6s
Grapes, Portugal, p. lb., 9d to 1s	— sweet, per lb., 2s to 3s
Pears, per doz., 6s to 10s	Walnuts, p. 100, 1s 6d to 2s
Apples, kitchen, p. bsh., 4s to 6s	— p. bush., 16s to 24s
Lemons, per doz., 1s to 2s	Nuts, Bar., p. bush., 20s to 22s
— per 100, 6s to 12s	— Brazil, p. bsh., 12s to 16s
Oranges, per doz., 9d to 1s 6d	Kent Cobs, 90s to 100s p. 100 lbs
— per 100, 5s to 12s	

VEGETABLES.

French Beans, p. 100, 1s 6d to 3s	Onions, p. bushel, 3s 6d to 4s 6d
Seakale, per punnet, 1s to 3s	— Spanish, p. doz., 1s 6d to 4s
Asparagus, p. bund., 2s to 7s	Shallots, per lb., 4d to 8d
Rhubarb, p. bundle, 6d to 1s	Garlic, per lb., 4d to 8d
Cabbages, per doz., 1s to 1s 6d	Lettuce, Cab., p. sc., 4d to 9d
Cauliflowers, p. doz., 1s to 4s	Endive, per score, 1s 6d to 3s
Broccoli, p. doz. bundl., 8s to 10s	Mushrooms, p. pot., 9d to 1s
Greens, per doz., 3s to 4s	Small Salads, per punnet, 2d to 3d
Sorrel, p. hf. sieve, 1s to 1s 6d	Fennel, per bunch, 2d to 3d
Potatoes, per ton, 60s to 120s	Savory, per bunch, 2d to 3d
— per cwt., 3s to 7s	Thyme, per bunch, 2d to 3d
— per bush., 2s 6d to 3s 6d	Parsley, p. doz. bun., 2s to 3s
Turnips, p. doz. bun., 1s 6d to 2s 6d	— Roots, p. bdle., 9d to 1s
Red Beet, per doz., 9d to 1s	Marjoram, per bunch, 2d
Horse Radish, p. bdl., 1s to 4s	Mint, green, per bunch, 9d to 1s
Cucumbers, each, 1s 6d to 4s	Watercress, p. doz. bunches, 6d to 9d
Leeks, per bunch, 1d to 1½d	Corn Salad, p. hf. sieve, 9d to 1s
Celery, p. bundle, 8d to 1s 6d	
Carrots, per bun., 4d to 6d	
Spinach p. sieve, 2s to 3s	

HOPS.—Friday, April 5.

Messrs. Pattenden and Smith report that there is no alteration since Monday. Fine yearlings are in good demand.

MARK LANE.

Monday, April 1.—The supply of Wheat from Essex, Kent, and Suffolk, this morning, was very small, which enabled the factors to dispose of it on the terms of this day se'nnight; foreign met a dull retail inquiry at our quotations.—Fine English and foreign Barley maintain their late value, but other qualities are difficult of disposal.—Beans and Peas are unaltered in value.—Oats are a free sale, but stale and inferior descriptions are the turn cheaper.

British per Imperial Quarter.	s.	s.		s.	s.
Wheat, Essex, Kent, & Suffolk ...White	42	44	Red	36	39
— — fine selected runs ...ditto	43	46	Red	38	41
— — Talavera	44	50			
— Norfolk, Lincoln, & York ...White	37	40	Red	36	37
— Foreign	34	50			
Barley, grind. & distil., 19s to 22s...Chev.	24	27	Malting	22	24
— Foreign.....Grinding and distilling	18	21	Malting	21	23
Oats, Essex and Suffolk	15	19			
— Scotch and Lincolnshire ...Potato	17	22	Feed	16	20
— Irish .....Potato	17	20	Feed	15	18
— Foreign .....Poland and Brew	15	20	Feed	13	17
Rye	20	24	Foreign	20	22
Rye-meal, foreign .....per ton	5*l.*	—6*l*			
Beans, Mazagan .....19s to 20s.....Tick	23	25	Harrow	23	25
— Pigeon .....25s — 37s ...Winds	22	28	Longpod	25	28
— Foreign .....Small	24	36	Egyptian	18	20
Peas, white, Essex and Kent.....Boilers	23	25	Suffolk	24	26
— Maple .....24s to 26s.....Grey	22	23	Foreign	20	28
Maize .....White	24	26	Yellow...	24	25
Flour, best marks, delivered ...per sack	34	38			
— Suffolk .....ditto	26	34	Norfolk	26	34
— Foreign .....per barrel	22	24	Per sack	28	33

Arrivals in the Port of London last week.

	Wheat.	Barley.	Malt	Oats.	Beans.	Peas.
Flour, 14045 sks	Qrs.	Qrs.	Qrs	Qrs.	Qrs.	Qrs.
— 790 bls	3461	1768	5586	3802	600	256
English	—	—	23	2290	—	—
Irish	11163	12106	—	21839	2346	387
Foreign						

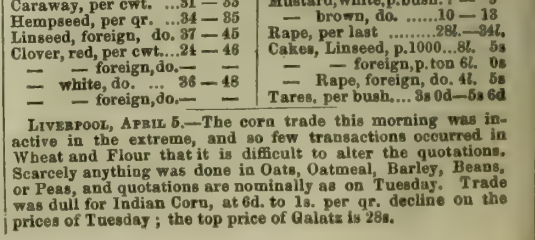
Friday, April 5.—With the exception of foreign Oats, of which the arrivals have been good, the supplies of grain this week are small. The market this morning was moderately attended, and fine foreign Wheat attracted some attention; nevertheless sales were quite of a retail character, and at no improvement in price; English is unaltered in value, as are also Barley, Beans, and Peas.—Oats are in fair demand, but our quotations are not exceeded.—For Indian Corn there has been an increased inquiry, and 28s. 6d. obtained for Galatz afloat.—The Flour trade continues much depressed, and the turn of prices in favour of the buyer.

Arrivals this week.

	Wheat.	Barley.	Oats.	Flour.
	Qrs.	Qrs.	Qrs.	
English	1650	870	930	1890 sacks
Irish	—	—	1450	
Foreign	4620	2110	17520	— brls.

Imperial Averages.	Wheat.	Barley.	Oats.	Rye.	Beans.	Peas.
Feb. 16	37*s* 6*d*	23*s* 10*d*	15*s* 4*d*	20*s* 7*d*	24*s* 11*d*	26*s* 10*d*
— 23	37 11	23 7	15 6	20 11	24 8	26 0
March 2	38 6	23 9	14 11	21 11	24 4	25 11
— 9	38 6	23 10	15 2	23 3	24 7	25 4
— 16	38 1	23 8	14 11	22 7	24 1	25 2
— 30	37 9	23 6	15 2	21 7	23 10	25 3
Aggreg. Aver.	38 1	23 7	15 2	22 3	24 3	25 6
Duties on Foreign Grain	1 0	1 0	1 0	1 0	1 0	1 0

Fluctuations in the last six weeks' Corn Averages.



SEEDS.—April 5.

Canary, per qr.	70s to 74s	Coriander, per cwt.	16s — 21s
Caraway, per cwt.	31 — 33	Mustard, white, p. bush.	7 — 9
Hempseed, per qr.	34 — 35	— brown, do.	10 — 13
Linseed, foreign, do.	37 — 45	Rape, per last	28*l.* — 34*l.*
Clover, red, per cwt.	24 — 46	Cakes, Linseed, p. 1000	8*l.* 5s
— — foreign, do.	— —	— — foreign, p. ton	6*l.* 0s
— white, do.	36 — 48	— Rape, foreign, do.	4*l.* 5s
— — foreign, do.	— —	Tares, per bush.	3s 0d — 5s 6d

Liverpool, April 5.—The corn trade this morning was inactive in the extreme, and so few transactions occurred in Wheat and Flour that it is difficult to alter the quotations. Scarcely anything was done in Oats, Oatmeal, Barley, Beans, or Peas, and quotations are nominally as on Tuesday. Trade was dull for Indian Corn, at 6d. to 1s. per qr. decline on the prices of Tuesday; the top price of Galatz is 28s.

TO GENTLEMEN, FLORISTS, AND OTHERS.

MESSRS. PROTHEROE AND MORRIS will sell by Auction, at the Mart, Bartholomew-lane, on WEDNESDAY, April 10th, and THURSDAY 12th, 1850, a First Class collection of Carnations, Picotees, and Auriculas; also Climbing and other Roses; choice Dahlias, Verbenas, Fuchsias, Pinks, Pæonies, &c. May be viewed the morning of sale. Catalogues had at the Mart; and of the Auctioneers, American Nursery, Leytonstone, Essex.

EAST INDIAN ORCHIDS.

MR. J. C. STEVENS begs to announce that he received by the last overland mail a select parcel of ORCHIDS, in fine condition, collected in the central provinces of Ceylon, and comprising many rare varieties of Vandas, Dendrobiums, Cœlogynes, Renantheras, &c.; they will be sold by Auction at his Great Room, 38, King-street, Covent Garden, on FRIDAY, the 12th inst., at 1 o'clock precisely.—Catalogues will be forwarded in due course.

TO MARKET GARDENERS.

TO BE LET, on Lease, with immediate possession, a desirable MARKET GARDEN, situate at Turnham Green, near the high road, containing upwards of 16 acres, with good House and Offices. To a tenant of undoubted responsibility the extensive and valuable stock of Trees, Shrubs, and Bushes will be included in the letting and scheduled in the Lease.—Apply to Mr. W. S. PATERSON, Solicitor, 7, Bouverie-street, Fleet-street, London.

PATENT WOOL NETTING FOR COVERING TREES, EARLY FRUITS, and FLOWERS.—No article so effectually preserves Fruit-trees from Frost, Cold Winds, Blight, and Insects, as WOOL NETTING.—Agents, Duncan Hairs, 109, St. Martin's-lane; Minier, Nash, and Nash, 60, Strand; Hurst and M'Mullen, 6, Leadenhall-street; Charlwood, 14, Tavistock-row, Covent-garden; Kernan, Great Russell-street, Covent-garden; and Clark, King-street, Covent-garden, London.

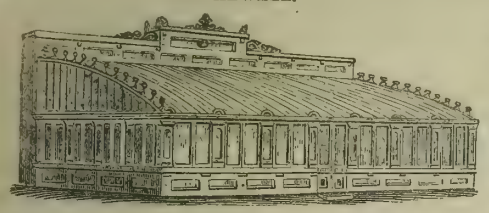
PATENT SPADES, DAISY RAKES, SCYTHES, Draining, and other Garden Tools. Mole Traps, 6s. per dozen. Carpenters and Smiths' Tools, &c. Ladies' Garden Tools, 7s. 9d. a set. Sword-scrapers for Gardens, 1s. 2d. each. Patent Fumigation, for destroying insects on plants, in greenhouses, &c.: at Messrs. J. H. BOOBBYER and Co.'s (late STURCH and BOOBBYER), Ironmongery, Brass-foundry, Nail and Tool Warehouse, 14, Stanhope-street, Clare-market, London. Established nearly 200 years for the sale of goods from the best Manufactories at the lowest prices. Goods forwarded to any part on the receipt of remittance.

GARDEN ENGINES, SYRINGES &c.—CAUTION.—The well-known reputation of READ'S Engines, Machines, and Syringes, has led to the nefarious practice of placing Cards in Shop Windows, with the words "READ'S PATENT" over Syringes of the very commonest description. R. READ begs to Caution the Public against being deceived by such false representations, as many of these Instruments, upon trial, will be found defective and useless.—READ'S Syringes may be known by the Royal Arms, and the words "READ'S PATENT." Manufactured only at 35, Regent Circus, Piccadilly, London.

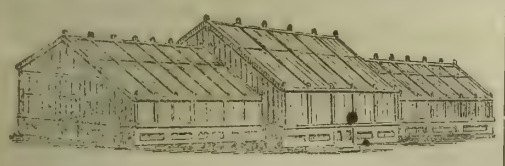
HALLIMAN'S FRUIT PROTECTOR, Registered March 22d, 1850, was offered, for the first time, March 2d, 1850; was patronised by Richard Holland, Esq., 42, Grosvenor-square, London; and was shown in private at Buckingham Palace, 13th March, 1850, and returned with a satisfactory written reply. It has been named the Fruit Preserver, and pronounced to be an article of great utility by a great number of first-rate Noblemen's Gardeners. The interest of the money laid out will not amount to more than ¼d. per Peach, Grapes 1d. per bunch, per year. O. H. will be thankful to receive any order, and will complete it as soon as it is in the Sole Inventor's power. — C. HALLIMAN, 1, Queen's-place, Norland-square, Kensington, Middlesex.

HYDRAULIC ENGINES, WATER RAMS, &c., on Improved Principles; Engines worked by Steam or Hydraulic power, to raise from 1 gallon to 1000 per minute to a height of 500 feet, and from a depth of 900 feet. Douche, Vapour, Hot-air, and all other kinds of Baths. Buildings, Conservatories, &c., heated by Steam, Air, or Water. Boring, Sinking, and Collecting of Water, &c. Towns supplied. Direct to JOHN LEGG, Cheltenham.

DESIGNED, ERECTED, AND HEATED BY J. THOMSON, FOR J. SHUTTLEWORTH, ESQ., NEAR BAKEWELL.



HOTHOUSE DESIGNING, BUILDING, AND HEATING.—Every description of Horticultural Structure designed, Erected, and Heated by Hot Water, common Flues, and other modes, on the most economical and improved modern principles. Testimonials and references from Noblemen and Gentlemen who have kindly patronised, for more than 15 years past, J. THOMSON and Co.'s Modern and Simple Mode of Constructing, Building, Warming, and Ventilating Garden Structures.



J. THOMSON having had full 25 years' experience as a practical Horticulturist, Landscape Gardener, and Garden Architect, in her Majesty's Royal Gardens at Windsor, Kew, and other places, most respectfully solicits the favours and patronage of Noblemen and Gentlemen about to form new, or to alter and embellish their present Parks, Gardens, &c.

Plans and Estimates for remodelling Parks and Gardens, or for Building and Heating Hothouses, and other Garden improvements, furnished on application to J. THOMSON and Co., Hothouse Builder, &c., King-st., Hammersmith, near London.

*** Rustic Summer Houses, Chairs, Melon Boxes, and Lights, Vases, and similar Garden Ornaments, made on the shortest notice.

STOUT AND PORTER.—JENNER, WICKING, and JENNER, are now delivering for cash to private families their celebrated PORTER at 1s., and imperial STOUT at 1s. 4d. per gallon. May be had in casks of 4½, 9, 18, and 36 galls.

N.B. Their Ales are now in very fine condition.

South London Brewery, Southwark-bridge-road.

LOOK TO YOUR STABLE EXPENDITURE, and attend to its economy and Corn-dealers' Bills.

CHAFF MACHINES.—Horse Masters should give cut Hay or Wheat Straw with the Oats they allow, and those Oats should be bruised.—MARY WEDLAKE'S superior CHAFF MACHINES and OAT BRUISERS, manufactured on the premises (40 years established), 118, Fenchurch-street, and 8, Billiter-street.

N.B. Chaff-cutting and Oat-bruising Machinery by horse-power. Old Machines repaired.

HOW TO KEEP A HORSE FOR LESS THAN ONE SHILLING PER DAY!! and make the Animal look better than he now does when you are paying not less than 12s. to 13s. per week. Consider the enormous saving in these hard times—times of cheapness!!

DO YOU BRUISE THE OATS YOU GIVE YOUR HORSES? No. Then you lose one bushel out of every three, and your Cattle do not do half so well.—MARY WEDLAKE AND CO.'S OAT BRUISING MILLS. Superior Chaff Engine, simple in construction, doing from 50 to 500 bushels daily and more. Nearly all respectable Coachmasters and Brewers in London use these implements. To be seen at 118, Fenchurch-street, opposite Mark-lane, close to the Blackwall Railway.

N.B. Linseed Mills, Bean Mills, and Malt Mills, in great variety.

MANURE IS MONEY.—MOST IMPORTANT TO LAND PROPRIETORS, FARMERS, GRAZIERS, GARDENERS, AND OTHERS. A new and excellent Treatise.

THE FARMER'S FRIEND AND COMPANION; showing how to farm to meet the times, and save money, by introducing, for the benefit of the agriculturists, a new and most valuable receipt for the manufacturing of the New Patent Manure, which will be sent gratis, and can be manufactured without a license by every farmer, as the preparation is most simple and cheap, and suitable for all seasons, soils, and crops, at the trifling expense of 1l. per acre, warranted equal to 12 loads of farm-yard manure, and a perfect substitute for all foreign manures. Also showing how to fatten every description of Stock and Poultry, at one-third the cost now adopted, the best and cheapest method of draining, &c. This valuable Treatise on Farming and Grazing, registered and entered at Stationers' Hall, contains also a collection of 150 of the most valuable receipts ever discovered in agriculture for profit, &c., with full directions for use, by the late celebrated agriculturist, Mr. Ellman, and others, and patronised and highly recommended by H.R.H. Prince Albert, at Windsor Farm, the Royal Agricultural Society of England, their Graces the Dukes of Richmond, Portland, and Bedford, &c., and will be forwarded, without fail, by return of post, free, to any part of the country, by enclosing 12 postage stamps, addressed, pre-paid, to Messrs. MORGAN and Co., Post-office, Lisson-grove, Marylebone, London. Mind the address.

N.B. The receipt for manufacturing the Patent Manure can be had alone, by forwarding six postage stamps.

HARTLEY'S PATENT ROUGH PLATE GLASS. In submitting our list of prices, we would beg to direct attention to the Leading Article of the *Gardeners' Chronicle* of Saturday, Dec. 8, upon the subject of "Patent Rough Plate." Some alteration having been made in the mode of manufacturing this description of Glass, the quality is greatly improved, and we now supply it perfectly flat, and, by an arrangement with Messrs. HARTLEY and Co., precisely at their prices. Cut to order in panes of

8 by 6	and under	10 by 8	at 4½d. per foot.
10 by 8	,,	14 by 10	at 5d. ,,
14 by 10	,,	1½ foot	at 5½d. ,,
1½ foot	,,	3 feet	at 6d. ,,

PACKED IN BOXES of 50 feet each.

6 by 4 and 6½ by 4½...10s. 6d. 8 by 6 and 8½ by 6½...13s. 6d.
7 by 5 and 7½ by 5½...12s. 0d. 9 by 7 and 10 by 8 ...15s. 0d.

Milk Pans from 2s. to 6s. each, Metal Hand-frames, Tiles, and Slates; Propagating and Bee Glasses from 2d. each; Cucumber Tubes, 1d. per inch; Peach Glasses, 10d. each; Wasp Traps, 3s. 6d. per dozen; Pastry Slabs, Hyacinth Glasses and Dishes, Shades for Ornaments, Fish Globes, Plate and Window Glass of every description, and Lamp Shades. Lactometers for trying the quality of Milk, 4 tubes, 7s. 6d; 6 tubes, 10s. Self-registering Thermometers for Greenhouses, Horticultural Glass, &c.

JAMES PHILLIPS and CO., 116, BISHOPSGATE STREET WITHOUT, LONDON.

GLASS FOR CONSERVATORIES, &c.

HETLEY AND Co. supply 16-oz. Sheet Glass of British Manufacture, at prices varying from 2d. to 3d. per square foot, for the usual sizes required, many thousand feet of which are kept ready packed for immediate delivery. Lists of Prices and estimates forwarded on application, for PATENT ROUGH PLATE, THICK CROWN GLASS, GLASS TILES and SLATES, WATER-PIPES, PROPAGATING GLASSES, GLASS MILK PANS, PATENT PLATE-GLASS, ORNAMENTAL WINDOW GLASS, and GLASS SHADES, to JAMES HETLEY and Co., 35, Soho-square, London.

See the *Gardeners' Chronicle* first Saturday in each month.

CROWN, SHEET, AND ROUGH PLATE GLASS, FOR HOTHOUSES, CONSERVATORIES, &c.

Of every manufacture FIT FOR USE, including the make of Messrs. CHANCE, HARTLEY, SWINBURNE, and others.

100 and 200 feet cases of large Sheet Glass, from 2½d. per foot. Small ditto, 10s. 6d. per 100 feet, packed in boxes ready for immediate delivery. Curators of Botanical Societies, Florists, Railway Agents, and others requiring large quantities, will, on sending dimensions, receive estimates at the lowest prices.

GLASS MILK PANS, CREAM POTS, Lactometers, Bee Glasses, Fish Globes, and all kinds of Dairy Glass, Propagating Glasses, Hyacinth Dishes, Cucumber Tubes, and every other description of Garden Glasses.

PATENT GLASS PENS, self supplying, never blot, never soil the ruler, and will write continuously for 12 hours.

Also, Glass Rulers, Glass Inks for office-stands, desks, &c. Stationers and Schools supplied. Wholesale Warehouse for Ornamental Shades, Lamp Shades, Gas Glasses, Genuine White Lead, Paints, Colours, and Pumps for Farm purposes.

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SUPERPHOSPHATE OF LIME, GUANO, CRUSHED BONES, and all other artificial MANURES, at Messrs. HUNTS' Bone Mills and Manure Works, High-street, Lambeth, London. Established 1816.

MESSRS. NESBIT'S CHEMICAL AND AGRICULTURAL SCHOOL, 38, Kennington-lane, London.—A sound practical knowledge of Analytical and Agricultural Chemistry, Geology, Surveying, Levelling, Railway Engineering, &c., may be obtained in Messrs. NESBIT'S Academy, in addition to a good modern education.

Mr. NESBIT'S works on Arithmetic, Mensuration, Gauging, Land Surveying, English Parsing, &c., are published by LONGMAN and Co., and may be had of all Booksellers.

The terms of the School can be had on application either personally or by letter.

GLASS PIPES.

MESSRS. COATHUPES AND Co., GLASS MANUFACTURERS, of Bristol, and of Nailsea, Somerset, beg to inform Engineers and others, that they are prepared to supply GLASS PIPES of from 1 to 4-inch bore, in lengths of from 3 to 7 feet; the lengths being less as the diameters of the bores increase.

GLASS FOR CONSERVATORIES, HORTICULTURAL PURPOSES, &c.



T. MILLINGTON'S SHEET GLASS, which is of the best description, varying from 16 to 32 ounces, at from 2d. per foot and upwards; 100 feet and 200 feet cases of large Sheet Glass, for cutting up, at 2½d. per foot. British Plate Glass, from 1s. 2d. to 2s. per foot, according to size. Patent Rough Plate Glass, from ⅛ to 1 inch in thickness, from 4d. per foot upwards. Glass Slates and Tiles. Milk Pans from 12 to 24 inches diameter, from 2s. to 5s. each. Cucumber Tubes, from 12 to 24 inches long, at 1d. per inch. Lactometers, 7s. 6d. each. Wasp Traps.—Lists may be had, on application at the Warehouse, 87, Bishopsgate-street Without, same side as the Eastern Counties Railway.

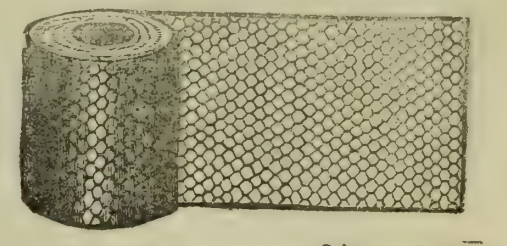
THE GARDENERS' CHRONICLE.—TO BE SOLD, the first Six Volumes, half-bound, and in good condition, price 5l. — Apply to F. H. S., 221, Tottenham-court-road, Middlesex.

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THOMAS PERRY AND SONS, 252, OXFORD-STREET (NEAR HYDE PARK), And Highfields Foundry and Wrought-iron Works, Bilston, Staffordshire, Manufacturers of all descriptions of PLAIN AND ORNAMENTAL IRON AND WIRE FENCING, Park Entrance, Carriage and Field Gates, Wickets, &c.; Deer, Sheep, and other Hurdles; Hare and Rabbit-proof Wire Fencing; Iron Bedstead Makers to the Board of Ordnance; And Government Contractors.

The works of Messrs. PERRY being situated in the heart of the first iron district, they are enabled to execute all orders with the greatest facility; and on the most moderate terms. Drawings made and estimates prepared, if required. The show rooms contain an immense variety of every description of Iron and Wire-work, and are the largest in London. An Illustrated Catalogue of Bedsteads, with dimensions and prices, sent on application, post-free.

GALVANISED WIRE GAME NETTING.—7d. per yard, 2 feet wide.

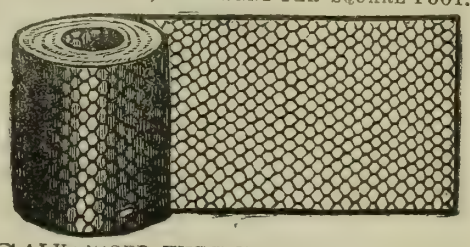


	Galvanised.	Japanned Iron.
2-inch mesh, light, 24-inch wide ...	7d. per yd.	5d. per yd.
2-inch ,, strong ,, ...	9 ,,	6½ ,,
2-inch ,, extra strong ,, ...	12 ,,	9 ,,
1½-inch ,, light ,, ...	8 ,,	6 ,,
1½-inch ,, strong ,, ...	10 ,,	8 ,,
1½-inch ,, extra strong ,, ...	14 ,,	11 ,,

All the above can be made any width at proportionate prices. If the upper half is a coarse mesh, it will reduce the price one-fourth. Galvanised sparrow-proof netting for pheasantries, 3d. per square foot. Patterns forwarded post-free.

Manufactured by BARNARD and BISHOP, Market-place, Norwich, and delivered free of expense in London, Peterborough, Hull, or Newcastle.

WIRE NETTING, ONE PENNY PER SQUARE FOOT.



GALVANISED WIRE NETTING, TWO-PENCE PER SQUARE FOOT.—This article requires no painting, the atmosphere not having the slightest action on it. It was exhibited at the late Metropolitan Cattle Show, and was highly eulogised both for its utility and pretty appearance, and acknowledged to be the cheapest and best article ever produced. It forms a light and durable fence against the depredations of hares, rabbits, and cats, and is peculiarly adapted for Aviaries, Pheasantries, and to secure poultry; and by the galvanised requiring no paint, it answers admirably for training all kinds of creeping plants. Large quantities always kept in stock, of 18, 24, 36, and 48 inches wide; it can, however, be made to any dimensions desired. Patterns forwarded free of expense.

12 inches wide	3d. per yard	30 inches wide	7½d. per yard
18 ,, ,,	4½d. ,,	36 ,, ,,	9d. ,,
14 ,, ,,	6d. ,,	48 ,, ,,	1s. ,,

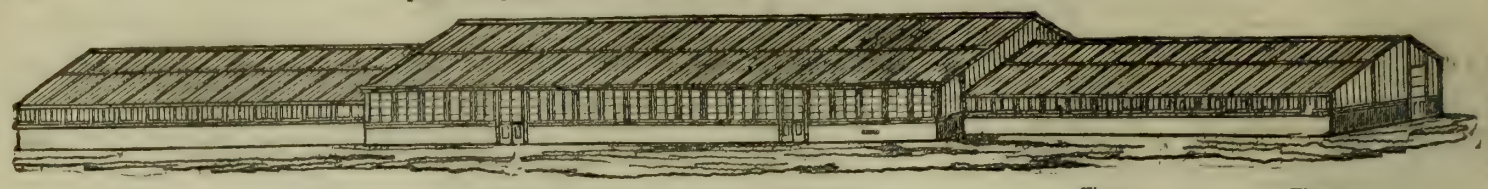
Galvanised do., 1d. per foot extra.

Extra strong Imperial Wire Sheep Netting, 3 feet, 1s. 6d. per running yard; if galvanised, 2s. Also every description of Wire Nursery and Fireguards, Wire House Lanterns and Shades, Fly-proof Dish Covers, Meat Safes, &c.; Window Blinds, 1s. 10d. per square foot, with bolts complete, in mahogany frames; Gothic Garden Bordering, 6d. per running foot; Flower Trainers, from 3d. each; Garden Arches, 20s. each; Flower Stands, from 3s. 9d. each; Galvanised Tying Wire for plants and trees, Dahlia Rods, and every description of Wire-work; Weaving, for the use of paper-makers, millers, &c.—At the Manufactory of THOMAS HENRY FOX, 44, Skinner-street, Snow-hill, London.

GRAY, ORMSON, AND BROWN,

DANVERS STREET, CHELSEA,

Respectfully solicit the attention of the Nobility and Gentry to their superior manner of Erecting and Heating every description of Building connected with Horticulture. They have much pleasure in giving the following testimonial referring to the range of houses shown below.



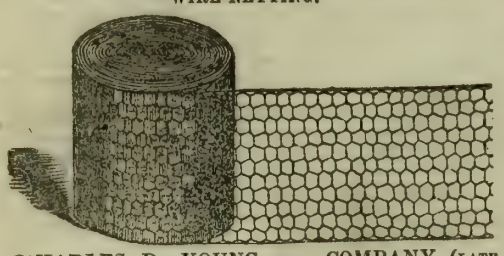
Peach House, 30 by 16 feet. | Vinery, 30 by 16 feet. | Stove, 45 by 20 ft. | Greenhouse, 45 by 20 ft. | Vinery, 30 by 16 ft. | Vinery, 30 by 16 ft.

[ERECTED FOR JOHN SHAW LEIGH, ESQ., LUTON HOO.]

Extract of a Letter from Mr. FRASER.—"I have much pleasure in expressing my entire satisfaction with the range of houses you erected here. I may also state that my honoured employer, JOHN SHAW LEIGH, Esq., is perfectly satisfied. I have no hesitation in stating, that to the best of my knowledge, there is not a more complete range of glass in the country, as regards both building and heating. I may add that they are admired by every Gardener who has seen them. I shall have much pleasure in answering any references you may please to direct.

(Signed.) "JAMES FRASER, Gardener, Luton Hoo Park."

STRONG PREMIUM HARE AND RABBIT PROOF WIRE NETTING.



CHARLES D. YOUNG AND COMPANY (LATE W. AND C. YOUNG),

MANUFACTURERS OF IRON AND WIRE WORK, &c., 22, PARLIAMENT-STREET, WESTMINSTER, LONDON; CASTLE-BUILDINGS, DERBY-SQUARE, LIVERPOOL; 128, HIGH-STREET, EDINBURGH; and 32, ST. ENOCH-SQUARE, GLASGOW, beg respectfully to call the attention of Landed Proprietors and others to their strong Wire-Net Fence, for excluding Hares and Rabbits from Gardens, young Plantations, Nurseries, &c.

This Net was exhibited at the Show of the Highland and Agricultural Society of Scotland, held lately at Inverness, where its Efficiency, Great Strength, and Exceeding Cheapness attracted general attention, and had awarded from the Judges the Society's Silver Medals, with high commendations.

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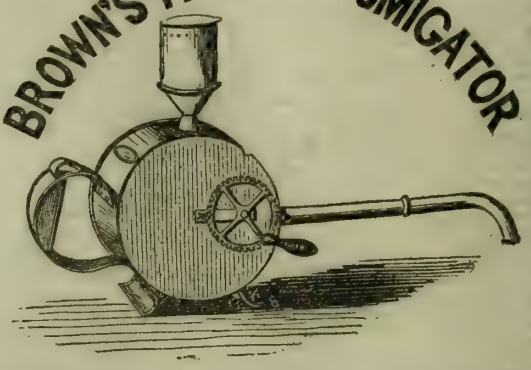
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THE EDINBURGH REVIEW, No. CLXXXIV., will be published on THURSDAY next, the 11th inst.

CONTENTS.

1. NATIONAL OBSERVATORIES—GREENWICH.
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3. SUPPLY OF WATER TO THE METROPOLIS.
4. LANDOR'S POETRY.
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Printed by WILLIAM BRADBURY, of No. 13, Upper Woburn-place, in the Parish of St. Pancras, and FREDERICK MULLETT EVANS, of No. 7, Church-row, Stoke Newington, both in the County of Middlesex, Printers, at their office in Lombard-street, in the Precinct of Whitefriars, in the City of London; and published by them at the Office, No. 5, Charles-street, in the parish of St. Paul's, Covent-garden, in the said county, where all Advertisements and Communications are to be ADDRESSED TO THE EDITOR.—SATURDAY, APRIL 6, 1850.

THE GARDENERS' CHRONICLE
AND
AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 15—1850.] SATURDAY, APRIL 13. [PRICE 6*d.*

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HORTICULTURAL SOCIETY OF LONDON.—The EXHIBITIONS OF FLOWERS, &c., in the Society's Garden, will take place on the following SATURDAYS, viz.: May 18, June 8, and July 13. TUESDAY, April 23, *is the last day* on which privileged tickets, at 3*s.* 6*d.* each, are issued to Fellows of the Society. Every Fellow is entitled to 24 such tickets, if paid for on or before that day.—21, Regent-street.

ROYAL BOTANIC SOCIETY, Regent's Park.—GENERAL EXHIBITIONS, WEDNESDAYS, MAY 8th, JUNE 12th, and JULY 3d.

AMERICAN PLANTS.—SATURDAYS, May 25 and June 1. Tickets to be obtained at the Gardens, by orders from Fellows of the Society, price, on or before Saturday, April 27, 4*s.* each; after that day, 5*s.*; or on the days of Exhibition, 7*s.* 6*d.* each; and such Tickets will admit to the Collection of American Plants, from the 3d of June to the 8th, both included.

N. B. Fruit will be exhibited on June 12 and July 3.

ROYAL SOUTH LONDON FLORICULTURAL SOCIETY.
UNDER THE PATRONAGE OF HER MOST GRACIOUS MAJESTY THE QUEEN.

THE FIRST EXHIBITION for the Season will be held in the Assembly Rooms at the Horns Tavern, Kennington, on WEDNESDAY, April 17, 1850 (open to all Exhibitors), when Prizes will be awarded for the following productions, viz.:—Miscellaneous Plants, Azaleas, Cinerarias, Auriculas, Heartsease, Polyanthuses, and Specimen Plants; in addition to which, a Silver Cup, value 5*l.* 5*s.*, presented by the Committee, will be awarded for the best collection of Miscellaneous Plants, by Mr. Wm. Ivery. For the best 8 Cinerarias, in pots, small Silver Victoria Medal, by Mr. H. Chapman. For the 2d best ditto, small Silver Albert Medal, by R. W. Dutton, Esq. For the best 3 Plants of Oliver's Lovely Ann Auricula, small Silver Albert Medal. And by the Proprietors of the "Gardener's Hive," for the best Seedling Cineraria (not sent out), the Hive Medal, value 10*s.*

Mr. Oakey's band will be in attendance. Admission to Non-Members, from 1 to 6 o'clock, at 1*s.* each. List of Prizes, and the Rules of the Society, may be obtained from

JOHN TAYLOR NEVILLE, Secretary.

Ebenezer House, Peckham, Surrey.

CHELTENHAM GRAND HORTICULTURAL FETE, to take place on THURSDAY, the 20th of June, 1850.—The Committee appointed to award Prizes for the best SCHEDULE for the above Fête, have determined that for general merit, the 1st Prize shall be given to Elizabeth Whiting, of Acacia Cottage, Walham-green, Fulham; and the 2d to John Edwards, F.H.S., of Wace Cottage, Holloway, Middlesex. Unsuccessful candidates wishing to have their Schedules returned, can have them by applying to the Hon. Secretary, Mr. J. D. TAGART, High-street, Cheltenham.

The adopted Schedule to be had on application as above, enclosing a postage stamp.—Cheltenham, April 13.

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From the *Gardeners' Chronicle.*—"STRAWBERRIES: *J. K.* Your Seedling Strawberry, 'Goliah,' judging from its size and appearance, is worthy of cultivation."

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EXACTUM.—This Petunia surpasses all others in form—almost a perfect circle; colour a pinkish white, with a fine dark throat, and well calculated to make a fine specimen plant, on account of its being short in the joints. *Vide* Dr. LINDLEY'S opinion in the *Gardeners' Chronicle* of 5th May, 1849: "*H. J. H.* Exactum, pale blush, good in form, not over large, and nicely marked in the centre with violet veins; a very pretty variety." Price 7*s.* 6*d.* each.

LAVENDULA PENCILLATA.—A fine, large, bold flower, veined with dark purple; colour lilac. See *Gardeners' Chronicle* of 5th May, 1849: "*H. J. H.* Lavendula Pencillata, large pale lilac, nicely veined all over the flower with deep violet; a pretty variety, but rather thin." Price 5*s.* each.

EYEBRIGHT.—This Petunia is of extra size, and novel in appearance; ground colour pale pink, shading to white, with a very fine dark eye. See *Gardeners' Chronicle* of 22d Sept., 1849: "*H. J. H.* Pale blush, with dark eye, slightly feathered with violet veins; good in shape and texture." Price 5*s.* each.

CONSPICUA.—Brilliant rose ground, with a dark blood-coloured stripe running up each of the divisions of the corolla; a conspicuous looking variety, not unlike a Convolvulus. See *Gardeners' Chronicle* of 22d Sept., 1849: "*H. J. H.* Rosy pink, eye dark, and slightly feathered; good in shape, texture, and colours, but small." Price 5*s.* each.

The set of four for 20*s.* When three or more of any one sort are ordered at the same time, four plants will be given. Strong plants in the middle of May.

J. T. begs to call the attention of the public to his set of Eight Superb GERANIUMS as advertised on the 2d March in the *Gardeners' Chronicle.*

Providence Nursery, Ramsgate, April 13.

W. IVERY has selected from his Superb Stock of SEEDLING ANTIRRHINUMS (to which four Certificates were awarded at the London Floricultural Society, and were allowed by all who saw them to be first-rate varieties,) Crimson King, 5*s.*; Dowager Queen, 5*s.*; Earl of Dublin, 5*s.*; Princess Royal, 5*s.*; Standard, 5*s.*; Tricolor, 5*s.*; Victoria, 5*s.*; or the set for 30*s.*

W. I. has selected two of the most distinct varieties of PETUNIA from Mr. Young, of New Cross, which can be particularly recommended, and which received two first-class Certificates at the South London Floricultural Society, viz., Herseeana, purplish crimson, jet black throat, a beautiful round flower, 5*s.* Queen, lilac blush, the throat very richly marked, fine substance, 5*s.* Plants of the above will be sent out after the 22d of April.

W. I. can supply good plants of Chauvier's unrivalled VERBENAS, imported this spring. The 12 for 40*s.*

Geraniums, in fine variety,	per dozen—	6*s.*	to	18*s.*	0*d.*
Ditto, Fancy	,,	,,	12	to	30	0
Ditto, Scarlet	,,	,,	6	to	18	0
Fuchsias	,,	,,	6	to	18	0
Verbenas	,,	,,	5	to	9	0
Ditto, best French selected	,,	,,	6	to	18	0
Cinerarias, fine	,,	,,	12	to	30	0
Petunias, fine	,,	,,	6	to	15	0
Antirrhinums, fine	,,	,,	6	to	18	0
Phlox, very choice	,,	,,	9	to	24	0

Descriptive Catalogues can be had on application. Post-office orders made payable at Camberwell.

Hanover Nursery, Peckham, near London.

NEW AND STRIKING VERBENA.

ARTHUR MACKIE begs to offer the undermentioned to the attention of Florists, with the fullest conviction that it will give entire satisfaction.

WOODCOCK'S MAGNIFICENT.—A. M. having purchased the entire Stock of this unrivalled Verbena, offers it to the Public with the utmost confidence, being fully persuaded that it will surpass everything yet out in its class. The individual flowers cover a sixpence, and sometimes a shilling. It is of a very free habit and growth, and well suited for grouping. See *Gardeners' Chronicle*, Sept. 15, 1849.—"*W. K. B.* Colour bright rose, fading to pink; a remarkably fine variety, with much the largest flowers we have yet seen."

Fine strong plants at 5*s.* each, free by post. Where three are ordered four will be sent.

MACKIE'S Descriptive Catalogue of Flower and Vegetable Seeds is now ready, and will be forwarded on receipt of two stamps for postage.—Norwich Nursery, Norwich, April 13.

FRUIT TREES, TULIP BEDS, &c.—Those who wish to insure a good crop of Fruit will do well to cover their Wall and other Fruit Trees with "THE TANNED GARDEN NETTING," being the cheapest, most durable, and best protection against Frost, Blight, and Birds. It can be had in any quantity from JOHN KING FARLOW'S Fishing-rod and Net Manufactory, 5, Crooked-lane, London-bridge, at 3*d.* per yard, two yards wide; or 6*d.* per yard, four yards wide. Forwarded on receipt of Post-office order or stamps.

CHEAP! CHEAP!! CHEAP!!!

R. WHITE begs to offer Plants of his splendid collection of VERBENAS, PETUNIAS, FUCHSIAS, &c., at very reduced prices, viz.:

VERBENAS.—Chauvelii, Ocean Monarch, Iphogene, Louis de France, John Salter, Queen of the French, Eppsii, Eclipse (Dufoy's and Epps'), Monsieur Affre, Morphee, Burgundy, Union Jack, Avalanche, White Perfection, Junius, Anacreon, Rose de France, Lady of the Lake, Diversity, Viscomte de Tourval, St. Margaret, Minerva, Cardinal, Eyebright, Princess Alice, Royal Purple, Vulcan, Superb, Valentine de Saveuse, Le Normand, Epomine, Beauty Supreme, La Reine, Satellite Bicolor Grandiflora, Robinson's Defiance, &c.

PETUNIAS.—Louis Napoleon Buonaparte, Princess Alice, Conservative, Berryer, Rosea, La Reine, Apollo, Brilliant, Conspicua, Amœna, Simpsonii, Marchioness of Hastings, Magna Rosea, Splendens, Pet Superb, &c.

Selections from the above, 6s. per doz.; left to R. WHITE, 3s.

FUCHSIAS. — Flavescens, Scarletina Reflexa, Elizabeth, Henry of Navarre, Vesta, Rose d'Amour, White Perfection, Sanspareil, Ellen, Beauty of Dalston, Atrosanguinea, Acantha, One in the Ring, Madame Breary, Leucantha, Goliah, Purity, Bianca, Napoleon, Sir H. Pottinger, Etoile de Versailles, Duchess of Sutherland, &c.

HELIOTROPES.—Voltairianum, Peruvianum, and Triomphe de Leige, 4s. per dozen; Grisan and Souvenir de Leige, 1s. each, or 9s. per dozen.

Also an immense stock of Bedding Plants, consisting of Salvias, Scarlet Geraniums, &c., the whole of which will be ready to send out, in strong plants, on and after April 22d, at 3s. per dozen, package included.—Poole Nursery, April 13.

This Advertisement will not be repeated.

GERANIUMS.

A LARGE AND SPLENDID STOCK OF STRONG PLANTS, AT LOW PRICES.

BASS AND BROWN beg to offer the following from their superb collection.

12	all new varieties of last season	...	...	2	2	0
12	superb show varieties	...	...	1	1	0
25	Ditto ditto	...	...	2	0	0
50	Ditto ditto	...	...	3	15	0
12	fine show varieties	...	...	0	12	0
25	Ditto ditto	...	...	1	2	0
50	Ditto ditto	...	...	2	0	0

Best older varieties, 6s. to 9s. per dozen.

FANCY GERANIUMS.

The following 12 new and other choice fancy varieties for 15s.

Annais
Beauty of Winchester (Shepherd's)
Bouquet tout fait
Jehu
Jehu improved
Jehu Superb (Chauvier's)
Jenny Lind (Ambrose's)
La Belle d' Africana
Lady Flora Hastings
Maid of Anjou
Statuiskii
Yeatmannianum

NEW PLANTS.

Geranium Foquet's Magnificent	... ... 21s	0d	
Gloxinia Grandis (Henderson's)	 5	0	
Gloxinia Wortleyana	... 2	6	
Æschynanthus speciosa	3	6	
Chirita Moonii	... 2	6	
Liebegia speciosa	... 3s.	6d	
Luculia Pinciana	... 2	6	
Siphocampylos microstoma rubra	 2	6	
Tritonea aurea, 3s. 6d. to	7	6	
Fuchsia spectabilis, 2s. 6d. to	 3	6	

DESCRIPTIVE PRICED CATALOGUES OF OUR EXTENSIVE COLLECTION OF SEEDS AND PLANTS supplied, prepaid on receipt of four penny stamps.

Remittances requested from unknown correspondents. Post-office orders to be made payable to BASS and BROWN, or to STEPHEN BROWN. Goods carriage free to London, and with orders of 40s. extra plants presented.

BASS and BROWN'S Seed and Horticultural Establishment, Sudbury, Suffolk.

STORY'S SUPERB SEEDLING FUCHSIAS.—2-48 SOUTH DEVON.—A very distinct and elegant flower; tube and sepals light rosy crimson, long and well reflexed, showing a most compact elegantly formed light blue corolla. The flowers are produced on long footstalks and in great abundance. This is a most distinct variety, and one that will give satisfaction to purchasers.—Strong plants, 7s. 6d.

* 3-48 DUPLEX.—A most remarkable variety, from its invariably producing a double rich deep purple corolla. The tube and sepals are bright scarlet, well reflexed, of good substance. It is a dwarf, compact grower, and an abundant bloomer. It will be a general favourite.—Strong plants, 10s. 6d.

6-48 MULTIPLEX.—This, as the name designates, is another double corolla flower, but perfectly distinct from Duplex. The tube and sepals are bright crimson, and well reflexed, shewing to a great advantage the intense purple corolla, which, for doubleness, resembles a large double Violet. It is a very free bloomer, and a variety that was greatly admired by those parties who saw it in flower.—Strong plants, 10s. 6d.

7-48 IGNEA.—A most splendid flower of extra size, and extraordinary brilliancy, both in its crimson tube and sepals, and deep purple corolla. The tube is long, symmetrical, and of great substance, without excrescence of any kind. Sepals sufficiently reflexed to show to advantage its beautifully formed corolla. It is certainly a first-class flower, and warranted to give satisfaction.—Strong plants, 10s. 6d.

* 8-48 UNIQUE.—This is a beautiful flower, of large size; tube and sepals bright glossy scarlet, of great breadth and substance, without the least wortiness or roughness of any kind. Corolla deep purple and well formed. A most abundant bloomer, two flowers being produced at the axil of the leaves. In the "Florist" for September and November last, it is highly commended, and described as a "very fine flower." The habit of growth and blooming is excellent. It is altogether a first-rate flower, and strongly recommended.—Strong plants, 10s. 6d.

9-48 MIRABILIS.—A great favourite with those parties who saw it in bloom. An early bloomer, tube and sepals scarlet, well formed and reflexed, corolla fine lively purple, bell-shaped, a most abundant bloomer, and a striking plant. Habit and foliage very good; a most distinct variety.—Strong plants, 7s. 6d.

* 11-48 STRIATA.—A most novel variety. The corolla which is crimson, being singularly striped with purple like a flake Carnation. It is an abundant bloomer, and invariably comes true to its striped character. It was much admired when in flower.—Strong plants, 7s. 6d.

The three sorts marked thus * are figured in "The Florist," for March last. The set of seven for 2l. 10s. for cash (prepayment). A selection of either four for 1l. 15s. for cash (prepayment.) The usual discount to the trade.

Messrs. VEITCH and SON have much pleasure in offering the above beautiful FUCHSIAS. They are Seedlings raised in 1848, and proved in 1849, by W. H. Story, Esq., of Whitehill, Newtown Bushell, and were selected from a vast number of Seedlings. They are all perfectly distinct, and worthy of general cultivation. Mr. Story's well-known character as a raiser of Seedlings will be a sufficient guarantee that he would permit nothing to be sent out with his name attached that was not of first-rate character, and calculated to give satisfaction.

Strong well-established plants will be ready for delivery on and after Monday the 15th of this month.

N. B. A remittance or reference from unknown correspondents required; this will be strictly adhered to.

Exeter, April 13.

RUSSIAN SUPERB VIOLETS.

ROBERT SHACKELL, in again bringing his Seedling VIOLETS to the notice of the public, takes this opportunity of thanking those friends who have so liberally purchased of him; and begs to inform them that from the middle of March until the beginning of May is the best time for planting these beautiful and easily cultivated flowers.

R. S. refers those who are not yet possessed of them to the opinions of the following Horticultural Editors:

"Gardeners' Journal," Oct. 20, 1849.—"VIOLETS: R. S., Bath.—We have much pleasure in testifying to the improvements made by you in this tribe of flowers, as evident in the comparison united by a close inspection of the sample sent of the old Russian Violet and your Seedling Russian Superb. The following points of difference exist, and to them we call the attention of all lovers and growers of this odoriferous race of flowers. The Russian Superb is a better formed flower than the old Russian, with much larger petals, better shaped, and more fully expanded, showing to advantage a nice white centre, the whole bloom being free from that crumpled, half closed appearance, so general with these flowers. The perfume is delicious, and the extreme abundance of bloom passes all question. On the plant before us there are 27 blooms, finely expanded, and of brilliant colour; and the potted plant fully bears out your description, of its inclination to form a tree violet. The fact of its beginning to bloom in August and continuing until March is a recommendation of itself. In our opinion Russian Superb will entirely supersede the old Russian for all the purposes for which this variety has been hitherto cultivated, its extreme pre-eminence in point of beauty, as well as other properties, being indisputable."

"Florist," Nov. 1st, 1849.—"SEEDLING RUSSIAN SUPERB: R. S., Bath.—Fine bunches and in good condition. This is a very great improvement upon the original variety in the size and form of the flowers. Its fragrance is quite equal, and the foliage very good. It completely eclipses its predecessor, and is a valuable seedling."

"Midland Florist," Dec. 1st, 1849.—"THE RUSSIAN SUPERB VIOLET.—About the middle of last month we received from Mr. SHACKELL a most beautiful bouquet of this excellent Violet. It is a seedling raised by him from the old variety, which it much surpasses in size, both of flowers and foliage. It is very fragrant, and a great and decided acquisition."

"Gardeners' Hive," Jan. 12th, 1850.—"Mr. SHACKELL, Bath.—The bouquet of blue and white seedling Violets reached us in safety, and are certainly the best that ever came under our notice. The foliage alone is a recommendation, but the increased size of the blossoms surpasses all others in cultivation. The petals are of greater breadth than ordinary varieties, and, consequently the flower is more symmetrical; but this is not all—the stems are much longer, which is a great advantage, and (though last, most important) the fragrance is powerful and delicious. For these improved out-door winter-flowering pets of the ladies you will, no doubt, find an extensive sale."

"The Gardeners' Magazine of Botany," Feb. 9th, 1850.—"VIOLETS.—We received from Mr. R. Shackell, of Bath, a few days back, a bunch of his Russian Superb Violets, remarkable for their large size, robust habit, fine form, and delicious scent. This is a very decided improvement upon the old Russian Violet, and must soon come into general cultivation where Violets are admired—and where are they not? Accompanying the above was a bunch of seedling white Violets, of exquisite form, pure in colour, and remarkably sweet. Both of these varieties, though humble, are decided acquisitions."

Mr. Glenny, in the "Country Gentleman."—"THE NEW VIOLET, RUSSIAN SUPERB.—We have received from Mr. Shackell a bunch of these Violets and a plant to grow; and, although we are slow to pronounce anything actually new until we have grown it side by side with the best of old ones, we cannot help saying that the flowers are larger, more symmetrical, and stronger in fragrance than we have ever found the ordinary Russian Violet. The white seedling, which accompanies the other is an acquisition; and assuredly, whether they are sufficiently novel to be all we require or not, we would rather give the price for either, to be of such a breed, than have the best of the Russians and Whites we have hitherto seen for nothing."

Dr. Lindley, in the *Gardeners' Chronicle*, March 2d, 1850—"RUSSIAN SUPERB VIOLET.—Mr. R. SHACKELL, of Bath, has sent us, two or three times, specimens of what he calls by this name. It is very difficult to form a just opinion concerning Violets without growing them; but we should say that Mr. SHACKELL's have all the appearance of being a very fine, robust variety, as we believe it to be."

A bouquet of the Russian Superb Violet was recently sent to her Majesty, and has been officially acknowledged to the grower as proving acceptable to her Majesty.

OPINIONS ON THE WHITE WINTER-BLOOMING VARIETY.

Dr. Lindley, in the *Gardeners' Chronicle*, Nov. 3d, 1849.—"VIOLETS: R. SHACKELL.—Your White Seedling is large and pretty. It is a good white."

G. Glenny, in the "Country Gentleman."—"The best white we have seen."

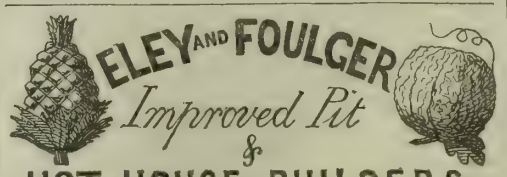
"Gardeners' Journal," Nov. 10th, 1849.—"VIOLETS: R. S., Bath.—We have much pleasure in again testifying to your success in raising Violets. The white variety, just received, is an improvement in its class. As a sweet-scented, winter-blooming flower, it is very desirable; and, were comparison instituted between your seedling and other sorts, on the score of colour, we should not hesitate to pronounce your White Seedling good. And relieved, as these blooms are by the dark green foliage which surrounds them, it shows to advantage; while its exquisite fragrance secures favour the moment it is seen."

Price of the Russian Superb Violet, 18s. per dozen; Winter-blooming White ditto, 9s. per dozen. Five other Sweet-scented varieties, 3s. per dozen.

ROBERT SHACKELL,
LOCKSBROOK NURSERY, UPPER BRISTOL ROAD, BATH.

FRUIT TREES.—Wanted, Several Thousand Fruit Trees. Nurserymen having a surplus stock of Standard, Half-standard, or Dwarf Apple or Pear Trees, which they are willing to sell cheap, are invited to send the particulars of the same to Mr. VARDEN, 154, High-street, Southwark, with the lowest price per 1000 they will accept. The trees to be delivered next autumn. Gooseberry, Currant, and Plum trees are also wanted.

FOR SALE, 80 bushels of Green-top Yellow Bullock, and 40 ditto of Purple-top Swedish TURNIP SEED, the growth of 1849, transplanted and carefully selected. For price, &c., apply to Mr. BRYAN CLARKE, Farmer, Tuxford, Nottinghamshire.



HOT-WATER APPARATUS MANUFACTURERS, and INVENTORS of the DOUBLE SADDLE CAST-IRON BOILERS, proved the most superior. Can be highly recommended by the Nobility. Prices equal to all competition.—Address, City-road, near the Toll-gate, London; Manufactory at Old-street.

FERN SEEDS.

GEORGE BENNET begs to inform the lovers of Ferns that he has still a large quantity of NEW ZEALAND FERN SEEDS, and has much pleasure in announcing that they have vegetated. Price 2s. 6d. per packet. The names of the varieties are as follows: No. 1, Todia sp., variety australis; No. 2, Alsophylla medullaris, fine variety; No. 3, Cyathea dealbata; No. 4, mixed varieties of Hymenophyllum, Trichomanes, Adiantums, &c.; No. 5, mixed varieties of Alsophylla dealbata, or Silver Tree Fern; No. 6, Cyathea medullaris. A remittance must accompany the order either in postage stamps or Post-office order, made payable at Coventry, to GEORGE BENNET, Brandon, Warwickshire, near Coventry.

MEETINGS AT WORTON COTTAGE, ISLEWORTH, for the Display and Examination of SEEDLING FLORISTS' FLOWERS, and other objects of Horticultural Interest.

The Editor of the FLORIST AND GARDEN MISCELLANY particularly requests that all Seedlings for the opinions of the Censors of that work may be posted, as far as practicable, so as to reach Mr. BECK, Isleworth, Middlesex, on the Wednesday morning of each week. Parties desirous of attending personally with their productions, by taking the 4.35 o'clock train for Isleworth from the Waterloo Station, will be put down within a few minutes' walk of Worton Cottage.

The next Meeting will be held on Wednesday, April 17th, and each succeeding Wednesday, at 5 o'clock, P.M.

An Artist will attend these Meetings, to take coloured memoranda of anything particularly striking.

TO MARKET GARDENERS.

THE ADVERTISER, wishing to acquire practical knowledge of Market Gardening, is willing to communicate with a party in that line holding ground, who, for a moderate premium, would instruct him therein.—Apply by letter, prepaid, to R. M., Post-office, 72, Farringdon-street, City.

JOHN BAILY, PURVEYOR TO HER MAJESTY AND H.R.H. PRINCE ALBERT, 113, Mount-street, Grosvenor-square, London, Dealer in every description of Useful and Ornamental POULTRY and WATER-FOWL, Dorking, Hambro', Spanish, Polish, and Cochin China Fowls. Gold and Silver Spangled Bantams. All sorts of Pea Fowls. Gold, Silver, Pied, and Ring-necked Pheasants. Tame-bred Pheasants in any numbers. Live Partridges for turning out.—Priced Lists and Estimates forwarded by post, on application.

THE COTTAGER'S STOVE will cook sufficient for a Family of a dozen persons with one pound of Coal or Coke per hour, and is well adapted for Emigrants.—May be seen in operation daily at the Manufacturer's, Messrs. BENHAM and SON'S, 19, Wigmore-street, and Messrs. D. and E. BAILEY, 272, High Holborn, London.

FIRST-RATE SEEDLING FUCHSIAS, VERBENAS, AND PETUNIAS.

FUCHSIAS.

KOSSUTH.—Tube and sepals bright crimson, broad, and well reflexed; corolla violet purple, large and well formed; the habit and growth of Coralina, with blooms twice the size; of bell-like form, with remarkably beautiful foliage, together with its abundance of blooms. G.S. has no hesitation in saying that it is the best dark Fuchsia ever offered to the public. It has taken first-class Certificates at the Royal South London, the Central Floricultural Society, and North London Shows, the only places exhibited. It is also highly spoken of by the Editors of the *Gardeners' Chronicle*, Gardeners' Journal, The Hive, &c. Strong plants 10s. 6d. each, April 22.

QUEEN OF MAY.—A fine large stout flower, tube and sepals white, the latter with a slight tip of green; corolla rosy lilac, large, and well formed; a fine variety. Was awarded a first-class Certificate at the Royal South London in July last. 5s. per plant in April.

ORION.—Shown at the Royal Botanic Gardens as Wonder. This will be found to be by far the largest Fuchsia yet offered; a remarkably free bloomer and good habit; colour, tube and sepals dark crimson, corolla rose purple; of good form; a noble variety. Was awarded a first-class Certificate at the North London Floricultural Society. Plants in April, 5s.

VERBENAS.

G. S., in offering the following Six Seedling VERBENAS, begs to say that they are of the most exquisite form, their colour decided, large, and of excellent habit.

MONITOR (Smith).—A most beautiful rich rosy scarlet, with bright pink eye, corolla large and well formed. A most superb variety. Awarded a first-class Certificate at the London Floricultural Society.

CALLIOPE (Smith) is a bright rose, suffused on the edge and richly blotched, with crimson centre and yellow eye. "The form of this variety is a decided improvement on many out; size of pip large, a fine trusser."—Gardeners' Journal. A first-class Certificate awarded at the London Floricultural Society.

DESDEMONA (Smith).—"Salmonish pink, richly blotched with rosy scarlet, centre greenish lemon, form pretty good, size of pip and truss desirable."—Gardeners' Journal. A first-class Certificate at the London Floricultural Society, and a premium as the best seedling of 1849 at the Royal South London in September last.

MASTERPIECE (Smith) is a fine flower, very showy, if not of first-rate form; colour a magnificent purplish crimson, centre greenish lemon, eye white, a noble trusser. "Mr. Smith's Seedling Verbenas were very good."—Gardeners' Journal, Sept. 1.

LAURA (Young).—A bright rich salmon, the eye being surrounded with bright crimson, truss large, a most beautiful variety. A first-class Certificate awarded at Camberwell.

LETITIA (Young).—A beautiful delicate peach colour, with a blotch of bright rosy pink, very distinct and fine.

G. S. begs to say that the above six will be sent out in good strong plants by the 22d April, at 5s. each, or 25s. the set.

PETUNIAS.

G. S. has much confidence in offering the following three Seedling PETUNIAS, raised by Mr. Young, of New Cross, together with his "North London."

PICTA.—Form excellent, ground colour blush, with a deep margin of rose-pink; throat pale primrose, beautifully pencilled with purple; good habit. Was awarded a first-class Certificate at the Royal South London in July, 1849.

LETITIA.—Form excellent, ground colour a beautiful mottled rosy lilac, the corolla being divided into five distinct compartments with a deep purple, the throat pale primrose, which shades softly into the ground colour; excellent habit.

YOUNGII.—A rich purplish crimson, with a jet black throat, corolla of great substance, a superb round flower, and excellent habit. Was awarded a first-class Certificate at the Royal South London in July, 1849.

NORTH LONDON (Smith.)—Ground colour bluish pink, beautifully striped with rich purplish lake, good size and habit; awarded a first-class Certificate at Highgate. Plants in April, 3s. 6d. each.

G. S., in offering the above, warrants them to be distinct and very superior varieties.

G. S. can also supply all the Foreign and English Novelties.

Post-office orders from unknown correspondents made payable at Islington.

G. SMITH, Tollington Nursery, Hornsey-road, Islington.

UNEQUALLED NEW SEEDLING ANTIRRHINUMS.

ROBERT WHIBLEY begs to refer the reader to his Advertisement of the 9th of February last.
Nursery, Kennington, London.

JAMES WHOMES, Royal Pelargonium Nursery, Windsor, can supply fine Plants of HOYLE'S "CRUSADER" GERANIUM at 36s. per dozen; and every other fine variety equally cheap.—April 13.

VERBENA—"WONDERFUL."

G. MOORE begs to refer the Readers of this Paper to his Advertisement of the 2d of February.
Perry Barr, near Birmingham, April 13.

PELARGONIUMS AND NEW PLANTS, MANY OF THEM FROM CALIFORNIA AND CHINA.

H. GROOM, Clapham Rise, near London, by Appointment FLORIST TO HER MAJESTY THE QUEEN, and to HIS MAJESTY THE KING OF SAXONY, begs to say that his CATALOGUE OF PELARGONIUMS AND NEW PLANTS is ready, and will be forwarded by post on application.

FLOWER SEEDS FREE BY POST. — One Hundred packets of the newest and best sorts for 18s.; Fifty for 10s.; Twenty-five for 6s. Selection can be made from RENDLE'S Descriptive Catalogue of Flower Seeds.

GERMAN SEEDS.—*We have a large stock of all the best varieties* (*See our Advertisement, page* 177, *March* 23, "Gardeners' Chronicle"), *including Stocks, Asters, Wallflowers, Balsams, Larkspurs, Hollyhocks, Zinnias, &c.*

For particulars apply to WILLIAM E. RENDLE and Co., Seed Merchants, Plymouth. Established 1786.

CHOICE SEEDLING PETUNIAS.—We have the pleasure to offer the following varieties of our own raising, which have been selected as first-rate from a large number of other Seedlings, and we trust will give equal satisfaction to the varieties we have hitherto sent out. To be sent out on April 20.

Magnificent, a fine rich crimson, colour and shape of "Brilliant" sent out last year, but having darker veins	5s. 0d
Castor, a large and distinct lilac, with a very rich dark purple throat	3 6
Pollox, a large silvery blush, with a dark rich purple throat	3 6
Orion, a rich lively crimson lake, of fine form	3 6
Syren, pure white, with a rich bright pink throat, good round form	3 6
Cassandra, French white, lilac pink throat, veined, edges of the corolla blotched with lively pink, large and fine	3 6

The usual allowance to the trade by taking the set, or for three plants of a sort.

12 new varieties of last season	12 0
12 superior varieties	9 0
12 fine ditto	5 0
25 varieties in choice assortment	15 0

The above free by post if required.
BASS AND BROWN,
Seed and Horticultural Establishment, Sudbury, Suffolk.

WOODLANDS NURSERY, MARESFIELD, NEAR UCKFIELD, SUSSEX.

WM. WOOD AND SON are now issuing copies of their new CATALOGUE OF STOVE AND GREENHOUSE PLANTS, to which is added Descriptive Lists of all the newest Camellias, Cinerarias, Fuchsias, Verbenas, Petunias, and Chrysanthemums, with a very extensive collection of plants adapted for bedding.

W. W. and S. have a large stock of Dwarf Roses in pots. April and May are the best months for planting out the above. They will be supplied as under, the selection being left to themselves.

Hybrid Perpetual and Bourbon Roses ...	12s. to 18s. per dozen.
Tea-scented and Noisette do.	12s. to 18s. "
China and climbing do.	9s. to 12s. "

Catalogues will be forwarded, GRATIS, on application.

NGAINES begs to inform the admirers of Fancy GERANIUMS, he intends sending out on Monday next the following Seedlings: Gaines's Parodi, Lady Louisa Cornwallis, Elegans, Priam, Nina, Queen Superb, Signora Carolinii, Odorata variegata; also he has good strong plants of his Hero of Surrey and Cerise Unique.

On the 1st of May will be ready for delivery, his superb new Seedling DAHLIAS Lady Auckland, Empress of Yellow, Lord Hardinge, Fancy do., Princess Louisa, Hero, Desdemona, Rotundiflora and Atalanta. Opinion of this Paper (1849), see August, No. 34; September, No. 38. Gardeners and Land Stewards' Journal, August, No. 32; September, No. 35.—A Descriptive Catalogue of the above, including Calceolarias, Dahlias, Pelargoniums, Fuchsias, Cinerarias, Chrysanthemums, Azaleas, Verbenas, Rhododendrons, &c., may be had by applying at the Nursery, Surrey-lane, Battersea, April 13.

The Gardeners' Chronicle.

SATURDAY, APRIL 13, 1850.

MEETINGS FOR THE ENSUING WEEK.

MONDAY, April 15—Medical ..8 P.M.
Pathological.. ..8 P.M.
Chemical ..8 P.M.
TUESDAY, April 16—Linnean..8 P.M.
Horticultural ..3 P.M.
Civil Engineers..8 P.M.
WEDNESDAY, April 17—Society of Arts ..8 P.M.
Royal South London..1 P.M.
Microscopical ..8 P.M.
THURSDAY, April 18—Royal ..8½ P.M.
Antiquarian ..8 P.M.
FRIDAY, April 19—Royal Institution ..8½ P.M.
SATURDAY, April 20—Asiatic ..2 P.M.
Westminster Medical ..8 P.M.

THE plan of growing early crops by aid of WASTE STEAM, as contemplated by the writer in the "Journal of the French Polytechnic Society," does not appear to have had any reference to a protecting roof, but to have been limited to the gain derivable from the mere augmented heat of the soil. The good effect by this means produced upon Pine-apples, daily exposed to the open air, is particularly referred to.

That all flowers will be brighter, and all fruits higher flavoured, if ripened under the free and full influence of the atmosphere, has long ago been shown by us, and is familiar to all observing gardeners. Nor has this difference been affected in the least by the increased light now obtained by large and clear sheets of glass. Augmented light will in no degree compensate for insufficient ventilation; on the contrary, it renders the free admission of air more than ever necessary. If, then, glass could be dispensed with, and its place supplied by ground heat, an important gain, as well as a saving, would be the result. This was sufficiently proved by the very interesting experiments tried in Lady ROLLE's Garden at Bicton, of growing Pine-apples in the open air. We venture to say no such *high-flavoured* Pine-apples had ever before been tasted in England. But the Bicton experiment began in May, and ended in the autumn; the Pine-apple plants merely swelled and ripened their fruit in the open air; all the preparation for fruiting was made beneath glass. The question then still remains whether by permanent ground-heat the Pine-apple, or any such plant, can be made to bear our winters, and also whether, if that be so, the yet more tender leaves and flowers of forced hardy plants would thus be enabled to dispense with artificial protection.

Upon this point very little information exists—no one having instituted a series of experiments to decide it. We know, indeed, that in what are called hot countries severe frosts are experienced for many nights in succession without injury to the vegetation, if the air be dry—as in New Holland, for example. We have also before us the very curious fact, for which we are indebted to Messrs. LEE, of Hammersmith, that some Pine-apple plants having been accidentally frozen hard in a dry neglected Pinery, nevertheless survived and produced fruit, which fruit we tasted; and, although small, it was quite as good as half the Pine-apples sold in the markets. But in these cases the dryness experienced is precisely what cannot be secured in the open air in Great Britain, and therefore they furnish no data upon which any opinion on this question can be formed.

The following experiment is more useful. In December 1848, some plants were plunged in soil in a Melon pit, the soil being heated; but the plants above it exposed to the open air, unprotected by glass or other covering. The following was the result:

SURVIVED.	
Edwardsia flexuosa	Echeveria secunda
Berberis tenuifolia	Abutilon striatum
Habrothamnus elegans	Phœnix dactylifera
Acacia melanoxylon	Dion edule
„ species, New Holland	Opuntia, species
	An Agave, from Mexico
Melaleuca pungens	Heliotropium peruvianum
Heimia salicifolia	Statice mucronata
Camellia Welbankii	Fuchsia (The *Gem*)
Orange (stock)	Ceanothus azureus.

DIED.	
Passiflora hederæfolia	Habrothamnus fasciculatus
„ Bonapartei	Genista canariensis
Begonia suaveolens	Acacia pulchella
„ uncinata	„ albicans
Candollea tetrandra	Pelargonium (Ivy-leaved)
Callistemon marginatus	Statice Dickensoni.
Templetonia glauca	
Anona Cherimolia	

Lowest temperature at night during the trial 19°
Average night temperature during the trial... 33°.41
Average temperature of the soil in which the plants were plunged ... ... 60°.07

Considering that this experiment was not tried with plants established during summer in the soil, but turned out in the middle of December, and immediately exposed to the inclemency of winter, it leads to the inference that heated soil must influence greatly the power which plants possess of resisting cold, even when accompanied by wetness. But it is very far from conclusive, and requires to be repeated, and varied in many ways. Supposing, also, that it had been wholly successful, there would still have remained the question of cost; for it might, and probably would, have turned out that to maintain the necessary earth temperature would be dearer than to cover the ground with a glass roof. If, however, the waste steam of a manufactory could be thus applied, the question would wear a different aspect.

We believe that the earliest suggestion of the possibility of turning STEAM POWER TO THE PRODUCTION OF AN UNDERGROUND CLIMATE, was made by the Right Hon. T. F. KENNEDY. We have now before us a letter dated "Treasury Chambers, Dublin Castle," in the early part of 1849, from which we make the following extracts:

"Some consequences at once occur to me as very important. I should think that the liquid might be injected into the subterranean pipes much less diluted than it can be applied on the surface to plants, whereby a smaller expenditure of power would be required for distribution, by steam power or otherwise. The utmost economy of the material would be secured, because all gaseous action would take place under-ground, and its whole effects would unavoidably go to use and profit.

"But another idea has occurred to me, which I am anxious to bring under your consideration, because I venture to hope that it may be of importance. I assume that a garden or field is laid with earthen pipes, in parallel lines, 3 feet apart, and 14 or 16 inches under the surface (the land being already either thoroughly dry or thoroughly drained), and that liquid manure is injected and absorbed by the soil in sufficient quantity. I assume also that the pipes are not less in diameter than 1½ inch; if 2 inches so much the better, and the mains considerably larger. My idea is, that *into these same pipes*, which convey the liquid, when they are either only partially filled or emptied by the absorption of the liquid, *there shall be injected* by steam power a *powerful current of heated air*, after the manner probably of the hot blast in smelting iron-stone, but of course at a lower temperature. By this means an *actual climate* may be created under-ground, the pipes will acquire and retain and emit heat, the gases of the liquid manure will be extricated (and the stronger the liquid the more powerfully), fissures in the subsoil will be created by the diffusion and action of the heat which will pervade the subsoil, the gases and the fluid will be rapidly absorbed, always under the pressure and retentive power of the incumbent soil, and the roots of the plants will be enticed downwards by the genial temperature, and by the supply of food.

"I venture to think that the effects of such a system, modified according to circumstances, may be very great, as applied to crops of all kinds, whether in the garden or on the farm, in the meadow or on the tillage land; but I forbear to enter into speculative details, because you will at once appreciate the notion either as important or the reverse.

"I may, however, observe, that atmospheric air is at least a cheap and not a rare commodity, and that to *heat* it cannot be very expensive compared to the value of the results which possibly may be attained. It would seem that almost a tropical climate might be created under-ground, while I fear that a British climate must remain on the surface; but still if the notion be not wholly fallacious, the results may be notwithstanding very great. To secure the passage onwards in the pipes of the hot air injected, it might be necessary to have the pipes to terminate in upright shafts, coming to the surface at long distances, which, while they would render the effectual injection of the air *practicable*, would not infer a great escape of heat; but even this might be regulated.

"Experiment can alone determine the mechanical working of such a system, as well as its effects on vegetation, but it seems to me that the combined effects of the injection, to any available extent, of liquid manure and of hot air, throughout a season, might produce very great results. Another mode of operation might be—first, the hot air might be injected in pipes under-ground, and, if preferred, the liquid might be applied on the surface; but, in that case, a large portion of the gases would be driven off, *unprofitably*, into the atmosphere.

"In either case, good draining pipes, even without collars, laid throughout the land, seem to be the only machinery required, with the aid of steam power, and a chamber in which to heat the air. The necessary interstice between each pipe, of 12 or 14 inches long, seems to afford an excellent escape for the fluid and gaseous manure, and for the hot air; and the greater the heat and the power employed for the alternate injection of *air* and *liquid*, the more rapidly and effectually may the process be carried into effect.

"In cases where land is to be cultivated deeply for a varied succession of crops, the pipes should probably be laid at a depth of 16 inches, so that there should be no interference from the plough or from the spade; but if the system were to be applied to permanent meadows, or to the growth of successive crops of Italian Rye-grass, the pipes might probably be placed at a depth only of 8 or 10 inches, by which means the action upwards of the manure and heated air might be very immediate and constant on the roots of the Grasses. The effect might no doubt be an almost unheard-of succession of heavy crops of Grass throughout a season; for in reality it would be a system of *continuous forcing* applied to the produce of our fields, instead of to the produce of our hothouses; and that by an extremely simple, and by no means expensive instrumentality compared to the value of its products. If applicable to field culture, the system might be still more applicable to market gardens, the produce of which is wanted at all seasons, and which, from the price they bear, would amply pay for any expenditure which might promote production at times more or less *out of season*."

Here we have, at least, a practicable method of employing steam-power pointed out, and one to which we presume that no objection would be made in the neighbourhood of a manufactory, although there might be some difficulties about it in mere agricultural districts. That a good deal may really be accomplished with economy in this way we entertain no doubt, at least between April and November; and that would be a material gain. But we cannot imagine that, in mid-winter, this kind of gardening would succeed, unless for the mere preservation of vegetable life; and for forcing purposes it would have little application, unless in the case of such productions as Mushrooms, Rhubarb, and Seakale. It is possible, however, that some of our intelligent correspondents may have some experience to produce, and, if so, we would earnestly invite them to communicate it for discussion and examination.

To the history of the VICTORIA WATER-LILY we have now the gratification of adding a second instance of its having produced its flowers, and this time near London, within reach of the curious who have no means of visiting Chatsworth. In a large tank, at Syon House, constructed upon Mr. PAXTON'S plan, the sovereign of the lakes and rivers has begun to blossom with great vigour, and will probably continue to do so for many weeks—or even

months to come. Each day produces its flower, which begins to open in the evening and bursts into full maturity in the succeeding day. This vegetable wonder will prove a subject of great interest to those who have permission from the Noble Duke to inspect the magnificent gardens in which it has appeared.

NOTES OF A TRAVELLER.—No. XI.

AN ACCOUNT OF THE DISCOVERY AND INTRODUCTION OF THE NEW FUNEREAL CYPRESS.—Permit me to give you an account of the discovery of the new Cypress sent home last year, and which you have described in a leading article, p. 243, 1849, and named C. funebris. If you will look at the map of the eastern coast of China you will observe the tract of a large river which falls into the Bay of Hangchow between the 30th and 31st degrees of north latitude. About 150 miles up this river, and near to the far-famed green-tea country of Wheychow (Hwuychow), the following notes were entered in my journal.

"But the most beautiful tree found in this district is a species of weeping Cypress, which I had never met with in any other part of China, and which is doubtless quite new. It was during one of my daily rambles that the first specimen presented itself to my eye. About half a mile distant from where I was, I observed a noble looking Fir tree, about 60 feet in height, having a stem as straight as the Norfolk Island Pine, and pendulous branches like the Weeping Willow. The branches grew at first horizontally with the main stem, then described a graceful curve upwards, and drooped again at the points. From these main branches, others, long and slender, hung down towards the ground, and gave the whole tree a weeping and graceful form. It was also very symmetrical, and reminded me of some of those large and gorgeous chandeliers which one sees in large theatres and public halls in Europe."

What could it be? It evidently belonged to the Pine tribe, and was more handsome and ornamental than them all. I walked—to tell the truth I ran—up to the place where it grew, much to the surprise of my attendants, who evidently thought I had gone out of my senses. When I reached the spot where it stood, it appeared even more beautiful than it had done at a distance. Its stem was perfectly straight, like the well-known Cryptomeria, and its branches were formed like those of the Arbor-vitæ, but much more slender and graceful.

The tree was growing in an inclosure belonging to a country inn, and was the property of the innkeeper. It was covered with a quantity of ripe seeds, a portion of which I was most anxious to secure. A wall, however, intervened between us and it. I confess I felt very much inclined to climb over it, but remembering that I was acting a Chinaman, and that such a proceeding would have been very indecorous, to say the least of it, this idea was immediately given up. Another scheme was adopted with the most complete success. We walked into the inn, and seating ourselves down quietly at one of the tables, ordered dinner. When we had dined, we lighted our Chinese pipes and sauntered out into the garden, where the attraction lay, accompanied by our polite host. We led the way towards the tree, and drew his attention to it. "What a fine tree you have here; we have never seen it in the countries near the sea where we come from: pray, give us some of its seeds." "It is a fine tree," said the man, who was evidently much pleased with our admiration of it, and readily complied with our request. These seeds were carefully treasured up and sent home to England, where, I am glad to hear, they are now growing most luxuriantly.

Afterwards as we journeyed westward the Cypress became more common, and was frequently seen in clumps on the sides of the hills. It had a most striking and beautiful effect upon the Chinese landscape, and I have no doubt in a few years to see the same effect produced by it upon our own. It will be particularly valuable for park scenery, for lawns, for the entrance to suburban residences, and as an ornament for our cemeteries. I have no doubt that it is quite as hardy as Cryptomeria japonica and the Indian Deodar, and will be a fit companion for both in our parks and pleasure-grounds. *R. F.*

PARSNIPS.

THE varieties of these that have been described or cultivated are the following:

Common Parsnip, aliàs Swelling Parsnip, Large Swelling Parsnip. Roots from 3 to 4 inches in diameter at the shoulder, tapering regularly to the depth of from 20 to 30 inches. Crown generally below the surface-level of the ground.

1. *Guernsey Parsnip*, aliàs Jersey Parsnip, Panais long, Panais Coquine. An improvement upon the preceding, the whole plant being larger and finer; roots sometimes 3 feet long, and Dr. M'Culloch states that in Guernsey its roots grow to the length of 4 feet. In quality it is much the same as the common Parsnip.

2. *Hollow-crowned Parsnip*, aliàs Hollow-headed Parsnip, Panais Lisbonais. Leaves shorter than those of the common Parsnip; roots about 18 inches in length, from 4 to 5 inches diameter at the widest part, ending somewhat abruptly with a small tap root; crown hollow round the insertion of the footstalks, and grows generally below the surface of the ground. The seed should be sown in shallow drills, the drills 18 inches apart, and the plants thinned out to 12 inches from each other; or to 15 inches if very large roots are desired. By good cultivation they have been grown to between 4 lbs. and 5 lbs. weight each. This is the best variety for general cultivation in gardens. The *Fourqué*, formerly cultivated in Guernsey, is an inferior variety of the above.

3. *Turnip-rooted Parsnip*, aliàs Round Parsnip, Panais rond, Panais Royal. Leaves few, root chiefly above ground, from 4 to 6 inches in diameter, in shape resembling a round Turnip, with a strong tap root. It is the earliest variety, and will succeed in ground too shallow for the long-rooted kinds.

There is a variety described in Noisette's "Manuel complet du Jardinier," and mentioned by Dr. Neill, in the "Edinburgh Enclyclopædia," which appears to remain a desideratum. It is called Le Batard ou de Siam Yellow; in form intermediate between the round and the long; more tender-fleshed and richer-flavoured than the other varieties. *R. T.*

DISEASES OF PLANTS.

(*Continued from page* 213.)

GENUS VII.; *one species*. SHAKES (*or Shakiness*).—This kind of injury is much more frequent and dangerous in its consequences than is generally supposed. Little care is taken how young plants are beaten about. Yet the shock may occasion the laceration of one or more fibres, a thing which, though it may not show externally, may bring the plant into a bad state of health, by the internal disorganisation which it produces. Wind, considered as a mere mechanical agent, is often the cause of this evil; thence the precept of agricultural writers not to plant trees in places exposed to certain prevalent winds. It is not, as some would imagine, that these winds carry with them saline particles which are supposed to form incrustations on the trees and thus to affect them, but rather that by striking them repeatedly in one and the same direction they occasion internal lacerations. Besides, when winds beat about the young branches of trees, they cause these to rub against each other. The wind indeed cannot be stopped. But a careful cultivator can guard against many causes of similar injuries, and especially he can prevent the great mischief done by cattle rubbing themselves against young trees.

GENUS VIII. CONTUSIONS.—I give this name to all sorts of bruises observed on plants. They may be occasioned by blows, such as the fall of hail, or by ligatures. Hence two species, *Contusions from blows*, and *Contusions from ligatures*.

The cultivator soon learns the injuries inflicted by blows; but when they are produced by the striking of hailstones, he is apt to attribute them to some specific injurious principle in the storm. It is, however, merely by contusions that the plants are wounded, or even completely broken up and destroyed. The parts struck are torn and disorganised, and the adjoining vessels being often more or less affected the evil spreads. Therefore, after a hailstorm, tedious as it may be, the injured trees should be visited, the affected parts cut out and covered with Forsyth's composition, or the *onguent de S. Fiacre*. This applies to the larger contusions. It becomes impossible for the smaller ones, which are the the most frequent, and which after many hailstorms do much damage to many trees. The only remedy is a good pruning the following spring. It is not trees only but herbs also that suffer from these causes.

Contusions of the second species are very common. In tying stakes to trees or Vines, in bending branches of fruit trees, the ligatures are often made so tight as to bruise them and bring on ulcers, the general result of ill-cured wounds. When grafts are bound too tight, the sap stagnates, and black spots indicating contusion may always be observed. Cultivators cannot be too frequently reminded not to tighten ligatures more than absolutely necessary, and always to use for bandaging materials of a certain degree of elasticity.

GENUS IX. EXCORIATIONS.—Not unfrequently, whether from ignorance or wantonness, the epidermis or bark is scraped or torn off. Cattle rubbing against smooth barked young trees will not only carry off the bark, but even lay the alburnum bare. Nature, it is true, will in many cases of herself repair the injury; yet in many others, by neglect the wound will be converted into ulcers. The careful cultivator will therefore, in going his rounds, examine his trees, and apply the pruning knife, wherever he perceives such injuries, and even if only the outer bark is torn off, he will take measures for protecting it from the action of wet or cold. In the case of our hardy trees such precautions may perhaps be ridiculed, but in botanical gardens many are the exotics lost from the neglect of them.

ON THE CONDITIONS ESSENTIAL TO THE MOST PERFECT CULTIVATION.—No. XIII.

EVERY day witnesses some improvement upon old systems, both in men and things, and every year records in its annals the destruction of some useless but time-honoured practice, and it is only when we look back from some point of progress, some intellectual eminence attained, that we become sensible of the advantage of the innovation, and wonder that we were so long blinded by prejudice.

Most assuredly one of the conditions *not* essential to perfect plant cultivation is a *porous* pot. And the day that shall witness its banishment from our gardens will be an era, even in this draining age of gardening. Half the difficulties experienced in the cultivation of hard-wooded plants arise from the necessity of using precautionary measures to combat the deleterious qualities of the porous pots in which the plants are grown. I am aware that such an opinion will meet with some opposition, and I may possibly be looked upon as an horticultural visionary, but I think a careful investigation of the subject will at least induce respect.

One great requisition in the successful cultivation of delicately rooted plants is, the absolute necessity of a certain amount of moisture in the soil. Once let a pot-bound Epacris or Erica be thoroughly exhausted of moisture, and it becomes almost impossible to induce water to resaturate the mass. The soil employed is adverse to the admission of water unless a given portion of moisture is present to separate the individual particles, and to act as conductors. Now, a plant growing in a porous pot, under ordinary circumstances, is subjected to an enormous (and, compared with natural conditions, a greatly augmented) surface of evaporation. The moisture of the earth, which should escape only from the surface (of course I do not allude to drainage), is constantly flying off from the whole surface of the pot. It might possibly be argued that the pot absorbs as well as gives off moisture. But I cannot imagine a condition under ordinary plant culture where the atmosphere of a house should hold in combination a greater amount of moisture than the soil ought to do. And it is with the evaporation of moisture as with the radiation of heat, any two bodies in contact or proximity will appropriate either in excess, according to their capacity for doing so. Again, it is a well ascertained fact in physics that evaporation produces coldness in a direct ratio to its rapidity or copiousness. And as it is so much insisted on by modern scientific gardening that the soil should be in advance of the air in temperature, it becomes a certainty that to produce a *vice versa* condition the best means would be to employ a porous pot. And here I would not be misunderstood. I would still employ the same material, mechanically speaking, but I would coat the exterior with a dense glaze, and also the interior of the pot for an inch or two from the surface of the rim.

For the healthy conditions of vegetation it is not needed that evaporation should take place from the soil, other than at the surface. By the present porous pot plan the labour of watering is increased three-fold with no ultimate benefit. On the contrary, the frequent use of water is calculated to deteriorate the soil, deprive it of its inorganic constituents, and to rob it of its porosity. The evil effects of porous pots are not so apparent in large as in small ones—the larger ones, on account of their thickness, offering a more formidable barrier to the escape of moisture. But the evil, if less in degree, is equally great in principle, and should be done away with.

By using non-porous pots we might, I think, adopt Mr. Knight's mode of Pine growing (*i. e.*, without employing a plunging medium for obtaining bottom-heat), with great success. Could such a condition be arrived at, everybody with a 12-light pit and a row of hot-water pipes might enjoy his Pine-apple, with less expenditure of labour than is required for producing a crop of Melons; and it is not too much to say that the culture of every tropical plant might be carried on with less trouble and expense than at present. I am at a loss to understand upon what principle the porous pot is insisted on. In what essential condition does it imitate a natural process necessary to the perfect development of vegetable life? In none; but on the contrary, it is calculated, as I have stated, to rob the plant of its necessary root moisture, which loss requires to be met by a constant application of the watering pot, involving an amount of labour which might be directed to a more useful channel. It is not only in decreasing the amount of labour and watchfulness, however, that the employment of glazed pots would effect a benefit, but in the general appearance of the pots themselves. No green lichens could obtain a footing, and any dirtiness could be so readily removed by the hand, or even with the syringe. An old pot would be as handsome as a new one, and the coating of glaze would render it less liable to be broken. But there is another objection to the ordinary pot, and that is on the score of taste; I allude to its colour. Nothing breaks up the harmony of a house of fine plants so much as the red brick colour of the pots. The employment of a bright red colour for gravel walks is not more at variance with true harmony in the keeping of garden scenery than that of bright red pots to exhibit plants in.

I would adopt Mr. Forsyth's idea expressed in an article in this Paper several years since, and have all flower-pots in which ornamental plants are to be seen of a quiet stone colour, or a neutral tint. I think it was Brown who was wont to say that a red-bricked house set a landscape on fire, and it might be said with equal propriety that red garden pots scorch the quiet effect of a greenhouse. Surely the time has arrived for paying some slight attention to taste in garden matters, but the progress is tardy. We still cling to the abominable "lean-to" to grow plants in, and for what reason it would be difficult to define, at least upon the score of utility. We have abandoned the old straggling system of plant growing for an opposite extreme; the knife and shears obliterate every natural characteristic of the plant so treated; and the old antiquated red brick flower-pot is still endured, let it be hoped, not because it is thought useful, but merely as a mark of esteem for past services. Let us, however, expect better things soon. *G.*

Home Correspondence.

Victoria Regia, at Chatsworth. — This plant is at present in the most vigorous health, the leaves are rapidly increasing in size, and have already arrived at nearly the same dimensions as the largest which was produced during the last season. A flower opened on

Monday, the 8th inst., and measured 13 inches in diameter; this is more than two inches wider than any which had previously expanded, the largest never before having exceeded 10¾ inches. I have also about 20 young healthy plants, which his Grace the Duke of Devonshire has kindly permitted to be distributed. I shall therefore be most happy to furnish a plant to any person who possesses sufficient accommodation for its successful growth; but no tank of less dimensions than 15 feet in diameter will answer for the purpose. Our new tank at Chatsworth, already in progress of building, will measure 33 feet across (inside measure), and, if necessary, we can add considerably to the size. Of the plant's duration it may be well to state, that the flowering specimen has formed large, fleshy root-stocks, and that its perennial character may now be considered almost certain. *Joseph Paxton, April* 10.

Feeding Bees.—It is an excellent plan to give bees a general feeding once or twice in the course of this month (April), on a mild day; it stimulates the workers to animation and activity, and thereby aids the bees in maintaining that temperature of heat in the hive, so necessary to the proper development of the brood, which is to form the swarms of the ensuing month. Two pounds of the best moist sugar, boiled a few minutes in one pint of water, in which two teaspoonfuls of salt have been previously dissolved, will prove a most welcome test. The liquor may be poured into any flat vessel, a wooden trough, or dish, with a board fitting the top of it, not exactly, but so much so as to prevent the bees from passing by its sides; it should be perforated with numerous holes, through which they may reach the liquor without danger. *Apiarius.*

Cropping a Kitchen Garden.—Will some of your readers give me some information as to the management of my kitchen garden. I have only recently come to this place, where I find to all appearance a beautiful garden, walled on all sides to a height of 14 feet. The soil is a rich rather light loam, situated on a gentle slope towards the south-west. The extent is nearly an acre and a half, yet I am told that I can grow neither Carrots, Parsnips, Potatoes, nor Celery. The Potatoes run to leaves alone, the others to tough stringy fibre. I cannot help believing that the chief cause of the failure lies in the gardener's ignorance of the right mode of succession in regard to his different crops. He seems to have no idea of arrangement, but uses any vacant ground that first comes to hand, for whatever purpose he requires it. I cannot dismiss him, for various reasons; and as he is a hard working honest man, I think by a little instruction, I may be able to remedy the evil. Under all the walls is a border about 3 yards in width, the central part is intersected by two hedges. Flowers, fruits, and vegetables have all been grown together in the central quarters, and the borders under the walls have been cropped with early Peas. The latter plan I have stopped at once; but in order to restore the fruit trees to health, I wish to know whether it is necessary to do more than leave the borders uncultivated and top-dress them; whether the roots of the trees must be artificially raised; or whether they will naturally throw their roots to the surface, if there is good soil to attract them. Would it continue the mischief if I used the ground to raise slight annuals? The whole extent of the border facing the north-west the gardener declares to be useless, except for winter greens. Is this the truth? Can no use be made of it throughout the spring and summer? The sun shines upon it from somewhere about 2 o'clock in the afternoon at this period of the year (April). Will some one give me a scheme for the proper rotation of crops in such a garden. I ought to say that the gardener declares that the soil is worn out (it has been made about 10 years); but the situation affords great facilities for a change of manure, as it is connected with a large farm, and close to the sea-shore. Hitherto it has been manured only from the stable; would not sea-weed be an advisable change? *L. B. S.*

Pond Mud.—In discussing this subject, we should first of all determine the meaning of the terms we employ. A "pond" is not a sufficiently definite expression whereon to hang an argument. I know ponds in Wales, each of which covers many acres of ground. They are constructed for, and the water is daily and nightly used by the immense iron works there, in hydraulic balances, the twyers, steam-engines, &c. To none of these ponds, however, can "D.'s" description of mud (see p. 201), apply, which, he says, "contains a considerable proportion of animal matters." The fact is, the mud of these ponds contains nothing of the kind to any appreciable extent, the efflux of the water being too active. "D.'s" description can only apply to stagnant water, say a pool or ditch, which is liable to receive decaying vegetable matter, or excrementitious filth, fit fœtid food for foul things to "knot and gender" on. With these premises, I can agree with "D." that lime and salt would be an unnecessary addition to such a compound, so redolent of fœtid animal and vegetable matter. As to his mode of removing the mud, I do not object to it on the whole, although I consider that a leathern pouch secured to a suitable iron ring, fixed at the end of a pole, is as efficient as the iron pouch, and far more easy to handle by the workmen. In point of fact, this working part depends rather on local circumstances and the manager than on any prescribed method beyond the general features. *W. E. Gill, Truro.*

Artistic Arrangement of Plants in Glass houses.—The remarks which you have lately made about cultivating plants without pots, in a more natural and tasteful manner than is commonly seen in greenhouses, have induced me to suggest to your readers a plan which I have often wished to put in execution had circumstances allowed me. It is this. That a moveable house should be constructed, which might rest on light iron pillars, inserted on blocks of wood level with the surface of the ground like a Tulip house, the size and shape depending upon the situation. If a place was chosen where there is natural inequality of surface and rocky sandy soil, a beautiful imitation of the vegetation of the Cape and Australia might be made by planting the various kinds of Epacris and Ericas, with perhaps a few Chorozemas, Diosmas, Boronias, Pultenæas, Genistas, Eutaxias, &c. The ground should be on a slope, and the paths should wind round real or artificial masses of rock. In the lower part of the house a small artifical pond or tank might be placed to hold the rain-water from the roof in winter. Some patches of Ixias, Babianas, Sparaxis, and such small Cape bulbs might be planted here and there at the sides of the path. Perhaps, at the back or centre, one or two Rhododendron arboreums, or some new Indian kind, might be



placed; but probably they would grow too large for a moderate-sized house. About May or June the whole of the glass might be removed, and the sashes and lights used in the Melon ground, &c. No bricklayer's work would be wanted, and no heating apparatus needed, unless perhaps a small portable Arnott's stove in the most severe part of the winter. In gardens where there are already good-sized plants of the kinds above named, the work would be very soon and easily effected. Iron and glass are now very cheap, and the whole would be in fact on the plan of a hand-glass. Many suitable plants might be obtained which flower at all seasons, and the place need never be without some blossoms. I have stated that a slope would look the most natural and picturesque, but of course it would require some artistic taste to arrange the thing properly. The accompanying sketch will convey some idea of my meaning. The back might be boarded and covered with the patent asphalte felt, which is a good defence against frost. A curvilinear iron house would be the most ornamental. The dotted line shows the natural slope of the ground. An erection of this kind must not be on too small a scale. *C. D. S., Chichester.*

—The superiority of the French in horticultural embellishment arises not so much from a practical acquaintance with art being more common with them than with us, as from a more correct estimate of what constitutes a man an artist. The phrase of the craftsmen of the middle ages when speaking of their craft, was "art and mystery," and a very appropriate phrase it was, for truly the art which could produce such works as those now collected for our instruction in the rooms of the Society of Arts, is a real mystery to the great proportion of those who call themselves artists in these degenerate days. In former times the influence of men of genius, famous painters, sculptors, and architects, was far more extensive and beneficial to arts and manufactures than can be the case now, at least in England, where every man, manufacturer or gardener, is his own artist. The French are wiser in these matters—they know that if they want a work of fine art, of whatsoever kind, they must go to an artist for it, and they make their selection from amongst those who have shown their ability by the production of great works. Were we weavers of figured silks, or printers of calico, and we could meet with an adviser in such a colourist as we have lately lost in Etty, we would never put forth a pattern until we had first obtained his approval of our design; and with regard to the appropriately picturesque in gardening, I believe that if men with such a thorough knowledge of composition and practical experience concerning scenic effect as Stanfield or Roberts were to undertake the arrangement of one of our great collections, such as that in the noble conservatory at Kew, we should have a school of art the influence of which would soon be felt all over the kingdom, and in which the artists of the Jardin D'Hiver might take lessons of taste. As the woodcuts given in your numbers of the 9th and 16th March may enable me to render some of my former observations on the subject of fine art more intelligible, I beg again to refer to them, and I am the more desirous of doing so because they suggest a few hints which may possibly prove of use to those who are desirous of investing their plant-houses with an interest beyond that resulting from the beauty or peculiarities of the individual plants. With regard to the print from Von Martius, I would observe that however valuable in respect of its truth of detail, I by no means adduce it as a specimen of artist-like picturesque arrangement; on the contrary, it affords an instance of that faulty kind of composition which I had in view some time ago when I gave a caution against the admission of equal quantities of similar forms. If it were a view of the interior of a conservatory instead of a Brazilian forest, the position of the two trees constituting its most important features might be accounted for and excused on the supposition that they were so placed to conceal the supports of the roof; and had pictorial effect been the object, it might easily have been obtained by giving some of the interesting forms in the middle distance greater connection with the foreground. There is, however, one pictorial feature in the print after Von Martius, which (common-place though it be) is notwithstanding very preferable to the corresponding portion of the print from the Horticultural Society's Transactions, given in your Journal of the 16th ult. I allude to the grouping of the objects (below the eye) in the near part of the foreground, which may be taken as an illustration of what is termed breadth, as opposed to "littleness" and "spottiness," of which latter defects the one—two—three—four little independencies occupying the foreground of the Society's print is a palpable instance. I must not, however, forget that the sketch was probably taken at a time when allowance was made for the massing and connection of the parts by their growth. Although the waterfall and its adjuncts are by no means badly conceived, I should have been better satisfied had the two portions into which the fallen stream is divided been less equal in height; and I could moreover have wished that the upper half had been virtually divided into two or three streams, for the sake of variety, as well as for the purpose of adding by contrast to the importance of the lower fall. I am also reminded by this print of another way in which I think the imitation of Nature might be considerably advanced, and the composition rendered more pictorially perfect. Instead of those queer looking little logs of wood dangling from the rafters, on which beautiful Epiphytal plants are usually gibbeted, I would have a real tree, or a considerable portion of one, the branches of which might be so arranged as to lead the eye from contemplating the rafters of the roof, and at the same time afford most appropriate habitats in its forks and branches for the most beautiful and interesting objects in the whole vegetable kingdom; and what an invaluable adjunct an old Oak tree might be made to such a waterfall as that of Mr. Llewellyn! *M.*

Birds: Tomtits.—I was very glad to find that a naturalist who stands so deservedly high as Mr. Doubleday should have come forward in favour of my old friends, the tits, about whom you may remember I had a few years ago a somewhat furious contest in your Paper with one "Furibus hostis," upon which occasion I took exactly the same grounds as Mr. Doubleday has now done with convincing force. Equally glad was I to see that, although Mr. Graham would not be convinced against his will, he yet generously conceded the point that tomtits do more good than harm; and his example might be followed with great advantage to themselves, with great credit to their humanity, and with undoubted benefit to their pockets, by those who continue still to poison by the bushel those birds which an all-wise Providence has created for our good. In this utilitarian age there is a strong tendency to sacrifice all that is beautiful in mind and body, as well as in the fresh green, joyous Nature by which we are surrounded, to the desire of making money. *Cui bono*—let me ask, to the mass who are bent upon these destructive principles? Carry out your views to the utmost extent. If it is a good thing to poison the birds in any given district, it must be a law of universal application. Carry out then, I say, your views—poison every bird, cut down every tree, and level every fence in the United Kingdom, and again let me ask, *cui bono?* Suppose you gain a few more bushels of corn per acre, would that repay you, or would the country thank you for turning it into a dull, monotonous, matter of fact, manufacturing sort of thing! But, suppose the contrary is the case, and as I have no doubt you will soon find to your cost your bushels per acre increase, in imagination, will dwindle woefully down; who then, I say, will thank you for turning fertility into barrenness, beautiful England into a sterile wilderness? Your own ruin is of small consequence in comparison with the misery which such conduct would entail upon the community. A gentleman who has permitted me to make use of his name, Mr. Paul, of Harleston in Norfolk, called upon me a few weeks ago, and informed me that, whenever in his district birds had been poisoned, the wireworms had increased immensely. Of course, in a few years, the system will tell with wonderful and amazing force. The wireworm remains as a larva three or four years in the soil, and as it generally feeds underground, it cannot be got at by the birds; but when it changes into the perfect insect, a beetle, the Elater lineatus, it then becomes the prey of the birds you poison. For every elater eaten by birds, probably a thousand wireworms are destroyed. The Royal Agricultural Society's prize for the destruction of wireworms might be gained by an essay of three words—"Protect the birds." Rooks, sparrows, tomtits, robins, finches, and most of our summer visitors are on the look out for these beetles, and all the return they get is a dose of poisoned Wheat, laid out for them by the ill-judged obstinacy, I was going to say stupidity, of the farmer. Again, the caterpillar of a moth, the Agrotis segetum, and allied species, in some seasons will destroy the Wheat and Turnip crops of an entire district. Poison the birds, and of course Agrotis segetum and its congeners will live to deposit its eggs, and the caterpillars resulting therefrom will live to eat your crops. *C. R. Bree, Stowmarket.*

——I must once more reply to Mr. Graham. I really believe he is mistaken about the blue titmouse. I am quite certain that it never picks off or in any way injures

the buds of the Cherry in this neighbourhood. A Cherry tree stands close to my house, and on this tree the blue titmouse may be seen almost daily, but I never saw one single bud removed; and I have closely watched a pair to-day on this tree within two yards of the window. In the garden the ground is often strewed with the remains of the buds, but this is the work of the bullfinches; these birds often seriously injuring the Cherry trees just as the buds begin to swell. The marsh titmouse may often be seen clinging to the heads of the wild Teazel in winter, and a superficial observer would suppose that he was engaged in extracting the seeds—whereas he is searching for the larva of an elegant little moth—Penthma gentianana, which feeds on the pith of the Teazel; and although there is nothing by which we can distinguish the heads of the Teazel which contain larvæ from those which do not, yet this little bird never opens a head which does not contain a larva. *Henry Doubleday, Epping.*

Fruit Protectors.—We have received from Mr. Halliman, of Queen's-place, Norland-square, Kensington, a letter, in which he explains his opinion respecting his fruit-protectors. He says that "the common striking-glass was not selected as a pattern for it; it was the old-fashioned straw bee-hive and the finger-glass used at table that first suggested the shape to him; and, like the straw bee-hive, it can be made cheaper than any other glass that can be blown fit for the same purpose. The fruit-protector assists Nature in our cold climate, and places the fruit from 5° to 20° farther south than it would otherwise be. On account of its shape, no scorching can or will take place. When the air inside is raised to a certain degree of heat, it quickly passes out at the uppermost edge, and fresh air freely enters in at the lowermost edge; the trees always enjoy free air, and can be dressed or syringed in the common way. The protectors are easily fixed on the tree, and the fruit can be gathered with facility. Oval protectors are objectionable and dear; holes, to pass the wire through, are also objectionable, and would make the contrivance dearer; dents in the edge, to fit the branches, are objectionable, but they can be made with them for the same price; in a word, the fruit-preservers increase the richness and flavour of the fruit." Our readers must judge for themselves how far these advantages are equalled by the cost of the protectors.

A Precedent for the Great Exhibition of 1851.—The Royal Commission lately issued in England for the exhibition of the works of industry of all nations in 1851, and over which the Royal Consort of our most gracious Queen will preside, bears a very close analogy to another great commission of very similar import, relating to all animated nature throughout the known world, instituted above 2000 years ago by Alexander the Great, at that time one of the most powerful monarchs on earth. It is faithfully recorded in Pliny's "Historia Naturalis" (lib. viii. cap. 16, page 107). I will transcribe the paragraph alluding to this commission from a good copy of Pliny now before me (dated 1526), which, besides bearing the initials of the celebrated Dr. Johnson, has the following remark apparently written by him, opposite the title-page, "The emendations of Hermolaus Barbarus, Patriarch of Aquileia, render this edition of Pliny's Nat. Hist. extremely valuable." "Alexandro Magno rege inflammato cupidine animalium naturas noscendi delegataque commentatione Aristoteli, summo in omni scientia viro, aliquot millia hominum in totius Asiæ Græciæque tractu parere jussa, omnium quos venatus, aucupia, piscatusque alebant. Quibusque vivaria, armenta, alvearia, piscinæ, aviaria, in cura erant; ne quid usquam gentium ignoraretur ab eo. Quos percontando, L ferme volumina illa præclara de animalibus condidit. Quæ à me collecta in arctum cum iis quæ ignoraverat, quæso ut legentes boni consulant, in universis rerum naturæ operibus medioque clarissimi regum omnium desiderio cura nostra breviter peregrinantes." Which may possibly admit of the following interpretation: King Alexander the Great, being anxious to know the nature of animals, by his commission given to Aristotle, then the leading person in every science known; commanded that some thousands of men throughout the tract of all Asia and Greece, should assemble and obey him, as well all hunters and fowlers, and fishers, as those who had the care of parks, and herds, and flocks, and apiaries, and fisheries, and aviaries, in order that he might become acquainted with the manners of all nations (Gesner, in in his celebrated work of Animals (1551), in copying this paragraph, has used the word *genitum* (aliàs *gentium*), whereby the translation may be rendered, the nature of all things created or begotten). By examining whom, he (the said Aristotle) formed almost 50 excellent books (that he styled), "De Animalibus," which being compiled by me (Pliny) in a smaller compass, I pray my good readers may consult, together with those matters I have added, of which he was uninformed, relating to the universal operations of nature, that they may, travelling with me, in the like desire, of that best of all kings be equally gratified. *Edward Scudamore, M.D., St. George's-place, Canterbury.*

Garden Walks.—I think I have walks both better and cheaper than those you commend. A few years back I hesitated a long time between gravel, lime chippings, and other kinds, and ultimately made my present walks more with a view to economy than perfection. After two years' experience of them, I still prefer them to any other for general use, though I would perhaps rather have white lime chippings if I could always keep them dry. Mine are dry, firm, and clean in all weathers, and are at all times free from that very great objection of adhering to the shoes when walking. I first covered the walks with foundry cinders (no cost except a trifle for cartage), which, being well rolled in after wet, made a dry hard foundation; then I procured a few cart-loads of the burnt brickdust from a brick kiln, which made a nice, smooth, bright red surface, and this after a little usual rolling formed capital walks, that have not since required any further attention. The cinders not only keep the walks dry, but also prevent the growth of weeds, and keep worms from any interference underground. For appearance, they can at any time be renewed by a thin sprinkling of fresh dust, and the cost is so very trifling as not to be worth notice. My walks are on a level with the adjoining borders. Such of your readers as find gravel expensive, will find some benefit from trying my plan. *G. F.*

Seed Lists: Peas.—It is not our intention to enter into a paper war with you, but we cannot allow the leading article in your Paper of the 6th inst. to pass unnoticed. You say that "Messrs. Beck, Henderson, and Co., in the Strand (our letter is dated from Middle Wharf, Adelphi), have criticised, with no remarkable civility, the valuable attempts which our correspondent 'R. T.' has made at our request," &c. It is well we were not charged with having criticised your correspondent's valuable attempts with remarkable incivility, for it must be evident to any unbiassed person that the writer of that article could not have seen our letter. We think, however, that we may very justly charge you with having treated us not merely with incivility, but with actual scurrility. Your correspondent "R. T." does not appear to be very indignant at our lack of civility, for he has very temperately and fairly replied to our criticism; but we still differ with him respecting the Pea called by the French Nain Hâtif. This Pea, notwithstanding the authority of the "Bon Jardinier," is not, or certainly was not, the same as Nain Hâtif L'évêque. You also say, "They charge him with sundry inaccuracies, and tell us that there are plenty more that could be pointed out; nevertheless, while indignant at his criticism, they in the main admit his accuracy, and vow that if they do sell trash it is to oblige their customers." We ask in what part of our letter is such admission to be found? On the contrary, we have denied his accuracy, and said that if we were to notice the whole of his blunders, we should fill the whole of your Paper; and so far from having evaded the question, we have offered, if not directly, certainly by implication, to give you the origin of many of the synonymes, and the reasons why they are retained in the lists of many of the most respectable houses in the trade. We are at a loss to conceive what could have drawn down such vengeance on our heads, unless it is that we have presumed to criticise the labours of your correspondent "R. T.," or that we should have been so arrogant as to append our signature instead of initials to our letter. But that your readers may better understand this subject, we refer them to leading articles in your Papers of this year—in No. 3, page 35, and in No. 5, page 67, and to "R. T.'s" lists of Peas, &c., in No. 3, and subsequent papers; then to our letter in No. 13, p. 198, and to your leader in No. 14, and leave them to judge between us. Your correspondent, "R. T.," and ourselves are still at issue respecting Warner's Early Emperor Pea. He says its habit of growth is intermediate between the Early Kent and Early Frame. Habit of growth is not the question. Is it, or is it not, as early as the Early Kent, with pods much larger, and a more abundant bearer? If not, how does it happen that seedsmen and market gardeners (who we presume must be the best judges) will and do give a much higher price for the Emperor than the Kent? If "R. T.'s" remarks are founded upon experiments made by himself, from whence did he obtain the seed? for this we conceive to be of the first importance. Did he obtain it from Mr. Warner, of Cornhill, who first introduced it? If not, his remarks are of little value. You also say, towards the end of your leading article, "The example has been set them well by several of those whom they presume to call 'little people,'" &c. We again ask in what part of our letter is such an expression to be found, or anything like it? Echo answers—Nowhere. You also recommend us to put our house in order; this was done before the writer of this and our preceding letter was connected with the house, in which he became a principal about 45 years ago, and we fearlessly assert that in no instance has the honour or respectability of the firm been called in question before your last publication. As to our selling trash, that in the present instance we shall leave to the decision of our numerous correspondents; but should such another unwarrantable libel be inserted in your Paper, we warn you that legal proceedings will be taken to vindicate our character. As you have given very conspicuous publicity to such a serious and unfounded charge against us, we trust that you will give equal publicity to this letter in your next Number. *Beck, Henderson, and Co., Middle Wharf, Adelphi.*

[It Messrs. Beck and Co, when they are cool, will read again the article to which this production purports to be an answer, they will discover that we have nowhere charged them or their house with that of which they complain. The latter part of our observations was purposely disconnected with their name, having relation to notorious practices of every day occurrence, and to no one special act. As to the rest of their letter, it does not call for either reply or explanation.]——I am pleased to see that you are endeavouring to effect a reformation in the seed trade. It is important to expunge from seed lists all mere synonymes and varieties possessing so small a shade of difference as not to render them worthy of being retained; and it is requisite that a combination of those seed-buyers who discern the good that must ultimately accrue from an alteration in seed lists, should patronise the seedsmen who came boldly forward to make the required concession. As a guide to the seller and purchaser of garden-seeds, and as a foundation for the permanency and stability of the change referred to, it is essential that a standard of reference should be made accessible to all interested in consulting its pages. The Horticultural Society of London, considering the competency and skill of those by whom its operations are conducted, and the great facilities at its disposal, is unquestionably the source from whence such a desideratum might proceed. A list of seeds formed on the plan of its fruit catalogue would prove of as much advantage to the class for which it is designed as the fruit catalogue is to pomonologists, and be of equal authority. New varieties of great merit might be added as soon as they were sufficiently proved. Some perhaps might imagine that the adoption of this course would prove a barrier to the advancement of the art of improving the various races of vegetables. It would no doubt check the practice of retaining varieties of no merit, for thereby no premium would be held out to the raisers palming them upon the public; but those possessed of real merit would, upon an impartial investigation of their improved characteristics, be recognised as such; and through the above medium their superiority would be guaranteed. The publication of a select catalogue would, therefore, prove beneficial in many respects; it would be a pattern for the seedsman to imitate, a guide for purchasers in the choice of seeds; it would tend in a great measure to prevent the public from being imposed upon in purchasing new varieties of seeds, as those excluded would be considered beneath mediocrity, and the palm of merit would be accorded to those that deserve it. *A Subscriber.*

Societies.

ENTOMOLOGICAL, *April* 1.—G. R. WATERHOUSE Esq., President, in the Chair. The President nominated Messrs. Douglas Stainton and J. F. Stephens to examine the monographs of Tortricidæ, sent in for competition for the prizes offered at a previous meeting. He also gave notice that the council had determined to reduce the price of the volumes, forming the first series of the Transactions, to the members, and likewise called attention to the series of works proposed to be published by subscription, entitled "Insecta Britannica," under the superintendence of a committee, consisting of the president and secretaries of the Society, together with Messrs. Spence, Stephens, and Saunders; the subscription for the first five volumes of which, containing the British Diptera, Hemiptera, Homoptera, and Microlepidoptera, is fixed at 4*l.* 10*s.*, being at the rate of 18*s.* per volume, to be paid annually on its delivery. The subscription list is headed by H. R. H. Prince Albert. Mr. Westwood exhibited a specimen and drawing of Cholovocera Maderæ, a new coleopterous insect of minute size, remarkable for wanting the ordinary compound facetted eyes, the place of which at each side of the head is occupied by six small semiglobose translucent ocelli, similar to the organs of vision of many larvæ. This is the only instance in which such a structure has been observed throughout the whole of the tribes of winged insects. He also exhibited some minute insects fixed upon small slabs of gelatine, which, from its perfect transparency, is better fitted for mounting microscopical specimens, than talc or card. Mr. Stainton exhibited specimens of Micropteryx aruncella, Scop. (concinnella, Steph.), and Mr. S. Stevens, some very splendid butterflies, from the river Amazon, collected by Mr. Wallace. Mr. Douglas exhibited a Noctuideous pupa, found in a Thistle stem, and also the larvæ of some small species of moth, which form a hybernaculum on the terminal shoots of the common broom. He also read descriptions of two new British Microlepidoptera. Mr. Stainton exhibited some plants of Helianthemum vulgare, the leaves of which were mined by a small Lepidopterous insect, most probably a species of Elachista. Mr. Sydney Saunders read an elaborate paper upon two new Strepsipterous insects, from Albania, parasitic upon bees of the genus Hylæus, forming a new genus, to which he gave the name of Hylecthrus.

STOKE NEWINGTON CHRYSANTHEMUM, *March* 28.—Mr. LAIDLAW in the chair. Mr. Holmes opened the discussion by reading an essay on the cultivation of this fine autumnal flower. He offered some remarks on new varieties, and on the difficulty of obtaining seed in this climate. The only important improvement that had taken place, he said, was in regard to cultivation. Some of the oldest varieties were still the best. In incurved flowers, Goliah and the two-coloured Incurved stand unequalled. In the other class, Superb-clustered Yellow is far before all newly imported ones, and if we cannot save seed here, he thought we should resolutely set ourselves against the reception of all new sorts that are not improvements on older kinds, and thus induce our southern neighbours to devote more attention to superior varieties. For the pleasure-garden, where protection is inconvenient, he recommended only the early sorts, such as Queen, Imperial, Goliah, Princess Marie, &c., assigning as a reason that frosted buds never expand well. He stated that specimen plants should consist of such kinds as Phidias, Lady Camerson, Queen Victoria, Vesta, and Queen of the Belgians; but that these would be almost useless where cut flowers for exhibition was the object aimed at. For the latter purpose he recommended Goliah, Aristides, Beauty, and others of similar habit. He remarked that the latest sorts were generally the finest, such as Perfection, Campestroni, King d'Or, and two-coloured Incurved. Late sorts, he said, should be struck in autumn, for if this operation is delayed until spring they often proved abortive; cuttings of the medium flowering varieties, such as Pilot, General Moreau, Defiance, &c., should be put in in the third week in March, and those of the early sorts, as Imperial, Queen, Princess Marie, in the latter end of April. He preferred cuttings to suckers, placing them round the edges of 5-inch pots, in light sandy soil, well drained. He advised the cuttings to be placed in a close frame, with a little bottom-heat; when struck they should be hardened and potted singly in 5-inch pots, protecting them for a short time, and finally shifting them into the pots or place where they were intended to bloom. In cultivating Chrysanthemums for cut blooms, regardless of height, habit, or appearance, the plants should be divested of all side shoots in their early stages, trained up in single stems, kept unstopped and only one or two flowers at most left on each stem. For specimen pot plants shift at once into 12-inch pots, using equal

parts of forest loam and well-rotted manure, with plenty of drainage. One or three plants may be put in each pot, placing them where they can get all the sun and air possible. As they advance in growth, train and regulate, so as to secure a healthy foliage. Plunging the pots, he said, had a twofold advantage—it secured the roots from drought and prevented the plants from being blown over by the wind. As soon as they show their flower-buds, he would begin at once to thin them, leaving only the centre bloom; that is, he strips off all side buds, in order to give additional strength to the remaining buds, which causes them to expand uniformly. To preserve the flowers in perfection, they must be protected not only from frost but also from rain.—Mr. Croxford questioned Mr. Holmes, and also Mr. Tant, on the best method of taking cuttings. Mr. Holmes preferred cuttings off the best and strongest suckers. Mr. Tant had taken cuttings off suckers, and also off the stems of the old plants, with the same results; he also remarked that it was difficult to get suckers from many of the varieties. He considered liquid manure highly beneficial for the full development of the foliage and flowers; but it should be withheld when the latter begin to expand. Half a pint of guano dissolved in 6 or 8 gallons of water, and applied as circumstances required, had been found of much service. Mr. James had applied liquid manure to his plants in all stages and seasons, and with equal success. Mr. Taylor had struck his cuttings later than Mr. Holmes had recommended, and had been most successful: his finest flowers were grown against a south wall in a well prepared border; the flowers protected by glasses hung against the wall. In plunging the pots, it was recommended that the hole should be made 6 inches deeper than the bottom of the pot, or that the latter should be set on bricks on edge, with a cavity between them.

Review.

China and the Chinese: their Religion, Character, Customs, and Manufactures, &c. &c. By H. C. Sirr, M.A., Barrister-at-Law. 2 vols. 8vo. Orr and Co., London.

We fear that the reader who expects new information from this work will be disappointed. It is the production of a gentleman haunted by one idea—the abhorrence of the opium trade; and the main purpose of the work is to assist Mr. Montgomery Martin in denouncing it. We cannot avoid suggesting to Mr. Sirr and his friends that it would be quite as well to look at home in the first instance, and to commence their crusade by an attack upon Irish whisky, Jamaica rum, English gin, and American Tobacco. Until that is done, philanthropic labours on the other side of Asia are superfluous, and can hardly hope for sympathisers in Europe. That opium smoking is an evil, is not disputed; but so is gin drinking, and so is sotting in a rural beer-shop. These vices are of equal magnitude, and demand equal vigilance, if they are to be suppressed. To say that opium smoking is much worse than these are, is, we believe, to assert what is not only incapable of proof, but directly the reverse of the fact.

Passing by this hallucination, we must also express some doubts as to the accuracy of statements concerning mere matters of fact. For example, oil of the finest quality is said to be obtained in China from Apricot stones. Is this so? On the other hand, Camellia oil is omitted. In a country abounding with Laurels, it is rather strange that Mr. Sirr should know of only one, the Camphor Laurel. Then a kind of Sycamore is said to yield materials for paper, a statement which we undertake to say is founded on some mistake. So, as to indigo, it is clear that our author's information is not very clear upon that point, for although he names "the Indigo plant" and "a species of Polygonum" as the sources of Chinese Indigo, he entirely omits the Chinese Woad, Isatis tinctoria, from which the whole of the indigo of Shanghae and adjacent provinces is prepared. Among the marvels of Chinese gardening is mentioned, upon hearsay, "an Orange tree which had been distorted into a complete representation of a human hand;" did it never occur to Mr. Sirr that his informant was talking of the well known fruit of the fingered Citron? Another prodigy, not mentioned upon hearsay, but which bloomed in the possession of the author, was a very curious Camellia japonica, the colour of which was "*a unique bright purple*, or mazarine blue;" upon which it is remarked that, "we have been repeatedly asked by botanists if we were quite sure that we did not mistake the colour of this extraordinary flower; our reply was 'Do you think we would tell a lie?'" Notwithstanding this Hibernian mode of stopping a doubt, we must be permitted to say that although we "do not think that the author would tell a lie" we believe him very capable of making a blunder; and that the flower, although blue, as he describes it, was no Camellia. Among Chinese vegetables we find enumerated "orcus," what is that? Apricots, by which we suspect Loquats to be intended, for the latter are nowhere mentioned; and a Plum from Ching-chow, "ten millions times more delicious in flavour" than an Egg-Plum. We can only express our regret that Mr. Sirr did not occupy himself usefully in bringing this Plum to England, rather than in putting together such useless matter as much of his book consists of.

Garden Memoranda.

S. Rucker's, Esq., Wandsworth.—Since we last visited this delightful villa, several new glass houses have been erected, and a considerable addition made to the lawn. A nice span-roofed Orchid-house, 26 feet long by 18 feet wide, has just been put up, to which the flowering specimens are removed as they come into blossom; and a new Heath-house, 50 feet long and 16 feet wide, has been built, as well as some useful pits. One long span-roofed house called the "Heath pit" contained some extraordinary examples of that interesting genus. A plant of splendens measured 4 feet high and as much through. Some idea of its rate of growth may be formed when we state that since August last it has made young wood a foot in length. Associated with it were remarkable plants of vasiflora, just coming into bloom; favoides elegans, a handsome Heath, in the way of the vestitas; Hartnelli; retorta, and its larger variety; tricolor Wilsonii, a large-flowered kind; and a very fine ferruginea. This Heath pit, which is at least 40 feet long, is heated by hot water in 2-inch iron pipes from one of Shewin's conical boilers, which also warms a small span-roofed stove, standing at right angles with the side of the pit. One side of this stove is furnished with a tank, through which the hot-water pipes are passed; the tank is closed in with slates, on which an inch of sand is laid, and on that flat earthenware tiles. On this heated bed Gloxinias (among which the curious Fyfiana and Wortleyana, one of the best of the light kinds, were in bloom), Achimenes, Begonias, Æschynanths, and other soft-wooded stove plants are forced into flower for the early spring decoration of a pretty little conservatory which is attached to the dwelling house, and which, by means of this pit and a warm greenhouse, is kept gay the whole year round. Its (the conservatory) present occupants are Hyacinths, Roses, Geraniums, Azaleas, Camellias, Cinerarias, &c.; the latter have been in flower here ever since last September. This is effected by taking off offsets as early as they can possibly be obtained, and keeping them growing on all through the summer season. In this way they come into flower just at a time when they are most wanted. Franciscea acuminata has been found to be a most useful plant for conservatory display where a little stove like that we have just mentioned exists for *growing* it in. Aphelandra aurantiaca, and the showy Æschynanth (Æ. speciosus), brought forward in the same way, have also proved very serviceable. A fine head of bloom may be obtained from the latter even in a 5-inch pot, and, by removing the flowering shoot when it goes out of bloom, another flowering branch quickly takes its place. Begonia fuchsioides and Æchmea fulgens likewise contribute not a little to enliven a conservatory in winter and early spring. The latter may be increased by suckers exactly in the way in which Pine-apples are propagated. In the greenhouse, which is always kept rather warmer than houses of this kind usually are, some large Azaleas were in full blossom, and others were coming fast forward. Behind the Azaleas were Camellias which had done flowering and were making their wood; and these again were backed up by tall Orange trees just bursting into bloom. The front and side shelves were filled with Geraniums. In the Heath-house was a beautiful plant of Hovea Celsi in full blossom. It was at least 6 feet high, and had been allowed to "run up" with four stems which, although naked at the bottom, were well clothed three-parts of their length with flowering wood, and, managed in this way, by which its natural character was exhibited, this plant looked much more graceful, and had a far more striking effect, than it would have had twisted and twined round stakes. Beside it was a trained plant of the same Hovea; and as some may wish to know the best way of keeping it "bushy," and in a comparatively small state, we will mention how it was managed. A main stem was allowed to grow up the centre; the first tier of branches from this was brought down as near the pot as they could be got; the points of these after a time turned up, another tier was drawn down, and the points of these turned up in the same way; a third and a similar effect followed, and in this way a "bushy" pyramidal specimen may be obtained; but it will never look so well as a plant which has been allowed to follow, as near as may be, its "natural bent." The Heaths in this house were all in admirable condition, and promised abundance of bloom. Crassula was in full blossom, and so were elegans stricta (a remarkable plant of the kind), mutabilis, and some others. Among Orchids, which contain some of the finest plants in the kingdom, as those who have seen our great metropolitan exhibitions can testify, the following were in blossom. The yellow-flowered Lælia (L. flava), Schomburgkia violacea, Phaius Wallichii, various Dendrobes, among which we observed the charming yellow-flowered D. chrysotoxum, D. Jenkinsii, and D. aggregatum—as well as several of the purple and white kinds; a fine plant of the long-tailed Lady's Slipper (Cypripedium caudatum), producing a spike 2 feet long, surmounted by two flowers whose tails were at least 18 inches in length; Vanda tricolor and the sweet-smelling Vanda suavis; Galeandra Devoniana, with three handsome spikes of flowers; the charming Odontoglossum Cervantesii and O. Insleayii, a somewhat scarce species; the rare Burlingtonia fragrans, Leptotes bicolor, a mass of flower, and various others. Both the plants and the place exhibited the best possible management, and reflected the greatest credit on those who have the care of them.

Calendar of Operations.

(For the ensuing week.)

PLANT DEPARTMENT.

Orchids.—All those species which are commencing a new growth should be carefully examined and repotted or surfaced, according to their respective requirements. Let the old stuff be picked away as far as is possible without injuring the roots. The most suitable material in the shape of soil for these plants is half decomposed leaf-mould, which has been sufficiently baked or sweated to destroy everything pertaining to animal life; this should be mixed with one-third its bulk of pure sand, and interspersed and packed with small blocks of turfy peat. Perfect drainage, however, is unquestionably of the greatest importance in the cultivation of Orchids, and to secure this, a portion of pots-herds should be mixed up with the soil, except in that for Stanhopeas, as the latter protrude their flower-stems through the bottoms of the baskets, which for this genus should be considerably shallower than the hemispherical ones recommended for general purposes. A liberal supply of water must be given to those plants which are in an active growing state, and a warm moist atmosphere must be retained during the day in fine weather, and especially amongst Vandas and their congeners from the hottest localities, and Dendrobes, which are in a growing state. Shading in bright strong sunshine is indispensable, but the abuse of this is as common as the use of it. The canvas should be so arranged that it can be removed or applied in a few moments; as the difficulties of covering or uncovering, in many instances, prevent the necessary attention to this matter. Conservatory. — Climbers should now have a portion of their shoots pruned hard, to produce growths for late autumn flowering. The training of the young shoots should have regular attention, that they may at all times look neat; on the other hand, carefully avoid the stiff formal appearance which is produced by tying in their shoots to their extremities. If the house is sufficiently lofty, climbers look most graceful when they are allowed to hang down from the rafters in natural festoons. Plants in conservatory borders (whether climbers or otherwise), which have been planted in former years, should have as much of the old exhausted soil removed as can be done without materially injuring the roots, and the space filled up again with fresh compost; and, at the same time, if any alteration in their arrangement is desirable it should be made. On a careful scrutiny of the plants, many will present themselves to notice, which will form greater objects of attraction if planted out than they will if confined in pots. In making a selection for this purpose, those sorts should be chosen which are remarkable either for the beauty of their flowers, for continuing a long time in bloom, or for their elegant and ornamental appearance in habit or foliage. Let the soil for these plants consist of roughly-chopped turves of loam or peat, with an admixture of richer materials according to their special requirements; but let the surface be covered with finer soil for neatness sake. As the season advances, heat and moisture may be more liberally supplied to tropical plants, increasing them gradually in proportion to the growing power of the sun's rays, but in all cases avoiding a high night temperature. At this season, 60° is sufficient for those plants which are growing most actively. The necessary night temperature must be principally obtained by closing early, and so retaining the heat derived from the sun; and when fires are required, they must not be so strong as to render it necessary to admit currents of cold air. This must be used with greater caution than when the plants were in a dormant state, for the admission of a current of cold air during the development of the young growth will frequently give it a check, and so injure the tender foliage as to spoil the future appearance of the plant; a cold current of this description is very different from the moderate circulation of the air which is necessary in all plant houses. Select some of the strongest young plants of Carnations and Picotees, and pot them in soil consisting of three-fourths loam which has been charred for the purpose of destroying wireworms and other insects, and one-fourth thoroughly decomposed cow manure. During the summer all flower-stems should be picked out, the plants should be plunged in a bed of coal-ashes, and watered with clear liquid manure. After the end of August the stems should be carefully tied up as they make their appearance; and towards the end of October the plants should be taken up and placed near the glass in a frame or on the front of a greenhouse stage, where they will continue to flower a long time, and be much admired. Seedlings grown in pots and very liberally treated, will rarely fail to flower through the winter; and even single flowers are useful for bouquets and glasses.

FORCING DEPARTMENT.

Pineries.—With the advancing season, the temperature may be increased from 60° to 65° by night. Take advantage of fine weather to close with a sun heat of from 90° to 95°, and syringe freely all except those which are in blossom or ripening their fruit. Examine the state of the soil frequently, to see that it is sufficiently moist beneath the surface, as the frequent syringing will give a damp appearance without penetrating sufficiently deep to moisten the whole. Vineries.—Attend to disbudding, and thinning of bunches and berries in the successional houses, and make use of the syringe no longer than it can be done with propriety. We seldom give more than one good syringing after the fruit is set, merely to remove the remains of the blossom, as syringing is liable to injure the bloom, if used after the berries have attained any size. Peach-house.—During dull weather maintain a moderate temperature, with a rather dry atmosphere. In damp weather it will be necessary to keep up the day temperature with fire heat; and by

means of ample ventilation to allow free egress for evaporated moisture. Keep the green fly in check by fumigating, if the ordinary syringing of the house proves insufficient. FIG-HOUSE.—Figs require an abundance of air, with free exposure to the light; and without these, a plentiful crop of good fruit need not be hoped for. A moist atmosphere, and a liberal supply of water to the roots are also essential; and if the roots are confined within reasonable limits, every alternate watering during the swelling of the fruit should be of liquid manure. As the fruit begins to ripen, however, the atmosphere should be kept rather drier, to prevent its rotting; and in damp dull weather, sufficient fire heat should be used to permit the superabundant vapour to escape. Let the later successions be brought on gradually at first, in a temperature by night of from 50° to 55°. MELON PITS.—Excessive moisture must be carefully avoided during the setting of these crops; and as it is an easy matter to thin the fruit after all danger of damping is over, it is a good plan to allow more to set than will be ultimately wanted. Remove the blossoms as soon as they fade, and do not allow more male blossoms to expand than are required, as they tend to weaken the energies of the plant. Some seeds should now be sown of some of the best kinds for preserving. The adaptability of any kind for this purpose depends upon the colour of the flesh; the kinds most approved of are "the old scarlet fleshed rock," and the "Dampsha." The flesh of the latter is of a very deep green, and besides answering for preserviug purposes, it is very useful for dessert, and more particularly so, as it is one of the latest and best keeping Melons we have seen. It keeps till Christmas.

FLOWER GARDEN AND SHRUBBERIES.

It is a good plan to sow Convolvulus major, Tropæolum canariense, and some other half-hardy climbing annuals, in a frame, in such a manner that they can be easily removed to their permanent situations at the usual season. The best method is to lay some turves into a frame, with the grassy side downwards. After beating them till quite flat, the seeds should be pressed into the smooth surface, 2 to 4 inches apart, and then covered with a little light soil. When ready for moving to the borders, cut the turves with an edging-iron into small squares, containing one, two, or more plants in each. In this way they will experience little or no check, and will start into the new soil with much greater freedom than if they had been confined in pots. Sunflowers may be treated in the same way, as they do not like transplanting; and it is desirable to get them into flower as early as possible. As soon as the Primroses and others of the Polyanthus family have done blooming, they should be removed from the beds, of which they have lately been the ornament, that the ground may be prepared for the summer beauties. The plants which are taken up should be parted and planted in some nice loamy soil in the reserve garden, watered, and shaded with evergreen branches till their roots are re-established; in this situation they will prepare themselves for a repetition of their duties next spring. Those who do not possess a stock of these useful plants cannot commence at a better time. Seeds should be sown in the reserve garden of Hollyhocks, Dianthus, and other biennials; and also of perennials, especially of those kinds which flower the first season; some of the latter may be sown at once in suitable situations, where they may remain.

KITCHEN GARDEN.

Cardoon seeds should now be sown in 3-inch pots, two seeds in each, and plunged near the glass in a close cool frame; the advantage of this method of raising them, over sowing the seeds in the open air, is in the facility which the former affords at planting season, inasmuch as the plants can be arranged according to their sizes, and at the same time all blanks can be avoided. The old method involved considerable difficulty in earthing up, as it frequently happened that a very strong plant grew by the side of a very weak one, and to make the best of the former, the latter was inevitably buried. Parsley should be sown in drills about 12 inches apart, into which a few seeds should be dropped at intervals of 6 inches. The object in view is to remove all excepting the best plants in each patch, as soon as the curl is distinguishable; as those which are left increase in size, every alternate plant should be removed as they are wanted for use, and the ground forked between the remaining plants, to encourage their growth, and so to prevent their running to seed. Soot is a suitable manure for this herb, and is particularly useful in preventing or destroying the maggots by which this plant is so liable to be attacked. Where there is a large quantity of the spring crop of Broccoli still unused, the later heads should be selected and laid in under the shade of a north wall; and to shorten the interval between the last of them and the earliest Cauliflowers, the latter should be stimulated by frequent applications of liquid manure.

HARDY FRUIT GARDEN.

After removing the superfluous shoots of Apricots, the remaining ones should be carefully examined in search of the green caterpillar, which not only injures the young leaves, but, after eating holes in the young fruit, causes it to gum and grow deformed, or to fall off before it is stoned. The surest method of destroying these pests is by gently pressing the leaves in which they are lodged between the thumb and finger, after which the trees should be washed with clean water from the engine. After the fruit is set, more is to be feared from the ravages of the caterpillar than from either frosts or storms. It is an old adage that prevention is better than cure, and to few things does it more truly apply than to the destruction of wasps. At this season every existing wasp is about forming a nest, of which she will become the parent; and if these parents are destroyed, before they have had time to rear the first of their young ones, as a matter of course their innumerable progeny are destroyed along with them. Much loss of fruit will be prevented by offering a penny a head for every wasp caught before a certain date, according to the locality, from the 20th of May to the 1st of June. The distance must of course be limited; but as a large fruit garden is a great attraction, a two mile circuit will not be too much in a general way.

State of the Weather near London, for the week ending April 11, 1850, as observed at the Horticultural Garden, Chiswick.

April.	Moon's Age.	Barometer. Max.	Barometer. Min.	Temperature. Of the Air. Max.	Min.	Mean	Of the Earth. 1 foot deep.	2 feet deep.	Wind.	Rain.
Friday.. 5	22	29.851	29.627	59	30	44.5	46½	45	W.	.00
Satur... 6	23	29.719	29.687	58	45	51.5	46	45½	S.W.	.12
Sunday . 7	24	29.701	29.599	66	41	53.5	47	45½	S.W.	.00
Monday 8	25	29.415	29.346	60	41	50.5	48	46½	S.	.32
Tues. .. 9	26	29.415	29.315	60	37	48.5	48	47	S.W.	.01
Wed. ...10	27	29.412	29.362	60	34	47.0	47½	47	S.E.	.06
Thurs....11	28	29.369	29.449	60	34	47.0	48½	47	S.	.05
Average....		29.559	29.483	60.4	37.4	48.9	47.3	46.2		0.16

April 5—Cloudy and rather boisterous; cloudy and fine; clear.
— 6—Overcast; cloudy and fine; overcast at night.
— 7—Overcast; cloudy and fine throughout.
— 8—Foggy; overcast; cloudy with slight showers.
— 9—Fine; cloudy; overcast.
— 10—Fine; very fine; clear at night.
— 11—Rain; showery, with sunny intervals; overcast.
Mean temperature of the week 3 deg. above the average.

State of the Weather at Chiswick during the last 24 years, for the ensuing week, ending April 20, 1850.

April.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds. N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 14	57.4	37 8	47.6	9	0.31 in.	2	5	—	2	2	5	1	7
Mon. 15	57 8	39.3	48.5	14	0.17	1	4	3	1	4	6	1	4
Tues 16	56.4	36.7	46.6	11	0.63	6	5	3	1	2	3	2	2
Wed. 17	56.6	36.1	46.4	14	0.32	6	5	3	2	1	4	1	2
Thurs. 18	56.8	37.5	47.2	7	0.49	3	5	2	1	3	2	5	3
Friday 19	57.8	35.8	46.8	5	0.28	6	6	2	1	1	3	5	—
Satur. 20	59.0	36.5	47.7	11	0.45	3	6	3	—	—	6	5	2

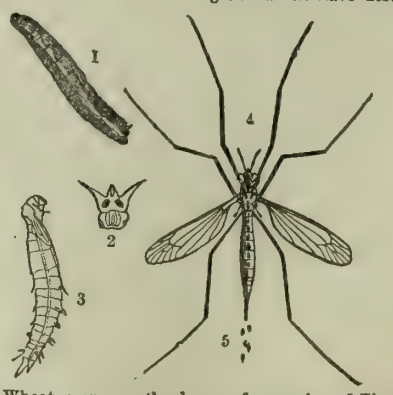
The highest temperature during the above period occurred on the 17th 1844—therm. 71 deg.; and the lowest on the 16th, 1817—therm. 20 deg.

Notices to Correspondents.

INSECTS: *Onoma, &c.* 1, Philonthus aterrimus; 2, Aphodius sphacelatus; 3, Philonthus æratus; 4 (?), but without a number, Quedrus picicornis? (No No. 5); 6, Xantholinus glabratus, Grav. (Gyrohypnus cruentatus, Spry); 7, Cis Boleti; all the commonest of the common, and, except the last, unconnected with the objects of our publication, to which in future be pleased to restrict the species sent for determination. *W.—G A.* Westwood's "Entomologist's Text Book" will suit you. It is almost impossible to determine an insect by its chrysalis, except in marked cases. The young cockroach which attacks Orchids resembles the perfect insect of the common species, except that it is smaller, wants wings, and is wider in proportion. It is not necessary to dip insects in spirits before placing them in the cabinet. *W.—Northumbriensis.* From your description we suppose the insects found in your Melon frame to be some species of spring-tailed insect (Podura) which attack decaying or ailing vegetables, and which have most probably been introduced with the manure. The earth should be well moistened with gas tar water, and the plants repotted in fresh soil. *W.—L B S.* See the preceding answer to Northumbriensis. *W.—Vernon.* We cannot supply answers to conundrums in the "Family Herald." *W.—W D S.* The small "bugs" in the crevices of the diseased Rose bark are a minute species of bark mite



(see *Gard. Chron.* 1843, p. 356). Fig. 1 is part of a branch with the mites clustered together, of the natural size; 2, one of them removed; and 3, do., magnified. We do not think that they were the cause of the wound, but they will certainly aggravate it. Wash the part with strong soapsuds and lime. *W.—T V.* The grubs which have destroyed



your Wheat crop are the larvæ of a species of Tipula or daddy-long-legs, most probably T. maculosa (see *Gard. Chron.* of 1846, page 317); 1 is the grub; 2, its tail, magnified; 3, its pupa or chrysalis; and 4, the perfect fly. Your field should be turned up, and a lot of ducks driven after the spade or plough. This, with a strong watering of gas-tar water, will get rid of a great number, but children should be employed to catch and destroy the flies when they appear. *W.—J H S.* The insects sent with the sprig of Honeysuckle are so minute and shrivelled up that we cannot make out what they are, but suppose them to be aphides. Unnail the plants from the wall, and enclose each in a close bag, within which tobacco smoke should be introduced. If properly done, this will destroy the young aphides. *W.—B A.* No. 1, Anisopteryx leucophearia; 2, Cheimatobia brumata; 3, Acidalia lactata; 4, Cidaria ferrugata; 5, Lozogramma petraria; 6, Margaritia prunalis; 7, Emmelesia albulata; 8, Diurnea Fagi. All very common. *W.—E T F.* Dermestes lardarius crushed to pieces. Specimens for identification, and especially living ones, should be packed so as not to be injured in the transit. We know no other way of preventing the attacks of this insect than by killing the grubs, and especially the beetles, as soon as they make their appearance in the perfect state, for which a sharp look out must be kept. *W.*

AMERICAN ALOE: *Flos.* Clean off the tar thoroughly; take it out of its soil, and cut away all *dead* roots. Then repot it in rich loose soil, well drained, and plunge the pot in a hot-bed, where it may remain, shut up close, till it has made young leaves. As soon as these are 3 inches long, give air gradually, and when they are hardened and full 6 inches long, expose it more and more to the open air. If there is any life in it, this process will revive it.

BOOKS: *A Constant Reader.* Probably Babington's "Manual of British Plants" will suit you, but it contains no plates. If you want *them* you had better buy Vol. I. of the cheap edition of Sowerby's "English Botany."—*A M.* "Glendinning on the Pine-apple." Sheet glass will burn; use rough plate.‡

MANURE: *Sub.* The best thing to mix with garden refuse, such as leaves, the Grass mown from a lawn, &c., so as to cause them to decompose and become fit for manure, is the ammoniacal liquor of the gas works, if you can procure it.‡

NAMES OF PLANTS: *Constant Sub.* It is a Jew's-ear Fungus (Exidia Auricula Judæ), a very curious Tremella-like thing, not rare on old trees.—*M C.* Oncidium longipes; it will be published in the next Number of "Paxton's Flower Garden." *W G.* Saxifraga oppositifolia.—*A E N.* Tecoma australis.—*W P.* Aponogeton distachyon.—*Enquirer.* Hippeastrum Johnsoni; the rest next week. Thanks for the Phaius.—*A E.* Sutherlandia frutescens.

RATS: *B.* Since you cannot poison them, the only remedy you have left is to trap them, or kill them by means of ferrets. In baiting the traps do not touch the bait with a knife, a fork, or the hand. If you do, all will be vain; their sense of smell being extremely delicate, their suspicions will be aroused, and they will avoid the stratagem.‡

SAP: *Enquirer.* The buds placed on the topmost parts of a tree are first developed in the spring because they are youngest, whilst those buds that are situated in the lowest parts of the same tree, being older, are at the same time but slightly affected. The separate memorandum is founded upon a misconception of well ascertained and undoubted facts. Both gaseous and fluid matters pass *freely* in all directions in the interior of the young parts of plants.

SEAKALE: *Sub.* To be flooded two or three times during the year will not injure Seakale, provided the water does not stagnate about it. Both Seakale and Asparagus would be benefited rather than injured by such floodings, the soil being an alluvial loam.‡

TANNERS' BARK: *Adolescentulus.* This, in its manufacturing state, is unfit for cultivators to use; but when exhausted of its tannin, and allowed to decay, it ceases to be "tanners' bark," and becomes, like all other decaying vegetable substances, valuable to the cultivator in proportion to its degree of decay. The worst way of using it is to burn it to ashes; the best way is to *char* it. Whether charred or merely decayed, it should be mixed with putrifying matters, such as the contents of cesspools, or rotten dung, and also earth or any other common material, *except lime.* It then becomes one of the most valuable of all manures.

THE TREE ROSE: *W D.* At the request of numerous subscribers the price of this work is now reduced from 4*s.* 6*d.* to 3*s.* 6*d.*, post free; it can be forwarded to any address by a Post-office order being sent to James Matthews, at the Office of this Paper.

WIRING WALL TREES: *E T C.* In erecting a new garden wall, it is not necessary that the studs for wires should be built into it, as they can be driven in afterwards with much less trouble. They should, however, be inserted before the mortar has set hard, as cast-iron studs will then drive easily, and are much cheaper than wrought-iron ones. If the mortar is good, and allowed to set very firm, there is some loss in using the cast-iron nails, as they are liable to break in driving. With regard to the different modes of wiring, the horizontal one is to be preferred for fruit trees; the vertical wires are better adapted for climbing plants. The semi-circular arrangement may look very well on paper, but to make it answer on the wall, a much stronger wire and a very large quantity of studs are necessary, and even then the wires are liable to be continually displaced. But why use wires at all? It is an additional expense without affording any compensating advantage. We would recommend in preference the system described at p. 435, of the volume for 1849, by Mr. Fleming, which is simply driving common cast-iron wall nails or studs, 5 or 6 inches asunder, over the entire surface of the walls, and to these the trees are secured by bast. Every facility is afforded by this method for neat and expeditious training, and the appearance of the studs even on the uncovered portions of the wall is much more agreeable and ornamental than wires would be. Studs are very cheap; they cost only 1½*d.* per lb., and they are as permanent as wires. For further particulars, together with a discussion of the various modes of securing trees to walls, and the relative cost of each, we beg to refer you to the page above quoted.‡

MISC: *A M.* Messrs. Youell, Great Yarmouth. A west aspect will answer for a greenhouse. Soot may be used with advantage in a kitchen-garden; and so may guano; but they will not enable you to dispense with farm-yard manure.‡—*A C S.* It will not harm a Hardenbergia to prune it in after flowering. For an answer to your other question we must refer you to previous advertisements.‡

SEEDLING FLOWERS.

CINERARIAS: *W H H.* 1, purplish crimson, texture and colour good, outline thin, size small; 2, deep purple, texture good, size and shape middling; 3, purple, petals narrow, outline bad, size too small.*—*J P.* 1, white centre, with deep rosy purple edge, good in texture, colours, and shape, but very much too small; 2, violet with a white centre, too small; 3, very like the last in colour, but a little larger in size; 4, deep blue, white centre, bright in colour, but very small; 5, light blue fading to white in the centre, texture good, but too small; 6, bright crimson, good in texture and colour, but too small. All your Cinerarias are very good in texture and colour, but far below the standard in size.*

EPIPHYLLUM ROSEUM GRANDIFLORUM: *R W.* Colour bright rosy red, slightly marbled; size good for its class of hybrids; a nice distinct variety.*

PANSIES: *T O G.* A large bold flower, striking in colours, and having a rich eye, but coarse, and the eye runs into the margin too often. Two of the blooms out of the three have this fault.

ERRATA: GARDEN WALKS.—In the last Number, p. 212, 3d col., 40th line from the beginning of the article, for "gardener," read "garden;" and at the 4th line from the bottom of the same column, for "corner" read "former."

MANURES.—The following Manures are manufactured at Mr. LAWES's Factory, Deptford Creek:

Corn and Grass Manure, per ton	£10 0 0
Clover Manure, do.	11 0 0
Turnip Manure, do.	7 0 0
Superphosphate of Lime	7 0 0
Sulphuric Acid and Coprolites	5 0 0

Office, 69, King William-street, City, London.

N.B. Peruvian Guano, guaranteed to contain 16 per cent. of Ammonia, 9*l.* 15*s.* per ton; and for 5 tons or more, 9*l.* 10*s.* per ton, in dock. Sulphate of Ammonia, &c.

LAWES'S PATENT MANURE.

WILLIAM E. RENDLE AND CO., Plymouth, are Mr. Lawes's Wholesale Agents for the Sale of his MANURES, and can supply them at Mr. Lawes's prices, delivered at his Factory, Deptford Creek.—Apply to WILLIAM E. RENDLE and Co., Union-road, Plymouth.

POTTER'S GUANO. — This effective MANURE, now greatly Improved, is confidently recommended as a Dressing for all Spring Crops. It is equal to Peruvian Guano, and 25 per cent. cheaper. Also SUPERPHOSPHATE of LIME, GYPSUM, and SULPHATE of AMMONIA, all of guaranteed quality, and Cheaper than at any other establishment in town or country.

Factory, 28, CLAPHAM ROAD PLACE, LONDON.

CORN MANURE FOR WHEAT, BARLEY, OATS, BEANS, &c., &c.

THE LONDON MANURE COMPANY most confidently recommend the above, as they are daily receiving very satisfactory accounts from parties who used it with great success last season. It will be found fully equal to and much cheaper than Peruvian Guano, and is not so liable to produce so large a growth of straw. Price Seven Guineas per ton, 3 cwt. per acre. They also beg to offer their Concentrated Urate, Superphosphate Lime, Nitrate of Soda, Sulphate and Phosphate of Ammonia, Fishery and other Salt, Gypsum, Sulphuric Acid, and genuine Peruvian Guano. To insure this free from adulteration, all purchasers can receive it direct from the Warehouses of the Importer.

Bridge-street, Blackfriars. EDWARD PURSER, Secretary.

Country Dealers and Agents supplied.

PERUVIAN GUANO.—As Agents of the Peruvian Government for the importation and sale of this valuable MANURE, we think it right, for the protection of consumers and respectable dealers, to apprise them that the adulteration of the article is still extensively practised, and to recommend them to apply either to ourselves, to our agents, Messrs. GIBBS, BRIGHT, and Co., of Liverpool and Bristol, or to dealers of established character, in whose honesty and fair dealing they can place implicit confidence. ANTONY GIBBS and SONS.

London, April 13.

SUPERPHOSPHATE OF LIME, GUANO, CRUSHED BONES, and all other artificial MANURES, at Messrs. HUNTS' Bone Mills and Manure Works, High-street, Lambeth, London. Established 1816.

GUANO AND OTHER MANURES.—Superphosphate of Lime (See reports of experiments in Royal Agricultural Society's Journal, Vol. 6, Part 2), Guano, Peruvian and Patagonian, Gypsum, Salt, Nitrate of Soda, and all other Manures of known value on sale. A Pamphlet on the above forwarded on receipt of four postage stamps.—Apply to MARK FOTHERGILL, 201A, Upper Thames-street, London.

CORN MANURE.

BLASHFIELD'S PATENT COPROS.—A new Manure for Corn and other Crops, containing Ammonia, Phosphate of Lime, Potash, Soda, Magnesia, Silicate of Potash, &c. Price, delivered alongside a vessel, or any Wharf in London, 8*l.* per ton. It is sold in a finely-ground dried powder, by the Patentee, at No. 3, New London-street, Mark-lane, London.

Superphosphate of Lime, Gypsum, Sulphate of Ammonia, Sulphate, and Nitrate of Soda.

PATENT SPADES, DAISY RAKES, SCYTHES, Draining, and other Garden Tools. Mole Traps, 6*s.* per dozen. Carpenters and Smiths' Tools, &c. Ladies' Garden Tools, 7*s.* 9*d.* a set. Sword-scrapers for Gardens, 1*s.* 2*d.* each. Patent Fumigation, for destroying insects on plants, in greenhouses, &c.: at Messrs. J. H. BOOBBYER and Co.'s (late STURCH and BOOBBYER), Ironmongery, Brass-foundry, Nail and Tool Warehouse, 14, Stanhope-street, Clare-market, London. Established nearly 200 years for the sale of goods from the best Manufactories at the lowest prices. Goods forwarded to any part on the receipt of remittance.

LOOK TO YOUR STABLE EXPENDITURE, and attend to its economy and Corn-dealers' Bills.

CHAFF MACHINES.—Horse Masters should give cut Hay or Wheat Straw with the Oats they allow, and those Oats should be bruised.—MARY WEDLAKE'S superior CHAFF MACHINES and OAT BRUISERS, manufactured on the premises (40 years established), 118, Fenchurch-street, and 8, Billiter-street.

N.B. Chaff-cutting and Oat-bruising Machinery by horse-power. Old Machines repaired.

HOW TO KEEP A HORSE FOR LESS THAN ONE SHILLING PER DAY!! and make the Animal look better than he now does when you are paying not less than 12*s.* to 13*s.* per week. Consider the enormous saving in these hard times—times of cheapness!!

DO YOU BRUISE THE OATS YOU GIVE YOUR HORSES? No. Then you lose one bushel out of every three, and your Cattle do not do half so well.—MARY WEDLAKE AND CO.'S OAT BRUISING MILLS. Superior Chaff Engine, simple in construction, doing from 50 to 500 bushels daily and more. Nearly all respectable Coachmasters and Brewers in London use these implements. To be seen at 118, Fenchurch-street, opposite Mark-lane, close to the Blackwall Railway.

N.B. Linseed Mills, Bean Mills, and Malt Mills, in great variety.

STEPHENSON AND Co., 61, Gracechurch-street, London, and 17, New Park-street, Southwark, Inventors and Manufacturers of the Improved CONICAL and DOUBLE CYLINDRICAL BOILERS, respectfully solicit the attention of scientific Horticulturists to their much improved method of applying the Tank System to Pineries, Propagating Houses, &c., by which atmospheric heat as well as bottom-heat is secured to any required degree, without the aid of pipes or flues. S. and Co. have also to state that at the request of numerous friends they are now making their Boilers of Iron, as well as Copper, by which the cost is reduced. These Boilers, which are now so well known, scarcely require description, but to those who have not seen them in operation, prospectuses will be forwarded, as well as reference of the highest authority; or they may be seen at most of the Nobility's seats and principal Nurseries throughout the kingdom.

S. and Co. beg to inform the Trade that at their Manufactory, 17, New Park-street, every article required for the construction of Horticultural Buildings, as well as for heating them, may be obtained upon the most advantageous terms.

Conservatories, &c., of Iron or Wood, erected upon the most ornamental designs. Balconies, Palisading, Field and Garden Fences, Wire-work, &c.

HOT WATER APPARATUS AND HORTICULTURAL BUILDING.



W. HILL begs respectfully to announce that his improved "FLUE BOILER" may now be had in sizes to suit every description of Apparatus, from that of 100 feet to 2000 feet of 4-inch pipe. Improved STEAM BOILERS, from one-horse power and upwards, adapted either for stationary or portable engines, and guaranteed to be most effective.

Every description of Horticultural Building constructed upon the best principle. Buildings of any kind heated by hot water.

*** A liberal Discount to the Trade.

W. HILL, Horticultural Works, Greenwich.

The Agricultural Gazette.

SATURDAY, APRIL 13, 1850.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

WEDNESDAY, April 17—Agricultural Society of England.
THURSDAY, — 18—Agricultural Imp. Society of Ireland.
WEDNESDAY, — 24—Agricultural Society of England.
THURSDAY, — 25—Agricultural Imp. Society of Ireland.

MR. PAGAN'S plan of ROAD REFORM, to which we referred last week, involves the abolition of the toll-bar system, and the substitution for it of a poll-tax on horses. The former method of raising the funds for road maintenance is extravagantly expensive. In Fife and Kinross-shires it is said the amount annually needed for the maintenance of existing roads does not exceed 18,000*l.*—producible by a tax of less than 30*s.* a-head on the horses within these counties, and which might be collected as other taxes are with the assistance of means already in operation; while, as the thing now stands, the real cost to the public of these roads amounts to 33,000*l.* annually, 15,000*l.* being lost in the expenses of collection. Fivepence is thus wasted in collecting every 6*d.* that is usefully spent. We need not repeat, what we have already pointed out in our volume for 1846, how the two methods of road maintenance differ also in their influence upon industry; the one, a proportionate tax, increasing if *it* offer to increase, and thus keeping it down to the lowest possible point; the other, a fixed annual payment, the same whether the animals taxed be at work or not, and thus a direct bonus upon their employment. All this is well pointed out in Mr. PAGAN's work on the subject,* which, though published and widely circulated three years ago, again deserves general attention now that road management is about to be made the subject of legislation.

The following are facts illustrative of the mode in which this gentleman's plans would act in particular districts. "As regards Scoonie and Logie, two parishes in the county of Fife, nearly of equal extent —Scoonie containing 3855, and Logie 3343 acres; —the first containing a burgh and post-town, with considerable manufactories, and a population of 2640, its surface being traversed by turnpike and statute labour roads, and closely hemmed in by turnpike bars; the latter an agricultural parish, with only a very small village, a population of 410, and no turnpike roads. The present taxation paid by the inhabitants for the maintenance of the roads, whether in the name of toll-dues or statute labour conversion money (at 36*s.* per 'plough-gate'), is estimated in Scoonie at 537*l.* 4*s.* 3*d.*; in Logie at 120*l.* 13*s.* 11½*d.* The ascertained number of horses is—in Scoonie, 161; in Logie, 75. A tax, therefore, on horses, according to Mr. PAGAN's scheme, to meet the *present* expenditure for upholding the roads would be, per horse, in Scoonie, 3*l.* 7*s.*; in Logie, 1*l.* 12*s.* 2*d.* From a rate laid on the real rental of all property for the same purpose, it would amount, per pound sterling of annual value, in Scoonie to 1*s.* 2½*d.*; in Logie to 8*d.* It must, however, be borne in mind that the real rate would, in either case, be much less (probably two-thirds), from the saving in the expense of management, which Mr. PAGAN clearly proves may be effected."—All this is reported by a committee to the trustees of the county. The report, from which it is extracted, concludes, however, without sanctioning Mr. PAGAN's scheme, observing that the difficulty "in respect to a general measure of change in that county is greatly increased by the circumstance of its being divided into four districts, having different amounts of debt, and whose separate powers in respect to the management of the funds are absolute."

Now for the facts regarding Forfarshire. In a report upon that county, as regards the management of its roads, Mr. PAGAN shows that out of the 13,000*l.* levied at toll-bars, 3500*l.* are spent in the mere process of collection. The 4000*l.*, within which the whole expenses of management at present fall, might be reduced nearly to 1100*l.* under Mr. PAGAN's plan; and all the funds needed on the roads of that county might be provided by a tax of 29*s.* per horse on the 10,000 horses it is estimated to contain. And the following grounds for believing that this tax might ultimately be considerably reduced are given in detail, as there is not a county where they may not be expected to be equally influential:

"1. The projected railways through the county will have the effect of relieving the roads of all thorough traffic, so that in future they will be kept up at a much less cost, for the sole use and at the sole expense of the county.

"2. On the abolition of toll-bars, there will be no inducement to use circuitous routes. People will, in every instance, drive by the nearest and most direct road, and so diminish the tear and wear attendant on the circuitous driving which results from the present system.

"3. The public money will go farther when applied under the direction and responsible management of a County Roads Board, with the county divided into a few districts, than under the present system, with 70 separate sets of managers and paymasters.

"4. From the roads being thrown open by the abolition of tolls, as well as from the wants of an increasing population and the progress of improvement throughout the county, an increase in the number of horses may reasonably be expected. Whenever the number of horses rises to 12,000, a rate of 22*s.* 6*d.* would produce the funds required; and, when clear of debt, at the end of 31 years, the rate would fall to 14*s.* 6*d.*"

We add the following particulars, illustrative of the subject, which are true, of a Union in the county of Gloucester containing 36,000 acres. The population of the district is 38,000. It contains 960 horses. There are 80 miles of roads, under no fewer than 16 turnpike trusts within it; and it contains 180 miles of highways supported by parish assessments. There are nearly 40 toll-houses within the limits of the district. The tolls collected, if put at 20 per cent. over the actual sums received from toll-collectors, amounts to 3960*l.*; while the actual cost of the turnpike roads is not more than 2000*l.* annually. This refers to the 80 miles of roads under different trusts within the district. As regards the 180 miles of highways, the amount raised by rates is 1700*l.*, of which 300*l.* are paid as contributions to the turnpike-roads: the annual cost of the highways is 1200*l.*, and the expenses of administration about 300*l.* Now whatever method of raising the funds for road maintenance be adopted, it seems clear that the extravagant method of toll collection must be given up. Mr. PAGAN's mode of taxing horses would, as might be expected in the case of so thickly populated and so "industrious" a neighbourhood, fall heavily enough upon the farmers, while the carriers and others whose horses are constantly on the road, would benefit by it; but inasmuch as a large portion of the funds collected as at present are derived from thorough traffic, there seems justice in the proposal to widen the districts, within which the tax would be uniform, to make it, in short, a county tax, rather than that every union should maintain its own roads: and this would take the burden somewhat off districts such as that referred to, which may be considered as the foci of intercommunication. No doubt the burden would in the same proportion be thrown upon the purely agricultural districts; and out of this most of the objections to Mr. PAGAN's method of road reform have arisen: but it is forgotten that however, relatively, certain districts might benefit more than others—*all* would probably benefit to some extent, as, the present outrageously extravagant system being stopped, a very large reduction would be effected in the expenditure. Thus Mr. PAGAN was at the trouble to ascertain the actual expenditure on the roads by the owners of 286 horses, and it was found to amount to at least 2*l.* 2*s.* 6*d.* per horse in a district where, under his system, a direct tax of about 30*s.* would have sufficed. And we have no doubt that the same fact would hold true in degree of all other districts whatever, and that under the proposed system no greater inequalities of taxation would exist than at present occur under a system of far greater expense to all concerned.

* "Road Reform," &c. By WILLIAM PAGAN, &c. BLACKWOOD and SONS.

CHRONICLES OF A CLAY FARM.

SECOND SERIES.—No. VII.

AMONG the various experiences which the much more social Agriculture of the last twenty years has brought, (for a great change has come over us in that particular since—well—never mind how long ago I was going to say,—) there is none which has struck me more than that part of its philosophy which consists in the operation of mind *upon mind*. That of 'mind upon matter' is not a very new subject: we see it every day, —and hear of it too, till it is something tiresome: just now we are on a different theme, and a less trodden: 'mind upon mind' is our point at present, and perhaps the more important, after all, of the two. I was going to say that in a pretty long and intimate experience of a rather curious soil to deal with, and to which never did man, horse, or implement, deny the epithet 'stiff,' I too, like them, have had my own dumb reflections, and not the least emphatic of these have grown out of the everyday phenomena of mind acting upon mind. You tell a man something, to-day, or express an opinion,

or assert a fact, about a thing which he has perhaps never noticed, or never heard, before: he smiles, starts, shakes his head, or delivers himself in some other way, for the ways are various in which men 'behave' (as the chemists call it) under the impregnation of a new idea. Whatever the mode may be, one thing you may be sure of, that in the grunt, the smile, the laugh perhaps, in fact whatever it may be that meets you, the attitude of mind betokened is that of—*dissent*. I am far from complaining of it: some of my best hands have given me infinitely the most mental gravelling in this respect. But what I *do* complain of, and want to know where to apply for remedy, (since the Law tells us that for every Wrong there lies one)—is that these same hard-headed fellows, workmen, neighbours, friends, kind advisers, or whatever other relation they may hold,—six, twelve, or eighteen months afterwards, coolly come to me, and with all that air of profound thought that becomes a man of reflective character, down-calving as one may say with something intensely wise, announce to me in new language of their own, the very thing which I at such time back suffered a small martyrdom in the vain endeavour to urge *upon them*.

I know not whether other 'employers of labour' have felt this sort of *paulo post* experience as I have done. But I suspect so; for every man is (and it is comforting to think so) only the unit of *a class*. It is difficult to study for successive years the character of a soil, without learning something of the character of those employed upon, aye and even of those who *visit*, it. And this has been my especial grievance, and one which Time, the 'smooth-handed god' has increased, not lightened. People who derided my 'improvements,' laughed at my 'deep' drains, bewept my grubbed-up Ash-stumps, mourned over my obliterated hedgerows, turned up noses at my Tank, listened with mock-gravity to my 'mysterious' remarks about the 'economy of warmth' as cheaper than the 'equivalent in food,'—and a great many other things that it would take an inventory to tell,—do now come and preach to me such admirable sermons on my own poor old antiquated texts, that I should really begin, as other worthies have done before me, to doubt my own identity,—but for a little store laid by in a corner, of the capital I began with, and which I commend again to all *beginners*—namely, of philosophy.

"The mind," says an old author, "like the body, must digest before it can assimilate. The hungry dog bites your fingers as he takes your morsel: but the food becomes flesh, and the want is forgotten,—with the giver."

And so I have found it: and so, no doubt, have others. No sooner is a new thought imparted, than it sets up for itself, and denies its pedigree. "Why, that is exactly what I told you three years ago, when you came—&c.——!" you feel on the point of rapping out, struck with severe amazement.

Spare your breath! and your reproach. He cannot remember anything but what he *now knows*. He forgets that he ever thought otherwise! Tell him, *now*, something new, and you will see again the same derisive smile, the same look of idle wonder, aye of contempt, at your fanciful, ideal, 'theoretic' notions: and twice twelvemonths hence, when your idea has *taken root* and become a fact, the scene of to-day will be acted over again. Then go to your library,—large or small,—and look back over the history of the world; and you will see that the annals of human invention and discovery are the true history of Martyrdom, and that to be stoned by his own generation, and worshipped by the next, is at once the penalty of human pioneership, and the reiterated monument of human folly, dotting the road, like milestones.

It is very fine, no doubt, to connect one's own small-scale improvements, after this fashion, with the history of the Great and the Dead, to whom life was one conflict with ridicule and contempt—a history the most affectingly interesting—perhaps the most important that is left to us;—but after all, the grandeur or pettiness of the scale does not alter the argument. And when I had listened for half an hour to Mr. Greening discoursing of Guano and Superphosphate, in as easy and as matter-of-fact a style as if he had regularly carted them out of his Farm-yard on to the Turnips any time this fifty years, (though he still called it Gu-anner, and *would not* have it at any price as a word of two syllables,) I could not help mentally amusing myself with thinking of the time when he used to poke every imaginable jocularity at me for '*sowing the saw-dust*,' 'wheel-barrow farming,' 'pocket-dung-carts,' and a whole heap of good sayings which, duly noted down on my part, made my chronicle of that date a complete glossary of farming-witticisms: and curious it was to see how the memory of former incredulities had passed away *from him*. My deepest drains were no longer deep; my largest fields no longer 'to' big for the farm.' But Greening was a true improver notwithstanding. He baptized every new-born notion with a jest, but he watched its growth and adopted each youngster in succession, and so heartily and practically withal, that they seldom got into his hands without thriving better after all than they had done in mine.

Ye ardent Go-aheads! who expect every new argument to *tell* at once,—every intellect to yield at the first onset, every new plan to be tried by every body,—learn to *wait:* and you will find that there is much more chance of your notion being over*taken* than over-*looked*, much more likelihood of your having to re-*claim* than to re-*assert* a single hint that was ever good for anything. The seed may seem a long time buried, but if it have any vitality in it, it is germinating where you little think, and will fructify when you least expect, and with a produce you had never dreamt of. And when you come again and say 'this is *mine!*' do not be surprised if shouts of louder laughter greet you than even befel your first announcement of it.

I had time to think all this: for my guest, like a shrewd bargainer, as he was, gave a little fling to the general discourse before he came to business. In fact he had the true diplomatic tact of always making the business come of itself. "Well then! Here's 'Better Prices for 'thirty-six'! and that 's with all my heart, *and* no mistake," said he, 'topping up' with a final cup of Coffee that healthiest and purest of mortal meals, a plain but hearty breakfast. "And now, sir,—when are we to see 'em!" he added, giving his chair a shove sideways, slapping his hands on his knees, and facing me, like a lion refreshed: "for it 's my notion we never shall again!"

"And then——?"

"Why the farmers 'll be ruined, and the land 'll go out of cultivation."

"And the Landlords——?"

"Will follow, of course. They depend upon the Farmers, and the Farmers on the land."

"And the land on the price of Wheat?"

"Surely."

"Tell me this, Greening, have rents risen or fallen since the War?"

"Risen, certainly; and too much, to my thinking."

"And the price of Wheat has been falling: from eighty or ninety shillings a quarter to forty or fifty, as we remarked this morning. Rents rising, and prices falling!"

"Yes: and the farmer's business getting worse every year. 'Tisn 't like what it used to be."

"Just so! and competition keeping up the rents notwithstanding!"

"Aye! that Competition! It didn't use to be so. And what is it after all? No sooner a Farm's vacant than a hundred fellows come yelping after it like a pack-o'-fox-hounds, offering a high rent, and not one of 'em perhaps with the valye of a team o' horses of his own, scarce: and when they get in what do they do? Crop every field that 'll bear a crop, sell all off for a few years, and then leave it clean beggared, and the landlord without his last year's rent p'raps."

"No Turnips—they *take no root*, Greening!"

"Turnips! they 've no stock to give 'em to! What 's the use o' them growing Turnips? that 's not their *sort* o' business."

"And they outbid the honest cultivator, and the skilful one: in fact they can afford to do so, because they can afford to rob: just as though a man offered you a higher rent for your house, meaning to sell off the furniture?"

"That 's just it: that 's just what it is, sure*ly*."

"And the higher the price Wheat is kept at, the better it pays,—the greater the premium, in fact, on that kind of 'farming.'—the higher the sham-rents offered over the head of the fair tenant,—the smaller the inducement to steady and fair cultivation,—the greater the breadth of Wheat unfairly grown,—the greater the consequent glut upon the corn-market, and the injury done to the honest grower who has earned one large grain-crop by growing roots and feeding plenty of stock, instead of raking the land by frequent and diminishing crops with no stock at all. Is that to your liking? Will you pray that the inducement may continue of that style of farming? of *that* style of *competition*? of that style of rent-raising, that ends in ruin to the beggared land, the ignorant landlord, the foolish tenant, and the defrauded laborer?"

Mr. Greening looked thoughtful,—"Well—there's something in that, perhaps; but how 's it to be stopped? How 's them sort o' *farmers* to be put an end to?"

Now it was the other's turn to be a lion. So the savage beast sat right opposite to poor Greening, and glaring fiercely in his face growled out—"Now look at me like a man—don't faint—and I 'll tell you.—By serving them as you do the Rats when you take the Ricks away! Starving 'em out! There 's no *other* way! They 'll starve you if you don't starve them. Their food—their only food is—ever has been—the *premium* price—the *disproportionate* value of the grain-crop. TAKE AWAY THAT BAUBLE!" quoth farmer Oliver—the *Protector*.

There was an 'awful pause.' Mr. Greening was looking into the fire. One would think there was something written in the live embers which he was trying in vain to decypher—So hard he looked at it.—"Ah! I've thought o' that!" he slowly muttered at last, as if to himself:—"Kill or cure! But that's 'kill first and cure afterwards.'"

"Kill the proud-flesh, to cure the sound. Yes: cruel work, no doubt, at any time; but crueller when done at the wrong one."

"When's that?"

"The moment when it *will* be done; as surely as effect follows cause! Does it need a ghost to tell us that that time will be a time of *scarcity*—a famine perhaps, or a fancied one? *Then* it will be done, and done *in a hurry too*! And then——What comes after a famine, Greening? What is the recoil of Scarcity?—*Abundance*—very true:—*then* will be the tug of war, then! for good and bad together. 'A cruel brute, this Lion,' we shall say! and yet he pastures on the cruellest of all: he cracks the bones of the true bloodsuckers; and 'when it's bad weather for thieves,' they say, 'the true man may sleep the sounder,' let the rain rattle on *his* corn-stack how it may. 'Let Mr. Lion roar again,' you will say, when you've seen the end. Even your tiny Mole is a ruthless beast of the field—to slugs, and snails, and caterpillars, and such land-sucking fry—a fierce subnavigator, in his way: but his track turns up some pretty cultivation; it only wants *spreading*,—far and wide! it's not so wise to throttle him as you think. I grieve to see him hanging gibbeted—his clever paddles stopt, by cruel ignorance. For he is your only granulation-master; he taught us drainage—and *sub*-cultivation—and we shall learn of him another, and a greater lesson, some day, and call him a prophet—when we've done hanging him—and have got some speculation in our own eyes (whose sense is shut at present), instead of saying *he* can't *see*. Day and Night! HE has the better right to say so of us!—But as for this price-of-corn question—this grain crop *versus Green crop*—trust me, Nature has her true *Proportions*—and is pretty rigorous in maintaining them: and you cannot throw them out of gear, but she 'll be down upon you, somewhere. *Green-crop versus Grain-crop!* Which would you shew favour to, if either? the man that comes to *make* an investment—to *earn* a crop, knowing the cost, or the spoiler that comes to *take* one, counting nothing?—him that comes to sow before he reaps, or him that comes to reap before he sows? Do you remember what I said about 'Grace before meat.'"

"Yes, yes! I remember it, I 've thought of it too, though I never did in that way 'xactly before.—I see your meaning, now. But—but—about the—What was it you said about *the Rents?*"

"Ah! the core! the vital point—is n't it? touch it tenderly for the life of you!"

"But will they fall?"

"Will they *stop rising* a bit? Catch that fish first. Get *him* well on the hook: land him carefully; and you won't have quite an empty basket, I can tell you. I'm NOT sure if it won't take care of itself afterwards. Which farm pays the *best* rent, even now, the one where the *highest* was *promised*—or *the other?*"

Mr. Greening drew in his lips and shook his head. "Let the Landlords answer that. 'Taint all gold that glitters.'"

"True: so for those that ca'nt distinguish, *a pure currency* were the greater blessing, eh?"

"There 'll be less *of it*, I 'm thinking," said Mr. Greening, "if it comes to that. But that aint all. There's them Clay Siles. We haven't done with them yet."

"We haven't *begun* with 'em! Come, I 'm out of breath. 'After breakfast sit awhile,'—we mustn't ride the old maxim to death. Let's go and *look at them:* I can give you your choice—Red, blue, yellow and white, and every one with a different temper for every month of the year! The man that can tell what *is* to be done with them—"

"He 's the '*coming* man,' I suppose," said Mr. Greening, laughing, and beginning to pull on his great-coat; "he must be able to mix Fire and Water first, I 'm thinking!"

"And make STEAM?"—said the other.

Mr. Greening turned short round at the answer, as he was going to the door, and looked a moment fixedly at the speaker. Both smiled: but there was a difference in the smiles. And they walked out together.

Talpa.

THE CONDITION OF THE LABOURER ON THE DUKE OF RICHMOND'S ESTATE, HUNTLY, ABERDEEN.

THE condition of the labourer at present, in this part of the north, is prosperous. The usual food is prepared with oatmeal, and at present rates, while the labourer is earning from 2*s.* to 2*s.* 4*d.* per day, the average price of the quantity of oatmeal which an able-bodied man could consume would be about 2*d.* per day; and work is in the meantime abundant, though it is impossible it can continue so unless a change of prices takes place. The high rate—11*s.* and 12*s.* a-week for men, and 10*d.* a day for female labourers—of wages is to be attributed, to a great extent, to the impulse given in this district to agricultural improvement by the Duke of Richmond. Within the last 10 years his Grace has expended in the Huntly division of his Scotch estates as follows:

1. On buildings	£7,000	
2. On enclosing...	4,700	
3. On drainage	6,400	
4. On miscellaneous improvements, such as roads to farm steadings, embankments, &c.	850	
	18,950	
5. On plantations	3,000	
		£21,950

The principle on which the aid in enclosing drainage and buildings has been afforded to the tenants is such that probably about half the expense falls to be borne by the tenant, and no interest is charged on the outlay; so that adding an equal outlay on the first four items of outlay, the total expenditure cannot be far short of 40,000*l.*, by far the greater proportion of which has been expended directly on labour.

These outlays are over and above the outlay of 5000*l.* in progress of expenditure on his Grace's lands in this district, under the provisions of the Drainage Act. Of this outlay the tenants bear no share, but they pay 5 per cent., in addition to their rents, on the amount expended on their respective farms.

Leases of 19 years are the usual rule throughout the country, where the farms are of any size, and in many cases even where the size is very inconsiderable. The

facilities for acquiring the ordinary branches of education are very considerable throughout the whole of Scotland, but especially throughout the northern counties, from the circumstance that several large bequests have have been left for educational purposes in these counties. These are sufficient to raise the salary of the schoolmaster to a very considerable amount (comparatively), independently of fees; and the allowance to each schoolmaster being graduated according to the number of his pupils, and their proficiency in the different branches taught, the interest of the teacher in the advancement of his scholars is secured. Besides these (the parish schools), there are few parishes in which there are not one or two side schools, supported mainly by small fees from the pupils, aided generally by salaries of small amount from the landlords, occasionally by bequests, and by grants from the funds of the Scotch church. In addition to these, a great number of schools, connected with other religious bodies, exist throughout the country, and are attended by a large proportion of the young.

With these educational facilities, there is hardly a labourer in the north who has not learned at least to read and write; and there are numbers who are quite fit to undertake situations of some considerable trust and responsibility, in which being able to write tolerably and a fair acquaintance with figures are indispensable. So much is this the case that the wages of an ordinary farm-servant, and of a servant who fills the situation of a *grieve* or overseer, and has charge of all the accounts, &c., differ to a very trifling extent; and there is no difficulty in getting persons employed as ordinary labourers, fitted for such charge.

There are no allotments expressly for the purpose of accommodating labourers in the district; but there are numerous small holdings, and the farm servants and labourers generally consist of the families of the occupants of these smaller possessions. The improvements before referred to have, of late years, introduced labourers from different quarters, of more migratory habits, who will no doubt leave this locality as work becomes less plenty here, or more abundant elsewhere. The number of these labourers, however, is comparatively small, the great majority being, as mentioned, children of small tenants of land; and they are themselves less desirous of pushing themselves forward as labourers than, after some years of service, of settling in crofts, and, in fact, of becoming little farmers. It must be obvious that without adopting the Irish system of subdivision, it would be impossible to make provision for settlements of this nature for any length of time. The present tendency is rather to unite possessions and to give employment to the class referred to as labourers, than to subdivide and convert them into cottars. Still great progress has not been made in the work of consolidation, as may be seen from the following statement:—On a property in this immediate neighbourhood, consisting of 200,000 arable acres, there are—

108	tenants paying a rent under	£5	0	0			
64	„ paying between ...	5	0	0	and £10	0	0
67	„ „ „ ...	10	0	0	and 20	0	0
82	„ „ „ ...	20	0	0	and 50	0	0
67	„ „ „ ...	50	0	0	and 100	0	0
38	„ „ „ ...	100	0	0	and 200	0	0
12	„ „ „ ...	200	0	0	and 300	0	0
	And only 1 tenant upwards of	300	0	0			

Besides these, there are scattered over the same property 183 occupants of cottages and gardens, paying rents varying from 1*s.* to 20*s.* yearly. These are for the most part persons who had settled at a former period in unoccupied corners on hill sides, without any authority and without any objection. The practice is not now permitted, but the parties already settled have been allowed to continue.

There are very few manufactures in any part of the north country, and in this locality none. And although there has for a considerable time been, and still is good employment for labouring men at high wages, women have sometimes great difficulty in earning anything, particularly in winter. In spring and summer and in harvest season they can find plenty of work at the wages above mentioned; but in winter they can get little or no outdoor work, and almost none indoors. In Scotland, able-bodied persons out of employment, if in health, have no claim to parochial relief; but of aged and infirm men the number on the poors' roll in this locality is very inconsiderable, as compared with the number of infirm women, perhaps in some degree owing to their want of steady employment. *James M'Donald, Huntly, Aberdeenshire.*

Home Correspondence.

Water Wheels.—The experience I have had in water machinery, makes me decidedly give the preference to vertical water wheels, for a situation like that of "*Aqua Pura*," [see page 203], and would recommend the wheel to be not less than 18 to 20 feet in diameter. The width of course must be calculated from the quantity of water you have at command; 3 or 4 feet wide will make a very powerful wheel sufficient for the requirements of a considerable farm, to cut straw, hay, gorse, and to thresh, crush Oats, Beans, &c., and churn; but all these will not be required at once, therefore the power sufficient to work a threshing machine will be sufficient. Light water wheels of 8 and 9 feet diameter, 2 feet wide, wrought-iron axle, cast-iron sockets, the remainder all Pine or American deal wood, are made here for about 10*l.*, fixing extra, and one 14 feet of the same material, was made for 15*l.* These answer for cutting gorse, straw, &c., and churning, and with a good supply of water, may turn a small threshing machine, but are not to be recommended (the small ones). The greater diameter gives a greater leverage, and consequently greater power, although the perpendicular fall of water be the same. To a person who could superintend the fixing of the machinery, it would not be very expensive. A common straw cutter and threshing machine on the ground floor, attached to the water wheel, one on each side, by spur or bevel gear, and giving to each the requisite speed in the diameter of the wheels; a pair of old mill stones, fixed in the floor above, and turned by the upper side of the spur wheel, on the axis of the water wheel; thus each can be worked separately, by providing slides to move the pinion, or all together, if power enough, and occasion require. *T. S.*

Farming in 1850.—Being too old to learn new ways and contend with the difficulties of the times, I have retired from agricultural pursuits; but not liking to be a mere idle looker-on, I wish to make myself useful by writing a few remarks for the consideration of those who are busily engaged in the battle of life. Farming in 1850 must be very different from what it was 50 years ago. It will not now do to reap only two middling crops in three years, the third year having a dead fallow. Neither will it do to go on cultivating wet land; it must either be well drained or thrown out of cultivation; nor will it do to be satisfied with middling crops. The cultivation and condition of the land must now be such as will bring great crops; but, to effect this, it is requisite that the farmer should have a large capital; and, to induce him to lay it out freely, he must have security for remuneration, and payment for improvement. The present time is a crisis, requiring prompt and judicious consideration, and the active energy of land-agents and landowners as well as tenant-farmers. Many of the latter are thinking of emigrating, as they reckon it a hopeless task to endeavour to compete with the foreigner, while they are themselves bound hand and foot, oppresssed by war-time rents and taxes, and, in too many cases, their crops devoured by game, which they are bound to protect. If, therefore, the owners of land would avert the disastrous consequences of having their farms thrown into ruinous condition, and then cast upon them—and if they would deprecate the abduction of capital, skill, and enterprise, which will otherwise take place—let them immediately make such arrangements as will prevent the ruinous consequences which such neglect will certainly bring upon themselves and this nation. Corn-rents on tillage farms, the destruction of the vermin called game, long or renewable leases, with payment for all unexhausted improvements, and liberty to make the most of the land without injuring, but with every encouragement to improve it as much as possible, appear to me to be the indispensable requisites; and with these, and a moderate reduction of rent, I hope the British farmer may yet be spared the pain of banishment from his native soil. *An Old Farmer.*

Logic and Liberality.—What a queer world is this we live in, and how strange that every effort to mend it is sure to be met with determined opposition from some quarter or other, but chiefly from the ranks of ignorance, selfishness, and "Suspicion!" I have not been more amused for a long time than by the efforts of certain writers to throw odium on the means adopted by the *Agricultural Gazette* to elicit information on a subject, important at all times, but doubly important in times like the present; that of the relative connection between the position of the employer and the employed, with a view mainly to the amelioration of the latter, but ultimately, perhaps, to the advantage of both. Amongst the foremost in his opposition to inquiry on this interesting question, is a certain scribe, who rejoices in the cognomen of "Suspicion," (a more appropriate title he could not have hit upon), who puts forth a manifesto, by way of warning, to the cultivators of the soil, how they give the remotest sanction or encouragement to the list of queries propounded by you, the very Guy Fawkes of free trade editors. In the eyes of "Suspicion" the whole thing is a vile plot to undermine the agricultural interest, and the smattering of chemical knowledge he has acquired, authorises him to pronounce it an explosive mixture, destined to blow up the whole system, both of protection and agriculture; terms which, in his vocabulary, are strictly and completely identical. One gentleman, who is and shall be nameless, issues the very alarming mandate to those who have received the list of queries, "Do not reply to them!" King Canute once issued a similar command to the waves of the sea, not to come near his gouty toes: but they did come notwithstanding, and the royal toes suffered in consequence—and the courtiers who advised the absurd decree were rebuked, as they deserved to be, for a set of rogues and fools. Just so now. The wave will roll in, and the answers to your queries will be borne with it—the result will be published, and the whole will form a valuable repertory of information on a subject, as I have already said, of the gravest importance both to the farmer and the labourer. As one who was honoured with the receipt of a copy of your list of queries, I feel myself bound to state the course I pursued on the occasion. First, I resolved to answer them myself; and next, to multiply copies, so that others at a distance might have an equal chance of contributing to the success of the plan. Others, I have no doubt, would do the same, and you may deem these an ample set-off against any defalcation likely to arise from the pigmy efforts which such heroes as "Suspicion" can bring into the field. And I confidently say, that we may be sure of the co-operation and assistance of every real friend to the farmer, and the welfare of the poor; and will not fail, in the end, to find that you have attained an object far more useful than these traducers of it will ever accomplish, and, at all events, one far, very far above "Suspicion." *S. T., Barnwood, Gloucester, April* 2. [Many thanks for your assistance: with the cordial goodwill which our object has in so many places elicited, we have no doubt of its attainment]

Evils of Ireland.—Much has been said and written respecting the cause of so great misery in Ireland; they seem to have sprung from political and religious discord of contending parties in bygone times. What a blessing it would have been, if even only a tenth part of the sums expended from time to time in agitation had been applied to teach the people habits of industry. And also, if contending parties would lay aside their disputes, and attend to the poet's remonstrance:

> What signifies for folks to chide,
> At what's been done before them.

They would then be disposed to think more seriously, and see that much of their misery arose from themselves, and might be remedied by their own exertions. The never-ending strife in Ireland has driven and still continues to drive many landlords from their home, and has prevented the growth or rise of a trading or middle class to take the lead in arts and sciences, as in Britain. Whatever else may be said of the state of affairs in Ireland, from those two sources much misery has arisen to all classes. The middlemen have long leases for from 400 to 1000 acres, granted in many instances by the grandfathers of the present proprietors. It was not supposed that they were to farm the whole themselves; they let it divided into small holdings, and may have a profit rent four times the amount of the original one; consequently the middleman fattens between the tenant and landlord, and assumes the name of gentleman. But many leases of these men are nearly expired; and knowing that they will not get them renewed, they take care that their tenants do not get into arrear with them, and give no encouragement to them to improve their land, while these struggle to hold on to the end of the sub-landlord's lease, until they are often left without a cow or pig. Much misery and evil will arise from this grinding system, and many murders recorded in the newspapers are those of middlemen slaughtered by their own tenants, acting under the notion that, when they get rid of them, they will be better off under the head landlord. Supposing that the latter returns home, with a view of improving his property, by introducing a few fresh tenants in room of the former ones, setting a good example in agriculture, and giving employment to the people, he soon finds that he is disliked by the ejected tenantry, and is surrounded by wretchedness and misery, and speedily quits the country, having previously appointed an agent, probably a lawyer, who seldom or never sees the property, but who is well qualified to screw up the tenantry. These soon become poor, and begin to act like the middleman, by letting part of their already too small farms to others at a rack rent, in order to get a little money in hand. By this sub-letting plan the land is cut up into small patches, so that not a respectable farm is seen for miles. It is needless to observe that this cutting up of property tends to lower the grade of the people, who, under better management, might have been comfortable, instead of being oppressed and miserable. In general, however, the Irish tenantry have no reason to complain of their head landlords from being "hand tied" by strict covenants like those on this side of the water. And what is strange, there is no law in Ireland to prevent a tenant letting part of his farm to another—at least if there be it is a dead letter; so that, by this means, many small tenants get upon land unknown to the owner, and are often so poor or so unwilling to pay any rent. These are the great plague of agents, who are often shot when endeavouring to force payment for their master, who may be living in England or France, in needy circumstances. He spurs on his agent, and he fleeces the tenants, that could consume in their own families the whole produce of their wretched farms, the rent all that time leaving the country. So much for the absentees. It may be superfluous to describe the reverse in other districts, where resident landlords manage their property in a better way, spending their incomes at home, and giving employment to the people. There is another class, called gentleman farmers; these obtained their leases in times more troublesome than usual, for Ireland has never seen other than troublesome times, like the middlemen; but instead of letting their land, commenced clearing off the small tenants, and kept all in their own hands, perhaps 1000 acres under pasturage, sending the produce of stock to the English market. A great portion of their land requires draining and other improvements; but they allege that it is more profitable, or what is more true, gives less trouble to let it remain as it is. They observe that the wet ground produces very good Grass during the few summer months; and that they cannot pay for improvements. These of this class are of course a loss to the country, though they are rich and able to indulge in field sports. They plead that they can do what they like with their own; and so does the poor cottier with only half an acre of Potatoes. The too extensive culture of this root is another great evil. I do not allude particularly to the occasional failure of the crops, such as those of late years, which have brought an overwhelming misery that beggars description, but am persuaded that so much land cropped with Potatoes instead of corn, not only shortens labour for the people sorely wanted, but also supplies them with very interior food. Besides, the easy culture of Potato land has a great tendency to

lower the condition of society, by encouraging early marriages. For a young man does not look forward to work for the support of himself and family, his ambition is no higher than to be able to plant half an acre of Potatoes, which is to place him beyond the fear of want for the year. A few days' work enables him to plant and take up the crop; the remainder of the season is usually spent in debasing idleness. Therefore he is a poor workman at home; but when driven from his Potato field into Britain or America, he becomes a good labourer. I refer again to early marriages that are imprudently encouraged, as not only entailing much misery to parents and society by a helpless offspring, but tending also to cut up land in the way described; for a small holder, instead of training his family to trades, encourages them to marry young, and portions out his land among them. They act the same towards their offspring, by which means what was once a respectable family is lost in the common degraded mass. It should be observed, however, that this is owing to the absence of a middle or trading class; for the small holder has little or no opportunity of putting his family to trades, like small farmers in Scotland, who bring up their sons to trades, or educate them so as to enable them to fill respectable situations. Among such are many good land stewards or gardeners, who are correspondents or readers of this journal, and know that the mild winters in Ireland are a drawback to agricultural labour, which is not so much felt in England or Scotland. This may seem strange, but it is nevertheless true, for it costs the British farmer much care and expense for labour, in order to grow artificial crops to feed his stock during winter, while the Irish fields produce Grass nearly all the year. By this it appears that Ireland is better adapted for grazing than growing corn, especially as there is always a ready market in England for live stock. But that sort of farming contracts the demand for labour, as noticed above under the description of gentlemen farmers; and the grand question is, how can labour be increased to repay the capital expended. As there is a wide field for improvement, some advocate introducing British farmers, whose skill and capital are sorely wanted. But this, even with the great encouragement given to emigration, will not remove the dead obstacle in the way, as it will not give employment to the overwhelming population, unless it be accompanied by manufacturing and commercial occupations to give the people work, by which they would be enabled to improve their condition, and consume better food than Potatoes. It cannot be supposed that farming and other rural pursuits can give profitable work to all who are now upon the land. Supposing a farmer takes a lease of 200 acres; before he can occupy them there may be 20 small holders ousted. He cannot of course employ hardly half that number, and the misery that follows turning the poor adrift is harrowing to the feelings of humanity. The British farmer, aware of this, will consider well before he sells his stock, and embarks his all into a land where agitators fill their purse or feed their vanity from the miseries of the people, and excite their feelings against their rulers and employers. *J. Wighton.*

Societies.

ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

A Weekly Council was held at the Society's-house, in Hanover-square, on Wednesday last, the 10th of April; present, Mr. Raymond Barker, V.P., in the chair, Mr. Alcock, M.P., Mr. Barugh Almack, Mr. Bastard, Mr. Burke, Col. Challoner, Mr. Clarke, Mr. Dyer, Col Le Couteur, Mr. C. E. Overman, Mr. Parkins, Prof. Sewell, Mr. Reynolds Solly, and Prof. Way.

The following new members were elected:

Anson, Sir John, Bart., Avisford, near Arundel, Sussex
Darby, Joseph, Martock, Somerset
Watts, Henry, Teignmouth, Devon
Pinsent, Thomas, Greenhill, Kingsteignton
Creed, William, Abbotskerswell, Devon
Stevenson, John N., Hayne Manor, Moreton-Hampstead
Wreford, John, Cleaveangter, Lapford, Devon.

The names of nine candidates for election at the next meeting were then read.

Prize Essay.—Mr. Pusey, M.P., Chairman of the Journal Committee, reported to the Council the decision of the Judges appointed to adjudicate on the Essays sent in to compete for the Society's Prize of 30*l.* for the best Report on the Prevention of Abortion in Cows, including a statement of the extent and causes of its prevalence. The sealed motto-paper being opened by the Chairman of the Council, it was found that the winner of the Prize in question was Mr. John Barlow, Veterinary-Surgeon, of Stone House, Wilmslow, near Manchester. Mr. Pusey also reported, that the Judges had "commended" The Essay, on the same subject, bearing the motto "Prevention is better than cure: (A.)" The sealed motto-paper corresponding with this commended essay was ordered by the Council to be transmitted to Mr. Pusey, in order that, in his capacity of Chairman of the Journal Committee, he might open or not, at his discretion, agreeably with the 5th Regulation of competition for Essay Prizes, and communicate, if he thought proper, with the author, with a view of consulting him confidentially as to his willingness to place such essay at the disposal of the Journal Committee for publication.

Irrigation.—Sir Thomas Dyke Acland, Bart., M.P., favoured the Council by transmitting to them the following statement, addressed to him by Mr. John Tyrrell, of Exeter, on the probable cause of the fertilising power of the water employed in irrigating meadows.

"I see from the proceedings of the Royal Agricultural Society, that you take a considerable interest in watered meadows. I fancy I have lately discovered that the benefit derived from the water on such land is principally the result of the animals the water calls into existence. The microscope shows us countless millions of these animals, where irrigation is going forward; while they are found 'few and far between' upon fields that have not been watered. They are principally of the same family that are frequently found fossil in some of our oldest deposits. It strikes me, they may assist vegetation during their lives, by supplying carbon to the roots of plants, or by disintegrating and converting into manure the decaying vegetable matter around them. When dead they must furnish not only animal but mineral manure, for the shells with which most of them are covered consist of silica."

Jersey Cattle.—Colonel Le Couteur, Viscount of the Island of Jersey, presented to the Council lithographic impressions from two beautiful drawings, made by himself, of a bull and cow of the Jersey breed, on which were marked the "scale of points," approved by the Royal Agricultural Society of Jersey at their general annual meeting in January last, as constituting perfection in their peculiar and well-known breed of dairy cattle, and as furnishing to their judges a simple and definite process for arriving at satisfactory conclusions in making their awards. Col. Le Couteur entered into a detailed and very interesting statement of the character of animals in which any one or more points specified in this scale were more than usually developed. The drawings then laid before the Council were not portraits of any particular bull or cow of the Jersey breed, but represented an ideal assemblage of individual excellencies occurring in different animals, and selected from the finest cattle on the island, collected together at Col. Le Couteur's farm for the express purpose in view, and carefully submitted to the inspection and comparison of the gentlemen who formed the special committee appointed by the Jersey Society to revise the "points" of their stock. Col. Le Couteur, in detailing the points thus agreed to by the committee, called the particular attention of the Council to some of those points found to be most intimately connected with the natural excellence of the animals and the characteristic peculiarities of the Jersey breed, of which the island, in Col. Le Couteur's opinion, at that time contained some of as perfect specimens as could well be conceived. He remarked that the cows which had the inside of the ear tinged with a deep yellow colour, were invariably found to yield butter of a rich orange colour, while those with ears of a lighter tint furnished butter of a correspondingly inferior quality, and of a paler hue. In the finest stock, too, the eye of the cow was soft and placid, while that of the bull was lively and full of fire. The "action" of Jersey cattle also indicated, not only their muscular power and their mode of employing it, but that general conformation and adaptation of parts which constituted excellence: a finely-bred Jersey animal, Col. Le Couteur remarked, ought to walk off the ground like a race-horse. By means of this determination of a standard scale of points, the labour and responsibility of the judges was much reduced, while their decisions almost invariably gave satisfaction; as, in the case of any difference of opinion, a third party being called in, the award is at once decided. During the 10 years that he had acted as Secretary to the Royal Jersey Agricultural Society, he had never known the occurrence of an absolute case of dissatisfaction. In reply to inquiries made by the Chairman and Colonel Challoner, he proceeded to state, that no animal received approval excepting through the Society, the members being allowed a free exhibition, while strangers are required to pay an entrance fee; the number of points assigned by the judges being duly stamped on the horn of each animal. Colonel Le Couteur, in reply to further inquiries, admitted that this guarantee of merit might by unprincipled dealers be imitated for the purpose of deception. At the present time, many animals were easily passed as of the true Jersey breed, especially those of black, or black and white colour, from Normandy, and others from Brittany, which were very inferior, as dairy stock, to the genuine animals of that breed.—The Chairman wished to know how the term "Alderney" had been generally applied in England to the Channel Islands' cattle, and whether the animals of that island possessed advantages over those of Jersey or Guernsey.—Colonel Le Couteur said that, on the contrary, there was at the present time scarcely an animal in Alderney that he would think worth purchasing. He explained that that island had belonged to his great-grandfather, who introduced into it a great number of the Jersey cattle, which, however, from the inferiority of the pasture, soon deteriorated from the original stock. Colonel Le Couteur, Mr. Parkins, and Mr. French Burke, then cited particular instances of the great amount of butter yielded by dairy cows, during the flush of Grass in May and June, or throughout the year, if fed in a particular way, and tended with great care; namely, 16lbs. a week in those months, or 1lb. a day in other cases during the year.—Colonel Challoner then stated the case of a finely-bred handsome Jersey bull of his own, which, though perfectly healthy and fat, had his skin constantly affected with a yellow powder or scurf of a deep orange colour, especially within his ears and on his tail, a result he could only attribute to an abuse made of him by parties to whom he had been good-naturally lent.—Colonel Le Couteur then expressed the great pleasure it would at all times give himself, as one of the Governors of the Royal Agricultural Society of England, or his successor in the office of Secretary to the Royal Agricultural Society of Jersey, to receive applications from any of its members who required advice and aid in obtaining the best dairy animals which that island could produce. He had had last year the satisfaction of freighting a vessel with 33 head of such stock, to a gentleman residing in Scotland, which arrived in perfect safety, and maintained the high character of the Jersey breed.—The Chairman referred to a challenge given by Mr. Villebois, one of the Governors of the Society, to the county of Berks, in which he resided in favour of two of his dairy cows of the Channel Islands' breed, which had produced him both milk and butter of almost unexampled quantity and quality.—Mr. Alcock, M.P., remarked that it would be highly desirable, if, in the case of other breeds of cattle, a similar scale of points could be established, in order that the doubt and difficulty of the judges, and the frequent dissatisfaction of competitors, might be removed by the adoption of such a defined standard of adjudication as would have the effect of limiting and defining the conditions of merit in the competing animals.—Colonel Le Couteur stated, that when some years ago he had shown to the late Earl Spencer the scale of points for the Jersey cattle, his Lordship expressed to him the desire he felt that such a step should be taken in reference to other breeds.—Colonel Challoner said that he could fully corroborate that statement, for he had the pleasure of being present with Lord Spencer and Colonel Le Couteur at the time it was made.—Mr. Burke remarked that he was also fully aware of Lord Spencer's wishes on that point.—The Chairman felt how highly desirable the adoption of so definite a system would prove, but at the same time he feared that our judges would have great difficulty in defining the required points, and unanimously agreeing to them.—On the motion of Mr. Parkins, the best thanks of the Council were expressed to Colonel Le Couteur for this kind offer on his part, and for the interesting documents and statements with which he had favoured them.

Miscellaneous Communications.—M. von Bechtold, Ministerial Councillor, and President of the Central Board of the Agricultural Societies of Hessia, transmitted to the Council a communication on the part of Count Salms-Laubach, President of the Agricultural Society of Upper Hessia, in the grand Duchy of Hesse, on the subject of the different breeds of Sheep.—Mr. Henry Clayton addressed a further communication to the Council, on the conditions under which, in his opinion, the trial of Draining Pipe and Tile Machines ought to be made, in order to obtain results which subsequent trial and the ordinary working of the machines would be found to confirm.—Mr. Beale Browne transmitted an average sample of the Flax Seed grown by him in Gloucestershire.

The Council then adjourned to Wednesday fortnight, the 24th inst. (Prof. Way's Lecture being fixed for that day week, the 17th inst.)

Highland and Agricultural, *Feb.* 13: *Feeding of Farm Horses.*—Mr. Gibson, of Woolmet, said:

The system of feeding I adopt is as follows: From the middle of October till the end of May my horses get one feed of steamed food, and two feeds of Oats daily, with the best Oat or Wheat-straw for fodder. I never give Bean-straw, having often seen the bad effects of it—partly owing, I think, to its long exposure to the weather, and from the quantity of sand which adheres to it; I use it generally for litter. The steamed food used is well washed Swedish Turnips and Potatoes, in equal proportions, mixed with sifted Wheat-chaff. In those years when we had a total loss of Potatoes, Swedish Turnips alone were used, but not with the same good effects as when mixed with Potatoes. This year, having plenty of diseased Potatoes in a firm state, I give a larger proportion of Potatoes than Turnips, and never upon any occasion gave Oat-husks, commonly called meal seeds, having often seen their injurious effects. At 5 o'clock in the morning each horse gets 6 lbs. of bruised Oats; at noon the same quantity of Oats; and at half-past 7 P.M. 47 lbs. of steamed food. I find that it takes 62 lbs. of unsteamed Potatoes and Turnips to produce 47 lbs. steamed; to each feed of steamed food 4 oz. of common salt is added, and mixed up with one-fourth part of a bushel of Wheat-chaff, weighing about 1½ lb. A greater quantity of Wheat-chaff than this has generally too laxative an effect. Each horse eats from 14 lbs. to 18 lbs. of fodder during the 24 hours, besides what is required for litter. During the spring months I sometimes give a mixture of bruised Beans and Oats, instead of Oats alone. From June to the middle of October, those horses that are required for the working of the green crop, driving manure, and harvest work, are fed with cut Grass and Tares in the house, and about 7 lbs. of Oats each day, given at twice, increasing or decreasing this quantity according to the work they have to do. I turn out to pasture those horses only that are not required until the busy season. I disapprove of horses that are regularly worked being turned out to Grass, and exposed to all the changes of our variable climate. I believe it is the origin of many diseases. The expense of this mode of feeding, at present prices, in the district, for each horse per annum, is as follows:

	£	s.	d.
12 lbs. of Oats per day for 30 weeks, is 7½ qrs. of 42 lbs. per bush.			
7 lbs. of do. for 22 weeks, is 3⅝ ditto ditto.			
10⅝ qrs. at 17*s.* ...	9	0	7
145 stones straw consumed, at 4*d.* per stone of 22 lbs.	2	8	4
Each horse consumes 5 tons 16 cwt. of Turnips and Potatoes in 30 weeks.			
58 cwt. of Potatoes, at 1*s.* 6*d.*	4	7	0
58 cwt. of Turnips, at 9*d.*	2	3	6
53 lbs. salt, 1*s.* 8*d.*, 52 bushels Wheat-chaff, 4*s.* 4*d.* ...	0	6	0
22 weeks on cut Grass and Tares, at 9*d.* per day ...	5	15	6
	£24	0	11

For the 30 weeks the keep of each horse per day is 7*d.* for Oats, 7½*d.* for steamed food, and 2½*d.* for fodder; for the 22 weeks the keep is—Grass 9*d.*, Oats 4*d.*, or 1*s.* 1*d.* per day. The expense of preparing the steamed food, including coals, is ½*d.* per day for each horse. Two hundred and sixty stones of straw will be required for litter for each horse during the year; for this no charge is made, as it is left in manure. By this mode of feeding, the horses are in fine sleek condition, and able for their work. I have acted upon this system for the last 15 years, have always had from 16 to 20 horses, and during that period I have only lost 7 horses, 3 of them being from accidental causes; and I attribute this, in a great measure, to the mode of feeding, and, in particular to the steamed food.—Mr. Binnie, Seaton Mains, said: For the most part the soil of my farm is of a light nature, and the system I have generally followed in feeding my work horses has been attended with success. I consider that economy in feeding the horse embraces the health, condition and stamina of the animal, and I have found those

ends well served by ad , as nearly as possible, the following mode of manage from the 1st October to 20th May, my horses get fed thri a day; the morning and midday feeds consist of 7 lbs. of Oats and bruised Beans each feed (one part of the latter to two of the former), the present cost of both diets will be something like 9*d.*; the evening's meal is composed of 35 lbs. of Turnips and 6 lbs. of Barley well boiled together, which (with the expense of coals, salt, and woman's wage in cooking), I put at 6 . I use only Wheat or Oat-straw (uncut) as fodder, and I w ke the cost at 3*d.* a day. From 20th May (when, by to sing, I have generally a cutting of Grass) until 1st July, I allow two feeds of Oats and Beans, as I have before mentioned, and as much cut Grass as satisfies the horse in stable during day, and turn him to the pastures for the night. From 1st July to 1st October, I find, on an average, that my horses consume, as nearly as I can calculate, a feed of Oats each per day; and taking cutting and pasture Grass at 7*l.* per imperial acre, my statement resolves into a cost, as nearly as possible, of 28*l.* 10*s.* per horse per annum. In my calculations I have assumed the value of 42 lbs. Oats to be 19*s.* per qr., 65 lbs. Beans to be 28*s.*, and Barley, weighing 53 lbs. per bushel, to be worth 20*s.*, and Turnips 15*s.* per ton. I can strongly recommend the black Tartarian Oat for the use of the horse, as, from its peculiar formation, the horse is necessitated to masticate it thoroughly, and it has also the advantages of giving a very large acreable produce, and having a high standing in the Oat class for its fineness of husk and its mealing properties. I would also advise the growth of the white Belgian Carrot, as a most nutritious, safe, and economical article of food for the horse. It is easily raised, and can be grown to yield 18 tons per imperial acre on moderately free land. On account of the Carrot keeping its moisture much longer than the Turnip, I have found it most beneficial in its raw state, for spring feeding. I beg to close my remarks by saying that home experience, as also that acquired while engaged as inspector to a cattle insurance company, have taught me that too much care cannot be given to the properly ventilating and cleaning of our stables, as I am convinced that more horses are lost by inattention to these points than by any mode of feeding I have ever seen practised in the Lothians.—Mr. Steedman, Boghall, said: Gentlemen, being called upon to take part in the important discussion on the "Best and Most Economical Mode of Feeding Farm Horses," I can give you no mode better and more economical (at least as far as I know) than the one I myself adopt. In the first place, my horses get in the morning 5 lbs. of Oats, along with two or three small Swede Turnips (raw), and the same at 12 o'clock or dinner time; in the morning the boiler is filled with 56 lbs. of Turnips and ½ lb. of Linseed for each horse; the Linseed being difficult to boil, is put into a small bag, and then placed in the middle of the boiler amongst the Turnips; when boiled without a bag it is apt to boil over, and liable to sit on and burn, and in consequence the most nourishing part of it is lost. After the Turnips and Linseed are boiled, they are thrown into a large trough or cooler, and a little Wheat-chaff, along with a handful of salt for each horse, well mixed together, and cloths, or a lid for the purpose, put over the cooler, and allowed to cool slowly. The weight of the Turnips being 56 lbs. when put into the boiler, you will find reduced to about 40 lbs. About the half of this is given at dusk, or whenever the horses return from work, and the remainder at 8 o'clock, when the men go to clean and do them up for the night. The expense of the Oats and Turnips twice a day (at the present prices) is about 8*d.*, and the boiled food 5*d.*, making in all 1*s.* 1*d.* a day; giving them Oat-straw, upon which I set no value, allowing it to go in lieu of manure from the horses. Under this system, which I have adopted for the last six years, I have found my horses healthy, in good working condition, and always ready for their work, working them from daylight to dark in the winter months (except when they are feeding in the middle of the day); and, when prevented from farm operations by the weather, they go to Edinburgh for dung, and seldom or, I may say, never return, with less than 30 cwt. gross. Previous to boiling, I used to steam Turnips and Potatoes, but lost upwards of 40 horses, and since I commenced to boil, I have been at a great expense with boilers cracking; but for some time past I have used a malleable iron boiler, made by Mr. Slight, engineer, Leith Walk, which I find to answer the purpose admirably. In the spring of the year, instead of giving the horses Oat-straw, they get hay, which increases the expense to about 3*d.* each; but their work being harder, and hours longer, I consider it necessary. In summer they get Grass, costing about 6*d.* each, which I believe to be far more profitable than driving it to Edinburgh and getting a shilling, in consequence of making more manure, and saving labour. I may mention that the late Mr. Scoon, tenant at Pentland Mains (an adjoining farm to mine), used to feed his horses with two feeds of Oats a day, and at night they got raw Potatoes, just as they were lifted from the pit or Potato house (only riddled), and during his 19 years' lease, never lost a horse. The present tenant, Mr. Brown, has nearly run another 19 years, and to my knowledge has lost 15 or 16 horses, with feeding them differently. The only way I can account for this is, that Mr. Brown feeds higher and works harder. The breed of horses Mr. Scoon had was a breed rare to be seen now-a-days; they were mostly all blacks, with short legs and backs, deep-ribbed, broad-chested, with a good flat bone, and rare action—very unlike the present breed, long-legged and backed, narrow chested, and with as much hair and clay on their legs, carrying along the road with them, as I am sure would weigh more than 4 lbs., and more like camels than horses; at least our forefathers, had they seen them, would have called them so. The great point in keeping horses in good condition (and consequently keeping them cheap), is to feed regularly, and have them well groomed; also to attend to the ventilation of a stable, which I am sorry to say is rather overlooked in many cases. In addition to the present ventilators, which you frequently see placed in the roof of a stable, there ought to be a common drain tile, 3 or 4 inches diameter, built in the wall, from 3 to 4 feet above the horses' heads when standing, and 4 feet apart, the same on the opposite side, or behind them; then you will always find your stables sweet and wholesome, the horses healthy, and with good appetites. There is apparently a great loss attending horses' feeding, in consequence of the mangers not being properly constructed; I would therefore strongly recommend all those who are about to build a stable, to have cast metal mangers, placed on one side, levelled in the bottom, and fluted at the top, that is to say, with a projection over the inside about 3 inches. I have no doubt but that most farmers must have noticed horses, when feeding, throwing the meat out of their mangers with their noses, and frequently throwing a considerable quantity over, which would not occur if the projection I have spoken of was attached to the manger, also having a rack on the other side, filled with hay or straw, as horses frequently eat when lying. Grain, at the present prices, would be cheaper to boil than Turnips; but the change in the system of feeding might possibly cost a horse or two, and neither I, nor I believe any other tenant, is at present in a position to try experiments which might perhaps add very materially to the loss of money which we are now undergoing, and which had little need to be increased; therefore I am contented to let well alone, as far as feeding horses is concerned.—Mr. Finnie, Swanston, said: All that I intend by my remarks, on the present occasion, is to lay before the meeting those principles and rules which, in my humble opinion, should form the basis of what may be termed an economical system or mode of feeding farm horses. The primary and all important of these I would state to be, an artificial preparation of the food, which may be embraced under the following heads: 1st, the cutting or chopping of the fodder; 2d, the bruising of the grains; 3d, the boiling or steaming of the roots. Various are the articles which may be used as food for the horse: take the grains, we have Oats, Barley, bran; of the leguminous plants, Beans and Peas; of the roots, the Potato, Turnip, Carrot, Parsnip; and what is used as green food, Clover, Tares, &c., and even Whins; and then the Grasses in their dried state, the straw of the Cereal grains, and even linseed cake, linseed, &c.; but upon the present occasion, and for practical purposes, we ought, I think, to confine ourselves to the produce of the farm. Now, in support of my first principle, viz., the artificial preparation of food, I would say by its adoption we will be found consulting the laws of nature, and by being so, can never fail in being right. My attention was early directed to this fact by reading an article (on cooked food for horses) in the "Quarterly Journal of Agriculture," in 1832, from the pen of our able and celebrated professor of veterinary surgery, Mr. Dick, and which it would be well worth while to republish. Mr. Dick very properly calls in question the prevailing indifference on the part of owners of horses to the state in which that animal receives his food, describes the peculiarity of the process which his food undergoes before it passes on to be digested, and from his knowledge of the anatomy of the horse, argues that an artificial preparation of his food cannot fail to be economical. Mr. Dick concludes thus: "That before the food can properly yield nourishment to the animal, it is necessary that it be minutely broken down and cooked, either naturally or artificially, before digestion can take place, and I further conclude that the more completely we do this, the more readily and completely will the nutritious portions of the food be taken into the system, and thus by avoiding almost the possibility of waste, the animal will be kept in the same condition at a less cost to the owner." I think it unnecessary to add more upon that point, but shall proceed to the practical working out of this theory, and will commence with the fodder, suppose that to be straw, but which I would restrict to that of either Beans, Oats, or Wheat, Barley-straw being universally admitted to be bad for horses. Bean-straw I propose not to refer to again, although I believe it to be the most valuable, and even within the scope of my remarks; still not being a grower of Beans, I wish to advance nothing but what is founded on my own experience. Now the article of straw contains a high relative value in certain localities, and when such is the case there is less waste by cutting or chopping it; but even take a district where the principal object is to convert it into manure, I would even argue in favour of artificial preparation, having found from experience—1st, That the horse will thus be induced to take a much larger proportion of it within the 24 hours; 2d, That you will afford him some hours during that time of additional rest, to recruit his exhausted system, as, comparatively speaking, he requires almost no time to fill himself; and 3rd, and not the least important consideration, that the more fodder he eats the better will be his condition, for I maintain that any stranger going through a stud of farm horses will have no difficulty in pointing out to the farmer his best consumers of fodder. But, before passing from the cutting of fodder, there is still another recommendation which I think it has. We all know that as the winter advances, and the spring commences, very little of the natural sap remains in the straw, consequently it becomes less palatable, and invariably after wetness in harvest, which we rarely escape from, it is never good, and being one of those that think that hay should to a great extent, if not altogether, supersede the use of straw, where no Beans are grown upon the farm, I am firmly convinced that give a farm horse as much of the grains as he can consume, if his fodder is indifferent, that animal can never be kept in a thriving state; this may be accomplished by the use of the cutting-machine, but not without it, as I know the profligate waste whenever ploughmen have leave granted to frequent the hay-stack. By cutting, however, the farmer can well afford either to give hay alone, or in a certain proportion mixed with the straw, for, in either case, he will find that less corn will suffice. Then as to the bruising of the grains: and need I do more than direct attention to the solid excrement of the horse? and as appearance will require no further demonstration to prove that grain given entire produces the loss of a very large proportion of nutrition, some allege a tenth part, I would say much more, but at all events a good deal, will be seen voided without having undergone any change. It is, I think, unecessary to occupy the time of this meeting with any further remarks on this point, as there cannot be a better illustration of there being an unnecessary expenditure of food, if bruising of the grain is neglected. I shall now refer to the steaming and boiling of the roots, viz., the Potatoes and Turnips, and perhaps I may be found differing with many of my practical friends; but I will state what my conviction is, and which has been founded on some little experience, and I would say, first, that by boiling or steaming the Potato and Turnip there is less risk of endangering the health of the horse; and, secondly, that you maintain him in better condition. I would instance the practice of horse dealers, whose object is to obtain that condition which is essential to enable them to realise a profit between purchase and sale; and I believe they will admit that either boiling the roots or grains, or steaming the roots, is indispensable to their business; but I would say further, that it is surely more in keeping with the laws of nature, when you subject the system of the horse to what may be termed an artificial treatment, to study the food most congenial for him under such circumstances; and I think it can hardly be disputed, that after exposure to cold, wind, and wet, that a comfortable supper of moderately warm cooked Turnips and Potatoes, well seasoned with salt, is a more inviting and salubrious mess than if they were given in their crude and unprepared state. Some farmers give two feeds of boiled or steamed roots per day, to that I have no objection; all that I would wish to maintain is, that the horse, during the winter months, should have at least one mess cooked for him in the day; and if it is not found profitable to give either Potatoes or Turnips, let a boiled feed of Beans or Peas be substituted, and that at the close of his day's work. Before disposing of my straw-cutter and bruised grain, I may further remark that Mr. Dick is not my solitary authority. I may point to the practice of our enterprising townsmen, Mr. Croal, to Mr. Isaac Scott, or to the Messrs. Laings; I believe the two former have been found cutting hay and straw, and bruising their grain for at least 20 years; I know the former, 17 years back, had no hesitation in stating that his annual saving in his establishment by doing so was not less than 150*l.* Go to London, and there I found establishments with from 100 to 300 work-horses doing the same. I believe it is very general on the Continent; now, such authority as that I hold to be worthy our imitation and consideration, inasmuch as in those establishments, the food is all purchased, and must be obtained, at whatever cost, and the very success of their business depends upon the condition in which they can turn out their horses, and often to the hardest work. I now come to the treatment of horses during the Grass season; and here I may be found at variance with other practical men. My opinion however, is, that the objections to the pasturing horses are unanswerable. In the first place, I would say it is a most expensive manner of feeding them, inasmuch as less ground would suffice if the Grass was cut green, and given either in the stables or yards; secondly, that there is great waste of manure; and lastly, but not least, the poor animal is turned adrift to roam about and search for his food, with an exhausted system, and is thus deprived of the rest necessary to enable him to perform the requisite labour you extract; and after great exertions and copious perspiration, with a relaxed system, having every pore in his body open, he is left to seek his bed on the cold and often wet ground, exposed to the elements, and which treatment cannot fail to predispose him to disease, instead of being well groomed, just as important for him as the much cared-for racer, well littered, and allowed to use what, otherwise, would be an empty stable. There is one thing, however, I should wish to notice in connection with soiling horses, and that is, that, in order to avoid waste, the Grass, when cut, should be put into bunches, and let the size and number of those be apportioned, from time to time, to the consumption; as I need not remark, that in proportion to the mixture of Clover, its wet or dry state, or the succulency of the Rye-grass or Tares, will be the ratio for the daily allowance of each horse; and when these are brought home, every ploughman receives the number allotted for him; thus from the field to the rack there is no loss in transit. When, on the other hand, it is brought home in a loose state, each ploughman with his fork selects what suits his fancy best, scattering and treading no small portion of the heap, filling the rack to overflowing, and what is not consumed at the time is left to ferment until his return to the stable, when it is cast to the dunghill. I have found from actual experience that the difference in saving between bunches and bringing home Grass in a loose state amounted to 1*s.* per head per horse per week, and that upon an establishment of 20 horses was no small consideration. Having, I fear, exhausted the patience of this meeting by extending my remarks on what I thought the most important points to be attended to in farm-horse management, I shall be very brief in what I have to say about the quantity each horse may be expected to require per day. This, as I said before, must be left entirely to the judgment of the farmer, as well as the grain and other farm produce which ought to predominate in the feeding of his horses—I would say invariably let it be what is of least marketable value. If during the Grass season the work is light, the grain may be very much restricted, or even dispensed with altogether; and in the winter season, even at regular work, from 10 to 12 lbs. per day, in addition to their cooked food for supper, will be found sufficient; when hay is given, from 2 to 3 lbs. less of grain will suffice. I find my best fodder eaters consume at the rate of 17 lbs. per 24 hours of cut Oat-straw, and the saving between giving hay entire and cut will be in favour of the latter in the proportion of a third; and the only point in which I differ from my friend Mr. Dick is in preferring my Oats bruised rather than ground, as I think my horses masticate them well, and certainly appear to like them better. Another point I ought not to admit, and that is changing from heavy to light grain, or *vice versa*; the feed should be in proportion to the weight. If this is neglected, overfeeding at one time and underfeeding at another must take place; and it being the usual practice of all farmers to consume all the light Oats first, and when they run out to fall back upon the good, and that a difference of 6 to 8 lbs. per bushel is often found to exist, the necessity for this test I think is plainly made out. I shall only trouble you with one other observation, and that likewise bears upon the economy of farm stable management. It is the undesirableness of trusting the feeding of the horses upon a farm to any one whose employment is that of a regular ploughman; for, without calling in question the honesty of one in such a situation, I would say his horses seldom appear in worse condition than that of the others. This occasions heart-burnings amongst the other ploughmen; that is not all, there is often favouritism. I likewise object to the system of each man being the custodier of his horses' corn; I do not think economy can exist in either case. My own practice is to entrust one to serve out the grain given to the horses, totally unconnected with the ploughmen, and the advantage of doing so rests in having the food of the horses distributed in proportion as they require it. If at easy work he restricts it; that a regular ploughman will never do. And as in every establishment some horses are more easily kept than others in good condition, with this arrangement, the food is given in either larger or smaller quantities, as the constitution of the horse or the nature of the work to be performed requires: and in this way a more thorough control can be exercised over a department in farm management which is certainly not the least expensive to maintain. Mr. Finnie concluded his speech by remarking that, with regard to the annual expenditure required for the horse, his experience coincided with the details given by Mr. Gibson. He (Mr. F.) considered, however, that Swedish Turnips were of too laxative a nature for the horse, and he had made use of boiled Peas. Before the Potatoes became so bad, he had been in the habit of using five parts of Turnips to one of Potatoes. But, in the main, he was disposed to corroborate the statements of Mr. Gibson.—Mr. Thomson, of Hangingside, said: The course I have adopted for many years has been as follows, viz.: during the summer months, two feeds of Oats per day, of 6 lbs. each, with Grass; and during the winter and spring months, the same quantity of Oats, with a boiled feed at night, consisting of Swedish Turnips, mixed with Beans, Barley, and clean chaff, weighing 40 lbs., to each horse, using salt and 1½ oz. nitre to each animal once a week; by this mode of treating my farm horses, disease has hardly been known in my stables. Care should be taken that this quantity of the prepared food should not be exceeded, as it may be considered the maximum to be safely given. Important as is the amount of nutritious food allotted to a horse, not less important is the kind and quality of the fodder that is to be the accompaniment; if possible, the fodder of any year's growth should not be used in the same year: that is to say, the fodder and crop of year 1848 should form the supply over the whole of 1849. At this period of the season, the natural moisture which produces fermentation in the stomach of the horse is exhausted in the crop of 1849, and the animal is saved from those acute attacks arising from disordered bowels, which the susceptibility of his system renders him liable to. Barley-straw should never be given to a horse; it is so productive of flatulence that he hardly ever eats it unscathed. As to the question of economy—the food which supplies the largest amount of fat and muscle, torn from a horse by hard work, is the cheapest. Regularity in the treatment of the horse is of the utmost consequence, whether as regards food, drink, work, or mode of keeping and dressing. He is the most easily affected of all the domestic animals by any sudden change, and is more subject to inflammation than any other. He should have but one day in the seven for rest, and as seldom as possible be over wrought; an extra hour or two will tell upon him for several days. As different horses have different constitutions, they require to be treated accordingly—the appearance of the coat speaks at once to the eye, but the state of the bowels is the surest index of the health of the animal. Bruised corn is preferable to whole, both as it obliges the horse to masticate, and is more easily digested.—Mr. Black, of Dalkeith, said: I am afraid that my system of feeding farm horses will not be approved of by farmers generally, as they may consider it expensive. All the farm horses under my charge are allowed 16 lbs. of hay, 12 lbs. of bruised corn, and 28 lbs. of boiled Turnips per day, during winter and spring, which at present prices in my locality will amount to 1*s.* 6*d.* per day. I consider boiled Turnips, when given judiciously to cart horses, a most palatable, nutritious, and gratifying food, particularly to young horses; and not less so to those intended for coach or saddle than for farm work—they grow much faster and look much healthier, with nice sleek coats. I have generally from 20 to 30 horses young and old, fed on boiled Turnips; and to convince you that they are wholesome, I have only had one death from disease during these last four years, and that death was occasioned by the bursting of a blood-vessel. I consider it of the greatest importance to keep farm horses in good condition, or rather fat, as I consider good condition in a farm horse a good flesh coat. Weight is always advantageous in slow work, indeed weight is power in the heavy draught.—Mr. Scott, Craiglockhart, said he very much agreed in the statement made by the gentlemen who had previously spoken. But he did not altogether concur with Mr. Gibson in the opinion that Bean-straw should not be given to horses; he (Mr. S.) had long been in the habit of giving that kind of food, and he was aware that others had; and his opinion was, that its value was not much inferior to hay. He had also found much advantage when horses were working hard, especially in the spring months, to adopt a judicious plan of a division of food. The interval, he considered, was too long for a horse to want food, from an early hour in the morning to 12 o'clock

and a small feed of Oats at about 8 o'clock he found was valuable to the animal.—Professor Dick remarked that he was not prepared to enter at length upon the subject now before the meeting, as he was not present at the commencement of the discussion; but from what he had heard he thought he could gather pretty accurately the opinions of the farmers as to the feeding of their farm horses. There was one point, however, which had been but incidentally touched upon, and to which he would suggest that more attention should be paid. He alluded to the giving of food to horses at shorter intervals. He approved of cooking food, but the danger lay in giving it in too large quantities at a time. In the evening, when the animal was somewhat exhausted, and the cooked food was easily swallowed, the stomach became overloaded, and every farmer well knew the consequence. Food ought to be given in the morning, before going out, and again, as has been recommended, at 8 o'clock; indeed, a greater division of food would at all times be found advantageous. He knew one gentleman who had lost a number of horses through inattention to this, and though he (the Professor) was generally sent for, he always found the animal dead before he got to the place. (Laughter.) He suggested an alteration in the way of feeding the horses, especially that the evening meal should be divided into two feeds, instead of giving it all at once. When the animal came in from its work one portion could be given, and the second some time after. He (Professor Dick) did not think that the gentleman referred to lost a single horse afterwards, except on one occasion, when a servant gave one of the animals a too large feed. He (the Professor) would also mention the advantage of allowing a horse to rest twice during the day at least. It was most injurious to a horse, to allow it to work on for a number of hours consecutively without food. The stomach of the animal was small, consequently could not contain food sufficient to enable it to work a great portion of a day without a renewal of food and rest. Sometimes the stomach was literally stuffed full, and its power of contracting and acting on the contents was thus destroyed. In consequence of the peculiar structure of the animal, the stomach soon became empty, and when distended either with food or the want of it, it was much injured. A combination of hay and Oats chiefly would be found the best kind of food, though some thought it expensive; and to cut the hay and bruise the Oats was much to be recommended. If the corn be bruised or ground, it could be taken with safety; for it would be deprived of its vitality, and thus digestion be quickened. Mr. Thomson recommended hay and Oats, with a little bran mash, as the best feeding, and in this he is right. He added to this the propriety of giving a little alterative medicine; he (the Professor) was one who was more in the habit of giving medicine than in taking it (laughter), and he would advise Mr. Thomson to put a handful of salt among his horses' food, instead of any alterative medicine. No doubt an alterative medicine would make an alteration (laughter), but what sort of an alteration? It would be found that any interference with the profession of the regular practitioner was by no means a good thing for the farmer. (Laughter.) When medicine was really wanted let the farmer send for the doctor in time; let him give small quantities of salt amongst the food; but let him have little to do with alterative medicines. All kinds of medicine were alterative; but he would have his farmer friends to have more faith in a handful of salt and good food judiciously given than in quack alterative medicines, which were so plentifully advertised. (Laughter and applause.) He had that day had some cake sent him as being good food for horses, and suited to their strength; but he had no specimen of it with him. He might observe that a certain quantity of innutritious food was necessary to go along with the other, because if the food be too rich or nutritious, the animal would assuredly suffer. (Applause.)—The Chairman said that the meeting was certainly much obliged to those gentlemen who had given their opinions on the subject of feeding farm horses, and now Mr. Usher would show the working of his steam plough.—Mr. Usher then exhibited the model of his steam plough, which created a very great interest amongst the numerous farmers and others present.—On the motion of Sir James Russell, K.C.B., a cordial vote of thanks was tendered to the chairman, for his able discharge of the duties of the chair.

Calendar of Operations.

APRIL.

Bedfordshire Farm, *April* 8.—The weather for the past month, and up to the present time, has been everything that could be desired for sowing spring seeds, and preparing the green crop fallows. Barley sowing has been finished some time, under the very favourable circumstances of a well pulverised and deeply loosened soil. Carrots have also been sown on a most congenial bed; and, in fact, all seeds, and every operation of the farm, has gone on satisfactorily, and with good promise for the future crops. The winter Wheats have a very healthy appearance. Our crop has been all hoed, harrowed, and some upon light land has been rolled with Crosskill's crusher. The Wheat planted with Dr. Newington's dibble at the rate of a bushel per acre, and now quite thick upon the ground, was sown early in October; the late sown is however too thin to present appearances, and shows the necessity and advantage of early sowing. The store cattle in yards have a run daily in the fields, and appear to thrive upon a little Grass, and dry food at night. Every one has not the opportunity of turning out their cattle through the day, and taking them into the yards at night; but where such can be done, it is desirable to do so, as cattle frequently lose condition at this time when wholly confined to yards with dry food; and when turned out all at once to young Grass, they are apt to scour, and go back instead of forward for some weeks. The horses here are now being employed in harrowing Grass land, carting stones off Grass and seeds, and rolling the same. Dung carting will be the next operation, with the carriage of liquid manure. We have four tanks, and apply the contents to both arable and Grass land, as it happens. The liquid manure appears to do as much good on arable as pasture or seeds. In dry weather we think it much preferable to apply it to arable land, as it imbibes and retains it better than the hardened surface of Grass. The fallows intended for Mangold Wurzel will soon receive another ploughing, and other preparation for the seed. We usually commence sowing at the beginning of May. The Orange Globe yields the largest weight per acre. After the Mangold Wurzels are sown, a few acres of Tankard Turnips follow for early consumption. Swedes are afterwards sown at intervals till nearly the end of June, when if any land after Tares remains unsown, a quicker growing Turnip takes the place of Swedes. The sheep have still a few Turnips to consume. The strongest ewes and lambs are put upon Italian Rye-grass. After the first bite of Rye-grass, Rye will be ready, with ordinary weather, then winter Tares follow, and, by the various sowings of winter and spring, ought to supply the sheep till the stubbles and early Turnips are ready. The fatting cattle have a daily allowance, about a bushel, of Mangold Wurzels now, with corn and chaff. The fatting pigs live upon Barley and Pea-meal. Store pigs have steamed Mangolds and Carrots, with a few Peas. There are more roots, more Turnips, Carrots, and Mangold Wurzel grown in our neighbourhood now than formerly. Vast breadths of Potatoes are again being planted. Corn-growing at present prices is at a discount. Tradesmen are very tenacious in holding up the price of day-work to former rates. Your proposition in last Saturday's *Gazette* is deserving of much attention. Some tradesmen are obstinate enough to remain idle rather than submit to a reduction of price with a chance of constant employment. *R. V.*

Lammermuir Sheep Farm, *April* 1.—The past month has, with the exception of the last week, been peculiarly favourable for hill sheep stock; the weather has been dry throughout, and, with the above exception, calm and mild. This has not only caused the moss to spring vigorously, but enabled the sheep quietly to range the higher grounds in search of it. The abundance of this valuable plant, and a slight spring on the pastures generally, has wrought a material change in their appearance, being fresher and in better spirit than they frequently are during the stormy month of March. We trust they will continue to improve, though the severe frost we have had for the last month augurs the reverse—the thermometer at 21° being very unfavourable to vegetation. The Cheviot shearling ewes, and some of the leanest of the older ages, have been on Turnips for some weeks, and will continue to receive a few until the lambing begins, when they will be returned to their respective pastures. We should have liked all the Cheviot ewes to have had a few weeks Turnips, but this frosty weather has caused them to disappear more rapidly than we had calculated upon. The general lambing will begin about the 15th of April, though a few Cheviot and black-faced ewes, with crossed lambs, to be fed in the enclosures, will drop theirs 10 days earlier. The dry weather has been exceedingly favourable to heather burning, and where tenants are not wholly prohibited from burning, or limited to a small quantity, from a mistaken idea, on the part of some landlords, that the game will thereby be greatly increased, we believe a much larger breadth than usual has been burnt under very favourable circumstances. The work on the arable part of the farm has consisted in the sowing of Oats after Grass; ploughing, sowing Oats, and harrowing after Turnips as soon as these are cleared off by the sheep; carting out manure for Turnips, and covering up the dunghills with earth. The cows and young cattle are receiving a limited supply of Turnips with Oat straw and coarse meadow hay. The milking calves, besides their milk, get as much Clover hay and Swedes as they can consume. *A Lammermuir Farmer.*

Sussex Farm, *April* 8.—We have now finished sowing Oats and Barley, and we are engaged sowing the remainder of the Tares and seeds amongst the Oats, Barley, and Wheat, harrowing and rolling the same, and preparing the land for the Mangolds, which we shall plant this week, if fine. We shall also plant the remainder of the Potatoes this week. We are also harrowing and cross-ploughing the land for Swedes. With the late fine showers the Peas and Beans come up beautifully. Men are engaged with the Mangold Wurzel and Potato planning, threshing Wheat and Oats, cleaning out ditches, sharpening Hop poles, poling Hops, draining, &c. Women are picking Couch off Mangold Wurzel and Potato land, and stones off Wheat and seeds. *J. B.* [We shall endeavour to have the subject of corn rents discussed soon.]

Notices to Correspondents.

Belgian Fire-places: *A B.* Your bookseller will obtain the work of M. Jules Norsain for you. Apply to Bailliere, 219, Regent-street, London.

Cheap Sheds: *J W B.* You will find one described at page 25 of our volume for 1844.

Epsom Salts: *E Jones.* Broadcast, over 1½ or 2 acres in wet weather.

Oats: *J L H L.* You should have applied to Mr. Lawson. Black Tartarian Oats may generally be had at least 2*s.* 6*d.* per quarter cheaper than better kinds.

Roofing Tiles: *R W* asks for a receipt for glazing roofing tiles.

Rooks, &c.: *Speed the Plough.* You must shoot them down in winter time. But you had better have a bird-keeper while the Oats are brairding.

Rural Chemistry, by R. Solly, price 4*s.* 6*d.*, second edition, revised and enlarged, may be had of all booksellers, and at the Office of this Paper.

White Belgian Carrot: *F Pine.* On a good loamy soil, tilled deeply, and rolled to considerable firmness, sow 5 lbs. of seed per acre in rows 18 inches apart on the flat. Mix 2 bushels of ashes with the seed, and sow with the common Suffolk drill, set to deliver 2 bushels; taking the weights off the coulters, or you will bury the seed. If the land be apt to grow Chickweed, &c., sow some Oats with the Carrot-seed; they will come up and show the position of the rows, so that you can hoe between them before the Carrot seed comes. It is a profitable crop for sale, if you are placed well as to market. It is time the seed were sown.

Wine: *An Old Subscriber.* An attempt to make wine by the addition of "2 gallons of new beer," must prove a failure. Beer, and the yeast of beer even, are deprecated by M'Culloch and all experienced makers of wines, and though such a mixture might ferment, certain it is that the product could not be a wine. As circumstances are, it should appear that no alternative exists but to try to convert the fluid into a vinegar by exposing the vessel to the full sun under an open shed, the bung-hole being covered with a piece of tile or slate. Wine can only be made from Grapes. A liquor called by some malt-wine has been made from pure and rich sweet-wort; but though pleasant if well manipulated, and fermented by the lees of wine (not yeast), it still is not a true wine. *J. T.*

Markets.

SMITHFIELD, Monday, April 8.

The supply of Beasts is very large to-day; prices are lower, owing to the glutted state of the dead markets and the warm weather. We are also more plentifully supplied with Sheep; trade is exceedingly dull at lower rates. Shorn Sheep are now more readily sold than those in the wool. Lamb is more freely disposed of than on Friday, but 6*s.* is an extreme quotation. Trade is dull for Calves at Friday's prices. From Holland and Germany there are 210 Beasts, 390 Sheep, and 55 Calves; from Scotland, 400 Beasts; and 2600 from Norfolk and Suffolk.

Per st. of 8 lbs.—s	d	s	d	Per st. of 8 lbs.—s	d	s	d
Best Scots, Herefords, &c. ...	3	2 to 3	4	Best Long-wools .	3	6 to 3	8
Best Short-horns	2	10 — 3	0	Ditto Shorn ...	3	0 — 3	4
2d quality Beasts	2	4 — 2	8	Ewes & 2d quality	3	0 — 3	4
Best Downs and Half-breds ...	4	0 — 4	2	Ditto Shorn ...	2	6 — 2	10
Ditto Shorn ...	3	6 — 3	8	Lambs	5	0 — 6	0
				Calves	3	4 — 4	4
				Pigs	3	0 — 4	0

Beasts, 3795; Sheep and Lambs, 23,950; Calves, 111; Pigs, 250.

Friday, April 12.

We are but moderately supplied with Beasts; however, the trade is so bad that it is difficult to effect sales, and 3*s.* 4*d.* continues to be an extreme quotation for choicest descriptions. The number of Sheep and Lambs is a fair average; trade is exceedingly dull, and Monday's quotations are barely reached. Good Calves are plentiful; they suffer a reduction in price of fully 2d. per 8 lbs. From Germany and Holland there are 78 Beasts, 70 Sheep, and 134 Calves; from Scotland 200 Beasts; and 125 Milch Cows from the home counties.

Best Scots, Herefords, &c. ...	3	2 to 3	4	Best Long-wools .	3	6 to 3	8
Best Short-horns	2	10 — 3	0	Ditto Shorn ...	3	0 — 3	4
2d quality Beasts	2	4 — 2	8	Ewes & 2d quality	2	6 — 3	3
Best Downs and Half-breds ...	3	10 — 4	2	Ditto Shorn ...	2	0 — 2	10
Ditto Shorn ...	3	6 — 3	8	Lambs	5	0 — 6	0
				Calves	3	0 — 4	2
				Pigs	3	0 — 4	0

Beasts, 762; Sheep and Lambs, 6500; Calves, 296; Pigs, 235.

POTATOES.—Southwark, April 8.

The Committee report that since our last report the arrivals from the Continent have been very extensive—above 4000 tons. So large an arrival has caused a depreciation in the value of foreign Potatoes. Yorks being scarce are selling at better prices. The following are the present prices:—York Regents, 80s. to 110s. per ton; Scotch do., 70s. to 80s.; Scotch cups, 50s to 60s.; Scotch whites, 40s. to 45s.; French whites, 55s. to 65s.; Belgian do., 40s. to 55s.; Rhenish do., 40s. to 55s.; Dutch, 40s. to 45s.

COVENT GARDEN, April 13.

Vegetables are well supplied, but many kinds of Fruit are still scarce. A few Strawberries have made their appearance. Hothouse Grapes are not very plentiful. Pine-apples are scarce and inferior in quality. Walnuts and Chestnuts are abundant; and Oranges and Lemons sufficient for the demand. Amongst Vegetables, Turnips and Carrots are good, and there is some very good Broccoli in the market. Potatoes are unaltered since our last account. Lettuces and other salading are sufficient for the demand, and so are Mushrooms. French Beans, Asparagus, Seakale, and Rhubarb are becoming very plentiful. Cut Flowers consist of Heaths, Pelargoniums, Bignonia venusta, Primulas, Camellias, Cinerarias, Azaleas, Lily of the Valley, Epacrises, Acacias, Lilacs, and Roses.

FRUITS.

Pine-apples, per lb., 6s to 10s	Almonds, per peck, 6s
Grapes, Portugal, p. lb., 9d to 1s	— sweet, per lb., 2s to 3s
Pears, per doz., 6s to 10s	Walnuts, p. 100, 1s 6d to 2s
Apples, kitchen, p. bsh., 4s to 6s	— p. bush., 16s to 24s
Lemons, per doz., 1s to 2s	Nuts, Bar., p. bush., 20s to 22s
— per 100, 6s to 12s	— Brazil, p. bsh., 12s to 16s
Oranges, per doz., 9d to 1s 6d	Kent Cobs, 90s to 100s p. 100 lbs
— per 100, 5s to 12s	

VEGETABLES.

French Beans, p. 100, 1s 6d to 3s	Onions, p. bushel, 3s 6d to 4s 6d
Seakale, per punnet, 1s to 3s	— Spanish, p. doz., 1s 6d to 4s
Asparagus, p. bund., 2s to 7s	Shallots, per lb., 4d to 8d
Rhubarb, p. bundle, 6d to 1s	Garlic, per lb., 4d to 8d
Cabbages, per doz., 1s to 1s 6d	Lettuce, Cab., p. sc., 4d to 9d
Cauliflowers, p. doz., 1s to 4s	Endive, per score, 1s 6d to 3s
Broccoli, p. doz. bundl., 8s to 10s	Mushrooms, p. pot., 9d to 1s
Greens, per doz., 3s to 4s	Small Salads, per punnet, 2d to 3d
Sorrel, p. hf. sieve, 1s to 1s 6d	Fennel, per bunch, 2d to 3d
Potatoes, per ton, 60s to 120s	Savory, per bunch, 2d to 3d
— per cwt., 3s to 7s	Thyme, per bunch, 2d to 3d
— per bush., 2s 6d to 3s 6d	Parsley, p. doz. bun., 2s to 3s
Turnips, p. doz. bun., 1s 6d to 2s 6d	— Roots, p. bdle., 9d to 1s
Red Beet, per doz., 9d to 1s	Marjoram, per bunch, 2d
Horse Radish, p. bdl., 1s to 4s	Mint, green, per bunch, 9d to 1s
Cucumbers, each, 1s 6d to 4s	Watercress, p. doz. bunches, 6d to 9d
Leeks, per bunch, 1d to 1½d	Corn Salad, p. hf. sieve, 9d to 1s
Celery, p. bundle, 8d to 1s 6d	
Carrots, per bun., 4d to 6d	
Spinach p. sieve, 2s to 3s	

HAY.—Per Load of 36 Trusses.

Smithfield, April 11.

Prime Meadow Hay	66s to 70s		Clover	60s to 84s	
Inferior ditto... ...	50	63	New Clover	—	—
Rowen	—	—	Straw	23	26
New Hay	—	—		J. Cooper.	

The trade very heavy.

Cumberland Market, April 11.

Prime Meadow Hay	70s to 74s		Inferior	60s to 70s	
Inferior ditto... ...	50	63	New Clover	—	—
New Hay	—	—	Straw	26	28
Old Clover	75	80		Joshua Baker.	

Whitechapel, April 11.

Fine Old Hay ...	63s to 68s		New Clover	—s to —s	
Inferior ditto ...	50	55	Inferior ditto... ...	60	65
New Hay	—	—	Straw	22	26
Old Clover	80	84			

HOPS.—Friday, April 12.

Messrs. Pattenden and Smith report that the market continues much the same; new Hops and fine yearlings are scarce.

MARK LANE.

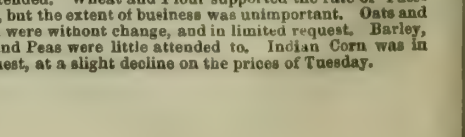
Monday, April 8.—Notwithstanding the supply of English Wheat by land carriage samples to this morning's market was small, it met a slow sale at a decline of 1*s.* to 2*s.* per qr., and some remained unsold at a late hour. For foreign the inquiry was of a languid and retail character, and little progress could be made with sales at even a reduction of 1*s.* per qr.—English Barley is unaltered in value; good foreign commands rather more money.—Beans and Peas remain as last quoted.—The Oat trade is heavy, at a decline of 6d. per qr.

British per Imperial Quarter.	s.	s.		s.	s.
Wheat, Essex, Kent, & Suffolk ... White	41	42	Red	35	38
— — fine selected runs ...ditto	41	44	Red	37	39
— — Talavera	44	50			
— Norfolk, Lincoln, & York ... White	37	40	Red	36	37
— Foreign	34	50			
Barley, grind. & distil., 19s to 22s... Chev.	24	27			
— Foreign.....Grinding and distilling	18	21	Malting	21	23
Oats, Essex and Suffolk	15	18			
— Scotch and Lincolnshire ...Potato	17	22	Feed ...	16	20
— Irish .....Potato	16	19	Feed ...	13	17
— Foreign .....Poland and Brew	15	19	Feed ...	13	16
Rye	20	24	Foreign	20	22
Rye-meal, foreign .....per ton	5*l.*	6*l.*			
Beans, Mazagan .....19s to 20s.....Tick	23	25	Harrow	23	25
— Pigeon .....25s — 37s ...Winds	22	28	Longpod	25	28
— Foreign .....Small	24	36	Egyptian	18	20
Peas, white, Essex and Kent.....Boilers	23	25	Suffolk	24	26
— Maple .....24s to 26s.....Grey	22	23	Foreign	20	28
Maize .....White	24	26	Yellow...	24	25
Flour, best marks, delivered ...per sack	34	38			
— Suffolk .....ditto	26	34	Norfolk	26	34
— Foreign .....per barrel	22	24	Per sack	28	33

Friday, April 12.—The arrivals of grain from abroad this week have been considerable, which induces buyers to act with great caution, and business is on the most restricted scale. We observe no alteration in the value of English Wheat, but to have effected sales of foreign a decline of 1*s.* per qr. would have been submitted to.—Barley, Beans, and Peas remain nominally the same as on Monday.—Oats are a slow sale at a reduction of 6d. to 1*s.* per qr.—The Wheat trade throughout the country for the past week has been exceedingly dull, and sales have been very generally effected at a reduction of 1*s.* per qr. Business in spring corn has also been very limited, and prices are almost nominal. In the Baltic prices appear to be fully maintained, purchasers for Scotch and Dutch account at Konigsberg and London account at Rostock having imparted rather an upward tendency.

Imperial Averages.	Wheat.	Barley.	Oats.	Rye.	Beans.	Peas.
Feb. 28.....	37*s* 11*d*	23*s* 7*d*	15*s* 6*d*	20*s* 11*d*	21*s* 8*d*	26*s* 0*d*
March 2	38 6	23 9	14 11	21 11	24 4	25 11
— 9.....	38 6	23 10	15 2	23 3	24 7	25 4
— 16.....	38 1	23 8	14 11	22 7	24 1	25 2
— 30.....	37 9	23 6	15 2	21 7	23 10	25 3
April 6.....	38 1	23 2	14 10	21 6	23 8	24 5
Aggreg. Aver.	38 1	23 6	15 1	22 4	24 1	25 3
Duties on Foreign Grain	1 0	1 0	1 0	1 0	1 0	1 0

Fluctuations in the last six weeks' Corn Averages.



Liverpool, April 12.—The market this morning was slenderly attended. Wheat and Flour supported the rate of Tuesday last, but the extent of business was unimportant. Oats and Oatmeal were without change, and in limited request. Barley, Beans, and Peas were little attended to. Indian Corn was in fair request, at a slight decline on the prices of Tuesday.

TO GENTLEMEN, FLORISTS, AND OTHERS.

MESSRS. PROTHEROE AND MORRIS will sell by Auction, at the Mart, Bartholomew-lane, on THURSDAY, April 18th, a first-rate collection of Carnations and Picotees, a very choice assortment of Dahlias, Verbenas, Fuchsias, Heartsease, Pinks, Geraniums, &c.—On view the morning of Sale. Catalogues had at the Mart; and of the Auctioneers, American Nursery, Leytonstone, Essex.

NEW ORCHIDS.

MR. J. C. STEVENS begs to announce the return of Mr. WARSZEWIEZ, from Veragua; he has brought with him a most choice collection of ORCHIDS, comprising many perfectly new things in Acineta-, Odontoglossum, 2 very fine Cycnoches, 14 different species of Mormodes, most beautiful Huntleyas, Trichopilias, Sobralias, with a most magnificent new Cattleya, besides splendid specimens of known species, which will be sold by Auction, at his Great Room, 38, King-street, Covent-garden, on THURSDAY and FRIDAY, 18th and 19th inst.; together with a fine collection from Guatemala, of Barkeria spectabilis and Skinneri, Lycaste Skinneri, &c., which have just arrived.—Catalogues will be forwarded.

ORCHIDS—THE COLLECTION OF A GENTLEMAN.

MR. J. C. STEVENS begs to announce for Sale by Auction, at his Great Room, 38, King-street, Covent-garden, on WEDNESDAY, the 24th April, at 12 for 1 o'clock, the Collection of ORCHIDS of a Gentleman giving up growing them. The plants are all well established, and in good health, and consist of the best varieties of Aerides, Cattleya, Dendrobium, Oncidium, Odontoglossum, Stanhopea, Vanda, &c., some of which are specimen plants, particularly a mass of Miltonia spectabilis.—May be viewed the day prior and morning of sale, and Catalogues had of Mr. J. C. STEVENS, 38, King-street, Covent-garden, London.

MESSRS. WINSTANLEY AND SONS, of Liverpool, will sell by Auction, on MONDAY, April 22d, at 4 o'clock in the afternoon, at Shotton Farm, one mile from the Queen's Ferry Station on the Chester and Holyhead Railway, and seven miles from Chester, A SIX HORSE-POWER STEAM ENGINE, with Boiler complete, suitable for, and at present working, a Threshing Machine, &c.; also a Flax-rolling Mill and a Flax Scutching Mill, of the most improved construction. They may be viewed two days previous to the sale.

EXTENSIVE PUBLIC SALE OF PLANTS AT UTRECHT (HOLLAND).—On MONDAY, April 22, and following days, from 10 o'clock in the morning till 3 o'clock afternoon, will be offered for Sale, a considerable quantity of different PLANTS and EXOTICS, consisting of Hothouse Plants, Cactuses, and splendid Palm-trees, besides a magnificent collection of Orange-trees, Acacias, Azalea Indicas, Banksias, and Dryandras, of different sorts; beautiful Epacrises, Ericas, Pelargoniums, and also a great variety of other precious Flowers, described in the Catalogue. The whole forthcoming from the stock of the late Mr. G. DE GROOT, of Utrecht, Florist to his Majesty. Three days previous to the Sale the Collection may be examined.—For the Catalogue, and further particulars, apply to Mr. E. L. GLINDERMAN, Auctioneer, at Utrecht, Holland.

MAGNIFICENT GERANIUMS, AZALEA INDICA, CARNATIONS, FUCHSIAS, HERBACEOUS PLANTS, SEEDS, PILLAR AND OTHER ROSES, CREEPERS, &c.

MR. HASLAM will sell by Auction, at the Mart, on THURSDAY, April 18, and FRIDAY, April 19, as above.—Catalogues may be had at the Mart, and of the Auctioneer, South Essex Nurseries, Epping.

TO FLORISTS AND OTHERS.

TO BE SOLD, very cheap, the LEASE OF A NURSERY, within two miles of London, containing 1 acre of ground, together with two good Dwelling-houses let to respectable tenants, which nearly covers the rent of the whole. The Lease can be taken with or without the Stock (wholly Pot Plants) and Glass, or with a part thereof, to suit the convenience of the purchaser.—For particulars apply, if by letter post paid, to A. B., 14, Sommerford-grove, Stoke Newington-road, near London.

TO MILLERS, FARMERS, AND OTHERS.

MONEY.—The Advertiser (a Miller and Flour-factor), having an extensive Connection in London and its vicinity, wishes to meet with a party who can advance from 3000*l.* to 4000*l.*, to be employed in the Trade, by Partnership or otherwise. This is a safe and profitable Investment, and the present is a peculiarly favourable time for embarking in the above line of business.—Apply by letter, with real name and address, to Mr. SIMMONS, 49, Gracechurch-street, London.

HIGHLAND AND AGRICULTURAL SOCIETY OF SCOTLAND.

GLASGOW SHOW, 31st JULY, and 1st and 2d AUGUST.

SWEEPSTAKES FOR SHORT-HORN BULLS.

Notice is hereby given that the period of Entry for the Sweepstakes is extended to the 1st of June. The Entry is open to England and Ireland, and to Animals which have already carried the Society's first Premium. All other Entries of Stock, Implements, &c., must be made on or before the 20th of June. Copies of the Premium List, Regulations, and Forms of Entry, to be had on application to JOHN HALL MAXWELL, Secretary,

Edinburgh, 6, Albyn-place, April 13.

TO NOBLEMEN and GENTLEMEN who require a plentiful and CONSTANT SUPPLY of PURE WATER to their Country Mansions.

Messrs. EASTON and AMOS beg to offer their improved PATENT HYDRAULIC RAM, which is perfectly self-acting, and without manual labour is capable of lifting water to 30 times the height of the waterfall by which it is worked.

THIS MACHINE CAN BE APPLIED WHEREVER A FALL OF WATER OF A FEW FEET CAN BE OBTAINED, and its cheapness and durability, with the fact that upwards of 500 of them erected in England and other countries by Messrs. EASTON and AMOS have now been at work many years, afford ample proof of its great value and efficiency.

Estimates of the expense of the Machine, Pipes for the conveyance of Water, Tanks, and Reservoirs, may be had on application to Messrs. EASTON and AMOS, CONSULTING ENGINEERS to the ROYAL AGRICULTURAL SOCIETY, at their office in Orange-street, Trafalgar-square, or at the Works in the Grove, Southwark, London.

WIRE STRAND FENCING, as fixed by R. S. NEWALL and Co., is cheaper, stronger, and more durable and elegant than any other Fence hitherto introduced.

COPPER WIRE HOTHOUSE SASH LINE.

LIGHTNING CONDUCTORS.

GILT AND PLATED CORD FOR HANGING PICTURES.

Office, 130, Strand, London; Warehouse, Brunswick-street, Blackwall; Manufactory, Gateshead, on Tyne.

DR. NEWINGTON'S HAND-DRILL HOES, with their various fittings; Hand-Dibbles, with from 6 to 9 depositors each, Wheel-Dibbles, Drop-drills, and Hand-sowing Implements for dropping seed at defined intervals in the seams of the plough, or in pressed land, or in drills. A Prospectus and Lecture on Seeding sent gratis on application to Messrs. DUFAUR and Co., Agricultural Depôt, 21, Red-lion-square, Holborn, London. The above Dibbles received the prize given by the Royal Agricultural Society at Norwich.

MEADOW AND PASTURE

GEORGE GIBBS AND Co. be
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ready. The general satisfaction the
years past, and the present low prices
2 bushels and 12 lbs. to each acre, they
tinuance of orders. Mixed Seeds for in
1*s.* 3*d.* per lb.; fine sorts for forming
Their Priced List for the season of Tur
and other Farm Seeds, will be forward
Down-street, Piccadilly, London.

HORTICULTURAL T

GREEN AND CONSTABLE,
street, five doors from London Bri
sortment of GARDEN TOOLS, contai
inventions, and including Lyndon's Patent
Shovels, and Garden Forks, Lord Vern
Hothouse Syringes, Transplanting Tools, H
Labels, Ladies' sets of Gardening implements,
Knives, &c. Agents for the Vitreous Porcelai
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HOTHOUSES AND CONSERVATORIES
fixed complete in all parts of the Kingdom
siderable reduction. One, two, and three-light
and Melon Boxes and Lights of all sizes, kept ready
packed, and sent to all parts of the Kingdom; warran
material. Garden-lights of every description, at JAMES W
Hothouse Builder, Claremont-place, Old Kent-road. Refe
may be had to the Nobility, Gentry, and the Trade, in mos
the counties in England.

BEE HIVES.

GEORGE NEIGHBOUR AND SON respectfully announce that they have prepared for this season an extensive supply of their various IMPROVED BEE HIVES, which are offered to all who are desirous of cultivating that pleasing and profitable branch of rural economy—the Honey Bee. The collection consists of "Nutt's Collateral Hives," "The Single Box Hive," "The Amateur Bar Hive," "The Improved Cottage Hive," &c., from either of which the honey may be taken at any time without injury to the Bees, and may be worked with safety, humanity, and profit, by the most timid and unaccustomed to Bee manipulation. A descriptive paper, with drawings and prices, will be forwarded on the receipt of two postage stamps.—GEORGE NEIGHBOUR and SON, 127, High Holborn, London.

"Nutt on Bees" (6th edition), now published.

GLASS WATER PIPES.

MESSRS. COATHUPES AND Co., GLASS MANUFACTURERS, Bristol and Nailsea, Somerset, continue to supply GLASS PIPES for the conveyance of water, &c., in lengths of from 3 to 7 feet, and from ½-inch to 4-inch bores; they provide also the necessary joints, which enable them to stand very considerable pressure.

GLASS FOR CONSERVATORIES.

JAMES PHILLIPS AND Co. have the pleasure to hand their New List of Prices of GLASS for Cash.

CUT TO SIZE.

16 oz.	from 2*d.*	to 3½*d.*	per foot.
21	,, 3½	,, 5	,,
26	,, 3½	,, 7½	,,
32	,, 4	,, 9½	,,

100 feet and 200 feet cases of large Sheet Glass, for cutting up, at 2½*d.* per foot. British Plate Glass, from 1*s.* 2*d.* to 2*s.* per foot, according to size.

SHEET SQUARES.

In boxes of 100 feet.	*s.*	*d.*
Under ... ... 6 by 4	... 12	6
6 by 4 and under 7 by 5	... 16	6
7 by 5 ,, 8 by 6	... 18	6
8 by 6 ,, 10 by 8	... 20	6

HARTLEY'S PATENT ROUGH PLATE, packed in boxes of 50 feet each:

6 by 4 and 6½ by 4½	...	10*s.*	6*d.*
8 by 6 ,, 8½ by 6½	...	13	6
7 by 5 and 7½ by 5½	...	12*s.*	0*d.*
9 by 7 ,, 10 by 8	...	15	0

MILK PANS.

12 in. diameter	...	2*s.*	0*d.*
14 ,,	...	2	6
16 ,,	...	3	0
18 ,,	...	3	6
20 ,,	...	4	0
22 ,,	...	4	6
24 ,,	...	5	0
26 ,,	...	6	0

CREAM POTS, from 2*s.* each.

PROPAGATING GLASSES.

2 in. diameter	...	0*s.*	4*d.*
3 ,,	...	0	3
4 ,,	...	0	4
5 ,,	...	0	6
6 ,,	...	0	8
7 ,,	...	0	10
8 ,,	...	1	0
9 ,,	...	1	2
10 ,,	...	1	4
11 ,,	...	1	6

BEE GLASSES, same sizes.

METAL HAND FRAMES.

12 inches	...	6*s.*	0*d.*
14 ,,	...	7	0
16 ,,	...	8	0
18 ,,	...	9	0
20 ,,	...	10	0
24 ,,	...	12	0

Open tops, 1*s.* extra.

CUCUMBER TUBES.

12 inches long	...	1*s.*	0*d.*
14 ,,	...	1	2
16 ,,	...	1	4
18 ,,	...	1	6
20 ,,	...	1	8
22 ,,	...	1	10
24 ,,	...	2	0

Glass Shades; Tiles and Slates of any size; Wasp Traps, 3*s.* 6*d.* per dozen; Lamp Shades; Rough Plate Glass of every thickness. Lactometers, for trying the quality of milk, 4 tubes, 7*s.* 6*d.*; 6 do., 10*s.* Glass Stands for Pianoforte, and every article in the trade.

JAMES PHILLIPS AND Co., 116, BISHOPSGATE-STREET WITHOUT, LONDON.

HARTLEY'S PATENT ROUGH PLATE GLASS FOR CONSERVATORIES, &c.

See Article in THE GARDENERS' CHRONICLE of Saturday, December 8, 1849.

"Continued experience leaves us no room to doubt that this is the best material yet produced, and that it will in time supersede glass of all other kinds for the greater part of Gardening purposes." . . . "As for the article substituted for Rough Plate . . . it is wholly unfit for any horticultural purpose." . . . "The best sample of it which we have yet seen was Manufactured by Messrs. HARTLEYS, AND SOLD BY MESSRS. JAMES PHILLIPS & CO., 116, BISHOPSGATE STREET."

GLASS FOR CONSERVATORIES, HORTICULTURAL PURPOSES, &c.



T. MILLINGTON'S SHEET GLASS, which is of the best description, varying from 16 to 32 ounces, at from 2*d.* per foot and upwards; 100 feet and 200 feet cases of large Sheet Glass, for cutting up, at 2½*d.* per foot. British Plate Glass, from 1*s.* 2*d.* to 2*s.* per foot, according to size Patent Rough Plate Glass, from ⅛ to 1 inch in thickness, from 4*d* per foot upwards. Glass Slates and Tiles. Milk Pans from 12 to 24 inches diameter, from 2*s.* to 5*s.* each. Cucumber Tubes, from 12 to 24 inches long, at 1*d.* per inch. Lactometers, 7*s.* 6*d.* each. Wasp Traps.—Lists may be had, on application at the Warehouse, 87, Bishopsgate-street Without, same side as the Eastern Counties Railway.

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GLASS MILK
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description of Garden G
PATENT GLASS PEN
soil the ruler, and will write
Also, Glass Rulers, Glass
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Ornamental Shades, Lamp Shades,
Lead, Paints, Colours, and Pumps
Our Catalogue of 18 folios is the most
No Gardener or Farm Bailiff should be
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IRON AND WIRE FE

AND METALLIC BEDSTEADS.

THOMAS PERRY AND
252, OXFORD-STREET (NEAR HYDE PA
And Hightields Foundry and Wrought-iron Works,
Staffordshire, Manufacturers of all descriptions of
PLAIN AND ORNAMENTAL IRON AND WIRE FENCI
Park Entrance, Carriage and Field Gates, Wickets, &c.;
Deer, Sheep, and other Hurdles;
Hare and Rabbit-proof Wire Fencing;
Iron Bedstead Makers to the Board of Ordnance;
And Government Contractors.

The works of Messrs. PERRY being situated in the heart of the first iron district, they are enabled to execute all orders with the greatest facility; and on the most moderate terms. Drawings made and estimates prepared, if required. The show rooms contain an immense variety of every description of Iron and Wire-work, and are the largest in London. An Illustrated Catalogue of Bedsteads, with dimensions and prices, sent on application, post-free.

LINGHAM BROTHERS, 170, Hampton-street, Birmingham, sole Manufacturers of the improved WOOD and ZINC MENOGRAPH, or Label for Garden Borders, Flowerpots, &c., in boxes of 100, &c. The Zinc Labels are highly approved of for their lasting durability; can be written upon with the greatest ease, and, when dry, a permanent inscription is secured. Directions for use sent with each box, including bottle of Metallic Ink.

Sole agents in London, G. and J. DEANE, Horticultural Implement Warehouse, 46, King William-street, London-bridge.

CHEAP AND DURABLE ROOFING.

BY HER MAJESTY'S ROYAL LETTERS PATENT.

F. M'NEILL AND Co., of Lamb's-buildings, Bunhill-row, London, the Manufacturers and only Patentees of THE ASPHALTED FELT FOR ROOFING Houses, Farm Buildings, Shedding, Workshops, and for Garden purposes, to protect Plants from Frost.

At the Great National Agricultural Shows, it is this Felt which has been exhibited and obtained TWO SILVER MEDAL PRIZES, and is the Felt SOLELY patronised and adopted by

HER MAJESTY'S WOODS AND FORESTS,
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HER MAJESTY'S ESTATE, ISLE OF WIGHT,
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And on the Estates of the Dukes of Sutherland, Norfolk, Rutland, Newcastle, Northumberland, Buccleuch (at Richmond), the late Earl Spencer, and most of the Nobility and Gentry, and at the ROYAL AGRICULTURAL SOCIETY'S HOUSE, Hanover-square.

It is half the price of any other description of Roofing, and effects a great saving of Timber in the construction of Roofs. Made to any length by 32 inches wide.

PRICE ONE PENNY PER SQUARE FOOT.

*** Samples, with Directions for its Use, and Testimonials of seven years' experience, with references to Noblemen, Gentlemen, Architects, and Builders, sent free to any part of the town or country, and orders by post executed.

☞ The Public is cautioned that the only Works in London or Great Britain where the above Roofing is made, are

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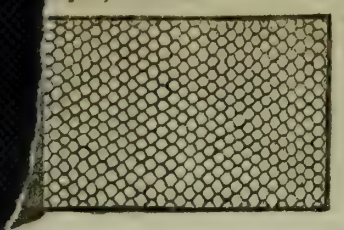
Patent Felt Manufactory, Lamb's-buildings, Bunhill-row, London, where roofs covered with the Felt may be seen.

The new Vice-Chancellor's Courts, at the entrance to Westminster Hall, were roofed with F. M'NEILL and Co.'s Felt about two years since, under the Surveyorship of Chas. Barry, Esq., R.A. Her Majesty's Commissioners of Woods and Forests are so satisfied with the result that they have ordered the Committee Rooms at the Houses of Parliament to be roofed with their Felt. Quantity altogether used, 24,000 feet.

NOTE.—Consumers sending direct to the Factory can be supplied in lengths best suited to their Roofs, so that they pay for no more than they require.

Every information afforded on the construction of Roofs, or any proposed particular application of the Felt.

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er yard, 2 feet wide.

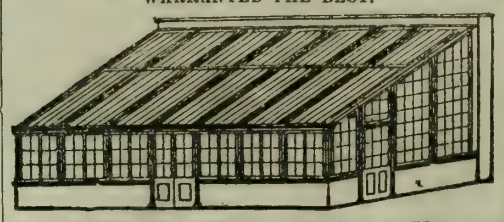


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light, 24-inch wide	...	7d. per yd.	5d. per yd.
strong	...	9 „	6½ „
extra strong „	...	12 „	9 „
light „	...	8 „	6 „
strong „	...	10 „	8 „
extra strong „	...	14 „	11 „

e above can be made any width at proportionate prices.
upper half is a coarse mesh, it will reduce the price one-
. Galvanised sparrow-proof netting for pheasantries, 3d.
square foot. Patterns forwarded post-free.
Manufactured by BARNARD and BISHOP, Market-place,
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HORTICULTURAL BUILDING AND HEATING BY HOT WATER.

BOILERS OF ALL SIZES TO BE SEEN IN OPERATION, WARRANTED THE BEST.



J. WEEKS AND Co., King's-road, Chelsea, HORTICULTURAL ARCHITECTS, HOTHOUSE BUILDERS, and HOT-WATER APPARATUS MANUFACTURERS, solicit an inspection of their various Works completed and in progress. Horticultural Buildings of every variety. BOILERS of all sizes to be seen in operation, and which they warrant to be the most effective and economical of any in use. The largest size Boiler is now effectually heating three extensive ranges of Forcing-houses, 230 feet by 22 feet, all Span Roofs and lofty, containing upwards of 50,000 cubical feet of air. Also various small and intermediate size Boilers, some of all sizes in operation. The consumption of fuel is very moderate, and the fires will continue from 10 to 15 hours without attendance. The extensive arrangements now in full operation on their premises, enables them to build to any extent, and at very moderate prices. Hothouses, Greenhouses, Conservatories, Forcing-pits, Frames, Glass Lights, &c. A very extensive collection of Stove and Greenhouse Plants, which are sold at very low prices. Plans, Estimates, and Catalogues forwarded on application.

J. WEEKS and Co., King's-road, Chelsea.

IMPORTANT TO AGRICULTURISTS.—COLLECTION AND DISTRIBUTION OF MANURES.

STRATTON'S AGRICULTURAL REPOSITORY, BRISTOL.

STRATTON, HUGHES, AND CO., have now ready their PATENT TUMBLER CART for the collection of Night-soil and other offensive matters; also their Iron Mill, to be worked by horse-power, water-power, or steam, for mixing and incorporating Nightsoil with Charcoal and other deodorisers. The Tumbler Cart has an iron body with a close cover; can be fitted if required as a Watering-cart, with a Valve and Delivery Pipe for distributing water or liquid manure, and also with an Apparatus for distributing dry manures in any given quantities per acre.

STRATTON, HUGHES, and Co.'s Tumbler Carts are used for scavenging purposes in Manchester, Bristol, Worcester, Harwich, Rochford, Cardiff, &c., and they are now building them for Chester, Oxford, Huddersfield, &c., besides many for Agricultural Colleges and private individuals. STRATTON, HUGHES, and Co.'s new illustrated Catalogue of Carts, Waggons, and Agricultural Implements will be forwarded to any address on receipt of 1s. 6d. in postage stamps.

HALLIMAN'S FRUIT PROTECTOR, Registered March 22d, 1850, was offered, for the first time, March 2d, 1850; was patronised by Richard Holland, Esq., 42, Grosvenor-square, London; and was shown in private at Buckingham Palace, 13th March, 1850, and returned with a satisfactory written reply. It has been named the Fruit Preserver, and pronounced to be an article of great utility by a great number of first-rate Noblemen's Gardeners. The interest of the money laid out will not amount to more than ½d. per Peach, Grapes 1d. per bunch, per year. C. H. will be thankful to receive any order, and will complete it as soon as it is in the Sole Inventor's power. — C. HALLIMAN, 1, Queen's-place, Norland-square, Kensington, Middlesex.

AUSTRALIA, NEW ZEALAND, CAPE OF GOOD HOPE, NATAL, &c.

PASSENGERS to the COLONIES generally may obtain their OUTFITS from S. W. SILVER and CO., CLOTHIERS, &c., 66 and 67, CORNHILL, at wholesale prices. SILVER and CO. make nearly the whole of the articles comprised in an outfit, to secure durability, so that the Cabin Folding Furniture may become permanent Household Furniture on arrival in the colony.

They also engage PASSAGES, and give ship sailing INFORMATION, but they neither receive nor pay a commission—their object being to give PASSENGERS who place themselves in their hands every benefit; and they forward small packages for their customers (gratis) through their AGENTS in the COLONIES.

SILVER and CO. give DRAFTS on AUSTRALIA at sixty days' sight of 103*l.* for every 100*l.* paid here.

The EMIGRANT Fitting-out Branch is at No. 4, Bishopsgate-street, opposite the London Tavern, where a comfortable fit-out for male or female, including bedding, may be obtained for FOUR POUNDS.

A Branch of each at ST. GEORGE'S-CRESCENT, LIVERPOOL.



AUSTRALIAN NEW LINE OF PACKETS.—The first of the above line is the ALBATROSS, of 1026 tons register; a new ship, launched in January, frigate-built, sails remarkably fast, and will be despatched on the 30th of April, for Adelaide, Port Phillip, and Sydney, New South Wales. Her accommodations are superior to anything yet despatched from this port. For terms of freight or passage apply to GIBBS, BRIGHT, and Co., 1, North John-street, Liverpool.

PHLOX DRUMMONDII JARRETTII.

GARAWAY, MAYES, AND Co., beg to announce that they are now prepared to supply this charming and distinct variety, which far surpasses any other yet sent out. The flowers are very large, and of an excellent form; the colour a beautiful rosy lilac, with white centre, and, like the other varieties, it continues in bloom throughout the whole of the summer and autumn months; a property which makes this tribe so desirable for bedding purposes. Good plants 15*s.* per dozen, or 1*s.* 6*d.* each.

As a further proof of its merit, the following opinions are quoted from the *Gardeners' Chronicle*, and the "Gardeners' and Farmers' Journal."

"PHLOX: J. P.—Flowers rosy lilac, white in the centre, large in size, and bright in colour; a very nice variety and remarkably handsome."—*Gardeners' Chronicle*, Oct. 6, 1849.

"PHLOXES: J. P., Bath.—A superb variety of a reigning favourite. This class of plants is rapidly improving, and though we have had some very beautiful specimens submitted to us during the season, we are free to confess your seedling totally eclipses them, with one exception. We do not remember having noticed a Phlox under your initials previous to the present moment, but if our memory serves us aright we have had a variety closely resembling the one before us, forwarded for our opinion early in the season. Be this as it may (for we have not time to refer), it does not deteriorate from the beauty of your flower, which is first-rate in its properties. Form good, petals flat, smooth on the edges, of desirable consistency, and brilliant; colour rosy lilac, bordering on peach blossom; centre pure white, beautifully blotched with light puce; eye circular, and distinct, size of the pip very large, and a noble trusser."—"Gardeners and Farmers' Journal."

G., M., and Co. beg likewise to recommend two other good and distinct varieties, viz., Phlox Drummondii atropurpurea: flowers of a good form; colour dark purplish carmine, with the centre almost black, forming a good contrast with the former and following variety.—Phlox Drummondii oculata: pure white, with rosy lilac eye; very pretty, 6*s.* per dozen, or 9*d.* each.

A Descriptive Catalogue for this season, containing their choice collections of Dahlias, Geraniums, Verbenas, Pansies, Greenhouse, Stove, Orchidaceous and Miscellaneous Bedding Plants, is now ready, and will be sent on application.

Durdham Down Nursery, Bristol, April 13.

CHEAP GERANIUMS, FUCHSIAS, CINERARIAS, AND PERPETUAL BLOOMING ROSES.—Fine healthy plants of GERANIUMS (including all the most popular varieties), fit for beds, or late bloom in the greenhouse, 6*s.* per dozen, or 42*s.* per 100; stronger plants, 9*s.* per dozen, or 63*s.* per 100; large bushy plants, showing bloom-buds, 12*s.* per dozen, or 84*s.* per 100.

CINERARIAS of all the most popular varieties, at the same prices as the above, according to strength of plants, and they are remarkably fine, just coming into bloom, and cannot fail to please any one. There is a great variety of colour amongst them, and they would make the greenhouse gay for a length

The FUCHSIAS are the best sorts in cultivation, and are last year's plants, and will average a foot in height at least, and are breaking into growth in every part of them. They have been wintered in a cold frame, and are quite hardy enough for turning out into beds at once, or for pushing forward in the greenhouse. Prices the same as for Geraniums, or smaller plants will be supplied at 4*s.* per dozen, or 30*s.* per 100.

The PERPETUAL BLOOMING ROSES are also fine strong healthy plants, of the best sorts, and this is the best season for planting them out into beds. The prices of these will be from 9*s.* to 12*s.* per dozen.

Also all the best VERBENAS for bedding. Autumn struck plants 5*s.* per dozen, and spring struck plants 3*s.* per dozen. Can be sent per post.

Every other description of bedding plants in fine condition, at equally low prices.

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N.B. Catalogues may be had on application, inclosing two stamps. Prepayment, or references, is respectfully requested.

WILLIAM GREGORY begs most respectfully to offer the undermentioned NEW FUCHSIAS and GERANIUMS.

SPLENDID NEW FUCHSIAS.

To be sent out the first week in May next.

DIANA.—The purest white Fuchsia yet introduced; a pure white tube, of wax-like consistency, stout and well proportioned. Sepals slightly tinged with pale blush, tipped with a pretty shade of green; corolla brilliant scarlet, flushed with crimson at the extremity. Price 10*s.* 6*d.* each.

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CORINIUM.—A well-shaped dark flower, tube and sepals bright crimson, of desirable consistency; corolla beautiful rich purple, a free bloomer, and of rather dwarf habit. Price 7*s.* 6*d.*

CHOICE SEEDLING GERANIUMS.

A few strong plants remain.

LUCILLE BELMONT.—Of very dwarf habit, a free bloomer, upper petals blotched with dark puce, the lower petals striped with the same colour; good for bedding or pot culture. Price 7*s.* 6*d.* each.

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*** The usual discount to the trade upon all the above.

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This advertisement will not be repeated.

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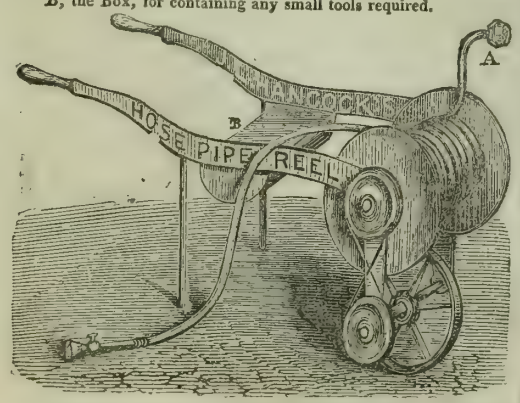
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A, represents the Union-joint, for effecting the communication between the Hose-reel and the Tank, or Reservoir.

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L. HANCOCK invites attention of parties using long lengths of the Flexible Garden Hose, to his SELF-ACTING HOSE PIPE REEL, which is found a most convenient machine for winding up and conveying away the Hose when out of use.

THE GARDENERS' CHRONICLE
AND
AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 16—1850.] SATURDAY, APRIL 20. [PRICE 6*d.*

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HORTICULTURAL SOCIETY OF LONDON.—The EXHIBITIONS of FLOWERS, &c., in the Society's Garden, will take place on the following SATURDAYS, viz.: May 18, June 8, and July 13. TUESDAY, April 23, *is the last day* on which privileged tickets, at 3*s.* 6*d.* each, are issued to Fellows of the Society. Every Fellow is entitled to 24 such tickets, if paid for on or before that day.—21, Regent-street.

ROYAL BOTANIC SOCIETY, Regent's Park.—GENERAL EXHIBITIONS, WEDNESDAYS, MAY 8th, JUNE 12th, and JULY 3d.

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N. B. Fruit will be exhibited on June 12 and July 3.

HAMMERSMITH HEARTSEASE SOCIETY.—Eleventh Annual Meeting, May 2d, 1850, at Mr. C. Lidgard's, Thatched House, Hammersmith. Private Growers' Class, 24 blooms, 5 prizes. Open Class, 36 blooms, 5 prizes. Seedlings, 3 blooms each variety. Extra Prize—Best Seedling, 3 blooms, One Guinea.

Class Showing Open—White ground varieties, 4 prizes.
" " Yellow ditto 4 "
" " White Self ditto 4 "
" " Yellow ditto ditto 4 "
" " Dark ditto ditto 4 "

Censors—G. GLENNY, Esq., F.H.S.; JAMES DICKSON, Esq., and JOHN TAYLOR NEVILLE, Esq.

Hon. Sec., Mr. JOHN EDWARDS, F.H.S., Wace Cottage, Holloway, London.

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Hoyle's Rollo, per doz.	20*s.* 0*d*	Fouquett's Carlotta, p. dz.	20*s.* 0*d*
" Abd-el-Kader	20 0	Foster's Ondine	20 0
" Terpsichore	20 0	" Lallah Rookh	20 0
" Prometheus	20 0	Whomes' Cupid, each	5 0
" Superlative	20 0	" Windsor Castle	5 0
" Flamingo	20 0	" Plutarch	3 0
" Mount Etna	9 0	" Princess Helena	2 0
" Julius	9 0	" Violetta	1 6
Fouquett's Elizabeth	20 0		

All the above can be supplied fine plants.
JAMES WHOMES, Royal Pelargonium Nursery, Windsor.

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MESSRS. JEYES AND CO. have much pleasure in offering for Sale the above Verbena. The two eminent growers named below have described its character.

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P.S.—The Prices of the Rare Flower Seeds advertised and described in this Paper of March 9 are—Hibiscus speciosa, 2*s.* 6*d.*; Æthionema membranaceanum, 6*d.*; Myosotis azoricus, 2*s.* 6*d.*; Pentstemon Murrayanum, 2*s.* 6*d.*; Calandrinia umbellata, 2*s.* 6*d.* per paper.—Northampton, April 20.

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Second Class: Purchaser's Selection of 12 from the following List, for 8*s.*, or 20 for 12*s.*—Florence Dombey, Queen of Roses, Victoria Regina, Harlequin, Mrs. Anderson, Princess Radzville, Champion of England, Standard of Perfection, Beeswing, Enterprise, Sir Edmund Antrobus, Marquis of Aylesbury, Pius the Ninth, Mrs. Warner, Shylock, Viscomte de Ressiguier, Belted Knight, Bathonia, Fire King, Hamlet, Cleopatra, Miss Vyse, Eugene de Dijou, Duchess of Leinster, Ackbar, Madame Zalphar, Master George Clayton, Pantaloon, Prusser, Princess Wellina, Felix, Lily White, Marc Antony, Essex Rosy, Lady Featherstone, Bijou de Colshault, Ludwig, Hanseatetsin, Fulwood Scarlet, Lady of the Lake, Louis Philippe, Marquis of Worcester, Queen of Sheba, Star, Roi de Pointilly, Marquis of Cornwallis, Mrs. Shelley, Capt. Warner, Biondetta, Lady Sale, and Berrier.

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12	Ditto CINERARIAS,	...	15*s.*
20	Ditto VERBENAS,	...	12*s.*
12	Ditto MISCELLANEOUS PLANTS,	...	18*s.*
20	Ditto Ditto	...	25*s.*
12	Ditto MISCELLANEOUS CLIMBERS	...	18*s.*
20	Ditto Ditto	...	25*s.*
20	Ditto HERBACEOUS PLANTS	...	12*s.*
100	Ditto Ditto	...	50*s.*
6	Ditto ANTIRRHINUMS	...	5*s.*
20	Ditto CHRYSANTHEMUMS	...	12*s.*
12	Nice Seedling Plants CEDRUS DEODARA	...	5*s.*
20	Ditto Ditto	...	7*s.*

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10	Ditto	Winter Stocks,
6	Ditto	Autumnal Stocks,
20	Ditto	Dwarf Aster,
10	Ditto	Fine Pyramidal ditto,
10	Ditto	Extra Tall Quilled ditto,
8	Ditto	Double Balsams,
12	Ditto	Double Dwarf Larkspurs,
10	Ditto	Double Tall ditto,
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10	Ditto	Zinnia elegans,
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YOUELL AND CO.'S Extensive and Celebrated Collection of the above are this season unusually strong and healthy, and are ready for sending out, in fine well-rooted plants, to any part of the United Kingdom, or for exportation, at the following prices:

25 pairs of finest first-rate show varieties of Carnations and Picotees	... ...	£5	0 0
12 pairs do. do. do.	... ...	2	10 0
(Including their fine Red-edged Picotee, "The Gem," by far the most perfect Picotee yet raised, and shown in all the winning stands at the Metropolitan Exhibitions during last season.)			
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PINKS, finest first-class show flowers, 12*s.*, 18*s.*, and 24*s.* per dozen pairs.

PANSIES, the finest first-class show flowers, comprising all those exhibited in the winning stands at the Metropolitan Exhibitions, 10*s.* to 18*s.* per dozen, well established in small pots, or per post, free.

FUCHSIAS, all of the very best sent out last season, 12*s.* and 18*s.* per dozen.

VERBENAS,	"	"	6*s.* to 12*s.* per doz.
PETUNIAS,	"	"	6*s.* to 12*s.* per doz.
CINERARIAS,	"	"	9*s.* to 18*s.* per doz.
CHRYSANTHEMUMS,	"	"	6*s.*, 9*s.*, & 12*s.* p. doz.

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Rose Geant des Batailles, 20*s.* per dozen.
" Pius the 9th, Sydonie, Cymedor, &c.
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25	Ditto ditto	...	...	2 0	0
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Annais	Jenny Lind (Ambrose's)
Beauty of Winchester (Shepherd's)	La Belle d' Africana
Bouquet tout fait	Lady Flora Hastings
Jehu	Maid of Anjou
Jehu improved	Statuiskii
Jehu Superb (Chauvier's)	Yeatmannianum

NEW PLANTS.

Geranium Foquet's Magnificent	21*s.* 0*d*	Liebegia speciosa ...	3*s.* 6*d*
Gloxinia Grandis (Henderson's)	5 0	Luculia Pinciana ...	2 6
Gloxinia Wortleyana ...	2 6	Siphocampylos microstoma rubra	2 6
Æschynanthus speciosa	3 6	Tritonea aurea, 3*s.* 6*d.* to	7 6
Chirita Moonii ...	2 6	Fuchsia spectabilis, 2*s.* 6*d.* to	3 6

DESCRIPTIVE PRICED CATALOGUES OF OUR EXTENSIVE COLLECTION OF SEEDS AND PLANTS supplied, prepaid on receipt of four penny stamps.

Remittances requested from unknown correspondents. Post-office orders to be made payable to BASS and BROWN, or to STEPHEN BROWN. Goods carriage free to London, and with orders of 40*s.* extra plants presented.

BASS and BROWN'S Seed and Horticultural Establishment, Sudbury, Suffolk.

NEW AND UNRIVALLED SEEDLING FUCHSIAS, "YORKSHIRE ECLIPSE," "BEAUTY OF RICHMOND," AND "DISTINCTUS."

WM. RUMLEY AND SONS have great pleasure in announcing to the Nobility, Gentry, Nurserymen, and the trade in general, that they intend sending out the above Splendid Seedling FUCHSIAS on and after the 7th of May; they can confidently recommend them as the most beautiful, distinct, and showy varieties yet sent out, and their undoubted merits must insure satisfaction to every purchaser. For Dr. LINDLEY'S opinion, see *Gardeners' Chronicle* for Aug. 18, 1849, p. 520, under the initials "G. R—y."

No. 1. YORKSHIRE ECLIPSE.—A large, elegant, and handsome variety; its stout and robust habit, combined with the graceful form and novel colours of the flowers, contribute to render it a most desirable addition to those in cultivation. It is also an abundant bloomer, and one of the most showy varieties yet sent out.

Dr. LINDLEY'S opinion, August 18: "No. 1. Tube pale blush; lobes the same colour, tipped with green at the points, broad and well expanded; corolla bright orange purple; petals small in proportion and rather narrow; a nice waxy light-coloured variety, good in size, with well contrasted colours." 10*s.* 6*d.* each.

No. 2. BEAUTY OF RICHMOND.—This matchless variety is perfect in every respect; its excellent habit and ample foliage tend to show off the flowers, which are of the finest glossy texture, and produced in great profusion to the utmost advantage. It has long been considered that a Fuchsia, possessing the peculiar properties of Venus Victrix, of large size, would be a great desideratum, and in this fine variety we have this desirable result realised.

Dr. LINDLEY'S opinion, August 18: "No. 2. Tube and lobes white, stained with pale purple; corolla deep violet; texture, shape, size, and colours good; a nice variety, with the colours of Venus Victrix; the best of your seedlings." 10*s.* 6*d.* each.

No. 3. DISTINCTUS.—A novel, distinct, and beautiful variety; tube and sepals of the finest rosy red; the sepals beautifully expanding, with deep violet-blue corolla, of excellent habit and free bloomer, and has been greatly admired by all who have seen it.

Dr. LINDLEY'S opinion, August 18: "No. 3. Flowers small, with very long reflexed lobes, and remarkably short corolla; a neat and singular shaped little flower, with bright, well contrasted colours." 7*s.* 6*d.* each.

WM. RUMLEY and SONS have also to offer at the same time the following Splendid New Seedling PETUNIAS and ANTIRRHINUMS, which they can with the greatest confidence recommend as first-rate and very distinct.

PETUNIA,	"Gem of the North,"	3*s.* 6*d.*
"	"Attraction,"	3 6
"	"Rosea Superba,"	2 6
ANTIRRHINUM,	"Crimson King," ...	5 0

For full description of the above, and also Dr. LINDLEY'S opinion, see Catalogue, which may be had on application.

The usual allowance to the trade. Orders will be executed in strict rotation as received. From unknown correspondents a remittance or Post-office order, payable at Richmond, is respectfully requested prior to the plants being sent.

Gilling, Richmond, Yorkshire.

CHOICE SEEDLING PETUNIAS.—We have the pleasure to offer the following varieties of our own raising, which have been selected as first-rate from a large number of other Seedlings, and we trust will give equal satisfaction to the varieties we have hitherto sent out. To be sent out on April 20.

Magnificent, a fine rich crimson, colour and shape of "Brilliant" sent out last year, but having darker veins	5*s.* 0*d*
Castor, a large and distinct lilac, with a very rich dark purple throat	3 6
Pollox, a large silvery blush, with a dark rich purple throat	3 6
Orion, a rich lively crimson lake, of fine form	3 6
Syren, pure white, with a rich bright pink throat, good round form	3 6
Cassandra, French white, lilac pink throat, veined, edges of the corolla blotched with lively pink, large and fine	3 6

The usual allowance to the trade by taking the set, or for three plants of a sort.

12 new varieties of last season	12 0
12 superior varieties	9 0
12 fine ditto	5 0
25 varieties in choice assortment	15 0

The above free by post if required.

BASS AND BROWN,
Seed and Horticultural Establishment, Sudbury, Suffolk.

PROFESSOR EDWARD FORBES, F.R.S., will deliver a Course of Lectures on BOTANY for LADIES, at Queen's College, London, during the present term. The Introductory Lecture will be given on Tuesday, 23d April, 1850, at 4 o'clock, to which the admission will be by tickets, to be obtained at the College, 67, Harley-street; or at the office of the Governesses' Benevolent Institution, 32, Sackville-street. —Fee for the Course, 1*l.* 11*s.* 6*d.*

GERANIUMS.—Splendid plants in 48-sized pots, of popular sorts, 12*s.* to 24*s.* per doz. Selection to be left to ourselves.—H. LANE and SONS, The Nurseries, Great Berkhampstead, Herts. Catalogues may be had.

FLOWER SEEDS FREE BY POST. — One Hundred packets of the newest and best sorts for 18*s.*; Fifty for 10*s.*; Twenty-five for 6*s.* Selection can be made from RENDLE'S Descriptive Catalogue of Flower Seeds.

GERMAN SEEDS.—*We have a large stock of all the best varieties* (*See our Advertisement, page* 177, *March* 23, "Gardeners' Chronicle"), *including Stocks, Asters, Wallflowers, Balsams, Larkspurs, Hollyhocks, Zinnias, &c.*

For particulars apply to WILLIAM E. RENDLE and Co., Seed Merchants, Plymouth. Established 1786.

MEADOW AND PASTURE GRASS SEEDS.

GEORGE GIBBS AND Co. beg to notice their mixtures for laying Land down to Permanent Grass are now ready. The general satisfaction they have given for many years past, and the present low prices of 32*s.* per acre, allowing 2 bushels and 12 lbs. to each acre, they trust will ensure a continuance of orders. Mixed Seeds for improving old Grass Land, 1*s.* 3*d.* per lb.; fine sorts for forming Lawns, 1*s.* 4*d.* per lb. Their Priced List for the season of Turnips, Mangold Wurzel, and other Farm Seeds, will be forwarded on application to 26, Down-street, Piccadilly, London.

GRASS SEEDS.—Mixtures of selected natural GRASS SEEDS, with a proper proportion of permanent Clovers, for laying down land to permanent Meadows and Pastures, to suit the soil to be laid down. Mixtures of the above for Irrigation or Water Meadows.

Mixtures of the above for Parks or Field Lawns; Italian, Perennial, and other Rye-grasses; Long Red, Yellow Globe, and other Mangold Wurzel; Swedes (various sorts), Hybrid and other Turnips; all kinds of Grass Seeds, Agricultural and other Seeds.—THOMAS GIBBS and Co., the Seedsmen to the Royal Agricultural Society of England, corner of HALF-MOON-STREET, Piccadilly, London.

NOVELTIES AND IMPROVEMENTS IN HORTICULTURE.

STRAWBERRIES more than two ounces each in weight, and of delicious flavour, were grown last season on ROBERTS'S STRAWBERRY TILES. Celery and Cardoons of the most superb quality were produced by his Sockets, and this season he introduces a new method of growing Asparagus, which greatly improves the quality and increases the quantity of this valuable vegetable. He also gives a new method of growing Grapes, Peaches, and other Wall Fruit, and has recently registered a Ventilating Flower-pot, which will be found invaluable to scientific gardeners and amateurs.

A pamphlet giving full particulars can be had by enclosing three postage stamps to Mr. JOHN ROBERTS, 34, Eastcheap, London.

SEEDS! SEEDS! SEEDS!—NEW CABBAGE.

WAITE'S KING OF THE CABBAGES, the earliest and best in cultivation, has now been fully proved, and of its superiority no doubt exists. One-half of the Vegetable Seeds sent out as new are only old ones with new names; but to test the merits of this, J. G. WAITE will forward, gratis, free by post on receipt of 1 stamp, ½ oz. of the seed, sufficient to grow upwards of 2000 plants.

J. G. WAITE, Seed Merchant, 181, High Holborn, London.

N.B. Catalogues of all kinds of Seeds can be had on application.

TO GRAPE GROWERS.—THE BLACK BARBAROSSA.

JOHN BUTCHER has a limited stock of the above truly magnificent GRAPE, introduced by T. C. Ward, Esq., from the Continent, and now for the first time offered for sale. It has the following good properties: the Vine, a most luxuriant grower, a free bearer; bunches, large and finely shouldered; berries, large and globular; flavour, equal to the Hamburgh; will hang on the Vine for at least another month to come, without sinking in size of berry, or losing in flavour; as hardy as the Hamburgh. Mr. Bevington, gardener to Mark Philips, Esq., exhibited the above Grape at the Horticultural Rooms, Regent-street, London, January, 1849, for which a Certificate was granted; and again on the 19th February, 1850, when a Banksian Medal was awarded it. Some idea may be formed of the magnificence of this Grape, by its being but the third year of the tree bearing fruit—21 bunches, averaging 4 lbs. per bunch, was the crop of 1849. To those families requiring late Grapes, it will prove a valuable acquisition. Good plants, from eyes, 21*s.* each, including package.—London Agent, Mr. FREDERICK WARNER, Seed Merchant, 28, Cornhill, London; and JOHN BUTCHER, Nurseryman, Stratford-on-Avon, April 20.

NETTING, FLAGS, AND BUNTING.—Superior Tanned Garden Netting, for preserving Fruit-trees from Frost, Blight, or Birds; or as a fence for Fowls, Pigeons, Tulip and Seed-beds, can be had in any quantity from JOHN KING FARLOW'S Fishing-rod and Net Manufactory, 5, Crooked-lane, London-bridge, at 3*d.* per yard 2 yards wide, or 6*d.* per yard 4 yards wide. Woollen Bunting, any length or width, at 6*d.* per square yard. Forwarded to any part of the kingdom on receipt of remittance, Post-office order, or stamps. Several good second-hand Flags to be sold cheap.

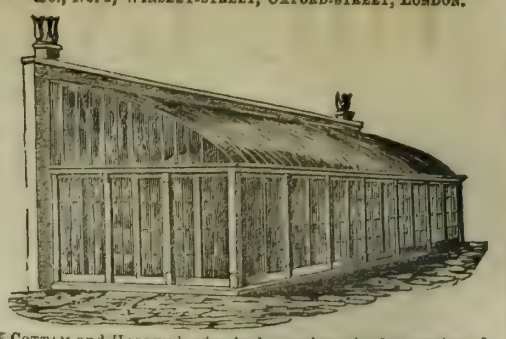
GARDEN ENGINES, SYRINGES, &c. CAUTION.—The well-known reputation of READ'S Engines, Machines, and Syringes, has led to the nefarious practice of placing Cards in Shop Windows, with the words "READ'S PATENT" over syringes of the very commonest description. R. READ begs to Caution the Public against being deceived by such false representations, as many of these Instruments, upon trial, will be found defective and useless.—READ'S Syringes may be known by the Royal Arms, and the words "READ'S PATENT." Manufactured only at 35, Regent Circus, Piccadilly, London.

HALLIMAN'S REGISTERED FRUIT PROTECTOR is now ready for Sale; it is highly approved of by all practical men who have seen it. This glass placed over the fruit on the common wall assists Nature in our cold climate, the fruit grows to a large size, and its richness and flavour are increased. Any order C. H. is favoured with will be forwarded at the lowest possible price for ready money. Sizes are from 3 to 12 inches; 4 inches for Peaches, in flint glass, price 5*l.* per 100; 6 inches for Grapes, 10*l.* per 100; common glass cheaper.—C. HALLIMAN, Gardener, Kensington, London.

TO NURSERYMEN, GARDENERS, and OTHERS.

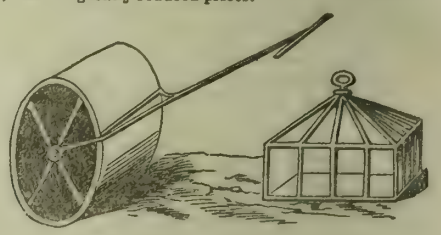
PARTNERSHIP.—WANTED, by the Advertiser, a Person, with about 300*l.*, to join him as Partner in the business of a Nurseryman, Seedsman, and Florist, which has been Established upwards of Thirty Years, and is situated within three miles of Covent Garden Market. The Grounds are well Stocked, and, with the assistance of an active individual, the Business is capable of being greatly increased.—Apply by letter, stating real name and address, to Y. Z., 18, Canonbury-street, Lower-road, Islington, London.

COTTAM & HALLEN, ENGINEERS, IRON FOUNDERS, &c., No. 2, WINSLEY-STREET, OXFORD-STREET, LONDON.



COTTAM and HALLEN having had experience in the erection of HOTHOUSES and CONSERVATORIES (made of Iron or of Iron and Wood combined), and from many improvements they have made during that time, can with confidence undertake to erect such buildings with economy and dispatch.

HOT WATER APPARATUS for heating the above and other buildings (of which they have constructed upwards of 3000), fixed at greatly reduced prices.



COTTAM and HALLEN have on show, at their repository, No. 2, Winsley-street, Oxford-street, a great variety of the following articles, for GARDENS, &c., at Greatly REDUCED PRICES, viz.:

Garden Rollers,	Hand-glass Frames,
Garden Engines,	Flower Stakes,
Garden Syringes,	Flower-bordering,
Watering Pots,	Flower Stands,
Garden Vases,	Garden Arches,
Mowing Machines,	Garden Chairs.

Every description of Work, both plain and Ornamental, in wrought and cast iron, for Gardens, &c. &c.

HORTICULTURAL TOOLS and AGRICULTURAL IMPLEMENTS of all kinds.

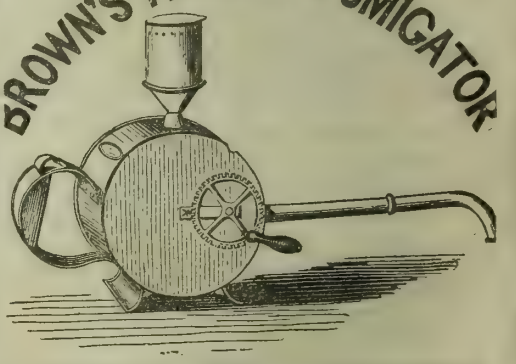
STRONG IRON HURDLES, strained Wire Fencing, &c.

Show Rooms at the MANUFACTORY, 2, Winsley-street, and 76, Oxford-street, three doors West of the Princess's Theatre.

THE COTTAGER'S STOVE will cook sufficient for a Family of a dozen persons with one pound of Coal or Coke per hour, and is well adapted for Emigrants.—May be seen in operation daily at the Manufacturer's, Messrs. BENHAM and SON'S, 19, Wigmore-street, and Messrs. D. and E. BAILEY, 272, High Holborn, London.

PRICE TEN SHILLINGS AND UPWARDS.

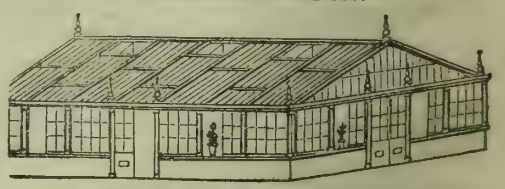
BROWN'S PATENT FUMIGATOR



A PORTABLE INSTRUMENT for Fumigating Greenhouses, Stoves, and Frames, or Shrubs and Flowers, in the open air, without injuring the most delicate plant; delivering the smoke cool, in a dense mass, and effecting a great saving of Tobacco.

Manufactured and supplied to the Trade by Messrs. BARBER and GROOM, London; and may be had of all Ironmongers, Seedsmen, and Florists.

HORTICULTURAL BUILDING AND HEATING BY HOT WATER.
BOILERS OF ALL SIZES TO BE SEEN IN OPERATION, WARRANTED THE BEST.



J. WEEKS AND Co., King's-road, Chelsea, HORTICULTURAL ARCHITECTS, HOTHOUSE BUILDERS, and HOT-WATER APPARATUS MANUFACTURERS, solicit an inspection of their various Works completed and in progress. Horticultural Buildings of every variety. BOILERS of all sizes to be seen in operation, and which they warrant to be the most effective and economical of any in use. The largest size Boiler is now effectually heating three extensive ranges of Forcing-houses, 230 feet by 22 feet, all Span Roofs and lofty, containing upwards of 50,000 cubical feet of air. Also various small and intermediate size Boilers, some of all sizes in operation. The consumption of fuel is very moderate, and the fires will continue from 10 to 15 hours without attendance. The extensive arrangements now in full operation on their premises, enables them to build to any extent, and at very moderate prices. Hothouses, Greenhouses, Conservatories, Forcing-pits, Frames, Glass Lights, &c. A very extensive collection of Stove and Greenhouse Plants, which are sold at very low prices. Plans, Estimates, and Catalogues forwarded on application.

J. WEEKS and Co., King's-road, Chelsea.

JAMES WHOMES, Royal Pelargonium Nursery, Windsor, can supply fine Plants of HOYLE'S "CRUSADER" GERANIUM at 36*s.* per dozen; and every other fine variety equally cheap.—April 20.

VERBENA—"WONDERFUL."

G. MOORE begs to refer the Readers of this Paper to his Advertisement of the 2d of February.
Perry Barr, near Birmingham, April 20.

HART AND NICKLIN, FLORISTS, Guildford, can supply the following, strong and healthy:
PANSIES.—Duke of Norfolk, Aurora, Gem, Orestes, Blooming Girl, Example, Matilda, Caroline, Ondine, Ophir, Juventa, and Constellation, 12*s.* the dozen. Free by post, or to London.

GERANIUMS, new and good, per doz. ...	...	12*s.* 0*d.*
VERBENAS, best named, per doz., free by post	6	0
FUCHSIAS, " " "	6	0

TO NOBLEMEN, GENTLEMEN, AND THE TRADE.

CONRAD LODDIGES avails himself of this opportunity to tender his warmest thanks to the friends of Horticulture who have honoured with their kind patronage his late Father and Uncle so many years, and begs to assure them that nothing shall be wanting on his part to merit a continuance of the confidence which has always been reposed in their house.—The business in future will be continued as heretofore under the firm of CONRAD LODDIGES and Sons, Hackney.

TO CAMELLIA GROWERS.

RENÉ LANGELIER begs to inform the Amateurs of Camellias that he has still some fine CAMELLIA STOCKS, fit for immediate Grafting—they are fine, clean, and healthy—at from 40*s.* to 50*s.* per 100; also a collection of the choicest and most select sorts.—Apply at the Clarendon Nursery, St. Helier, Jersey.

WOODLANDS NURSERY, MARESFIELD, NEAR UCKFIELD, SUSSEX.

WM. WOOD AND SON are now issuing copies of their new CATALOGUE OF STOVE AND GREENHOUSE PLANTS, to which is added Descriptive Lists of all the newest Camellias, Cinerarias, Fuchsias, Verbenas, Petunias, and Chrysanthemums, with a very extensive collection of plants adapted for bedding.
W. W. and S. have a large stock of Dwarf Roses in pots. April and May are the best months for planting out the above. They will be supplied as under, the selection being left to themselves.

Hybrid Perpetual and Bourbon Roses ...	12*s.* to 18*s.*	per dozen.
Tea-scented and Noisette do.	12*s.* to 18*s.*	"
China and Climbing do.	9*s.* to 12*s.*	"

Catalogues will be forwarded, GRATIS, on application.

RENDLE'S PRICED CATALOGUE OF PLANTS is JUST PUBLISHED, and can be had for one postage stamp.
Ever since our invention of the "Tank System of Heating Horticultural Buildings" (for which a Gold Medal was unanimously awarded to us by the Royal Devon and Cornwall Horticultural Society) we have been enabled to propagate plants in such abundance, with scarcely a failure, that we are enabled to offer them at
VERY REDUCED PRICES.
We shall have at least THREE THOUSAND DAHLIAS and FUCHSIAS ready for delivery after the 10th of May next, as well as a large quantity of Geraniums, Camellias, Indian Azaleas, Cinerarias, Verbenas, Antirrhinums, Chrysanthemums, with a large collection of Greenhouse, Hothouse, and Herbaceous plants, prices of which will be found in our new Catalogue, on application to
WILLIAM E. RENDLE & CO., Seed Merchants, Plymouth.
ESTABLISHED 1786.

SEEDS IN COLLECTIONS.
OF THE BEST WHICH CAN BE PROCURED.

BASS AND BROWN beg to offer the following CHOICE VEGETABLE SEEDS.
Complete Collections of the best and newest sorts, in proportionate quantities of each, suited for large or small gardens, at per collection, 1*l.*, 2*l.*, and 3*l.* A Collection for a small garden, of good sorts, at 10*s.* 6*d.* A List of the Collections furnished if required.

SELECT FLOWER SEEDS,

Free by post, with full directions for sowing, heights, colours, &c.	*s.*	*d.*
100 varieties best and newest Annuals	15	0
50 varieties for 8*s.* 6*d.*, 30 for 5*s.* 6*d.*, 20 for	4	0
20 varieties best dwarf kinds, in larger packets, suited for filling beds on lawns, 7*s.* 6*d.*, or 12 do. for ...	5	0
20 varieties best Greenhouse Annuals, 7*s.* 6*d.*, 12 for ...	5	0
20 varieties choice Greenhouse Perennials, 10*s.* 6*d.*, 12 for	7	6
20 vars. choice hardy Biennials and Perennials, 7*s.* 6*d.*, 12 for	5	0

IMPORTED GERMAN SEEDS.

20 varieties splendid double Stocks, 3*s.* 6*d*; 12 ditto ...	2	6
12 vars. splendid China Asters	2	6
12 vars. fine globular Asters	2	6
12 vars. Dwarf Rocket Larkspurs	2	0
9 vars. Tall ditto	1	6

Remittances with orders are requested from unknown correspondents. Goods carriage free to London, and with all orders of 2*l.* and upwards, articles presented extra. Post-office orders payable to BASS and BROWN or to STEPHEN BROWN.
Our Descriptive Priced Seed and Plant List will be forwarded, prepaid, on application, by forwarding four postage stamps, as copies having the Newspaper stamp are now all distributed.
SEED AND HORTICULTURAL ESTABLISHMENT, SUDBURY, SUFFOLK.

CUCUMBER AND MELON BOXES AND LIGHTS.
One hundred 1, 2, and 3-light Boxes and Lights of all sizes ready for immediate use. Warranted best materials, packed and sent to all parts of the kingdom; 2-light Boxes and Lights from 1*l.* 4*s.* Garden Lights of every description, Conservatories, Green and Hot-houses, made and fixed in all parts of the kingdom. References given to the Nobility, Gentry, and the Trade, in most of the counties of England. JAS. WATTS, Hothouse Builder, Claremont-place, Old Kent-road, London.

EDWARD BECK, SLATE WORKS, ISLEWORTH.
SLATE CISTERNS, &c.; COLE'S PATENT.

E. BECK informs Horticulturists and the Public generally that Mr. COLE has granted him the use of his Patent for the unexpired term, and he is now able to supply SLATE CISTERNS fastened without iron bolts or the usual oil cement, thereby doing away with the difficulty which has hitherto existed of forwarding such articles by rail or waggon, fixed and ready for use instead of in pieces, as heretofore.
E. B. will be happy to answer any inquiries as to the price of Cisterns, or any other Slate articles manufactured by him, such as Orange Tubs, Plant Boxes, Tanks, Shelves, Garden-path Edging, Hot-water Tank Covers, Flower Boxes for Balconies, Shelves fitted to hold water for Orchidaceous Houses, &c., all of which may be seen in use at Worton Cottage, Isleworth, on application to the Gardener, Sundays excepted.
Estimates given for Work as shown upon Drawings, and in specifications. A large stock of Slate Slabs of all sizes and thicknesses, kept on sale.
N.B.—Dairies fitted either with Shelves or Milk Pans, of very neat appearance.

ROBERT WHIBLEY'S CATALOGUE, containing all the newest and most select Geraniums, show, scarlet, and fancy; Fuchsias, Verbenas, Antirrhinums, Petunias, Chrysanthemums, Roses, Dahlias, Phlox, Pansies, Herbaceous Plants, &c., which is worthy the attention of purchasers, and will be sent for two postage stamps. Fine plants now ready.
Nursery, Kennington, London.

IMPORTANT TO CHICORY GROWERS.—LARGE ROOTED CHICORY SEED to be had, in any quantity, at 84*s.* per cwt.
J. G. WAITE, Seed Merchant, 181, High Holborn, London.

TO NURSERYMEN, FLORISTS, &c.

J. LINDEN, FLORIST, of Luxembourg, begs to inform the above that his new CATALOGUE OF PLANTS, &c., is now ready, and may be obtained of his Agents, Messrs. Betham and Blackith, Custom House and general forwarding Agents, Cox and Hammond's Quays, Lower Thames-street, London.—April 20.

FERN SEEDS.

GEORGE BENNET begs to inform the lovers of Ferns that he has still a large quantity of NEW ZEALAND FERN SEEDS, and has much pleasure in announcing that they have vegetated. Price 2*s.* 6*d.* per packet. The names of the varieties are as follows: No. 1, Todia sp., variety australis; No. 2, Alsophylla medullaris, fine variety; No. 3, Cyathea dealbata; No. 4, mixed varieties of Hymenophyllum, Trichomanes, Adiantums, &c.; No. 5, mixed varieties of Alsophylla dealbata, or Silver Tree Fern; No. 6, Cyathea medullaris. A remittance must accompany the order either in postage stamps or Post-office order, made payable at Coventry, to GEORGE BENNET, Brandon, Warwickshire, near Coventry.

NGAINES begs to inform the admirers of Fancy GERANIUMS, he intends sending out on Monday next the following Seedlings: Gaines's Parodi, Lady Louisa Cornwallis, Elegans, Priam, Nina, Queen Superb, Signora Carolinii, Odoratum variegatum; also he has good strong plants of his Hero of Surrey and Cerise Unique.
On the 1st of May will be ready for delivery, his superb new Seedling DAHLIAS Lady Auckland, Empress of Yellow, Lord Hardinge, Fancy do., Princess Louisa, Hero, Desdemona, Rotundiflora, and Atalanta. Opinion of this Paper (1849), see August, No. 34; September, No. 38. Gardeners and Land Stewards' Journal, August, No. 32; September, No. 35.—A Descriptive Catalogue of the above, including Calceolarias, Dahlias, Pelargoniums, Fuchsias, Cinerarias, Chrysanthemums, Azaleas, Verbenas, Rhododendrons, &c., may be had by applying at the Nursery, Surrey-lane, Battersea, April 20.

SUPERB PICOTEE—"THE GEM."—By far the most perfect light red-edged PICOTEE yet raised, and shown in all the winning stands in the Metropolitan Exhibitions of last season, and is pronounced by all the leading publications of the day as "a perfect gem." May now be had, in fine strong plants, per post free, at 5*s.* 6*d.* per pair, or well established in small pots at 5*s.* per pair.
YOUELL and Co., Nursery, Great Yarmouth.

EDWARD GEORGE HENDERSON, Wellington-road Nursery, St. John's Wood, London, begs to offer the following superb new GERANIUMS and FUCHSIAS.
SCARLET GERANIUM "COMMANDER-IN-CHIEF."—This is decidedly the finest variety yet offered, and will no doubt prove a great favourite for many years. The foliage partakes of the beautiful transparent variegated appearance of Queen of Summer, but it is more distinctly marked, and of greater substance. In habit it is much superior and quite distinct from it, having the robust character and stout flower-stalk of Compactum, with very large trusses of orange-scarlet flowers, blooming most profusely. Plants 18 inches high, in 24-sized pots, produced from nine to 12 trusses of bloom at one time; and such is the desirable texture of the blossoms, that the truss remains perfect until all the pips are fully expanded. Plants in May, 10*s.* 6*d.* each.
SCARLET GERANIUM "EXCELLENCE."—This is also a most desirable variety, quite distinct from Commander-in-Chief, and possessing rich velvety dark foliage, strongly marked with a wide dark circle, giving it a very distinct and beautiful appearance. Its habit is stiff and compact, and throws out prominently very fine trusses of dark scarlet flowers of matchless form. It is unhesitatingly recommended as a first-rate variety. Plants in May, 7*s.* 6*d.* each.
An allowance to the Trade on each variety if three are taken.
NEW FUCHSIAS.
PRINCE OF ORANGE (HENDERSON'S), orange sepals and scarlet corolla; a fine bold flower and profuse bloomer.
FAIR ROSAMOND (HENDERSON'S), large clear white sepals and tube, rosy crimson corolla; good form, and an abundant bloomer.
DON GIOVANNI (HENDERSON'S), very large reflexed crimson sepals, with violet purple corolla; very fine, and a free bloomer; quite distinct.
SIMS REEVES (HENDERSON'S), bright rosy red sepals, and violet purple corolla; stout flower, and well adapted for pot culture; an abundant bloomer, and quite distinct.
THE PEARL OF ENGLAND (HENDERSON'S), clear pearly white sepals, with scarlet corolla; distinct, and very desirable.
GRAND MASTER (HENDERSON'S), crimson sepals, and extra large violet purple corolla; distinct, and a free bloomer; very desirable.
CONFIDENCE (HENDERSON'S), dark crimson sepals, with purple corolla; a fine noble flower, and quite distinct; a free bloomer.
The above set 30*s.*, or 5*s.* each, with the usual discount to the Trade. Plants now ready.
Wellington-road Nursery, St. John's Wood, London, April 20.

The Gardeners' Chronicle.
SATURDAY, APRIL 20, 1850.

MEETINGS FOR THE ENSUING WEEK.

MONDAY, April 22—Medical ..8 P.M.
British Architects .....8 P.M.
Statistical .....8 P.M.
Geographical .....8½P.M.
TUESDAY, April 23—Zoological 9 P.M.
Antiquarian (Anniversary) 2 P.M.
Syro Egyptian (ditto) ....7½P.M.
Civil Engineers.....8 P.M.
Medical and Chirurgical ..8½P.M.
WEDNESDAY, April 24—Society of Arts .....8 P.M.
Geological.....8½P.M.
THURSDAY, April 25—Royal ..8½P.M.
London Institution (Anniversary).....12 A.M.
Royal Soc. of Literature (Anniversary) .....3 P.M.
Numismatic .....7 P.M.
FRIDAY, April 26—Royal Institution .....8½P.M.
Philological .....8 P.M.
SATURDAY, April 20—Royal Botanic .....3½P.M.
Westminster Medical ....8 P.M.
COUNTRY SHOW.—Wednesday, April 24: York Horticultural.

THE late DEAN OF MANCHESTER used to maintain the paradox that PLANTS DO NOT GROW NATURALLY IN THE SOIL BEST SUITED FOR THEM. The general belief of gardeners and others has always been that to judge of the mode of cultivating a plant, it is above all things needful that we should know in what sort of soil or situation it is found wild; and accordingly the rule is to grow on old walls the plants which are naturally found in such places, to keep bog plants in artificial swamps, and to make epiphytes root upon the branches of trees. The propriety of this was stoutly denied by Dean HERBERT. He contended that the reason why many plants are found in peculiar places is not at all because they prefer them, but because they alone are capable of existing there, or because they take refuge there from the inroads of stouter neighbours who would destroy them: and consequently he by no means advised the gardener to imitate, in a servile spirit, all that he saw happening in the abodes of wild vegetation.

"I saw," said the Dean, "a Crocus, a Sternebergia, and an Ornithogalum growing in contact with each other aloft on the meagre sod of Mount Œnos; but not a seed-pod of the Sternebergia could be discovered, and very few of the Crocus. In a more fertile sod they would have been choked by some stronger plant, but they would rejoice in a better soil, if protected against the oppressor. * * * The compost in which the Dutch raise their improved bulbs of various kinds is known to be (see Sismondi, des Jacinthes) a compost of humus, obtained from thoroughly-decayed Elm-leaves and dung of stall-fed cattle, and mixed with sand deposited by the sea on a bed of prostrate timber of unknown antiquity, in which there is probably nothing calcareous. Does it not then appear that the case stands thus—not that calcareous matter is essential to the growth of Crocus, or even a useful auxiliary, but that Crocus can bear the sterility of elevated calcareous mountains better than most other plants of stronger growth? If that be true of one genus, it will probably be applicable to others. * * * It will be found that Orchis latifolia, removed from the swamp, in which it struggles with other swamp-plants, will grow more vigorously where it is cultivated with less wet. The small Polygala vulgaris is stated in Mr. Babington's Manual to grow in dry pastures, having flowers either blue, white, or red. I believe the stated habitation to be only thus far true, that it does not grow in water. I do not recollect seeing it in sandy pastures; I know it well on chalk and on clay. In England it is little admired. In the alluvial and very moist meadows of Zante, near the sea, in the vicinity of Trieste, it formed a most conspicuous part of the meadow-crop at the end of May, and the beauty with which it painted the herbage was to me astonishing. It seemed that, in a warmer climate, it could endure more moisture than with us. On the slope of Monte Spaccato, where no Grass grows, large single plants of it stood in the bare soil amongst the stones, with every intermediate diversity of pearl-colour and lilac, showing evidently that the merits of that little plant under cultivation are not appreciated or known."

We believe that in this instance the views of Dean HERBERT were in perfect accordance with every well ascertained fact relating to other plants; and that one of the greatest errors that have been committed is a too servile imitation of soils. Men do not in fact distinguish between natural *accidents*, such as soil, and natural *habits*, such as manner of growth coupled with atmospheric peculiarities. It is the natural *habit* of the Java Rhododendrons to grow in a damp, hot atmosphere, highly charged with the results of frequent thunderstorms; and they will never be grown well except in the presence of such conditions or of their equivalents. But the growing upon the branches of trees is with them an *accident*, and they will probably grow better in soil; for there is nothing we believe in the anatomical condition of their roots which declares that in air alone are they capable of existing.

A very striking example of the application of this principle is given in a late number of the "Botanical Magazine." Speaking of the management of the Lace-Bark tree, Mr. SMITH says: "Mr. WILSON informed us that 'it is invariably found growing in very dry situations on marly limestone hills, where there is not a particle of earth to be seen. The young plants grow in the crevices, or *honeycomb*, as it is called, and in order to obtain them with roots, a hammer or large stone is required to break away the porous limestone.' He further adds, that 'the soil for growing it in should be composed of one-third marl or lime-rubbish; for I am persuaded that pure loam will kill them.'" But Mr. SMITH observes: "In our experience, we have never found any plant thrive by retaining it in its native soil, or in soil too closely resembling it. If we could also imitate all the various influences of climate that modify and control the growth of plants in their native localities, it might then be proper for us to cultivate the Lace-Bark tree in marly soil, like limestone; but our plants afford evidence that such soil is not required when they are grown in an artificially heated atmosphere. We have used good yellow loam, mixed with a little leaf-mould and sand. In this they have attained the height of 8 feet, and continue in a perfectly healthy state."

We are persuaded that this fact is only one of

many hundreds which would be readily discovered if attention were sufficiently drawn to them, and that gardeners cannot do better than consider very carefully what they are doing before they blindly imitate the natural soil in which a plant has been found wild.

At the meeting of the Horticultural Society on Tuesday last a question arose as to what might be the CAUSE OF THE PALENESS OF TROPICAL FLOWERS when cultivated. We know that they are very much paler than when wild. For that we have the testimony of all travellers, the drawings of all artists, the evidence of all kinds which accident or intention have been able to collect.

By some it has been thought that light is the great cause of production of colour, and so it certainly is, of green colour; but it is clear that it cannot be the agent to which we owe the development of all colours, because the blackest Grapes form naturally under the shade of their own leaves. Nor does the diminution of light in modern glass houses appear to be such as will explain the pallid state of many of the flowers that bloom there. We have long been of opinion that free access of air is quite as important to colour as free access of light, and in many cases more so; as has been shown on former occasions in the columns of this Journal. But in all probability the formation of colour depends upon some peculiar combination of favourable circumstances, of which light is one, and free air another. It now seems evident that a lower temperature than we usually maintain is also indispensable.

A new and charming plant has been brought into cultivation under the name of the "SWEET TRICHOPILE." It is an Orchid from Central America, where it was found by Mr. WARCZEWITZ, who in his drawings represents its flowers as being white with well defined *deep* rose-coloured spots. But with Mrs. LAWRENCE, Mr. HOLFORD, and Mr. LODDIGES, all of whom have flowered it, the rose exists as faint stains, and nothing more. Another plant, the "DISCOLOURED WARREA," also found by the same traveller, has become known to us, the lip of which is covered with a dull violet; but Mr. WARCZEWITZ's drawings represent it to be naturally of a rich mazarine blue. It happened that both these plants were present on Tuesday in Regent-street, where this traveller saw them. He immediately exclaimed, "These are ruined by heat; they are in the same state as we find them in the low damp hot plains of the tropics. To know what they are they must be seen on the mountain sides, where the heats are exchanged for the colder air of a considerable elevation." In confirmation of this, he produced two drawings of the Warrea; one made at an elevation of 3000 to 4000 feet, on the Volcano of Cartago, and the other from 5000 feet higher. The first was better coloured than the garden plant, but the second presented all that richness of tint to which alone the term of mazarine blue can be applied. And he assured us that the colour is ever changing as you ascend the mountains, until the clearest and deepest tone is acquired.

We would not attach too much importance to drawings, especially as regards tints represented by water-colours, which, in the most skilful hands, seldom imitate with much fidelity the blues and violets of Nature. Still less would we rely overmuch upon sketches made by a poor naturalist under circumstances of great difficulty and inconvenience. But we must say this of Mr. WARCZEWITZ that, however rude his drawings may be, they have an air of truth about them which cannot be mistaken, and that in every case where we have been able to examine into his statements we have found them faithful and honest. For this reason, without relying too much upon the exactness of colour, we entirely believe in the main fact that the "Discoloured Warrea" acquires on the mountains a purity and intensity of blue, which it does not possess in the hot low districts. And we take this to be a general as well as a particular fact.

It is very true that the rarefaction of the air at great elevations must have some effect in producing these results; and we are quite prepared to admit that as another element in the "peculiar combination of favourable circumstances" above alluded to. But we would strongly advise gardeners to ascertain for themselves whether a very considerable approach to such a fortunate combination may not be made by the use of free air, abundant light, and a lowered temperature, even although no rarefaction of the air can be possibly secured.

SAVOYS.

Of these, some prefer the small varieties, others the large; occasionally the early sorts are in request, but more generally the late. Nos. 2 and 3 are preferable sorts where only two can be grown.

1. *Early Green Curled*, alias New Early, De Milan très hâtif d'Ulm. Small, outer leaves rather plain, deep green; hearts readily, and is of excellent quality. It is considered the best for early use.

Early Dwarf Green Curled, alias Dwarf, Dwarf Green, Milan hâtif. Similar in quality to the preceding, but dwarfer.

Early Flat Green Curled, alias Milan court, nain, ou trapû. Middle-sized, very dwarf and flat-headed, deep green, tender and very good.

2. *Dwarf Green Curled*, alias Small Dwarf Green Curled, Pancalier de Touraine. Stem dwarf; leaves deep green, very rugose, much curled at the margin; hearts well, and is very good, especially after the first frosts in autumn. It is hardier than the preceding sorts, and forms a succession to them.

Large Late Green Curled, alias Large Green, Late Green, Large Late Green, Globe, Milan ordinaire, Gros Chou de Milan. Larger than the preceding, and lighter green; very rugose, and hardy.

3. *Large Green German*, alias Large Late Green, Milan des Vertus, or Gros Chou Pommé-frisé d'Allemagne. This is the largest kind of Savoy, and the best amongst the large. The leaves are plainer than in the other varieties; the head roundish, a little flattened, like a Drumhead Cabbage, which it also approaches in size. It is hardy, withstanding the frosts of ordinary winters very well.

Conical Savoy, alias Milan à tête longue. Rather small, pointed, green, hardy, of very good quality, but affords much less weight of produce than several of the preceding sorts.

Early Yellow Savoy. Middle-sized, roundish, yellow; hearts early, of tender substance when cooked, and very good, but some object to the colour.

Early Long Yellow, or Milan doré à tête longue. This, like the preceding, is an early variety, but it does not heart firmly.

4. *Yellow Curled*, alias Yellow, Large Late Yellow, White Savoy, Blœmendale, New Blœmendalers, Milan Doré, ou de Savoie. This is later and hardier than the other Yellow Savoys. It is dwarf, middle-sized, round; the leaves are pale green at first, but in winter they are quite yellow. The heart is not so compact as some, but it is of tender quality, and by many persons it is preferred, being considered much sweeter than the other kinds. *R. T.*

DISEASES OF PLANTS.

(*Continued from p.* 228.)

GENUS X. CURVATURE. *First species.* ACCIDENTAL CURVATURE.—We often observe in hedges and thickets some trees of extraordinarily crooked growth. This frequently arises from their having been when young attacked by some insect, and the injured part rendered incapable of a sufficient determination of sap to nourish it like the rest of the plant; the fibres have lost their distensibility, and *curvature* comes on. Winds, accidental blows, and still more, the readiness with which the knife is ignorantly applied to young plantations, are causes that disfigure so many fine trees, which never entirely recover these early injuries.

It is not, however, always impossible to straighten the curved stems of trees when the evil has not been allowed to remain too long. A stake, carefully driven into the ground, so as not to injure the roots, will keep the young tree straight if properly tied to it. If the stem is thicker, it may be straightened by hand, resting the knee against the curve as a fulcrum, and drawing the tree towards you till you hear a slight crack. If the tree is too large to do this, incisions will sometimes correct the curvature. Two or three vertical slits should be made on the concave side of the trunk or branch, of a length proportioned to its size. These incisions will determine a great flow of sap to the part, and in many cases the curvature will much diminish or entirely disappear. I have seen the experiment successfully tried.

Second species. CURVATURE OF THE MULBERRY.—In a Mulberry plantation it is not uncommon to see certain trees with their branches twisted and shrivelled in an unnatural way. This disease, which I called *Lordosi* in my essay on Nosology, is owing entirely to the carelessness in which the gathering the leaves is performed. Instead of picking them one by one, the branch is stripped by passing it through the hand from one end to the other. It is not thus to be wondered at if they perish entirely, or at any rate remain deformed. Careful treatment, and judicious pruning, are, of course, the means of preventing this disease of the Mulberry.

GENUS XI. FLAGELLATION, *or* THRASHING.—This is a kind of injury which may be said to be compounded of many others. The common abuse in thrashing trees to gather their fruits, for example, Walnuts, Acorns, Services, &c., by means of long poles, not only produce considerable contusions, but gives violent shocks to the branches, tearing, disbarking, or twisting them. In short, the trees are thus thrashed and injured in the most delicate as well as the most precious parts, the young shoots forming the hope of succeeding years. It suffices to examine two trees, the one which has been thrashed, the other spared. Whilst this one is vigorous, rich in fruits, majestic, and crowned by well-formed shoots, which ensure future crops, the former is languid, slow of growth, and sparing in produce. I feel unfortunately convinced that there is no persuading our peasantry to alter this practice; but I will not for that refrain from warning landowners that the thrashing is the ruin of their trees, especially of the more delicate ones, which are affected by cold, like the Walnut. Nature will generally cause the fruit to fall when ripe, or, at most, a slight partial shaking of the branches will suffice.

GENUS XII. STRIPPING OFF LEAVES.—All Mulberries are stripped of their leaves in spring, and some a second time in autumn. Elms, and not a few other trees, are also, with us, stripped in August. This is a real and fatal injury inflicted on the tree. There is no mere novice in the study of physiology who is not aware of the principal use of leaves in contributing to the nutriment of the tree, and to the ridding it of its superfluous elements; and the depriving it of these essential organs of nutrition and respiration must be productive of mischief. I well know that, for the breeding of silkworms, as well as in our method of feeding cattle, this stripping is indispensable, and I am far from recommending that it should be foregone; but I feel it incumbent on me to offer a few observations on the subject, which may be useful to the cultivator.

The general precautions requisite in the cultivation and plantation of trees should be more particularly attended to in the case of those which are intended to be stripped. Experience has now convinced us of the great folly of stripping the Mulberries twice in the year, which causes their early and rapid decay. The most careful have even adopted the practice of only gathering the leaves every alternate year, and if with this precaution the pruning down the trees can be avoided, they become all the more vigorous. If, however, circumstances require the annual stripping of the trees, the whole of the leaves should not be taken, but a few left here and there. I should add, however, that it is not enough to leave a little tuft at the end of each branch, as is the custom with some; this tuft should indeed be left, as from thence is to issue the new shoot; but I would have a few leaves also left here and there along the branches. With regard to the stripping of Elms and other trees for food for cattle and sheep, it should be delayed till the autumn. Moreover, the whole of the tree should not be deprived of its leaves at once, but the operations should be spread over four, six, or eight days, and in such manner that every part of the tree should preserve a few leaves till the stripping is completed. There is another general precept which cannot be too strongly inculcated, as to the mode of taking off the leaves, which is to avoid the ordinary careless practice of so tearing them off that the young buds are carried away with the leaves. The later the operation is delayed in autumn the less the danger.

VILLA AND SUBURBAN GARDENING.

ONE of the most lovely, as well as one of the most odoriferous plants known in gardens is the Luculia gratissima; nevertheless, we seldom meet with it in anything like perfection. In most collections, if existing at all, it presents so miserable an appearance, that even possessors of large gardens cease to care for it, alleging that it is impossible to grow it in anything like a creditable or healthy state. It is a plant that does not require a high temperature, for it comes from the cooler parts of India, and the want of success may in some instances result from its being roasted to death. A few particulars, therefore, respecting the successful culture of this truly beautiful plant may not be unacceptable to my amateur readers.

The most certain mode of increasing the Luculia is by layering. If the young shoots are slightly slit, in the manner pursued with respect to Carnations, and pegged down in a small pot an inch under the surface of the soil, they will root readily, more especially if it is layered in autumn. Young plants so produced, if carefully preserved during winter, may be grown into fine flowering specimens in one season. The situation it occupies in the house is an important point to be considered. If placed where a current of air passes over the foliage, it will dwindle and die. A quiet cool position is what it especially requires; and it should be partially shaded during bright sunshine. It will be found to luxuriate in the temperature of an ordinary conservatory, where the frost is merely kept out. I have known it to be exposed to nearly the freezing point without sustaining any injury whatever.

The soil in which I have found the Luculia to thrive best is turfy loam, with an admixture of one-fifth leaf-mould and one-fifth silver sand; let the pot be well drained, and the soil used in a rather rough state.

Few conservatory plants are more ornamental than the Luculia, and if planted out where there is no draft, it will thrive and bloom in perfection every winter. *Pharo.*

Home Correspondence.

Adamia versicolor.—Seeing in the last Number of "Paxton's Flower Garden" a representation of this plant, and an account of it, where it is spoken of as a difficult plant to flower, I think it may be worth while to mention that a plant of it, received in Sept. 1848 from the Horticultural Society, has been in flower for the last three weeks in the stove here. The flowers first showed themselves about January, and continued for a very long time (perhaps a month) previous to their expanding without changing at all, except that the buds altered from a white by degrees to a sort of pale blueish violet, when they began expanding, and have continued ever since to be a great ornament, though all the buds have not expanded, and I fear never will. The plant is now showing another head of flowers at the side, lower down the stalk, and one out of two cuttings struck last year is showing another head. I am not aware that it received any very particular treatment. It has been kept in a Vinery, where it has always seemed perfectly healthy until removed when in flower to the

stove. It certainly is a great ornament, and is a new style of flower among stove plants. If any of your readers would wish for any further particulars concerning its treatment, our gardener, Mr. Law, under whose care it has flowered, will, I am sure, be ready to give them. *James Stuart Wortley, Wortley Hall, Sheffield.*

Bleeding Roots of the Birch-tree.—Can any of your readers mention a remedy for the bleeding of the roots of a very fine Birch tree, standing in a most conspicuous place on our lawn, which were cut through in making a new walk near it? They are about five in number, and average about 1½ inch in diameter, and have been bleeding so incessantly for the last fortnight, that the walk has been quite standing in puddles, and the sap still bubbles up through the gravel. Do you think it will materially injure the tree? *James Stuart Wortley.* [This is a very curious case. Why do the *roots* bleed? When the Russians invested Hamburgh at the close of the last war, the Baschkirs killed the Birch trees for the sake of the wine that could be made from the sap, by bleeding them to death, but we never heard of the roots being tapped. An interesting physiological question is involved in this matter; and we should like to hear of similar occurrences.]

Employment of Waste Steam in Heating Glass houses.—The heating of frames and forcing houses with waste steam has the appearance of utility, but I am afraid it will not answer. A friend of mine, who has an extensive factory in this neighbourhood, has fitted up a very nice little greenhouse with pipes and tank, all of which he can heat at pleasure to any temperature, by simply turning a cock from the waste steam pipe; so far so good. Nothing could be better. Top heat and bottom heat all for nothing. On calling however to see my friend's little conservatory on the Sunday, I found to my surprise the frost on the glass, and the plants looking as miserable as could well be imagined. A few words explained all—the great pot was not boiling—and it would have cost more to heat it for the 24 hours of the sabbath, than the greenhouse and all it contained were worth, or certainly more than it would have cost to heat it by ordinary means for a month. How many fine things might be accomplished, were it not for the want of one link in the chain that should bind all together! *Charles Lee, Hammersmith.* [Does it not occur to Mr. Lee what this proves?]——The following extract from the second volume (page 528) of "Professor Ansted's Geology," may interest your readers, as bearing on the employment of heated water to promote vegetation. "Advantage has sometimes been taken of the temperature of water from deep springs, and conservatories have been warmed and even Cress plots cultivated by such means. It is stated that a salad ground near Erfurt, in which this method is adopted of communicating a high and regular temperature, yields a profit of not less than 12,000*l.* per annum to the proprietor. Fish ponds have been sometimes improved by such warm springs being passed through them." I fear that there has been some mistake in rating the profit so high as 12,000*l.*; probably 12,000 francs. But I give the extract in Professor Ansted's own words. *A. C., Edinburgh.*

The Gardeners' Benevolent Institution.—As a gardener and a subscriber to this institution, I would respectfully beg to draw attention to what I would term the slumbering position of it. I much fear that two-thirds of the gardening fraternity in the British Isles either do not know or do not fully appreciate the benefits which might be expected from it, if it could receive an extension of support worthy of its objects. Neither can I imagine that the nobility and gentry of our charitable isle have ever become thoroughly acquainted with its scope and tendency, or they would more numerously subscribe towards the assistance of a body of unfortunates from whom, as a class, they have ever derived no mean share of their comforts, and, I may add, their delights. When it is considered that gardeners are peculiarly a rheumatic class, and that a much earlier disability to continue in service characterises those of later times; and that, principally owing to the extension of plant culture (subjecting them much to humid atmospheres, and to sudden chills), surely there will be found to exist a powerful claim, I will not say on the justice, but on the benevolence of those in affluent circumstances, and who are attached to horticultural pursuits. It is well known that as a class, few are enabled to lay by anything for a rainy day. Gardeners are generally married men; and if they happen to get their "quiver full" of children betimes, adieu to all ideas of independency. I should be sorry to attempt to impugn the zeal of Mr. Cutler, the worthy secretary to the institution; but I should certainly like to hear from him as to whether all possible means have been taken to give the thing publicity in the right quarter. If Mr. C. would make it known in the *Gardeners' Chronicle*, it might serve to warm the subject up again, and perhaps to give a renewed impulse to it. Amongst other modes of bringing the subject before the public, and of keeping it alive, I would suggest that a prospectus of the intentions of the institution be hung in every seed-shop in Great Britain; as also in every exhibition-room through the kingdom; and that nurserymen have circulars which they be invited to circulate; or that they be furnished with wrappers for a portion of their annual or other papers; such as are likely to fall into the hands of the gentry or wealthy amateurs. In addition, perhaps, the conductors of our gardening periodicals would occasionally spare an odd corner in order to tickle the memories of their subscribers, for this in itself would be no small affair. *Robert Errington, Oulton Park.* [If Mr. Errington lived in London he would know that no *legitimate* means are neglected to make this excellent charity known. If it is not so prosperous as it might be, gentlemen are not to blame, so much as gardeners are.]

Mildew on Grapes.—On removing some lateral shoots from my Vines on the 3d of April inst., I discovered that I had got mildew. I sulphured all the parts I could find affected, and left them. The Vines were just coming into flower, and a day or two previous to the appearance of the evil I had kept the atmosphere comparatively dry. Cloudy and cold winds prevailed at the time, and I attributed its progress to being obliged to keep up the temperature by artificial heat coupled with a dry air. Accordingly I have since kept the atmosphere more moist. Wherever the sulphur touches the fungus the latter disappears; but of course it leaves a brown spot on the leaves affected. What I am most anxious about is to know whether or not by perseverance I will be able to keep the evil in check until the berries are ripe. The keeping a rather moist atmosphere will also, perhaps, affect the setting of the fruit. I may add that on the branch on which I first noticed it there was a piece of last year's wood of a dull green colour about 1 or 2 inches long, completely covered with mildew; this was probably the remains of last year's disease which had escaped my observation. My house is heated by hot water, and contains plants usually found in Vineries where there is insufficient house room, such as Camellias, Azaleas, Fuchsias, &c. Spots are still making their appearance. After the leaves have become partially brown from their effects, should I remove them and encourage others to take their places? [Not if you can help it.] *Edgar Sanders, Egham Lodge, April 12.*

Monthly Meteorological Abstract, Pembroke Dock-yard.—

Date.	Thermometer. Absolute Maximum.	Absolute Minimum.	Mean.	Average Maximum.	Average Minimum.	Mean.	Rain in Inches. 8 in. Gauge on Tower, 42 ft. 6 in. from ground; 31 ft. above 5-in. Gauge, 60 ft. 8 in. above high-water level.	5-in. Gauge, 5 ft. from ground; 29 ft. 8 in. above high-water level.	Wet Days.
1849.									
July	...	...	...	...	...	...	1.358	...	12
August	...	...	...	...	...	...	2.272	...	11
September	72.5	39.0	55.7	63.6	48.9	56.25	3.870	4.162	14
October.....	63.0	31.0	47.0	55.7	45.2	50.45	3.807	3.642	19
November	57.0	33.0	45.0	52.6	43.5	48.00	3.287	3.000	21
December	56.0	23.0	39.5	45.9	35.3	40.60	2.844	2.930	21
Means ...	62.1	31.5	46.8	54.45	43.2	48.80	17.438	13.734	98

The 5-in. Gauge is on a slope rising from the Tower.

Rain at Bowness, Windermere, in 1849.—January, 12.133; February, 3.226; March, 1.701; April, 1.946; May, 3.265; June, 1.789; July, 6 138; August, 5.490; September, 3.358; October, 9.286; November, 8.371; December, 4.354. Total, 61.557 inches. *T. S. P.*

Extraordinary Flight of Swallows.—Although a straggler is sometimes to be seen sooner in the month, the usual advent of the swallow, in this part of the country, is from the 12th to the 20th of April. This year my gardener saw one on the 5th, and I have heard of one or two other solitary birds elsewhere. But in the afternoon of the 10th, I had just been enquiring of him whether he had seen more or not, when our notice was attracted to the sudden appearance of a large flight which made a little play over our heads, and then drew together again and went all off to the westward. My man guessed them at 100, and I dare say there were so many. There was a light wind from the east at the time, and it had been blowing from the S. and S. E. for many days before. I do not doubt that these birds had crossed the narrow part of the Channel that morning, and went on to distribute themselves in the southern counties farther west; only one solitary bird having been seen here since that day. Mr. Knox, in his pleasant "Ornithological Rambles" in Sussex, has pointed attention to the outward-bound migration of our wanderers along the south coast towards the narrow part of the Channel; and we see the birds of the swallow tribe congregate and go off in the autumn. But it is not often that they are observed to come in flocks like what I have been describing. Ours always make their appearance, for anything before observed, as stragglers, or a very few at a time. *M., Pulborough, Sussex.*

Rhubarb.—Have any of your readers noticed the increasing prevalence of that "physicky" taste in Rhubarb, which so disagreeably and strongly reminds us of the chemist's shop? If so, can they inform me whether it depends on species, culture, soil, cooking, or any removable cause. My experience is very small, but the same plants in the same garden do appear to me quite different in taste at different times. *L. L.*

Gravel Walks.—Decomposed sandstone is an excellent covering for walks, in order to bind any loose material of which they may be formed. Soon after its application the surface becomes perfectly smooth and almost as firm as a flag. The walks may be swept during wet weather, nearly as well as when it is dry. About three years since I made a walk of the rider or limestone with which lead ore had been blended. I procured it in the state locally termed "cuttings;" that is, after it had passed through the crushing mill, and the ore separated from it. In this state the largest of the pieces will pass through a ring an inch in diameter. The kind I made use of was almost as hard, sharp, and angular as broken flints. Having previously formed out the walk, by lowering it about 8 or 9 inches below the surface—perhaps one-half of the depth would have answered equally well—and without making any provision for drainage at the bottom, the soil being sufficiently porous to allow the water to pass through it, I filled it with the cuttings to about 1 inch from the lawn at the sides, and exactly to the height of the lawn in the middle of the walk, the width of which is 4 ft. 6 in. I then put on the sand just sufficiently thick to cover the angular points of the cuttings. I allowed it to remain in this state for a few weeks, and then put on a second covering of sand. In a short time it became firm and hard, and has remained so ever since. Severe frosts and sudden thaws disturb the surface a little, but it soon regains its previous firmness. If the colour of walks is an object in landscape gardening, much might be accomplished by covering them with sand of proper hue. We can get it here from creamy white through all the intermediate shades of the yellow ochres, to a deep brunt terra de Sienna brown. *Wm. Wallace, Nenthead.*

Tomtits, and other miscalled Vermin.—"Defend me from my friends, and I will take care of my enemies," is a maxim oftener quoted than understood, for it is not always that a man can distinguish friends from foes. A gardener is but a man, and therefore occasionally finds himself in this predicament; as witness the obfuscation of his notions on the supposed atrocities of tomtits and other feathered monsters, with whom he fancies it a point of duty to wage a war of extermination. Bless the man! his own common sense—and a gardener, of all people, ought to have a decent share of this—might teach him better; yet what a want of observation, what a strange jumble of cause and effect is often met with in a class whose daily and hourly experience ought, one would think, to insure very different results. The defence of these supposed garden marauders I might well leave in the hands of such redoubtable champions as Mr. Doubleday and Mr. Bree; but that I deem it but an act of justice to add my testimony to the correctness of their decision. During my abode at Whittington, in Norfolk, I planted and reared a rather extensive flower and kitchen garden; the borders of the former being planted with various ornamental trees and shrubs, which in due time became the resort of blackbirds, thrushes, goldfinches, and I know not what besides. From the beginning I made a resolution, which I rigidly adhered to myself, and as rigidly enforced on all around me, to preserve and encourage these several visitants, whatever might be their number and variety. My litttle demesne was as strictly tabooed as Charles Waterton's Park, and the report of a gun as great a novelty. To one exception I certainly do plead guilty, and that is in the case of the eviction of martins by those most impudent of burglars the sparrows; a race whose peculiar creed seems to be—

"That they should prig who have the power,
And they should keep who can."

By way of set-off to this moral depravity, I am quite willing to accord to them many and great countervailing virtues. They are most laudably voracious; and though this voracity is occasionally exhibited in the seed-bed, or the ripening corn-field, yet their chief sphere of usefulness is unquestionably the garden, as wholesale destroyers of grubs, caterpillars, &c. Like the blackbirds and thrushes, their betters, they plead guilty to the abduction of a certain quantum of fruit; but they allege, and with some show of reason, a sort of prescriptive right to this as their share of the produce. At all events, it rests with the gardener to determine the amount of this share, for nothing is easier in a general way than to protect any given spot, or bush, by covering it with a guard of net-work, either wire or cord. So far, but no farther, do I admit the doctrine of protection; but carried to the extent I have heard of its being attempted by some, viz., to the exclusion of all birds whatever from any particular spot of ground, it must inevitably lead to failure and disappointment. A friend of mine was once witness to such an attempt, and such a failure. It occurred to a neighbour of his, who, having the fear of tomtits and other perils before his eyes, set himself most manfully to circumvent the whole tribe of winged Philistines. He did not indeed "hedge *in* the cuckoo," but he did the next feat to it, he hedged him *out*. In fact, he inclosed and covered in nearly all his garden; and a rare mess he made of it! True, he kept out all the birds, for not so much as a tomtit could penetrate the charmed circle of his *sanctum sanctorum;* but he soon found that even excluding tomtits would not always insure safety to his produce, whether of fruit or flowers; for the various tribe of insecta, with all their ramifications of hymenoptera, and coleoptera, and neuroptera, and lepidoptera, and hemiptera, and diptera, and other opteras and ipteras, with their numerous kith and kin to the third and fourth generations, finding themselves safe from the attacks of the respective ogres who formerly made it their peculiar pastime to pounce upon and gobble them up by wholesale, began to fancy themselves in an El Dorado—a species of insect paradise, which called for the hum of myriads, and all was soon high jinks and jollity. Even snails, and slugs, and earthworms joined to swell the chorus—

"Oh if there's an Elysium upon earth,
It is this—it is this!"

The effects of all this insect gallivanting were soon painfully apparent to the sapient author of the mischief. Not a leaf, nor a bud, nor a fruit but told a tale of disease and death; the very place stank of insect repletion and depletion; and all through the blind and impotent attempt of man to improve upon, and even to counteract the designs of Omnipotence. My own experience of a system the very reverse of this fully satisfied me of the mischief and absurdity of this restrictive policy. The Cabbages and other vegetables in the small gardens attached to the cottages in and about Stoke, I observed year after year, were sure to be destroyed, or at least greatly injured by caterpillars, grubs, and other insects. Why? Because from their proximity to the dwellings no birds dare go near them. The insects had their full swing, and they made the most of such a chance. When any of these cottagers visited my garden, as I always encouraged them to do, their cry was, "How lucky you are with your Cabbages and Cauliflowers, sir! Why, I don't see a caterpillar upon them! Ours are sheer stumps. Never will be good for nothing. How the plague do you manage?" "Manage! by encouraging the birds, instead of scaring them away as you do. The moment a blackbird is seen to pick one of your Cherries, off goes the gun, and you spend us much in powder and shot before the season is over as would cover your tree with old fishing net. Nor is this the worst. You drive away all the small birds, and then come to me with a cock-and-a-bull story of your want of luck in not being able to raise such good Cabbages as your neighbours. You do not deserve as good; and another thing allow me to tell you; you never will have as good till you alter your system of management." In the course of my proceedings I have had more difficulty with cats than with any other enemy of the birds. Boys and gunners I could always manage, but the cats bothered me. True, I might have destroyed them, but then the mice would have got the upper hand. At last I adopted the following device, which completely succeeded in preserving the nests; which, till then, had been frequently pulled down, and their inmates destroyed. I took a piece of 2 inch meshed wire net, square or round, no matter, about 2 or 2½ feet across; this I cut open to the centre so as to

clasp the stem of the tree or shrub. The edges of the cut wire were then brought together and fastened, and the piece rested horizontally on one or more of the side branches of the stem, a foot or two below where there was any likelihood of birds building; forming, when finished, a sort of shelf, resembling the piece of furniture called a dumb waiter. A cat could creep up to this net or shield, but beyond, it was "no go." When fixed it was no more visible than a cobweb, and would last many years. I had no nests disturbed that were so protected. Mr. Bree's allusion to my friend Joseph Paul's opinion of the value of birds in the destruction of insects was both satisfactory and amusing to me. Few people are more at home in the knowledge of the insect world than Mr. Paul. It seems to run in the family. His worthy uncle, the late Robert Paul of Starston, was an enthusiast on the subject, and devoted much time and no little money to the invention of traps and other devices for inveigling the flies and lice which infested his Turnip and Bean crops. Nay, the better to make himself acquainted with their domestic economy and family arrangements, the good man had a sort of private establishment for the board, lodging, and education of certain flies, lice, and wireworms, the better to carry out his preventive schemes. We always met at the Holkham sheep shearings; at one of which (1818) he was introduced by Mr. Coke to Lord Erskine as the inventor of the fly-trap. I happened to be present at the time, and shall not easily forget the sly, quaint, but sarcastic remarks of the ex-chancellor on what he considered the daring, almost impious, attempts of man to thwart, by his puny devices, the designs of the Almighty. "I have also a plan for destroying rats, my lord," observed Mr. Paul, evidently desirous to change the subject. "There, sir," exclaimed his lordship, with great animation, "I should applaud you to the echo; and I hope that you will not confine your exertions to any particular species, but extend them to bipeds as well as quadrupeds." *Samuel Taylor, Earnwood, Gloucester, April* 16.

Societies.

Horticultural, *April* 16.—R. S. Streatfield, Esq., in the chair. C. S. Shaw and C. Fraser, Esqrs., were elected Fellows. Messrs. Veitch received a Large Silver Medal for a new and very fine Clianthus from New Holland, having a greyish aspect, and bearing a cluster of large brilliant crimson flowers. It was named C. formosus; it appeared to be a profuse bloomer, and will no doubt prove a great acquisition. The same nurserymen also produced an example of Dendrobium Farmeri.—From Mrs. Lawrence's garden at Ealing Park came the same kind of pink-spotted fragrant Trichopilia which was exhibited on the 2d inst. by Mr. Loddiges, and which is an improvement on T. tortilis; a good specimen of Mr. Skinner's Cattleya (C. Skinneri), an Oncidium, and a Mormodes, together with finely flowered specimens of Erica nitida, and of the Chinese Enkianthus reticulatus, a plant which few can cultivate successfully. A Certificate of Merit was awarded to the Heath, and a Banksian Medal to the pink-spotted Trichopile, the Oncid, and Mr. Skinner's Cattleya.—Mr. Errington, gr. to Sir P. G. Egerton, Bart., M.P., sent a long, straggling, cut spike of the new Oncidium trilingue with rather handsome brown and yellow curiously-formed flowers; and Mr. Lane, of Great Berkhampstead, an example of Warrea discolor, from Costa Rica.—Mr. Henderson, of St. John's-wood, contributed a poor specimen of the bright yellow blossomed Epimedium colchicum, which, when grown in perfection, is one of the gayest early-flowering hardy plants we have; and along with it Ceanothus papillosus, one of the several sorts recently introduced by the Horticultural Society from California. It is expected that C. dentatus, which proves to be a very fine thing, and most of the others brought over at the same time, will be hardy; but this one (C. papillosus) was stated to be the most tender of them all. It, however, survived last winter with Mr. Henderson, planted out against a *north* wall. A Certificate of Merit was awarded to it and the Epimedium. The same nurseryman produced a deep crimson-flowered Malva (M. umbellata), Chorozema flavum, the white blossomed Anadenia pulchella and three Cinerarias.—Messrs. Fairbairn sent a large bright rose-coloured Azalea, called Dilecta, for which a Certificate of Merit was given, and a similar award was made to Mr. Ayres, of Blackheath, for Pimelea Verschaffeltii, which, if well-flowered, is really a good thing.—Messrs. Henderson, of Pine-apple-place, produced a well cultivated plant of Siphocampylus manettiæflorus, an interesting collection of Cinerarias, another of Hyacinths, and three plants of a small pale blue-flowered New Holland Comesperma, leafless, and comparatively unattractive. A Banksian Medal was given for the Cinerarias and Hyacinths.—Mr. Jones, gr. to Sir J. Guest, sent three Ripley Queen Pine-apples, the heaviest of which weighed 4 lbs. 2 oz.; the other two were lighter and not quite ripe. A Certificate of Merit was awarded for the first-named fruit.—Messrs. Hartley exhibited samples of their patent rolled plate glass, a very different article from common rough plate; Mr. Dobree, of Guernsey, a plaster of Paris model of a Chaumontel Pear, which weighed 2 lbs. 4½ oz., and Mrs. Temple, examples of wax flowers.—The Garden of the Society furnished three kinds of Oncids, Trichopilia tortilis, Hypocalymna robusta, Fernandezia elegans, Acacia decipiens, two Azaleas, the double white-flowered Chinese Peach, Genista racemosa, Dillwynia speciosa, Pultenæa stricta, Henfreya scandens, Diosma capitata, the Apricot-flowered Alloplectus speciosus, and the old-fashioned Theophrasta Jussiæi. — It was announced that printed copies of the audited accounts of the Society were ready for delivery to Fellows, and that April the 23d was the last day on which tickets would be issued at 3*s*. 6*d*. each.

Linnean, *April* 16.—The President in the chair. A continuation of Mr. Miers' paper on the natural order Triuridaceæ, was read. After describing the remaining species belonging to the order, the author made some remarks on its affinities. One remarkable point in the structure of the order was the absence of a true embryo in the seeds. After criticising the labours of Brown, Griffiths, and Lindley, on the Rafflesiaceæ and Balanophoreæ, the author was disposed to agree with the two first observers in thinking that these orders should not be separated from the class of dicotyledonous plants. He dwelt on the want of a perfect embryo in such orders as Cuscutaceæ, Orobanchaceæ, and Pistiaceæ, as a proof that a want of development of parts of the embryo was not sufficient ground for constituting a distinct class. On these grounds he was disposed to regard Triuridaceæ as an order of Endogenous plants, near Alismaceæ, Juncagineæ, and Fluviales. He proposed to call the imperfect embryo of this and other families a *protoblastus*. At the conclusion of the paper, the President remarked that for our knowledge of this order we were more indebted to Mr. Miers than any other botanist. He did not quite agree with Mr. Miers as to the affinities of the order, or his nomenclature of certain parts of the structures he had so well described. Mr. Marnock exhibited a remarkable specimen of the woody growth of Viscum album.

Microscopical, *April* 17.—Dr. A. Farre in the chair. The following gentlemen were elected members: Captain Manners, Captain Trotter, J. B. Mummery, Esq., R. Meslayer Esq., H. Cantis Esq., F. H. Wenham Esq., C. White, Esq.—Mr. Warren De la Rue made some observations on a previous paper by Mr. Shadbolt, on the construction of a prism for using oblique light with the microscope. A paper was read from Mr. F. Wenham, on the construction of an apparatus for the better illuminating opaque objects under the microscope. The President called the attention of the members to the state of the cabinet, and requested contributions from the members. He also exhibited a microscope of French construction, with three sets of glasses, the highest power being 270 diameters, which cost 70 francs. He expressed a wish that our English makers would furnish cheaper instruments, as he believed it would lead to a more extensive use of the microscope, and in the end to the sale of the more expensive kinds. Mr. Bowerbank, Dr. Lankester, and Dr. Carpenter advocated the construction of cheaper instruments than could be at present obtained of the best makers. Mr. White stated that it would be impossible to make the admirable object-glasses of the great English makers at a low price. Dr. Lankester stated that Mr. Beck would exhibit some young trout which had been produced according to the plan proposed by Mr. Boccius. He thought it would be interesting to the Society to know that in the hands of Mr. Gurney the plan had perfectly succeeded, and that he now possessed a brood of promising second year's trout.

Royal South London Floricultural, *April* 17.—This exhibition, the first of the season, was held at the Horns Tavern, Kennington. The day being fine a large number of well cultivated stove and greenhouse plants was produced, and, as a florists' show, it was creditable, though not so fine as we have seen it.

Best 24 Pansies: Nurserymen—1st prize to Mr. Turner, Royal Nursery, Slough, for Bell's Duke of Norfolk and Climax, Youell's Supreme and Androcles; Thomson's Constellation, Polyphemus, Duchess of Rutland, and Cyclops; Turner's Mr. Beck, Miss Edwards, and Addison; Hooper's Wonderful and Juventa; Mrs. Hamilton, Bellona, Queen of England, Ophir, Hector, Lucy Neal, Rubens, Milton, Aurora, Rainbow, and Gem; equal second prizes to Mr. Thomson, Iver, and Mr. Bragg, Slough. Mr. Thomson had a fine yellow-ground flower, Lord Walshingham, Penelope (white ground), Caroline, California, Andromache, and Miss Thomson, the remainder being a repetition of the first stand. In Mr. Bragg's stand we observed a good dark variety of Joseph Hunt. The following flowers were shown in good condition: Helen, Sir R. Peel, Mrs. Beck, Leader, and Model of Perfection. Best 24 Pansies: Amateurs—1st prize to J. Edwards, Esq., Holloway, for Privateer, Ophir, Rainbow, Miss Edwards, Constellation, Mrs. Hamilton, Queen of England, Wonderful, Climax, Addison, Lucy Neal, Zabdi, Hector, Charmer, Masterpiece, Model of Perfection, Duke of Norfolk, Juventa, Royal Standard, Mrs. Bragg, Helen, Gem, Aurora, and Disraeli; 2, Mr. J. Scotcher for Miss Edwards (Turner's), fine; 3, Mr. Over, for Helen (Hunt's), ditto; 4, Mr. Parsons, for Rainbow (Thomson), ditto. Two first-class Certificates were awarded for seedlings, both yellow-ground varieties, contributed by Mr. Turner—Mr. Beck and Rubens—both smooth fine large flowers. The Pansies were large and fresh for the time of year.

Best pair of Auriculas: Amateurs—1st prize to W. S. Ginger, Esq., for Champion (Page), and Duke of Wellington (Dickson); 2, Mr. W. E. Miller, for the same varieties; 3, W. Sandilands, Esq., for Duke of Wellington and Glory. Best four: Amateurs — 1st prize to W. S. Ginger, Esq., for Alexander (Stretch), Britannia (Hodge), Duke of Wellington (Dickson), and Champion (Page), very fine plants, surpassing any four we have seen for years; 2, Mr. W. E. Miller; 3, J. Chapman, Esq.—In the Nurserymen's class Mr. Dickson showed four good plants, but not equal to this grower's general productions.

Some Polyanthuses and Cinerarias were shown in good condition. Among Seedling Cinerarias, of 1851, Clementine (white, tipped with purplish crimson, and dark disc) received a first-class Certificate and an extra prize. This was shown by Mr. Salter; and Mr. Kendal received Certificates for Black-eyed Susan (white, tipped with purplish crimson, and dark disc), Eclipse (white, tipped with purplish blue, and dark disc), and Dr. Bushell (white, tipped with amethyst, and dark disc). These are all promising flowers, which we should like to see again.

Messrs. Jackson, of Kingston, showed a nice bloom of their new light Camellia, named Countess of Ellesmere; a fine white Rhododendron, which is stated to be quite hardy; the true R. arboreum (deep crimson), and a variety of Smithii (rosy purple).

April 10.—Meeting at Worton Cottage for the display and examination of seedling florist flowers and other productions.—On this occasion there was present, for the purpose of comparison, a very fine tray of Pansies (old varieties) from Mr. Bragg, of Slough; blooms of the same from Mr. Turner, and a few of the finest varieties of Cinerarias in cultivation. Some seedlings of the latter, from a raiser in Bedfordshire, although very pretty, were inferior to the former in many respects. We suspect from the presence of green-fly on the flowers, that the plants were not in the best condition, and consequently the flowers were smaller than they should be. "L. L." sent some striking Pansies; one of them, No. 21, had a yellow ground, dark purple belting, top petals same shade, flat, excellent shape, full size, and in every respect a good show flower; the others, though fine in many particulars, will not do. Several seedling Pansies were produced, but nothing requiring notice at present; they must all be seen again. Mr. Willison, of Whitby, sent two seedling Roses, one of which had fallen to pieces; the other was a most fragrant variety in a half open state; it seemed a promising thing, and should be seen some time hence, when the powers of comparison with its predecessors will enable us to form a correct judgment upon its merits.

April 17. — Very few things present, it being the meeting of the South London Floricultural Society. There were a seedling Azalea, and some seedling Cinerarias and Pansies, all very pretty, but not sufficiently striking to call for particular notice. We could see that next week some two-years old seedling Pelargoniums would be present, as Mr. Beck's collection is fast coming into bloom.

Review.

Adult Schools. A Letter to the Lord Bishop of Norwich on the Establishment of Adult Schools in Agricultural Districts. By A Country Curate. London: Longmans.

This is an unpretending pamphlet worth reading. The Curate's purpose is to show that education should not cease when a boy is sent to work, but that it should be continued in the full-grown man. In this we entirely agree with him. All you can teach country *boys* is routine; but upon the minds of country *men* you may impress principles—very imperfectly perhaps—but still you may make an impression. Or if you cannot, you may give him something profitable and pleasant wherewith to occupy his leisure—and even country labourers have some leisure, however small—nay, a good deal—or they would not waste so much time in the pot-house.

We entirely disbelieve in the existence of an innate desire to swill beer, and to reel home like a drunken sot—such consequences attend upon the having nothing to do, except to labour hard, which man's *physique* is unequal to. Our Curate then deserves all the encouragement which the press, at least, can give him, in his laudable attempt to establish adult schools. But he deserves much more from his neighbours, for his attempts have been crowned with success. Upon that point we quote his words, although long; for no amount of space can be mis-bestowed in a case like this.

"The author of these pages entered upon the curacy of two parishes in this diocese in October. Though for the education of the rising generation of the poor of both parishes ample provision has been made for some years past, the older inhabitants, as in most parts of this diocese, are lamentably ignorant. To remedy this, adult evening schools, meeting three times a week, were established in both parishes, the management of which was confided to the author. They met for the first time on the 3d and 4th of December. At parish A, the number on the first night was 11; at parish B, 10. After the third week the numbers greatly increased, and the average attendance for some time has been nearly 27 at parish A, and nearly 40 at parish B. The extent of knowledge at these schools is of a most elementary nature. At parish A, not more than three or four can read with fluency. At B, the first class, containing 14 or 15, read fairly; the second class, imperfectly; and some in the third class cannot read at all. Writing and arithmetic are in the same elementary state.

"But a gratifying feature presents itself, in the high promise which these schools afford. The payments, for which no credit is allowed, are willingly made; the the desire to improve is most eager; and the advancement is most rapid. Men who could not read a word, can now read and spell; some who had never formed a letter can now write neatly on paper. In the first class at parish B, men who could read on after a fashion, but not spell, nor bear to be questioned, can now spell well, and answer questions arising from the subject, readily and with gusto. They are, indeed, most eager to obtain knowledge, and in most cases they endeavour on off nights to improve themselves at home. The interest too, comparatively unfelt before, which they take in the progress of their children or relations at the National Schools, is most pleasing and valuable. I might here state my firm conviction, that had the study of vocal music been introduced (which a local circumstance

forbad) the numbers would have been far greater. As it is, I have good reason for expecting that the following winter will witness a more numerous attendance, even without such a popular inducement.

"At parish B, almost all of those who are not necessarily engaged, meet between services on the Sunday: though no one is then present but themselves, they are most orderly and assiduous under the conduct of the monitors. They afterwards proceed to church. Attendance on the Sunday is quite optional. The following is an analysis of the ages of the adults at parish B:—1 above 40, 8 above 30, 4 above 25, 11 above 20, and 15 above 16. But how is all this acting towards improving the physical condition of the labouring classes?

"At the same time were commenced a Horticultural Society for the encouragement of cottage gardening, and also a lending library. Both of these now bid fair to prosper. Many of the adults are already members of the lending library, and many more will join when their acquirements will warrant the step. Thus sound instruction and rational amusement are provided at their own homes. Arithmetical knowledge is also conveyed, with the definitive object of advancing the economical disbursement of limited means.

"Above all, that curse of the agricultural districts, the club, will now be gradually abolished by means of these schools. One sound Friendly Society will soon rise up out of the ruins of various public-house clubs, which are established one year to break up and divide assets the next; then to start afresh to be broken up again."

We only regret that the author's name is unknown; for we should hope that some charitable purses would be opened to aid him if it were certain that the contents would reach their destination.

Garden Memoranda.

Elm Grove, Roehampton, the seat of J. H. Oughton, Esq.—The mansion, a classic Roman villa, with a handsome entrance porch in front, is placed at the northern extremity of an extensive and beautiful lawn, that slopes gently to a fine piece of ornamental water which bounds it on the south. Large Elm trees, with stems buried in Ivy and issuing from among evergreens, surround the house and either side of the lawn, which is divided into two parts by a hollow gravel walk, margined with flower beds and standard Roses. The part between the hollow walk and the water is tastefully laid out in flower beds, here and there interspersed with ornamental trees and shrubs; while that next the house is open glade, dotted at the lower end with nice bushes of Portugal Laurel and Laurustinus, and bounded on all sides by semicircularly hollowed ha-has and broad gravel walks. At a corner of the lower lawn is a neat little Rosery, furnished with choice standard plants in 4 feet beds, which form concentric circles, with 4 feet gravel walks, all surrounding an ornamental vase in the centre, and which is approached on two sides by a gravel walk. In summer, when the Roses are in bloom, together with the herbaceous plants which carpet the ground below them, this forms one of the most interesting spots in the whole garden. Leaving the lawn by a tunnel through below the public road, and following a broad circuitous walk among evergreens for a short distance, we enter the kitchen garden at the north side, in full view of the extensive ranges of glass houses at the opposite or south side. This, like most kitchen gardens, is a parallelogram, enclosing two acres within the walls. The latter are covered with beautiful fruit trees, which promise abundant crops, as do also the "dwarfs" in the borders. These "dwarfs" are pruned in closely every year, after the manner in which such trees are managed in the Horticultural Society's garden, and under this treatment they succeed uncommonly well, and are kept within small bounds. In the east corner, against the south wall, is the Geranium-house, 26 feet long, 17 feet wide, and 10 feet high, which is all the house room Mr. Parker requires to grow the plants in, which he every year produces at our great metropolitan flower shows, and which are the admiration of every one. The top shelf contains the specimens which are to blossom in May, and the lower shelves those for the succeeding months. Some of the May plants, among which we remarked Arabella, Forget-me-not, Negress, Resplendent, &c., were already coming into bloom. Each plant exhibited perfect symmetry of growth, and was not at all "drawn." Even those on the lower shelf, although 7 feet from the roof, were just as free from etiolation as those near the glass. On shelves round the front were some finely grown Cape Pelargoniums, which Mr. Parker is in hopes he will by-and-bye be able to produce in as good condition as the florists' kinds; elegans, glaucum, reniforme, flexuosum, ardens, elatum, and others, were in flower. The principal range of glass against the south wall is 160 feet long, 25 feet wide, and 14 feet high. It is divided into two Vineries, that annually bear heavy crops, and a greenhouse filled with Oranges, Camellias, Azaleas, Geraniums, Callas, in full bloom; Heaths, &c. In front of this range, and divided from it by a border and a broad gravel walk, is a third Vinery, which is 50 feet long, 12 feet wide, and 10 feet high at the back. The Vines in this pit, for so it may be called, were just going out of flower; the crop promised to be abundant, as it always is. In a line with this Vinery is a Peach pit of similar dimensions, well furnished with healthy trees, literally loaded with fruit, done stoning. It is in this pit that Mr. Parker produces the excellent Peaches and Nectarines with which he is usually so successful at the early shows. The Melon ground lies at the west end of the glass houses, and rather behind them. It comprises a considerable extent of framing. Cucumbers and Melons, Radishes, and early Carrots (the latter two covered at night with wooden shutters), and Potatoes, are all grown, or rather forced here. The Potatoes (Early Royals) were from 6 to 8 inches high, and to all appearance very healthy. They were planted out in soil on a bed of leaves and dung hooped over and covered with mats and litter at night, but left open in fine days. They were transferred to this bed in the last week in February from small pots, in which they were started under glass. In front of the Melon ground, and running up the west side of the garden, is an orchard, 3 acres in extent, well stocked with fruit trees. The soil of the kitchen garden is a dark coloured friable loam on clay, and very productive. The outsides of the walls are clothed with fruit trees, and the borders in which they grow are found very useful for many purposes.

As Mr. Parker is universally admitted to be one of the best growers of Geraniums in the kingdom, perhaps the following account of the way in which he manages his exhibition plants may not prove uninteresting. To begin—He strikes his cuttings, which are obtained as soon as the wood is thoroughly ripe, under hand-glasses in the open ground, watering them very slightly for a week or two, but exposing them to dews at night. When they are well rooted, they are lifted and potted in turfy loam, two-year-old cow-dung, some peat and silver sand, all well mixed together, and placed on an efficient drainage. The plants are then set in a cold frame, and kept close in the day-time till they have become established; but they are left open at night. Ultimately the lights are off during both day and night, and, as soon as they will bear it, they are placed on boards, exposed to all weathers, until the long, cold, late autumn nights cause them to be placed in-doors. The main point in their out-door treatment is, never to allow them to get water-logged or stunted in their growth. They receive a shift in November, using the compost mentioned above without the peat. They are again shifted in February, and each shoot stopped at the fourth joint. Lateral shoots are then produced, and these are tied out horizontally, so as to form the basis of the future specimen. The lateral shoots are also stopped, and by these means plenty of wood is obtained for large plants in the following season. But Mr. Parker has another mode of proceeding, which is, to take strong plants in April or May, pot them in 11-inch pots, place them out of doors, and pick the flowers off them throughout the season. Next year they are fit for exhibition. The plants that are to blossom in May are never stopped after they are cut down in July. The June plants are stopped early in January, and those for July in February. To grow Geraniums successfully, Mr. Parker finds that much depends on their winter treatment. They should not receive too much water or fire-heat, and the wood should be well ripened before they are allowed to flower, if a fine head of bloom is wanted. Mr. Parker's general time for cutting down is between the first week of July and the middle of August, according to the ripeness of the wood. When the plants have fairly broken, the old soil is shaken clean from their roots; the latter are trimmed in a little, and the plants are repotted and placed in a frame till they have become established, when they are placed out of doors till they are removed to their winter quarters. To come in for exhibition in May and June, they are repotted in November, and for July in February. When they begin to show flower-buds, liquid manure is occasionally given them. The latter is made by putting into a large tub of soft water half a barrow-load each of cow, sheep, and horse-dung, and a peck of lime, mixing well and using the clear liquid, after two-thirds of clean water has been added to it. During the blooming season plenty of water (not liquid-manure, that is only given five or six times just before they come into flower) is required, otherwise the foliage becomes discoloured, and the blossoms come small and deformed.

The above contains the leading points of Mr. Parker's system of managing Pelargoniums. We have only to add, that everything about the place exhibited the best of keeping, the soft, velvety lawn, with its sloping banks, was closely shaven, the walks nicely rolled, all the shrubs (and they are many) annually examined and cleared of discoloured leaves and dead wood, and altogether this is one of the most charming villas in the neighbourhood of London.

Miscellaneous.

Death of Professor Kunth.—The foreign papers announce the decease of this learned botanist, at Berlin, on the 22d of March. He was well known as the colleague of Baron Humboldt and M. Bonpland in the preparation of the great work on the new plants discovered by them in equinoctial America; and, latterly, for a useful Enumeration of all known plants, of which, however, only a few volumes have appeared.

Professorship of Culture in the Garden of Plants at Paris.—We also learn, and with very great satisfaction, that M. Decaisne has been recommended as the successor, in this important chair, of M. de Mirbel, who has resigned in consequence of age and illness.

The Howden Testimonial.—The friends of Mr. W. Howden (late foreman in Inverleith Nursery, but now disabled by age and infirm health), entertained him to supper in Edinburgh, on the 9th inst. Mr. C. Alexander occupied the chair. After the usual toasts the chairman, in a very feeling manner, proposed the toast of the evening—Mr. Howden's health—which was drunk with great cordiality by every one present. He congratulated Mr. Howden and the committee on the warm response with which the appeal to his numerous friends had met, and it gave him great pleasure to hand to Mr. Howden a purse containing the amount of subscriptions, being about 35*l.* Mr. Howden expressed his deep sense of the esteem of his friends who thus testified their friendship in so substantial a manner in the time of need. The meeting was chiefly composed of the most intelligent practical gardeners, and passed off with the greatest harmony.

Sale of Orchids.—A collection made by Mr. Warczewiz in Veragua and other parts of South America, was sold by Mr. Stevens, on Thursday last, at the following prices:—Cattleya Skinneri, from Costa Rica, 3*l.* 3*s.*; a Trichopilia, from Cordillera of Veragua, 2*l.* 8*s.*; Warrea discolor, from Cartago Volcan, 3000 or 4000 feet above the level of the sea, 1*l.* 1*s.*; Ditto, 9000 feet above the level of the sea, 2*l.*; a new Cattleya near C. maxima, from David in Veragua, 6*l.* 15*s.*; a new Trichopilia (just flowered in Mr. Holford's garden in Hertfordshire), 2*l.* 4*s.*; Cypripedium caudatum, 5*l.* 5*s.*; Trichopilia coccinea, 2*l.* 4*s.*; a Sobralia said to be new, 3*l.* 5*s.*; S. labiata, 4*l.* 4*s.*; a new Chysis, 4*l.* 10*s.*; a good specimen of Lælia superbiens, 9*l.*; Barkeria spectabilis, 3*l.* 3*s.*; Lycaste cruenta, 4*l.*; L. Skinneri, 2*l.* 6*s.* Other lots, of which there were in all 200, fetched from 10*s.* to 1*l.*

Calendar of Operations.

(For the ensuing week.)

PLANT DEPARTMENT.

Stoves.—The increased amount of heat and moisture in these structures, aided by longer days and more powerful sunlight, is of course inducing a development of new growth, and it is the province of the gardener to take care that this should be so directed as to make each individual plant approximate as nearly as possible to a perfect specimen. To this end they should be carefully and constantly watched, as every piece of neglect or mismanagement, however trifling in itself, tends in a proportionate degree to defeat the object in view. To lay down more than general principles is impossible; but it is necessary to urge three things upon every cultivator of plants; these are observation, reflection, and action—indispensable at all times, but at no season more so than at the present. Premising that the plants have been carefully potted in suitable soils, the next important point is situation, the temperature of which should of course be in proportion to that of the localities to which the plants are indigenous. Theory points out the advantage of a moderate bottom-heat, as the earth is invariably some degrees warmer than the atmosphere; practice proves this, and proves also that an excess of heat is as injurious to the roots as to the tops. Ample space for every plant is indispensable, as it is impossible, if the plants are at all crowded, to make handsome specimens of them, however well they may be attended to in other respects. After securing the largest possible amount of light, as much heat and moisture may be supplied as the plants will bear without producing weak or spindling growth; taking this as the criterion, any individual plant which seems to require a warmer or cooler, a moister or drier situation, should be accommodated accordingly. Plants of shrubby habit will require, besides the general direction of the shoots, the occasional stopping of any young growths which are unduly taking the lead; and climbers on trellises will require daily attention, to prevent their twining about the wires, and reaching the top of the trellis before the bottom is properly furnished. On the other hand it is not a good plan to keep the tender young growths tied in to their extreme points, as the practice has the effect of crippling them and preventing their progress; and the plants, especially of delicate species, soon acquire a stunted appearance. We prefer allowing the shoots of strong growing kinds to keep from 12 to 18 inches in advance of the tied-in portion, taking care, however, to prevent entanglement. Mealy bug, scale, and other insects which torment stove plants, increase with frightful rapidity at this season, and it is necessary to make great exertions to keep them even in check.

FORCING DEPARTMENT.

Pineries.—As all the plants should now be making rapid progress, a steady heat is very essential, especially among fruiting plants. Where the bottom-heat is supplied by fermenting material it should be carefully examined, and on the first indications of a decline the old tan should be loosened up and surfaced with a few inches of fresh. As the sun will now be a powerful auxiliary in keeping up the heat, it will not so frequently be necessary to renew the entire bed; but if the latter course seems likely to be required soon, it will be well to do so the first time any of the plants are removed for potting or other purposes, that they may be disturbed as little as possible during the summer. As the sun increases in power it will be necessary to shade during clear sunshine with thin bunting; but let this be used very cautiously at present. Vineries.—In the early houses, when the fruit is fully ripe, let the temperature fall to 55° by night, and give plenty of air during the day. Endeavour to keep the foliage green and healthy as long as possible; if proper attention has been paid to preventing the establishment of insects on the Vines, this will be an easy matter, and the additional strength thus secured to the future crop will be an ample recompense for any extra exertion. Peach-houses.—

The Peaches started early in November will now be approaching maturity, and will consequently require more air and less moisture, but in all cases avoid sudden changes. Let the young growths be tied neatly in, but do not allow them to crowd one another. The aim should be to retain no more shoots than will be required at the winter training, otherwise a crowded and sickly foliage will be the consequence. CHERRIES AND APRICOTS. — Let these be frequently examined, and caterpillars or other plagues carefully destroyed.

FLOWER GARDEN AND SHRUBBERIES.

As the bedding out season is so near at hand, we again call attention to the hardening of the young stock of plants. If young plants, which were potted in small pots early in the spring, cannot be temporarily planted in frames of soil, it will be an advantage to give them an occasional watering with liquid manure or guano-water, to keep them in a healthy state till the season will admit of their being planted in the open ground. If they are permitted to become stunted in their growth, it is not easy to induce many of the kinds to start again, especially if much dry weather occurs at planting out time, but the future occupants of these beds will be much benefited if the interim be employed in turning the soil over again and exposing a new surface to the influence of sun and air. In moderately warm localities, Chrysanthemums are very ornamental as late autumn flowering plants, if planted now against a south wall. Half hardy annuals sown in frames, &c., should be pricked out at greater distances apart, that they may be strengthened a little before they are removed to the flower beds. The sowing of hardy annuals, unless already done, should be immediately attended to, if they are required for early flowering; it is a good plan to sow a few patches of those kinds which come quickly to maturity, once in three weeks to the end of June, by which a succession of gaiety will be produced throughout the summer and autumn.

FLORISTS' FLOWERS.

AURICULAS.—Water liberally when they require it; many of the trusses will now be expanding their flowers. The careful florist will look over his collection, and with a small pair of very sharp-pointed scissors cut out those of the centre buds of the truss which crowd the others too much: by judicious thinning, those which are retained improve in size, independent of a simultaneous expansion. Small hand-glasses should be placed over the trusses; the usual way is to have three small forked sticks round the pot, and on these the glasses are placed, by this means there is a much better chance of preserving them from dust and insects. CARNATIONS AND PICOTEES ought to have been potted off early in this month, for much depends on the plants being well established; nevertheless, we have heard of many applicants during the past week, but we warn amateurs against this procrastination. We would advise the sticks to be placed in the pots immediately; for when deferred to a later period the fibres are often seriously injured by their insertion. DAHLIAS.—Continue to strike cuttings of all valuable varieties; those which are already potted off should be kept thriving. RANUNCULUSES.—The weather hitherto has been admirable for these flowers; should the weather set in dry, care must be taken that all cracks on the bed are filled up.

KITCHEN GARDEN.

Crops which have been some time on the ground, and especially those amongst which the soil has been much trodden in gathering the produce, as Parsley, Spinach, &c., and the various spring sown crops as they appear above ground, should have the soil about them loosened with a fork, to allow their roots to penetrate more easily, and at the same time to admit the sun and air more freely. The same operation destroys the young seed weeds which spring up abundantly at this season. After the young plants have gained a little strength they should be thinned if necessary, weeding the rows with the hand. At this period of their growth they should be carefully guarded against the ravages of snails or other insects, which are particularly liable to trouble them in their young and tender state. Proceed with the formation and manuring of Celery trenches as soon as possible, and complete all such work which is liable to make much mess upon the walks, that the latter may be put in respectable order. Sow Celery on a warm border for late crop, and prick out into frames the young plants of earlier sowings. Make a sowing of dwarf French Beans in a cool frame, to be transplanted into the open air as soon as the weather will permit. Sow Vegetable Marrows and Gourds in 4-inch pots, two seeds in each, and place them in a warm frame. Another sowing should now be made of Cauliflower, Broccoli, Borecole, Cabbages, and Savoys, and dust some quicklime over the young plants of former sowings, to preserve them from slugs. Encourage the growth of Tomatoes in a warm frame, and repot them as soon as they require it, to obtain strong forward plants for turning out as soon as the season will permit. Our short summers render it necessary to be very early with these plants; and this is particularly felt in late cold localities. Where the quantity required is considerable, and the spare spaces upon the wall very limited, a quantity may be grown in 10 or 12-inch pots, taking care that the soil be sufficiently rich to compensate for the restriction in point of quantity. When the season is far enough advanced to admit of the plants being exposed to the open air, they may be placed along a walk-side near a wall, or in any other warm part of the garden. We adopted this plan last year with great success. Repot Capsicums, but do not allow them to flower till they are strong and well established. Prick out Basil, Savory, &c., from the seed pans into boxes or frames, preparatory to their being planted out next month.

HARDY FRUIT GARDEN.

Continue to thin gradually the covering of Spruce and Yew branches on wall trees, where the fruit is set. This operation is the more necessary with branches of the Yew, as the leaves continue on them much longer than upon those of the Spruce. Commence the disbudding of Peaches and Nectarines, by removing the foreright and back buds now; but defer the final arrangement for ten days or a fortnight longer. After the blossoms are fairly set, advantage should be taken of a fine morning to wash the trees with the engine, for the double purpose of removing decayed blossoms and destroying the green fly. Be careful not to get the trees too thick of wood. If they are plentifully furnished with blossoms, thin out some of last year's shoots wherever there is a superabundance of them; taking care to remove side shoots only of last year's production, and in cutting them, to leave the lowest bud on each, to produce a new shoot. In this manner young wood can be obtained in parts of the tree which would be otherwise barren. Let particular attention be paid to hand-picking, and destroying caterpillars.

State of the Weather near London, for the ensuing week ending April 18, 1850, as observed at the Horticultural Garden, Chiswick.

April.	Moon's Age.	Barometer.		Temperature. Of the Air.			Of the Earth.		Wind.	Rain.
		Max.	Min.	Max.	Min.	Mean	1 foot deep.	2 feet deep.		
Friday.. 12	●	29.87	29.620	63	36	49.5	48	47	N.	.04
Satur... 13	1	29.885	29.729	54	42	48.0	48	47½	S.W.	.30
Sunday . 14	2	29.885	29.810	54	43	48.5	48	47½	N.	.05
Monday . 15	3	29.847	29.234	59	42	50.5	48	47½	S.W.	.26
Tues. .. 16	4	29.173	29.096	53	42	47.5	48	48	S.	.16
Wed. ...17	5	29.726	29.479	61	33	47.0	48	48	S.W.	.00
Thurs....18	6	30.058	29.907	62	35	48.5	48½	48	W.	.00
Average....		29.714	29.561	58 0	39.0	48.5	48.1	47.6		0.81

April 12—Fine; thunder storm commenced ¼ past 12; overcast.
— 13—Hazy throughout the day; heavy rain at night.
— 14—Hazy; overcast at night. [cloudy.
— 15—Rain; very heavy rain in forenoon; sunshine at intervals;
— 16—Rain; showery; large masses of white clouds; showers.
— 17—Fine; low white clouds; clear at night.
— 18—Clear; very fine throughout; clear at night.
Mean temperature of the week, 1½ deg. above the average.

State of the Weather at Chiswick during the last 24 years, for the ensuing week, ending April 27, 1850.

April.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds.							
						N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W
Sunday 21	57.7	39.0	48.4	9	0.20 in.	1	5	4	1	1	3	8	1
Mon. 22	58 8	39.5	49.1	13	0.32	3	6	3	1	1	4	5	1
Tues 23	58.6	39.3	48.9	14	0.52	1	4	5	—	1	4	3	4
Wed. 24	58.7	38.7	47.5	10	0.55	4	2	4	4	1	6	2	1
Thurs. 25	59.7	39.3	49.5	11	0.40	4	3	2	2	6	3	2	2
Friday 26	59.5	37.4	48.3	12	0.12	3	2	3	1	1	7	2	3
Satur. 27	60.4	37.6	49.5	13	0.12	1	3	2	5	4	3	—	—

The highest temperature during the above period occurred on the 25th 1840—therm. 80 deg.; and the lowest on the 25th, 1827—therm. 25 deg.

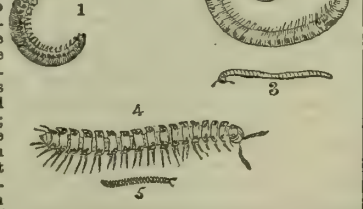
Notices to Correspondents.

TO OUR CORRESPONDENTS.—May we beg it to be understood that *we cannot answer inquiries privately through the post.* We are ready to give reasonable information through our columns, but we cannot consent to the labour of writing letters.

BEE HIVES: *A.* Next week. *Y.*

BOOKS: *C Smith.* All Mrs. Loudon's are useful; that is as much as we can say in the present case. We presume it is the figures and names you want. In that respect it will probably answer your purpose.—*G Gw.* We can only repeat what we have often said before, that if you wish to study botany you *must* begin with the beginning. Master "School Botany" in the first place.—*R S F.* Earp's "New Zealand Hand-book" is a 2*s.* 6*d.* book; it may be obtained of any respectable bookseller.‡

INSECTS: *A Young Beginner.* The person who allowed your plants to come to such a pass ought to be kept scrub, scrub, scrubbing them for the rest of his days—the dirty fellow! It is almost impossible to subdue the vermin; the best way would be to burn the worst plants, to prune close the remainder, burning the branches; to repot everything in clean mould, burning the old mould, to soak the pots in boiling water, to whitewash the house, and repaint all the woodwork. Electricity! You might as well try mesmerism, or put your plants into the hands of a fortune-teller.—*An Islander.* The shell slugs are by no means common. There are four species, one of which (Testacellus scutulum?) is, however, common in the island of Guernsey. (See Loudon's "Magazine of Natural History," vol. vii., p. 224, for a good monograph of the group.) Any further particulars of habits and locality are desirable. *W.*—*D P A.* Your Ash tree has been destroyed by the small stag beetle (Sinodendron cylindricum). We should be very much obliged to you for some specimens of the larvæ, sent so as not to be injured, as well as for a small portion of the wood or bark showing the burrows. *W.*—*E P.* The beautiful globular excrescences on the Oak shoots are galls formed by the puncture of a small four-winged fly (Cynips quercus terminalis). They are not injurious to the trees, except where exceedingly numerous. *W.*—*C J P.* The small white worms sent, and described as attacking the Asparagus, are two species of millipedes, Julus (Polydesmus) complanatus, figs. 4 and 5 in the accompanying woodcut, and Julus pulchellus, figs. 2 and 3; the larger figures representing the insects magnified. They have no doubt been imported with the manure. We should think repeated dressings of salt would dislodge them; if not, make some holes in the bed and put in decaying vegetables, which should be examined from time to time, and the insects (which will congregate there) be destroyed. The larger grub is that of the common daddy-long-legs. *W.*—*W F.* The beetles are the destructive red-legged weevil (Otiorhynchus tenebricosus). If left undisturbed they will gnaw the roots and young fibres of the Filberts. Continue, therefore, to employ the women to pick them. *W.*



CISTERNS: *X Z.* Do not use zinc for cisterns in which water is to be collected for garden purposes. Lead is better, or bricks and cement. Slate is best.

DEODARS: *G P.* We see nothing the matter. The leaves are brown, probably from snow having laid upon them, but they are already falling off, and will be succeeded by others.

DISEASES: *G R.* The leaves of Eranthemum pulchellum are infested with a curious Sphæronema, to which we shall have occasion shortly to advert more fully. Meanwhile will you examine other plants in your conservatory, and observe whether any other genera are similarly infested? By so doing you will have a far better chance of suggesting a remedy than we can possibly have from the mere inspection of a diseased leaf. Should you find other plants affected, would you be so kind as to forward specimens.

FUNEREAL CYPRESS: *A Sub.* Any nurseryman in the kingdom can supply you with it. It has been advertised repeatedly by Messrs. Standish and Co., of Bagshot. It is perfectly hardy, and will grow well at Norwood.

GRAPES: *A B.* Your border is too cold for the temperature at which you keep the house at night. Your night temperature is 20° too high under any circumstances. If your border was warm it would not so much signify, but still your practice would be wrong.—*John Morris.* Spent raisins will not serve as a substitute for tan. If they are rotted down along with bones and common loamy soil, they will form a compost which may be useful in time, but not till they are quite rotten.

GUANO: *H G.* See last week's Number, p. 231, col. *a.* ‡

HEATING: *J R F.* In all the forms of apparatus for hot water the upper pipe is the flow pipe and the lower pipe is the return. We can assure you that such is the case.

MANDRAKES: *T M G.* The best thing to do with them is to plant them at the foot of a south wall, where the soil is *thoroughly* drained, or, if you prefer it, in the south face of some rockwork. Wet at the roots in winter injures them. They should be covered by a hand-glass from October to May; in the other months they should be uncovered. Thus treated they will grow well and flower freely; but we have never been able to get them to set their fruit. They flower very early, and probably want bees, or to be set artificially. Give your Crocuses all the air and light you can till their leaves die; then leave them quiet in the dry ground, and put them into an open dry border in August. They are quite hardy. Scarlet Tulips may be treated in the same way exactly, only they are much more impatient of wet when at rest. Mere cold will not hurt them.

MARKET GARDENS: *Novice.* We strongly advise the young man, with but little knowledge of the business, who has taken about 7 acres of market garden ground, seven miles from London, and who wants instruction in the management of it, to get rid of it again. Such gardening cannot be taught by books. If he is determined to risk the loss of his capital, then his only resource is to hire a clever foreman, well acquainted with the business.

MULBERRY: *L L.* As this tree does not bleed, you may prune it now; but the more you prune it the less fruit will you have.

NAMES OF PLANTS: *M.* Montia fontana.—*Emily.* Begonia Dregei, and one of the hybrids between Cereus flagelliformis and speciosissimus.—*J H.* 1, not recognised; 2, some Bæobotrys, either argentea or macrophylla; 3, Dodonæa angustissima; 4, Bryobium pubescens; 5, Genista racemosa; 6, Acacia biflora; 7, Dendrobium revolutum.—*D P A.* Tussilago Farfara. Make yourself master of Lindley's "School Botany," and then buy Babington's "Manual." When a real difficulty occurs apply to us.—*J D.* Some common Thalictrum, quite indeterminable from such fragments.—*X Y S.* We do not recognise it, in the absence of flower and fruit. It may be some Sapindus.—*Enquirer.* 1, Cyrtomium falcatum; 2, Blechnum Corcovadense; 3, Pteris serrulata; 4, Pteris umbrosa. *S.*—*M B.* Alaternus, Phillyrea, Ruscus aculeatus, Sweet Bay. Very great rarities!

NATAL: *E G A.* Porter's "Tropical Agriculturist," and several excellent practical Leading Articles in our columns during the two last years. But we do not recommend you to go to Natal. You may get on, but it will be hard work. As to Cotton there—where is it? Report says "nowhere."

POLYANTHUSES: *H.* Next week.*

PRUNING VINES: *J L.* As your unpruned Vines are but just breaking their buds, you must not cut them at present. When the shoots have pushed some inches you may then prune with little risk of injury to the Vines from bleeding; but there is some skill required in the process; the shoots should be removed so as not to entirely divest the plants at once of the young foliage they may have made when the operation is commenced. The mode, whatever its general effect on the Vines may be, will certainly call into action latent buds at a much later period of the season than if the sap had been urged towards them in consequence of an early winter pruning.‖

RIGHTS: *Llw.* It is said that if all men had their rights every man would be a king. Do not be foolish, but make up so trumpery a quarrel. You will gain much more valuable information by studying the New Testament than by perplexing yourself with "Every Man his own Lawyer."

ROSES: *W X W.* Next week.

RUSSIAN HOUSES: *Jean Baptiste.* In the Garden of St. Petersburgh heat is obtained from steam, conveyed in pipes, and from stoves. The roofs in winter are of double sashes; and we believe that additional external covering is employed at the time of greatest severity. Wood is what they burn. You certainly may do as well in Canada, on the banks of the Richelieu, even although your very long winters nearly equal those of Russia in severity; although last winter, for three weeks, the thermometer never stood above —10° Fahr.; and although at the moment you are writing the ground is covered with snow, and your rivers are your high roads.

SCALE ON PEACH TREES: *E C T.* Wait till the fruit has been gathered, and the leaves have fallen; and then thoroughly clean your trees with hot water of the temperature of 160°.‡

THE TREE ROSE: *W D.* At the request of numerous subscribers the price of this work is now reduced from 4*s.* 6*d.* to 3*s.* 6*d.*, post free; it can be forwarded to any address by a Post-office order being sent to James Matthews, at the Office of this Paper.

TULIPS: —— Next week.

VERANDAHS: *W B.* Tropæolum canariense. ‡

WORMS: *W P R.* We know of nothing better than lime water for dislodging worms in pots or on lawns. ‡

ZAUSCHNERIA CALIFORNICA: *G F.* Sow your seed now in pans, and place them in a gentle hot-bed. When the plants are up gradually harden them off. It is quite hardy, and makes a good bedding plant. Colour, deep orange red. ‡

SEEDLING FLOWERS.

CALCEOLARIAS: *F P.* Quite withered up; but apparently good for nothing.*

CAMELLIA: *J T—s.* Very small and worthless.*

CINERARIAS: *L V.* Apparently a pretty variety, but too much shrivelled up to enable us to say whether it is better than Cerito or not. The colours appear to be brighter than those of Cerito. Can you send another bloom?*—*W F* and *J P.* All inferior to kinds already in cultivation.*—*W A A.* Bright in colours; but too starry, and otherwise faulty.*

PANSIES: (Name lost.) Too much withered for us to venture an opinion concerning their merits. Send them again.*

PETUNIAS: *J M B.* White, very large; but coarse and worthless, except as a border flower.*

ERRATA: One or two errors have crept into the article headed "Artistic Arrangement of Plants in Glass houses," at page 229. Where the stream is spoken of as being divided "virtually" read "vertically," and three lines farther, upon the same column, for "fallen" read "falling."

CORN MANURE FOR WHEAT, BARLEY, OATS, BEANS, &c., &c.

THE LONDON MANURE COMPANY most confidently recommend the above, as they are daily receiving very satisfactory accounts from parties who used it with great success last season. It will be found fully equal to and much cheaper than Peruvian Guano, and is not so liable to produce so large a growth of straw. Price Seven Guineas per ton, 3 cwt. per acre. They also beg to offer their Concentrated Urate, Superphosphate Lime, Nitrate of Soda, Sulphate and Phosphate of Ammonia, Fishery and other Salt, Gypsum. Sulphuric Acid, and genuine Peruvian Guano. To insure this free from adulteration, all purchasers can receive it direct from the Warehouses of the Importer.

Bridge-street, Blackfriars. EDWARD PURSER, Secretary.
Country Dealers and Agents supplied.

POTTER'S GUANO. — This effective MANURE, now greatly Improved, is confidently recommended as a Dressing for all Spring Crops. It is equal to Peruvian Guano, and 25 per cent. cheaper. Also SUPERPHOSPHATE of LIME, GYPSUM, and SULPHATE of AMMONIA, all of guaranteed quality, and Cheaper than at any other establishment in town or country.

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MANURES.—The following Manures are manufactured at Mr. LAWES'S Factory, Deptford Creek:

Corn and Grass Manure, per ton	£10	0	0
Clover Manure, do.	11	0	0
Turnip Manure, do.	7	0	0
Superphosphate of Lime	7	0	0
Sulphuric Acid and Coprolites	5	0	0

Office, 69, King William-street, City, London.

N.B. Peruvian Guano, guaranteed to contain 16 per cent. of Ammonia, 9*l.* 15*s.* per ton; and for 5 tons or more, 9*l.* 10*s.* per ton, in dock. Sulphate of Ammonia, &c.

LAWES'S PATENT MANURE.

WILLIAM E. RENDLE AND CO., Plymouth, are Mr. Lawes's Wholesale Agents for the Sale of his MANURES, and can supply them at Mr. Lawes's prices, delivered at his Factory, Deptford Creek.—Apply to WILLIAM E. RENDLE and Co., Union-road, Plymouth.

GUANO AND OTHER MANURES.—Superphosphate of Lime (See reports of experiments in Royal Agricultural Society's Journal, Vol. 6, Part 2), Guano, Peruvian and Patagonian, Gypsum, Salt, Nitrate of Soda, and all other Manures of known value on sale. A Pamphlet on the above forwarded on receipt of four postage stamps.—Apply to MARK FOTHERGILL, 201A, Upper Thames-street, London.

PERUVIAN GUANO.—As Agents of the Peruvian Government for the importation and sale of this valuable MANURE, we think it right, for the protection of consumers and respectable dealers, to apprise them that the adulteration of the article is still extensively practised, and to recommend them to apply either to ourselves, to our agents, Messrs. GIBBS, BRIGHT, and Co., of Liverpool and Bristol, or to dealers of established character, in whose honesty and fair dealing they can place implicit confidence. ANTONY GIBBS and SONS,

London, April 20.

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Superphosphate of Lime, Gypsum, Sulphate of Ammonia, Sulphate, and Nitrate of Soda.

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W. HILL begs respectfully to announce that his improved "FLUE BOILER" may now be had in sizes to suit every description of Apparatus, from that of 100 feet to 2000 feet of 4-inch pipe. Improved STEAM BOILERS, from one-horse power and upwards, adapted either for stationary or portable engines, and guaranteed to be most effective.

Every description of Horticultural Building constructed upon the best principle. Buildings of any kind heated by hot water.

*** A liberal Discount to the Trade.

W. HILL, Horticultural Works, Greenwich.

BY HER MAJESTY'S ROYAL LETTERS PATENT.

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S. and Co. beg to inform the Trade that at their Manufactory, 17, New Park-street, every article required for the construction of Horticultural Buildings, as well as for heating them, may be obtained upon the most advantageous terms.

Conservatories, &c., of Iron or Wood, erected upon the most ornamental designs. Balconies, Palisading, Field and Garden Fences, Wire-work, &c.

HYDRAULIC ENGINES, WATER RAMS, &c., on Improved Principles; Engines worked by Steam or Hydraulic power, to raise from 1 gallon to 1000 per minute to a height of 500 feet, and from a depth of 900 feet. Douche, Vapour, Hot-air, and all other kinds of Baths. Buildings, Conservatories, &c., heated by Steam, Air, or Water. Boring, Sinking, and Collecting of Water, &c. Towns supplied.

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Mr. NESBIT'S works on Arithmetic, Mensuration, Gauging, Land Surveying, English Parsing, &c., are published by LONGMAN and Co., and may be had of all Booksellers.

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1st. It is a non-conductor.

2d. It is portable, being packed in rolls, and not liable to damage in carriage.

3d. It effects a saving of half the timber usually required.

4th. It can be easily applied by any unpractised person.

5th. From its lightness, weighing only about 42 lbs. to the square of 100 feet, the cost of carriage is small.

Price One Penny per Square Foot.

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Samples, testimonials, and full instructions, on application to CROGGON and Co., 2, Dowgate-hill, London.

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JAMES LYNE HANCOCK, Sole Licensee and Manufacturer of the PATENT VULCANISED INDIA-RUBBER PIPES and TUBING. These Pipes are well adapted for watering Gardens, conveying Liquid Manure, for Breweries, Gas Fittings, Chemical and all purposes where a perfectly sound WATERPROOF and FLEXIBLE PIPE is required. Hot Liquors or Acids do not injure them. No oil or dressing is required in using them. They do not leak from remaining out of use, are permanently flexible in all temperatures, and are therefore particularly suitable for Fire-Engines; and from their not leaking, are found exceedingly useful in conveying hot or cold water to baths in dwelling houses and such like purposes. Being extremely portable, stowing closely without danger of injury, resisting the influence of climate, insects, and vermin, frequently so injurious to such articles on board ship, and retaining their virtues though long out of use, render them particularly adapted for exportation.

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The best selected varieties, mixed in proper proportions of such kinds as possess the most desirable qualities suited for PERMANENT PASTURES, and adapted to different descriptions of soils, per acre ... ... 24*s.* 0*d.*

Fine mixed dwarf varieties for lawns, per lb.	1	3	
Ditto, per peck	5	0	
RYE GRASS, True Italian ... per bushel	6	6	
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TURNIP—Skirving's Liverpool Swede, p. bu., 28*s.*, p. qt.	1	0	
,, Laing's Improved Swede, per bu., 36*s.*, p. qt.	1	3	
,, Purple-top Swede, per bush., 28*s.* per qt.	1	0	
,, Skirving's Improved Purple-top Scotch ,, ...	1	3	
,, Norfolk White, Green, and Red Rounds ,, ...	0	9	
,, Dale's Hybrid ... ... ,, ...	1	3	
,, White and Red Tankards ... ,, ...	1	0	
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LUCERNE ... ... per lb.	0	10	
CARROT—Large White Belgian ... ... ,, ...	0	8	
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MANGOLD WURZEL—Yellow Globe ... ,, ...	0	6	
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,, ,, Long Red ... ,, ...	0	6	
,, ,, Long Yellow ... ,, ...	0	9	

Best English Red and White Clovers, Trefoil, and all other Agricultural Seeds of the best stocks at the lowest market prices. PRICED CATALOGUES of AGRICULTURAL SEEDS sent prepaid on application; also prices to the trade.

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N.B. Chaff-cutting and Oat-bruising Machinery by horse-power. Old Machines repaired.

HOW TO KEEP A HORSE FOR LESS THAN ONE SHILLING PER DAY!! and make the Animal look better than he now does when you are paying not less than 12*s.* to 13*s.* per week. Consider the enormous saving in these hard times—times of cheapness!!

DO YOU BRUISE THE OATS YOU GIVE YOUR HORSES? No. Then you lose one bushel out of every three, and your Cattle do not do half so well.—MARY WEDLAKE AND CO.'S OAT BRUISING MILLS. Superior Chaff Engine, simple in construction, doing from 50 to 500 bushels daily and more. Nearly all respectable Coachmasters and Brewers in London use these implements. To be seen at 118, Fenchurch-street, opposite Mark-lane, close to the Blackwall Railway.

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PASSENGERS to the COLONIES generally may obtain their OUTFITS from S. W. SILVER and CO., CLOTHIERS, &c., 66 and 67, CORNHILL, at wholesale prices. SILVER and CO. make nearly the whole of the articles comprised in an outfit, to secure durability, so that the Cabin Folding Furniture may become permanent Household Furniture on arrival in the colony.

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A Branch of each at ST. GEORGE'S-CRESCENT, LIVERPOOL.

The Agricultural Gazette.

SATURDAY, APRIL 20, 1850.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

WEDNESDAY,	April 24	Agricultural Society of England.
THURSDAY,	—	25—Agricultural Imp. Society of Ireland.
WEDNESDAY,	May 1	Agricultural Society of England.
THURSDAY,	—	2—Agricultural Imp. Society of Ireland.

WE desire the attention of those of our readers who are interested in the breeding of stock to the advertisement of the Highland Society, announcing that the period of entry for the sweepstakes for Short-horn Bulls, to be shown at Glasgow on the 31st July and 1st and 2d August, is extended till June 1st. The entry is open to England and Ireland, and to animals which have already carried the Society's first premium.

THE mode of paying WAGES IN KIND has so many advantages—to the labourer in dear seasons, and to the farmer when low prices prevail—that we think it may not be uninteresting to our readers to specify in detail the nature of the custom in one of the localities in which it prevails. The following statements refer more particularly to the present wages of ploughmen in the parish of Kilmany, but they are also generally applicable to the greater portion of Fifeshire. Ploughmen are invariably hired for a year from Martinmas to Martinmas. Married men generally stay many years with the same master wherever there is anything like mutual satisfaction. There are numerous instances of foremen spending their whole married life-time in the service of one master, who, if he has it in his power, seldom permits long and faithful services to go unrewarded, or to allow such individuals to come to want in their declining years. Young, unmarried ploughmen seldom remain longer than one year in the same place, arising, no doubt, from the natural restlessness of youth, and a very laudable desire to see other modes of conducting farm-work:

Wages of Married Foremen per annum.

Money	£12	0	0
65 stones (14 lbs.) of Oatmeal, at 1*s.* 2½*d.* per stone	3	18	6½
1200 yds. of Potato ground, at 3*s.* per 100 yds.	1	16	0
House and garden	2	10	0
Cow and keep	9	0	0
Allowance of bread and beer in hay-time and harvest	0	10	0
Total	£29	14	6½

Or 11*s.* 5*d.* per week.

Wages of Married Ploughmen (common workmen).

Money	£10	10	0
65 stones of Oatmeal, at 1*s.* 2½*d.* per stone	3	18	6½
182 gallons of new milk, at 6*d.* per gallon *	4	11	0
1200 yds. of Potato ground, at 3*s.* per 100 yds.	1	16	0
House and garden	2	10	0
Allowance in hay-time and harvest ...	0	10	0
Total	£23	15	6½

Or 9*s.* 1¾*d.* per week.

Wages of Unmarried Ploughmen.

Money	£12	0	0
Oatmeal (same as above)	3	18	6½
Milk	4	11	0
Allowance in hay-time and harvest ...	0	10	0
Lodging, including bed-clothes, cooking, utensils, coals, &c.	1	5	0
Total	£22	4	6½

Or 8*s.* 6½*d.* per week.

The money wages are not legally due until the expiry of the engagement, but it is a common custom

* Some farmers give only the old Scotch pint, equal to 12 gills nearly, as the daily allowance for each ploughman. The annual quantity would, in these cases, only amount to 136 galls.

for the master to pay a part at an earlier period if required by the servant. The oatmeal is delivered every two or three months in such quantity as best suits the conveniency of both parties. The milk is given daily and always new from the cow. In winter when there happens to be a great scarcity of this article, the ploughmen receive money in lieu thereof. The Potato ground is manured by the farmer, and also receives such horse-labour as may be necessary, while the ploughman furnishes seed and hand-labour. The produce of Potatoes from 1200 yards is generally about three cart-loads, or somewhere about 45 cwts., and when the crop is sound there is a surplus to assist in feeding a pig. Before the Potato disease appeared the custom was to give married ploughmen three cart-loads of Potatoes yearly instead of Potato ground, but for several years back the sometimes total destruction of the crop rendered it impossible for the farmer to fulfil his bargain.

The question of reducing the wages of farm servants has been agitated in some counties of England, but in Scotland no outward attempt has as yet been made to supplement low prices by encroaching on the hard-earned pittance of the agricultural labourer. Any relief to the farmer from this source must then be small indeed. Upon a farm of 240 acres, where four or five ploughmen may be employed, any reduction of wages could scarcely exceed 8*l.* or 10*l.* per annum; and this, though an insignificant sum to the master, would be seriously felt by the servants. The wages mentioned in the foregoing statements have varied little, for many years back, in the districts to which they refer—the only difference being that before the repeal of the Corn-laws the item of oatmeal was of greater money value than it is now; but this is of little consequence to the labourer who consumes the whole quantity bargained, and thus it matters little to him whether the food thus consumed be high or low priced.

The Scotch mode of paying wages partly in "kind" has sometimes, but erroneously, been compared to the "truck system" pursued covertly by some manufacturers, but it has no resemblance to it, inasmuch as the bargain is made with the perfect knowledge and consent of the workman *before* he enters his situation, who finds it more convenient and sure to have a certain amount of food guaranteed to him, so that he may be in some measure independent of the fluctuation of prices. The Scotch ploughman is altogether in a different position from his English neighbour. He lives in a house on the farm, supplied and upheld to him by his employer, whereas the other is often located in a village where money can be readily converted into such necessaries and non-necessaries of life as may be required. The Fifeshire system of paying wages, partly in farm produce, is one simply of conveniency to the ploughman, who prefers to have the staple articles of his daily diet, meal and milk, given to him without trouble or expense. Unmarried men seldom use all the meal they receive, and they generally dispose of the surplus to married ploughmen with large families, whose allowance is seldom sufficient to supply them with oatmeal throughout the year. In the *dear* year of 1847 married ploughmen, whose annual allowance of oatmeal was insufficient for their wants, were very poorly off, in consequence of the high price they had to pay for what they bought in. The unmarried men, on the contrary, were much better off than usual, as they got a high price for their surplus oatmeal. The agricultural labourer, in the district referred to, has generally suffered most when corn was high priced; and as, then, he did not receive any augmentation of wages, it would hardly be fair to darken his present gleam of sunshine by lowering his wages, to increase, by the few pounds thus obtainable, the sum total on the Credit side of the ledger. *H.*

PROFITS OF CATTLE FEEDING.

In an editorial article, Feb. 23d, you ask your readers to give their experience on this subject, I accept your proposal. It is right that you Englishmen should know why we Irishmen are discontented; why our lands are untilled and depopulated; why the estates of our gentry are being sold for 8½ years' purchase of the rental of 1845; and why our nobles are exchanging incomes with their agents, and thankfully accepting of 6*d.* in the pound out of the rents of their principalities, leaving the agents to scramble between the tenants and the creditors for the remaining 19*s.* 6*d.* as well as they can.

In the article alluded to, you state that your model cattle feeder sold his five Hereford oxen at 50*s.* per cwt., thereby making 85*l.*, or 17*l.* per head. On this the whole question turns: for suppose they had been sold at 13*l.* per head (and in the best market in Ireland, even that price could not now be obtained for animals weighing 6¾ cwt. each), there would then be left, not 20*l.* 5*s.*, but barely 5*s.* to pay for "the Swedes and Mangold Wurzel that five oxen ate, and for attendance, fuel, and other expenses during 15 weeks;" a profit very similar to what we are now receiving in Ireland. An Irish cattle feeder could no more obtain 50*s.* a cwt. for his fatted beast, than he could get 8*s.* per bushel for his Wheat. The present actual prices are not more than half those, and the poor farmer is robbed and plundered in every market, whether of grain or meat. If you doubt the assertion, take my experience during the present season in proof.

In the first week of October last, I tied up 16 beasts to fatten; they consisted of six heifers that I had bought two years previously for 18*l.*; a bull 4½ years old, for which I paid 9*l.* two years ago; and nine cows that had been in the dairy, which I wished to replace by young stock. Their food was excellent Swedes, and good oaten straw, regularly supplied; the cattle well littered and curry-combed every day. Having ascertained pretty nearly the weights of the cattle, both by measurement and by the opinions of competent judges, about a fortnight since I sent four of the heifers to Cork market, giving instructions to my man as to the lowest price he was to take for each, which was at the rate of about 32*s.* 6*d.* per cwt. But he sold none, and brought them all home again. I then suspected that there might be some error in the estimated weight, and to make sure, I caused the smallest of the heifers (estimated at 4 cwt., and for which 5*l.* 5*s.* had been the highest offer), to be killed for my own use. When cut up, I placed a hind quarter in the scales, and found it to weigh 113 lbs.; so that the butcher would have had my meat at 26*s.* per cwt., besides fat, hide, head, insides, &c. While my beef was being salted, word was brought to me that a person from Cork was looking at the cattle. I offered the lot to him for 100*l.*—my poverty and not my will consenting, for my supply of food was running short, and the poor-rate collector was urgent and clamorous in his demand for 118*l.* due on my three farms, containing about 400 acres; and the upshot was that I took 90*l.* cash down for the 15 beasts, which the buyer himself admitted would produce at least 75 cwt. of marketable beef. Now, can you or your English readers calculate my profit (for I perceive nothing but loss), to pay for 19 weeks' attendance, and for 10 acres of Swedes set apart for these cattle, the whole of which was either consumed or stolen. In truth, I believe one-third of the crop disappeared in the latter way. I admit, indeed, that I have a pretty heap of excellent manure; but if the straw consumed had been sold, the price of it would have purchased guano to three times the value of the dung. May I not, then, ask in conclusion, what Irish farmer can afford at these rates to grow Turnips or Wheat? Would it not be better to run the chance of even black Potatoes? *C. C. Barretts, Cork, Feb.* 28.

ON INCREASING THE SUPPLY OF MEAT.

In the kingdom of Great Britain, where the use of animal food enters so very largely into the list of articles of general consumption, the augmentation of the supply of that special commodity, in order to meet the demands of the rapidly increasing population, and also to extend the use of it among the lower orders of society, becomes a point of importance that is not exceeded in the value of the consideration by any national object in the whole circle of social and political economy. Food is the essential element of life, and being composed of different articles the value of which stands in a relative position to each other, the attention must be directed to the providing of them, in the ratio which the commercial interchange has established. Bread and beef are known to form the food of the strongest quality; labour is supported by these articles much longer than by vegetable productions, and the bodily vigour that is necessary to intellectual energy must be raised and upheld by the same means. The value of these articles has been raised to the top of the highest scale by the superior quality, and that value has placed them too far beyond the reach of the poorer population. Fluctuations occur of high and low prices, for which no cause can be seen, nor can any preventive be applied; all commercial uses are exposed to it, and the occurrence in the end is not deemed hurtful. But the quantity must be steadily increased in proportion to the uniform rise in the population; demand necessarily calls for a supply, and incites the finding of the means of production. These means are advanced along with the other improvements that are effected in the cultivation of the soil, which is the source and fountain of all organised existence. As the quadruped part of the animated world is wholly dependent on the earth for its support, both in quantity and quality, the primary attention must be directed to the cultivation of the land, in order that it may produce the greatest possible amount of the necessary articles. The performance of this most essential requisite becomes a duty and an inquiry of the very last importance.

It is now admitted as an indisputable fact that green crops form the basis of improved agriculture, both for production of corn and cattle. On whatever soils green crops can be got, other crops will invariably follow. Notwithstanding these most undeniable maxims in agriculture, an unfortunate prejudice yet exists against the use of the crops, on account of requiring much labour and manure, and an undue degree of attention. A very strong predilection for Grass lands is still entertained, arising from the latent barbarism of the mind, which adopts and adheres to the customs and practices which chance and accident have placed in use. Grass lands of the very best quality will yield a quantity of human food as large as if the land was under an arable culture; but the case is wholly different on the inferior soils, which produce few Grasses, and mostly weeds. Where such soils are wet, close draining will wholly remove the evil, and adapt them for the green crop cultivation; and for this purpose a most convenient accommodation is now afforded by the Government loans of money at 6½ per cent.

The conversion of all lands of this description from the present unproductive state into the alternate system of cropping and grazing, may be very justly placed as the first step towards the augmentation of corn and beef, which are always considered to be the staff of life. Inferior articles of food can only support animals of an inferior description, and also fewer in number than when the land is used in the production of the best known articles of nutriment. Green crop plants are now known that can be raised on all soils except the very stiffest clays, an advantage which very much encourages the arable culture of every possible kind of land. Without this well known employment of the soil, the conversion of it to aration might be more justifiably refused. The retention of lands under such disadvantages arises wholly from prejudice.

The introduction of green crops forms the most valuable revolution that ever has happened in the art of agriculture, and one of the most extraordinary events that are recorded in the annals of the progress of human improvements. The practice of cultivation has been completely revolutionised—better animals have been produced, and the supply of every kind of food has been most amazingly increased. It is a rigid law in the alterations of animal organisation, that the more the parts of it are refined, the quality of the food must be correspondingly raised; and consequently the arable culture of the land must advance with, or rather precede the improvements in the animal kingdom. The foundation must be laid on which to build the superstructure, and the durability of it must be continued, to support the constantly increasing quantity of the operations. Experience has shown that the dry food of hays and straws does not nourish and invigorate animals in any just comparison with roots; the juices are wanting, and the useful saliva that is engendered by the mastication of the esculent materials. The manure is also very inferior from culmiferous food, and becomes very much increased in value when mixed with the urine and the fæces that come from the use of rooted vegetables. This property forms one of the chief recommendations of the use of esculents.

The fattening of animals never reached any degree of perfection till the roots of Turnips and Potatoes were cultivated in a quantity to show the general advantages. The growth of the animal was slow, and the quality of the flesh was tough and meagre, and wholly wanting in the flavour and elasticity that are now procured. The number of the animals was also very deficient. The improvements that have been effected, and are now permanently established in the organisation of the animals of the farm, could not have been supported without a corresponding refinement in the nutrition afforded; both quantity and quality become requisite to uphold and maintain an enlarged and improved carcase.

The earth being the basis on which every human effort is exerted, the first attention must be directed to the condition of its capability of production, and to the means that are required for the development of its resources. The just appropriation of its uses, according to the best modern knowledge of cultivation, is the most important enquiry, in order that the quantity may be increased both of animal and vegetable food. After the breaking up of the inferior Grass lands that have been mentioned, the main object of attention must be to fit them for the production of green crops, by draining where necessary, and by paring and burning where much foggage covers the surface. As has been before mentioned, wherever green crops are got other crops will follow, and consequently more cattle can be kept, and the animals of a better quality.

Next to the conversion of the inferior Grass lands into the arable state, the better cultivation of the lands that are and have been under tillage, may be placed as an infallible mode of increasing the supply of the necessaries of life. On a very large part of these lands sufficient capital and labour are not expended, injudicious cropping is practised, and over the breadth of the kingdom the returns of crops fails by more than one-third of the easily available produce. Draining is mostly everywhere wanted, and the facility which is now offered in the loans of money by Government for that purpose is not extensively accepted. Green crops are not used to the full extent even in the fittest localities; prejudices remain to be overcome after an experience of the inestimable benefits of more than three-fourths of a century. The produce of every kind is thus curtailed; the animals of use are lessened in number and reduced in quality, and the prices of value are unnecessarily enhanced. Every enlightened observer never fails to record the universal prevalence of hurtful prejudices, antiquated customs, and bigoted practice, which most effectually retard the progress of improvements, and limit the supply of food. In order to bring about the most desirable result of the most enlightened practice, the minds of the operators must be first enlightened by education, which will enable them to see the object in prospect, and then to find the means necessary to effect the attainment. Liberality of mind is essential to the introduction of improvements, and it can only be obtained by the expansion of the intellectual faculties that arise from a varied and comprehensive learning. This enlightenment of the mind bears in the first place on

the cultivation of the earth, and is next applied to the use of the better implements of every kind, dead, animal and vegetable. The first improvement is required in the agent of operation—it must perform the first and the most necessary part, and provide for the gradual and regular progression of the connected chain of the improvements. Without this fundamental requisite, no lasting benefit will be derived, the parts will not be duly apportioned, and the necessary mutual support will not be afforded.

The "radical" improvement must begin in the enlightenment of the minds of the cultivators, in order to introduce the known practices of the greatest value, which will at least double the quantity of the produce of land of every kind, and the number of cattle among the other articles. In order to rear animals to the useful maturity, green crops must form the foundation of the system of proceeding; by these crops, the animals are quickly pushed into value, the manure that is made on the farm is greatly increased both in quantity and quality, and by that means and by the working of the land for the growth of the esculent roots, the production of the future culmiferous and leguminous crops amounts to an absolute certainty. The greater the number of cattle the greater will be the produce of grain. The want of green crops limits the number of cattle, and the existing quantity is reared in an imperfect and profitless manner. *J. D.*

(To be continued.)

Home Correspondence.

Relations between Landlord and Tenant.—There are few subjects of more general interest at the present moment than the relation between tenant and landlord; they are so mixed up together that it is almost impossible one can suffer without bringing distress and inconvenience upon the other. It is not a question of the greatest amount of rent to be paid by the farmer, or how cheap he can obtain his land, but what is the fair value of his holding, as between man and man, honestly and fairly. The landlord, on the one hand, not wishing to receive more than is just, and the tenant, on the other hand, not exaggerating the depreciation of produce. These are matters of no difficult management where the parties concerned have confidence in each other. The complaint of distress amongst all classes may be accounted for, in some measure, by individuals, during the period of high prices, living up to, and even beyond their incomes, and having nothing to fall back upon to meet the sudden change in the market. Those men who have saved money when their profits were large will now be able, by judicious management, to weather the storm, and right themselves in the course of a couple of years; on the contrary, those who never had capital to commence with, and were careless when they had opportunities of adding to the stock purse, will suffer severely, if they are not obliged to resign their farms into the hands of a new race, who will enter the field prepared to invest their cash in the land, in the same manner that a shopkeeper would in trading in soap and candles, &c. I have heard it stated in conversation that many farmers have declared that they will take care of themselves, if left in possession of their holdings for two years more; after which time the landlords may do what they please with the soil; implying that the land will be exhausted by over-cropping, to remunerate them for losses. I merely repeat what has been said, without vouching for the truth of the rumour; neither do I believe the great majority of tenants would act so madly, for their own interests; as a temporary advantage of a very questionable nature would be attended with most disastrous consequences to the landed interest and all persons attached to it, from the highest to the lowest. There is nothing more destructive to farming than full cropping without efficient dressing; and to exhaust the soil amounts to insanity, as the mischief which may be perpetrated in two years would not, probably, be repaired in half a dozen or more. Wheat cannot be much lower than it is, and farmers have arrived at a point from which they will probably advance. Food having fallen in price, everything should in proportion be reduced, which, if it was the case, we should be in much the same position as if protection was still the law of the land. Now suppose that the agricultural body were to encourage those who sold the commodities they required at a fair remunerating rate, compared with the alteration of other prices, at the same time entering into engagements with their landlords to either value their farms at a corn rent or reduce them to the standard of those who do so. There can be no question where very large fortunes are made by a few, there is much more distress existing in the country than where there are many who share in moderate profits. Let any intelligent person travel through the rural districts, who understands the difference between land well tilled, and that which is undrained and badly cultivated, and he will find a vast extent of acreage in a most primitive state, wasting its strength in the production of weeds. On inquiring the reason of such neglect, the answer will probably be, prices are so low it does not pay to spend money on the land; then surely it cannot remunerate the farmer allowing it to remain idle, having his rent to make up. I never could yet understand why land under garden management can return a profit at a rent of 4*l.* per acre, where the same description of soil under the plough is thought dear at 2*l.* per acre, and yet not 200 yards apart—similar grain and roots being sown on each. To elucidate this apparent mystery, we must conclude the man with the small holding has a capital sufficient to do his ground justice, whilst the other is over-burthened with more land than he can manage, with the funds at his command; therefore are high prices blamed because they compel exertion. In days gone by, high prices smoothed the agricultural path, and permitted the easy going tenant to rest in security; guaranteeing half a crop as enough to live upon. Now matters have assumed a different aspect, and every inch of soil must bear its fair proportion towards the maintenance of the million, or they will of necessity call in to their aid foreign grain. What has enabled the manufacturers to keep the home market to themselves and drive competitors from the field? The use of means to multiply production, such as gold and machinery, and it is only by the free use of these, added to untiring energy, that they have attained their proud position. Farmers will have to adopt much the same system, and follow so good an example. It seems rather a reflection upon England to hear it said, that foreigners can beat us in farming; it cannot be because labour is cheaper, when good workmen may be hired in the rural districts at 8*s.* per week. It cannot be because money is scarce, when any amount may be borrowed on real security at 4 per cent. It cannot be that Britons are less hardy, and more afraid of toil than those of other nations; her soldiers and sailors are evidence against such a supposition. It cannot be that the islanders are more ignorant than their neighbours, when they are generally said to have a large share of common sense. Then what is it that throws a damp over the agriculturist's spirits? All trades must advance with the age, if they expect to prosper, and farming must not be left out of the list. Land will always be a fair investment for spare cash. *Falcon.*

Farming to a Profit.—Every one will readily admit that a great improvement has taken place within the last 20 years in agricultural science; but there has often arisen a question in our mind whether a corresponding improvement has taken place in agriculture considered as a profitable trade. Farming is now becoming rather a fashionable employment; many of our aristocrats are spending their thousands in having their farms properly drained and subsoiled throughout; and very well it is for those who have plenty to spend. But is it right for those of the middle class of society to embark their whole capital in a trade, unless it can be shown that there is a certainty of a profitable remuneration. I have been struck lately in travelling through one of the southern counties with the very great differences in the modern system of farming. After passing for miles through agricultural districts in the older style of farming—small fields, innumerable hedges, glimpses of sloppy farm-yards, or of a team of horses (six horses, a man and two boys leading them), we have certainly felt relieved upon suddenly coming to an open space of perhaps 300 acres without a tree upon it all, evidently under the highest state of cultivation; ploughs hard at work (two horses and one man), and, on nearer investigation, we could discover the cattle all box-fed, and everything in first-rate style. If we were to go to the former of these farms, and ask to see his accounts, he would stare, or probably laugh and say "he did not know how to write, and therefore could keep none." Our contempt of him would then be at its height; and our esteem of the other would be heightened in the same proportion when, in reply to a similar question, he would produce half a dozen large volumes; tell us to a penny the amount of food each ox had eaten—to an inch the length of land each horse had trod, and to a shilling the money that had passed through his hands. But let us go to the bankers, and see how much remains in the said gentleman's hand, and how much in the old farmer's whom we so despise, and we shall find that as far as money is an object the latter is the best farm. Though praise and admiration are very well in their way, they are not very satisfying things to live on; and we certainly would advise those farmers who have wives and children depending upon them, to think rather less about the *appearance* of their cattle and fields, and look to stricter economy in the more important items of labour, seed, and manure. *L. H. P.*

Threshing Machines.—I should have regretted the accidental error that crept in my last communication if it had not brought forth the ability of your correspondent "Lusor." It is to be hoped he will continue to give his information, as there are few objects of more importance to the farmer than a speedy and an easy threshing machine. I should be much obliged for his or any of our readers' opinion, as I am about altering mine. "Lusor" states that the rollers probably take off one-sixth of the power, but I should say nearer one-half than one-third, when it is taken into consideration the length of time a sheaf is under operation, and that the rollers have, in Scotch machines like mine, the greatest part of the weight of a heavy close concave, which is raised with the top one when taking too much feed. If I discard them and feed near the summit of the drum, as "Lusor" recommends, I am at a loss how that should be done without reversing the motion of the drum and taking away the revolving rake, for my machine has the mouth of the rollers, the axis of the drum, and the axis of the revolving rake, all in a line; in which case, to be out of their way, the feeder would be placed inconveniently high. Would he propose the old drum and a new hollow concave, or would he, as there will be required a counter-shaft to reverse the motion, prefer both new, and about the size they are generally made? The engine could be reversed, but the other machinery attached will not permit it. Whose principle of drum and concave would he prefer? The barn work of Mr. Wood's machine offered the least resistance to the dynamometer at Norwich. Does "Lusor" know the principle, and will he give that knowledge to your readers; and is he acquainted with the form and manner of working of Messrs. Garrett's prize machine? and give that as well. One of your subscribers wishes to know the "best mode of applying steam-power." To make the most of the fuel it will require a double cylinder engine, the small cylinder to work with high pressure steam, the large one to be worked with the steam when having done its duty in the small one, and when used in the large one, then to be condensed, to have a fixed tubular boiler, large in comparison, to expose a great surface to the flame and heated air, to make the most of the fuel; to have a high chimney, to get a powerful draught; and a self-regulating damper, to regulate that draught, or it will cause a great loss of fuel, but as the first cost of such an engine will be great, and as skill to manage such an engine will be very expensive, I should say that a high pressure engine will be had for a much less cost, and as any sharp man will be able to manage it, one of that description will be most suitable for farmers generally; but it should be made with its ports and passages so large as not to be less than an eighth of the area of the piston, which should be a correct metallic one; the length of the stroke should not be more than twice the diameter of the cylinder, the piston to travel not less than 200 feet per minute, to be assisted by a good fly-wheel, and the steam to be cut off at one-third of the stroke. This can be done by a very plain movement, described in the "Artizan" for last March, but it will require it to be divested of the apparatus adopted for locomotive engines, to enable the engineer to cut off the steam at any point whilst the engine is running. The boiler should have not less than one foot of space exposed to the flame and heated air for every square inch of area on the piston, and for every 10 feet of heated surface not less than 1 foot of grate. The boiler that will take the least trouble is a long cylindrical one, no larger in diameter than will just admit a person to clean it, and then it will be longer and take more of the heat from the fire. What is most against this sort is, that it takes so long a time to boil; this may be obviated by having the diameter larger, the length shorter, and a flue about 14 or 15 inches through it. This boiler will hold much less water to boil, and consequently take less time to get up steam, which will be both saving of fuel and time. The boilers of steam-engines require our utmost care to discern those of the best principle, for in the "Patent Journal," in the monthly part for last December, the editor, in an article on "Furnaces and fire places," states, "that in them generally the waste of heat is so great that from three-fourths to four-fifths of the fuel is unnecessarily expended," and in a calculation he shows that, in an engine chimney which evolved 19,000 cubic feet in a minute, there was as much heat lost as would supply an engine of 200 horse power, as he frequently found the heat of the air at the base of the chimney from 700° to 800° Fahrenheit, almost four times the temperature of boiling water. What would be a better subject for a prize essay by our Royal Agricultural Society than one to be adopted by farmers of this waste heat, and the heat from the waste steam of high pressure engines? One way of employing the heat of the fire after leaving the boiler would be to let it go under and round a sheet iron vessel, which could be used as a kiln for drying grain or other articles, and the waste steam could be used for cooking food for cattle, or for steaming bones, which, after a few hours subjection to that heat would very easily be broken with a wooden mallet; but, in either case, the ready exit for the steam must be provided, or the power of the engine would be greatly diminished. *Richard Nicklin, Isle of Man.*

Societies.

ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

Professor Way, Consulting-Chemist to the Society, delivered a lecture on the Chemical Principles of Cheese and Butter-making, before the members of the Society, at their house in Hanover-square, on Wednesday last, the 17th of April; the Earl of Ducie, Vice-President, in the chair.

Lecture on the Chemical Principles of Butter and Cheese-making.—Mr. Way commenced his lecture by stating that on two different previous occasions he had had the pleasure of bringing before the Society subjects upon which he had been personally engaged, and to which, he hoped, his investigations had brought some additional knowledge. The lectures he alluded to were those on guano, and on the absorptive powers of soils. But it was not in the nature of things, however desirable it might be, that he should be able to bring before them on each occasion some subject new to the agricultural world. In the present lecture he should merely embody in a condensed form that information which his hearers could, if they sought it, find equally well, or better given, in books. There was, however, good reason to believe, that truths, when orally enunciated, possessed ten times more penetrative power (if he might so say) than any power of written language could infuse into them. To this circumstance, and to the obvious importance of recalling to our minds from time to time the great principles involved in the practice of agriculture, he must trust for the success of the present lecture. He must be excused for once more remarking, that a fundamental part of the plan of these monthly lectures was, in his mind, the opportunity for

subsequent remarks by the members present, and he hoped they would freely offer such observations as might occur to them. They lecturer went on to say, that to understand the circumstances affecting cheese and butter, they must first of all examine the composition of milk. The popular knowledge of milk was that it consisted of butter, cheese, and whey,—at least these were the three parts into which it was usually seen to be capable of separation; but this division of the ingredients of milk left out of the question a substance of whose existance in milk many people were entirely ignorant, but to which, in a philosophical point of view, the greatest amount of attention was due—he meant the sugar of milk. In a chemical point of view, milk consisted of five parts, butter, curd, milk sugar, water, and saline matter. The diagram on the wall gave the relative quantities of these ingredients in different kinds of milk.

COMPOSITION OF MILK.

	Woman.	Cow.	Ass.	Goat.
Casein (pure curd)	1.52	4.48	1.82	4.08
Butter	3.55	3.13	0.11	3.32
Milk Sugar ...	6.50	4.77	6.08	5.28
Saline matter ...	0.45	0.60	0.34	0.58
Water	87.98	87.02	91.65	86.80
	100.00	100.00	100.00	100.00

The sugar of milk, it would be seen, existed in considerable quantity in it, equalling in the cow the weight of the curd. In England, he believed it was never prepared for domestic or other purposes; but in Switzerland it formed a considerable article of commerce. Mr. Way exhibited a specimen of milk sugar, and observed that it would be found to possess only a slightly sweet taste, which was due to its very limited solubility. This circumstance prevented its extensive use as a substitute for ordinary sugar, because it could only be employed in the form of a syrup, and required so much water to dissolve it as greatly to reduce the strength of any liquid to which it was added. Now, milk sugar, although by itself, or in solution in pure water, it would keep well, was very liable to change when in contact with bodies having the nature of ferments. Milk was, when drawn from the cow, slightly alkaline to test-paper; but in a short time it became sour and curdled. This souring was due to the production of an acid from the sugar, which had, from this circumstance, been called the *lactic acid*, or the acid of milk. The same compound was formed in many other circumstances, and its production was not confined to milk sugar, but occurred in the other forms of sugar. Thus lactic acid was produced when Cabbage is cut up and allowed to become sour, forming the sour-krout of the Continent. The sourness of brewers' grains is due to the same acid. Mr. Way exhibited a diagram which showed how easily the sugars could pass into lactic acid.

RELATION OF SUGAR TO LACTIC ACID.

	Carbon.	Hydrogen.	Oxygen.
Cane Sugar	12 equiv.	12 equiv.	12 equiv.
Grape Sugar	12	14	14
Milk Sugar	24	24	24
Lactic Acid	6	6	6

Thus milk sugar was in relation to the acid in question of such composition that one equivalent or combining proportion of it could, without adding to or subtracting from its component parts, produce four equivalents of lactic acid. Now in the natural souring of milk this transformation occurs, but the question arises, how is it brought about? Mr. Way had before stated that ferments in general had this power of acidifying milk sugar. It was an axiom with chemists that ferments are substances in a state of decay, and in virtue of that state capable of imparting it to other substances. The difference between a ferment and a fermentable substance was in general this: The body producing a ferment was liable to change by simple exposure to air. The body in which the fermenting process can be induced is not liable to change by exposure to air, but in the presence of the ferment is capable of ready conversion. The class of ferments generally contain nitrogen; the bodies liable to fermentation do not. Mr. Way had collected in a Table some of the more important of the proximate principles containing nitrogen, and also some of those which do not contain this element.

NITROGENOUS PROXIMATE PRINCIPLES (Mulder).

	Gluten of Wheat.	Casein from Milk.	Fibrin from Blood.	Albumen From Eggs.	Albumen From Blood.
Carbon	54.75	54.96	54.56	54.48	54.84
Hydrogen	6.99	7.15	6.90	7.01	7.09
Nitrogen	15.71	15.80	15.72	15.70	15.83
Oxygen	21.93	21.73	22.13	22.00	21.23
Phosphorus ...	...	...	0.33	0.43	0.33
Sulphur	0.62	0.36	0.36	0.38	0.68
	100.00	100.00	100.00	100.00	100.00

NON-NITROGENOUS PROXIMATE PRINCIPLES.

	Starch.	Gum.	Cane and Beet-root Sugar.	Grape Sugar.	Milk Sugar.
Carbon	44.47	45.10	44.92	40.47	42.57
Hydrogen	6.28	6.10	6.11	6.59	6.44
Oxygen	49.25	48.80	48.97	52.94	50.99
	100.00	100.00	100.00	100.00	100.00

Amongst the former would be found casein, the name given by chemists to the principle which is found in the curd or cheese of milk. Casein, as it existed in milk, was in a fluid or semi-fluid state, but most people were familiar with it in the form of curd. If the curd of milk, carefully separated by pressure from the whey, was exposed to the air, it soon began to acquire a putrid smell; in this state it would, if mixed with sweet milk, rapidly cause it to turn sour. The same thing happened in the case of the natural souring of milk; by the exposure of the casein to the air it underwent a change which enabled it to act upon the milk sugar, converting it into lactic acid. This souring of milk was influenced by a variety of circumstances, to some of which Mr. Way would allude presently; but his present object was to explain and to enforce upon their attention the consecutive changes occurring—first, by the action of the air on the curd, and, secondly, by the influence of the ferment so produced upon the sugar of the milk. A right understanding of these changes would simplify and explain the greater part of the phenomena which presented themselves in the operations of the dairy.

It was well known that the most minute precautions were necessary in the management of a dairy. One of the most important of these was temperature. The action of the air upon nitrogenous substances was, in all cases, favoured by a moderate elevation of temperature. Practically this circumstance was well understood and applied in the construction of dairies, which were usually sunk below the level of the earth, and were as far as possible shaded from the direct rays of the summer's sun. The use of water as a means of regulating temperature was also known. The plentiful sprinkling of the walls, the floor, and the benches, being intended to reduce the temperature by the cold produced in evaporation. But Mr. Way thought that, by a little ingenuity, much greater advantage might be taken of this well-known law of evaporation. Thus, for instance, it seemed to him perfectly practicable to imitate in dairies the methods of producing cold which were practised in hot climates. One of these was to cover the openings of communication with the external air by mats kept constantly wet, which insured a cool and refreshing breeze. In many instances where the command of water existed, this practice might be worthy of imitation in dairies. The colour of the walls was another not unimportant circumstance in the formation of dairies. In one instance he had known of a large dairy constructed of wood being painted black, or rather being covered with tar. As black is the colour of all others the most absorbent of heat, the results may be guessed. Scrupulous cleanliness is another of the essentials of dairy management—the scalding and cleansing and airing of the milk-pans, and other utensils, being of the first consequence. The reason of this was also obvious; any minute portion of milk left from one operation would necessarily become so changed by the next as greatly to hasten the internal chemical changes in the milk. Another class of phenomena was connected with the extraordinary power of minute and inappreciable quantities of animal effluvia to produce change in such a delicately compounded fluid as milk. Thus, it was a rule never to have a dairy near a stable or other bad smell; there must be no drain near it, no meat kept in it, and the cheese itself should, where possible, be separated as far as possible. In these cases, as indeed in all cases of noxious effluvia, it was believed that excessively minute quantities of decomposing animal matter were carried in the air, rapidly inducing changes of a chemical nature in substances susceptible of such changes. In the case of milk, the phenomena were all referable to the tendency of casein to undergo change, which was much enhanced by exposure to impure air.

Mr. Way said that he had now shortly to call attention to the curdling of milk. It was seen that the natural souring was due to production of lactic acid; but in what way did this bring about a separation of the curd? This question was best answered by examining the properties of casein. Casein, or the curd of milk, was but slightly soluble in water, but very soluble in a weak solution of an alkali. In milk, casein was kept in solution by a small quantity of soda, which accounted for the alkalinity of the milk when fresh drawn. Upon the formation of the acid, this latter seizes the soda, thus depriving the curd of its solvents, and the consequence was that the curd was immediately set free. The separation of the curd from the whey was assisted by warming the milk; this was the reason why milk, slightly sour, but not curdled, became so when added to hot tea. If this explanation of the curdling of milk was correct, the same result would be obtained by the use of vinegar or muriatic acid; and Mr. Way showed that these acids would curdle fresh milk. The lecturer then went on to say that he would make a very short sketch of the different operations of butter and cheese-making.

Cream.—Cream, he stated, was merely a concentration of milk; the butter, by its lightness, rising and carrying with it a certain quantity of casein; it was therefore merely a mechanical separation. Clouted or Devonshire cream was butter with a larger quantity of cheesy matter, and therefore less wholesome than ordinary cream. Cream cheese was one step further than Devonshire cream, being a mixture of casein and butter with a considerable quantity of whey not pressed out. To this circumstance was attributable the impossibility of keeping cream cheese sweet more than a few days. There was a method of preserving cream and milk sweet for some time, which was interesting in a chemical point of view. It consisted in the periodical heating of the milk or cream to the boiling point. If this were done every morning or second morning the milk may be preserved for several weeks. In the same way if fresh cream be bottled and well corked, the bottles then placed in cold water gradually raised to the boiling point, it will be preserved for months. The explanation in these cases is that, by a temperature of 212° Fahrenheit, the quantity of ferment produced by the action of the air on the casein is destroyed; if no further contact of air takes place, the change of milk sugar into lactic acid is suspended; but if the milk be exposed to the air after boiling, a further quantity of ferment is produced, to destroy which, before it greatly accumulates, recourse must be again had to the process of heating.

Mr. Way thought it possible that the bisulphite of lime, the use of which had excited so much attention lately as a means of retarding the fermentation of the juice of the cane, and the Beet-root, in the preparation of sugar, might be advantageously employed in the preservation of milk; but possibly the inventor had contemplated this application of his process.

Butter.—The separation of butter in churning was considered a mechanical process, but there were one or two circumstances which seemed to favour the notion that chemical action of some kind occurred during the operation. The circumstances affecting the butter were the same as those affecting the milk. Butter was never entirely free from casein and milk sugar. The casein, although it did not exceed one-half per cent. of the weight of the butter, yet was sufficient to make the preservation of butter difficult. The methods of preserving by salting and pressure were intended to meet this tendency of butter to become rancid—here, again, possibly the bisulphite of lime might be useful. There was a method of preserving butter for domestic purposes described in Mr. Rham's "Dictionary of the Farm" (p. 113), and which was founded on the separation of the casein and the buttermilk. It consisted in melting the butter and allowing the casein and water to separate and fall to the bottom. The solid butter thus obtained was less finely-flavoured; but it kept better, and was much preferable to salt butter for pastry and other such purposes. To remove the turnipy taste in butter, Mr. Way recommended either stirring the milk as it is drawn, or the addition of a little saltpetre; or the adoption of the Rev. Mr. Huxtable's plan, namely, adding to each gallon of the milk a table-spoonful of the clear solution of half an ounce of chloride of lime (or bleaching powder), in a gallon of water. In respect to the theory of the formation of butter in the cow, Mr. Way remarked that it was believed that although fat (and by parity of reasoning butter) could be formed from the starch and mucilage of the food, that in the presence of sufficient oily matter it was not likely that any such production of fat should take place; then came the question how far oily foods would increase the yield of butter. It must not be lost sight of, however, that butter consisted of two fats—a solid and a liquid; and that, according as the one or the other predominate the butter was firm or soft; the oils might possibly increase the quantity, but would the quality be good? He would suggest as an experiment of physiological interest an attempt to feed a cow with a mash in which suet as a solid fat should be introduced. By proper measures, best known to dairy-farmers, a cow might be made to eat this perhaps, and it would be interesting to know the results on the quantity and quality of butter.

Cheese.—Mr. Way remarked that the curdling of milk was due as before explained to acids, which combined with the soda of the soluble curd. In general the production of acid in the milk was brought about by the use of rennet, which was a ferment produced by the exposure of the lining membrane of the stomach of a calf to the air. The use of rennet presupposed of course the destruction of the milk sugar, and therefore the whey was sour. In Germany and Switzerland, and particularly in Holland, the acetic and muriatic acids were used to curdle milk for cheese. Mr. Way exhibited a diagram of the composition of cheese, which would show that although we believed cheese to be dry, it still retained a large quantity of water.

COMPOSITION OF CHEESE (Johnston.)

	Skim Milk Cheese.	Double Glou-cester.	Ched-dar.	North Wilts.	North Wilts, 2d Specimen.	Dun-lop.
Water ...	43.82	35.81	36.04	35.58	44.80	38.46
Casein ...	45.04	37.96	28.98	25.00	28.16	25.87
Butter ...	5.93	21.97	30.40	30.11	23.04	31.86
Saline matter	5.18	4.25	4.58	6.29	3.99	8.81
	100.02	99.99	100.00	99.98	99.99	100.00

The relative richness of cheeses was due to the quantity of butter in them. The rich cheeses were those which it was most difficult to keep. The thorough salting and perfect washing of the curd also rendered cheese liable to change, although, as in the case of butter, every precaution in this direction was unfortunately opposed to the production of cheese of good flavour; those cheeses that keep best, as the Dutch and Suffolk cheeses, being far less agreeable to eat.

Before he sat down, Mr. Way wished to make one or two observations upon the effect of dairy cultivation on the land. Obviously by exporting butter and cheese from a farm, we export the same elements as in ordinary Wheat, beef, and mutton farming. In addition, however, to the carbonaceous and nitrogenous elements so exported, a quantity of mineral matter, chiefly phosphate of lime, is removed by the cheese and in the bones of the calves. In old pastures this was never replaced,

until the practice of manuring with bones came into use. Bones, as exhibited in the diagram, contain 50 per cent. of phosphate of lime.

COMPOSITION OF BONES.

	Thomson.			Valentin.		
	Ileum of a Sheep.	Ileum of an Ox.	Vertebræ of a Haddock.	Outer part of Tibia of Man.	Inner part of Tibia of Man.	Head of Tibia.
Organic matter, combustible ...	43.3	48.5	39.5	38.02	41.16	48.56
Phosphate of Lime...	50.6	45.2	56.1	52.93	49.02	41.77
Carbonate of Lime...	4.5	6.1	3.6	7.66	7.76	7.11
Magnesia	0.9	0.2	0.8	*0.25	1.54	0.88
Salts of Soda	0.3	0.2	0.8	1.19	0.51	1.67
Potash	0.2	0·1	0.0	0.00	0.00	0.00
	99.8	100.3	100.8	100 05	99.99	99.99

* Phosphate of magnesia.

The organic part was composed of oil and gelatin, the latter of which was a nitrogenous substance, as shown in the diagram below.

CARTILAGE OF BONES—(Gelatin).

Carbon	50.50
Hydrogen	6.90
Nitrogen	18.47
Sulphur	0.56
Oxygen	23.57
Total	100.00

Now it had been found that 1000 lbs. of milk contain phosphoric acid equal to about 3 lbs. of phosphate of lime. Mr. Curwen found that in a mixed dairy of long and short-horns on an average of four years 3700 quarts of milk were annually produced by each cow. Upon this calculation about 27 lbs. of phosphate of lime would be annually carried off, and that without taking into account the bones of the calf removed. To replace the phosphate of lime ½ cwt. of bones must annually be added for each cow that was kept. By a further calculation Mr. Way showed that if the use of bones were to replace the nitrogen carried off in the milk, about 15 times the quantity would be requisite that was needed for the replacement of the phosphate of lime.

It must be believed, then, that although the nitrogenous matter of the bones was highly useful to pasture lands, the phosphate of lime was the principal advantage in their application. If a contrary creed were maintained, it was plain that the application of the nitrogenous matter was attended with an unnecessary waste of phosphate of lime. To the one class of believers, the mineral phosphate of lime, or coprolite, and the African and other phosphatic guanos, were open; to the other, the employment of ammoniacal manures like the sulphate of ammonia. Under any circumstances, Mr. Way thought that Peruvian guano would act with the same kind of benefit as bones.

At the conclusion of the Lecture, the noble Chairman detailed to the meeting the immediate and permanent effect of bones applied at the rate of 2½ qrs. or 20 bushels per acre, on some of his dairy land on the sandstone in Gloucestershire, where the largest dressing of the richest manure had produced no appreciable result. He had accordingly become a purchaser of bones to a great extent.—Prof. Way alluded to the advantages to be derived from employing dissolved coprolites for the Turnip crop, on land deficient in phosphate of lime, of which that mineral contained a large proportion. He had received from Cheshire a specimen of what was there called, from its external appearance, a grey "marl," but which on chemical examination was found to be no marl at all, as it contained no chalk; but it contained, instead, a large proportion of phosphate of lime, and it was to such substance that the value of the marl in question for dairy land was due.—Col. Challoner made some remarks on the different modes employed for the separation of curd, either artificially by the direct application of acidity, or naturally by the conversion of a part of the sugar of milk into lactic acid.—Mr. John Bethell having observed that he doubted whether the dissolved coprolites would be found cheaper than bones, enquired of Prof. Way, whether there was any mode of preventing the small quantity of milk, left in dairy utensils, from contaminating the fresh milk added to it.—Professor Way thought that carbonate of soda would be the simpliest corrective for that evil, neutralising, as it would, by its alkaline properties, the acid generated in the old milk, by exposure to the atmosphere, and consequent decomposition.—Mr. Fisher Hobbs, during his visits to the counties of Leicester and Suffolk, had found, that in the Leicestershire dairies the cheese was obtained before the butter, while in those on the poorer pastures of Suffolk, the butter was obtained first. He was desirous of ascertaining whether this practice was followed simply from local custom, or whether it was connected with the different animals employed in those counties respectively for dairy purposes, and a different mode of feeding them. The domesticated ox was now chiefly regarded as an animal machine for the production of milk, or the laying-on of flesh, and experience had proved the tendency of different breeds of cattle to the one or other of these results. The late Lord Spencer had short-horned cattle, and Alderneys, fed and tended precisely in the same way, and under the same circumstances, but the result was quite different in each case, according to the characteristic tendency of the respective breeds, the short-horns developing their resources in the formation of flesh, and maintaining their high condition, while the Alderneys yielded to the dairy the assimilated store of their high feeding in an abundant supply of the rich st cream, without gaining flesh to themselves, or improving their condition.—On the motion of Sir Robert Price, Bart., M.P., seconded by Colonel Challoner, the best thanks of the meeting were then voted to Professor Way for his kindness in delivering before them so interesting a lecture on that occasion.

American Churn.—At the request of Colonel Challoner, the Secretary laid before the meeting the correspondence in which he had been engaged on the subject of the American air-churn, which had recently attracted much public attraction: from which correspondence it appeared that the operation of the churn in question would be exhibited by the patentee at the weekly meeting of the Council on Wednesday next, the 24th inst., at 12 o'clock, when all members of the Society, who wished to be present, would have the privilege of admission.

Reviews.

The Modern Dairy and Cowkeeper. By Cuthbert W. Johnson, Esq., F.R.S.

This little book is a useful compendium of facts connected with the management of cows. It treats perhaps too much of the theory of the subject, giving too many extracts from the writings of scientific men; but the reader will find a great deal of information upon the practical details of the subject as well. It is the production of one who has long been well known as a good agricultural writer; and though it is of course rather a condensation of previous publications on the subject, than the statement of a personal experience by the practical man, yet it will be found to contain probably as much useful information as the latter could give.

Calendar of Operations.

APRIL.

South Hampshire Farm, *April* 15.—The weather during the month of March has been as favourable as could be desired for the sowing of Lent grain, and also in forwarding the tillage of fallows intended for Turnips and other root crops. The showers we have had during the present month have also proved as seasonable as the late dry weather, inasmuch as the growth of Grass is now very rapid, and in many cases it is much wanted, particularly upon farms where the Turnip crop is nearly exhausted. The horse labour upon the farm during the past month has been chiefly ploughing land after the Turnip crop has been fed off, for Barley, Oats, &c., the sowing of which we have nearly completed; indeed we have finished sowing our Barley for some little time, and the remaining portion of our land, after Turnips, we prefer sowing with a mixture of Oats and Barley, intended for horse feed, as we have invariably found we cannot grow a good sample of Barley, if sown later than the middle of April, whereas in the mixed corn intended for home consumption the quality is not of so much importance. The horses have also been employed in ploughing, harrowing, rolling, &c., forwarding the tillage for Turnips, Carrots, &c.; also rolling seeds and harrowing the Wheat after Italian Rye-grass seed has been sown. Odd horses have been continually employed in carting hurdles for the removal of sheep, carting stones off the Clover seeds, carting manure from the cattle pens and spreading evenly over the farm-yard, and other jobbing work, such as will always be required upon a farm having any pretensions to common decency and appearances. The late rains have also compelled us to apply the horses to the threshing machine, for the purpose of threshing the remaining portion of our Oat crop, which we have now completed, and which has yielded quite equal to our expectations. Our labourers have been employed in draining the meadow land, and also some portion of the land intended for Turnips, besides which they have been engaged in various work, such as water furrowing, hedging, trenching in meadow land, planting quicks in the vacant hedges, and cutting the borders round the fields, and burning for a supply of ashes at all times useful for mixing with manures for Turnips, Carrots, Mangold Wurzel, &c. Our shepherds have been fully employed ever since the commencement of Turnip feeding in attending to their flocks, by feeding at regular intervals—a matter of much importance in sheep feeding, in our estimation, as we have always found that quantity and quality of food will not produce the desired effect in fatting sheep and lambs, unless given with regularity. Our fat lambs reared from the horned Somerset ewes are now nearly all sold, as also many of the ewes after having fatted their lambs; our lambs this year have proved fatter than we ever remember in any former season. Those for which we obtained the premium at our fat cattle show on March the 25th, at Botley, weighed from 80 lbs. to 84 lbs. each, at from 20 to 22 weeks old, fed in the open field; the mothers of them being sold fat, and very heavy weighers, on the same day. Our Southdown lambs, although not quite so forward as upon some former occasions, a few of which we have sold, weigh from 10 lbs. to 11 lbs. per qr., for a pen of which we also received a premium at the above named cattle show. We wish we could speak well of the prices we are receiving for our sheep and lambs; the sale of late has been very heavy, and at anything but good prices. Our dairy cows have nearly all dropped their calves, and are doing well, there being now a good spring of Grass, and they being free from the epidemic, which has proved such a drawback in former seasons. The heifers, which we keep in yards two together, all the year through, seem to be doing well, having been fed upon a bushel of cut Swedes each per day, with a liberal allowance of Barley or Oat straw, which we consider to be the cheapest and also the best food during the winter months for young animals intended for dairy purposes. The work of the farm during the next fortnight will be sowing the remaining portion intended for Oats, preparing land, and sowing the Carrot seed, which we do by drilling on the flat, about 15 inches between the rows, using 4 bushels of superphosphate of lime with 16 bushels of ashes per acre; we prefer sowing the last week in April or the first week in May than at any earlier period, because we have time to destroy one crop of weeds before sowing; the land being rolled fine and close about a fortnight before we wish to drill, gives time for the weed seeds on the surface to vegetate, and then by using the scarifier before the drill they are effectually destroyed, which very much diminishes the labour of hoeing whilst the plant is young. Our Cow Cabbage will also be planted in a few days, and at the beginning of May we shall be busy dibbling our Mangold Wurzel. We found last year that the Mangold Wurzel grew well manured with 2 cwt. of Peruvian guano, 4 bushels of superphosphate, and 20 bushels of ashes per acre, sown broadcast, and stitched up at 2 feet apart in rows. *J. B.*

Notices to Correspondents.

Cake: *C W.* Good oilcake at 7*l.* a ton is cheaper than Linseed at 6*s.* a bushel. The loss of 20 tons of Swedes may be made up, on a lot, by the purchase of 2 tons of oilcake; which will probably assist the feeding more than the Swedes would have done. But if 20 tons should be all you had they would not be replaced by the cake. Bulk as well as nutriment is needed in food. Rape cake has been successfully used by Mr. Pusey as a substitute for oilcake.

Feeding; *Anon.* Barley-meal and bran will be better in the meantime than Bean-meal. The Alderney is not good at fattening when old. It will not be a good practice to sow Rape with Oats, in order to get an autumn crop. You had better sow Italian Rye-grass. We hardly know the purport of your question; but we imagine your neighbour is not responsible for injury done to your field, sustained because your fence was bad and his swine got through.

Garden Farms: *P H.* suggests that a "Country Curate" should read "Blacker on Small Farms." He will there find many valuable suggestions for the profitable cultivation of his half acre of ground. In the absence of that I would suggest his keeping a cow, preserving very carefully her liquid manure, and also a pig. As a productive crop for the former I would sow in September next Italian Rye-grass, and manure this with the liquid. In January [if the winter be mild] he will be able to have a cutting, and if, after every cutting, he uses the liquid manure upon it, he will be able to have from eight to ten crops, producing a quantity that will surpass his expectations. As a proof of the vast production of this Grass, read Dickenson's evidence before a Committee of the House of Commons on the Sewage Manure question, taken in 1846. It is to be had at Hansard's, Piccadilly. I had forgotten to state that a tub well covered should be sunk for the purpose of saving the liquid manure from the cow.

Gorse: *W Barlow.* It is of use in comparatively waste places. It should not be sown on good land, where ordinary husbandry pays better. It is cut once every other autumn, and crushed and given to cattle.

Grass Seeds: *A Subscriber.* If your land is disposed to run to chickweed, &c., you had better wait till the Barley is up, before sowing Clover and seeds, and then hoe them in. If it is clean, sow the seeds as soon as you like, and harrow them in. For a permanent Grass meadow, see pages 125, 173, 222.

Hose for Liquid Manure: *T W T.* Will any of our readers, who have had experience on this subject, say what is the cheapest and at the same time most durable hose piping for the distribution of liquid manure.

Pigs: *E T F.* You were right, no doubt, in anticipating our advice. We have no doubt but what the disease was as we stated—rheumatism. The little horny excreseence with which you have favoured us (produced probably by the animal lying down so much) throws no further light on the disease. *W C S.*

Rape for Seed: *Constant Reader.* Sow any time early in autumn, say August, about 5 or 6 lbs. of seed, in rows 18 inches apart. There is no doubt a liability to the destruction of the plant if sown too late before a severe winter.

Rural Chemistry, by E. Solly, price 4*s.* 6*d.*, second edition, revised and enlarged, may be had of all booksellers, and at the Office of this Paper.

Salt and Lime: *W Barlow.* Slake lime with brine in some sheltered place, and apply 50 or 60 bushels per acre some month or so hence. Your best plan will be to do all this in midsummer, so as to be ready to apply it on the stubble in autumn.

Shanghae Fowls: *G W* will probably be able to obtain these by applying to Mr. Bailey, of Mount-street, Grosvenor-square, who advertises in our columns. For further information, see the second edition of Dixon's Poultry, pp. 293 and 296.

Spaniel: *W W.* Sulphate of zinc, 4 grains; Superacetate of lead, 10 grains; Rose-water, 2 oz. A little to be dropped into the ear every day. *W C S.*

The Anthony Churn: *A Dairyman* should apply to the curator of the museum of the Royal Dublin Society; or to Mr. Maguire, 10, Dawson-street, Dublin.

"Times": *Quercus.* Yes.

Turnips: *Walter W.* Pare and burn. Spread the ashes. Plough 3 inches deep, roll, harrow, and harrow again. When that ploughing is reduced to a tilth, cross plough at double the depth, and repeat the tillage. Sow 3 cwt. of superphosphate, broadcast, drill up in rows, 26 inches apart, and sow 3 lbs. of seed on the tops of the drills.—*W Barlow.* Sow 3 or 4 lbs. per acre, in rows 2 feet or more apart, and single out to 10 or 12 inches.

Young Clover: *A Young Farmer.* We have often folded ewes and lambs and store sheep through the summer on first year's seeds (Clover and Italian Rye-grass). Fold them till the Clover becomes too high, and then mow and put the sheep on the mown space, to be fed from the mowing of the next piece, and so on.

Markets.

SMITHFIELD, Monday, April 15.

The number of Beasts is smaller; however, the demand is still limited, and it is difficult to advance prices. Our highest quotations are exceeded in a few instances. The supply of Sheep is also less, and in consequence trade a little better in the morning, but slow towards the close of the market. There is no quotable alteration in the Lamb trade. There are only few Calves on offer, and the best kinds are making rather more money. From Holland and Germany there are 288 Beasts, 470 Sheep, and 68 Calves; and 500 Beasts from Scotland.

Per st. of 8 lbs.—	s	d	s	d	Per st. of 8 lbs.—	s	d	s	d
Best Scots, Herefords, &c. ...	3	2	to 3	4	Best Long-wools .	3	6	to 3	10
Best Short-horns	2	10	— 3	0	Ditto Shorn ...	3	0	— 3	4
2d quality Beasts	2	6	— 2	8	Ewes & 2d quality	3	0	— 3	6
Best Downs and Half-breds ...	4	0	— 4	4	Ditto Shorn ...	2	6	— 2	10
Ditto Shorn ...	3	6	— 3	8	Lambs	5	0	— 6	0
					Calves	3	0	— 4	4
					Pigs	3	0	— 4	0

Friday, April 19.

We are moderately supplied with Beasts, and trade is better. Prices have advanced about 2d. per 8 lbs. on Monday's quotations. The number of Sheep is small; Monday's rates are fully maintained, and in some instances exceeded. We have a fair supply of Lamb; trade is dull at late prices. Calves are much more plentiful, and it is difficult to make more than 4*s.* of the choicest. From Germany and Holland there are 118 Beasts, 110 Sheep, and 176 Calves; from Scotland 200 Beasts; and 127 Milch Cows from the home counties.

Best Scots, Herefords, &c. ...	3	4	to 3	6	Best Long-wools .	3	6	to 3	10
Best Short-horns	3	0	— 3	2	Ditto Shorn ...	3	0	— 3	6
2d quality Beasts	2	6	— 2	8	Ewes & 2d quality	3	0	— 3	8
Best Downs and Half-breds ...	4	0	— 4	4	Ditto Shorn ...	2	8	— 3	2
Ditto Shorn ...	3	6	— 3	10	Lambs	5	0	— 6	0
					Calves	3	0	— 4	0
					Pigs	3	0	— 4	0

POTATOES.—Southwark, April 15.

The Committee report that the market continues to be abundantly supplied from the Continent, all of which are selling heavily at very low prices. York Regents are scarce, and realise a high figure. The following are the present prices:—York Regents, 90*s.* to 120*s.* per ton; Scotch, 70*s.* to 80*s.*; Scotch cups, 50*s.* to 60*s.*; Scotch whites, 40*s.* to 45*s.*; French whites, 40*s.* to 60*s.*; Belgian do., 40*s.* to 50*s.*; Rhenish do., 40*s.* to 60*s.*; Dutch, 40*s.* to 45*s.*

HAY.—Per Load of 36 Trusses.

Prime Meadow Hay	66*s*	to 72*s*	Clover	60*s*	to 84*s*	
Inferior ditto... ...	50	63	New Clover	—	—	
Rowen	—	—	Straw	22	25	
New Hay	—	—		J. Cooper.		

Very little doing.

Cumberland Market, April 18.

Prime Meadow Hay	68*s*	to 74*s*	Inferior	60*s*	to 68*s*	
Inferior ditto... ...	50	63	New Clover	—	—	
New Hay	—	—	Straw	24	28	
Old Clover	75	84		Joshua Baker.		

Whitechapel, April 18.

Fine Old Hay ...	68*s*	to 68*s*	New Clover	—*s*	to —*s*	
Inferior ditto ...	50	55	Inferior ditto... ...	60	65	
New Hay	—	—	Straw	22	26	
Old Clover	80	84				

COVENT GARDEN, April 20.

Vegetables are well supplied, but many kinds of winter Fruit are over, or at least very scarce. A few Strawberries have made their appearance. Hothouse Grapes are scarce and dear. Pine-apples are more plentiful. Walnuts and Chestnuts are abundant; and Oranges and Lemons sufficient for the demand. Amongst Vegetables, Turnips and Carrots are good, and there is some very good Broccoli in the market. A few frame Potatoes have just made their appearance. Lettuces and other salading are sufficient for the demand, and so are Mushrooms. French Beans, Asparagus, Seakale, and Rhubarb are becoming very plentiful. Cut Flowers consist of Heaths, Pelargoniums, Bignonia venusta, Primulas, Camellias, Cinerarias, Azaleas, Lily of the Valley, Epacrises, Acacias, Lilacs, and Roses.

FRUITS.

Pine-apples, per lb., 6s to 10s
Grapes, hothouse, p. lb., 15s to 20s
— Portugal, p. lb., 9d to 1s
Strawberries, per oz., 4d to 1s
Pears, per doz., 6s to 10s
Apples, kitchen, p. bsh., 4s to 6s
— per 100, 6s to 12s
Oranges, per doz., 9d to 1s 6d
— per 100, 5s to 12s
Lemons, per doz., 1s to 2s
Almonds, per peck, 6s
— sweet, per lb., 2s to 3s
Walnuts, p. 100, 1s 6d to 2s
— p. bush., 16s to 24s
Nuts, Bar., p. bush., 20s to 22s
— Brazil, p. bsh., 12s to 16s
Kent Cobs, 90s to 100s p. 100 lbs

VEGETABLES.

French Beans, p. 100, 1s 6d to 3s
Seakale, per punnet, 1s to 3s
Asparagus, p. bund., 2s to 7s
Rhubarb, p. bundle, 6d to 1s
Cabbages, per doz., 1s to 1s 6d
Cauliflowers, p. doz., 1s to 4s
Broccoli, p. doz. bundl., 8s to 10s
Greens, per doz., 3s to 4s
Sorrel, p. hf. sieve, 1s to 1s 6d
Potatoes, per ton, 60s to 120s
— per cwt., 3s to 7s
— per bush., 2s 6d to 3s 6d
Turnips, p. doz. bun., 1s 6d to 2s 6d
Red Beet, per doz., 9d to 1s
Horse Radish, p. bdl., 1s to 4s
Cucumbers, each, 1s to 3s
Leeks, per bunch, 1d to 1½d
Celery, p. bundle, 8d to 1s 6d
Carrots, per bun., 4d to 6d
Spinach p. sieve, 2s to 3s
Onions, p. bushel, 3s 6d to 4s 6d
— Spanish, p. doz., 1s 6d to 4s
Shallots, per lb., 4d to 8d
Garlic, per lb., 4d to 8d
Lettuce, Cab., p. sc., 4d to 9d
Endive, per score, 1s 6d to 3s
Mushrooms, p. pot., 9d to 1s
Small Salads, per punnet, 2d to 3d
Fennel, per bunch, 2d to 3d
Savory, per bunch, 2d to 3d
Thyme, per bunch, 2d to 3d
Parsley, p. doz. bun., 2s to 3s
— Roots, p. bdle., 9d to 1s
Marjoram, per bunch, 2d
Mint, green, per bunch, 9d to 1s
Watercress, p. doz. bunches, 6d to 9d
Corn Salad, p. hf. sieve, 9d to 1s

HOPS.—Friday, April 19.

Messrs. Pattenden and Smith report that there is a better demand for fine yearlings, which have become very scarce; there is also good inquiry for 1846 and 1847. The new Hops are reduced to a very small compass.

MARK LANE.

Monday, April 15.—Notwithstanding the supply of Wheat from Essex, Kent, and Suffolk this morning was small, no progress could be made with the disposal until a decline of fully 2s. per qr. upon the prices of this day se'nnight was submitted to, at which reduction foreign, with the exception of Dantzic, which was held for late rates, met but a limited sale.—The value of Barley, Beans, and Peas is unaltered.—Oats met a tolerably free sale, at a decline of 1s. per qr. from our last quotations.

British per imperial Quarter.	s. s.		s. s.
Wheat, Essex, Kent, & Suffolk ...White	39—40	Red	35—38
— — fine selected runs ...ditto	41—42	Red	37—39
— — Talavera	44—48		
— Norfolk, Lincoln, & York ...White	35—40	Red	34—35
— Foreign	33—50		
Barley, grind. & distil., 19s to 22s...Chev.	24—27	Malting	22—24
— Foreign.....Grinding and distilling	16—19	Malting	20—23
Oats, Essex and Suffolk	15—18		
— Scotch and Lincolnshire ...Potato	16—21	Feed ...	14—19
— Irish .....Potato	15—18	Feed ..	12—16
— Foreign .....Poland and Brew	14—18	Feed ...	12—15
Rye	19—21	Foreign	18—20
Rye-meal, foreign .....per ton	5l.—6l.		
Beans, Mazagan .....19s to 20s.....Tick	23—25	Harrow	23—25
— Pigeon.....25s — 37s ...Winds	22—28	Longpod	25—28
— Foreign ..... Small	24—36	Egyptian	18—19
Peas, white, Essex and Kent.....Boilers	23—25	Suffolk	24—26
— Maple .....24s to 26s.....Grey	22—23	Foreign	19—28
Maize ..... White	23—26	Yellow...	23—25
Flour, best marks, delivered ...per sack	34—38		
— Suffolk .....ditto	26—34	Norfolk	26—34
— Foreign .....per barrel	21—24	Per sack	28—32

Arrivals in the Port of London last week.

	Wheat.	Barley.	Malt	Oats.	Beans.	Peas.
Flour, 15437 sks	Qrs.	Qrs.	Qrs	Qrs.	Qrs.	Qrs.
— 10 bls	3370	1630	6461	3535	669	186
English	—	—	—	—	—	—
Irish	—	—	—	—	—	—
Foreign	25091	16160	—	57958	3924	275

Friday, April 19.—The arrivals of home-grown grain since Monday have been small, those from abroad large. This day's market was tolerably attended, and there appeared rather more disposition to purchase Wheat where it could be done at a reduction in prices, but the general amount of business transacted was not large.—Barley fully supports our quotations.—The value of Beans and Peas is unaltered.—Oats meet a better sale at improving rates.—The Flour trade is rather firmer.—Galatz Indian Corn continues to be held at 28s. 6d. per. qr. floating.—We have again to report a heavy trade in corn for the last eight days; and Wheat, owing to the large foreign arrivals, has declined 1s. to 2s. per qr. throughout the kingdom, the demand continuing adequate to the supply. The value of Barley has been fully supported, but Oats are again the turn lower. Beans and Peas unaltered. The majority of the French markets is again lower.

Arrivals this week.

	Wheat.	Barley.	Oats.	Flour.
	Qrs.	Qrs.	Qrs.	
English ...	2580	1890	2220	3290 sacks
Irish	—	—	—	
Foreign ...	15460	7950	29890	— brls.

Imperial Averages.	Wheat.	Barley.	Oats.	Rye.	Beans.	Peas.
March 2.....	38s 6d	23s 9d	14s 11d	21s 11d	24s 4d	25s 11d
— 9.....	38 6	23 10	15 2	23 3	24 7	25 4
— 16.....	38 1	23 8	14 11	22 7	24 1	25 2
— 30.....	37 9	23 6	15 2	21 7	23 10	25 3
April 6.....	38 1	23 2	14 10	21 6	23 8	24 5
— 13.....	38 5	22 11	15 3	20 8	23 9	26 3
Aggreg. Aver.	38 1	23 5	15 1	22 4	24 0	25 3
Duties on Foreign Grain	1 0	1 0	1 0	1 0	1 0	1 0

Fluctuations in the last six weeks' Corn Averages.

Prices.	Mar. 2.	Mar. 9.	Mar. 16.	Mar. 30.	April 6.	Apr. 13.
38s 6d	—	...	...	...	...	...
38 6	...		...	...	..	...
38 5	...	...	...	...	...	
38 1	...	...		...	...	...
38 1	...	...	...	...		...
37 9	...	...	...		...	...

Liverpool, Friday, April 19.—Since Monday last the arrivals into this port, coastwise and from Ireland, are limited in amount. Although at our market to-day a few parcels of Irish and foreign Wheat were taken by country millers, and a limited quantity sold to our country dealers, the transactions altogether were very moderate. Flour continued to meet some demand at our last quotations. Barley, Malt, Beans, and Peas continued to rule dull at late prices. Oats moved slowly, but remained steady in value.

HARTLEY'S PATENT ROUGH PLATE GLASS.

In submitting our list of prices, we would beg to direct attention to the Leading Article of the *Gardeners' Chronicle* of Saturday, Dec. 8, upon the subject of "Patent Rough Plate." Some alteration having been made in the mode of manufacturing this description of Glass, the quality is greatly improved, and we now supply it perfectly flat, and, by an arrangement with Messrs. Hartley and Co., precisely at their prices. Cut to order in panes of

8 by 6	and under	10 by 8	at 4½d. per foot.
10 by 8	,,	14 by 10	at 5d. ,,
14 by 10	,,	1½ foot	at 5½d. ,,
1½ foot	,,	3 feet	at 6d. ,,

PACKED IN BOXES of 50 feet each.

6 by 4 and 6½ by 4½...10s. 6d. 8 by 6 and 8½ by 6½...13s. 6d.
7 by 5 and 7½ by 5½...12s. 0d. 9 by 7 and 10 by 8 ...15s. 0d.

Milk Pans from 2s. to 6s. each, Metal Hand-frames, Tiles, and Slates; Propagating and Bee Glasses from 2d. each; Cucumber Tubes, 1d. per inch; Peach Glasses, 10d. each; Wasp Traps, 3s. 6d. per dozen; Pastry Slabs, Hyacinth Glasses and Dishes, Shades for Ornaments, Fish Globes, Plate and Window Glass of every description, and Lamp Shades. Lactometers for trying the quality of Milk, 4 tubes, 7s. 6d; 6 tubes, 10s. Self-registering Thermometers for Greenhouses, Horticultural Glass, &c.

JAMES PHILLIPS and CO., 116, BISHOPSGATE STREET WITHOUT, LONDON.

CROWN, SHEET, AND ROUGH PLATE GLASS,

FOR HOTHOUSES, CONSERVATORIES, &c.

Of every manufacture FIT FOR USE, including the make of Messrs. Chance, Hartley, Swinburne, and others.

100 and 200 feet cases of large Sheet Glass, from 2½d. per foot. Small ditto, 10s. 6d. per 100 feet, packed in boxes ready for immediate delivery. Curators of Botanical Societies, Florists, Railway Agents, and others requiring large quantities, will, on sending dimensions, receive estimates at the lowest prices.

GLASS MILK PANS, CREAM POTS, Lactometers, Bee Glasses, Fish Globes, and all kinds of Dairy Glass, Propagating Glasses, Hyacinth Dishes, Cucumber Tubes, and every other description of Garden Glasses.

PATENT GLASS PENS, self supplying, never blot, never soil the ruler, and will write continuously for 12 hours.

Also, Glass Rulers, Glass Inks for office-stands, desks, &c. Stationers and Schools supplied. Wholesale Warehouse for Ornamental Shades, Lamp Shades, Gas Glasses, Genuine White Lead, Paints, Colours, and Pumps for Farm purposes.

Our Catalogue of 18 folios is the most complete ever published. No Gardener or Farm Bailiff should be without one. May be had Gratis on sending two postage stamps to Messrs. Cogan and Co., 48, Leicester-square, London.

GLASS FOR CONSERVATORIES, &c.

HETLEY and Co. supply 16-oz. Sheet Glass of British Manufacture, at prices varying from 2d. to 3d. per square foot, for the usual sizes required, many thousand feet of which are kept ready packed for immediate delivery. Lists of Prices and estimates forwarded on application, for PATENT ROUGH PLATE, THICK CROWN GLASS, GLASS TILES and SLATES, WATER-PIPES, PROPAGATING GLASSES, GLASS MILK PANS, PATENT PLATE-GLASS, ORNAMENTAL WINDOW GLASS, and GLASS SHADES, to James Hetley and Co., 35, Soho-square, London.

See the *Gardeners' Chronicle* first Saturday in each month.

GLASS FOR CONSERVATORIES, HORTICULTURAL PURPOSES, &c.



TMILLINGTON'S SHEET GLASS, which is of the best description, varying from 16 to 32 ounces, at from 2d. per foot and upwards; 100 feet and 200 feet cases of large Sheet Glass, for cutting up, at 2½d. per foot. British Plate Glass, from 1s. 2d. to 2s. per foot, according to size. Patent Rough Plate Glass, from ⅛ to 1 inch in thickness, from 4d. per foot upwards. Glass Slates and Tiles. Milk Pans from 12 to 24 inches diameter, from 2s. to 5s. each. Cucumber Tubes, from 12 to 24 inches long, at 1d. per inch. Lactometers, 7s. 6d. each. Wasp Traps.—Lists may be had, on application at the Warehouse, 87, Bishopsgate-street Without, same side as the Eastern Counties Railway.

LINGHAM BROTHERS, 170, Hampton-street, Birmingham, sole Manufacturers of the improved WOOD and ZINC MENOGRAPH, or Label for Garden Borders, Flower-pots, &c., in boxes of 100, &c. The Zinc Labels are highly approved of for their lasting durability; can be written upon with the greatest ease, and, when dry, a permanent inscription is secured. Directions for use sent with each box, including bottle of Metallic Ink.

Sole agents in London, G. and J. Deane, Horticultural Implement Warehouse, 46, King William-street, London-bridge.

BEE HIVES.

GEORGE NEIGHBOUR and SON respectfully announce that they have prepared for this season an extensive supply of their various IMPROVED BEE HIVES, which are offered to all who are desirous of cultivating that pleasing and profitable branch of rural economy—the Honey Bee. The collection consists of "Nutt's Collateral Hives," "The Single Box Hive," "The Amateur Bar Hive," "The Improved Cottage Hive," &c., from either of which the honey may be taken at any time without injury to the Bees, and may be worked with safety, humanity, and profit, by the most timid and unaccustomed to Bee manipulation. A descriptive paper, with drawings and prices, will be forwarded on the receipt of two postage stamps.—127, High Holborn, London.

Agents: Wm. Drury, Castle-street, Liverpool; Hall and Wilson, 50, King-street, Manchester; Austin and M'Aslin, 168, Trongate, Glasgow.

BAKER'S PHEASANTRY, Beaufort-street, King's-road, Chelsea, by special appointment to her Majesty and H. R. H. Prince Albert.—ORNAMENTAL WATER FOWL, consisting of black and white swans, Egyptian, Canada, China, barnacle, brent, and laughing geese, shieldrakes, pintail, widgeon, summer and winter teal, gadwall, Labrador, shovellers, gold-eyed and dun divers, Carolina ducks, &c., domesticated and pinioned; also Spanish, Cochin China, Malay, Poland, Surrey, and Dorking fowls; white, Japan, pied, and common pea-fowl, and pure China pigs; and at 3, Half-moon-passage, Gracechurch-street.

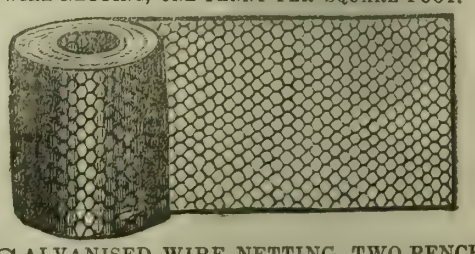
ALLSOPP'S BURTON and EAST INDIA PALE ALES.—Messrs. S. Allsopp and Sons beg to call the attention of the public to their East India, Pale, and other Burton Ales, which may be obtained in casks of 18 gallons and upwards, either singly or in any quantity, by application to the Brewery, Burton-on-Trent, or on the same terms at their respective Stores, as follows:—61, King William-street, London; Cook-street, Liverpool; under the Exchange, Ducie-place, Manchester; and at the Market-place, High-street, Birmingham.

TO FLORISTS, HORTICULTURISTS, &c.



MORRELL'S REGISTERED FLOWER LABELS are ready for delivery in any quantity; they will be found unimpaired by any change of weather, either of heat, cold, wet, or dry, and therefore suitable for the Stove, Hothouse, Greenhouse, or the open ground; also his improved Flower Sticks, of various lengths, from 12 inches upwards.—May be had of most Seedsmen and Ironmongers in town and country: and wholesale at 149, Fleet-street, London.

WIRE NETTING, ONE PENNY PER SQUARE FOOT.



GALVANISED WIRE NETTING, TWO-PENCE PER SQUARE FOOT.—This article requires no painting, the atmosphere not having the slightest action on it. It was exhibited at the late Metropolitan Cattle Show, and was highly eulogised both for its utility and pretty appearance, and acknowledged to be the cheapest and best article ever produced. It forms a light and durable fence against the depredations of hares, rabbits, and cats, and is peculiarly adapted for Aviaries, Pheasantries, and to secure poultry; and by the galvanised requiring no paint, it answers admirably for training all kinds of creeping plants. Large quantities always kept in stock, of 18, 24, 36, and 48 inches wide; it can, however, be made to any dimensions desired. Patterns forwarded free of expense.

12 inches wide	3d. per yard	30 inches wide	7½d. per yard
18 ,, ,,	4½d. ,,	36 ,, ,,	9d. ,,
14 ,, ,,	6d. ,,	48 ,, ,,	1s. ,,

Galvanised do., 1d. per foot extra.

Extra strong Imperial Wire Sheep Netting, 3 feet, 1s. 6d. per running yard; if galvanised, 2s. Also every description of Wire Nursery and Fireguards, Wire House Lanterns and Shades, Fly-proof Dish Covers, Meat Safes, &c.; Window Blinds, 1s. 10d. per square foot, with bolts complete, in mahogany frames; Gothic Garden Bordering, 6d. per running foot; Flower Trainers, from 3d. each; Garden Arches, 20s. each; Flower Stands, from 3s. 9d. each; Galvanised Tying Wire for plants and trees, Dahlia Rods, and every description of Wire-work; Weaving, for the use of paper-makers, millers, &c.—At the Manufactory of Thomas Henry Fox, 44, Skinner-street, Snow-hill, London.

STRONG PREMIUM HARE AND RABBIT PROOF WIRE NETTING.



CHARLES D. YOUNG and COMPANY (late W. and C. YOUNG),

MANUFACTURERS OF IRON AND WIRE WORK, &c.,
22, PARLIAMENT STREET, WESTMINSTER, LONDON;
48, NORTH BRIDGE, EDINBURGH;
32, ST. ENOCH SQUARE, GLASGOW;
1, CASTLE BUILDINGS, DERBY SQUARE, LIVERPOOL;

beg respectfully to call the attention of Landed Proprietors and others to their strong Wire-Net Fence, for excluding Hares and Rabbits from Gardens, young Plantations, Nurseries, &c.

This Net was exhibited at the Show of the Highland and Agricultural Society of Scotland, held lately at Inverness, where its Efficiency, Great Strength, and Exceeding Cheapness attracted general attention, and had awarded from the Judges the Society's Silver Medals, with high commendations.

The immense damage done by Hares and Rabbits in Gardens and Young Plantations is often so great, that in the course of a year or two it will amount to more than the entire cost of protecting them with this Net. It is so durable, that when Plantations are sufficiently advanced to be independent of its protection, it can be removed to other exposed situations with the greatest facility, by any labourer. As a Fence against Hares and Rabbits, it is of itself quite sufficient, having only to be unrolled and attached, with small wire sent for that purpose, to wooden stakes driven into the ground, about every six or seven feet apart. It is, besides, peculiarly adapted for rendering Hedges, Paling, or other existing Fences, *completely impervious* to such vermin; and by being cut up into small pieces of three or more feet, as required, it forms a most efficient guard, at little expense, for individual Plants and Shrubs.

Prices.—18 ins. high, 9d.; 24 ins., 1s.; 30 ins., 1s. 3d.; and 36 ins., 1s. 6d. per lineal yard.

Or a web of 100 yards, 18 ins. wide, will cost	..	£3 15 0
Do. of 100 yards, 24 ins. wide	..	.. 5 0 0
Do. of 100 yards, 30 ins. wide	..	.. 6 5 0
Do. of 100 yards, 36 ins. wide	..	.. 7 10 0

If more or less than a web is required, it would be charged at the same rate per yard.

This Netting is also admirably adapted for Pheasantries and Poultry-yards, and is charged at the same rate. As carriage has, in many instances, been an obstacle to parties at a distance requiring this Net, C. D. Y. and Co. have made arrangements by which they will undertake to deliver it at any of the principal ports of Scotland, England, and Ireland, for One Halfpenny per lineal yard.

C. D. Young and Co. cannot give a better idea of the great strength of their Premium Wire Netting than by stating that the weight of one yard of their 24-inch at 1s. is equal to 2½ yards of another article in the market, the same width, at 9d. per yard. Samples for inspection sent free of expense.

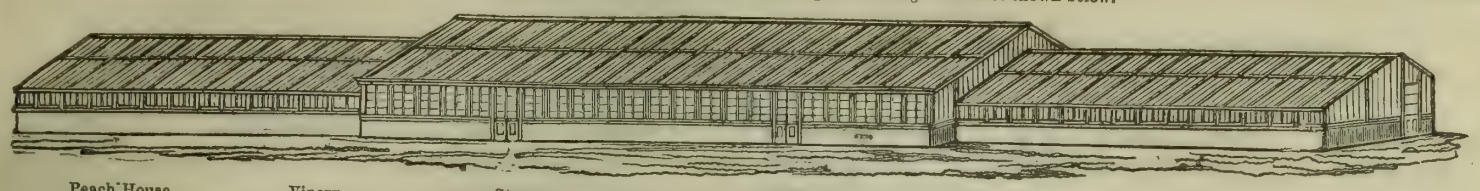
C. D. Young & Co. manufacture every description of IRON and WIRE WORK required for this and foreign countries.

Workmen sent to all parts of Scotland, England, and Ireland.

GRAY, ORMSON, AND BROWN,

DANVERS STREET, CHELSEA,

Respectfully solicit the attention of the Nobility and Gentry to their superior manner of Erecting and Heating every description of Building connected with Horticulture. They have much pleasure in giving the following testimonial referring to the range of houses shown below.



Peach House, 30 by 16 feet. | Vinery, 30 by 16 feet. | Stove, 45 by 20 ft. | Greenhouse, 45 by 20 ft. | Vinery, 30 by 16 ft. | Vinery, 30 by 16 ft.

[Erected for John Shaw Leigh, Esq., Luton Hoo.]

Extract of a Letter from Mr. Fraser.—"I have much pleasure in expressing my entire satisfaction with the range of houses you erected here. I may also state that my honoured employer, John Shaw Leigh, Esq., is perfectly satisfied. I have no hesitation in stating, that to the best of my knowledge, there is not a more complete range of glass in the country, as regards both building and heating. I may add that they are admired by every Gardener who has seen them. I shall have much pleasure in answering any references you may please to direct.

(Signed.) "James Fraser, Gardener, Luton Hoo Park."

THE STANWICK NECTARINE.

MR. J. C. STEVENS has the honour to announce that on WEDNESDAY, May 15, at 12 for 1 o'clock, by order of His Grace the Duke of Northumberland, and on account of the Trustees of a Fund for the Benefit of the GARDENERS' BENEVOLENT INSTITUTION, he will offer for sale by Auction, in his Great Room, 38, King-street, Covent-garden, Twenty-four Plants of the celebrated STANWICK NECTARINE. These plants are in pots, have been propagated expressly for the Charity by Mr. Rivers, of Sawbridgeworth, and are the first specimens that have been offered for sale.

TO GENTLEMEN, FLORISTS, AND OTHERS.

MESSRS. PROTHEROE AND MORRIS will sell by Auction, at the Mart, Bartholomew-lane, on WEDNESDAY, April 24, and THURSDAY, April 25, at 12 o'clock, a first-rate collection of Carnations and Picotees, choice Auriculas, Climbing Roses in pots, Dahlias, Fuchsias, Verbenas, Heartsease, Pinks, also fine Geraniums in bloom, &c.—May be viewed the morning of Sale; Catalogues had at the Mart, and of the Auctioneers, American Nursery, Leytonstone, Essex.

TO GENTLEMEN, FLORISTS, AND OTHERS.

MR. D. A. RAMSAY has received instructions to sell by Auction, at the Brompton Auction Ground, Fulham-road (1 mile from Hyde Park-corner), on TUESDAY, April 23d, at 12 o'clock, a choice collection of Pinks, Picotees, Cloves, Pansies, &c.; also a collection of Herbaceous Plants, comprising 300 of the leading varieties, with a quantity of Greenhouse Plants and other miscellaneous Nursery Stock.—May be viewed the day prior and morning of sale. Catalogues may be had by post, and of the Auctioneer, Brompton Nursery, Fulham-road, Brompton, Middlesex.

TO NURSEYMEN, FLORISTS, &c.

TO BE DISPOSED OF, the LEASE of a NURSERY GROUND, about 2 acres, in a high state of cultivation, a substantial and convenient Dwelling-house, Greenhouse, Outbuildings, and Forcing Pits, called the "Victoria Nursery," situate near the capital market town of Uxbridge, in the county of Middlesex. The stock to be taken at a valuation in the usual manner. For further particulars, apply to Mr. Henry Morten, Hillingdon-end, Uxbridge, or to Messrs. Riches and Woodbridge, Solicitors, Uxbridge.

TO NURSERYMEN, SEEDSMEN, AND OTHERS.

TO BE SOLD, on very advantageous terms, the Stock of a small compact Nursery, and good Seed Business. The former is well stocked with trees of various kinds, Greenhouse, and other buildings; situated opposite to a railway terminus, in the vicinity of one of the principal market towns. The above is well worthy of notice.—For particulars, apply by letter only to A. B., Crosby-hall Coffee-house, Bishopsgate-street, London

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IPPLEPEN, DEVON.

TO BE LET, at Ipplepen, Devon, for a term, furnished or unfurnished, a Pleasant and Gentlemanly RESIDENCE, fit for the occupation of a respectable Family, with about 10 acres of highly productive Garden, Orchard, and Meadow Land adjoining. The House is pleasantly situated, with a southern exposure, and Lawn in front; about five miles from Torquay, within half an hour's drive of Newton and Totness, excellent market towns, Stations of the South Devon Railway, and five hours and a half from London. Ipplepen is distinguished by its salubrity, and the unequalled beauty of the vicinity. The Dart and Teign, the best Trout and Salmon Rivers in England, are near at hand. Fox Hounds and Harriers regularly hunt the neighbourhood, and any amount of sporting can be easily obtained.—For further particulars apply to J. Lang, Esq., Ipplepen, Devon; or to Mr. R. Bastard, Solicitor, 80, Lombard-street, London.

TO BE LET, from 100 to 450 acres, in Carmarthenshire, 16 miles from the South Wales Railway. Rent moderate.—Apply to T. W. Lawford, Esq., Tirydail, Llandilo.

CONGRESBURY, SOMERSET.

TO BE LET, with immediate possession, URCHINWOOD FARM-HOUSE and Premises, with about 4 acres of Orcharding and 55 acres of Pasture-ground, 2½ miles distant from the Railway Station at Yatton. This Estate is suitable to a family of respectability. The pasturage will be ready to receive stock in about another week.—Application, prepaid, at Rhodyate Lodge, Congresbury, Somerset.

YORKSHIRE AGRICULTURAL SOCIETY.—No. 12 of the "TRANSACTIONS" are now ready, and may be had of Ridgway, London, and all booksellers, price 2s. Prize Sheets for the Thirsk meeting, 1850, may be had of M. M. Milburn, Secretary, Thirsk, Yorkshire.—April 20.

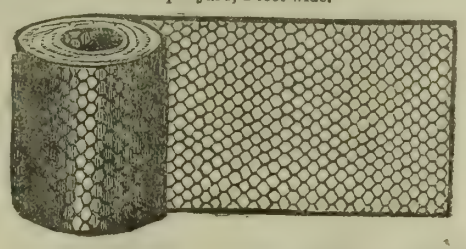
AGRICULTURAL DRAINING: THE DERBY LEVEL.—A Very Superior Draining Level, of great simplicity, price 3l. 5s., to be had of the Maker, Mr. John Davis, Optician, Derby. The above is securely packed and sent to any part of the empire.

BELL'S PATENT LIQUID CEMENT is ready for use, and only one-eighth the cost of oil-paint. For beauty it is pre-eminent, giving the exact appearance of FINE CUT STONE. Can be used at once on fresh Roman Cement, or any other plastering, and will protect the walls as well as Roman Cement. In casks of 1, 2, and 3 cwt., at 8s., 15s., and 21s., casks inclusive.

PATENT MINERAL PAINTS.—Invaluable for cheapness, beauty, and permanence: not half the cost of other paints, always ready for use, will keep good for years, and therefore well suited for exportation. Brilliant black, 2s.; rich brown, 2s. 9d.; greens and light colours 4s. per gallon.

G. Bell and Co., 2, Wellington-street, Goswell-street, London.

GALVANISED WIRE GAME NETTING.—7d. per yard, 2 feet wide.



	Galvanised.	Japanned Iron.
2-inch mesh, light, 24-inch wide ...	7d. per yd.	5d. per yd.
2-inch ,, strong ,, ...	9 ,,	6½ ,,
2-inch ,, extra strong ,, ...	12 ,,	9 ,,
1½-inch ,, light ,, ...	8 ,,	6 ,,
1½-inch ,, strong ,, ...	10 ,,	8 ,,
1½-inch ,, extra strong ,, ...	14 ,,	11 ,,

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TO BE HELD AT EXETER.

PRINCIPAL DAY OF THE SHOW, THURSDAY, THE 18TH OF JULY.

PRIZES FOR AGRICULTURAL IMPLEMENTS.

The Prizes are open to General Competition. Members have the privilege of a Free Entry, and Non-Subscribers are allowed to compete on the payment of 5s. on each Certificate.

Exhibitors will have to pay One Shilling per foot run towards defraying the expense of erecting the Shedding, which amount must be remitted to the Secretary, with the Certificate, by the First of May.

FORMS OF CERTIFICATE TO BE PROCURED ON APPLICATION TO THE SECRETARY, 12, HANOVER SQUARE, LONDON.

All Certificates for the entry of Implements, &c., will be required to state the total number of articles entered to be shown by each Exhibitor, and the space required for their exhibition, and must be returned, filled up, to the Secretary, on or before the FIRST OF MAY, 1850; the Council having decided, that in no case whatever shall any such Certificate for Implements be received after that date.

For the Plough best adapted for general purposes	£7 0 0
For the Plough best adapted for Deep Ploughing	7 0 0
For the best One-way or Turn-wrest Plough	5 0 0
For the best Paring Plough	5 0 0
For the best Subsoil Pulveriser	5 0 0
For the best Drill for general purposes, which shall possess the most approved method of Distributing Compost or other manures in a moist or dry state, quantity being especially considered	10 0 0
N.B. Other qualities being equal, the preference will be given to the Drill which may be best adapted to cover the manure with soil before the seed is deposited.	
For the best Pair-horse Steerage Corn and Turnip Drill	10 0 0
For the best Drill for small occupations	5 0 0
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N. B. Other qualities being equal, the preference will be given to the Drill which may be best adapted to cover the manure with soil before the seed is deposited.	
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For the best Turnip-cutter	5 0 0
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For the best Light Harrow	5 0 0
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For the best Horse Hoe on the ridge	5 0 0
For the best Horse Rake	5 0 0
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I.—CATTLE.

CLASS. I.—SHORT-HORNS.

1.—To the owner of the best Bull, calved previously to the 1st of January, 1848	£40 0 0
To the owner of the second-best ditto	20 0 0
2.—To the owner of the best Bull, calved since the 1st of January, 1848, and more than one year old	20 0 0
To the owner of the second best ditto ditto	10 0 0
3.—To the owner of the best Cow in Milk, or in Calf	20 0 0
To the owner of the second-best ditto	10 0 0
(In the case of the Cow, to which either of these prizes is awarded, being in calf, and not in milk, the prize will not be given until she is certified to have produced a live calf.)	
4.—To the owner of the best In-calf Heifer, not exceeding three years old	20 0 0
To the owner of the second best ditto	10 0 0
5.—To the owner of the best Yearling Heifer	10 0 0
To the owner of the second-best ditto	5 0 0

CLASS. II.—HEREFORDS.

1.—To the owner of the best Bull, calved previously to the 1st of Jannary, 1848	40 0 0
To the owner of the second-best ditto	20 0 0
2.—To the owner of the best Bull, calved since the 1st of January, 1848, and more than one year old	20 0 0
To the owner of the second-best ditto	10 0 0
3.—To the owner of the best Cow in Milk, or in Calf	20 0 0
To the owner of the second-best ditto	10 0 0
(In the case of the Cow, to which either of these prizes is awarded, being in calf, and not in milk, the prize will not be given until she is certified to have produced a live calf.)	
4.—To the owner of the best In-calf Heifer, not exceeding three years old	20 0 0
To the owner of the second-best ditto	10 0 0
5.—To the owner of the best Yearling Heifer	10 0 0
To the owner of second-best ditto	5 0 0

CLASS. III.—DEVONS.

1.—To the owner of the best Bull, calved previously to the 1st of January, 1848	40 0 0
To the owner of the second-best ditto	20 0 0
2.—To the owner of the best Bull calved since the 1st of January, 1848, and more than one year old	20 0 0
To the owner of the second-best ditto	10 0 0
3.—To the owner of the best Cow in Milk, or in Calf	£20 0 0
To the owner of the second-best ditto	10 0 0
(In the case of the Cow, to which either of these prizes is awarded, being in calf, and not in milk, the prize will not be given until she is certified to have produced a live calf.)	
4.—To the owner of the best In-calf Heifer, not exceeding three years old	20 0 0
To the owner of the second-best ditto	10 0 0
5.—To the owner of the best Yearling Heifer	10 0 0
To the owner of the second-best ditto	5 0 0

IV.—ANY BREED.

(Not qualified to compete as Short-horns, Herefords, or Devons. Cross-bred animals will be excluded.)

CLASS.

1.—To the owner of the best Bull, calved previously to the 1st of January, 1848	20 0 0
To the owner of the second-best ditto	10 0 0
2.—To the owner of the best Bull, calved since the of January, 1848, and more than one year old	10 0 0
3.—To the owner of the best Cow in Milk, or in Calf	10 0 0
(In the case of the Cow, to which this prize is awarded, being in calf, and not in milk, the prize will not be given until she is certified to have produced a live calf.)	
To the owner of the second-best ditto	5 0 0
4.—To the owner of the best In-calf Heifer, not exceeding three years old	10 0 0
5.—To the owner of the best Yearling Heifer	5 0 0

II.—HORSES.

CLASS.

1.—To the owner of the best Stallion for Agricultural purposes, of any age	30 0 0
To the owner of the second-best ditto	15 0 0
2.—To the owner of the best two years old Stallion for Agricultural purposes	20 0 0
To the owner of the second-best ditto	10 0 0
3.—To the owner of the best Roadster Stallion	15 0 0
4.—To the owner of the best Mare and Foal for Agricultural purposes	20 0 0
To the owner of the second-best ditto	10 0 0
5.—To the owner of the best two years old Filly	15 0 0
To the owner of the second-best ditto	5 0 0

III.—SHEEP.

CLASS. I.—LEICESTERS.

1.—To the owner of the best Shearling Ram	£30 0 0
To the owner of the second-best ditto	15 0 0
2.—To the owner of the best Ram of any other age	30 0 0
To the owner of the second-best ditto	15 0 0
3.—To the owner of the best Pen of Five Shearling Ewes of the same flock	20 0 0
To the owner of the second-best ditto	10 0 0

II.—SOUTHDOWN, OR OTHER SHORT-WOOLLED SHEEP.

CLASS.

1.—To the owner of the best Shearling Ram	30 0 0
To the owner of the second-best ditto	15 0 0
2.—To the owner of the best Ram of any other age	30 0 0
To the owner of the second-best ditto	15 0 0
3.—To the owner of the best Pen of Five Shearling Ewes, of the same flock	20 0 0
To the owner of the second-best ditto	10 0 0

III.—LONG-WOOLLED SHEEP.

(Not qualified to compete as Leicesters.)

CLASS.

1.—To the owner of the best Shearling Ram	20 0 0
To the owner of the second-best ditto	10 0 0
2.—To the owner of the best Ram of any other age	20 0 0
To the owner of the second-best ditto	10 0 0
3.—To the owner of the best Pen of Five Shearling Ewes, of the same flock	10 0 0
To the owner of the second-best ditto	5 0 0

IV.—PIGS.

CLASS.

1.—To the owner of the best Boar of a large breed	15 0 0
To the owner of the second-best ditto	5 0 0
2.—To the owner of the best Boar of a small breed	15 0 0
To the owner of the second-best ditto	5 0 0
3.—To the owner of the best Breeding Sow of a large breed	10 0 0
4.—To the owner of the best breeding Sow of a small breed	10 0 0
5.—To the owner of the best Pen of Three Breeding Sow Pigs of a large breed, of the same litter, above four and under eight months old	10 0 0
6.—To the owner of the best Pen of Three Breeding Sow Pigs of a small breed, of the same litter, above four and under eight months old	10 0 0

*** Complete Prize Sheets for Implements or Live Stock, containing the Regulations for Entry and Competition, may be obtained on application to the Secretary, at the Office of the Society, No. 12, Hanover Square, London.*

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The two following Prizes are offered by R. A. SLANEY, Esq., M.P., subject to such conditions as may be decided upon by the Implement Committee.

1.—For the best Drain Plough, to cut out at one, two, or three cuts, to the greatest depth, with not more than 4 horses, so as to prepare a drain so far for deeper cutting	£10 0 0
2.—For the best Plough to fill in the soil cast out of drains, with not more than 4 horses, two and two abreast	10 0 0

II.—SOUTH HAMS CATTLE.

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CLASS.

1.—To the owner of the best Bull calved previously to the 1st January, 1848	£20 0 0
To the owner of the second-best ditto	10 0 0
2.—To the owner of the best Bull, calved since the 1st of January, 1848	10 0 0
To the owner of the second-best ditto	5 0 0
3.—To the owner of the best Cow, in calf or in milk, having produced a living calf within the previous 12 months	£15 0 0
To the owner of the second-best ditto	5 0 0
4.—To the owner of the best in-calf Heifer, not more than 3 years old	15 0 0
To the owner of the second-best ditto	5 0 0
5.—To the owner of the best Yearling Heifer	10 0 0
To the owner of the second-best ditto	5 0 0

By order of the Council,
JAMES HUDSON, Secretary.

Printed by WILLIAM BRADBURY, of No. 13, Upper Woburn-place, in the Parish of St. Pancras, and FREDERICK MULLETT EVANS, of No. 7, Church-row, Stoke Newington, both in the County of Middlesex, Printers, at their office in Lombard-street, in the Precinct of Whitefriars, in the City of London; and published by them at the Office, No. 5, Charles-street, in the parish of St. Paul's, Covent-garden, in the said county, where all Advertisements and Communications are to be ADDRESSED TO THE EDITOR.—SATURDAY, APRIL 20, 1850.

THE GARDENERS' CHRONICLE
AND
AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 17—1850.] SATURDAY, APRIL 27. [PRICE 6*d.*

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THE STANWICK NECTARINE.

MR. J. C. STEVENS has the honour to announce that on WEDNESDAY, May 15, at 12 for 1 o'clock, by order of His Grace the DUKE OF NORTHUMBERLAND, and on account of the Trustees of a Fund for the Benefit of the GARDENERS' BENEVOLENT INSTITUTION, he will offer for sale by Auction, in his Great Room, 38, King-street, Covent-garden, Twenty-four Plants of the celebrated STANWICK NECTARINE. These plants are in pots, have been propagated expressly for the Charity by Mr. RIVERS, of Sawbridgeworth, and are the first specimens that have been offered for sale.

On the same day will be sold about 150 dwarf Apples, in 6-inch pots, grafted on the Pomme de Paradis (identical with the dwarf Apple of Armenia); many of them are in a bearing state, and very interesting little trees.

ROYAL BOTANIC SOCIETY, Regent's Park.—GENERAL EXHIBITIONS, WEDNESDAYS, MAY 8th, JUNE 12th, and JULY 8d.

AMERICAN PLANTS.—SATURDAYS, May 25 and June 1.

Tickets to be obtained at the Gardens, by orders from Fellows of the Society, price 5*s.* each; or on the days of Exhibition, 7*s.* 6*d.* each; and such Tickets will admit to the Collection of American Plants, from the 3d of June to the 8th, both included.

N. B. Fruit will be exhibited on June 12 and July 3.

DAHLIAS.— Magnificent (Keynes'), 10*s.* 6*d.*, 9 certificates; Sir F. Bathurst (Keynes'), 10*s.* 6*d.*, 9 certificates; Snowflake (Dodd's), 10*s.* 6*d.*, 5 certificates; Queen of Primroses (Keynes'), 10*s.* 6*d.*, 5 certificates; Gaiety (Dodd's), 7*s.* 6*d.*, 4 certificates; Elizabeth Proctor's Fancy, 10*s.* 6*d.*, 7 certificates; Highland Chief, 7*s.* 6*d.*, 5 certificates; Flying Dutchman, 7*s.* 6*d.*, 5 certificates; Forget-me-not (Hooper's), 7*s.* 6*d.*, with all the leading show flowers of the season, are now ready for sending out, in extra fine plants, on application to JOHN KEYNES, Castle-street Nursery, Salisbury.—April 27.

MESSRS. S. AND J. DILLISTONE beg to offer the following, in good plants:

Antirrhinums, fine	4*s.* to 9*s.*	per dozen
Dahlias, show and fancies	6*s.* to 12*s.*	,,
Fuchsias, fine	6*s.* to 12*s.*	,,
Geraniums, in fine variety ...	6*s.* to 12*s.* and 18*s.*	,,
Ditto, scarlet	6*s.* to 9*s.*	,,
Heliotropes	4*s.* to 9*s.*	,,

Herbaceous Plants, in choice variety, 5*s.* per doz.; 30*s.* per 100.

Myosotis azoricus, a beautiful blue bedding plant, of dwarf habit, 1*s.* each; 9*s.* per dozen.

Petunias, in fine variety, 4*s.* to 12*s.* per dozen.

Roses, fine variety of Tea, China, Bourbon, and Noisettes, 6*s.*, 9*s.*, and 12*s.* per dozen.

Phlox, the very finest ..... 6*s.* to 12*s.* per dozen.

Verbenas, the best French and others ... 4*s.* to 12*s.* ,,

Verbena, "Lilac Defiance," a fine lilac, and perfumed; habit of Scarlet Defiance, admired and ordered by all who saw it in autumn; only a few plants to spare, at 5*s.* each.

Quantities of Bedding Plants, in assortments, 4*s.* per dozen; 25*s.* per 100.

Remittances are respectfully requested from unknown correspondents. Carriage of all parcels paid to London.

Sturmer Nurseries, Haverhill, Suffolk, April 27.

TULIPS.—The fine bed of Tulips which belonged to the late Mr. JOHN RONALDS, is now coming into bloom, and will be disposed of either altogether or in separate parts. They will be in full bloom from the 10th of May.

Brentford, April 27.

PELARGONIUMS AND NEW PLANTS, MANY OF THEM FROM CALIFORNIA AND CHINA.

H. GROOM, Clapham Rise, near London, by Appointment FLORIST TO HER MAJESTY THE QUEEN, and to HIS MAJESTY THE KING OF SAXONY, begs to say that his CATALOGUE OF PELARGONIUMS AND NEW PLANTS is ready, and will be forwarded by post on application.

NEW DAHLIAS.

THOMAS BARNES will commence sending out, on the 1st of May, his superb Seedlings, viz.:

SNOWBALL, best white	10*s.* 6*d.*
WILLIAM BRAGG, vermilion	10 6

*** "GEORGE GLENNY" is unavoidably held in fancy for another season.

LADY CULLUM, yellow, tipped white	10 6
ELECT, black, tipped white	7 6
PICTURATA, cream-bordered, scarlet	7 6
DANDY, salmon and white	7 6

Selections of last year's varieties, 24*s.* per dozen; selections of former years, 9*s.* per dozen; Trentham Scarlet Geraniums, 3*s.* 6*d.* each. General descriptive Catalogues on application.

Danecroft Nurseries, Stowmarket.

VERBENA—"WONDERFUL."

G. MOORE begs to refer the Readers of this Paper to his Advertisement of the 2d of February.

Perry Barr, near Birmingham, April 27.

HOLLYHOCK SEED.

J. KITLEY begs to inform the Admirers of the HOLLYHOCK, that he has a small quantity of SEED saved from very choice double varieties of all colours, a packet of which will be sent post free, on the receipt of postage stamps to the amount of 2*s.* 6*d.*, or in 18 named varieties, for 5*s.*—Lyncombe Vale Nursery, Bath, April 27.

DAHLIAS—NEW AND CHOICE VARIETIES AT REDUCED PRICES.

WM. DENYER, SEEDSMAN and FLORIST, 82, Grace-church-street (near the Spread Eagle), London, has just published his Annual Descriptive List of DAHLIAS, containing all the new and most approved show varieties. The new varieties, 12*s.* to 18*s.* per dox.; the older kinds, but good sorts, 6*d.* each, or 5*s.* per doz.

Catalogues may be had on application.

W. D. has just received, from an eminent German grower, the following, which may be had in small collections:

Autumnal Stocks, 6 brightest colours; the collection,	1*s.* 6*d.*	
Brompton or Gigantic Stocks, 6 vars., including the Emperor	,,	2 0
Double Balsams, 6 brightest colours...	,,	1 6
,, Hollyhocks, 6 do do. ...	,,	1 6
Wallflowers, singular colours, 6 vars.	,,	2 0

NEW AND UNRIVALLED SEEDLING FUCHSIAS.—Yorkshire Eclipse, 10*s.* 6*d.*; Beauty of Richmond, 10*s.* 6*d.*; Distinctus, 7*s.* 6*d.*

WM. RUMLEY and SONS beg to refer the readers of the *Gardeners' Chronicle* to their Advertisement in this Paper of April 20th, for a full description of the above splendid FUCHSIAS, which will be sent out on and after the 7th of May, with the usual allowance to the trade.—Gilling, Richmond, Yorkshire.

WILLIAM WOOD AND SON have the pleasure of offering the following select and highly desirable plants:

Achimenes Kleii, each	1*s.* 6*d.*	
,, longiflora major, do.	1 6	
Anemone japonica hybrida, do.	1 6	
Maurandya Emeryana (red), do.	2 6	
Mutraria coccinea, do.	7 6	
Phlox depressa, do.	2 6	
Potentilla Smouti, do.	3 6	
Rhododendron javanicum, per doz. ...	7*s.* 6*d.* to 21	0
Azalea indica, fine collection, per doz....	12*s.* to 24	0

SELECT BEDDING PLANTS. Per doz.

Antirrhinums, best named	6*s.* 0*d.*
Calceolarias, shrubby	6*s.* to 12 0
,, fine seedlings	6*s.* to 12 0
Chrysanthemums, Continental (vars.)	9*s.* to 18 0
,, Miniature	12*s.* to 18 0
Cinerarias, superb collection	12*s.* to 24 0
Fuchsias, best kinds	6*s.* to 18 0
Geraniums, finest scarlet (vars.), remarkably strong and bushy, 40*s.* per 100	6*s.* to 12 0
Geraniums, Ivy-leaved pink and white...	6 0
,, striped-leaved for edgings	6 0
,, Mangles' silver-striped, fine	6 0
,, sweet-scented-leaved	6*s.* to 12 0
Heliotropium Grisau	12 0
,, Souvenir de Liège...	9 0
Lobelia erinus lilacina	9 0
,, ,, maxima	9 0
,, fulgens, 6 new vars.	18 0
Mimulus rubinus, very fine	9 0
Pentstemons of sorts	6 0
,, 8 new and superb vars. ... ...12*s.* to	18 0
Salvias, 6 fine vars.... ... ... 4*s.* to	9 0
Verbenas, best sorts ... ... 6*s.* to	12 0
Zauschneria californica	6 0
Roses in pots (see previous Advertisements) ... 9*s.* to	18 0

Extra Plants presented with each order. Catalogues may be had GRATIS, on application.

Woodlands Nursery, Maresfield, near Uckfield, Sussex.

ANTIRRHINUMS UNEQUALLED.

EDWARD TILEY begs to inform the lovers of the above beautiful flower, that he will be ready to send out, after the 7th May, Five superb Seedling ANTIRRHINUMS, selected from above ten thousand seedlings. Ne plus ultra, 5*s.*; Lady William Powlett, 5*s.*; Criterion, 5*s.*; Lord Gough, 5*s.*; Major Edwardes, 5*s.*

The above varieties will be found to be very superior to anything of the kind yet sent out. They were admired by hundreds of spectators, and numerous orders were taken for them when in bloom. Blooms were sent to the Editor of the *Gardeners' Chronicle*, who spoke in the highest terms of them. "Ne plus ultra" was sent to Mr. Henderson, Pine-apple Nursery, who highly approved of it, and ordered plants. They are dwarf habited, and very free bloomers; large bold flowers beautifully striped with large flakes of various colours, some of them finely splashed and studded over on various coloured grounds, which give them a very attractive appearance—above all the older varieties. The set of 5 will be sent for 1*l.*

E. T. being a grower of all the best varieties, warrants them to give the greatest satisfaction to all purchasers. Parties living at a distance can have them sent through the post, carefully packed in stout boxes, postage and package free, on the receipt of Post-office order for the amount of plants required. A remittance or reference is expected from all unknown correspondents. The usual allowance to the trade when three plants are ordered.—EDWARD TILEY, Nurseryman, Seedsman, and Florist, 16, Pulteney-bridge, Bath, April 27.

HORTICULTURAL TOOLS.

GREEN AND CONSTABLE, 36, King William-street, five doors from London Bridge, have a large assortment of GARDEN TOOLS, containing all the recent inventions, and including Lyndon's Patent Cast Steel Spades, Shovels, and Garden Forks, Lord Vernon's Hoe, Jointed Hothouse Syringes, Transplanting Tools, Registered Garden Labels, Ladies' sets of Gardening implements, Pruning Sheare, Knives, &c. Agents for the Vitreous Porcelain Garden Bordering.—36, King William-st., five doors from London Bridge.

FERN SEEDS.

GEORGE BENNET begs to inform the lovers of Ferns that he has still a large quantity of NEW ZEALAND FERN SEEDS, and has much pleasure in announcing that they have vegetated. Price 2*s.* 6*d.* per packet. The names of the varieties are as follows: No. 1, Todia sp., variety australis; No. 2, Alsophylla medullaris, fine variety; No. 3, Cyathea dealbata; No. 4, mixed varieties of Hymenophyllum, Trichomanes, Adiantums, &c.; No. 5, mixed varieties of Alsophylla dealbata, or Silver Tree Fern; No. 6, Cyathea medullaris. A remittance must accompany the order either in postage stamps or Post-office order, made payable at Coventry, to GEORGE BENNET, Brandon, Warwickshire, near Coventry.

SEEDS IN COLLECTIONS.
OF THE BEST WHICH CAN BE PROCURED.

BASS AND BROWN beg to offer the following CHOICE VEGETABLE SEEDS.

Complete Collections of the best and newest sorts, in proportionate quantities of each, suited for large or small gardens, at per collection, 1*l.*, 2*l.*, and 3*l.* A Collection for a small garden, of good sorts, at 10*s.* 6*d.* A List of the Collections furnished if required.

SELECT FLOWER SEEDS,

Free by post, with full directions for sowing, heights, colours, &c.

	s.	*d.*
100 varieties best and newest Annuals	15	0
50 varieties for 8*s.* 6*d.*, 30 for 5*s.* 6*d.*, 20 for	4	0
20 varieties best dwarf kinds, in larger packets, suited for filling beds on lawns, 7*s.* 6*d.*, or 12 do. for ...	5	0
20 varieties best Greenhouse Annuals, 7*s.* 6*d.*, 12 for ...	5	0
20 varieties choice Greenhouse Perennials, 10*s.* 6*d.*, 12 for	7	6
20 vars. choice hardy Biennials and Perennials, 7*s.* 6*d.*, 12 for	5	0

IMPORTED GERMAN SEEDS.

20 varieties splendid double Stocks, 3*s.* 6*d*; 12 ditto ...	2	6
12 vars. splendid China Asters	2	6
12 vars. fine globular Asters	2	6
12 vars. Dwarf Rocket Larkspurs	2	0
9 vars. Tall ditto	1	6

Remittances with orders are requested from unknown correspondents. Goods carriage free to London, and with all orders of 2*l.* and upwards, articles presented extra. Post-office orders payable to BASS and BROWN or to STEPHEN BROWN.

Our Descriptive Priced Seed and Plant List will be forwarded, prepaid, on application, by forwarding four postage stamps, as copies having the Newspaper stamp are now all distributed.

SEED AND HORTICULTURAL ESTABLISHMENT, SUDBURY, SUFFOLK.

NEW CONTINENTAL VERBENAS.

THOMAS BARNES has a large healthy Stock of the following new VERBENAS, which he is enabled to offer in fine Plants, 3*s.* per dox., or 3*s.* 6*d.* each, viz., Adele, Anais, Buffon, Bajeans, Cyporisse, Daubenton, La Leduisante, Madame Lecquay, Madame de Gournay, Madame Goudon, Madame Liencount, Madame Lockroy. Woodcock's Magnificent, 3*s.* 6*d.* each. Selections of last year's, 12*s.* per doz.; do. of former years, 6*s.* per doz.; collections for bedding 20*s.* per 100.

PETUNIAS.—A few more sets of T. B.'s superb Seedlings may still be had, with all the leading varieties of last and former years.

General Descriptive Catalogues may be had on application.

Danecroft Nurseries, Stowmarket, Suffolk.

UNRIVALLED SEEDLING ANTIRRHINUMS.

JAMES SAUNDERS AND SON having paid particular attention to the cultivation of the above beautiful hardy plant, have much pleasure in offering a selection of 12 from their large and universally admired collection. They will be found perfectly distinct, and cannot fail to give the utmost satisfaction. Fifty spikes of flowers were sent to Dr. LINDLEY, who describes them thus in the *Gardeners' Chronicle*, July 14, 1849:—"*J. S. A.* A very handsome collection, particularly Nos. 3, 5, 16, 19, 18, 24, 25, 27, 31, and 42, but still more particularly Nos. 5 and 42. No. 28 is a very bright self-coloured yellow. You had better select the most distinct striped and spotted ones for seed. Yours is an excellent breed of Antirrhinums for that purpose."

Blooms were also sent to and seen by a great many Nurserymen and Florists, and in every instance received the same admiration, as superior in every respect to any out, and were in all cases ordered. Many of them are beautifully spotted, others as finely flaked as any Carnation, and the whole collection brilliant in every variety of colour, perfect in shape, free bloomers, and of compact habits.

Strong plants will be sent out on and after the 6th of May, at 30*s.* the set of 12; one-third off to the Trade when three or more sets are ordered. They can be forwarded safely by post, and, when ordered so, free of postage.

J. S. and SON have also a fine Stock of Antirrhinum Seed, carefully selected from 50 of their best varieties, in packets, 2*s.* 6*d.* to 5*s.* each, free by post.—Abergavenny, April 27.

HORTICULTURAL IMPROVEMENTS.

STRAWBERRIES exceeding two ounces each in weight, and of delicious flavour, were grown on Roberts's Strawberry Tiles last season, and exhibited at the Horticultural Show at Chiswick, and at the Royal Botanic Gardens, Regent's Park, where they obtained the highest Certificate of Merit. No appliances hi herto used are equal to these Tiles for improving the flavour and keeping the Strawberries clean. This is admitted by all who have tried them. As a further proof, many persons who have tried them have had a second and third supply, and will have much pleasure in answering inquiries, if any reference is considered necessary. They are not like articles of consumption, for when once purchased they will last for many years.

CELERY and CARDOONS of the most superb quality and size were produced by the use of Roberts's Sockets, and this season he introduces a new method of growing Asparagus, which greatly improves the quality and quantity of that valuable vegetable. He likewise gives a new mode of growing Grapes, Peaches, Figs, and other Wall Fruit, and has recently registered a Ventilating Flower Pot, which will be found invaluable to Scientific and Amateur Gardeners.

An illustrated pamphlet, with particulars and testimonials, can be had by enclosing three postage stamps to Mr. JOHN ROBERTS, 34, Eastcheap, London, where these inventions may be inspected.

EDWARD GEORGE HENDERSON, Wellington-road Nursery, St. John's Wood, London, begs to offer the following Plants, which can be supplied immediately.

NEW FUCHSIAS (HENDERSON'S).

Prince of Orange, Fair Rosamond, Don Giovanni, Sims Reeves, Pearl of England, Grand Master, and Confidence. The set of 7 for 30*s.*, or 5*s.* each, with the usual discount to the Trade.

SCARLET GERANIUM, "COMMANDER-IN-CHIEF," 10*s.* 6*d.*, an allowance to the Trade if three are taken.

SCARLET GERANIUM, "EXCELLENCE," 7*s.* 6*d.* each, an allowance to the Trade if three are taken.

For descriptions of the above see *Gard. Chron.* of April 20.

NEW BEDDING PLANTS.

	s.	*d.*
Bouvardia leiantha, orange, a very profuse bloomer, and distinct	5	0
Calceolaria sulphurea splendens, fine large yellow, dwarf habit	3	6
Cuphea Donkelaarii, bright plum-purple, new and distinct	3	6
" miniata speciosa, rosy pink, crimson and lake, distinct and fine, and blooms very freely	5	0
Heliotropium corymbosum, a beautiful variety, compact, bushy habit, blooming freely	3	6
Lantana delicatissima, small, compact habit, distinct, and blooms freely	3	6
Lobelia erinus maxima, rich blue, with white eye, large, and the best for bedding, 9*d.* each, or 8*s.* per dozen.		
Lopezias villosa, miniata, and miniata superba, 1*s.* 6*d.* and 2*s.* 6*d* each.		
Petunia viridis marginata, rosy crimson, distinctly marked with green, compact habit, novel, and blooms profusely	3	6
Salvia Lamboninii, deep purple, habit of splendens, blooming profusely	3	6
Salvia species alba, distinct	3	6

NEW HERBACEOUS PLANTS.

Campanula nobilis alba, fine white, with beautifully spotted throat	7	6
Dielytra spectabile, a most beautiful Fumaria, with pink flowers 5*s.* and	7	6
Scutellaria canescens, light blue, with light centre, large flower, and a profuse bloomer; erect habit	5	0
Scutellaria macrantha, blue; a very free blooming and showy plant, of compact habit, growing about 1 foot high, good for bedding	3	6

SELECT PLANTS.

Ceanothus dentatus, 5*s.*; C. rigidus, 5*s.* and 7*s.* 6*d.*; C. papillosus, 7*s.* 6*d.* and 10*s.* 6*d.*
Chorizema flava, bright yellow, blooming very freely, 7*s.* 6*d.*
Centradenia floribunda, 7*s.* 6*d.* and 10*s.* 6*d.* each.
Daphne Delahayana (new and hardy), 7*s.* 6*d.*; D. Fortunii (hardy), 7*s.* 6*d.*
Epiphyllum truncatum Salmonium, distinct and new in colours, 7*s.* 6*d.* and 10*s.* 6*d.*
Epiphyllum truncatum spectabile, very fine, 7*s.* 0*d.* and 10*s.* 6*d.*
Fuchsia spectabile, 3*s.* 6*d.*; F. corymbiflora alba, 3*s.* 6*d.* and 5*s.*; F. syringæflora, 2*s.* 6*d.*
Gesnera picta (Veitch's), 5*s.*; G. purpurea macrantha, 5*s.*
Hoya bella (Veitch's), 10*s.* 6*d.*; H. imperialis (Low's), best variety, 7*s.* 6*d.* and 10*s.* 6*d.*
Kunthia Schauerii, a free blooming and very desirable plant, 5*s.* and 7*s.* 6*d.*
Hydrangea involucrata, 3*s.* 6*d.*
Nematanthus Morilliana (or N. Ionema), 5*s.*
Passiflora alata superba, 10*s.* 6*d.*
Gloxinia Victoria Regina Henderson's), 7*s.* 6*d.*
Verbenas, good sorts, 6*s.* per doz. The best of the continental and other varieties of 1849, 9*s.* and 12*s.* per doz. New continental and other varieties, now sending out for the first time, 30*s.* per doz. Selection in each instance left to E. G. H.

The Trade Supplied.

N.B. Descriptive Priced Catalogues of all the new Bedding and Soft-wooded Plants, are just published, and will be sent on application.

E. G. H. has at the present time in his establishment a few very excellent Gardeners, waiting for engagements, who can be highly recommended.

EARLY AND CATTLE CABBAGE.—A stock not to be equalled, of 400,000 stout bedded plants, superior true sorts, 4*s.* 6*d.* per 1000; also fine bedded Red for pickling, 1*s.* per 100, or 7*s.* 6*d.* per 1000, package included, delivered free of carriage to the Edenbridge station, South Eastern Railway. Address to JOHN CATTELL, Westerham, Kent. Cash expected from unknown correspondents. Seed of CATTELL'S superior "Dwarf Barnes," and his new "Dwarf Reliance" Cabbage may be had in packets, by post, for 12 penny stamps per packet, the former containing 1 oz. as usual, and the latter half an ounce.

J. C.'s Annual Catalogue of Plants, for the spring of 1850, is now ready, and may be had by inclosing, with address, 1*d.* stamp.

A large stock of Strawberries, bedded plants, worth the attention of the Trade—Early Grove-end Scarlet, Princess Alice, British Queen, Downton, and Swainston Seedling.

TURNIP SEEDS.

W. SKIRVING begs to acquaint his Friends and the Public, that he has no Agent in Town or Country, and that the price of his Improved Swede, and also his Improved Purple-top Yellow Bullock Turnip Seed is this season 1*s.* per pound. All other kinds of Turnip and Agricultural Seeds in general, of the most select description, at moderate prices. A remittance, or reference, from unknown correspondents, is respectfully requested to accompany orders.

Liverpool, April 27.

WANTED, GARDEN ORNAMENTS, VASES, FIGURES, or a good DIAL, in artificial stone or terra cotta; also large TUB PLANTS. Parties having such to sell in very good condition, at second-hand prices, and in the immediate vicinity of London, may hear of a purchaser, by addressing exact particulars of the material, pattern, size and price to W. S., 8, King's Bench Walk, Temple, London.

GRASS SEEDS.—Mixtures of selected natural GRASS SEEDS, with a proper proportion of permanent Clovers, for laying down land to permanent Meadows and Pastures, to suit the soil to be laid down. Mixtures of the above for Irrigation or Water Meadows.

Mixtures of the above for Parks or Field Lawns; Italian, Perennial, and other Rye-grasses; Long Red, Yellow Globe, and other Mangold Wurzel; Swedes (various sorts), Hybrid and other Turnips; all kinds of Grass Seeds, Agricultural and other Seeds.—THOMAS GIBBS and Co., the Seedsmen to the Royal Agricultural Society of England, corner of HALF-MOON-STREET, Piccadilly, London.

MEADOW AND PASTURE GRASS SEEDS.

GEORGE GIBBS AND Co. beg to notice their mixtures for laying Land down to Permanent Grass are now ready. The general satisfaction they have given for many years past, and the present low prices of 32*s.* per acre, allowing 2 bushels and 12 lbs. to each acre, they trust will ensure a continuance of orders. Mixed Seeds for improving old Grass Land, 1*s.* 3*d.* per lb.; fine sorts for forming Lawns, 1*s.* 4*d.* per lb. Their Priced List for the season of Turnips, Mangold Wurzel, and other Farm Seeds, will be forwarded on application to 26, Down-street, Piccadilly, London.

SCARLET GERANIUMS.

MARY CONWAY begs to offer good plants of the following:—

SCARLET GERANIUM "PRINCESS ROYAL" (CONWAY'S).—A splendid bright scarlet variety, of dwarf habit, and a very free and early bloomer, with a handsome horse-shoe leaf. Plants 7*s.* 6*d.* each, and the usual discount to the Trade when three are taken.

The following 15 Scarlets for 14*s.*:—Eclipse, Goliah, Ivery's Scarlet, Ibrahim Pacha, Gem of Scarlets, Mrs. Maylor, Phenomenon, Punch, Royalist, Shrubland Superb, Symmetry, Tam O'Shanter, Tom Thumb's Master, Tom Thumb Improved, and Brompton Hero. With the following seven pink varieties for 21*s.*, viz., Cherry Cheek, Judy, Jenny Lind, Lucia Rosea, Pet, Pink Nosegay, and Rosy Morn.

The following VERBENAS 12*s.* per dozen, or two dozen for 20*s.*, viz., Adonis, Apollon, Bances, Belle de Comte, Criterion, Chauveerii, Eclipse, Favourite, Gracieuse, Heroine, Lord of the Isles, General Lamoriciere, Malvina, Morphee, Madame Gabrielle de Vandeva, Madame Rattier, Princess Alice, Reine Bacchanal, Royal Purple, Virgil, Vesta, War Eagle, Reine du Jour, and Monsieur Affré.

The following VERBENAS 6*s.* per dozen, autumn-struck plants, viz., Clotilda, Emperor of China, Empress of Scarlets, Eppsii, Gem of the West, Grandiflora, Madame Passy, Vulcan Superb, Excelsa Superba, Vampa, Marchioness of Ailsa, Defiance, St. Margaret, and Picta.

PETUNIA "BEAUTY SUPREME" (CONWAY'S).—This is a splendid variety for bedding, the habit of the plant is perfection itself, forming a compact close bush, studded all over from the ground upwards with a dense mass of the most showy deep purplish crimson flowers; 9*s.* and 12*s.* per doz.

CALCEOLARIAS.—Shankleyana, new and shrubby, 12*s.* per doz.; Kentish Hero, 6*s.* and 9*s.* per doz.; Amplexicaule, 9*s.* per doz.; Viscosissima, 6*s.* per doz.; Kayii, 6*s.* per doz.; and Aurantia Multiflora, 6*s.* per doz.

HELIOTROPIUMS.—Grisau, 9*s.* per doz.; Triomphe de Liege, 9*s.* per doz.; Souvenir de Liege, the best for bedding, 12*s.* per dozen.

FUCHSIAS.—Beauty of Leeds, Brewerii, Count de Beaulieu, Crimson King, Dreadnought, Exoniensis, Etiole de Versailes, Elizabeth, One in the Ring, Purity, Prince Albert, and Scarletina Reflexa, 9*s.* per doz.; Elegance, 1*s.* 6*d.*; Newtoniensis, 1*s.* 6*d.*; Serratifolia Multiflora, 1*s.* 6*d.*; Sir Charles Napier, 1*s.* 6*d*; Splendida, 1*s.* 6*d.*; Spectabile, or Queen of Fuchsias, 5*s.*

LOBELIAS.—Erinus, Grandiflora, Lucida, Maxima, and Lilacina, 6*s.* per doz.

M. C. has also a good stock of the newest and best Phloxes, Salvias, Œnotheras, Antirrhinums, and Chrysanthemums, at moderate prices.

Earl's Court Nursery, old Brompton, near London.

STAR NURSERY, SLOUGH, BUCKS.

W. R. BRAGG begs to inform the Floral Public that his Annual Spring Catalogue contains Descriptive Lists of E. Foster's new and superlative Pelargoniums; the best varieties of Pinks, Picotees, Carnations, Pansies, Roses, &c., and may be had on application.

GIPSY PRIDE, by far the most successful Pelargonium of 1849, may still be had; also Constance, Conspicuum, Narcissus, Armida improved, and all the best show varieties of last and former years, in extra strong plants.

NEW PANSY, HUNT'S "HELEN," has gained more first class certificates in 1849 than any other variety now offered, and, beyond doubt, is quite a leading white-ground flower; plants are fine and healthy. 5*s.* each.

GOLDEN YELLOW DAHLIA, OLIVER'S "GOLDEN DROP," gained four first prizes and first class certificates in 1848, &c., five of each in 1849. Plants in May, 10*s.* 6*d.*

NEW FANCY DAHLIA, BRAGG'S "LADY GRENVILLE," the most successful fancy Dahlia of the year; colour, deep red, distinctly tipped with white; as a guarantee for constancy, it has received 11 first class certificates, four extra money prizes, and two premier prizes in class showing. Plants in May, 10*s.* 6*d.* Sound ground and pot roots of all the best Fancy and other Dahlias, at moderate prices.—April 27.

DELPHINIUM MAGNIFICUM, figured in "Paxton's Magazine of Botany" for October, 1849. This fine hardy Delphinium must be seen to show its great superiority over every other Larkspur yet grown, in the intense brilliancy of its blue; either in the flower garden or in the bouquet, it at once arrests the attention by its vivid colouring and fine habit. Good established plants ready to send out on the 10th of May, at 10*s.* 6*d.* each. The usual allowance to the trade when three or more are taken.

Rose Geant des Batailles, 20*s.* per dozen.
" Pius the 9th, Sydonie, Cymedor, &c.

A. GODWIN, Eycroft's Nursery, near Ashbourne.

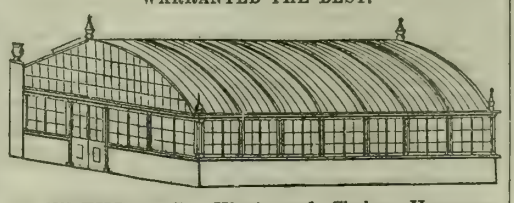
BELFAST.

FLAX-DRESSING MACHINERY.—Persons wishing to put up Mills for Scutching or Dressing FLAX IN THE STRAW, can be supplied with the Improved Machinery recommended by the Royal Flax Improvement Society of Ireland, on application to the makers, MAC ADAM Brothers and Co., Engineers, Soho Foundry, Belfast.—April 27.

THE COTTAGER'S STOVE will cook sufficient for a Family of a dozen persons with one pound of Coal or Coke per hour, and is well adapted for Emigrants.—May be seen in operation daily at the Manufacturer's, Messrs. BENHAM and SON'S, 19, Wigmore-street, and Messrs. D. and E. BAILEY, 272, High Holborn, London.

HORTICULTURAL BUILDING AND HEATING BY HOT WATER.

BOILERS OF ALL SIZES TO BE SEEN IN OPERATION, WARRANTED THE BEST.



J. WEEKS AND Co., King's-road, Chelsea, HORTICULTURAL ARCHITECTS, HOTHOUSE BUILDERS, and HOT-WATER APPARATUS MANUFACTURERS, solicit an inspection of their various Works completed and in progress. Horticultural Buildings of every variety. BOILERS of all sizes to be seen in operation, and which they warrant to be the most effective and economical of any in use. The largest size Boiler is now effectually heating three extensive ranges of Forcing-houses, 230 feet by 22 feet, all Span Roofs and lofty, containing upwards of 50,000 cubical feet of air. Also various small and intermediate size Boilers, some of all sizes in operation. The consumption of fuel is very moderate, and the fires will continue from 10 to 15 hours without attendance. The extensive arrangements now in full operation on their premises, enables them to build to any extent, and at very moderate prices. Hothouses, Greenhouses, Conservatories, Forcing-pits, Frames, Glass Lights, &c. A very extensive collection of Stove and Greenhouse Plants, which are sold at very low prices. Plans, Estimates, and Catalogues forwarded on application.

J. WEEKS and Co., King's-road, Chelsea.

DEANE'S WARRANTED GARDEN TOOLS.—Horticulturists, and all interested in Gardening pursuits, are invited to examine G. and J. DEANE'S extensive Stock of GARDENING AND PRUNING IMPLEMENTS, best London made Garden Engines and Syringes, Coalbrookdale Garden Seats and Chairs.

Averuncators	Garden Scrapers	Pick Axes
Axes	Grape Gatherers and Scissors	Potato Forks
Bagging Hooks	Gravel Rakes and Sieves	Pruning Bills
Bills	Greenhouse Doors and Frames	" Knives, various
Borders, various patterns	Hammers	" Saws
Botanical Boxes	Hand-glass Frames	" Scissors
Cases of Pruning Instruments	Hay Knives	" Shears [riety.
Chaff Engines	Hoes of every pattern	Rakes in great va-
Chaff Knives	Horticultural Hammers and Hatchets	Reaping Hooks
Daisy Rakes	Hotbed Handles	Scythes
Dibbles	Ladies' Set of Tools	Scythe Stones
Dock Spuds	Labels, various patterns, in zinc, porcelain, &c.	Shears, various
Draining Tools	Lines and Reels	Sickles
Edging Irons and Shears	Marking Ink	Sickle Saws
Flower Scissors	Mattocks	Spades and Shovels
" Stands in Wires and Iron	Menographs	Spuds
Fumigators	Metallic Wire	Switch Hooks
Galvanic Bordersand Plant Protectors	Milton Hatchets	Thistle Hooks
Garden Chairs and Seats	Mole Traps	Transplanting Tools
" Loops	Mowing Machine	Trowels
" Roliers		Turfing Irons
		Wall Nails
		Watering Pots
		Weed Extractorsand Hooks
		Wheelbarrows
		Youths' Set of Tools

G. and J. DEANE are Sole Agents for LINGHAM'S PERMANENT LABELS, samples of which, with the Illustrated List of Horticultural Tools, can be sent, post paid, to any part of the United Kingdom.—DEANE'S Horticultural Tool Warehouse, opening to the Monument, 46, King William-st., London-bridge.

RAPID BUTTER MAKING.

ANTHONY'S AMERICAN CHURN, patented in England, was exhibited on Wednesday last before the Council of the Royal Agricultural Society of England, at their Rooms, 12, Hanover-square, when it sustained its former reputation, by producing, from 5 quarts of rich cream, 5¼ lbs. of Butter in eight minutes.

Sold at the Depôt, 97, Newgate-street, London. A liberal allowance to the Trade. Parties infringing will be prosecuted. None genuine without the Brand and Number.—April 27.

PATENT SPADES, DAISY RAKES, SCYTHES, Draining, and other Garden Tools. Mole Traps, 6*s.* per dozen. Carpenters and Smiths' Tools, &c. Ladies' Garden Tools, 7*s.* 9*d.* a set. Sword-scrapers for Gardens, 1*s.* 2*d.* each. Patent Fumigation, for destroying insects on plants, in greenhouses, &c.: at Messrs. J. H. BOOBBYER and Co.'s (late STURCH and BOOBBYER), Ironmongery, Brass-foundry, Nail and Tool Warehouse, 14, Stanhope-street, Clare-market, London. Established nearly 200 years for the sale of goods from the best Manufactories at the lowest prices. Goods forwarded to any part on the receipt of remittance.

ALEXANDER SHANKS AND SON, MACHINE MAKERS, Ogilvy-place, Arbroath, respectfully solicit the attention of the Nobility, Gentry, and Gardeners to their IMPROVED GRASS CUTTING and ROLLING MACHINES, for LAWNS, the completeness of which has now been fully proved. The Machine works with perfect ease, producing a beautiful smooth surface, and attended with a saving of labour of 80 per cent.

Extract from a Letter from Mr. Henry C. Ogle, Chief Gardener to the Earl of Abergavenny; dated Bridge Castle, Kent, October 23, 1848.

"Sirs—Your large-sized Mowing Machine, which I have had in use during the past summer, has given me the most perfect satisfaction. It is an admirable Machine for all places having a great extent of Lawn; and I feel persuaded, as its merits become better known, it will be brought into general use.—I am, Sirs, your obedient servant, HENRY C. OGLE."

A. S. and SON respectfully solicit the attention of the Farmers, Agriculturists, and others to an improved STRAW or HAY CUTTING MACHINE, which they have recently invented. The cheapness and utility of this improved Machine, combined with superior workmanship and durability, enable the inventors confidently to recommend it, as the most profitable Machine of the kind yet sent out. Further particulars and a list of prices may be had, by applying to the makers or to their Agents. Agents for London, Messrs. J. and C. Lee, Nursery and Seedsmen, Hammersmith; Hertford, Mr. George Folkard, Ironmonger; Liverpool, Messrs. Charles D. Young and Co., Castle Buildings, Derby-square; Wakefield, Mr. Wm. Barratt, Nursery and Seedsman, St. Johns; Chester, Messrs. F. and J. Dickson, Nursery and Seedsmen; Glasgow, Messrs. Charles D. Young and Co., 32, St. Enoch-square; Edinburgh, Messrs. Charles D. Young and Co., 48, North Bridge; Perth, Messrs. Dickson and Turnbull, Nursery and Seedsmen.

BEE HIVES.

GEORGE NEIGHBOUR AND SON respectfully announce that they have prepared for this season an extensive supply of their various IMPROVED BEE HIVES, which are offered to all who are desirous of cultivating that pleasing and profitable branch of rural economy—the Honey Bee. The collection consists of "Nutt's Collateral Hives," "The Single Box Hive," "The Amateur Bar Hive," "The Improved Cottage Hive," &c., from either of which the honey may be taken at any time without injury to the Bees, and may be worked with safety, humanity, and profit, by the most timid and unaccustomed to Bee manipulation. A descriptive paper, with drawings and prices, will be forwarded on the receipt of two postage stamps.—127, High Holborn, London.

Agents: WM. DRURY, Castle-street, Liverpool; HALL and WILSON, 50, King-street, Manchester; AUSTIN and M'ASLIN, 168, Trongate, Glasgow.

GLASS WATER PIPES.

MESSRS. COATHUPES AND Co., GLASS MANUFACTURERS, Bristol and Nailsea, Somerset, continue to supply GLASS PIPES for the conveyance of water, &c., in lengths of from 3 to 7 feet, and from ¾-inch to 4-inch bores; they provide also the necessary joints, which enable them to stand very considerable pressure.

CUCUMBER AND MELON BOXES AND LIGHTS.

One hundred 1, 2, and 3-light Boxes and Lights of all sizes ready for immediate use. Warranted best materials, packed and sent to all parts of the kingdom; 2-light Boxes and Lights from 1*l.* 4*s.* Garden Lights of every description, Conservatories, Green and Hot-houses, made and fixed in all parts of the kingdom. References given to the Nobility, Gentry, and the Trade, in most of the counties of England. JAS. WATTS, Hothouse Builder, Claremont-place, Old Kent-road, London.

NETTING, FLAGS, AND BUNTING.—Superior Tanned Garden Netting, for preserving Fruit-trees from Frost, Blight, or Birds; or as a fence for Fowls, Pigeons, Tulip and Seed-beds, can be had in any quantity from JOHN KING FABLOW'S Fishing-rod and Net Manufactory, 5, Crooked-lane, London-bridge, at 3*d.* per yard 2 yards wide, or 6*d.* per yard 4 yards wide. Woollen Bunting, any length or width, at 6*d.* per square yard. Forwarded to any part of the kingdom on receipt of remittance, Post-office order, or stamps. Several good second-hand Flags to be sold cheap.

GERANIUMS.—Hoyle's Belle of the Village, 20s. per dozen.

Hoyle's Rollo, per doz.	20s.	0d	Fouquett's Carlotta, p. dz.	20s.	0d
,, Abd-el-Kader...	20	0	Foster's Ondine	20	0
,, Terpsichore ...	20	0	,, Lallah Rookh	20	0
,, Prometheus ...	20	0	Whomes' Cupid, each	5	0
,, Superlative ...	20	0	,, Windsor Castle	5	0
,, Flamingo ...	20	0	,, Plutarch ...	3	0
,, Mount Etna ...	2	0	,, Princess Helena	2	0
,, Julius	3	0	,, Violetta	1	6
Fouquett's Elizabeth...	20	0			

All the above can be supplied fine plants.
James Whomes, Royal Pelargonium Nursery, Windsor.

NEW AND STRIKING VERBENA.

ARTHUR MACKIE begs to offer the undermentioned to the attention of Florists, with the fullest conviction that it will give entire satisfaction.

WOODCOCK'S MAGNIFICENT.—A. M. having purchased the entire Stock of this unrivalled Verbena, offers it to the Public with the utmost confidence, being fully persuaded that it will surpass everything yet out in its class. The individual flowers cover a sixpence, and sometimes a shilling. It is of a very free habit and growth, and well suited for grouping. See *Gardeners' Chronicle*, Sept. 15, 1849.—"*W. K. B.* Colour bright rose, fading to pink; a remarkably fine variety, with much the largest flowers we have yet seen."

Fine strong plants at 5*s.* each, free by post. Where three are ordered four will be sent.

Mackie's Descriptive Catalogue of Flower and Vegetable Seeds is now ready, and will be forwarded on receipt of two stamps for postage.—Norwich Nursery, Norwich, April 27.

RENDLE'S PRICED CATALOGUE OF PLANTS is just published, and can be had for one postage stamp.

Ever since our invention of the "Tank System of Heating Horticultural Buildings" (for which a Gold Medal was unanimously awarded to us by the Royal Devon and Cornwall Horticultural Society) we have been enabled to propagate plants in such abundance, with scarcely a failure, that we are enabled to offer them at

VERY REDUCED PRICES.

We shall have at least THREE THOUSAND DAHLIAS and FUCHSIAS ready for delivery after the 10th of May next, as well as a large quantity of Geraniums, Camellias, Indian Azaleas, Cinerarias, Verbenas, Antirrhinums, Chrysanthemums, with a large collection of Greenhouse, Hothouse, and Herbaceous plants, prices of which will be found in our new Catalogue, on application to

WILLIAM E. RENDLE & CO., Seed Merchants, Plymouth.
ESTABLISHED 1786.

GERANIUMS.

A LARGE AND SPLENDID STOCK OF STRONG PLANTS, AT LOW PRICES.

BASS and BROWN beg to offer the following from their superb collection.

12	all new varieties of last season		...	...	2	2 0
12	superb show varieties		...	...	1	1 0
25	Ditto	ditto	...	...	2	0 0
50	Ditto	ditto	...	...	3	15 0
12	fine show varieties	...	...	...	0	12 0
25	Ditto	ditto	...	...	1	2 0
50	Ditto	ditto	...	...	2	0 0

Best older varieties, 6*s.* to 9*s.* per dozen.

FANCY GERANIUMS.

The following 12 new and other choice fancy varieties for 15*s.*

Annais
Beauty of Winchester (Shepherd's)
Bouquet tout fait
Jehu
Jehu improved
Jehu Superb (Chauvier's)
Jenny Lind (Ambrose's)
La Belle d' Africana
Lady Flora Hastings
Maid of Anjou
Statuiskii
Yeatmannianum

NEW PLANTS.

Geranium Foquet's Magnificent	21s	0d	Liebegia speciosa ...	3s.	6d
Gloxinia Grandis (Henderson's)	5	0	Luculia Pinciana ...	2	6
Gloxinia Wortleyana ...	2	6	Siphocampylos microstoma rubra	2	6
Æschynanthus speciosus	3	6	Tritonea aurea, 3s. 6d. to	7	6
Chirita Moonii ...	2	6	Fuchsia spectabilis, 2s. 6d. to	3	6

DESCRIPTIVE PRICED CATALOGUES OF OUR EXTENSIVE COLLECTION OF SEEDS AND PLANTS supplied, prepaid on receipt of four penny stamps.

Remittances requested from unknown correspondents. Post-office orders to be made payable to Bass and Brown, or to Stephen Brown. Goods carriage free to London, and with orders of 40*s.* extra plants presented.

Bass and Brown's Seed and Horticultural Establishment, Sudbury, Suffolk.

PHLOX DRUMMONDII JARRETTII.

GARAWAY, MAYES, and Co., beg to announce that they are now prepared to supply this charming and distinct variety, which far surpasses any other yet sent out. The flowers are very large, and of an excellent form; the colour a beautiful rosy lilac, with white centre, and, like the other varieties, it continues in bloom throughout the whole of the summer and autumn months; a property which makes this tribe so desirable for bedding purposes. Good plants 15*s.* per dozen, or 1*s.* 6*d.* each.

As a further proof of its merit, the following opinions are quoted from the *Gardeners' Chronicle*, and the "Gardeners' and Farmers' Journal."

"Phlox: J. P.—Flowers rosy lilac, white in the centre, large in size, and bright in colour; a very nice variety and remarkably handsome."—*Gardeners' Chronicle*, Oct. 6, 1849.

"Phloxes: J. P., Bath.—A superb variety of a reigning favourite. This class of plants is rapidly improving, and though we have had some very beautiful specimens submitted to us during the season, we are free to confess your seedling totally eclipses them, with one exception. We do not remember having noticed a Phlox under your initials previous to the present moment, but if our memory serves us aright we have had a variety closely resembling the one before us, forwarded for our opinion early in the season. Be this as it may (for we have not time to refer), it does not deteriorate from the beauty of your flower, which is first-rate in its properties. Form good, petals flat, smooth on the edges, of desirable consistency, and orilliant; colour rosy lilac, bordering on peach blossom; centre pure white, beautifully blotched with light puce; eye circular, and distinct, size of the pip very large, and a noble trusser."—"Gardeners and Farmers' Journal."

G., M., and Co. beg likewise to recommend two other good and distinct varieties, viz., Phlox Drummondii atropurpurea: flowers of a good form; colour dark purplish carmine, with the centre almost black, forming a good contrast with the former and following variety.—Phlox Drummondii oculata: pure white, with rosy lilac eye; very pretty, 6*s.* per dozen, or 9*d.* each.

A Descriptive Catalogue for this season, containing their choice collections of Dahlias, Geraniums, Verbenas, Pansies, Greenhouse, Stove, Orchidaceous and Miscellaneous Bedding Plants, is now ready, and will be sent on application.

Durdham Down Nursery, Bristol, April 27.

JAMES WHOMES, Royal Pelargonium Nursery, Windsor, can supply fine Plants of HOYLE'S "CRUSADER" GERANIUM at 36*s.* per dozen; and every other fine variety equally cheap.—April 27.

"SUNSET" VERBENA.

MESSRS. JEYES and CO. have much pleasure in offering for Sale the above Verbena. The two eminent growers named below have described its character.

"Your Verbena 'Sunset' is quite distinct from any other scarlet. Its habit for bedding is the best we know of. The name is well applied, for a mass of its flowers has all the appearance of a declining sun.—Daniel Judd, Gardener to the Right Honourable Earl Spencer, K. G.; Walter Grey, Gardener to the Right Honourable Sir James Parke."

Plants 5*s.* each; if two are ordered three will be sent.

P.S.—The Prices of the Rare Flower Seeds advertised and described in this Paper of March 9 are—Hibiscus speciosa, 2*s.* 6*d.*; Æthionema membranaceanum, 6*d.*; Myosotis azoricus, 2*s.* 6*d.*; Pentstemon Murrayanum, 2*s.* 6*d.*; Calandrinia umbellata, 2*s.* 6*d.* per paper.—Northampton, April 27.

CHOICE SEEDLING PETUNIAS.—We have the pleasure to offer the following varieties of our own raising, which have been selected as first-rate from a large number of other Seedlings, and we trust will give equal satisfaction to the varieties we have hitherto sent out.

Magnificent, a fine rich crimson, colour and shape of "Brilliant" sent out last year, but having darker veins	5s. 0d
Castor, a large and distinct lilac, with a very rich dark purple throat	3 6
Pollox, a large silvery blush, with a dark rich purple throat	3 6
Orion, a rich lively crimson lake, of fine form	3 6
Syren, pure white, with a rich bright pink throat, good round form	3 6
Cassandra, French white, lilac pink throat, veined, edges of the corolla blotched with lively pink, large and fine	3 6

The usual allowance to the trade by taking the set, or for three plants of a sort.

12 new varieties of last season	12 0
12 superior varieties	9 0
12 fine ditto	5 0
25 varieties in choice assortment	15 0

The above free by post if required.

BASS AND BROWN,
Seed and Horticultural Establishment, Sudbury, Suffolk.

TO NOBLEMEN, GENTLEMEN, AND THE TRADE.

CONRAD LODDIGES avails himself of this opportunity to tender his warmest thanks to the friends of Horticulture who have honoured with their kind patronage his late Father and Uncle so many years, and begs to assure them that nothing shall be wanting on his part to merit a continuance of the confidence which has always been reposed in their house.—The business in future will be continued as heretofore under the firm of Conrad Loddiges and Sons, Hackney.

The Gardeners' Chronicle.

SATURDAY, APRIL 27, 1850.

MEETINGS FOR THE ENSUING WEEK.

Monday,	April	29	Zoological (Anniversary) ..... 1 P.M. Medical ..... 8 P.M.
Tuesday,	—	30	Civil Engineers ..... 8 P.M.
Wednesday,	May	1	Horticultural (Anniversary) .... 1 P.M. Royal Institution (ditto) ..... 2 P.M. Zoological ..... 3 P.M.
Thursday,	—	2	Antiquarian ..... 8 P.M. Royal ..... 8½ P.M.
Friday,	—	3	Botanical ..... 8 P.M. Royal Institution ..... 8½ P.M.
Saturday,	—	4	Westminster Medical ..... 8 P.M.

Country Shows.—Tuesday, April 30: Hand-worth and Lozels Floral and Horticultural.—Wednesday, May 1: Newcastle-on-Tyne Horticultural.—Thursday, May 2: Hammersmith Heartsease.

In our last Number an interesting case of Bleeding at the Root was mentioned by the Hon. James Stuart Wortley. It occurred to a large Birch tree, whose roots, having been cut through, have bled so much that, although not more than 1½ inch in diameter, a neighbouring "walk has been standing in puddles, and the sap was still bubbling up through the gravel," at the date of the letter.

A similar case is mentioned by an anonymous correspondent, who says, "In lowering the ground near a large Walnut tree, some years ago, some large roots were cut through; so much bleeding took place in consequence that the tree died."

A letter received from Mr. Spencer, gardener to the Marquess of Lansdowne, at Bowood, thus describes a third occurrence of the same nature:—"This present spring, in forming a new walk, I had occasion to cut through three large roots belonging to an adjoining Beech, and which are exposed at the present time. Some time about the middle of March I observed the roots were bleeding considerably, which has continued more or less ever since, the *flow being materially influenced by the state of the weather*. By the beginning of the present month, the bleeding was sufficient to saturate the walks completely. On examining the roots, with an ordinary microscope, I observed the discharge proceeded from the whole of the exposed cells through the section; but, from the larger diameter of the vessels towards the exterior of the root, the bleeding, as a natural consequence, was greatest at that part. I observed as well that bubbles of air were frequently formed on the cut surface, evidently showing that some kind of gas was present, either in the sap or in the cells. Although in bright weather the discharge was perfectly visible to the naked eye, the assistance of the microscope enabled me to see distinctly the *downward* passage of the sap, and that through *all* the root cells, at a time when physiologists have generally agreed it has its greatest ascending power."

No doubt such circumstances are of constant occurrence, although unobserved. What gives the cases now brought forward so striking a character, is the extraordinary extent to which in them the bleeding occurred.

When stems bleed the observer is in no way surprised; firstly, because he is accustomed to the phenomenon; and secondly, because he knows that roots draw fluid out of soil, and send it *upwards*. But when roots bleed, the ordinary explanation of the phenomenon is no longer applicable; for roots cannot be said to draw fluid from the soil when they are removed from the soil; nor can it be admitted that sap is sent upwards when we see that it runs downwards.

In explaining the phenomenon of root bleeding, the first step is to consider why sap ascends. This was in part demonstrated more than a century since by our countrymen Hales. In discussing the question of the circulation or non-circulation of the sap, this great experimentalist uses the following words:—"We see in many of the foregoing experiments, what quantities of moisture trees do daily imbibe and perspire. Now the celerity of the sap must be very great, if that quantity of moisture must, most of it, ascend to the top of the tree, then descend, and ascend again, before it is carried off by perspiration. The defect of a circulation in vegetables seems in some measure to be supplied by the much greater quantity of liquor which the vegetable takes in, than the animal, whereby its motion is accelerated; for by Experiment 1st, we find the Sunflower, bulk for bulk, imbibes and perspires 17 times more fresh liquor than a man every 24 hours. Besides, Nature's great aim in vegetables being only that the vegetable life be carried on and maintained, there was no occasion to give its sap the rapid motion which was necessary for the blood of animals. In animals, it is the heart which sets the blood in motion, and makes it continually circulate; but in vegetables, we can discover no other cause of the sap's motion but the strong attraction of the capillary sap vessels, assisted by the brisk undulations and vibrations caused by the sun's warmth, whereby the sap is carried up to the top of the tallest trees, and is there perspired off through the leaves: but when the surface of the tree is greatly diminished by the loss of its leaves, then also the perspiration and motion of the sap is proportionably diminished, as is plain from many of the foregoing experiments; so that the ascending velocity of the sap is principally accelerated by the plentiful perspiration of the leaves."

The sap then ascends in consequence of an attracting force exercised from above downwards by the foliage of plants. But it is evident that this is only a partial explanation of the phenomenon; for it does not account for the ascent of sap in winter when leaves are absent. In order to explain that fact we must have recourse to the action of endosmose, a force the effect of which is to produce propulsion. A tree may be assumed to be a combination of hollow tubes freely communicating with each other, and enclosed in a skin *through which fluids are capable of being absorbed* on the one hand and expelled on the other. If we conceive a body of this kind, in which the tubes are nearly empty, to have its lower extremity plunged in water, the absorbing power of the skin at that part will begin to introduce the water into the interior, and this continuing to go on for a sufficient time the tubes must necessarily become at last filled with water rising upwards from below. To effect this no attracting force at the upper end of the cylinder was necessary; every particle of water which was absorbed by the lower end, having driven before it a corresponding volume of the water previously existing in the apparatus. Under the influence of this operation the tubes would in time become full, and if unelastic the introduction of more water would be impossible. But if such tubes and the skin that encloses them were elastic and extensible, then any such further quantity of water might be introduced as the apparatus could receive without bursting. If we then suppose that the one end of the apparatus were cut open the sides of the tubes would collapse, and the water would be forced out till there was no more left than the tubes held in their original unstretched condition.

A tree is just such an apparatus. Its tubes are nearly empty at the fall of the leaf. During winter the roots absorb water from the soil and fill the tubes again. By the arrival of spring they are filled almost to bursting, and then if the stem is cut it bleeds; or if the roots are cut they bleed.

Bleeding ceases as the leaves unfold; the Vine, the Walnut, the Birch, are all as incapable of bleeding as other trees when their leaves are formed; because the leaves gradually empty the tubes, put an end to their distension, and prevent its recurrence so long as they remain in an active state.

The excessive loss of sap mentioned in the cases that have produced these remarks could not have taken place if the roots had been wounded in the summer or autumn; and if the trees survive, bleeding will cease with the appearance of leaves. It is probable however that it has been increased by the cold

ness of the spring. HALES himself was aware that sap falls back at night in consequence of the contraction of the tubes by cold; Mr. KNIGHT observed the same fact: and it has more recently been proved experimentally by M. BIOT. It may therefore be supposed that the excessive cases of bleeding now adverted to have assumed so serious an appearance, because, in addition to the natural contraction of the tubes, the mechanical contraction produced by unusual cold has to be taken into account.

As to stopping the bleeding, it will probably be found that Mr. KNIGHT's cement will answer that purpose. The composition of this substance is as follows—To four parts by measure of scraped cheese add one part of calcined oyster shells, or any other pure calcareous earth. Blend them thoroughly, and press them with force into all the tubes and cells that are visible on the wound. The best way is to smear a layer over the surface, and to press it down gradually but forcibly with a flat board.

ONE of the follies of the day, a few years since, was the construction of VINE PILLARS, that is to say, of hollow cylinders of brickwork, filled with certain materials which were conceived to form a soil suitable to Vines. The Vine was to be introduced into the bottom of the cylinder through a hole; and the cylinder was to stand on a floor so paved with bricks that no roots could find their way downwards. In short the Vine columns were gigantic flower-pots, in which the Vines were introduced through a hole in the bottom instead of the usual opening at the top.

The following is an exact account of the state in which the roots were found of an unhappy Vine, which had been able to linger through several years in one of these contrivances, pulled down a few weeks ago. "This Vine, which was planted inside the pillar amongst a composition of lime rubbish, brickbats, charcoal, bones, and urine, had almost all its roots rambling up *the centre of the compost to the height of upwards of 4 feet, where they branched out in all directions very freely.* Some of them had their extremities turned a few inches in a downward direction; but most of the *lateral roots growing horizontally below 2 feet high* were either dead or in a sickly condition. The roots seemed to have fed freely on charcoal, but not to such a degree as on bones; one instance was found where two or three spongelets had penetrated into a piece of lime rubbish, but they were sickly; in another instance, a root 6 inches long had a few spongelets fixed to the lime belonging to the building, and had there died."

If any correspondent has a wish to draw any *practical inferences* from these facts we should be very glad to receive them.

COVERING AND SUMMER MANAGEMENT OF WALL FRUITS.

OF all the seasons it has been my lot to witness, this spring has been the most unusual. Our February, termed of old "fill dyke," was notorious for dryness; and soils in most parts might be as easily worked as they usually can be in an arid March. The temperature too has been, on the whole, very mild, with the exception of the last week of March, when a thermometer 16° below freezing point reminded folks of the old proverb, "All is not gold that glitters."

My purpose in making these remarks is to draw attention to the subject of covering fruit trees, and also to offer some suggestions as to the summer management of those, especially, which have missed a crop; and such will, I fear, prove a fearful majority. For my own part, I have for years been an advocate for some kind of covering, having so repeatedly witnessed the benefits to be derived from it; and it does appear an extraordinary thing that any man, in his sound senses, should object to even a mat being hung over his pet Apricot on a frosty night; and, not to go to extremes in the argument, say, with a thermometer 8° or 10° below freezing point—by no means an unusual affair.

But, says the non-protection advocate, "I do not like covering, for it has a tendency to 'draw' the buds." It may certainly do this when coverings of very close materials are used; but, for my part, I have never seen anything worth recording in this way, and I have used covering extensively for at least 20 years. On the contrary, such things as thin canvas, Spruce Fir boughs, &c., most decidedly retard the buds; for this reason I endeavour to get my trees covered at the end of February, drawing it off, if moveable, on all cold and windy days, and keeping close covered on those which are sunny or exciting.

My Peaches are now in full blossom or nearly so, and a finer sight in the Peach or Nectarine way I have never seen, and probably never shall see. The frost, to all appearance, does not seem to have affected them in the least. I need not inform the readers of the *Chronicle* that we do not possess a Devonshire climate in Cheshire; but I may add that these remarks, concerning the Peaches and Nectarines blossoming, are made in the month of April. I doubt much if the majority of those, not treated on the retarding principle, have not attempted to blossom long since.

It is only a few days since, that I read in a contemporary paper some notes on the recent severe frost, in which the writer says that the destruction of Peaches, &c., is unparalleled, every branch being encased in frozen snow. Now the question immediately arises, is such obliged to be the case; and would the preventing such an occurrence tend to insure a crop? Everybody must surely admit that he whose Peaches or other fruits—be they what they may—blossom a week or two later than his neighbours, has a superior chance in the majority of seasons, although perhaps the gardens join each other.

I much fear that in the heat of the controversy which has long raged between parties about this matter, the great principle of timely retarding has been lost sight of. Every gardener must know how exciting the sunshine sometimes is on a south wall, especially even in the end of February,—when on the heels of frosty or cold weather the blossom buds, with a change of atmosphere and intense sunshine, begin to unfold with a dangerous rapidity. Most, too, are aware that some plants—not indigenous—of a highly excitable character as to their foliation, frequently succeed better in a cold aspect than in a warm one. Here, then, is the principle of retarding, to which I would direct attention, only a stronger case still presents itself with regard to the south wall.

I would now respectfully offer a little advice on the summer management of wall fruits, more especially the Peach and Nectarine; for although the culture of the latter has advanced in some degree, yet we do not generally see them perfectly satisfactory. This is, I conceive, in part owing to the neglect of careful summer dressing. Many omit the stopping of gross shoots, termed "robbers;" many more leave too much of the annual spray on their trees; the sure consequence of which is imperfectly formed blossom buds, many of which become either absolutely barren, or produce diminutive fruits. It ought to be taken as a maxim by the careful Peach dresser, not to leave a single young shoot on the trees at the final disbudding, for which a reason does not exist. This may appear hard doctrine to those accustomed to leave them somewhat at random, which indeed too many are compelled to do, through the want of a sufficient staff of the right sort of labourers; still we must not confound principles with mere expedients; my advice is offered to those who are more fortunately situated.

Disbudding should extend over a period of some three weeks or a month; and once a week during that period will set all right. In the first disbudding, the more foreright shoots, and those jammed in, should be removed; in addition to these, the shoots which compete with the leader should be rubbed away, and also any rival shoots at the lower part of each "fork," where an experienced Peach dresser will always direct his special attention, for it is of the greatest import that the very lowest situated healthy young shoot should be preserved. This secures that succession of wood which keeps up the future fabric of the tree. And what is said of the lowest fork (by which latter term I mean the angle necessarily formed by the divergence of any two branches), is equally true of all the other forks or angles all over the tree. The securing a nice young shoot annually at this point being a guarantee against a lot of half denuded branches, which, whatever fruit they may bear on their extremities, can never be perfectly satisfactory.

Equal in importance to proper disbudding is the timely stopping or pinching of all gross shoots, which may be readily distinguished for ordinary wood, by their speedy tendency to produce side spray, almost coeval with the extension of the growing point. These have (as may be guessed by the most inexperienced) a continual tendency to attract an undue proportion of the sap; and if left unmolested, or merely pruned in the "rest season," they will assuredly become dangerous monopolists, and naked portions of walling will be the sure consequence.

The best practice, therefore, is to continue pinching off the heads of such, as long as they continue to appear. To be sure exceptions will arise at times, such as in the case of young trees required to fill a given space as speedily as possible, and which have not as yet begun to bear. In such cases they may be allowed to ramble a foot or more in length during the early part of the summer; still, I am not assured that any very great benefits are derivable; a little off-hand appearance is perhaps the chief.

Another point of paramount importance is freedom from insects; so important, indeed, that it is impossible to excel, and indeed difficult long to sustain the vitality of the trees, if such be permitted to infest them unmolested. A thorough syringing two consecutive evenings with tobacco water, and sulphur daubed as paint between the branches in April, have given me an immunity from the aphides and the red spider for some years. Blister on the leaves and gum on the wood is, I may say, almost totally unknown with me, as to outdoor Peaches and Nectarines; and this I attribute in the main to a soil comparatively shallow.

Summer disbudding and dressing is of nearly equal importance to our other fruits. A timely attention to this is indeed one of the prime secrets of successful cultivation, especially to trees on walls and under trellis culture. The artificial twisting and bending of the leaders causes them at all times to produce a host of spray, not eligible to the purpose in hand, for Nature abhors what we so much admire—systematic training. We try to make neat and prim bushes, Nature is ever attempting to make them trees. We are ever trying to increase the amount of succulency and richness of the pulp, Nature merely aims at perfecting the seed; thus a continual warfare is waged, and when true science is brought to bear, a knowledge based on a thorough appreciation of the character and habits of the tree, its mode of growth, and its root action, together with a just estimate of the character of soils, man comes off the conqueror; but he can only continue to hold his conquest by the most indomitable perseverance.

I had intended to offer some further remarks on other matters connected with our wall fruits, but must trust to another opportunity. In the meantime I would advise those who happen to be disappointed in a crop, after much expense and labour, by no means to despair. Other and genial seasons are doubtless in store; and indeed if these mishaps did not occur, fruits would be lightly esteemed, and our enjoyment of them consequently lessened. The commercial gardener is most to be pitied, for his very existence depends on success in such things. *Robert Errington, Oulton Park.*

VILLA AND SUBURBAN GARDENING.

THE cultivation of the Pelargonium, like that of most other inhabitants of the greenhouse, has undergone a remarkable change during these last 10 years. Enormous plants, with hundreds of stakes to support their flowers, have been produced; but these gaudy mountains of artificial gardening are anything but suitable for places of limited accommodation, such as those which amateurs generally possess. A few plants monopolise a whole house, and divest it of that variety which is the parent of interest, and which constitutes, or rather ought to constitute, the chief feature of a place of circumscribed means. In running away from the foreigner, who clings with considerable tenacity to his 3 and 4-inch pots, we have arrived at tubs, to the exclusion of good taste. I would prefer the "happy medium." Pelargoniums can be well flowered in what are known in the potteries as large 32's, or 6-inch pots; and if they are "well done" in pots of this size, they will produce as a whole a much more effective display, and they can be easily moved if required for house or window decoration.

The art of producing a lengthened bloom is well worth the attention of the villa gardener, and nothing is more simple. Place those plants which flower earliest under a wall, and fully exposed to the sun's influence, in order that the succulent wood may be well and early ripened; when this is effected, cut them down to within 4 inches of the pots; remove them to a rather close frame until they begin to break, when air may gradually be given them; eventually the lights may be taken off, in order that the young shoots may be hardened and strengthened, previous to the plants being placed in their winter quarters. By having a succession of plants so treated, a prolongation of bloom is readily obtained.

One of the main points in the culture of the Pelargonium is keeping the plants near the glass, and sufficiently far apart to prevent the foliage of one touching that of another. Give abundance of air in mild weather, and allow it to circulate freely amongst the plants. This will check their tendency to get leggy. Good loamy soil, moderately rich, suits the Pelargonium perfectly; for liquid manure can be readily administered in spring when it is growing rapidly. Plants treated in this manner will require very little staking. Perfect cultivation, in my opinion, consists in having a specimen well bloomed without being supported by a faggot of stakes. *Pharo.*

DISEASES OF PLANTS.

(*Continued from p. 244.*)

GENUS XIII. LACERATION.—I give this name to the injury caused to a plant when in removing any part of it the adjoining fibres are more or less disorganised, as when a branch is cut off with a saw, or eaten off by some animals who tear the shoots off. Some, it is true, crop off without tearing much. So the horse, the ox, the ass, and the mule, furnished with incisive teeth on both jaws, do not do near so much mischief as sheep and goats. The latter having incisive teeth on one jaw only, are obliged not only to cut but to compress, and this double action lacerates the plant. And as I have mentioned goats, this is the place to refute the prevailing idea, that the great injury done by goats to Vines and to trees arises from some peculiar malignant humour supposed to proceed from their saliva; the fact is that it is laceration alone that causes the bite of sheep and goats to be so much more injurious than that of other animals; and goats with their bold, greedy, and active dispositions are on that account so much more mischievous than the slow timid sheep. When a plant has been so eaten down by goats as to occasion fears that it will remain stunted and barren, if it be properly pruned down it will shoot out again, so as in progress of time to efface all traces of injury. It is to the neglect of the plants after the injury, not to the fabulous malignant humour, that the loss of so many plants eaten down by goats is to be attributed.

The greatest number of lacerations of trees or herbs is due to the numerous tribes of insects. I shall in an appendix treat of the evils they entail on vegetation. I shall now confine myself to the remark that sometimes herbs especially will often perish in a very short time from this cause. The prevention of the evil is very difficult, although in many cases when the decay of a plant is suspected to be owing to the presence of an insect, and it may be found on inspection on the plant or on its roots, it may suffice to expel the enemy and prune out the injured parts, to stop the injurious consequences of the laceration.

Obliged as we often are to use the saw, it cannot be too strongly recommended to use that kind of saw which will produce the least laceration, and after the branch is cut off to pare off with a sharp knife all loose fibres, and smooth off the surface left rough by the saw.

Genus XIV. Puncture.—This is a small hole made by a sharp instrument of small size, whether it be an awl or the sting of an insect. The amount of injury done will depend on the size of the hole in relation to the part affected. A needle passed through a leaf or a petal may be a matter of indifference, but if pierced into an ovary or a stigma it will prevent fecundation. Insects, as we shall see, are the great cause of mischief under this head.

Genus XV. Intrusion.—This is a class of injuries brought about almost exclusively by the work of insects. They pierce or divide some part of the plant, inserting into it some extraneous body, such as an egg. Sometimes a mere aperture in the bark, with the insertion of the extraneous body, arrests the flow of the sap, and causes a monstrous excrescence. Thus the Livia juncorum *Latr.* lays its eggs in the germ of the Juncus articulatus *L.* at the moment of the opening of the flower, causing it to acquire three or four times its natural size. This monstrosity is often accompanied by an elongation of the extremities of the calyx, which become covered with beards or awns. I once received a specimen of a singularly deformed piece of Elm wood. There was a little stone in the interior, which appeared to have been the cause of the monstrous conformation, although I was unable positively to ascertain it.

Home Correspondence.

Ripe Vegetable Marrows.—After two winters' trial of ripe Vegetable Marrow as food, having used it with all sorts of meat, I can confidently recommend it as a first-rate winter vegetable. Many object to eat it in a ripe state, and it may be many years before it receives universal acceptance as a winter vegetable, but in this it only shares the fate of many other things now common on our dinner tables. The Potato passed through the same ordeal; many a weary day did this valuable tuber struggle for a place. With almost, if not quite as many good qualities as the Potato, the Marrow is not so liable to so many diseases, and it is much easier to cultivate. Since I have recommended its use in a ripe state to public favour I have had letters from gentlemen who have been in every part of the globe, and they state that in some places hardly any winter vegetable could be obtained but ripe Marrows. Sir Henry Bethune informs me, that when in Persia, 15 years ago, Marrows or Gourds were his greatest favourites, but he never could get them into use at home. I have ripened the Marrow upon the flat surface of the ground for these two years past, as well as on iron rods, up sticks, over hurdles, against walls, and over arbours, which it shades agreeably. Indeed it may be grown in any place, and anywhere in the United Kingdom. It might be cultivated in Ireland with advantage; and till the people throw off their prejudices, pigs could be fed on it. They thrive fast upon it boiled and mixed with middlings, or other spare food. The seed should be sown, near London, about the first of April, in any warm corner; northwards, a little later would answer better. When up, plant out amongst Potatoes or other vegetables that are soon to be removed. As soon as it comes into bearing the fruit must be cut off regularly; the plants should not be allowed to bear the main crop until they are very strong. While they are acquiring strength the young Marrows could be used for table, as well as for mixing with pigs' food. The Vegetable Marrow likes a rich soil, and if it can be watered with rich manure-water now and then, so much the better as to its keeping properties; of course much will depend upon its ripeness. When thoroughly ripe the skin is very hard; if a pin pierces the skin freely it is not quite ripe. I have grown two sorts—a yellow and a green striped with yellow; both are well-flavoured and productive, but I prefer the green one. When ripe they must be stored in a dry place, from which frost is excluded. The under-ripened ones should be used first. In boiling ripe Marrows cut them up into pieces of 4 or 5 inches in length; take out the pith and seeds, but do not remove the skin before boiling; then boil in plenty of water with a little salt; after three quarters of an hour's sharp boiling (this depends upon its ripeness) let the pulp be scraped out into a dish, and press out all the water that it has imbibed during the process of boiling; add pepper and salt, and mash as with Turnips; and no one who has not tried it can have any idea what a fine winter dish it makes. To captains going long voyages it would prove most valuable. Vegetable Marrow in its young state makes a famous pickle. Cut it into 2 or 3 inches in lengths, as Cucumbers are served. I have several ripe ones now, April 15, quite sound, and their flavour is quite as good, if not better than it was in the beginning of the winter; with a little sugar it makes a good dish for children; and where Apples are scarce, good sauce for pork and geese, with a squeeze of Lemon in it; but always bear in mind that vegetables are made indigestible by too little boiling. *James Cuthill, Camberwell.*

Gardens on Burning Coal-beds.—As illustrative of the subject of your two leading articles at pp. 195 and 227, I send a free translation of a passage in Prof. Leonhard's "Naturgeschichte der Erde" (1te Ausg. 1ter B. s. 434). The author is treating of coal-beds on fire. "In Staffordshire, a garden of considerable extent is situated over one of these subterraneous conflagrations; its produce comes so rapidly to perfection that three crops are harvested within the year. Young exotic trees were planted over burning coal beds in another part of England; they grew vigorously, but, on attempting to shift them from the heated soil to another situation, soon died. At Planitz, near Zwickau, hotbeds have been placed, since 1837, along the lines where these natural furnaces approach the surface of the ground, and by means of this unpaid for, but nevertheless expensive, fuel, the plants flourish admirably." I have sought in vain for the sources of Prof. Leonhard's information regarding the English localities, but hope you will discover them, and further elucidate this interesting branch of the subject. *A. R., Woodside Cottage, Elgin.*

Visit to Mr. Low's Nursery at Clapton.—Mr. Low having been for some time a successful importer of plants from almost every quarter, I do not know a nursery where a person beginning to collect Orchidaceous plants is more likely to find specimens that he may want, and at a reasonable rate. There was not, however, much in flower, most of the plants being at rest; but for the collector this is an advantage, as the plants are in the best state for travelling. I however observed a magnificent Cyrtopodium marked splendens in flower, a long spike of deep yellow blossoms. Amongst his other stock was the new Viburnum suspensum, in flower, which Mr. Low considers will be hardy, the flowers something like Hoya bella, sweet; the foliage evergreen and very handsome. There are also fine Cephalotaxuses from Japan, introduced by Siebold, of Leyden, which if hardy will be a great addition to the Coniferæ; and particularly there has been raised a good stock of the Thuja chilensis, which if it prove hardy will be an acquisition to our trees; two were raised by Mr. Low in 1847, and one of them is at Elvaston Castle. The stock of Australian plants appeared good. *Dodman.*

Destruction of Slugs, Snails, and Wireworms.—Having suffered very much in my garden from the depredations of these vermin, I have been induced to try the effect of Swede Turnips as a decoy for them. I had a large basketful cut up into slices rather more than half an inch in thickness, and placed about my garden (about a quarter of an acre), and the result of 10 consecutive days' operations, is the securing of the enormous quantity of 9096, besides a great quantity of wireworms and milipedes. The second morning's collection was 2056 slugs and snails; 510 is the smallest collection I have made. The Turnip slices I have been using are now put into the ground edgeways, the better to trap the wireworms, and I am employing fresh slices for a further destruction of slugs and snails. *Thomas Colley, Ipplepen, Devon.*

Would Guano benefit American plants, such as Rhododendrons of all kinds, and Azaleas? *C. H.* [Has any one tried guano for such plants?]

Uniting Bees.—In my observations (p. 534, 1849) on uniting bees, I stated that I had succeeded, by a method accidentally discovered by myself, and new to me, in uniting the bees of two hives which I had rescued from destruction, viz., by driving them into an empty hive together (without having recourse to fumigation) one evening, and transferring them to one of a set of boxes on Nutt's principle in the afternoon of the following day. I stated also my belief that the plan would succeed under any circumstance of uniting bees, and advised your correspondent "W. G." to try it in the instance of it strengthening a weak stock. I can now back my advice by my own experience, having strengthened one of my own stocks, by the addition to it of the bees out of two others within the last few days. The plan adopted was similar in most respects to that described by me before. The bees were driven from all three stocks one after another into an empty hive, and when united were driven back the same evening into the stock which I desired to strengthen, and from which part of them had been driven before. The whole process of four drivings consumed exactly two hours, at the end of which time the strengthened stock was quietly standing on its old pedestal, as if nothing had happened. As this stock was a common cottage hive, the whole business was accomplished the same evening, which could not have been the case had it been a box hive. This can only be done by daylight (in the hot sun if possible, and after the usual swarming time of day is over), owing to the difficulty—I may say impossibility—of driving from a circular to a square hive. Not even with the assistance of a board intervening between the hives, with a hole in its centre of the same size as the box, can the thing be done; because in nine cases out of ten, if there be not a clear, uninterrupted ascent from one hive to the other, no degree of force or persuasion will induce the bees to mount beyond the obstruction. From this it will be understood that the hives to be operated upon should be as nearly as possible of the same size. I would observe that I drove the bees out of the stock to be strengthened, because without fumigation I think they would have resented the intrusion of strange bees; and I drove them first, in order that they might have time to forget their old home, and might thus be on the same footing as the others to be joined to them. While on the subject of bees, I would inquire what is the best food for them? As I am rearing a stock entirely by artificial means, I am anxious to combine the best method of feeding with the greatest economy. For some time I tried the following compound, recommended by Mr. Golding, of Maidstone. In one quart of beer was melted one pound of rich, brown sugar, to which was added ½ lb. of honey and a dessert-spoonful of rum and sherry in equal quantities, and a small quantity of salt. This, however, the bees did not particularly relish, and it went but slowly; moreover, after some time it turned sour in the zinc feeder. Would this be the case after absorption and its transfer to the cells, or would it keep in the hive good and wholesome till the spring? If so, being the cheapest food, and as the bees will eat it, it will do well enough. I have however concocted a liquid which they devour greedily, make the whitest comb of it, and thrive amazingly upon it. They have consumed in three weeks 1½ gallon of it, worth 8*s.*, and have constructed seven large combs which half fill the box and more, and many thousand cells are sealed up already. It is this: 4 lbs. of rich Barbadoes sugar, boiled for a few seconds in a quart of beer, to which is added 2 lbs. of honey, a glass of sherry, and a spoonful of salt. *P. V. M. F.*

The "Physicky" Taste in Rhubarb, of which your correspondent complains, is caused by frost; a considerable quantity of the early Albert Rhubarb was sent into market after having been touched by the frost, and was worthless, although, to all appearance, it was tolerably sound. Tarts made of such Rhubarb have been consigned to the pigs, on account of the physicky taste they possessed. We are great Rhubarb consumers here, no season being without one or two substantial pies, which if properly made are delicious; and I have never known the flavour of fresh pulled Rhubarb vary unless it was caused by frost, *i. e.* Rhubarb of the same species. No kind equals the Victoria in flavour; and now that it is in fine order, and selling in the markets at a reduction of one-third the price of last year, it will, no doubt, be more extensively used. The stalks should not be washed, but simply rubbed with a cloth, and cut into pieces of 1 or 2 inches square, without any scraping. I mention this, because I find that pie at home and pie abroad, are very different things. Washing the stalks makes the fruit flavourless, and to remove the outside deprives them of the rich crimson tint which well-grown Rhubarb should possess. *H. T. P., Greenwich.*—According to my experience the "physicky" taste in Rhubarb comes on in dry weather and goes off in wet. If I am correct, copious watering would be the remedy. *B. B. B.*

The Salad Ground near Erfurt, alluded to at p. 245, as yielding a profit of 12,000*l.* per annum, was, when I made a tour through Germany, in 1846, wholly devoted to the culture of the common Watercress (Nasturtium officinale). We are informed by "Rhind's Vegetable Kingdom," page 300, that Watercresses were first cultivated in Europe at Erfurt; and that its cultivation is still conducted extensively there, will be readilly inferred, when I mention that the markets of the greater portion of Germany derive their supply of it from this source. I visited Erfurt in February, and even at this (for central Germany), very early season, I observed that the Watercress, in consequence of the natural warmth of the spring from whence the "Salad-ground" was irrigated, was already being collected for the markets. From the great extent of ground under Watercress cultivation at Erfurt, and from information obtained on the spot, respecting the profits derived therefrom by the proprietors, I unhesitatingly assert that the amount of revenue alluded to by Professor Ansted, though great, is far from being exaggerated, as "A. C." seems inclined to suppose. *Theodore Baubin, Chatsworth.*

Rose Stocks.—In an article on Rose stocks which appeared in your Paper of March 23, Mr. Saul, of Durdham Down Nursery, says, that the kind of stock on which Roses is worked is a point of no little importance. I would add that another and still more important item, as respects successful Rose growing, is to secure a permanent union between the scion and stock, by which the new plant may grow as freely and as long as it would have done on its own bottom under the most favourable circumstances. If this is not attended to, the hopes of the cultivator will be frustrated by the early death of his plants. Mr. Saul states that many cultivators use strong vigorous stocks, such as crimson Boursault, Celine, and others. I never heard of the crimson Boursault being employed as a stock. It sells well itself. The blush Boursault is used for that purpose, and to a great extent in many, indeed I may say in all nurseries; but it is not suitable for weak growing Roses. Celine answers well for such kinds as Hybrid Chinas; but it is only fit for dwarfs. Sir Walter Scott makes a fine stock for Noisettes, such as Cloth of Gold, Solfaterre, Eclair de Jupiter, Ophirie, Vicomtesse d'Avesne, Zietrude, &c., worked in the autumn, and taken up and potted, these will be found to flower freely on this stock in the following spring. It will be found that the head and the stock will grow and swell together to a large size. This stock will grow freely in any light soil, where the Briar becomes covered with moss, and dies. The old Maiden's Blush makes a stock second to none for working Tea-scented Roses on. I have also worked with success the three following Noisettes on it, standard high: Clara Wendell, Mrs. Siddons, and Smith's Yellow. Their growth is fully double that of the same kinds on Briars. The blush Boursault answers well for the strong-growing hybrids; Coupe d' Hébé, Chenédolé, Fulgens, Brennus, Blairii, Paul Perras, Paul Ricaut, and many others of similar habit, and they will last on it for a number of years. I may say as long as on the Briar, or on any other stock, and the growth and blooms are finer. That the Manettii is a good stock no one will venture to deny, but it is not better than the old Maiden's

Blush, except that it strikes much more freely. The Briar makes the best stock for most Moss Roses, as well as for the Austrian and Sweetbriars, and their hybrids. *H. Coppin, Mr. Clarke's Nursery, Streatham-place, Brixton-hill, Surrey.* —— My experience is totally irreconcilable with Mr. Saul's statements respecting the merits of the different kinds of Rose stocks. In recommending the Manettii, Mr. Saul says that "Teas and Chinas will grow better, and live much longer upon it, than on either the crimson Boursault or Celine." Now I happen to have living proofs in plants of these kinds (many of which trees are as many years old as the Manettii stock has been known in England), that the Boursault and Celine are equal to any stocks, for these Roses, that have yet been discovered. The Safrano, Elise Sauvage, Yellow China, Comte de Paris, Devoniensis, and others, I have now, not only not showing any symptoms of decay, but actually increasing in strength and bulk of head after the lapse of years. One plant of Elise Sauvage, on the Celine, is a very remarkable instance of this, having become a strong bushy plant from a very weakly first shoot; the manner in which it grew after the heading back in the first year was astonishing. Other kinds on both the Celine and Boursault have thriven equally well; but I notice this, as the Elise Sauvage is so delicate a Rose as to be liable, more particularly than many others, to the danger described by Mr. Saul, were such danger to be generally apprehended. Add to these instances before my eyes, the well known circumstances of the finest Cloth of Gold and Devoniensis in the kingdom being on the Celine and crimson Boursault stocks, and must we not have strong doubts of the correctness of Mr. Saul's judgment on this point of Rose-growing? I think it most probable that Mr. Saul's mistake in the matter arose from his working on Boursault stocks, raised from thick, sappy, instead of small, hard cuttings. Let him grow his stocks from the latter, and he will at once be satisfied that they become harder and less subject to decay, than the Manettii, which, however, Mr. Rivers's specimen fully establishes as an excellent stock, and the real merits of which I would in no way depreciate, excepting so far as I am compelled by the comparison between it and other stocks, instituted by Mr. Saul. *An Amateur, Bristol.*

Rotting of the Flowers of the Double White Brugmansia before they expand.—I have a double white Brugmansia which does not flower properly under my management, though the plant from which it was struck flowered most freely and healthily in a Vinery. Last year my plant was grown in a pot in a Vinery, when it appeared healthy, but each flower, as it appeared, began to rot off in the centre before the double part expanded. As I had a single white Brugmansia which flowered most luxuriantly when plunged in a border in the greenhouse, I turned the double one also out of the pot and plunged it where it had plenty of room for its roots, but to my disappointment its flower here was even worse than before. We have, at different times, tried much watering and little watering, but the result and disappointment are the same. The centre, which ought to form the double flower, is always decayed before it expands properly. Can any of your correspondents inform me whether this disease is common to the plant, and what mode of culture would remedy it? We grow it in a very rich, loamy soil, and it appears most luxuriant and healthy. *Lancastria.*

Curious Species of Cress mentioned by Chateaubriand.—In the English translation of that delightful work of Chateaubriand's, "The Genius of Christianity," by Shoberl, with preface and notes by the Rev. H. Kett, at page 183, vol. i., occurs the following paragraph: "On the banks of the Yare, a small river in the county of Suffolk, we were shown a very curious species of Cress; it changes its place, and advances as it were by leaps and bounds. From its summit descend several fibres; when those which happen to be at one extremity of the plant are of sufficient length to reach the bottom of the water, they take root. Drawn away by the action of the plant, which settles upon its new root, the claws on the contrary side loose their hold, and the tuft of Cresses turning on its pivot moves the whole length of its bed. In vain you seek the plant on the morrow in the place where you left it on the preceding night, and you perceive it higher up or lower down the current of the river, producing, with the other aquatic families, new effects and new beauties." It has sadly puzzled me to guess what little Crucifer this can be, and I have often felt inclined to come to the uncharitable conclusion that it lived but in "the poet's dreams." Perhaps some of your correspondents may be able to throw some light on the subject. I would also feel thankful if the writer of the notice of "the Mistletoe growing on the Oak," or any other correspondent, would confirm his curious statement "that the Mosses (does he mean by these the true Mosses or Lichens, or both?) that grow on Quercus pedunculata are different from those on Q. sessiliflora," and *vice versa*; and if so, to give the names of the species peculiar to each. The fact stated is a curious one, but requires to be confirmed; the more so as the writer tells us the branches of the two varieties of Oak were so close as to intermingle. *A. B., March* 5. [One part of this communication is quite as much in need of confirmation as the other.]

Lamp-Black is, I believe, the very best material to mix with oil as a protective paint for any surface exposed to the action of the weather. In proof of this, it is only necessary to examine the condition of any old notice board which has been painted in the usual manner with black letters on a white-lead ground. In many instances I have found that the black letters remain perfectly distinct long after the white-lead ground has perished and been dissolved, excepting where it has been protected by the thin film of carbonaceous covering formed by the black letters. I have an instance at hand, in which the black letters stand out in clear relief or projection, in consequence of the perishing of the surface of the wood, as well as the solution of the white-lead paint which originally covered it. This is no more than might have been expected from the well-known action of lead on oils, which has the effect of destroying the elasticity and toughness of the oil to such an extent as eventually to render it as brittle as glass, and also of converting it into a kind of soap of slow but certain solubility. Lamp-black being one of the most unchangeable substances in nature, excepting by actual ignition, it neither acts nor is acted upon by the oil, and its particles are too fine to have any injurious mechanical influence. Next in value to lamp-black I would rank finely ground anthracite. *J. Howard.*

Feeding Bees.—"Y." may rest assured that there are apiarians on the north side of the Tweed as well as on the south who know the good effects at times of closing the doorways of beehives (except air-holes), whatever he may state to the contrary. When bees are fed from proper feeding-pans at the top of the hives there is no occasion for the careful removal of what is left next day, nor perhaps for closing the doors; but the case is widely different when they are fed below, whether by night or by day. Although "Y" objects to a little feeding during the time bees sun themselves, there are apiarians who approve of it, especially when there are no strange bees kept within range of their short flight. This does not coincide with Mr. Golding's brief notice of feeding; but I may remind him, when bees require feeding in spring they may starve before the gloamings are warm enough to admit of their having a short flight before they go to rest; and when they do, the bees in the same apiary would soon be aroused by their hum, which sounds as if they were after plunder. If "Y." thinks his the best plan, why not mention it in his book on bees? [What book on bees? Our friend "Y." never wrote a book on the subject; but he has read a good many—the value of which his long experience does not place very high] I have now only to observe that I am better acquainted with the good effects of salt on Asparagus and Seakale beds than on bees; not that I am ignorant of what has been said both *pro et con* as a medicine for them, particularly at the breeding season, a term, however, not well defined by some writers, which might lead "Y." to recommend withholding water from his salt-pans after May. *A Peebles Apiarian.*

Garden Walks.—It is agreed on all hands that some degree of convexity is necessary, in order to throw the water to the sides; and yet the less a walk is rounded the more comfortable it is to the foot. It too often happens that, when there is any degree of declivity in the ground, the walks, on account of the raised edges (if in Grass), become water-courses during heavy rains, and I have often seen the gravel washed up and carried before the stream, and the walks so injured and disfigured that it required much labour and trouble to get them right again. To prevent such unfortunate occurrences, it has been my practice, on many occasions, to carry a drain along the line of the walk (whether on one side or in the middle is immaterial), and to place gratings at the edges at such distances, or in such positions, as to carry the water into the drain before it accumulates into such a body as to furrow up the gravel; or, in some instances, where the cast of the ground or local circumstances will admit of it, I make outlets and let the water run off. These things attended to, it is of less consequence of what material the bottoming of the walk consists, provided it is coarse and dry, with sufficient thickness of fine gravel above it, to admit of occasional turning. Upon the whole, there can be no fixed rule for walk-making, as so much depends upon local circumstances. The end to be kept in view—a dry, comfortable walk—and the means of attaining that end, must in a great measure depend on the sagacity and judgment of the gardener. *Quercus.*

Size of Mahogany Trees.—The following are the dimensions of a log of Mahogany said to be the largest ever imported into Liverpool. I measured it as it lay on the Birkenhead-quay. Its length was 20 feet, width 4 feet, depth 5 feet 4 inches. *J. W. H.*

Porous v. *Non-porous Pots* (see p. 228).—"G." says, "Most assuredly one of the conditions not essential to perfect plant growing is a porous pot." Now some may infer from this statement that the non-porous pot is superior to one that is porous for the perfect cultivation of plants. Has "G." ever observed, in a moist stove, pots of a dark dull invisible green, and as slippery as a slug on a spring morning? Has he ever seen the soil in such pots in as wet and sour a state as an undrained marsh? Has he ever seen the plants in such soil looking death-like and ghostly, with only the apology of a root? Has he ever had the pleasure of continually washing, rubbing, and scrubbing such pots for the purpose of seeing their original colour even for a week or so? On the contrary, Has he ever seen the London-made porous pots, maintaining their colour without any cleaning whatever, and their occupants in a healthy and flourishing condition? If he has not witnessed these things, then he is unacquainted with what a non-porous pot is, and shall have to enjoy the satisfaction of practically proving the matter, as I have done. If I was going to grow a plant in perfection, I would certainly employ the porous pot. "G." says, "once let a pot-bound Erica or Epacris become thoroughly exhausted of moisture, and it becomes almost impossible to induce water to re-saturate the mass." Now, if he was thoroughly acquainted with the perfect cultivation of either the Erica or the Epacris, he would never allow them to become dried in the manner he describes through inattention to watering. Any one well versed in their culture would never allow them to become either wet or dry, but would endeavour to keep them in a medium state as regards moisture, and that cannot be done except by using the porous pot, and by paying proper attention to drainage and watering. Does the advantage of the non-porous pot consist in its keeping the plant continually moist? Suppose that one person washes himself thoroughly, and keeps the pores of his body clear for free perspiration, and another never washes himself at all, but suffers the pores to become choked up, which would be the healthiest man? Certainly he who kept the pores clear; and the same holds good as regards the pots in question. But suppose plants in each description of pot were to become saturated with water, which would be likely to suffer the most? Those in the non-porous pots, as a matter of course. Did "G." ever turn out of either kind of pot the same sort of plants, and examine the state of their roots? if he has not, I would recommend him to do so. In the porous pot he will find the roots strong and healthy, clinging to the sides of the earthenware, while the roots in the non-porous pots will be found to be weak and away from the pot, showing at once which material they prefer. But "G." says, "I would still employ the same material, mechanically speaking, but I would coat the exterior with a dense glaze, and also the interior of the pot for an inch or two from the surface of the rim." Now, why only glaze the outside? surely something must have struck "G." that he would like to have porous glazed pots. If he would glaze the outside, and the inside partly, why not glaze the pot all over? Does he suppose that it would be porous inside and not porous outside? In the matter of colouring, I agree with "G.," but they must be coloured with something that will not interfere with the porosity of the material. *F.*

Societies.

Botanical of Edinburgh, *April* 11.—Professor Fleming in the chair. Several donations were announced. Dr. Greville gave the following report on a specimen of fibrous matter from the Edinburgh Water Co.'s works, and a specimen resembling it, found on an old wheelbarrow in Dundee: "The fibrous substance from the Water-works, is Ozonium auricomum of Link. Along with a number of other fibrous and byssoid productions, it is now regarded as either an imperfectly developed or aberrant form of some fungus. Ozonium, Himantia, Fibrillaria, Acrothamnium, Byssocladium, &c., are considered by Fries as the Mycelia of Hymenomycetous fungi, in a more or less monstrous state. I am not aware that the full development has ever been traced, so that the species has not been identified. The specimens from an old wheelbarrow are probably the same thing. Having been more favourably placed, there is evidently an approach to a higher development." Mr. M'Nab showed a specimen of Ranunculus ficaria, raised from roots which had been gathered in Silesia by the Rev. Mr. Wade in 1848. These roots had been exposed over a large extent of country in Austria by heavy rains, and the common people gathered them and used them as an article of food. Their sudden appearance gave rise to various conjectures as to their nature and origin, and in the Austrian journals they were spoken of as if they had fallen from the sky. The small bodies were used as Peas by the inhabitants Mr. M'Nab had tasted the dried specimens as well as fresh roots of Ranunculus ficaria gathered in this country, which, after being boiled, he found very amylaceous. There is no acridity in the roots even in their fresh state. A paper was read on Indian Hemp (Cannabis indica), by A. Christison, Esq. On careful examination no specific differences could be detected between the specimens raised from Indian seeds, and the common Hemp in the garden. Mr. M'Nab read the following report on the flowering of the plants in the open borders of the Royal Botanic Garden, Edinburgh, in continuation of a similar report read at last meeting.

Date.	Lowest Point of Thermometer during the Night.	Names of Plants in Flower.
March 15	40°	Saxifraga oppositifolia, Adonis vernalis.
,, 16	37	Corydalis solida, C. cava.
,, 18	32	Muscari botryoides, Orobus vernus.
,, 19	35	Geum altaicum, Lamium maculatum, Tritonia media, Anemone nemorosa.
,, 20	37	Fritillaria imperialis, Gagea lutea, Saxifraga crassifolia.
,, 21	39	Primula auricula, P. marginata, Alopecurus nigricans, Corydalis capnoides, Aubrietia deltoidea.
,, 22	29	Saxifraga virginica, Geum pyrenaicum, Erigeron villosum, Primula villosa.
,, 24	23	Aubrietia grandiflora, Orobus venosus, Narcissus pseudo-Narcissus, N. moschatus.
,, 25	29	No plants observed in flower.
,, 26	26	Do. do.
,, 27	22	Omphalodes verna.
,, 28	25	No plants observed in flower.
,, 29	35	Do. do.
,, 30	37	Dalibarda geoides.
,, 31	38	No plants observed in flower.
April 1	42	Hesperis arabidifolia, Viola pulmonensis.
,, 2	44	Narcissus bicolor, N. incomparabilis, Pulmonaria angustifolia.
,, 3	45	Alyssum saxatile, A. montanum, A. appenninum, Orobus flaccidus, Pulmonaria virginica.
,, 4	44	Pulmonaria officinalis, Euphorbia pilosa, Cardamine bellidifolia, Draba rupestris, Hierochloe borealis.
,, 5	38	Asphodelus taurieus, Carex stenophylla, C. pilosa, Euphorbia epithymoides, Orobus canescens.
,, 6	39	Anemone hortensis, Narcissus stellaris, Doronicum Pardalianches, Prunus Cerasus.
,, 8	45	Scilla italica, Lunaria vesicaria, Hyacinthus orientalis.
,, 9	42	Potentilla opaca, Narcissus pallidus, Carex montana.
,, 10	43	Narcissus poeticus, Fritillaria meleagris, Carex pilosa, Helonias bullata.

Botanical of London, *April* 5.—G. Cooper, Esq., in the chair. A collection of dried specimens of the flowering plants and Ferns growing native within a district of the county of Norfolk, embracing an extent of about 40 square miles, having for its centre the tower

of Fakenham, was presented by W. S. Notcutt, Esq R. Hudson, Esq., F.R.S., &c., Dr. Caspary, W. H Purchas, Esq., and Mrs. L. Watkins, were elected members. A conclusion of Mr. Coleman's paper, "On the plants indigenous to the neighbourhood of Horsham, Sussex," was read.

April 24.—Meeting at Worton Cottage for the display of Seedling Florist Flowers, &c. — A beautiful evening and a nice display.—Mr. Coombs, of Northfleet, placed on the table three blooms of a pretty seedling Azalea indica, having a white ground colour, striped and spotted with deepish lilac.—From Mr. Strong came nine varieties of seedling Ericas, of 1850, raised from Aristata and Macnabiana. They were not sufficiently distinct to claim individual notice, although they had enlarged and purer lips, with brighter colours than their progenitors. They arrived in capital condition.—Many seedling Cinerarias were present. Mr. Salter, Versailles Nursery, Hammersmith, staged two plants, Clementine and Crimson King; the former a beautifully-formed variety, with obtuse petals, white ground, deep rosy-purple tip, good habit, and free bloomer, which may also be said of the latter, though we should call its colour a rosy-purple self, with neat, small disc.—Mr. Keynes, of Salisbury, brought a truss of a seedling very similar to Clementine.—Mr. E. G. Henderson had a quantity of blooms; three of a variety named Madame Sontag claimed much notice, possessing, as they did, every point of a good flower—small disc, broad obtuse petals, white ground, most delicately tipped with pale blue.— Mr. Layton had a well grown specimen of his Hammersmith Beauty, not yet sent out. In colour it is azure blue, with a light circle round the disc, which is somewhat large; altogether it is a striking variety, a profuse bloomer, and good in habit.—Seven varieties shown by J. C. took no place with those on the table; not one of them would bear describing.—Six varieties of seedling Mimulus, from Mr. Layton, of Hammersmith, were large and fine; one in particular, which Mr. Andrews was figuring, is a large flower 2 inches in diameter, of a rich yellow, margined with crimson maroon, and having a handsome blotch of the same colour on each petal; throat spotted. They were well-grown plants, with good foliage.—From Mr. F. Whitly came seedling Pansies: No. 38 had two decided shades of ground colour, which condemned what would otherwise be considered a first-rate flower; No. 6 was coarse and inferior; No. 1, good in quality, but too small to report upon. A seedling Polyanthus, "Richard Cobden," from the same grower, was wanting in the circular properties which a first-rate flower must possess.—W. A. sent a single pip of a semi-double Auricula, of a character well known to raisers, but not considered valuable. It was a grey-edge, with good paste, very circular, and had a second and smaller flower rising from its centre.—Mr. Turner was present with a flower of his Pansy, "Mr. Beck," in good character, from the open ground.—Mr. Gad, gr. to — Lennox, Esq., brought two plants of his seedling Petunia "Enchantress," and a cut branch covered with large well formed flowers, of a light character, delicately veined. — Two-year-old seedling Pelargoniums were on the table from the Worton Cottage collection; these we shall see again, and therefore shall not notice them till the season is more advanced.

Reviews.

An Encyclopædia of Gardening; comprising the Theory and Practice of Horticulture, Floriculture, Arboriculture, and Landscape Gardening; including all the latest Improvements, &c. By J. C. Loudon, F.L.S., H.S., &c. A new Edition, corrected and improved, by Mrs. Loudon. 8vo. Longmans, London.

We perceive, with much satisfaction, that a new edition of this standard work has been issued. It is undoubtedly the most useful of all books to a gardener; and that gardeners think so is abundantly proved by the many thousands of copies which have been sold. Even the first edition, with all its blemishes and grievous faults, was welcome; but they have been long since corrected, and in its improved state the work has found friends everywhere. We must allow Mrs. Loudon to describe the peculiarities of this new edition in her own words:

"The leading principle which she has adopted for her guide has been to make the work as nearly as she possibly could what she believes her late husband would have made it, had he lived to the present time. The general arrangement remains the same, as the experience of nearly 20 years has proved the justness of the author's sentiments on this subject, which he stated in the preface (given in pages v. and vi), which he prefixed to the third edition of the work. The execution of the work has been conducted on the same principles as those which guided Mr. Loudon himself; viz., those of inducing the young gardener to think for himself, and giving the man of experience a choice of practices. 'All knowledge,' observes Mr. Loudon, in the edition of 1834, 'to be really useful, must be gained by experience; and the next best thing to gaining this experience from personal practice is to observe and reflect on the practices of others.'

"Part I., containing the History of Gardening, has been carefully revised, and brought down to the present time. Part II., containing the Science of Gardening, has been completely rewritten; and the editor has to return thanks to Dr. Lindley for permission to make extracts from his valuable works on Vegetable Physiology, &c., particularly from the new edition of his 'Introduction to Botany.' She likewise offers her most sincere thanks for the very valuable assistance she has received in geology from Professor Ansted, and in chemistry from Professor Solly; these gentlemen having read over and corrected the articles on their respective subjects. The article on Entomology in this part has been entirely rewritten by J. O. Westwood, Esq. Part III., on Gardening as an Art and as practised in Britain, has received several valuable additions from Mr. Thompson, fruit gardener to the Horticultural Society of London, who has looked over and revised the lists of fruit and vegetables. Mrs. Loudon has also been very greatly indebted to Mr. Marnock, superintendent of the Royal Botanic Garden in the Regent's-park, for the plan and description of that garden; to Mr. Ogle, gardener to the Earl of Abergavenny, at Eridge Castle, for his drawings and description of a fruit-room, his mode of cultivating Pines, and many hints and corrections; to Mr. Francis Rauch (many years assistant to Mr. Loudon) for much valuable assistance, particularly in the catalogue of Coniferous trees, and in the tables containing lists of various kinds of flowering plants; and to Mr. David Wooster for the very great care and attention he has bestowed in assisting in the work in general, and particularly in the correction of the proof sheets. The subject of landscape-gardening has been considerably enlarged; numerous woodcuts have been added; and, in short, no pains have been spared to render this edition as perfect as possible."

Garden Memoranda.

Mr. Beck's, Worton Cottage, Isleworth.—A fine afternoon, and the certainty of a rich floral treat before us, induced us to pay a visit to this quiet and interesting place, which we reached in good time to see the seedling flowers which are exhibited here every Wednesday evening for the inspection of the censors of flowers sent for opinion to the superintendent of the "Florist." We found that ample accommodation had been provided for the display of such flowers which, away from smoky dusky London, are seen to great advantage. A span-roofed house, some 20 feet long, glazed in front, and having a convenient green baise covered stage, has been appropriated to the exhibition of seedlings, not only such as are sent for the opinion of the "Florist," though that is the main object for which these meetings have been instituted, but for all florist flowers, whether produced for the purpose of comparison or notice. When we state that these flowers receive the most careful examination from some of the best florists in the kingdom, comparing them at their leisure one with another, and then again with older flowers of acknowledged excellence, we need hardly say that raisers of seedlings must reap much benefit from such meetings. As will be seen from a report in another column, some good things were produced, and we are given to understand that the number of flowers of various kinds is increasing with every succeding meeting, a sure token that an interest has been excited in the matter. But we will take our readers through the plant houses, for that is a privilege freely granted to all who attend these meetings. The Pelargoniums for the May exhibition are coming very fast into bloom, and they promise to do good service. Their trusses, without being drawn, stand well up above the foliage, which is small—too small, according to the opinion of some, but Mr. Dobson well knows that large foliage and rampant shoots are incompatible with a fine display of blossoms. Indeed, so far from being drawn, the branches have few or no sticks to support them. The plants for the June and July shows are "stocky" and healthy. Two long houses are filled with this year's seedlings, from which, considering Mr. Beck's usual success, much may be expected. The small stove, which was wont to be filled with Orchids, is now occupied with Achimenes, Gloxinias, &c., of which there is here a nice collection, and the Orchids have been removed to what was formerly the Rose house; but Mr. Beck, after beating everybody, and being well beaten himself, has given up the pot culture of Roses The ever-flowering Phalænopsis amabilis was in bloom, and so were some other Orchids; but the lion of the collection was a magnificent Dendrobium nobile, about 4 feet high, and as much through, literally covered with flowers expanded and expanding. A seedling Geranium-house, parallel with the Orchid-house, claimed much attention. It was fitted up with a table in the middle covered with fine healthy plants, and surrounded with slate shelves, on which were two-year-old seedlings. Having passed through the potting shed, in which there is a place for everything and everything in its place, and round the end of the principal Geranium house we find ourselves among flower beds in gravel, with a broad walk before us leading to the little lawn near the house. This walk is broadly margined with Grass, and lined on either side with standard Roses, which rise out of small circles in the lawn. To improve the health and flowering of the plants, these circles receive a little dung in November, covering it slightly with soil, and in spring this is "pointed" in about the roots. The beds are edged with slate of an ornamental description, which, besides being impenetrable and offering no harbour for insects, contrasts admirably with the warm colour of the gravel on the one hand, and the soil and green leaves on the other. All the houses here are furnished with canvas shading, at 4½*d.* a yard, made to move up and down on rollers; and in the end of one house we observed one of Mr. Dromgole's ventilators in use. Haythorn's Hexagon Netting, a neat looking material, is employed to exclude bees, &c., which, when allowed admission, fertilise and spoil the Pelargonium flowers. We saw one of Brown's fumigators put in use for smoking a span-roofed house, 40 feet long by 12 feet wide, which it filled in from five to eight minutes. It was one of the largest size. It should be mentioned that in charging this kind of fumigator, instead of placing the hot cinders in the bottom of the receiver, as is usual with other fumigators, they should be put on the top. This is important, for otherwise it will not burn. In justice to Mr. Dobson, we must mention that the garden altogether exhibited the best of keeping; not a weed was to be seen, the walks were all neatly swept and rolled, the Grass cut short, and indeed everything and every place had that air of cleanliness about them which gives one pleasure to see, and in which consists the charm of a well kept garden. Those interested in the application of slate to horticultural purposes will find everything here in use which Mr. Beck recommends, such as tanks for rain and manure-water, shelves, tubs and boxes for plants, edgings for borders, hot water tank covers, floors for frames, &c. We had nearly forgotten to state that Mr. Beck has some nice plants of the Ceylon Anæctochilus, whose beautiful leaves are the admiration of everybody.

Miscellaneous.

Suggestion for a Metropolitan Winter Garden.—The "Westminster Review" proposes that the building to be provided for the Great Industrial Exhibition shall be of such a character as that after the Exhibition shall have closed, it may be used as "a great metropolitan conservatory, or winter garden." "Our parks are pleasant, and available for exercise during six months in the year, but scarcely for a longer period. The Duke of Devonshire, and a few other noblemen, have magnificent conservatories, in which, during the severest weather, they can enjoy a healthful promenade, and breathe the balmy air of summer. The public have only the conservatory at Kew, which is on too small a scale, and too far distant, for the multitudes who would visit it in the winter season, if in the immediate vicinity of London. Why should the inhabitants of the metropolis not be enabled to command, between the months of October and April of every year, the facilities a winter garden would afford for healthful enjoyment; and especially that large invalid class of our population whom the first breath of a north-easterly wind now consigns to the imprisonment of their own dwellings?" —*Economist.*

Calendar of Operations.

(For the ensuing week.)

PLANT DEPARTMENT.

Great care is necessary in watering newly potted plants, to prevent the fresh soil from becoming soddened and soured. When any plant is observed to be in this state, it should be shaken out, repotted in sweet soil, and more carefully watered for the future. But if this operation is to be of any service, it must be performed without delay, as the roots of plants are speedily injured and destroyed if allowed to remain in contact with unwholesome soil. Thunbergias, Clitorias, and other climbing tender annuals, should be transferred at once from 4-inch pots to those in which they are intended to flower, in order that they may at once be furnished with a suitable trellis; the soil for Thunbergias can scarcely be too rich. Ipomœas of the annual kinds should in like manner be grown on, without receiving any check. During the growth of these climbers some of the strongest shoots should occasionally be stopped, to induce the formation of laterals and to equalise the strength of the plants. Abundance of light is necessary, to prevent weak long-jointed shoots, and when their growth is nearly completed, and the plants begin to produce flower-buds, the amount of air should be considerably increased, in order to prepare them for the cooler atmosphere of the conservatory. Ipomœa Learii, and I. ficifolia, are excellently adapted for the autumn decoration of the conservatory; for this purpose they should be potted in 10 or 12-inch pots grown in stove heat till the end of May, and then removed to cooler quarters. The plants will flower more freely if they are kept in their pots, than they will if planted in the soil; but there is an advantage in setting the pots on the surface of the soil, and allowing the plants to root through, as they are thereby enabled to guard themselves against accidental drought, and the nutriment they derive by the same means contributes to maintain a healthy appearance to a later period, without interfering with the profusion of their blooms.

FORCING DEPARTMENT.

Vineries.—Let the rods of Vines which are just starting be tied horizontally across the rafters, that the flow of sap may be equalised, and the whole of the buds induced to break regularly. In the earlier houses use the utmost vigilance to keep down insects, especially the red spider; this attention will be particularly required in houses where the ripening of the fruit renders it necessary to maintain a drier atmosphere. Where proper care has been taken to keep the enemy in check to this time, little difficulty will be experienced; but if this is, or has been neglected, the gardener will stand a chance of seeing the leaves ripen as soon as the fruit, and of course he must expect only a limited supply of elaborated sap for the benefit of the future crop. Applying a wash of sulphur to the hot water pipes, or to the surface of the flues, is the easiest and quickest method of destroying these insects. Melons.—In

determining the number of fruit to be matured on each plant, exercise as much caution as you would in regulating a crop of Grapes; the proper medium of size, and perfection of flavour, depend upon the plants being neither over-stimulated nor over-cropped; the latter fault should be carefully avoided, as by it, not only are the fruits of the first crop inferior, but the chance of a second crop is rendered hopeless. Admit air freely during warm sunshine, and maintain a moist atmosphere by means of evaporating pans, and by sprinkling the paths and soil with water. STRAWBERRIES.—Continue to forward successions of this useful fruit, and by fumigation or syringing, destroy aphides on the leaves and fruit of those which are in progress; this demands particular attention, as these little pests suck the juices out of the fruit while in its young state, which of course spoils its appearance and prevents its swelling. With proper attention Strawberries should now be obtained as good as at any season; and every means which will contribute to produce fine well-flavoured fruit should be put in practice. Placing the plants near the glass, where they can have a free circulation of air, but at the same time be guarded against cold currents, is very important. The small weak berries should be thinned out, leaving from six to ten of the most promising upon each plant. Up to the time when the fruit begins to change colour, manure water may be applied with advantage once a week; but after that it should be entirely withheld, and even clear water should be given more moderately. The flavour of the fruit very much depends upon careful attention to these points.

FLOWER GARDEN AND SHRUBBERIES.

The evergreens which were placed in the flower beds before winter should now be removed to the reserve garden, in order that the ground may be prepared for its summer occupants. The beds which have been filled with Crocuses, or other winter and spring flowering bulbs, are generally prepared for this purpose by taking up the bulbs about this time; such a practice, however, is very objectionable, as the foliage is not sufficiently ripened; and even if the bulbs are left in the ground until properly matured, and then taken up, the flowers are not nearly so fine or so strong as they would have been if they had been left undisturbed. Every objection, however, may be removed, and much unnecessary labour prevented, by laying a few inches of fresh soil on the beds for the summer flowers, without disturbing the bulbs. When the latter operation is being performed, the leaves of the Crocuses should be tied together in knots, that they may have time to mature themselves, without interfering with their successors. In removing the latter in autumn, they should be drawn out of the ground, that the bulbs beneath them be not injured; at the same time, a portion of the spring top-dressing should be removed, sufficient to leave the bulbs about 2 or 3 inches from the surface. By this method, gorgeous masses of flowers are displayed, both winter and summer, without the plants of one season interfering with those of another.

FLORISTS' FLOWERS.

TULIPS.—After the late hailstorms, how do our amateur friends stand? Those who have suffered, and those who are safe, will, we imagine, patronise a small-meshed net in future. From information we have received from various parts of the country, Tulips are looking above the average; abundance of increase is reported, and, generally speaking, a fine bloom is anticipated.—Look well to Ranunculuses, as the leaves emerge from the ground they often throw the centre bare, which is consequently detrimental to the rising bloom. It will, then, be absolutely necessary to guard against this by stirring the surface soil of the bed. As for watering, our best authorities are *pro* and *con*—we say, if the bed is well made that they may easily be overdone in this respect. Carnations and Picotees will want little else but watering, should dry weather set in. Sticks, to which the spindles are to be attached, of course should be put down immediately. AURICULAS.—Seedlings will now require attention. From 700 blooming seedling plants saved from a collection, in which there were but a few Alpines, we have been astonished in not finding more than one in a hundred *bona fide* Auriculas. We are aware this is not very often the case, still we think, as they were strictly collected, and tallied correctly, without a possibility of mistake, that this wholesale falling back is somewhat singular. Remove the plants as the blooms decay into a shady situation, extracting the decayed petals, and covering the promising truss of seed from excessive wet.

KITCHEN GARDEN.

Those who have sown their Leeks in a frame (according to former directions), with the intention of transplanting, should now get the ground ready for them. To produce this excellent vegetable in perfection, it should be grown as large and quickly as possible, as the flavour is thereby rendered much milder. As the Leek is fond of moisture, its roots have a natural tendency downwards, deriving their nourishment principally from below the reach of the scorching sun of summer. The ground for this crop should be double dug, 18 or 20 inches deep, and the manure laid into the bottom of the trench, which should be previously loosened up with a fork. Of the planting we will speak in a future Number. After this time it is better to sow Lettuce where it is to remain. The drills should be drawn 10 or 12 inches apart, and a few seeds dropped in at intervals of 3 inches; these patches, as soon as they are fairly up, should be thinned to one plant. It is better to avoid transplanting Lettuces in summer, as the tap-root is liable to get broken in the operation, and the plants have to depend for their support on the surface soil, which for this crop is too much exposed to the drying influence of sun and wind. The plants are thus rendered deficient of that crispness and succulence which is so indispensable in this salad, and are much more liable to run to seed. In hot summers, transplanting will only succeed in such ground as that of a London market-garden, where the soil is very rich and moist.

HARDY FRUIT GARDEN.

Disbudding wall trees will be the principal work in hand, during the next few weeks, in this department. In the final regulation of the shoots, do not allow more to form wood than can be conveniently trained in. When working at wall trees, avoid treading upon the soil; a plank and a few bricks, moved along as the work advances, will prevent the compression of the soil, and add no little to the comfort of the workman.

State of the Weather near London, for the week ending April 25, 1850, as observed at the Horticultural Garden, Chiswick.

April.	Moon's Age.	Barometer. Max.	Barometer. Min.	Temperature. Of the Air. Max.	Of the Air. Min.	Of the Air. Mean	Of the Earth. 1 foot deep.	Of the Earth. 2 feet deep.	Wind.	Rain.
Friday.. 19	7	30.110	29.834	62	44	53.0	50	48½	S.W.	.26
Satur... 20	8	29.631	29.468	59	35	47.0	49½	49	S.W.	.08
Sunday . 21	9	29.785	29.570	58	35	46.5	49	49	N.	.07
Monday 22	10	29.958	29.828	59	34	46.0	49½	50	N.W.	.00
Tues. .. 23	11	29.977	29.956	55	29	42.0	49	49	N.W.	.00
Wed. ..24	12	30.131	30.076	58	32	45.0	49	49	N.W.	.00
Thurs....25	13	30.056	29.972	56	39	47.5	48½	48½	S.E.	.00
Average....		29.949	29.814	58.1	35.3	46.7	49 2	49.0		0.41

April 19—Hazy; showery; constant rain in afternoon; overcast.
— 20—Fine; showery; clear at night.
— 21—Slight rain; low white clouds; cold at night.
— 22—Fine throughout; clear.
— 23—Overcast; cloudy; frosty at night.
— 24—Clear; fine; clear; slight frost.
— 25—Fine; overcast and cold; clear at night.
Mean temperature of the week, 1½ deg. below the average.

State of the Weather at Chiswick during the last 24 years, for the ensuing week, ending May 4, 1850.

April and May.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds. N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 28	61.7	37 3	49.5	10	0.28 in.	1	4	4	4	4	1	2	
Mon. 29	62 2	39.5	50 8	7	0.75	2	3	4	2	4	3	2	4
Tues 30	63.3	42.1	52.7	9	0.31	5	3	6	1	3	4	2	3
Wed. 1	63.0	42.1	52.6	9	0.31	1	3	5	2	5	4	4	—
Thurs. 2	64.5	42.6	53.5	8	0.72	1	3	6	—	5	4	3	1
Friday 3	63.0	42.5	52.8	12	0.30	1	4	6	1	4	4	1	3
Satur. 4	64.2	42.6	53.4	8	0.70	1	4	7	—	5	2	2	1

The highest temperature during the above period occurred on the 4th 1833—therm. 81 deg.; and the lowest on the 29th, 1836, 1848—therm. 27 deg.

Notices to Correspondents.

TO OUR CORRESPONDENTS.—May we beg it to be understood that *we cannot answer inquiries privately through the post.* We are ready to give reasonable information through our columns, but we cannot consent to the labour of writing letters.

BEE-HIVES: *A.* It is difficult to answer your question, as nearly every writer on the subject recommends some particular hive. But from experiments carried on for several years in the neighbourhood of London, for the purpose of testing whether a straw or wood hive was most conducive to the well-being of bees, the preference seemed much in favour of a well and strongly made straw hive, as nearly spherical as possible, being about two-thirds of a globe, merely depressed enough at the top to allow a board (for supporting a glass cap or feeder) to be fastened on, the space between the board and the top of the outside of the hive being filled in with plaster of Paris; round the outside of the lower part a strong Ash hoop is fastened, and the space between the lower part of the outside of the hive and the hoop is also filled in with plaster of Paris; while the plaster is still soft, the hive is worked about on a flat board to obtain a flat surface, so that when the hive is in use it fits closely to its board. At the back of the hive a piece of stout glass, 4 or 5 inches by 3 inches, is inserted, which is covered by a piece of woollen cloth twice folded, fastened on by a tin tack at each corner. The board at the top of the hive should be a well-seasoned piece of Mahogany, ½ inch thick and about 10 inches diameter, with a hole cut out in the centre of it of 1⅞ inch diameter, and to correspond with the hole at the top of the hive. A straw cover is made to pass moderately close over this board, and to rest on the top of the hive sufficiently high to admit a large glass being used under it. The hive-board is made of two pieces of ⅜-inch thick white Pine, about 18 inches by 16, screwed together across the grain of each, and is further secured from warping by a piece of iron hooping being screwed entirely round it, the screws being alternately placed in each piece of the board. The entrance to the hive is formed by grooving out a passage in the board, gradually sloping upwards to the centre of the part covered by the hive, which groove should be rather more than 5 inches wide, and, at the part where the hive crosses, it should be ⅜ inch deep. The best mode of contracting this entrance, when necessary, is by wedges of wood. It was found, after several seasons' trial, that swarms of equal size, put into these at the same time as into common straw, wood, or cork hives, and treated as nearly alike as possible, were most in health and strongest the next spring; gave off the earliest and largest swarms; filled and sealed the comb in the glasses or caps earlier; and, from the shape admitting the current of air to every part of the interior of the hive, they were not troubled by the larva of the wax-moth. They are economical in price, and, with the necessary care of keeping them from wet, will last as many years as a stock can flourish in the same hive. *Y.*

BOOKS: *L L D.* We know of no book that will answer your purpose.

BULBS: *Wotton.* Four inches is quite deep enough in light or sandy land; two to the crown of the root is deep enough in heavy land. No doubt the yellowness of your tree Box plants is chiefly owing to their having been transplanted. Give them a little mulching over their roots.

CAMELLIAS: *Cork.* Why try to grow them in frames and with the aid of dung? Plant them under a north wall or fence in the open air, and put some sashes over them when they show their flower-buds. That is all they want. They are perfectly hardy in Ireland.

DISEASES: *L D.* Your plants are ruined by bad gardening. It is useless to advise you to do anything with such a gardener. If you will find an industrious careful man, he will put all in order again, if the plants are not in a hopeless state.

HARDY HERBACEOUS PLANTS: *X.* Apply to Mr. Plant, of Cheadle; Messrs. Backhouse, of York; or Mr. Masters, of Canterbury. Such things are much out of fashion.‡

HOLLIES: *J S H.* Prune them in now. Whether young Hollies should be topped or not depends on the purposes for which they are wanted. Your other questions next week.‡

INSECTS: *Sub.* We know of no better remedy for scale than washing with hot water. With a little care we should think the operation might be effected without injuring the fruit.‡—*G R.* The insects found under the surface of the ground in your garden are unmatured specimens of the fly of St. Mark (Bibio Marci). They are not injurious, apparently feeding on decaying vegetable matter. *W.—S T.* The little yellow masses produced from the caterpillar which fed on your Apricots are the silken cocoons of a number of minute parasitic ichneumonidæ (Microgaster glomeratus), the larvæ of which fed within the body of the caterpillar and destroyed it. *W.—Este.* The two larvæ found beneath the bark of the Downton Pippin are the caterpillars of some small moth, most probably Œcophora sulphurella, which will very shortly assume the winged state. Were their burrows in the solid wood, or merely beneath the bark? *W.—S F.* No; the larva sent is not the wireworm, it is the larva of some species of moth of the genus Agrotis. *W.—H R I.* The small larvæ infesting your young Irish Juniper shoots are the caterpillars of some small moth (Tineidæ), and the eggs have just hatched a number of minute cooper caterpillars, most probably those of Thera juniperata. These must, therefore, now be sedulously attacked; and we know no better plan than enveloping the tree, if not too large, in a coarse bag, and fumigating it with tobacco smoke, or by dipping the young shoots in limed soap-suds with some quassia mixed with it. *W.*

LAWN: *B R H.* It may be mown now. April 27 is not *early.*‡

NAMES OF PLANTS: *A Sub.* The flowers appear to belong to Pachysandra procumbens; but if so, the leaves are those of some other plant.—*A B.* Apparently a leaf of Eranthemum pulchellum. What you call an insect on the back of it is its own natural secretion. Pray let it alone. You might as well scald your chin in order to get rid of your beard—if you have one.—*W W.* Some Cape Asphodelus, but nobody can identify such a ragged morsel.—*J S H.* Asplenium Trichomanes, very common. The rare Fern of Perthshire is Asplenium alternifolium. *S.—W M T.* Cyrtochilum maculatum.—*Marcelly.* A, Saxifraga tridactylites; B, Cochlearia officinalis.—*R H.* 1, leaves of a Phrynium; 2, husks of Indian Corn.—*W G.* Vestia lycioides.—*Anon.* Hibiscus Patersonii.—*P E.* Baccharis halimifolia.—*Omega.* Caltha palustris, Ranunculus Ficaria, Ceterach officinarum, Luzula campestris, Tussilago Farfara.

PAXTON'S COTTAGERS' CALENDAR may be had at the Office of this Paper, or of any bookseller, price 3*d.*, or 5*s.* for 25 copies for distribution amongst cottage tenantry.

PINE-APPLES: *A M.* Pines may be grown in all their stages and ultimately fruited in pits heated by dung, unassisted by fire heat in any way. Where stable dung may be had in any quantity, and fuel is scarce, and where the pits are formed upon the best principle, there is not any difficulty in doing so; on the contrary, the largest Pines ever seen in this country were so obtained. You should study "Mills on the Pine-apple."

POLYANTHUSES: *W W.* Alexander, George the Fourth, Formosa, Invincible, Bang Europe, Beauty of England, Princess Royal, Defiance, Freedom, Cheshire Favourite, Nicholson's Gold-lace, and Coe's Prince Regent.‡

POTATOES: *P A.* So long as there is risk of Potato disease, refrain from the use of all manure of every sort. Be contented with a moderate crop sound, rather than strive for a large crop which may rot. There will be no difficulty in growing Swedes, Mangold Wurzel, and Raspberries in such land as that.

SEEDS: *P T O.* It should be a weak solution of oxalic acid. Daphne indica bears cutting well. Sow your Deodar seeds in pure loam in pans in a Cucumber frame, and when they are up gradually harden them, and remove to the open air under a north wall.—*T H, Swainton.* Treat your Goa Cedar seed in the same manner.

SIX GOOD CLIMBING AUTUMN-FLOWERING ROSES: *W W.* Bourbon: Acidalie, white; Gloire de Rosamène, carmine; Pierre de St. Cyr, pale rose. Noisette: Du Luxembourg, lilac rose; La Biche, flesh-colour; Pourpre de Tyre, violet crimson. In time these will attain the height of 10 feet.‡

SLUGS: *Sub.* See a paragraph in our "Home Correspondence" of to-day.‡

STUMPS: *L S.* All that you can do to render them *ornamental* is to make them the shafts or stands for large rustic baskets. Objects of this kind are by no means suitable to decoration; they are much more at home in the fire-place.

TOLL GATES: *J H J.* We cannot undertake to answer legal questions; on the contrary, we have repeatedly refused to do so—for this reason, more especially, that no safe opinion can be formed upon a point of law, in the absence of much more complete evidence than newspapers ever receive. Besides, all such questions ought to be put to professional men, in a professional way. As, however, your case is peculiar and one of some public interest, we have no objection to make it partially an exception to a very wholesome and necessary rule. You say that you are summoned for refusing to pay toll for "Cauliflower plants growing in pots." Whether you are right may depend on the local act by virtue of which the toll-gate in question was erected. The section of 3 Geo. 4, c. 126, is to be construed liberally, and we should think that "pots" might, under certain circumstances, be considered as implements of husbandry. The liability to pay toll does not, however, turn on that alone; for if the Cauliflowers in pots had either been just bought, or were going to be sold or disposed of, toll would be payable. We are not acquainted with any case in which the meaning of the words "implements of husbandry" has been decided. All the law on the subject will be found collected in the last edition of "Burn's Justice," vol. iii., p. 724, and "Woolrych's Law of Ways," p. 165. *N.*

THE TREE ROSE: *W D.* At the request of numerous subscribers the price of this work is now reduced from 4*s.* 6*d.* to 3*s.* 6*d.*, post free; it can be forwarded to any address by a Post-office order being sent to James Matthews, at the Office of this Paper.

TULIPS: *C N R.* We have suffered several times in a similar manner, and our applications of soot, pounded chalk, and lime appeared to have little effect. The best results were attained by removing the soil, as low as possible, and placing pounded charcoal round the stem, but even in these cases the bulbs diminished much in size. *W.*

WALLFLOWERS: *Z.* It is possible that cuttings taken from a very double Wallflower would produce single flowers when struck, but not probable. Oxalis floribunda does not require any particular soil. A light leafy compost suits it *best.*

WEEDS ON WALKS: *Hutton.* Do not use arsenic. Employ labourers, and do not allow the weeds to grow again when once removed.‡

MISC: *Amateur.* Liquid manure will not do your Convolvulus any harm; but it may make it grow too large for your purpose.‡—*W B S.* Head down your Spruce Fir in November. Remove the large Laurel branches now.‡—*Emily B.* You can only obtain Scrophularia nodosa by enquiring at botanic gardens, unless you can find it wild.‡—*Charles.* Dielytra spectabilis has frequently flowered in collections about London. Its proper season of flowering is March and April in the greenhouse. Nobody has yet tried it out of doors that we know of.

SEEDLING FLOWERS.

AURICULA: *G B S.* Shrivelled up. Can you send us another bloom.*

CINERARIAS: *S and J D.* White tipped with rosy purple; disc brownish purple, a clean-looking attractive flower, but too small.*—*J C.* Worthless as regards form and colour. If sweet-scented it had lost its perfume when it reached us.*

PELARGONIUMS: *J R.* Smashed to pieces in coming through the post; colour good, but petals too pointed.*

STRIPED AZALEA: *C.* See our report of Worton Cottage meeting in another column.*

MANURES.—The following Manures are manufactured at Mr. LAWES's Factory, Deptford Creek:

Corn and Grass Manure, per ton	...	£10	0 0
Clover Manure, do.	...	11	0 0
Turnip Manure, do.	...	7	0 0
Superphosphate of Lime	...	7	0 0
Sulphuric Acid and Coprolites	...	5	0 0

Office, 69, King William-street, City, London.

N.B. Peruvian Guano, guaranteed to contain 16 per cent. of Ammonia, 9*l.* 15*s.* per ton; and for 5 tons or more, 9*l.* 10*s.* per ton. in dock. Sulphate of Ammonia, &c.

LAWES'S PATENT MANURE.

WILLIAM E. RENDLE AND CO., Plymouth, are Mr. Lawes's Wholesale Agents for the Sale of his MANURES, and can supply them at Mr. Lawes's prices, delivered at his Factory, Deptford Creek.—Apply to WILLIAM E. RENDLE and Co., Union-road, Plymouth.

GUANO AND OTHER MANURES.—Superphosphate of Lime (See reports of experiments in Royal Agricultural Society's Journal, Vol. 6, Part 2), Guano, Peruvian and Patagonian, Gypsum, Salt, Nitrate of Soda, and all other Manures of known value on sale. A Pamphlet on the above forwarded on receipt of four postage stamps.—Apply to MARK FOTHERGILL, 201A, Upper Thames-street, London.

PERUVIAN GUANO.—As Agents of the Peruvian Government for the importation and sale of this valuable MANURE, we think it right, for the protection of consumers and respectable dealers, to apprise them that the adulteration of the article is still extensively practised, and to recommend them to apply either to ourselves, to our agents, Messrs. GIBBS, BRIGHT, and Co., of Liverpool and Bristol, or to dealers of established character, in whose honesty and fair dealing they can place implicit confidence. ANTONY GIBBS and SONS.
London, April 27.

CORN MANURE FOR WHEAT, BARLEY, OATS, BEANS, &c., &c.

THE LONDON MANURE COMPANY most confidently recommend the above, as they are daily receiving very satisfactory accounts from parties who used it with great success last season. It will be found fully equal to and much cheaper than Peruvian Guano, and is not so liable to produce so large a growth of straw. Price Seven Guineas per ton, 3 cwt. per acre. They also beg to offer their Concentrated Urate, Superphosphate Lime, Nitrate of Soda, Sulphate and Phosphate of Ammonia, Fishery and other Salt, Gypsum, Sulphuric Acid, and genuine Peruvian Guano. To insure this free from adulteration, all purchasers can receive it direct from the Warehouses of the Importer.
Bridge-street, Blackfriars. EDWARD PURSER, Secretary.
Country Dealers and Agents supplied.

CORN MANURE.

BLASHFIELD'S PATENT COPROS.—A new Manure for Corn and other Crops, containing Ammonia, Phosphate of Lime, Potash, Soda, Magnesia, Silicate of Potash, &c. Price, delivered alongside a vessel, or any Wharf in London, 8*l.* per ton. It is sold in a finely-ground dried powder, by the Patentee, at No. 3, New London-street, Mark-lane, London.
Superphosphate of Lime, Gypsum, Sulphate of Ammonia, Sulphate, and Nitrate of Soda.

JOHN BAILY, PURVEYOR TO HER MAJESTY AND H.R.H. PRINCE ALBERT, 113, Mount-street, Grosvenor-square, London, Dealer in every description of Useful and Ornamental POULTRY and WATER-FOWL, Dorking, Hambro', Spanish, Polish, and Cochin China Fowls. Gold and Silver Spangled Bantams. All sorts of Pea Fowls. Gold, Silver, Pied, and Ring-necked Pheasants. Tame-bred Pheasants in any numbers. Live Partridges for turning out.—Priced Lists and Estimates forwarded by post, on application.

The Agricultural Gazette.
SATURDAY, APRIL 27, 1850.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

WEDNESDAY,	May 1	Agricultural Society of England.
THURSDAY,	— 2	Agricultural Imp. Society of Ireland.
WEDNESDAY,	— 8	Agricultural Society of England.
THURSDAY,	— 9	Agricultural Imp. Society of Ireland.

THE *Morning Herald* considers that the character of Mr. CAIRD, of Baldoon, as a practical farmer, is of some public importance at the present time. That Journal lately devoted its leading article to an attempt to prove that the testimony of this gentleman on agricultural subjects ought not to be considered of any authority whatever. Its correspondent asserts that Baldoon *was* among the most fertile farms of its locality, and *is* among the most exhausted of them—that its occupying tenant holds a very low standing indeed, whether as a man or as an agriculturist—that in fact he is "universally considered a bad neighbour—a bad farmer—a bad tenant."

Now we presume that Mr. CAIRD cannot complain of his *agricultural* status being called in question by his opponents: it is not an unfair, and, when practicable, it is an easy method in controversy to throw discredit on the argument of your opponent by proving his incompetency as witness or judge of the facts he urges: but apart from this we have yet to learn that any argument can be strengthened by personal attacks, such as the above. Let Mr. CAIRD be proved a bad *farmer*, and then, notwithstanding that he confines himself to describing the operations of others, his influence as an agricultural writer will very properly diminish; but what sort of logic is it that aims at the agriculture of an opponent through his *personal* character? *Blackwood* wastes 30 pages in attempting to maintain a charge of vanity, and the *Herald* rejoices on behalf of its readers to have proved one of general worthlessness; and so, in the absence of argument, the interest of the controversy is kept up by slander and abuse, neither of which, unfortunately, can in the least tend to a satisfactory conclusion of the discussion.

We agree however with the *Herald* in thinking that the *agricultural* status of our agricultural writers is a subject on which their readers may indulge a reasonable curiosity; and we have accordingly made enquiries with the view of ascertaining how the charges of that journal in this respect have been received in Wigtonshire. The following letter is from a gentleman who though now resident in Dumfries is well known in Galloway, and well acquainted with the agriculture and the agriculturists of that part of Scotland. Mr. HARKNESS was Secretary to the Rhins of Galloway farmers' club, and no one is better qualified to give an opinion on the subject to which the *Herald* refers. He says:

"I have known the farm of Baldoon for upwards of 20 years, long before Mr. CAIRD became tenant of it. I was very generally acquainted among the tenantry of the county. I went into the county seven years ago, resided there, and took a deep interest in establishing the Rhins Farmers' Club, which was highly approved by Mr. CAIRD, and in which club the principles of high or good farming were advocated so far back as 1844–5, and afterwards. Finally, I examined Baldoon farm and management about a year ago, and from such data, and a personal acquaintance of Mr. CAIRD for at least six years, I can confidently and deliberately say that there is not a word of truth in the charges brought against that gentleman by the *Herald's* correspondent. He says 'as much as four guineas an acre used to be the average rent of land in this district,' and he insinuates that Baldoon, once *the best*, is now the most deteriorated farm of that district. Both statements are glaring misrepresentations. Neither the farms of that district, nor of any portion of Wigtonshire ever averaged four guineas; and the farm of Baldoon, certainly a first-class farm, of heavy clay soil, never was in so highly improved, in so well cultivated, and so productive a condition as it is now under Mr. CAIRD's management. The greater portion of the land is very tenacious clay, and in a wet and changeable season it is most difficult and precarious to work and crop. This applies more especially to green cropping and Wheat growing. It is not true that 'this farm now presents the picture of want and desolation, slovenness and poverty.' I went over it little more than a year ago, and then Baldoon was in excellent *heart* (after complete draining at the tenant's own expense); his dairy stock, Ayrshire cows, were first-rate—clean, well fed, and managed; his Galloway cattle, in course of fattening, were of prime quality and symmetry; his Swede roots were also first-rate; his drainage of liquid, as well as the preserving of solid manure, properly provided for; and, in short, all the arrangements of the offices, and the farm, were such as would satisfy any person acquainted with such matters, that Mr. CAIRD is alike an intelligent, a scientific, and a good practical agriculturist. And what I now deliberately state I not only know to be correct, but I know that my statements will be cheerfully corroborated by not only Mr. C.'s neighbours, but by all the tenantry of Wigtonshire, and by many in the stewartry of Kirkcudbright. The *Herald's* correspondent refers to the Carse of Gowrie, the land and farming of which I have seen, but I question much if throughout all that far-famed agricultural district any one farm will be found so well cultivated and managed generally as Baldoon. Far from Mr. CAIRD being regarded as 'a bad neighbour,' he is universally esteemed as a good one; instead of being considered 'a bad farmer,' or 'a bad tenant,' not only the whole neighbourhood, but the whole county, and all who have the pleasure of his acquaintance, know him to be an intelligent gentleman, a kind, enlightened, and benevolent man, an excellent neighbour, agriculturist, and tenant. I feel it to be simple justice to express these truths in opposition to charges so unfounded, I would say, malevolent.

"Whether Mr. CAIRD's publications illustrative of the principles and practice of 'high farming,' be fully borne out, and the example of Auchness be such as can with safety be recommended as 'high farming' and good management for the tenantry of Great Britain and Ireland generally, is a question which the London *Herald* might have discussed without having recourse to vituperation, the baseless inventions of fancy, or the palpable misrepresentations of a malicious correspondent. The free trade movement has unquestionably progressed with greater rapidity to a low scale of agricultural prices than most of its friends anticipated would follow the change of the law; and the ordeal of an unavoidable transition state, consequent upon that change, is most severely felt by the British farmers generally. It is, therefore, the duty of all the friends of the agriculturists to look this difficulty fairly in the face, investigate the principles and operations of the systems of husbandry hitherto pursued, and discuss and test every reasonable improvement which may be suggested on the ground of efficiency and economy, with the view of raising a larger produce of food at comparatively less outlay. This seems to me a course equally wise and necessary in the present emergency of farming, one which I am sure Mr. Caird would approve; but at the same time I must add it is a course of sound policy, which the attacks of the *Morning Herald*, if at all operative, may retard but cannot promote. Upon the facts now stated you may rely. They can be substantiated by hundreds well qualified to judge in such matters."

We should apologise both to Mr. CAIRD and to our readers for making personal character the subject of discussion in these columns; and were it not that the matter really is of some public importance, we certainly should have carefully avoided it, but the thing has in a manner been forced upon us, not only by its own intrinsic merit, but by the singular fact, which seems fairly deducible from the past history of the Auchness controversy, that to hardly any other agricultural journal would testimony such as the above be welcome. The "racy and trenchant" criticisms of his opponents are received with acclamation, but Mr. CAIRD's own defence has been scouted and his agricultural character disparaged. Let his experience be a warning to all the enterprising agriculturists of the day; if any of them thinks he knows anything likely to benefit his fellows, then if he values his peace, let him hold his tongue; for if Mr. CAIRD's reviewers have not taught him that lesson, he must be dull indeed.

WHILST the admission has been freely made that, under the superintendence of a competent surveyor the funds annually raised for the repair of roads might be more judiciously spent than under the present system,—there is, nevertheless, a growing dislike in the agricultural districts to the measure at present under Parliamentary consideration.

We are far from thinking that our present system of ROAD MANAGEMENT is perfect; on the contrary, after Mr. PAGAN has shown us that 5*d.* out of every 11*d.* goes in collecting the tolls upon our highways, there can be but one opinion of such a system, and had the Government measure attacked this monstrous evil the public would have readily supported them. Year after year each Government has held out promises that this crying evil should be remedied, and after all our expectations we are sadly disappointed that the country still remains consigned to the tender mercies of "*Pike men*" and turnpike trusts. No doubt the township roads as at present managed are far from faultless; but with the roads under the management of trustees they have nothing to fear from comparison. One of her MAJESTY'S Ministers, a short time ago, when advocating the necessity for Government interference with township roads, quoted a case where the expense on a township road had been gradually increasing, whilst a portion of turnpike in the same district had gradually diminished in expense,—the inference being bad management in the former case, and economy in the latter. This, we maintain, is a most unfair way of putting the case; and the inference we would draw is, that railways have completely changed the line of traffic from the old turnpike roads with which they often run parallel, and opened out so many new resources that the township roads have now become the main thoroughfares of the country.

But this comparison between the alleged superior management of the turnpike roads by trustees, over the township roads as managed by parish officers, is also particularly unfortunate as long as the former are some millions in debt, which has increased, is increasing, and will increase. We lately met with a farmer whose land lay between a turnpike road and a township road, by each of which the distance to market is about equal. In his case the contribution required of him yearly to the turnpike road trust is 23*l.*; to the township road, 9*l.*

We quote this case, as we are satisfied it is by no means a solitary one, and it surely shows anything but superior management on the part of the turnpike road trust.

The thanks of the community are due to Mr. PAGAN for having in such an unanswerable style called attention to the iniquities of the *pike* system—it is truly one far in arrear of the civilisation of the day. The frightful scenes of riot, which took place in the quietest portion of the empire, are the necessary results of its action when it arrives at perfection. Certainly the extravagant method of toll collection must be given up. At present the more active a farmer is, and the better the crops that he grows, so much the more does he pay in toll; it therefore operates as a direct tax upon his industry.

What we wish to see is, both turnpike and township roads to be placed under one system of management—the tolls on the former to be at once swept away. The first difficulty to be overcome is the debt which stands against the turnpike trusts. We would, of course, recommend that the tax for the liquidation of this debt should be spread over as large an area as possible, certainly not less than a county, and whether it be raised by a tax on horses or by a special rate is immaterial.

As a means for raising the necessary funds for keeping the roads in repair, no other machinery is necessary than is at present adopted in the several townships. If these were placed under the superintendence of a district surveyor, with summary powers for making repairs in case of neglect, this is all the machinery that we see necessary.

Could such a reform as this be carried out, the relief which the removal of the toll bars would at once afford would be a sufficient set off against any other temporary inconvenience which the change might produce.

THE VALUE OF AGRICULTURAL LABOUR.

Column A gives the present weekly wage of able-bodied men. Column B their weekly wage at harvest time. Column C states the daily wage of female labourers now, and D their daily wage in harvest time. Columns E, F, G, H, contain the prices of different sorts of piece-work; E, of mowing Clover per acre; F, of mowing Meadow-grass; G, of reaping Wheat per acre; and H, of threshing and cleaning Wheat per bushel. Column I gives the cost of digging, per yard in length, a drain in clay subsoil free from stones, 3½ feet deep, 14 inches wide at top, and 3 inches wide at bottom, *i. e.*, 42 × 14 × 3, or some other dimensions specified. Column K gives the ordinary cottage rent.

SCOTLAND.	A	B	C	D	E	F	G	H	I	K	AUTHORITY.
INVERNESS-SHIRE ...	9s	12s	6d	...	3s 6d	...	8s	1½d*	1d	52s	J. MACKENZIE, Eilenach.
* In mills.											
ABERDEENSHIRE	11s to 14s	15s to 20s	10d	16d to 18d	1s 10d to 2s 6d	...	7s to 10s*	...	1d to 1½d	...	J. MACDONALD, Huntly.
* Barley. ‖ Per annum, with food. † For the harvest.	16l‖	12s to 15s	9d	2l †	2s 6d	...	5s*	...	1d to 1½d	Too high	R. SMITH, Kintore.
PERTHSHIRE	10s	15s	9d	...	2s 8d	...	8s 6d	1½d	½d	...	C. PLAYFAIR, Errol.
MORAYSHIRE	9s to 10s or 7l ‖	12s	8d	1s 6d	2s	...	9s	3d	1d	...	J. GRIGOR, Forres.
FIFESHIRE	10s	15s	8d	10d to 1s	3s to 3s 6d	...	10s to 12s	...	1d*	52s	A. BELL, Montrose.
	9s	10s to 11s*	8d	...	...	7s 6d	...	1d	2l to 2l 10s	J. HAXTON, Drummond.	
* With food.	9s	10s to 12s 3d *	8d	36s* to 42s	2s to 3s	2s to 3s 6d	12s to 13s	4d to 5d	½d	...	D. TENNANT, St. Andrews.
	9s	11s to 12s*	9d	18d to 20d*	...	...	...	...	...	2l 10s	W. VEITCH, Kinghorn.
EAST LOTHIAN	10s	10s*	9d to 10d	...	2s 10d to 3s 2d	...	10s	...	1d*	...	J. RUSSELL, Haddington
*With food. † Coals hauled.	10s†	12s*	9d to 10d	...	2s 3d to 3s 6d	...	...	...	1d	28s to 30s	G. HOPE, Fentou Barns..
LINLITHGOW	15l 10s to 17l‖	10s*	9d	...	2s 9d to 3s 6d	...	10s to 12s	...	...	2l	J. MELVIN, Ratho.
‖ With 910 lbs. of oatmeal, 12 cwt. Potatoes, 2 meals daily, in harvest time, and hauling of 4 tons of coals. * With food.											
STIRLING	15l to 18l or 10s to 12s	12s to 18s	...	1s 6d	2s 10d to 3s 2d	3s to 3s 4d	8s to 10s	3d to 3½d	½d to 1d	45s to 50s	R. M'NAUGHTEN, Stirling.
‖ With food.	12s	12s‖	9d	...	3s	...	10s	...	½d to 1½d	...	W. FORRESTER, Stewarthall.
LANARKSHIRE	10s to 12s	12s to 14s	10d to 1s	...	2s to 2s 6d	2s 6d to 3s	8s to 10s	3½d	1½d	2l to 3l	D. GARDNER, Hamilton.
RENFREW	10s to 12s	10s to 12s	1s	...	3s	3s 4d	9s 6d to 11s	6d	...	...	G. BOYD, Renfrew.
AYR	9s* or 14l ‖	12s	9d	...	3s 6d	3s 9d	7s 6d	...	½d*	2l to 50s	ALEX. M'CAW, Maybole.
* House and garden free.	9s	10s to 13s 6d	8d to 10d	...	2s 6d	...	8s to 10s 6d	...	1d	...	J. DYKES, Kilmarnock.
‖ With 900 lbs. of meal and house free. ‡ With food.	10s or 12l to 15l §	10s‡	8d	...	3s	2s 6d to 4s	10s	...	½d*	2l to 3l	J. Y. MAC CULLOCH, Girvan.
SELKIRKSHIRE	10s to 12s	12s*	10d	1s	...	...	...	...	...	5l	J. STALKER, Galashiels.
* With food.											
BERWICKSHIRE ...	9s to 10s	14s*	10d	2s 6d	2s 4d	2s 4d	...	...	1d*	50s	P. MEARNS, Coldstream.
* With food.											
DUMFRIESSHIRE ...	9s to 10s	12s to 15s	8d to 10d	2s	2s 6d	2s 6d to 3s 6d	...	...	1d	30s to 60s	J. LITTLE, Westerkirk.
* For five weeks, with board.	9s	45s*	8d	31s*	1s 8d	2s 4d to 2s 6d	9s	3d	½d	2l	W. THOMSON, Dumfries.
	9s to 10s	12s to 15s	9d to 10d	2s	2s 6d	2s 6d to 3s	...	...	½d to 1d	30s to 60s	C. BROWN, Langholm.
WIGTON	9s	12s or 2l 2s*	8d	...	2s 6d	...	8s to 10s	...	...	52s	J. CAIRD, Baldoon.
* Food in harvest month.											
ENGLAND.											
NORTHUMBERLAND ...	12s*	12s and food	10d	1s 6d	2s to 3s 6d	2s to 3s 6d	8s	4½d	1½d	...	JOHN GREY, Dilston.
* Cottage, garden, and carriage of coals free.											
‡ Ditto ditto, with 50 to 60 stones of Potatoes p. ann.	12s‡	15s to 18s	10d	1s 6d	2s 6d to 3s 6d	3s to 4s 6d	7s to 9s 6d	...	1d to 1½d	40s to 50s	WM. GLOVER, Newcastle.
CUMBERLAND	9s to 12*	10s to 12s 6d*	10d to 1s	...	1s 8d to 2s	2s to 2s 6d	7s 6d*	...	½d	30s to 50s	S. RIGG, Abbey-house, Wigton
* With food. ‡ With food and drink. ‖ 15s in summer. § With beer.	12s‖	18s‡	1s	1s 10d	2s 6d	3s	8s to 12s	2d‡	...	60s to 80s	T. WILSON, Penrith.
WESTMORELAND ...	11s	12s*	10d to 1s	...	2s	2s 6d to 3s	7s to 9s	3d	1d to 1½d	50s to 60s	JOHN CROSBY, Kirkby-thore.
* With meat, drink, and lodging.											
LANCASHIRE	13s 6d	20s	1s	1s 6d	3s	3s 6d	12s to 15s	4d	...	50s to 65s	G. DREWRY, Cartmel.
* And their food (?).	5s to 6s*	10s*	...	1s to 2s	...	...	...	...	1d	...	M. SAUL, Garstang.
† One pint of beer, and 3d.-worth of bread and cheese daily. ‡ And 4 qrts. beer.	12s†	15s	1s	14d to 18d	3s 6d	3s 6d‡	13s 6d‡	6d	1d	5l to 6l	T. W. TATTON, Northenden, Manchester.
‖ Customary acre.	10s to 12s	...	10d	...	...	4s	9s	1s 6d (?)	¾d	4l to 5l	L. RAWSTORNE, Preston.
§ Per 25 sheaves.	12s to 15s	12s to 15s	...	...	...	20s‖	...	6d §	1d	5l 10s	W. WANKLYN, Jun., Bury.
	12s	13s	...	1s	4s	5s	10s to 14s	6d	...	4l	E. EVANS, Wigan.
YORKSHIRE	10s	...	9d	...	3s	3s 6d to 4s	7s to 9s	6d to 7d	1d	...	H. THOMPSON, Moat-hall, York.
* With beer or coffee.	10s to 12s	...	8d to 9d	1s to 1s 6d	2s	3s to 5s	7s to 12s	6d	¾d to 1d	3l to 4l	H. J. TURNER, Richmond.
† With beer and bread and cheese. ‡ Irishmen.	9s to 12s	18s	9d	1s to 1s 6d	2s 6d	3s 6d	...	...	½d to 1d	...	J. TURNER, Guisboro'.
	10s to 12s	15s*	9d	14d to 18d	3s	4s	8s	5d to 6d	...	...	—, Leyburn.
	8s to 10s	16s to 17s	...	1s to 18d*	2s 6d	2s 9d	8s to 9s	...	¾d	...	H., Thirsk.
	10s	15s to 18s†	...	...	...	...	10s to 12s	...	...	4l to 6l	—, York
	‡6s to 10s	13s 6d to 18s*	6d to 8d	1s to 1s 6d	2s 3d to 2s 9d	2s 6d to 3s	5s 6d to 9s	4d to 6d	½d to 1d	3l to 5l	T. HOWARD, York.
DERBYSHIRE	10s	12s*	...	...	3s to 4s	3s to 3s 6d	9s to 12s	5d to 6d	?	...	T. J. ROWLEY, Chesterfield.
* With beer and food.											
NOTTS	10s	16s*	8d	14d to 16d	3s 6d to 4s 6d	3s to 4s	13s to 16s	3½d†	...	3l to 5l	C. PAGET, Notts.
* Three bushels of malt, and carriage of 4 tons of coal in the year. † Barley.	12s	15s	...	1s 6d	3s 6d	3s 6d to 4s 6d	12s to 14s	6d	...	...	E. J. LOWE, Notts.
CHESHIRE	8s*	10s to 12s	...	1s	2s 4d*	2s 6d†	11s to 12s	6d	¾d	4l	R. OWEN, Tarporley.
* In winter. † With beer.	10s to 12s	12s†	...	1s	3s†	3s 6d†	10s to 10s 6d†	6d	½d		
	8s*	10s to 12s†	8	...	2s 6d†	3s†	10s†	...	¾d to 1d	50s to 3l	W. PALIN, Chester.
LINCOLNSHIRE	9s to 10s6d	18s to 24s	d	1s	1s 8d to 3s	2s 6d to 3s 6d	8s to 25s	6d	1d*	Very high	W. WINGATE, Hareby, Spilsby
* To complete.	10s	18s to 24s	8d	10d	3s to 3s 6d	3s to 4s 6d	12s	...	½d to 3d	...	J. AITKEN, Spalding Fen
† Food and beer.	9s to 10s	15s †	10d	1s	2s to 3s	3s to 4s	5s to 7s	3½d	¾d to 1d	3l to 4l	E. DARBY, Greetham, Horn-
	10s	18s to 20s	10d	...	3s 3d	3s 6d	8s	...	...	4l to 6l	R. WESTLAND, Boston [castle
	10s to 12s	20s	10d	1s	2s to 3s	3s	8s	...	1d	4l to 5l	F. SOWERBY, Aylesby
	9s to 10s	18s to 20s	10d	...	2s 6d to 3s 6d	3s to 3s 6d	9s to 12s	4d	½d to ¾d	3l to 4l	J. A. CLARKE, Long Sutton
SHROPSHIRE	9s	18s *	8d to 9d	...	2s 6d to 3s 6d	3s 6d to 4s 6d	9s	6d	1½d	50s to 5l	J. SCARTH, Shrewsbury
* With beer.	9s*	12s‖	...	10d	1s 6d to 1s 8d	4s	7s to 8s ‡	...	¾d to 1d	50s	C. A. A. LLOYD, Whittington, Oswestry
‖ With food and beer.											
‡ For mowing.	8s	8s ‖	10d	...	1s 6d*	2s 6d*	8s	6d	1d†	3l to 4l	J. ASTON, Market Drayton
† To complete.	8s *	8s ‖	6d to 8d ‖	6d to 8d ‖	1s 6d*	1s 8d to 2s *	4s to 5s ‖	...	...	52s *	R. DAVIS, Little Wenlock
LEICESTERSHIRE	8s to 10s	13s to 15s	...	1s	2s	2s 6d *	7s to 12s	4d	¾d to 1d	52s *	T. SPENCER, Knossington
* With beer.											
RUTLAND	9s	18s *	8d	...	2s 6d	3s	10s	4d	¾d	4l to 5l	C. SMITH, Burley-on-the-Hill.
* With beer.	10s	20s	8d	1s	2s *	3s	8s to 11s	3½d to 3¾d	...	...	W. FANCOURT, Empingham
NORFOLK	8s	...	7d *	...	1s 6d to 2s	2s 6d *	...	...	...	...	C. CREMER, Cromer
* For harvest month.	7s to 8s	...	6d to 8d	...	Ruled by price of Wheat and weight of crop.				...	...	W. P. SALTER, Norwich
‖ And two pints of beer.	7s to 8s †	4l. to 5l. *	6d	...	1s 6d to 2s	...	6s to 9s	4d	...	50s to 4l	W. CUBITT, North Walsham
† Carter 1s. to 2s. extra.	7s to 8s	4l. 15s *	6d	...	1s 3d to 1s 9d	...	6s to 9s	3½d to 4½d	...	...	J. WARNES, North Walsham
	7s to 8s	4l. 15s *	7d	...	1s 8d ‖	2s ‖	7s to 8s	3½d to 4d	...	70s to 90s	F. DIX, Scole
SUFFOLK	7s to 8s	20s	6d	...	1s 4d	2s	7s 6d to 9s 6d	3d to 3½d	...	...	J. S. HENSLOW, Hitcham
	8s	20s to 24s	6d to 7d	10d	2s to 2s 6d	2s 3d to 2s 6d	8s to 10s	4d	...	...	E. COOK, Stratford St. Mary
CAMBRIDGE	9s	18s to 20s	10d	...	2s 3d to 3s	3s to 3s 6d	8s to 14s	5d	...	3l 10s to 5l	J. FEYER, jun, Chatteris
	9s	20s	9d	...	2s 6d to 2s 9d	3s to 4s	9s to 14s	...	...	3l to 5l 10s	A. G. BURTON, Chatteris
	8s	20s	6d	10d to 1s 6d	2s	3s	8s to 10s	4½d	¾d	Very high	P. PURVES, Huntingdon
HUNTINGDON	8s to 9s	16s to 18s *	...	...	Piece-work lower now by 1-5th than formerly.				...	...	W. GREY, Northampton
NORTHAMPTON	10s to 12s	12s to 17s	8d to 10d	...	3s to 3s 9d	3s to 3s 6d	8s	...	...	...	J. WHITWELL, Peterborough
* With beer.	8s	3l 4s *	6d to 7d	...	1s 8d to 1s 10d	2s 3d to 2s 6d	7s to 11s	...	½d 30×10×3	...	W. FORRESTER, Loxley
WARWICKSHIRE	8s to 9s	15s to 16s	6d	1s	2s 6d to 3s 6d	2s 3d to 3s	9s to 11s	1s 3d (?)	1d to 1½d	...	J. BURBURY, Kenilworth
* For harvest month, with two quarts of ale and two quarts of beer.	10s	16s	8d	...	3s ‖	3s 6d ‖	11s ‖	5d	½d (?)	52s to 78s	W. F. PRIDMORE, Coventry
‖ With beer.	9s	15s †	8d	1s	2s ‖	3s ‖	8s to 12s	...	¾d	20s to 35s	T. CHAPMAN, Stoneleigh
WORCESTERSHIRE ...	8s	15s to 18s *	...	1s	2s to 2s 4d *	2s 2d to 3s *	6s to 7s 6d *	...	¾d to 1d	3l 10s to 5l 5s	F. E. WILLIAMS, Worcester
* With 1 to 1½ gallon of cider a day. ‖ With 3 quarts of beer or cider daily. † 38 quarts.	8s	...	7d	...	...	...	...	4½d	¾d	...	H. HUDSON, Pershore
	7s to 8s ‖	15s	7d to 8d	...	1s 8d	2s 3d to 2s 6d	6s to 8s *	4d to 4½d	...	3l 10s to 4l	G. MANNING, Eldersfield
	8s to 10s	13s to 17s *	8d	...	1s 8d ‖	2s ‖	9s to 10s	5d †	...	3l to 5l	R. SAYCE, Bridgenorth
	8s to 9s ‖	13s to 14s	8d to 9d	...	2s to 2s 6d ‖	2s 6d to 3s 6d ‖	6s to 8s ‖	5d to 6d †	...	High	J. NOCK, Stourbridge
HEREFORDSHIRE	8s *	8s ‖	8d	...	1s 8d ‖	1s 8d ‖	5s to 5s 3d ‖	...	¾d	50s to 70s	E. BOWEN, Ludlow
* With beer. ‖ With food and drink. † Ten gallons.	7s	7s ‖	6d to 8d	...	1s 6d to 2s *	2s to 2s 3d *	6s 6d to 7s	4d to 6d †	¾d	3l to 5l	J. MATHEWS, Blakemore
MONMOUTHSHIRE	8s to 10s	8s to 10s	6d to 10d	...	...	2s 6d *	8s to 9s	5d to 6d †	½d *	...	T. DYKE, Monmouth
* With two quarts of beer.	10s	10s *	10d	1s	2s to 2s 6d	3s to 3s 6d	7s to 9s	5d ‖	...	3l to 4l	W. H. LITTLE, Abergavenny
GLOUCESTERSHIRE ...	8s to 9s	9s to 10s	8d	...	2s 6d	3s	9s to 11s	5d to 6d	1d	High	J. HUNT, Almondsbury
* Two or three quarts of beer or cider daily.	7s to 8s *	10s	7d to 10d	...	2s ‖	2s ‖	7s *	4d *	...	...	S. TAYLOR, Gloucester
‖ One gallon of beer.	6s to 7s ‖	12s ‖	6d	1s	1s 6d ‖	2s ‖	8s *	...	1d	3l 3s	R. BEMAN, Moreton-in-Marsh
† With food and drink.	8s to 9s *	12s ‖	...	8d †	2s *	2s 6d *	7s to 10s ‖	5d to 6d	...	3l to 5l	J. SHERBORNE, Fpton, Cotterel
‡ By machinery.	8s	10s to 12s ‖	8d	...	1s 4d to 2s ‖	2s 6d * ‖	8s to 10s ‖	5d to 7d	1d *	2l 12s	C. LAWRENCE, Cirencester
	9s to 10s	9s to 10s †	8d	10d	2s 3d to 2s 6d †	2s to 3s †	6s to 9s ‖	...	...	...	J. BURNELL, Bristol
	8s to 9s	12s ‖	8d	...	1s 6d to 2s 6d ‖	2s 6d ‖	6s to 8s ‖	...	½d to 1½d	...	A. TUCKETT, Warmley
	7s to 10s	10s ‖	6d	10d	1s 2d ‖	2s ‖	7s ‖	8d ‡	...	30s to 52s	J. KEARSEY, Cirencester

THE VALUE OF AGRICULTURAL LABOUR—*Continued.*

ENGLAND.	A	B	C	D	E	F	G	H	I	K	AUTHORITY.
OXFORDSHIRE	7s to 8s	9s to 10s *	7d	...	2s 9d to 3s	3s 6d	8s	...	...	52s to 78s	S. Collier, Witney
* With beer sometimes.	8s ‖	10s to 12s	7d to 8d	...	2s *	2s *	8s to 10s	...	¾d	50s to 5*l*	S. Druce, jun., Eynsham.
‖ Carter and shepherd's cottages rent free.											
BEDFORDSHIRE	8s	18s to 20s	...	10d	1s 6d *	2s 3d to 2s 6d *	8s to 10s *	4d to 5d	...	10s per room	W. Lavender, Biddenham
BUCKS (* With beer.) ...	8s to 9s	18s *	9d	1s	3s	3s 6d	10s	3½d	¾d	5*l*	R. Valentine, Leighton Buz-
HERTFORDSHIRE	9s	18s *	10d	...	2s *	2s 6d *	9s	4d	1d *	50s to 4*l*	J. B. Lawes, St. Alban's [zard
* With beer.	8s to 11s *	20s *	...	1s to 1s 6d	2s 8d to 3s 4d	3s 4d to 4s	9s to 10s *	4½d to 6d	...	High	—— St. Alban's
ESSEX	9s to 11s	5*l*.*	...	...	3s	3s 6d	11s	...	...	52s	J. C. B. Warren, Colchester
* The harvest month with 2 bushels of malt and 2 lbs. of Hops. † With 3 bshls. of malt and 3 lbs. of Hops. ‖ With beer.	9s to 10s	5*l*.	4d to 6d	...	2s 6d to 4s	3s to 4s	9s to 12s	...	...	4*l* to 5*l*	J. Malpas, Harwich
	8s to 9s	4*l*. 5s to 4*l*. 10s	6d to 8d	...	1s 8d to 3s	2s to 3s	9s to 11s	3½d to 4d	1d	78s	J. J. Mechi, Kelvedon
	6s to 7s	3*l*. to 3*l*. 10s †	7d	...	2s ‖	2s ‖	8s ‖	3d to 4d	1d	4*l* 4s	F. Fairbank, Sible Hedinghm
	8s	4*l*. 5s ‖	6d	...	2s 6d	...	8s to 12s	...	...	Moderate.	A. Hempson, Harwich
BERKSHIRE	7s to 11s	...	6d to 10d	...	2s to 2s 6d	2s to 3s	6s 6d to 11s	...	¾d	...	——, Farringdon
* Two quarts of beer daily.	7s to 8s	15s *	6d to 7d	1s	2s to 2s 6d	2s to 3s	8s	3d to 4d	¾d to 1d	...	J. Coleman, Newbury
‖ Six or eight pints of beer.	8s	16s	8d	...	3s	3s	8s to 9s	6d	1d *	2*l* to 5*l*	R. H. Betteridge, Abingdon
	9s to 11s*	20s ‖	8d	10d	2s 6d to 3s	3s 6d to 4s	9s to 11s	5d to 5½d	...	78s to 100s	W. Dickson, Reading
	8s to 10s	12s ‖	6d to 8d	...	2s 6d to 3s	3s 6d to 4s	7s to 12s	4½d to 6d	1d to 1½d	...	S. Kirk, Wokingham
	6s to 7s*	...	6d	8d to 10d	2s	2s 6d to 3s	6s to 10s	...	¾d *	...	T. Ankell, Swindon
* 8s to 9s for carters and shepherds. ‖ Cottage free for carters; Potato ground free. † With beer.	7s‖	10s to 12s	6d	1s	1s 8d †	2s 6d †	8s to 10s	3½d	...	...	E. A. Nicholson, Salisbury
	7s	10s	7d	...	1s 6d	3s	7s 6d	3d	¾d	...	G. N. Hulbert, Bradford
	8s	8s	8d	...	3s	3s 6d	8s 6d	4d	...	4*l*	J. Brodie, Westbury
WILTSHIRE	7s to 8s	9s to 10s *	8d	10d	2s 6d to 3s	3s to 4s	7s to 9s	4d to 4½d	¾d	3*l*	J. Spencer, Bowood
SOMERSET	7s*	...	6d	8d	2s ‖	2s ‖	6s to 9s	5d to 7d	...	Rather high	W. Young, Castle Cary
* Carters 1s per week extra.	8s‖	9s ‖	8d	...	2s ‖	2s 6d ‖	7s ‖	4d	...	...	R. Coventry, Crewkerne
‖ With cider.	9s‖	9s †	...	...	2s 3d to 2s 6d ‖	2s 6d to 3s ‖	8s ‖	9d ‖	...	4*l* to 5*l*	H. Cottrell, Congresbury
† With meat and drink.	7s ‡	8s	7d to 8d	...	1s 6d	2s	6s to 9s	...	...	52s	J. W. Eastment, Wincanton
‡ Sometimes Potato ground.											
SURREY	12s	15s to 16s	1s	1s 4d	2s 6d	3s	10s to 11s	5d	1½d	5*l*	H. Davis, Old Jewry
* With beer.	9s to 10s	...	8d	...	2s 6d to 3s 6d *	3s to 4s *	9s *	4½d	...	2*l* 10s to 5*l*	J. M. Paine, Farnham
KENT	9s to 10s	20s	1s	...	3s 6d to 4s 6d	3s to 4s	12s	...	...	5*l*	T. Slater, Wingham
* With beer.	11s	...	10d	...	4s	3s 6d	16s	...	...	6*l*	J. Smeed, Thanet
	9s to 10s	18s *	10d	...	2s 6d	3s 6d to 4s	7s to 10s	...	...	3*l* 18s to 5*l*	M. Sandford, Dover
	10s	16s to 18s *	...	...	2s 9d to 3s	3s 6d to 4s 6d	7s to 14s	4½d to 5½d	...	5*l* & upwards	A. Gardner, Ash [Wells
	10s	10s *	10d	...	2s to 3s *	3s	8s to 12s	6d	1d	4*l* to 6*l*	S. Newington, Tonbridge
	10s	15s	10d	...	4s	4s	10s to 15s	4½d	...	50s to 90s	J. W. Tylden, Sittingbourne
SUSSEX	8s to 10s	16s to 20s *	8d	...	2s 3d to 3s	3s to 4s 6d	10s to 12s	...	...	52s to 78s	——, Chichester
* With beer.	10s	18s *	10d	1s	2s 6d	3s 6d	9s to 11s	5d to 6d	¾d to 1d	3*l* 18s to 5*l*	A. Frazer, Crawley
	10s	15s	9d	...	2s	3s 6d	10s	5d	1d	3*l* 10s to 4*l*	J. Brotherton, Robertsbridge
HAMPSHIRE (* With beer.)	8s	16s *	6d to 8d	...	1s 8d to 1s 10d*	2s to 3s 6d *	8s	5d	1½d	52s	J Eames, Beaulieu
DEVONSHIRE	10s to 12s*	18s to 21s	10d ‖	...	2s 6d ‖	3s ‖	7s ‖	9d ‖	...	2*l* to 5*l*	W. Bartlett, Torquay
* With Potato land free.	7s‖	15s ‖	6d to 7d	...	1s	1s 6d	5s	5d	...	2*l* 10s to 3*l*	S. Cornish, Kingsbridge
‖ With cider.	9s to 10s	9s to 10s †	6d to 8d	...	2s to 2s 6d	2s 6d to 3s	6s to 7s	4d	...	2*l* 12s to 5*l*	John Benson, Tavistock
† With food and drink.	9s	10s to 12s	8d to 10d	...	2s 6d	3s	...	...	...	52s to 78s	G. W. Fowler, Princehall
	8s to 10s	8s to 10s †	8d	...	1s 6d to 1s 9d ‖	2s ‖	6s ‖	6½d	1d to 1½d	3*l* to 4*l*	T. Evans, Torquay
	8s to 9s	9s to 10s †	6d to 8d	...	2s to 3s	2s to 3s 6d	5s to 6s	8d	1½d to 1½d	...	G. Maw, Bideford
	8s	14s * ‖	8d	...	1s 8d ‖	2s ‖	6s ‖	6d	1½d	2*l* 12s to 3*l* 5s	T. Michelmore, jun., Totnes
	7s	9s †	7d	8d †	1s 6d ‖	2s 6d ‖	...	...	...	...	J. Laydon, Ilfracombe
	8s*	8s †	7d to 8d	...	1s 6d	2s 6d	6s 6d	...	...	...	T. Newman, Dawlish
DORSETSHIRE	7s*	12s	6d to 7d	...	2s *	2s *	6s *	6d	1d *	3*l* 18s	S. Tucker, Bridport
* With cider or beer.	8s†	12s	6d	1s	1s 6d ‖	3s	...	...	1d to 1½d	...	W. Voss, Corfe Castle
* Cottage free in most cases.	7s†*	12s to 15s	7d	...	2s *	2s 3d *	6s to 12s *	6d	2d	...	J. Furmedge, Beaminster
‖ One bushel of malt for 15 acres.	6s to 8s *	13s 6d *	8d	10d	2s 6d *	2s 6d *	10s	5d	1½d *	2*l* 12s to 3*l*	A. Huxtable, Sutton Waldron
	8s*	15s	7d	8d to 1s *	2s *	2s 6d to 3s 6d *	10s *	4½d	1d	...	T. Jesty, Dorchester
CORNWALL	9s	12s	6d to 8d	...	2s 6d	3s	...	8d	¾d	...	R. B. Fox, Penryn
* With beer or cider.	8s to 9s	8s to 9s *	6d to 8d	...	2s	2s 9d to 3s 6d	8s	...	1d	3*l* 5s	J. Wills, Launceston
† With food and drink.	10s 6d	10s 6d *	8d	...	4s ‖	4s to 6s	8s	...	...	2*l* to 3*l* 10s	W. Simmons, Gwennap
‖ The Cornish acre. (?)											
WALES	8s to 9s ‖	12s to 21s *	8d to 9d	...	1s 8d to 2s	2s 3d to 3s	9s to 10s	6d	1d	...	E. H. Griffith, Denbigh
† With beer.	8s to 9s	10s *	8d	...	2s 6d	3s 6d	10s	5d	1½d	...	J. Jenkins, Caerleon
* With meat and drink.	12s to 14s	6s to 9s *	1s	...	2s 6d	3s	9s	5d	...	Dear.	H. Thomas, Glamorganshire
‖ With milk or broth.	8s	8s ‡	7d to 8d	...	1s 6d	2s to 2s 6d	4s to 4s 6d	5d to 6d	1d	...	T. W. Lawford, jun., Llandilo
‡ Pay for over-hours.											

REMARKS ON THE KING'S SOMBORNE SCHOOL.

The popularity of this school is altogether unprecedented. Everywhere else the inspector is accustomed to be told of the indifference of the poor to the education of their children. Here he finds them manifesting an earnest desire to obtain for them the benefits of it. Agricultural labourers send their children from other parishes, from three to four miles daily, to the school,* and one-seventh of the resident population of the parish daily assembles in it.

Wherever he goes, the inspector's ear is familiar with the complaint that funds for the maintenance of the school are deficient; that the fees are wrung with difficulty from the hands of the parents, who are too poor to pay them; that the landlords and farmers are unwilling to contribute to the school, and that competent teachers cannot therefore be provided, or sufficient in number. Here, in a district where the rate of wages is at least as low as in the others, and where, if the people be not as poor, it must be due to the operation of moral causes, he finds a self-supporting school, having more than the usual staff of teachers,† adequately paid. At other schools one-third of the children are generally absent, and if the fee be insisted on, the inability of the parents to pay it is generally assigned as a principal reason of this irregularity in the attendance.‡ Here the payment of the school fee is strictly enforced, and the average daily attendance is more than eight-ninths of the children on the books.§

In other schools nothing so discourages the inspector as the inadequate supply of school-books, the injudicious selection of them, and their miserable condition; for all this, the poverty of the school is given him as the explanation; and if he is desirous to preserve the character of a discreet man, he will not venture to hint, as a possibility, that the children might be induced to buy proper school-books for themselves. Here he finds every child in possession of as many school-books as it wants, of the best kind, well bound, and in a sound condition; and he finds, moreover, that the child has purchased them all for itself, the school providing none.*

Elsewhere the early age at which the children leave, is spoken of as fatal to the success of the school. Here, although the very goodness of the school has a tendency to produce this result, and does to a certain extent produce it, the parents persuading themselves that their children get to know enough in a good school sooner than in a bad one, there is evidence that a labourer is capable of making for his child the sacrifice of the weekly wages he might earn, if sent to work, that he may send him to the school. There were in May, 1847, 11 girls in the first class above the age of 13, whose parents were of the condition of labourers; eight of these were above 14 years of age. There were of the like condition, five boys of above 14 years of age, and nine above 12.†

Your lordships will appreciate the amount of that sacrifice which a labourer earning 9*s*. a-week makes, when he sends to school a boy who might add to the weekly income of the family from 1*s*. 6*d*. to 2*s* 6*d*., and not, I trust, consider misplaced the expression of an opinion which this example has but confirmed in my mind—that the poor will be found capable of making, to a far greater extent than they do now, the sacrifice involved in sending their children to school instead of to work, whenever this sacrifice shall be justified by the character of the education offered to them.

In other schools only 23 per cent. of the children remain after they are 11 years of age; here 32 per cent. In other schools 4 per cent. of the boys and 10 per cent. of the girls are above 13 years of age; here 10 per cent. of the one and 19 per cent. of the other. Here, finally, the average age ($10\frac{1}{17}$ years) of all the children in the school is nearly that of the monitors in other schools.*

There is no sacrifice made for the cause of education so great as that of the agricultural labourer, who, when he might send his son to work, sends him to the school. Nor is this a less sacrifice to make at King's Somborne than in other agricultural parishes; but, on the contrary, a greater, there being a custom of sending the children out to tend cattle in the large fields or open downs, which is in some degree peculiar to the place. Neither are the farmers more disposed to promote the education of the labourers' children there than elsewhere. They claim them at the earliest available age for what is called bird starving, pig watching, &c. There is no occupation, however slight, which does not stand, in their estimation, before the school, and they look upon their further education after they are able to go to work, as an unjust deprivation of their labour, and an unwarrantable interference with the privileges of their own children.†

* There are at the present time 26 children who attend the school under these circumstances.

† Two masters and two mistresses, and (before the appointment of apprentices) paid monitors.

‡ In the iron districts of South Staffordshire, at a time when the wages of a large class of workmen were 50*s*. per week, the irregular attendance of the children was attributed to the inability (the unwillingness?) of the parents to pay the school fee.

§ In the month of May, 1848, when the hooping-cough was prevalent, the attendance was as follows:

	Number on the Books.	Average daily Attendance.
Boys	92	85
Girls	93	80
Infants	34	30
Total	219	195

* 29*l*. 14*s*. 6*d*. were paid by the children for school books thus supplied to them in the year 1847, at wholesale prices.

† The following Tables afford the means of comparing the ages of the children in the King's Somborne school with those of the children in 47 schools in the Midland Districts.

Table I.

King's Somborne School. (90 Boys, 82 Girls.)	Number per Cent.				
	Under 7 Years.	7 to 9.	9 to 11.	11 to 13.	13 to 17.
Boys	15½	26⅔	25 5-9ths	21	10
Girls	13	23	29	14	19
Total	14	25	27	18	14

Table II.

(From Report on Midland Districts for 1846, p. 151. 8vo Edition.)

Midland Districts. (2044 Boys in 27 schools, 944 Girls in 20 schools.)	Number per Cent.				
	Under 7 Years.	7 to 9.	9 to 11.	11 to 13	13 to 15
Boys	22	28	32	14	4
Girls	19	27	25	18	10
Total	21	27	28	16	7

* See Report on Midland Districts for 1844. The average age of 3756 boys in 46 schools of the Midland Districts was from 6⅝ to 8½ years; and of 2301 girls in 33 schools, from 7⅓ to 9 1-7th years.

† Mr. Dawes speaks thus judiciously on this subject: "In agricultural districts the employer does not encourage the labourer to educate his child; on the contrary, his mode of thinking and of acting is in every way against it. He has no feeling that the respectability of the labouring classes would be advanced by education; or, if he has, he immediately becomes jealous of their being brought nearer to himself, not seeing that the class to which he belongs will in the end be equally advanced. In fact, he has no notion of worth in the labourer, as a man, or as a fellow-creature, but only values him as a machine or instrument by which a certain quantity of work is to be performed; and does not think that, although he professes to be a Christian, it is any part of his duty, as such, to endeavour to improve the moral condition of the labourers about him, by making them more intelligent, more sober, and better conducted in every relation of life, or that, by doing so, he adds to his own respectability. In the eyes of too many of the employers, the labourer who spends his money at the beer-house, neglects his family, and is perfectly regardless as to how they are brought up, is considered quite as useful as the one who would struggle hard to get his children an education, and try to raise them above those low and degraded habits to which they have hitherto been accustomed. Let those who act thus, if higher motives will not influence them, weigh well the observations of a modern writer, that 'independent of moral grounds, the kindness, sympathy, and attention of an employer to his workmen is the safest and most profitable money speculation in which he can engage.' I have never known a single instance of a farmer encouraging the labourer to send his children for a longer period to school, however trifling the work for which he wanted them. I have known instances of a parent wishing to continue a child, but his employer preventing him by requiring his services when so young, that it would have been far more creditable to have employed an older boy."—*Hints on a Self paying System of National Education*, p. 19.

To complete the contrast of this school with all others known to me: Whilst I have found the success or failure of other schools attributed to the personal influence of the clergyman and other respectable inhabitants over the parents, by a moral violence, compelling the children to the school, here there is obviously, on both sides, the most complete independence; the school offered on the one hand, and accepted on the other; an education provided such as the parents think likely to benefit their children, and the parents availing themselves of it for their benefit; the father consenting that out of his week's wages the school fee should be paid, and the price of the school-books; the mother yielding to the school her daughter's labour in the household; and both, that their child may enjoy a privilege of which they have themselves no experience, submitting to the privations which must be endured, when the small weekly earnings of the family are diminished by the 1*s.* 6*d.* or 2*s.* 6*d.* which that child might have earned.

That explanation which it is easiest to give of the unprecedented popularity of the King's Somborne school is, to attribute it, not to any peculiar adaptation to the wants of the people it is intended to benefit, but to extraordinary skill on the part of the master, or to remarkable tact and aptitude for teaching and school-keeping on the part of the rector. Were this the case, it would be impossible for me, in recording the results of my examination, to speak of them as generally attainable, and the example of the King's Somborne school would lose half its value. I trust, therefore, that I shall be pardoned, if I record the impression that the qualifications of the master are not in advance of those of the masters of very many other schools not equally successful; and that the rector (whilst the result shows him to be a very able teacher) would, I think, lay no claim to extraordinary technical skill or unapproachable readiness, or simplicity, or aptitude in his way of dealing with children. He takes no pains to make the public exhibition of a winning manner in teaching, and is certainly the last man in the world to compromise, in his intercourse with children, the dignity of his character or of his station.

His success has, in point of fact, been accomplished by honester and better means; and holding, myself, the opinion that he has had precisely the same kind of difficulties to contend with that other clergymen have, and that any earnest and enlightened man who followed in the same path would achieve the same results, I have thought it the more expedient to record this opinion, as I have constantly heard the whole merit of the school attributed to certain gifts and graces peculiar to the rector himself. The probabilities of the case are all, in point of fact, opposed to such a supposition. Mr. Dawes is a distinguished member of the University of Cambridge, and was for many years resident in that University as fellow and tutor* of his college; and a parish school was to him an unaccustomed place, when, a few years ago, he opened that of King's Somborne.

When I hear it asserted that such an education as that given in the King's Somborne school cannot be offered to the poor of the whole country, because it is not to be expected that such a rector as Mr. Dawes can be placed in every parish, I do not dispute the premises, but I see nothing to justify the conclusion. The example of the King's Somborne school would be of little value if it did not embody a principle; and there is no reason why, if that principle were duly appreciated, our training schools should not supply masters qualified to carry it out; or why, if such masters were provided, one mind such as Mr. Dawes's should not control many such schools.

It is true that the attention given to the school by a highly educated man like Mr. Dawes raises it above other schools in the estimation of the people about him; and, considering what has been the previous training of our present national schoolmasters, this is not to be wondered at; but I speak of another state of their education, and I see not why men, duly and specially educated for the office, should not create everywhere the same confidence, and accomplish the same or yet greater results. *Report to the Committee of Council on Education.*

Home Correspondence.

In answer to a Country Curate, the best works I can recommend are, the "Cottage Gardeners' Assistant," price 1*s.*, in which work, at page 56, he will find an excellent plan for managing a kitchen garden of 20 poles—or one-eighth of an acre; and Mr. Cuthill's admirable work on the Potato (which no Potato grower should be without) which may be obtained post free from Mr. Cuthill, nurseryman and florist, Camberwell; I think the price is a shilling or eighteen-pence. The best stock in such a neighbourhood would be pigs, as the least expensive to purchase in the first place, and quicker in their returns, affording, too, an ample supply of the most stimulating and enduring of all manures. In September let him purchase two young breeding sows in pig of their first litter, and about a month from their time of pigging; these will, if of good quality and large in size for their age, probably cost from 60*s.* to 75*s.*; indeed at this present moment a good sow three months advanced in her second litter is not worth more than 80*s.*; from each of these he may this year obtain a litter of pigs, and then convert them into baconers by the end of February. When he parts with these let him procure two fresh gilts as before, and that year and each succeeding one he will obtain two litters. I think he may fairly count on five at a litter as a general average, though seven (I speak from experience) is nearer the mark. This is the plan adopted by the cottagers in my neighbourhood, and one which I have found the most profitable—indeed the only profitable plan in pig-keeping. With regard to poultry keeping, let him purchase at once 16 hens (pullets), and two cocks of any breed, provided they are large sized, short-legged, any colour but white, especially the cocks, and with white legs. Should you approve of my doing so, I should be happy to send you an account of my poultry management, by which I obtain a net profit of 15*s.* from each hen. I would advise "A Country Curate" to plant one-half of his garden with Potatoes, one-fourth in kitchen garden, and one-fourth in Mangold Wurzel. As soon as he buys his sows he may begin to pull the leaves of the Wurzel for them. The Mangold Wurzel should be dibbled in rows 20 inches apart and 12 inches in the row. At these distances I have obtained the greatest produce, viz., at the rate of 42 tons per imperial acre. They should be sown by about the end of the present month. The Potatoes should have been planted in February, using whole sets, of about the size of a hen's egg, and planted at the same distances as the Mangold Wurzel. I prefer American Earlies, or as some call them, American Natives. I usually obtain from this sort about 100 sacks, 18 stones (of 14 lbs. per stone) to the sack; though my father, a more experienced hand than myself, has frequently grown 160 sacks of this kind per acre, or one sack to a rod; this was by spade culture, in a garden farm of about three quarters of an acre, mine by the acre in the open fields. I have drawn up a Cr. and Dr. account for the second and each succeeding year on half an acre of ground, supposed to be deeply drained (I mean 4 to 5 feet), a less depth, except under some circumstances, I have found, comparatively speaking, money thrown away. Last year I drained 3 acres (some of it tenacious clay) from 4 to 5 feet deep, planted them with Potatoes, which proved free from disease, and an abundant crop; and this spring the Wheat looks most luxuriant. Two acres of land in the same field, of exactly the same nature, drained 24 inches deep, is almost as bad as ever, though drained 4 years ago. But to return to the point. I suppose one quarter of the whole, *i. e.*, 20 poles or rods, to be trenched to the depth of 30 inches, taking care for the first time to keep the top soil at the top, unless the soil extends to that depth, when I would advise the top soil to be buried underneath, as in all probability it is full of the seeds of various weeds, as, if I remember right, "A Country Curate" stated that it had been allowed to run wild for some years. I always apply farm-yard manure for Mangold Wurzel, and 3 cwt. of superphosphate of lime per acre, the largest crops being always obtained from the use of farm-yard and artificial manures combined.

Cr.	£	*s.*	*d.*
½ acre or 40 poles, 25 sacks of Potatoes, at 4*s.*	5	0	0
¼ acre or 20 poles Kitchen Garden			
¼ Ditto Mangold Wurzel			
¼ litters of pigs, say 20 pigs, at 12*s.* 6*d.* each, sold when weaned at eight weeks old (a poor price) ...	12	10	0
2 fat sows, 20 stone, at 5*s.* They should weigh, if well kept, nearer 30 stone (14 lbs. per stone)	10	0	0
	£27	10	0

Dr.	£	*s.*	*d.*
1 waggon-load of straw	1	10	0
6 quarters Barley, at 24*s.*	7	4	0
Grinding ditto, at 2*s.* 8*d.* per qr.	0	16	0
2 quarters Beans, at 30*s.* per qr.	3	0	0
2 sacks seed Potatoes	0	10	0
Sundries	1	10	0
	£14	10	0

The expenses I have estimated higher, the produce lower, than I ought to have done, but I would rather be within the mark. The Mangold Wurzel, probably about 4 tons (an allowance of nearly 2 stone per diem to each pig throughout the year), should be boiled, and, having been mixed together with the Barley-meal, should be given when warm to the sows during the time they are undergoing the process of fattening, a trough of clean water for drinking being always come-at-able by the pigs. In summer I give the Mangold Wurzel raw, and the corn bruised and dry. *The Son of a Country Rector, Lincolnshire.*

Societies.

ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

A Weekly Council was held, at the Society's house, Hanover-square, on Wednesday last, April 24; present, his Grace the Duke of Richmond, K.G., Trustee, in the chair; Earl of Ducie, Lord Wharncliffe, Lord Portman, Hon. R. H. Clive, M.P., Hon. J. J. Carnegie, Sir M. W. Ridley, Bart., Sir Robert Price, Bart., M.P., Mr. R. Barker, Mr. J. Bethell, Mr. F. Burke, Mr. D. Burton, jun., Col. Challoner, Mr. W. Clavering, Mr. E. Denison, M.P., Mr. W. Dennison, jun., Mr. G. Dyer, Mr. T. Ellman, Mr. A. Foster, Mr. F. Hobbs, Rev. A. Huxtable, Mr. Langston, M.P., Mr. Lawes, Mr. D. Lewis, Mr. Majendie, Mr. C. E. Overman, Mr. Parkins, Mr. Pendarves, M.P., Mr. H. Porcher, Mr. J. F. Powell, Mr. Pusey, M.P., Mr. G. H. Ramsay, Dr. Ryan, Prof. Sewell, Mr. Shaw (Lond.), Mr. Brinsley Sheridan, M.P., Mr. Bridgeman Simpson, Mr. E. Slade, Mr. Stansfield, M.P., Capt. Shawe Taylor, Mr. G. Vernon, Rev. J. C. Wharton, Mr. J. T. Wharton, and Prof. Way.

The following new members were elected:

Heale, Henry Newton, Highfield, Hemel-Hempsted
Coulton, William, Dean Court, Barton, Dean Prior, Ashburton
White, James, 266, High Holborn, London
Field, Charles, Trunk Farm, Horley, Bagshot
Lovaine, Lord, Albury Park, Guildford
Chalcraft, Thomas, Amory Farm, Alton, Hants
Talbot, Hon. Wellington Patrick, Honeybone Grounds, Evesham
Hartshorn, Thomas, Silkmore House, Stafford
Tyrrell, John, Exeter

The names of 20 candidates for election at the next meeting were then read.

Sewage of Towns.—His Royal Highness Prince Albert, as one of the Governors of the Society, transmitted to the Council, through Colonel the Hon. Charles Grey, a communication on turning the sewage of towns, at present the cause of disease and pestilence, into a source of national wealth, by its application to purposes of agriculture. Colonel Grey informed the Council that this important subject had, along with the general interest it had lately excited in the public mind, become a matter of interest and study to his Royal Highness Prince Albert, and that he was commanded by his Royal Highness to bring before the Council of the Society, for their consideration and inquiry, should they think the subject worthy of it, what had struck his Royal Highness as being a simple plan for effecting the object in view. Leaving it to more competent judges to decide whether the sewage should be used as a liquid manure, or solidified, upon which point his Royal Highness wished to give no opinion himself, he had confined his consideration to the latter mode of application, for two reasons; namely, that, in the solid form; 1. It could be more easily transported. 2. It could be obtained at the least possible expense. Colonel Grey then proceeded to describe the plan proposed by his Royal Highness, which was simply this: to form a tank, with a perforated false bottom, upon which a filtering medium should be laid; and to admit at one end the sewage into the tank, *below* the false bottom, when, according to the principle of water regaining its own level, the sewage liquid would rise through the filtering bed to its original level in the tank, and, provided the filtering medium had been of the proper nature and of sufficient thickness, it would be thus freed from all mechanical impurity, and would pass off into the drain, at the other end of the tank, as clean and clear as spring water. This simple and effective plan was illustrated by drawings, showing the vertical and horizontal sections of the tank, and by a neatly constructed model of its external form and internal arrangements. It was also clearly shown, by these sections, how the sewage matter could be let into the tank, or shut off, when necessary, in the simplest manner, by means of common valves; and with what facility such a filtering tank might be applied to every existing arrangement of sewers, without requiring any alteration in their structure. The filtering medium having abstracted from the sewage all extraneous matter, would, in all probability, become the richest manure, and could, at any time, by stopping the supply of sewage, be taken out by a common labourer with a shovel, and carted or shipped to any place thought most desirable. The solid matter, too, held in suspension by the sewage, would probably form a very rich deposit at the bottom of the tank, of a substance approaching in its qualities to guano, and could be extracted by removing the false bottom, which rested on arches or vertical supporters over the sewage below it in the tank, and could be easily made to lift up or take out for the purpose of such extraction. Two tanks might easily be constructed together, so that one might continue in operation while the other was being emptied. The experiment might be tried at any house-drain in town or country; in fact, his Royal Highness had himself tried the operation on a small scale with apparent success; and while he thus suggested an important and extensive application of the hydrostatical principle involved in the plan proposed, he wished to lay no claim to originality in the adoption of that well-known law of fluid bodies by which they make an effort, proportionate to their displacement, to regain their original equilibrium. On that principle was founded, as he was well aware, the upward-filtering apparatus used by the Thames water companies. His Royal Highness's great object was by the simplest possible means to attain a great end; to effect an essential sanitary improvement, and at the same time to create a new source of national wealth, by the very means employed for the removal of a deadly nuisance, and the conversion of decomposing matter, highly noxious to animal life, into the most powerful nutriment for vegetation. His Royal Highness, too, wished to offer no opinion on the details required to complete the plan proposed, or on the mode of carrying it out in the most effective manner. Supposing it to be right in principle, its advantages in an economical point of view could only, his Royal Highness conceived, be ascertained by practical experience; and it was on that account, that he wished to submit it to the consideration of the Agricultural Society, who might be better able to carry out the necessary experiments. It would remain to be decided what is chemically or mechanically the best, and what the cheapest substance for the filter; what the best and cheapest construction of the tank; how long the sewage will pass before the filter becomes choked; and how soon the filter could be sufficiently saturated to make it profitable as a manure. His Royal Highness had used as the filtering medium, the following substances:—

1. Charcoal: admitted to be the most perfect filtering substance for drinking water, retaining effectually

* For twenty years tutor of Downing College.

extraneous matters, and well known for its singular powers of purification.

2. Gypsum (plaster of Paris, or sulphate of lime): recommended by agricultural chemists, for fixing ammonia and other volatile substances, by the decomposition to which it becomes subject, when exposed to the action of volatile alkali.

3. Clay: in its burnt state, would act mechanically as a filtering bed; and in its unburnt state, on account of its aluminous salts, have also the property, like gypsum, of fixing ammonia, or of decomposing the ammoniacal and other alkaline salts present in manure; and in either state would be cheaply procured.

All these substances, his Royal Highness thought, would in themselves be highly useful as manures, independently of the purpose they would subserve as agents for filtration, or of the additional amount of manuring matter they would receive from the sewage which they purified. His Royal Highness, however, in thus incidentally referring to the substances he had himself employed for the filtering medium, was well aware how many more of equal, if not superior, value would suggest themselves to others, who, like himself, felt an interest in effecting the important object proposed. As he had given no opinion on the general question of the liquid or solid application of manure, but had merely stated the grounds of preference, in a practical sense, of the solid form over the liquid for the purposes of the filtering operation under consideration, his Royal Highness entered into no discussion on the amount of manuring matter retained by the filter compared with the soluble matter that might pass through it along with the water, and remain in that liquid in a soluble, colourless, and transparent form; nor of the value of such filtered water for agricultural purposes. He had confined his observations to the agricultural value of the filtering bed, and the rich deposit obtained in the purification of sewage for sanitary purposes.

After the general expression of the members, of the gratification it gave them, to find that questions so intimately connected with the welfare of the community and the objects of the Society, enjoyed so large a share of his Royal Highness Prince Albert's deep interest and enlightened attention, Lord Portman informed the Council that the plan proposed by his Royal Highness was not any suggestion made to him by other parties, and which he had been induced to patronise; but that it was his Royal Highness's own plan, and the result of his own deliberate consideration on a subject that his Royal Highness regarded as of vital importance to the country. His Lordship thought the plan proposed the simplest and cheapest contrivance that he had seen for the purpose proposed in all cases where there was a sufficient fall of drain in the declivity of ground where it was employed. The communication with which they had been honoured by his Royal Highness, was a great proof of the useful matters to which his Royal Highness was devoting his attention. His Lordship expressed the pleasure it would give him to institute experiments on the plan proposed by his Royal Highness, in localities well adapted for their trial, and to report the result to the Council.—Sir Robert Price and Colonel Challoner considered the principle most excellent. Col. Challoner thought the only difficulty would be found in adjusting the filtering bed to a just proportion to the amount of liquid that would have to pass through it, in order that all the extraneous matter might be abstracted and retained. He regarded the first results of the trial already made to be confirmatory of Prof. Way's views of the power of certain soils over manuring elements.—Prof. Way was much pleased to find Prince Albert turning his attention to subjects of so much interest as the one his Royal Highness had then brought under the consideration of the Council. He had himself attended much to the question of the sewage of London; and whether in the most fashionable squares or in the most squalid courts, the crying evil was alike felt and present to the inhabitants of this great city. The sewage was itself divisible into two portions—the soluble and the insoluble. The insoluble matter consisted of cells of vegetable and animal matter, of hair and other floating substance: the soluble portion contained ammonia and the salts of potash and soda. The insoluble was retained by charcoal and clay. Clay, by burning, gradually lost its peculiar property of arresting ammonia: in its raw state it possessed twice the power in question. Burnt clay would however form a good mechanical material for the filling in of the filtering bed. He thought gypsum would not answer the purpose of arresting ammonia in a case like the present, where the solid matter only was intended to be obtained and employed as manure. The gypsum, being sulphate of lime, yields its sulphuric acid to the ammonia, and thus forms sulphate of ammonia, which, as a soluble salt, is at once dissolved and carried off by the clear filtered water, and is consequently not left behind in the filtering bed. Thus, unless the filtered water is also used for irrigating purposes, the ammonia is thus carried off and lost. He thought the plan proposed by his Royal Highness for obtaining the solid manuring matter of sewage, if employed in connexion with the application of liquid manure, would form a complete system, and secure all the advantages to be derived from such a source of manuring matter. He then concluded by some remarks on the application of liquid tank manure, and to the excellence of his Royal Highness's suggestion in reference to the solid matter of sewage.—The Duke of Richmond thought it desirable to ascertain how far charcoal, after its use as a chemical and mechanical agent, during the filtering operation, would prove of value as a manure; whether, during such action, it gave up its own substance to effect the changes produced, or became changed by such agency; or whether it simply retained the manuring matter, and again yielded it as a manure to the field. It would also, his Grace conceived, be as well to determine the value of the filtering bed in comparison with farm-yard manure.—Mr. Shaw enquired whether peat charcoal was recommended for use in this plan. Eight different experiments were at that time going on in different parts of the kingdom with such charcoal saturated with the best manuring matter.—The Duke of Richmond thought that Mr. Shaw probably meant charred peat, and in his opinion there was a wide difference between charred peat and peat charcoal, or charcoal of any kind.—The Council then unanimously voted their best thanks to his Royal Highness Prince Albert for the kindness with which his Royal Highness had honoured them with this interesting communication on so important a subject.

Cottage Grate.—Viscount Barrington, M.P., having called the attention of the Council to a cottager's grate he had seen, that he thought of considerable benefit where coals are generally burnt, the inventor had leave to exhibit to the members a model of its construction.—Colonel Challoner favoured the Council with the result of his experience in the use of household grates, and of the advantage of their being placed low down in the hearth, and with backs of peculiar construction, to prevent their splitting.—Mr. Pusey suggested, that as there was a prize of 5*l.* offered by the Society for the best "Cottage Stove or Range for burning coal," shown at the Society's Country Meeting at Exeter in July next, it would be at the option of the inventor of the cottage grate, of which a model was then exhibited to the Council, to make an entry of his invention for that occasion.—The Duke of Richmond concurred in this suggestion, which he communicated to the party in question, thanking him for the trouble he had taken in submitting the model to the inspection of the Council, but without conveying any opinion of its merits or otherwise.

American Churn.—The Council were favoured by Mr. Key, of Newgate-street, with an inspection of the new American churn, for which he is the agent, and with a trial of its operation in their presence. This churn consists of a square wooden box, nearly cubical in its dimensions, and capable of holding nearly 3 gallons, with a revolving dasher inside, turned round by a crank handle on the outside, a lid to fit closely on the top of the box, and a spigot and forcet aperture at the bottom of one of its sides. The dasher is very nearly equal in length to the internal dimensions of the box, its two ends sweeping close to each portion of the box within its range. It is similar to a double box or shallow drawer, having, on each side of it, narrow rectangular grooves or cells, and an iron axle through its centre, communicating with the handle outside. Before use the churn is scalded out, and the cream being warmed to about 62½° of Fahrenheit, it is poured into the churn to not more than half its depth. The lid is then closely pressed down perfectly tight upon the churn, and the dasher kept in rapid but uniform revolution by turning the handle. At the end of 8 minutes the operation is completed; and, from 5 quarts of cream, 5¼ lbs. of fine fresh butter is produced. The peculiar action of this churn appears to consist in the mechanical mode in which atmospheric air is rapidly brought, at a given temperature, into most intimate contact and compression with the cream. By a single revolution of the handle, the box-dasher is brought down upon the surface of the cream in a position nearly parallel to that surface, as the churn is only half full of the cream, which accordingly is on a level with the axle of the dasher. When the dasher thus enters the body of the cream, it carries with it the air enclosed in its under cells or rectangular partitions, while the cream fills the partitions on the opposite and upper side of that end of the dasher. As the dasher passes down through the cream, it presses by its rotary action the included air upon the cream immediately in contact with it; but as the dasher, in the course of its revolution, rises through the cream on the other side of the churn, the included air gradually escapes, and bubbles up through the cream; while the cells on the upper side being filled with cream, and carried to the upper part of the churn, the cream is dashed out, and falls down through the body of the churn. This combined mechanical action being constantly kept up, it may easily be conceived in how intimate a manner, and in how short a time, the atmospheric air is brought into contact with every portion of the cream, and the result of churning effected. The butter is then washed in the churn, without being touched with the hands. Nothing, as it appeared, could be more simple in its construction than this churn, or more decisive in its result; and the agent only regretted, that instead of providing himself, as he thought it his duty to do, with the cream for the operation, he had not requested the Council to favour him by ordering the cream, at his expence, from some indifferent party, and by causing the churn to be worked by any person they thought proper to employ. It would then have removed all doubt that might exist respecting any peculiar mode of treating the cream or of working the churn. He expressed the satisfaction it would give him to be allowed to repeat the trial under those conditions.—The Council ordered their thanks to Mr. Key for the kind trouble he had taken in favouring them with this inspection and trial. The Secretary then read to the Council an extract from a report, made by the New York State Agricultural Society, and to which his attention had been kindly called by Mr. John Bethell, in reference to the entrance of time as an element in the due formation of butter. The report is contained in the last volume of the Transactions of that body, page 267. After detailing the trial of an atmospheric churn, producing butter in 7 or 8 minutes, with other similar churns used in America, Mr. Howard, the assistant-editor of the "Cultivator," who was present at the trial, says, "The atmospheric churn appears to operate on a correct principle, that of mingling the air with the cream; but we are not in favour of such *rapid* churning. Having formerly had some experience in making butter, we should prefer that the churning, for a quantity of 10 to 20 lbs. of butter or more, should be prolonged to 30 minutes at least. According to our experience, the best butter is not produced by a very short nor a very long period in churning. If it is churned too quickly, the separation is not complete, and the butter, besides being less rich, is deficient in quantity; if the process is continued too long, the butter is likely to be oily. We think our best butter-makers would decide that churning, for ordinary quantities, should occupy from 30 to 50 minutes." Mr. Johnson, Secretary to the New York Society, then adds to these remarks of Mr. Howard, the following observations. "We have conversed, in relation to this subject, with many of our best dairymen, and they agree with Mr. Howard, that the best time for churning butter is from 30 to 50 minutes. The proper temperature for producing the greatest quantity as well as the best quality of butter is from 58° to 60°."—Professor Way remarked on the construction of the churn, that it would probably be an improvement in the dasher, if, instead of its being made so as to strike the surface of the cream in a parallel position, it were divided into oblique segments, similar to the sails of a windmill, or the fans of a revolving ventilator.

Prize-Essay.—Mr. Pusey, M.P., Chairman of the Journal Committee, laid before the Council the reports of the judges on the essays sent in to compete for the prize of 30*l.* offered by the Society, for the best essay on the diseases of cattle and sheep, occasioned by mismanagement; and the sealed motto-paper, corresponding with the motto of the winning essay being opened by the noble Chairman, it was found that the successful author for this prize was Mr. William Floyd Karkeek, veterinary-surgeon, of Truro, in Cornwall.

Wheat-grubs.—Mr. Pendarves, M.P., having received last week from one of his tenants in Shropshire some specimens of grubs, then existing in great numbers in that part of the country, but unknown previously, which were committing great devastations on the blade and root of the young Wheat plant, but resisted lime, salt, soot, and the remedies usually applied for the destruction of such insects, they had been sent to Mr. Curtis, the distinguished entomologist, for the favour of his inspection, and the following report, addressed to the Secretary, had been kindly made by that gentleman:

"15th April, 1850.

"I am much obliged to you for the grubs, which I wish very much to breed, in order to ascertain the exact species, but I fear they have had such a shaking by the post, that few of them will be able to slip off their jackets, and change to pupæ. Will you do me the favour to inform Mr. Pendarves, that the larvæ he left with you will change to large gnats, probably to a species described and figured in my last report; and as Mr. Pendarves seems interested in this matter, I beg to refer him to the 'Royal Agricultural Journal,' vol. x., pp. 89 and 92, where I have expressed my belief that the corn crops suffer from the larvæ of a species of Tipula, especially on sandy and light soils; and these larvæ of Mr. Pendarves's are the offspring, I expect, of the identical gnat which is figured in Plate, letter V. (opposite to page 117), in the same volume of the Journal; the larvæ at figures 42 and 43 are the pupæ at figure 44. This, I hope, will prove satisfactory; and if Mr. Pendarves be inclined to transmit me some more larvæ, in damp moss in a small tin box, which may be safely transmitted by post, I shall be happy to endeavour to rear them, and send you the results.

(Signed) "John Curtis."

The Council ordered their thanks to Mr. Curtis for the favour of this kind attention to the objects of the Society.

Mr. Fisher Hobbs has also received from a friend of his in the neighbourhood of Colchester, similar grubs from a 9-acre field of Wheat in that neighbourhood, much injured by their ravages, to the extent of nearly half the crop. The grubs attack the centre of the root of the plant.

Australian Barley.—Mr. R. W. Baker having transmitted details connected with his trial of the Australian Barley received by the Council a few years ago, and distributed among such members as kindly undertook to try and report upon its qualities, Mr. Pusey, Mr. Raymond Barker, and Mr. Fisher Hobbs, favoured the Council with their views on the general question of the trial of naturalised Barley, and the comparative mode by which its qualities ought to be tested by cultivation in this country along with the best ordinary varieties, and under precisely the same circumstances.

Asphaltic Manure.—Mr. John Bethell requested leave to put a question to the noble Duke before he quitted the chair. He had for some years been much interested in the conversion of bituminous substances into manure, but he had hitherto failed in obtaining a clue to any means by which their application in that respect could be made successful. He had accordingly learned, with much interest, from the communication made by Earl Grey to the Society a short time ago, that the Earl of Dundonald had succeeded in the attempt to render the pitch of the Asphaltic Lake in Trinidad beneficial as a manure, and had tested its value as such in the

Government gardens at Bermuda. Specimens of this bituminous manure were in the hands of Professor Way for analysis, and the results would, in due time, no doubt be laid before the Council; but as he had much doubt whether that analysis would inform us of more than we might anticipate from the probable nature of the compounds, he felt a great desire to hear what proofs Lord Dundonald had to offer of the excellence of the manure so prepared; and he begged to inquire of the noble Duke whether such communication had been received.—Mr. Pusey, M.P., stated that he had already anticipated Mr. Bethell's wishes on this subject, having written to Lord Grey to make a similar inquiry, when his Lordship had informed him that such communication was on its way from Lord Dundonald, and when received would be forwarded to the Council. Mr. Pusey took that opportunity of stating the interest he too felt on this question, though on grounds different from those stated by Mr. Bethell, namely, from cases in which increased fertility could apparently be due only to casual admixture with bituminous matter in the soil. This had been found to occur on some property of his relative's, the Earl of Carnarvon's, in Wiltshire, not far from his own residence at Pusey, where dark blue clay had been thrown over the land, and had exerted a manuring effect that could only be attributed to the bituminous matter the clay in question was known to contain.

Mr. John Martin, K.L., the celebrated artist, presented to the Society his work on diverting the sewage of London and Westminster from the Thames, and applying it to agricultural purposes; on improving the navigation of the river; and on establishing a supply of pure water to the metropolis.—Messrs. Blackie and Son, of Glasgow, presented the first division of the "Cyclopædia of Agriculture" (edited by Mr. J. Chalmers Morton, so well known to the Society and the public, as a distinguished writer on agricultural subjects).—Mr. Bruce Allen presented his Rudimentary Treatise on Cottage Building.—For all of which the Council ordered their usual acknowledgments to be conveyed.

The Council then adjourned to Wednesday next, the 1st of May.

Calendar of Operations.

APRIL.

East Lincolnshire Farm, *April* 22.—We have just succeeded in getting in our spring corn, and are now finishing sowing Grass seeds on the Wheat (which is much improved by the harrowing), and rolling our Barley, which looks promising. The lambing season is now over (excepting a few stragglers), and it has been altogether a tolerable one; that is, we have been as fortunate as our neighbours. About five or six ewes were lost, and there have not been so many pairs as usual. The greater part of the ewes and lambs are on a piece of seeds; the hogs finished their Turnips the first week in this month, and removed to Grass. About 200 (wethers) we are getting fresh, with oilcake, half a pound each per day, and will, perhaps, be kept on till shearing. We have wintered 18 beasts, bought last fall at 9*l.* 15*s.* per head, and though living well on Turnips and cake, they would not fetch at last fair 11*l.*, so that they will stay over a little longer. Prices at last Saturday's Caistor fortnight market were lower than ever; a good cow and calf might be bought for 9*l.* to 10*l.*, best fresh beasts, 11*l.*, best hogs, 31*s.*, very prime, 35*s.* Potatoes were selling at 8*d.* a peck, and butter at 9*d.* a pound. *H. E.*

Notices to Correspondents.

Account Books: *W B H.* The English Agricultural Society have published account-books. You should apply to their stationer; his address may be ascertained at No. 12, Hanover-square. The article "Accounts," in Blackie's "Cyclopædia of Agriculture," is worth reading. We hope to be able to describe the churn referred to next week.

Bantams: *Amateur.* The "black sickness" from which your birds are suffering is believed to be highly infectious in its worst stages, although it may only be epidemic in the earliest. Be cautious of handling the suppurating parts if you have a cut or cracked finger. Look well that the accommodation for your fowls be clean, warm, and airy. They may probably require to be crammed to keep them alive, for which purpose the pellets used for goslings are convenient. Dip them in water before administering, to make them slip down easily. For further details see "Dixon's Poultry," 2d edit., p. 255.

Bones and Acid: *G F M.* Pile the bone-dust in a heap and soak it with water, then pour the acid (one-fourth or one-third the weight of the dry bones), on the heap, and see that it does not run away unused from the heap. This will not be difficult to hinder, but it may be well for the purpose to lay a thick rim of ashes around the heap of bones on the earthen floor. When the boiling and effervescence have somewhat subsided, cover the heap over for a fortnight with the ashes, and after that turn it over and mix it well with enough dry ashes to make it drill.

Brain's Artificial Manures: *J L.* We do not know Mr. Brain's address. If he should see this perhaps he will be good enough to inform us.

Cabbages: *Sigma.* The Cabbages can hardly be expected to survive the suffocation between the rows of Beans. We very much doubt if the Turnips will come to much, unless they be sown very late.

Cow: *J C, Southton.* The supposed cause could not have had any influence in preventing the return of the natural instinct. Try stimulating food, such as Beans, and the following by way of medicine in a mash—Cantharides powdered, 5 grains every alternate day. *W. C. S.*

Emigrants: *B B.* It would be very unsafe to take any advice but that of those who have themselves been out. Perhaps some of our readers may be able to say where in N. America a capital of 500*l.* is likely to be most advantageously invested in agriculture.

Hose for Liquid Manure. *Subscriber.* Mr. Browne, of Hampen, Andoversford, Gloucestershire, is making Flax hose, which will bear a little pressure per yard, for conveying liquid manure, at 2*s.* per yard without seam. It is 2½ inches diameter; for 3*d.* per yard additional he puts on a composition that will secure it from decay. He is taking out the water from his Flax tanks with it, and intends with a force-pump to water some of his best crops this year. He is making a stronger hose for 2*s.* 6*d.* per yard for the London brewers and fire-engines, but he uses the one he sells at 2*s.* per yard himself.

Italian Rye-grass: *E D.* It will succeed among the Oats, but not among the Vetches. The latter will most likely kill it. It was so in our case once.

Kohl Rabi: *R F.* Mr. Hewitt Davis has strongly recommended it; and the following passage is extracted from an article by him in our volume for 1847: "My practice is to prepare a seed-bed by well digging and dressing in the winter a corner of my earliest piece of Tares. The seed is sown early in March thinly, in rows 12 inches asunder, and kept perfectly clean by hoeing and hand-weeding; and as the Tares are cleared off in May and June, the ground is deeply ploughed, ridged up, and dressed and planted. The plants at first are placed out 3 feet apart, the ridges being 28 inches asunder; but as the season advances, the distance between the plants is diminished. The value of this root, I assure your readers, in any season, is very considerable, but more particularly after a dry summer, when most other winter food is scarce. I am this year very fortunate, having on each of my farms a considerable breadth. Lean stock, after such a season as we have just had, always sells low in the autumn, from the want of winter keep, whilst fat stock in the following spring, from the same cause, usually sells very high, so that a plant of this description is most advantageous. Upon a field of 10 acres, broken up from heath last year (part of Bagshot-heath), I have at this moment more winter food to the acre than is commonly grown on good soils in favourable seasons, and this, too, has been raised without the aid of any purchased manure."

Legal Redress: *R W P.* You may obtain whatever the agreement with your tenant or the custom of the country implies. But on this subject you must consult your solicitor.

Peruvian Guano: *Bolton.* Average of 32 specimens, according to Mr. Way, is—

	Per cent.
Water	13.09
Organic matter and salts of ammonia	52.61
Sand	1.54
Earthy phosphates	24.12
Alkaline salts	8.78
	100.14

The organic matter named above contains ammonia corresponding to a per centage of 17.41 in the guano.

Spent Bark: *B W.* You had better either char it and then use it in compost with other manures, or make use of it as a sponge to hold liquid manure. You had better not apply it by itself in any large quantity to land; but if you soak it with tank water and turn it over two or three times it will do to use on any sort of soil at the rate of 20 cubic yards per acre, just as you would use farm dung.

Situations: *A A.* We have known inquiries to be made for managers for West Indian estates. Your best plan will be to advertise.

Stamps: *Borrower of Money.* We are not learned in the law, or should have been glad to inform you.

Stone Paper: *S R H* asks, "Has the new German 'stone paper' found its way to England yet, and how does its cost stand relatively to other coverings, such as the felt, &c.?" We have not any personal experience of felt as a covering for roofs, having preferred pantiles.

Yews: *H.* The Yew tree is extremely poisonous to horses, cows, and sheep when eaten in a dry or withered state. The writer has known many instances of animals having been thus poisoned. *W. C. S.*

Markets.

COVENT GARDEN, April 27.

Vegetables are well supplied, but many kinds of winter Fruit are over. Strawberries and Hothouse Grapes are both more plentiful, and the same may be said of Pine-apples, of which some good fruit may be obtained. Walnuts and Chestnuts are abundant; and Oranges and Lemons sufficient for the demand. Amongst Vegetables, Turnips and Carrots are good, and there is some very good Broccoli in the market. A few frame Potatoes have made their appearance. Lettuces and other salading are sufficient for the demand, and so are Mushrooms. French Beans, Asparagus, Seakale, and Rhubarb are plentiful. Cut Flowers consist of Heaths, Pelargoniums, Bignonia venusta, Primulas, Camellias, Cinerarias, Azaleas, Lily of the Valley, Epacrises, Acacias, Lilacs, and Roses.

FRUITS.

Pine-apples, per lb., 6s to 10s	Lemons, per doz., 1s to 2s
Grapes, hothouse, p. lb., 10s to 15s	Almonds, per peck, 6s
— Portugal, p. lb., 9d to 1s	— sweet, per lb., 2s to 3s
Strawberries, per oz., 4d to 1s	Walnuts, p. 100, 1s 6d to 2s
Pears, per doz., 6s to 10s	— p. bush., 16s to 24s
Apples, kitchen, p. bsh., 4s to 6s	Nuts, Bar., p. bush., 20s to 22s
— per 100, 6s to 12s	— Brazil, p. bsh., 12s to 16s
Oranges, per doz., 9d to 1s 6d	Kent Cobs, 90s to 100s p. 100 lbs
— per 100, 5s to 12s	

VEGETABLES.

French Beans, p. 100, 1s 6d to 3s	Onions, p. bushel, 3s 6d to 4s 6d
Seakale, per punnet, 1s to 2s	— Spanish, p. doz., 1s 6d to 4s
Asparagus, p. bund., 2s to 7s	Shallots, per lb., 4d to 8d
Rhubarb, p. bundle, 6d to 1s	Garlic, per lb., 4d to 8d
Cabbages, per doz., 1s to 1s 6d	Lettuce, Cab., p. sc., 4d to 9d
Cauliflowers, p. doz., 1s to 4s	Endive, per score, 1s 6d to 3s
Broccoli, p. doz. bundl., 8s to 10s	Mushrooms, p. pot., 9d to 1s
Greens, per doz., 3s to 4s	Small Salads, per punnet, 2d to 3d
Sorrel, p. hf. sieve, 1s to 1s 6d	Fennel, per bunch, 2d to 3d
Potatoes, per ton, 60s to 120s	Savory, per bunch, 2d to 3d
— per cwt., 3s to 7s	Thyme, per bunch, 2d to 3d
— per bush., 2s 6d to 3s 6d	Parsley, p. doz. bun., 2s to 3s
Turnips, p. doz. bun., 1s 6d to 2s 6d	— Roots, p. bdle., 9d to 1s
Red Beet, per doz., 9d to 1s	Marjoram, per bunch, 2d
Horse Radish, p. bdl., 1s to 4s	Mint, green, per bunch, 3d to 1s
Cucumbers, each, 1s to 3s	Watercress, p. doz. bunches, 6d to 9d
Leeks, per bunch, 1d to 1½d	Corn Salad, p. hf. sieve, 9d to 1s
Celery, p. bundle, 8d to 1s 6d	
Carrots, per bun., 4d to 6d	
Spinach p. sieve, 2s to 3s	

SMITHFIELD, Monday, April 22.

The number of Beasts is larger, and the average quality good. There is a good attendance of buyers, and late quotations are fully supported. The supply of Sheep is moderate; trade is brisk at advanced rates. Lamb is plentiful, and no dearer. The supply of Calves is quite equal to the demand; they meet with a dull sale at scarcely Friday's quotations. From Holland and Germany there are 326 Beasts, 330 Sheep, and 55 Calves; from Scotland, 400 Beasts; and 2500 from Norfolk and Suffolk.

Per st. of 8 lbs.—	s	d	s	d
Best Scots, Herefords, &c.	3	4 to 3	6	
Best Short-horns	3	0 — 3	4	
2d quality Beasts	2	8 — 3	0	
Best Downs and Half-breds	4	2 — 4	6	
Ditto Shorn	3	8 — 4	0	

Per st. of 8 lbs.—	s	d	s	d
Best Long-wools	3	10 to 4	2	
Ditto Shorn	3	4 — 3	8	
Ewes & 2d quality	3	6 — 3	10	
Ditto Shorn	3	0 — 3	4	
Lambs	5	0 — 5	8	
Calves	3	4 — 4	0	
Pigs	3	0 — 4	0	

Beasts, 3658; Sheep and Lambs, 20,760; Calves, 126; Pigs, 230.

Friday, April 26.

We have a very large supply of Beasts to-day, and consequently prices are lower. The dead markets being, however, tolerably clear, a fair clearance is effected. The number of Sheep and Lambs is large; the former are sold about the same as on Monday last, but the latter do not maintain that day's quotations. Calves are very plentiful; trade is dull at lower prices. From Germany and Holland there are 102 Beasts and 195 Calves; from Scotland 500 Beasts; from Norfolk, 300; and 123 Milch Cows from the home counties.

Best Scots, Herefords, &c.	3	2 to 3	4	
Best Short-horns	3	0 — 3	2	
2d quality Beasts	2	6 — 2	10	
Best Downs and Half-breds	4	2 — 4	6	
Ditto Shorn	3	8 — 4	0	

Best Long-wools	3	10 to 4	2	
Ditto Shorn	3	4 — 3	8	
Ewes & 2d quality	3	6 — 3	10	
Ditto Shorn	3	0 — 3	4	
Lambs	5	0 — 5	6	
Calves	3	0 — 4	0	
Pigs	3	0 — 4	0	

ENGLISH TIMBER AND BARK.—April 27.

	Round Timber. Per Load.	Plank. Per Foot Cube.	Inch Board. Per Foot Superf.
Oak	£5 0 0 to £7 0 0	3*s.* 0*d.* to 5*s.* 0*d.*	0*s.* 4½*d.* to 0*s.* 6*d.*
Ash	4 0 0 — 6 0 0	2 3 — 3 0	0 3 — 0 4
Elm	2 10 0 — 3 10 0	1 6 — 2 0	0 2 — 0 3
Beech	2 5 0 — 3 0 0	1 6 — 2 0	0 2 — 0 2½
Lime	3 0 0 — 4 0 0	2 0 — 2 6	0 3½ — 0 4½

Bark per load of 45 cwt. is from 13*l.* to 15*l.* We have to note a decline of 20*s.* to 30*s.* per load in old English during the past month; some large parcels are now in the market.

POTATOES.—Southwark, April 22.

The Committee report that the fresh arrivals during the past week have been limited, which has enabled salesmen to commence selling out of stores, but prices are very little better. The following are the present prices:—York Regents, 100*s.* to 120*s.* per ton; Scotch whites, 40*s.* to 45*s.*; French whites, 40*s.* to 65*s.*; Belgian do., 40*s.* to 55*s.*; Rhenish do., 50*s.* to 65*s.*; Dutch, 35*s.* to 40*s.*

HAY.—Per Load of 36 Trusses.

Cumberland Market, April 25.

Prime Meadow Hay	68*s* to 72*s*		Inferior		60*s* to 70*s*
Inferior ditto	50	63	New Clover	—	—
New Hay	—	—	Straw	24	28
Old Clover	75	80			

Joshua Baker.

Whitechapel, April 25.

Fine Old Hay	63*s* to 68*s*		New Clover	—*s* to —	
Inferior ditto	50	55	Inferior ditto	65	70
New Hay	—	—	Straw	22	25
Old Clover	80	84			

HOPS.—Friday, April 26.

Messrs. Pattenden and Smith report that there is a steady trade doing in new Hops, as well as fine yearlings, at the following prices:

Mid. and East Kents	p. cwt. 147*s* to 252*s*	Farnhams, p. cwt.	—*s* — —*s*
Weald of Kents	126 — 147	Yearling Kents	40 — 80
Sussex	110 — 130	Yearling Sussex	40 — 80
		Old Hops	20 — 60

MARK LANE.

Monday, April 22.—The supply of English Wheat by land carriage samples to this morning's market was very small, and disposed of at the prices of this day se'nnight. Foreign met an improved inquiry at the prices of Friday last.—Barley of all sorts is fully as dear, as are also Peas.—We raise our quotations for Mazagan Beans 1*s.* per qr., and other qualities meet a better sale.—Oats are in more general demand, at rather enhanced prices.—The top price of English Flour is lowered 1*s.* per sack, namely to 37*s.*

British per Imperial Quarter.	s.	s.		s.	s.
Wheat, Essex, Kent, & Suffolk	White	39—40	Red	35—38	
— — fine selected runs	ditto	41—42	Red	37—39	
— — Talavera		44—48			
— Norfolk, Lincoln, & York	White	35—40	Red	34—35	
— Foreign		33—50			
Barley, grind. & distil., 19*s* to 22*s*	Chev.	24—27	Malting	22—24	
— Foreign	Grinding and distilling	14—19	Malting	20—23	
Oats, Essex and Suffolk		15—18			
— Scotch and Lincolnshire	Potato	16—21	Feed	14—19	
— Irish	Potato	14—18	Feed	12—16	
— Foreign	Poland and Brew	14—18	Feed	12—15	
Rye		19—21	Foreign	18—20	
Rye-meal, foreign	per ton	5*l.*—6*l.*			
Beans, Mazagan	19*s* to 21*s*	Tick	24—25	Harrow	23—25
— Pigeon	25*s* — 37*s*	Winds	22—28	Longpod	25—28
— Foreign		Small	24—36	Egyptian	18—19
Peas, white, Essex and Kent		Boilers	28—25	Suffolk	24—26
— Maple	24*s* to 26*s*	Grey	22—23	Foreign	19—28
Maize		White	23—26	Yellow	23—25
Flour, best marks, delivered	per sack	33—37			
— Suffolk	ditto	26—33	Norfolk	26—33	
— Foreign	per barrel	21—24	Per sack	28—32	

Arrivals in the Port of London last week.

	Wheat. Qrs.	Barley. Qrs.	Malt Qrs	Oats. Qrs.	Beans. Qrs.	Peas. Qrs.
Flour, 14743 sks — — bls						
English	3337	1799	7639	2223	679	104
Irish	—	—	107	25	—	—
Foreign	22930	12631	—	38111	5239	216

Friday, April 26.—The arrivals of foreign Barley and Oats this week are large, but moderate of Wheat and English corn. The attendance at this morning's market was small, and business limited. Foreign Wheat, however, was held with more firmness, and where sales were effected late prices were fully supported; English remains as last quoted. We observe no alteration in the value of Barley, Beans, or Peas.—The Oat trade is heavy, and inferior qualities difficult of disposal, excepting at a decline of 6d. per qr. on Monday's prices.—Since the 19th inst. an improved feeling has manifested itself for Wheat, both here and in many provincial markets. The value of good qualities has been fully supported, although much difficulty still attends the disposal of inferior and out-of-conditioned parcels, which, in the interior, have in some instances been held at a decline. Barley and Peas are unaltered in value. English Mazagan Beans have rather improved, but foreign Oats are a trifle cheaper, the supply here continuing large.

Arrivals this week.

	Wheat. Qrs.	Barley. Qrs.	Oats. Qrs.	Flour.
English	2770	2010	890	5080 sacks
Irish	—	—	—	
Foreign	5970	8400	38150	— brls.

Imperial Averages.	Wheat.	Barley.	Oats.	Rye.	Beans.	Peas.
March 9	38*s* 6*d*	23*s* 10*d*	15*s* 2*d*	23*s* 3*d*	24*s* 7*d*	25*s* 4*d*
— 16	38 1	23 8	14 11	22 7	24 1	25 2
— 30	37 9	23 6	15 2	21 7	23 10	25 3
April 6	38 1	23 2	14 10	21 6	23 8	24 5
— 13	38 5	22 11	15 3	20 8	23 9	26 3
— 20	37 10	22 8	15 3	21 6	23 9	24 9
Aggreg. Aver.	38 0	23 2	15 1	21 11	23 10	25 2
Duties on Foreign Grain	1 0	1 0	1 0	1 0	1 0	1 0

Fluctuations in the last six weeks' Corn Averages.

Prices.	Mar. 9.	Mar. 16.	Mar. 30.	April 6.	Apr. 13.	Apr. 20.
38*s* 6*d*						
38 5						
38 1						
38 1						
37 10						
37 9						

SEEDS.—April 26.

Canary, per qr.	62*s* to 68*s*	Coriander, per cwt.	18*s*— 22*s*
Caraway, per cwt.	31 — 34	Mustard, white, p. bush.	7 — 9
Hempseed, per qr.	34 — 35	— brown, do.	10 — 13
Linseed, foreign, do.	37 — 45	Rape, per last	30*l.*—37*l.*
Clover, red, per cwt.	24 — 46	Cakes, Linseed, p. 1000	8*l.* 5*s*
— — foreign, do.	— —	— — foreign, p. ton	6*l.* 0*s*
— white, do.	36 — 48	— Rape, foreign, do.	4*l.* 5*s*
— — foreign, do.	— —	Tares, per bush.	3*s* 0*d*—5*s* 6*d*

Liverpool, Friday, April 26.—Since Monday last the arrivals of grain and Flour have been very insignificant. At this day's market the Wheat trade was more lively than of late, and a fair amount of business was transacted, partly on speculation, and chiefly on secondary runs of foreign, which realised an advance of 1d. to 2d. per 70 lbs. on Tuesday's rates. Barley was a dull sale, and rather cheaper. There was no change in Malt, Beans, and Peas. Oats were in moderate request, and a shade dearer. Oatmeal was steady at late prices.

TO GENTLEMEN, FLORISTS, AND OTHERS.

MESSRS. PROTHEROE AND MORRIS will sell by Auction, at the Mart, Bartholomew-lane, on WEDNESDAY, May 1, and THURSDAY, May 2, at 12 o'clock, a first-rate collection of CARNATIONS and PICOTEES; also the newest varieties of Dahlias, Heartsease, Fuchsias, Verbenas, and other plants in bloom.—May be viewed the morning of Sale. Catalogues had at the Mart, and of the Auctioneers, Leyton-stone, Essex.

DAHLIAS, VERBENAS, GERANIUMS, CARNATIONS, PICOTEES, BLACK AND GREEN TEA TREES IN POTS, HERBACEOUS PLANTS, ROSES, &c.

MR. HASLAM will sell by Auction, as above, at the Auction Mart, on WEDNESDAY, May 1, and FRIDAY, May 3.—Catalogues may be had at the Mart, and of the Auctioneer, Epping, Essex.

GLASS FOR CONSERVATORIES.

JAMES PHILLIPS AND Co. have the pleasure to hand their New List of Prices of GLASS for Cash.

CUT TO SIZE.

16 oz.	from 2d.	to 3½d.	per foot.
21	,, 3½	,, 5	,,
26	,, 3½	,, 7½	,,
32	,, 4	,, 9½	,,

SHEET SQUARES.

In boxes of 100 feet.	s.	d.
Under	6 by 4...	12 6
6 by 4 and under 7 by 5	...	16 6
7 by 5 ,, 8 by 6	...	18 6
8 by 6 ,, 10 by 8	...	20 6

100 feet and 200 feet cases of large Sheet Glass, for cutting up, at 2½d. per foot. British Plate Glass, from 1s. 2d. to 2s. per foot, according to size.

HARTLEY'S PATENT ROUGH PLATE, packed in boxes of 50 feet each:

6 by 4 and 6½ by 4½	...	10s.	6d.
8 by 6 ,, 8½ by 6½	...	18	6
7 by 5 and 7½ by 5½	...	12s.	0d.
9 by 7 ,, 10 by 8	...	15	0

MILK PANS.

12 in. diameter	...	2s.	0d.
14 ,,	...	2	6
16 ,,	...	3	0
18 ,,	...	3	6
20 ,,	...	4	0
22 ,,	...	4	6
24 ,,	...	5	0
26 ,,	...	6	0

CREAM POTS, from 2s. each.

PROPAGATING GLASSES.

2 in. diameter	...	0s.	2d.
3 ,,	...	0	3
4 ,,	...	0	4
5 ,,	...	0	6
6 ,,	...	0	8
7 ,,	...	0	10
8 ,,	...	1	0
9 ,,	...	1	2
10 ,,	...	1	4
11 ,,	...	1	6

BEE GLASSES, same sizes.

METAL HAND FRAMES.

12 inches	...	6s.	0d.
14 ,,	...	7	0
16 ,,	...	8	0
18 ,,	...	9	0
20 ,,	...	10	0
24 ,,	...	12	0

Open tops, 1s. extra.

CUCUMBER TUBES.

12 inches long	...	1s.	0d.
14 ,,	...	1	2
16 ,,	...	1	4
18 ,,	...	1	6
20 ,,	...	1	8
22 ,,	...	1	10
24 ,,	...	2	0

Glass Shades; Tiles and Slates of any size; Wasp Traps, 3s. 6d. per dozen; Lamp Shades; Rough Plate Glass of every thickness. Lactometers, for trying the quality of milk, 4 tubes, 7s. 6d.; 6 do., 10s. Glass Stands for Pianoforte, and every article in the trade.

JAMES PHILLIPS AND Co., 116, BISHOPSGATE-STREET WITHOUT, LONDON.

HARTLEY'S PATENT ROUGH PLATE GLASS FOR CONSERVATORIES, &c.

See Article in THE GARDENERS' CHRONICLE of Saturday, December 8, 1849.

"Continued experience leaves us no room to doubt that this is the best material yet produced, and that it will in time supersede glass of all other kinds for the greater part of Gardening purposes." . . . "As for the article substituted for Rough Plate . . . it is wholly unfit for any horticultural purpose." . . . "The best sample of it which we have yet seen was Manufactured by Messrs. HARTLEYS, AND SOLD BY MESSRS. JAMES PHILLIPS & CO., 116, BISHOPSGATE STREET."

GLASS FOR CONSERVATORIES, HORTICULTURAL PURPOSES, &c.



T. MILLINGTON'S SHEET GLASS, which is of the best description, varying from 16 to 32 ounces, at from 2d. per foot and upwards; 100 feet and 200 feet cases of large Sheet Glass, for cutting up, at 2½d. per foot. British Plate Glass, from 1s. 2d. to 2s. per foot, according to size. Patent Rough Plate Glass, from ⅛ to 1 inch in thickness, from 4d. per foot upwards. Glass Slates and Tiles. Milk Pans from 12 to 24 inches diameter, from 2s. to 5s. each. Cucumber Tubes, from 12 to 24 inches long, at 1d. per inch. Lactometers, 7s. 6d. each. Wasp Traps.—Lists may be had, on application at the Warehouse, 87, Bishopsgate-street Without, same side as the Eastern Counties Railway.

CROWN, SHEET, AND ROUGH PLATE GLASS, FOR HOTHOUSES, CONSERVATORIES, &c.

Of every manufacture FIT FOR USE, including the make of Messrs. CHANCE, HARTLEY, SWINBURNE, and others.

100 and 200 feet cases of large Sheet Glass, from 2½d. per foot. Small ditto, 10s. 6d. per 100 feet, packed in boxes ready for immediate delivery. Curators of Botanical Societies, Florists, Railway Agents, and others requiring large quantities, will, on sending dimensions, receive estimates at the lowest prices.

GLASS MILK PANS, CREAM POTS, Lactometers, Bee Glasses, Fish Globes, and all kinds of Dairy Glass, Propagating Glasses, Hyacinth Dishes, Cucumber Tubes, and every other description of Garden Glasses.

PATENT GLASS PENS, self supplying, never blot, never soil the ruler, and will write continuously for 12 hours.

Also, Glass Rulers, Glass Inks for office-stands, desks, &c. Stationers and Schools supplied. Wholesale Warehouse for Ornamental Shades, Lamp Shades, Gas Glasses, Genuine White Lead, Paints, Colours, and Pumps for Farm purposes.

Our Catalogue of 18 folios is the most complete ever published. No Gardener or Farm Bailiff should be without one. May be had Gratis on sending two postage stamps to Messrs. COGAN and Co., 48, Leicester-square, London.

GLASS FOR CONSERVATORIES, &c.

HETLEY AND Co. supply 16-oz. Sheet Glass of British Manufacture, at prices varying from 2d. to 3d. per square foot, for the usual sizes required, many thousand feet of which are kept ready packed for immediate delivery. Lists of Prices and estimates forwarded on application, for PATENT ROUGH PLATE, THICK CROWN GLASS, GLASS TILES and SLATES, WATER-PIPES, PROPAGATING GLASSES, GLASS MILK PANS, PATENT PLATE-GLASS, ORNAMENTAL WINDOW GLASS, and GLASS SHADES, to JAMES HETLEY and Co., 35, Soho-square, London.

See the *Gardeners' Chronicle* first Saturday in each month.

HOT WATER APPARATUS AND HORTICULTURAL BUILDING.

W. HILL begs respectfully to announce that his improved "FLUE BOILER" may now be had in sizes to suit every description of Apparatus, from that of 100 feet to 2000 feet of 4-inch pipe. Improved STEAM BOILERS, from one-horse power and upwards, adapted either for stationary or portable engines, and guaranteed to be most effective.

Every description of Horticultural Building constructed upon the best principle. Buildings of any kind heated by hot water.

*** A liberal Discount to the Trade.

W. HILL, Horticultural Works Greenwich.

TO FLORISTS, HORTICULTURISTS, &c.

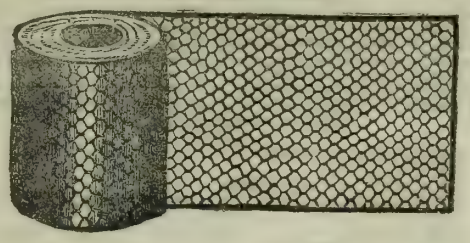


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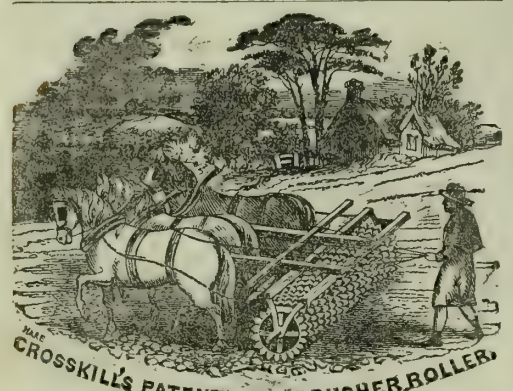
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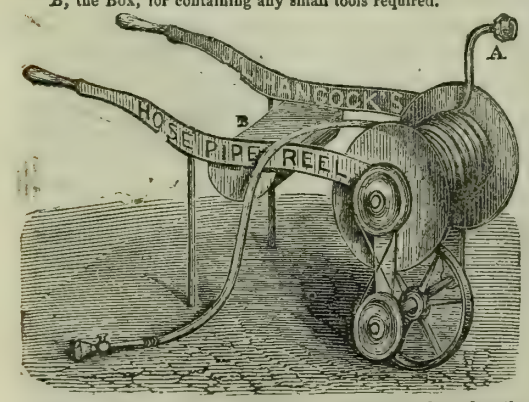
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Diseases of plants	276 *c*	Steam power, application of	283 *b*
Drainage, Laws on, rev.	285 *c*	Storm, progress of a	283 *b*
Farm buildings	284 *c*	Trade memoranda	277 *b*
Farming, high	282 *a*	Trees, wall	277 *c*
— in Ayrshire	282 *b*	Villa gardening	277 *a*
Farm horses	284 *c*	Vines, bleeding of late pruned	278 *b*
Farmers, qualifications of	284 *b*	Vine pillars	278 *a*
Fish, gold	279 *c*	Vine roots, bleeding of	278 *a*
Frost, the late	278 *a*	Wages, labourers'	281 *b*—284 *a*
Fulham market gardens	279 *a*	Wall trees, management of	277 *c*
Geological specimens	283 *c*	Water snail	279 *c*
Gold fish	279 *c*	Worton Cottage meetings	278 *c*
Grass seeds for clay	286 *b*	York Farmers' Club	285 *a*

ERRATUM.—In Messrs. WOOD and SON'S Advertisement, inserted April 27th, for Rhododendron javanicum, *per dozen*, 7*s.* 6*d.* to 21*s.*, read 7*s.* 6*d.* to 21*s. each.*

THE STANWICK NECTARINE.

MR. J. C. STEVENS has the honour to announce that on WEDNESDAY, May 15, at 12 for 1 o'clock, by order of His Grace the DUKE OF NORTHUMBERLAND, and on account of the Trustees of a Fund for the Benefit of the GARDENERS' BENEVOLENT INSTITUTION, he will offer for sale by Auction, in his Great Room, 38, King-street, Covent-garden, Twenty-four Plants of the celebrated STANWICK NECTARINE. These plants are in pots, have been propagated expressly for the Charity by Mr. RIVERS, of Sawbridgeworth, and are the first specimens that have been offered for sale.

On the same day will be sold about 150 dwarf Apples, in 6-inch pots, grafted on the Pomme de Paradis (identical with the dwarf Apple of Armenia); many of them are in a bearing state, and very interesting little trees.

ROYAL BOTANIC SOCIETY, REGENT'S PARK.

THE FIRST EXHIBITION OF PLANTS AND FLOWERS this season will take place on WENDESDAY next, May 8th. Tickets to be obtained at the Gardens only by orders from Fellows of the Society, price 5*s.* each, or on the day of Exhibition, 7*s.* 6*d.* N.B. The gates open at 2 o'clock.

TWO HUNDRED POUNDS IN PRIZES.

THE GRAND MONSTER HORTICULTURAL AND FLORAL EXHIBITION
WILL BE HELD IN CHELTENHAM,
On THURSDAY, the 20th of June, 1850, in the Spacious Hall and Pavilion of the ROYAL OLD WELLS.

The SHOW is open to all Exhibitors, and without Entrance Fees. The following List includes a few of the principal Prizes:—Stove Plants (exclusive of Orchidaceæ), best Ten—1st, 12*l.*; 2d, 6*l.*; and 3d, 3*l.* Best Six Ditto, 5*l.*, 2*l.* 10*s.*, and 1*l.* Orchidaceous Plants, best Eight, 12*l.*, 6*l.*, and 3*l.*; best Four Ditto, 5*l.*, 2*l.* 10*s.*, and 1*l.* Greenhouse Plants, best Twelve, 10*l.*, 5*l.*, and 2*l.* 10*s.*; best Six Ditto, 4*l.* and 2*l.* Heaths, best Six, 7*l.*, 4*l.*, and 2*l.* Bulbs, best Six, 7*l.* and 3*l.* 10*s.* Pelargoniums, best Twelve, 8*l.*, 4*l.*, and 2*l.* Roses, best Eighteen, cut, distinct varieties, 6*l.*, 3*l.*, and 1*l.* 10*s.* Best and Newest Plant in bloom, 3*l.*; ditto, in or out of bloom, with the most remarkable foliage, 2*l.* A great number of Prizes for Specimen and Herbaceous Plants, Pinks, Pansies, Fuchsias, Fruit, Vegetables, &c., included in the Schedules, which may be had on application to the Hon. Secretaries, H. W. MILLETT, Esq., and Mr. J. TAGART, Cheltenham.

GARDENERS' BENEVOLENT INSTITUTION.—The SEVENTH ANNIVERSARY DINNER in aid of the Funds of this Society will be held at the London Coffee-house, Ludgate-hill, on WEDNESDAY, 15th inst., the Right Hon. the EARL OF CARLISLE in the chair.

STEWARDS.

His Grace the Duke of Northumberland	Henry Thomas Hope, Esq., M.P.
The Right Hon. Lord Robert Grosvenor, M.P.	John Lane, Esq.
Sir James Duke, Bart., M.P.	John Lee, Esq.
Captain Charles Forbes	John Lindley, Esq.
Captain James Lamont, R.N.	Joseph Martineau, Esq.
John Craigmyle, Esq.	John Murray, Esq.
William F. G. Farmer, Esq.	William Noble, Esq.
Thomas Finden, Esq.	Charles Palmer, Esq.
Robert Glendinning, Esq.	Arthur Pott, Esq.
William Gregory, Esq.	Sigismund Rucker, Esq.
Robert Hanbury, Esq.	John Strickland, Esq.
A. Henderson, Esq.	James Thomson, Esq.
William Hill, Esq.	James Thorne, Esq.
Robert Steiner Holford, Esq.	J. H. Tuck, Esq.
	J. C. Wheeler, Esq.

☞ Dinner on Table at Half-past Five o'clock precisely.

Tickets 21*s.* each, to be had of the Stewards, at the Tavern, and of the Secretary, 97, Farringdon-street.

UNBLOOMED SEEDLING CALCEOLARIAS.

HENRY MAJOR, Knosthorpe, near Leeds, begs to announce that he has now ready for sending out, a large quantity of unbloomed seedling CALCEOLARIAS, saved from fine varieties, in parcels of 20, at 7*s.* 6*d.* per parcel, or three parcels for 1*l.*, postage free. They will all bloom this year. He has still left a few sets of his five beautiful seedling Pansies, price 1*l.* the set post free. Also healthy plants of most of the leading varieties of PANSIES at moderate prices. Select Pansy seed, 2*s.* 6*d.* per packet. A descriptive list of Calceolarias and Pansies may be had on pre-paid application.—From unknown correspondents a remittance is respectfully requested with the order.

RENDLE'S NURSERY ESTABLISHMENT, PLYMOUTH.

ESTABLISHED 1786.

GERANIUMS.—20 strong plants for 30*s.*; for names, see this Paper, Saturday, April 20.

SCARLET GERANIUMS.—20 strong plants for 15*s.*

DAHLIAS.—12 superior new sorts for 18*s.*, or 20 second-class ditto, for 26*s.*

CAMELLIAS.—Nearly 1000 splendid plants, 18 in. to 30 in. high, 12 for 36*s.*; 20 for 50*s.*; or 40 for 4*l.* 10*s.*

FUCHSIAS.—20 for 15*s.*, all the newest sorts. Purchasers' selection, at the above prices, from our Advertisement in this Paper, April 20th, or from our Plant Catalogue just out.

FREE DELIVERY *of all orders above* 40*s. to all stations on the Great Western, Bristol and Exeter, or South Devon Railways; or to Cork, Dublin, or Belfast, by Steamer.*

RENDLE'S CHEMICAL PLANT MANURE.—A sample box will be sent GRATIS with every order. When the properties of this valuable Manure become fully known, it will be used by everybody.

Apply to WILLIAM E. RENDLE and CO.,
Union-road, Plymouth.

WILLIAM WOOD AND SON have the pleasure of offering the following select and highly desirable plants:

Achimenes Kleii, each	1*s.* 6*d.*
,, longiflora major, do.	1 6
Anemone japonica hybrida, do.	1 6
Maurandya Emeryana (red), do.	2 6
Mitraria coccinea, do.	7 6
Phlox depressa, do.	2 6
Potentilla Smoutii, do.	3 6
Rhododendron javanicum, each	7*s.* 6*d.* to 21 0
Azalea indica, fine collection, per doz.	12*s.* to 24 0

SELECT BEDDING PLANTS.	Per doz.
Antirrhinums, best named	6*s.* 0*d.*
Calceolarias, shrubby	6*s.* to 12 0
,, fine seedlings	6*s.* to 12 0
Chrysanthemums, Continental (vars.)	9*s.* to 18 0
,, Miniature	12*s.* to 18 0
Cinerarias, superb collection	12*s.* to 24 0
Fuchsias, best kinds	6*s.* to 18 0
Geraniums, finest scarlet (vars.), remarkably strong and bushy, 40*s.* per 100	6*s.* to 12 0
Geraniums, Ivy-leaved pink and white	6 0
,, striped-leaved for edgings	6 0
,, Mangles' silver-striped, fine	6 0
,, sweet-scented-leaved	6*s.* to 12 0
Heliotropium Grisau	12 0
,, Souvenir de Liège	9 0
Lobelia erinus lilacina	9 0
,, ,, maxima	9 0
,, fulgens, 6 new vars.	18 0
Mimulus rubinus, very fine	9 0
Pentstemons of sorts	6 0
,, 8 new and superb vars.	12*s.* to 18 0
Salvias, 6 fine vars.	4*s.* to 9 0
Verbenas, best sorts	6*s.* to 12 0
Zauschneria californica	6 0
Roses in pots (see previous Advertisements)	9*s.* to 18 0

Extra Plants presented with each order. Catalogues may be had GRATIS, on application.

Woodlands Nursery, Maresfield, near Uckfield, Sussex.

JOHN B. SMITH begs to inform the Nobility, Gentry, and the Trade, that his superb Collection of Yellow RHODODENDRONS, AZALEA INDICAS, &c., are now coming into bloom, and will continue throughout the present month.

Norbiton Nursery, Kingston, May 4.

TO ENGLISH GENTLEMEN, AMATEURS, AND NURSERYMEN.

MR. J. DE JONGHE, 20, Rue Visitandinen, Brussels, has now ready to send out the beautiful new plant FRANCISCEA EXIMIA, received from the Province of St. Paul, Brazil, and which received the first prize for new and rare plants at the exhibition of the Royal Floricultural Society at Brussels, the 6th of March, 1849. This truly splendid plant has been considered by connoisseurs to be the best Franciscea introduced; the foliage is good, the flowers large, and of the most exquisite violet blue. It flowers from March till June, is easy of cultivation, and blossoms profusely.

Strong 3-year-old plants	...	...	£6 0 0
Do. 2-year-old	do.	...	4 0 0
Good 1-year-old	do.	...	2 0 0

Unknown correspondents are requested to forward the amount through Messrs. GRINDLEY and Co., 18, Cornhill, London.

UNRIVALLED SEEDLING ANTIRRHINUMS.

JAMES SAUNDERS AND SON having paid particular attention to the cultivation of the above beautiful hardy plant, have much pleasure in offering a selection of 12 from their large and universally admired collection. They will be found perfectly distinct, and cannot fail to give the utmost satisfaction. Fifty spikes of flowers were sent to Dr. LINDLEY, who describes them thus in the *Gardeners' Chronicle*, July 14, 1849:—"*J. S. A.* A very handsome collection, particularly Nos. 3, 5, 16, 19, 18, 24, 25, 27, 31, and 42, but still more particularly Nos. 5 and 42. No. 28 is a very bright self-coloured yellow. You had better select the most distinct striped and spotted ones for seed. Yours is an excellent breed of Antirrhinums for that purpose."

Blooms were also sent to and seen by a great many Nurserymen and Florists, and in every instance received the same admiration, as superior in every respect to any out, and were in all cases ordered. Many of them are beautifully spotted, others as finely flaked as any Carnation, and the whole collection brilliant in every variety of colour, perfect in shape, free bloomers, and of compact habits.

Strong plants will be sent out on and after the 6th of May, at 30*s.* the set of 12; one-third off to the Trade when three or more sets are ordered. They can be forwarded safely by post, and, when ordered so, free of postage.

J. S. and SON have also a fine Stock of Antirrhinum Seed, carefully selected from 50 of their best varieties, in packets, 2*s.* 6*d.* to 5*s.* each, free by post.—Abergavenny, May 4.

DAHLIAS—NEW AND CHOICE VARIETIES AT REDUCED PRICES.

WM. DENYER, SEEDSMAN and FLORIST, 82, Grace-church-street (near the Spread Eagle), London, has just published his Annual Descriptive List of DAHLIAS, containing all the new and most approved show varieties. The new varieties, 12*s.* to 18*s.* per doz.; the older kinds, but good sorts, 6*d.* each, or 5*s.* per doz.

Catalogues may be had on application.

W. D. has just received, from an eminent German grower, the following, which may be had in small collections:

Autumnal Stocks, 6 brightest colours; the collection,		1*s.* 6*d.*
Brompton or Gigantic Stocks, 6 vars., including the Emperor	,,	2 0
Double Balsams, 6 brightest colours	,,	1 0
,, Hollyhocks, 6 do do.	,,	1 6
Wallflowers, singular colours, 6 vars.	,,	2 0

BEAUTIFUL BOUQUETS OF FLOWERS may be preserved perfectly fresh and blooming for several days in glasses constructed for the Button-hole, the Hand, the Hair, or any part of the Dress. In boxes containing one dozen, for 2*s.* 6*d.*, postage included, forwarded in postage stamps to JACKSON and TOWNSON, 89, Bishopsgate-street Within, London.

MESSRS. J. AND H. BROWN'S New List of Bedding out Plants can be had by post, and the following Select Plants immediately supplied.

	s.	*d.*
Verbenas, new and first-rate varieties, of all colours, per dozen	4*s.* to 6	0
Petunias, large crimson, white, lilac, pink, and mottled per dozen	4*s.* to 6	0
Pentstemons, fine scarlet, blue, purple, and white, per doz.	6	0
Salvias, blue, white, scarlet, and variegated, per doz.	4	0
Heliotropiums, 4 sorts, 3 of each for	6	0
Lobelia erinus, grandiflora, alba, and lucida, per doz.	3	0
Lobelia fulgens, 6*s.* Other new scarlet vars., per doz.	9	0
Antirrhinums, best named varieties, per doz.	6	0
Cinerarias, fine varieties, flowering plants, per dozen	9	0
Calceolarias, pale and deep yellow, orange, red, crimson, and spotted, per dozen	6	0
Zauschneria Californica, fine scarlet, per dozen	6	0
Torenia asiatica, and three sorts of Cupheas, per doz.	6	0
Geraniums, finest scarlets and mixed varieties, all named, 40*s.* per 100; per dozen, 6*s.*, 8*s.*, and	10	0
Fancy Geraniums, of best sorts, per dozen	9	0
Fuchsias, named varieties of the newest kinds, per doz, 6*s.*, 8*s.*, and	10	0
Chrysanthemums, the most approved varieties, per doz.	6	0
Ditto, Lilliputian, 12 varieties, 1*s.* each; or the set	10	0
Dahlias, show and fancies, per dozen, 6*s.*, 8*s.*, and	10	0
Climbers, Maurandyas, 3 sorts; Cobœas, Thunbergias, Rhodochiton, and Lophospermums, per dozen	6	0
Climbing Roses, of choice sorts, in pots, per dozen	6	0
Fairy Roses, six sorts, ditto ditto	4	0
Crimson and White China for beds, per dozen	6	0
12 New Belgian Azaleas, in pots, one of a sort	15	0
12 American Azaleas, ditto ditto	12	0
12 Azalea Indica, splendid varieties	25	0
50 Select Greenhouse plants, one of a sort, by name	40	0
24 Choice Ericas, one of a sort, by name	18	0
12 Tea-scented Roses, ditto ditto	9	0
12 Rhododendrons, scarlet, white, and rose	12	0
New Hardy Yellow Rhododendrons, each, 7*s.* 6*d.* to	10	6
Passifloras and Clematis, hardy and tender species, each	1	6
25 Select Hardy Herbaceous plants, by name	7	6
12 Hardy Ferns, and other Rock plants	8	0

Albion Nursery, Stoke Newington, London, May 4.

THE FINEST CARNATIONS, PICOTEES, &c. &c.

YOUELL AND CO.'S Extensive and Celebrated Collection of the above are this season unusually strong and healthy, and are ready for sending out, in fine well-rooted plants, to any part of the United Kingdom, or for exportation, at the following prices:

25 pairs of finest first-rate show varieties of Carnations and Picotees	...	£5	0 0
12 pairs do. do. do.	...	2	10 0

(Including their fine Red-edged Picotee, "The Gem," by far the most perfect Picotee yet raised, and shown in all the winning stands at the Metropolitan Exhibitions during last season.)

25 pairs of very fine show varieties of do. do.	...	3	0 0
12 do. do. do. do. do.	1*l.* 4*s.* to	1	10 0
Fine mixed border ditto—per dozen pairs	...	0	12 0
True old Clove—per pair	...	0	2 0

PANSIES, the finest first-class show flowers, comprising all those exhibited in the winning stands at the Metropolitan Exhibitions, 10*s.* to 18*s.* per dozen, well established in small pots, or per post, free.

FUCHSIAS, all of the very best sent out last season, 9*s.*, 12*s.*, and 18*s.* per dozen, (including Spectabilis.)

VERBENAS,	,, ,,	6*s.* to 12*s.* per doz.
PETUNIAS,	,, ,,	6*s.* to 12*s.* per doz.
CINERARIAS,	,, ,,	9*s.* to 18*s.* per doz.
CHRYSANTHEMUMS,	,, ,,	6*s.*, 9*s.*, & 12*s.* p. doz.

ERICAS, comprising all the new varieties of Ventricosa, Trossula, Cavendishii, Mirabilis, Cerinthoides, Aggregata, Westcottiana, Sindryana, &c., &c., flowering plants, 9*s.* to 12*s.* per doz.

HOYA BELLA, per post free, 7*s.* 6*d.* per plant.

ÆSCHYNANTHUS speciosus, 3*s.* 6*d.* per plant.

FUCHSIA CORYMBIFLORA ALBA, 3*s.* 6*d.* per plant.
,, SPECTABILIS, 2*s.* 6*d.* per plant.

MITRARIA COCCINEA, 2*s.* 6*d.* per plant.

GLOXINIAS, a Splendid collection of all the very best kinds, including "Grandis," "Wortleyana," "Carminata splendens," &c., 12*s.* per dozen.

JASMINUM GRACILE, flowering plants, 2*s.* 6*d.* each; or 24*s.* per dozen.

CAMELLIAS, an extensive collection of the most superb kinds can now be obtained in fine strong plants at 30*s.* per doz.

Thirty packets of new and very choice FLOWER SEEDS for 6*s.*, per post, free.

Their Descriptive Spring Catalogue is just published, and will be forwarded free on receipt of two postage stamps. It will be found indispensable for the present season, as it contains all the latest deserving introductions (home and continental), in obtaining which no expense has been spared in forming a selection of such as will prove satisfactory.

Great Yarmouth Nursery, Norfolk.

PLANTS, NEW AND SELECT.

BASS AND BROWN are now sending out the following choice selections. Their Descriptive Catalogue may be had by inclosing four penny stamps.

GERANIUMS.

Twelve of the following, all new varieties of last season, for 42*s.*; or, Purchaser's selection, 55*s.*: Topping's Brilliant and Elegans; Hoyle's Crusader, Rolla, Prometheus, and Sparkler; Beck's Delicatissima, Emilia, Princess, Refulgent, Symmetry, Sundown, and Harlequin; Story's Mont Blanc, No. 1; Whomes' Windsor Castle, Queen Victoria, and Princess Helena.

Twelve of the following choice varieties for 21*s.*; Purchaser's selection, 25*s.*: Hoyle's Augusta, Isabella, and Josephus; Beck's Crusader, Desdemona, Gigantic, Gulielma, Honora, Isabella, Marc Antony, Margaretta, Mustee, Rosy Circle, and Zenobia; Lyne's Fire-fly, Forget-me-Not, Jenny Lind, Marmion, Merry Monarch, and Peri; Foster's Magog, Orion, Duke of Hamilton, and Grandis; Begum, Thunderer, Black Prince, Duchess of Leinster, Flora's Flag, Mary Queen of Scots, Mrs. Brock, and Sarah Jane.

Twelve fine show varieties, 12*s.*; 25 ditto, 22*s.*; 50 ditto, 40*s.* Good old named sorts, 6*s.* to 9*s.* per doz.; Scarlets, 6*s.* to 9*s.* per dozen.

FANCY GERANIUMS.

Twelve of the following for 15*s.*; Purchaser's selection, 20*s.*: Shepherd's Beauty of Winchester, Lady Rivers, and Queen Victoria; Chauviere's Annais, Bouquet tout fait; Jehu superb, Maid of Anjou, Statuiski, and Zelia; Ambrose's Jenny Lind; Henderson's Madame Grisi, Jehu, Jehu Improved; Katinka, Black Prince, La Belle d'Africana, Lady Flora Hastings, and Yeatmanianum.

FUCHSIAS. †

Twelve of the following new varieties for 15*s.*; Purchaser's selection, 18*s.*: Low's Splendida, Story's Elegantissima, Newtoniensis, and Gem of the West; Smith's Lord Nelson, Eastern Beauty, and Ne plus ultra; Turville's Elegance, Gem, Fire King, Shylock, and Beauty of Chelmsford; Tiley's Sir Charles Napier; Miellez's General Negrier; Pope's Criterion; Mayle's Purity, Kendall's Elizabeth; Barnes' Rev. Freeman.

12 superior older vars.	9*s.* 0*d*	12 fine varieties ...	5*s.* 0*d*
25 do. do.	17 6	25 do.	10 0

Fifty varieties, in very choice assortment, 25*s.*

PETUNIAS. †

Twelve of the following for 12*s.*; Purchaser's selection, 15*s.*: Bass's Brilliant, Beauty of Suffolk, Delicata, Hesperus, Nymph, Spotted Beauty, Renown, and Telegraph; Barnes' Exquisite, Splendens, and Resplendens; Louis Buonaparte, Striata Perfecta, Othello, Centurion, Maculata, Romulus, Rosetta, Una, and Rosamond.

12 fine showy varieties	5*s.* 0*d*	12 superior varieties ...	9*s.* 0*d*
25 do. do. ...	10 0	25 do. do. ...	15 0

VERBENAS. †

Twelve of the following, all new varieties of last season, 12*s.*: Barker's Cardinal,* Junius,* Eyebright, Duchess of Northumberland, Miss Thorold,* and Lord of the Isles; Wyness' Princess Alice;* Smith's Napier, Burgundy, Psyche,* War Eagle,* Lady Russell, and Queen of the French; Epps' Eclipse* and Eppsii;* Ivery's Union Jack* and Attraction; Chauviere's John Salter, General Lamoriciere, Chauverii,* Rosati, and Madame Ravershon; Dufoy's Apollon* and Morphee;* Young's Royal Purple and Brilliant: Barnes' Queen of Summer;* and Joiris' La Candeur.

12 fine showy varieties	4*s.* 0*d*	12 superior varieties ...	7*s.* 6*d*
25 do. do. ...	7 6	25 do. do. ...	12 0

Fifty varieties, in choice assortment, 20*s.* Those of the above Verbenas marked thus (*) are best adapted for bedding, being of good habit, and of bright showy colours, and can be had by the dozen, or half-dozen of each sort, at 9*s.* per dozen, with the following at 6*s.*; not less than six of each:

Robinson's Defiance	Barker's St. Margaret
Ivery's Emperor of China	White Perfection
Englefieldiana	Amulet (lilac).

DAHLIAS.

12 superior vars. of 1849	21*s.* 0*d*	12 fancy vars. of 1849 ...	18*s.* 0*d*
12 fine varieties ...	5 0	12 fine fancy vars. ...	5 0
25 ditto	10 0	12 superior ditto ...	9 0
12 superior ditto ...	9 0	50 vars., including new	42 0

CHRYSANTHEMUMS. †

12 fine varieties ...	6*s.* 0*d*	12 superior varieties ...	9*s.* 0*d*
25 do.	10 6	25 do. do. ...	17 6

Forty varieties, in choice assortment, 30*s.*

GREENHOUSE PLANTS.

12 fine showy varieties	15*s.* 0*d*	12 extra choice varieties	25*s.* 0*d*
25 do. do. ...	28 0	50 fine varieties... ...	50 0

Greenhouse Climbing Plants, 12 select varieties, 12*s.*

Stove Plants, 12 fine and select varieties, 18*s.*

†Achimenes, 6 splendid new varieties, 7*s.* 6*d.*

,, 12 fine and select varieties, 6*s.*

Gloxinias, 12 varieties, 15*s.*; 6 superior new varieties, 9*s.*

Azalea indica, 12 fine varieties, 18*s.*; 6 superior do., 10*s.*

Cinerarias, 12 fine named varieties for 10*s.*

Hardy Herbaceous Plants, 100 showy varieties, 30*s.*; 50 do., 18*s.*; 25 do., 10*s.*; 100 superior, 50*s.*; 50 do., 32*s.*; 25 do., 17*s.* 6*d.*

Hardy Rock Plants, 25 varieties, 12*s.*; 12 do., 7*s.* 6*d.*

†Phlox, 12 fine varieties, 6*s.*; 12 superior do., 9*s.*

Antirrhinums, 12 fine varieties, 6*s.*; 12 superior do., 10*s.*

Roses, 12 fine autumnal blooming varieties, in pots, 12*s.*

NEW PLANTS, strong and well established.

Gloxinia Grandis, each,	5*s.* 0*d*	Liebegia speciosa, each,	3*s.* 6*d*
,, Wortleyana...	2 6	Luculia Pinciana ...	2 6
Geranium Magnificent	21 0	Tritonia aurea, 3*s.* 6*d.* to	7 6
Chirita Moonii	2 6	Fuchsia spectabile, †	
Æschynanthus speciosus	3 6	2*s.* 6*d.* to	3 6
Indigofera decora ...	3 6	Fuchsia corymbiflora	
Verbena Magnificent †...	2 6	alba †	3 6

CHOICE SEEDLING PETUNIAS.†

Magnificent	Orion	Cassandra
Castor	Pollux	Syren

For description see *Gardeners' Chronicle*, April 14, 20, and 27.

The set 22*s.* 6*d.*; usual allowance to the Trade.

Those marked † can be sent free by post if required.

Goods sent carriage free to London, and with all orders of 40*s.* and upwards extra plants presented. Remittances requested from unknown correspondents. Post-office orders to be made payable to BASS AND BROWN, or STEPHEN BROWN.

Seed and Horticultural Establishment, Sudbury, Suffolk.

HORTICULTURAL IMPROVEMENTS.

STRAWBERRIES exceeding two ounces each in weight, and of delicious flavour, were grown on Roberts's Strawberry Tiles last season, and exhibited at the Horticultural Show at Chiswick, and at the Royal Botanic Gardens, Regent's Park, where they obtained the highest Certificate of Merit. No appliances hitherto used are equal to these Tiles for improving the flavour and keeping the Strawberries clean. This is admitted by all who have tried them. As a further proof, many persons who have tried them have had a second and third supply, and will have much pleasure in answering inquiries, if any reference is considered necessary. They are not like articles of consumption, for when once purchased they will last for many years.

CELERY and CARDOONS of the most superb quality and size were produced by the use of Roberts's Sockets, and this season he introduces a new method of growing Asparagus, which greatly improves the quality and quantity of that valuable vegetable. He likewise gives a new mode of growing Grapes, Peaches, Figs, and other Wall Fruit, and has recently registered a Ventilating Flower Pot, which will be found invaluable to Scientific and Amateur Gardeners.

An illustrated pamphlet, with particulars and testimonials, can be had by enclosing three postage stamps to Mr. JOHN ROBERTS, 34, Eastcheap, London, where these inventions may be inspected.

FERN SEEDS.

GEORGE BENNET begs to inform the lovers of Ferns that he has still a large quantity of NEW ZEALAND FERN SEEDS; and has much pleasure in announcing that they have vegetated. Price 2*s.* 6*d.* per packet. The names of the varieties are as follows: No. 1, Todia sp., variety australis; No. 2, Alsophylla medullaris, fine variety; No. 3, Cyathea dealbata; No. 4, mixed varieties of Hymenophyllum, Trichomanes, Adiantums, &c.; No. 5, mixed varieties of Alsophylla dealbata, or Silver Tree Fern; No. 6, Cyathea medullaris. A remittance must accompany the order either in postage stamps or Post-office order, made payable at Coventry, to GEORGE BENNET, Brandon, Warwickshire, near Coventry.

MEADOW AND PASTURE GRASS SEEDS.

GEORGE GIBBS AND Co. beg to notice their mixtures for laying Land down to Permanent Grass are now ready. The general satisfaction they have given for many years past, and the present low prices of 32*s.* per acre, allowing 2 bushels and 12 lbs. to each acre, they trust will ensure a continuance of orders. Mixed Seeds for improving old Grass Land, 1*s.* 3*d.* per lb.; fine sorts for forming Lawns, 1*s.* 4*d.* per lb. Their Priced List for the season of Turnips, Mangold Wurzel, and other Farm Seeds, will be forwarded on application to 26, Down-street, Piccadilly, London.

GRASS SEEDS.—Mixtures of selected natural GRASS SEEDS, with a proper proportion of permanent Clovers, for laying down land to permanent Meadows and Pastures, to suit the soil to be laid down. Mixtures of the above for Irrigation or Water Meadows.

Mixtures of the above for Parks or Field Lawns; Italian, Perennial, and other Rye-grasses; Long Red, Yellow Globe, and other Mangold Wurzel; Swedes (various sorts), Hybrid and other Turnips; all kinds of Grass Seeds, Agricultural and other Seeds.—THOMAS GIBBS and Co., the Seedsmen to the Royal Agricultural Society of England, corner of HALF-MOON-STREET, Piccadilly, London.

CHEAP BEDDING PLANTS.

JOHN HAYES, FLORIST, Farnham, Surrey, will send out the following Bedding Geraniums, 3*s.* 6*d.* per dozen; all other kinds of Bedding Plants, 2*s.* 6*d.* per dozen. Geraniums sent out of pots, 2*s.* 9*d.* per dozen; all other kinds, 1*s.* 8*d.* out of pots. Descriptive Catalogues sent on the receipt of 1*d.* postage stamp.

FARNHAM CASTLE CUCUMBER.—Two Seeds of this stout Black Spine Cucumber will be sent, on the receipt of 12 postage stamps. May be grown 24 inches long. Twelve seeds of Prize-fighter, ditto, for 12 stamps.—May 4.

EDWARD BECK, SLATE WORKS, ISLEWORTH.
SLATE CISTERNS, &c.; COLE'S PATENT.

E. BECK informs Horticulturists and the Public generally that Mr. COLE has granted him the use of his Patent for the unexpired term, and he is now able to supply SLATE CISTERNS fastened without iron bolts or the usual oil cement, thereby doing away with the difficulty which has hitherto existed of forwarding such articles by rail or waggon, fixed and ready for use instead of in pieces, as heretofore.

E. B. will be happy to answer any inquiries as to the price of Cisterns, or any other Slate articles manufactured by him, such as Orange Tubs, Plant Boxes, Tanks, Shelves, Garden-path Edging, Hot-water Tank Covers, Flower Boxes for Balconies, Shelves fitted to hold water for Orchidaceous Houses, &c., all of which may be seen in use at Worton Cottage, Isleworth, on application to the Gardener, Sundays excepted.

Estimates given for Work as shown upon Drawings, and in specifications. A large stock of Slate Slabs of all sizes and thicknesses, kept on sale.

N.B.—Dairies fitted either with Shelves or Milk Pans, of very neat appearance.

EDWARD GEORGE HENDERSON, Wellington-road Nursery, St. John's Wood, London, begs to offer the following Plants, which can be supplied immediately.

NEW BEDDING PLANTS.

Bouvardia leiantha, 5*s.*; Cuphea Donkelaarii, 3*s.* 6*d.*; Cuphea miniata speciosa, 5*s.*; Heliotropium corymbosum, 3*s.* 6*d.*; Lantana delicatissima, 2*s.* 6*d.*; Lobelia erinus maxima, 9*d.*, or 8*s.* per doz.; Lopezias villosa, 1*s.* 6*d.*; L. miniata, 1*s.* 6*d.*; L. miniata superba, 1*s.* 6*d.*; Petunia viridis marginata, distinct, 3*s.* 6*d.*; Bouvardia jacquini, rose-coloured tube, brilliant scarlet centre, free bloomer, 1*s.* 6*d.* and 2*s.* 6*d.*

SCARLET GERANIUM, "COMMANDER-IN-CHIEF," 10*s.* 6*d.* This splendid variety should be in every garden where a Geranium is grown, as it cannot be too highly recommended for public favour.

SCARLET GERANIUM, "EXCELLENCE," 7*s.* 6*d.* An allowance to the Trade on the Geraniums where three are taken.

Maurandya Emeryana, 2*s.*; Calceolaria sulphurea splendens, a splendid large yellow, and very fine for bedding, 5*s.*; Trentham scarlet Geranium, 3*s.* 6*d.*

NEW HERBACEOUS PLANTS.

Campanula nobilis alba, 7*s.* 6*d.*; Dielytra spectabile, 5*s.*; Scutellaria canescens, 5*s.*; S. macrantha, 3*s.* 6*d.*; Anemone vitæfolia hybrida, 3*s.* 6*d.*; Delphinium azureum plenum, 3*s.* 6*d.*; and Funkia grandiflora, 3*s.* 6*d.*

SELECT PLANTS.

Ceanothus dentatus, 5*s.*; C. rigidus, 5*s.* and 7*s.* 6*d.*; C. papillosus, 7*s.* 6*d.* and 10*s.* 6*d.*; Daphne Delahayana 7*s.* 6*d.*; D. Fortunii, 7*s.* 6*d.*; Centradenia floribunda, 7*s.* 6*d.* and 10*s.* 6*d.*; Hoya bella (Veitch's), 10*s.* 6*d.*; Hoya bella (continental variety), 10*s.* 6*d.*; Gesnera picta (Veitch's), 5*s.*; G. purpurea macrantha, 5*s.*; Hydrangea involucrata, 3*s.* 6*d.*; Gloxinia Victoria Regina, 7*s.* 6*d.*; Fuchsia Prince of Orange, Fair Rosamond, Don Giovanni, Sims Reeves, Pearl of England, Grand Master, and Confidence. The seven for 30*s.*, or 5*s.* each, with the usual discount to the Trade.

For descriptions of the above see last week's Paper.

N.B. Descriptive Priced Catalogues of all the new Bedding and Soft-wooded Plants, are just published, and will be sent on application.

BAKER'S PHEASANTRY, Beaufort-street, King's-road, Chelsea, by special appointment to her Majesty and H. R. H. Prince Albert.—ORNAMENTAL WATER FOWL, consisting of black and white swans, Egyptian, Canada, China, barnacle, brent, and laughing geese, shieldrakes, pintail, widgeon, summer and winter teal, gadwall, Labrador, shovellers, gold-eyed and dun divers, Carolina ducks, &c., domesticated and pinioned; also Spanish, Cochin China, Malay, Poland, Surrey, and Dorking fowls; white, Japan, pied, and common pea-fowl, and pure China pigs; and at 3, Half-moon-passage, Gracechurch-street.

BEE HIVES.

GEORGE NEIGHBOUR AND SON respectfully announce that they have prepared for this season an extensive supply of their various IMPROVED BEE HIVES, which are offered to all who are desirous of cultivating that pleasing and profitable branch of rural economy—the Honey Bee. The collection consists of "Nutt's Collateral Hives," "The Single Box Hive," "The Amateur Bar Hive," "The Improved Cottage Hive," &c., from either of which the honey may be taken at any time without injury to the Bees, and may be worked with safety, humanity, and profit, by the most timid and unaccustomed to Bee manipulation. A descriptive paper, with drawings and prices, will be forwarded on the receipt of two postage stamps.—127, High Holborn, London.

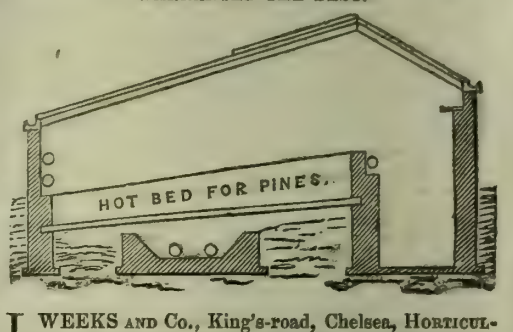
Agents: WM. DRURY, Castle-street, Liverpool; HALL and WILSON, 50, King-street, Manchester; AUSTIN and M'ASLIN, 168, Trongate, Glasgow.

DEANE'S WARRANTED GARDEN TOOLS.—Horticulturists, and all interested in Gardening pursuits, are invited to examine G. and J. DEANE'S extensive Stock of GARDENING AND PRUNING IMPLEMENTS, best London made Garden Engines and Syringes, Coalbrookdale Garden Seats and Chairs.

Averuncators	Garden Scrapers	Pick Axes
Axes	Grape Gatherers and Scissors	Potato Forks
Bagging Hooks	Gravel Rakes and Sieves	Pruning Bills
Bills	Greenhouse Doors and Frames	,, Knives, various
Borders, various patterns	Hammers	,, Saws
Botanical Boxes	Hand-glass Frames	,, Scissors
Cases of Pruning Instruments	Hay Knives	,, Shears [riety.
Chaff Engines	Hoes of every pattern	Rakes in great va-
Chaff Knives	Horticultural Hammers and Hatchets	Reaping Hooks
Daisy Rakes	Hotbed Handles	Scythes
Dibbles	Ladies' Set of Tools	Scythe Stones
Dock Spuds	Labels, various patterns, in zinc, porcelain, &c.	Shears, various
Draining Tools	Lines and Reels	Sickles
Edging Irons and Shears	Marking Ink	Sickle Saws
Flower Scissors	Mattocks	Spades and Shovels
,, Stands in Wires and Iron	Menographs	Spuds
Fumigators	Metallic Wire	Switch Hooks
Galvanic Borders and Plant Protectors	Milton Hatchets	Thistle Hooks
Garden Chairs and Seats	Mole Traps	Transplanting Tools
,, Loops	Mowing Machine	Trowels
,, Rollers		Turfing Irons
		Wall Nails
		Watering Pots
		Weed Extractors and Hooks
		Wheelbarrows
		Youths' Set of Tools

G. and J. DEANE are Sole Agents for LINGHAM'S PERMANENT LABELS, samples of which, with the Illustrated List of Horticultural Tools, can be sent, post paid, to any part of the United Kingdom.—DEANE'S Horticultural Tool Warehouse, opening to the Monument, 46, King William-st., London-bridge.

HORTICULTURAL BUILDING AND HEATING BY HOT WATER.
BOILERS OF ALL SIZES TO BE SEEN IN OPERATION, WARRANTED THE BEST.



J. WEEKS AND Co., King's-road, Chelsea, HORTICULTURAL ARCHITECTS, HOTHOUSE BUILDERS, and HOT-WATER APPARATUS MANUFACTURERS, solicit an inspection of their various Works completed and in progress. Horticultural Buildings of every variety. BOILERS of all sizes to be seen in operation, and which they warrant to be the most effective and economical of any in use. The largest size Boiler is now effectually heating three extensive ranges of Forcing-houses, 230 feet by 22 feet, all Span Roofs and lofty, containing upwards of 50,000 cubical feet of air. Also various small and intermediate size Boilers, some of all sizes in operation. The consumption of fuel is very moderate, and the fires will continue from 10 to 15 hours without attendance. The extensive arrangements now in full operation on their premises, enables them to build to any extent, and at very moderate prices. Hothouses, Greenhouses, Conservatories, Forcing-pits, Frames, Glass Lights, &c. A very extensive collection of Stove and Greenhouse Plants, which are sold at very low prices. Plans, Estimates, and Catalogues forwarded on application.

J. WEEKS and Co., King's-road, Chelsea.

TO BE DISPOSED OF, the fine BED OF TULIPS possessed by the late Mr. JOHN RONALDS, of Brentford, either in the whole bed or separately. They will be in bloom after the 10th of this month (May).—Brentford, May 4.

HOTHOUSES AND CONSERVATORIES made and fixed complete in all parts of the Kingdom, at a considerable reduction. One, two, and three-light Cucumber and Melon Boxes and Lights of all sizes, kept ready for use, packed, and sent to all parts of the Kingdom; warranted best material. Garden-lights of every description, at JAMES WATTS', Hothouse Builder, Claremont-place, Old Kent-road. Reference may be had to the Nobility, Gentry, and the Trade, in most of the counties in England.

TO FLORISTS, HORTICULTURISTS, &c.



MORRELL'S REGISTERED FLOWER LABELS are ready for delivery in any quantity; they will be found unimpaired by any change of weather, either of heat, cold, wet, or dry, and therefore suitable for the Stove, Hothouse, Greenhouse, or the open ground; also his improved Flower Sticks, of various lengths, from 12 inches upwards.—May be had of most Seedsmen and Ironmongers in town and country; and wholesale at 149, Fleet-street, London.

WM. JAS. EPPS begs to offer the following Plants, which are well established, and in fine health. Having an extensive stock, he is enabled to offer them at the following reduced prices:

GERANIUMS, varieties of last season, in 4-in. pots		36*s.* per doz.	
Do., excellent varieties		12*s.* to 21*s.*	,,
AZALEAS, all the new varieties		12*s.* to 21*s.*	,,
ERICAS, do. do.		12*s.* to 24*s.*	,,
STOVE PLANTS, do.		12*s.* to 24*s.*	,,
DAHLIAS, do. do.		6*s.* to 18*s.*	,,
PANSIES, do. do.		6*s.* to 18*s.*	,,
PETUNIAS, the best of last season ...		8*s.* to 12*s.*	,,
Do., fine varieties		4*s.* to 6*s.*	,,

Descriptive Catalogues of the above may be had on application. A large quantity of specimen Stove and Greenhouse Plants, Ericas, Heaths, Azaleas, &c., of all sizes. A remittance expected from unknown correspondents.

Bower Nurseries, Maidstone, Kent, May 4.

HOLLYHOCK SEED.

J. KITLEY begs to inform the Admirers of the HOLLYHOCK, that he has a small quantity of SEED saved from very choice double varieties of all colours, a packet of which will be sent post free, on the receipt of postage stamps to the amount of 2*s.* 6*d.*, or in 18 named varieties, for 5*s.*—Lyncombe Vale Nursery, Bath. May 4.

NEW AND UNRIVALLED SEEDLING FUCHSIAS.—Yorkshire Eclipse, 10*s.* 6*d.*; Beauty of Richmond, 10*s.* 6*d.*; Distinctus, 7*s.* 6*d.*

WM. RUMLEY and Sons beg to refer the readers of the *Gardeners' Chronicle* to their Advertisement in this Paper of April 20th, for a full description of the above splendid FUCHSIAS, which will be sent out on and after the 7th of May, with the usual allowance to the trade.—Gilling, Richmond, Yorkshire.

DAHLIAS.— Magnificent (Keynes'), 10*s.* 6*d.*, 9 certificates; Sir F. Bathurst (Keynes'), 10*s.* 6*d.*, 9 certificates; Snowflake (Dodd's), 10*s.* 6*d.*, 5 certificates; Queen of Primroses (Keynes'), 10*s.* 6*d.*, 5 certificates; Gaiety (Dodd's), 7*s.* 6*d.*, 4 certificates; Elizabeth Proctor's Fancy, 10*s.* 6*d.*, 7 certificates; Highland Chief, 7*s.* 6*d.*, 5 certificates; Flying Dutchman, 7*s.* 6*d.*, 5 certificates; Forget-me-not (Hooper's), 7*s.* 6*d.*, with all the leading show flowers of the season, are now ready for sending out, in extra fine plants, on application to JOHN KEYNES, Castle-street Nursery, Salisbury.—May 4.

MESSRS. S. AND J. DILLISTONE beg to offer the following, in good plants:

Antirrhinums, fine	... ...	4*s.* to 9*s.* per dozen
Dahlias, show and fancies	... ...	6*s.* to 12*s.* ,,
Fuchsias, fine	... ...	6*s.* to 12*s.* ,,
Geraniums, in fine variety	...	6*s.* to 12*s.* and 18*s.* ,,
Ditto, scarlet	... ...	6*s.* to 9*s.* ,,
Heliotropes	... ...	4*s.* to 9*s.* ,,

Herbaceous Plants, in choice variety, 5*s.* per doz.; 30*s.* per 100.
Myosotis azoricus, a beautiful blue bedding plant, of dwarf habit, 1*s.* each; 9*s.* per dozen.
Petunias, in fine variety, 4*s.* to 12*s.* per dozen.
Roses, fine variety of Tea, China, Bourbon, and Noisettes, 6*s.*, 9*s.*, and 12*s.* per dozen.
Phlox, the very finest ... ... 6*s.* to 12*s.* per dozen.
Verbenas, the best French and others ... 4*s.* to 12*s.* ,,
Verbena, "Lilac Defiance," a fine lilac, and perfumed; habit of Scarlet Defiance, admired and ordered by all who saw it in autumn; only a few plants to spare, at 5*s.* each.
Quantities of Bedding Plants, in assortments, 4*s.* per dozen; 25*s.* per 100.
Remittances are respectfully requested from unknown correspondents. Carriage of all parcels paid to London.
Sturmer Nurseries, Haverhill, Suffolk, May 4.

"SUNSET" VERBENA.

MESSRS. JEYES AND CO. have much pleasure in offering for Sale the above Verbena. The two eminent growers named below have described its character.

"Your Verbena 'Sunset' is quite distinct from any other scarlet. Its habit for bedding is the best we know of. The name is well applied, for a mass of its flowers has all the appearance of a declining sun.—DANIEL JUDD, Gardener to the Right Honourable Earl Spencer, K. G.; WALTER GREY, Gardener to the Right Honourable Sir James Parke."

Plants 5*s.* each; if two are ordered three will be sent.

P.S.—The Prices of the Rare Flower Seeds advertised and described in this Paper of March 9 are—Hibiscus speciosa, 2*s.* 6*d.*; Æthionema membranaceanum, 6*d.*; Myosotis azoricus, 2*s.* 6*d.*; Pentstemon Murrayanum, 2*s.* 6*d.*; Calandrinia umbellata, 2*s.* 6*d.* per paper.—Northampton, May 4.

RENDLE'S PRICED CATALOGUE OF PLANTS is JUST PUBLISHED, and can be had for one postage stamp.

Ever since our invention of the "Tank System of Heating Horticultural Buildings" (for which a Gold Medal was unanimously awarded to us by the Royal Devon and Cornwall Horticultural Society) we have been enabled to propagate plants in such abundance, with scarcely a failure, that we are enabled to offer them at

VERY REDUCED PRICES.

We shall have at least THREE THOUSAND DAHLIAS and FUCHSIAS ready for delivery after the 10th of May next, as well as a large quantity of Geraniums, Camellias, Indian Azaleas, Cinerarias, Verbenas, Antirrhinums, Chrysanthemums, with a large collection of Greenhouse, Hothouse, and Herbaceous plants, prices of which will be found in our new Catalogue, on application to

WILLIAM E. RENDLE & CO., Seed Merchants, Plymouth. ESTABLISHED 1786.

STAR NURSERY, SLOUGH, BUCKS.

W. R. BRAGG begs to inform the Floral Public that his Annual Spring Catalogue contains Descriptive Lists of E. Foster's new and superlative Pelargoniums; the best varieties of Pinks, Picotees, Carnations, Pansies, Roses, &c., and may be had on application.

GIPSY PRIDE, by far the most successful Pelargonium of 1849, may still be had; also Constance, Conspicuum, Narcissus, Armida improved, and all the best show varieties of last and former years, in extra strong plants.

NEW PANSY, HUNT'S "HELEN," has gained more first class certificates in 1849 than any other variety now offered, and, beyond doubt, is quite a leading white-ground flower; plants are fine and healthy. 5*s.* each.

GOLDEN YELLOW DAHLIA, OLIVER'S "GOLDEN DROP," gained four first prizes and first class certificates in 1848, &c., five of each in 1849. Plants in May, 10*s.* 6*d.*

NEW FANCY DAHLIA, BRAGG'S "LADY GRENVILLE," the most successful fancy Dahlia of the year; colour, deep red, distinctly tipped with white; as a guarantee for constancy, it has received 11 first class certificates, four extra money prizes, and two premier prizes in class showing. Plants in May, 10*s.* 6*d.* Sound ground and pot roots of all the best Fancy and other Dahlias, at moderate prices.—May 4.

ANTIRRHINUMS UNEQUALLED.

EDWARD TILEY begs to inform the lovers of the above beautiful flower, that he will be ready to send out, after the 7th May, Five superb Seedling ANTIRRHINUMS, selected from above ten thousand seedlings. Ne plus ultra, 5*s.*; Lady William Powlett, 5*s.*; Criterion, 5*s.*; Lord Gough, 5*s.*; Major Edwardes, 5*s.*

The above varieties will be found to be very superior to anything of the kind yet sent out. They were admired by hundreds of spectators, and numerous orders were taken for them when in bloom. Blooms were sent to the Editor of the *Gardeners' Chronicle*, who spoke in the highest terms of them. "Ne plus ultra" was sent to Mr. Henderson, Pine-apple Nursery, who highly approved of it, and ordered plants. They are dwarf habited, and very free bloomers; large bold flowers beautifully striped with large flakes of various colours, some of them finely splashed and studded over on various coloured grounds, which give them a very attractive appearance—above all the older varieties. The set of 5 will be sent for 1*l.*

E. T. being a grower of all the best varieties, warrants them to give the greatest satisfaction to all purchasers. Parties living at a distance can have them sent through the post, carefully packed in stout boxes, postage and package free, on the receipt of Post-office order for the amount of plants required. A remittance or reference is expected from all unknown correspondents. The usual allowance to the trade when three plants are ordered.—EDWARD TILEY, Nurseryman, Seedsman, and Florist, 16, Pulteney-bridge, Bath, May 4.

HORTICULTURAL SOCIETY OF LONDON.—EXHIBITIONS AT THE GARDEN.

The First Meeting will take place on SATURDAY, the 18th of May. Subjects for Exhibition must be at this Office on Friday the 17th, or at the Garden before half-past Eight o'clock, A.M., on the day of Exhibition.

The Gates will be open to visitors at One, P.M. Tickets are issued to Fellows at this Office, price 5*s.* each, or at the Garden in the afternoon of the days of Exhibition, at 7*s.* 6*d.* each; but then only to orders from Fellows of the Society.

N.B. No Tickets will be issued in Regent-street on the day of Exhibition. 21, Regent-street.

WORTON COTTAGE MEETINGS.—Raisers of seedlings and others will please to observe these meetings will not be held when the Metropolitan Exhibitions fall upon a Wednesday, as that of the Botanical Society does next week.

*** Flowers may be sent as usual for the opinion of the Censors of the "Florist and Garden Miscellany."

EDWARD BECK, Worton Cottage, Isleworth.

ZOOLOGICAL GARDENS, REGENT'S PARK.—Admission every day in WHITSUN WEEK, except Saturday, at SIXPENCE each person.

The Gardeners' Chronicle.

SATURDAY, MAY 4, 1850.

MEETINGS FOR THE ENSUING WEEK.

MONDAY,	May	6	Entomological	8 P.M.
			Chemical	8 P.M.
			Pathological	8 P.M.
			Medical	8 P.M.
			British Architects (Anniversary)	8 P.M.
TUESDAY,	—	7	Linnean	8 P.M.
			Civil Engineers	8 P.M.
			Royal Botanic Gardens	2 P.M.
			Literary Fund	3 P.M.
WEDNESDAY,	—	8	Society of Arts	8 P.M.
			Graphic	8 P.M.
			Ethnological	8 P.M.
			Geological	8 P.M.
THURSDAY,	—	9	Royal Soc. of Literature	4 P.M.
			Antiquarian	8 P.M.
			Astronomical	8 P.M.
FRIDAY,	—	10	Philological	8 P.M.
			Royal Institution	8 P.M.
SATURDAY,	—	11	Asiatic (Anniversary)	2 P.M.
			Westminster Medical	8 P.M.

COUNTRY SHOW.—Friday, May 10: Stamford Hill Horticultural.

THE REPORT of the COMMISSIONERS appointed to inquire into the Constitution and Government of the BRITISH MUSEUM must be regarded as a document of the highest importance to those who desire to secure a right application of the large sums annually granted for the maintenance of this huge public collection. And although we, in common we believe with most men of science, are obliged to differ from the commissioners in some of the conclusions they draw from the evidence laid before them, yet we are bound to say that the evidence has been collected with industry, sifted with patience, and considered with an impartiality which, if it does not command an acquiescence in the commissioners' views, at least entitles them to respectful attention. The fault of the report lies in the commissioners having occasionally allowed their judgment to be biassed by the scientific reputation of some of the officers, whose peculiar views they consequently adopt without sufficient inquiry. They have scarcely considered that a great amount of technical knowledge may be combined with contracted judgment in matters of public policy. Nor have they always perceived that a principle of action which may be tolerable in private affairs becomes indefensible when applied to national interests.

About three years have elapsed since we ventured to suggest the expediency of removing to the Royal Botanic Garden, at Kew, the whole of the botanical department of the museum, together with a good selection of modern books upon natural history, and of connecting them with a reading-room, public lectures, &c. (May 22, 1847). The commissioners did not overlook this recommendation; on the contrary, their line of examination, in the case of some of the witnesses, was evidently taken with a view to eliciting opinions by which they might be guided. The commissioners do not, however, refer in their report to the proposal of transferring the botanical collections from Great Russell-street to Kew, whence we infer that they could not make their minds up as to that question; and they cannot take upon themselves to recommend the systematic adoption of the practice of giving public lectures, because they think that the main purpose of the museum is the "conservation and arrangement of a vast variety of material objects, from which men of science, literature, and art, may derive assistance to their researches." (p. 35.) The enlightened founder of the museum, Sir HANS SLOANE, could scarcely have anticipated such an interpretation of the desire, expressed in his will, that the natural history collections "should be rendered as *useful as possible*, as well towards satisfying the desire of the curious, as *for the improvement, knowledge, and information of* ALL PERSONS."

To us it appears that words like these will bear but one interpretation—namely, that the museum collections were to be made useful to all persons, in every way that increasing knowledge and intelligence might point out. The commissioners can hardly mean to say that public lectures do not aid, very materially, in making such collections conducive to "the improvement, knowledge, and information of all persons;" nor can they intend to limit the collections to "the satisfying the desire of the curious." Nevertheless the effect of their decision is to make the museum a mere spectacle for idlers to stare at. The commissioners admit that the practice of the "HUNTERIAN collection, and that of the Jardin des Plantes and other Continental institutions is in favour of the introduction of this practice," and yet they cannot recommend it. That is to say, they think that what works well in Paris and elsewhere is not to be adopted in London, and that a practice which is found of great public utility in Lincoln's-inn-fields would be of no utility in Great Russell-street. The commissioners dwell upon the inexpediency of allowing the collections to be placed "at the disposal of lecturers not attached to the museum;" and there we agree with them; the museum officers should themselves deliver the lectures. The commissioners think otherwise; they say that superintendence and management are alone sufficient "to engross the time and the abilities" of the officers of the museum. If this were so more aid should be given. But is it so? We submit that the following facts, disclosed by the witnesses, entirely negative the supposition.

The keeper of the Banksian collection states (qu. 8315) as follows: "The general or arranged Herbarium at present consists of about 30,000 species, *certainly not more*, possibly somewhat less. The unarranged, or geographically arranged collections, may *probably* furnish 5000 or 6000 additional species." We may therefore assume the herbarium, whose arrangement, "superintendence and management," are alone sufficient to engross the time and the abilities of the officers of the botanical department as containing 36,000 species. This department of the museum was formed in 1827, or 23 years ago, from the great herbarium left by Sir JOSEPH BANKS. We have no knowledge of the extent of that collection: but it will, we imagine, be admitted by the friends of that great man that it could scarcely have contained fewer than 30,000 species, enriched as it had been for a quarter of a century by the contributions of learned foreigners, by purchases, and by the botanical collectors employed by the British Government. We have, therefore, 6000 additional species arranged, &c., in 23 years. Now, it appears from Parliamentary papers, that during this period two officers have been employed, with the aid of one or more assistants, and that the number of working days is 152 in each year for the principal keeper, and 230 for the under-keeper; so that there are 382 days of attendance in each year between the two officers. This being so, it follows that each of these additional 6000 species has demanded very nearly a day and a half for its incorporation with the herbarium!! What the expense has been is not known to us, our file of Parliamentary papers being very incomplete; but we see that the annual cost of superintendence is now 575*l.*, and if, in order to make allowance for less assistance supplied the Botanical department in former years than it now receives, we average the annual charge at 500*l.*, it will follow that the whole cost has been 11,500*l.* in 23 years, or *nearly two pounds* per species. This must be admitted to be a startling result, when it is recollected that the value of such things is about 6*d.* per species, and that the number of species contained in the herbarium of the British Museum is very considerably less than in some private herbaria of this country, for which no aid in superintendence, arrangement, and management has been supplied beyond what could be derived from the leisure of their possessors.

What the present condition may be of the collection thus expensively superintended, arranged, and managed, we have no knowledge: but if it is at all like what a part of it was when consulted by us some years since, we can only say that 11,500*l.* has been paid by the nation to very little purpose.

At all events, in the face of such a statement as this, it is difficult to understand how the commissioners could have assigned want of leisure as a reason why public lectures should not be given by the museum officers. The public will be apt to assign a very different reason. For ourselves, we believe that the value to the country of the natural history department would be essentially increased if a series of lectures, adapted to the wants and wishes of the public, and separated from mere technicalities, which would be neither understood nor appreciated, were delivered at stated periods by men of such scientific rank as that possessed by some of the officers of the museum. The knowledge, the tact, the anecdotes, and the conversational skill of the present keeper of the Banksian collection should surely fit him for this important duty.

Lectures, however, would be more appreciated, and would be more conveniently delivered in a garden than in such a place as the British Museum, and we must therefore examine, but on a future occasion, into the reasons which have been offered to the commissioners against sanctioning the removal of the dried plants from Great Russell-street to Kew.

THE STANWICK NECTARINE is at length announced for sale. On Wednesday the 15th of May the first 24 plants which it has been possible to propagate

will be brought to the hammer by Mr. STEVENS (see Advertisement), and no further supply can reach the market until next winter: so that the purchasers of these plants will be one clear year in advance of the earliest possessors of any which may be offered for sale hereafter. We mention this for the purpose of correcting a misapprehension upon the subject; some persons having imagined that the present sale is to be speedily followed by another. Beyond the 24 which Mr. STEVENS is now directed to sell, no other young plants at present exist.

The original Nectarine tree is in the possession of his Grace the Duke of NORTHUMBERLAND, at whose seat, at Stanwick, it has borne fruit for several years, and from which it derives its name. The Duke received it from the late Mr. BARKER, of Suædia, in Syria, a gentleman whose attention had long been turned to the acquisition of the finest fruit trees of the East, in the hope that they might be valuable in his native country. It was his anxious desire that such as proved to be adapted to the climate of the United Kingdom might be immediately dispersed; and the sale now announced is in furtherance of Mr. BARKER'S benevolent design. In surrendering his property in it to the public, the Duke of NORTHUMBERLAND has resolved that the proceeds, after paying the expenses of propagation, &c., should be transferred to a fund in aid of the Benevolent Institution for the Relief of Infirm Gardeners: a plan in which Mr. BARKER heartily concurred, and which we trust that the well-wishers to this excellent charity will heartily support. The sale will take place on the anniversary of the Institution, and the purchasers will have the satisfaction of knowing that in this instance they may contribute materially to its funds, while at the same time they are consulting their personal interests.

In excellence the Stanwick Nectarine is as far beyond all other Nectarines as a Green-gage Plum is beyond all other Plums. Beyond this praise cannot reach. It may, nevertheless, be as well to repeat on the present occasion what we stated some time since, when the high quality of the Nectarine had first become perfectly ascertained:

"The Nectarine forming the subject of this notice is about the size of an Elruge, and like it in shape, except in being less heart-shaped at the base. Its skin is pale, like that of the white Nectarine, where shaded, with a violet tinge next the sun. The flesh is white, exceedingly tender, juicy, rich, and sugary, without the slightest trace of the flavour of prussic acid. The stone is middle-sized, ovate, with rather a prominent sharp edge, very rugged, and of a chocolate colour. The kernel is sweet, like a nut, possessing nothing of the Bitter Almond flavour. The fruit of the Peach and Nectarine, partaking so much as it does of the quality of the Bitter Almond, must have been very deleterious in its unimproved state; but the varieties now generally cultivated retain but little of the injurious properties ascribed to the species by ancient authors; and, when well ripened, they can be generally eaten with impunity, notwithstanding the slight prussic acid flavour which pervades even their luscious sugary juice; but some constitutions are liable to be affected by this trace. It was, indeed, considered unlikely that amelioration would be carried much further. For at least a century little improvement has been effected, and in every variety the kernels have proved intensely bitter. But at last this is overcome; in the specimen above described the deleterious quality considered inherent in the species has disappeared; and Mr. BARKER himself informed me that his fruits with sweet kernels may be eaten as a full meal, in quantities, at any time of the day, and repeatedly, with perfect safety."

"To this we have nothing to object except that it scarcely gives the Stanwick Nectarine so high a character as it deserves. In fact, at the time when the description was written, its full value was imperfectly understood, the fruit which reached London having been damaged in the carriage. We have lately, however, been favoured by his Grace the Duke of NORTHUMBERLAND with a liberal supply, which arrived in the most perfect condition, and we can now appeal to various persons near London, who had the opportunity of tasting it, as witnesses to its unrivalled excellence. 'The most delicious Nectarine I ever ate.' 'The flavour is very delicious, and it is altogether most exquisite; I do not wonder at your speaking in such high terms of it.' 'It is a superb fruit.' 'Most delicious.' Such is the language in which great judges of fruit, accustomed to the finest known varieties, have spoken of the specimens they received."

This evidence is conclusive as to the great importance of the Stanwick Nectarine to our country, and we confidently believe that the time is not distant when it will be found in every fruit-garden in the United Kingdom.

ON THE PRESENCE OF IODINE IN FRESH-WATER PLANTS.

BY M. AD. CHATIN.

BY verifying the circumstance pointed out by Müller (Lindley's "Vegetable Kingdom," page 363), viz., the presence of iodine in a species of Cress of unknown origin, M. Chatin has ascertained—That iodine exists in the common Water-cress, and that this fact is neither peculiar to this species nor common to all Crucifers; that iodine is entirely absent from, or that, at all events, it cannot be found in terrestrial, whilst it is always present in aquatic plants; that of the latter, those living in running contain more iodine than those living in stagnant water; that, if the stagnant water is large enough to be much disturbed by the wind, the quantity of iodine in the plants growing in the water is more nearly equal to that in plants found in running water; that the quantity of iodine found in plants is, as a general rule, independent of their nature, but dependent on their habitat—this is shown by Confervas, Potamogetons, Nymphæas, Ranunculuses, Cresses, which are all equally rich in iodine when in running water, and all equally poor when in stagnant pools; and that the iodine is not combined with the tissue of the plant, but exists as an alkaline iodide dissolved in the sap.

Among the plants, from the examination of which the above results were deduced, M. Chatin enumerates the yellow Alyssum (Alyssum saxatile), Cabbage (Brassica oleracea), Shepherd's-purse (Capsella Bursa-pastoris), Erysimum, Wallflower, Horse-radish (Cochlearia armoracia), Radish (Raphanus sativus), as being all terrestrial Crucifers containing no iodine. Water-cress (Nasturtium officinale), Nasturtium amphibium, Conferva crispata, Chara fœtida, Fontinalis antipyretica, Bullrushes (Typha angustifolia and minima), Scirpus lacustris, Reed (Arundo phragmites), Acorus calamus, Sagittaria, Potamogeton crispum and pectinatum, Beccabunga, Phellandrium aquaticum, Gratiola, Water Ranunculus, all are Crucifers and other plants containing more or less iodine.

Whence comes the iodine which is found in fresh-water plants? They certainly do not form it. It is impossible that it should be derived from the salt springs and mineral sources in which it has been detected by Angelini, Cantu, O. Henry, and others; for it is found not only in plants growing in large rivers, such as the Seine, the Marne, and the Isère, but also in those growing in every brook, pond, and marsh. It comes, M. Chatin concludes, from every part of the earth from which, associated with chlorides, it is dissolved out by the flowing of the water. This explains why plants in running streams contain the most iodine; for in them one portion of the water is no sooner deprived of this element than more water with a fresh supply arrives to be exhausted in its turn.

And how does the iodine get into the plants? Is it through their whole surface, which separates it from the water by a peculiar action, as oxygen is, according to M. Ad. Brongniart's ingenious theory, separated in the process of respiration? Or does the iodine enter along with the water, either by the surface or the roots of the plants, and then become concentrated in their tissues in consequence of the exhalation of the same water, thus destroying M. Dutrochet's theory that plants which live in water do not transpire?

This discovery of the existence of iodine in fresh water plants explains the anti-scrofulous, anti-tuberculous, and other similar properties of Phellandrium, Water-cresses, Brooklime, &c., and the reason of the preference given to those plants which grow in running streams, as well as of the common custom of prescribing the habitual use of aquatic plants for persons living in those countries in which goitre is endemic. The water in which the ashes of these plants have been washed may be used for the same purpose, unless it be found more advantageous to extract the iodine from them.

M. Chatin, in analysing the plants, carefully calcined them, washed the ashes with boiling water, and tested for iodine with starch, sulphuric acid, nitric acid, and nitrate of potash and sulphuric acid. The discolouring of the liquids and the volatilisation of the iodine by the application of heat were always used as checks. According to their richness in iodine the plants furnished an intense violet colour immediately, or the same colour after the lapse of a short time, or a violet purple colour immediately, or after a more or less long space of time.

In making these operations several precautions are necessary. A portion of the iodine will be lost if the plant to be calcined be not moistened with a solution of caustic potash, and when this is done the ashes become inconveniently fusible. Saline mixtures, especially if rich in carbonates, mark the reactions more or less, particularly that of chlorine. The iodine disappears with great rapidity in solutions which are either too hot or too concentrated, and it is not easily to be detected in solutions that are a little too weak, &c. *Comptes rendus.*

KALE OR BORECOLE.

ALSO called *Kail, Open Kale, Winter Greens, Chou Cavalier* (derived from *Chou caulier*, alluding to *caulis*, a stem), *Caulet, Choux verts, ou non pommés, Grüne* or *Braunkohl ohne Kopfe, Cavolo aperto.*

The varieties of these are endless; they differ in having stems dwarf, or tall; leaves more or less cut and curled; in colour green, purple; or variegated with purple, red, green, and yellow. The transformations of all these render any attempt to give minute descriptions quite useless; it will be sufficient to point out the general characters of varieties that may be usefully distinguished as such.

1. *Dwarf Green Curled*, aliàs Dwarf Curled Kale, Very Dwarf Green Curled, Dwarf Winter Curled, Scotch Kale, Green Scotch Kale, Dwarf Curlies, French Dwarf Curled, Canada Dwarf Curled, Labrador Kale, Green Borecole, Dwarf Green Borecole, Frisé vert à pied court, Frisé à pied court. By one or other of the above names this is certainly known to everyone. The Canada Dwarf Curled was found to represent exactly the finest Dwarf Curlies grown many years ago in some parts of Scotland, the plants being very dwarf and closely curled.

2. *Tall Green Curled*, aliàs Tall German Greens, Tall Scotch Kale, Tall Green Borecole, Tall Greens, German Tall Curled Greens, Green Winter Greens, Frisé Vert du Nord, Frisé Vert du Nord Grand, Chou frisé, Chou frangé du Nord, Chou frisé non pommé, Chou frisé d'Allemagne, Grosser Grünkohl, Krauser Grünkohl, Nordischer Grünkohl. Height usually from 2 to 3 feet; but 2 feet is the preferable growth. The plants are capable of enduring severe frost; and, like the preceding, it affords the best Greens from the time after the first frost has mellowed its flavour, until the middle of February.

3. *Purple Borecole*, aliàs Purple or Red Borecole, Tall Purple Kale, Purple Winter Greens, Brown Kale, Purple Kale, Curled Red Kale, Curled Brown Kale, Braunkohl of the Germans. This in its formation and habit differs little from the Tall Green Curled; but the colour is deep purple; as the leaves enlarge they have an inclination to become green, but the veins still retain the purple hue.

4. *Variegated Borecole*, aliàs Variegated Kale, Variegated Plumage Kale, Chou Plume, Frisé panaché, Aigrette, Chou frisé, Vert et rouge, Bunten Plumage Kohl, Federkohl. A sub-variety of the Purple Borecole, having the leaves beautifully variegated; sometimes green and yellowish white, green and purple, bright red, purple, and green. It is occasionally employed for garnishing; but it is very good cooked, after frost. It is not quite so hardy as the Purple Borecole.

Dwarf Purple Borecole or Frisé rouge à pied court; and the *Dwarf variegated*, are merely sub-varieties of the two preceding, distinguished by their dwarfer habit of growth.

5. *Buda Kale*, aliàs Prussian Kale, Prussian or Buda Kale, Buda Greens, Russian Kale, Hamburgh Kale, Anjou Kale, Manchester Kale, Asparagus Kale, Duke of York's Kale, Camberwell Kale; and so closely allied as not to be worth distinguishing from it, are the Jerusalem Kale, Delaware Greens, Delaware Kale, Ragged Jack, Jagged Kale, Dwarf Feathered Kale, Chou à feuilles laciniées, Chou à feuille de Chêne. The Buda Kale is not so tall as the Purple Borecole; very hardy; leaves purplish, somewhat glaucous, cut and fringed. It has been blanched, in some cases, like Seakale.

Woburn Perennial Kale.—This is a tall variety of the Purple Borecole, with foliage very finely divided or fringed. The plant lasts many years, and may be propagated by cuttings, as it neither flowers readily nor perfects well its seeds. Its produce at Woburn is stated to have been more than four times greater than that of either the Green or the Purple Borecoles on the same extent of ground. The weight of produce from ten square yards was 144 lbs. 10 ozs.; but some of the large kinds of Cabbages and Savoys will exceed this considerably, and prove of better quality. The Woburn Perennial Kale can, therefore, only be recommended where the climate is too severe for the more tender kinds of the Cabbage tribe.

Tree Cabbage, aliàs Great Cow-Cabbage, Cesarean Borecole, Chou en Arbre, Grand Chou à Vache, Chou Cavalier, Chou à Chèvre, Grand Chou Vert, Chou Vert de Touraine, Baumkohl, Grosser Kuhkohl.—This grows to the height of six feet; and in La Vendée and in Jersey it is reported that it attains the height of twelve feet or upwards. The leaves are large, smooth, or but slightly curled; its sprouts are said to be good when cooked, and cottagers might grow it with advantage in some cases, as it affords a supply for cattle. Its merits, however, have been greatly over-rated, for, when tried in this country against other Cabbages, its produce was nothing extraordinary.

The *Thousand-headed Cabbage*, aliàs Chou à mille têtes, Chou à Mille têtes du Poitou, Chou branchu du Poitou, is allied to the preceding, but does not grow so tall, and sends out numerous side-shoots. On the whole it is preferable to the Tree Cabbage.

Flanders Kale, or Caulet de Flandre, is a tall-growing kind, distinguished from the Tree Cabbage by its purplish foliage.

Cockscomb Kale, or Chou à feuilles prolifères, produces sprouts, along the ribs, on the surface of the leaves; but is of little value. *R. T.*

DISEASES OF PLANTS.

(*Continued from p.* 261.)

The three last genera of injuries being generally caused by the work of insects lead me to the following observations in the form of an appendix.

On the Diseases which have been individualised by the Name of one or more Insects, or which have been attributed to Insects.—Almost all writers on vegetable pathology have agreed in placing amongst diseases of plants the injuries caused by insects; following up on this occasion the ideas on entomology entertained in the times of Theophrastus and Pliny. Thus some, in describing the effects of worm-eating, seem disposed to revive the doctrine of spontaneous generation. I will not stop to refute this opinion, as it appears that Linnæus, Redi, Vallisneri, and others, have sufficiently demonstrated its falsity. I will only observe that all the chief maladies depending on insects may be classed under one or other of the three last preceding genera. I will also mention the principal facts and phenomena

which the greater number of those for whom I write may themselves witness, and which, I flatter myself, may prove to be of some utility.

The most careful observations of naturalists have shown that there perhaps is not a single species of plant that is not attacked by some insect or another. The motives for which they invade them are these: 1, to procure nourishment for themselves; 2, to place their offspring in safety; 3, to protect themselves from their enemies, and insure their own safety whilst performing some of the functions to which they are destined by nature. Plenck is the one of all others who has treated of these diseases with the greatest accuracy. He places among ulcers the ulcerations caused by insects, and the disleafing or stripping of leaves by the same, classing both diseases amongst wounds. In his class of fluxes he mentions the albugo of aphides, their honey dew; in that of cachexies he includes chlorosis from insects, blotches, phthiriasis, vermination, phthisicalness caused by the stripping of foliage by caterpillars; among excrescences he has Rose galls [bedeguar?], scaly productions, &c. To me it appears that the whole of these maladies are real wounds in their origin, which have in their consequences been so fatal to the plants. We shall see that neither these, nor several other diseases come on but by the effects of laceration such as that caused by coleoptera, by incisions, or intrusion, as for example that of the cynips tribe; or by puncture and suction of the juices, as is done by the gall insect. These insects may be considered as the most terrible enemies of plants.

I would refer to the genus *Strangulation*—

1. The *webs* of insects. It is not the spider only which with the threads of its web suffocates some plants. Many other insects, and especially those of the family of lepidoptera, either in passing to the state of chrysalis, or to defend them from their enemies, or simply in order to live, take possession of leaves, sometimes roll them up like a little horn, after having, to facilitate the operation, lacerated some part, sometimes stretching threads from leaf to leaf, knot them together to form a receptacle for their young brood, as may be observed on fruit trees, especially on the Pear, Apple, and Plum, and above all, here, in the Bolognese district, on the Cherry. These leaves being thus prevented from performing their ordinary functions, the worst consequences must follow, especially in young trees. Thus the curculio of the Cherry, the Pear, and the Vine, in some seasons, causes the desiccation of some branches, from the leaves having been curled up when young. This evil must be prevented by examining the branches in winter and clearing away all the masses of leaves of the preceding year remaining about the trees, which are all nests of insects, and burning them immediately.

To the genus of *Lacerations* belong—

2. *Disleafing* or *stripping of leaves*.—There is scarcely a plant whose leaves do not serve as food to some insect. Nearly all the larvæ of lepidoptera and coleoptera live upon them. Many beetles, such as the cockchafer, feed in the same way in their perfect state; the cockchafer is particularly fond of the Maple, at any rate with us. Thus sometimes we see the leaves of trees so eaten by insects that nothing remains but the fibres, whilst in other cases all the internal substance is eaten away and the epidermis alone remains. The Phalæna Bombyx graminis *L.* destroys meadows by eating the Grasses.

3. *Fall of buds*.—In the same manner the young buds of plants are attacked by insects such as the larvæ of lepidoptera, whilst those of coleoptera which live underground are as destructive to the roots. There is one larva which lives on the root of the Lucerne and kills it, another on the Rye, and a third on the Hop roots.

4. *Truncated plants*.—We not uncommonly may observe plants as it were truncated or broken off. If examined it will be observed that they contain a larva which has devoured the substance of the plant where it appears broken off. This once happened in a hemp field destroyed by a pyralis, described by me in a special memoir. One year again in a nursery of grafted trees, and in the espaliers, many young trees were broken off from the ravages of, I believe, the Cossus æsculi of Fabricius. Naturalists well know that the larvæ of certain insects are only to be found in the interior of plants.

5. *Chancres from insects*.—This name is given to a disease which causes so many trees to perish from being pierced, bored, and deprived of their internal substance, of which nothing remains but a sponge-like mass. This is clearly owing to insects, which produce the mischief in their larva state, remaining a long time within the trunk of the tree. Thus we know that the brown cockchafer and the stag-beetle destroy trees. The latter, which is the Lucanus cervus of Linnæus will sometimes kill the most vigorous Oaks, as the larva of the Phalæna cossus *L.* occasions the death of so many Willows, and the Sirex spectrum *L.* lives in Pines and Firs. Some will have it that these chancres are also caused by earthworms, but it does not appear that such animals feed on vegetables.

6. *Chlorosis from insects*.—Plenck having observed that some plants, such as Rye, lost the colour of their ears, which remained small and poor, called these plants chlorotic, attributing that state to insects, from having observed some nestled in them. To me it appears to be a case of the results of laceration.

VILLA AND SUBURBAN GARDENING.

Public taste as regards certain plants is exceedingly capricious. The favourite of to-day, so to speak, is supplanted by some fresh candidate for our esteem on the morrow, and however undeservedly, it almost vanishes from our gardens. This has been the fate of the once much prized Calceolaria, a circumstance which may in part be attributed to the difficulty amateurs have experienced in wintering it. I have frequently heard amateurs say that they had given up the culture of the Calceolaria, as their stock entirely disappeared during winter, and on the return of every spring a fresh supply was wanted. Almost all the best growers of the Calceolaria prefer young plants which have been struck in the autumn, and kept in a dormant state during winter. I have wintered Calceolarias without loss on a shelf over the pathway of a common greenhouse, or on one at the back of the house close to the glass. In such situations they very rarely damp off. I have kept hundreds of the choicer kinds this winter with scarcely a failure, but then great attention has been paid to them as regards the supply of water. Just enough should be given to keep them from flagging until they show signs of growth in spring, when they should be repotted at once into the pots in which they are destined to bloom. The plants may then be placed on the shelves of a well constructed and well ventilated greenhouse, or in a common frame; in the latter situation they must be carefully protected from frost, and plenty of air must be given them on all favourable occasions. The rapid progress they make under such circumstances is astonishing; one point which must never be neglected is to keep them free from the fly, an enemy which is easily subdued by fumigating the moment it appears. An eminent cultivator of these plants informed me that he never neglected fumigating them once every week from the time they commenced their spring growth until they began to open their flowers. The reason he assigned for this was, that it is difficult to discover the fly on its first appearance with the naked eye, and that prevention is better than cure. As to soil, I have found a fibrous loam, with one-fifth decomposed stable manure and half that quantity of silver sand, answers all purposes. This compost well mixed together, and the pots properly drained, will, with proper attention, insure good bloom. The production of new varieties from seed, and the mode of propagating the best kinds with certainty, will be treated of in a future article. *Pharo.*

TRADE MEMORANDA.

Will any one inform us who Mr. W. B. Doling, the Forest, Lyndhurst, Hants, is, who favours nurserymen with large orders for plants?

Home Correspondence.

Guano Beneficial to American Plants.—I have been in the habit of using guano and other strong manures in a liquid state for some years past, to the Rhododendron, Ghent and Indian Azaleas; and with great advantage. My practice is to use the guano in the proportion of 1 lb. to 30 gallons of manure-water, that runs from the stables and farm-yard. I water the Rhododendrons and Ghent Azaleas as soon in the spring as I perceive the blossom-buds beginning to swell, and continue it at the rate of 8 or 10 gallons to each plant until the flowers are expanded, varying the watering according to the weather; if the weather continues dry, water is given once a week, but if damp, only once a fortnight. I also vary the quantity given each time, according to the size of the plant, taking care that each plant gets enough. As soon as the blossoms begin to drop I again have the plants well drenched with guano-water, so as to encourage the early growth of wood; by this means the latter is made earlier, and is consequently better ripened, and the foliage is of a much deeper colour than if no stimulus had been given. I treat the Indian or Greenhouse Azaleas in the same way, with the exception of giving them a short rest for a fortnight or three weeks after flowering, when they receive but little water of any kind. I then bring them out, and give them such pruning as is necessary to keep them in a good pyramidal shape, after which they are supplied with strong guano water, until they have completed their growths; they are then placed out of doors in a sunny situation, where they remain with the pots protected from the action of sun and wind until the autumn rains set in, when they are housed for the winter. The advantage of manure or guano-water to the greenhouse Azalea is, that the blossoms are much finer, and the petals of better texture; and I find that by the use of manure-water the most deciduous kinds retain their foliage through the winter, and are well clothed with foliage when in blossom, which I consider adds much to the beauty of the plant; even the old, but now rare one, "Flore pleno," under this treatment is an evergreen, and although one of the most delicate of Azaleas, it will bear guano water as well as any of the more robust kinds. When it has not been convenient for me to have the manure-water previously prepared for the Azaleas, I have placed a piece of guano, about the size of a walnut, on the surface of the soil, and watered upon it from time to time, and I never found any bad effects from this practice. *Henry Bundy, Dynevor Castle.*

Ceanothus papillosus, C. dentatus, and C. rigidus have stood the winter here; the plants were kept rather dry. *W. Culverwell, Thorp Perrow, Yorkshire.*

The Crucifer about which "A. B." enquires is Nasturtium amphibium; after describing it in the "English Flora," Sir J. E. Smith, adds: "This plant is noticed by the celebrated M. Chateaubriand, in his account of England, for its wonderful powers of increase by root. He observed it in the river, near Beccles, where he long resided as an emigrant, and his rather florid description has excited wonder and curiosity in many, who daily, perhaps, pass over, without regard, several no less interesting works of their Creator." The fact is, the stem emits roots at each node, which strike into the mud, and after a time it ceases to be connected with the original root. The rest is poetical. *F. B., April* 30.

Bees.—Will "A Peebles Apiarian" describe the hive he uses, or at least the "doorways" and the "door," and state on what occasions he is in the habit of closing the door so that the bees have neither egress nor ingress from or to the hive; and for what period he at any one time keeps the door so shut, and the state he finds his bees in on re-opening it; as also similar information respecting the "air holes" he mentions. Will he also state what he considers to be the distance "within range of their short flight." His other remarks will be answered by a careful perusal of the articles at pages 165 and 216, excepting that I omitted to state my reason for not continuing the brine pans after May, which is, that I have found few or no bees resorting to them after that time, though I am yet uncertain whether the bees do not still entertain some desire for saline particles, as in consequence of the power of the sun the quick evaporation of the watery portion of the drainings of stables, &c., leaves the saline particles contained in the drainings more concentrated, and this mixture may be more agreeable to them, and thereby cause them to reject the plain brine. *Y.*

The Rotting of the Flowers of Brugmansia Knightii is not of common occurrence, at least as far as my observation goes, and I have seen it grown under widely different systems of treatment. Without presuming to offer an opinion as to the causes of the disease, I would recommend "Lancastria" to grow this plant in the open air during the summer months, for there it assumes a strong, robust, and vigorous habit of growth. Remove it from the greenhouse in May, and replace it in September, and it will flower abundantly, without being liable to disease; the finest plant I have seen was grown in this locality (Yorkshire) in this manner; it was covered with a profusion of its interesting flowers during the greater part of the summer; it was potted in rich turfy loam, having a small quantity of decayed vegetable matter incorporated with it; it requires a liberal supply of water. *W. R.*

Winter Treatment and Spring Covering of Wall Trees.—In early winter I have my wall trees unnailed, so that the old shreds may be removed, and the trees kept as far from the wall as possible, in order that the warm early spring weather may not excite the sap too early, which it is apt to do when the trees are nailed close to the sun-warmed wall. They are left in this condition (pruning in the meantime) until the blossom-buds indicate that it is time the trees were attended to. Under this treatment they are always considerably more backward than my neighbours'. This year, after the blossom on my neighbours' trees was cut off by the severe frost, my trees had not bloomed. As soon as they are nailed to the wall I have rough bagging, hung on tenter-hooks, before the trees every night; and, to keep the bags from blowing about and damaging the blossom, I place hop-poles against the wall below them, and tie the bags near the bottom of them. These bags are quickly removed or replaced by a stick with a nail at its point. I find that my Apricots, Peaches, and Nectarines have set a good crop, while my neighbours' blossom is as dead as the broom boughs that were intended to protect it. *H. H.*

Bleeding of Birch-tree Roots.—I have frequently observed the bleeding of Birch-tree roots that had been accidentally cut. I know no means by which it can be stopped, unless it can be done by a ligature, in the nature of a tourniquet. The long continued winter delayed the thinning of some of my plantations, and consequently a number of Birch and other trees have been cut at too late a season. The stools of the Birches have bled most profusely (I send you a specimen of one); so have those of the Sycamore, but the stool of the Sycamore bleeds profusely at whatever season the tree is cut. The stool of the Beech bleeds a little, of the Ash not at all, but perhaps it might do so if cut at a later season. The stool of the Oak bleeds at this season only, about the junction of the heart wood and sap wood. No bleeding can be detected from the boles of any of the trees above-mentioned. Both the stools and boles of the Scotch Fir and Larch exude resinous matter at whatever season the trees may be cut. I have remarked that where two Birches grew from one stool, and one stem was cut and the other left to grow, scarcely any, if any, bleeding took place from the cut stool. My forester says that the safest season for pruning or lopping a Sycamore, should occasion require it, is in the month of July; the tree bleeds less then than at any other time of the year. Have you remarked how much Birch seedlings affect the decaying stools of other trees as places of growth? Of course the seeds must find a lodging in them; but why should the Birch seeds find their way into these, while those of the Sycamore and the Ash, though springing up with and all around them, are seldom or never to be seen growing out of the roots of other trees? Since the above was written, I have had the roots of several Birch trees cut at different distances from the trunk; and I have in no case seen any bleeding, or discharge of sap from the roots. This leads me to think that the roots bleed only when cut at certain seasons of the year—perhaps about the time that the sap begins to ascend;

or, more likely, immediately before that. What seems to confirm this is that the stools of Birches, cut within these two or three days, bleed much less profusely than did those of trees that were cut several weeks ago. I have no recollection of the particular season of the year at which I had seen Birch roots bleeding. *Scotus, April* 27.——It is a question with me as to the sufficient tenacity of "Knight's Cement" to stop such copious bleeding as you refer to. Perhaps the following plan may succeed. Melt together equal parts of resin, beeswax, and tallow. Wipe dry the wound, and apply a piece of thick, black-hot iron for two or three minutes, and then lay on the above compo, which may be smoothed off by a warm iron. If the hydrostatic force exceeds the tenacity of this compo, it may be easily made harder by the simple increase of the proportional of rosin. Under ordinary circumstances, with small sections, I have found the smearing of the wound, when dry, with tallow, quite equal to the task. *W. E. Gill, Truro, May* 1.

Vine Pillars.—I have read the remarks at page 260, and I am led to suppose that urine had been used in too large a quantity. Urine is a great fertiliser of Grass, in proper quantity, but it is destructive to it when used in too great profusion, and it is, without doubt, the same with Vines. "The unhappy Vine" in question was, I have little doubt, made the victim of the improper use of this strong manure. I have proof continually before my eyes that Vines do grow, and that, too, in a most healthy condition, in Vine pillars. It is a curious fact that Vines will flourish under the circumstances in which they do in Vine pillars. The failure from mismanagement is no proof whatever against the discovery. The writer speaks of "lime rubbish," which is a very different thing from lumps of old mortar taken from an old building, and which must have been completely carbonised. I should wish to know if the Vine pillar, now taken down, had been protected from the winter's cold rain and melted snow, and if water had been given when wanted. I have had four large garden-pots of water poured into each of my pillars since I removed their roofs. I have a pipe in the middle of the top of each pillar in which to pour the water, so as not to wash down soil into the mixture below. *C. A. A. Lloyd, Whittington, Oswestry.*

Bleeding Roots of the Vine.—On the 17th of January, 1848, whilst renewing a walk in front of a Vine-border, for the purpose of enlarging the latter, several roots were unavoidably cut through, all of which bled freely. The alterations were completed as soon as possible, and the Vines, as heretofore, grew vigorously, and in the same season matured a heavy crop of fruit. I nevertheless deem it safer to perform such operations in the autumn. *Jos. Williamson, Castle Gardens, Whitehaven, April* 30.

Effects of the late Frost.—The low state of the temperature in my garden during five days in March is very remarkable, and worth placing on record.

March	25th,	lowest temperature,	16 degs.
,,	26th	,,	20 ,,
,,	27th	,,	2 ,,
,,	28th	,,	13 ,,
,,	29th	,,	21 ,,

On the morning of the 27th of March, every pane of every window in my house was covered with ice, even in rooms in which there had been fire the previous evening. All the blooms on the Gooseberry and Currant trees were quite destroyed, as were the *leaves* of the Raspberry, Bay trees in a very sheltered spot, Rose trees, and many shrubs too numerous to mention. Even Yew trees were partially injured. At 6 A.M. the thermometer had risen to 5°, and at 7 A.M. to 7½. At 9 A.M. it had risen to 31½, and, in the course of the day, to 47. I had three Vines in garden-pots, under glass, which had their leaves destroyed. We have had only three frosts in April; namely—

On the	23rd,	lowest temperature	28½ degs.
,,	24th	,,	27 ,,
,,	28th	,,	30 ,,

Two persons in this neighbourhood, who keep night thermometers on much higher ground than mine, did not observe the mark lower than 13° on the morning of the 27th. One of these thermometers was 400 feet above the level of mine.—*C. A. A. Lloyd, Whittington, Oswestry.*——On the night of the 25th March, the thermometer indicated 21° of frost, the mercury having fallen to 11°. On the night of the 26th it fell to 18°, and on the 27th to 25°, giving a decrease in the severity of the frost of 7° each night. It was accompanied by a sudden deep snow fall, which was followed by bright sunny days. Deodars, 8 to 10 feet high, have been stripped of their foliage; Cupressus torulosa, 8 to 12 feet high, entirely destroyed; Juniperus recurva, 4 feet high, killed; Ilex latifolia, blackened; Photinia serrulata, 10 to 12 feet high, killed to the ground; Euonymus japonicus, all sorts, destroyed; Araucaria Braziliensis, fine plants, 3 feet high, destroyed; Abies Morinda, killed by hundreds; Pinus insignis, much injured; Cedars of Lebanon, quite brown; Laurels, Laurustinus, Arbutus, Aucubas, Tree Pæonies, Bays, &c., also quite brown; Ribes of sorts, Lilacs, Syringas, Deutzias, Weigela, and other flowering shrubs, have been killed to the ground; standard and dwarf Roses, consisting of Noisette, Bourbon, Tea-scented, Hybrid Perpetual, and China, quite killed; whilst those of the other classes, together with dwarfs on their own roots, are very seriously injured. The fruit-buds on all my Pear trees are quite destroyed; not a blossom is to be seen. Maiden Peaches, Apricots, Nectarines, and Pears, are all injured—in fact, very few plants have escaped the severity of the weather on the nights of the 25th, 26th, and 27th. *Thomas Barnes, Danecroft Nurseries, Stowmarket.*

Pond Mud.—I am much obliged by the information which my inquiries respecting the cleaning out of ponds have drawn forth. The idea of hastening the work by digging into, or, if I may use the expression, herring-boning the body of the mud is quite new to me; and though I had considered the slack time between hay and Wheat harvests would be the best season, I am much struck by the arguments used in favour of the winter. Your Truro correspondent seems somewhat too precise in demanding a definition of the term pond, and I fear that any which might be given would be open to the charge of saying very plain things in very hard words. What I had in my own mind in writing was, that artificial water which forms so peculiar an ornament in an English landscape, and which one would hardly seek in the reservoir of Cornish iron-works. The mud must of course vary with the strata from which it is carried, with the swiftness of the stream, and the woodiness of its banks. Most fertile soils have been originally alluvial deposit, yet no one would think of carting them for manure, and I doubt whether, except in very rare cases, one could expect to find mud worth the expense; and if not, it would obviously be better to heap it up as an island, or a bank, to be planted with trees. There is nothing then to balance the cost of moving, and as I apprehend this would differ very much from the mere cost of moving so many cubic yards of earth in ordinary cases, any proved details would be very valuable. Was not the water at Blenheim cleared out a few years ago; that might be a good example? As regards the value of pond mud as manure, though animalculæ may be visible throughout, I cannot imagine that they will often be found so abundant as to lead one to forego the great advantages which might otherwise be derived from mixing it with lime; and the observations of Prof. Way upon the properties of alumina (*Gard. Chron.*, March 23d), serve to show that the clay of the mud itself has a considerable power of retaining ammonia, and an actual chemical value, independent of its effects in improving the texture of sandy soils. May it not also have arrested the alkaline salts of the water from which it is deposited in a degree far greater than we have hitherto suspected? Lastly, I would call your attention to two analyses of the mud of the Nile, detailed in the "Philosophical Magazine" for April, 1850, p. 325. They are very remarkable as containing no phosphates. I regret that the character of the spot from which the specimens were taken is not stated; and as the mud of the Nile has been accumulating for ages, we are left in doubt how the corn of Egypt does, under such conditions, obtain its phosphates. *Ruris Amator.* [The analyses are as follows:

Portion soluble in water.	Silica	0.05
	Water	4.75
	Organic matter	4.85
	Alkaline chlorides	0.65
Portion soluble in hydrochloric acid.	Peroxide of iron	11.30
	Alumina	21.65
	Carbonate of lime	3.85
	Carbonate of magnesia	2.05
Matters insoluble in water and acid.	Silica	46.55
	Alumina	3.70
		100.00

Water	3.25
Organic matter soluble in water	0.35
Organic matter insoluble in water	4.46
Alkaline chlorides	0.07
Sulphate of lime	0.37
Carbonate of lime	6.38
Carbonate of magnesia and magnesia	4.09
Silica	54.27
Alumina	10.77
Peroxide of iron	13.18
Lime	2.86
	100.00

Ants.—Can any one give me a successful recipe against ants; they are the pest of our house. Last summer they made their way from near a Fir tree, where we could discover no nest, in a long line to the house, along the wall of which they marched in long order, and on the other side of the house they set off at a like distance, and walked along the wall of the house until they were only separated by a flight of steps from their opposite brethren. This year they are confined to one side of the house, along which their name is legion, and although fed by tributary streams, and we have discovered two or three small nests, we make no impression upon them. From the outside they get into the kitchen by perceptible and imperceptible ways like harpies or the plagues of Egypt, tainting all they touch—spoiling jams and stores, and whatever they come near. I have tried numerous rags steeped in spirits of turpentine, lime, and boiling water, which, although they have a slight effect, at present are a mere flea-bite. Cannot "Ruricola" or some one help me? What will destroy them or send them to the "right about!" *Northwood.*

Bleeding of Late-Pruned Vines (see p. 248).—I have never known Vines to receive any injury from bleeding after being pruned, though I have cut them at all periods of their growth. In this I found the late Mr. Knight to agree, and I have conversed with many gardeners on the subject, all of whom dreaded it, but they could not assert that any real injury resulted from it. *T. Torbron, Lower Tottenham.*

Glazed Pots v. *Porous Pots.*—When Mr. Winkle, of Pickwickian celebrity, ascended the witness-box to give evidence in the renowned case of Bardell against Pickwick, it is well known to all readers of that most interesting case, that, with all the best intentions of strengthening the defence, he (Mr. Winkle) added very materially to the cause for the plaintiff; and in my opinion, "F.," in attempting to advocate the superiority of porous flower-pots, has materially strengthened the case of glazed ones. He proves nothing but by dogmatical evidence, which is no evidence at all. He has evidently taken cause for effect in reference to green slimy pots and saturated soil. His whole letter is one mass of questions, which I have neither time to answer, nor conscience to ask space for, even if I did so. I regret that "F." should be so waspish upon the point, because when a man argues in that spirit, he often gives utterance to what he does not really mean. If "F." can give direct proof that first-rate plants cannot be grown in pots of non-porous material, I shall be only too happy to become a convert to him, and retract all I have said in their favour. Has "F." ever observed in the window or greenhouse of the amateur good plants in glazed china pots? and will he give good evidence of the advantage of the escape of moisture from the soil in which a plant is growing other than by drainage from the bottom and evaporation from the surface? *G.* [We really thought that the absurdity of praising porous pots had long since been seen by everybody of average intelligence.]

Societies.

Horticultural, Anniversary, *May* 1.—Sir Charles Lemon, Bart., in the chair. The annual report of the Council and Auditors was read. It was resolved unanimously that this report be adopted. The ballot for Council and officers then took place, when R. S. Holford, J. Barchard, and J. M. Strachan, Esqs., were elected new members of Council, in the room of Sir P. de Malpas Grey Egerton, Bart., M.P., Sir C. Lemon, Bart., M.P., and R. W. Eyles, Esq. The Duke of Devonshire was elected President, J. R. Gowen, Esq., Treasurer, and Dr. Daniel, Secretary. S. F. Gray and C. Loddiges, Esqs., were appointed Auditors for the ensuing year.

Meeting at Worton Cottage, *May* 1.—The long prevalence of cold easterly winds has, no doubt, retarded the opening of seedling flowers. This day but very few were present. Mr. Story (not Strong, as reported last week) sent some more seedling Ericas; one of them, 10-50, raised from Jubana "set" with McNabiana, is a very beautiful thing. The circular whorl consisted of 11 flowers of large size, tube of a deep flesh colour, fine lip, white, delicately tinged with the same shade; 11-50 is also a striking seedling, dark red straightish tube, with a distinct dark band round that part where it expands into the lip, which is white, giving a pleasing relief to the flower; 12-50, a delicate light-coloured seedling, with a longer tube, decreasing in size till it expands into a wide star-like lip; 13-50, very similar in character to 11-50, but inferior in many respects, though rather brighter in colour. Mr. Shepherd, gr. to — Mitchell, Esq., Priory, Kew, placed two seedling Cinerarias, one a striking bronzy purple, but both too small at present for general cultivation. Mr. Stedman, nurseryman, Isleworth, brought a plant of a fine large flowering Mimulus; its foliage was strongly Musk-scented, colour yellow ground, with broad band of crimson maroon encircling the flower. Some seedling Pansies and a few Cinerarias were present, but nothing requiring further notice; the same may be said of a few seedling Pelargoniums which were not sufficiently found in bloom.

Royal Horticultural Improvement of Ireland, *April* 18.—The following were the awards of the judges. Six Stove Plants: Amateurs—1st, Mr. Bruce, gr. to Justice Crampton, for Euphorbia splendens, Begonia coccinea, B. speciosa, Amaryllis speciosa, Æschynanthus ramosissimus, Justicia carnea. Six Greenhouse Plants: 1st, Mr. Pressly, gr. to G. Burns, Esq., for Azalea Smithii coccinea, Epacris Willmoreana, Tropæolum Jarratii, Eriostemon cuspidatum; 2d, Mr. John Bruce. Six Cape Heaths: 1st, Mr. Pressly, for Willmoreana, persoluta rubra, propendens, sulphurea, Beaumontiana, Parmentieri rosea. Eight Ornamental Plants: 1st, Mr. Pressly, for Azalea indica alba, Acacia prostrata, Polygala acuminata, Kennedya ovata. Six Azaleas: 1st, Mr. Bruce, for macrantha rubra, spectabilis, indica alba, phœnicea, rubra plena, Smithii. Six Pelargoniums: 1st, Mr. Corrigan, gr. to J. D. Meldon, Esq., for Hebe, Duke of Cornwall, Coronation, Joan of Arc, Masterpiece, Victory. Specimen Stove Plant: 1st, Mr. Pressly, for Franciscea latifolia. Specimen Greenhouse Plant: 1st, Mr. Kelly, for Rhododendron Youngii (10 feet high). Specimen Citrus: 1st, Mr. Pressly, for a magnificent Orange tree, 10 feet high. Specimen Camellia: 1st, Mr. Armstrong, for C. Corallina (fine). Specimen Cape Heath: 1st, Mr. Bruce, for Linnæoides superba. Herbaceous Plants: 1st, Mr. Corrigan, for Anemone pulchella, Primula cortusoides. Six Greenhouse Plants: Nurserymen—1st, Mr. Livingston, for Chorozema nanum, Hovea Celsi, Correæa speciosa major, Eutaxia myrtifolia. Eight Ornamental Plants: 1st, Mr. Hodgins, for Azalea triumphans, indica alba, Epacris grandiflora, Cyclamen persicum odoratum, Diosma capitata, Erica ventricosa coccinea. Specimen Orchid: 1st, Mr. Hodgins, for Calanthe veratrifolia. Specimen Greenhouse Plant: 1st, Mr. Hodgins, for Azalea variegata. Specimen Cape Heath: 1st, Mr. Hodgins, for aristata major. Specimen Cactus: 1st, Mr. Livingston, for C. speciosissimus. Six

Cinerarias: 1st, Mr. Hodgins, for Adela Villiers, Cerito, Delight, Amazon, Countess of Zetland, Regulator. Auriculas (Green-edged): Amateurs—1st, Mr. Corrigan, for Standard of England, Stretch's Alexander; Self-edged, 1st, Mr. Edward Corrigan, for Hannibal and Squire Mundi. Polyanthuses (four varieties): 1st, Mr. Corrigan, for Black Prince, Buck's George IV., Beauty of England, and Pearson's Alexander. Hyacinths: Double blue—1st, Mr. Brady, gr. to the Earl of Charlemont, for Blocksberg, Laurence Koster, and Bride of Lammermoor; double red—1st, Mr. Brady, for Compte de la Costa, Honeur de Amsterdam, and Lord Wellington; double white—1st, Mr. Brady, for Prince Van Waterloo, Staut's General, and Heroine; double yellow—1st, Mr. Brady, for Heroine, Gloria Florum, La Grandeur; single blue—1st, Mr. Brady, for Prince Albert, Prince Van Saxe Weimar, and Charles Dickens; single red—1st, Mr. Brady, for La Francq de Berkeley, Sappho, and Monsieur de Feasch; single white—1st, Mr. Brady, for Grand Vanqueur, Voltaire, and Victoria Regina. Auriculas (Green-edged): Nurserymen—1st, Mr. Livingston, for Lovely Ann and Imperator; grey-edged—1st, Mr. Livingston, for Kenyon's Ringleader and Mary Ann; white-edged—1st, Mr. Livingston, for Favourite and Reform; self-edged—1st, Mr. Livingston, for Apollo and Lady Miltown; four alpines—1st, Mr. Livingstone, for Napoleon of the Alps, Sarah of the Alps, John of the Alps, and the Alpine Shepherdess. Various plants were sent in not for competition, and several other prizes were awarded; but we have not been favoured with the names of the subjects for which they were given.

Garden Memoranda.

The Fulham Market-Gardens.—After so long and severe a winter as that from which we are but just escaping, it may be satisfactory to know that no ill effects, beyond a temporary check, have been experienced from the frosts in these gardens, and what is true of these may be considered to be true of all the market-gardens round London. The extensive grounds occupied by excellent vegetables, which are everywhere observable, afford ample assurance that no scarcity of such food need be apprehended. The fruit trees are in full blossom, and there is every appearance that there will be plenty of fruit, so that altogether the future prospect is so far consolatory, except to the market gardener, who complains that "the market is already 'glutted;' that he cannot get rid of his produce, except at greatly reduced prices; and that if things do not mend he will have to employ horse instead of hand labour, the effect of which will be an inferior system of tillage." Let us hope, however, for better things, and in the meantime we will venture to give a few details respecting the present state of the crops.

Cabbages (*the Battersea or Fulham*) form the great bulk of the vegetables at present in these fields. They are planted at first thickly, and are thinned out in autumn for Coleworts, leaving the permanent crop in rows 2 feet apart, and the plants 20 inches asunder in the rows. The Battersea is a fine looking Cabbage, of the Vanack breed, and suits the market and the light ground which prevails in this quarter better than any other sort.

Cauliflowers have wintered safely under hand-glasses, the number of which to be seen in use in these fields strikes the "countryman," who may happen to see them, on his "first visit to town," with amazement; each of them covers three plants placed in the form of a triangle; and when the glasses are not wanted for this purpose they are employed in forwarding ridge Cucumbers, &c.

Broccoli.—Two kinds only are planted—the Early Cape, for autumn, and the Sprouting, for spring use. Large plantations of the latter may now be seen, here and there, ready for market. The fine large white Broccoli which is the admiration of everybody in Covent-garden market, is chiefly supplied from Cornwall, and from the strong loamy soils of Enfield, which suit it better than the light, black, highly manured land about Fulham.

Lettuces (*White Cos*).—These and Cabbages form such large proportions, compared with other crops, that a cursory examination of the fields just now would almost lead one to suppose that these two kinds of esculents formed the staple of the London vegetable markets; but it need hardly be stated that this is the worst of all seasons for viewing crops, most of them being in the ground, but not yet vegetated. The soil between the rows is now being stirred with swan-necked draw-hoes, not to kill weeds, for weeds there are none, but to promote the growth of the plants, which are now about one-third their natural size. They were transplanted from frames in February, and generally look well, though some show the ill effects of the cold dry north-easterly winds, which we have so long experienced this spring.

Spinach (*the prickly*) in most situations is a good crop; but in a few places it has failed, probably from rotting off early in autumn, a circumstance which has within these few years been more than usually prevalent.

Rhubarb is plentiful and finely coloured. The colouring is improved by placing dry straw round the plants, so as to partially blanch them.

Radishes are now being drawn out of 5 feet beds, some in the open ground, others on sloping borders at the foot of hedges where they had been covered with straw at night, so as to retain in the soil the heat it had absorbed during the day whilst exposed to the influence of the sun's rays. In this way they are obtained much earlier than they otherwise would be.

Turnips (*Dutch*).—Large breadths are just coming through the ground.

Carrots (*Early Horn*) in open beds look brown from the cold drying winds; but between hooped Potato beds, where they have received some shelter, they are green and healthy.

Potatoes in frames are now being dug for market, and are as yet free from disease. Others planted in 5 feet beds, hooped and matted at night, are about 6 inches in height, and will come into market after the early crops are out, and before those from the open ground come in. Some of the latter are appearing above the ground.

Kidney Beans.—Some of these have been planted, but it is to be feared that the ground is yet too cold for them. The second sowing often comes into use before the first, which will probably be generally the case with early plantations in the present season.

As we have stated, most kinds of fruit trees are in full blossom, and are as yet safe from frost. Apricots on walls have set their fruit well, and are being thinned out for tarts and bottling. Bush fruit promises abundant crops.

Miscellaneous.

Oncidium serratum.—A very striking, orchidaceous, half-twining epiphyte from Peru. Flowers, large, brownish-olive, and brilliant yellow, produced with M. Pescatore, of Paris. Till we received a flower of this curious species from M. Pescatore, it was only known to us from a rude copy of an old Spanish drawing, sent from Peru by the late Mr. Matthews, and preserved in Sir Wm. Hooker's Herbarium. The plant has oblong, smooth, terete, pseudo-bulbs, each having two broad sword-shaped leaves at the point, and several others below the pseudo-bulbs. The flower-stem was 9 feet long, partly twining, with five or six lateral branches, each carrying from four to six flowers near



the extremity. These flowers have the very singular form shown in the annexed figure, which is about twice as large as they are represented in the Spanish drawing above alluded to, and perhaps four times as large as they were with M. Pescatore. The colour is said to be cinnamon-brown in Peru, with bright yellow tips to the upper divisions. In the fresh flower they had the colour of Oncidium luridum, only brighter; but the yellow on the upper half of the delicately fringed and crisped petals was clear and brilliant. If flowered in the summer, the species would no doubt be much finer; as it is, we must regard it as one of the most remarkable of the short-lipped Oncids. *Paxton's Flower Garden.*

Abies Webbiana.—It may be interesting to know that a thriving specimen of this handsome Conifer, at Ealing Park, has very nearly 20 cones on its top branches. It has stood the winter uninjured, with a slight protection over the leading shoot.

Observations on the Adjustment of the Animal and Vegetable Kingdoms, by which the Vital Functions of both are permanently maintained.—This communication will consist of a detail of an experimental investigation which has been carried on for nearly the last 12 months, and which appears to illustrate in a marked degree that beautiful and wonderful provision which we see everywhere displayed throughout the animal and vegetable kingdoms, whereby their continued existence and stability are so admirably sustained, and by which they are made mutually to subserve each for the other's nutriment, and even for its indispensable wants and vital existence. The experiment has reference to the healthy life of fish preserved in a limited and confined portion of water. It was commenced in May, 1849, and the subjects chosen were two small gold fish. These were placed in a large glass receiver of about 12 gallons capacity, having a cover of thin muslin, stretched over a stout copper wire bent into a circle, placed over its mouth, so as to exclude as much as possible the sooty dust of the London atmosphere, without, at the same time, impeding the free passage of the atmospheric air. This receiver was about half filled with ordinary spring water, and supplied at the bottom with sand and mud, together with loose stones of larger size of limestone tufa, from the neighbourhood of Matlock, and sandstone; these were arranged so that the fish could get below them, if they wished so to do. At the same time that the fish were placed in this miniature pond—if I may so term it—a small plant of the Vallisneria spiralis was introduced, its roots being inserted in the mud and sand, and covered by one of the loose stones, so as to retain the plant in its position. The Vallisneria spiralis is one of those delicate aquatic plants generally selected by the microscopist for the exhibition of the circulation of the sap in plants; it throws out an abundance of long wiry strap-like leaves, of about ¼ inch in breadth, and from 1 foot to 3 feet in length: these leaves, when the sun shines on them, evolve a continued stream of oxygen gas, which rises in a current of minute bubbles, particularly from any part of the leaf which may have received an injury. The materials being thus arranged, all appeared to go on well for a short time, until circumstances occurred which indicated that another and very material agent was required to perfect the adjustment, and which, from my not having thought of it at the time of commencing the experiment, had not been provided against. The circumstances I allude to arose from the internal decay of the leaves of the Vallisneria, which became yellow from having lost their vitality, and began to decompose; this, by accumulation, rendered the water turbid, and caused a growth of mucus, or green slimy matter, on the surface of the water and on the sides of the receiver. If this had been allowed to increase, I conceive that the healthy life of the fish must have suffered, and probably their vital functions have been destroyed. The removal of these decaying leaves from the water, therefore, became a point of paramount importance to the success of the experiment. To effect this, I had recourse to a very useful little scavenger, whose beneficial functions have been too much overlooked in the economy of animal life—I mean the water-snail, whose natural food is the very green slimy growth, or mucus, and decaying vegetable matter, which threatened to destroy the object which was wished to be obtained. Five or six of these creatures—the Limnæa stagnalis—were consequently introduced, and, by their continued and rapid locomotion and extraordinary voracity, soon removed the cause of interference, and restored the whole to a healthy state; thus perfecting the balance between the animal and vegetable inhabitants, and enabling both to perform their vital functions with health and energy. So luxuriant was the growth of the Vallisneria under these circumstances, that, by the autumn, the one solitary plant that had been originally introduced had thrown out myriads of offshoots and suckers, thus multiplying to the extent of upwards of 35 strong plants; and these threw up their long spiral flowering stems in all directions, so that at one time more than 40 blossoms were counted lying on the surface of the water. The fish have been lively, bright in colour, and appear very healthy; and the snails also—judging from the enormous quantity of gelatinous masses of eggs which they have deposited on all parts of the receiver, as well as on the fragments of stone—appear to thrive wonderfully, and, besides their functions in sustaining the perfect adjustment of the series, afford a large quantity of food to the fish in the form of the young snails, which are devoured as soon as they exhibit signs of vitality and locomotion, and before their shell has become hardened. Thus we have that admirable balance sustained between the animal and vegetable kingdoms, and that in a liquid element. The fish in its respiration consumes the oxygen held in solution by the water as atmospheric air, furnishes carbonic acid, feeds on the insects and young snails, and excretes material well adapted as a rich food to the plant, and well fitted for its luxuriant growth. The plant, by its respiration, consumes the carbonic acid produced by the fish, appropriating the carbon to the construction of its tissues and fibre, and liberates the oxygen in its gaseous state to sustain the healthy functions of the animal life, at the same time that it feeds on the rejected matter, which has fulfilled its purposes in the nourishment of the fish and snail, and preserves the water constantly in a clear and healthy condition. While the slimy snail, finding its proper nutriment in the decomposing vegetable matter and minute confervoid growth, prevents their accumulation by removing them from the field, and, by its vital powers, converts what would act otherwise as a poison into a rich and fruitful nutriment, again to constitute a pabulum for the vegetable growth, while it also acts the important part of a purveyor to its finny neighbours. *Robert Warrington, F.C.S., in Beck's Florist and Garden Miscellany for May.*

Calendar of Operations.

(For the ensuing week.)

PLANT DEPARTMENT.

Proceed with potting all stove or greenhouse plants which require it, in order that they may have the advantage of the next two months in which to produce a

vigorous growth, and have plenty of time for maturing it before winter. Many of the free-growing plants, which were potted early in the season, will now require larger pots, with which they should be immediately supplied, unless it is wished to flower them in their present sizes, and somewhat earlier than their usual season. In the latter case, occasional waterings of liquid manure, of moderate strength, will be useful, both to maintain the present vigour of the plants and to assist the future development of their flowers. Keep a moist growing atmosphere in the conservatory, by frequently sprinkling the paths, curbs, and other evaporating surfaces, in warm weather; and when syringing, sprinkle well the walls of the house, that they may give off in combination with moisture the heat which they have absorbed during the day. In fine weather, a little before the sun goes off the Pelargonium-house, close it for an hour, and syringe the plants; after which, air may again be given according to the state of the external atmosphere. In the Orchid-house the moisture should be moderate, unless when the weather is so fine that it may be accompanied with light and heat. In watering and syringing, care must be taken to prevent the moisture lodging in the young growths, as they are liable to damp off in their early stage. Constant attention will be necessary to keep the plants clean and free from insects, of which all the troublesome kinds breed most rapidly at this season. Encourage specimen plants of the choicer kinds of Fuchsias, Erythrinas, Oleanders, Brugmansias, Hibiscus rosa-sinensis, &c., for placing in the conservatory along with Balsams, Cockscombs, Amaranthus, and other tender annuals usually grown for summer and autumn decoration; all of which should be shifted on progressively, using rich loamy soil.

FORCING DEPARTMENT.

PINERIES.—During very strong bright sunshine, pay attention to the shading of all Pines, unless this is rendered unnecessary by Vines growing over them. Maintain a moist atmosphere, with a high temperature; a free circulation of air during the day, and a more moderate one during the night also. Where they are grown in pots, the plants should be frequently examined, and repotted as they require it; that by shifting a few at different times, the fruit may come up and ripen in succession. Let us impress upon our younger readers the necessity of allowing plenty of room to Pines in all stages, that their leaves may take their natural curved shape, instead of compelling one another to stand erect. One of the most important points is to give plenty of air; and if these items be attended to, the plants will acquire a sturdy habit, and with due care in other respects, the result will be large fine flavoured fruits upon small plants. VINERIES.—If the outside borders have been kept covered with warm litter, according to previous recommendations, they will not require water, unless in very dry situations. They should, however, be occasionally examined and watered with liquid manure or guano water, in the proportion of half an ounce to a gallon of water, if the state of the soil requires it. Give air early in the morning, commencing with a little, and increasing it gradually till mid-day. The crops for the supply of the family during the late autumn and winter months will now require regulating as regards bunches. MELONS.—Those who are anxious to produce Melons in the greatest perfection should plant about the beginning of May, as they thereby secure the four finest months in the year for growing and maturing them; and as they are also the months in which insects increase with the greatest rapidity, no pains should be spared to keep them in check. To this end all damaged leaves should be removed, as insects generally effect a lodgment most easily on those parts of the plants which have received some check in their healthy development.

FLOWER GARDEN AND SHRUBBERIES.

Premising that the operation of planting out may now commence in favourable localities, but as we do not yet consider it safe, except in such situations, we would not recommend too great precipitation in the matter, unless it be an object of the first importance to make a very early display; and even in such a case abundant means of protection should be at command. The precariousness of our English climate renders such precautions indispensable. In our own case it is necessary, for the reason above mentioned, to plant very early; but to protect the plants in case of a sudden change in the weather, as well as to protect them from the rays of the sun, it is our practice to use branches of evergreens, the lower ends of which are sharpened and fixed in a leaning position over and amongst the plants. The Yew branches taken from the wall trees that no longer require covering also come in useful for this purpose. This is a simple method of preventing, at a small cost, a loss which would be irretrievable. We of course commence with the hardiest kinds, as Pentstemons, Antirrhinums, &c, and follow with Calceolarias and Verbenas, selecting the best established of those plants, which have been gradually exposed to the open air. Except in very extensive places, very little advantage is gained by commencing too soon, and the meantime may be more usefully employed by performing all preliminary operations and getting the work forward elsewhere, that a strong force and undivided attention may be devoted to this work as soon as it may be prudently commenced. It will be advisable to cast an eye over the arrangement, and compare the quantity required with the total in stock, that any deficiency may be provided for by apportioning a smaller number to the different beds, or by substituting something else of which there is a greater abundance. Consideration should at the same time be given to making a provision for filling up the gaps, which are liable to occur under the most careful management. Let Neapolitan and Tree Violets be immediately parted, and planted in a frame of rich leafy soil on a shady border. Carnations, Picotees, Cloves, &c., should be immediately staked; they are charming things for the flower garden, and invaluable for supplying cut flowers for vases or bouquets.

FLORISTS' FLOWERS.

RANUNCULUSES.—Seedlings will now require particular attention, and every means adopted to ensure a luxuriant growth, for according as the foliage is stout and vigorous, so will the roots be, and if they take up well, a good bloom may be expected from them the succeeding season. Those on beds should be kept perfectly clean, removing the weeds at an early period, before their roots get entangled amongst those of the Ranunculuses.

KITCHEN GARDEN.

All the shoots first produced on the Asparagus beds should be cut, both small and large, leaving none to shoot up into leaf, till the time comes when cutting is discontinued for the season, which will be about the 10th to the 15th of June. We have practised this mode for many seasons, and we find our beds improving yearly. If any are left sooner, even though very weak ones, they are developed at the expense of the shoots which are still to be thrown up; and the latter come smaller and less abundantly than they otherwise would. Where a portion of the Asparagus beds is yearly required for forcing, cutting should be discontinued, with a quantity sufficient to meet this demand, at least a fortnight earlier than from the general beds. Seakale pots, and the materials with which they have been surrounded, should now be cleared away, the remaining etiolated foliage cut off, and the ground sprinkled with common salt and forked over, taking care not to injure the crowns.

HARDY FRUIT GARDEN.

Apricot walls must be frequently examined, and the caterpillars destroyed; and where the fruit has set very thickly, a portion of those where they are most crowded should be removed at once, taking care, however, to leave twice as many as would constitute a fair crop, as they cannot be considered safe till the stoning is over. Disbudding of Peaches and Nectarines should also be proceeded with; and both these and the Apricots should be washed with the engine at least once a week. The remains of the evergreen branches may be removed where the fruit is set, as their presence is no longer useful, but rather injurious, from being so closely in contact with the leaves. We find the plan of fixing canvass upon rollers to answer admirably as a protection for fruit trees on walls. Although the first expense is rather costly, I have no doubt it will be cheap in the end. Where the walls are furnished with projecting coping or weather-boards, the soil at the foot of the walls is liable to become very dry; if upon examination it is found to be so, it should be well watered, and at the same time the soil should be loosened and a little soot dusted amongst it, as such a situation affords an excellent harbour for insects in various stages. The water used to moisten the soil will assist in destroying these pests, if it have soot dissolved in it. After the natural gross luxuriance of Pear trees has been overcome, they generally mature more blossom buds than they can set; and still more fruit is set than can be properly supported. In the first struggle for existence, it sometimes happens that more embryos fall off than can be conveniently spared; and to prevent this, the blossoms of choice varieties should be thinned. Advantage may be taken of this, to balance the rates of their growth, calculating the strength of each, and leaving sufficient to prevent grossness, but removing enough to prevent any stunting or mutual impoverishment being caused by a superabundance of flower buds.

State of the Weather near London, for the week ending May 2, 1850, as observed at the Horticultural Garden, Chiswick.

April and May.	Moon's Age.	Barometer. Max.	Barometer. Min.	Temperature. Of the Air. Max.	Of the Air. Min.	Of the Air. Mean	Of the Earth. 1 foot deep.	Of the Earth. 2 feet deep.	Wind.	Rain.
Friday.. 26	O	30.146	30 065	61	41	51.0	48	48½	N.E.	.00
Satur.. 27	14	30.179	30.146	55	34	44.5	49	49	E.	.00
Sunday . 28	15	30.296	30.225	55	33	44.0	48	48	E.	.00
Monday 29	16	30.336	30.282	57	35	46.0	47	48½	E	.00
Tues. .. 30	17	30.246	30.146	57	39	48.0	47½	48½	N E.	.00
Wed. .. 1	18	30.078	30.048	51	28	39.5	48	48	N E.	.63
Thurs.... 2	19	30.274	30.197	56	23	39.5	47	48	N.E.	.00
Average....		30.222	30.158	56 0	33.3	44.6	47.8	48.3		0.00

April 26—Cloudy and cold, with brisk N.E. wind; fine; cloudy.
— 27—Cloudy and cold; fine; clear at night.
— 28—Cloudy and cold; fine; clear.
— 29—Fine with clouds, and dry air; cloudy at night.
— 30—Cold and dry; fine; dry cold wind; cloudy.
May 1—Cloudy and cold, with brisk wind; slight frost at night.
— 2—Fine; air excessively dry; sharp frost at night.
Mean temperature of the week, 6½ deg. below the average.

State of the Weather at Chiswick during the last 24 years, for the ensuing week, ending May 11, 1850.

May.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds. N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 5	65.4	42 3	53.8	15	0.40 in.	3	4	2	3	7	3	1	1
Mon. 6	62 6	40.8	51.7	10	0.48	6	3	2	3	6	3	1	1
Tues 7	63.8	41.8	52 8	7	0.45	2	6	2	2	4	5	1	2
Wed. 8	63.0	42.6	52.5	7	0.57	1	5	5	1	5	3	5	1
Thurs. 9	62.2	41.2	51.7	10	0.60	2	6	4	1	2	7	2	—
Friday 10	61.8	39.7	50.8	7	0.10	4	4	4	1	1	4	5	1
Satur. 11	62.8	38.0	50.4	8	0.26	4	5	3	1	5	3	1	2

The highest temperature during the above period occurred on the 6th 1830—therm. 81 deg.; and the lowest on the 11th, 1838—therm. 27 deg.

Notices to Correspondents.

BACK NUMBERS: One shilling will be given for No. 35, 1847.

BOOKS: *J Messenger*. Lindley's "Vegetable Kingdom" may be had of all booksellers. For price and other particulars, see an advertisement in another column.‡

GRAPES: *C B*. Your Grapes may be mildewed; but the three berries you have sent us are affected by rust. Sulphur will kill mildew if it is applied the moment the fungus appears.‡

HEATING: *J S L*. We are not sure that we understand your plan; if we do, there is no objection to it. The essentials in Polmaise heating are to throw the heated air at once into the house, to have heating-surface enough, and to take care that the openings through which the hot air enters the house are large enough. They can hardly be too large.

INSECTS: *J F*. The beetles which have eaten the young leaves of your Vines are Elater (Athous) vittatus, the larvæ of which are *wireworms*; as many as possible should therefore be destroyed at once, either by hand picking or shaking the plants. *W.—Este*. Thanks for the specimen of the bark of the Downton Pippin with its inclosed insect, which we fear is damaged. Will you seek for more specimens, and confine them in a box till they become winged, and then favour us with one of the moths. *W.—Canfordiensis*. The larvæ which have eaten off the Barley are the real wireworm, or larvæ of Elater segetis. *Gard. Chron.* (1845, p. 344), 1, the plant attacked by—2, the wireworm of the natural size; 3, the same magnified; 4, the perfect beetle; 5, the same magnified.



The plan of laying down patches of damp Grass, or burying them in open wicker baskets in different part of the fields, inspecting them every other morning, is one of the most effectual methods for destroying these insects. *W.—Agricola*. The insects sent are the real culprits, being the true wireworms. See the answer to "Canfordiensis." *W.—E H*. The beetles which have attacked the young Vine shoots by night are the two species of Vine weevils, Otiorhynchus sulcatus and picipes. Continue your search by night, laying down a white cloth beneath the plants, which must be smartly and suddenly shaken about midnight; the insects will fall to the ground, and must then be destroyed. *W.—C L*. The beetles which have attacked your Plum trees (you do not say in what manner) are the red-legged weevil (Otiorhynchus tenebricosus). They may be destroyed in the manner described in the preceding answer to "E. H." *W.—A R*. The publication "Insecta Britannica," will be commenced as soon as a sufficient number of subscribers' names are obtained. The subscription is to extend to five volumes, *i. e.*, a volume per annum, at the price of 18*s*. Each volume will comprise a separate tribe, and will be illustrated with plates of generic details. You will find a prospectus addressed to your initials at our office. *W.—G B*. We suppose the buds and bark of your Rose trees must have been attacked by the weevil Otiorhynchus tenebricosus, which hides itself during the day, and must be sought for at night. *W.—W A, Newport*. The grubs which have destroyed your Oats and Vetches are the young state of the common daddy-long-legs. Turn up the soil, and send a number of ducks into the field, and when the flies appear, employ children to destroy them. *W*.

KIDNEY BEANS: *A B*. There can be little advantage or economy in "sowing Kidney Beans very thickly on any spare piece of ground, and afterwards transplanting them to their proper place." The plan may be practised by market-gardeners, but we have not seen it adopted near London.‡

NAMES OF PLANTS: We have to ask for the patience of two or three correspondents under this head until we can find leisure to examine what they have sent. They will all be answered next week.—*C T*. Nemophila discoidalis.

NEW HOLLAND SEEDS: *A Clergyman*. These are not from Australia, but from tropical India. They are all stove plants, and none of them much worth growing. Canna indica, the common Indian Shot, will flower out of doors if raised and treated like a tender annual.

PAXTON'S COTTAGERS' CALENDAR may be had at the Office of this Paper, or of any bookseller, price 3*d*., or 5*s*. for 25 copies for distribution amongst cottage tenantry.

PLANTS DAMAGED IN TRAVELLING BY RAILWAY: *J F* complains of the gross negligence of those through whose hands parcels are conveyed from London. He states that he received, from a well-known nursery in London, advice of a basket of plants (according to order), which was sent to the railway station on the Friday, but did not come to hand till the Monday. Its contents were packed (he is confident) most carefully, and, with fair treatment, would have travelled any distance; but, out of 21 pots, seven were broken to shivers and the plants damaged, and two other pots arrived quite empty. He adds, "You can easily imagine in what state Calceolarias would arrive under these circumstances." We insert his complaint at his request; but we very much doubt the good packing he speaks of.

THE TRANSMUTATION OF SPECIES: *F L S*. This is a speculation and not an ascertained fact. We have never been able to obtain satisfactory evidence that it happens; on the other hand it is impossible to prove a negative. As to mere opinions they are of little value either one way or the other. We do not recognise the seeds from Cusco, but we will examine them at leisure, and, if we can identify them, report further.

VINE BORDERS: *J S H*. It would be desirable not to have the border less than 10 feet wide; but under limited circumstances, as regards space, you may succeed in having good crops for some years with a border 5 feet wide. Perhaps you will have the kindness to state the aspect of the wall for which you require to know the most suitable trees.‖

MISC: *S A*. Annuals sown round standard Roses, for the summer months, will not damage the Roses, provided they grow close to their stems.‡

SEEDLING FLOWERS.

CALCEOLARIAS: *Amicus*. Very pretty; but not equal to kinds of the same colours already in cultivation.*

CINERARIAS: *J M*. Quite withered up when received, but apparently worthless.*—*A R*. 1, white tipped with purplish lilac, dark disc; a good flower. 2, violet purple, with a circle of white surrounding a dark centre; beautiful in colour, but too starry. 3, light blue, with a white circle surrounding a dark blue disc; irregular, and otherwise inferior to kinds already in cultivation. 4, purplish lilac with a dark centre. Of the four sorts sent 1 is the best.*—*N W*. Nicely packed, and arrived in excellent condition. 1, white tipped with purplish lilac, dark disc. 2, purplish lilac, with a circle of white round a dark disc. 3, like 1, but more broadly tipped with purplish lilac. 4, light blue, with a narrow circle of white round a dark disc. 5, like 1 and 3, but smaller. All clean looking bold flowers, but irregular and somewhat defective in shape.*

DOUBLE AURICULA: *W A*. Double flowers are not unknown to us, but we have not before seen one like the specimen sent. If a seedling, and it is constant in its character, it will be worth propagating, for though not ranking as a florists' flower, yet it will have admirers on account of its singularity.*

RENDLE'S DESCRIPTIVE CATALOGUE OF AGRICULTURAL SEEDS IS JUST PUBLISHED, and can be had on application, GRATIS (for one penny stamp).

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Laing's Improved ditto ditto, per lb., 8d.	per qt.	1 0
Purple-top Scotch ditto ditto, per lb., 8d.	per qt.	1 0
White and Green Globe per lb., 6d.	per qt.	0 10
White Belgian Carrot	per lb.	0 10
Yellow Globe Mangold Wurzel	per lb.	0 8
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BELFAST.

FLAX-DRESSING MACHINERY.—Persons wishing to put up Mills for Scutching or Dressing FLAX IN THE STRAW, can be supplied with the Improved Machinery recommended by the Royal Flax Improvement Society of Ireland, on application to the makers, MAC ADAM Brothers and Co., Engineers, Soho Foundry, Belfast.—May 4.

HYDRAULIC ENGINES, WATER RAMS, &c., on Improved Principles; Engines worked by Steam or Hydraulic power, to raise from 1 gallon to 1000 per minute to a height of 500 feet, and from a depth of 900 feet. Douche, Vapour, Hot-air, and all other kinds of Baths. Buildings, Conservatories, &c., heated by Steam, Air, or Water. Boring, Sinking, and Collecting of Water, &c. Towns supplied.
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Works, Sumner-street, Southwark-bridge-road.

LOOK TO YOUR STABLE EXPENDITURE, and attend to its economy and Corn-dealers' Bills.

CHAFF MACHINES.—Horse Masters should give cut Hay or Wheat Straw with the Oats they allow, and those Oats should be bruised.—MARY WEDLAKE'S superior CHAFF MACHINES and OAT BRUISERS, manufactured on the premises (40 years established), 118, Fenchurch-street, and 8, Billiter-street.
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Liverpool, May 4.

The Agricultural Gazette.

SATURDAY, MAY 4, 1850.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

WEDNESDAY, May 8—Agricultural Society of England.
THURSDAY, — 9—Agricultural Imp. Society of Ireland.
WEDNESDAY, — 15—Agricultural Society of England.
THURSDAY, — 16—Agricultural Imp. Society of Ireland.

WE have to acknowledge, on behalf of our readers, the kindness with which so many correspondents have answered our enquiries about AGRICULTURAL WAGES. Some of the results of the inquiry were tabulated in our last week's columns, and the rest of the information received shall be published at intervals.

Some of the statements of wages are accompanied by the intimation that they must be reduced very soon, masters being unable to wait any longer for those better prices of agricultural produce which alone can maintain them; and in other cases it is told us that a considerable reduction has already been enforced. And there can be no doubt that, in the majority of instances, higher wages have all along prevailed in the agricultural districts than would have resulted from the simple exercise of the law of demand and supply, under the circumstances in which agriculture has been placed; so that at any time there has been no other hindrance than the farmer's own will to the reduction of the wages of the agricultural labourer. We could give notice to our labourers of a reduction of wages, to the amount of 15 or 20 per cent. on the present rates, to-morrow; and after, possibly, an explosion of angry feeling among themselves, we have no doubt that they would all be at work again within a week. And the only hindrances, we repeat, to our doing this are the *vis inertiæ* which tends to maintain existing practice—the kindly feeling which shrinks from anything personally injurious to one's neighbour—and the fear of having to pay for an extra number of paupers. The first of these, though of course altogether indefensible, is, nevertheless, with most people of very considerable influence; the second is a feature in the relationship between master and servant, which, in its personal form, is almost peculiar to the agricultural districts; and the third, we have no doubt, has had a great deal to do with maintaining wages above what we believe to have been in many districts an unnaturally high minimum. The first and third of these causes must diminish in influence as food cheapens—the one, because small receipts will very soon check a *habit* of large payments; and the other, because the necessaries of life are now more cheaply attainable. The second cause, we believe, will diminish in its influence upon wages as intelligence prevails; the kindly feeling to which it is due will doubtless prevail and increase, but it will be confined to its own province, and not allowed to exercise itself in the payment of wages for labour, which is a purely commercial transaction. Anything which disturbs the natural exercise of the law of demand and supply must, we believe, in the long run, be mischievous; and unintelligent benevolence, which creates such mischief, and the existing law of settlement, which perpetuates it, are equally injurious in their effects. If, all along, men had obtained only the fair market price of their labour, or of whatever other commodity they may have had to offer, then every trade would have had to maintain just that number of hands which, in its existing condition, and in equal proportion with other occupations, it was at any time able for; and agriculture would not have had dependant upon it that superabundance of labourers of which *in its present condition** it now has to complain. And the remark is as true of farmers as it is of labourers; neither class has anything to complain of the other in this aspect of their relationship; but each has a great deal to complain of those circumstances which, by unnaturally swelling its own ranks, have induced an unnatural competition there.

We believe, then, that a considerable reduction of wages is taking place in the agricultural districts at present, chiefly owing to the diminished influence of those mischievous causes which have maintained the hitherto unnaturally high rates, but also no doubt owing, in part, to the diminished employment which farmers have been offering. We sincerely hope that while the former of these causes takes full effect, the latter will soon cease to operate.

IT is scarcely to be credited that there are still districts in which it is the established custom to grow two white crops after a bare fallow. We had thought that a system so much at variance with every principle of agriculture had been buried with our grandfathers. The Committee on "Agricultural Customs," in their report, mention several places where this absurd rotation is still followed. Still it was to be expected that such practices were local and accidental, until we learn from a letter addressed by Lord LONDONDERRY to his tenantry that this antiquated system is at this day the recognised plan followed on his immense estates.

The following are the rules on which his lordship insists, for the future, that his land shall be farmed:—1. Two white crops shall not be taken in succession. 2. The Wheat land is this season to be sown with Clover. 3. All drained land to be green cropped. 4. "The practice of taking Wheat after bare fallows to be discontinued."

The meaning of this last regulation, unless it be a repetition of No. 3, is not at all clear.

But in what terms are we to describe the management which has been hitherto followed on an estate, where now, for the first time, the owner insists upon the cultivation of Clover between the white crops. This affords matter for serious reflection; for, if upon this estate such a system has been hitherto followed, no doubt the neighbouring lands are in a similar condition. Without any personal reference to Lord LONDONDERRY'S farms, we cannot restrain our astonishment that a rotation which, in some parts of England and Scotland was abandoned 70 or 80 years ago, should yet have a recognised existence even in the remotest corner of Great Britain.

It cannot possibly be that landowners and farmers are ignorant of the advantages of the introduction of Clover and the four-course system. The Clover, as requiring less labour than a corn crop, is one of the most valuable plants the farm produces. Besides, upon a farm where the system of two white crops and a fallow are followed, one-third of the land must always be under the plough; where Clover is introduced only one-fourth. Or upon a farm of 300 acres, 100 acres will be under the plough upon the three-course system; 75 acres will be under the plough upon the four-course system; a difference of 25 acres, equal to the work of one pair of horses, or at least 75*l.* per annum is saved in this item alone.

Nor is this all; it would almost be worth the trouble to visit one of these benighted districts to see how the farmer manages. What does he make his manure from? How does he feed his horses? In fact, how does he manage to carry on his farm at all. Lord LONDONDERRY well remarks in the letter we have already quoted, by such a system "a continued process of abstraction, and a gradual reduction of the good quality of the soil goes on," which will end in the impoverishment and deterioration of the value of the land as certainly as takes place on the removal of coals or other mineral wealth.

A great deal has been both said and written about bad farming, but this reveals to us a more serious practice of mismanagement on the part of the owner. If bad farming be blameable where the tenant is

* We are not discussing the possibility of profitably employing more labour in agriculture; we are only urging the mischievous effect of any other cause, than the natural profits of the business, being at work to attract labourers to this employment and keep them there. We have no doubt that there are few individual farmers who would not profit by the employment of more labour on their farms; and, supposing the command of abundant capital, we believe that the interests of both farmer and labourer will be best served by employing a maximum of labour at a minimum of wages. We do not propose a minimum weekly wage by which, at great ultimate cost to yourself, you would get all the decrepit in body and bankrupt in character upon your hands, but a minimum piecework wage which only good hands can accept; for the most efficient labour is always the cheapest.

perhaps only a yearly tenant, what shall we say in the case of a landowner who must have at least a life interest in his estate. It is no slight palliation to the present low prices if they be the means of forcing landowners into a better system of management. *C.*

HIGH FARMING.

In a former Paper I endeavoured to show by my own experience that high farming is profitable at about present prices; and the prospects of everything about my farm lead me to retain that opinion. But this is a very different thing from maintaining the proposition enunciated in the title of Mr. Caird's pamphlet—High Farming under Liberal Covenants the best Substitute for Protection—a proposition which I will endeavour now to show is far too general. The proposition which Mr. Caird and other high farmers have successfully proved is this—that high farming under liberal covenants is a sufficient substitute for protection to the few who are likely to practise it.

Mr. Caird says, "it has been suggested that, if high farming were universal, the supply of food might so increase as to render the system unprofitable. We fear, on the contrary, that a want of capital, on the part of both landlord and tenant, will prove, as hitherto, a serious obstacle to its extending with sufficient rapidity to keep pace with the demands of our increasing population." Here the weakness of the high farming theory as pointing out a general remedy for agricultural difficulty is stated almost in so many words. It is evident that if the practice were universal, the consequent extremely low prices would render it unprofitable. On the other hand, if it were not universal, then high farming would of course be no benefit to those who did not practise it. The advice then to farm high is not a sufficient answer generally, though it may be in particular cases, to those who complain of farming profits. It is either generally impracticable, or, if generally practicable, then would be unprofitable. This is a very important view of the question. If I am not mistaken the propriety of what is called high farming—that is, fattening large quantities of animals—of largely increasing produce prior to the discovery of the means of largely diminishing the cost of production—has been too eagerly advocated. When a manufacturer finds his produce likely to be permanently reduced in price from some cause or other over which he had no control, we don't find him forthwith increasing his produce. He either invents new machinery, which shall enable him to produce at less cost, or he quits the manufacture. Analogous to this must be any general remedy for permanently reduced agricultural prices. If we cannot invent machinery, in the strict sense of the word, adequate to the occasion, we must discover or adopt new processes or methods of agriculture, in which the cost of production shall be reduced, without reducing the rate of the wages of the labourers—a thing which is neither desirable nor possible in the face of an increasing demand for their services in almost all non-agricultural employments.

Again, this question is important, because, though high farming will be impracticable generally, owing to a want of capital, yet it is quite possible that, as often in past times other trades have suffered from over-production, and agriculture too under the artificial stimulus of unduly high prices, so it is quite practicable for high farming to become sufficiently general to make prices, if not unprofitable to the high farmers, still seriously so to all the rest who continue in the old way. Thus, suppose only one-sixth of the land to be cultivated in some such way as that of Mr. Caird. The produce of this sixth might, as that gentleman shows is done in his case, be increased threefold. This would increase the whole produce of the country one-third. But, according to all past experience, prices fell much faster than the increase of produce which may happen in the course of a year or so. So that it seems no unreasonable thing to imagine that high farming extended over no more than one-sixth of the farmers might cause a reduction of 33 per cent. in prices, a reduction which would be pretty much like ruin to the other five-sixths. Probably it is too extreme a supposition that one-sixth of the land could be brought under high cultivation in a sufficiently short time to produce such great reduction in prices as that, but the illustration serves to show there is some force in the argument which Mr. Caird has somewhat illogically encountered.

Far more probable, however, is it that a want of capital, on the part of both landlord and tenant, will render high farming impracticable over a wider extent of land than the increasing population will keep up with. The problem then will still remain to be solved, how farming shall be made profitable at low prices to the great majority who cannot adopt what is called high farming. I suspect this problem is capable of being solved in a great variety of ways, but that no one uniform system of husbandry is able to meet the case. One system, however, I think capable and worthy of extensive adoption, and have in a former Paper called attention to it. I allude to the system of Jethro Tull. This may be called cheap farming. I am disappointed that my communication on the subject elicited no remarks in the *Gazette*. My experimental acre is looking beautiful. On part of it the Wheat constitutes the third successive crop, and there it looks the best, but I fear I drilled it too thick. But this I am satisfied of, that 3 quarters to the acre under this system will pay me better than 5 quarters under the high farming system, pursued as stated in my former paper. The question is, can I get 3 quarters? I must solve the problem by trying, but discussion would have helped me, if I could have got it, by giving information or correcting errors. *Amicus Tull.*

HIGH FARMING IN AYRSHIRE.

The lands of Myremill are situated in the parish of Maybole, about nine miles from Ayr. The occupation of the tenant, Mr. James Kennedy, extends to 560 Scotch, or 600 imperial acres of arable land, the property of P. W. Kennedy, Esq., of Drummellan. The whole has been drained, and latterly a considerable portion of it, where the shallow system had been practised, has been re-drained 4 feet deep. This is now Mr. Kennedy's minimum depth. The soil is various. Where Myremill houses are situated it is naturally thin, and resting on a tenacious till. There is little level land on the farm. What is level is partly improved moss, and the remainder rich alluvial soil. The largest proportion is of medium tenacity, and has been well cultivated for a considerable length of time.

The buildings of Myremill are situated on an elevated, though not the highest, part of the farm. The old steading was tolerably suited to the green crop system as commonly followed; but was far from being sufficiently commodious for the soiling system and other improvements which the proprietor and tenant, about a year and a half since, mutually agreed to carry out. An additional extensive range of buildings has accordingly been erected. The first of these to which we were conducted was the forage house. It is 66 feet in length, by 22 in width. Turnips and other food for present use are stored here, and there are two wide carriage entrances to it. It is floored with tiles. The hay-cutter and Turnip washer and cutter are placed in it, and are connected with the steam engine at the other side of the court by an underground shaft. The hay-cutter is by Mr. John Cornes, Barbridge, and cost 14*l.*, exclusive of the gearing. We were much pleased with the Turnip washer and cutter. The washer externally has the appearance of a revolving cylinder hung at a considerable inclination. The inside fitting is that of a screw, and there is plenty of water run into it from a pipe. The Turnips are thrown in at an opening in the upper end of the cylinder in twos or threes at regular intervals; but the individual at work is kept busily employed. The turning of the cylinder causes them to revolve round the axis in the spiral convolutions until they reach the other end, when at the same regular intervals —once for each revolution of the cylinder—they are thrown out washed, and are then carried up by elevators on a gutta percha belt to the cutter, which finishes the work. One person to throw in the Turnips and one to shovel them out from below the cutter, will, with the aid of these mechanical contrivances, prepare a day's Turnips for 200 cattle in less than an hour and a half. We regard the washing of Turnips as of great importance with the heavy soil and soft climate of Ayrshire. By these contrivances it is easily effected; indeed it would require the same number of hands to attend to the cutter alone without washing. The Turnip waggons are altogether of metal. They have four wheels with movable axles like that of a carriage in front, so as to turn easily. The cutters with gearing, &c., are so constructed that they can be removed during summer when they are not required, and the house is used for the green food.

The two new byres run at right angles from the side of the forage house. Their width is just equal to its length. In each of the byres, 52 cattle are placed in two rows, with a centre passage—6 feet wide—and a passage at each side before their heads—4½ feet in width. There are three doors from the forage house to each byre, corresponding to the passages, and one at the other end from the centre passage, opening to the manure heap. The passages and the stalls where the cattle stand are paved with tiles laid with mortar upon sand, the same as the floor of the forage house. It forms quite a smooth walk for running the feeding waggons upon. Under each of the bullocks, the tiles are laid in a slightly concave form, and the lowest of these in the centre is perforated with holes, through which the liquid of the animal is drained to the pipe underneath, which communicates with the tank. Tunnels, 3 feet square, for the admission of air, are constructed under each of the four walks in front of the cattle. There are gratings outside to admit currents of air at both ends, with boards to regulate the admission of the air. There are also air gratings over the tunnels opposite each stall of cattle. The impure air escapes by ventilation in the roof. There is a substantial stone trough before each animal, with an opening from the one to the other, about 6 inches from the bottom. By connecting the troughs at the upper end of the byres with the water pipe, by means of gutta percha hose, the whole of the troughs are filled to that depth without more trouble. The plentiful supply of water in the pipes admits, likewise, of the drains which carry off the liquid manure to the tanks being flushed three or four times a week, or more frequently, if it be thought necessary, so that there is no danger of their choking. On entering these byres, one feels agreeably surprised alike by their extent and their clean tidy appearance. They are each 94 feet in length by 33 feet in width and 11 feet in height. They are lathed and plastered over, and the camsiled roofs with rows of ventilating sky-light windows at each side, give them quite an airy appearance. The two byres are stalled for the accommodation of 104 cattle, and as filled at present, from the clean and quiet state of the animals, have all the appearance of comfort and rapid improvement. The largest stalls are 7 feet 10 inches by 7½ feet, and they are gradually made less, so as to be suitable for different sizes of cattle.

The plan of box-feeding is carried on in two other houses, which contain nearly 40 head of cattle. It has been frequently urged that box-fed cattle must, of necessity, be kept in a filthy state. The inspection of the boxes at Myremill convinced us of the groundlessness of this objection, as the cattle contained in them were as sleek and clean in the skin as those in the stalls. To our view, the chief objections to the system are, that it requires a greater extent of housing and more litter, and the work of feeding is not so convenient; and as the liquid, instead of running to the tank, is completely absorbed by the litter, it causes a greater amount of cartage, and gives less work for the steam-engine. Mr. Kennedy's boxes, which are constructed for the accommodation of two cattle each, are 13 feet by 10 feet. It will thus be seen that a building which is large enough for 20 cattle in boxes, would contain 30 in roomy stalls. And it is asserted by Mr. Huxtable, with appearance of reason, that straw, though it contains but a small proportion of nutritious matter, may be used to better purpose than by being trodden down for manure. By cutting it for mixing with cooked food in winter, and the quickly-grown succulent Grasses in summer, its mere bulk is of advantage for filling the capacious stomach of the ox, and causing him to ruminate more; and it is at the same time useful from its slightly astringent effect on the bowels, which are apt to be over-laxative from the free use of Turnips or Italian Rye-grass. Taking all these considerations into account, we think that the system of stall-feeding should be preferred in all plans for the building or remodelling of steadings.

There is accommodation altogether for 150 fatting cattle at Myremill, and Mr. Kennedy can put up 80 more at his out-farms. He has sold 300 fat since harvest, and bought others in their stead. And the cattle are brought into a condition in which they realise the highest market price. To those who feel an interest in such matters it certainly is no ordinary treat to see these large buildings filled with fine cattle in a thriving condition, and all the operations connected with them going on like clockwork. There are few places we presume where such an extensive and well-conducted manufactory of beef can be seen.

The cooking-house for the cattle is floored with tiles as already described. On one side of it are arranged four large boilers, in which linseed is cooked by condensed steam from the engine. About half an hour suffices for this. As soon as it is prepared, it is thrown in a hot state over cut hay, chaff, Bean-meal, and bruised Oats, or whatever is used for mixing at the time. The whole is allowed to lie on the floor, according to the plan of Mr. Warnes, until the dry chaff or hay absorbs the mucilaginous matter of the linseed. The ordinary feeding at present used is, for each fattening animal—about 50 lbs. of cut Turnips at 5 A.M. At 11 o'clock, 15 to 16 lbs. of the cooked food, followed by a little dry hay. At 5 P.M., another 50 lbs. of cut Turnip and hay or straw, after which the cattle are littered up for the night. The granary is over the forage house, with a flight of steps outside. It is well lighted and aired, and also, we are happy to say, well filled, notwithstanding its great extent. Immediately connected with the engine is a machine for bruising corn and linseed. It was constructed by Mr. John Young, of Ayr, and it does him much credit, as we have not anywhere seen this description of work more efficiently performed. In the same building there is also a circular saw for cutting wood for farm purposes.

The entire drainage of the steading is carried in the first instance to a small cesspool, where any sediment it contains settles to the bottom and the liquid flows into a tank at hand. This tank is 48 feet long, 14 wide, and 15 deep. The second tank is of the same length and width, and is 11 feet deep. The tanks are formed by digging out the earth, building the sides without puddling, as the stiff subsoil does not require it, and arching over the top. The two are capable of containing upwards of 100,000 gallons. The liquid manure is pumped by the engine from the first to the second tank, where it is diluted with water, according to its strength and the state of the weather, and is made ready for being discharged upon the fields. It is obvious that a steady supply of water is required for this and the various other purposes about the steading. Such has been obtained by bringing it in pipes from a higher level, at a distance less than a mile.

Cast-iron pipes have already been laid down for conveying the liquid from the tanks to 350 Scotch acres of land. There are stop-cocks in the centres of the fields, generally for each 10 acres of land. To these, when a particular field is to be manured, gutta percha pipes are attached in lengths of about 30 feet, and a hose at the end for discharging the liquid over the field. The operation is begun at the centre by describing a circle round the cock, which circle is gradually widened by adding to the gutta percha till the whole field is taken in. Before gutta percha came into use, a few years ago, such a plan could not have been adopted. It is the only substance known which combines the essential requisites of strength and flexibility. When we saw the process in full play on Friday, the jet from the hose was discharged to a distance of 120 feet, and the steam engine, which is of 12 horse power, was working a powerful threshing machine at the same time. It fell like a heavy shower over the ground, saturating it in an evenly manner. A man to direct the jet, so as to attain an equal distribution of the manure, and a

boy to assist in moving the pipes, are all that are required on the field. In this manner the steam-engine and force-pump will manure 10 acres of land in a day, throwing on from 8 to 10 tons per acre. There is no danger of the pipes suffering from too high pressure, though an obstruction should occur to prevent the efflux of the liquid. A strong cast-iron apparatus, of a globular form, connected with the pipes, and air-tight outside, is placed near the engine. When the pipes are full, and the engine still at work, the liquid is forced towards the globe, and when the pressure comes up to a certain degree of force, the compressed air acts on the safety valve of the engine, and the liquid, no longer impelled, runs back along a conduit into the tank.

When the engine, the pumps, and the pipes are thus in complete order, it is evidently of great importance to make them do as much work as possible. An attempt is to be made at Myremill to dissolve a large proportion of the solid manure and force it through the pipes, and thus effect a great saving of manual and horse labour. The bullocks which are so well provided with a clean dry bed, will receive as little litter as possible, and the manure which is thus made, almost free from straw, will be conveyed to a large tank and dissolved with water, or, at least, brought to such a degree of thinness as, it is expected, will admit of its being pumped out. A large additional tank is laid off for this purpose, alongside of another new one for liquid. The two will be capacious enough to hold 200,000 gallons. If this plan succeed, and we can see no formidable objection to it, it will cause a great saving at that busy season—the time of Turnip-sowing. Besides this, what is to prevent Mr. Kennedy from watering a field at sowing time, and thus, by a day's work of the engine, he may obtain a Turnip braird in a droughty season over 10 acres of land, and increase the crop by 50 or it may be 100 tons? It is altogether a great advance in the way of high and economic cultivation.

We can scarcely indicate the course of cropping which is likely to be adopted at Myremill. The system points to an extensive growth of the succulent Grasses and roots, for which our island climate is so suitable. A great number of cattle may thus, at all seasons, be fed, rich manure made, and the land brought to a garden-like state of fertility. As yet, Mr. Kennedy is but feeling his way: but, from the result of trials already made, he will be induced to sow annually a considerable breadth of Italian Rye-grass. A field of 10 Scotch acres, which produced a Turnip crop in 1848, was sown with Dickenson's Italian Rye-grass in April, 1849. Towards the end of May, when the Grass had come up, it was dressed with guano. It will be recollected that the month of May last was very cold and backward, and it was near the beginning of July before the first of it was ready to cut. During the next three months the field, by cutting and soiling, afforded feeding to 80 fatting cattle and 20 horses. In addition to the Grass, the horses had two feeds of Oats, and the cattle 4 lbs. of oilcake, daily. The whole of the field was cut three times, and a part of it four times. The land from which each day's Grass was taken was manured with liquid in the afternoon, as at Sutton Waldron and Auchness. This year the same field will yield a good cut by the end of April, and the manuring can be kept up more efficiently now that the pipes are laid down. As an evidence of the good feeding qualities of the Grass, it may be mentioned that 20 of the cattle which were purchased at Ardrossan tryst last year, and fed on it, gave 50*s.* a head of profit for six weeks' keep. At the time when the cattle were accustomed to it they would not eat red Clover.

The reader may wish to have an idea of the cost of remodelling and extending the steading and the other works in connection with the scheme. This is of essential importance in forming an estimate of the plan, as its merits must be ultimately tested by the question of profit. We are not prepared to enter minutely into figures, but may state generally, that the cost of the pipes is from 30*s.* to 40*s.* for each Scotch acre within their range; and the entire expenditure on houses, tanks, engine, pumps, pipes, rails, &c., is not much more than would suffice to thorough drain the land. Such an outlay should not discourage any liberal landlords, who may have thoughts of making a similar experiment: and it would be very much for the interests of agriculture that a number of others should be made in different parts of the country, as people in general are most satisfied with results of which they have been personally cognisant. After seeing the extent and excellence of the works at Myremill, we were a little surprised on learning that the expenditure was not much greater than it really is. The byres, for instance, which we have described, and the plan of which we would recommend for adoption wherever fatting of dairy stocks are kept, cost very little more than common erections for cattle throughout the country. The usual calculation for slate-roofed byres on extensive estates in this neighbourhood, is 5*l.* for each head of cattle which they have space to accommodate. Those at Myremill cost 6*l.* per head: and when we consider the benefits to be derived from good lighting and thorough ventilation—the facility of labour by the smooth, wide, durable walks—and the comforts of dryness and cleanness to the animals—the advantages joined appear to us much more than commensurate with the additional outlay.

When instances of high-farming are promulgated, there has been a tendency of late to view them through a political medium. This is to be regretted, in so far as it prevents people from considering the subject dispassionately, but even this feeling has given rise to a more widely spread spirit of enquiry, and in this respect will be productive of good. The advocates of progress may be assailed and browbeat on all hands, but there is little danger that the onward tendency of the age will receive any serious check from the evanescent bitterness of politics.

We are sure that our readers will join with us in heartily wishing that success may crown the great experiment, of which we have endeavoured to give a slight outline. The friends of progress, everywhere, are under a debt of gratitude to Mr. Kennedy of Drummellan for the magnificent example he is giving of what science and art can do for the advancement of agriculture. *Abridged from the Ayr Advertiser of April* 11.

Home Correspondence.

Application of Steam Power.—The answer to your subscriber's letter respecting the best mode of applying the power of a steam-engine to general agricultural purposes will be—Let him get a steam-engine of the size he mentions and put a large pulley on the fly-wheel shaft; let him then in a suitable part of the barn put up a shaft with a pulley opposite the one on the fly-wheel, which shaft he can then turn by a belt made of gutta percha, which is the best material for the purpose. On this shaft he can put various pulleys, of such sizes as he may require, and by putting pulleys on the different machines to be turned he can work them all with belts. He will have to calculate the size of his pulleys so as to attain the requisite speed; thus, supposing the engine makes 80 revolutions a minute, the pulley on the fly-wheel shaft being 30 inches in diameter, and the pulley on the working shaft 12 inches, this shaft will make 2½ revolutions for one of the engine, or 200 a minute. Now, to work a threshing-machine, which should make 800 revolutions a minute, he must put a 4 feet pulley on his shaft, and a 1 foot pulley on the shaft of the drum of the threshing-machine. Or to work a chaff-cutter which should make 100 revolutions a minute, he must put a 1 foot pulley on the working shaft, and a 2 feet one on the chaff-cutter. To steam the Flax he must have a valve attached to the boiler, which will turn the steam into the pipes put round the Flax. I have here a six-horse power engine doing all this, and a Flax rolling and Flax scutching mill of the most improved construction, all of which I wish to dispose of at a very low price, as I am giving up this farm. Perhaps your correspondent might like to purchase them, as they seem to answer his description. *Henry Crockford.*

The Progress of a Storm.—Having an engagement about 25 miles from home on the afternoon of Thursday, April 4th, I had an opportunity of observing the course and velocity of the progress of storms ashore, which does not often occur. The previous night had been one of most violent tempest; a gale from south-west, commencing at noon of the Wednesday about south, and shifting gradually round to the west, accompanied by torrents of rain, till noon on Thursday, at which time the rain having ceased, and the blue sky glimpsing out occasionally, I set out on my journey, travelling in a direction about north-east. However by 2 o'clock, having gone 14 miles, I found the day rather got worse than better, the blue sky disappeared, and the flying scud of the morning seemed to settle down again into rain. I therefore availed myself of the hospitality of a friend by the wayside, to rest my horse till 3 o'clock, by which time the sky had become blue again, the sun shone out cheerfully, and I started once more, expecting a pleasant drive. But, no; to my surprise, in less than half an hour, the haze came on again, the clouds thickened around me, and soon after 4 o'clock I arrived at my journey's end, just in time to escape the drenching of the stormy evening which was closing in upon me. The interval between my arrival and the sounding of the dinner bell was so engrossed by an animated discussion on the merits of your friend "Porcius and his Pigs," that we quite forgot to think of the weather, that interesting topic of all Englishmen, until we were hurried away to make a hasty toilette, when looking out at the storm I expected to see, to my surprise I was gladdened with the brightly sinking sun, whilst in the north-east alone the dark bank of clouds showed that my course had followed the storm, and that the variations of weather which I had experienced during the day were due to the unequal pace with which I had followed the march of the tempest's track. *F. P. B. M., April* 6.

Garden Allotments.—Will any of your numerous correspondents be kind enough to answer me the following queries relative to garden allotments in agricultural districts, and give me any hint by which the system may be made to work advantageously. The amount of land let out in allotments to the poor? At what rate per pole [5½ yards square] it is let? The quality of the land when first let out? Its present quality? Does the system work well for the poor? The average amount of poor rates before the introduction of the allotment system? The present amount of poor-rates? What quantity of land is allotted to each family? The usual number of labourers out of employ before the system was introduced? The present usual number of labourers out of employ? How the farmers regarded the system when first introduced? How they look at it now? Its moral tendency. *R. G., April* 15.

Cattle Feeding.—With reference to my statement of the 2d March last (*Agricultural Gazette*, p. 139), I have been presented with the following valuation of the manure, on the principle deduced from the very extensive and elaborate experiments of Mr. Lawes,—that the nitrogen carried off by the butcher in feeding stock is equivalent to the difference between that element and ammonia, or to the hydrogen which enters into its composition in the formation of the latter; the computation will therefore stand thus:

	tons.		lbs.
Meal, bran, and Pollard	155 = 347,200 at 3 per cent.		10,416
Straw	153 = 342,700 „ ½ „ „		1,714
Hay	84 = 87,160 „ 1 „ „		872
Mangold Wurzel	340 = 761,600 (388 lbs. at 1 of nitrogen.)		2,253
Swedes	90 = 191,600 (4¼ lbs. per ton.)		382
Green crops, and after feed, 56 acres, estimated as dry at 1½ ton per acre	84 = 188,160 at 1 per cent.		1,882
Slaughtered stock, offal, and blood, 10,000 „ 10 „ „			1,000
Left on the land the tops of Mangold Wurzel, 105 tons, at 13 per cent.			1,365
Tops of Swedes, 30 tons, at 10 per cent.			300
Coal ashes			—
		lbs.	20,184

20,184 lbs. of ammonia at 6*d.* will amount to 504*l.* 12*s.*, so that, on the moderate computation of the above, my prospective crops will have to be charged with this sum to the credit of my cattle and green crops of 1849. But even allowing for a considerable loss by evaporation, or from other causes, there will remain an immense amount of carbonaceous and alkaline substances, and all the phosphate of lime—which was not required in the animal economy. I think we may safely conclude that by proper management of stock, on an average of seasons, there is no cheaper way of maintaining or increasing the fertility of our soils, than by a large consumption of purchased food, aided by the root and green crops of our farms—provided we economise the manure, which is rarely done. Every day's experience convinces me that the cooking and preparation of our straw, hay, meal (and possibly our roots), is essential to the profitable feeding of our animals; but more of this hereafter. *J. J. Mechi, Tiptree Hall, April* 18.

On Farm Buildings.—It has often occurred to me that it would be very advantageous to have a second floor over the whole ground area of a farmery, and standing on cast-iron pillars, which would also support the roof of corrugated iron. On this second floor every sort of food would be prepared, and let fall from it upon the places where wanted for use. For this purpose there will be laid a number of railways on which light waggons will run and convey the articles to the proper places. The steam power of the threshing machinery will be the "primum mobile" of the whole concern; the making of the power will be done on the ground, and the scutching apparatus will be on the second floor. The unthreshed corn will be raised to the second floor by means of travelling carriers, and also the roots, as Turnip, Beet-root, and Potatoes. Cutters for hay and straw may be placed on one side of the threshing power, and for roots on the other, and all impelled by the agency of steam. Being laid in depôts, the chaff and sliced roots can be conveyed to any place on the railways, and let fall from the waggons into the cribs and mangers. Litter in the shape of uncut straw will be deposited in the same way over the yards. This idea arises from the practice of millers raising aloft the crude article of manufacture, and letting it fall to the ground in the condition of use. A descending body is always easily commanded, and can be made to pass through any number of performances before it reaches the ground and requires to be again raised. The latter should never occur; the reaching of the ground must finish the process and terminate the labour. *J. D.*, 1849.

Geological Specimens.—Mr. Downes, of Wickham Market, Suffolk, would be glad to effect, through the medium of our "Notices to Correspondents," an exchange of geological specimens. He would be happy to change shells and other characteristic specimens from the crag, and other members of the tertiary formation, for those from other deposits.

Savings.—The necessity of provident habits cannot too often be impressed on the labouring classes. When some are spoken to on the duty of saving a little in the day of health, and when employment may be had, they at once admit the propriety of doing so; but objections are started, and the most common one is, that "the sum they can save is so small that it is not worth while beginning." In answer to this objection, the old saying may be stated "take care of the pence, and the pounds will take care of themselves." The result of adding together the littles has often been the astonishment of those who began with the intention of saving a few pounds, but who, in the course of a few years, with the regular addition of interest, were able to look at their account with the sum of 10*l.* or 20*l.*, or even a larger amount due to them. Among the labouring classes, in the time of employment, few are without the means of saving something. It is often foolishly said, that those having small wages cannot be expected, and are not required to save; but it is a melancholy fact, that it is not those who have large wages who save most. The reason of this is, that being accustomed to plenty, they do not put that value upon their means which they ought to do, but recklessly spend their income in sensual pleasure, and frequently in extravagance and folly. It is no uncommon thing to find a man in regular employment, receiving perhaps 20*s.* a week, whose wages are required, as soon as received, to pay off his debt in a shopkeeper's book, so that he has seldom a shilling at his command. On the other hand, there are many whose earnings do not exceed 12*s.* a week, who, with habits of economy and self-denial, lay past a part of their income—their names are not to be found in the books of any shopkeeper—they can even lend assistance to some poor friend or neighbour, and

their hand is not shut against the claims of religion and benevolence. It is not only the duty, but the interest of the labouring classes to use every means in their power to induce their fellow-workmen to save; for improvident men do great injury, not to themselves only, but to others also. A labourer, by saving what he can in a time of health and prosperity, may avoid much suffering and privation, and secure many future benefits for himself and his family. And I would recommend the distribution of a little tract, by Mr. Hatton of Reading, already noticed in our columns, by those who are desirous of forwarding this work, and who feel an interest in the welfare of our rural population. It has already reached an extensive circulation, and is supplied at a cheap rate. I do not hesitate to affirm that if men can be brought to understand their own interests, and to apply themselves courageously to improve the means within their reach, they cannot fail of success in bettering their condition. *M. S.*

Wages.—Having lately become a reader of your valuable paper, I have seen your allusion to the circular of queries respecting agricultural labourers, and believing that whatever tends to elicit truth in this as on most other subjects, may prove advantageous, I venture to offer the little information I possess on the subject. I have been so circumstanced during the last 13 months as to make observations and comparisons in three different localities. 1st, In the north of Nottinghamshire, where a regular system of improved agriculture is adopted; 2d, In the southern part of the Weald of Sussex, where many of the holdings are small and cultivated upon no regular plan; and lastly, in Surrey, within seven miles of the metropolis, where of course a state of things differing widely from the two former exists. In Nottinghamshire the wages of regular labourers were 12*s.* per week; house rent moderate, a cottage and small garden from 3*l.* to 5*l.* a year, and coals 12*s.* per ton. In the village where I resided, a considerable number of half-rood allotments had been let to the labourers at farmers' rent, which were by many highly appreciated, though being some distance from their homes was found to be a disadvantage. There were opportunities for good hands to earn considerably more than 12*s.* at piece-work, such as Wheat hoeing, at 3*s.*; Turnip hoeing and singling, with the help of a boy or two girls, at 4*s.*; mowing Clover and Grass at from 2*s.* 6*d.* to 4*s.* 6*d.* per acre, without beer. In harvest, mowing Wheat, Barley, and Oats, at from 6*s.* to 9*s.*, that is, mowing, binding, stacking, and raking—none of the corn being led home in the loose state. The heavier crops of Wheat are reaped with the sickle, generally by strangers, at 9*s.* to 13*s.* per acre. Most of the corn is threshed by machine, Barley occasionally by hand at 2*s.* per qr. One-fourth of the arable land being constantly under Turnip culture, a considerable amount of labour is required in the attendance of stock in the winter, consequently the demand is much more equal throughout the year than is the case where the same system cannot be, or is not adopted. A flock of 300 sheep requires a man and two boys, the man receiving 13*s.*, and the boys 3*s.* 6*d.* each, the whole of the Turnips being cleaned and cut with Gardener's cutter. The price given for taking up and cleaning Turnips is about 8*s.* per acre; women are frequently employed at this work, and when by the day of 7 or 8 hours work, receive 10*d.* When the warm weather commences in the spring, a large number of fat sheep are shorn weekly for market, which is a branch of employment at which good hands may earn 4*s.* or 5*s.* per day. In one instance 5*s.* per score was paid for belting, washing, shearing, washing and drying the locks, and stowing away the wool. Attending to fatting cattle is another branch which affords winter employment, each farm having one or more hand so engaged at 12*s.* or 13*s.* per week. The men employed with the horses are mostly single men, boarded and lodged at wages from 8*l.* to 20*l.* a year. When a married man is kept as foreman, his wages would be from 14*s.* to 18*s.* per week, and often with house rent free; these men work early and late, in summer time being expected to be with their horses at 4 o'clock in the morning, and to take them out at 6. The neighbourhood is well supplied with schools, and the best educated are, I believe, found to be the most valued servants. The wages in the part of Sussex of which I speak, are from 10*s.* to 12*s.* per week. House rent 5*l.* a year, and coals 22*s.* per ton. The demand for labour irregular, and consequently greater temptation to commit depredations, which occasionally occur. The labourers in this part of Surrey, being so near London, are consequently, some of them at least, not strictly agricultural, and not very efficient; those of this class are only occasionally employed by the farmers. There are some good hands who readily find employment at from 14*s.* to 16*s.* per week. Coals are 22*s.*, provisions high, and house rent from 8*l.* to 10*l.* a year. The only experience I have hitherto had of the price of piece-work in this county is hay-trussing and draining; the former is neatly bound and weighed for 3*s.* per load. The draining we have had done has been from 30 inches to 3 feet deep, at 4*d.* to 6*d.* per rod of 5½ yards; the subsoil clay, and occasionally gravel; removing the sod and replacing it; also placing thorns over the pipes in clay subsoils, and damaged hay in gravel or loose sand, to prevent the sand from washing into the pipes. The allotment system has been adopted here to some extent from benevolent motives, and appears to be much valued by the working classes. The character of the labouring class for sobriety and economy does not stand high; there are exceptions, and some are glad to avail themselves of the opportunities offered for the education of their children. There is a working-man's institution, with a reading-room, where a number of newspapers and periodicals may be seen, as well as other books for circulation amongst the members; lectures are occasionally given, and it appears to be in a prosperous state, though I do not hear that many agricultural labourers avail themselves of the advantage. I am inclined to think that young men employed as farm-servants or as day-labourers, throughout the country, exhibit a great want of inclination to read, and perhaps the nature of their employment has much to do with it; but perhaps it is worth inquiry, if there are no inducements to be offered which have not yet been presented to them. I need say nothing of the advantages which would arise from increased intelligence in that important class of the community. If I am able to give you further information, likely to be of service, I shall have pleasure in doing so. *Thomas Woolley, Clock-house Cottage, West-hill, Wandsworth.*

Prices of Agricultural Labour.—The following are added on to the list published last week:

	No. 1.	No. 2.	No. 3.
Present wages of men per week	10s to 12s	12s	9s
Wages during harvest month	...	12s to 15s	15s to 18s *
Wages of female labourers	10d to 1s	1s	10d to 1s
Mowing Clover per acre ...	3s to 3s 6d	2s 6d	2s 6d to 3s 6d
Mowing Meadow grass ...	3s 6d to 5s	2s 6d	3s to 4s
Reaping and tying Wheat...	9s to 10s	10s	8s to 10s
Threshing Wheat per bushel	6d	6d	6d
Digging drains 42×14×3 ...	...	3d	...
Cottage rent	...	78s	4l to 5l

* With beer.

No. 1 is from Mr. Whittem, of Coundon, Warwickshire; No. 2 is from Cumberland; No. 3 from Mr. Yool, of Beacon's-field, Buckinghamshire.

On the Qualifications of Farmers.—A few weeks since there appeared in your columns some remarks on the qualifications of gardeners, and your correspondent suggested as a means by which the really professional gardener should be distinguished from the flock of those whose pretensions to the title are but too palpably equivocal; that he should qualify himself by undergoing an appointed examination before a properly constituted board, much in the same way that young men are entitled to practice physic or surgery by the possession of a diploma of the Apothecaries' Company or the College of Surgeons. The idea is very good, inasmuch as the principle which it involves is that which long experience has taught is the best that can be applied for the protection of the public against fraud, and for the elevation of a very numerous and important class of men; while the advancement of science in that department would be marked by much better results than can possibly occur under the present system. But the principle contained in your correspondent's suggestion may be likewise extended with advantage to a larger and more influential body of men than even gardeners, and in its ultimate effects must be productive, in proportion, of a far greater amount of real benefit. A great and laudable effort is everywhere making at the present day for raising the intellectual and social position of the farmer, and it is gratifying to observe model schools and colleges springing up on every side, professing to have for their object this desirable end. Agriculture is, in fact, taking up a very high position, and it is to be hoped that the time is not very far distant when we may see as tillers of the land a body of men in no respect inferior in high intellectual acquirements to the members in either of the faculties of Divinity, Law, or Physic. But desirable as it would be, such a consummation can scarcely be brought about, whilst there exists no standard by which to judge of the qualifications of the farmer. In the faculties above alluded to, an ordeal of no ordinary kind has to be gone through before the candidate is considered properly suited to fill the office for which he aspires, and stringent penal enactments protect the public from imposition and the profession from degradation. Their salutary effects being universally recognised in the integrity and learning of the great body of men who are members of these faculties. Do any valid objections exist for not following such examples in the case of farmers? I think not. I believe there is ample room for carrying out a similar plan, and it only requires a proper and liberal spirit to justly appreciate the value of such a requirement, to discover the materials ready at hand, waiting only the impress of a master mind to model them into an institution, which must prove of incalculable benefit to the farming interest, the greatest possible security to landlords, and the means of placing the tenant on a far higher and better footing than he can ever hope to attain under the present regime. *Iota, Cirencester, April 24.*

Agricultural Labourers.—It is much to be regretted that farmers should be, as they too often are, unable or unwilling to employ, to pay, and to accommodate their labourers as liberally as good ones are worthy of. The consequence of this is, as with the farmer who is not encouraged in his efforts to improve his farm, that the best labourers, being treated no better than those who are less worthy, the good ones either emigrate to other counties, where industry is better rewarded, or they too commonly sink down into the ranks of the careless, the idle, and the profligate. This is in my humble opinion a very important matter, and a subject vitally connected with the welfare of the farmer, as well as the labourer, and well worth the consideration of the landlord, the philanthropist, and the statesman. *An Old Farmer.*

The Landlord part of Agricultural Produce.—Lately I have heard such different amounts stated as the proportion which belongs to the landlord out of "a quartern loaf," which means I suppose a loaf of 4 lbs. weight, and not myself, through ignorance of the costs of manuring, ploughing, and in short preparing the land for the Wheat, as well as the quantity of water used by the baker, &c., that I shall feel much obliged if you will settle this question. We will suppose the land lets at 20*s.* per acre, and the bread to be worth 4*d.* Perhaps the "Old Farmer" who gave us a specimen of what he can do, in page 235, and tells us that he does not like to be a mere idle looker on, and wishes to make himself useful, will employ his time in making such calculation. I am convinced the work will do him nothing but good. *Murphy.*

On Farm Horses.—All intelligent scientific observers have stated their opinion of the very undue preference that has been constantly given to heavy carcases of the stallions for farm purposes that have been exhibited at the shows of the Royal English Agricultural Society since the commencement of that institution; and it must be acknowledged that the observation is very just and true, and appeared most conspicuously at Newcastle in 1846, and at Norwich in July of the last year. The first prizes were awarded to short heavy fat carcases, wherein the only properties were weight of offal and an abundance of muscular fibre, loading every exertion and encumbering every step of the animal; and at their sides have stood the lengthy active carcases that befit the work of the farm, and the spirit that moves and impels the whole machinery. There cannot possibly be a greater mistake than having heavy fat animals for the purposes of the farm. The very first point of all superior breeding is, to get quit of the superfluous offal, both in fattening animals, and in those for the use of draught and the road. In the former case, the articles are useless to the butcher; and in the case of horses, the animal is burdened with a superfluous weight, which promotes perspiration, and debilitates the muscular action. The body of a farm-horse should be comparatively light, round—the offal must not show any suspension below the level of the fore ribs, but rather rise upwards. The thighs must be deep and sinewy, and the legs flat in the bone, and little hair at the heels. The neck long, lofty, and well arched; the head small, and tapering to the muzzle. The whole animal should be a "racer," enlarged to the size that is capable of bearing the burdens and fatigues of farm-work. Very widely different are the figures to which the prizes are given. The sole object seems to have heavy fat carcases fit for the shambles, without any regard to spirited action or quickness of step. Heavy bodies are killed by their own movements, and by the effervescence that takes place in such a collection of fleshy materials. Muscle and not fibre is required in the horse, and the latter must be present only in the quantity that is sufficient to bind the muscular frame in the due elasticity and vigour. Any greater quantity only creates a burden, and forms a useless appendage. The best farm-horse would be got by a cross between the largest blood-horse and the choicest country mare that can be found. The size must be large on both sides, and the figure handsome. The progeny will possess both strength and action, which when combined form the "ne plus ultra" of all animal perfection that is meant for the purposes of exertion. Such an animal will wonderfully contrast the prizes of our agricultural shows; but of the side of superiority no doubt would for a moment remain. *D. J.*, 1849.

Societies.

ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

A MONTHLY COUNCIL was held at the Society's House in Hanover Square, on Wednesday last, the 1st of May. The following Members of Council and Governors were present: His Grace The Duke of RICHMOND, K.G., trustee, in the Chair; Lord Bridport, Lord Portman, Hon. R. H. Clive, M.P., Hon. Dudley Pelham, M.P., Hon. H. W. Wilson, Sir Thomas Dyke Acland, Bart., M.P., Sir Charles Lemon, Bart., M.P., Sir John V. B. Johnstone, Bart., M.P., Mr. Alcock, M.P., Col. Austen, Mr. Raymond Barker, Mr. C. Barrett, Mr. S. Bennett, Mr. H. Blanshard, Mr. Bramston, M.P., Mr. Brandreth, Mr. Burke, Col. Challoner, Mr. Evelyn Denison, M.P., Mr. R. Garrett, Mr. Brandreth Gibbs, Mr. Grantham, Mr. Hamond, Mr. Fisher Hobbs, Mr. Hudson (Castleacre), Mr. Jonas, Rev. C. E. Keene, Mr. Lawes, Mr. W. Miles, M.P., Mr. Milward, Mr. Pendarves, M.P., Mr. Pusey, M.P., Prof. Sewell, Mr. Shaw (London), Mr. Shaw (Northampton), Mr. Villiers Shelley, Mr. Sillifant, Prof. Simonds, Mr. W. Simpson, Mr. Stansfield, M.P., Mr. H. S. Thompson, Mr. C. Hampden Turner, Mr. Turner (of Barton), Mr. G. Wilbraham, and Prof. Way.

The following new Members were elected:

Ticehurst, Frederick, Hastings, Sussex
Pedlar, Richard, Barton, Tiverton, Devon
Smith, Richard, Sedlescombe, Battle, Sussex
Northcote, Stafford H., Pynes, Exeter
Arnold, George, jun., Dolton, Crediton, Devon
Limbrick, George, Horton, Chipping-Sodbury, Gloucester
Corner, Richard, Torweston, Williton, Taunton
Watson, Richard Huxham, Dorsley, Totnes
Shorten, Charles Thomas, Ipswich, Suffolk
Barnes, Ralph, Exeter, Devonshire
Walker, William Henry, 38, Sackville-street, London
Kingdon, Samuel, Duryard Lodge, Exeter
Creed, John, Whiddon House, Newton-Abbots, Devon
Norris, Thomas George, Southernhay, Exeter
Lumley, Robert Wheatley, 9, Charles-street, Berkeley-square
Saunders, Philip, Rudge Farm, Morehead-Bishop, Crediton
Boscawen, Emlyn, Mereworth Castle, Tonbridge
Tout, Michael, Burrinton, Chumleigh, Devon
Horsfall, Thomas, Burley Hall, Otley, Yorkshire
Whidborne, J., Teignmouth, Devon.

FINANCES.—Colonel CHALLONER, chairman of the

Finance Committee, laid before the Council the Monthly Report on the accounts of the Society; from which it appeared, that, on the previous day, the current cash-balance in the hands of the Society's bankers was 2582*l.* (including 1260*l.* as the subscription from Exeter, 180*l.* on account of compositions for life, and 1142*l.* as special balance available for current purposes). The Report contained the following reference to legal proceedings, instituted, by special order of the Council, against those members of the Society who were more than two years in arrear of their subscription, and who have failed to comply with the claims of the Society, as communicated to them in the numerous circulars addressed to them, from time to time, on the subject.

"The Finance Committee have to report that, in conformity with the orders of the Council, they have, in the course of the past month, taken out summonses in the County Court against a portion of those persons residing in and about London, who have neglected to respond to any of the applications repeatedly made to them for the payment of their arrears; most of whom, on the receipt of their summons, have paid into court the amounts due to the Society, together with the costs. The Finance Committee cannot but regret that the painful necessity which obliges them to resort to these extreme measures, for the recovery of arrears due to the Society, should entail additional expense on the parties who thus contend its just claims in these cases, as well as in those, which may hereafter arise, in which parties, by order of the metropolitan courts, and agreeably with the power vested in them, may be required to be summoned from distant parts of the country to London, as the locality within which their obligations to the Society have been contracted, and become thereby subject to a still further amount of costs. —The Committee will continue to persevere steadily in carrying out the orders given to them by the Council for the recovery of the arrears still remaining due."

The Committee concluded their Report by recommending that Messrs. Saunders and Co., of Exeter, should be requested by the Council to accept the appointment of Bankers to the Society during the period of the Exeter meeting.

The Council having taken this Report into their deliberate consideration, decided, that, while the just claims of the Society should be fully maintained in these actions, and the various powers at the disposal of the Society made known to the parties resisting them, every care should be taken to prevent an increase of costs to the defendants, although cases might unfortunately occur in which it would be imperative on the Society to avail themselves of a special order of court for the summoning of a member from a remote part of the country to London, to answer in person the claims made against him, a necessity which, they trusted, would only seldom occur. They also expressed a hope, that when the Society had established, by a few decisive cases, its full claim for the recovery of arrears, the members in arrear, both for their own sake and that of the Society, would at once, without further appeal to legal forms, discharge the obligations into which they had voluntarily entered. It was also thought desirable that it should be known, that, in all cases where parties withheld their subscriptions because the Journals of the Society had not been transmitted to them, the Journals, on the payment of the subscriptions, would be immediately forwarded, and had been only withheld in accordance with a rule of the Society which required the subscription to precede the transmission of the Journal. The Report of the Finance Committee was then adopted and confirmed.

Prize Essays.—Lord Portman, in the absence of Mr. Pusey, reported the further awards made by judges of Essays for the current year, which, on the chairman's opening the sealed motto-papers of the Prize Essays, were as follows:

I. The Prize of 50*l.*, for the best Report on the Farming of Somersetshire, awarded to Thomas Dyke Acland, jun., of Holnicote, near Minehead.

II. The Prize of 20*l.*, for the best Essay on the Management of Oats, awarded to John Haxton, Farmer, of Drumnod, near Cupar, Fifeshire.—The Judges commended the essays bearing the mottoes, "Theory without Practice is nothing worth," and "Let Experience test the truth of Science."

III. The Prize of 5*l.*, for the best Essay on the Climate of the British Islands in its effect on cultivation, awarded to Nicholas Whitley, Surveyor, Truro, Cornwall.—The Judges commended the Essays bearing the mottoes, "Observation guided by Science," and "A. B. C."

Agricultural Chemistry.—Lord Portman also laid before the Council the Report of the Chemical Committee, including a special report made by Prof. Way on the operations carried on in his laboratory during the past year. The Council directed that this Report of Prof. Way should be read before the Members at the Weekly Council to be held on the following Wednesday; and they adopted the following proposed subjects of investigation during the ensuing year:

1. The continuation of the investigation into the absorptive properties of soils, including clays.
2. The nutritive properties of the Grasses.
3. The agricultural properties of the chalks and marls.
4. The chemical properties of water; with a view to its effect on irrigation, and on the health of animals.

Exeter Meeting.—Lord Portman then reported the favourable progress of the arrangements connected with the Exeter Meeting: the erection of the pavilion and show-yard, under the direction of Mr. Henry Manning, the Contractor of Works to the Society; the entries for implements and stock by exhibitors; the personal explanation of the theory and practice of catch-meadows in Devonshire, by Mr. George Turner, of Barton, and the exhibition of Sir Thomas Acland's water-meadows at Killerton; and the preparation of the programme of proceedings connected with the Exeter meeting, for the information of the members.—This Report was adopted by the Council.

Colonel Challoner having called the attention of the Council to the convenience and advantage of the Pavilion Dinner taking place on the Wednesday instead of the Thursday, as heretofore, it was carried, on the motion of Lord Portman, that, after the present year, the Pavilion Dinner should take place on that day. The Council referred the question of the place where the judges' awards of live stock were to be read at the Exeter meeting, to the consideration of the general Exeter Committee.

Mr. Fisher Hobbs and the Hon. H. W. Wilson having called the attention of the Council to the desirableness of an extension of time for the exhibition of implements and live stock at the country meetings of the Society, the noble Chairman suggested that such extensions should this year be tried at Exeter only as an experiment, in order that the Directors and Stewards might examine into the result of its effects on the animals exhibited, for the future guidance of the Council in repeating or discontinuing such extension. The Council then agreed that the show-yard should be open to the public on the Friday, at one shilling each person, from 6 o'clock in the morning till 12 at noon, after which time the cattle might be removed.

On the motion of the Hon. Capt. Pelham, seconded by Mr. Shelley, Mr. Anthony Hamond, of Westacre Hall, Norfolk, was appointed the Steward-Elect of Implements for the Exeter meeting, to come into office as a Steward in that department at the ensuing meeting of the Society, at which there would be an exhibition of implements, namely, in 1852.

On the motion of Mr. Brandreth Gibbs, Mr. Samuel Jonas, of Ickleton, Cambridgeshire, was appointed one of the Stewards of Cattle at the Country Meetings of the Society, in the place of Mr. Kinder, who retires by rotation.

The following committees were appointed for the selection and recommendation of the Council, of proper persons to be appointed as judges at the Exeter meeting, from nominations particularly requested to be made by the members at large of the Society, and communicated to the Secretary before the general meeting on the 22d inst., or to the President on that day; such members, in making these nominations, being requested to certify from their personal knowledge that the parties proposed are qualified and willing to act as Judges for the particular class for which they are respectively recommended, and who are unconnected with any exhibitor of stock or maker of implements, and have no direct personal interest in the stock exhibited, as the breeder of any of the animals upon which they may be called upon to adjudicate. 1. Committee for Judges of Implements: Lord Portman, Mr. Thompson, Col. Challoner, Capt. Pelham, M.P., Mr. Brandreth, Mr. Hamond, and Mr. Shaw, of London. 2. Committee for Judges of Cattle: Lord Portman, Col. Challoner, Mr. Shaw, of London, Mr. Miles, M.P., Mr. Shaw of Northampton, and Mr. Brandreth.

Meeting of 1851.—The Council, having had letters read to them from Mr. Pusey M.P., the Chairman of the Inspection Committee, appointed by the Council "to inspect any site or sites of ground proposed for the show-yard in 1851, and to report to the Council their suitableness or otherwise for the purposes of the Society," and received statements from the members of the Committee then present at the Council, unanimously agreed to the following resolutions:

1. That the Council are prepared to fulfil their promise of holding a Cattle Show in Hyde Park in 1851, as requested by the Royal Commission.
2. That the Inspection Committee be requested to communicate the above resolution to the Royal Commission.
3. That the General Meeting in the country required by the Charter, be held in 1851, at Hampton-court.

The Council then appointed the following General Middlesex Committee. Duke of Richmond, Marquis of Downshire, Lord Portman, Hon. Capt. Pelham, M.P., Mr. Raymond Barker, Mr. Brandreth, Col. Challoner, Mr. Brandreth Gibbs, Mr. Fisher Hobbs, Mr. Milward, Mr. Shaw of London, Mr. Miles, M.P., Mr. Shelley, and Mr. Pusey, M.P.

Veterinary Inspection.—Mr. Raymond Barker, Chairman of the Veterinary Committee, reported that an interesting statement had been received from Prof. Simonds, detailing his inquiries into the cause of the great amount of illness and death in cattle on farms in Somersetshire, occupied by tenants of Lord Portman. The circumstantial evidence derived from the locality in which the cattle were placed, and the post-mortem examination which Prof. Simonds had made on one of the animals placed at his disposal, appeared to fix the cause of the malady on the water the animals had been in the habit of drinking. Specimens of the water were undergoing the chemical examination of Prof. Way, and Prof. Simonds was prosecuting his researches into the physiological changes of condition and structure found to have taken place in the diseased cattle. Mr. Barker hoped that the final report would be received by the committee, and laid before the Council at their Monthly Meeting in June next.

The Council then agreed to the House List of Council, to be recommended at the ensuing general meeting, agreeably with the terms of the Bye-laws; and having decided that such general meeting should be held at 11 o'clock in the forenoon of Wednesday, the 22d inst., they adjourned to their weekly meeting on Wednesday next.

Prof. Way has signified his regret that he will be under the necessity of postponing his lecture "On Variations in the Chemical Composition of Water, as affecting its Agricultural uses," from the 15th of May to the 19th of June, in consequence of his inability to complete the details of that lecture, from the more immediate pressure of other engagements for the Society, which at present entirely occupy his time.

Farmers' Clubs.

York: At a late monthly meeting of this Club Mr. Hawking, of Linton-upon-Ouse, delivered a lecture on the subject of *Agriculture and its Prospects in Connection with the past.* He said:

If we regard farming operations, we find them nearly as expensive as they were when produce was selling at much higher prices, except 10 per cent. deducted on wages. Now to simplify and illustrate, I will make a comparison between the present year and the 12 past years, which make an average price of Wheat about 7*s.* per bushel, Barley 34*s.* per qr., and mutton 6*d.* per pound. Take 100 acres of arable land upon the four-course system, at 25*s.* per acre rent, 125*l.*, which should produce annually, viz.:

25 acres of Wheat, 24 bushels per acre, at 7*s.* p. bush.	£210	0	0
25 acres of Barley, 36 bushels ditto, at 34*s.* per qr. ...	191	5	0
50 fat sheep, 24 lbs. per qr., 6*d.* per lb., 48*s.* each ...	120	0	0
Wool on 90 sheep, 450 lbs., at 1*s.* per lb.	22	10	0
Total	£543	15	0

The total produce of the farm ought to raise 543*l.* 15*s.*, which is nearly four and a half rents, and ought to be produced upon a well cultivated farm. Then take the same farm, at the same rent and produce, at present prices:

25 acres of Wheat, 24 bushels per acre, at 5*s.* per bushel	£150	0	0
25 acres of Barley, 36 bushels ditto, at 25*s.* per qr. ...	140	12	6
50 fat sheep, 24 lbs. per quarter, at 5*s.* per stone ...	100	0	0
450 lbs. of wool, at 10*d.* per lb.	18	15	0
Total	£409	7	6

Which would be the total produce of the farm, only making three rents and a fraction short of a half; in fact, making a difference between present prices and the past of 134*l.* 7*s.* 6*d.* in the cultivation of 100 acres of land, having a rent charge of 125*l.* Thus showing if the rent is forgiven, the cultivator will still sustain a loss, and at present he has received no deduction, except about 10 per cent. on wages. Now, let us prove what amount of labour will be required to cultivate this farm:

For three men, at 12*s.* per week each...	£93	12	0
For three boys annually, at 8*s.* per week	62	8	0
Total	£156	0	0

Ten per cent. upon 156*l.* would be 15*l.* 12*s.*, which deduct, and it still leaves the farm minus 118*l.* 15*s.* 6*d.*, without paying one farthing rent for his land. This shows to us at once that farming has been a most excellent business, or is now a most ruinous one. And if we remark upon the old farmers, with all their sobriety, diligence, and economy, not many of them got rich, nay, very few of them could be gratified like the common industrious tradesmen in towns, who attend to business 20 or 30 years, then enjoying themselves in retirement on the fruits of their early labours. Some people say you must adopt scientific farming, and many of these would-be instructors, if you test them, do not correctly know the right end of a plough. To farm in a scientific manner, the landlords must make greater investments, to encourage the scientific cultivator in his enterprise. And the cultivator himself must sink more capital before he can bring his plan into operation. But I may at present ask what landlord and what tenant can be induced to sink more capital, when that which is already sunk returns them so little interest, and with every prospect of paying them less. I am not going, sir, to discourage scientific farming, for I admire, I learn, and I practise it, so far as I am persuaded it will yield a return. It is our interest, as agriculturists, to keep our farms in a good state of cultivation, and to produce good crops at as little expence as we can. And it is the duty of agents to respect, to encourage, to shield, and to prefer good farmers to bad, for before a man can raise a farm to a good state of cultivation, he must sink 7*l.* of his own money upon every acre he occupies, thereby making every 100 acres he occupies 700*l.* more valuable than that which is occupied by a bad farmer. But before a man can be induced to sink so much of his capital in the cultivation of rented land, he must have confidence in the owner and agent, for he cannot act like the tradesman—put his money into goods and take it out when he likes. For in many instances what the cultivator expends in the cultivation of his soil, he does not expect, nor can he get it back again in less than three or four years. It is generally said lower your rents, which must be done; yet, I have shown that the taking away of the whole rent will not be equivalent to an advance of 1*s.* 6*d.* per bushel upon the Wheat crop, making it 6*s.* 6*d.* per bushel instead of the present price, 5*s.* If there is to be no rent paid upon landed property, it will be of no use to the owner, and will be destructive to the real national funds of this country, for past instances show that we have no real security unless it is invested in the soil. We must not only have a reduction in rents, but in all taxations, rates, wages, tradesmen's and merchant's accounts, destroying sinecures, pensions, and all superfluous salaries, lowering centage and profits upon trade in ratio to the landed interest. Would it not be fraudulently unjust to take away the interest of the landed proprietor, and leave the other interests of the country undiminished? In the national weal all interests must rise or fall together. It is estimated that in the United Kingdom there are 48,000,000 acres of land under cultivation, at a rental of 40,000,000*l.* per annum; and that 22,000,000 are cultivated for the grain crop, which may be calculated to produce the following quantities at the late expected prices:

24,000,000 qrs. of Wheat, at 56*s.* per qr. ...	... £67,000,000
10,000,000 qrs. of Barley, at 36*s.* per qr. ...	... 18,000,000
40,000,000 qrs. of Oats, at 28*s.* per qr. ...	... 56,000,000
5,000,000 qrs. of Beans and Peas, at 40*s.* per qr.	10,000,000
Total	£151,000,000

Now let us take the national production at the present prices.

Wheat at 40*s.* per qr.	... £48,000,000
Barley at 25*s.* per qr.	... 12,500,000
Oats at 16*s.* per qr.	... 32,000,000
Beans and Peas, at 30*s.* per qr.	... 7,500,000
Total	£100,000,000

Thus you see to a demonstration that the produce of the arable land of this country is depreciated in value one-third, consequently the value of land is reduced one-third, and that one-third of the money invested in land and its improvement, and the stock and crop upon it, is taken away and lost to its rightful owner. Therefore, unless the land occupier can have his rent reduced one-third, and all rates and taxes, and wages and expenses upon his land reduced one-third, it is impossible for him to pay his way under existing depression.

Review.

On the Drainage of Strong Clays. A Prize Essay of the Newcastle-upon-Tyne Farmers' Club, by Peter Laws.

We have great pleasure in directing attention to this little work, as highly creditable to the Newcastle Club; which (as we have not lately seen any papers by its members), we had begun to fear was defunct. Mr. Laws had adopted throughout a medium, and we think a judicious, line between the deep and shallow drainers, and between the pencil-cases and the tunnels. He has also illustrated the work with some very neat drawings

to which we would suggest, in case of a reprint, more extensive reference or description than he has at present given. The strong clays on which the Essay treats are subdivided into—1st, Tenacious clays, on which he recommends the drains to be 16 feet apart and 28 inches deep; 2d, Strong stony clays, on which the drains should be 20 feet apart and 3 feet deep; 3d, Friable clays, the drains to be 24 feet apart and 3 feet deep; 4th, Soft free loamy clays, the drains to be 30 feet apart and 3 feet 6 inches deep; 5th, A mixture of the above clays, interspersed with gravel and sand, the drains to be 26 feet apart and 39 inches deep. We refer to the work itself for the estimates of the expense at which the above work can be done in Northumberland, and also for several other useful tables. In some of the above clays Mr. Laws advocates the filling in of the drains with the surface soil, but in 3 and 4 he thinks it immaterial whether this be used for that purpose or the clay that has been taken out. Upon the tenacious clays he expresses a most decided opinion that increased depth will not compensate for excessive distance, and if the drains be filled in with the clay taken out "he is satisfied that the latter will return to its original state." Mr. Laws has in general advocated the use of pipes, though he says that in strohg clays the common horse-shoe tile draws quicker. No reason is assigned for this last opinion. If the various distances which are recommended to be used in the above-named description of soils be anything like correct, they afford an odd commentary upon those who would lay down one rule for depth and distance in all situations. *C.*

Miscellaneous.

Improved Churn.—Mr. B. Samuelson, of the Britannia Iron-works, exhibited a newly invented churn at our market, on Thursday last, with which he produced upwards of 3 lbs. of excellent butter in the short space of 8 minutes on the first and 7 minutes on the second trial. The churn is made entirely of wood, and is similar in appearance to the ordinary box churn—differing from it only in the construction of the dasher, which is hollow and divided by a horizontal and several vertical partitions, into a number of cells; these as the dasher revolves carry the air down with them, and by its mechanical action on the cream, cause the butter to be obtained in the short time we have recorded. *Banbury Guardian.*

Conduct of an Irish Landlord.—I cannot forbear mentioning the noble conduct of Mr. Stephen De Vere as related to me by Lord Monteagle. A large body of the tenants of Sir Aubrey De Vere, foreseeing the calamity likely to fall on them from the effects of the famine, resolved to emigrate to North America. To guard them against the wretched treatment to which they were then exposed on the voyage, this young gentleman accompanied his father's tenants, taking a steerage berth, and sharing in their privations. The fever broke out on board; he tended the sick, and caught the fever himself, from which, after being in great danger, he fortunately recovered. After landing the people, he accompanied them up the country, remained with them till they were fairly set a-going, and then returned home. *The Plantation Scheme, by Mr. Caird.*

Irish Labour and its Reward.—The employers of labour generally, in the west of Ireland, are not overburdened with ready money. They do not pay their labourers with regularity, and accordingly the people become disheartened, and their labour is then indolently and very grudgingly given. I am assured by a gentleman who occasionally had under his direction the employment of several hundred men, that he at first found great unwillingness on their part to task work; but after some trial with them, they became very fond of it. And what was the reason? Their former employers had given them task-work; but at the end of the week, finding that the people were earning more than the usual rate of wages, they lowered the contracts, and thus discouraged the system altogether. As soon as the men found that the rate for their work was lowered in proportion as they the more exerted themselves, they naturally became disgusted with task-work. But this gentleman continued the same rate throughout; and the men, finding that they were not taken advantage of, worked willingly, aud made good wages. *The Plantation Scheme, by Mr. Caird.*

Notices to Correspondents.

Ammoniacal Liquor: *Irish Sub.* The only ammoniacal liquor with which the farmer in a general way has to do, is the urine of his cattle. In some rare cases gas water, which is an ammoniacal liquor of variable strength, is to be had. It should be used in compost with some absorbent material, as vegetable matter of any kind, sawdust, spent bark, or peat, which it will cause to rot. Carbonate of ammonia is too costly to purchase, and it is volatile; the sulphate of ammonia is a better salt. But guano is, taking all points together, probably the cheapest manure in the market.

Cement: *J D.* If the tank be built of brick laid in blue lias cement, it will hold water. And probably any leakage may be cured by rebuilding the faulty part, using this mortar, and puddling with clay behind the wall.

Charcoal: *W Everitt.* It is very useful in compost. Mix it with guano, at the rate of 8 or 10 bushels to a cwt. You cannot compare the two, for their qualities depend upon altogether different circumstances.

Churn: *B B B, &c.* The American churn was fully described at page 269. Weston's air churn, introduced at Liverpool, we have never been able to find; it is believed that the agitation of the cream by it was effected solely by the passage of air through it. In the American churn the agitation is produced in the usual way by a dasher, but this is constructed so as to carry air down with it.

Dogs: *S.* You should apply to your solicitor on the subject. The injustice no doubt admits of legal remedy.

Ducks: *F G S.* The Aylesbury breed, and the Warwickshire blues, are good sorts; 12 lbs. a pair are a good weight for young ducks. You will not make much by fattening ducks on bought food.

Grass Seeds: *G A.* Now; apply to Mr. Dickinson, we believe at 7, Curzon-street, May-fair.

Grass Lands: *Somerset Farmer.* You may consider that there is much manure in the ashes now that they are saturated with liquid manure. The proposed dressing of Mangold Wurzel seems ample. Peat ashes vary exceedingly in quality. They often contain a good deal of gypsum. The best use you could make of peat would be to char it and use it in compost with liquid and other manure. You would soon find the value of that.

Machines: *A Subscriber.* Messrs. Barrett and Exall, of Reading, make a very light plough, which we should suppose to be under the command of one horse. Occupants of 3 or 4 acres should dibble all the Turnip or Mangold Wurzel seeds they will use, by hand. It will not answer their purpose to try the dibbling machines in use for these purposes.

Manure: *B T.* The cow is said to yold 13,000 lbs. weight of urine per annum. We do not know what may be the weight in the case of the pig—probably not above 1100 or 1200 lbs.

Permanent Pasture on Stiff Soil: *Yardley.* Aira cæspitosa lutescens, Tufted Hair Grass, 1 lb.; Alopecurus pratensis, Meadow Foxtail, 3 lbs.; Arrhenatherum avenaceum, Tall Oat-like Grass, 2 lbs.; Dactylis glomerata, Rough Cock's-foot, 3 lbs.; Festuca duriuscula, Hard Fescue Grass, 2 lbs; F. heterophylla, various leaved, 2 lbs.; F. elatior, tall, 2 lbs.; F. loliacea, spiked, 3 lbs.; F. pratensis, meadow, 2 lbs.; Lolium italicum, Italian Rye-grass, 3 lbs.; L. perenne, common Rye-grass, 5 lbs.; Phleum pratense, Meadow Cat's-tail, 2½ lbs.; Poa nemoralis, Wood Meadow Grass, 3 lbs.; P. trivialis, Rough-stalked Meadow Grass, 2½ lbs.; Trifolium pratense, common Red Clover, 4 lbs.; T. repens, White Clover, 5 lbs. Total, 45 lbs., and 1 bushel of Barley per acre.

Poultry: *W R.* Mr. Bailey, Mount-street, Grosvenor-square.

Rural Chemistry, by E. Solly, price *4s. 6d.*, second edition revised and enlarged, may be had of all booksellers, and at the Office of this Paper.

Soap Ashes: *G Lee.* They would be likely to destroy the seeds mixed with them, unless the ashes were very old, and had been long exposed to the air. The best way of applying soaper's ashes is to throw them broadcast, at the rate of 2 or 3 tons per acre, over clay land stubble in autumn, a month before ploughing them in.

South Hampshire: *A B* would be much obliged to the reporter of the "South Hampshire Farm," if he would state from his experience how many weeks it takes in winter for a Dorset ewe to bring her lamb to 10 lbs. a quarter, and what quantity of corn and cake per week is necessary (in addition, of course, to Swedes and hay-chaff *ad libitum*) for this, and to make herself fat at the same time.

Turnips, &c.: *A B.* We have sown seed nearly above superphosphate in the same way, but it is well to have a layer of earth between the two.—If your haulm remained healthy, it would probably have resulted in a larger crop of tubers; but an excessive luxuriance of leaf is not at present a desirable character in the Potato crop.

Water-ram: *B.* We have one of Mr. Roe's machines at work in our neighbourhood. It answers its purpose perfectly, which is to raise water about 80 feet by means of a fall of 6 or 8 feet.

Markets.

COVENT GARDEN, May 4.

Vegetables are well supplied, but most kinds of winter Fruit are over. Strawberries and Hothouse Grapes are both more plentiful, and the same may be said of Pine-apples, of which some good fruit may be obtained. Walnuts and Chestnuts are abundant; and Oranges and Lemons sufficient for the demand. A few bunches of young Carrots and Turnips may be had at from 1s. to 2s. per bunch; and some green Peas have made their appearance from Cornwall. Frame Potatoes fetch from 1s. to 3s. per pound. Lettuces and other salading are sufficient for the demand, and so are Mushrooms. French Beans, Asparagus, Seakale, and Rhubarb are plentiful. Cut Flowers consist of Heaths, Pelargoniums, Bignonia venusta, Primulas, Camellias, Cinerarias, Azaleas, Lily of the Valley, Epacrises, Acacias, Lilacs, and Roses.

FRUITS.

Pine-apples, per lb., 6s to 10s	Almonds, per peck, 6s
Grapes, hothouse, p. lb., 8s to 12s	— sweet, per lb., 2s to 3s
— Portugal, p. lb., 9d to 1s	Walnuts, p. 100, 1s 6d to 2s
Strawberries, per oz., 4d to 1s	— p. bush., 16s to 24s
Apples, kitchen, p. bsh., 4s to 6s	Nuts, Barcelona, per bush., 20s to 22s
— per 100, 6s to 12s	— Brazil, p. bsh., 12s to 16s
Oranges, per doz., 9d to 1s 6d	Kent Cobs, 90s to 100s p. 100 lbs
— per 100, 5s to 12s	
Lemons, per doz., 1s to 2s	

VEGETABLES.

French Beans, p. 100, 1s to 2s 6d	Onions, p. bushel, 3s 6d to 4s 6d
Seakale, per punnet, 1s to 2s	— Spanish, p. doz., 1s 6d to 4s
Asparagus, p. bund., 2s to 5s	Shallots, per lb., 4d to 8d
Rhubarb, p. bundle, 6d to 1s	Garlic, per lb., 4d to 8d
Cabbages, per doz., 6d to 1s	Lettuce, Cab., p. sc., 4d to 9d
Cauliflowers, p. doz., 1s to 4s	Endive, per score, 1s 6d to 3s
Broccoli, p. doz. bundl., 8s to 10s	Mushrooms, p. pot., 9d to 1s
Greens, per doz., 3s to 4s	Small Salads, per punnet, 2d to 3d
Sorrel, p. hf. sieve, 1s to 1s 6d	Fennel, per bunch, 2d to 3d
Potatoes, per ton, 60s to 120s	Savory, per bunch, 2d to 3d
— per cwt., 3s to 7s	Thyme, per bunch, 2d to 3d
— per bush., 2s 6d to 3s 6d	Parsley, p. doz. bun., 2s to 3s
— frame, per lb., 1s to 3s	— Roots, p. bdle., 9d to 1s
Turnips, p. doz. bun., 1s 6d to 2s 6d	Marjoram, per bunch, 2d
Red Beet, per doz., 9d to 1s	Mint, green, per bunch, 3d & 4d
Cucumbers, each, 6d to 2s	Watercress, p. doz. bunches, 6d to 9d
Leeks, per bunch, 1d to 1½d	Horse Radish, p. bdl., 1s to 4s
Celery, p. bundle, 8d to 1s 6d	
Carrots, per bun., 4d to 6d	
Spinach p. sieve, 1s	

POTATOES.—Southwark, April 29.

The Committee report that there has been a liberal supply, during the past week, both coastwise and Continental, which, with a dull trade, has tended to depreciate prices with all second-rate sorts. The following are this day's quotations:—York Regents, 90s. to 120s. per ton; Scotch do., 60s. to 90s.; Scotch cups, 60s. to 70s.; whites, 40s. to 50s.; French whites, 40s. to 65s.; Belgian do., 40s. to 50s.; Dutch, 30s. to 40s.

HAY.—Per Load of 36 Trusses.

Smithfield, May 2.

Prime Meadow Hay	66s	to 72s	Clover	60s	to 84s
Inferior ditto... ...	50	63	New Clover	—	—
Rowen	—	—	Straw	23	27
New Hay	—	—		J. Cooper.	

Cumberland Market, May 2.

Prime Meadow Hay	70s	to 74s	Inferior	65s	to 72s
Inferior ditto... ...	50	65	New Clover	—	—
New Hay	—	—	Straw	24	30
Old Clover	78	84		Joshua Baker.	

Whitechapel, May 2.

Fine Old Hay ...	65s	to 68s	New Clover	—s	to —
Inferior ditto ...	50	55	Inferior ditto... ...	60	65
New Hay	—	—	Straw	22	25
Old Clover	75	80			

HOPS.—Friday, May 3.

Messrs. Pattenden and Smith report that the market continues the same as for some time past. The bine in many places continues in a weak state.

SMITHFIELD, Monday, April 29.

We have to-day an unusually large supply of Beasts. Prices are lower, and several remain unsold. A choice Scot barely reaches 3s. 4d., and the first-rate Short-horns make scarcely anything over 3s. The number of Sheep is also large, although not excessive; the demand is very limited, and late quotations cannot be supported. Lamb is a dull trade, at about Friday's prices. We are not overdone with Calves, but trade is no better. From Holland and Germany there are 314 Beasts, 2980 Sheep, and 85 Calves; from Scotland, 500 Beasts; and 3000 from Norfolk and Suffolk.

Per st. of 8 lbs.—	s	d	s	d
Best Scots, Herefords, &c. ...	3	0 to 3		2
Best Short-horns	2	10 — 3		0
2d quality Beasts	2	4 — 2		8
Best Downs and Half-breds ...	4	2 — 4		4
Ditto Shorn ...	3	8 — 3		10

Per st. of 8 lbs.—	s	d	s	d
Best Long-wools .	3	8 to 3		10
Ditto Shorn ...	3	4 — 3		6
Ewes & 2d quality	3	4 — 3		8
Ditto Shorn ...	2	8 — 3		2
Lambs	5	0 — 5		8
Calves	2	8 — 4		0
Pigs	3	0 — 4		0

Beasts, 4448; Sheep and Lambs, 23,220; Calves, 165; Pigs, 225.

Friday, May 3.

The number of Beasts is not so large as might have been expected, considering that many remained over from Monday. Trade is exceedingly dull, and although a few choice Scots make 3s. 4d., it is too much to quote as average for the best qualities. Sheep and Lambs are plentiful; for the former, prices remain the same as on Monday, with more difficulty in obtaining them; the latter meet with a dull sale, at rather lower rates. The number of Calves is large, but the average quality is inferior; consequently a choice one makes 4s.; this is, however, an extreme quotation. From Germany and Holland there are 70 Beasts, 240 Sheep, and 217 Calves; from Scotland, 240 Beasts; from Norfolk and Suffolk, 300; and 132 Milch Cows from the home counties.

Best Scots, Herefords, &c. ...	3	0 to 3		2
Best Short-horns	2	10 — 3		2
2d quality Beasts	2	4 — 2		8
Best Downs and Half-breds ...	4	0 — 4		4
Ditto Shorn ...	3	6 — 3		10

Best Long-wools .	3	8 to 3		10
Ditto Shorn ...	3	2 — 3		6
Ewes & 2d quality	3	4 — 3		8
Ditto Shorn ...	2	8 — 3		0
Lambs	5	0 — 5		6
Calves	2	6 — 4		0
Pigs	3	0 — 4		0

Beasts, 919; Sheep and Lambs, 8610; Calves, 103; Pigs, 275.

MARK LANE.

Monday, April 29.—The supply of Wheat from Essex, Kent, and Suffolk this morning was short, and sold at an advance of 1s. per qr. upon the prices of this day se'nnight. Foreign met an improved inquiry, and fine heavy qualities of red also commanded an improvement of 1s. per qr.—English Barley is unaltered in value, but foreign is inquired after at rather more money.—We raise our quotations 1s. per qr. for Mazagan and Egyptian Beans.—Peas are firm.—Oats meet a better demand, and have nearly recovered the depression of last week.

British per Imperial Quarter.	s.	s.		s.	s.
Wheat, Essex, Kent, & Suffolk ...White	40	42	Red	35	38
— — fine selected runs ...ditto	42	44	Red	38	40
— — Talavera	46	50			
— Norfolk, Lincoln, & York ...White	35	40	Red	35	36
— Foreign	38	50			
Barley, grind. & distil., 19s to 22s...Chev.	24	27	Malting	22	24
— Foreign.....Grinding and distilling	14	19	Malting	19	22
Oats, Essex and Suffolk	15	18			
— Scotch and Lincolnshire ...Potato	16	21	Feed ...	14	19
— Irish .....Potato	14	18	Feed ...	12	16
— Foreign .....Poland and Brew	14	18	Feed ...	12	15
Rye	19	21	Foreign	18	20
Rye-meal, foreign .....per ton	5l.	6l.			
Beans, Mazagan .....19s to 22s.....Tick	23	25	Harrow	23	25
— Pigeon .....25s — 37s ...Winds	22	28	Longpod	25	28
— Foreign ..... Small	24	36	Egyptian	18	20
Peas, white, Essex and Kent.....Boilers	23	25	Suffolk	24	26
— Maple .....24s to 26s.....Grey	22	23	Foreign	19	28
Maize .....White	23	26	Yellow...	23	25
Flour, best marks, delivered ...per sack	33	37			
— Suffolk .....ditto	26	33	Norfolk	26	33
— Foreign .....per barrel	21	24	Per sack	28	32

Arrivals in the Port of London last week.

Flour, 12938 sks — 125 lbs	Wheat. Qrs.	Barley. Qrs.	Malt Qrs	Oats. Qrs.	Beans. Qrs.	Peas, Qrs.
English	3247	1996	6387	1686	419	173
Irish	—	—	—	—	—	—
Foreign	11345	9232	—	44897	3367	357

Friday, May 3.—The arrivals of English corn this week have been small, but we are largely supplied from abroad with Wheat, Barley, and Oats. This morning's market was attended by several buyers from a distance, some of whom appeared disposed to purchase on speculation, but the advanced rates insisted upon restricted business. In the sales effected in foreign Wheat an improvement of 1s. per qr. was generally realised.—Our quotations of Barley, Beans, and Peas are fully supported.—Oats are in lively demand at former prices, but a rise of 6d. per qr. renders them difficult of disposal.—We quote good common brands of French Flour 28s. to 29s., extra 31s. to 32s. per sack of 280 lbs., and there is a good sale.

Arrivals this week.

	Wheat. Qrs.	Barley. Qrs.	Oats. Qrs.	Flour.
English ...	2140	750	1020	3310 sacks
Irish	—	—	—	
Foreign ...	17540	8760	38610	— brls.

Imperial Averages.	Wheat.	Barley.	Oats.	Rye.	Beans.	Peas.
Mar. 16.....	38s 1d	23s 8d	14s 11d	22s 7d	24s 1d	25s 2d
— 30.....	37 9	23 6	15 2	21 7	23 10	25 3
April 6.....	38 1	23 2	14 10	21 6	23 8	24 5
— 13.....	38 5	22 11	15 3	20 8	23 9	26 3
— 20.....	37 10	22 8	15 3	21 6	23 9	24 9
— 27.....	37 1	22 1	15 0	21 8	23 8	25 1
Aggreg. Aver.	37 10	22 11	15 1	21 9	23 9	25 2
Duties on Foreign Grain	1 0	1 0	1 0	1 0	1 0	1 0

Fluctuations in the last six weeks' Corn Averages.

Prices.	Mar. 16.	Mar. 30.	April 6.	Apr. 13.	Apr. 20.	Apr. 27.
38s 5d	...	...	...	...	...	...
38 1		...	...	...	...	...
38 1				...	...	...
37 10	...	...		...		
37 9	...		...	...	...	...
37 1	...	...	...	...	...	

SEEDS.—May 3.

Canary, per qr.....62s to 68s	Coriander, per cwt. ...18s— 22s		
Caraway, per cwt. ...31 — 34	Mustard, white, p. bush. 7 — 9		
Hempseed, per qr. ...34 — 35	— brown, do. .....10 — 13		
Linseed, foreign, do. 37 — 45	Rape, per last .....30l.—37l.		
Clover, red, per cwt...24 — 46	Cakes, Linseed, p. 1000...8l. 5s		
— — foreign, do.— —	— — foreign, p. ton 6l. 0s		
— white, do. ... 36 — 48	— Rape, foreign, do. 4l. 5s		
— — foreign, do.— —	Tares, per bush.... 3s 0d—5s 6d		

Liverpool, Friday, May 3.—Since Monday last the arrivals of Irish grain into this port have entirely fallen off, but from the north of Europe we have a fair supply of Wheat, and a moderate quantity of Barley and Beans. Our market this morning opened with a tolerably firm aspect, and Wheat continuing to meet a fair demand, the current prices of Tuesday were fully maintained, and in some instances advanced 1d. per 70 lbs. Barley and Beans claiming more attention, improved 6d. to 1s. per qr., and Malt was 1s. per qr. dearer. Oats, realised a further advance of ¼d. per 45 lbs., and Oatmeal was the turn dearer. American Flour advanced 6d. per barrel.

Sales by Auction.

TO GENTLEMEN, FLORISTS, AND OTHERS.

MESSRS. PROTHEROE AND MORRIS will submit to public competition, by Auction, at the Mart, Bartholomew-lane, on THURSDAY, May 9th, a first-rate collection of Dahlias; the newest varieties of Fuchsias and Verbenas; also Geraniums, Heartsease, and other plants in bloom.—May be viewed the morning of Sale; and Catalogues had at the Mart; and of the Auctioneers, American Nursery, Leytonstone.

TO GENTLEMEN, FLORISTS, AND OTHERS.

MR. D. A. RAMSAY will sell by Auction, at the Brompton Auction Ground, Fulham-road, one mile from Hyde-park Corner, on TUESDAY, May 7th, at 12 o'clock, a Choice Assortment of Carnations, Pinks, Picotees, Dahlias, Pansies, and Herbaceous Plants; a quantity of Bedding Plants Geraniums, &c., in bloom. May be viewed on the morning of Sale, and Catalogues had of the Auctioneer, Brompton Nursery, Fulham-road, Brompton, Middlesex.

TO BE LET, IN ESSEX, with immediate possession, a FARM of 200 acres, principally arable, within 20 miles of town, and five of a railway station. Apply to Mr. W. SOUNDY, Park Farm, Henley-on-Thames.

SEATON, COAST OF DEVON.

TO BE LET, unfurnished, with immediate possession, by the year, or for a term, the MANOR HOUSE, containing spacious Dining and Drawing-rooms, 10 Bed-rooms, Kitchens, and other offices, with Coach-house, Stables, and Garden; also the right of Shooting over about 700 acres of preserved land. Situated between Lyme and Sidmouth, on a picturesque and healthy part of the south coast of Devon.—To view, apply to Mr. JAMES MAJOR, Seaton; and for further particulars to Mr. BABBAGE, Nettlecomb, near Taunton; or to Mr. JOHN HARE, House-agent, Taunton.

HORTICULTURAL TOOLS.

GREEN AND CONSTABLE, 36, King William-street, five doors from London Bridge, have a large assortment of GARDEN TOOLS, containing all the recent inventions, and including Lyndon's Patent Cast Steel Spades, Shovels, and Garden Forks, Lord Vernon's Hoe, Jointed Hothouse Syringes, Transplanting Tools, Registered Garden Labels, Ladies' sets of Gardening implements, Pruning Shears, Knives, &c. Agents for the Vitreous Porcelain Garden Bordering.—36, King William-st., five doors from London Bridge.

HARTLEY'S PATENT ROUGH PLATE GLASS.

In submitting our list of prices, we would beg to direct attention to the Leading Article of the *Gardeners' Chronicle* of Saturday, Dec. 8, upon the subject of "Patent Rough Plate." Some alteration having been made in the mode of manufacturing this description of Glass, the quality is greatly improved, and we now supply it perfectly flat, and, by an arrangement with Messrs. HARTLEY and Co., precisely at their prices. Cut to order in panes of

8 by 6	and under	10 by 8	at	4½*d.* per foot.
10 by 8	,,	14 by 10	at	5*d.* ,,
14 by 10	,,	1½ foot	at	5½*d.* ,,
1½ foot	,,	3 feet	at	6*d.* ,,

PACKED IN BOXES of 50 feet each.

6 by 4 and 6½ by 4½...10*s.* 6*d.* 8 by 6 and 8½ by 6½...13*s.* 6*d.*
7 by 5 and 7½ by 5½...12*s.* 0*d.* 9 by 7 and 10 by 8 ...15*s.* 0*d.*

Milk Pans from 2*s.* to 6*s.* each, Metal Hand-frames, Tiles, and Slates; Propagating and Bee Glasses from 2*d.* each; Cucumber Tubes, 1*d.* per inch; Peach Glasses, 10*d.* each; Wasp Traps, 3*s.* 6*d.* per dozen; Pastry Slabs, Hyacinth Glasses and Dishes, Shades for Ornaments, Fish Globes, Plate and Window Glass of every description, and Lamp Shades. Lactometers for trying the quality of Milk, 4 tubes, 7*s.* 6*d*; 6 tubes, 10*s.* Self-registering Thermometers for Greenhouses, Horticultural Glass, &c.

JAMES PHILLIPS and CO., 116, BISHOPSGATE STREET WITHOUT, LONDON.

GLASS FOR CONSERVATORIES, HORTICULTURAL PURPOSES, &c.



T. MILLINGTON'S SHEET GLASS, which is of the best description, varying from 16 to 32 ounces, at from 2*d.* per foot and upwards; 100 feet and 200 feet cases of large Sheet Glass, for cutting up, at 2½*d.* per foot. British Plate Glass, from 1*s.* 2*d.* to 2*s.* per foot, according to size. Patent Rough Plate Glass, from ⅛ to 1 inch in thickness, from 4*d.* per foot upwards. Glass Slates and Tiles. Milk Pans from 12 to 24 inches diameter, from 2*s.* to 5*s.* each. Cucumber Tubes, from 12 to 24 inches long, at 1*d.* per inch. Lactometers, 7*s.* 6*d.* each. Wasp Traps.—Lists may be had, on application at the Warehouse, 87, Bishopsgate-street Without, same side as the Eastern Counties Railway.

GLASS FOR CONSERVATORIES, GREENHOUSES, PIT FRAMES, &c.

HETLEY AND CO. are supplying 16-oz. Sheet Glass, of British Manufacture, packed in boxes containing 100 square feet each, at the following REDUCED PRICES for cash. A reduction made on 1000 feet.

Sizes. Inches.				Inches.				Per foot.	Per 100 feet.
		Under	6	by	4	at	1½*d.* is	£0 12	6
From 6	,, 4	,,	7	,,	5	,,	2*d.* ,,	0 16	8
7	,, 5	,,	8	,,	6	,,	2½*d.* ,,	0 18	9
8	,, 6	,,	10	,,	8	,,	2½*d.* ,,	1 0	10
10	,, 8	,,	12	,,	9	,,	2½*d.* ,,	1 2	11

Larger sizes, not exceeding 40 inches long.

16 oz. from 3*d.* to 3½*d.* per square foot, according to size.
21 oz. ,, 3½*d.* 5*d.* ,, ,, ,,
26 oz. ,, 3½*d.* 7½*d.* ,, ,, ,,

PATENT ROUGH PLATE, THICK CROWN GLASS, and PATENT PLATE GLASS for Horticultural purposes, at reduced prices, by the 100 square feet.

GLASS TILES AND SLATES made to any size or pattern, either in Sheet or Rough Plate Glass.

Propagating Glasses, Bee-hive Glasses, Cucumber Tubes, Glass Milk Pans, Glass Water Pipes, and various other articles not hitherto manufactured in glass.

PATENT PLATE GLASS.—The present extremely moderate price of this superior article should cause it to supersede all other inferior window glass in a gentleman's residence. No alteration connected with the sash is required.

GLASS SHADES, as ornamental to, and for the preservation of every description of goods susceptible of injury by exposure. Prices, since the removal of the Excise duty, reduced one-half. List of Prices and Estimates forwarded on application to JAMES HETLEY and Co., 35, Soho-square, London.

CROWN, SHEET, AND ROUGH PLATE GLASS, FOR HOTHOUSES, CONSERVATORIES, &c.

Of every manufacture FIT FOR USE, including the make of Messrs. CHANCE, HARTLEY, SWINBURNE, and others.

100 and 200 feet cases of large Sheet Glass, from 2½*d.* per foot. Small ditto, 10*s.* 6*d.* per 100 feet, packed in boxes ready for immediate delivery. Curators of Botanical Societies, Florists, Railway Agents, and others requiring large quantities, will, on sending dimensions, receive estimates at the lowest prices.

GLASS MILK PANS, CREAM POTS, Lactometers, Bee Glasses, Fish Globes, and all kinds of Dairy Glass, Propagating Glasses, Hyacinth Dishes, Cucumber Tubes, and every other description of Garden Glasses.

PATENT GLASS PENS, self supplying, never blot, never soil the ruler, and will write continuously for 12 hours.

Also, Glass Rulers, Glass Inks for office-stands, desks, &c. Stationers and Schools supplied. Wholesale Warehouse for Ornamental Shades, Lamp Shades, Gas Glasses, Genuine White Lead, Paints, Colours, and Pumps for Farm purposes.

Our Catalogue of 18 folios is the most complete ever published. No Gardener or Farm Bailiff should be without one. May be had Gratis on sending two postage stamps to Messrs. COGAN and Co., 48, Leicester-square, London.

STEPHENSON AND Co., 61, Gracechurch-street, London, and 17, New Park-street, Southwark, Inventors and Manufacturers of the Improved CONICAL and DOUBLE CYLINDRICAL BOILERS, respectfully solicit the attention of scientific Horticulturists to their much improved method of applying the Tank System to Pineries, Propagating Houses, &c., by which atmospheric heat as well as bottom-heat is secured to any required degree, without the aid of pipes or flues. S. and Co. have also to state that at the request of numerous friends they are now making their Boilers of Iron, as well as Copper, by which the cost is reduced. These Boilers, which are now so well known, scarcely require description, but to those who have not seen them in operation, prospectuses will be forwarded, as well as reference of the highest authority; or they may be seen at most of the Nobility's seats and principal Nurseries throughout the kingdom.

S. and Co. beg to inform the Trade that at their Manufactory, 17, New Park-street, every article required for the construction of Horticultural Buildings, as well as for heating them, may be obtained upon the most advantageous terms.

Conservatories, &c., of Iron or Wood, erected upon the most ornamental designs. Balconies, Palisading, Field and Garden Fences, Wire-work, &c.

HOT WATER APPARATUS AND HORTICULTURAL BUILDING.



W. HILL begs respectfully to announce that his improved "FLUE BOILER" may now be had in sizes to suit every description of Apparatus, from that of 100 feet to 2000 feet of 4-inch pipe. Improved STEAM BOILERS, from one-horse power and upwards, adapted either for stationary or portable engines, and guaranteed to be most effective.

Every description of Horticultural Building constructed upon the best principle. Buildings of any kind heated by hot water.

*** A liberal Discount to the Trade.

W. HILL, Horticultural Works, Greenwich.

CORN MANURE.

BLASHFIELD'S PATENT COPROS.—A new Manure for Corn and other Crops, containing Ammonia, Phosphate of Lime, Potash, Soda, Magnesia, Silicate of Potash, &c. Price, delivered alongside a vessel, or any Wharf in London, 8*l.* per ton. It is sold in a finely-ground dried powder, by the Patentee, at No. 3, New London-street, Mark-lane, London.

Superphosphate of Lime, Gypsum, Sulphate of Ammonia, Sulphate, and Nitrate of Soda.

MANURES.—The following Manures are manufactured at Mr. LAWES'S Factory, Deptford Creek:

Corn and Grass Manure, per ton	...	...	£10 0 0
Clover Manure, do.	...	...	11 0 0
Turnip Manure, do.	...	...	7 0 0
Superphosphate of Lime	...	...	7 0 0
Sulphuric Acid and Coprolites	...	...	5 0 0

Office, 69, King William-street, City, London.

N.B. Peruvian Guano, guaranteed to contain 16 per cent. of Ammonia, 9*l.* 15*s.* per ton; and for 5 tons or more, 9*l.* 10*s.* per ton, in dock. Sulphate of Ammonia, &c.

LAWES'S PATENT MANURE.

WILLIAM E. RENDLE AND CO., Plymouth, are Mr. Lawes's Wholesale Agents for the Sale of his MANURES, and can supply them at Mr. Lawes's prices, delivered at his Factory, Deptford Creek.—Apply to WILLIAM E. RENDLE and Co., Union-road, Plymouth.

GUANO AND OTHER MANURES.—Superphosphate of Lime (See reports of experiments in Royal Agricultural Society's Journal, Vol. 6, Part 2), Guano, Peruvian and Patagonian, Gypsum, Salt, Nitrate of Soda, and all other Manures of known value on sale. A Pamphlet on the above forwarded on receipt of four postage stamps.—Apply to MARK FOTHERGILL, 201A, Upper Thames-street, London.

PERUVIAN GUANO (GENUINE) in packages, 1*s.* each, sufficient to make 50 gallons; Cuba BAST, 1*s.* per lb.; Six-inch garden wood TALLIES, prepared for the pencil, 1*s.* per 100. The above may be had, together with every kind of Flower and Vegetable SEEDS, upon application to WILLIAM DENYER, Seedsman and Florist, 82, Gracechurch-street, near the Spread Eagle, London.

TO FARMERS AND MARKET GARDENERS.—MANURE.

MESSRS. RICHARDSON, CURRIE, AND Co.'s BONE AND CHEMICAL MANURES, Newcastle-upon-Tyne, have been successfully used for the last four years, by the agriculturists of Northumberland, Berwickshire, the Lothians, and other districts of the Kingdom; the attention of Farmers and Gardeners is particularly directed to their superior quality and true fertilising nature, and which are suited for every description of crops. For the present season they recommend their Manure for

Turnips and Bulbous Roots, at	...	£8 0 0	per ton.
Superphosphate of Lime, at	...	7 0 0	,,
Superior British Guano, at	...	6 10 0	,,

Delivered free in the Thames or nearest stream.

W. J. WILKINSON, 12, Little Tower-street, London, agent for London and the south of England.

CORN MANURE FOR WHEAT, BARLEY, OATS, BEANS, &c., &c.

THE LONDON MANURE COMPANY most confidently recommend the above, as they are daily receiving very satisfactory accounts from parties who used it with great success last season. It will be found fully equal to and much cheaper than Peruvian Guano, and is not so liable to produce so large a growth of straw. Price Seven Guineas per ton, 3 cwt. per acre. They also beg to offer their Concentrated Urate, Superphosphate Lime, Nitrate of Soda, Sulphate and Phosphate of Ammonia, Fishery and other Salt, Gypsum, Sulphuric Acid, and genuine Peruvian Guano. To insure this free from adulteration, all purchasers can receive it direct from the Warehouses of the Importer.

Bridge-street, Blackfriars. EDWARD PURSER, Secretary.
Country Dealers and Agents supplied.

PERUVIAN GUANO.—As Agents of the Peruvian Government for the importation and sale of this valuable MANURE, we think it right, for the protection of consumers and respectable dealers, to apprise them that the adulteration of the article is still extensively practised, and to recommend them to apply either to ourselves, to our agents, Messrs. GIBBS, BRIGHT, and Co., of Liverpool and Bristol, or to dealers of established character, in whose honesty and fair dealing they can place implicit confidence. ANTONY GIBBS and SONS.

London, May 4.

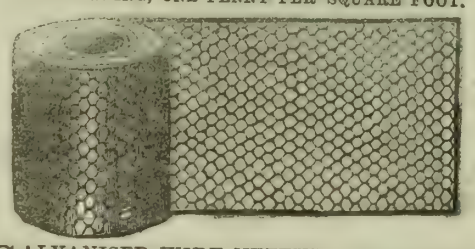
NETTING, FLAGS, AND BUNTING.—Superior Tanned Garden Netting, for preserving Fruit-trees from Frost, Blight, or Birds; or as a fence for Fowls, Pigeons, Tulip and Seed-beds, can be had in any quantity from JOHN KING FARLOW'S Fishing-rod and Net Manufactory, 5, Crooked-lane, London-bridge, at 3*d.* per yard 2 yards wide, or 6*d.* per yard 4 yards wide. Woollen Bunting, any length or width, at 6*d.* per square yard. Forwarded to any part of the kingdom on receipt of remittance, Post-office order, or stamps. Several good second-hand Flags to be sold cheap.

BELL'S PATENT LIQUID CEMENT is ready for use, and only one-eighth the cost of oil-paint. For beauty it is pre-eminent, giving the exact appearance of FINE CUT STONE. Can be used at once on fresh Roman Cement, or any other plastering, and will protect the walls as well as Roman Cement. In casks of 1, 2, and 3 cwt., at 8*s.*, 15*s.*, and 21*s.*, casks inclusive.

PATENT MINERAL PAINTS.—Invaluable for cheapness, beauty, and permanence: not half the cost of other paints, always ready for use, will keep good for years, and therefore well suited for exportation. Brilliant black, 2*s.*; rich brown, 2*s.* 9*d.*; greens and light colours 4*s.* per gallon.

G. BELL and Co., 2, Wellington-street, Goswell-street, London.

WIRE NETTING, ONE PENNY PER SQUARE FOOT.



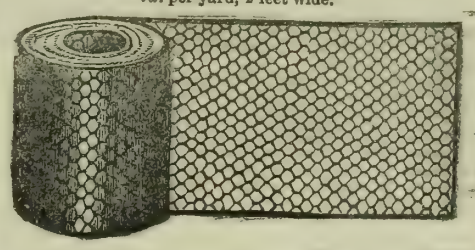
GALVANISED WIRE NETTING, TWO-PENCE PER SQUARE FOOT.—This article requires no painting, the atmosphere not having the slightest action on it. It was exhibited at the late Metropolitan Cattle Show, and was highly eulogised both for its utility and pretty appearance, and acknowledged to be the cheapest and best article ever produced. It forms a light and durable fence against the depredations of hares, rabbits, and cats, and is peculiarly adapted for Aviaries, Pheasantries, and to secure poultry; and by the galvanised requiring no paint, it answers admirably for training all kinds of creeping plants. Large quantities always kept in stock, of 18, 24, 36, and 48 inches wide; it can, however, be made to any dimensions desired. Patterns forwarded free of expense.

12 inches wide	3*d.*	per yard		30 inches wide	7½*d.*	per yard	
18 ,, ,,	4½*d.*	,,		36 ,, ,,	9*d.*	,,	
14 ,, ,,	6*d.*	,,		48 ,, ,,	1*s.*	,,	

Galvanised do., 1*d.* per foot extra.

Extra strong Imperial Wire Sheep Netting, 3 feet, 1*s.* 6*d.* per running yard; if galvanised, 2*s.* Also every description of Wire Nursery and Fireguards, Wire House Lanterns and Shades, Fly-proof Dish Covers, Meat Safes, &c.; Window Blinds, 1*s.* 10*d.* per square foot, with bolts complete, in mahogany frames; Gothic Garden Bordering, 6*d.* per running foot; Flower Trainers, from 3*d.* each; Garden Arches, 20*s.* each; Flower Stands, from 3*s.* 9*d.* each; Galvanised Tying Wire for plants and trees, Dahlia Rods, and every description of Wire-work; Weaving, for the use of paper-makers, millers, &c.—At the Manufactory of THOMAS HENRY FOX, 44, Skinner-street, Snow-hill, London.

GALVANISED WIRE GAME NETTING.—7*d.* per yard, 2 feet wide.



		Galvanised.	Japanned Iron.
2-inch mesh, light, 24-inch wide	...	7*d.* per yd.	5*d.* per yd.
2-inch ,, strong ,,	...	9 ,,	6½ ,,
2-inch ,, extra strong ,,	...	12 ,,	9 ,,
1⅝-inch ,, light ,,	...	8 ,,	6 ,,
1⅝-inch ,, strong ,,	...	10 ,,	8 ,,
1⅝-inch ,, extra strong ,,	...	14 ,,	11 ,,

All the above can be made any width at proportionate prices. If the upper half is a coarse mesh, it will reduce the price one-fourth. Galvanised sparrow-proof netting for pheasantries, 3*d.* per square foot. Patterns forwarded post-free.

Manufactured by BARNARD and BISHOP, Market-place, Norwich, and delivered free of expense in London, Peterborough, Hull, or Newcastle.

METCALFE'S ALKALINE TOOTH-POWDER will be found to be the best that has yet been produced; it contains no acids, nor anything that can injure the finest enamel; it thoroughly removes the tartar and all impurities, produces that beautiful white appearance so much to be desired, and its fragrant perfume tends to sweeten and purify the breath. M. and Co., from the many years they have been celebrated as Tooth-Brush Makers, have had opportunities (that occur to few) of testing the relative merits of those powders that have been brought before the public. They have now succeeded in procuring the receipt from which the above Powder is prepared, and confidently recommend its universal adoption. Wholesale and retail at METCALFE, BINGLEY, and Co.'s, Brush-Makers to H.R.H. Prince Albert, 2*s.* per box. Caution.—The genuine Powder will have the Royal Arms, combined with those of H.R.H. Prince Albert, on the lid of the box, and the signature and address of the firm, thus: "METCALFE, BINGLEY, and Co., 130 B, Oxford-street, London."

GREY GOOSE FEATHERS, 1*s.* per lb.—HEAL AND SONS' present prices for Bed Feathers are:—

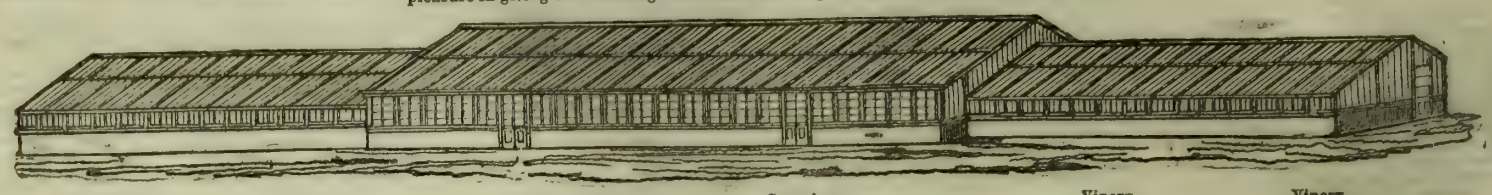
Poultry	0*s.* 8*d.*	Best Grey Goose	1*s.* 10*d.*
Grey Goose	1 0	White ditto	2 2
Foreign ditto	1 6	Best Dantzic ditto	3 0

Purified by steam, and warranted sweet and free from dust.—HEAL and SONS' List of Bedding, containing full particulars of weights, sizes, and prices, sent free by post, on application to their Factory, 196, Tottenham-court-road, London.

GRAY, ORMSON, AND BROWN,

DANVERS STREET, CHELSEA,

Respectfully solicit the attention of the Nobility and Gentry to their superior manner of Erecting and Heating every description of Building connected with Horticulture. They have much pleasure in giving the following testimonial referring to the range of houses shown below.



Peach House, 30 by 16 feet. | Vinery, 30 by 16 feet. | Stove, 45 by 20 ft. | Greenhouse, 45 by 20 ft. | Vinery, 30 by 16 ft. | Vinery, 30 by 16 ft.

[ERECTED FOR JOHN SHAW LEIGH, ESQ., LUTON HOO.]

Extract of a Letter from Mr. FRASER.—"I have much pleasure in expressing my entire satisfaction with the range of houses you erected here. I may also state that my honoured employer, JOHN SHAW LEIGH, Esq., is perfectly satisfied. I have no hesitation in stating, that to the best of my knowledge, there is not a more complete range of glass in the country, as regards both building and heating. I may add that they are admired by every Gardener who has seen them. I shall have much pleasure in answering any references you may please to direct.

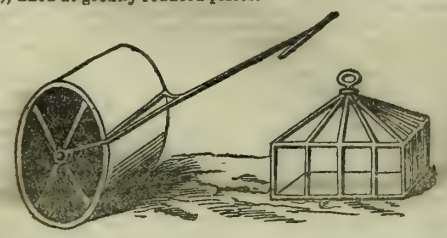
(Signed.) "JAMES FRASER, Gardener, Luton Hoo Park."

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THE GARDENERS' CHRONICLE
AND
AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 19—1850.] SATURDAY, MAY 11. [PRICE 6*d.*

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HORTICULTURAL SOCIETY OF LONDON.—EXHIBITIONS AT THE GARDEN.

The First Meeting will take place on SATURDAY, the 18th of May. Subjects for Exhibition must be at this Office on Friday the 17th, or at the Garden before half-past Eight o'clock, A.M., on the day of Exhibition.

The Gates will be open to visitors at One, P.M. Tickets are issued at this Office, price 5*s.* each, or at the Garden in the afternoon of the days of Exhibition, at 7*s.* 6*d.* each; but only to orders from Fellows of the Society.

N.B. No Tickets will be issued in Regent-street on the day of Exhibition. 21, Regent-street.

ROYAL BOTANIC SOCIETY, REGENT'S PARK.

GENERAL EXHIBITIONS of FLOWERS AND FRUIT on WEDNESDAYS, JUNE 12th and JULY 3d. AMERICAN PLANTS on SATURDAYS, MAY 25th and JUNE 1st.

Tickets to be obtained at the Gardens only, by orders from Fellows of the Society, price 5*s.*; or on the days of Exhibition, 7*s.* 6*d.* each. Each ticket will admit one person on any one of the above-named four days, or to the Collection of American Plants on any one day from the 3d to the 8th of June, both included.

The first PROMENADE will take place on Wednesday, May 15.

THE ROYAL SOUTH LONDON FLORICULTURAL SOCIETY, under the patronage of her Most Gracious Majesty the QUEEN.

The SECOND EXHIBITION of the season will be held at the Royal Surrey Zoological Gardens, on WEDNESDAY, MAY 22d (open to all exhibitors), when Prizes will be awarded for the following productions, viz., for Miscellaneous, Orchids, and Specimen Plants; Pelargoniums, Cape Heaths, Azaleas, Tulips, Heartsease, and Vegetables. In addition to the prizes offered by the Society, Mr. R. J. Lawrence, of Hampton, offers 5*l.* value of Tulips, selected from his bed when in bloom, for the 1st and 2d Prizes to Amateurs. The following Exhibitions will also take place at the Royal Surrey Zoological Gardens, on Wednesday, June 19th; Tuesday, July 23d; and Wednesday, September 4th. Lists of Prizes, and the Rules for Exhibition, may be obtained from JOHN TAYLOR NEVILLE, Secretary.

Ebenezer House, Peckham, Surrey.

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G. H. BUNNEY, NURSERYMAN, Stratford, Essex, has plants of the above splendid VERBENA to send out on the 23d inst., price 2*s.* 6*d.* each or 24*s.* per doz. The usual allowance to the Trade.

The above Verbena is of dwarf compact habit, and a very profuse bloomer, making it one of the very best white Verbenas for small beds, or single plants in the flower borders.

ACHIMENES TUGWELLIANA.—This beautiful

Achimenes was raised by Mr. Carmichael, gardener to G. C. Tugwell, Esq., Crowe Hall, Bath. It was the admiration of all who saw it in bloom, and the following opinions were expressed upon its merits:

"ACHIMENES: *W. C.* Your hybrid between A. patens and A. longiflora, with deep violet-purple flowers, about the size of those of A. patens, is a decided cross, and is a very beautiful thing, nice in colour."—*Gardeners' Chronicle*, August 11, 1849.

"ACHIMENES: *William Carmichael.* Your hybrid between A. patens and A. longiflora is distinct from both the flowers, being about the size of A. longiflora, with a colour intermediate betwixt the parents. It is undoubtedly a desirable acquisition to this already useful and ornamental class of plants."—Gardeners' Journal, August 18, 1849.

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STAINES HORTICULTURAL EXHIBITION, to be held on SATURDEY, JUNE 22. Open to all competitors.

A Prize of Five Pounds will be given for the best collection of 10 distinct species of Stove or Greenhouse Plants, which will not contain more than two of the same genus, excluding Pelargoniums, Fuchsias, and Calceolarias. A Second Prize of 2*l.* 10*s.* will also be given.

A Prize of Four Pounds will be given for the best collection of 6 Pelargoniums, varieties, in No. 12-sized pots. A Second and Third Prize will also be given.

A Prize of Three Pounds will be given for the best collection of 6 Pelargoniums, varieties, in No. 24-sized pots, A Second and Third Prize will also be given.

Six Exotic Orchids, varieties, 1 Prize. Collection of British Ferns, ditto. Collection of British Plants and Grasses, ditto.

The Judges will not be bound to award a Prize if they deem the production unworthy of it. No article sent for competition will be allowed to be touched or removed till 6 o'clock.

*** Great difficulty having hitherto existed in making arrangements for the Show, exhibitors are earnestly requested to forward to the Secretaries, at least three days previous to exhibition, a list of the articles they intend to produce.

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50 „ Half-hardy ditto, 15*s.*; 25 ditto	0 7 6
50 „ Hardy Perennials, 12*s.*; 25 ditto	0 6 0
25 „ Greenhouse Seeds, 7*s.*; 12 ditto	0 3 6
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„ Douglasii		... 5	0		
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„ macrocarpa	 5	0 — 10	6		
Picea Nordmanniana		5	0		
Pinus Benthamiana		21	0		
Pinus cembra	... 2	6 to 5	0		
„ cembroides		5	0		
„ excelsa	... 1	6 — 7	6		
„ Fremontiana		42	0		
„ insignis	. . 2	6 — 7	6		
„ Gordoniana		21	0		
„ Grenvilleæ	...	42	0		
„ macrocarpa	...	21	0		
„ Sabiniana	...	21	0		
„ maritime de corte		3	6		
„ muricata	...	21	0		
„ radiata	...	21	0		
„ tuberculata	...	42	0		
„ Wincheseriana		42	0		
„ occidentalis	...	10	6		
„ Gerardiana	1	6 — 5	0		
„ Montezumæ	...	7	6		

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GERANIUMS, best vars. of last season, in 4-in. pots	36*s.*	per doz.	
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AZALEAS, all the new varieties	... ...	12*s.* to 21*s.*	„
ERICAS, do. do.	... ...	12*s.* to 24*s.*	„
STOVE and GREENHOUSE PLANTS,	...	12*s.* to 24*s.*	„
DAHLIAS, do. do.	... ...	6*s.* to 18*s.*	„
PANSIES, do. do.	... ...	6*s.* to 18*s.*	„
VERBENAS, all the best of last season	...	8*s.* to 12*s.*	„
Do., fine varieties	... ...	4*s.* to 6*s.*	„

Descriptive Catalogues of the above may be had on application. A large quantity of specimen Stove and Greenhouse Plants, Ericas, Heaths, Azaleas, &c., of all sizes. A remittance expected from unknown correspondents.

Bower Nurseries, Maidstone, Kent, May 11.

CHRYSANTHEMUMS.

CHANDLER AND SONS, NURSERYMEN, Vauxhall, London, are now sending out young plants, strong and healthy, of all the best varieties of CHRYSANTHEMUMS for autumn flowering, at 9*s.* and 12*s.* per dozen; the newest sorts at 18*s.* per dozen; and good free flowering sorts for planting in the open borders, 50*s.* per 100.

The Plants are in small pots, and in good order for packing. A Descriptive List may be had on application.

It is requested a Post-office order may accompany all orders from unknown correspondents.

NEW DARK FUCHSIA—"SIR J. FALSTAFF," 10*s.* 6*d.* per plant, one over when two are ordered.

Strong plants of the above on application to C. TURNER, Royal Nursery, Slough, Bucks.

NEW BLUE VERBENA, with white centre, of the finest shape and habit; equally adapted for bedding or pot culture, warranted much the best of its class.

C. TURNER has some strong plants left of the above at 5*s.* each, one plant over for every two ordered.—Royal Nursery, Slough, Bucks.

MAYLE'S MODEL FUCHSIAS FOR 1850.—No grower can expect to win a prize at any of the principal exhibitions in town or country without these magnificent reflexed varieties.

Messrs. MAYLE and Co. will send out their SEVEN NEW FUCHSIAS on the 20th June, extra strong plants. From the very high opinions expressed of their merits by Dr. Lindley, Mr. Glenny, &c., they require no further comment from us. They are the things of the season, and must be had by all who wish to keep pace with the times.

No. 4, DIADEM, was shown at Walsall, near Birmingham, with two blooms, May 8th, and was awarded an extra prize. Judges' opinion: "By far the best ever raised."

Those in bloom will be exhibited at Chiswick and Regent's-park June shows. The earliest orders will secure the strongest plants. Circulars can be had. Also Mr. Hoyles' superb Geraniums, a few extra strong blooming plants being left.

Stove, Greenhouse, Bedding Plants, &c., including every novelty of the season.—105, New-street, Birmingham.

READING NURSERIES, Portland-place, London-road, and at the back of the Seed Shop, Nos. 7 and 8, Market-place, Reading, Berks.—The additional Greenhouses and Hot-water Pits, recently erected adjacent to the Market-place, contain the most extensive and choice collections of PLANTS FOR CONSERVATORIES, FLOWER BEDS, &c., which have ever been offered in the neighbourhood of Reading.

In addition to a quantity of Geraniums, Calceolarias, Cinerarias, and other plants, now in bloom, J. SUTTON and SONS have a large stock of Verbenas, Petunias, and other plants in pots, 4*s.* to 6*s.* per dozen. Also a spendid collection of Fuchsias, by name, 7*s.* 6*d.* per dozen. A large stock of Coniferæ, and other Evergreens.—Reading Nurseries, May 11.

PLANTS NEW AND CHEAP.

HENRY WALTON is now sending out the following choice Selections of Plants, at very low prices.

GERANIUMS.

Twelve of the following new varieties for 12*s.*, or purchaser's selection, 1*l.* 8*s.* 6*d.*: Abd-el-Kader, Alonzo, Belle of the Village, Jenny Lind (Foster's), Prometheus, Plutarch, Terpsichore, Sparkler, Avenger, Aurantia, Black Prince, Conspicabunda, Distinctus, Flora's Flag, Jenny Lind, Lady Ebrington, Luna, Refulgens, Mercury, Mustee, Miss Holford, Prince Alfred, Queen of Kent, Scarlet Defiance, Telegraph, Vulgus, Raphael. The following seven new scarlets for 12*s.*: Queen of Summer, 3*s.* 6*d.*; Antagonist, Pink, Pet, Gem of Scarlets, Rosy Morn, Symmetry, Royalist; post free.

FUCHSIAS.

Twelve of the following varieties, 7*s.* 6*d.*; or purchaser's selection, 12*s.*: Atrosanguinea, Albona, Alboni, Beauty of Leeds, Crimson King, Caractacus, Dr. Smith, Eastern Beauty, Esteem, Enchantress, Elizabeth, Elegantissima, Elegans, Fountain, Gem of the West, Gem, Gigantea, Reflexa, Lord Nelson, Ne plus ultra, Purity, Newtoniensis, Oldfordensis, Perfection, Sapphire, Splendida, Sir C. Napier, Scarletina reflexa, Una.

PETUNIAS.

Twelve of the following for 6*s.*: Amœna, Bass's Brilliant, Pearson's Brilliant, Berryer, Conspicua, Centurion, Beauty Supreme, Elegantissima, Louis Bonaparte, Lady of the Lake, Minerva, Millerii, Nobilis, Ovid, Prince Albert, Punctata, Renown, Resplendens, Rosamond, Spotted Beauty, Striata perfecta, Sylph.

VERBENAS.

Twelve of the following for 4*s.* 6*d.* to 6*s.*; purchaser's selection, 7*s.* 6*d.*: Apollon, Attraction, Ariadne, Brilliant, Burgundy, Captivation, Charmont, Zoe, Cardinal, Criterion, Defiance, Duchess de Cases, Desirable, Edmondsiana, Emperor of China, Fulgens, Eyebright, General Lamoriciere, Heronia, Iphigene, John Salter, Junius, Lord J. Russell, La Villegeoise, Lilac Rival, Louis Napoleon, La Candeur, Morphee, Miss Sharald, Miss Vyse, Montrose, Nonpareil, Optimus, Psyche, Rubra multiflora, Royal Purple, Reine Bacchanal, St. Margaret, Shylock, Union Jack, Vulcan superb, White Perfection, Trafalgar.

FANCY VERBENAS.

Beauty of Stow, Belle de Comte, Boule de Neiger, Chauvierii, Clotilda, Comte de Paris, Charlotte Corday, Eclipse, Elegantissima, Gracieuse, La Coquette, Magnificent, Madame Gabridle de Vandeava, Madame Rattier, Painted Lady, Princess Alice, Queen of the French, Reine de Jour, Village Maid, Virgil.

ACHIMENES.

Six of the following for 7*s.* 6*d.*: Atrosanguinea, Bœdmerii, Eximia, Escherii, Fimbriata, Florabunda, Elegans, Ghiesbrichtii, Knightii, Longiflora superba, Ocellata, Patens, Skinnerii grandiflora.

GLOXINIAS.

The following Six fine varieties for 9*s.*: Albo-sanguinea, Carminata splendens, Elegans, Griffina, Rubra superb, Wortleyana.

Fuchsia corymbiflora alba	... ...	3*s.*	6*d.*
Mitraria coccinea	... ...	2*s.* 6*d.* to 5	6
Salvia patens alba	... ...	1	6
„ azurea compacta	... ...	1	0
„ oppositifolia	... ...	1	0
Heliotropium Souvenir de Liege	... ...	1	0
„ Grisau	... ...	1	0
Mimulus rubina	... ...	1	0
„ Harlequin	... ...	0	9
12 Scarlet Verbenas for bedding	... ...	4	6
12 Fine named Phloxes	... ...	6	0
12 Fine Show Pinks	... ...	6	0
12 Fine Dahlias	... ...	6*s.* to 12	0
12 Fine Show Pansies	... ...	6*s.* to 9	0
12 Chrysanthemums	... ...	6	0

All the above can be sent free by post, except the Geraniums, if required, as the stock of some is very small, early orders are necessary to insure a supply. It is particularly requested that all orders be prepaid. Post-office orders to be made payable at Burnley. Descriptive Catalogue for one stamp.

Edgend Marsden, near Burnley, Lancashire.

GARDENERS' BENEVOLENT INSTITUTION.—The SEVENTH ANNIVERSARY DINNER in aid of the Funds of this Society will be held at the London Coffee-house, Ludgate-hill, on WEDNESDAY, 15th inst., the Right Hon. the EARL of CARLISLE in the chair.

STEWARDS.

His Grace the Duke of Northumberland	Henry Thomas Hope, Esq., M.P.
The Right Hon. Lord Robert Grosvenor, M.P.	John Lane, Esq.
Sir James Duke, Bart., M.P.	John Lee, Esq.
Captain Charles Forbes	John Lindley, Esq.
Captain James Lamont, R.N.	Joseph Martineau, Esq.
John Craigmyle, Esq.	John Murray, Esq.
William F. G. Farmer, Esq.	William Noble, Esq.
Thomas Finden, Esq.	Charles Palmer, Esq.
Robert Glendinning, Esq.	Arthur Pott, Esq.
William Gregory, Esq.	Sigismund Rucker, Esq.
Robert Hanbury, Esq.	John Strickland, Esq.
A. Henderson, Esq.	James Thomson, Esq.
William Hill, Esq.	James Thorne, Esq.
Robert Steiner Holford, Esq.	J. H. Tuck, Esq.
	J. C. Wheeler, Esq.

☞ Dinner on Table at Half-past Five o'clock precisely.
Tickets 21*s.* each, to be had of the Stewards, at the Tavern, and of the Secretary, 97, Farringdon-street.

DANECROFT NURSERY, STOWMARKET, SUFFOLK.—All Persons who claim any Debts against the Estate and Effects of the late Mr. SAMUEL GIRLING, Florist and Nurseryman, deceased, who have not received a Dividend upon the amount thereof, are requested immediately to apply for the payment of the Dividend to me, at Peasenhall, near Yoxford, that the final Dividend may shortly be made.—WILLIAM GIRLING, Peasenhall, May 11.

EDWARD DENYER having the entire Stock of a very brilliant SCARLET GERANIUM, named "ADMIRAL VON TROMP," recommends it with the greatest confidence to his kind Patrons, feeling assured that it will give entire satisfaction, as it is one of the most profuse bloomers known; in growth, the habit of Tom Thumb. E. D. has much pleasure in offering the above at 18*s.* per dozen, or 2*s.* each; good Plants in pots are now ready.

E. D. begs to inform the Lovers of ROSES that they are now in full bloom, in pots, in the Rose-house, and solicits his Friends' inspection of them. E. D. has been successful in raising large quantities of Geraniums, Verbenas, Calceolarias, &c., for turning out into the flower-borders, at 4*s.* per dozen; extra large size, 6*s.* E. D. informs his Friends that he has no Seed Shop in London.—Catalogues to be had on application at the Nurseries, Loughborough-road, Brixton, near London.

RENDLE'S DESCRIPTIVE CATALOGUE OF AGRICULTURAL SEEDS IS JUST PUBLISHED, and can be had on application, GRATIS (for one penny stamp).

It contains a descriptive list of all the best Field TURNIPS, *with the lowest market prices, also a full descriptive price current of all the best sorts of* CARROTS, MANGOLD WURZEL, CLOVER, *&c., as well as all the best varieties of Permanent Pasture Grasses.*

The following is an extract from the Catalogue.

Rendle's Imperial Purple-top Swede Turnip ...	per lb. 0*s.* 8*d.*
Ditto ditto	per qt. 1 0
Skirving's Liverpool Swede ditto, per lb., 8*d.*	per qt. 1 0
Laing's Improved ditto ditto, per lb., 8*d.*	per qt. 1 0
Purple-top Scotch ditto ditto, per lb., 8*d.*	per qt. 1 0
White and Green Globe per lb., 6*d.*	per qt. 0 10
White Belgian Carrot	per lb. 0 10
Yellow Globe Mangold Wurzel	per lb. 0 8
True Italian Rye-grass	per bush. 7 0
Best English Red and White Clover	per lb., 5*d.* to 0 7
Large Cattle Parsnip	per lb., 1*s.* to 1 6

With every other kind of Agricultural Seeds at the lowest market prices. (See Catalogue.)

PERMANENT PASTURE GRASSES, sold in mixtures to suit various soils, at 30*s.* per acre, allowing two bushels of light seed and 12 lbs. of heavy seed to each acre.

All orders above 2l. will be delivered free of carriage to any station on the Great Western, Bristol and Gloucester, Bristol and Exeter, or South Devon Railways; or to any town in Devon and Cornwall; or to Cork, Dublin, or Liverpool, by Steamers.

Railway and Steam communication to all parts of Great Britain and Ireland.

For Catalogues and further particulars apply to
WILLIAM E. RENDLE & CO., Union-road, Plymouth.
ESTABLISHED 1786.

TURNIP SEEDS.

W. DRUMMOND AND SONS, Agricultural Museum, Stirling, N.B., offer the following selected varieties of TURNIP SEEDS, all at 9*d.* per lb.:

SWEDES.—East Lothian, Purple-top, very hardy; Skirving's improved ditto, Laing's ditto, Matson's ditto; large Green-top, very hardy; Fettercairn ditto ditto.

YELLOWS.—Aberdeen or Green-top Bullock, Ditto Purple-top ditto, Dale's Hybrid, Purple-top improved, Improved early (excellent either for early or late sowing; it comes quick to maturity, and yields a heavy crop), Long Tankard.

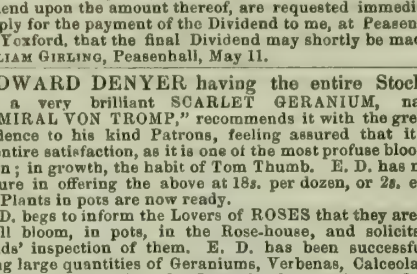
⁂ A considerable reduction made when ordered in Cwts.

FREE DELIVERY.—All parcels above 2*l.* value delivered Free in London, Liverpool, Hull, Newcastle, Belfast, Londonderry, Aberdeen, Inverness, and to all the Stations along the lines of the Caledonian and North British Railways.

TURNIP SEEDS.

W. SKIRVING begs to acquaint his Friends and the Public, that he has no Agent in Town or Country, and that the price of his Improved Swede, and also his Improved Purple-top Yellow Bullock Turnip Seed is this season 1*s.* per pound. All other kinds of Turnip and Agricultural Seeds in general, of the most select description, at moderate prices. A remittance, or reference, from unknown correspondents, is respectfully requested to accompany orders.
Liverpool, May 11.

TO FLORISTS, HORTICULTURISTS, &c.



MORRELL'S REGISTERED FLOWER LABELS are ready for delivery in any quantity; they will be found unimpaired by any change of weather, either of heat, cold, wet, or dry, and therefore suitable for the Stove, Hothouse, Greenhouse, or the open ground; also his improved Flower Sticks, of various lengths, from 12 inches upwards.—May be had of most Seedsmen and Ironmongers in town and country; and wholesale at 149, Fleet-street, London.

TURNIP SEEDS.

DUNCAN HAIRS having personally superintended the selection and growth of the Turnip Seed he offers, can with confidence recommend them as genuine. Likewise, AGRICULTURAL SEEDS of every description, of first-rate quality and low in price. Catalogues with prices free.

Garden Tools, Nets, and every article connected with the trade wholesale and retail.

Seedsman and Florist, 109, St. Martin's-lane, Charing-cross.

FIELD TURNIP SEEDS, &c.

HOGG AND WOOD, SEEDSMEN BY APPOINTMENT TO THE NORTHUMBERLAND AGRICULTURAL SOCIETY, beg leave to draw the attention of Agriculturists to their select stock of TURNIP SEEDS, MANGOLD WURZEL, &c., all of which have been selected from the best stocks grown in Northumberland and the neighbouring counties of East Lothian, Berwickshire, &c., so deservedly renowned for their superiority in Turnip culture. Priced Lists may be had on application.

SWEDES.	YELLOWS.
Laing's new Purple-top, from Mr. A. Laing's stock.	Aberdeen Yellow.
Hogg's Dwarf-topped Purple-top.	Border Imperial Brown-top Yellow.
East Lothian Purple-top.	Dale's Hybrid.
Skirving's ditto.	Skirving's Purple-top Yellow.
Fettercairn Green-top, &c.	Besides all the varieties of common Turnips.

Delivered free in London, Hull, and Newcastle-upon-Tyne. A reference or remittance required from unknown correspondents.—Coldstream, N. B., Berwickshire.

FOR TURNIP SOWING.

SUPERPHOSPHATE OF LIME AND CRUSHED BONES are the best and cheapest Manures for the Turnip Crops, and may be had in any quantity on application to Messrs. HUNT'S Manure Works, High-street, Lambeth, London.
Established 1816.

TRUE DRUMHEADS FOR CATTLE selling by THOMAS WELLAND, at the Surrey Gardens, Wheeler-street, Godalming, Surrey, packed and delivered at Godalming Station, at 3*s.* 6*d.* per 1000.

BEE HIVES.

GEORGE NEIGHBOUR AND SON respectfully announce that they have prepared for this season an extensive supply of their various IMPROVED BEE HIVES, which are offered to all who are desirous of cultivating that pleasing and profitable branch of rural economy—the Honey Bee. The collection consists of "Nutt's Collateral Hives," "The Single Box Hive," "The Amateur Bar Hive," "The Improved Cottage Hive," &c., from either of which the honey may be taken at any time without injury to the Bees, and may be worked with safety, humanity, and profit, by the most timid and unaccustomed to Bee manipulation. A descriptive paper, with drawings and prices, will be forwarded on the receipt of two postage stamps.—127, High Holborn, London.

Agents: WM. DRURY, Castle-street, Liverpool; HALL and WILSON, 50, King-street, Manchester AUSTIN and M'ASLIN, 168, Trongate, Glasgow.

HALLIMAN'S REGISTERED FRUIT PROTECTOR.—The effective power and utility of these Glasses cannot be expressed. The trees and fruit always enjoy the free air; the richness and flavour of the fruit being increased. The Glass has been tested; the expense will be so small, that a wall 18 feet high and 600 feet in length can have a sufficient number placed on it for less money than a common Vinery costs building.

C. H. can now manufacture them at 10*s.* per dozen, 4*l.* per 100, 38*l.* per 1000, 4 inches; 6 inches, at 15*s.* per doz., 6*l.* per 100, 57*l.* per 1000, for ready money. Any orders C. H. is favoured with will be duly attended to, and sent out in any numbers required, with printed directions for use, and nails.

C. HALLIMAN, 1, Queen's-place, Norland-square, Kensington, Middlesex.

GARDEN ENGINES, SYRINGES, &c., &c.—CAUTION.—The well-known reputation of READ'S Engines, Machines, and Syringes, has led to the nefarious practice of placing Cards in Shop Windows, with the words "READ'S PATENT" upon Syringes of the very commonest description. R. READ begs to caution the Public against being deceived by such false representations, as many of these Instruments upon trial will be found defective and useless. READ'S Instruments may be known by the Royal Arms, and the words "READ'S PATENT."

Manufaactured only at 35, Regent Circus, Piccadilly.

THE CHOICEST AND MOST EXQUISITE ITALIAN and ORIENTAL PERFUMES, for presents.

Eglantine,	Musk Rose,	Coumarine,	Patchouli,
Heliotrope,	Moss Rose,	Sandal,	Violet,
Honeysuckle,	Sweet Pea,	Spring Flowers,	Verbena,
Geranium,	Jessamine,		Millefleur.
Mignonette,	Rondelezia,		

In single bottles, at 1*s.* 6*d.*, 2*s.* 6*d.*, and 4*s.* 6*d.* each; or in an elegant case of four bottles, one-eighth of a pint each, selected by the purchaser from the above, enclosed in a strong wooden box, forwarded carriage free to any railway town in the kingdom on the receipt of 7*s.* 6*d.* in postage stamps, by JACKSON and TOWNSON, 89, Bishopsgate-street Within, London.

DEANE'S WARRANTED GARDEN TOOLS.—Horticulturists, and all interested in Gardening pursuits, are invited to examine G. and J. DEANE'S extensive Stock of GARDENING AND PRUNING IMPLEMENTS, best London made Garden Engines and Syringes, Coalbrookdale Garden Seats and Chairs.

Averuncators	Garden Scrapers	Pick Axes
Axes	Grape Gatherers and Scissors	Potato Forks
Bagging Hooks	Gravel Rakes and Sieves	Pruning Bills
Bills	Greenhouse Doors and Frames	,, Knives, various
Borders, various patterns	Hammers	,, Saws
Botanical Boxes	Hand-glass Frames	,, Scissors
Cases of Pruning Instruments	Hay Knives	,, Shears [riety.
Chaff Engines	Hoes of every pattern	Rakes in great va-
Chaff Knives	Horticultural Hammers and Hatchets	Reaping Hooks
Daisy Rakes	Hotbed Handles	Scythes
Dibbles	Ladies' Set of Tools	Scythe Stones
Dock Spuds	Labels, various patterns, in zinc, porcelain, &c.	Shears, various
Draining Tools	Lines and Reels	Sickles
Edging Irons and Shears	Marking Ink	Sickle Saws
Flower Scissors	Mattocks	Spades and Shovels
,, Stands in Wires and Iron	Menographs	Spuds
Fumigators	Metallic Wire	Switch Hooks
Galvanic Bordersand Plant Protectors	Milton Hatchets	Thistle Hooks
Garden Chairs and Seats	Mole Traps	Transplanting Tools
,, Loops	Mowing Machine	Trowels
,, Rollers		Turfing Irons
		Wall Nails
		Watering Pots
		Weed Extractorsand Hooks
		Wheelbarrows
		Youths' Set of Tools

G. and J. DEANE are Sole Agents for LINGHAM'S PERMANENT LABELS, samples of which, with the Illustrated List of Horticultural Tools, can be sent, post paid, to any part of the United Kingdom.—DEANE'S Horticultural Tool Warehouse, opening to the Monument, 46, King William-st., London-bridge.

PROTECTION FOR BEES.—A Treatise on Artificial Swarms and preserving the Bees while taking the Honey. The Second Edition, price 2*s.* 6*d.*, may be had of Messrs. LONGMAN and Co., Paternoster-row, London, and of the Author, Dr. SCUDAMORE, St. George's-place, Canterbury.

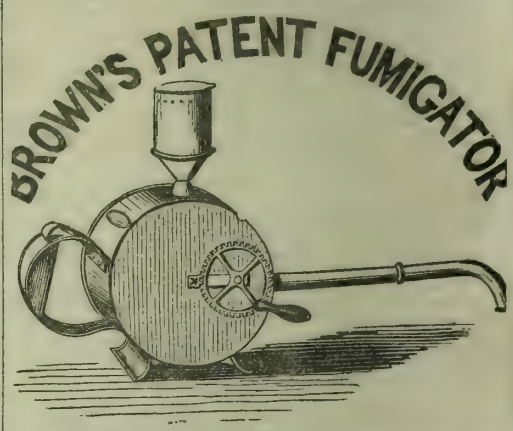
HORTICULTURAL BUILDING AND HEATING BY HOT WATER.

BOILERS OF ALL SIZES TO BE SEEN IN OPERATION, WARRANTED THE BEST.



J. WEEKS AND Co., King's-road, Chelsea, HORTICULTURAL ARCHITECTS, HOTHOUSE BUILDERS, and HOT-WATER APPARATUS MANUFACTURERS, solicit an inspection of their various Works completed and in progress. Horticultural Buildings of every variety. BOILERS of all sizes to be seen in operation, and which they warrant to be the most effective and economical of any in use. The largest size Boiler is now effectually heating three extensive ranges of Forcing-houses, 230 feet by 22 feet, all Span Roofs and lofty, containing upwards of 50,000 cubical feet of air. Also various small and intermediate size Boilers, some of all sizes in operation. The consumption of fuel is very moderate, and the fires will continue from 10 to 15 hours without attendance. The extensive arrangements now in full operation on their premises, enables them to build to any extent, and at very moderate prices. Hothouses, Greenhouses, Conservatories, Forcing-pits, Frames, Glass Lights, &c. A very extensive collection of Stove and Greenhouse Plants, which are sold at very low prices. Plans, Estimates, and Catalogues forwarded on application.
J. WEEKS and Co., King's-road, Chelsea.

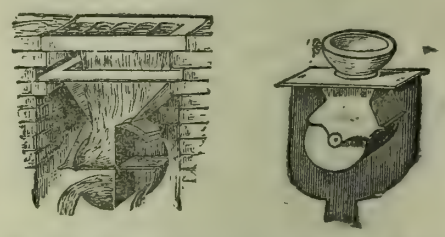
PRICE TEN SHILLINGS AND UPWARDS.



A PORTABLE INSTRUMENT for Fumigating Greenhouses, Stoves, and Frames, or Shrubs and Flowers, in the open air, without injuring the most delicate plant; delivering the smoke cool, in a dense mass, and effecting a great saving of Tobacco.

Manufactured and supplied to the Trade by Messrs. BARBER and GROOM, London; and may be had of all Ironmongers, Seedsmen, and Florists.

TO BUILDERS, &c.
IMPORTANT SANITARY INVENTION.



BY HER MAJESTY'S ROYAL LETTERS PATENT.

C. MARSDEN'S ROTARY WATER-CLOSETS and EFFLUVIA TRAPS, acknowledged by the most scientific to be the best and simplest self-acting Water-Closets and Effluvia Traps ever invented. A stench arises at the time of using all other Water-Closets—with this invention it can be got rid of. It is constructed in the shape of a drum, with four receivers or buckets caused to revolve by the weight of the matters falling into one of the receivers, when it instantly empties itself into the drain or sewer, and another bucket is ready from the opposite side to take its place, and two others on their ascent, to be emptied in their turn, while any upward escape of effluvia during these successive changes is effectually prevented, by overhanging and side flaps of vulcanised India-rubber, so placed that it is impossible to get choked up or get out of order; no balance weight or handles, no D or syphon traps required with these Closets. All traps that require water to keep them air-tight must necessarily leave a sediment to putrify. The value cannot be believed unless seen and tested.—Also Manufacturer of Decorative Marble Paper-hanging.—Waterloo House, King's Road, Chelsea, near the Bridge.

RAPID BUTTER MAKING.

ANTHONY'S PATENT AMERICAN CHURN was again tried on Saturday, at 97, Newgate-street, parties bringing their own Cream. In six minutes from the time of putting in the Cream, at a temperature of 58°, from nearly 4 quarts, 3 lbs. 10 oz. of good firm butter of most excellent quality was produced. The human hand was never used in its manufacture; the butter-milk being expressed by the dasher, and rendered fit for use.

KEY and MITCHELL, sole Agents for the proprietors, 97, Newgate-street, London.

A liberal allowance to the Trade. Parties infringing will be rigorously prosecuted.

WIRE STRAND FENCING, as fixed by R. S. NEWALL and Co., is cheaper, stronger, and more durable and elegant than any other Fence hitherto introduced.
COPPER WIRE HOTHOUSE SASH LINE.
LIGHTNING CONDUCTORS.
GILT AND PLATED CORD FOR HANGING PICTURES.
Office, 130, Strand, London; Warehouse, Brunswick-street, Blackwall; Manufactory, Gateshead, on Tyne.

ZOOLOGICAL GARDENS, REGENT'S PARK.—Admission every day in WHITSUN WEEK, except Saturday, at SIXPENCE each person.

JOHN B. SMITH begs to inform the Nobility, Gentry, and the Trade, that his superb Collection of Yellow RHODODENDRONS, AZALEA INDICAS, &c., are now coming into bloom, and will continue throughout the present month.
Norbiton Nursery, Kingston, May 11.

RENDLE'S NURSERY ESTABLISHMENT, PLYMOUTH.
ESTABLISHED 1786.
GERANIUMS.—20 strong plants for 30*s.*; for names, see this Paper, Saturday, April 20.
SCARLET GERANIUMS.—20 strong plants for 15*s.*
DAHLIAS.—12 superior new sorts for 18*s.*, or 20 second-class ditto, for 20*s.*
CAMELLIAS.—Nearly 1000 splendid plants, 18 in. to 30 in. high, 12 for 36*s.*; 20 for 50*s.*; or 40 for 4*l.* 10*s.*
FUCHSIAS.—20 for 15*s.*, all the newest sorts. Purchasers' selection, at the above prices, from our Advertisement in this Paper, April 20th, or from our Plant Catalogue just out.
FREE DELIVERY *of all orders above* 40*s. to all stations on the Great Western, Bristol and Exeter, or South Devon Railways; or to Cork, Dublin, or Belfast, by Steamer.*
RENDLE'S CHEMICAL PLANT MANURE.—A sample box will be sent GRATIS with every order. When the properties of this valuable Manure become fully known, it will be used by everybody.
Apply to WILLIAM E. RENDLE and CO.,
Union-road, Plymouth.

CHEAP BEDDING PLANTS.
JOHN HAYES, FLORIST, Farnham, Surrey, will send out the following Bedding Geraniums, 3*s.* 6*d.* per dozen; all other kinds of Bedding Plants, 2*s.* 6*d.* per dozen. Geraniums sent out of pots, 2*s.* 9*d.* per dozen; all other kinds, 1*s.* 8*d.* out of pots. Descriptive Catalogues sent on the receipt of 1*d.* postage stamp.
FARNHAM CASTLE CUCUMBER.—Two Seeds of this stout Black Spine Cucumber will be sent, on the receipt of 12 postage stamps. May be grown 24 inches long. Twelve seeds of Prize-fighter, ditto, for 12 stamps.—May 11.

HOLLYHOCK SEED.
J. KITLEY begs to inform the Admirers of the HOLLYHOCK, that he has a small quantity of SEED saved from very choice double varieties of all colours, a packet of which will be sent post free, on the receipt of postage stamps to the amount of 2*s.* 6*d.*, or in 18 named varieties, for 5*s.*—Lyncombe Vale Nursery, Bath, May 11.

DAHLIAS.—Magnificent (Keynes'), 10*s.* 6*d.*, 9 certificates; Sir F. Bathurst (Keynes'), 10*s.* 6*d.*, 9 certificates; Snowflake (Dodd's), 10*s.* 6*d.*, 5 certificates; Queen of Primroses (Keynes'), 10*s.* 6*d.*, 5 certificates; Gaiety (Dodd's), 7*s.* 6*d.*, 4 certificates; Elizabeth Proctor's Fancy, 10*s.* 6*d.*, 7 certificates; Highland Chief, 7*s.* 6*d.*, 5 certificates; Flying Dutchman, 7*s.* 6*d.*, 5 certificates; Forget-me-not (Hooper's), 7*s.* 6*d.*, with all the leading show flowers of the season, are now ready for sending out, in extra fine plants, on application to JOHN KEYNES, Castle-street Nursery, Salisbury.—May 11.

WILLIAM WOOD AND SON have the pleasure of offering the following select and highly desirable plants:

Achimenes Kleii, each	1*s.* 6*d.*
„ longiflora major, do.	1 6
Anemone japonica hybrida, do.	1 6
Maurandya Emeryana (red), do.	2 6
Mitraria coccinea, do.	7 6
Phlox depressa, do.	2 6
Potentilla Smoutii, do.	3 6
Rhododendron javanicum, each	7*s.* 6*d.* to 21 0
Azalea indica, fine collection, per doz.	12*s.* to 24 0

SELECT BEDDING PLANTS.

	Per doz.
Antirrhinums, best named	6*s.* 0*d.*
Calceolarias, shrubby	6*s.* to 12 0
„ fine seedlings	6*s.* to 12 0
Chrysanthemums, Continental (vars.)	9*s.* to 18 0
„ Miniature	12*s.* to 18 0
Cinerarias, superb collection	12*s.* to 24 0
Fuchsias, best kinds	6*s.* to 18 0
Geraniums, finest scarlet (vars.), remarkably strong and bushy, 40*s.* per 100	6*s.* to 12 0
Geraniums, Ivy-leaved pink and white	6 0
„ striped-leaved for edgings	6 0
„ Mangles' silver-striped, fine	6 0
„ sweet-scented-leaved	6*s.* to 12 0
Heliotropium Grissu	12 0
„ Souvenir de Liège	9 0
Lobelia erinus lilacina	9 0
„ „ maxima	9 0
„ fulgens, 6 new vars.	18 0
Mimulus rubinus, very fine	9 0
Pentstemons of sorts	6 0
„ 8 new and superb vars.	12*s.* to 18 0
Salvias, 6 fine vars.	4*s.* to 9 0
Verbenas, best sorts	6*s.* to 12 0
Zauschneria californica	6 0
Roses in pots (see previous Advertisements)	9*s.* to 18 0

Extra Plants presented with each order. Catalogues may be had GRATIS, on application.
Woodlands Nursery, Maresfield, near Uckfield, Sussex.

MEADOW AND PASTURE GRASS SEEDS.
GEORGE GIBBS AND Co. beg to notice their mixtures for laying Land down to Permanent Grass are now ready. The general satisfaction they have given for many years past, and the present low prices of 32*s.* per acre, allowing 2 bushels and 12 lbs. to each acre, they trust will ensure a continuance of orders. Mixed Seeds for improving old Grass Land, 1*s.* 3*d.* per lb.; fine sorts for forming Lawns, 1*s.* 4*d.* per lb. Their Priced List for the season of Turnips, Mangold Wurzel, and other Farm Seeds, will be forwarded on application to 26, Down-street, Piccadilly, London.

GRASS SEEDS.—Mixtures of selected natural GRASS SEEDS, with a proper proportion of permanent Clovers, for laying down land to permanent Meadows and Pastures, to suit the soil to be laid down. Mixtures of the above for Irrigation or Water Meadows.
Mixtures of the above for Parks or Field Lawns; Italian, Perennial, and other Rye-grasses; Long Red, Yellow Globe, and other Mangold Wurzel; Swedes (various sorts), Hybrid and other Turnips; all kinds of Grass Seeds, Agricultural and other Seeds.—THOMAS GIBBS and Co., the Seedsmen to the Royal Agricultural Society of England, corner of HALF-MOON-STREET, Piccadilly, London.

CUCUMBER AND MELON BOXES AND LIGHTS.
One hundred 1, 2, and 3-light Boxes and Lights of all sizes ready for immediate use. Warranted best materials. packed and sent to all parts of the kingdom; 2-light Boxes and Lights from 1*l.* 4*s.* Garden Lights of every description, Conservatories, Green and Hot-houses, made and fixed in all parts of the kingdom. References given to the Nobility, Gentry, and the Trade, in most of the counties of England. JAS. WATTS, Hothouse Builder, Claremont-place, Old Kent-road, London.

THE STANWICK NECTARINE.
MR. J. C. STEVENS has the honour to announce that on WEDNESDAY, May 15, at 12 for 1 o'clock, by order of His Grace the DUKE OF NORTHUMBERLAND, and on account of the Trustees of a Fund for the Benefit of the GARDENERS' BENEVOLENT INSTITUTION, he will offer for sale by Auction, in his Great Room, 38, King-street, Covent-garden, Twenty-four Plants of the celebrated STANWICK NECTARINE. These plants are in pots, have been propagated expressly for the Charity by Mr. RIVERS, of Sawbridgeworth, and are the first specimens that have been offered for sale.
On the same day will be sold about 150 dwarf Apples, in 6-inch pots, grafted on the Pomme de Paradis (identical with the dwarf Apple of Armenia); many of them are in a bearing state, and very interesting little trees.

HORTICULTURAL IMPROVEMENTS.
STRAWBERRIES exceeding two ounces each in weight, and of delicious flavour, were grown on Roberts's Strawberry Tiles last season, and exhibited at the Horticultural Show at Chiswick, and at the Royal Botanic Gardens, Regent's Park, where they obtained the highest Certificate of Merit. No appliances hitherto used are equal to these Tiles for improving the flavour and keeping the Strawberries clean This is admitted by all who have tried them. As a further proof, many persons who have tried them have had a second and third supply, and will have much pleasure in answering inquiries, if any reference is considered necessary. They are not like articles of consumption, for when once purchased they will last for many years.
CELERY and CARDOONS of the most superb quality and size were produced by the use of Roberts's Sockets, and this season he introduces a new method of growing Asparagus, which greatly improves the quality and quantity of that valuable vegetable. He likewise gives a new mode of growing Grapes, Peaches, Figs, and other Wall Fruit, and has recently registered a Ventilating Flower Pot, which will be found invaluable to Scientific and Amateur Gardeners.
An illustrated pamphlet, with particulars and testimonials, can be had by enclosing three postage stamps to Mr. JOHN ROBERTS, 34, Eastcheap, London, where these inventions may be inspected.

STAR NURSERY, SLOUGH, BUCKS.
W. R. BRAGG begs to inform the Floral Public that his Annual Spring Catalogue contains Descriptive Lists of E. Foster's new and superlative Pelargoniums; the best varieties of Pinks, Picotees, Carnations, Pansies, Roses, &c., and may be had on application.
GIPSY PRIDE, by far the most successful Pelargonium of 1849, may still be had; also Constance, Conspicuum, Narcissus, Armida improved, and all the best show varieties of last and former years, in extra strong plants.
NEW PANSY, HUNT'S "HELEN," has gained more first class certificates in 1849 than any other variety now offered, and, beyond doubt, is quite a leading white-ground flower; plants are fine and healthy. 5*s.* each.
GOLDEN YELLOW DAHLIA, OLIVER'S "GOLDEN DROP," gained four first prizes and first class certificates in 1848, &c., five of each in 1849. Plants in May, 10*s.* 6*d.*
NEW FANCY DAHLIA, BRAGG'S "LADY GRENVILLE," the most successful fancy Dahlia of the year; colour, deep red, distinctly tipped with white; as a guarantee for constancy, it has received 11 first class certificates, four extra money prizes, and two premier prizes in class showing. Plants in May, 10*s.* 6*d.* Sound ground and pot roots of all the best Fancy and other Dahlias, at moderate prices.—May 4.

The Gardeners' Chronicle.
SATURDAY, MAY 11, 1850.

MEETINGS FOR THE ENSUING WEEK.

MONDAY,	May	13	Medical	8 P.M.
			British Architects	8 P.M.
			Geographical	8½ P.M.
TUESDAY,	—	14	Syro Egyptian	7½ P.M.
			Civil Engineers	8 P.M.
			Medical and Chirurgical	8½ P.M.
			Zoological	9 P.M.
WEDNESDAY,	—	15	Ethnological (Anniversary)	2 P.M.
			Society of Arts	8 P.M.
			Microscopical	8 P.M.
THURSDAY,	—	16	Antiquarian	8 P.M.
			Royal	8½ P.M.
FRIDAY,	—	17	Royal Institution	8½ P.M.
SATURDAY,	—	18	Horticultural Gardens	1 P.M.
			Westminster Medical	8 P.M.

COUNTRY SHOWS.—Tuesday, May 14: Hampshire Horticultural, and Cornwall Horticultural.—Wednesday, May 15: Manchester Botanical and Horticultural.

IN another column will be found a complaint, from Plymouth, of ADULTERATED GUANO having been palmed off upon some Devonshire farmers. Let us congratulate Sir ROBERT NEWMAN'S tenantry that matters are no worse. "Wood, straw, coal, and large fragments of bones," have some sort of value; and we may assume that the iron nails and other rubbish, spoken of by Prof. WAY, were inconsiderable in quantity. It is true that wood and other rubbish are not worth quite 9*l.* 10*s.* per ton; but they are worth something. Matters would have been worse, had the stuff been prepared by more cunning hands.

Must we again, for the hundredth time, inform the world that guano doctoring is a trade? and a very great one too; that, with the exception of what is procured from the only importers, or *from their authorised agents*, all guano is falsified? and that a substance, the cost of which when bought by the cargo is 9*l.* 5*s.* per ton, cannot be sold for less except by rogues? Yet it is notorious that "fine genuine Peruvian guano" is offered all over the country at a much lower price. A few circumstances that have come to our knowledge lately may explain how this is managed.

There are places near London where loam is sifted, and dried till it looks like guano. We could lay our hands upon a gentleman who has found a California on a hill side, so ample is the harvest of gold which he digs up. He is said to have a contract with one house for 30 tons of loam per week, at 20*s.* a ton—a little revenue of something like a thousand a-year, after paying expenses. A field of loam, assisted by a few such contracts, is, we suspect, a better *placer* than SUTTER'S mill itself.

There are caravans in London carefully covered in, so that the most curious eye cannot see their contents: they vary in size from that of a one-horse cart to a waggon; and will hold anything,—chests of tea, sugar-loaves, cheeses, tobacco—and even loam, if you don't mind dirtying them.

Such caravans, of the largest size, may be seen winding their way through crooked lanes, and narrow streets, and poor neighbourhoods, till at last they disappear near the banks of a river or canal, or some such place. At the time of their disappearance a pair of folding gates will be found to open and close mysteriously. If the passer-by looks within those gates he may find a wharf, perhaps, and all the signs of a busy trade. But what the trade may be can scarcely be discovered unless from the nods and winks and grins of the neighbouring peasantry.

In or near such places may be remarked heaps of blue billy (the stinking lime of the gas-works), refuse salt, crushed stones, and sundry other mysterious ingredients. There, too, are sometimes bags, which a little bird once opened for us, and which, to our surprise, were filled with guano, genuine as imported.

Now what can guano be doing there, in such doubtful company? Sifted and dried loam, blue billy, refuse salt, ground coprolites, crushed stones, are strange associates for an article worth 9*l.* or 10*l.* a ton; and one would think that the owners of the wharf would be alarmed lest, by some unfortunate accident, these matters might be mixed, and their reputation should suffer; especially when it is considered that the loam is uncommonly like guano, and that what it wants in smell the blue billy, if it did get mixed with it, might help it to.

But we must not be fastidious. Our native industry demands men of bold dispositions; and we have no doubt that adventurous merchants can be found, and in the midst of the most celebrated haunts of business, who would not feel acutely the inconvenience even if an awkward labourer were to jumble all these things together. Like true men of spirit, they would seek a remedy for the disaster—and sell the mixture for what it is worth. Now, what a thing is worth is what it will fetch; and if the mixture happens to fetch 8*l.* or 9*l.* a ton, then it is worth 8*l.* or 9*l.* a ton—that is clear. The seller has nothing to do with the buyer's ignorance; how can he undertake to measure a man's ignorance? He is naturally acute, himself, and he lies under no obligation to enquire into the amount of his customer's obtuseness. The mode we have suggested of repairing the accident would be perfectly in accordance with the maxims of trade observed by that part of the mercantile community to which such a man belongs. You may hear such doctrines defended any day at the Old Bailey.

There can be no doubt that accidents of this kind happen every day, and, which is more unlucky, continually to the same parties; so that their misfortunes become matter of public observation, and in the long run the gentlemen are set down as persons with whom it is not safe to deal. Their neighbours know them, and shun them. But their misfortunes are not heard of out of London: and the simple countryman, instead of suspecting his merchant to be a man sent to Coventry by fair dealers, looks with admiration at the wealth he is accumulating, and believes everything the knave may tell him. Hence the trash thus compounded finds a ready sale; and it is only when the mischief is done, beyond repair, that the dupes discover by their starving crops that a cheap bargain may be a very costly acquisition.

Since writing the above we have learned that a vessel is on her way to the Norfolk coast with a cargo of doctored guano, along with a few tons of guano genuine as delivered from the West India Docks; and that another is loaded for Newcastle, or some port in the north.

We also hear that 100 tons of London-made guano has just been returned from Yorkshire to a notorious dealer in the article, and that in consequence his trade is not quite so brisk as it was.

THE following extract from the Report of the Council of the Horticultural Society to the Anniversary Meeting, May 1, will have some interest for those who think of visiting the ensuing Exhbitions at Chiswick:

"For many years the Exhibitions at the Garden were accompanied by such constant fine weather that precautions against rain appeared needless. From 1833 to 1843, a period of 11 years, only two afternoons out of 33 were wet, and of these one was very slightly so. In 1845 and 1846 every day was fine; but since that time the weather in May, June, and July has changed so much, that out of nine meetings, in 1847, 1848, and 1849, five have been more or less stormy. In 1849 one day only proved wet, but so much inconvenience was then experienced that the Council have felt obliged, from a regard to the convenience of visitors, to endeavour to devise such a remedy as is possible where very large numbers assemble in the open air.

"With this view the old entrances to the Garden have been paved and drained, and a new double entrance has been opened into the Arboretum, from the Duke of

Devonshire's road, whence a gravel walk, 630 feet long, and 15 feet wide, has been made as far as the large Conservatory. On either side of this walk the tents will be pitched, and it is expected that a dry line of communication will be secured, in the event of rain, from one range of tents to the other. This alteration would not, however, have alone completed a convenient approach to the tents from the more distant entrances to the Garden, and therefore it has been found desirable to construct another gravel walk, 15 feet wide, and 667 feet long, from the old gate in the Duke of Devonshire's road as far as the new approach to the Conservatory. In doing this the opportunity has been taken of reconstructing the Flower Garden, which had for many years been much in want of remodelling. The Garden Committee, under whose charge these works were placed, availed themselves of plans prepared by Mr. Glendinning, to whom the execution of the groundwork and planting was also intrusted. The Council trust that this operation will be found to have added greatly to the convenience of visitors to the Garden, as well as to have improved its appearance. In order to render these alterations useful to the Exhibitors, a yard expressly for the purpose of receiving their waggons and carts has also been formed out of a portion of the orchard, in the neighbourhood of the tents."

Some suggestions which we lately ventured to make as to the possibility of economising the Waste Steam of factories, by applying it to the purposes of cultivation, were met *in limine* by this inquiry, "How is the heat to be maintained on Sundays and other days when the engine fires are put out?"—To that objection we offer the following reply:

Upon reading the observations now alluded to, Mr. Dillwyn Llewellyn, of Penllergare, tried the following experiment. From a small 8-inch cylinder engine, employed by him for agricultural purposes, this gentleman conducted a jet of steam for *twenty minutes daily*, through an inch iron pipe, into a bed of rough stones, covered by a glazed frame. A journal of the temperature was kept for 11 days, with the following result:

STATEMENT of Experiment with Waste Steam, as a medium of Bottom-heat, made at Penllergare, 1850.

Date.	Time of Observation.	Thermometer.	
April.		Degrees.	
9..	12 Noon	51	Steam introduced about 12 [o'clock.
,,	5 P.M.	54	
,,	7 P.M.	56	
10..	12 Noon	68	Steam introduced.
,,	3 P.M.	73	
,,	5 P.M.	85	
,,	7 P.M.	96	
11..	7 A.M.	108	Steam not introduced.
,,	12 Noon	104	
,,	5 P.M.	98	
12..	10 A.M.	83	Steam not introduced.
,,	7 P.M.	79	
13..	10 A.M.	69	Steam introduced.
,,	6 P.M.	75	
14..	10 A.M.	82	Steam not put on.
,,	7 P.M.	79	
15..	10 A.M.	70	Steam introduced.
,,	6 P.M.	73	
16..	10 A.M.	81	Steam introduced.
17..	10 A.M.	76	Steam introduced.
,,	4 P.M.	79	
18..	10 A.M.	94	Steam introduced.
,,	5 P.M.	110	
19..	10 A.M.	108	Steam not introduced.
	6 P.M.	96	

From this it appears—1, that, although steam was introduced among the stones for only 20 minutes a day, the temperature was raised from 51° to 68° in the first 24 hours; 2, that the temperature continued to rise for many hours after the second application of steam, until the thermometer reached 108°; 3, that, at the end of 19 hours, the heat of the frame diminished; yet 4, that, at the end of *seventy hours*, the temperature still was 69°. This appears a conclusive answer to those who think that masses of heated water, or heated porous materials, like rough stones, will become so reduced in temperature by a few hours' withdrawal of the prime heating power, as to endanger the plants cultivated in houses thus warmed.

We have no account of the external temperature at Penllergare during this trial; but we find that the minimum night temperature near London on the 10th, 11th, and 12th of April, during which steam was discontinued, was 34°, 34°, and 36°, on those days respectively.

ON THE CONDITIONS ESSENTIAL TO THE MOST PERFECT CULTIVATION.—No. XIV.

One of the best practical gardeners of the day (Mr. Barnes, of Bicton), in alluding to a successful mode of Pine culture, very justly states that it does not necessarily follow the strict adherence to any particular item in the category of requisites. The pit may be of the most improved construction, the heating apparatus the most efficient, facilities for atmospheric moisture may wait upon the will, and the soil may be unexceptionable, yet but very imperfect success may attend the efforts of those directing the operations. And if this be true in one department of gardening, which t most assuredly is, it is equally applicable to every other department of practice. It is in a natural relationship between the agents employed that success must be looked for. In a certain harmony of parts consists beauty of proportion, and consequent gratification to refined tastes, which is the ultimate result aimed at by the artist in the studio, or the practical realiser in the field. And as in an otherwise beautifully proportioned statue, the general effect is destroyed by a deformed limb, or a too prominent muscle, so where a physical result has to be worked out, by the employment of certain natural agents, artificially applied, will success be reaped in proportion as the causes known are related to the results aimed at. It must be borne in mind, that no result in nature, whether it arises from causes naturally applied or directed by the hand of man, but bears a relationship to such causes, and that certain natural causes can only produce certain results. In the ordinary natural phenomena around us we do not recognise this, because we are not familiarly acquainted with the nature and influence of the agents employed in the great laboratory of Nature. We know that in the movements of the planets some particular body will occupy a certain position in reference to another body, on some given moment, it may be years in the future—as, for instance, the eclipses of Jupiter's moons; because we know the process by which such a calculation can be arrived at, and we feel such a degree of certainty upon the result of such calculation because we know the relationship between the cause and effect.

Now, in the operations of cultivation, success will ever attend in proportion as we can make ourselves acquainted with the relation which certain natural agents bear to certain results; and the science of gardening must be based upon such principles. It cannot be said that, famous as English gardeners are, they have as yet established a correct code of practice founded upon scientific data, although—and it is much to be regretted that it is so—every one who writes an article in the present day deems it part of his duty to attempt to account for his results upon scientific principles. I say that such a course is to be regretted, because the principles sought to be established are often erroneous ones, and the result must be to make garden literature a chaos of presumed causes and effects, without any real relationship. How adverse such must be to the establishment of correct data will be evident to every one.

As every gardener knows with how much greater facility he can develope the capabilities of a plant when he has a knowledge of its natural history, it follows that if he could make himself acquainted with the principal facts in the nature, habit, locality, and habitat of every plant coming under his care, the great difficulties he would otherwise have to combat are overcome at the very threshold of his proceedings. Till comparatively recent times in the progress of horticulture, the English gardener has been woefully deficient in the means to facilitate him in the acquisition of such knowledge. The introducers of exotics thought it enough to say with each specimen that it was a native of the Cape, or of Terra del Fuego, which, as far as practical utility was concerned, was saying nothing; hence the loss, in the early progress of gardening enterprise, of many valuable importations. Such losses have often been attributed to ignorance of the ordinary routine of gardening by the practitioners of the day, and perhaps justly so; but such can only amount to a negative condemnation on their part. The real culprits were the men who introduced plants without the requisite data for their cultivation. If a more liberal amount of useful particulars were not now conveyed with new plants on their introduction, I question if a knowledge of plant culture would so rapidly progress towards perfection—unquestionably one of the greatest aids a gardener can possess, after an acquaintance with the routine of his business, or profession, if "Elpidophorus" will allow the term, is facility for gaining a knowledge of the natural history of his charges; and independently of the great practical utility of such knowledge, it adds an interest to his daily routine, and gives an intellectuality to his pursuits. It elevates his calling to something beyond mere rule of thumb, and should give him a position beyond that which the common opinion of the world would award to him as a gardener even of to-day. Let us hope to attain that position. The acquisition of knowledge, as observed by Lord Brougham in his admirable "Discourse," independently of its application to the ordinary affairs of life, or in the more limited sphere of our several occupations, there is conveyed to us by its acquirement an inward satisfaction, a pleasure derived from the consciousness of such acquisition, calculated in the highest degree to elevate the man, to refine the morals, and to add an intellectuality, a dignity to his position. And it should be borne in mind by every candidate for intellectual eminence, by every one who is desirous of obtaining the highest mental gratification, respect, and moral value in the eyes of his superiors, that mere position or wordly circumstances can never influence him in the pursuit, or tend to give him a retrograde movement, worthy of a moment's consideration. The mind is become or is becoming the talisman by which to estimate a man's claims upon respect and social value; and let us hope that the couplet of Pope will become an acknowledged truism, that

> "Worth makes the man, the want of it the fellow,
> The rest is all but leather and prunella."

The above remarks, although somewhat irrelevant to the immediate subject of discussion, will, I hope be pardoned, because this is the last paper of the present series. Not that the subject is exhausted.

There are many points in the details of plant culture which no treatise upon principles, however elaborate, could ever hope to elucidate. But it has appeared to me that there is a golden rule applicable to routine, which every young gardener would do well to have emblazoned on the cover of his pocket-book in letters of gold. It should be this—Take care of the roots and the leaves, and the plant will take care of itself. *George Lovell.*

VILLA AND SUBURBAN GARDENING.

Few pursuits connected with gardening possess more real interest than the raising of seedling flowers. It is an interest which never flags, for no sooner has one "batch" done flowering than preparation is made for sowing the seed of another. Notwithstanding the improvement which art and ingenuity have effected with respect to the Calceolaria, there is still an ample field left for the employment of the amateur's leisure hours, and for the exercise of his skill. I would recommend those who intend to pursue this subject to avail themselves of the improvements already effected by hybridising, more especially as regards form and distinct colouring, and, above all, select those which are of robust habit. Cross-breeding frequently induces constitutional debility, and to save seed from weakly plants would only be perpetuating one of the greatest evils attending the raising of new Calceolarias.

When the flowers begin to expand, take two plants, for example, of distinct colours; and in order that the cross may be as perfect as possible, place them under a hand-glass, so as to prevent them from being fertilised by bees or other insects, or place them in a frame or pit by themselves, where air can be given, and with a small hair pencil distribute the pollen of the one variety carefully over the stigma of the other, and *vice versa*. In order to obtain as perfect a breed as circumstances will admit, it will be much better to breed from a few pairs in this way than to raise a miscellaneous chance mixture, because it will be a source of more interest to the amateur, and because a very small portion of seed will prove ample for his purpose.

When the seed is ripe, which will be readily known by the cracking of the capsules, let it be carefully looked after, and as soon as the whole is collected, the plants may be kept in a growing state, in order that the young shoots may lengthen 2 or 3 inches, when they may be layered precisely as Carnations are; when perfectly rooted, let the layers be potted into 3 or 4-inch pots, in which they may be housed for the winter. The best kinds should, of course, only be propagated, as room must be reserved for the seedlings.

The seed should be sown in the beginning of October, and when just sufficiently above the soil, the young seedlings should be pricked off into 6-inch pots, as they are exceedingly apt to damp off if permitted to remain in the seed pans. These will be quite advanced enough to be potted into 4-inch pots, in which they will establish themselves before winter; I have on some occasions sown the seed as late as January, and obtained a good bloom the following summer. The seeds, which are sown in autumn in pans, instead of being baked in a hothouse or greenhouse, should be placed under a north wall; and, if the weather is wet, a hand-glass should be suspended over the pans, and provision made to prevent slugs or other insects from attacking them. *Pharo.*

DISEASES OF PLANTS.

(*Continued from p.* 277.)

To the genus of *Punctures* belong—

7. *Albugo from aphides.*—"This is a white mould produced upon leaves by the effect of aphides, and which causes them to soften." This is Plenck's definition. I myself have never observed this mould resulting from aphides, and I therefore do not venture any opinion on it. I have however often observed another phenomenon known to naturalists. Aphides, when near their last metamorphosis, are covered with a white dust, and some also with a very fine soft hairiness, also white. In this state I have seen them in crowds sucking out their food, in their usual manner, from the young leaves or branches on which they rested. I have sometimes cleared them off so as not to leave a single aphis on the plant. When I have left it exposed to the sun, the branch, if very tender, has generally perished; but when I have removed the plant to the shade and watered it well it has usually recovered. In this case it seems to me, that this so called *albugo*, a simple effect of injuries of the genus of *punctures*, has been confounded with the disease called *mugnoio* (miller), which is a symptom of weakness in the plant. Although I am inclined to think that aphides generally avoid healthy plants, and only attack the weak or diseased, yet even supposing they will also attach themselves to the sound, it is also true that the first mischief is produced by the effects of puncture. This kind of albugo is most frequent in autumn, and towards the close of a hot and moist spring.

8. *Honey-dew of Aphides.*—"A sweet transparent fluid, which is found on the upper surface of the leaves of various trees, shrubs, and herbs." I cannot understand how this disease could ever have been classed amongst fluxions. The most ignorant are aware that this fluid does not in any manner proceed from the plant. It transudes, or is expelled by the aphides from two protuberances, which they have on the head and from the anus. Ants which are frequently found with the aphides, are most greedy of it, and thence it is concluded by many, that the former do not injure plants. *Honey-dew*, properly speaking, should at most, as a disease, be classed only as a phthiriasis, of which it is a consequence when this phthiriasis is one of aphides. It is true that the honey-dew falling upon branches and

leaves injures them, especially when young, but that is from a totally different cause.

9. *Phthiriasis.*—I should define this to be the attack of an immense number of insects crowding upon a plant. Although the aphides are the most common, yet the cochineals and some others cover in the same manner the branches, leaves, and flowers. On this account I class the injury under the general head of *Punctures.*

To the genus which I have called *Intrusion* should be referred, if I mistake not, the greater part of the specific diseases caused by insects when accompanied by their presence.

10. *Gall of the Oak.*

11. *Bedeguar of the Rose.*

The one and the other are in fact real *galls*, that is to say, excrescences closed on all sides, in the centre of which lives an insect. They are produced by a hole bored by an insect, into which it deposits an egg. In the first case the excrescence is fungoid, with a smooth surface; in the [bedeguar] it is covered with reddish filaments. The latter is formed by the Cynips rosæ, *Linn.* Of the former there are many species, one of which is found on roots. Naturalists have not much investigated the manner in which these excrescences result from the disturbance occasioned in the ordinary course of the sap, by the deposit of the insect's egg. But it is not the less true that the introduction of this extraneous body has produced the disease.

It was our Malpighi who first established the fact, having detected a little fly in the act of depositing its egg in an Oak leaf, by means of a kind of awl, corresponding to the ovary. Professor Gerbi of Pisa, after examining and refuting the theories of the formation of gall nuts, laid down by the most celebrated naturalists, adds one of his own, having chiefly in view the gall of the Carduus spinosissimus. He supposes it to be formed by an accumulation of solid matter, deposited by the sap of the Thistle itself, diminished by the nutriment taken by the egg and the larva, and that the form of the gall nut depends on the form of the egg, and of the larva round which the incrustation takes place. This ingenious hypothesis requires to be verified on other kinds of gall. Bosc, in speaking of galls in general, says that the result of all that has been hitherto written, is very unsatisfactory; and that we shall long be obliged to confess our ignorance of the reasons of the regularity in growth which these singular productions assume.

12. *Scaling.*—This is a swelling of the buds, with the transformation of the surface into little scales. It may be observed in the Willow for instance, of which the catkins are sometimes converted into a kind of knotted and scaly bunches. There is no doubt of its being caused by the insect which deposits its eggs within it.

13. *Verrucosity of Leaves*, or Leaf-like excrescences on the surface of some parts of plants.—Marchant, in the "Mémoires de l'Academie de Paris," for 1709, gives an account of a Radish plant which produced oblong tubers, from whence issued flowers of a cartilaginous texture, but otherwise like the ordinary ones. He presumed this to be due to the deposit of insects' eggs in the plant, or even that it might be produced by simple puncture, like the deformed pods produced by the Radish when attacked by aphides.

14. *Fleshy Follicles.*—These are fleshy protuberances on the surface of leaves, formed by the eggs of insects, as Plenck has described them. We see them more especially on the Elm, produced by an insect which lives in a little bladder apparently growing from the leaf; but this bladder is, in fact, a production of the insect itself, which deposits its egg withinside of it. Naturalists say that these bladders must be considered as formed of an exudation from the leaf occasioned by the puncture of the insect.

15. *Scab of the Olive.*—This name is commonly given to a disease of the Olive, about which there may be some confusion. The natural history of the insects that live upon this tree is but little known. It is not improbable that they only attack the trees already afflicted with the scab, and that it is by analogy only that the name of *scab of the Olive* has been given to the mass of insects which are thus rather the result than the cause of the disease.

TRADE MEMORANDA.

Messrs. Lee, of Hammersmith, have furnished us with the following information respecting Doling. They say in their letter, "we learn from the police, that Mr. W. B. Doling, the Forest, Lyndhurst, Hants, is a common hawker, therefore those nurserymen who trust him will understand the extent of their risk. We made enquiry, before executing an order for above 30*l.* worth of plants and seeds." Similar information has been obtained by Messrs. Henderson and Co., of Pine-apple-place.

Home Correspondence.

Spring Protection of Young Conifers.—Our spring frosts sorely try the constitution and injure the health of some of the most beautiful Conifers, by nipping their young shoots and stopping their growth at the time it should be most vigorous. The superabundant resinous sap exudes at every injured point, becomes hardened by the sun, and renders such plants unsightly and quite unfit to embellish a lawn. Some evergreens, such as the Box tree, &c., are also liable to similar injuries; but as their sap is not resinous, and they have the power of prolonging their growth through the greater part of the summer, which Conifers have not, they soon recover their luxuriance. To the temporary protection, therefore, of young specimen Conifers in April and May, I wish particularly to direct attention, as I believe it might be easily accomplished, at a trifling expense, by the use of bunting, or some other light close material. I say young specimens, because I believe when they attain the height of 14 feet in some localities, or 16 feet in others, they may be considered beyond the reach of ground frosts, which I imagine really do all the mischief. Attention should also be directed to those species which, being less excitable than others, are not liable to be disfigured in the same degree. Here the young Deodars, Webbianas, Cephalonicas, Douglas Firs, and Pindrows, have suffered most: Grandis, amabilis, and nobilis are but little injured, but the most secure of all is the beautiful and rare Nordmanniana. The buds of this valuable species are as dormant as they were on Christmas-day; thus they triumph over many of their magnificent congeners. Can any one oblige us with a scientific or practical reason for the fact, that while the young shoots of Conifers, Azaleas, &c., are quite destroyed by a May frost, those of the Horse Chesnut, &c., apparently quite as delicate and tender, are uninjured by such casualties? *Charles Lee, Hammersmith.*

Value of Flued Walls.—As several gardeners of eminence in their "profession" condemn the practice of working flued walls in spring, with a view to keep off frost; and as a friend of mine, an old gardener, who lives about 30 miles to the north of Edinburgh, informed me on the 29th ult., that his Peaches on the lower part of the wall, where of course the fire was strongest, were the size of blackbirds' eggs, and the wood fit for laying in, I have taken the liberty of asking whether the spring working of flued walls is condemned with sufficient reasons. My friend has always excellent crops, without covering of any kind, and from all that I have seen and read the out-of-door cultivation of the Peach is yet in its infancy. *A Peach Admirer.*

Food of Birds: Tomtits, &c.—As this subject is now fairly opened in your columns, on account of its important bearing both on the produce of the garden and the fields, as well as its being a case of life and death to many thousands of charming creatures, to whom has been given a power over that region into which man cannot soar; I trust that it will induce many of your readers to impart information, whereby man may in time know his friends from his enemies. To suppose that these numerous tenants of the air have not a task allotted to them which cannot be greatly interrupted without serious mischief to other departments of the great system of life immediately connected with them, would be inconsistent with any universal theory of natural dependencies, and at variance with many well known facts in natural history. Still, general rules are by no means infallible guides to a solution of particular mysteries. With regard to tomtits, I certainly believed they were in search of insects, until I examined the blossom buds on the trees as well as those which they had thrown down. In the former I found no insect, nor in the latter any sign of erosion from one; but the lower part of every calyx, and the embryo fruit which it envelopes, was simply divided by one clean transverse cut by a single stroke of the bill, the peduncle being nipped off as if by the same stroke in a corresponding direction. Not perceiving that any portion was removed, nor any sign of an insect having been present, I was led to suspect that the bird might be in search of some pleasant juice, perhaps the "liquor amnios" contained in the ovary; I therefore divided a few of the young fruit, and on tasting them, was just able to distinguish a delicate Almond flavour. That Tommy, although he certainly belongs to the epicurean school, was really in search of this nectareous drop, I will not presume to say; but, as I know one branch of his family feeds on objects not larger than a pin's point, he may possibly sip his nectar in like proportion; making up in essence and in number for the smallness of the quantity he may obtain from each sealed vessel; for he will go from flower to flower, throwing them down with great rapidity, until the ground is sometimes white with the blossoms. It is, however, by no means less probable that he may have been in search of insects, which at the time escaped my observation; but as neither Mr. Doubleday nor any of your correspondents have answered my request, that they would say what insects he is in search of, I conclude this at least is a part of the subject still to be learned. That the Cherry tree, in common with others, is subject to the depredation of insects, I am well aware; but that does not prove the case in point; neither does the account of the wild teazel, which might perhaps as appropriately be placed in the same category with Tommy's amusement upon a Sunflower, as to the nature of which I apprehend there is no mistake. From the correspondence which has ensued from my remarks on a portion of Mr. Doubleday's article on the valuable services of birds, it may be inferred that I am also amongst their persecutors. So far from that being the case, I have always encouraged birds of every kind, and strictly prohibited the taking of any nests whatever, not excepting the sparrows—

> "For thou, poor bird, perhaps mayest moan,
> Some passerella dead and gone."

Now, these birds fell under even Mr. Taylor's mild proscription, so that I am a greater protector than he. I was induced to encourage these daring marauders from having observed them following the scarifier and picking out wire-worms from the clods, until they had collected four or five (probably one for each of their young ones), which they packed up in a bundle and carried off direct to the farm buildings, and having fed their greedy families flew back for more. This account was published some years since in your journal, and notwithstanding the stares and shakes of the head, and various eloquent apostrophes with which I have been saluted in the market-place, I still hold the opinion that sparrows do infinite good, at least during 11 months out of the 12; and if farmers cannot take the trouble to keep them off their Wheat for one month, while it is ripening, it is a pity. It is not clear to me that they are not then in search of the Cecidomyia Tritici; for if they were feeding on the corn alone, it seems scarcely probable that they would leave so much scattered on the ground, which is often as much as they consume. *F. J. Graham.*

Vegetable Marrow &c., a good Covering for Railway Embankments.—"It has occurred to us, that Vegetable Marrows, Gourds, Pompions, and even Cucumbers (if really useful), might be profitably cultivated on railway embankments; in addition to some gain, such plants would produce an agreeable appearance on the embankments, and there can be no doubt that on south aspects, at least, they might be grown in perfection. They should be planted on well cultivated grounds, about a yard apart, on the summit of the banks, and allowed to grow with their heads downwards. The present is perhaps the very best time for raising the seed in pots, and at the same time the ground should be dunged and prepared for their reception in the middle of May, when they may be considered out of all danger from frost. *Hardy and Son, Maldon.* [Certainly, the French Gourds might be usefully grown on the waste banks of railways, and would add much to winter supplies of wholesome food.]

Which is the best Aspect for an Orchard of Dwarf Standard Apple, Pear, and Plum trees? Most books recommend the south-east as being partially sheltered from the cold north-east and the heavy south-west winds, the former of which are destructive to the blossoms, and the latter to the fruit when approaching maturity. It appears to me that there is so little chance of the fruit being blown off dwarf trees, that the latter inconvenience might be risked for the sake of a more complete shelter from the former, in which case south or even south-west will be the best aspect. Many consider north to be a good aspect for orchards and Hop grounds, as the backwardness of it retards flowering till the frosts are gone. Perhaps this might apply to perry or cider fruits, where quantity is the chief object, but not to table fruit, which must be thoroughly ripened. Can you give me, or direct me to information as to the extent to which aspect and inclination of surface affect temperature, either monthly or as an average of the year. Most fruit books refer with approbation to the old custom of putting pavements under fruit trees, to prevent the roots from getting into the cold or wet subsoil. Would you recommend this practice where thorough drainage is adopted? [No.] My object in asking is to judge whether I should give the preference for planting to some land which has a thin layer of stone (about 2 inches) at 2 feet from the surface, and another of 6 inches at 3 feet, both parallel with the inclination of the ground. I could remove the upper layer, but the lower must remain, as it would cost more to take it out than the land would be worth. Supposing land on the lias formation to be as well drained as that on the old or new red sandstone, would it be better or not so good for fruit trees? The sandstone marls are generally recommended, because they are deep, rich in lime, and frequently on dry subsoils. It appears to me that the lias formation is richer in lime, and if depth and dryness were obtained, would be at least as good. There is, at this present time, in my garden, a striking instance of the effect of retarding the flow of sap in producing early blossoming of fruit trees. A young Pear tree has blossomed on one small branch only, and on examination, I found a nail in it which had been driven through it by the gardener when nailing it to the wall. *R. Varden, Landown House, Worcester.* [If soil is warmed by thorough drainage, it matters little what its quality is, provided it is neither sand nor clay. As to aspect, we should prefer a western to an eastern.]

Hybrid Azalea.—I send for inspection flowers of a hybrid Azalea, which has bloomed with me for the first time this season. It was purchased some years since of Messrs. Lucombe and Pince, of Exeter, as a seedling raised between an American Azalea and the Indian Rhododendron arboreum (he believes), at Highclere. The plant is grafted on Rhododendon ponticum, and though flowering in the conservatory, to decorate which it was lifted from the open ground, and planted in a very large pot, it is perfectly hardy and evergreen. The cross seems a curious one. *A Devonian.* [This is an extremely pretty and curious cross; the leaves are evergreen, the flowers short, firm, and deep rose colour; yet the form of the leaves, their undulations, and their surface, are very like those of an Azalea pontica.]

Ants.—We would advise "Northwood" to procure twopennyworth of arsenic, and mix it with a tablespoonful of honey, thinning it slightly with warm water. Let him apply this to his walls with a common whitewash or painter's brush. If "Northwood" tries this remedy, we should like to hear with what result. *Baxter and Son, Lewes.*——Try a liberal supply of guano, as a top-dressing over them, or toads will eat them. *J. R. C., Pulborough.*——Strong gas-water from the gas-works will kill them; but it cannot be employed in-doors, on account of its smell. *W. H. Browning.*——Small quantities of good cheese and arsenic rubbed well together, and placed in their runs, will kill them. *George Mills, Gunnersbury.*——Let "Northwood" remove part of his

kitchen floor, and he probably will soon discover the source of that living stream with which his food and furniture are inundated. I speak from experience. Some years since my dining-room was similarly infested. Within a few minutes after the cloth had been laid for dinner, an advanced party of ants would take possession of it, and have a taste of all the good things on the table. Having passed some years of my life within the tropics, I could have stood this intrusion, but in course of time their numbers increased so much that the legs of my guests were not safe under the table. Up to this time I had been content with pouring an occasional kettle of hot water on the column which wound its way along the entire plinth of the house, while the housemaid did her duty within-doors. It happened, however, that very room was covered with a Turkey carpet, so that the brush, though worked by a willing hand, had but little effect in routing the enemy. When, however, I found my neighbours cry out, and fight shy of my beef and port, I became desperate, and removing the furniture out of the room, had two or three planks of the floor removed. The living mass that met my eye at once proved to me how utterly hopeless the mere destruction of a column of ants daily would be. I removed with a garden spade a stáble bucket nearly filled with ants and the dust and material of which they had formed their nest. I then gave them a few hours' rest, until I supposed all stragglers and foraging parties had returned to their quarters, when I poured some spirits of turpentine on the place where the nest had been. I kept the floor open for a few weeks, so that I might have an opportunity of seeing if any attempt was made at a new settlement, but up to this time I have not seen another ant within the walls of the house. Let your correspondent be as energetic, and the chances are, he will be equally rewarded. *Experto crede.*

Effects of the late Frost.—In your last *Chronicle* I observed statements made by two correspondents under the above head, which have somewhat surprised me, as well with respect to the alleged intensity of the cold as stated by one writer, and the destructive effects experienced by another; the former stating the thermometer to have fallen in the night of the 27th March to 2° (the accuracy of which statement I am inclined to doubt), and the latter enumerating a number of shrubs which with him in Suffolk have either been killed or have sustained injury, while with myself, living in what is accounted a cold and bare district (the Cotswold), hardly any of the enumerated shrubs (and I possess several of them), have been injured at all. My Deodars, for example (one of them from 15 to 20 feet growth), are in as healthy a condition as they have ever been, and I may say the same of the Cupressus torulosa (of about 10 feet growth), and others of that sp cies; nor has the Araucaria imbricata, insignis, and other Pines, Abies morinda, tree Pæonies, Arbutus, Aucuba, tree Roses, and other things mentioned by Mr. Barnes, been hurt. But one shrub of late introduction, not in the list, which I had hoped to have found (as has been stated), quite hardy, has, I fear, been killed—I mean the Taxodium sempervirens, which, though planted out only a year ago had attained a vigorous growth of about 4 feet, but it has now much the appearance of being dead, though I think not quite to the root. The Ilex latifolia is only rather pinched, and a Cryptomeria japonica too, though not yet planted out, and kept under glass, turned so brown during the earlier frosts that I feared I had lost it, but it has, however, again recovered its hue of health, though from what has occurred I must rather doubt its being altogether hardy. The Magnolias (grandiflora) against my house are also, I hope and believe, little if at all the worse for the last winter's frosts, but by the exposure to the cold of from 30 to 40 preceding ones they may have acquired a hardy constitution. I have to-day been looking over about 150 trees of not altogether an ordinary description, though none of them perhaps very rare, planted in a place that I dignify with the name of an arboretum, and I find that upon the whole they have withstood the rigour of the season very well. Of the Pines there planted, it seems to me that the Corsican (Laricio) is the most likely to prove a valuable tree; one planted when the collection was made 16 years ago is really a noble looking tree. *W. H., May* 8. [With us, in low imperfectly drained heavy London clay, Taxodium sempervirens and Cryptomeria have not even changed colour.]

The Weather.—From the 20th to the end of April the weather was cold and dry, with bright days, and two or three degrees of frost at night; under these circumstances the Plum and Pear trees bloomed and set their fruit in great perfection, and there appeared a prospect of a most abundant season; but suddenly, on the evening of May 2d, a sharp hoar frost came on, so that on the morning of the 3d the thermometer registered 23, or 9 degrees of frost; this seems to have destroyed nearly everything. Beurré Capiaumont Pears and some other late blooming sorts, seem to have escaped. It will be of interest to know if these sudden hoar frosts in spring are local, or in what situations they are most destructive; perhaps some of your readers in different parts of the country will give the amount of frost registered on the morning of the 3d; here we are neither high nor low, and the soil rather dry than otherwise—substratum sand. Peaches on south-west wall, unprotected, which had entirely escaped the severe frosts of March, and had set their fruit abundantly, are all killed. *T. R., Sawbridgeworth.*

Hartley's Patent Rough Plate Glass.—I am most thoroughly convinced from experience that nothing can equal "Hartley's Patent Rough Plate." I only wish I had used it for all my houses, &c. It keeps flowers in bloom weeks longer than any other glass, and completely gets rid of the necessity of shades. I have used it for pits and hand-glasses with great success; and it answers admirably for striking cuttings under it, even of the most delicate things. The time will come when no other glass will be used for horticultural purposes, roofs at any rate. I have seen many imitations of it, most wretched and imperfect substitutes, nothing but common sheet glass with one side roughened. Every one who has seen the patent rough plate is satisfied now of its efficacy, though they were very sceptical last year. *John Wills, jun., the Rectory, South Perrott, near Crewkerne.*

Societies.

Royal Botanic, Regent's Park, *May* 8.—This Society was unfortunate in having a wet day for its first fête this season. Without anything striking, if we except some of the Roses, the Azaleas, and Mrs. Lawrence's collection of stove and greenhouse plants, which were fine, the exhibition was not more than an average one. There were no tall Cacti worth mentioning. Orchids were far from being numerous, and the Pelargoniums, with one or two exceptions, were not sufficiently in bloom. H. R. H. Prince Albert inspected the exhibition at an early hour.

Collections of 30 Stove and Greenhouse Plants were shown by Mrs. Lawrence, of Ealing Park, and Mr. Cole, gr. to H. Colyer, Esq., of Dartford. In Mrs. Lawrence's group, which was greatly superior to Mr. Cole's, we remarked huge specimens of Eriostemon myoporoides and buxifolium, Polygala acuminata, Epacris grandiflora, a very fine Pimelea spectabilis, which could hardly be less than 5 feet through and nearly as much high, a mass of finely expanded flowers; a graceful bush of Chorozema Lawrenceana, Podolobium staurophyllum, the handsome yellow-flowered Oxylobium Pultenææ, the showy Gompholobium barbigerum, a plant which few flower well; a small G. polymorphum, trained to stakes, in the form of a bush, a much handsomer plan than that of placing it on a trellis; a nicely-flowered and highly-coloured Hovea Celsi, Boronia pinnata in charming condition, Adenandra speciosa, a good blue Leschenaultia, and some other plants. The best of Mr. Cole's 30 plants were Erica Cavendishii, Adenandra speciosa, Azalea Gledstanesii, a purple-flowered Everlasting, Hovea Celsi, not so highly coloured as it should have been, and a finely blossomed Clerodendron splendens.

Collections of 20 Stove and Greenhouse Plants were shown by Messrs. Green, Taylor, Frazer, and Pamplin. Mr. Green had Gardenia Stanleyana, with a good show of blossom, but hardly forward enough; a very fine Azalea Gledstanesii, insufficiently advanced in bloom; a pretty conical Leschenaultia formosa, the pretty Acrophyllum venosum, a useful plant; Ixora coccinea, a large red Azalea, two Everlastings, and the purple Epiphyllum Russellianum, trained on a wire trellis.—Mr. Taylor sent a handsome pyramidal Eriostemon buxifolium, Ixora coccinea, a pale pink Epacris, called limata; Adenandra speciosa; a buff-flowered Heath, named Albertii; and a large white Azalea.—Messrs. Frazers' plants were small, and incapable of comparison with the fine specimens supplied from the same nursery in former years. Among them were good plants of Erica propendens, Azalea indica alba, Pimelea spectabilis, Epacris grandiflora, and Privet-leaved Jasmine.—Mr. Pamplin had Genista racemosa, Hovea Celsi, some Azaleas and Heaths, and a good bush of the not very showy Pimelea lanata.

Collections of 10 Stove and Greenhouse Plants were numerous. The two best were furnished by Mr. Croxford, of Stamford-hill, and Mr. Laybank, of Norwood. In the former of these we observed a large Epacris grandiflora, well flowered and highly coloured; Adenandra speciosa, Erica propendens, E. Hartnelli, a blue Leschenaultia, the box-leaved Eriostemon, a prettily managed Epacris miniata, and Chorozema Henchmanni.—Mr. Laybank's 10 plants contained Tropæolum tricolorum, trained in the form of an upright cylinder, 4 feet high, and covered with flowers, producing a striking effect; a well-cultivated Boronia anemonæfolia, a white Azalea, Zichya coccinea, a badly-coloured variety of Gompholobium polymorphum, Erica Batemanniana, a handsome Heath in the way of Sprengelii; a well-grown and flowered Chorozema angustifolia, and a purple Everlasting.—Among the 10 plants from Mr. Bruce, of Tooting, which were placed next in point of merit, we remarked Azalea speciosa, a glowing red variety; a charming Epacris miniata, Aphelexis humilis, and Erica perspicua nana.—Other tens were produced by W. H. Gilliot, Esq., of Clapham; Miss Traill, of Bromley; Mr. Malyon, gr. to T. Brandram, Esq., Blackheath; Mr. Slowe, gr. to R. W. Baker, Esq., Mr. Stanly, Mr. Young, and others. In these collections we observed Erica Sindriana, which is noticed in another column; some nice bushes of Boronia anemonæfolia, which, on account of its sombre appearance, makes an ineffective exhibition plant; Oxylobium Pultenææ, one of the handsomest of yellow-flowered greenhouse shrubs; Erica vestita rosea, a charming purple Heath; and the strongly-scented violet-flowered Prostanthera rotundifolia.

Before leaving this part of the exhibition, we must not omit to mention that in the tent in which the stove and greenhouse plants were arranged, earthen terraces faced with turf have been substituted for the wooden stages on which the plants used to be placed, and with good effect.

Orchids.—The only collection of 25 was produced by Mr. Williams, gr. to C. B. Warner, Esq., of Hoddesdon. It contained Lælia majalis, with one flower; L. cinnabarina, Cypripedium barbatum, with four blossoms; Odontoglossum pulchellum, Epidendrum bicornutum, E. macrochilum, aurantiacum, crassifolium, and variegatum, Lycaste cruenta, Cattleya intermedia, C. citrina, with two flowers; C. Skinneri, and C. Mossiæ, a finely-blossomed Dendrobium macrophyllum, moniliforme, densiflorum, cærulescens, and nobile; Phalænopsis grandiflora, Maxillaria tenuifolia, the little orange-flowered Saccolabium miniatum, Phaius Wallichii, and the larger variety of Brassia maculata.

Groups of 15 Orchids were shown by J. H. Schröder, Esq., of Stratford, and by Mrs. Lawrence. Mr. Schröder's plants consisted of Dendrobium triadenium, Devonianum, pulchellum, and densiflorum; Cymbidium eburneum, Burlingtonia rigida, Saccolabium guttatum, Oncidium bifolium, Cattleya intermedia, and Calanthe veratrifolia. Mrs. Lawrence sent Dendrobium nobile, moniliforme, secundum, and formosum; Cattleya intermedia, Cyrtochilum citrinum, Cypripedium barbatum, Phalænopsis grandiflora, Chysis bractescens, Vanda insignis, and Oncidium Papilio.

Ten Orchids were supplied by Mr. Beck, and Mr. Wooly, gr. to H. B. Ker, Esq., of Cheshunt. Mr. Beck's group (all in slate pots) contained a large and charming specimen of Dendrobium nobile, also D. densiflorum and fimbriatum, a highly coloured Cattleya Skinneri, and a good Epidendrum crassifolium. Mr. Wooly had Phaius grandifolius, with nine flower spikes; Lycaste Harrisoniæ, with a dozen open blossoms; Dendrobium nobile, Epidendrum cochleatum and crassifolium.—Messrs. Lucombe and Pince, of Exeter, produced an admirable Dendrobium cærulescens, some 4 feet high and as much through, growing in a pan about a foot deep, and we noticed elsewhere in the tents an example of the Bornean Cypripedium Lowei from Messrs. Rollisson.—Messrs. Veitch had Dendrobium cretaceum, from Moulmein.

Of Azaleas there was a large and grand display. Mrs. Lawrence had 12 excellent specimens, and a similar number was produced by Messrs. Frazer and Lane. The first group contained exquisita, double red, præstantissima, Lawrenceana, coronata, lateritia, speciosissima, Rawsonii, optima, one of the best reds, and Gledstanesii.—Messrs. Frazer had Broughtonii, Murrayana, violacea superba, purpurea superba; refulgens, a cone of glowing red; splendens; an admirable Chinese yellow; Fielder's White, fulgens, and lateritia.—Messrs. Lane sent speciosissima, picturata, white; triumphans, double purple, double red, indica alba, and others.

Six Azaleas were produced by Messrs. Green, Falconer, and Gilliot. Mr. Green's sorts were triumphans, indica alba, double red, coronata, variegata, and lateritia. Mr. Falconer sent quite a little tree of the double red; also fine plants of speciosissima, variegata, Favourite, Bianca, one of the best whites, and lateritia. Mr. Gilliot's kinds consisted of small plants of optima, exquisita, refulgens, and variegata.

Roses were numerous, and exhibited in beautiful condition. Indeed it would be difficult to surpass the excellence of many of the specimens in Mr. Lane's collection. Mr. Paul, too, had a plant of Madame de St. Joseph (a very fine Tea Rose), which was the admiration of everybody. Mr. Francis' collection also did him credit; and so did those produced by Mr. Rowland and others, to the amateurs. Mr. Lane's varieties were, *Hybrid Bourbon*: Chenédolé. *Hybrid Perpetual*: Baronne Prevost, Duchess of Sutherland (very fine), Géant des Batailles, Lady Alice Peel, Louis Bonaparte, Madame Trudeaux, Mrs. Elliott. *Bourbon*: Armosa. *China*: Fabvier, Miellez, lemon white.—Messrs. Paul had fine plants of *Teas*: Safrano, Taglioni, Cels multiflora, Madame de St. Joseph (alluded to above), Lady Warrender. *Bourbon*: Bouquet de flore. *Hybrid Perpetual*: Duchess of Sutherland. *China*: Mioland, and others.—Mr. Francis's sorts were, *Hybrid Perpetual*: Augustine Mouchelet, Baronne Prevost, La Reine, General Allard, Mrs. Elliot. *Hybrid Bourbon*: Charles Duval, Paul Perras. *Teas*: Elise Sauvage. *Bourbon*: Armosa, Souvenir de la Malmaison, Chenédolé.—Mr. Lane's yellow Roses were, Queen Victoria, Smith's Yellow, Vicomtesse de Cazes, Pauline Plantier, and Clara Wendel.—Mr. Paul had, in addition to the above, two Persian yellows, Harrison's Yellow, and Solfaterre. To the above sorts Mr. Francis added La Pactole.

Cape Heaths were plentiful, but generally insufficiently in bloom. The plants produced from Mr. Rucker's garden, and cultivated by Mr. Leach, were certainly admirable examples of successful Heath growing. Among them were fine specimens of Beaumontia, propendens, perspicua nana, vasiflora, Hartnelli, suaveolens, elegans stricta, favoides elegans, tortulæflora, aristata major, mutabilis, and dilecta.—Among Amateurs, Mr. Quilter, of Norwood, had the next best group. It consisted of mutabilis, viridis (not viridiflora or viridescens, but the true viridis of "Andrews," a scarce Heath with the habit of the vestitas), Sindriana, favoides elegans, fastigiata lutescens, intermedia, elegans, perspicua nana, ampullacea, vestita rosea, nitida, and propendens.—Mr. Cole had 15 nice Heaths; and groups of six plants were produced in good condition by Messrs. May, Williams, and Green.—In the Nurserymen's Class, Mr. Fairbairn had 12 good plants, some account of which will be found in another column, and so had Messrs. Rollisson and Veitch. In the group from Exeter, we observed a nice example of Per-elegans, a new kind; and Messrs. Rollisson had the seldom-seen primuloides and Sindriana. Some Seedling Heaths, apparently raised between aristata and Hartnelli, were exhibited by Messrs. Lucombe and Pince; but though very beautiful, as most Heaths are, they were not sufficiently distinct to merit more particular notice. This remark also applies to a seedling produced by Mr. Epps, of Maidstone, in the way of Dunbariana or, perhaps, tricolor verna.

Single specimens consisted of an immense Pimelea spectabilis from Mrs. Lawrence, Rhododendron Gibsonii from Mr. Lane, Boronia spathulata from Messrs. Veitch, Hoya imperialis from Messrs. Lucombe and Pince, Epacris miniata from Messrs. Rollisson, Pimelea Hendersoni from Mr. Warner, and some other plants of less interest.

New Plants were scarce. Messrs. Veitch had Medinilla bracteata, Fuchsia spectabilis (not in good condition), Pimelea Neippergiana, a pretty white kind, Stylidium ciliare, and Dielytra spectabilis.—Messrs. Lucombe and Co. sent Gardenia malleifera and Clerodendron Bethuneanum.—Mr. Taylor had Pimelea Nieppergiana.—Messrs. Henderson ditto, an Acacia called grandis, and Pimelea Verschaffeltiana.—Mr. Stanly showed a seedling Hovea.—Messrs. Veitch produced Cinchona lanceolata as a "plant of economical interest."—A cut spike of a small-flowered white Rhododendron called Bianca was exhibited by Messrs. Lucombe and Pince, and Mr. Stark, of Edinburgh, sent a yellow-flowered Wallflower, which was stated to be "violet-scented."

Pelargoniums.—As we have stated, these were numerous, but not sufficiently advanced in bloom. For 12 "new kinds" in 8-inch pots, Mr. Cock, of Chiswick, was first with Hope, Gulielma, Salamander, Pictum, Mont Blanc, Mars, Bertha, Orion, Rosamond, Pearl, Forget-me-Not, and Gustavus; 2d, Mr. Robinson, Pimlico, for Orion, Camilla, Negress, Armada, Isabella, Gustavus, Hebe's Lip, Forget-me-Not, Rosetta, Miss Holford, Cassandra, and Gulielma; 3d, Mr. Stains, New-road, for Forget-me-Not, Rolla, Centurion, Virgin Queen, Phyllis, Painted Lady, Pearl, Norah, Bertha, Minna, Gulielma, and Negress. Nurserymen (same class): Gold Medal to Mr. Dobson, gr. to Mr. Beck, for Cuyp, Agatha, Mulready, Gulielma, Rosalind, Mont Blanc, Chloe, Gustavus, Pontiff, Blanche, and Rosamond; 2d, Mr. Gaines, for Forget-me-Not, Pearl, Armada, Grenadier, Mont Blanc, Mrs. Beck, Juliana, &c. Mr. Parker's varieties, in 11-inch pots, were Adonis, Rosy Circle, Resplendent, Zanzummim, Pearl, and Negress. Mr. Gaines had Cotherstone, Gazelle, Emma, Negress, Pearl, and Ackbar.

Fancy Pelargoniums.—1, Mr. Robinson, for very fine plants of Empress, Fairy Queen, Jehu superbum, Anais, Queen, and Madame Miellez; 2, Mr. Moseley, for Nosegay, Statuiski, Anais, Lady Rivers, Yeatmannianum grandiflorum, and Lady Flora; 3, Mr. Stains, Queen, Madame Miellez, Statuiski, Nymph, La belle Africana, and Yeatmannianum grandiflorum.—Mr. Gaines' six consisted of Anais, Madame Rosati, Jenny Lind, Madame Miellez, Lady Rivers, and Ibrahim Pacha.

Of Cape Pelargoniums Mr. Parker had elegans, abrotanifolium, glaucum, holosericeum, reniforme, crispum major, ardens, bicolor, flexuosum, Blandfordianum, elatum, and quinquevulnerum.

Seedling Pelargoniums.—Mr. Beck had Rosa and Incomparable, two varieties of great colour, which we hope to see again. "Little, but good," from the same raiser, is also a promising flower. Other seedlings were produced by Mr. Hoyle and others, but the season is not yet far enough advanced for them to be seen in their true characters.

Cinerarias.—Messrs. Henderson, of Pine-apple-place, showed Speciosa, Cerito, Husseyana, Edmondsiana, and Beauty of St. John's-wood.—Mr. Henderson, Wellington-road, had Adela Villiers, Flora McIvor, Cerito, Matilda, Pauline, and Effie Deans.—Mr. Ivery sent Beauty of Peckham, Prime Minister, Gem, Alboni, One in the Ring, and Edmondsiana.—Mr. Robinson produced Fairy Ring, Edmondsiana, Newington Beauty, Amanda, Husseyana, and Brilliant.—Among Seedlings, perhaps the most promising were Lady Hume Campbell, and Madame Sontag.

Calceolarias.—Mr. Stanly showed Beauty Supreme, Solicitor-General, Enchantress, Chancellor, Madonna, and Don Sebastian. No Seedlings were produced worthy of remark.

Pansies were shown by Messrs. Turner and Bragg, of Slough, and Messrs. Maul, of Bristol. With the exception of the Duke of Norfolk, the flowers were generally small.

A collection of 30 well-grown British Ferns was produced by Mr. Williams, gr. to C. B. Warner, Esq.; and Mr. Wooly, gr. to H. B. Ker, Esq., had a group of 12 exotic Ferns. Alpine

plants were furnished by Mr. Turner, and Mr. Wood, of Norwood.

HAMMERSMITH PANSY EXHIBITION, *May* 3.—Amateurs—24 blooms: 1st, Mr. Treacher; 2d, Mr. Scotcher; 3d, Mr. Parsons; 4th, J. H. Brown, Esq.; 5th, A. Lane, Esq. Nurserymen—36 blooms: 1st, Mr. Turner, Royal Nursery, Slough; 2d, Mr. Thomson, Iver; 3d, Mr. Bragg. A first-class certificate was awarded to "Mr. Beck," a flower of much promise, raised by Mr. Turner; and to it was also awarded the Vice-Presidents' prize of one guinea. Amongst the varieties shown in the various collections we noticed particularly fine specimens of Queen of England, Almanzor, Mrs. Hamilton, Ellen, Mrs. Beck, Miss Thomson, Duchess of Rutland, Penelope, Caroline, Sir R. Peel (Bragg), Climax, Princess, Constellation, Bellona, Rubens, Miss Edwards, Duke of Norfolk, Addison, Leader, Juventa, Mrs. Bragg, Viceroy, Example, Ophir, Emma, Malvern, Disraeli, Rainbow, Lucy Neal, Sambo, &c. The flowers were produced in excellent order, and altogether the meeting was one of the best which has been held under the auspices of this Society.

IPSWICH AURICULA AND POLYANTHUS SHOW, *May* 2.—1st, Mr. Marshall, for Lee's Colonel Taylor, and Grime's Privateer; 2d, Mr. Scotchmere, Smith's Waterloo and Grime's Privateer; 3d, Mr. Woollard, Baldiston's Susan and Grime's Privateer. White-edged: Mr. Kerridge, Townsend's Lady Duncan and Wild's Bright Phœbus. Self prize: Mr. Woollard, Woollard's Margaret, Seedling; Mr. Barker, England's Hope. Polyanthus: Mr. Woods, Flare up. Seedling: Mr. Woods, Agitator. Mr. Woods obtained first and second prizes for Polyanthuses, of which he is an extensive cultivator. *Ipswich Chronicle.*

Reviews.

The Statistical Companion for 1850. By T. C. Banfield, Esq., and C. R. Weld, Esq. 12mo. Longmans, pp. 144.

Now that the world has learned to estimate more justly the relative value of facts, surmises, suppositions, and queries, statistical enquiries have assumed importance in the eyes of the ordinary reader, while intelligent men continue to place them in the highest ranks of human pursuits. We therefore entertain a confident belief that the little work before us will be received with a hearty welcome, relating as it does to things social, mercantile, rural, fiscal, geographical, medical, and political, in short to every subject about which civilised society is interested. It will also be a useful guide to the investigators of statistical evidence, by showing in what direction there is the most pressing necessity that enquiries should be directed. A glance at the pages will show that the Statistics of Gardening and Farming are among those on which we have the smallest amount of information; and it is to be hoped will convince the members of the House of Commons of the monstrous error they committed in refusing to give the Government authority to call for annual detailed returns as to the different branches of rural industry.

The only fault that strikes us in the work before us, except its brevity, is its arrangement, or rather want of arrangement, and its insufficient index. About the former there are typographical difficulties the force of which we readily acknowledge: but this circumstance should have drawn greater attention to the index, which, we regret to say is, as it stands, inaccurate and wholly insufficient. The price of the volume is however so small that the student will probably reconstruct it for his own use, by cutting two copies to pieces, and pasting the fragments together in such an order as may be most suitable to his own line of research.

The following table may serve as an example of the manner in which important facts are brought into distinct view.

STATE OF LAND IN THE BRITISH EMPIRE.

	Arable and Gardens.	Meadows, Pastures, and Marshes.	Wastes capable of Improvement.	Annual Value of Wastes in present state.	Incapable of Improvement.	Summary.
	Acres.	Acres.	Acres.	£	Acres.	Acres.
England ...	10,952,800	15,879,200	3,454,000	1,700,000	3,256,400	32,242,400
Wales	800,670	2,226,430	630,000	200,000	1,105,000	4,752,000
Scotland ...	2,498,960	2,771,050	5,960,000	1,690,000	8,528,930	19,738,930
Ireland	5,889,040	6,736,240	4,900,000	1,395,000	2,416,664	19,441,944
Brit. Islands	109,680	974,060	166,100	25,000	569,469	1,119,159
	19,130,990	27,886,980	15,000,000	5,000,000	15,871,463	77,894,433

Miscellaneous.

Stanhopea cirrhata.—A stove Orchidaceous epiphyte, from Nicaragua, introduced by Mr. Skinner. Has not yet flowered. (Fig. 19.) A few pseudo-bulbs of this remarkable plant were sold at one of Mr. Skinner's sales, having been collected at Nicaragua by Mr. Warcziewitz. A couple of specimens in spirits enable me to define it. Among Stanhopeas it is unique, for the flowers being absolutely solitary, not in spathaceous spikes, and for the column being wingless, and extended into a pair of feelers like some Odontoglossums. Its lateral horns, too, are extremely short and fleshy. Its colours are unknown, but it does not promise to be a showy species of much horticultural interest. *Paxton's Flower Garden.*

Stanhopea ecornuta.—A stove Orchidaceous epiphyte, from Central America, whence it was sent to Mr. Van Houtte by Mr. Warcziewitz. Flowers white, with the base of the lip yellow. (Fig. 20.) This extremely curious plant differs from all the previously known Stanhopeas, in having a lip wholly free from horns, and without any break in its middle. It may be regarded as a species with the hypochil (or lower half of the lip), alone present. This body is described as being "ovate, obsoletely triangular at the end, very short. It has much the form of a slipper, extremely fleshy, of a very bright yellow-orange colour, passing towards the point into pure white, and mottled on its sides with handsome purple blotches. Four little tumours, two near the articulation with the column, and two near the point, indicate four abortive horns." The flowers are otherwise pure white, with a few purple spots near the base of the petals, which are short, firm, concave, and not reflexed, as in most other Stanhopeas. "The column is very short, very fleshy, compressed, rounded above, winged at the sides, channelled in front." "The flowers, which grow in pairs, are about 4½ inches across, and have very short bracts." *Paxton's Flower Garden.*



Stanhopea tricornis.—An Orchidaceous epiphyte, from Western Peru; plants of which were dispersed at one of Mr. Skinner's sales. Has not yet flowered. (Fig. 21). A very curious thing. The figure of the lip is most remarkable, there being a third horn at the base of the middle lobe of the lip in addition to the two always present at the side. In a figure sent home by Mr. Warcziewitz the petals are represented to be pink, and the rest of the flower white; the petals moreover are more fleshy, firm, and apparently incapable of rolling back as in the rest of the genus. Fig. 21 *a* represents a portion of the lip. *Paxton's Flower Garden.*

Fragrant Thistle.—"The air was filled with the aroma of a multitude of toffs, which the Bedouin children had gathered for us. I know no European flower which I could put in comparison, as regards odour, with this seemingly insignificant Thistle; and here, in Tunis, where kind Nature seems to have created it in such abundance, in order to overpower the pestiferous exhalations of the town, I have become too fond of it not to say a few words about it. One or two days after our arrival in Tunis, F— brought me a very ugly flower, a sort of vegetable polypus, as it were, which had neither leaves nor stalk, nor, as I supposed, smell. For want of a stalk, it was stuck on the end of a small twig. Almost offended at the imputation against my taste, implied by F—'s offering me so ugly a thing, I paid no attention to his present, but let it lie on the chimney-piece. Often, however, as I passed the spot I perceived a delicious odour, and in vain inquired where were the concealed beds of Violets or Mignonette from which it proceeded. Neither F— nor T— could give me any information on the matter. The perfume, meanwhile, grew stronger and stronger every day, and with it grew my amazement at the phenomenon. It was my despised Thistle which diffused its incomparable fragrance over the whole room. I found it limp and faded lying under a heap of newspapers; I took it up, and pulled out the pointed twig that had been thrust into its tender heart, entreated its forgiveness for having so mistaken its worth, laid it into a saucer of water, and behold it did forgive me; for its shrivelled florets expanded themselves again, and sent forth their fragrance more abundantly than ever. It is now the season when they are in bloom, and they stretch their heads by hundreds out of the earth; for they grow so close to the ground that one must actually dig them out, to get the flower entire. The exquisite perfume of this Thistle is universally acknowledged, for many fragrant essences are prepared from it." The foregoing is an extract from the Diary Tour in Barbary. What a pity it is that the fair authoress had not read Lady's Botany, or some such book, and told one the name of the plant at once. What is the ill-favoured but sweet flavoured vegetable? *Dodman.*

Garden Memoranda.

MESSRS. FAIRBAIRN'S NURSERY, CLAPHAM.—The plants here in general look well, and many of the Heaths, for which this establishment is so justly celebrated, are beginning to unfold their charming blossoms. E. intermedia, suaveolens, a very sweet-scented species; vasiflora, daphnoides, mutabilis, a beautiful specimen; Sprengelii, mundula, elegans, favoides elegans, vestita rosea, odore rosæ, fastigiata lutescens, and some of the ventricosas are already in flower, and Macnabiana, a useful spring-flowering kind, is reported to have been in full beauty for as least these three months past. Sindriana, a comparatively new kind, in the way of hiemalis, was likewise in blossom. It has a robust upright habit, blooms profusely, and will prove an acquisition, as will also a Devonshire Heath called Devonia, "let out" by Messrs. Veitch. It is a seedling of Mr. Story's, we believe, and certainly promises to be, when larger and better bloomed, a charming sort. The flowers have the form of those of ampullacea, and are brighter coloured than those of aristata, which is evidently one of its parents. Indeed, it is stated to have been raised between this species and Hartnelli. Our readers will regret to learn that the fine specimen of Cavendishii, which has been so often exhibited from this nursery at our great metropolitan shows, died within the last few days. It could not have been less than 25 years of age, and was green, vigorous, and apparently healthy to the last, when its "young shoots dropped down, and it went off suddenly." In the propagating house we observed some nice young plants of Dielytra spectabilis. This is readily increased here from cuttings of the very young shoots placed in silver-sand and covered with a bell-glass. On the shelves of the Camellia-house were many beautiful young plants of Boronia serrulata, and in the same house we noticed a rich scarlet Geranium called "Trentham Scarlet," a dwarf and apparently profuse blooming kind, which will prove suitable for bedding. Many of the young Heaths, of which there is an immense number here, are already in their summer quarters; they are protected from wet by soiled canvas coverings or "lights" which are easily removed or put on as occasion may require. The young stock in frames has wintered well, and exhibits the best of health.

Calendar of Operations.

(For the ensuing week.)

PLANT DEPARTMENT.

AZALEAS should be attended to as they go out of bloom, potted if they require it, and placed in a favourable situation for forming their young growths. Many plants, and particularly large ones, which received a liberal shift last year, will not have filled their pots so full of roots as to render re-potting necessary; and it is better to allow such to make their growth and set their flower-buds without additional root-room. This growth will of course be a moderate one, and when this is perfectly matured, and the danger of their starting again is past, we give them a slight shift, and place them in a cool house; in the new soil so supplied they continue, during the remainder of the autumn and winter, to produce roots, but without making any progress in the tops; and, the roots being thus in advance of the head, the plants are prepared to meet the flowering season with extra vigour; for in the size and colour of the flowers Azaleas so treated far surpass those which have been treated in the ordinary way. Though these useful plants succeed very well in ordinary peat, to which a small proportion of leaf-mould and sandy loam, with a liberal supply of sand, have been added, yet those who can procure Wimbledon peat, at a moderate expense,

will find it answer their purpose to do so, as the high state of perfection to which the Azalea attains in that soil is ample recompence. In potting large specimens of any kind of plants, and especially those in whose compost peat predominates, make use of tin tubes of about half an inch in diameter, to pierce the old balls in various directions, and fill up the holes so made with coarse sand or washed road-grit; thus securing a passage for the water into all parts of the ball. Hard-wooded plants, which have been recently potted, should be kept rather close till their new roots are in progress; and in fine afternoons they will be considerably benefited by a gentle syringing. During this season, when the greater part of the plants are in active growth, and require more warmth and moisture, those which are in flower should be kept by themselves, where their blossoms can be preserved by shading, free admission of air, and a drier atmosphere. As the cooler pits and frames are set at liberty, they may be made very useful during the summer by filling them with suitable composts, and turning out young greenhouse plants into them, there to make their summer's growth. Treated in this manner they make much greater progress during a season than when grown in pots, and are with less difficulty induced to form handsome plants. Young Azaleas, Camellias, &c., can by this treatment be induced to make double the growth; and thus acquire a vigour which will be maintained for years, and which is not so easily obtained under any other course of management. The principal points requiring attention are, to secure a good drainage, to give each plant sufficient space, and to elevate the surface of the soil as near to the glass as possible, allowing only sufficient height for the plants themselves, and a vigorous summer's growth. The extent to which this plan is adopted should be regulated by the facilities at command, for preserving them after they are taken up in the autumn, and potted, as the frames will then be required for other purposes.

FORCING DEPARTMENT.

PINERIES.—Maintain a steady bottom heat of from 80° to 85°, and attend to the watering with the strictest regularity. Success in the cultivation of the Pine depends on their being so managed as to avoid subjecting them to considerable excitement at one time, or sudden checks at another; the consequence of these would be to throw them into fruit prematurely, at the expense both of size and quality. CHERRIES.—Where the fruit is ripening, give abundance of air, and maintain a drier atmosphere; but let the trees on which the fruit is swelling have plenty of water, and to keep the foliage and fruit free from insects, syringe freely in fine weather. STRAWBERRIES should now be abundantly supplied with water, or they will change colour before they have attained their full size. MELONS.—Keep up the heat in the beds by adding fresh linings as they require it. If plants on which the fruit is near ripening require water, give it in the morning, that the vapour arising from the soil may pass off during the day. Keep the shoots thin and regular, allowing not more than three or four fruit to swell on each plant. As it is not necessary that Melons for preserving should be very large, those which are intended for this purpose may be left thicker on the plants than those which are grown for table, as in the latter case size is almost as much an object as flavour. Endeavour by all means to preserve the foliage of early plants in a clean and healthy state, that they may produce a second crop. Frames in which Potatoes have been forced should now be prepared for late Melons. Let the soil be good, 18 or 24 inches deep; and if the frames are not furnished with hot-water pipes, a bottom heat of 80° should be supplied by means of linings or fermenting material between the bed.

FLOWER GARDEN AND SHRUBBERIES.

It having been determined what each bed or border is to be filled with, the business now to be attended to is, to execute these arrangements as speedily as possible, and to use every means for securing their safety and success, that they may produce a full display of flowers as early as possible. The chief points then are to plant in good soil, and to protect the plants for the first fortnight from extremes of heat, cold, or drought. When it is necessary to water them, it should be done in the morning, as they are liable to be injured by late spring frosts if watered over night. I would still recommend the use of evergreen prunings as a protection against fierce sun and cold cutting winds. The surface of the ground may be left very rough, to prevent evaporation, until the plants are sufficiently established to admit of the branches being removed; after which, if the ground be dry, it should receive a good watering, and then, for appearance sake, should be made smooth with a small rake: or, if this course be not approved of, it may be made fine at once, and to prevent the escape of moisture it may be covered over with a thin layer of short Grass from the lawn, which the extending foliage will soon conceal. In either case the plants should be well watered immediately after planting, taking care to moisten the bed thoroughly. In planting, the distance asunder must of course be regulated by the stock of plants prepared; but if a fine early display be desired, the beds should be planted sufficiently thick to produce immediate effect, and as the season advances it is the easiest thing imaginable to thin them out. Never within our recollection have we seen masses too thickly planted, but we have often observed the ill effects of beds planted too scantily. It is a very common fault to plant too near the edges of the beds; in consequence f which the outside plants have to undergo a constant mutilation to keep them within the boundary. Care should be taken not to push the work on more rapidly than is consistent with its proper execution; many late spring propagated plants will be better if they remain a little longer in the frames, as unless fairly established before they are planted out, they will be a long time before they start into growth in a satisfactory manner. Where the young plants have been pricked out into frames of soil, attention should be paid to lifting them with a sufficient ball of earth and roots, and also to conveying them to their destination, and planting them as quickly and with as little injury as possible.

FLORISTS' FLOWERS.

TULIPS.—In the northern counties, the awning had better be kept off some time longer, of course the amateur must be the best judge in these matters; complaints reach us that Tulips generally are weak, many also are not blooming, arising from injury sustained last season. Seedling Tulips, in their various grades, should have the best care, for it is possible, as in the case of Ranunculuses, by increasing their growth, to have these bulbs bloom a year or two sooner than ordinary. If we recollect rightly it was Mr. Sweet, who by forcing seedling Hyacinths early, and by keeping them in constant progression, attained for the bulbs in one year the size they would have got in two under ordinary treatment; if such a plan or system of cultivation could be adopted with the Tulip, it would be a boon of no ordinary character to the admirer of these flowers. CARNATIONS AND PICOTEES.—If the surface soil in the pots bakes, it must be stirred. It sometimes happens in the case of potting with unprepared soil, that it shrinks from the side of the pot, leaving a space which allows free access to air, &c.; with a small blunt shell stir the soil deeply, running it round the interior of the rim. DAHLIAS.—Harden preparatory to planting out.

KITCHEN GARDEN.

Beds should now be prepared for Vegetable Marrows and ridge Cucumbers, by taking out a trench in one of the quarters, 4 feet wide and 15 inches deep; throwing the soil to the two sides, to raise them higher. The trench should be filled to the top with rotten dung, from the surface of the earliest Vine borders, or from any other convenient source; this should be trodden solid, and covered to the depth of 4 or 5 inches with part of the soil taken out in forming the trench. This should be done immediately, that the bed may have time to settle, before the plants are put out. Let old Mushroom beds be examined, by removing the soil as soon as they begin to go out of bearing. If the dung appears decayed or exhausted, the bed should be immediately renovated; but if, as often happens, the beds are found in good order, solid, and teeming with spawn, they should be watered moderately with tepid water, if they require it, and covered in a day or two afterwards with 2 or 3 inches of fresh loamy soil. In hot weather, the house should be kept as cool as possible, and a moist atmosphere obtained by frequently sprinkling the paths and walls with cold water; excessive evaporation should be allowed to escape by means of a top ventilator. Let all the horse-droppings produced be carefully collected and stored up to renovate exhausted beds.

State of the Weather near London, for the week ending May 9, 1850, as observed at the Horticultural Garden, Chiswick.

May.	Month's Age.	Barometer.		Temperature.					Wind.	Rain.
				Of the Air.			Of the Earth			
		Max.	Min.	Max.	Min.	Mean	1 foot deep.	2 feet deep		
Friday.. 3	21	30.271	30.115	61	41	51.0	46½	48	S.W.	.00
Satur.. 4	22	29.979	29.728	60	32	46.0	48	48	S.W.	.03
Sunday. 5	23	29.617	29.583	60	33	49.0	48	48	N.	.35
Monday 6	24	29.581	29.550	45	41	43.0	48½	48½	N.E.	.68
Tues. .. 7	25	29.497	29.448	48	44	46.0	47	48	E.	.01
Wed. .. 8	26	29.573	29.369	51	39	45.0	47	48	N.W.	.32
Thurs.... 9	27	29.933	29.742	54	29	41.5	47	48	N.E.	.00
Average....		29.778	29.648	54.1	37.7	45.9	47.4	48.1		1.37

May 3—Clear; fine, with exceedingly dry air; overcast.
— 4—Fine till 1 P.M., when rain commenced; clear at night.
— 5—Cloudy; showery; some angular hail fell at 6 P.M.; clear.
— 6—Cold rain throughout.
— 7—Cold and drizzly; overcast; hazy at night.
— 8—Wet and cold throughout.
— 9—Heavy clouds; fine; clear; slight frost.
Mean temperature of the week, 4½ deg. below the average.

State of the Weather at Chiswick during the last 24 years, for the ensuing week, ending May 18, 1850.

May.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds.							
						N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 12	63.4	41.7	52.5	10	0.40 in.	2	5	7	1	3	3	1	2
Mon. 13	64.3	39.8	52.1	10	0.22	3	5	4	—	3	4	3	2
Tues 14	63.9	41.6	52.8	9	0.56	3	4	5	1	3	4	3	1
Wed. 15	65.2	42.0	53.6	7	0.41	2	5	2	1	8	3	2	1
Thurs. 16	66.3	43.9	55.1	8	0.34	4	1	5	—	2	7	1	1
Friday 17	65.4	42.6	54.0	9	0.58	1	5	4	—	3	5	4	2
Satur. 18	64.5	44.3	54.4	9	0.36	1	5	4	2	2	6	4	—

The highest temperature during the above period occurred on the 17th 1833—therm. 85 deg.; and the lowest on the 15th, 1838—therm. 26 deg.

Notices to Correspondents.

ADJUSTMENT OF THE ANIMAL AND VEGETABLE KINGDOMS: *J F and H S.* Answers next week.

ANEMONE SEED: *J R.* Though late it may be sown now. If the seed is good, and not covered too deeply, it will grow.‡

AZALEAS: *H H.* They are readily increased from cuttings made of the young wood. The more tender kinds had best be "worked" on stronger sorts.‡

BEEHIVES: *L L.* We never recommend dealers.‡

BOOKS; *Isaac Messenger.* Nobody uses Linnæus's artificial system now-a-days. If you want to understand it, look out upon old bookstalls, and you may pick up some account of it at the price of waste paper. Lee's Botany, Smith's Botany, Withering, &c., are all names familiar to dealers in old books.

BROWN'S FUMIGATOR: *Fylde.* We can only repeat what we have before said, that this is a very nice, useful, effective machine—much the best we have seen. But tobacco will not kill Gooseberry caterpillars.

CACTUSES: *Amateur.* You may thin out the branches of your tall Cacti now, selecting those, as far as it is practicable, on which there is the least appearance of bloom, cut close to the parent branch. The flower-buds may be thinned out too if you wish it; but it is seldom they are produced so plentifully as to require that. The "underground" shoots had best be removed after the plants have bloomed.‡

CUCUMBERS: *J Jones.* It is impossible to answer your inquiry, even if the specimens sent were examinable.

FLIES: *H T.* Stretch threads across the windows at the distance of a quarter of an inch. Flies will not pass them readily. As to killing them you must employ fly poison, such as any druggist will sell you.

HEATING: *Leyton.* Keep the plants as near the glass as you can; the distance will depend upon the strength of the plants and their kind. With hot water you will require no tanner's bark, nor do you need a pipe under the soil. A flow and return pipe along the front and end will give heat enough; only take care that the soil is *thoroughly* drained before the pit is built, and always water with luke-warm water.

HEMLOCK: *M E.* The "American Hemlock" is the Hemlock Spruce Fir, sold in every nursery. The scraps are sad trash. Artorhize is a foolish name given to the Psoralea esculenta; the word literally means "bread-root;" the plant is worthless.

INSECTS: *J S.* The black grubs are the larvæ of the common daddy-long-legs (Tipula oleracea), and the shining one is that of one of the click beetles (Elateridæ), closely allied to the wireworm. *W.—G B.* We are glad that our conjecture respecting the insects which destroyed your Roses has proved correct, and that you have been enabled to kill so many of them by hunting for them with a light. The insects now sent are the common millipedes (Julus pulchellus). Your ground must be very foul. You had better sink pottles of moss made of wire or open wicker-work in your beds, which will form a good trap for them. *W.—B V H.* The grubs which have eaten off your Auriculas are the larvæ of some kind of weevil, most probably Otiorhynchus sulcatus, the eggs of which have been deposited in the earth close to the plants, which should be carefully searched in pots standing in the vicinity of those already killed, as the female weevil doubtless deposited a number of eggs in different adjacent pots. We cannot undertake to name florists' flowers. *W.—Sub of Old.* The insect sent is the oil beetle (Meloe proscarabæus), a harmless creature. *W.—G S.* Your insect is of the same species as that mentioned in the preceding answer. *W.—G S W.* The facts detailed in your communication respecting the small black flies (Cecidomyia sp.), are new to science, and as soon as we can obtain fresh specimens, so as to determine one or two material points, we will communicate them to the public. Can you send us some more specimens *immediately*, to watch their transformations? We have forwarded a prospectus of the intended publication, "Insecta Britannica," to your private address. *W.—W W E.* We are much obliged for the specimens of Silver Fir bark, which is terribly infested with the young and eggs of the Chermes Laricis. Now, therefore, is the best time to wash the trees with hot water, if not considered too impracticable an operation. *W.*

NAMES OF PLANTS: *T Rooper.* One of the Cape plants is a morsel of some Drimia, the other is apparently Hypoxis villosa.—*W P.* Lycopodium clavatum. Rubus arcticus does very well in a northern American bed, where it is not overshadowed by bushes, and where the soil is spongy and damp.—*J K.* Gongora truncata, some Saccolabe near micranthum, and a Maxillaria near M. setigera; but the species of this difficult genus cannot be certainly determined without leaves and bulbs.—*J B.* Fuchsia arborescens and Dendrobium transparens, a very pretty thing; Oncidium guttatum.—*G H K.* Cerastium tetrandrum.—*M A G.* Dodonæa viscosa.—*L.* Some Broomrape, apparently the "Taller," or Orobanche elatior.—*G M.* The whole are varieties of Oncidium luridum; they are mere differences in colour.—*R S H.* Odontoglossum maxillare, a fine thing.—*A B.* Uredo effusa. Cut off the branches affected and *burn* them.—*A Young Beginner.* Genista racemosa. Let the fruit set before you stop them.—*Y Z.* The leaf gives no information; it may possibly be a Thysanotus, a greenhouse plant requiring the same treatment as a Gladiolus. Probably your Rhapis is badly drained; if not, the house is too cold for it.—*R Josling.* The novelty is Honesty, Lunaria rediviva—more scarce than new.—*H W G.* Oncidium Baueri?

ORCHIDS: *J T.* No doubt your house is much too dry. Dissolve oxalic acid in water, making the solution very weak.

PATENT PLATE GLASS: *Eboracensis.* See a letter in another column; we quite agree with the writer.

PAINTING WALLS: *Ballandyne.* In colouring the mortar of a new wall of blue limestone, if wanted of a dark colour, use Roman cement water; if of a Bath-stone colour, employ Atkinson's cement, mixed in small quantities at a time, so that it may be all used in about half an hour, or before it sets. *S.*

PAINT FOR IRON: *J S H.* Use one-third Stockholm tar and two-thirds gas tar, laid on while quite hot, with a brush, and spread as thinly as possible.‡

PEACHES: *R D.* Remove the sashes as soon as the risk of frost is gone.

PELARGONIUM LEAVES: *N K.* They are affected by the "spot," a disease caused by cold and damp.‡

POROUS POTS: *F.* We cannot reopen our pages to this question—it has been settled. You are quite wrong; as slate tubs and pots sufficiently prove. If you want arguments and further proofs, you will find plenty of both in some of our previous volumes.

ROBERTS'S TILES: *J E M.* We have no experience in their use; probably they would be useful for Vines, but slates will answer the same purpose.

ROCKWORK: *O C J.* Linaria Cymbalaria, Ivy, white Jasmine, Thyme, Savin bushes, Pelargoniums, Verbenas, Petunias, Honeysuckles, Ayrshire Roses, and all such things. Enquire at any nursery. We never recommend dealers.

SHOWS: *L S.* We do not think the plant is disqualified, provided the exhibitor grew it himself. Where he grew it is immaterial. Suppose he had hired the greenhouse—that would be the same case; his friend having lent him a corner in his greenhouse does not make the plant the less the growth and property of the exhibitor.

SEAKALE: *J E M.* If Seakale be not cut before it is too far advanced for use, the plants should not be cut down, for they will be stronger for the next season by allowing them to remain uncut.

TREES: *J W T.* The theory you refer to does not lead to such a conclusion as you draw. At the fall of the leaf tissue is more empty than at any other period; by degrees it fills, slowly during the winter, rapidly on the approach of spring, most rapidly just about the opening of the buds. *Therefore* timber should be felled from the fall of the leaf to midwinter. The bark of Larch trees felled in winter will nevertheless "run" in spring, because the act of felling a tree does not kill it; and the separation of the bark is a vital action. If you kill the Larch the bark will not run in that case.

WOODLICE: *B B.* Keep a toad or two in your Melon and Cucumber pits. The woodlice will then disappear.‡

MISC.: *J S H.* You had perhaps best allow your Acacia Robinia to grow as it likes.‡—*Sigma.* Do not warm water for watering plants in summer by putting a piece of quicklime into it, unless you want lime-water. "Pricking out" Cabbage plants in autumn checks their tendency to run to seed in spring.‡

SEEDLING FLOWERS.

CALCEOLARIAS: *Anon.* Your lucifer box and Calceolarias were smashed to pieces in coming through the post.*

PETUNIA: *R S.* Your seedling named Eclipse is a handsome violet-veined variety, and well worth cultivating.*

BY HER MAJESTY'S ROYAL LETTERS PATENT.

PATENT HOTHOUSE WORKS, KING'S ROAD, CHELSEA.

EDENCH invites the attention of Gentlemen about to erect Hothouses, &c., to the vast superiority in every respect possessed by his PATENT HOUSES, which he will warrant superior in every respect to any others. Good Glass from 16 to 21 oz. per foot, 1 foot wide, 3 feet long, furnished, and the Houses, when completed charged, from 1*s.* 3*d.* to 1*s.* 6*d.* per superficial foot, according to size and quantity; on one principle the roof is formed without wood or putty, and on another principle with wood rafters, and the glass put in with putty. Patent Sashes, requiring no paint, from 7*d.* to 9*d.* per foot. HEATING BY HOT WATER.

HOT WATER APPARATUS AND HORTICULTURAL BUILDING.

WHILL begs respectfully to announce that his improved "FLUE BOILER" may now be had in sizes to suit every description of Apparatus, from that of 100 feet to 2000 feet of 4-inch pipe. Improved STEAM BOILERS, from one-horse power and upwards, adapted either for stationary or portable engines, and guaranteed to be most effective.

Every description of Horticultural Building constructed upon the best principle. Buildings of any kind heated by hot water.

*** A liberal Discount to the Trade.

W. HILL, Horticultural Works, Greenwich.

CARSON'S ORIGINAL ANTI-CORROSION PAINT, especially patronised by the British and other Governments, the Hon. East India Company, the principal Dock Companies, most public bodies, and by the Nobility, Gentry, and Clergy, for out-door work at their country seats, The Anti-Corrosion is particularly recommended as the most durable out-door Paint ever invented, for the preservation of every description of Iron, Wood, Stone, Brick, Compo, Cement, &c., work, as has been proved by the practical test of upwards of 60 years, and by the numerous (between 500 and 600) testimonials in its favour, and which, from the rank and station in society of those who have given them, have never yet been equalled by anything of the kind hitherto brought before the public notice.

Lists of Colours and Prices, together with a Copy of the Testimonials, will be sent on application to WALTER CARSON, No. 9, Great Winchester-street, Old Broad-street, Royal Exchange.

No Agents.—All orders are particularly requested to be sent direct.

CORN MANURE FOR WHEAT, BARLEY, OATS, BEANS, &c., &c.

THE LONDON MANURE COMPANY most confidently recommend the above, as they are daily receiving very satisfactory accounts from parties who used it with great success last season. It will be found fully equal to and much cheaper than Peruvian Guano, and is not so liable to produce so large a growth of straw. Price Seven Guineas per ton, 3 cwt. per acre. They also beg to offer their Concentrated Urate, Superphosphate Lime, Nitrate of Soda, Sulphate and Phosphate of Ammonia, Fishery and other Salt, Gypsum, Sulphuric Acid, and genuine Peruvian Guano. To insure this free from adulteration, all purchasers can receive it direct from the Warehouses of the Importer.

Bridge-street, Blackfriars. EDWARD PURSER, Secretary.

Country Dealers and Agents supplied.

MANURES.—The following Manures are manufactured at Mr. LAWES's Factory, Deptford Creek:

Corn and Grass Manure, per ton	£10 0 0
Clover Manure, do.	11 0 0
Turnip Manure, do.	7 0 0
Superphosphate of Lime	7 0 0
Sulphuric Acid and Coprolites	5 0 0

Office, 69, King William-street, City, London.

N.B. Peruvian Guano, guaranteed to contain 16 per cent. of Ammonia, 9*l.* 15*s.* per ton; and for 5 tons or more, 9*l.* 10*s.* per ton, in dock. Sulphate of Ammonia, &c.

LAWES'S PATENT MANURE.

WILLIAM E. RENDLE AND CO., Plymouth, are Mr. Lawes's Wholesale Agents for the Sale of his MANURES, and can supply them at Mr. Lawes's prices, delivered at his Factory, Deptford Creek.—Apply to WILLIAM E. RENDLE and Co., Union-road, Plymouth.

GUANO AND OTHER MANURES.—Superphosphate of Lime (See reports of experiments in Royal Agricultural Society's Journal, Vol. 6, Part 2), Guano, Peruvian and Patagonian, Gypsum, Salt, Nitrate of Soda, and all other Manures of known value on sale. A Pamphlet on the above forwarded on receipt of four postage stamps.—Apply to MARK FOTHERGILL, 201A, Upper Thames-street, London.

PERUVIAN GUANO.—As Agents of the Peruvian Government for the importation and sale of this valuable MANURE, we think it right, for the protection of consumers and respectable dealers, to apprise them that the adulteration of the article is still extensively practised, and to recommend them to apply either to ourselves, to our agents, Messrs. GIBBS, BRIGHT, and Co., of Liverpool and Bristol, or to dealers of established character, in whose honesty and fair dealing they can place implicit confidence. ANTONY GIBBS and SONS.

London, May 11.

LOOK TO YOUR STABLE EXPENDITURE, and attend to its economy and Corn-dealers' Bills.

CHAFF MACHINES.—Horse Masters should give cut Hay or Wheat Straw with the Oats they allow, and those Oats should be bruised.—MARY WEDLAKE'S superior CHAFF MACHINES and OAT BRUISERS, manufactured on the premises (40 years established), 118, Fenchurch-street, and 8, Billiter-street.

N.B. Chaff-cutting and Oat-bruising Machinery by horse-power. Old Machines repaired.

HOW TO KEEP A HORSE FOR LESS THAN ONE SHILLING PER DAY!! and make the Animal look better than he now does when you are paying not less than 12*s.* to 13*s.* per week. Consider the enormous saving in these hard times—times of cheapness!!

DO YOU BRUISE THE OATS YOU GIVE YOUR HORSES? No. Then you lose one bushel out of every three, and your Cattle do not do half so well.—MARY WEDLAKE AND CO.'S OAT BRUISING MILLS. Superior Chaff Engine, simple in construction, doing from 50 to 500 bushels daily and more. Nearly all respectable Coachmasters and Brewers in London use these implements. To be seen at 118, Fenchurch-street, opposite Mark-lane, close to the Blackwall Railway.

N.B. Linseed Mills, Bean Mills, and Malt Mills, in great variety.

CORN MANURE.

BLASHFIELD'S PATENT COPROS.—A new Manure for Corn and other Crops, containing Ammonia, Phosphate of Lime, Potash, Soda, Magnesia, Silicate of Potash, &c. Price, delivered alongside a vessel, or any Wharf in London, 8*l.* per ton. It is sold in a finely-ground dried powder, by the Patentee, at No. 3, New London-street, Mark-lane, London.

Superphosphate of Lime, Gypsum, Sulphate of Ammonia, Sulphate, and Nitrate of Soda.

HOME GROWN SEEDS, CARRIAGE FREE BY GREAT WESTERN, SOUTH WESTERN, OR SOUTH EASTERN RAILWAYS.

	per lb.	per gal.
THE ASHCROFT SWEDE TURNIP.—This is decidedly the best of all Swedes; it is very large and better shaped than the Liverpool Swede, which it somewhat resembles; it is perfectly hardy, and being of quick and strong growth it is so soon in rough leaf as to be much less subject to suffer from attacks of the fly. The colour is yellow, with purple top	1*s* 0*d*	6*s* 0*d*
EARLY SIX WEEKS TURNIP.—An excellent sort for early sowing to feed off for Wheat. *A Field of these Turnips grown (from Messrs. Sutton's Seed) by Mr. E. W. Moore, at Coleshill, gained the* 20*l. prize at the Farringdon Agricultural Show in December last*	1 0	6 0
SUTTON'S PURPLE-TOP YELLOW HYBRID.—*This sort is equal to a fine yellow Swede, may be sown much later, and keeps well till spring*	1 0	6 0
DALE'S HYBRID.—A fine green-top Turnip ...	0 10	4 6
YELLOW TANKARD.—Very excellent ...	0 11	5 0
LINCOLNSHIRE RED.—*The original stock of this superior New Turnip was presented to J. S. and Sons by Philip Pusey, Esq., M.P.*	1 0	6 0

Liverpool Swedes, Laing's, Matson's, Fettercairn, and other Swedes. Fine Green-round, Globe, Tankards, and other Turnips, true stocks of home growth, 20*s.* to 30*s.* per bushel (as see Sutton's Agricultural Seed Catalogue). True Italian Rye Grass, 6*s.* 6*d.* per bushel. Fresh imported Lucerne, 80*s.* per cwt. White Mustard Seed, 10*s.* per bushel. French Furze, 1*s.* per lb., and all other Agricultural Seeds at lowest market prices.

JOHN SUTTON and SONS, Nos. 7 and 8, Market-place, Reading, Berks, confidently recommend the above articles as being of very superior quality; *they beg also to refer to their Advertisement which appeared on the last page of the Gardeners' Chronicle on the 30th of March*, by which it will be seen that they supply GRASS SEEDS FOR PERMANENT PASTURE, either separate or mixed, AT MUCH LOWER PRICES than those usually charged. *Carriage free, as see above.*

BELFAST.

FLAX-DRESSING MACHINERY.—Persons wishing to put up Mills for Scutching or Dressing FLAX IN THE STRAW, can be supplied with the Improved Machinery recommended by the Royal Flax Improvement Society of Ireland, on application to the makers, MAC ADAM Brothers and Co., Engineers, Soho Foundry, Belfast.—May 11.

ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

The MAY GENERAL MEETING will be held at the Society's House in Hanover Square, on WEDNESDAY, the 22d inst., at Eleven o'clock in the forenoon.

By order of the Council,

London, May 1, 1850. JAMES HUDSON, Secretary.

NOMINATION OF JUDGES.—On or before the General Meeting on the 22d of May, Nominations of Judges for Stock or Implements, at the Exeter Meeting, will be received from Members of the Society, who are requested to certify, from their personal knowledge, that the parties proposed are qualified and willing to act as Judges for the particular class for which they are respectively recommended, and who are unconnected with any Exhibitor of Stock or Maker of Implements, and have no direct personal interest in the Stock exhibited, as the breeder of any of the animals upon which they may be called upon to adjudicate.

LECTURE.—Prof. Way (at the request of several members of the Council) has kindly consented to repeat his Lecture: "On the Absorptive Powers of Soil, in reference to Manure," at the House of the Society, on Wednesday next, the 15th inst., at Twelve o'clock. All members of the Society will have the privilege of free admission.

The Agricultural Gazette.

SATURDAY, MAY 11, 1850.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

WEDNESDAY, May 15—Agricultural Society of England.
THURSDAY, — 16—Agricultural Imp. Society of Ireland.
WEDNESDAY, — 22—Agricultural Society of England.
THURSDAY, — 23—Agricultural Imp. Society of Ireland.

ON another page we publish a table containing the returns to inquiries about POTATO PLANTING IN IRELAND, with which we have lately been favoured. The following particulars will suffice to explain its meaning. As regards the second column it is not always stated whether the proportions named is meant positively, or only relatively to the existing population of the locality. In some cases the former is very evidently intended—but, generally, we imagine that the proportions "one-fourth less," "nearly as much," and so on, are intended to signify that relatively to the number of the surviving population or to the extent of land now in cultivation the quantity planted is so and so: for in every district the clearance system, emigration, pestilence, and famine have thrown so many farms waste, and have removed the small landholders and cottiers who were the principal growers of Potatoes to so great an extent, that though the actual portion of the Potato grounds of 1844, 1845, and 1846, now in crop is necessarily small, yet, relatively to the number of existing consumers, the difference is not so great. As regards the fourth column, it may be necessary to explain that the differences of the prices given, and the limits within which they are stated, are so wide, owing rather to the variety of sorts offered, than to any variety in the demand or supply of the article. The demand has certainly greatly increased within the last few weeks, and prices have accordingly risen considerably, but the supply seems ample everywhere: and in any case where the prices differ so greatly, as for instance from 2*s.* 8*d.* to 5*s.* per cwt., they refer to the different kinds in the market; thus, "Cups" may be 2*s.* 8*d.*, "Lumpers" 3*s.* 6*d.* to 4*s.*, and other kinds, as "Kemps," "Pink-eyes," "Russets," &c., 5*s.* or more. We add that the counties are arranged according to their latitude from north to south: and that from most of the counties reports have been received.

So much in explanation of the table—and, now, what does it teach?—that confidence in the productiveness of this, the most hazardous of all our cultivated plants, remains unbroken in Ireland—that everywhere much, and in many districts *all*, is being staked on the result of this year's Potato crop—that every class of the agricultural community, landlords, farmers, and to the utmost of their ability, cottiers, also—including even those who have professed their patriotism in a desire that Ireland may get wholly rid of it—are planting extensive tracts with the Potato—doubling their past year's efforts—hoping, with what confidence they may, for the large immediate benefit which will attend success—thoughtless both of the ruin they will reap within the year if the crop should fail, and of the constant idleness and wretchedness which, even if it succeeds, the crop is sure to entail upon their country. The facts seem to be that, on the average, twice the extent will be planted this year that was planted in 1849—that the proportion of the cultivated land devoted to this crop is rapidly approaching that which existed before the rot—and that the conacre system is ready to start again into full vigour on the security, if only they had it, of one single season of successful Potato culture. And as it is wholly useless attempting to dissuade the people from the course they are taking, so it seems unreasonable to waste time in lamenting the resolution or impulse which is at work upon them. In fact, the time is past for advice: never before has such an extent of the crop been planted so early. For good or for evil the die has already been cast on which the prosperity of the year is to depend; and, even though it had not, it would be folly to suppose that those whom the appalling realities of famine and of fever have not deterred, are to be alarmed by the warnings of the journalist. Besides, we doubt if hitherto there have been any fair motive to offer by way of dissuasion. No doubt the Potato, by the facility of its cultivation, by the thus permitted idleness of its cultivators, and by the hazardous character of its produce, is connected with all that has been reckless and wretched in the condition of the common people of Ireland; but what is that to them?—the circumstances in which it has placed them have long since become the standard by which their estimate of life is guided, and anything better than this has hardly been desired. And if it had, could any one have offered it as the reward of abandoning this root? Of the existing population it must latterly, with truth, have been said, that the multitude whom the Potato had reared, the Potato alone could maintain; and in many districts, even with their reduced population, it is still true that the Potato is the only crop capable of affording it maintenance. Offer the advantages of systematic agriculture to some generation succeeding that in which the exchange is made, if you will; but the probability of benefit to one's children's children will not be found enough to induce submission to self-injury: and in many parts of Ireland, it is, we fear, still the case, that the abandonment of the Potato crop would be a self-inflicted injury almost as fearful as its destruction. The thing might no doubt be done, slowly and gradually, emigration proceeding the while: this is *possible*, but with the knowledge of what is now proceeding, can we imagine it probable? As things are—prejudice, and recklessness, or listlessness, being still the chief guides of Ireland's fortune—it seems of all probabilities the weakest; and the only alternative open to the existing generation of people seems to be the Potato—its success, with the old precarious and miserable life—its failure, and ruin. Another alternative will, by-and-bye, be opened no doubt; the succession of Potato failures which may be expected, is certain, ultimately, to create the conditions under which a better system shall become possible; and already, in many parts, corn, green crops, and cattle would be able to give food and employment to the diminished population. How good it would be if the reduction in the number immediately dependant on agriculture could be effected artificially—by emigration, or by absorption in the manufacturing labour market. But this is not to be expected. Famine will doubtless be the severe instructor, and the people, even when it might be avoided, seem to be earnestly invoking the lesson it has to offer.

The conacre system, under which the Potato culture had become so excessive, has not indeed yet generally revived — the people are in the workhouse, and the farmers have not confidence enough to let the rent be dependant on the harvest, but the

security of a single year of successful Potato culture is enough to start it in full vigour; and certain of abuse as it is, we believe that in many places it is the only way in which the people can hope to maintain themselves. Hear Mr. TWINAM, of Kanturk, county of Cork: "I consider the abandonment of the conacre system a great loss for the poor. You, in your country, think it oppressive, and in many instances it may have been carried out oppressively, but no labourer ever came to engage work from me by the year who did not make it his first request that he should have at least one large acre of garden for every two to be supplied with labour; and this, for 8*l.*, generally gave 15 tons of Potatoes, which, with his pigs, always kept him above want." The conacre system then is sure to revive, with the first reasonable hope of a certain rent. The circumstances out of which it arises must be altered before it, and all the famine and wretchedness which the Potato disease has attached to it, can be removed from any locality. The population must be diminished—there seems no other remedy—and the utmost efforts of benevolence should be directed to the artificial method of doing it—for the natural method will, in all probability, again be in fearful exercise before another year shall have passed. Mr. SKILLING, professor of agriculture in Queen's College, Galway, writes as follows—and his remarks are essentially true of all the thickly populated districts in the south and west of Ireland:

"There will be at least *five times* as much ground planted with Potatoes this year as there was last; and the great emigration, the vast quantity of land that has been abandoned, and is now idle, must be remembered. The people that remain, with an unpardonable recklessness, appear to have thrown their whole minds and energies upon the root, which they have been eagerly engaged planting since December last. Those early planted are now coming over ground; they are still busy planting; other crops are comparatively neglected; some Oats and Barley are sowed. I fear the Turnip and other green crops will be nearly or altogether neglected. The fact is, they are staking their existence upon the crop, knowing that the population, though seriously diminished, cannot be fed and supported otherwise, except in the workhouse. Taking into consideration the great decrease of the population, and the idle land, my impression is, that in the west of Ireland there will be more land, according to the occupiers, under Potatoes this season than ever was seen before. Should the Potato succeed this year, the conacre system will be revived and in full vigour next season. I do not think the land will let so high as formerly, but it will be conacred largely at a price. It must be recollected that the conacre and the Potato was the only system that could support such a dense population upon the inferior soils of the south and west. All the judicious proprietors and others are getting rid of the population as speedily and quietly as possible, and laying down all the land to sheep and cattle pasture. Cultivation will not pay here now."

It remains, then, for another year's experience—fearful if bad—and not to be desired though good—to determine whether the agriculture of Ireland shall be a mere Potato culture by a population always on the edge of pauperism, or a field for the investment of farm capital in the employment of well paid labour.

IT was not to be expected that the reduction to figures of so large a mass of correspondence on the VALUE OF LABOUR, as is contained in the table of wages, published in No. 17, could be effected without some errors; and accordingly the following is a list of *errata*, which we place in as prominent a position as possible, in order that the corrections they require may at once be made.

All the asterisks in columns I and K should be replaced by the sign + (*plus*), and should be read—"and upwards." Mr. AITKEN'S statement of the price paid for digging drains, instead of being from "$\frac{1}{2}d.$ to $3d.$," should be from "$\frac{1}{2}d.$ to $\frac{3}{4}d.$" per yard. In Gloucestershire the quantities of beer or cider given to the harvest men is not stated correctly, the most material alteration required being in col. G, where in place of 1 gallon per acre it ought, in the cases of Frampton Cotterel, Hanham near Bristol, and Warmley, to have been 3 or 4 gallons per acre; and at Moreton in the Marsh, it ought to have been *|| or 6 quarts per acre, instead of * or two quarts. In Glamorganshire, again, Mr. THOMAS'S report is to be taken as true only of the mineral district of the county. The wages in the agricultural part of the county differ materially from what is paid around Caerphilly. We state this at Mr. THOMAS'S request, though of course the same remark holds true of every other contribution to the table; the prices stated refer not to the whole counties, but to the particular localities in each that may be specified.

POTATO PLANTING IN IRELAND, 1850.

The Columns contain answers to the following questions?—A. What extent is likely to be planted, compared with 1849?—B. What extent compared with the years before the Potato rot?—C. To what extent does the Conacre system exist in your neighbourhood?—D. What is the present price of Potatoes for seed per cwt?

COUNTY.	A 1849.	B 1844, 1845, & 1846.	C Conacre system.	D Potatoes p. cwt.	AUTHORITY.
				s d *s d*	
DONEGAL	One-half more	Nearly as much	It is reviving	2 4 to 2 8	T. J. ATKINSON, Ballyshan-
	More than twice as much	Very little short	Rarely seen	3 0	C. J. BOYCE, Stranorlar [non
	Double as much	As much as ever	Unknown	2 6 — 5 0	W. SINCLAIR, Lifford.
	One-fifth more	The greatest for 10 years, excepting 1846	Can hardly be said to exist	3 4 — 3 6	J. O'DONNELL, Ballyshannon.
DERRY	Fully one-fourth more	About a fourth less	Never existed	3 0 — 6 0	C. POLLOCK, Magherafelt.
	One-fourth more	One-half less	Ditto	4 6 — 6 6	S. ORR, Coleraine.
	One-half more	One-fourth less	Ditto	3 4 — 4 0	J. T. CLARK, Maghera.
	A great deal more	Nearly as many as I remember (63 yrs.)	Ditto	3 2 — 5 0	J. MOORE, Newtown-Limavady.
	One-third more	More than half	No conacre	2 8 — 4 0	H. HASLETT, Newtown Limavady.
ANTRIM	Rather more	Three-fourths	Never existed	2 6 — 5 0	JOHN LAMB, Belfast.
	One-half more	As many, or more	No such thing	4 6 — 8 6	R. R. HOUGHTON, Lisburn.
	Double as much	About the same	Not practised	2 9 — 5 0	J. BURMISTON, Randalstown.
	One-third more	One-half	Not in use	3 4	A. M'KINLAY, Bushmills.
TYRONE	One-fourth more	Nearly as much as ever	Not existing	3 6 — 4 6	J. BUCHANAN, Omagh.
	Double	One-third less	Not known	4 0	W. BERKLEY, Cookstown.
	One-third more	One-third less	....	2 8 — 3 4	R. JUNE, Stewartstown.
	One-third more	One-half	....	3 0 — 3 4	W. ATWELL, Stewartstown.
	More	Doubtful	....	3 8	J. KNOX, Strabane.
	Double	One-fourth less	....	3 4	W. CAMPBELL, Ballygawley
	Nearly double	One-fourth less	....	3 6	W. PATERSON, Newtown
FERMANAGH ..	Three times as many	One-third less	Still a little	3 4 — 4 6	A. MAIR, Linaskea. [Stewart
	Full a third more	More than one-third less	Very little	2 8 — 4 0	J. PATTERSON, Linaskea.
MONAGHAN ..	One-half more	One-fourth less	Rare instances	2 8	G. B. COULTER, Castle Blay-
	At least ¼ more	One-third less	None	3 8	J. MARRON, Ballibay. [ney.
ARMAGH	Nearly double	Not much less	Does not prevail	3 4 — 4 0	WM. BLACKER, Armagh.
	Nearly double	Three-fourths	Peasantry cannot pay for seed	3 0 — 6 0	R. B. HARDY, Tanderagee.
	Four times the quantity	Fully half	Never existed	2 6 — 5 0	G. GREEN, Armagh.
DOWN	Two-thirds more	One-third less	Cannot buy seed	3 6 — 4 8	J. WAUGH, Cavandean.
	One-third less	One-third	Does not exist	3 0 — 5 0	J. M'KEE, New Comber.
	About the same	One third	No such thing	3 8	T. GRACEY, Portaferry.
	Considerably more	Nearly as much	Scarcely exists	2 6 — 5 0	H. S. BOYD, Dromara.
	Not so much	About one-fifth	Scarcely any	3 0 — 6 8	——, Donaghadee.
	Fully as great	About one-third	Does not exist	3 6 — 6 0	R. M'CLEERY, Portaferry.
	Full a third more	About one-half	Never has been practised	3 0 — 5 0	M. FORRESTER, Castlewellan.
	Fully more	Not same breadth	Hardly known	3 6 — 6 0	J. MARSHALL, Newry.
	About the same	One-third	Not in existence	4 0 — 5 0	R. M'DOWELL, Crossgar.
MAYO	Three times more	Not one-twentieth	Abolished	3 0 — 4 6	A. S. PERKINS, Killala.
	Four times more	Equal, excepting lands laying waste	But partially re-adopted: much desired	3 0 — 4 0	G. HILDEBRAND, Westport.
	More than three times as much	....	Not in existence yet	3 4	W. B. STONEY, Castledean.
SLIGO	Much greater quantity	As great as ever in proportion to population	No revival yet	2 3 — 3 0	J. KNOTT, Boyle.
CAVAN	Three times the quantity	One-fifth less	None of any extent	3 8	J. GIBSON, Baileyborough.
	Twenty times as many	Full as many as ever	Revival tried	4 0	J. NESBITT, Belturbet.
LOUTH	Five times as many	As many as ever	A good deal attempted	2 8 — 4 0	W. M'CULLOCH, Dundalk.
GALWAY	One-half more	One-half; population greatly diminished	Almost unknown; conacre Oats not unusual	3 4 — 5 0	E. BEWLEY, M.D., Glantane.
	Five times as much	More according to population	Not yet revived	1 4 per stone	T. SKILLING, Prof. Agri., Queen's College, Galway.
	50 per cent. more	One-fifth; population one-half	Not known	3 0 to 4 0	J. ELLIS, Clifden.
	Fully double	Three-fourths	Revived considerably	3 4 — 4 0	R. B. SEYMOUR, Banagher. [*Vindicator.*
	Double	One-third less	None	3 0 — 3 4	J. F. BLAKE, Prop. *Galway*
ROSCOMMON ..	Three times	One-fourth	Three instances*	3 0 — 3 6	J. SHEIL, jun., Roscommon.
* At 5*l.* per acre before planting, or 6*l.* after harvest.	Four times the quantity	One-third in proportion to population	Partially revived	3 0 — 3 6	J. KELLY, Farraker.
	A greater quantity	As much compared with population	Conacre people are gone	2 6 — 3 6	D. BOYD, Carrick-on-Shannon
LEITRIM	Three times as much	The same	Resuming its former plan*	3 4	J. LINDSAY, Manor Hamilton.
* 6*l.* without manure, 8*l.* with ditto.					
LONGFORD	Double the quantity	Not more than one-tenth	No sign of revival	3 8 — 4 0	W. MORGAN, Edgworthstown.
	Three times the quantity	Three-fourths	No conacre	4 0	W. OFFICER, Newcastle.
WESTMEATH	Three times the quantity	One-third	Potato conacre entirely gone	3 6 — 4 6	J. M'KEAN, Mullingar.
	Double	One-third	No revival	3 4	R. BAGNAL, Tymlespass.
	Two-thirds more	One-half	No confidence	4 0 — 5 0	G. BAGNALL, Rochfortbridge
DUBLIN	Twice as much	Two-thirds	Not revived	4 0 — 5 0	T. BALL, Malahide. [bay
CLARE	Twice as much	Nearly as much	Hundreds of acres	2 8 — 3 0	R. MORONEY, Miltown Mal-
* More *at present*. † Labourers paid in cash. ‖ Much less by labourer	Twice as much	Equal in extent by farmer‖	Not revived yet	4 0 — 4 4	W. DIGAN, Killaloe. [House.
	Two-thirds more	Probably equal,* excepting mountain district	No revival	3 6 — 4 0	R. A. STODDART, Killishen
	At least double	About one-third	Still exists	3 0	——, Kilrush.
	At least two-thirds more	One-third; population reduced	Not existing†	4 0	H. FRANKS, Killaloe. [bridge.
	One-third to one-fourth more	One-third; population smaller	One or two instances	3 4 — 4 0	D. J. WILSON, Six-mile-
	At least four times the quantity	One-third	Very little	4 0 — 4 6	[Fergus. E. BENNETT, Newmarket-on-
QUEEN'S COUNTY ..	Nearly double	Quite as much	Very little	2 8 — 3 4	W. NEALE, M'Mellick.
	A half more	Not half as much	Not revived	2 6 — 3 6	T. ROE, Rathdowney.
KILDARE	One-third more	One-half	Extinct	3 6 — 4 0	G. LAMB, Castledermot
WICKLOW	Thrice the quantity	Nearly as much	Prevails again	4 4	J. DICKSON, Clerk, Wicklow.
	One-third more	Fully one-half	Never existed	4 0 — 6 0	J. DALY, Charleville.
LIMERICK	Three times as much	Not one-tenth	Nothing doing	4 0	G. GUBBINS, Bruff.
TIPPERARY	A fourth more	Half as much	Not reviving	4 0	M. QUINLAN, Thurles.
* Farmers prepared for it, but people could not afford. † But not by the same class.	Twice as much	Not one in 100	Hardly existing*	3 4 — 4 0	D. FORBES, Clonmel.
	Nearly double	Not so much	Very slight*	3 4	J. FENNELL, Cahir.
	Rather more by farmers	Not half	No revival	4 0 — 5 4	WM. P. WORRALL, Clonmel.
	One-half more	Half as much	Ditto	4 6	R. D. BOLTON, Ballywire.
	Twice as much already	About as much†	Reviving; 8*l.* per acre in hand	3 4	O'BRIEN DILLON, Nenagh.
KILKENNY	Equal	About one-third	Nearly extinct	3 6 — 4 0	M. MURPHY, Goresbridge.
	One-eighth more	Nearly one-half	Dying away	4s. and upwards	E. RYAN, Kilkeny.
	Half more	Three-fourths	Not half as much	3 6 to 4 3	R. STONE, Freshford.
	One-half more	One-sixth	Not existing	2 6 — 3 4	D. A. MILWARD, Tullogher.
	One-half more	Nearly as much	None	3 6 — 4 0	J. SOMERVILLE, Castlecorne.
CARLOW	One-fifth more	One-fourth	One-half more	3 0 — 3 6	P. B. MOSS, Carlow.
WEXFORD	One-half more	One-fourth less	Little or none	3 0	J. DEANE, Ross.

POTATO PLANTING IN IRELAND, 1850—*continued.*

COUNTY.	A 1849.	B 1844, 1845, & 1846.	C Conacre system.	D Potatoes p. cwt.	AUTHORITY.
				s. d. s. d.	
WEXFORD	One-half more	As much with the large farmers, but not with the others	No conacre	4 0	G. GLASCOTT, Camolin.
* Near towns.	The same	One-half	None	4 0 — 5 0	T. RUDD, Ferns.
	One-fourth more	One-half	Slight revival*	3 4 — 4 0	A. PRESTON, Enniscorthy.
	Three times	One-half	None at all	3 0 — 4 0	G. GORDON, Ballycarnly.
WATERFORD ..	Twice as much	One-third less	Not yet revived	4 0 per cwt.	G. HILL, Cappoquin.
	Three times as much	One-sixth; population one-half	None	2 8 and upwards	E. KENNEDY, Kilmacthomas.
	About the same	Not one-fourth	None	2 8 to 4 0	M. DUNNE, Stradbally.
	Nearly double	Nearly as much, excepting small farms	No revival	3 8 — 5 0	R. T. BARRON, Kilmacthomas
CORK	Nearly double	Half the usual breadth	Last year's quantity*	2 6 — 3 6	D. BARCLAY, Skibbereen.
* One-sixth the quantity before the rot.	About double	About two-thirds	Reviving	4 0	R. HUDSON, Youghal.
	Three times as much	Less than half	Hardly reviving	3 6 — 5 0	D. CLANCHY, Charleville.
	More, excepting deserted land	Not one-third	Extinct	4 0	ALEX. TWINAM, Kanturk.
	Much greater extent	Two-thirds, by farmers	Scarcely revived	3 0 — 4 0	T. C. COLE, Innisshannon.
	Double	Very little short of former years	....	4 0 — 4 6	D. M. O'GALWAY, Clonakilty.
	One half more	Two-thirds of 1844	Scarcely exists	3 0	T. W. COOPER, Macroom.
	Three times as much	Very little short of 1844	Extensively in operation	3 6 and upwards	J. W. KINGSTON, Bantry.
	Greater	Nearly as great on occupied farms	Almost disappeared	4 0	H. LONGFIELD, J.P., Doneraile.
	More than double	Nearly as much	None	....	S. PIDDELL, M.D., Kilderny.
	Double the extent	As extensive in proportion to population.	Nearly done up	3 0 — 3 6	THOS. JENKINS, Kinsale.
	One-third more	One-half	Re-commenced	4 0	J. WILKINSON, Cloyne.
KERRY	One-fourth more	One-fourth less	Not in much request	3 8	J. O. SULLIVAN, P.P. and V.G., Kenmare.
	Twice as much	As many, according to the number of farms	None here	4 0 to 4 6	J. CREAGH, Tarbert.
	One-eighth more	One-half	Extinct	3 0 — 4 0	J. RICHARDSON, Ballyne, Pill-[town

ON INCREASING THE SUPPLY OF MEAT.

(*Continued from page* 251.)

THE next step in order to increase the supply of meat is the improvement of "waste" lands of every kind, where physical obstacles are not wholly insurmountable. These obstacles are formed by the position of the ground and the geographical aspects. But much land remains uncultivated which enjoy all the necessary properties for a useful cultivation; social obstructions and artificial regulations are allowed to interfere and to continue in existence for the very hurtful purpose of impeding the production of food—by far the most important consideration that can be contemplated. Cultivation must be introduced on every spot of ground where the produce will repay the labour, and afford some small encouragement for the outlay. There is certainly a daily and progressing advancement in the way of improvement, both in new attempts and in the augmented repetition of the old modes of proceeding; but the journey is much too slowly performed, and the increase of the population creates demands that cannot bear so long a delay. The vast quantity of labour that would be usefully and remuneratively employed would afford a livelihood to many thousands of families, and add very materially to the strength of society by the contentment which competence creates, and by the quiet which is shown when the necessaries of life are abundant. When individual inclination does not apply itself to the performance of such attempts, and where energy shrinks from the prospect of remuneration, it becomes a national concern that the earth be applied to the legitimate purpose of producing food for the population. Government having now recognised the principle, in the drainage accommodation, that objects of this nature demand the legislative attention, an extension of the principle naturally enough points to "waste lands," requiring the same application for the improvement and the use of the soil, as is given to wet lands, to free them of superfluous moisture. And the employment of capital in that way would be more generally useful—for draining benefits wet lands only, whereas the former case extends to lands of every description.

When the complete intersection of the country by railway communication has been effected, the facility of transit will be most wonderful, and will afford the means of sending and fetching, that cannot fail to exert a very powerful effect on the point we are now discussing. Many artificial manures are now known, and are or will be prepared in most towns in the kingdom, and can hence be carried to stations and depôts, for the use of the neighbouring lands. These fertilisers are best used in raising Turnips, and where that invaluable root can be grown other crops will follow, and very speedily introduce the rearing and fattening of animals. The same conveyance will carry every kind of produce to the markets in towns, and will bring in return everything that may be wanted. A very great recommendation consists in these manures being dry, light, and easily handled, and conveniently transportable. The possession of them offers a very great inducement to remote cultivation, where the other conveniences are not available. The price is moderate, and the carriage is not a large sum, and the efficacy is now well established under all ordinary circumstances of application. The first crops being raised by these adventitious assistances, cattle will be introduced to consume them—manure will be produced—grain crops will follow, and a systematic production will be established. A steady increase will be thus promoted both in animal and vegetable food.

It is sufficiently evident that the utmost possible cultivation of the earth must be first effected, as it constitutes the foundation of every improved state of animal or vegetable life, both in quantity and quality. The use of it supports every living thing, and therefore the state in which it exists must form the primary consideration.

All lands that are capable of being cultivated having been put into a productive state of bearing the most esteemed crops, and the best known way of using these crops being adopted, it remains necessary that the best breeds of animals be used in the appropriate localities, and fortunately the special breeds of animals are well known at the present day, which are fitted to the different situations of soil and climate. The limits of supply from the sources where cultivation is wholly or nearly altogether denied by nature, may be reached, but even in these situations the natural circumstances admit of improvements which have and will increase the quantity of animals that browse the herbage. Mountain irrigation has been very successful, and the better cultivation of the soil in all other districts will raise articles in greater abundance, and of a superior quality for use in feeding animals.

Food of an inferior quality, or a limited supply of the better kinds, will not rear and fatten animals in number, nor of an improved organization—the growth is stunted, the maturity is deferred, and the carcase is faulty in every respect of quantity and quality. The very first existence of the animal is rendered nugatory by the feeding of the calf from the pail, with the milk, instead of suckling, and by the substitution of broths and juicy preparations for the nutriment of the dam. [?] These insufficient materials spoil the animals at the very first outset—the intestinal offals are enlarged, the growth is stopped, and also the acquisition of the stamina of organic vigour, which forms the very first property in the value of animal life. Without constitutional vigour, the organic functions are unable to perform their offices, and the food of the very best quality is not properly decomposed and assimilated. Every experience shows that no substances yet known will nurse a young calf so well as the mother's milk; and the quantity of saliva is wanting which is engendered by the mouth sucking the teat, and which is so very useful in promoting the action of the stomach. The suckling of the calf forms the foundation of the future animal. For the purpose of making butter and cheese it only remains to allot a portion of the cows for that purpose, and the others for suckling, each purpose being kept separate and distinct without the hurtful intermixture of starving the animal to procure the other products of milk. Each purpose must be free of the other.

It is a very important point in the successful nurture of animals, that no stoppage takes place in the onward progress, that the food and the treatment be regulated to the capabilities of age, and that the advancement be regular and constant. There cannot possibly be a greater blunder in the management of animals of any kind, than to pinch the quantity of food, especially in the first year of the existence—a stunted growth never attains a profitable bulk, and the flesh is juiceless, meagre, and dry in the fibre. The first step is in the calf sucking the dam, as before mentioned, and the successive steps consist in the regular supply of juicy food, in the esculent cultivated green crops. The animals that are bred on the land enjoy all these advantages from the birth upwards, and yield the full fruition of their use.

The following then is a recapitulation of the means of increasing the supply of meat: 1, the conversion of all inferior Grass lands into a state of cultivation; 2, the better cultivation of arable lands; 3, the more extended and general use of green crops; 4, the improvement of all waste lands; 5, the use of the best breeds of animals; 6, the increase of the sources of supply of the lean animals; 7, breeding animals on the ground; 8, suckling of calves, and good subsequent treatment; 9, allowing a good maturity; 10, improved cultivation of every kind. *J. D.*

Home Correspondence.

Caution to all Buyers of Guano.—In consequence of the gross and wilful adulteration of Peruvian guano at the present time, we believe it to be the duty of every one, interested in agriculture, to lay before the public every serious case of adulteration, as a warning and example to others. With these feelings we give you the particulars of a most glaring case, which has lately come under our notice. In the early part of March last we received orders from Sir Robert Newman's tenantry at Nunhead, near Dawlish, Devon, for about 15 tons of Peruvian guano; and, as we were very short of supply here, and as it was required for sowing over the spring Wheat, we had this lot expressly from Messrs. Anthony Gibbs and Co., to supply them; and, in order to save time, obtained it by steam. On the arrival of the steamer here the guano was immediately transferred to the South-Devon trucks, and dispatched to Dawlish the very same day on which the steamer came in. About a fortnight since we received a letter from one of Sir Robert's tenants complaining most loudly of some of the guano sent to him; telling us that some of the bags were most grossly adulterated. We were startled at such an announcement. After a few minutes' consideration we recollected that a number of bags of guano came down for another party in the same steamer, and unfortunately they got mixed with ours. We sent our clerk to the steam-office immmediately, and found that 44 bags were forwarded to a small dealer in Cornwall. We started our clerk off by the train within an hour of the receipt of our complainant's letter, and explained the circumstance to him. He was perfectly satisfied, and told him (our clerk) that 8 out of the 29 bags had from us were adulterated, whereas the remaining 21 bags contained excellent and genuine guano. Our clerk brought home a bag with him (and the others remain with him for proof, should occasion require it). On examining the bag, we found a portion of guano mixed with all manner of rubbish. Shortly after the receipt of this bag, we sent a sample to Messrs. Anthony Gibbs and Sons, to Professor Lindley, and to Professor Way, the Consulting Chemist of the Royal Agricultural Society, who has favoured us with the following analysis:

"Water	12.73 per cent.
Organic matter and salts of ammonia ...	44.48 ,, ,,
Phosphate of lime	21.38 ,, ,,
Nitrogen in the first experiment	9.84 ,, ,,
Ditto ,, second ,, ...	9.74 ,, ,,
Mean nitrogen	9.79=11.90 per cent. of ammonia.

"The guano contained several iron nails, large fragments of bones, pieces of wood, straw, coal, and other rubbish. It is far inferior to good Peruvian guano, which should contain rather more than 17 per cent. of ammonia. The present sample is not, in my opinion, worth more than two-thirds of the price which would be given for a genuine article. From the nature and extent of the foreign substance found in the specimen, and from its inferiority in ammoniacal value, I should say that it was largely and wilfully adulterated.

(Signed) J. THOMAS WAY, 23, Holles-street, April 30."

Two days after the receipt of the above analysis we received the following letter from Messrs. Anthony Gibbs and Sons:

"London, May 2d, 1850. Gentlemen,—Your favour of yesterday is to hand, and your instructions regarding the shipment of your guano will be complied with. With regard to the questionable parcel lately shipped in the same vessel with some of ours, our mutual friend, Mr. Bourne, has no doubt sent you Professor Way's analysis, showing it to be highly adulterated; and if you will favour us with the name of the party who shipped it, we will try to take means to check his proceedings; at all events guard our customers against purchasing of him. (Signed) ANTHONY GIBBS and SONS.

"P.S. If the individual in question is a party in the habit of buying of us, we shall at once decline having any further dealings with him."

This is a clear and decided case of "wilful adulteration." We shall refrain at present from mentioning names, but we are fully prepared with the strongest and most efficient evidence if necessity requires that we should be called upon to go into a court of justice. We can prove on the testimony of the lighterman in the employ of Messrs. Anthony Gibbs and Sons, that he delivered the guano on board the steamer direct from their warehouse. Then we have the most complete evidence of all our clerks and warehousemen, the *employés* of the steam company, as well as the railway company, to prove that the guano was, immediately on the arrival of the vessel, transferred to the South Devon trucks. We have taken a great deal of trouble to sift this matter thoroughly, and we hope this will be a warning both to the shipper in London and the dealer in the county of Cornwall, never to have any more dealings with any guano excepting the genuine and pure article, direct from the only legal importers, Messrs. Anthony Gibbs and Sons. *William E. Rendle and Co., Seed and Guano Merchants, Plymouth.*

Pigs.—My experience in stock keeping has been so decidedly in favour of breeding and fatting of pigs, that I may, with advantage to many who think differently, give some account of my management. That I should do so is the more necessary from farmers having generally a very low opinion of the profit to be gained from breeding of pigs, and I cannot but ascribe their failures too often to the negligence with which this stock is looked after. On an arable farm of 200 acres my stock has been 12 sows and two boars, and their produce, according to the season, consisted either of

rising stores running in the yards, or on the leas or stubbles; or of porkers in the sties fatting for the market. From March to October my stock may be said to have lived loose on store keep, principally green food; and from October to March (the parent stock excepted) in sties, fatting on roots and boiled corn. The sows on an average gave me, one with another, 14 pigs a year each, so that in summer my stock was about 100 upon store keep, and in winter about 200, of which 180 were in sties finishing for market. The spring litters went off in January and February as large porkers of 30 stone each, and the autumn born as small porkers of about 7 stone each; the first realising about 5*l.* each, and the last about 30*s.* each, so that each sow returned about 45*l.* a year, and this amount there is no difficulty in obtaining, large pork selling at 3*s.* 4*d.* per stone of 8 lbs., and small pork at 4*s.* 4*d.* Success in raising of pig stock I found was to be attained only by attention to fully carrying out the following principles—viz., the accommodation for pigs must be sunny, dry, sheltered from cold wind, and yet well ventilated. Their sties being carefully protected on the north, east, and west side, and open only on the south; so that whilst no cold winds can have access, there should be no obstruction to the sun shining in and on to their beds. The pigs must be regularly and carefully attended; sufficient should be kept to wholly occupy their attendant's time, and to them should that attendant's time and attention be wholly given. An old man is better than a young one; and this is an office suited to one infirm or past general labour. The sows must never be permitted to farrow earlier than the end of March, or later than October. The cold of winter is fatal to many farrows, and young pigs are ill able to bear up against it. Provide roots (Potatoes, Kohl Rabi, Swedes, Carrots, and Mangold Wurzel) for their keep, aided with boiled corn, from September to June; and Tares, Clover, Beans, and Maize, green, from May to September. Breed from large strong sows with boars of the finer breeds, having in view the gaining of large farrows, good nursing, and a rapid attainment of weight; look to the mother for nursing, and the father to correct coarseness of form in the mother. Attached to the sties have a boiling-house with copper and food cisterns; and in front of the sties a yard for the pigs to be turned into. Attention to these points makes all the difference between profit and loss. *Hewitt Davis*, 3, *Frederick's-place, Old Jewry, London, April* 20.

Road Reform.—I fully believe and concur in all that Mr. Pagan advances; I say so from long knowledge of the circumstances of various turnpike trusts of east Sussex, and the adjoining part of Kent. I must instance the Rye and Flimwell trust, on which I began to act as soon as the law allowed me to take the oath, now more than 40 years since; the debt then 6500*l.*, but which for some years has been reduced to 500*l.*, the interest of which is 4 per cent., or 20*l.* per annum. On this road, in extent 23 miles, there are four toll bars, which I believe, taking into calculation the houses, gates, fences, toll collector, and often profit of the lessee, together with the treasurer's salary, the clerk's salary and his bill, the advertising of meetings, &c., the printing of annual statements, &c., the use of the room for meetings, cannot be much less than 300*l.* a year, thus I say that the public pay 300*l.* a year for the purpose of getting the 20*l.* to pay the interest. You will observe that I speak not of the surveyor's salary, considering that that would be required under any change of system. Now for another absurdity—I believe, not from mere conjecture, but from calculation, that there are 10,000 miles annually traversed in the parish of St. Pancras by the waggons and vans going to and returning from the luggage station of the North-Western Railway, and this 10,000 miles extra, in order to avoid the toll bar by old St. Pancras Church. Of the extra number of miles traversed by omnibuses, cabs, coal waggons, &c., I will not attempt a conjecture. I could give you many instances in Sussex where hundreds of miles are unnecessarily traversed, and doing infinitely more injury than if travelling on the open hard turnpike road. You, as a man of business, must see the loss to the community, and I believe in no other country but this would it be tolerated. I was surprised when reading in the *Agricultural Gazette* of the number of turnpike trusts in one union of Gloucestershire, as I had fancied that Sussex far surpassed any other county; but your correspondent at Robertsbridge can tell that within the circuit of 10 miles of that town there are 46 toll bars on numerous trusts. At New Mills, Derbyshire, the bars are thicker than sentinels round a besieged town, 15 within a mile and a half. The Duke of Richmond said that I made a very just comparison when speaking of the 12 trusts within the Rape of Hastings, by saying it was as though a regiment of 12 companies, and each company having an adjutant, a paymaster, and contracting separately for their bread, meat, &c. I have been told that those hitherto who have been anxious to correct these anomalies or abuses have been thwarted by the extraordinary influence of the solicitors or clerks; and so Mr. Cornewall Lewis found in the two bills which he introduced last session. You are aware that an amalgamation act has passed; good ought to be the result, but I doubt it; circumstances of trusts vary so much, as within the Rape of Hastings the debt of the Rye and Flimwell road is 22*l.* per mile, whereas that of the Hollington is 4200*l.*, others about 1700*l.* I have been in correspondence on this subject with gentlemen in various counties. I am desirous that a highway act should pass in order to correct abuses which I know to exist, that instead of an annual, a permanent surveyor, a man of science, for several parishes, and one not interested by the employment of his teams, &c., should be named. I am confident that you will agree that should a good and sound highway act pass, not leaving in doubt the roads being kept in repair, that it would be greatly for the interest of all excepting clerks and treasurers, on trusts at all similar to the Rye and Flimwell forthwith to apply the whole of the tolls to the liquidating of the debt. With respect to the trusts deeply involved, I regretted that Mr. Lewis's plan of having the bonds of the mortgagees valued by three indifferent persons was rejected, for it is true that the evil is each year increasing, and it is true that consequent on the railways many highways have become byeways, and *vice versa*. *W. P. Lamb.*

Foreign Correspondence.

Brussels, *April* 30.—I must spare you any travelling exclamations out of Belgium; but it is 13 years since I have done more than merely pass through it, and even that I have done this time with new eyes. Every inch of the road is worth a farmer's notice, and the more so from the minute scale which cultivation assumes; more and more, yearly, as the holdings become smaller, which I am sorry to hear they still do. Certainly no country in the world tells its whole story more plainly to the eye, or in closer detail, and though I have scarcely seen a yard of what you call a rich *looking* soil, yet the painstaking style of culture seems to set quality of soil at defiance. 'Farming' one hardly knows how to call it. It is an endless succession of allotment-grounds, which as the train flies along over the dead flat, as straight as an arrow from a bow, lies out on either side, as far as the eye can reach, and for hours together, without check or change of character. The total absence of hedgerows of course adds to this uniformity of effect; and the small patches of every kind of crop, with the immense quantity of hand-work going on upon them, might make an English farmer fancy himself going through the suburbs and market-gardens of some immense town, and wonder when he would 'get into the country.' But on it goes without variation for 20, 30, 40 miles on a stretch—every square foot of soil turned to account up to the very edge of the road, as if it had been bought, or hired, in 'building lots' at so much per yard (which indeed is not far from the truth), and the family of the occupier being frequently seen down *upon their knees* weeding and sowing, as if the care of it was as much a worship as a labour. This habit of kneeling to their work is very curious. It speaks more to the eye than a whole chapter on 'Flemish Agriculture;' and it is strange with all this labour and pains that the Wheat crops, which are very forward, should not show a more even and regular appearance. Here and there I saw a good crop, but wherever I could look up the furrows I observed that it was patchy, like land that had been irregularly manured, or had suffered from want of drainage. I should say that Flemish cultivation is more laborious than skilful. Under-drainage is in its infancy; indeed it can scarcely be said to have reached even that description. The Government is making great efforts to promote it, and has undertaken to provide pipe-tiles at a fixed rate to all who choose to apply for them. But how to lay them will be the difficulty, for outfall there is almost none, the ditches being all cut to a dead level, and the water standing in them within less than 30 inches of the surface of the land. Grain, however, is not the favourite crop. The thing most extensively and assiduously cultivated is a species of Rape called 'Colza,' large tracts of which continually meet the eye, looking like a field covered with Carlock; and the oil from this plant is preferred to any other kind for burning, and makes it a most profitable crop. Why is it not cultivated in England? The light it gives is far superior to that from Spermaceti oil, and the cake after the oil is expressed is excellent for feeding.——It is an interesting, and indeed a wonderful, sight to look down from one of the high belfry towers of Ghent or Bruges upon the immense panorama they command of this flat country. Far as the eye can reach all round, it extends like a close-woven carpet of many colours, the canals and ditches cutting it in long straight seams, with here and there, for the only variety of texture, a square dab of a plantation, every tree of which is pruned as if the very branches had been counted. The pruning, however, though somewhat severe, is not unskilful or rudely done, as it usually is in England, where it is done at all. The stem is not bared of its branches and left standing like a pole with a brush at the top; but the branches are lightened by taking off some of the heavier portions and leaders from them with an oblique cut, so as to leave them reduced in extent, but without apparent mutilation. This of course checks their growth, and as the tree gets higher the lower ones, to about one third of its height, are gradually taken off, leaving but a small wound, which soon heals. The timber is clean, therefore, but not large; and the chief fault, besides that of a somewhat ridiculous uniformity of *pattern*, is that this pruning *in the branches* is carried too high up in the tree, which is bad economy. Were it confined to the larger and lower branches, it would not be offensive to the physiologist, however objectionable in point of beauty and character. Many of those plantations, however, are being stocked up, and the land taken into cultivation, promising to obliterate shortly what little variety still remains in the landscape.——The suffering amongst the immense body of small owners and occupiers of land, from the low price of Wheat, is spoken of as extreme; but every one I have spoken to on the subject indulges me with an incredulous smile or shake of the head when I refer to the same thing as existing in England. How curious that five or six hours' passage of sea water should sustain on either side such strange incredulities and ignorances. "You talk of low prices in England! You don't know there what low price means!" is the favourite answer. The report of the warehousing system on Government loans about to be established in France, has however had a good effect on the markets here. A gentleman who has written very ably on agricultural-financial questions, here, M. Arrivabene, said to me yesterday, in speaking of the Corn-law question in Belgium. "There are two opinions in the Chamber; two *sides*: they do not argue; they dispute each other's facts. Nobody believes any body: so nothing but time can settle it and the next harvest!" *C. W. H.*

Societies.

ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

A weekly Council was held at the Society's house in Hanover-square, on Wednesday last, the 8th of May; present, Mr. Raymond Barker, V.P., in the Chair, Earl of Lovelace, Hon. R. H. Clive, M.P., Hon. Dudley Pelham, M.P., Sir M. W. Ridley, Bart., Mr. Alcock, M.P., Mr. T. C. Blackden, Col. Blagrave, Col. Challoner, Mr. W. Clavering, Mr. G. Dyer, Mr. Fisher Hobbs, Mr. W. Miles, M. P., Mr. C. E. Overman, Mr. Parkins, Mr. Pendarves, M.P., Mr. Rowlandson, Mr. Villiers Shelley, Prof. Simonds, Mr. Slaney, M.P., Mr. Stansfield, M.P., Prof. Way, Mr. Wilson (of Stowlangtoft), and Mr. F. Woodward.

Sir Montague John Cholmeley, Bart., M.P., of Easton Hall, Lincolnshire, was elected a Governor of the Society.

The following new members were elected:

Goucher, John, Woodsetts, Worksop, Notts
Loveband, Rev. A. W., Yarnescombe, Devon
Duly, John, Northampton
Penoyre, Rev. W. T. Napleton, the Moor, Hereford
Furdon, George, Brampford-Speke, Exeter
Hocking, W., Bude, Cornwall
Hill, Hon. H. Noel, Berrington, Shrewsbury
Cann, W. M., Dawlish, Devon
Mackelcan, G. J., Lechlade, Gloucester
Byers, Frederick C., Exchange Chambers, Plymouth

The names of 9 candidates for election at the next meeting were then read.

Miscellaneous Communications.—Annual Report of Professor Way to the Chemical Committee, of the satisfactory progress of the investigations in his laboratory, and the gratifying fact of a great increase, during the last quarter, in the number of persons interested in agricultural chemistry, who had applied to him for analyses.—Communication from Dr. Royle, of the East India Company, on the sheep of Thibet.—Letter from Mr. Bickford to Mr. Pusey, M.P., on the formation of water-meadows in Devonshire.—Samples of Guernsey butter (of very fine quality) from Mr. Le Beir, secretary to the Agricultural Society in that Island.—Specimens of gutta percha hose for the distribution of liquid manure, from Mr. Beale Browne; and of gutta percha junctions (by means of slide fitting and circular clamp) for such hose, from Mr. Key.—Communication from Colonel E. Napier, on experiments, in which the ultimate decomposition of diseased Potatoes gave rise to the production of winged insects.—Specimens of Indian Corn grown in the United States of America, under latitudes and circumstances favourable for the cultivation of the produce in England, with a practical statement of the management of the Indian Corn crop; from Mr. Pliny Miles.—Schedule form for farm-accounts, from Mr. Popliss.

The Council ordered their thanks for these communications, which they referred to the Journal Committee.

Lecture.—Col. Challoner having alluded to the circumstances which prevented Prof. Way from being able to complete the details of his lecture, announced for Wednesday next, "on variations in the Chemical Composition of Water, as affecting its agricultural uses," informed the Council of the great interest which had been very widely felt among the members who were unfortunately not present at the Professor's important lecture on soils and manure delivered in the Council-room last month, and of the general wish he had heard expressed that an opportunity might, if possible, be afforded them to hear that lecture. He thought, therefore, that Prof. Way would confer an additional obligation on the members if he would kindly consent to repeat the lecture "on the absorptive powers of soil in reference to manure," on Wednesday next, the 15th inst., at 12 o'clock. Mr. Slaney, M.P., seconded the proposition; to which Prof. Way very cheerfully acceded. It was understood that, to this lecture, as to the former, all members of the Society would have the privilege of admission.

Presents.—Mr. Hewitt Davis presented a volume containing his collected communications on farming; Mr. Richard Smith, his treatise on the most profitable system of forming; Mr. Joshua Trimmer, his proposals for a geological survey, specially directed to agricultural objects, illustrated by a coloured sectional chart; Mr. James Matthews presented copies of works published by him—Dixon on Poultry; A. H. B. on the Tree Rose, and Paxton's Cottager's Calendar; M. Yvart, Inspector of the Veterinary and Cattle Schools of France, copies of his work on Merino sheep; transactions were received from the Geological and Statistical Society; proceedings from the Agricultural Society of Paris, and Annual Report from the Guernsey Agricultural Society; the following agricultural journals were also presented by their respective editors; the

Farmer's Magazine, by Mr. Shaw; the Journal of the Chemico-Agricultural Society of Ulster, by Dr. Hodges; Journal and Transactions of the Lower Canada Agricultural Society, by Mr. Evans, and the first number of the Agricultor Espanol, published at Madrid :—for all which the usual thanks of the Council were ordered.

The Council then adjourned (over the day of lecture on the 15th, and the day of general meeting on the 22d) to their weekly meeting on the 29th inst.

Reviews.

Ornamental and Domestic Poultry. By the Rev. Edmund Saul Dixon, M.A., Rector of Intwood-with-Keswick, Norfolk. Published at the Office of the *Gardeners' Chronicle*, 5, Upper Wellington-street, Covent-garden, London.

The really good and agreeable book recently published under this title deserves an especial notice from us, although a large portion of the matter contained in it originally appeared in this publication, and is of course familiar to many of our readers. The simple fact that a large impression of a rather bulky octavo has been already absorbed in the literary market, is an undoubted evidence of the sterling worth of the publication to which our pages have served the office of "a nursing mother."

The origin of the work, as stated by Mr. Dixon, in the preface to the first edition, is as follows. The author having found encyclopædias and current poultry books insufficient to afford him the practical information which he sought when keeping a few fowl, "although totally ignorant of their ways and doings," began to take notes himself of the questions which gave him the most trouble to solve. His friends induced him to offer these notes, with the observations accompanying them, to the Editor of the *Gardeners' Chronicle*, who at once suggested their publication in the *Agricultural Gazette* department, and the result has been that "a class of persons (to quote Mr. Dixon's words), whose good opinion he must think it an honour to have obtained," received them so favourably, that the author ventured to collect his various contributions on a subject which has been deemed so trivial, "that any one claiming to be considered as an educated gentleman may be thought to have done a bold thing in publishing a book on poultry, and giving his real name on the title page." He had experienced something of the sensations of Mr. Mowbray, who only ventured to meet the public criticism under the shelter of an assumed title. The second edition just come forth differs from the first in omitting the original passages from the Greek and Latin authors which had been admitted into it. By the omission of the original passages (the translations being retained), the reader of the new edition gains an accession of new matter to the extent of 50 pages in the mother tongue. Each kind of poultry, as the title intimates, is specially considered, not, however, with the mere routine details of a poultry maid's manual, but with the inquiring mind and critical judgment of an ornithologist familiar with the natural history of the creatures before him, and with the taste and skill of the accomplished gentleman. From so comprehensive a work we can only select a few passages as examples of the quality of the book, and of the manner in which the literary work has been executed. The following are the author's remarks on the classification of fowls:

"It is evident that if domestic fowls be believed to be merely altered forms of one or two wild races, under the influence of altered food and climate, which we have endeavoured to show that they are not, they must be arranged on different principles to what they would be if we allow them to take rank as original and independent varieties or species. In the one case we have to search out the wild bird nearest resembling any one domestic breed, and form our series from that as a beginning as well as we can; in the other case we have to become well acquainted with all the wild and all the domestic species of Gallus, and then arrange them in groups or in a continuous line, according to their resemblances and relationships without any reference to the circumstance of their domestication, or their untameability. The former plan can be carried out by a little theory and bold guess work; the latter requires industry, accurate observation, and opportunities which few individuals, if any, have at present at command. In the meanwhile we may attempt something like an artificial arrangement of fowls, which may afford a temporary assistance to the fancier till a more scientific scheme is worked out, and which may perhaps be the means of leading to it, just as, to compare small things with great, the artificial Linnean arrangement in botany has cleared the way and been preliminary to the great natural system of classification that is now in vogue. Two desiderata are still required for the attainment of this object, one or other of them is indispensable; the first, a complete set of full-sized coloured figures of every variety, giving both the sexes, the egg and the new hatched chick, with accurate and technical descriptions of their plumage and their characteristic properties; the second, a collection of stuffed specimens of the representations of every breed for comparison and reference. The first can only be undertaken by a person of fortune; the second can scarcely be expected from our museum or natural history societies, devoted as they are to subjects of wider range and more general interest. It is to be feared that poultry will be considered beneath the dignity of the Royal Agricultural Society, but such a work, or such a museum, would be no discredit to their taste; and if the ladies of the leading members were to exert their influence, something might perhaps be done to illustrate a tribe of useful and engaging creatures in whom so large a portion of society is more or less interested."

The author, however, despairs of a correct classification by arranging the domestic with the wild races in natural order and sequence, from the deficiency in our present amount of ornithological knowledge, though such a thing may be practicable when the Indian Archipelago, the native country of some of our finest breeds, shall have been more fully explored. Mr. Dixon enters boldly into opposition against the theorists who [maintain that the variety of fowl known by the designation of pheasant bird is a hybrid between the pheasant and the barn-door fowl. This notion] he seems to have successfully combated. He considers the species as distinct, of eastern origin, and maintains that by the immutable law of Nature, a hybrid bird, between the pheasant and common fowl, must be barren. He denies *in toto* the sufficiency of any supposed facts, or the soundness of any facts that have been adduced in support of the contrary opinion, and adds that if this hybrid breed were fertile, it would produce a very defective sort of bird, such as no poultry fancier or poultry butcher would wish to look at. He is able and eloquent on the subject in more than one part of the book, and states as the result of his investigations that hybrids between the pheasant and the fowl are for the most part absolutely sterile; that when they do breed it is not with each other, but with the stock of one of their progenitors, and that the offspring of these either fail or assimilate to one or other original type. No half-bred family is perpetuated; no new breed created by human agency.

Having, with something of the fearless spirit of the game bird, crowed his challenge upon this point, the author passes, by a natural transition, to the natural history and habits of the game fowl, which fight, not like an Irishman, for pleasure and exercise, but because, as a hero of antiquity said on a memorable occasion, "the one will not give way to the other."

This is a very spirited and entertaining chapter. The author defends the game cock from the charge of being a sanguinary tyrant, disposed to provoke the attacks of others. He thinks that the tilting matches of game chickens, which are generally supposed to indicate their pugnacity of disposition, are merely the results of high animal spirits, harmless sports as among the young of many other animals, which snarl, growl, scratch, or thump each other, as the case may be, in high good humour. As to serious cock-fighting, so common in the Indian Archipelago, and so nearly suppressed in this country, Mr. Dixon makes some very rational observations. He has never seen, and probably never will see a cock-fight, and is neither an amateur nor a defender on principle of cock-fighting; but he declares that more cruelty is committed in other matters every day without condemnation. "Cocks must die. Would a cock that had been fought be worse eating than a hare that had been hunted? And as to the mode of death; ask a cock which he would choose—to be hung up by the heels, and have the cook run a knife up his throat, taking care that he bleed long and die slowly (in order that his flesh may be so much the nicer and whiter), or to be set face to face with his adversary and fight for his life. If he win, to be petted and praised; if he fall, to have his existence cut short by one sharp merciful thrust, instead of the lingering faintness of a culinary departure. The combat is a pleasure, the survivorship a fair chance." Other passages, taken almost at random (from a chapter on the Musk Duck), will show the humorous and playful style in which the author so agreeably conveys practical information, and what would be dull parts if detailed by other men. "Can a duck swim?" is a pert question sometimes asked with little expectation of an answer in the negative. Here, however, is a duck, which, if it *can* swim, performs that action in such a clumsy way as hardly to deserve the name of swimming. Those who expect that its singular appearance "would render it a curious, if not an elegant companion, among the more attractive ducks of our aquatic preserves," will be disappointed; for it will never go near the water, if it can help it, but will prefer the farm-yard, the precincts of the kitchen, or even the piggery itself, to the clearest stream that ever flowed. In fact, it hates water, except some dirty puddle to drink and dabble in. When thrown into a pond, it gets out again as fast as it can. It does, indeed, sometimes seem to enjoy an occasional bath, but so does a sparrow or a canary bird. Its very short leg does not appear to be mechanically adapted for the purpose of swimming. It waddles on the surface of a pond, as much as it does on dry land; it is evidently out of its place in either situation. Its proper mode of locomotion is through the air; its congenial haunts are among the branches of the trees.

A pair that were given to me by a friend came home very dirty, and, as at the end of three or four days they still had not washed themselves from their coating of filth, they were driven towards the water, to bathe and be clean. In vain; they flew back over our heads to the poultry-yard, and we were obliged to catch them, to put them into the pond with our hands, and give them a ducking whether they would or not. Another curious fact is, that great part of the feathers of the musk duck do not resist the wet so well as those of other water birds; but the quill feathers particularly, and those of the tail, become soaked and matted in a very few minutes, like those of a hen or turkey; so that if compelled to make any long voyage, at a certain distance they would sink and be suffocated.

The cause of this difference in the wet-repelling powers of the feathers of different birds remains yet to be discovered. The old idea of the function of the oil-gland on the rump needs no further refutation. The quantity of oil secreted is quite insufficient to smear the whole plumage of any bird. The actions of the creature, which are presumed to be the smearing itself with this unguent, are nothing more than the process of combing and pruning and arranging its feathers. The rumpless fowl has a coat just as glossy as any other variety. The necks of some birds, as owls, are too short to reach the gland that is to supply the natural macassar. In other birds, of most aquatic and even oceanic habits, the rump itself is but little developed. What function is performed by these glands remains yet to be demonstrated; probably it will be found to be simply excretory. The question of lubrication might very soon be set at rest by amputating the rump of a common duck or goose, were such cruelty at all justifiable, which it is not, and if, at the end of a month, the mutilated creature swam as buoyantly as ever, it would certainly not be by the assistance of the oil-gland. I venture, therefore, to suggest and claim the credit of first suggesting, that this cause may probably be found in some minute structural peculiarity of the texture of the feather, which the microscope can alone reveal to us. In geology that instrument has afforded great and unexpected assistance. A thin slice of a fossil tree tells us whether it was a Palm, or whether it grew like our Oaks and Beeches; a minute fragment of a tooth has indicated the nature of an extinct and gigantic reptile. Youatt, through its aid, discovered the mechanical cause of the felting property of wool; and it is not too much to hope that it may throw light on the reason why some feathers resist moisture and others do not. *M. D.*

Calendar of Operations.

MAY.

Bedfordshire Farm, *May* 6.—The weather for some time past has been cold and uncongenial for vegetation; but on the other hand, highly favourable for the various operations of the field, in preparing the green crop fallows. We finished planting Mangold Wurzel on the last day of April, and sowed 20 acres in a week. Five pounds of seed were used per acre, and dibbled in at intervals of 27 by 18 inches. All the land was manured in the autumn. Part received another slight dressing of dung again and part was dressed with guano and the superphosphate of lime. Both the guano and the superphosphate were placed under the seed, with a layer of earth between. We have just sown a few acres of Turnips for early consumption. The horses, for some time henceforward, will be employed in carting out the remaining dung in yards to the most distant fields; the various qualities will be thrown up together and well mixed, and afterwards plastered up outside with a puddle of mud prepared from the oozing of the heap. The Turnip fallows are almost ready for sowing, without further preparation. I think I am safe in saying that on 80 acres there is not half a dozen loads of weeds. Every operation of the farm, whether manual or horse labour, stands happily more forward this season than on any previous one. The Rye is now being cut and consumed with a mixture of hay and straw chaff. The cattle are turned out to the fields through the day, but are sheltered and partly fed in the yards at night. The labourers are chiefly employed in hoeing, and turning composts of earth with lime and salt. It is the custom in several parts of this and the adjoining county for labourers to leave off work at 5 o'clock in the afternoon, all summer, save the busiest days of hay and harvest time. Some commence work at 7 o'clock in the morning, and some are allowed an hour for breakfast. In any statistical account of labour such various systems are perhaps deserving of remark. Beer drinking appears to be the greatest social evil of these parts. *R. V.*

Dorset Farm, *May* 6.—Since last report we may say the weather has not been so favourable as we had to report previously; towards the latter end of March it changed from fine dry weather to very cold and wet, and on several occasions we had sharp frosts, but they did not do much harm beyond checking the progress of vegetation, which is now rather backward, and the weather still wet and cold. The early sown Wheat looks very well, but the latter sown and also the Barley look rather yellow; and early Potatoes have been in many cases cut down by the frost since this month came in. We are now busy getting the ground ready for and sowing Mangold Wurzel, which we put in some on the baulk or raised drill system, and some we drill on the flat; the former at 27 inches apart, and the latter at 22 inches. As we have always a good stock of beasts we have plenty of dung, and we are applying it at the rate of from 30 to 40 yards per acre. I think I have stated before that we never fold our sheep on fallow land with hay, but on the young Clovers and other pastures. We folded them on part of a field of Clover, and put dung on the rest at the rate of from 15 to 18 yards per acre, well rotted, and the Grass on both parts is a fair crop, but that where the sheep were folded is decidedly the best, a result that I hardly expected. But I think the fresh urine from the sheep rather than the dung has given the extra stimulus, and circumstances like these ought to teach us (if anything will ever do so), how valuable liquid manure is applied on Grass. I do not think that anything can be found more suitable for dressing pastures. A heavy covering of dung will do some good, but as it is exposed on the surface, if the weather is very drying a great deal must be wasted. When dung is applied to pastures it ought to be mixed for some time with once or twice its bulk of earth, and a little gypsum added would be useful in retaining the chief fertiliser contained in the dung. We shall be employed for the present and part of next week getting in the Mangold Wurzel, and then after them the Swedes. We sowed a piece of Rape about three weeks ago, but the frost has been too sharp for it as it was coming up, and has cut up a great deal of it. *G. S.*

Lammermuir Sheep Farm, *May* 1.—The first fortnight of our lambing season has now passed. It is not often that April exhibits throughout such an almost uninterrupted continuance of dry weather as the one that has now gone. The beginning of it, as well as the greater part of March, having been mild, our hills had put on a somewhat greener hue than is usually the case so early in the season. Such a combination of favourable circumstances do not occur every year, but when they do, generally insure a good supply of milk, and consequently a good crop of lambs. Such, so far as we have gone, is our case, and that of our neighbours generally. Indeed, we understand that throughout the east of Scotland the crop of lambs will be large. About two-thirds of our ewes have lambed, though it will be near a month ere all have finished. In about a fortnight the lambs will be castrated, tailed, and ear-marked. We prefer moist mild weather as most favourable for this operation, having found that during a cold and very dry atmosphere we have a considerable number of deaths, while under the former, few or none. Our corn-sowing was completed on the 13th, and

has now a promising appearance. It has been all rolled since. The Potatoes were planted on the 27th, and we are now busy preparing for Turnip-sowing, which we purpose beginning about the 18th, and finishing during the first week in June—late sown Turnips seldom turning out a good crop in our high district. Cows and young cattle are receiving meadow hay and Oat-straw when in the house. They are let out for a few hours during the day, but the Grass is yet too short to be of much avail to them. The calves are fed on Swedes, Clover, hay, and bruised Oats, besides the usual supply of milk to those that are not weaned. *A Lammermuir Sheep Farmer.*

Notices to Correspondents.

CALVES: *Iman.* Access to salt would be advisable; but the motto, "let well alone," is a very good one, and it will not be advisable to enforce any material alteration in their food before the Grass is ready for them.

FLAX: *A Subscriber.* A rich somewhat adhesive loam is the best. Buy a tract on the subject by T. R. Short. (Groombridge.)

GOLD GRASS: *F.* We presume that what is referred to under this name is Cynosurus cristatus.

KING'S SOMBORNE SCHOOL: *J Galloway.* Groombridge and Sons, Paternoster-row.

MANGOLD WURZEL: *W W D.* The writer has given Mangold Wurzel to milch cows through the winter without any such result as that stated. If given in unlimited quantities, and early in the season, when the root contains a much larger per centage of moisture than subsequently, it may however have the effect of causing abortion. If given raw to young pigs, it has caused inflammation of the bowels. *W. C. S.*

MILK FAILS: *Country Cowkeeper.* Your instructions will be easily enough followed by any tinman. We do not know where the thing ready made is to be had.

PERMANENT PASTURE: *An Old Subscriber.* As you put the case, we should side with you; and *if* you get weather which will let the seed braird, you might sow it in July, after fallowing it this summer.

POULTRY: *Tonbridgiensis* says, "If your correspondent who subscribes himself 'The Son of a Country Rector, Lincolnshire,' would give a detail of his management with respect to poultry by which he nets a profit of 15*s.* by each hen, he would much oblige me, and I doubt not many others."

RURAL CHEMISTRY, by E. Solly, price 4*s.* 6*d.*, second edition, revised and enlarged, may be had of all booksellers, and at the Office of this Paper.

SMALL FARMS: We have a letter for "The Son of a Country Rector," and would forward it, if we knew how to address it. —*E B P.* "Tough Tom" should be kept where he is for a while, and in the meantime he might be educated for company with his betters. Draining for a year or so previous to trenching would greatly diminish the risk of that process. Fodder from October to June is to be secured by Turnips, Mangold Wurzel, Rye, and Vetches in succession. Gorse, too, will give food through winter. Burnet, Spurry, and so on, are very poor forage crops.

SOOT AND SALT: *Iman.* You may sow it during the present wet weather, as soon as you like after the Clover seed.

SPADE HUSBANDRY: *One who Writes, &c.*, should apply to his bookseller about Dr. Yellowley's pamphlet. We have not a copy, and do not know the publisher. Mr. Yule has lately published a pamphlet on the same subject, by, we think, M'Glashan, Dublin. Mr. Blacker's Essay on Small Farms will be useful.

Markets.

COVENT GARDEN, May 11.

Vegetables are well supplied, but most kinds of winter Fruit are over. Strawberries and Hothouse Grapes are both more plentiful, and the same may be said of Pine-apples, of which some good fruit may be obtained. Walnuts and Chestnuts are abundant; and Oranges and Lemons sufficient for the demand. A few bunches of young Carrots and Turnips may be had at from 1*s.* to 2*s.* per bunch; and some green Peas of good quality have been supplied from Cornwall. Frame Potatoes fetch from 1*s.* to 2*s.* per pound. Lettuces and other salading are sufficient for the demand, and so are Mushrooms. French Beans, Asparagus, and Rhubarb are plentiful. Cut Flowers consist of Heaths, Pelargoniums, Bignonia venusta, Primulas, Cinerarias, Azaleas, Lily of the Valley, Epacrises, Acacias, Lilacs, and Roses.

FRUITS.

Pine-apples, per lb., 6*s* to 10*s*	Almonds, per peck, 6*s*
Grapes, hothouse, p. lb., 5*s* to 10*s*	— sweet, per lb., 2*s* to 3*s*
— Portugal, p. lb., 9*d* to 1*s*	Walnuts, p. 100, 1*s* 6*d* to 2*s*
Strawberries, per oz., 4*d* to 1*s*	— p. bush., 16*s* to 24*s*
Apples, kitchen, p. bsh., 4*s* to 6*s*	Nuts, Barcelona, per bush., 20*s* to 22*s*
— per 100, 6*s* to 12*s*	— Brazil, p. bsh., 12*s* to 16*s*
Oranges, per doz., 9*d* to 1*s* 6*d*	Kent Cobs, 90*s* to 100*s* p. 100 lbs
— per 100, 5*s* to 12*s*	
Lemons, per doz., 1*s* to 2*s*	

VEGETABLES.

French Beans, p. 100, 1*s* to 2*s* 6*d*	Onions, p. bushel, 3*s* 6*d* to 4*s* 6*d*
Asparagus, p. bund., 2*s* to 5*s*	— Spanish, p. doz., 1*s* 6*d* to 4*s*
Rhubarb, p. bundle, 6*d* to 1*s*	Shallots, per lb., 4*d* to 8*d*
Cabbages, per doz., 6*d* to 1*s*	Garlic, per lb., 4*d* to 8*d*
Cauliflowers, p. doz., 1*s* to 4*s*	Lettuce, Cab., p. sc., 4*d* to 9*d*
Broccoli, p. doz. bundl., 8*s* to 10*s*	Endive, per score, 1*s* 6*d* to 3*s*
Greens, per doz., 3*s* to 4*s*	Mushrooms, p. pot., 9*d* to 1*s*
Sorrel, p. hf. sieve, 1*s* to 1*s* 6*d*	Small Salads, per punnet, 2*d* to 3*d*
Potatoes, per ton, 60*s* to 120*s*	Fennel, per bunch, 2*d* to 3*d*
— per cwt., 3*s* to 7*s*	Savory, per bunch, 2*d* to 3*d*
— per bush., 2*s* 6*d* to 3*s* 6*d*	Thyme, per bunch, 2*d* to 3*d*
— frame, per lb., 1*s* to 3*s*	Parsley, p. doz. bun., 2*s* to 3*s*
Turnips, p. doz. bun., 1*s* 6*d* to 2*s* 6*d*	— Roots, p. bdle., 9*d* to 1*s*
Red Beet, per doz., 9*d* to 1*s*	Marjoram, per bunch, 2*d*
Cucumbers, each, 6*d* to 2*s*	Mint, green, per bunch, 3*d* & 4*d*
Leeks, per bunch, 1*d* to 1½*d*	Watercress, p. doz. bunches, 6*d* to 9*d*
Celery, p. bundle, 8*d* to 1*s* 6*d*	Horse Radish, p. bdl., 1*s* to 4*s*
Carrots, per bun., 4*d* to 6*d*	
Spinach p. sieve, 1*s*	

POTATOES.—SOUTHWARK, May 6.

The Committee report that the arrivals from the Continent are quite equal to the demand. Good York Regents are scarce, and are making a ready sale. The following are this day's quotations:—York Regents, 90*s.* to 120*s.* per ton; Scotch do., 60*s.* to 90*s.*; Scotch cups, 60*s.* to 70*s.*; whites, 35*s.* to 40*s.*; French whites, 40*s.* to 65*s.*; Belgian do., 40*s.* to 50*s.*; Dutch, 30*s.* to 40*s.*

HAY.—Per Load of 36 Trusses.

SMITHFIELD, May 9.

Prime Meadow Hay	66*s* to 72*s*		Clover	60*s* to 84*s*	
Inferior ditto... ...	50	63	New Clover	—	—
Rowen	50	60	Straw	22	26
New Hay	—	—		J. COOPER.	

Very little doing.

CUMBERLAND MARKET, May 9.

Prime Meadow Hay	70*s* to 75*s*		Inferior	65*s* to 72*s*	
Inferior ditto... ...	50	65	New Clover	—	—
New Hay	—	—	Straw	24	30
Old Clover	75	84		JOSHUA BAKER.	

WHITECHAPEL, May 9.

Fine Old Hay ...	63*s* to 68*s*		New Clover	—*s* to —	
Inferior ditto ...	50	55	Inferior ditto... ...	60	65
New Hay	—	—	Straw	22	25
Old Clover	75	80			

SMITHFIELD, Monday, May 6.

The number of Beasts is nearly 1000 less than on Monday last; in consequence there is a little more activity in the trade, and in some few instances 3*s.* 6*d.* is realised for choice Scots. We have a few more Sheep on offer, which causes a dull trade, but quotations remain unaltered. Lambs are with difficulty disposed of at rather less money. From Holland and Germany there are 183 Beasts, 390 Sheep, and 71 Calves; from Scotland, 400 Beasts; and 2200 from Norfolk and Suffolk.

Per st. of 8 lbs.—	*s*	*d*	*s*	*d*	Per st. of 8 lbs.—	*s*	*d*	*s*	*d*
Best Scots, Herefords, &c. ...	3	2 to 3	4		Best Long-wools .	3	8 to 4	0	
Best Short-horns	3	0 — 3	2		Ditto Shorn ...	3	2 — 3	6	
2d quality Beasts	2	6 — 2	10		Ewes & 2d quality	3	6 — 3	10	
Best Downs and Half-breds ...	4	0 — 4	4		Ditto Shorn ...	3	0 — 3	4	
Ditto Shorn ...	3	6 — 3	10		Lambs	4	10 — 5	6	
					Calves	2	8 — 4	0	
					Pigs	3	0 — 4	0	

Beasts, 3369; Sheep and Lambs, 24,510; Calves, 149; Pigs, 240.

FRIDAY, May 10.

There is a considerable supply of Beasts; trade is however cheerful, and quotations remain unaltered from Monday. The number of Sheep and Lambs is large; for the former, trade is scarcely so good, and for the latter about the same as on Monday. A choice Calf is pretty readily disposed of, but the general trade is no better. From Germany and Holland there are 126 Beasts, 100 Sheep, and 198 Calves; from Spain, 120 Sheep; from Scotland, 200 Beasts; and 147 Milch Cows from the home counties.

Best Scots, Herefords, &c. ...	3	2 to 3	4		Best Long-wools .	3	8 to 4	0	
Best Short-horns	3	0 — 3	2		Ditto Shorn ...	3	2 — 3	6	
2d quality Beasts	2	6 — 2	10		Ewes & 2d quality	3	6 — 3	10	
Best Downs and Half-breds ...	4	0 — 4	4		Ditto Shorn ...	3	0 — 3	4	
Ditto Shorn ...	3	6 — 3	10		Lambs	4	10 — 5	6	
					Calves	3	0 — 4	2	
					Pigs	3	0 — 4	0	

HOPS.—Friday, May 10.

Messrs. PATTENDEN and SMITH report that there is a fair amount of business doing in fine yearlings, as also for 1847 s and 1846's. The trade is slow for new ones.

Mid. and East Kents ...	p. cwt.	147*s* to 240*s*	
Weald of Kents ...		126 —	160
Sussex		110 —	130
Farnhams, p. cwt.	—*s*	—	*s*
Yearling Kents ...	40	—	80
Yearling Sussex...	40	—	80
Old Hops	20	—	60

MARK LANE.

MONDAY, MAY 6.—There was a rather larger supply of Wheat from Essex this morning than we have seen of late, but very moderate from Kent and Suffolk; the whole was cleared at an advance of 1*s.* to 2*s.* per qr. A similar improvement was generally insisted upon on foreign, but being unwillingly complied with, sales at this advance were not extensive.—Barley is in better demand, and the turn dearer.—Beans and Peas must each be written 1*s.* per qr. higher.—Oats meet a good inquiry, and realise fully 6*d.* per qr. more money.—Ship Flour commands an advance of 6*d.* per sack.

BRITISH PER IMPERIAL QUARTER.	*s.*	*s.*		*s.*	*s.*
Wheat, Essex, Kent, & Suffolk ...White	40—44		Red	37—40	
— — fine selected runs ...ditto	44—47		Red	39—41	
— — Talavera	46—51				
— Norfolk, Lincoln, & York ...White	40—42		Red	36—38	
— Foreign	33—50				
Barley, grind. & distil., 19*s* to 22*s*...Chev.	24—27		Malting	22—24	
— Foreign.....Grinding and distilling	14—19		Malting	19—22	
Oats, Essex and Suffolk	15—18				
— Scotch and Lincolnshire ...Potato	18—21		Feed ...	15—19	
— Irish .....Potato	14—18		Feed ...	12—16	
— Foreign .....Poland and Brew	14—18		Feed ...	12—15	
Rye	19—21		Foreign	18—20	
Rye-meal, foreign .....per ton	5*l.*—6*l.*				
Beans, Mazagan .....20*s* to 23*s*.....Tick	23—26		Harrow	23—26	
— Pigeon .....25*s* — 36*s* ...Winds	—		Longpod	—	
— Foreign ..... Small	24—36		Egyptian	19—20	
Peas, white, Essex and Kent.....Boilers	23—26		Suffolk	24—27	
— Maple .....24*s* to 27*s*.....Grey	22—24		Foreign	19—28	
Maize .....White	23—26		Yellow...	23—25	
Flour, best marks, delivered ...per sack	33—37				
— Suffolk .....ditto	27—33		Norfolk	27—33	
— Foreign .....per barrel	20—24		Per sack	28—32	

ARRIVALS IN THE PORT OF LONDON LAST WEEK.

	Wheat.	Barley.	Malt	Oats.	Beans.	Peas.
Flour, 10625 sks	Qrs.	Qrs.	Qrs	Qrs.	Qrs.	Qrs.
— — bls	2574	848	5203	293	360	116
English	—	—	109	—	—	—
Irish	17798	9169	—	46839	380	982
Foreign						

FRIDAY, MAY 10.—The arrivals of grain of all kinds, both English and foreign, during this week, have been unusually small, This morning's market was attended by some distant buyers for free on board cargoes, and business was done in these to some extent. Transactions in Wheat were limited; by the advance insisted on by holders, nevertheless, in the sales effected an improvement of fully 1*s.* per qr. upon Monday's prices were obtained.—Barley is also 6*d.* to 1*s.* per qr. dearer, but the demand less active.—Egyptian Beans are 1*s.* higher; other sorts fully as dear.—Peas are held for extreme rates.—There is a fair sale for Oats, at fully 6*d.* per qr. advance.—The higher prices asked for Flour restrict the sale, but ship and foreign are each 1*s.* per sack dearer.—Floating cargoes of Galatz Indian Corn arrived off the coast are not obtainable below 30*s.* per qr.

ARRIVALS THIS WEEK.

	Wheat. Qrs.	Barley. Qrs.	Oats. Qrs.	Flour.
English ...	1910	330	1370	4870 sacks
Irish	—	—	—	— brls.
Foreign ...	3030	550	5190	

IMPERIAL AVERAGES.	WHEAT.	BARLEY.	OATS.	RYE.	BEANS.	PEAS.
Mar. 30.....	37*s* 9*d*	23*s* 6*d*	15*s* 2*d*	21*s* 7*d*	23*s* 10*d*	25*s* 3*d*
April 6.....	38 1	23 2	14 10	21 6	23 8	24 5
— 13.....	38 5	22 11	15 3	20 8	23 9	26 3
— 20.....	37 10	22 8	15 3	21 6	23 9	24 9
— 27.....	37 1	22 1	15 0	21 8	23 8	25 1
May 4.....	36 11	22 0	14 7	19 11	23 11	24 9
Aggreg. Aver.	37 8	22 9	15 0	21 2	23 9	25 1
Duties on Foreign Grain	1 0	1 0	1 0	1 0	1 0	1 0

Fluctuations in the last six weeks' Corn Averages.

PRICES.	MAR. 30.	APRIL 6.	APR. 13.	APR. 20.	APR. 27.	MAY 4.
38*s* 5*d*	...	...	...	...	...	...
38 1	...	...	...	...	...	...
37 10	...	...	...	...	...	...
37 9	—	—	—	—	—	—
37 1	...	...	...	...	...	...
36 11	...	...	...	...	...	...

SEEDS.—May 10.

Canary, per qr.....66*s* to 72*s*	Coriander, per cwt. ...18*s*—	22*s*	
Caraway, per cwt. ...31 — 34	Mustard, white, p. bush. 7 —	8	
Hempseed, per qr. ...34 — 35	— brown, do. .....10 —	13	
Linseed, foreign, do. 37 — 45	Rape, per last .....34*l.*—37*l.*		
Clover, red, per cwt....24 — 46	Cakes, Linseed, p. 1000...8*l.*	5*s*	
— — foreign, do.— —	— — foreign, p. ton 6*l.*	0*s*	
— white, do. ... 36 — 48	— Rape, foreign, do. 4*l.*	5*s*	
— — foreign, do.— —	Tares, per bush.... 3*s* 0*d*—5*s*	6*d*	

LIVERPOOL, FRIDAY, MAY 10.—At our Corn Exchange this morning rather a large business was transacted in Wheat, but mostly on speculation, at an improvement of 1d. to 2d. per bushel on the price of Tuesday. Flour was 6d. per sack and barrel dearer, but the town dealers supplied themselves only sparingly. Indian Corn also advanced 1*s.* to 1*s.* 3d. per qr.; good American new yellow corn also sold at 30*s.* per 480 lbs. Oats were ½d. per bushel, and Oatmeal 6d. per load higher. A good clearance was made of Beans and Peas at 1*s.* per qr. better prices. Grinding Barley also improved 2d. per bushel.

GLASS WATER PIPES.

MESSRS. COATHUPES AND Co., GLASS MANUFACTURERS, Bristol and Nailsea, Somerset, continue to supply GLASS PIPES for the conveyance of water, &c., in lengths of from 3 to 7 feet, and from ½-inch to 4-inch bores; they provide also the necessary joints, which enable them to stand very considerable pressure.

GLASS FOR CONSERVATORIES, &c.

HETLEY AND Co. supply 16-oz. Sheet Glass of British Manufacture, at prices varying from 2*d.* to 3*d.* per square foot, for the usual sizes required, many thousand feet of which are kept ready packed for immediate delivery. Lists of Prices and estimates forwarded on application, for PATENT ROUGH PLATE, THICK CROWN GLASS, GLASS TILES and SLATES, WATER-PIPES, PROPAGATING GLASSES, GLASS MILK PANS, PATENT PLATE-GLASS, ORNAMENTAL WINDOW GLASS, and GLASS SHADES, to JAMES HETLEY and Co., 35, Soho-square, London.

See the *Gardeners' Chronicle* first Saturday in each month.

GLASS FOR CONSERVATORIES.

JAMES PHILLIPS AND Co. have the pleasure to hand their New List of Prices of GLASS for Cash.

CUT TO SIZE.

16 oz. from 2*d.* to 3½*d.* per foot.

21	„	3½ „ 5	„	
26	„	3½ „ 7½	„	
32	„	4 „ 9½	„	

SHEET SQUARES.

In boxes of 100 feet.	*s.*	*d.*
Under ... ... 6 by 4	12	6
6 by 4 and under 7 by 5	16	6
7 by 5 „ 8 by 6	18	6
8 by 6 „ 10 by 8	20	6

100 feet and 200 feet cases of large Sheet Glass, for cutting up, at 2½*d.* per foot. British Plate Glass, from 1*s.* 2*d.* to 2*s.* per foot, according to size.

HARTLEY'S PATENT ROUGH PLATE, packed in boxes of 50 feet each:

6 by 4 and 6½ by 4½ ... 10*s.* 6*d.*	7 by 5 and 7½ by 5½ ... 12*s.* 0*d.*
8 by 6 „ 8½ by 6½ ... 13 6	9 by 7 „ 10 by 8 ... 15 0

MILK PANS.

12 in. diameter ...	2*s.*	0*d.*
14 „	2	6
16 „	3	0
18 „	3	6
20 „	4	0
22 „	4	6
24 „	5	0
26 „	6	0

CREAM POTS, from 2*s.* each.

PROPAGATING GLASSES.

2 in. diameter ...	0*s.*	2*d.*
3 „	0	3
4 „	0	4
5 „	0	6
6 „	0	8
7 „	0	10
8 „	1	0
9 „	1	2
10 „	1	4
11 „	1	6

BEE GLASSES, same sizes.

METAL HAND FRAMES.

12 inches	6*s.*	0*d.*
14 „	7	0
16 „	8	0
18 „	9	0
20 „	10	0
24 „	12	0

Open tops, 1*s.* extra.

CUCUMBER TUBES.

12 inches long ...	1*s.*	0*d.*
14 „	1	2
16 „	1	4
18 „	1	6
20 „	1	8
22 „	1	10
24 „	2	0

Glass Shades; Tiles and Slates of any size; Wasp Traps, 3*s.* 6*d.* per dozen; Lamp Shades; Rough Plate Glass of every thickness. Lactometers, for trying the quality of milk, 4 tubes, 7*s.* 6*d.*; 6 do., 10*s.* Glass Stands for Pianoforte, and every article in the trade.

JAMES PHILLIPS AND Co., 116, BISHOPSGATE-STREET WITHOUT, LONDON.

GLASS FOR CONSERVATORIES, HORTICULTURAL PURPOSES, &c.



T. MILLINGTON'S SHEET GLASS, which is of the best description, varying from 16 to 32 ounces, at from 2*d.* per foot and upwards; 100 feet and 200 feet cases of large Sheet Glass, for cutting up, at 2½*d.* per foot. British Plate Glass, from 1*s.* 2*d.* to 2*s.* per foot, according to size. Patent Rough Plate Glass, from ⅛ to 1 inch in thickness, from 4*d.* per foot upwards. Glass Slates and Tiles. Milk Pans from 12 to 24 inches diameter, from 2*s.* to 5*s.* each. Cucumber Tubes, from 12 to 24 inches long, at 1*d.* per inch. Lactometers, 7*s.* 6*d.* each. Wasp Traps.—Lists may be had, on application at the Warehouse, 87, Bishopsgate-street Without, same side as the Eastern Counties Railway.

CROWN, SHEET, AND ROUGH PLATE GLASS, FOR HOTHOUSES, CONSERVATORIES, &c.

Of every manufacture FIT FOR USE, including the make of Messrs. CHANCE, HARTLEY, SWINBURNE, and others.

100 and 200 feet cases of large Sheet Glass, from 2½*d.* per foot. Small ditto, 10*s.* 6*d.* per 100 feet, packed in boxes ready for immediate delivery. Curators of Botanical Societies, Florists, Railway Agents, and others requiring large quantities, will, on sending dimensions, receive estimates at the lowest prices.

GLASS MILK PANS, CREAM POTS, Lactometers, Bee Glasses, Fish Globes, and all kinds of Dairy Glass, Propagating Glasses, Hyacinth Dishes, Cucumber Tubes, and every other description of Garden Glasses.

PATENT GLASS PENS, self supplying, never blot, never soil the ruler, and will write continuously for 12 hours.

Also, Glass Rulers, Glass Inks for office-stands, desks, &c. Stationers and Schools supplied. Wholesale Warehouse for Ornamental Shades, Lamp Shades, Gas Glasses, Genuine White Lead, Paints, Colours, and Pumps for Farm purposes.

Our Catalogue of 18 folios is the most complete ever published. No Gardener or Farm Bailiff should be without one. May be had Gratis on sending two postage stamps to Messrs. COGAN and Co., 48, Leicester-square, London.

NETTING, FLAGS, AND BUNTING.—Superior Tanned Garden Netting, for preserving Fruit-trees from Frost, Blight, or Birds; or as a fence for Fowls, Pigeons, Tulip and Seed-beds, can be had in any quantity from JOHN KING FABLOW'S Fishing-rod and Net Manufactory, 5, Crooked-lane, London-bridge, at 3*d.* per yard 2 yards wide, or 6*d.* per yard 4 yards wide. Woollen Bunting, any length or width, at 6*d.* per square yard. Forwarded to any part of the kingdom on receipt of remittance, Post-office order, or stamps. Several good second-hand Flags to be sold cheap.

JOHN BAILY, PURVEYOR TO HER MAJESTY AND H.R.H. PRINCE ALBERT, 113, Mount-street, Grosvenor-square, London, Dealer in every description of Useful and Ornamental POULTRY and WATER-FOWL, Dorking, Hambro', Spanish, Polish, and Cochin China Fowls. Gold and Silver Spangled Bantams. All sorts of Pea Fowls. Gold, Silver, Pied, and Ring-necked Pheasants. Tame-bred Pheasants in any numbers. Live Partridges for turning out.—Priced Lists and Estimates forwarded by post, on application.

DALSTON NURSERY.—TO NOBLEMEN, GENTLEMEN, NURSERYMEN, FLORISTS, AND OTHERS.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. J. Smith, in consequence of the premises being required by the London and Birmingham West-India Dock Junction Railway Company, to sell by Auction, on the premises, Dalston, Middlesex, on MONDAY, May 27, and following day, at 12 o'clock each day, the valuable GREENHOUSE PLANTS, consisting of choice Azalea indica, Erica, Epacris, Boronia, Burchellias, Diosma, Pimelea, Erythrina, Kennedya, Metrosideros, Fabiana, Geraniums, Fuchsias, Verbenas, Chrysanthemums, Lobelias, Calceolarias, Heliotropes, Cupheas, Myrtles, Hydrangea, Alstrœmerias, Cactus, Gardenias, Clianthus, Dahlias, Clematis, Jasmine, Aloes, Brooms, Roses, Magnolia grandiflora, &c.—May be viewed two days prior to the sale. Catalogues had (6*d.* each, returnable to purchasers) on the premises, at the Shop in Covent-garden, of the principal Seedsmen, and of the Auctioneers, American Nursery, Leytonstone, Essex.

TO GENTLEMEN, FLORISTS, AND OTHERS.

MESSRS. PROTHEROE AND MORRIS will submit to public competition by Auction, at the Mart, Bartholomew-lane, on WEDNESDAY, May 15th, and two following days, at 12 o'clock each day, about 1000 DAHLIAS, consisting of all the leading sorts; the newest varieties of Fuchsias, Verbenas, Heartsease, Geraniums, and other plants in bloom, with a variety of ornamental plants for bedding.—On view the morning of sale. Catalogues had at the Mart, and of the Auctioneers, Leytonstone, Essex.

TO GENTLEMEN, FLORISTS, AND OTHERS.

MR. D. A. RAMSAY will sell by Auction, at the Brompton Auction Ground, Fulham-road, 1 mile from Hyde Park Corner, on THURSDAY, May 16th, 1850, at 12 o'clock, a large assortment of PLANTS for BEDDING OUT, comprising 2000 Geraniums, Fuchsias, Verbenas, &c., in choice variety; also a choice assortment of Pinks, Herbaceous Plants, &c.—May be viewed one day prior to the Sale, and Catalogues had at the usual Seed-shops; and of the Auctioneer, Brompton Nursery, Fulham-road, Brompton.

THE ERECTIONS OF THREE GREENHOUSES, GREENHOUSE PLANTS, &c.

MR. D. A. RAMSAY will sell by Auction, on the Premises, King's Road, Chelsea, opposite Cremorne Gardens, on TUESDAY, May 28, at 12 o'clock, by order of Messrs. Dennis (the lease of the Premises being expired), 3000 GREENHOUSE PLANTS, comprising Camellias, Geraniums, &c., finely in bloom. Also a quantity of Plants for Bedding out, consisting of Geraniums, Verbenas, Petunias, &c., in choice variety. With other Miscellaneous Nursery Stock. May be viewed one day prior to the sale. Catalogues had at the usual Seed Shops, on the Premises, and of the Auctioneer, Brompton Nursery, Fulham-road, Brompton.

TO NURSERYMEN, GARDENERS, CARRIERS, &c.

FOR SALE BY AUCTION, on WEDNESDAY next, at Mr. PAWLEY'S, The White Hart Inn, Bromley, Kent, by order of the Proprietor, who is obliged to clear the ground, that it may be given up, single and pair-horse open and close Vans, some thousand feet of Glass, two Iron Boilers, several hundred feet of Iron Piping, Wirework, large Flowerpots, a splendid Collection of Specimen Plants, &c.—May be viewed any day prior to the Sale, and Catalogues had on the premises, and at the Office of the Country Gentleman, 69, Fleet-street, or at the Office of this Paper.—May 11.

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FREEHOLD FOR SALE.—Nine Forcing Houses in the highest state of culture, and good bearing, to be entered upon forthwith, or at Michaelmas, as may be agreed. The crops succeed each other quickly, beginning in May. The Fruit has maintained a high standing in the London market for 20 years. The Residence has obtained 20*l.* per month. Moiety of purchase on mortgage if desired. This is a rare opportunity of uniting pleasure with profit.—Apply to Mr. J. WEBB, Estate Agent, 65, East-street, Brighton.

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TO BE LET, unfurnished, with immediate possession, by the year, or for a term, the MANOR HOUSE, containing spacious Dining and Drawing-rooms, 10 Bed-rooms, Kitchens, and other offices, with Coach-house, Stables, and Garden; also the right of Shooting over about 700 acres of preserved land. Situated between Lyme and Sidmouth, on a picturesque and healthy part of the south coast of Devon.—To view, apply to Mr. JAMES MAJOR, Seaton; and for further particulars to Mr. BABBAGE, Nettlecomb, near Taunton; or to Mr. JOHN HARE, House-agent, Taunton.

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BY HER MAJESTY'S ROYAL LETTERS PATENT.

F. M'NEILL AND Co., of Lamb's-buildings, Bunhill-row, London, the Manufacturers and only Patentees of THE ASPHALTED FELT FOR ROOFING Houses, Farm Buildings, Shedding, Workshops, and for Garden purposes, to protect Plants from Frost.

At the Great National Agricultural Shows, it is this Felt which has been exhibited and obtained TWO SILVER MEDAL PRIZES, and is the Felt SOLELY patronised and adopted by

HER MAJESTY'S WOODS AND FORESTS,
HONOURABLE BOARD OF ORDNANCE,
HONOURABLE EAST INDIA COMPANY,
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HER MAJESTY'S ESTATE, ISLE OF WIGHT,
ROYAL BOTANIC GARDENS, REGENT'S PARK,

And on the Estates of the Dukes of Sutherland, Norfolk, Rutland, Newcastle, Northumberland, Buccleuch (at Richmond), the late Earl Spencer, and most of the Nobility and Gentry, and at the ROYAL AGRICULTURAL SOCIETY'S HOUSE, Hanover-square.

It is half the price of any other description of Roofing, and effects a great saving of Timber in the construction of Roofs. Made to any length by 32 inches wide.

PRICE ONE PENNY PER SQUARE FOOT.

*** Samples, with Directions for its Use, and Testimonials of seven years' experience, with references to Noblemen, Gentlemen, Architects, and Builders, sent free to any part of the town or country, and orders by post executed.

☞ The Public is cautioned that the only Works in London or Great Britain where the above Roofing is made, are

F. M'NEILL AND CO.'S

Patent Felt Manufactory, Lamb's-buildings, Bunhill-row, London, where roofs covered with the Felt may be seen.

The new Vice-Chancellor's Courts, at the entrance to Westminster Hall, were roofed with F. M'NEILL and Co.'s Felt about two years since, under the Surveyorship of Chas. Barry, Esq., R.A. Her Majesty's Commissioners of Woods and Forests are so satisfied with the result that they have ordered the Committee Rooms at the Houses of Parliament to be roofed with their Felt. Quantity altogether used, 24,000 feet.

NOTE.—Consumers sending direct to the Factory can be supplied in lengths best suited to their Roofs, so that they pay for no more than they require.

Every information afforded on the construction of Roofs, or any proposed particular application of the Felt.

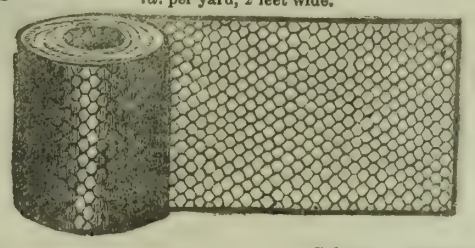
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TO BE LET, for 14 or 21 years, from Michaelmas next, Three or Four FARMS, situated in the most fertile district of that county, containing about 200 acres each (to which more may be added) of Arable and Pasture Land, with thriving Orchards. Every information respecting these Farms, which are in a fair state of cultivation, may be obtained by addressing a letter to A. B., Post-office, Bodmin, Cornwall.

N.B. It may be right to add that none but men of skill and capital will be treated with, to whom long terms (at corn rents, if preferred) will be granted.—May 11.

TO GENTLEMEN FARMERS.—If this should meet the eye of any married gentleman largely engaged in farming pursuits, having more house accommodation than he requires, and residing in a part of the country that can boast of a good trout river for fly-fishing, and fair general shooting, and who for society sake might wish to meet with, and to accommodate, a married gentleman, who is an officer in the army, without family, but with one servant, he may do so, by fully entering into particulars upon each point, with L. M. N. R., 10, Charles-street, St. James's-square, London.—Any offer that may appear eligible will be replied to.

GALVANISED WIRE GAME NETTING.—7*d.* per yard, 2 feet wide.



		Galvanised.	Japanned Iron.
2-inch mesh, light, 24-inch wide	...	7*d.* per yd.	5*d.* per yd.
2-inch " strong "	...	9 "	6½ "
2-inch " extra strong "	...	12 "	9 "
1⅝-inch " light "	...	8 "	6 "
1⅝-inch " strong "	...	10 "	8 "
1⅝-inch " extra strong "	...	14 "	11 "

All the above can be made any width at proportionate prices. If the upper half is a coarse mesh, it will reduce the price one-fourth. Galvanised sparrow-proof netting for pheasantries, 3*d.* per square foot. Patterns forwarded post-free.

Manufactured by BARNARD and BISHOP, Market-place, Norwich, and delivered free of expense in London, Peterborough, Hull, or Newcastle.

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The works of Messrs. PERRY being situated in the heart of the first iron district, they are enabled to execute all orders with the greatest facility, and on the most moderate terms. Drawings made and estimates prepared, if required. The showrooms contain an immense variety of every description of Iron and Wire-work, and are the largest in London. An Illustrated Catalogue of Bedsteads, with dimensions and prices, sent on application, post-free.

LINGHAM BROTHERS, 170, Hampton-street, Birmingham, sole Manufacturers of the improved WOOD and ZINC MENOGRAPH, or Label for Garden Borders, Flowerpots, &c., in boxes of 100, &c. The Zinc Labels are highly approved of for their lasting durability; can be written upon with the greatest ease, and, when dry, a permanent inscription is secured. Directions for use sent with each box, including bottle of Metallic Ink.

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1st. It is a non-conductor.

2d. It is portable, being packed in rolls, and not liable to damage in carriage.

3d. It effects a saving of half the timber usually required.

4th. It can be easily applied by any unpractised person.

5th. From its lightness, weighing only about 42 lbs. to the square of 100 feet, the cost of carriage is small.

Price One Penny per Square Foot.

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STEPHENSON AND Co., 61, Gracechurch-street, London, and 17, New Park-street, Southwark, Inventors and Manufacturers of the Improved CONICAL and DOUBLE CYLINDRICAL BOILERS, respectfully solicit the attention of scientific Horticulturists to their much improved method of applying the Tank System to Pineries, Propagating Houses, &c., by which atmospheric heat as well as bottom-heat is secured to any required degree, without the aid of pipes or flues. S. and Co. have also to state that at the request of numerous friends they are now making their Boilers of Iron, as well as Copper, by which the cost is reduced. These Boilers, which are now so well known, scarcely require description, but to those who have not seen them in operation, prospectuses will be forwarded, as well as reference of the highest authority; or they may be seen at most of the Nobility's seats and principal Nurseries throughout the kingdom.

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Conservatories, &c., of Iron or Wood, erected upon the most ornamental designs. Balconies, Palisading, Field and Garden Fences, Wire-work, &c.

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THIS MACHINE CAN BE APPLIED WHEREVER A FALL OF WATER OF A FEW FEET CAN BE OBTAINED; and its cheapness and durability, with the fact that upwards of 500 of them erected in England and other countries by Messrs. EASTON and AMOS have now been at work many years, afford ample proof of its great value and efficiency.

Estimates of the expense of the Machine, Pipes for the conveyance of Water, Tanks, and Reservoirs, may be had on application to Messrs. EASTON and AMOS, CONSULTING ENGINEERS to the ROYAL AGRICULTURAL SOCIETY, at their office in Orange-street, Trafalgar-square, or at the Works in the Grove, Southwark, London.

ALEXANDER SHANKS AND SON, MACHINE MAKERS, Ogilvy-place, Arbroath, respectfully solicit the attention of the Nobility, Gentry, and Gardeners to their IMPROVED GRASS CUTTING ROLLING MACHINE for LAWNS, the completeness of which has now been fully proved. The Machine works with perfect ease, producing a beautiful smooth surface, and attended with a saving of labour of 80 per cent.

FROM MR. CHARLES M'INTOSH, CHIEF GARDENER TO HIS GRACE THE DUKE OF BUCCLEUCH, DALKEITH PARK.

"Dalkeith Park, June 26, 1847.

"Gentlemen,—In reply to yours of the 15th inst., it gives me great pleasure to state that your Grass-Cutting Machine has far exceeded my expectation. We have it in constant use, and find that it does its work most completely. As to the saving of time, it is not easy to calculate accurately; but of this I am satisfied, that the expense of the Machine will be saved in one year in all places of similar extent with the grounds here.—I am, gentlemen, your obedient servant,

"Messrs. Shanks and Son." "CHAS. M'INTOSH."

A. S. and SON respectfully solicit the attention of the Farmers, Agriculturists, and others to an improved STRAW or HAY CUTTING MACHINE, which they have recently invented. The cheapness and utility of this improved Machine, combined with superior workmanship and durability, enable the inventors confidently to recommend it, as the most profitable Machine of the kind yet sent out. Further particulars and a list of prices may be had, by applying to the makers or to their Agents. Agents for London, Messrs. J. and C. Lee, Nursery and Seedsmen, Hammersmith; Hertford, Mr. George Folkard, Ironmonger; Liverpool, Messrs. Charles D. Young and Co., Castle Buildings, Derby-square; Manchester, Messrs. Francis and James Dickson and Co., Seedsmen, 106, Deansgate; Wakefield, Mr. Wm. Barratt, Nursery and Seedsman, St. Johns; Chester, Messrs. F. and J. Dickson, Nursery and Seedsmen; Glasgow, Messrs. Charles D. Young, and Co., 32, St. Enoch-square; Edinburgh, Messrs. Charles D. Young and Co., 48, North Bridge; Perth, Messrs. Dickson and Turnbull, Nursery and Seedsmen.

FLEXIBLE INDIA-RUBBER HOSE PIPES.

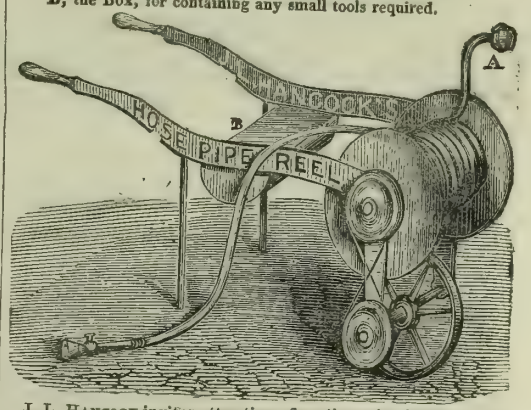
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All letters or Orders addressed to J. L. H. at the Manufactory and Warehouse, Goswell-mews, Goswell-road, London, will meet with immediate attention.

A, represents the Union-joint, for effecting the communication between the Hose-reel and the Tank, or Reservoir.

B, the Box, for containing any small tools required.



J. L. HANCOCK invites attention of parties using long lengths of the Flexible Garden Hose, to his SELF-ACTING HOSE PIPE REEL, which is found a most convenient machine for winding up and conveying away the Hose when out of use.

THE GARDENERS' CHRONICLE for Sale, from the commencement in 1841 to the end of 1849, perfect, very clean, and in excellent condition. Price for the set, 8*l.* 8*s.*—Address A.B., Mr. Gaines's Nursery, Battersea, Surrey.

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AND
AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 20—1850.] SATURDAY, MAY 18. [PRICE 6*d.*

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ROYAL BOTANIC SOCIETY, REGENT'S PARK. GENERAL EXHIBITIONS of FLOWERS AND FRUIT on WEDNESDAYS, JUNE 12th and JULY 3d. AMERICAN PLANTS on SATURDAYS, MAY 25th and JUNE 1st.

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"ACHIMENES: *William Carmichael.* Your hybrid between A. patens and A. longiflora is distinct from both the flowers, being about the size of A. longiflora, with a colour intermediate betwixt the parents. It is undoubtedly a desirable acquisition to this already useful and ornamental class of plants."—Gardeners' Journal, August 18, 1849.

R. GLENDINNING possessing the whole stock of the above desirable Achimenes, will be prepared to send out good plants the first week in June, at 7*s.* 6*d.* each. For every three ordered one extra will be added.—Chiswick Nursery, near London.

AZALEA INDICA.—This splendid tribe of Plants is now in FULL BLOOM at MESSRS. LANE and SON'S Nurseries, Great Berkhamstead, which are only a short distance from the Station on the London and North-Western Railway. A visit would amply repay all those interested in these plants, the mass of bloom being beyond description,

THE NEWEST AND MOST BEAUTIFUL PLANTS FOR BEDDING OUT can now be supplied by YOUELL and Co., comprising the most distinct and striking varieties of recent introduction, at 4*s.*, 6*s.*, 9*s.*, and 12*s.* per doz., viz, Fuchsias, Verbenas, Petunias, Antirrhinums, Anagallis, Bouvardias, Calceolarias, Chrysanthemums, Cupheas, Carnations, Geraniums (scarlet and fancy kinds), Heliotropes, Lantanas, Lobelias, Lychnis, Mesembryanthemums, Nemophila maculata, Pansies, Pentstemons, Phloxes, Salvias, Double White Rockets, Zauschneria, &c., of which Catalogues can be had on application.—Royal Nursery, Great Yarmouth.

EDWARD GEORGE HENDERSON, Wellington Nursery, St. John's Wood, London, begs to offer the following New and Select Plants:

Scarlet Geranium, "Commander-in-Chief" ... 10*s.* 6*d.*
,, ,, "Excellence" 7 6
Allowance, on each, to the Trade, if three are taken.

NEW FUCHSIAS (Henderson's).

Prince of Orange, Fair Rosamond, Don Giovanni, Sims Reeves, Pearl of England, Grand Master, and Confidence. The set of seven for 30*s.*, with the usual discount to the Trade.

BEDDING PLANTS.

Bouvardia leiantha, orange	5*s.*	0*d.*	
,, Jacquini	2	6	
Cuphea Pellerii ...	5	0	
,, miniata speciosa, fine	5	0	
,, Donckelaarii ...	3	6	
,, floribunda grandiflora	5	0	
Calceolaria sulphurea splendens ...	3	6	
Gaillardia splendidissima	1	6	
Heliotropium corymbosum	2	6	
Lantana delicatissima	2	6	
,, Sellowii grandiflora	2	6	
,, trifoliata	2	6	
Lobelia erinus maxima, 9*d.*, or 8*s.* per doz.			
,, erinus lilacina, 9*d.* or 8*s.* per doz.			
,, coronopifolia, a dwarf shrubby variety	1	0	
Verbena geranifolia, novel	1	0	
Lopezia villosa, very fine for winter blooming ...	1*s.*	6*d.*	
,, miniata, do. ...	1	6	
,, miniata superba, do.	1	6	
Mimulus rubinus ...	1	0	
,, rubescens ...	1	0	
,, Sir Robert Peel ...	1	0	
,, purpureus maculatus	1	0	
Petunia viridis marginata	3	6	
Pentstemon azureum, true	2	6	
,, heterophyllum ...	1	6	
,, gentianoides Buckii	1	6	
,, gentianoides Clowesii	1	6	
Phlox Drummondii atropurpurea	0	9	
,, ,, Jarrattii ...	1	6	
,, ,, Leopoldina	1	6	
,, ,, oculata ...	0	9	
Salvia Lambinonii, rich plum purple ...	3	6	
,, species alba ...	2	6	

NEW HERBACEOUS PLANTS.

Campanula nobilis alba	7*s.*	6*d.*	
Dielytra spectabile ...	5	0	
Funkia grandiflora ...	3	6	
Potentilla Menziesii ...	2*s.*	0*d.*	
Primula nigra pleno ...	10	6	
Scutellaria macrantha	3	6	
,, canescens ...	5	0	

SELECT PLANTS.

Chænesthes lanceolata, true	3*s.*	6*d.*	
Hibiscus longipedunculatus	5	0	
Manonia crotolarioides, purple	2	6	
Oxalis caprina, fine large yellow, like "Boweii"	1	6	
Siphocampylus lanceolatus	5*s.*	0*d.*	
Solanum somniculatum, a large deep lilac flower, and a profuse bloomer ...	3	6	
Tropæolum Smithii ...	2	6	
Veronica Andersonii ...	10	6	
Maurandya Emeryana	2	0	

The Trade supplied.

N.B. Descriptive Priced Catalogues of all the New Bedding and Soft-wooded Plants are just published, and will be sent on application. Also Lists of Greenhouse and Stove Plants, &c.

E. G. H. has at the present time in his establishment a few excellent Gardeners, waiting for engagements, who can be highly recommended.

ROYAL BOTANIC SOCIETY,

REGENT'S PARK.

AWARD OF PRIZES AT THE EXHIBITION HELD MAY 8TH, 1850.

EXTRA GOLD MEDAL.

Mr. MAY, Gardener to Mrs. Lawrence, Ealing Park, for 30 Stove and Greenhouse Plants
Mr. WILLIAMS, Gardener to C. B. Warner, Esq., Hoddesdon, Herts, for 25 Exotic Orchids

MEDIUM GOLD MEDAL.

Mr. COLE, Gardener to H. Colyer, Esq., Dartford, Kent, for 30 Stove and Greenhouse Plants
Mr. GREEN, Gardener to Sir E. Antrobus, Cheam, Surrey, for 20 Stove and Greenhouse Plants
Mr. MYLAM, Gardener to J. Rucker, Esq., Wandsworth, for 15 Cape Heaths
Mr. MAY, Gardener to Mrs. Lawrence, for 12 Greenhouse Azaleas
Mr. SCHROEDER, Stratford-green, for 15 Exotic Orchids

GOLD MEDAL.

Mr. TAYLOR, Gardener to J. Coster, Esq., Streatham, Surrey, for 20 Stove and Greenhouse Plants
Mr. SMITH, Gardener to W. Quilter, Esq., Crown Hill, Norwood, for 15 Cape Heaths
Messrs. ROLLISSON, Nurserymen, Tooting, Surrey, for 12 Cape Heaths
Messrs. FRAZER, Nurserymen, Lea-bridge-road, Leyton, for 12 Greenhouse Azaleas
Mr. DOBSON, Gardener to E. Beck, Esq., Worton Cottage, Isleworth, for 10 Exotic Orchids
Mr. COCK, Chiswick, for 12 Pelargoniums, in 8-inch pots
Mr. DOBSON, for 12 Pelargoniums, in 8-inch pots
Messrs. LANE and SON, Nurserymen, Great Berkampstead, Herts, for 12 Roses, in pots
Messrs. PAUL and SON, Nurserymen, Cheshunt, Herts, for 12 Roses, in pots

LARGE SILVER-GILT MEDAL.

Mr. CROXFORD, Gardener to H. Barnes, Esq., Stamford-hill, for 10 Stove and Greenhouse Plants
Mr. GREEN, for 6 Greenhouse Azaleas
Mr. FRANKLIN, Gardener to Mrs. Lawrence, for 15 Exotic Orchids
Mr. FRANCIS, Nurseryman, Hertford Nursery, Herts, for 12 Roses, in pots
A. ROWLAND, Esq., Lewisham, Kent, for 8 Roses, in pots

LARGE SILVER MEDAL.

Mr. COLE, for 15 Cape Heaths
Messrs. FAIRBAIRN, Nurserymen, Clapham, for 12 Cape Heaths
Messrs. VEITCH and SON, Nurserymen, Exeter, for 12 Cape Heaths
Messrs. LANE and SON, for 12 Greenhouse Azaleas
Mr. ROBINSON, Gardener to J. Simpson, Esq., Thames-bank, Pimlico, for 12 Pelargoniums, in 8-inch pots
Mr. GAINES, Nurseryman, Battersea, for 12 Pelargoniums, in 8-inch pots
Mr. PARKER, Gardener to J. H. Oughton, Esq., Surrey, for 6 Pelargoniums, in 11-inch pots
Mr. ROBINSON, for 6 Fancy Pelargoniums, in 8-inch pots

SILVER-GILT MEDAL.

Messrs. FRAZER, for 20 Stove and Greenhouse Plants
Mr. LAYBANK, Gardener to I. Maudslay, Esq., Norwood, for 10 Stove and Greenhouse Plants
Mr. GREEN, for 6 tall Cacti
Mr. MAY, Gardener to E. Goodhart, Esq., Langley Park, Kent, for 6 Cape Heaths
Mr. PARKER, for 6 Cape Pelargoniums
Mr. FALCONER, Gardener to A. Palmer, Esq., Cheam, Surrey, for 6 Greenhouse Azaleas
Mr. GAINES, for 6 Pelargoniums, in 11-inch pots
R. MOSELY, Esq., Pine-apple-place, Maida-hill, for 6 Fancy Pelargoniums, in 8-inch pots
A. STAINS, Esq., Middlesex-place, New-road, for 6 Fancy Pelargoniums, in 8-inch pots
Mr. GAINES, for 6 Fancy Pelargoniums, in 8-inch pots
Mr. TERRY, Gardener to Lady Puller, Youngsbury, Herts, for 8 Roses, in pots
Messrs. LANE and SON for 6 Yellow Roses, in pots
Messrs. LUCOMBE and PINCE, Nurserymen, Exeter, for Dendrobium cærulescens (single specimen)

SILVER MEDAL.

Messrs. PAMPLIN, Nurserymen, Walthamstow, Essex, for 20 Stove and Greenhouse Plants
Mr. BRUCE, Gardener to B. Miller, Esq., Colyer's-wood, Lower Tooting, for 10 Stove and Greenhouse Plants
Mr. DENNET, Gardener to W. H. Gilliot, Esq., Clapham-park, Surrey, for 10 Stove and Greenhouse Plants
Messrs. VEITCH and SON, for Medinilla bracteata (new plant)
Messrs. LUCOMBE and PINCE, for Gardenia malleifera; also for Clerodendron Benthamiana (new plant)
Mr. WILLIAMS, Gardener to Miss Traill, Hayes'-place, Bromley, Kent, for 6 Cape Heaths
Mr. DENNET, Gardener to W. H. Gilliot, Esq., for 6 Greenhouse Azaleas
A. STAINS, Esq., for 12 Pelargoniums, in 8-inch pots
Messrs. HENDERSON, Nurserymen, Pine-apple-place, for 6 Cinerarias

SMALL SILVER MEDAL.

Mr. WILLIAMS, for 10 Stove and Greenhouse Plants
Mr. MALYON, Blackheath, for 10 Stove and Greenhouse Plants
Mr. MAY, Gardener to Mrs. Lawrence, for Pimelea spectabilis
Mr. SLOWE, Gardener to R. Baker, Esq., Bayfordbury-park, for 10 Stove and Greenhouse Plants [rare]
Messrs. VEITCH and SON, for Saccolabium miniatum (new or
Messrs. ROLLISSON, for Cypripedium Lowei
Messrs. VEITCH and SON, for Cinchona lanceolata (new Orchid), a plant of economical interest
Mr. COLE, for Correct Labels in Class 1st
Mr. SCHROEDER, for Correct Labels in Class 2d
Mr. TURNER, Gardener to C. Williams, Esq., Holloway, for 12 Alpines
Mr. GREEN, for 6 Cape Heaths
Mr. DOBSON, for "Rosa," a seedling Pelargonium of 1849
Mr. TURNER, Slough, for 24 Pansies
Mr. HENDERSON, Nurseryman, Wellington-road, for 6 Cinerarias
Mr. ROSER, Gardener to J. Bradbury, Esq., Streatham, Surrey, for 8 Roses in pots
Mr. FRANCIS, for 6 yellow Roses in pots
Mr. STANLY, Gardener to H. Berens, Esq., Sidcup, Kent, for 6 Calceolarias

BRONZE MEDAL.

Mr. STANLY, for 10 Stove and Greenhouse Plants [specimen]
Messrs. VEITCH and SON, for Boronia spathulata (single
Messrs. LUCOMBE and PINCE, for Hoya imperialis (ditto)
Messrs. LANE and SON, for Rhododendron Gibsonii (ditto)
Messrs. VEITCH and SON, for Dendrobium creaticum, for Dendrobium sp. from Central India, for Pimelea Niessbergiana, for Dielytra spectabilis, and for Stylidium ciliare (now or rare Orchids and others in bloom)
Mr. TAYLOR, Gardener to J. Coster, Esq., for Pimelea Niessbergiana
Messrs. HENDERSON, Pine-apple-place, for Acacia grandis, for Pimelea Niessbergiana, and for Pimelea Verschaffeltiana
Mr. WILLIAMS, Gardener to C. B. Warner, Esq., for Correct Labels in Class 1st
Messrs. VEITCH and SON, for Correct Labels in Class 2d
Mr. WOOD, Norwood, for 12 Alpines
Mr. BRAGG, Nurseryman, Slough, for 24 Pansies
Mr. ROBINSON, Gardener to J. Simpson, Esq., for 6 Cinerarias
Messrs. PAUL and SON, for 6 yellow Roses in pots

CERTIFICATE OF MERIT.

Mr. YOUNG, Gardener to C. Barron, Esq., Camberwell, for 10 Stove and Greenhouse Plants
Messrs. ROLLISSON, for Epacris miniata
Mr. STANLY, for Hevea sp.
Mr. TAYLOR, for Correct Labels in Class 1st
Mr. WOOLEY, for Correct Labels in Class 2d
Messrs. LUCOMBE and PINCE, for Erica Hanburyana, for E. cinnabarina, for E. Barnesii, and for E. Ruckeri (seedling Heaths)
Mr. EPPS, Nurseryman, Maidstone, Kent, for "Ne plus ultra," a seedling Heath
Mr. IVERY, Nurseryman, Peckham, for 6 Cinerarias
Mr. HENDERSON, Wellington-road, for "Lady Hume Campbell" and for "Madame Sontag" (Seedling Cinerarias)
Messrs. HENDERSON, Pine-apple-place, for "Jetty Treffz," a seedling Cineraria.

R. MARNOCK.

NEW BLUE VERBENA—"MRS. MILLS," with white centre, of the finest shape and habit; equally adapted for bedding or pot culture, warranted much the best of its class.

C. TURNER has some strong plants left of the above at 5s. each, one plant over for every two ordered.—Royal Nursery, Slough.

HOME GROWN SEEDS, CARRIAGE FREE BY GREAT WESTERN, SOUTH WESTERN, OR SOUTH EASTERN RAILWAYS.

	per lb.	per gal.
THE ASHCROFT SWEDE TURNIP.—This is decidedly the best of all Swedes; it is very large and better shaped than the Liverpool Swede, which it somewhat resembles; it is perfectly hardy, and being of quick and strong growth it is so soon in rough leaf as to be much less subject to suffer from attacks of the fly. The colour is yellow, with purple top	1s 0d	6s 0d
EARLY SIX WEEKS TURNIP.—An excellent sort for early sowing to feed off for Wheat. *A Field of these Turnips grown (from Messrs. Sutton's Seed) by Mr. E. W. Moore, at Coleshill, gained the 20l. prize at the Farringdon Agricultural Show in December last*	1 0	6 0
SUTTON'S PURPLE-TOP YELLOW HYBRID.—*This sort is equal to a fine yellow Swede, may be sown much later, and keeps well till spring*	1 0	6 0
DALE'S HYBRID.—A fine green-top Turnip ...	0 10	4 6
YELLOW TANKARD.—Very excellent ...	0 11	5 0
LINCOLNSHIRE RED.—*The original stock of this superior New Turnip was presented to J. S. and Sons by Philip Pusey, Esq., M.P.*	1 0	6 0

Liverpool Swedes, Laing's, Matson's, Fettercairn, and other Swedes. Fine Green-round, Globe, Tankards, and other Turnips, true stocks of home growth, 20s. to 30s. per bushel (as see Sutton's Agricultural Seed Catalogue). True Italian Rye Grass, 6s. 6d. per bushel. Fresh imported Lucerne, 80s. per cwt. White Mustard Seed, 10s. per bushel. French Furze, 1s. per lb., and all other Agricultural Seeds at lowest market prices.

JOHN SUTTON and SONS, Nos. 7 and 8, Market-place, Reading, Berks, confidently recommend the above articles as being of very superior quality; *they beg also to refer to their Advertisement which appeared on the last page of the Gardeners' Chronicle on the 30th of March*, by which it will be seen that they supply GRASS SEEDS FOR PERMANENT PASTURE, either separate or mixed, AT MUCH LOWER PRICES than those usually charged. *Carriage free, as see above.*

DEANE'S WARRANTED GARDEN TOOLS.—Horticulturists, and all interested in Gardening pursuits, are invited to examine G. and J. DEANE'S extensive Stock of GARDENING AND PRUNING IMPLEMENTS, best London made Garden Engines and Syringes, Coalbrookdale Garden Seats and Chairs.

Averuncators
Axes
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Cases of Pruning Instruments
Chaff Engines
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Daisy Rakes
Dibbles
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Flower Scissors
,, Stands in Wires and Iron
Fumigators
Galvanic Bordersand Plant Protectors
Garden Chairs and Seats
,, Loops
,, Rollers
Garden Scrapers
Grape Gatherers and Scissors
Gravel Rakes and Sieves
Greenhouse Doors and Frames
Hammers
Hand-glass Frames
Hay Knives
Hoes of every pattern
Horticultural Hammers and Hatchets
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Labels, various patterns, in zinc, porcelain, &c.
Lines and Reels
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Menographs
Metallic Wire
Milton Hatchets
Mole Traps
Mowing Machine
Pick Axes
Potato Forks
Pruning Bills
,, Knives, various
,, Saws
,, Scissors
,, Shears [riety.
Rakes in great va-
Reaping Hooks
Scythes
Scythe Stones
Shears, various
Sickles
Sickle Saws
Spades and Shovels
Spuds
Switch Hooks
Thistle Hooks
Transplanting Tools
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Turfing Irons
Wall Nails
Watering Pots
Weed Extractorsand Hooks
Wheelbarrows
Youths' Set of Tools

G. and J. DEANE are Sole Agents for LINGHAM'S PERMANENT LABELS, samples of which, with the Illustrated List of Horticultural Tools, can be sent, post paid, to any part of the United Kingdom.—DEANE'S Horticultural Tool Warehouse, opening to the Monument, 46, King William-st., London-bridge.

TULIPS.

TO BE SOLD, by Private Contract, on WEDNESDAY, THURSDAY, and FRIDAY, the 21st, 22d, and 23d instant, at Park Cottage, Charlton Park, Cheltenham, where the same may be viewed daily, a very choice collection of TULIPS, containing an extensive variety of the best sorts, late the property of Mr. JAMES BAILEY, deceased; also a variety of Seedling and other Pansies, Polyanthuses, &c., amongst which are many prize flowers.

PLANTS, NEW AND SELECT.

BASS AND ROWN are now sending out the following choice selections. Their Descriptive Catalogue may be had by inclosing four penny stamps.

GERANIUMS.

Twelve of the following, all new varieties of last season, for 42s.; or Purchaser's selection, 55s.: Topping's Brilliant and Elegans, Hoyle's Crusader, Rolla, Prometheus, and Sparkler; Beck's Delicatissima, Emilia, Princess, Refulgent, Symmetry, Sundown, and Harlequin; Story's Mont Blanc, No. 1; Whomes' Windsor Castle, Queen Victoria, and Princess Helena.

Twelve of the following choice varieties for 21s.; Purchaser's selection, 25s.: Hoyle's Augusta, Isabella, and Josephus; Beck's Crusader, Desdemona, Gigantic, Gulielma, Honora, Isabella, Marc Antony, Margaretta, Mustee, Rosy Circle, and Zenobia; Lyne's Fire-fly, Forget-me-Not, Jenny Lind, Marmion, Merry Monarch, and Peri; Foster's Magog, Orion, Duke of Hamilton, and Grandis; Begum, Thunderer, Black Prince, Duchess of Leinster, Flora's Flag, Mary Queen of Scots, Mrs. Brock, and Sarah Jane.

Twelve fine show varieties, 12s.; 25 ditto, 22s.; 50 ditto, 40s. Good old named sorts, 6s. to 9s. per doz.; Scarlets, 6s. to 9s. per dozen.

FANCY GERANIUMS.

Twelve of the following for 15s.; Purchaser's selection, 20s.: Shepherd's Beauty of Winchester, Lady Rivers, and Queen Victoria; Chauviere's Annais, Bouquet tout fait; Jehu superb, Maid of Anjou, Statuiski, and Zelia; Ambrose's Jenny Lind; Henderson's Madame Grisi, Jehu, Jehu Improved; Katinka, Black Prince, La Belle d'Africana, Lady Flora Hastings, and Yeatmanianum.

FUCHSIAS. †

Twelve of the following new varieties for 15s.; Purchaser's selection, 18s.: Low's Splendida, Story's Elegantissima, Newtoniensis, and Gem of the West; Smith's Lord Nelson, Eastern Beauty, and Ne plus ultra; Turville's Elegance, Gem, Fire King, Shylock, and Beauty of Chelmsford; Tiley's Sir Charles Napier; Miellez's General Negrier; Pope's Criterion; Mayle's Purity, Kendall's Elizabeth; Barnes' Rev. Freeman.

12 superior older vars.	9s. 0d	12 fine varieties ...	5s. 0d
25 do. do.	17 6	25 do.	10 0

Fifty varieties, in very choice assortment, 25s.

PETUNIAS. †

Twelve of the following for 12s.; Purchaser's selection, 15s.: Bass's Brilliant, Beauty of Suffolk, Delicata, Hesperus, Nymph, Spotted Beauty, Renown, and Telegraph; Barnes' Exquisite, Splendens, and Respiendens; Louis Buonaparte, Striata Perfecta, Othello, Centurion, Maculata, Romulus, Rosetta, Una, and Rosamond.

12 fine showy varieties	5s. 0d	12 superior varieties ...	9s. 0d
25 do. do. ...	10 0	25 do. do. ...	15 0

VERBENAS. †

Twelve of the following, all new varieties of last season, 12s.: Barker's Cardinal,* Junius,* Eyebright, Duchess of Northumberland, Miss Thorold,* and Lord of the Isles; Wyness' Princess Alice;* Smith's Napier, Burgundy, Psyche,* War Eagle,* Lady Russell, and Queen of the French; Epps' Eclipse* and Eppsii;* Ivery's Union Jack* and Attraction; Chauviere's John Salter, General Lamoriciere, Chauverii,* Rosati, and Madame Ravershon; Dufoy's Apollon* and Morphee;* Young's Royal Purple and Brilliant: Barnes' Queen of Summer;* and Joiris' La Candeur.

12 fine showy varieties	4s. 0d	12 superior varieties ...	7s. 6d
25 do. do. ...	7 6	25 do. do. ...	12 0

Fifty varieties, in choice assortment, 20s. Those of the above Verbenas marked thus (*) are best adapted for bedding, being of good habit, and of bright showy colours, and can be had by the dozen, or half-dozen of each sort, at 9s. per dozen, with the following at 6s.; not less than six of each:

Robinson's Defiance	Barker's St. Margaret
Ivery's Emperor of China	White Perfection
Englefieldiana	Amulet (lilac).

DAHLIAS.

12 superior vars. of 1849	21s. 0d	12 fancy vars. of 1849 ...	18s. 0d
12 fine varieties ...	5 0	12 fine fancy vars. ...	5 0
25 ditto	10 0	12 superior ditto ...	9 0
12 superior ditto ...	9 0	50 vars., including new	42 0

CHRYSANTHEMUMS. †

12 fine varieties ...	6s. 0d	12 superior varieties ...	9s. 0d
25 do.	10 6	25 do. do. ...	17 6

Forty varieties, in choice assortment, 30s.

GREENHOUSE PLANTS.

12 fine showy varieties	15s. 0d	12 extra choice varieties	25s. 0d
25 do. do. ...	28 0	50 fine varieties... ...	50 0

Greenhouse Climbing Plants, 12 select varieties, 12s.
Stove Plants, 12 fine and select varieties, 18s.
†Achimenes, 6 splendid new varieties, 7s. 6d.
,, 12 fine and select varieties, 6s.
Gloxinias, 12 varieties, 15s.; 6 superior new varieties, 9s.
Azalea indica, 12 fine varieties, 16s.; 6 superior do., 10s.
Cinerarias, 12 fine named varieties for 10s.
Hardy Herbaceous Plants, 100 showy varieties, 30s.; 50 do., 18s.; 25 do., 10s.; 100 superior, 50s.; 50 do., 32s.; 25 do., 17s. 6d.
Hardy Rock Plants, 25 varieties, 12s.; 12 do., 7s. 6d.
†Phlox, 12 fine varieties, 6s.; 12 superior do., 9s.
Antirrhinume, 12 fine varieties, 6s.; 12 superior do., 10s.
Roses, 12 fine autumnal blooming varieties, in pots, 12s.

NEW PLANTS, strong and well established.

Gloxinia Grandis, each,	5s. 0d	Liebegia speciosa, each,	3s. 6d
,, Wortleyana...	2 6	Luculia Pinciana ...	2 6
Geranium Magnificent	21 0	Tritonia aurea, 3s. 6d. to	7 6
Chirita Moonii	2 6	Fuchsia spectabile, †	
Æschynanthus speciosus	3 6	2s. 6d. to	3 6
Indigofera decora ...	3 6	Fuchsia corymbiflora	
Verbena Magnificent †...	2 6	alba †	3 6

CHOICE SEEDLING PETUNIAS.†

Magnificent	Orion	Cassandra
Castor	Pollux	Syren

For description see *Gardeners' Chronicle*, April 14, 20, and 27.
The set 22s. 6d.; usual allowance to the Trade.
Those marked † can be sent free by post if required.
Goods sent carriage free to London, and with all orders of 40s. and upwards extra plants presented. Remittances requested from unknown correspondents. Post-office orders to be made payable to BASS and BROWN, or STEPHEN BROWN.
Seed and Horticultural Establishment, Sudbury, Suffolk.

MR. GLENNY REQUESTS that all Communications to him upon the subject of Sales, Valuations, attendance as Judge, or respecting the "Country Gentleman," Cottage, Villa, Farm, and Garden Newspaper, may be addressed 420, Strand, or "Scottish Agriculturist's Journal" Office, St. Andrew-street, Edinburgh.

TO EMIGRANTS.

FORTY ACRES of LAND (five acres broken up, fenced, and sown), a good substantial LOG HOUSE, and a free passage to any balloted family of the POTTER'S JOINT STOCK EMIGRATION SOCIETY AND SAVINGS' FUND, enrolled under Act of Parliament. Contributions—Three pence per week; every 1l. 1s. 6d. constituting a Share, and giving the right to ballot. Open to men of all trades. One Estate of 1600 Acres, called Potterville, already peopled; and FIFTY THOUSAND ACRES now in course of peopling. The latter is called Emancipation Ferry, is situate on the Fox River, near Fort Winnebago, in the state of Wisconsin, United States, North America, and has received Six Hundred Families in the course of the last eighteen months.—For particulars apply to the Agent and Founder, Mr. WILLIAM EVANS, Examiner Office, Shelton, Staffordshire Potteries.

Protection to Emigrants and Passage arranged at the Shipping Office of the Society's Agent, WILLIAM EVANS, 104, Dale-street, Liverpool.

ZOOLOGICAL GARDENS, REGENT'S PARK.—Admission every day in WHITSUN WEEK, except Saturday, at SIXPENCE each person.

DANECROFT NURSERY, STOWMARKET, SUFFOLK.—All Persons who claim any Debts against the Estate and Effects of the late Mr. SAMUEL GIRLING, Florist and Nurseryman, deceased, who have not received a Dividend upon the amount thereof, are requested immediately to apply for the payment of the Dividend to me, at Peasenhall, near Yoxford, that the final Dividend may shortly be made.—WILLIAM GIRLING, Peasenhall, May 18.

MAYLE'S MODEL FUCHSIAS FOR 1850.—No grower can expect to win a prize at any of the principal exhibitions in town or country without these magnificent reflexed varieties.

Messrs. MAYLE and Co. will send out their SEVEN NEW FUCHSIAS on the 20th June, extra strong plants. From the very high opinions expressed of their merits by Dr. Lindley, Mr. Glenny, &c., they require no further comment from us. They are the things of the season, and must be had by all who wish to keep pace with the times.

No. 4, DIADEM, was shown at Walsall, near Birmingham, with two blooms, May 8th, and was awarded an extra prize. Judges' opinion: "By far the best ever raised."

Those in bloom will be exhibited at Chiswick and Regent's-park June shows. The earliest orders will secure the strongest plants. Circulars can be had. Also Mr. Hoyles' superb Geraniums, a few extra strong blooming plants being left.

Stove, Greenhouse, Bedding Plants, &c., including every novelty of the season.—105, New-street, Birmingham.

HOLLYHOCK SEED.

J. KITLEY begs to inform the Admirers of the HOLLYHOCK, that he has a small quantity of SEED saved from very choice double varieties of all colours, a packet of which will be sent post free, on the receipt of postage stamps to the amount of 2*s.* 6*d.*, or in 18 named varieties, for 5*s.*—Lyncombe Vale Nursery, Bath, May 18.

EDWARD DENYER having the entire Stock of a very brilliant SCARLET GERANIUM, named "ADMIRAL VON TROMP," recommends it with the greatest confidence to his kind Patrons, feeling assured that it will give entire satisfaction, as it is one of the most profuse bloomers known; in growth, the habit of Tom Thumb. E. D. has much pleasure in offering the above at 18*s.* per dozen, or 2*s.* each; good Plants in pots are now ready.

E. D. begs to inform the Lovers of ROSES that they are now in full bloom, in pots, in the Rose-house, and solicits his Friends' inspection of them. E. D. has been successful in raising large quantities of Geraniums, Verbenas, Calceolarias, &c., for turning out into the flower-borders, at 4*s.* per dozen; extra large size, 6*s.* E. D. informs his Friends that he has no Seed Shop in London.—Catalogues to be had on application at the Nurseries, Loughborough-road, Brixton, near London.

RENDLE'S PRICED CATALOGUE OF PLANTS IS JUST PUBLISHED, and can be had for one postage stamp.

Ever since our invention of the "Tank System of Heating Horticultural Buildings" (for which a Gold Medal was unanimously awarded to us by the Royal Devon and Cornwall Horticultural Society) we have been enabled to propagate plants in such abundance, with scarcely a failure, that we are enabled to offer them at

VERY REDUCED PRICES.

We shall have at least THREE THOUSAND DAHLIAS and FUCHSIAS ready for delivery after the 10th of May next, as well as a large quantity of Geraniums, Camellias, Indian Azaleas, Cinerarias, Verbenas, Antirrhinums, Chrysanthemums, with a large collection of Greenhouse, Hothouse, and Herbaceous plants, prices of which will be found in our new Catalogue, on application to

WILLIAM E. RENDLE & CO., Seed Merchants, Plymouth. ESTABLISHED 1786.

DAHLIAS.—Magnificent (Keynes'), 10*s.* 6*d.*, 9 certificates; Sir F. Bathurst (Keynes'), 10*s.* 6*d.*, 9 certificates; Snowflake (Dodd's), 10*s.* 6*d.*, 5 certificates; Queen of Primroses (Keynes'), 10*s.* 6*d.*, 5 certificates; Gaiety (Dodd's), 7*s.* 6*d.*, 4 certificates; Elizabeth Proctor's Fancy, 10*s.* 6*d.*, 7 certificates; Highland Chief, 7*s.* 6*d.*, 5 certificates; Flying Dutchman, 7*s.* 6*d.*, 5 certificates; Forget-me-not (Hooper's), 7*s.* 6*d.*, with all the leading show flowers of the season, are now ready for sending out, in extra fine plants, on application to JOHN KEYNES, Castle-street Nursery, Salisbury.—May 18.

CHEAP BEDDING PLANTS.

JOHN HAYES, FLORIST, Farnham, Surrey, will send out the following Bedding Geraniums, 3*s.* 6*d.* per dozen; all other kinds of Bedding Plants, 2*s.* 6*d.* per dozen. Geraniums sent out of pots, 2*s.* 9*d.* per dozen; all other kinds, 1*s.* 8*d.* out of pots. Descriptive Catalogues sent on the receipt of 1*d.* postage stamp.

FARNHAM CASTLE CUCUMBER.—Two Seeds of this stout Black Spine Cucumber will be sent, on the receipt of 12 postage stamps. May be grown 24 inches long. Twelve seeds of Prize-fighter, ditto, for 12 stamps.—May 18.

EDWARD BECK, SLATE WORKS, ISLEWORTH. SLATE CISTERNS, &c.; COLE'S PATENT.

E. BECK informs Horticulturists and the Public generally that Mr. COLE has granted him the use of his Patent for the unexpired term, and he is now able to supply SLATE CISTERNS fastened without iron bolts or the usual oil cement, thereby doing away with the difficulty which has hitherto existed of forwarding such articles by rail or waggon, fixed and ready for use instead of in pieces, as heretofore.

E. B. will be happy to answer any inquiries as to the price of Cisterns, or any other Slate articles manufactured by him, such as Orange Tubs, Plant Boxes, Tanks, Shelves, Garden-path Edging, Hot-water Tank Covers, Flower Boxes for Balconies, Shelves fitted to hold water for Orchidaceous Houses, &c., all of which may be seen in use at Worton Cottage, Isleworth, on application to the Gardener, Sundays excepted.

Estimates given for Work as shown upon Drawings, and in specifications. A large stock of Slate Slabs of all sizes and thicknesses, kept on sale.

N.B.—Dairies fitted either with Shelves or Milk Pans, of very neat appearance.

CUCUMBER AND MELON BOXES AND LIGHTS.

One hundred 1, 2, and 3-light Boxes and Lights of all sizes ready for immediate use. Warranted best materials, packed and sent to all parts of the kingdom; 2-light Boxes and Lights from 1*l.* 4*s.* Garden Lights of every description, Conservatories, Green and Hot-houses, made and fixed in all parts of the kingdom. References given to the Nobility, Gentry, and the Trade, in most of the counties of England. JAS. WATTS, Hothouse Builder, Claremont-place, Old Kent-road, London.

HORTICULTURAL TOOLS.

GREEN AND CONSTABLE, 36, King William-street, five doors from London Bridge, have a large assortment of GARDEN TOOLS, containing all the recent inventions, and including Lyndon's Patent Cast Steel Spades, Shovels, and Garden Forks, Lord Vernon's Hoe, Jointed Hothouse Syringes, Transplanting Tools, Registered Garden Labels, Ladies' sets of Gardening implements, Pruning Shears, Knives, &c. Agents for the Vitreous Porcelain Garden Bordering.—36, King William-st., five doors from London Bridge.

MEETINGS AT WORTON COTTAGE.—The Censors of the "Florist and Garden Miscellany" inform raisers that there will be no Meeting on Wednesday next, the 22d inst., on account of the Royal South London Exhibition falling on that day. Flowers meanwhile may be forwarded, addressed to Mr. BECK, Worton Cottage, Isleworth, Middlesex.

HARDY AND SON, SEED GROWERS, Maldon, Essex, beg to offer, during this and next months, strong plants of the HERACLEUM GIGANTEUM, free by post, at 9*d.* each, or a packet of Seed for autumn sowing, 1*s.* Remittances requested.

In describing it, Mrs. Loudon, in the "Ladies' Companion," p. 141, observes—"It is one of the most magnificent plants in the world, growing 14 feet high, having a handsome fluted stem, 6 or 8 inches in diameter, with compound umbels of white flowers 12 feet in circumference, and leaves equally enormous, from 5 to 7 feet wide."

In the last number of the Journal of the Horticultural Society, Mr. Thomas Moore, F.B.S., Curator of the Chelsea Botanic Garden, speaks highly of it as an ornamental umbelliferous plant, of immense magnitude, appropriate to such situations as the bold openings of rude or wilderness scenery, &c.

The Gardeners' Chronicle.

SATURDAY, MAY 18, 1850.

MEETINGS FOR THE ENSUING WEEK.

MONDAY,	May	20	Chemical	8 P.M.
			Pathological	8 P.M.
			Medical	8 P.M.
			Statistical	8 P.M.
TUESDAY,	—	21	Pharmaceutical (Anniversary)	11 A.M.
			Civil Engineers	8 P.M.
WEDNESDAY,	—	22	Royal South London	1 P.M.
			Royal Botanic	3½ P.M.
			Society of Arts	8 P.M.
			Geological	8½ P.M.
THURSDAY,	—	23	Royal Soc. of Literature	4 P.M.
			Numismatic	7 P.M.
FRIDAY,	—	24	Linnean (Anniversary)	1 P.M.
			Philological (ditto)	8 P.M.
			Royal Institution	8½ P.M.
SATURDAY,	—	25	Royal Botanic Gardens (American Plant Show)	2 P.M.

COUNTRY SHOWS.—Tuesday, May 21: Derby Midland Horticultural.—Wednesday, May 22: York Horticultural.—Thursday, May 23: Royal Oxfordshire Horticultural, Liverpool Horticultural, and Bath Horticultural.

IT is difficult for those who have not read the late report upon the BRITISH MUSEUM to appreciate correctly the patience, industry, and skill with which the Royal Commissioners searched into the recesses of that monument raised to the genius of English maladministration. From witnesses, of some of whom the most favourable character would be that they were self-contradictory, absurd, or unwilling, has been elicited 1500 or 1600 folio pages of invaluable evidence, concerning a multitude of important facts, to which the commissioners did not think it necessary to make special reference in their report. Of this evidence more than half is already in the possession of the public, and the remainder will appear as soon as the index-maker shall have awakened from his slumbers. The story that it already tells us is far worse than even we, who live almost in the atmosphere of Russell-square, could have anticipated. A Board of Trustees, whose very number renders them powerless for good, presides over the national treasury of antiquities, literature, and natural science. A corps of principal officers, some of whom are men of high ability, others of no ability at all; none under efficient control, each claiming independent authority, and exercising it if he can—squabbling and quarrelling about rooms, and keys, and trumpery rights; now setting up a sort of pretence that they hold patent offices, and then asserting their immovability, snapping their fingers at trustees, Treasury, Parliament, and public opinion—form the staff to which the working of the Museum is confided. A straggling throng of ill-paid assistants, in some cases far superior to their officers in talent, industry, and personal acquirements, but possessing no more claim to the attention of the trustees than the menials who sweep the rooms, bring up the rear of the motley force. These facts are sufficiently indicated by the evidence itself, independently of the authentic rumours which are current in society. We quite agree with the commissioners that, for such a state of things, there is but one remedy—that of entrusting the executive management of the Museum to a small board of responsible officers, some of whom at least should be paid. To this, or something like it, the matter must come at last; and whenever that does happen, we venture to believe that one of the earliest measures will be the removal of the herbarium and its accompaniments to Kew. Room is already wanted for departments of natural history, better suited to such a place as London. Mr. ROBERT BROWN complains that he could not do what he wanted to do because he could not get a room (qu. 8343). But Mr. GRAY thinks that one of the rooms Mr. BROWN at first possessed might have done very well (qu. 3482); and hints pretty plainly that, the room in question, taken from him, has not been applied to the best purposes; "it would," he says, "have been equally convenient for me to have rooms *for my attendants to wash in*" (qu. 3483); and he in his turn complains that Mr. BROWN now wants another room (*ib.*) Some of the gentlemen, therefore, will, to a certainty, have to shift their quarters.

But Mr. ROBERT BROWN entirely objects to having anything to do with a garden. He thinks that to put an herbarium into a garden would prevent the herbarium being consulted with effect, and that, in short, a garden and an herbarium are things so essentially different that they are seldom thought of together. This gentlemen's evidence is as follows.

Qu. 3464.—Would not an advantage result to the botanical student from the connection of your department with living specimens of plants?—HARDLY ANY. That is to say, I think it would be much more than counterbalanced by the inconvenience of removing the collection to Kew, for example, as being the only botanical garden of any importance in the vicinity of London; but from which *it is much too distant for the convenience of botanists.*

3468.—Do not you think that it would be advantageous to the botanical student if your collection could be united with a good botanical garden, both of them being within a moderate distance of the wants of the metropolis?—The only such garden in existence, namely Kew Garden, is much too distant from the metropolis. I think *that by transferring the collection,* without a corresponding library, such as Sir JOSEPH BANKS's was, and such as I have access to here, although not equally convenient access, *it would become a dead letter. It could not, in short, be consulted with effect,* nor could the duties of the department be *satisfactorily* (!) carried on.

3320.—You have referred to the Jardin des Plantes at Paris; but the botanical collection there is a collection with a garden, is it not, and with living plants?—It is (along with the zoological and mineralogical collections) in connection with a garden certainly, but that depends on the garden being in the town. (!)

3321.—But the fact is, that the botanical collection is there connected with the living specimens of the plants?—It is; and chiefly from that cause.

3322.—Is not that the fact?—That is the fact.

3323.—Do not you think that that gives a great advantage to the botanical collection, and renders it an object of greater interest than it would be if it were separated from the garden?—I am not of opinion that it does so with respect to scientific consultation. *Consulting an herbarium and visiting a garden are two things* SO ENTIRELY DIFFERENT THAT THEY ARE SELDOM THOUGHT OF TOGETHER.

We need not say that the italics and other marks are our own.

If this astounding evidence were not found in a public document published by the authority of a Royal Commission, we should have regarded it as a provoking misrepresentation of the witness's words. An herbarium and a garden entirely different! Why until now we always thought they were so entirely the same that the only difference consists in an herbarium being a bad makeshift for a garden. The old name of an herbarium was Hortus siccus, or dry garden; and it perfectly expresses what the herbarium is. It is a collection of plants dried so that they may be examined at all times and under all circumstances; while a garden is a collection of living plants. Both are repositories of evidence, of which the student may make use; that use is easy in a garden, difficult in an herbarium. A good deal of tact and practice is required in the latter case, in addition to any acquaintance with science; in the former such tact and practice are superfluous. But more; it is notorious that a numerous class of facts cannot be ascertained at all by an herbarium; such as manner of growth, colour, texture, the forms of succulent organs, and all the phenomena of vegetable life; it is in a garden only that such points can be investigated. Vegetable anatomy, again, the foundation of vegetable physiology itself, consists essentially in an examination of living tissues; the aid which the herbarium affords in such an enquiry is altogether subordinate; very useful, very important, no doubt, but still less useful and less important than what the garden affords. In short an herbarium is a mere makeshift—a makeshift, indeed, indispensable to botanical enquiries, and undervalued by those only who are too ignorant of science to appreciate its importance—still a makeshift; it is a necessary appendage to a scientific garden; it is a place of reference when the resources of the garden are exhausted; but it is only consulted, unless to hunt up some bit of curious botanical history, when no better evidence is procurable—a circumstance which unfortunately is of hourly occurrence. In short nobody would look at an herbarium if they could find what they want in a garden.

No wonder that the commissioners were bewildered by Mr. ROBERT BROWN's opinions. Coming as they did from a witness whose scientific reputation is really of the highest order—a fact the truth of which has unfortunately been called in question lately by the preposterous adulation of ill-judging friends—the commissioners bowed, and stopped the enquiry; but their good sense prevented the expression of acquiescence in such views, and, in order that they might not be compelled to question the soundness of judgment of the witness, they compassionately passed the matter by without remark.

We say again, then, let the herbarium and botanical materials now in the British Museum be transferred to Kew, where there exists already one of

the noblest botanical collections in Europe, and a museum even now of great importance. Additions to it, such as Great Russell-street may furnish, inconsiderable as they are stated to be, will add to its value as a great national institution for the promotion of natural history. The Museum materials are not of themselves worth the rent of the rooms they stand in. We do not, however, press this as a measure to be immediately carried out; there are reasons, the force of which we willingly recognise, that render it inexpedient to disturb the present keeper of the herbarium. But the time must come when no such reasons will exist, and then we trust that these arguments will be remembered. In the meanwhile it is to be hoped that the Treasury will sanction no further outlay upon the botanical collection in the Museum. After having waited so long the public will consent to wait a little longer. The money required for fittings of "The Room" which has been selected for some exhibition which there is an *intention* of throwing open in the botanical department may be applied to other purposes, or wholly saved, and as for "The Room" itself, it would be only just to restore it to those who now complain that it has been taken from them.

OUR readers are aware that the earliest plants which it has been possible to propagate of the famous STANWICK NECTARINE were to be sold on Wednesday last, by order of his Grace the Duke of NORTHUMBERLAND, for the benefit of the Gardeners' Benevolent Institution. The sale has now taken place, and the following list shows the prices given for the lots, together with the names of the purchasers.

Lot 1 ...	£7	17*s.*	6*d.*	Mr. Low, Clapton.
2 ...	10	10	0	Do. Do.
3 ...	8	8	0	—Messrs. WHITLEY and OSBORNE, Fulham.
4 ...	6	16	6	—Messrs. HENDERSON, Pine-apple-place.
5 ...	10	10	0	—Messrs. WHITLEY and OSBORNE, Fulham.
6 ...	7	17	6	—Messrs. HURST and M'MULLEN, Leadenhall-street.
7 ...	8	18	6	—Messrs. VEITCH, Exeter.
8 ...	7	7	0	—Mr. TURNER, Slough.
9 ...	4	14	6	—J. H. BARCHARD, Esq., Putney Heath.
10 ...	3	13	6	Do. Do.
11 ...	5	15	6	—Mr. INGRAM, Gardener to Her MAJESTY, at Frogmore.
12 ...	4	14	6	—Messrs. YOUELL, Great Yarmouth.
13 ...	7	17	6	—Mr. GAINES, Battersea.
14 ...	9	9	0	—The Earl of DERBY.
15 ...	5	5	0	—R. HANBURY, Esq.
16 ...	8	18	6	—Messrs. LEE, Hammersmith.
17 ...	7	7	0	—S. RUCKER, Esq., Wandsworth.
18 ...	6	16	6	—Messrs. LUCOMBE, PINCE and Co., Exeter.
19 ...	4	4	0	—The Earl of HARRINGTON, Elvaston Castle.
20 ...	2	2	0	—Mr. DENTON.
21 ...	6	6	0	—Messrs. HENDERSON, Pine-apple-place.
22 ...	7	7	0	—Mr. GAINES, Battersea.
23 ...	6	6	0	—Mr. GLENDINNING, Turnham Green.
24 ...	5	15	6	—Messrs. KNIGHT and PERRY, King's-road, Chelsea.

£164 17 0

We give this list for two reasons; firstly, that the friends of the charity may see how effectually the operation is likely to benefit the funds; and, secondly, that the public may know who the nurserymen are that can hereafter supply the variety. A further and larger public sale will take place early in next autumn, on behalf of the charity, on which occasion Mr. RIVERS expects to have 500 young plants propagated; and no other genuine plants can be offered at that time. The earliest specimens which it is probable that the trade can offer, will be maiden plants in the end of 1851. It is desirable that this should be known, in order that those who have come forward liberally on the present occasion may receive all the advantage which can arise from the transaction.

It gives us much pleasure to add that the funds of the charity are flourishing, independently of the aid thus afforded, the subscriptions announced on Wednesday having been about 100*l.* more than at the last anniversary.

We believe that it is the wish of the noble Duke, who has permitted this admirable fruit to be dispersed among the public, that the money now and hereafter to be realised should form the nucleus of a fund for the construction of almshouses, an admirable proposition, to which we shall advert on another occasion.

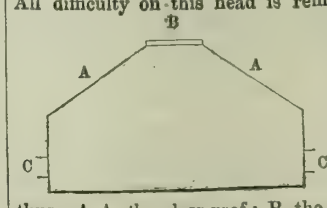
ORCHIDS FOR THE MILLION.

I HEAR almost every day, of some new person, starting up (undeterred by the supposed great difficulties of cultivation) who are willing to make an attempt at "growing a few Orchids;" and further, I find that the collectors in the upper classes are also increasing. A small house for the growing the more easily cultivated Orchids may be had at a small cost; and I do not know any one class of plants that are so fit for the management of the amateur, as they afford amusement and occupation for all the year round; and there is, perhaps, scarcely a day in the year, but there will be some one plant or another in flower; and another advantage is that most of the species last for a long time in bloom, and nearly the whole of these may be safely brought into a warm sitting room during the time of their flowering. Mr. Webster (gardener to Mrs. Huskisson, Eartham), a successful cultivator, grows these plants principally as drawing-room and warm conservatory ornaments, and there is scarcely a time when there is not one or two Orchids in flower in either the conservatory or suspended in the drawing-room. I suspect that, with a little care and contrivance, a single house may serve for growing the whole collection, keeping one end nearest the door for the cooler climate, and for the preserving all those which are at rest; but there will in most houses either already built, or to be constructed, be little difficulty in having a glass partition, so as thus to procure the two climates. I have already addressed some observations to you, under the title of "Orchids for the Million," containing a few remarks on Mr. Bateman's work; and I was in hopes you would have advanced the cause I had at heart by a few editorial remarks. The ordinary catalogues will indicate the habitat of most of the species, and, consequently, will show whether the specimen is to be grown at the hot or cold end. Most of the East Indian species of course are to be in the warmest part of the house, but I suspect that whilst the plants are actually growing, so that there be plenty of moisture and plenty of air, all are the better for plenty of heat. Now, I know Mr. Williams (Mr. Warner's gardener), grows all his Cattleyas (except citrina), in the warmest part of his warmest house. As regards the question of growing on blocks or in pots, Mr. Mylam (Mr. Rucker's gardener) grows nearly all the plants in pots or baskets, there are very few on blocks, and yet this collection is allowed to be the finest in this or in any other country. As regards the size of the house, a very small one will hold a large number of plants. If the house is built low, so much the better, the grower will have a greater command of heat and moisture. I think most of the houses in which the large collections are grown are too large, and especially too high; and I understand that Mr. Blandy, finding his new house too large and too high has moved his collection into a lower and smaller house; this is I think the fault of the house at Kew, in which the fine collection belonging to that garden is grown. I hope soon to see my suggestion, as to the Kew collection, carried out; viz., the setting apart a small house into which all the Orchids in flower should be introduced, and keeping the larger house shut up so as to enable the person having the management of the plants to control the temperature; the public can only care to see those flowers which are in bloom, the botanist will on application always obtain ready admission.

I observe that Mr. Rucker is building a very well-planned house for the purpose of showing all those plants which may be in flower. I had proposed to have offered you some few general observations on the mode of cultivating Orchids, the result of my own experience and enquiries, but as I find Mr. Williams (Mr. Warner's gardener) has a work in the press containing practical observations on the mode of cultivating the most desirable of these plants, the simplest course will be to refer your readers to his forthcoming pages. Those who have seen the excellent cultivation of the collection under his care will have no doubt but that he is well able to lay down safe rules for the cultivation of these plants.

In forming a collection, with reference to their beauty rather than rarity, I have found some difficulty, especially as I have not had an opportunity of consulting the rarer works containing figures of Orchidaceous plants. The following is a list of about 200, which I believe are nearly all the best in general cultivation. I send it, as it may be useful to others as well as myself, to have it corrected or added to by any of your readers, they bearing in mind that the addenda to the list required is of ornamental plants.

I have more than once in your Paper advocated the construction of cheap houses, having got cheap and good glass; and as comparatively cheap timber is now to be got at the saw-mills, and since we shall have bricks for flued walls and cheap houses at 50 per cent. under the old cost, I maintain that a very reasonably good house, quite fit for growing a collection of Orchids, may be put up for 30*l.*, and that it may be heated for 25*l.* The main difficulty in building a house with a span-roof without moveable sashes, is the ventilation at the top. All difficulty on this head is removed by making the centre supporting the sash bars consist of a strong board of 9 inches or a foot wide, and having ventilators on hinges cut on this to open to let out the hot air; thus—A A, the glass roof; B, the board on the centre supporting the sashes on which at intervals shutters on hinges are inserted; for the side ventilation there are sliding shutters at C C, and the same at both ends.



LIST OF GOOD ORCHIDS.

Acanthophippium bicolor
" Sylhetense
Acineta Humboldti
" Barkeri
Acropera Loddigesii
Aerides affine
" crispum
" odoratum
" virens
" tessellatum
" roseum
Angræcum bilobum
" caudatum
" eburneum
Anguloa Clowesii
" Ruckeri
" uniflora
Anæctochilus setaceus
Ansellia africana
Arundina densa
Barkeria spectabilis
" elegans
" Lindleyana
" Skinneri
Bletia hyacinthina
" patula
" Shepherdi
Bolbophyllum barbigerum
" saltatorium
" bracteolatum
Brassavola cordata
" glauca
" Digbyana
" grandiflora
" Perrinii
" venosa
Brassia caudata
" Wrayæ
" Lanceana
" macrostachya
" maculata major
" verrucosa major
Bromheadia palustris
Broughtonia sanguinea
Burlingtonia rigida
" candida
" venusta
Calanthe bicolor
" flavicans
" masuca
" vestita
" veratrifolia
Camarotis purpurea
Catasetum Russellianum
" tridentatum
Cattleya, all the genus
Chysis bractescens
Cirrhæa tristis
" Loddigesii
Cirrhopetalum nutans
" Medusæ
" Cumingii
" candelabrum
" Thouarsii
Cœlogyne cristata
" Cumingii
" flaccida
" Gardneriana
" maculata
" Wallichiana
" præcox
" undulata
Coryanthes macrantha
" speciosa
Cycnoches chlorochilum
" Loddigesii
" venericosum
Cymbidium aloefolium
" Mastersii
" giganteum
Cypripedium, all the genus
Cyrtochilum bictoniense
" filipes
" maculatum
" hastatum
" stellatum
Cyrtopodium glutinosum
" punctatum
Dendrobium aduncum
" aggregatum
" aureum
" cærulescens
" calceolare
" candidum
" chrysanthum
" compressum
" cupreum
" Dalhousianum
" densiflorum
" Devonianum
" formosum
" Gibsoni
" heterocarpum
" Jenkinsii
" Kingianum
" moniliforme
" moschatum
" nobile
" Paxtoni
" Pierardi
" " var. latifolium
" pulchellum
" Ruckeri
" sanguineolentum
" speciosum
(Probably some others desirable to cultivate are omitted)
Epidendrum aurantiacum
" bicornutum
Epidendrum cinnabarinum
" crassifolium
" Hanburii
" labiatum
" macrochilum
" " var. roseum
" Mastersii
" phœniceum
" Stamfordianum
" variegatum
" verrucosum
" vitellinum
Gongora atropurpurea
" maculata
" truncata
Goodyera discolor
Govenia superba [rum
Grammatophyllum multiflo-
" speciosum
Houlletia Brocklehurstiana
Huntleya violacea
" meleagris
Lacæna bicolor
Lælia acuminata
" albida
" anceps
" autumnalis
" cinnabarina
" flava
" majalis
" Perrinii
" superbiens
Leptotes bicolor
Liesochilus roseus
Lycaste cruenta
" macrophylla
" Skinneri
" Deppii
Maxillaria picta major
" tenuifolia
" Harrisoniæ grandiflora
" quadricornis
Miltonia candida
" Clowesii
" spectabilis
Mormodes luxatum
" pardinum
Odontoglossum bictonense
" citrosmum
" cordatum
" grande
" membranaceum
" Rossi
" maculatum
Oncidium ampliatum majus
" Barkeri
" bicallosum
" bicolor
" Cavendishianum
" ciliatum
" citrinum
" concolor
" crispum
" flexuosum
" incurvum
" guttatum
" Insleayi
" Lanceanum
" leucochilum
" longifolium
" Papilio (large variety)
" roseum
" ornithorynchum
Paphinia cristata
Peristeria elata
Phaius albus
" bicolor
" grandifolius
" maculatus
" Wallichii
Phalænopsis amabilis
" grandiflora
Pholidota imbricata
Promenæa stapelioides
" Rollissonii
Renanthera coccinea
Rodriguezia planifolia
" secunda
Saccolabium Blumei
" guttatum
" miniatum
Schomburgkia crispa
" tibicinis
" undulata
Scuticaria Steelii
Sobralia macrantha
" splendens
Sophronitis grandiflora
" cernua
" violacea
Stanhopea Devoniensis
" grandiflora
" insignis
" oculata
" tigrina
" Wardii
Trichopilia tortilis
" suavis
Vanda Roxburghii
" suavis
" teres
Warrea cyanea
Zygopetalum cochleare
" crinitum
" Mackayi
" maxillare
" rostratum
" tricolor.

N.B. The above names are those in common use amongst nurserymen and collectors.

P.S. I have met but one special, and at present serious, objection to the cultivation of Orchids for the million, viz., their cost; however, like all other matters of commerce, the supply will increase with the demand. Already we have constantly sales of imported plants at Mr. Stevens', and there are plants, such as the Barkerias, which sell for a few shillings apiece, and which were but a short time ago amongst the dearest; and as soon as there is a sufficient demand, nurserymen will propagate the quick growing plants fast enough, and sell them at a price within the reach of all. I feel certain that we shall soon see Dendrobium nobile car-

ried about the streets like the Cactus, &c. As regards the rarer and the more slow growing plants, the Aerides, Vandas, &c., these will always remain comparatively dear. But already orders have gone out, and collectors in all quarters are ransacking the forests, &c., to send home plants for Mr. Stevens' auction-room. I had a letter from a friend of mine at Penang, to whom I had written to collect plants for me, he said, "Our jungles are nearly stripped of all the Orchidaceous plants, such has been the demand for them of late." *Dodman.*

HITCHAM LABOURERS AND MECHANICS' HORTICULTURAL SOCIETY.

RULES TO BE OBSERVED BY THE MEMBERS OF THIS SOCIETY, FOR THE YEAR 1850:

1. Honorary members to pay from 1*s.* to 2*s.* 6*d.* annually.

2. Competing members to pay 6*d.* annually. The payments for the present year to be made before May 20th.

3. The specimens exhibited by competing members must have been grown by themselves in their own gardens or allotments. Should any one be guilty of an unhandsome attempt to impose other produce than his own culture upon the Society, he will forfeit all claim to a prize, and be dismissed from the Society with disgrace as a dishonest character.

4. The specimens forwarded for competition must be sent to the rectory before 10 o'clock on the days of exhibition. A number will be then attached to each; and the judges will decide, without being made acquainted with the names of the competing parties, to whom the separate specimens belong.

5. The award will be made known by 2 o'clock.

N.B. No gardeners will be allowed to compete; but there can be no objection to encouraging lads, under 16 years of age, to show flowers or vegetables reared entirely by their own care on a piece of ground assigned to them in a master's garden. It is hoped there will be no foolish jealousies and disputings about the award of the prizes. All who compete should give the judges full credit for acting to the best of their judgment. Those who gain no prize should take their disappointment manfully, preserve their good humour, and try again next year, if it should please God to allow them an opportunity of so doing. Any prizes to which the judges may consider there have not been sufficient merit to award them, will be reserved for a future occasion. *J. S. Henslow, Hitcham, May* 1.

DISEASES OF PLANTS.

(*Continued from p.* 292.)

16. *Blotches.*—I think that this disease, defined by some to be a discolouration, in the form of a black or yellow drop, which appears on various parts of the plant, and is caused by insects, may belong sometimes to the head of intrusion, sometimes to that of laceration. We have sometimes observed them without any appearance of external disorganisation, and they then indicate the existence of an egg; but we cannot deny that others are really the effect of laceration of some insect which has fed either upon the epidermis or upon the inner texture of the leaf under the epidermis.

17. *Vermination.*—Since the time of Theophrastus, this name has been given to fruits having a grub within-side. It is a very common disease in some plants. Some Pears have always a grub in their centre. Some plants have them in their seeds. Sometimes we see plants so loaded with grubs that every part of them is full. Observation has taught us that these internal enemies of fruits have been deposited there by butterflies and moths. Some lay their eggs in an oblique incision into the leaf, some penetrate even into the ribs. *Vermination* includes also the disease of seeds of grain, inhabited by the Curculio segetis, *L.*, and that of Nuts and Walnuts inclosing the larvæ of the Curculio nucum, *L.*

18. *Abortion from Insects.*—Insects are the cause that a vast number of plants remain sterile. It is generally from their having deposited an egg in the pistil. Thus the Livia juncorum, *L.*, lays its egg in the germ of the Juncus articulatus, *L.* The part thus injured acquires a size three or four times as large as usual, but remains sterile. The Acantia clavicornis, *L.*, depositing its eggs in the flowers of Teucrium, causes them to remain closed, discoloured, and barren. Sometimes insects prevent fecundation by the dispersion of pollen, but this appears to be a rare occurrence. The sterility derived from insects having eaten off the flowers, belongs to the head of lacerations.

From what I have now said, it appears to me to be clearly proved that all diseases occasioned by insects belong to the class of wounds, or mechanical injuries. If any one will read the beautiful general discourse on insects in the "Encyclopédie Méthodique," or the articles Insectes, Chenilles, and Lépidoptères in the "Nouveau Dictionnaire d'Histoire Naturelle," a work which should occupy a distinguished place on the shelves of the amateur, he will see in what a variety of ways insects and worms attack plants, and are the true cause of a great number of the evils that afflict them.

This would be the place to examine what are the surest means of protecting our farms and gardens from the incalculable injuries caused by insects. The nature of my subject does not admit of my neglecting this point, although I must candidly confess that as yet no method at once certain, easy, and economical has been discovered. But it is impossible not to encourage the hope that great progress may be made by the attentive study of the natural history of each species, and of the habits of those beings who, frequently from their minuteness, escape the eye of the observer, and who seem to evade every contrivance for expelling them.

Among the vast number of receipts, for the most part useless, prescribed in works on rural economy, the labours of some, especially of transalpine entomologists, have nevertheless supplied us in some cases with directions by which we may, if not wholly preserve ourselves from their ravages, at any rate diminish the damage effected. In my memoir on the pyralides which last year infested our Hemp grounds, I have shown how worthless are the generality of the receipts invented by quacks for the destruction of insects. I have shown that for the greater number of cases of insects infesting herbs, the only certain method is burning. I collected many facts in support of this doctrine, and showed that in all fields or pastures on which large fires are made, there appear scarcely any insects, and the soil is otherwise rendered more fertile. It is known also that one of the means which has proved the most certain for freeing Apple trees from caterpillars is that used in the province of Vicenza, where they shake the trees towards the end of March in order to find out where the caterpillars are, as they then may be seen to hang from their threads in consequence of the shaking, and their nests are then taken and destroyed. Frequent and abundant irrigations will destroy many larvæ. Knowing that butterflies fear the smell of dung, some have found it advantageous to hang baskets of it to the branches of trees to keep them away, but this can only be done to a very limited extent. I am convinced also that in some desperate cases it may be useful to suspend for a season, or to hasten or delay the period of sowing certain seeds; for, as it is well known that every insect has its own particular plant, if this one fails the insects perish, or those which remain become feeble, and, for the most part, incapable of reproduction. I have shown how ploughings in winter and the first days of spring will hasten the period of germination, and prove useful for our present purpose; and I have taken the same opportunity of urging the utility of rotations of crops. I will next add some observations on insects, of which I did not then treat, and which may be useful not only in the greater number of cases of arboriculture and agriculture in general, but also in some more special kinds of cultivation.

VILLA AND SUBURBAN GARDENING.

THE purest of all pleasures may be derived from a garden; but in order that we may enjoy these in their fullest extent, high keeping and order must form one of its distinguishing features. Gardens frequently get into bad condition from the want of method in the management of the labour employed. We often find better dressed gardens where only one man is kept than in others of greater pretensions, and this is easily accounted for. The one man relies on no other person to do the work for him; he knows that if it is not done by his own hands, it must be left undone; he cannot fall back and lay the blame upon another. Of course, one man can only do one's man work; but those who have experience in these matters will understand what a man of system can do compared with one of no system. These observations apply with equal, or even greater force to the amateur who cultivates his own little garden during his hours of relaxation. The first rule to be observed, is to do everything in time; "procrastination is the thief of time." Suppose a few rows of Peas are to be staked, or a row of Scarlet Runners, a box of Cucumbers or Melons that require stopping or thinning; if these are left for a few days beyond the period when they ought to have been attended to, we well know the check they receive from being moved about, which is sufficient to destroy half the crop; delay, therefore, not only tends to defeat the object of cropping, but it also so affects appearance and kindly growth, that the real interest which gardening pursuits afford is blighted in the bud. Another and equally valuable rule is, never to have more than one job in hand at once. The importance of this injunction will be apparent on a moment's reflection. Instead of any one matter being finished when it ought to be, the whole is delayed; consequently all suffer alike, whereas one matter, demanding attention, might be accomplished in proper season if followed up until it is completed. But independently of injury to the crops, confusion and disorder manifested everywhere in a garden must rob the proprietor of the pleasure he seeks in vain to realise in it. Let us also draw attention to the evils of such a system when applied to plant culture. In thousands of instances it renders the plant unworthy of the pot in which it is placed; creepers, if not trained in due time, get entangled, and the unravelling them injures and checks their growth. The performance of the operation too requires treble the time it would have occupied if effected at the proper time; I therefore earnestly counsel my amateur readers to do everything in proper season, remembering the old adage "that delays are dangerous." *Pharo.*

TRADE MEMORANDA.

HAS any one an analysis of the guano on board the Envoy and Commerce? or in the Ocean, bound for Belgium a short time since? If they have we should like to see it; or if they have the guano it might answer their purpose to have it analysed.

GARDENERS' BENEVOLENT INSTITUTION.

The seventh annual festival of this charity was celebrated on Wednesday, at the London Coffee House, when about 80 of the principal horticulturists, nurserymen, and seedsmen of London and its vicinity assembled under the presidency of the Earl of CARLISLE. At the upper table, besides the noble chairman, were seated H. T. Hope, Esq., M.P., Henry Pownall, Esq., and several others of the most distinguished friends of the Institution. After the usual loyal toasts, the CHAIRMAN rose to call attention to the special purpose for which they were assembled. We have hitherto (said the noble Earl), dealt only with those great things and persons connected with royalty, war, and the concerns of empires; but we are met together this evening to put forward the claims of the Gardeners' Benevolent Institution. (Hear, hear.) The first consideration that might naturally occur to myself is, what business have I to be in the chair on such an occasion, and to have thus the privilege of addressing you? for it is scarcely necessary that I should observe that I do not myself exercise the very honourable profession of a gardener, and furthermore I am sorry to say I am not fitted to hold the place amongst you I am now occupying, by any knowledge or proficiency I have acquired in your delightful science. ("Hear, hear," and a laugh.) But there seems to me to be this peculiarity in the business or profession of a gardener, that while it admits of the highest possible degree of progress and perfection, it also, in its most humble grades, and in artificial methods, opens up sources of healthful, innocent, and pleasurable employment. (Cheers.) The art of the gardener, dealing as it does with perhaps the most exquisite of all the raw materials which Nature supplies—the flowers of the earth; the art of the gardener seems to me to combine the healthy exercise and sturdy out-door life of the agricultural labourer, with the more intellectual and studious employment of furnishing models for the most ingenious imitations of the milliner, the most delicate enamellings of the jeweller, the richest colourings of the painter, the brightest day dreams of the poet—(hear, hear)—and there is hardly a spot of earth so rugged, scarcely a tribe of man so rude, that the art of the gardener will not be found to produce something like loveliness to the scene, and some idea of beauty to lift up the mind to the supreme fountain of light and beauty, and the Giver of all goodness (cheers); and the pursuit of gardening, gentlemen, seems to me not only to enhance, but also to make compensation for the beauties of nature—for the charms of scene, and the loveliness of landscape, are necessarily confined to limited portions of the globe's surface. The full enjoyment of these can be but the privilege of the few, and it is only some amongst us who can visit, and comparatively very few can enjoy permanently, such scenes as the valley of Cashmere, the Bay of Naples, the shores of Genoa, or even our own Windermere, Loch Lomond, or the lakes of Killarney, present to us. (Cheers.) But we must remember that there is hardly any spot of ground so built on but the monotony of the scene may be diversified by the gay parterre—scarcely a cottage so small that it may not have the Woodbine twining round its porch; nay, more, there is hardly a lodging or dwelling in the most squalid alley of this metropolis, but it may have its Geranium in the window sill—(hear, hear)—and I have heard, and I believe the statement is true, that the poor weavers of Bethnal-green take especial pride in rearing their Geraniums, their Hyacinths, and their Tulips. (Cheers.) It would thus appear that there is a sort of spell or charm about flowers, something like magnetism or mesmerism, which, independently of fashion, or the pleasures of sight and smell, tends to sooth the spirits and compose the mind. (Hear, hear.) I need not seek, gentlemen, to corroborate the respectability or honour of your craft, by alluding to its antiquity; but you will not forget that the first spot on which man was placed on earth was a garden, and it is fair to presume that the first avocation of man must have been that of a gardener—(cheers), —and the shrubs must have been green, and the flowers must have looked bright among the glades of Eden before sickness, pain, sorrow, or sin entered into our world. (Cheers.) However, gentlemen, we know that those drawbacks and disfigurements abound near the pursuit and profession of a gardener as they do to every other calling or occupation. And this brings me especially to the claims which such a charity as this puts forth for your support. I learn, gentlemen, that the Gardeners' Benevolent Institution is adapted to afford relief to aged and infirm gardeners above 60 years of age, and their widows, in all parts of the United Kingdom; that it has now 34 pensioners upon its funds, 11 women and 23 men, whose claims have all borne the strictest investigation, and who have been reduced in their old age to penury and destitution; and I find that the average ages of these parties are 74 years for the women, and 76 years for the men. I am further told that it will appear by one of your rules, that this society, besides providing pecuniary relief for the distressed and broken down, in the shape of charity, partakes also of the nature of a friendly society, and encourages contributions from gardeners, by promising which, while in the hey-day of their vigour and prime, they acquire a right of preference and a title to the enjoyment of your bounty in the event of darker days coming across them. (Applause.) I find that during the few years (8 I believe) that the Society has been in operation, it has contributed relief to the amount of 2280*l.* (Hear, hear.) But does the relief it is enabled to give meet all the claims made upon it? By no means. I regret to have to add, that, though this much has been done, yet at this time your committee, out of 20 eligible candidates for your bounty, can only elect two of them this year. (Hear, hear.) I have now to invite your considerate attention on behalf of these broken-down veterans in a pursuit so honourable, so respectable, and so useful. You will not forget—I am sure those who exercise the same craft will not forget—you will not forget, you who, by the favour of your Creator, are in easy circumstances, and in an affluent position, that all the enjoyment you derive from what is beautiful to the sight and fragrant to the smell in the rich and varied products of your gardens—you will not forget that the life and pursuit of a gardener is a laborious one, and subject to much competition; subject to many reverses; subject to the change of taste, and the caprice of fashion, and trying and unhealthy to some constitutions; exposed to unhealthiness in some situations, and often bending the stout back and stiffening the active limbs of those who minister to your luxury, your comfort, and your pleasure. (Hear, hear.) These are claims which you will not, I am sure, forget. You will remember that in the brightest foliage, and in the most gorgeous colours, there often lurks the most mischievous poison, and that even the fairest rose is never without its thorn—(hear, hear)—above all, you will remember that amid all that is bright and beautiful in nature, there is still no blossom of plant or shrub or tree that blows with such unfading colours—there is no scent of earth so fraught with undying fragrance—as the bloom of good and charitable works, and as the sweet-smelling savour of that pity which feels for the wants and relieves the distresses of our friends and our brothers. (Loud applause.) Gentlemen, I feel that a cause like this is safe in your hands, and I have only to recommend, with all good-will and all the fervour it deserves, the claims of this institution on your support, and to beg that you will join with me in drinking "Success to the Gardeners' Benevolent Institution." (Loud cheers.) The toast was drunk with three times three and one cheer more.

H. T. HOPE, Esq., M.P., proposed the next toast, "The health of the Chairman," who had given up (as he must have done on such a day) engagements of a pressing and earnest nature to take the chair on behalf of this charity. The toast having been drunk with enthusiastic cheering, the CHAIRMAN, in acknowledging the compliment, said, it was quite true that the duties of the day would naturally have called for his presence elsewhere, but he felt, at all events, that he could not spend her Majesty's birthday better than among her faithful gardeners. He would now give them the toast, "The Horticultural Society," coupling with it "The health of Mr. Paxton." (Hear, hear.) The services that gentleman had rendered to horticulture were recognised not only in this metropolis and in this country, but wherever flowers were cultivated or admired, and that was over the whole world. (Hear, hear.) Mr. PAXTON returned

thanks. He said he had been most unexpectedly called upon to respond to this toast. No one rejoiced more at the position or was more anxious for the success of the Horticultural Society than himself, for he had been intimately connected with it from its first establishment. He believed he had planted with his own hand or put down into the earth every plant in the arboretum at Chiswick—at least all that stood there 24 years ago, for it was 28 years now since he had first become connected with the Horticultural Society of London, and then that which was now the Horticultural Gardens was a market garden, growing Apple trees and vegetables; and though he did not form the ornamental portion of the gardens, the other parts were almost wholly executed under his direction. (Hear.) He had great pleasure in responding to this toast, the more so as the nobleman whom he had the proud satisfaction and honour to serve was the President of that Society, and he could say, without fear of contradiction, that no man living had given so much attention to the development of horticulture as that nobleman, who had placed at his (Mr. Paxton's) disposal ample means and every facility for the advancement of that science, and if he had not succeeded in all he had undertaken it was not for want of means or opportunity. (Hear.) He had also pleasing recollections of the Horticultural Society on another account, viz., that it was the medium through which he was first introduced to that nobleman. (Hear, hear.) He believed that Society had done much good in every department of gardening. Before that Society was established there were no means for men fond of the science of gardening, for noblemen and gentlemen who had a taste for, and were desirous of patronising the art, to assemble and commune together with a view to its advancement. The late Sir J. Banks and a few other distinguished men, under these circumstances, established the Society, which had now grown up and become a most valuable institution. (Hear, hear.) From that society had emanated that foremost and most distinguished of collectors David Douglas—(hear)—an old and esteemed friend of his, who had lost his life in the pursuit of his art, and than whom no man of science had left a higher name behind him. The Horticultural Society had patronised David Douglas, and had also fostered and encouraged many other gardeners of great eminence; and another claim that it had upon their attention and respect was, that it tended materially to the establishment of this Institution. (Cheers.) He believed the periodical shows of the Horticultural Society at Chiswick had been of great benefit, by bringing together the patronisers of the art, and giving the most practical encouragement to its pursuits. (Cheers.) There had already been many offshoots from the Society, as the Botanic Society in the Regent's Park, and several others. He thanked the company very sincerely for having drank success to a society in whose welfare he was warmly interested, and which deserved every encouragement at their hands. (Hear.) With regard to himself, all he could say was, that he thanked them most cordially for having associated his name with that of the Society in the toast. (Cheers.) The CHAIRMAN next gave, "Success to the Royal Botanic Society," between which and the Horticultural Society he hoped there would always be an honourable but not a hostile rivalry, for there was quite room enough in this metropolis for both. He would couple with this toast the health of Mr. Hope. The toast was drunk with honours. Mr. HOPE, M.P., returned thanks. The Botanic Society had, without money, and without means, succeeded by the energy of some half dozen energetic men, of whom he was not one, in attaining its present position of independence. For the first exhibition of this year they had already sold 16,000 tickets. (Hear, hear.) After some other toasts, the contributions of the evening were announced as being near 400*l*. The principal subscriptions handed in on the occasion were:

Duke of Devonshire	£21 0	H. Berens, Esq., for his gardener, Mr. Stanly	£10 10
Earl of Carlisle (Chairm)	10 10	Mr. Joseph Robinson	10 10
Joseph Martineau, Esq.	10 10	Dr. Lindley	5 5
Messrs. Wrench & Sons	10 10	Capt. James Lamont	5 5
George Bishop, Esq.	10 10	Robert Hanbury, Esq.	5 5
Proprietors of Gardeners' Journal	10 10	Robt. L. Holford, Esq.	5 5
Thomas Rivers	10 10	John Lane, Esq.	5 5
Henry Thomas Hope, Esq., M.P.	10 10	Arthur Pott, Esq.	5 5
A. F. Slade, Esq.	10 10	James Thomson, Esq.	5 5
Messrs. Noble and Co.	10 10	Messrs. Miniers & Co.	5 5
Joseph Paxton, Esq.	10 10	Editor of the Gard. Mag.	5 5
		Mr. Glendinning	5 5

Home Correspondence.

Grape Rust.—The following statement may tend to strengthen one of the many suggestions already pointed out with regard to this malady to which the Grape is so liable; and as my case is so clearly proven to have proceeded from the effects of sulphur, my remarks may be the means of protecting some good Vine borders from condemnation. Two seasons ago the leaves of my early Vines were attacked with red spider, in consequence of which I was obliged to use sulphur for its destruction. I applied a little at short intervals, which did in some measure keep under that pest. I observed, however, that some of the berries were inclined to rust. I gave the border the merit of this, being, as I thought, too wet. In the following season I was afraid of a second attack of my enemy, therefore I applied the sulphur earlier and to a greater extent than before. Not being aware of its evil propensities on the berry, I thought if the foliage was preserved all would be right; but when the fruit came to be the size of Peas, I found, to my astonishment, their surface covered with rust to a fearful extent. I of course still continued to attribute the fault to the border. As I allowed no handling in the process of thinning, I was aware that it could not arise from that. Seeing, however, the evil effects of sulphur on young Grapes pointed out, it struck me that it might be the cause of my complaint. I concluded that I should put the experiment to the test next season (this one); I have, accordingly, never sulphured, and and the result is most satisfactory. I have a fine crop of fruit without the least symptoms of disease of any kind. I have therefore come to that conclusion, that where sulphur is applied early, that is to say while the skin of the berry is young and tender, rust will unavoidably follow; and I believe that many of the cases that we are daily hearing of proceed from the same cause. *Northman.*

Green Peas. — Having gathered some Peas this morning for my friends, I beg to send a few for your inspection. They were raised without artificial heat, on the principle of root ventilation. I have not grown many, but merely tried an experiment, with five of the reputed earliest sorts. They were all sown on the 12th of December last, and those now sent are the most forward by 14 days. They are Cormack's Prince Albert. They were in bloom on the 7th of April; and had the weather been fine, I should have had the Peas in April. However, as I have established the fact that I can grow them without heat earlier than usual by fully a month, I hope in another season to send you a dish worthy your notice. *J. Roberts, Eastcheap.* [Green Peas from Cornwall have been in the market these two weeks past.]

Observations on the Adjustment of the Animal and Vegetable Kingdoms, by which the Vital Functions of both are Permanently Maintained (*see p.* 279).—The interesting paper extracted from the "Florist, and Garden Miscellany," under the above heading, was the subject of a communication to the Chemical Society of London, and was forwarded to me by a correspondent. I very much regret that this information was not appended to the article, as in its present state it looks like an original communication, which it was not. *Edward Beck.*

Culture of the Chrysanthemum — It has been acknowledged by all who have witnessed the Chrysanthemum exhibition of the Norfolk and Norwich Horticultural Society, that in no county in England is this beautiful autumnal flower exhibited in a higher state of perfection than in Norfolk, and having received numerous letters of inquiry respecting the mode of cultivation pursued, we have taken advantage of your columns in giving publicity to the same. We do not wish it to be understood that every exhibitor pursues this precise method of treatment, but it is such as we ourselves adopt, and we venture to say that if carried out it will ensure dwarf plants from 1½ to 2 feet high, covered with rich dark green foliage, and carrying blooms from 5 to 7 inches in diameter. In the last week in May we select the tops of the strongest shoots for cuttings, putting four or five round the edge of a 3-inch pot, and placing them in a gentle warmth; when rooted they are potted singly in the same sized pot, and kept ia a close frame for a few days, until they have become established; the tops may then be pinched out, leaving five or six joints to remain for lateral shoots; after a few days' hardening off they are then removed to an open situation, allowing the plants a sufficient distance from each other to prevent their drawing, care being observed that they do not suffer from want of water. About the third week in July we shift for blooming into 7-inch pots, using a small handful of coarsely broken bones at the bottom. The soil we use consists of equal parts of well decayed (one year old) pig manure, turfy loam, and leaf-mould, adding half a barrowful of peat and half ditto of road drift to every four barrows of the above. When potted they are placed in rows 2 feet apart, and they require but little attention, except watering, for two months; at the expiration of this period we commence watering twice a week with liquid manure made with one bushel of fresh pig manure (free from straw), to about 80 gallons of water; this will be ready for use in two or three days. As soon as the plants show flower-buds, we tie each shoot to a stick, and train them fan-shaped. Disbudding ought now to be attended to, reserving only one or at most two at the top of each shoot; but where two are left, it is better to take out the second bud and leave the third, to prevent confusion. As soon as the buds show colour, the plants are then removed to the greenhouse or conservatory, giving plenty of air and substituting water for liquid manure. We ought to have mentioned that where a profusion of bloom is required, two or three plants may be inserted in the pots where only one is usually grown; this will afford an opportunity of cutting away the weakest shoots, and reserving the strongest only. *Youell and Co., Great Yarmouth.*

Guano.—The farmers and gardeners of this country owe you much for the exertions you have made to secure them against the tricks of the guano trade. I have discovered the hill side to which you allude in your leading article, and it is truly a real California. The trade is brisker since your exposure than it was before; "the waggon" has got an extra horse in it, and an extra waggon is put to work. The bags hold about 3 or 4 bushels, and are placed generally in the bottom of a covered waggon, but sometimes I see they have two layers of bags, one above the other. This I imagine depends upon how fast they can dig it on the hill side. If the company is carrying on this for the adulteration of guano, then I say there is no other way of putting a stop to it than by Government interference. No one person can do it. *Dulwich, May* 16.

The Stanwick Nectarine. — In November, 1848, I had some young Peaches potted, which had been raised from seed the preceding summer; intending to try an experiment in grafting Peaches (it may be mentioned that they are invariably budded), the Stanwick Nectarine happened to run to mind, and I thought my Peach stocks might possibly be turned to good account, by grafting the shoots of that rather than of Peaches. I therefore wrote to the gardener at Stanwick, to send me the prunings of the tree in lieu of, as usual, consigning them to the rubbish heap. The shoots were received in December, and immediately grafted on my Peach stocks in pots; nearly 200 were I think grafted, placed in a cool house secure from frost, and towards the end of January removed to gentle bottom heat over a tank; they seemed at one time as if every graft would grow. But, after making a shoot nearly an inch in length, they gradually died off, so that in the end only 25 were left. Twenty-four of these were sold on Wednesday last, and realised such prices as were never yet heard of for small trees of a Nectarine. What a solid benefit has thus resulted from a few apparently worthless shoots, and what a lesson to us gardeners never to despair, but to "try and trust." *T. Rivers.*

Fish Ponds.—In a garden attached to the premises in which I reside is a fish pond, in which are some Water Lilies and other aquatic plants. The Lilies have for some time looked unhealthy, and weighed down; on examining them, I find that the leaves are covered with the enclosed gelatinous substance, which I presume is a Mollusca of some water snail. Will you inform me if such is the fact, and if it is desirable to let it remain as a food for the fish? *C. E., Hanwell, May* 3. [We did not find the gelatinous substance spoken of.]

Societies.

LINNEAN, *May* 7.—The President in the Chair. M. Alphonse De Candolle, and Asa Gray, M.D., were elected foreign fellows, Dr. Lankester, E. Newman, Esq., and W. Spence, Esq., were appointed auditors. The President exhibited a leaf of Victoria regia, Lindl, obtained from the stove of the Duke of Northumberland, at Sion, where a plant is now flowering. The President said that some question had been raised as to the propriety of establishing a new genus for this plant. The characters which distinguished it from Euryale were sufficiently distinct; but whether they were of primary or secondary importance he would not pronounce. He thought the bodies which were ordinarily called stigmas, belonged to an outer series of floral appendages, whilst the true stigmas were seated below, directly over the summit of the fruit. "Notes on the Dry Rot, as observed in the church of King's Wear, Devonshire," by A. H. Holdsworth, Esq., communicated by the President, were read. In this instance some old wood was employed in a new building, and the rot spread in particular directions. On removing the affected portions of wood, the rot was speedily arrested. A letter was read addressed by the President to Sir Francis Beaufort, for communication to Baron Alexander von Humboldt, on the origin and mode of propagation of the Gulf-weed. Mr. Brown was of opinion that there was more than one species of plant included under the term Gulf-weed. Although the opinion had been pronounced that this plant grows on the shores of the west, and was brought out to sea by the Gulf-stream, he had observed certain appearances which led him to believe that the Gulf-weed might propagate itself whilst floating in the waters of the ocean.

Garden Memoranda.

FLOWERING OF THE VICTORIA REGIA AT SION HOUSE, BRENTFORD.—As many of our readers know, this queen of aquatics has been flowering here for these two or three weeks past; and if we may judge from the quantity of flower-buds and young leaves at present in sight, it may be expected to go on blossoming for some time to come. When we state that this Water Lily has not only been grown but flowered in the comparatively short space of three months in a slate tank of about 22 feet long and some 12 feet wide, and at no very great cost for fuel and other appliances, many may be induced to become cultivators of so truly curious and magnificent a water plant, who have hitherto considered it beyond their reach.

The plant at Sion was received from Kew in the 2d week of September last. It was then a very small affair, the largest leaf not being more than 4 inches in diameter. No convenient receptacle having been previously provided for it, three Nelumbium tubs, *i. e.*, tubs in which Nelumbiums had been cultivated, were procured, one of these was filled with water, and in this the pot containing our aquatic was plunged. The other two tubs were placed one above and the other below this one, for the purpose of circulating and changing the water, which was led by means of a siphon out of the higher tub into the one in which the plant was, from thence into the lower tub, and out of that it was again pumped into the higher one, thus producing a continual flow of water from the higher tub to the lower one, a point (the circulation of the water) which Mr. Ivison considers of the highest importance in the culture of this aquatic. It was shifted first into a pot and then into a basket while it remained in the Nelumbium tub, which was at last enlarged to 6 feet square at the top by means of sheet lead, and even under those comparatively disadvantageous circumstances it made very satisfactory progress. A slate tank, 22 feet long, 12 feet wide, and 2 feet 6 inches deep, becoming shallower as its sides were approached, was about this time constructed for its reception. A hillock of well decayed turfy loam, mixed with a little river sand, and having brickbats below to keep it open, was placed in the middle of this tank, and the plant was planted out on this hillock a little after Christmas. The water in the tank is warmed by a 2-inch pipe at top, and a 4-inch pipe at bottom, and it is fed from a small slate cistern at one end, which keeps continually pouring warm water on a broad wheel about a foot in diameter, whose revolutions produce motion in the water in the large tank, the whole being supplied from a rain-water cistern in the open garden. The water is kept at a temperature of 85°, and the air of the house (formerly a low lean-to, but now altered to a span roof) between 80° and 90°. Since the house has been altered, the tank has been enlarged to 22 feet square, each corner containing Nymphæas of different colours, and there are also two Nelumbiums near the centre, whose foliage rising as it does above the surface of the water, gives to the whole an artistic appearance, which it would not otherwise possess.

At the present time, the plant has 10 leaves on it,

and one just expanding. Several of the leaves measure 5 feet in depth. They are almost quite circular, pink on the under sides and deeply ribbed, and most of of them have a turned up rim of from 1½ to 2 inches in diameter. The outside of the rim is a beautiful rosy purple on the side next the sun. It will be recollected that the rim never or very seldom showed itself on the leaves of the plant at Chatsworth, and Mr. Ivison attributes its production to the abundance of air which the small house at Sion allows him to give. The first flower opened on the 10th of April, and since that date up to the present time more than a dozen flowers have opened and closed, and there are now four flower-buds in sight. A flower-bud always follows the development of a leaf, on which, after a wavy motion, first to the right and then to the left, it finally places itself, and there it expands. The flowers continue in existence about two days. They open at 5 o'clock in the afternoon of the first day, and remain open all night. They close next morning between 10 and 11 o'clock, and reopen at 2 o'clock; the petals, which before were white, being this time changed to pink. These gradually fall down on the water, and an inner row of large petals, striped and mottled with purplish red, is unfolded about 3 o'clock; the latter reflex, and fall back on the others about 4 o'clock, when the whole flower assumes a flattened appearance, and discloses to view a quantity of smaller petals, overlapping each other and tapering to a rosy point in the centre. About 6 o'clock in the afternoon of the second day, it puts on its last form, exhibits to view a mass of yellow stamens, surrounded by a ring of small red and rosy petals, which, contrasting with the light coloured reflexed petals below, give the flower at this its last stage a beautiful and even striking appearance. After the flower has died off, it leaves a seed-vessel, having almost the exact shape of a large Meerschaum tobacco pipe. Some of the blossoms at Sion House measured 13 inches across.

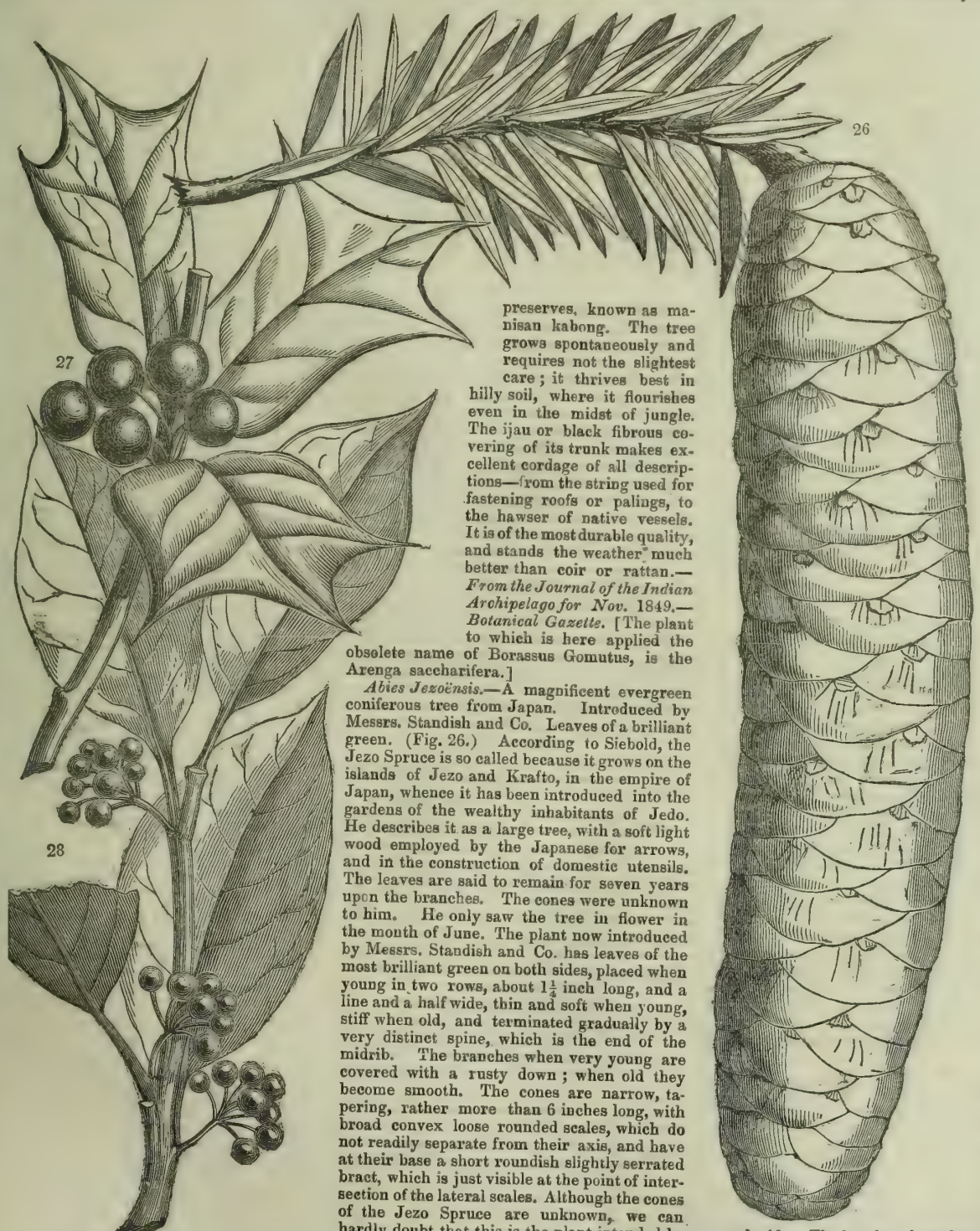
It is much to be regretted that this fine Water Lily is tender; its large round leaves, even if it did not produce flowers, would form a noble appearance in our ornamental waters, and if it were possible to render its constitution hardier by crossing it with some less tender kind, the subject is one worth the attention of the hybridiser.

Mr. Groom's Tulips.—We paid a visit to Clapham on Thursday last for the purpose of inspecting these; but with a few exceptions they had not opened their flowers. They will be in perfection next week, when we hope to see them again.

Miscellaneous.

Uses of the Borassus gomutus.—The Kabong or Borassus gomutus is a Palm-tree of some importance. It grows to the height of the Cocoa-nut and sago trees, and is cultivated principally for the juice which it yields for the manufacture of jaggery. Like the Cocoa-nut and many other intertropical trees, it comes into bearing after the seventh year. It produces two kinds of mayams, or flower buds — male and female. The female shoot yields fruit, but no juice, and the male *vice versâ*. Some trees will give five or six female shoots before they yield one male, and such trees are considered unprofitable by the toddy collectors; but it is said in this case they yield sago equal in quality though not in quantity to the Cycas circinalis, although it is not always put to such a requisition by the natives; others will give only one or two female shoots and the rest male, from each of which the quantity of juice extracted is the same as that obtained from ten cocoa-nut shoots.

A single tree will yield in one day sufficient juice for the manufacture of five bundles of jaggery, valued at 2 cents. each. The number of mayams shooting out at any one time, may be averaged at two, although three is not an uncommon case. When sickness or other occupation prevents the owner from manufacturing jaggery, the juice is put into a jar, where in a few days it is converted into excellent vinegar, equal in strength to that produced from the vinous fermentation of Europe. Each mayam will yield toddy for at least three months, though often for five, and fresh mayams make their appearance before the old ones are exhausted; in this way a tree is kept in a state of productiveness for a number of years, the first mayam opening at the top of the stem, the next lower down, and so on, until at last it yields one at the bottom of the trunk, with which the tree terminates its existence. The fruit-bearing mayam has a beautiful appearance, the nuts hanging in clusters of many thousands, and when green the transparent kernel is made into preserves, known as manisan kabong. The tree grows spontaneously and requires not the slightest care; it thrives best in hilly soil, where it flourishes even in the midst of jungle. The ijau or black fibrous covering of its trunk makes excellent cordage of all descriptions—from the string used for fastening roofs or palings, to the hawser of native vessels. It is of the most durable quality, and stands the weather much better than coir or rattan.—*From the Journal of the Indian Archipelago for Nov.* 1849.—*Botanical Gazette.* [The plant to which is here applied the obsolete name of Borassus Gomutus, is the Arenga saccharifera.]



Abies Jezoënsis.—A magnificent evergreen coniferous tree from Japan. Introduced by Messrs. Standish and Co. Leaves of a brilliant green. (Fig. 26.) According to Siebold, the Jezo Spruce is so called because it grows on the islands of Jezo and Krafto, in the empire of Japan, whence it has been introduced into the gardens of the wealthy inhabitants of Jedo. He describes it as a large tree, with a soft light wood employed by the Japanese for arrows, and in the construction of domestic utensils. The leaves are said to remain for seven years upon the branches. The cones were unknown to him. He only saw the tree in flower in the month of June. The plant now introduced by Messrs. Standish and Co. has leaves of the most brilliant green on both sides, placed when young in two rows, about 1¼ inch long, and a line and a half wide, thin and soft when young, stiff when old, and terminated gradually by a very distinct spine, which is the end of the midrib. The branches when very young are covered with a rusty down; when old they become smooth. The cones are narrow, tapering, rather more than 6 inches long, with broad convex loose rounded scales, which do not readily separate from their axis, and have at their base a short roundish slightly serrated bract, which is just visible at the point of intersection of the lateral scales. Although the cones of the Jezo Spruce are unknown, we can hardly doubt that this is the plant intended by Siebold; at least we observe nothing at variance with his figure and description, except that he describes the young branches of that species as being smooth; in the plant before us they are covered with short down, but they become smooth with age; and as he describes those which he saw as having a yellowish rusty coat, the apparent difference is reduced to little. Probably perfectly hardy, but that is not yet ascertained. *Paxton's Flower Garden for May.*

Ilex cornuta.—A fine, hardy, evergreen Holly, from the North of China. Introduced by Messrs. Standish and Co. (Fig. 27.) When Mr. Fortune was in China (in the service of the Horticultural Society) he found this in flower somewhere in the neighbourhood of Shanghae, in April. During his present visit to that country he had again met with it, and in fruit, at a place called Kin-tang. It is a very remarkable plant, and promises to be, to English gardens, of much importance, on account of its hard, dark green evergreen foliage and large berries. The leaves are almost always furnished with three strong spines at the end, but when the plant is young there are added one or two more on each side. In the old plant the latter wholly disappear, while the end spines will occasionally extend, turn up their edges, and assume the appearance of strong horns.—*Paxton's Flower Garden for May.*

Ilex microcarpa.—Another hardy evergreen Holly from the north of China. Introduced by Messrs. Standish and Co. (Fig. 28.) Concerning this new shrub, we have no information beyond the statement that it was found at Tein-tung. The aspect of the plant is not unlike that of an evergreen Oak, but the leaves are quite smooth on each side. The berries when ripe are very small, and appear to be unusually pulpy, for, on drying they shrivel up, and leave the ribs of the four stones which they enclose quite apparent. It seems allied to Thunberg's Ilex rotunda. *Paxton's Flower Garden for May.*

Calendar of Operations.

(For the ensuing week.)

PLANT DEPARTMENT.

As all the principal potting is or ought now to be completed, the routine work in this department will consist in watering, airing, and shading; training the plants, and keeping them and the houses perfectly clean. If the pots have been perfectly drained, and the plants potted in open soil, water may be liberally administered to those which are growing and rooting freely. But if anything like stagnation be observed, the fault may generally be attributed to some defect in the drainage, which should be immediately examined and put right. Sufficient air should at all times find admission into the houses, to produce a free circulation; but during the more active season of growth more than this is unnecessary, unless for the purpose of moderating the temperature in very hot weather. Shading should only be used in strong sunshine, and should be so arranged that it may be easily removed, or reapplied in changeable weather. Moisture, in conjunction with a high temperature, is indispensable for plants in a growing state. Where bottom heat is produced by tan or other fermenting materials, be careful that it does not decline

before the plants have completed their growth; but on the first indication of the heat failing, the bed should be stirred up and some fresh material added. All growing plants will require constant attention in the training, and occasionally stopping of the young growths, especially of those intended to form handsome specimens. To plants in a growing state, the allowance of heat, shade, and moisture during the day, should be increased rather than decreased, proportioning them to the still increasing strength of light; but avoid a high temperature during the night—68° is sufficient for anything—and whenever the weather is so warm as to raise the internal temperature higher than this, give air more abundantly; but, even in such weather, a little fire will be necessary the last thing at night to prevent the house being too cold at daybreak next morning. Let syringing be performed in good time in the afternoon, that superfluous moisture may dry up before dark; and to assist this some of the ventilators should be opened in the course of a couple of hours after syringing, and allow this air to remain on all night. This applies especially to houses with closely glazed roofs, where sufficient air to prevent stagnation cannot enter by means of the laps. Pelargoniums, Calceolarias, and other summer-flowering greenhouse plants should be accommodated with sufficient room to stand without being crowded, and that they may enjoy the full benefit of the sunlight with a free circulation of air. The flower stems of the Calceolarias should be supported with small neat stakes.

FORCING DEPARTMENT.

PINERIES.—Let the plants be liberally supplied with moisture during their growth, and especially those which are swelling their fruits; to the latter it should be given in the shape of liquid manure, and where it is desirable to produce the fruit as large as possible, its swelling will be assisted by removing useless suckers, and by affording a slight shade during bright sunshine. Maintain a moist atmosphere by sprinkling the paths, walls, and other evaporating surfaces, and by loosening the tan, to induce an exhalation of the congenial vapour arising therefrom. VINERIES. — Attend to tying, thinning, and stopping. Where plants of any kind are necessarily grown beneath Vines, the shoots of the latter should be stopped at the first joint above the fruit, and the spurs on which there is no fruit should be stopped at the fourth or fifth leaf. This will also apply to Vines on the rafters of greenhouses, which are just now breaking. In disbudding, not more than twice the number of shoots necessary to produce a crop should be retained, one half of which will carry bunches this year, and the other half will make wood on which to produce next year's crop. PEACHES AND NECTARINES which are just ripening should be assisted by a dry atmosphere, a free admission of air back and front, and by removing any leaves which shade the fruit from the rays of the sun. In the succession house very little fire will be required at night, if the sun-heat is properly economised by closing early in the afternoon. Tie in the young shoots as they advance.

FLOWER GARDEN AND SHRUBBERIES.

We feel it our duty to urge every gardener to proceed with the greatest possible despatch in planting out his bedding stuff; and particularly to take advantage of moist, showery, or dull weather; to push this work on with extra speed by borrowing workmen from other departments; that as soon as the season is sufficiently advanced, the plants which are properly hardened may be in their final situation as soon as possible. Annuals which have been sown or pricked out into frames or beds require transplanting into their final situations, and biennials into reserve beds for planting out next spring. A sowing of annuals should now be made for autumn flowering, including Mignonette, Nemophila, Virginian Stock, Silene, Collinsia, Sweet Pea, Gilia, Kaulfussia, Godetia, Clintonia, and any others which are sufficiently showy, and which come quickly into flower. Particular attention should be paid to the Rosery; the young buds will want looking after as carefully as those of Apricots, as they are troubled by caterpillars in a manner very similar, and, as in the case of the fruit trees, the best remedy is to examine them carefully and destroy the caterpillars with the thumb and finger. Shrubs which have been recently planted should not be allowed to suffer for want of water.

FLORISTS' FLOWERS.

TULIPS.—Seedlings as they expand must be marked, either for trial a succeeding season, or to be discarded altogether; it is useless, for instance, to preserve those which have either ill-formed or stained cups. The generally acknowledged standard is half a globe; therefore those which have long or pointed petals are out of the question. Form now is considered of very great importance; no other excellencies counterbalance a defect in this particular. Many seedlings have an impure base; this will occasionally "break out" when the flower blooms in a perfectly feathered state, but when flamed it is always apparent, and the variety will be valueless. The awning of the best or main bed will of course be on, though the Northerns will want all the sun they can get if they are to exhibit at either of the Manchester shows. PANSIES do not succeed very well under an awning; the best plan is to shelter the individual flowers required for exhibition with a neat shade. Much care must also be taken in the selection of seedlings, for in truth their name is legion; attend to rotundity of outline, substance of petal, and clearness and intensity of marking. Turner's Mr. Beck is a fine and successful new variety. All amateurs should aim at eclipsing such flowers as this. CARNATIONS AND PICOTEES must be well watered in dry weather (if in pots); the evening is the most proper time. PINKS.—As they advance, reduce both stems and buds, according to the strength of the plants. Plant out Dahlias, and attend to the general routine.

HARDY FRUIT GARDEN.

PEACHES AND APRICOTS ON WALLS.—Proceed with the final disbudding of these, leaving no more shoots than can be laid in without crowding. Where the young shoots seem likely to grow very strong, they should be stopped as soon as they have made from four to six leaves, and from the laterals consequently produced, one or more may be selected, which will generally form good bearing shoots of moderate strength; but if the wood they produce is still too strong, stop again, and continue the practice as long as the tree persists in throwing out strong growing shoots. This moderates the growth in those parts which are too vigorous, and helps to diffuse the sap over the whole tree with greater uniformity. The neglect of timely and judicious stopping of the gross shoots often proves to be the ruin of many a fine tree. Where the Peaches, Nectarines, and Apricots, have fortunately set an abundant crop of fruit, it will be necessary to examine them carefully, and to cut some away where they are too thick. This should be done when they are about the size of Walnuts, as they come in usefully for tarts. Attend vigilantly to the destruction of caterpillars and aphides. Continue to let down the canvas screens at night whenever the weather is wet or cold. Those trees which are protected by evergreen boughs should be gradually released, so that a free circulation of air and the rays of the sun may exercise their influence upon the rapidly-advancing fruit and foliage. If the covering is allowed to continue longer in contact with the branches, it will do injury by overshading. After all is removed, let the trees have a gentle washing with the engine, to remove any cobwebs, loose leaves, or other rubbish, which may be sticking about the walls; being at the same time untidy in appearance and a harbour for insects.

KITCHEN GARDEN.

A cool moist atmosphere should be maintained in the Mushroom-house, and cleanliness strictly attended to; let the hay used for covering the beds be occasionally changed, as it forms a more congenial harbour for insects when allowed to get old and musty. Pay attention to the destruction of woodlice, by laying slices of Turnips to attract them, in addition to which a few toads should be kept on all the beds. The Onions will soon require thinning, and if a sufficient breadth has not been sown, a bed should be prepared for transplanting those into which are thinned out of the principal bed. Make a sowing of the silver-skinned variety, moderately thick, to produce small bulbs for pickling. Give plenty of room to all growing crops, and stir the ground frequently with a fork, to encourage their progress and to keep down weeds. Make successional sowings of all summer vegetables which are of short duration, as Peas, Beans, French Beans, tall Runners, Spinach, &c., and salads of all kinds; also early Cabbages, and a small sowing of Cauliflowers for late autumn and early winter supply. The ground for Spinach crops sown at this season should be rich and deep, or the produce will be bitter and run to seed. Transplant Celery, and water freely, that the young plants may not suffer from the check, or from the drought in very dry weather.

State of the Weather near London, for the week ending May 16, 1850, as observed at the Horticultural Garden, Chiswick.

May.	Moon's Age.	Barometer. Max.	Barometer. Min.	Temperature. Of the Air. Max.	Of the Air. Min.	Of the Air. Mean	Of the Earth. 1 foot deep.	Of the Earth. 2 feet deep.	Wind.	Rain.
Friday.. 10	28	29.997	29.959	60	43	51.5	48	48	S.W.	.00
Satur... 11	●	29.981	29.952	62	47	54.5	49½	48½	S.W.	.01
Sunday . 12	1	30.002	29.946	65	35	50.0	50	49	N.W.	.01
Monday 13	2	30.109	30.082	62	34	47.5	51	50	N.E.	.01
Tues. .. 14	3	30.082	29.916	59	41	50.0	52	50½	S.W.	.00
Wed. ..15	4	29.916	29.902	52	25	38.5	51	50½	N.E.	.03
Thurs....16	5	29.947	29.930	55	37	46.0	49½	50½	N.	.01
Average....		30.005	29.955	59.3	37.3	48.3	50 1	49.5		.07

May 10—Clear; cloudy and fine.
— 11—Fine; cloudy and fine; overcast.
— 12—Slight shower; cloudy and fine; overcast.
— 13—Fine; very dry air; rain at night.
— 14—Very cold wind; fine; cloudy and fine.
— 15—Fine; cloudy; clear at night; temperature towards morning 7 deg below freezing.
— 16—Fine; slight shower in afternoon; overcast at night.

Mean temperature of the week, 4 deg. below the average.

State of the Weather at Chiswick during the last 24 years, for the ensuing week, ending May 25, 1850.

May.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds. N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 19	64.9	45 0	54.9	10	0.50 in.	2	5	5	1	2	6	3	—
Mon. 20	64.9	44.5	54.7	12	1.14	1	4	5	3	3	5	1	2
Tues 21	66.0	45.0	55.5	10	0.36	2	4	8	2	3	2	1	2
Wed. 22	65.8	44.5	54.6	11	0.20	5	2	3	3	3	4	2	1
Thurs. 23	68.2	46.8	57.5	7	0.21	1	5	3	4	1	3	3	4
Friday 24	68.2	45.5	56.9	9	0.54	:	5	5	—	4	4	3	1
Satur. 25	66.0	45.4	55.7	7	0.64	)	0	1	1	1	4	5	1

The highest temperature during the above period occurred on the 25th 1833—therm. 82 deg.; and the lowest on the 25th, 1839—therm. 29 deg.

Notices to Correspondents.

TO OUR CORRESPONDENTS.—May we beg it to be understood that *we cannot answer inquiries privately through the post.* We are ready to give reasonable information through our columns, but we cannot consent to the labour of writing letters.

BIRDS: *H A.* We do not know.

BOOKS: *H.* Dr. Lindley's "School Botany."‡—*Fritz.* We believe that Baxter's "British Flowering Plants" is extant. Enquire of any bookseller.‡

FISH: *H Seymour.* See the answer below under the head of "Valisneria."

GERANIUMS: *E C W.* The leaves of seedlings are always larger the first year than they are in the second or third.‡

GOLD GRASS: *F.* See p. 302 of our last week's Number.‡

HYBRIDS: *Ciolwlff.* A Fuchsia cannot be crossed with a Ribes. It is necessary in the hybridisation of plants that both should be of the same natural genus. There is no hope of getting a bright yellow Fuchsia. Read the late Dean of Manchester's treatise upon hybrids in the Journal of the Horticultural Society.

INSECTS: *Este.* The larva found in the heart of the branch of the Summer Nonpareil is that of the wood leopard moth; *Gardeners' Chronicle*, 1846, page 236, representing, 1, the



larva; 2, chrysalis; 3, male moth; and 4, mass of eggs. *W.—Essayer.* Your insect found on the Apricot is the caterpillar of the swallow-tail moth (Ourapteryx sambucaria). *W.—W B.* The grubs which have attacked the roots of the Cow Cabbage are the larvæ of the common daddy-long-legs, which had previously fed on the roots of the Grass you have lately broken up. You had better saturate the earth well round each plant with gas-tar water; but as the larvæ are nearly full grown, you must also kill as many of the flies themselves when they begin to appear. *W.— G S W.* Thanks for the reeds, but the majority seem old ones, from which the insects had escaped last year. The larvæ found in cocoons attached to the Rose-shred are those of the Rose antler saw-fly (Cladius difformis). The grubs found in the wine corks died; we shall be much obliged for another supply. They are known to turn to a small Tinea. *W.—H W B.* The insects which have attacked your neighbour's Cucumber plants are the common thrips. Fumigation will certainly destroy them, as well as the fumes from bruised Laurel leaves, but the frames must be made air tight at the time. *W.*

LETTUCES: *B C.* There are no full grown and well blanched Cos Lettuces in Covent-garden market yet. The weather has been unfavourable for their growth.‡

NAMES OF FRUITS: *G C.* The Easter Pippin or French Crab.‖

NAMES OF PLANTS: *J Ellis.* It looks like a bit of Oncidium urophyllum, but such things cannot be named without leaves, &c.—*P.* 1, 2, Aerides affine; 3, Oncidium filipes.—*An Old Sub.* 1, Astelia Banksii; 2, Leucopogon Richei; 3, Melittis melissophyllum. — *Addio.* Pulmonaria virginica. — *W G.* Apparently a white variety of Myosotis sylvatica; the specimen is quite unfit for examination.—*J K.* It is a parasitical fungus called Uredo Rosæ.—*H P G.* The Begonias in gardens are one mass of confusion. Yours is related to B. semperflorens, but distinct. We cannot just now spare half a day for the determination of its real name. It passes current under those of nitida and ulmifolia, both wholly wrong.—*A M.* Spiræa lævigata.—*A B C.* Ribes speciosum. —*Y Y.* Anagyris indica.—*W R.* A dried caterpillar attached by Sphæria Robertsii.—*Y Z.* Polystichum coriaceum. *S.*

PAINTING IRON HURDLES: *M A.* It is said that "the rustier they are the better before the composition mentioned at page 296 is laid on."‡

PAXTON'S COTTAGERS' CALENDAR may be had at the Office of this Paper, or of any bookseller, price 3*d.*, or 5*s.* for 25 copies for distribution amongst cottage tenantry.

PINE-APPLES: *A young Beginner.* With a little experience you will learn that there is no such difficulty as you are beaten by. We cannot give a lecture upon this subject. Read Mills on the Pine-apple, or Glendinning, or some other writer of authority. We are sorry to see that you have undertaken a task without having been qualified for it by the necessary experience.

RHUBARB: *J W.* There is no room for a difference of opinion as to the treatment of the Rhubarb plant, as it attains a disposition to form for seed. Undoubtedly the flowering stem should be cut down as soon as it is half grown, or sooner.

SASHES: *A Constant Reader.* Mr. Montgomery, Brentford. You cannot use anything better than Atkinson's cement.

THE TREE ROSE: *W D.* At the request of numerous subscribers the price of this work is now reduced from 4*s.* 6*d.* to 3*s.* 6*d.*, post free; it can be forwarded to any address by a Post-office order being sent to James Matthews, at the Office of this Paper.

VALISNERIA: *J F J.* Mr. Warrington's address is Apothecaries'-hall, Bridge-street, Blackfriars.

VERBENAS: *Amateur.* Turfy loam mixed with a little leaf-mould or *rotten* dung and sand, so as to render it light, will suit Verbenas perfectly.‡

MISC.: *G C.* September is the best time for moving large variegated Hollies.‡—*Inquirer.* Apply to Dr. Lankester, 22, Old Burlington-street.—*D Y.* No Orchids can be grown out of doors, except the common hardy kinds. Eggs of silkworms may be obtained in Covent-garden market.‡

SEEDLING FLOWERS.

AURICULA: *G B S.* A promising pip: but we should like to see a truss before we offer any opinion of its merits.*

CEREUS: *M I.* A pretty flower, very much like that of C. crenatus.

CINERARIAS: *G R.* 1, white, faintly tipped with lilac; dark centre. A large clean-looking flower, but different in form. 2, bluish purple, with a narrow rosy circle round the centre; too small, and inclined to reflex.*—1 *c* 1. White centre, broadly margined with purplish lilac; too small and inferior to many sorts already in cultivation.*

EPIPHYLLUM: *T K.* A pretty rosy pink variety of E. truncatum.*

PANSIES: *J F O.* 1, white ground, top petals purple, lower ones margined with the same colour; eye large and bold, showing itself in the side as well as in the bottom petal; smooth, but rather long. 2, a flower of the same class, and similarly marked; purple much darker than in 1; substance not so good. 3, yellow ground, worthless.*—*P.* A substance not so good. 3, yellow ground, worthless.*—*P.* A yellow-ground flower in the way of Hooper's Masterpiece, but not so good.*

POLYANTHUS: *J W.* Your seedling is deficient in many points which it ought to possess in order to be a good florists' flower. Instead of being stained in the centre with dark yellow like a Cowslip, it ought to have been either pure lemon or orange, and the lacing does not strike through the centre of the petals to the eye, which it should do. It is large and striking, but worthless as a show flower.*

*** As usual, many communications have been received too late, and others are unavoidably detained till the necessary inquiries can be made. We must also beg for the indulgence of those numerous correspondents, the insertion of whose interesting contributions is still delayed.

FOR TURNIP SOWING.

SUPERPHOSPHATE OF LIME AND CRUSHED BONES are the best and cheapest Manures for the Turnip Crops, and may be had in any quantity on application to Messrs. HUNT's Manure Works, High-street, Lambeth, London.
Established 1816.

PERUVIAN GUANO.—As Agents of the Peruvian Government for the importation and sale of this valuable MANURE, we think it right, for the protection of consumers and respectable dealers, to apprise them that the adulteration of the article is still extensively practised, and to recommend them to apply either to ourselves, to our agents, Messrs. GIBBS, BRIGHT, and Co., of Liverpool and Bristol, or to dealers of established character, in whose honesty and fair dealing they can place implicit confidence. ANTONY GIBBS and SONS.
London, May 18.

CORN MANURE FOR WHEAT, BARLEY, OATS, BEANS, &c., &c.

THE LONDON MANURE COMPANY most confidently recommend the above, as they are daily receiving very satisfactory accounts from parties who used it with great success last season. It will be found fully equal to and much cheaper than Peruvian Guano, and is not so liable to produce so large a growth of straw. Price Seven Guineas per ton, 3 cwt. per acre. They also beg to offer their Concentrated Urate, Superphosphate Lime, Nitrate of Soda, Sulphate and Phosphate of Ammonia, Fishery and other Salt, Gypsum, Sulphuric Acid, and genuine Peruvian Guano. To insure this free from adulteration, all purchasers can receive it direct from the Warehouses of the Importer.
Bridge-street, Blackfriars. EDWARD PURSER, Secretary.
Country Dealers and Agents supplied.

MANURES.—The following Manures are manufactured at Mr. LAWES's Factory, Deptford Creek:

Corn and Grass Manure, per ton	...	£10	0 0
Clover Manure, do.	...	11	0 0
Turnip Manure, do.	...	7	0 0
Superphosphate of Lime	...	7	0 0
Sulphuric Acid and Coprolites	...	5	0 0

Office, 69, King William-street, City, London.
N.B. Peruvian Guano, guaranteed to contain 16 per cent. of Ammonia, 9*l.* 15*s.* per ton; and for 5 tons or more, 9*l.* 10*s.* per ton, in dock. Sulphate of Ammonia, &c.

LAWES'S PATENT MANURE.

WILLIAM E. RENDLE AND CO., Plymouth, are Mr. Lawes's Wholesale Agents for the Sale of his MANURES, and can supply them at Mr. Lawes's prices, delivered at his Factory, Deptford Creek.—Apply to WILLIAM E. RENDLE and Co., Union-road, Plymouth.

GUANO AND OTHER MANURES.—Superphosphate of Lime (See reports of experiments in Royal Agricultural Society's Journal, Vol. 6, Part 2), Guano, Peruvian and Patagonian, Gypsum, Salt, Nitrate of Soda, and all other Manures of known value on sale. A Pamphlet on the above forwarded on receipt of four postage stamps.—Apply to MABE FOTHERGILL, 201a, Upper Thames-street, London.

CORN MANURE.

BLASHFIELD'S PATENT COPROS.—A new Manure for Corn and other Crops, containing Ammonia, Phosphate of Lime, Potash, Soda, Magnesia, Silicate of Potash, &c. Price, delivered alongside a vessel, or any Wharf in London, 8*l.* per ton. It is sold in a finely-ground dried powder, by the Patentee, at No. 3, New London-street, Mark-lane, London.
Superphosphate of Lime, Gypsum, Sulphate of Ammonia, Sulphate, and Nitrate of Soda.

BY HER MAJESTY'S ROYAL LETTERS PATENT.

PATENT HOTHOUSE WORKS, KING'S ROAD, CHELSEA.

E. DENCH invites the attention of Gentlemen about to erect Hothouses, &c., to the vast superiority in every respect possessed by his PATENT HOUSES, which he will warrant superior in every respect to any others. Good Glass from 16 to 21 oz. per foot, 1 foot wide, 3 feet long, furnished, and the Houses, when completed charged, from 1*s.* 3*d.* to 1*s.* 6*d.* per superficial foot, according to size and quantity; on one principle the roof is formed without wood or putty, and on another principle with wood rafters, and the glass put in with putty. Patent Sashes, requiring no paint, from 7*d.* to 9*d.* per foot.

HEATING BY HOT WATER.

HOT WATER APPARATUS AND HORTICULTURAL BUILDING.

W. HILL begs respectfully to announce that his improved "FLUE BOILER" may now be had in sizes to suit every description of Apparatus, from that of 100 feet to 2000 feet of 4-inch pipe. Improved STEAM BOILERS, from one-horse power and upwards, adapted either for stationary or portable engines, and guaranteed to be most effective.
Every description of Horticultural Building constructed upon the best principle. Buildings of any kind heated by hot water.
*** A liberal Discount to the Trade.
W. HILL, Horticultural Works, Greenwich.

HYDRAULIC ENGINES, WATER RAMS, &c. on Improved Principles; Engines worked by Steam or Hydraulic power, to raise from 1 gallon to 1000 per minute to a height of 500 feet, and from a depth of 900 feet. Douche, Vapour, Hot-air, and all other kinds of Baths. Buildings, Conservatories, &c., heated by Steam, Air, or Water. Boring, Sinking, and Collecting of Water, &c. Towns supplied.
Direct to JOHN LEGG, Cheltenham.

STEPHENSON AND Co., 61, Gracechurch-street, London, and 17, New Park-street, Southwark, Inventors and Manufacturers of the Improved CONICAL and DOUBLE CYLINDRICAL BOILERS, respectfully solicit the attention of scientific Horticulturists to their much improved method of applying the Tank System to Pineries, Propagating Houses, &c., by which atmospheric heat as well as bottom-heat is secured to any required degree, without the aid of pipes or flues. S. and Co. have also to state that at the request of numerous friends they are now making their Boilers of Iron, as well as Copper, by which the cost is reduced. These Boilers, which are now so well known, scarcely require description, but to those who have not seen them in operation, prospectuses will be forwarded, as well as reference of the highest authority; or they may be seen at most of the Nobility's seats and principal Nurseries throughout the kingdom.
S. and Co. beg to inform the Trade that at their Manufactory, 17, New Park-street, every article required for the construction of Horticultural Buildings, as well as for heating them, may be obtained upon the most advantageous terms.
Conservatories, &c., of Iron or Wood, erected upon the most ornamental designs. Balconies, Palisading, Field and Garden Fences, Wire-work, &c.

RENDLE'S DESCRIPTIVE CATALOGUE OF AGRICULTURAL SEEDS IS JUST PUBLISHED, and can be had on application, GRATIS (for one penny stamp).
It contains a descriptive list of all the best Field TURNIPS, *with the lowest market prices, also a full descriptive price current of all the best sorts of* CARROTS, MANGOLD WURZEL, CLOVER, *&c., as well as all the best varieties of Permanent Pasture Grasses.*
The following is an extract from the Catalogue.

Rendle's Imperial Purple-top Swede Turnip	...	per lb. 0*s.* 8*d.*
Ditto ditto		per qt. 1 0
Skirving's Liverpool Swede ditto, per lb., 8*d.*		per qt. 1 0
Laing's Improved ditto ditto, per lb., 8*d.*		per qt. 1 0
Purple-top Scotch ditto ditto, per lb., 8*d.*		per qt. 1 0
White and Green Globe per lb., 6*d.*		per qt. 0 10
White Belgian Carrot		per lb. 0 10
Yellow Globe Mangold Wurzel		per lb. 0 8
True Italian Rye-grass		per bush. 7 0
Best English Red and White Clover		per lb., 5*d.* to 0 7
Large Cattle Parsnip		per lb., 1*s.* to 1 6

With every other kind of Agricultural Seeds at the lowest market prices. (See Catalogue.)
PERMANENT PASTURE GRASSES, sold in mixtures to suit various soils, at 30*s.* per acre, allowing two bushels of light seed and 12 lbs. of heavy seed to each acre.
All orders above 2l. will be delivered free of carriage to any station on the Great Western, Bristol and Gloucester, Bristol and Exeter, or South Devon Railways; or to any town in Devon and Cornwall; or to Cork, Dublin, or Liverpool, by Steamers.
Railway and Steam communication to all parts of Great Britain and Ireland.
For Catalogues and further particulars apply to
WILLIAM E. RENDLE & CO., Union-road, Plymouth.
ESTABLISHED 1786.

TURNIP SEEDS.

DUNCAN HAIRS having personally superintended the selection and growth of the Turnip Seed he offers, can with confidence recommend them as genuine. Likewise, AGRICULTURAL SEEDS of every description, of first-rate quality and low in price. Catalogues with prices free.
Garden Tools, Nets, and every article connected with the trade wholesale and retail.
Seedsman and Florist, 109, St. Martin's-lane, Charing-cross.

MESSRS. NESBIT'S CHEMICAL AND AGRICULTURAL SCHOOL, 38, Kennington-lane, London.—A sound practical knowledge of Analytical and Agricultural Chemistry, Geology, Surveying, Levelling, Railway Engineering, &c., may be obtained in Messrs. NESBIT'S Academy, in addition to a good modern education.
Mr. NESBIT'S works on Arithmetic, Mensuration, Gauging, Land Surveying, English Parsing, &c., are published by LONGMAN and Co., and may be had of all Booksellers.
The terms of the School can be had on application either personally or by letter.

PURE WATER raised to any height from a small stream, where a fall can be obtained, by FREEMAN ROE and HANSON'S IMPROVED RAM; less waste, by two-thirds, than those ordinarily in use. Portable Steam Engines for Agricultural purposes, Threshing Machines, Deep-well Pumps, Water-wheels, Baths, Hot-water Apparatus, and Fountains. Towns supplied with Gas or Water. Drawings and Estimates made.—FREEMAN ROE and HANSON, Hydraulic and Gas Engineers; Office, 70, Strand, London.
Works, Sumner-street, Southwark-bridge-road.

LOOK TO YOUR STABLE EXPENDITURE, and attend to its economy and Corn-dealers' Bills.

CHAFF MACHINES.—Horse Masters should give cut Hay or Wheat Straw with the Oats they allow, and those Oats should be bruised.—MARY WEDLAKE'S superior CHAFF MACHINES and OAT BRUISERS, manufactured on the premises (40 years established), 113, Fenchurch-street, and 8, Billiter-street.
N.B. Chaff-cutting and Oat-bruising Machinery by horse-power. Old Machines repaired.

HOW TO KEEP A HORSE FOR LESS THAN ONE SHILLING PER DAY!! and make the Animal look better than he now does when you are paying not less than 12*s.* to 13*s.* per week. Consider the enormous saving in these hard times—times of cheapness!!

DO YOU BRUISE THE OATS YOU GIVE YOUR HORSES? No. Then you lose one bushel out of every three, and your Cattle do not do half so well.—MARY WEDLAKE AND CO.'S OAT BRUISING MILLS. Superior Chaff Engine, simple in construction, doing from 50 to 500 bushels daily and more. Nearly all respectable Coachmasters and Brewers in London use these implements. To be seen at 113, Fenchurch-street, opposite Mark-lane, close to the Blackwall Railway.
N.B. Linseed Mills, Bean Mills, and Malt Mills, in great variety.

AGRICULTURAL DRAINING: THE DERBY LEVEL.—A Very Superior Draining Level, of great simplicity, price 3*l.* 5*s.*, to be had of the Maker, Mr. JOHN DAVIS, Optician, Derby. The above is securely packed and sent to any part of the empire.

BELL'S PATENT LIQUID CEMENT is ready for use, and only one-eighth the cost of oil-paint. For beauty it is pre-eminent, giving the exact appearance of FINE CUT STONE. Can be used at once on fresh Roman Cement, or any other plastering, and will protect the walls as well as Roman Cement. In casks of 1, 2, and 3 cwt., at 8*s.*, 15*s.*, and 21*s.*, casks inclusive.
PATENT MINERAL PAINTS.—Invaluable for cheapness, beauty, and permanence: not half the cost of other paints, always ready for use, will keep good for years, and therefore well suited for exportation. Brilliant black, 2*s.*; rich brown, 2*s.* 9*d.*; greens and light colours 4*s.* per gallon.
G. BELL and Co., 2, Wellington-street, Goswell-street, London.

IRON AND WIRE FENCING,
AND METALLIC BEDSTEADS.

THOMAS PERRY AND SONS,
252, OXFORD-STREET (NEAR HYDE PARK),
And Highfields Foundry and Wrought-iron Works, Bilston, Staffordshire, Manufacturers of all descriptions of
PLAIN AND ORNAMENTAL IRON AND WIRE FENCING,
Park Entrance, Carriage and Field Gates, Wickets, &c.;
Deer, Sheep, and other Hurdles;
Hare and Rabbit-proof Wire Fencing;
Iron Bedstead Makers to the Board of Ordnance;
And Government Contractors.
The works of Messrs. PERRY being situated in the heart of the first iron district, they are enabled to execute all orders with the greatest facility, and on the most moderate terms. Drawings made and estimates prepared, if required. The show-rooms contain an immense variety of every description of Iron and Wire-work, and are the largest in London. An Illustrated Catalogue of Bedsteads, with dimensions and prices, sent on application, post-free.

FLEXIBLE INDIA-RUBBER HOSE PIPES.

JAMES LYNE HANCOCK, Sole Licensee and Manufacturer of the PATENT VULCANISED INDIA-RUBBER PIPES and TUBING. These Pipes are well adapted for watering Gardens, conveying Liquid Manure, for Breweries, Gas Fittings, Chemical and all purposes where a perfectly sound WATERPROOF and FLEXIBLE PIPE is required. Hot Liquors or Acids do not injure them. No oil or dressing is required in using them. They do not leak from remaining out of use, are permanently flexible in all temperatures, and are therefore particularly suitable for Fire-Engines; and from their not leaking, are found exceedingly useful in conveying hot or cold water to baths in dwelling houses and such like purposes. Being extremely portable, stowing closely without danger of injury, resisting the influence of climate, insects, and vermin, frequently so injurious to such articles on board ship, and retaining their virtues though long out of use, render them particularly adapted for exportation.
N.B.—VULCANISED INDIA-RUBBER GARDEN HOSE, fitted with Roses, Jets, and Branches, complete, with Union Joints, ready to attach to Water Cisterns.
All letters or Orders addressed to J. L. H. at the Manufactory and Warehouse, Goswell-mews, Goswell-road, London, will meet with immediate attention.

ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

The GENERAL MAY MEETING will be held at the Society's House in Hanover Square, on WEDNESDAY, the 22d inst., at Eleven o'clock in the forenoon.
By order of the Council,
London, May 1, 1850. JAMES HUDSON, Secretary.

NOMINATION OF JUDGES.—On or before the General Meeting on the 22d of May, Nominations of Judges for Stock or Implements, at the Exeter Meeting, will be received from Members of the Society, who are requested to certify, from their personal knowledge, that the parties proposed are qualified and willing to act as Judges for the particular class for which they are respectively recommended, and who are unconnected with any Exhibitor of Stock or Maker of Implements, and have no direct personal interest in the Stock exhibited, as the breeder of any of the animals upon which they may be called upon to adjudicate.

RENDLE'S CHEMICAL PLANT MANURE.—We have just received the following letter from Capt. JAMES WILLIAMS, R.N., Newport, near Barnstaple.

"Newport-terrace, Barnstaple, May 14, 1850.

"Sir,—I acknowledge the receipt of another supply of your Chemical Plant Manure, and I have very great pleasure in informing you of the beneficial effects I have found it produce on my plants in general. I am certain a short trial of it will be satisfactory to any person using it. I find my plants *strong and full of flowers*, particularly my Geraniums, which are grown in very small pots, producing now, at this time, *fine trusses of flowers, large*, and *their colours clear*. On my Calceolarias it has an *astonishing effect* in the produce of flowers, both in quantity and size; with regard to Petunias the same. I now use it in the compost of all my greenhouse plants. I have so far been successful in the quantity I have used—one pint of manure to two pecks of compost; and as it is *inexpensive*, I wish you a successful sale, and trust that your customers will be as well satisfied as I am.

"I remain, sir, yours truly, JAMES WILLIAMS."

"P.S. I shall most assuredly recommend all my friends to use it."

Samples can be had gratis, by enclosing six penny postage stamps to pay the postage. Sold in tin canisters, at 1*s.*, 2*s.*, and 3*s.* 6*d.* each, warranted to give satisfaction, or the money will be returned.
Apply to WILLIAM E. RENDLE & Co., Union-road, Plymouth.

The Agricultural Gazette.

SATURDAY, MAY 18, 1850.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

WEDNESDAY,	May 22—	Agricultural Society of England.
THURSDAY,	— 23—	Agricultural Imp. Society of Ireland.
WEDNESDAY,	— 29—	Agricultural Society of England.
THURSDAY,	— 30—	Agricultural Imp. Society of Ireland.

WE have repeatedly warned our readers of the risk they run by purchasing cheap guano; but, notwithstanding all that has been said on the subject, there are still so many short-sighted as to persist in cheapening down this and other artificial manures, until it has become a regular trade to supply an article of which the principle recommendation is its low price. A summer or two ago, at a sea-port town, we saw a manufactory of cheap guano in full swing; there was a pug mill at work, mixing the Patagonian and chalk together, the result being a beautiful sample of *Peruvian guano!*

During the last week we have received intelligence of another manufactory of this kind, so busily engaged that the men are working night and day. The following is an analysis of the result, alongside of which we place an analysis of Peruvian guano, for the purpose of comparison:

ADULTERATED GUANO.		
Organic matter, yielding 7.36 ammonia		14.96
Earthy salts, containing 14.28 phosphate		17.22
Water		9.54—41.72
Adulterations:		
Common salt	13.52	
Brown ochre	44.76—58.28	
Total		100.00
PERUVIAN GUANO.		
Organic matter, yielding 19.48 ammonia		43.38
Alkaline salts		13.46
Earthy salts, containing 25.00 phosphate		28.50
Insoluble matter		2.16
Water		12.50—100.

The price of the former is 7*l.* per ton, that of the latter is 10*l.*; but when the amount of adulteration is taken into account, the

Adulterated guano costs about	... ...	15*l.*
Peruvian „ „	... ...	10*l.*

The folly of thus attempting to get guano *cheap* cannot be more strongly shown. Men will have, in fact must have, a profit upon their transactions; and if farmers will persist in only giving a certain price for guano, dealers will always be found who will undertake to satisfy them; and well they may,

for in this adulterated guano the brown ochre, with which it is mixed, costs little enough, leaving the fraudulent dealer a much greater profit than the honest merchant is satisfied with.

The party most to blame in this matter is the farmer; the chemical analysis by which the fraud was discovered in this case cost about 1*l.*, so that where any quantity is needed, that cannot be a serious consideration. Those farmers who cannot afford this, must go to dealers of established character, and, asking for the genuine article, they must pay the best price. By doing so, they may be perfectly satisfied that they secure a cheaper article than any discernment of theirs, unassisted by chemical analysis, could ever have effected.

One word to certain eminent chemists, to caution them against the extremely careless way in which many of them allow their names to be used. We have now before us a printed copy of an analysis, with the name of one of these gentlemen attached to it, by which guano has been sold by a very extensive dealer for upwards of two years, with what approximation to truth our readers may judge. We would also recommend that all analyses of guano should be calculated on one principle, so as to show, as in the instances we have quoted above:—

In 100 parts—1st, the organic matter, and the quantity of ammonia it yields; 2d, substances soluble in water, or alkaline salts; 3d, earthy salts or substances soluble in acid, containing phosphates; 4th, insoluble matter; and 5th, the quantity of water.

An analysis professing to give more information than this is a waste of time as far as the farmer is concerned. But, if all analyses were given in the above form, they could be more easily and more accurately compared than under the present system.

We have little hope that our repeated warnings will be attended to. The temptation of apparent cheapness is too great to be resisted, until the subject is either better understood, or until the farmer has found that low priced guano invariably produces inferior crops.

The farmer who requires a small quantity can only protect himself by dealing with men of known good character. We advise those who farm largely to ask for a sample from the tradesman, and when the bulk arrives send it with a sample selected by himself to a professional chemist, whose practical knowledge is sufficiently advanced to be able to speak not only to the comparative value of the two samples, but also to an approximation of the market value of either.

The low priced guano is not only actually dearer than the high priced sample when the quantity of fertilising ingredients each contains is taken into consideration; but the farmer also finds that his crops are wofully deficient when these cheap manures have been used. There are, surely, a sufficient number of chances against a good crop without the farmer adding to them by the use of inferior manures; and as this is the season when the principal purchases are made, we cannot too strongly urge upon them to abandon their present "*penny wise and pound foolish*" practices.

Unless some new source of guano be discovered, this valuable manure will gradually become very scarce, and the extensive system of fraud and adulteration now carried on will also tend to bring it into disrepute. By satisfying farmers that there are other sources of fertility besides the dung heap, it has, however, effected a revolution in practical agriculture undreamt of before its introduction. A new species of manufacture has sprung up to supply this growing deficiency, which promises to be of great importance not only to agriculture but also to the general trade of the community, and many who have entered this new trade seem to be actuated by the wish of making sales for ONE year only—one sample of superphosphate which we saw turned out by one of these gentry, actually contained 80 per cent. of gypsum; of course he could not expect any of his customers to come back to him the next season. A few years will, however, weed out such men, and those manufacturers who have been careful to manufacture a good article from the first, will speedily have the market to themselves.

We again reiterate our warning to farmers to be careful what they purchase, in the name of artificial manures. The character of a respectable tradesman, and the assistance of the chemist, are a sufficient protection if he will but avail himself of them.

"How can he get wisdom that holdeth the plough, and that glorieth in the goad, that driveth oxen, and is occupied in their labours, and whose talk is of bullocks?" Such, in ancient times, was the exclamation of the Hebrew sage; and the same enquiry may again be demanded of the present age with a similar hopelessness of solution. How are mental acquisitions to be obtained by the toiling labourer who for 12 hours daily is fagging in the field; who "giveth his mind to make furrows, and is diligent to give the kine fodder," instead of devoting his intellectual faculties exclusively to other objects which mechanism is unable to perform; and who has but little opportunity for the satisfaction of his mental appetite. While the sinews of a man are overstrained, and his nerves fatigued in daily drudgery, what vigour or inclination can he have for exercising and informing his mind? Education cannot be expected to develope with rapidity the mental capacities of the poor until business shall shorten its demands upon their time and energy; for while the working-men of Britain are entitled to honour for the triumphs they have in so many instances achieved over the ruthless obstacles that beset their progress, the far greater part have failed in strength or courage to destroy the lion difficulties in their path:

"Chill penury repressed their noble zeal,
And froze the genial current of the soul."

It is true to some extent that "the wisdom of a learned man cometh by opportunity of leisure, and he that hath little business shall become wise." But leisure alone will not suffice. Of all employments, that of farming is supposed to give the largest periods of cessation from labour; and yet agriculturists generally, at least of England and Ireland, are not usually classed as men of cultivated intellects and brilliant attainments. Poets discourse on the power of a constant familiarity with the operations of nature, such as is found in a rural life, to excite reflection and elevate the mind. But how then is it that the great mass of the farmers who enjoy such frequent and lengthened respites from the turmoils of business should be proverbially feeble and contracted in their mental aspirations and acquirements? How comes it that lectures, discussions, and public periodicals figure so diminutively in their hands; and how is it that while the charms of the chase, the glories of game, and the perfections of their beasts of sport form an absorbing topic at market meetings and convivial gatherings—the revelations of science, the birth of new truths, and the great questions which concern the welfare of humanity are comparatively so little esteemed? Leisure for study is not so much needed as a perception of the value of knowledge and an inclination to possess it. It may be said that we libel the class; but, we ask, are agriculturists generally considered as "readers;" do not the cheering glass and comfortable pipe or the desultory fireside conversation engross too many of the evening hours? We may have several useful agricultural magazines and papers, but these are mainly supported and purchased by the more opulent farmers and landowners; and, as a proof of how little the great bulk of the farmers read of agricultural information, where, we ask, are our farmers' penny periodicals circulating their 10,000 per week? Again, another testimony to the truth of our remarks is to be gathered from the lips of the farmers themselves: do they not repeatedly complain of the unpractical nature of communications in the journals?

It is common to hear the contents of an agricultural periodical summed up thus—"there are a few letters on cattle-feeding after a fashion which everybody knows, practises, or ridicules; a paper or two describing the farming of some innovating amateur; an article on some new-fangled notions of draining; a few pet opinions respecting foreign competition; and a one-sided estimate of expenses and profits—but nothing of real and practical utility." Now, why do not these men themselves write "practical papers?" The fact is, their complaints are merely an evidence of the unliterary tastes and habits of their class. Those who would claim to themselves the distinction of "practical" farmers are in general too unfamiliar with the pen to take the rural journalism out of the hands of the "fancy farmer" or son of science. The lawyer and physician seem to possess more favourable opportunities than the farmer for studying the "theory" of their professions; because their business is much amongst books and papers, and they cannot acquire an adequate knowledge of their practice without reading, whereas farm operations may be directed without the aid of written information. The learned professions discover past theory in books of cases, &c.; the farmer finds it in the modified farm practice of the day. The habits of reading and writing are intimately connected with the one variety of pursuits, and widely severed from the other: hence the lawyer and medical man are accustomed to rest their belief and knowledge upon recorded facts, while the farmers are chiefly influenced by improvements performed before their eyes. But cannot these trammels of habit be broken through: is the mighty power of the press to be limited in its usefulness by the uncongenial tastes of men? If there be any truth in chemical and geological science, agriculture will progress in proportion as the principles and facts of these sciences are known and understood by the cultivators of the soil; and, by what means are those truths to be disseminated if not by the press? If there be any advantage accruing from the publication of discoveries and the discussion of opinions, then is the agricultural press destined to effect an entire renovation of our art.

The necessity of multiplying the vehicles of information, and the importance of employing every means by which printed statements may be made valuable and convincing, are points upon which many columns might be written. Undoubtedly one of the causes which have operated to the hindrance of agricultural improvement has been the broken channel of intercourse between mind and mind. The incongruous facts and fragmentary evidence collected by dispersed and scattered individuals have been preserved in publications whose scanty circulation could not exhibit them sufficiently before the public eye. The consequence has been that, while private dogmas have been many, definite generalised results have been rare: agriculture as a science is still unfounded upon secure fundamental truths. If, however, the observations and speculations of all could be instantly placed before the attention and criticism of all, by means of cheap papers universally circulated, agriculture would no longer hesitate so timorously in adopting new truths, and would be less dilatory in the application of proved principles.

We have many writers and readers among the agricultural public, but the smaller occupiers, and indeed a large portion of those "who ought to know better," have not fully admitted the idea of deriving assistance in their art from the pages of the press. Removed from that "mental attrition" which sharpens, warms, and stimulates the residents in towns, the more isolated agriculturists probably require the urgency of circumstances to impel them toward completer knowledge for relief. It may be that the present pressure will turn us from our crippled resources to that certain fountain of success, and lead us to demand a wider diffusion of information. *I. A. C.*

GUANO.

Return to an order of the honourable the House of Commons, dated 14th February, 1850;—for, an account "of all guano imported into the United Kingdom, in each of the years 1838 to 1849, inclusive; distinguishing the quantities imported from each country, respectively."

Countries from which Imported.	Quantities of Guano imported into the United Kingdom.								
	1841.	1842.	1843.	1844.	1845.	1846.	1847.	1848.	1849.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
Norway	...	...	...	...	...	...	...	...	25
Prussia	...	...	...	...	...	15	...	...	...
Belgium	...	...	...	149	...	46	...	...	...
Channel Islands	...	...	...	...	105	160	156	...	...
France	...	...	...	1	...	...	...	...	477
Spain	...	...	...	20	...	...	...	16	...
Italy	...	...	...	...	...	...	...	23	...
Turkish Dominions	...	...	...	...	...	64	...	...	...
Egypt	...	...	...	...	...	514	...	...	...
Western Coast of Africa	...	...	175	76,898	207,679	5309	1146	950	2345
Colonial Territory of the Cape of Good Hope	...	...	...	253	46,848	4718	184	...	767
Eastern Coast of Africa	...	...	...	...	...	48	...	...	1
St. Helena	...	...	...	110	2093	443	401	...	...
British Territories in the East Indies	...	...	...	600	307	900	...	...	...
British North American Colonies	...	...	...	...	76	10	6	...	...
Demerara	...	...	...	...	...	174	...	...	...
United States of America	...	...	...	...	...	1175	...	...	...
Brazil	...	...	...	...	431	1162	250	204	...
Oriental Republic of the Uruguay	...	...	...	...	...	228	21	...	...
Chili	819	6167	1234	9743	11,656	10,430	10,574	6029	4911
Peru and Bolivia	2062	14,231	1589	16,475	14,101	25,102	59,430	64,191	73,567
Patagonia	...	...	...	...	...	38,181	10,223	...	1945
Southern Whale Fishery	...	...	...	...	...	523	...	...	...
Other parts	...	...	4	2	4	1	1	1	...
Total of the Quantities Imported	2881	20,398	3002	104,251	283,300	89,203	82,392	71,414	83,438

Previously to 1841, when it was first specifically charged with duty in the tariff, the article of guano was entered at the custom-house under the general denomination of "goods not particularly enumerated." No account of the importations can, therefore, be rendered for the years 1838, 1839, and 1840. *W. Irving, Office of the Inspector-general of Imports and Exports, Custom-house, London, 23d March, 1850.*

Home Correspondence.

Prices of Drain Cutting.—In a recent number of the *Agricultural Gazette*, I saw a request to correspondents, to forward to the editor the price which they pay, in different parts of the country, for cutting and filling in drains. Believing that such information may be very useful to the public, I beg to inform you that I have till this year been in the habit of paying for clay cutting, *i.e.*, anything which will cut with a digging tool without stocking, for 3 ft. deep, 5*d.*; 3 ft. 6 in., 6*d.*; 4 ft., 7½*d.*; per perch of 5½ yards; this year I have reduced each ½*d.* per perch, and pay 4½*d.* for 3 ft.; 5½*d.* for 3 ft. 6 in.; 7*d.* for 4 ft., including everything; and the men have this season, I consider, earned from 10*s.* to 12*s.* per man per week all round. Where stocking is required, it is impossible to fix any general price, as all must depend upon the obstacles to be overcome. I have paid 9*d.* and 1*s.* 4*d.* in the same season for making 4 feet drains, and the men did not earn so much at the latter as the former. *J. Curtis Hayward, Quedgely House, Gloucester.*

Mr. Caird, of Baldoon, and his Reviewers.—Knowing Galloway well, and the position Mr. Harkness once held as an authority in all matters connected with farming in Wigtonshire, and Rhins of Galloway, I think his reply is sufficient to dispel all doubts respecting Mr. Caird and his agricultural skill. I question if a more intelligent and enterprising body of farmers are to be found in Great Britain than those located in the districts adjoining to Baldoon, and Mr. Caird is universally spoken of by them as a first-rate farmer and worthy man. On the first appearance of Mr. Caird's pamphlet on the high farming at Auchness, the agricultural world was puzzled at some of the statements made in it; and to this day many farmers in England believe that it contains lies from beginning to end. The quantity of manure made was the great stumbling-block to the unbelievers; but did they know that, on farms near the sea-coast, on the west of Scotland, sea-weed is to be procured in great quantities, and that it soon rots every particle of straw or rubbish mixed with it, their unbelief would soon vanish. In Ayrshire, on farms near the sea-shore, I have seen heaps of sea-weed piled up in a single day, after a storm, that would have surprised any one unacquainted with the locality. This manure, when well made, that is, mixed with stable litter, is always found the most powerful for raising every kind of green crop. I have never seen larger Swede Turnips, Ox-Cabbages, or Carrots, grown in any county in England than those to which this manure was applied. The quantity of Potatoes grown at Auchness, and the profit realised from them, was another bugbear. The soil there being newly reclaimed moss, which has always been the freest from disease, was, no doubt, one cause of the tenant at Auchness growing so many Potatoes; but no crop, on any description of soil, is so profitable, if they are properly managed. It is true that if there was no rot, and that every farmer grew as many in proportion as in the Auchness case, that prices would soon find their level, and that Potato growing would be as unprofitable as Wheat growing; but this is no answer to the argument, for the tenant at Auchness found that many were deterred from planting their usual quantity for fear of disease, and he calculated on high prices in consequence. Every farmer, according to his individual case, ought to do the same with any description of crop, and discriminate which one would pay him best for his skill and outlay. Having spent all my life in the deep and proper cultivation of the soil, I, for one, firmly believe that there is no limit to increased production in this country, that is, when capital and skill are properly applied. *T., Notts.*

The New Churn.—How to solve a doubt. Two gentlemen, extensive dairy farmers in the neighbourhood of Stony Stratford, having expressed a wish to see Anthony's patent American churn in operation, being somewhat sceptical about the merits of new inventions, requested to be allowed to bring their own cream and try the churn at our place of business in Newgate-street, which we at once consented to, and accordingly, on Saturday, they made their appearance, with somewhere about 4 quarts of excellent cream. We handed them a 6 lb. churn, with the use of a man to turn the handle, and they proceeded to business. The cream was put in at about a temperature of 58°; the operation commenced, and in exactly 6 minutes 3 lbs. 10 oz. of first-rate butter was obtained, much to the satisfaction of the doubters, and to the delight of several gentlemen who had dropped in during the process. The butter was washed in the churn, the butter-milk being squeezed out thoroughly by the dasher, a little salt added, and thus without human hand ever touching it, it was prepared, and with a slice or two from a nice cottage loaf, eaten with much relish by all present; but the following certificate will attest their opinion:—"We whose names and addresses are hereunto annexed, being desirous of witnessing the operation of Anthony's patent American churn, brought about 4 quarts of our own cream, and witnessed the working of the churn, which produced from that quantity, in 6 minutes, 3 lbs. 10 oz. of excellent butter, of exceeding good flavour, firm, and hard. The temperature of the cream, when put in, 58°; and we most willingly bear testimony to its merits, considering it a great and useful implement as a butter-making machine: Thomas D. R. Rolch, Drumlanford House, Ayrshire; Peter Murdoch, Longbank, Renfrewshire; W. G. Duncan, Bradwell, Stony Stratford; Joseph Peers, Plasnewydd, Denbighshire." It is most remarkable that this certificate contains the opinion of England, Scotland, and Wales; and we feel the greatest satisfaction in having it in our power to introduce to the public so useful, so thoroughly good and economical a butter-making machine as this churn, the merits of which are placed beyond all doubt. *Key and Mitchell, Sole Agents for the Proprietors, 97, Newgate-street.*

Public Houses.—Gentlemen are making great and commendable exertions to get the Beer Bill repealed. Efforts nearly of the same magnitude and earnestness were made to obtain its enactment 19 years ago. Both, I doubt not, have sprung from the same laudable motive of conferring an advantage upon the working classes. But both, I feel assured, involve one great error, which is, ignorance of the nature and properties of the article called beer, which these houses are licensed to sell. If the article is good, why either interdict its sale, or limit the number of places in which it is sold? If the article is bad, and injurious to those who use it, why license its sale at all, either in beer-houses or houses kept by licensed victuallers? But if licenses are granted, merely in deference to public opinion, yet limited, in order to lessen the evils produced, why not excite public opinion against the liquor, by constantly stating that the evils complained of arise from the liquor itself. Here I think the agitators for closing beer-shops are greatly at fault, for in none of the appeals have I yet seen this point insisted upon. There must be some strong reason why beer-shops are disorderly and coffee-shops perfectly quiet; why the sale of malt liquors should generally produce vice and crime, while the sale of milk is harmless in its effects. Let us have the same neighbourhood; let us have two houses adjoining each other, and exactly the same company, one selling coffee and the other beer, and you shall find the effects upon the company so different as at once to convince any impartial person that the fault is in the liquor, and not in the men who drink it. It was the long-cherished opinion that malt liquor was nutritious and useful to the working man, which led many well-meaning persons to advocate the Beer Bill; and I fear the same favourable opinion is still cherished even by some of those who are seeking its repeal, and that the present movement does not spring from a conviction that working men (and still less those who are not working men), are injured by taking this beverage, but that it should either be brewed at home or taken in places under strict magisterial surveillance. Now if it be demonstrable, as I maintain it is, that malt liquor (so called) is injurious to the human system, then the original opinion urged for opening beer-shops is at once destroyed, and it would only remain to be decided how far in deference to existing prejudices it should be sold at all, and under what restraint. Beer produces exactly the same physical effect when sold at the "licensed victualler's" as at the "beer-shop;" and any difference in its moral effects arises from the influence of other restraints. One of the fundamental principles of the Temperance reformation is, that it is not the shop but the drink that is in the fault; that it is not the incautiousness of the moderate drinker, but the drink that produces that incaution, and that consequently the evil to be guarded against is, not the abuse but the use, one being certain to produce the other, so long as man's physical constitution remains what it is. Alcoholic liquor has the same effect wherever taken; but the manifestations of bad drink are no doubt restrained by the character of the company in which the drinker is found; and hence the evils of drinking are not so palpable in the licensed victualler's establishment as in the jerry-shop. I hope my Lords Harrowby, Ashley, and others will not lightly pass over this view of the subject, but institute an inquiry as to what this long and far-famed "malt liquor" is; and if they should become convinced that the fault is not in the man but in the liquor, they will have a ten-times stronger case with which to go to Parliament for the refusal or limitation of licenses to sell this article. I will attempt briefly to show what this far-famed national beverage is. I only know three properties for which beer can be recommended; first, to quench thirst; secondly, to give strength; and thirdly, to afford a stimulant. That it cannot do the first, I think is now conceded on all hands. It creates thirst, and the stronger the liquor or the more a man drinks, the thirstier he becomes. The nearer it approaches water, the less thirst it creates; and hence, for allaying thirst, the beer at 1*d.* per quart is far superior to that at 6*d.*; but water is decidedly better than either. Then comes the question, does it give strength, or does it merely excite the system?—in other words, is it nutritious, or is it merely stimulating? That the latter are its properties is most obvious; and to this we have now the united testimonies of all classes of workpeople. The less ale, the more labour is performed; the more ale, and the less work is done. Ale stimulates for a short time, but does not strengthen; and there is a great difference between stimulation and strength. We may blow up the fire with the bellows, just as we may excite the nervous and arterial system by the spirit from malt (alcohol); but it is only by solid fuel that we can sustain it. The Saturday night's glasses, even when not taken to great excess, instead of producing strength for Sunday morning, as we might expect according to the old theory, are the cause of languor, inactivity, and depression, and the whole of Sunday is scarcely sufficient to throw off their effects. It is good food, not stimulating liquids, that is to sustain the human system. But if the honest experience of thousands, often told, is not sufficient to convince, we have only to attend to the process of ale-making to learn at once that the sole object in every process is not to produce a feeding, but a stimulating liquor. For instance, Barley is the only ingredient used which can feed, and as the nutritious properties of ale are only in proportion to the quantity of this which it holds in solution, we shall see by an impartial inquiry that it cannot possibly be a feeding liquor. In a gallon of ale, we have, first, above three quarts and a pint of water; secondly, about six ounces of malt spirit (whiskey); and, thirdly, only about nine ounces of the worst parts of the Barley, including a few particles of Hop. That which is really food, and which alone can give strength, comes actually short of a single pennyworth in a gallon. If we go step by step into the manufacture of malt liquor, we shall not be surprised at this result, and we shall also at once be convinced that notwithstanding the high opinion often expressed of its nutritious properties, the sole object of every process in its manufacture is to produce, not a feeding, but an intoxicating beverage. For instance, in the first place, there is not more than five-pennyworth of Barley used in making a gallon of ale of ordinary strength, and of this five-pennyworth, above four parts are either abstracted or converted into spirit in the process of malting, mashing, fermenting, and fining. The maltster, for instance, first takes this Barley, and, by allowing it to lie together in a wet state, forces it to germinate; that is, he brings it into a similar condition to the sprouted Wheat which stands in the fields during a wet and sultry season. After sprouting the Barley, and then drying it on a kiln, the sprouts are taken off by a machine, and sold as "malt combs." The Barley, nearly 50 lbs. to the bushel, is reduced, when malted, to 38 lbs.: this is the first stage of abstraction. The brewer next takes the malt, but does not boil it, as any one would whose aim was to produce a feeding liquor; no, he makes an infusion which he calls "mashing," that is, dissolving the saccharine matter. This liquor, called "sweet wort," he draws off as carefully as possible, and most of the solids remain behind, being what we call "grains," sold for the purpose of feeding cows and pigs. This is the second stage in which there is a considerable loss as to food. Up to this point the malt liquor is perfectly innocuous; it contains no spirit, and could not by possibility intoxicate. It is in the next, the fermenting process, that all the mischief is done. In this, which is the first process of vegetable decay, the sugary matter becomes changed into alcohol and carbonic acid gas, and acquires the power of intoxicating. This is the third stage in which a loss of food is sustained. Next, in order to make good ale, fine and sparkling, is the "fining" process; and by this nearly all the particles of the Barley which had not been previously appropriated, sink, and are called "barrel bottoms." These are also disposed of in various ways, and hence this is the fourth loss. It is an indisputable fact, that the five-pennyworth of Barley used in brewing two shillings' worth of ale, loses in these processes full four-fifths of its nutritive properties, for the whole scheme of brewing is to make a stimulating and intoxicating beverage; and provided this property be secured, the less food it contains, and the higher it is estimated. The basis of all spirit is saccharine matter, or sugar. The malting process is to develope more sugar, the mashing to wash out this sugar, the fermenting process to convert this sugar into spirit, and the fining to rid the liquor of the dregs of the Barley, in order that it may be as clear as possible. I may just add that the Hop is used to improve the colour, to impart a bitter to the flavour, and to preserve the drink from running into the acetic fermentation; it is a narcotic, but contains nothing in the shape of food. Indeed, ale is little more than whiskey and Hop-water. While men are, therefore, trained to drink beer under the delusive notion that it is either calculated to quench their thirst or increase their strength, drunkenness is sure to continue; and the only rational way of curing the evil is, honestly to explain to the operatives its true properties. It is from "malt liquor" that our whiskey and gin are distilled; and a tumbler of spirit and water, of equal alcoholic strength, is scarcely as injurious as a tumbler of ale. I would, therefore, most respectfully submit these views to my Lords Harrowby, Ashley, and others, so that they may urge public opposition to the Beer Bill upon the broad and defined principle that beer is not a nutritious, but an intoxicating drink; that its use ought to be discouraged in all places, as well as in beer-shops. And I cannot help adding that, to be consistent, everyone who agitates for the repeal of the Beer Bill, should unhesitatingly see that he has neither a beer barrel in his cellar, nor ale or porter upon his table. *J. Livesey, Preston, April 18.*

The Coming Generation.—If means are not taken to instil into the minds of the young (both male and female) habits of industry, we shall leave a fearful legacy to the next generation, in the way of an idle and discontented race of work-people. There are in England thousands of acres of land capable of producing something, now barren, and there are also thousands of acres which would yield double by the expenditure of tough muscle and sinew upon them. Does it not appear akin to folly, to use no harsher term, to waste capital &c., the shape of human labour, by feeding in indolence, and under the name of charity, an enormous amount of able-bodied beggars and paupers. These could support themselves if properly managed, and under the direction of district inspectors, receiving small salaries; who would regulate the machinery of a society, to supply work to those who are able to contribute their share to the riches of the country. The expenses to be defrayed by voluntary subscription, which would not amount to so much as is now given in abused charity. Do not let me be mistaken, I should be the last man to close either

the heart or purse strings against the call of real distress and misfortune; but I do maintain the indiscriminate dispensing of alms is most mischievous. Inquiries amongst those who are well acquainted with the habits of trampers would soon convince the kind hearted of the impositions practised upon them, deceit gloried in, when the culprits are carousing at night, and recounting their success, and the manner of cheating the unwary. I must confess, at one period, to have been deceived as much as anybody, but having lately taken the trouble to look after those whose stories appeared to be most lamentable, my eyes have been opened to the folly of throwing away money upon sturdy beggars, which might be more advantageously spent on hard-working men and their families. It is extraordinary how little influence the parents of poor children have over them, and how careless they are in taking advantage of the education the offspring receive in parochial schools. The heads of families scarcely ever dream of exercising their authority, and compelling obedience on the part of their children; indeed they appear almost to fancy the mechanical part of reading and writing is quite sufficient to provide them with bread in after life. What crime and misery might be prevented, by attending to the common duties of father and mother, which are so neglected! *Falcon.*

Potatoes.—It would be most interesting to farmers and gardeners if some scientific persons would ascertain the analysis of Potatoes under various circumstances: 1st, when thoroughly ripe and fresh from the soil, after drying two or three days; 2dly, after having been allowed to heat in a bury; 3dly, when they have sprouted half-an-inch in the spring, previous to planting; 4thly, the same description of Potato kept under cover during the winter, and turned frequently, to prevent both growing and heating. The last will probably prove the best seed, and produce the cleanest and most abundant crop, if planted early. I before mentioned having planted my crop of Potatoes, in 1849, before the end of February; they have kept admirably—during the late winter not a bad one amongst them. In 1848 I lost half my crop, pursuing the old system of placing the Potatoes in heaps, and setting them late. *Falcon.*

On Storing Turnips.—I am satisfied, from some years' practice, that Turnips may be taken out of the ground without in any way injuring them, by a much less expensive method than is usually adopted. I may remark, however, in passing, that unless it be in situations which render it necessary to have the Turnips removed at an early period, to make way for another crop, or some other cause, I do not think either the land or the Turnips are injured by allowing the Turnips to remain in the ground during the months of winter, or as long as they are in a dormant state. Until signs of vegetation appear, they neither waste themselves nor injure the land. On the contrary, with a little earthing up, to keep off severe frost, I think they preserve their juices and freshness better in the soil than in any heap in which they may be stored. To return, after this short digression, I proceed to state my mode of taking Turnips out of the ground. A few women (more or less, according to the size of the field) go along the Turnip drills, and with the common hoe which is used for hoeing Turnips, cut off, in fresh and dry weather, the whole of the Turnip leaves at their junction with the bulb, and which they do with wonderful neatness and expedition. When the Turnips are thus deprived of their leaves and tops, a ploughman with a pair of horses and a common plough (without its mouldboard), go along the drills and with a slight furrow turn the Turnips over on their sides, which at the same time cuts off great part of their tap roots. In the course of a day or less after the Turnips are turned over by the plough, the earth about the base of the Turnips, if the weather be dry, will become dry also. A pair of harrows drawn by a pair of horses, is then put on the field, and the field is first harrowed with a double strike of the harrow along the drills. This operation, or at most another double strike with the harrows, shakes the earth from the Turnips. Next a few women go along the field, and throw the Turnips into carts, in which they are conveyed to the homestead, and stored in the usual way. In this manner a large field of Turnips may be raised and carted to the farm steading in a very short space of time, and at comparatively little expense. The chief point to be attended to is, that the operations be performed only when the weather and soil are dry. Should any one still wish, however, to continue the present plan of topping and tailing Turnips with a knife, he will find that much labour may be saved by adopting the first part of the plan now recommended, namely that of first raising the Turnips from the ground by the plough, and then shaking the earth from them with the harrows. *A Turnip Grower, Elgin, April* 30.

Foreign Correspondence.

Berlin, *May* 11.—Nothing in the farming line has pleased me so much in point of general appearance as that part of Westphalia lying between the towns of Hamm and Minden. Both soil and cultivation are far more pleasant to an English eye than Belgium. It is equally unenclosed, but the soil has got some colour and texture in it, either of which it is almost impossible to describe, in Belgium. A white powdery sand that seems never to *mix* with the dark doughey clay that lies under it, added to the excessive and unvarying flatness, makes a great part of the latter country as cold and unpleasant to the eye as it is strange. The patchy style of cropping too—so small a pattern in so large a carpet—makes one very far from wishing that English farming may be ever like it in *all* respects, at least. But Westphalia is more cheerful. A range of distant hills on either side gives a frame to the picture, which is drearily deficient in the other. The colour of the soil is that of the new red-sandstone. The culture has the same style of high finish that you see in Belgium; but the implements! they hardly deserve the name. In one place I think I saw at least twenty little wooden ploughs at work, near and distant, drawn each by a *single* bullock, with a boy guiding by the *single handle.* The wonder is how such work is accomplished by such tools. The Rye-crop is the great favorite here, and no cheapness of Wheat flour (and it is cheap enough at present) is likely to make any change in the local consumption. It is equally relished by rich and poor, only in different quantities: the latter consuming and preferring it, alone, the former using it much as oat-cake is eaten in Scotland, and brown bread in England. It is baked in enormous loaves—a yard long—and being slightly fermented before it reaches the oven, acquires a half-sweet half-acid flavour, which the German palate does rejoice in, most unfeignedly. It is darker colored than gingerbread: and indeed if you can fancy a jolly compound of the latter with heavy brown bread with the bran in, to the bargain, the whole gone a little sour, you have not a very distant notion of this far-famed 'Pumpernickel'; which you will be pleased to masticate respectfully, and keep a due control over the nerves of your face, if you regard popularity or the credit of a man of taste. They recommend you to *begin* with it, as a sandwich, between slices of 'common' bread, and so proceed to better acquaintance, as, like many 'good things' it is apt to make the waistcoat sit a little uncomfortably if *indulged in too freely at first!* Like all ancient and well established nationalities, it is a delicate subject, however, to joke upon: and I merely throw the hint out for the benefit of those whose compassion for 'the poor foreign peasant eating brown rye-bread' might chance to meet with the sort of thanks encountered by those who interfere between a man and his wife. Great fears are entertained for the crop this year, owing to the cold and backward spring. Everywhere that I have seen it, it looks cut by the frost, and reminding one of the phrase sometimes applied to Wheat, of 'standing on one leg.' It is sown in such quantities that a failure would be very severely felt, and would act upon the price of Wheat very extensively, From the accounts from Stettin, it seems to have already begun to do so, at the ports.

The greatest breadth of Wheat, and the most forward, I have seen, is in the immediate neighbourhood of Magdeburg, a remarkably rich country, considered the best corn-land in Germany. The Elbe which carries its produce down to Hamburg, is kept equally hard at work in grinding it, for the river is full of water-mills *at anchor:* that is, a couple of barges fast-moored with an immense wheel between them, which above and below the bridge at Magdeburg make the stream pay toll in passing at a pretty handsome rate. Besides Wheat-grinding, there are two Beet-root-sugar manufactories there, well worth seeing: and why the saccharine juice should not be crushed out of Beet-root as well as out of sugar cane, I cannot imagine; but I understand the Powers that be, in Prussia, like our own, have determined that the trade is to be 'crushed' instead, by the imposition of a heavily increased duty, very shortly, with the object of putting an end to it. But why should this be? If a trade grows up spontaneously, and healthily, in a country, on what possible principle of economy can it be desirable to destroy it, in order to purchase the same article, less cheaply, from a distance? Is this Free-trade or Protection? It seems to have the evil attributed to both without the good of either. "On account of the Revenue," is the only answer one can get. But what a way of making a Revenue; by destroying a domestic trade. For in this country there is not even the excuse of the 'Colonial' argument.

But Magdeburg is quite a garden of Forbidden Fruits: for another of its staple crops is Chicory, which is cultivated to a great extent, upon its beautiful soil. That wicked herb that has the witchcraft of making Coffee twice as good and twice as wholesome, and, by so doing, of ultimately increasing instead of diminishing its use, since, however good as a component, it is not good as a substitute, to any palate. I could not help thinking as I journeyed over the miserable eighty-five miles of sandy desert that separates Magdeburg from Berlin, that its splendid old Fortress may yet have another siege to stand of modern warfare in behalf of Free Cultivation and Common Sense.

Nothing can exceed the contrast between the Brunswick and the Berlin side of the Elbe. The country from a few miles out of Magdeburg, to Potzdam, is like the sea-shore, without a sea. Here and there a lake indeed: but all the rest a pale bleak drifting sand: and if one wondered before, where mouths could be found for all the produce, one wonders afterwards, for a much longer distance, where subsistence can be found for the half-million mouths of Berlin! which stands, like Tadmor of old, a city of palaces, in a desert. *C. W. H.*

Societies.

ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

Professor Way, at the request of the Council, repeated his important lecture "on the Absorptive Powers of Soils in reference to Manures" at the house of the Society in Hanover-square, on Wednesday last; when a numerous and distinguished auditory were present on the occasion. We reserve, until next week, our report of this lecture, and the interesting discussion which ensued on its delivery.

Farm Memoranda.

Important Drainage Operations at Rufford.—This district, as our readers are aware, comprises immense tracts of low land, bordering on the river Ribble, and to a great extent incapable of cultivation, in consequence of their frequent inundation. To bring into operation an effective system of drainage on such land, has, during the last two years, been a favourite object with Sir Thomas Hesketh; but previous to more extensive experiments on Hesketh Marsh and other places, a portion of Martin Mere has been selected for the trial of a scheme of drainage suggested by Mr. Boosie, by which the land will be enabled to keep its "head above water" the year round, instead of being submerged to the depth of several feet, 5 or 6 months out of 12. "Martin Mere" is the name given to a very large tract of land (lying in the townships of Rufford, Tarleton, Burscough, Scarisbrick, and North Meols), which is constantly during the winter season, and also occasionally in the summer, covered with water. Its extent is about 5120 statute acres, to which there are four proprietors, viz., Sir Thomas Hesketh, the Earl of Derby, Charles Scarisbrick, Esq., and G. A. L. Keck, Esq. Up to the present time there is no recollection of this land having been under cultivation, in consequence of the continual inundations to which it has been subject. Upwards of 20 years ago the drainage of Martin Mere was contemplated by Mr. Miller, land surveyor, of this town, who drew up a report to the several landed proprietors, containing suggestions for effecting the object; but owing chiefly to the want of unanimity on the part of the proprietors, no practical improvement was attempted, and the land was permitted to lead its customary amphibious life, until Mr. Boosie, the present agent of Sir Thomas Hesketh, Bart., determined upon draining that portion of the Mere belonging to Sir Thomas, who was still unable to obtain the cordial concurrence of the other landed proprietors. The portion in question to which Mr. Boosie's efforts have been directed is at the eastern end of the Mere, within Rufford and Tarleton, and is about 1200 acres in extent, of which 800 acres will be reclaimed or benefited by the new drainage. The plan of drainage proposed by Mr. Boosie (in the execution of which he has had the able assistance of Mr. Porter) has been as follows:—In the first instance, two catch-water drains (about three and two miles in length respectively) have been formed to bring the surface-water from the higher grounds to a sluice which discharges itself into the river Ribble at Crossens. From the lower lands, however, in the interior of the Mere, the water could not be drained by this process (the level being quite as low as the outlet to the river;) therefore recourse has been had to mechanical means which we shall explain. Two principal and several collateral drains have been constructed to bring the water to one terminus or reservoir at the south side of the Mere, the water having in its course a fall to the reservoir of about 6 feet. At this terminus or reservoir an engine of 20 horse-power has been erected to lift up the water into the sluice already mentioned as the recipient of the catch-water drains, and which discharges itself into the river at Crossens. The process of lifting the water is as follows:—To the engine is attached an immense water-wheel, 30 feet diameter, with 40 scoops or buckets around the circumference. These buckets, when the wheel is revolving at its ordinary speed, lift up and discharge into the sluice 45 tons of water per minute, or upwards of 7½ million gallons of water in 12 hours! The water thus discharged into the sluice has a course of 4 miles to run into the cylinders at Crossens, through which it passes into the river. It is calculated that the total quantity of waste water lodged in the whole of the Mere annually, is no less than 25,000 millions of gallons, of which the portion of land belonging to Sir Thomas Hesketh will receive about 250 million gallons annually, and all this will have to be pumped away by the machinery we have described. To prevent the water, after being raised into the sluice, rising and again overflowing the land, an embankment 4½ feet in height, and upwards of three miles long, has been raised along the margin of the sluice. Of the 800 acres of land which will now be brought into cultivation by the drainage being effected, a large proportion has hitherto produced only a scanty herbage of the poorest Grasses. It will in future be fitted for all sorts of crops, some of it being very fertile soil, particularly adapted for growing Potatoes and other vegetables, for which Rufford and the vicinity have long been famous, and it is almost needless to say that the cultivation of so large a tract of hitherto lost and useless land will considerably increase the employment of the labouring classes in that neighbourhood. The salubrity of the district must also be improved by the removal of so large a body of stagnant water, exhalations from which are too often a subtle source of endemic disease. Were the other landed proprietors to imitate the spirited example of Sir Thomas Hesketh, 5000 acres of good land would be brought under profitable cultivation on Martin Mere alone, and if so desirable an improvement were extended also to the Formby district, the extent of land under cultivation in West Lancashire would be increased by no less than 11,520 acres! The improved value of the land, calculating it at the low rate of 10*s.* per acre, would be 5760*l.* per year.

In addition to the land actually under water during a great portion of the year, there are some hundreds of acres of adjoining land which will be indirectly benefited by these improvements, inasmuch as their drainage is at present very ineffective, in consequence of the long detention of the water in the lower grounds. Indeed, we may here mention the fact that the entire district to which Martin Mere and the Formby marshes have hitherto been the reservoirs, is upwards of 100 square miles in extent, a fact which shows to what degree the experiment now made by Sir Thomas Hesketh is capable of being extended by the adjacent proprietors, for their own advantage as well as that of the public. The engine, boiler, and water-wheel are comprised in a brick building, erected immediately to the east of the public road leading from Holmeswood to Ormskirk, and the tall chimney at the east gable forms a very conspicuous object for miles round in a landscape so level as that of the Martin Mere district. The whole of the machinery is from the establishment of Messrs. Benjamin Hick and Son, of Bolton. We have not been informed of the exact cost of the entire improvement, but we should think that it cannot have been less than 3000*l*. It may be here mentioned that one plot of the newly-reclaimed land (about 120 acres) has already been ploughed for a crop of Oats. Tuesday last was fixed upon for the first public working of the new draining apparatus. Accordingly in the forenoon of that day a considerable concourse of spectators, including the tenantry and labourers for miles round, and a number of visitors interested in agricultural improvements from Preston, Ormskirk, &c., assembled to witness the experiments. About 10 o'clock the engine with its immense water-wheel was set in motion, and continued during the day lifting the water out of the race in which it was brought from the Mere, into the sluice which conveyed it to the river. The process went on most satisfactorily, and the gradual subsidence of the water in the drain leading to the engine, soon showed how effectively it was performing its task. Since writing the above we learn that by Thursday the water in the catch ditches within the banks was reduced 4 feet below the surface of the land; and with the apparatus frequently at work, it is not expected to be any higher in future. *Preston Guardian.*

Farmers' Clubs.

EAST ILSLEY, *March* 27: *On the best method of managing Farm-yard Manure, so as to make it the most productive*:

Mr. FORDHAM, of Snelsmore-hill East, said, 20 or 24 bushels of Wheat per acre, at 35*s.*; 32 to 36 bushels of Barley, at 20*s.*; or 40 to 48 bushels of Oats, at 14*s.* or 15*s.*, must occasion an awful loss of capital, and surely some improvement in husbanding that "life's blood" of farming, or an improved method of making it, should be our constant attention—the system of our forefathers must be laid aside—the method of 40 years ago is of very little use now. I regret I cannot point out in this locality a farm-yard formed according to my idea among the many I am acquainted with. The prevailing fault is the waste of space. Many so large that much of the straw is as free from "mulch" as when it was first laid down, perfectly void of any manure, and blowing about as dry litter. A few pigs are seen in this great waste, and perhaps two or three cows or heifers; the stable-dung cast out in the rudest manner, and there suffered to lie, as chance may happen, wet or dry, until the time arrives between the breaking up of winter and the finishing of the spring crops; when this stuff, in the middle of the yard, well saturated with rain water, is carted, with a portion of the dry top and side straw mixed with it, and hauled to the field intended for Swede Turnip or Mangold Wurzel. No farm-yard can be complete without all the buildings are spouted to carry off rain water. One great deficiency in many farming concerns is the very inadequate mode of making manure. Unless a large quantity of this indispensable ingredient is made on a farm, it is utterly impossible that good farming can be attained. This manure can only be raised by feeding upon green crops with large stock. The economy of the management of the farm-yard depends upon collecting and preparing manure. When manure from the stables, cattle stalls, and other places are collected, and put under cover, pit, or hovel, it is certain that fermentation will take place, and every fresh addition of litter will ferment, as, in the first instance, the mass in the lower part will cool and keep cooling upwards as the decomposition goes on; considerable reduction in the original bulk will take place, the gas generated during the process of decomposition would pass upwards; the escape might be prevented by covering it with gypsum, which would convert the ammonical gas into sulphurate of ammonia. Liquid manure added to the fresh litter excites fermentation. The method I adopt is to convey the drainage of the pigsties through the dung-pit, and by a lower drainage into a tank; if you follow this plan you would never have a "fire-fanged," or mould-like appearance. The advantage of this system, will be found, in my humble opinion, of great importance; a much greater quantity of the best fertilising manure will be attained, rich in phosphates, the best possible dressing for Beans, Swedes, or Mangold Wurzel, and of course for the succeeding crops. If no pit or hovel covered to prevent rain water or the escape of the fertilising gases, I would strongly advise the free use of sulphate of lime (gypsum) sprinkled over the farm-yard; it would fix a portion, and would be a good addition to the manure. The practical farmer should always use gypsum in the stables and cattle sheds. 50 lbs. of gypsum will supply 30 lbs. of sulphuric acid to fix the ammonia in a ton of farm-yard manure, if the decomposition is complete.—Mr. JAMES OWEN, of West Ilsley, said he had at all times great difficulty in managing his yard manure, the space being too large for the proper fermentation to take place, and thus little or no decomposition took place in the mass, the swine in the yard principally turning the litter about, near the stables. He had this day employed his man to throw up the litter in heaps, taking care to add the stable dung and that from the pigsties in due proportion with the different heaps. He regretted he had not a covered pit, as he had observed how much better the dung came from them to what it turned out in the general old-fashioned way. He instanced a large farm, where the yard was half an acre and upwards; he saw it once occupied by a single hog; he avoided coming through the mountain of straw, and had a path all round the yard, as if it was made for his especial exercise.—Mr. JOHN BROWN, of Compton, said he thought, as practical men, they were bound to give what information they could to one another, though he did not admire some of the public writings of the day; he thought much that appeared in print could not be carried out in practice upon a large scale, and he instanced the present society, some of whom had many hundreds of acres under their care, so that no day was too long for them; he had made some alterations in his pig management, so as to have the manure separate, having a drain and a tank in the outward sty, covered with open 1½ inch planks, to admit the liquid and the droppings from the pigs, adding, from time to time, ashes to absorb all moisture, intending to apply this mass to the land by drill. He admitted the improvement of the manure by keeping it under cover, but was confident upon a large scale it could not be done; besides the great space of fold-yards, he had a yard and hovel upwards of two miles from the homestead. He experienced great difficulty in making manure there; used to keep pigs there, but unfortunately always lost one or two in a season by the dishonesty of some one. As to these modern ways, he thought they were attended with great expense; hinted that our forefathers got crops, and so he thought it might be done again, though perhaps not quite so heavy as some farmers boasted. He related an anecdote of a friend, a large farmer, setting his man to cart into the dung-yard a quantity of snow to moisten the litter.—The Chairman, Mr. JONES W. WILLIAMS, thought that manure might be made much better in a pit or hovel covered, but these low-price times deterred many from improving their homesteads; he had a barn and yard two miles from home; being high, his straw and fodder was constantly blown from the yard, and dispersed to the neighbouring lands. He always experienced great difficulty to manure this land.—Mr. FORDHAM, in answering the objections to the modern farm-yards, said he recollected in this locality a farm, some years ago, under a six-course system and a naked fallow; even then about 24 bushels was near the average of this farm; was glad large holders of land, such as Mr. Jas. Owen and Mr. John Brown, admitted that a great difficulty did exist in making sufficient manure for such numbers of acres under one holding by the old-fashioned way, and though not admirers of some of our published recommendations, still they were moving in the right direction. The next monthly discussion is "How to live at the present prices." *Amicus.*

Miscellaneous.

The Con-acre System.—The con-acre system was hitherto the universal plan of conducting the labour of farms in this part of the country. According to the quality of the land, it was charged to the labourer at from 6*l.* to 8*l.* and 10*l.* an acre per annum, the most worthless heath being let, when limed, at the former sum. The rent was paid by the labourer's work; and the system was, to let out as much land as paid the whole labour bill of the farm. In every way the necessities of the labourer were taken advantage of. The highest rent was charged, and that was paid by the lowest rate of wages. This system of course fell to pieces when the Potato failed; and the farmer, having no capital to pay his labourers in cash, failed also. * * * Nothing has contributed so much to the entire dependence on the Potato, and the consequent increase of a miserable, half-fed, naked population, as the system of con-acre labour. No truck system is comparable with this. It encourages a tenant without means to offer an exorbitant rent for land, which he pays by exacting one still more oppressive from his labourer. Its two-fold action is to raise rents, and depress wages, by over-competition. Enormous rents are exacted for the patches of Potato ground, which are paid by the very lowest scale of nominal wages. It compels an entire reliance on the Potato, inasmuch as the labourer can get Potatoes only for his food, no money-wages being ever paid. It encourages the landlord to expect a high rent for his land, without demanding from him in return any outlay for its permanent improvement. *The Plantation Scheme, by Mr. Caird.*

Tiptree Farm.—As very exaggerated and incorrect statements have been put forth respecting my farming operations, I have, on public grounds, and by the advice of competent friends, determined that six public valuers of eminence shall, in due season, value my present standing crops, stock, and implements, and fix the rent I have to pay, placing me in the position of a new tenant, entering upon the farm at Michaelmas next. My accounts will be annually submitted to the same valuers, and the detailed results or balance-sheet, good or bad, published in your journal, under their audit, sanction, and responsibility, my account-books and servants being, of course, at all times accessible to them. I pledge myself thus publicly to this course so long as I may continue to farm, in order to stimulate agricultural amendment and to test the practicability of farming poor lands profitably under our altered circumstances, with the necessary appliances of skill and capital on the part of both owner and occupier. *J. J. Mechi, in the Times.*

Calendar of Operations.

MAY.

SOUTH HAMPSHIRE FARM, *May* 11.—Since our last report the weather has been for the most part cold, for the time of year, and ungenial for vegetation. The sharp frosts which we have experienced lately have been beneficial than otherwise to the Wheat plant, upon all good soils in high cultivation, as the check which it has received will go far to prevent any superabundance of straw; but upon light and thin land, and also upon strong undrained soils, the appearance is altered so much for the worse that we much doubt whether an average crop of straw or corn will be obtained from such soils. The horse labour has been much retarded lately by a succession of wet weather; yet we have finished drilling and dibbling our Mangold Wurzel and Carrots. The horses have been engaged during the intervals of dry weather in ploughing, harrowing, rolling, &c.; forwarding the tillage of land intended for the Turnip crop—but the fallows generally are not in a forward state, so much time having been lost by the succession of rains during the month of April. Our labourers have been employed by draining in the meadow land and in the ordinary work of the farm, such as continually presents itself with the season; also by cutting and burning the sod upon the borders of the fields for the purpose of obtaining a supply of ashes, at all times useful for mixing with artificial manures for application to the Turnip crop. Some of our men have been employed during wet weather in screening ashes, and mixing with night-soil, in readiness for drilling with superphosphate and bone-dust for the Turnip crop, which application we found last year answer best of any we used. Our crop of Swedes for several years past having had a great tendency to rottenness and decay, we were induced to try some experiments upon the comparative value of the application of 2½ cwt. of superphosphate of lime, with 20 bushels of ashes, drilled, and 2 cwt. of Peruvian guano, sown broadcast, per acre, and of an application of 2½ cwt. of superphosphate of lime and 20 bushels of ashes with bone-dust previously mixed and fermented in yellow sand. The money value of each application was the same: the result was from three to four tons per acre more Swedes were produced where guano was applied, but there was in every instance a great loss from rottenness and deficiency in nutriment upon the soils where tried, viz., loam, clay, sand, and gravel; whereas the Swedes grown from the application of fermented bone-dust, in addition to the superphosphate, although the lesser crop, were the most valuable, having proved sound and highly nutritious in every instance up to a late period of the feeding season. We have no hesitation in saying that we can distinctly trace the rottenness of former seasons to the effects of guano, which we have used for the growth of our Turnip crops. We have in consequence decided upon discontinuing the application of guano for the Turnip crop, believing as we do that guano and all manures possessing a large proportion of ammonia are best suited to the growth of corn and Grass, and that when applied to Turnips it will be found too stimulating, and producing in every instance roots deficient in nutrition and hardihood. *J. B.*

Notices to Correspondents.

ADDRESS: *Mr. Crockford*, who describes his steam engine in No. 18, would much oblige us by his address.

AMERICAN CHURN: *Scotus.* It was thought that the account of it at page 269 would suffice. It is a small box churn, half filled with the milk or cream, the dasher contains cells which lift the milk as they rise, letting it escape and fall again through the air, and carry air down with them, which also escapes and rises again through the milk, so that it is an admirable contrivance for thoroughly mixing the air and the milk, at the same time that the latter is as completely shaken and shattered as by any ordinary churn. Further particulars can be given only by advertisement.

BACON: *Sigma.* Fifty of salt to one of saltpetre; but we do not know how much is rubbed into a flitch. It is used abundantly, and suffered to lie upon the flitch in excess. Mangold Wurzel and Turnip seed will not suffer from a little caustic lime being dusted among them.

BONES: *E T F.* The best way of dissolving them most certainly is by the use of acid. There is no loss during the process, if conducted with ordinary care.

EARLY TURNIP: *J E M.* The Swede is hardier than the Turnip, and may be sown the earliest, but you cannot sow in the end of March without great risk of losing the young plant by frost.

EDUCATION: *W P, Taunton.* Many thanks: we have access to the works you name.

FLAX: *J K.* Sow 10 pecks per acre. Buy T. K. Short's Tract on the subject.

GUINEA FOWL: *Sylvanus* wishes to know if the guinea fowl ever breeds with the the barn-door fowl, as a friend of his thinks that he has some hybrid chickens[!]

HAMPSHIRE FARM: *The Reporter for South Hampshire Farm*, in answer to the enquiries of "A. B." begs to say that a good bred horned ewe will make her lamb 10 lbs. per quarter in about 11 weeks, if well kept; and the food required to fatten the ewe at the same time will be 1 pint of Oats and ½ lb. Linseed-cake per day, in addition to cut Swedes and hay.

RURAL CHEMISTRY, by E. Solly, price 4*s.* 6*d.*, second edition, revised and enlarged, may be had of all booksellers, and at the Office of this Paper.

Markets.

COVENT GARDEN, MAY 18.

Vegetables are well supplied, but most kinds of winter Fruit are over. Strawberries and Hothouse Grapes are both more plentiful, and the same may be said of Pine-apples, of which some good fruit may be obtained. Walnuts and Chestnuts are abundant; and Oranges and Lemons sufficient for the demand. A few bunches of young Carrots and Turnips may be had at from 6d. to 2s. 6d. per bunch; and some green Peas of good quality have been supplied from Cornwall and France. Frame Potatoes fetch from 1s. to 2s. per pound. Lettuces and other salading are sufficient for the demand, and so are Mushrooms. French Beans, Asparagus, and Rhubarb are plentiful. Cut Flowers consist of Heaths, Pelargoniums, Bignonia venusta, Primulas, Cinerarias, Azaleas, Lily of the Valley, Epacrises, Acacias, Lilacs, Pinks, Carnations, and Roses.

FRUITS.

Pine-apples, per lb., 6s to 10s	Oranges, per doz., 9d to 1s 6d
Grapes, hothouse, p. lb., 5s to 10s	— per 100, 5s to 12s
— Portugal, p. lb., 9d to 1s	Almonds, per peck, 6s
Strawberries, per oz., 4d to 1s	— sweet, per lb., 2s to 3s
Gooseberries, green, per half sieve, 5s to 7s	Walnuts, p. 100, 1s 6d to 2s
Apricots, green, p. pottle, 8d to 1s	— p. bush., 16s to 24s
Apples, kitchen, p. bsh., 4s to 6s	Nuts, Barcelona, per bush., 20s to 22s
— per 100, 6s to 12s	— Brazil, p. bsh., 12s to 16s
Lemons, per doz., 1s to 2s	Kent Cobs, 90s to 100s p. 100 lbs

VEGETABLES.

French Beans, p. 100, 2s 6d to 3s 6d	Onions, p. bushel, 7s to 9s
Asparagus, p. bund., 2s to 6s	— Spanish, p. doz., 1s 6d to 4s
Rhubarb, p. bundle, 3d to 8d	Shallots, per lb., 8d to 1s
Cabbages, per doz., 6d to 1s	Garlic, per lb., 4d to 8d
Cauliflowers, p. doz., 1s to 3s	Lettuce, Cab., p. sc., 2d to 1s
Broccoli, p. doz. bundl., 6s to 12s	Radishes, p. 12 hands, 3d to 6d
Greens, per doz., 1s to 2s	Mushrooms, p. pot., 9d to 1s
Sorrel, p. hf. sieve, 6d to 9d	Small Salads, per punnet, 2d to 3d
Potatoes, per ton, 60s to 120s	Fennel, per bunch, 2d to 3d
— per cwt., 3s to 7s	Savory, per bunch, 2d to 3d
— per bush., 2s 6d to 3s 6d	Thyme, per bunch, 2d to 3d
— frame, per lb., 1s to 2s	Parsley, p. doz. bun., 1s to 2s
Turnips, p. doz. bun., 2s 6d to 4s	— Roots, p. bdle., 9d to 1s
Red Beet, per doz., 1s to 2s	Marjoram, per bunch, 8d to 9d
Cucumbers, each, 6d to 2s	Mint, green, per bunch, 2d
Leeks, per bunch, 1d to 2d	Watercress, p. doz. bunches, 6d to 9d
Celery, p. bundle, 8d to 1s 6d	Horse Radish, p. bdl., 1s to 4s
Carrots, per bun., 5d to 7d	
Spinach p. sieve, 9d	

POTATOES.—SOUTHWARK, May 13.

The Committee report that the market has been but moderately supplied this week, both coastwise and Continental; there are so many in store, that it is only good fresh Potatoes that make a little more money. The following are this day's quotations:—York Regents, 110s. to 130s. per ton; Scotch cups, 60s. to 70s.; ditto whites, 40s.; French whites, 40s. to 65s.; Rhenish do., 40s. to 65s.; Belgian do., 40s. to 60s.; Dutch, 35s. to 40s.

HAY.—Per Load of 36 Trusses.

SMITHFIELD, May 16.

Prime Meadow Hay	68s	to 74s	Clover	60s	to 85s
Inferior ditto	55	65	New Clover	—	—
Rowen	54	60	Straw	22	25
New Hay	—	—		J. COOPER.	

The supply short, and prices looking up.

CUMBERLAND MARKET, May 16.

Prime Meadow Hay	75s	to 80s	Inferior	60s	to 68s
Inferior ditto	50	68	New Clover	—	—
New Hay	—	—	Straw	26	28
Old Clover	75	88		JOSHUA BAKER.	

WHITECHAPEL, May 16.

Fine Old Hay ...	65s	to 68s	New Clover	—s	to —s
Inferior ditto ...	50	55	Inferior ditto	60	65
New Hay	—	—	Straw	22	25
Old Clover	75	80			

COAL MARKET.—FRIDAY, May 17.

Wallsend Braddyll's Hetton, 15s. 6d.; Wallsend Haswell, 16s. 9d.; Wallsend Lambton, 15s. 9d.; Wallsend Tees, 16s. 3d. Ships at market, 111.

SMITHFIELD, Monday, May 13.

The number of Beasts is rather larger than on Monday last; trade is, however, quite as good; indeed 3s. 6d. is more generally given for choice Scots. The supply of Sheep is by no means large; trade is active, and on the average prices are better. Lamb meets with a cheerful sale at a small advance. The Calf trade is very dull, especially for middling qualities. From Holland and Germany there are 203 Beasts, 340 Sheep, and 75 Calves; from Scotland, 500 Beasts; and 2400 from Norfolk and Suffolk.

Per st. of 8 lbs.—s	d	s	d	Per st. of 8 lbs.—s	d	s	d
Best Scots, Herefords, &c. ... 3	4	to 3	6	Best Long-wools . 3	8	to 4	0
Best Short-horns 3	2	— 3	4	Ditto Shorn ... 3	4	— 3	8
2d quality Beasts 2	8	— 3	0	Ewes & 2d quality 3	4	— 3	8
Best Downs and Half-breds ... 4	0	— 4	4	Ditto Shorn ... 3	0	— 3	4
Ditto Shorn ... 3	6	— 3	10	Lambs 5	0	— 5	8
				Calves 2	10	— 4	0
				Pigs 3	0	— 4	0

Beasts, 3579; Sheep and Lambs, 23,070; Calves, 177; Pigs, 250.

Friday, May 17.

The supply of Beasts is large, and, the weather being warmer, the demand smaller; consequently trade is heavy, and they cannot all be sold, although a reduction is submitted to. The number of Sheep and Lambs is unusually large; prices for the former are about the same as on Monday, and for the latter fully 4d. per 8 lbs. lower, with a great many left unsold. Calves are plentiful, but the average quality not good; consequently choice ones are making 4s. freely. From Germany and Holland there are 207 Beasts, 300 Sheep, and 145 Calves; from Scotland, 600 Beasts; from Norfolk, 100; and 133 Milch Cows from the home counties.

Best Scots, Herefords, &c. ... 3	2	to 3	4	Best Long-wools . 3	8	to 4	0
Best Short-horns 3	0	— 3	2	Ditto Shorn ... 3	4	— 3	8
2d quality Beasts 2	4	— 2	10	Ewes & 2d quality 3	4	— 3	8
Best Downs and Half-breds ... 4	0	— 4	4	Ditto Shorn ... 3	0	— 3	4
Ditto Shorn ... 3	6	— 3	10	Lambs 4	8	— 5	4
				Calves 3	0	— 4	0
				Pigs 3	0	— 4	0

Beasts, 1139; Sheep and Lambs. 14070; Calves, 413; Pigs, 295.

HOPS.—Friday, May 17.

Messrs. Pattenden and Smith report that the demand continues good for all healthy and well kept Hops. The bine is still in a very backward state, and looks unkindly.

MARK LANE.

Monday, May 13.—The supply of English Wheat to this morning's market being small, factors were enabled to realise it at 1s. per qr. over the rates of this day se'nnight. Foreign was in less active demand than last week, but being held with great firmness, a similar improvement was insisted upon in the retail sales which were effected.—Barley and Oats maintain the advance of Friday last, viz., 6d. to 1s. per qr.—Beans and Peas are also 1s. per qr. higher.

British per imperial Quarter.	s. s.		s. s.
Wheat, Essex, Kent, & Suffolk ...White	40—43	Red	37—40
— — fine selected runs ...ditto	44—48	Red	39—42
— — Talavera	46—52		
— Norfolk, Lincoln, & York ...White	40—42	Red	36—39
— Foreign	33—51		
Barley, grind. & distil., 19s to 22s...Chev.	24—27	Malting	22—25
— Foreign.....Grinding and distilling	15—20	Malting	19—22
Oats, Essex and Suffolk	15—18		
— Scotch and Lincolnshire ...Potato	18—21	Feed ...	15—19
— Irish .....Potato	14—18	Feed ..	12—16
— Foreign .....Poland and Brew	14—18	Feed ...	12—16
Rye	19—21	Foreign	18—20
Rye-meal, foreign .....per ton	5l.—6l		
Beans, Mazagan .....21s to 24s.....Tick	24—27	Harrow	24—27
— Pigeon .....26s — 36s ...Winds	—	Longpod	—
— Foreign ..... Small	24—36	Egyptian	20—22
Peas, white, Essex and Kent.....Boilers	23—26	Suffolk	24—28
— Maple .....24s to 27s.....Grey	22—24	Foreign	19—28
Maize .....White	24—28	Yellow...	24—27
Flour, best marks, delivered ...per sack	33—37		
— Suffolk .....ditto	28—33	Norfolk	28—33
— Foreign .....per barrel	20—24	Per sack	28—33

Arrivals in the Port of London last week.

Flour, 16565 sks	Wheat.	Barley.	Malt	Oats.	Beans.	Peas
— — bls	Qrs.	Qrs.	Qrs	Qrs.	Qrs.	Qrs.
English	2282	952	3824	1390	510	105
Irish	—	—	—	—	4	—
Foreign	3728	550	—	9018	133	6

Friday, May 17.—The arrivals of grain from abroad during the week have been to a fair extent, with the exception of Oats, which are small, as are also the supplies from our own coast. This morning's market was poorly attended, and the business transacted very limited; we quote Wheat, both English and foreign, nominally the same as on Monday.—Barley, Beans, and Peas are held for that day's prices.—Oats are the turn dearer; 30s. is made for Galatz Corn arrived, and 37s. refused for Polish Odessa floating.—Flour is a dull sale at late rates.—The weather to-day is warmer and more genial.—Since the 10th inst. the weather has been showery with a very cold atmosphere, and occasional night frosts. Vegetation has made but little progress.

Arrivals this week.

	Wheat. Qrs.	Barley. Qrs.	Oats. Qrs.	Flour.
English ...	2640	880	290	3110 sacks
Irish	—	—	—	
Foreign ...	8670	4100	5810	— brls.

Imperial Averages.	Wheat.	Barley.	Oats.	Rye.	Beans.	Peas.
April 6.....	38s 1d	23s 2d	14s10d	21s 6d	23s 8d	24s 5d
— 13.....	38 5	22 11	15 3	20 8	23 9	26 3
— 20.....	37 10	22 8	15 3	21 6	23 9	24 9
— 27.....	37 1	22 1	15 0	21 8	23 8	25 1
May 4.....	36 11	22 0	14 7	19 11	23 11	24 9
— 11.....	38 0	22 0	15 3	19 1	24 8	24 9
Aggreg. Aver.	37 1	22 6	15 0	20 9	23 1	25 0
Duties on Foreign Grain	1 0	1 0	1 0	1 0	1 0	1 0

Fluctuations in the last six weeks' Corn Averages.

Prices.	April 6.	Apr. 13.	Apr. 20.	Apr. 27.	May 4.	May 11.
38s 5d	...		...	...	...	...
38 1		...	...	..	...	...
38 0	...	...	...	...	...	
37 10	...	...		...	...	...
37 1	...	...	...		...	...
36 11	...	...	...	...		...

SEEDS.—May 17.

Canary, per qr.	74s to 82s	Coriander, per cwt.	18s— 22s
Caraway, per cwt.	31 — 34	Mustard, white, p. bush.	7 — 8
Hempseed, per qr.	34 — 35	— brown, do.	10 — 13
Linseed, foreign, do.	37 — 45	Rape, per last	34l.—37l.
Clover, red, per cwt.	24 — 46	Cakes, Linseed, p. 1000	8l. 5s
— — foreign, do.	— —	— — foreign, p. ton	6l. 0s
— white, do.	36 — 48	— Rape, foreign, do.	4l. 5s
— — foreign, do.	—	Tares, per bush.	3s 0d—5s 6d

Liverpool, Friday, May 17.—Influenced by a return of mild weather, and a slender attendance of country millers, less animation was displayed in the Wheat trade at our market this morning than on the previous days of the week; the operations in Wheat being only moderate, and holders nevertheless remaining equally firm as before. Barley and Malt, upon a moderate demand, remained unaltered in value. We have no change to note in English and foreign Beans, excepting Egyptian, which are held steadily at 6d. per qr. advance. Oats, though not readily saleable, slightly improved in value.

HARTLEY'S PATENT ROUGH PLATE GLASS.

In submitting our list of prices, we would beg to direct attention to the Leading Article of the *Gardeners' Chronicle* of Saturday, Dec. 8, upon the subject of "Patent Rough Plate." Some alteration having been made in the mode of manufacturing this description of Glass, the quality is greatly improved, and we now supply it perfectly flat, and, by an arrangement with Messrs. Hartley and Co., precisely at their prices. Cut to order in panes of

8 by 6	and under 10 by 8	at 4½d.	per foot.
10 by 8	,, 14 by 10	at 5d.	,,
14 by 10	,, 1½ foot	at 5½d.	,,
1½ foot	,, 3 feet	at 6d.	,,

PACKED IN BOXES of 50 feet each.

6 by 4 and 6½ by 4½...10s. 6d. 8 by 6 and 8½ by 6½...13s. 6d.
7 by 5 and 7½ by 5½...12s. 0d. 9 by 7 and 10 by 8 ...15s. 0d.

Milk Pans from 2s. to 6s. each, Metal Hand-frames, Tiles, and Slates; Propagating and Bee Glasses from 2d. each; Cucumber Tubes, 1d. per inch; Peach Glasses, 10d. each; Wasp Traps, 3s. 6d. per dozen; Pastry Slabs, Hyacinth Glasses and Dishes, Shades for Ornaments, Fish Globes, Plate and Window Glass of every description, and Lamp Shades. Lactometers for trying the quality of Milk, 4 tubes, 7s. 6d; 6 tubes, 10s. Self-registering Thermometers for Greenhouses, Horticultural Glass, &c.

JAMES PHILLIPS and CO., 116, BISHOPSGATE STREET WITHOUT, LONDON.

GLASS FOR CONSERVATORIES, &c.

Hetley and Co. supply 16-oz. Sheet Glass of British Manufacture, at prices varying from 2d. to 3d. per square foot, for the usual sizes required, many thousand feet of which are kept ready packed for immediate delivery. Lists of Prices and estimates forwarded on application, for PATENT ROUGH PLATE, THICK CROWN GLASS, GLASS TILES and SLATES, WATER-PIPES, PROPAGATING GLASSES, GLASS MILK PANS, PATENT PLATE-GLASS, ORNAMENTAL WINDOW GLASS, and GLASS SHADES, to James Hetley and Co., 35, Soho-square, London.

See the *Gardeners' Chronicle* first Saturday in each month.

GLASS FOR CONSERVATORIES, HORTICULTURAL PURPOSES, &c.



T. Millington's SHEET GLASS, which is of the best description, varying from 16 to 32 ounces, at from 2d. per foot and upwards; 100 feet and 200 feet cases of large Sheet Glass, for cutting up, at 2½d. per foot. British Plate Glass, from 1s. 2d. to 2s. per foot, according to size. Patent Rough Plate Glass, from ⅛ to 1 inch in thickness, from 4d. per foot upwards. Glass Slates and Tiles. Milk Pans from 12 to 24 inches diameter, from 2s. to 5s. each. Cucumber Tubes, from 12 to 24 inches long, at 1d. per inch. Lactometers, 7s. 6d. each. Wasp Traps.—Lists may be had, on application at the Warehouse, 87, Bishopsgate-street Without, same side as the Eastern Counties Railway.

CROWN, SHEET, AND ROUGH PLATE GLASS, FOR HOTHOUSES, CONSERVATORIES, &c.

Of every manufacture FIT FOR USE, including the make of Messrs. Chance, Hartley, Swinburne, and others.

100 and 200 feet cases of large Sheet Glass, from 2½d. per foot. Small ditto, 10s. 6d. per 100 feet, packed in boxes ready for immediate delivery. Curators of Botanical Societies, Florists, Railway Agents, and others requiring large quantities, will, on sending dimensions, receive estimates at the lowest prices.

GLASS MILK PANS, CREAM POTS, Lactometers, Bee Glasses, Fish Globes, and all kinds of Dairy Glass, Propagating Glasses, Hyacinth Dishes, Cucumber Tubes, and every other description of Garden Glasses.

PATENT GLASS PENS, self supplying, never blot, never soil the ruler, and will write continuously for 12 hours.

Also, Glass Rulers, Glass Inks for office-stands, desks, &c. Stationers and Schools supplied. Wholesale Warehouse for Ornamental Shades, Lamp Shades, Gas Glasses, Genuine White Lead, Paints, Colours, and Pumps for Farm purposes.

Our Catalogue of 18 folios is the most complete ever published. No Gardener or Farm Bailiff should be without one. May be had Gratis on sending two postage stamps to Messrs. Cogan and Co., 48, Leicester-square, London.

MEADOW AND PASTURE GRASS SEEDS.

George Gibbs and Co. beg to notice their mixtures for laying Land down to Permanent Grass are now ready. The general satisfaction they have given for many years past, and the present low prices of 32s. per acre, allowing 2 bushels and 12 lbs. to each acre, they trust will ensure a continuance of orders. Mixed Seeds for improving old Grass Land, 1s. 3d. per lb.; fine sorts for forming Lawns, 1s. 4d. per lb. Their Priced List for the season of Turnips, Mangold Wurzel, and other Farm Seeds, will be forwarded on application to 26, Down-street, Piccadilly, London.

TO FLORISTS, HORTICULTURISTS, &c.



Morrell's REGISTERED FLOWER LABELS are ready for delivery in any quantity; they will be found unimpaired by any change of weather, either of heat, cold, wet, or dry, and therefore suitable for the Stove, Hothouse, Greenhouse, or the open ground; also his improved Flower Sticks, of various lengths, from 12 inches upwards.—May be had of most Seedsmen and Ironmongers in town and country; and wholesale at 149, Fleet-street, London.

Baker's PHEASANTRY, Beaufort-street, King's-road, Chelsea, by special appointment to her Majesty and H. R. H. Prince Albert.—ORNAMENTAL WATER FOWL, consisting of black and white swans, Egyptian, Canada, China, barnacle, brent, and laughing geese, shieldrakes, pintail, widgeon, summer and winter teal, gadwall, Labrador, shovellers, gold-eyed and dun divers, Carolina ducks, &c., domesticated and pinioned; also Spanish, Cochin China, Malay, Poland, Surrey, and Dorking fowls; white, Japan, pied, and common pea-fowl, and pure China pigs; and at 3, Half-moon-passage, Gracechurch-street.

BEE HIVES.

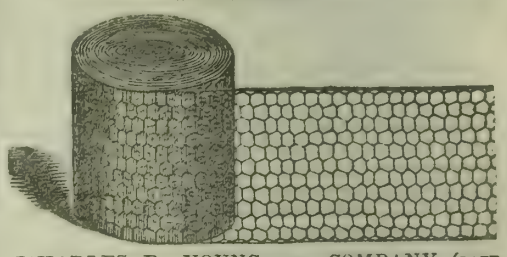
George Neighbour and Son respectfully announce that they have prepared for this season an extensive supply of their various IMPROVED BEE HIVES, which are offered to all who are desirous of cultivating that pleasing and profitable branch of rural economy—the Honey Bee. The collection consists of "Nutt's Collateral Hives," "The Single Box Hive," "The Amateur Bar Hive," "The Improved Cottage Hive," &c., from either of which the honey may be taken at any time without injury to the Bees, and may be worked with safety, humanity, and profit, by the most timid and unaccustomed to Bee manipulation. A descriptive paper, with drawings and prices, will be forwarded on the receipt of two postage stamps.—127, High Holborn, London.

Agents: Wm. Drury, Castle-street, Liverpool; Hall and Wilson, 50, King-street, Manchester; Austin and M'Aslin, 168, Trongate, Glasgow.

Netting, Flags, and Bunting.—Superior Tanned Garden Netting, for preserving Fruit-trees from Frost, Blight, or Birds; or as a fence for Fowls, Pigeons, Tulip and Seed-beds, can be had in any quantity from John King Farlow's Fishing-rod and Net Manufactory, 5, Crooked-lane, London-bridge, at 2d. per yard 2 yards wide, or 6d. per yard 4 yards wide. Woollen Bunting, any length or width, at 6d. per square yard. Forwarded to any part of the kingdom on receipt of remittance, Post-office order, or stamps. Several good second-hand Flags to be sold cheap.

Allsopp's BURTON and EAST INDIA PALE ALES.—Messrs. S. Allsopp and Sons beg to call the attention of the public to their East India, Pale, and other Burton Ales, which may be obtained in casks of 18 gallons and upwards, either singly or in any quantity, by application to the Brewery, Burton-on-Trent, or on the same terms at their respective Stores, as follows:—61, King William-street, London; Cook-street, Liverpool; under the Exchange, Ducie-place, Manchester; and at the Market-place, High-street, Birmingham.

STRONG PREMIUM HARE AND RABBIT PROOF WIRE NETTING.



Charles D. Young and Company (late W. and C. Young),

MANUFACTURERS OF IRON AND WIRE WORK, &c.,
22, PARLIAMENT STREET, WESTMINSTER, LONDON;
48, NORTH BRIDGE, EDINBURGH;
32, ST. ENOCH SQUARE, GLASGOW;
1, CASTLE BUILDINGS, DERBY SQUARE, LIVERPOOL;

beg respectfully to call the attention of Landed Proprietors and others to their strong Wire-Net Fence, for excluding Hares and Rabbits from Gardens, young Plantations, Nurseries, &c.

This Net was exhibited at the Show of the Highland and Agricultural Society of Scotland, held lately at Inverness, where its Efficiency, Great Strength, and Exceeding Cheapness attracted general attention, and had awarded from the Judges the Society's Silver Medals, with high commendations.

The immense damage done by Hares and Rabbits in Gardens and Young Plantations is often so great, that in the course of a year or two it will amount to more than the entire cost of protecting them with this Net. It is so durable, that when Plantations are sufficiently advanced to be independent of its protection, it can be removed to other exposed situations with the greatest facility, by any labourer. As a Fence against Hares and Rabbits, it is of itself quite sufficient, having only to be unrolled and attached, with small wire sent for that purpose, to wooden stakes driven into the ground, about every six or seven feet apart. It is, besides, peculiarly adapted for rendering Hedges, Paling, or other existing Fences, *completely impervious* to such vermin; and by being cut up into small pieces of three or more feet, as required, it forms a most efficient guard, at little expense, for individual Plants and Shrubs.

Prices.—18 ins. high, 9d.; 24 ins., 1s.; 30 ins., 1s. 3d.; and 36 ins., 1s. 6d. per lineal yard.

Or a web of 100 yards, 18 ins. wide, will cost	..	..	£3 15 0
Do. of 100 yards, 24 ins. wide	..	..	5 0 0
Do. of 100 yards, 30 ins. wide	..	..	6 5 0
Do. of 100 yards, 36 ins. wide	..	..	7 10 0

If more or less than a web is required, it would be charged at the same rate per yard.

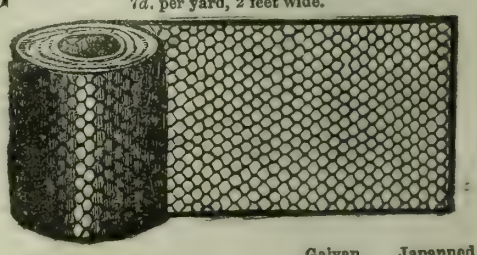
This Netting is also admirably adapted for Pheasantries and Poultry-yards, and is charged at the same rate. As carriage has, in many instances, been an obstacle to parties at a distance requiring this Net, C. D. Y. and Co. have made arrangements by which they will undertake to deliver it at any of the principal ports of Scotland, England, and Ireland, for One Halfpenny per lineal yard.

C. D. Young and Co. cannot give a better idea of the great strength of their Premium Wire Netting than by stating that the weight of one yard of their 24-inch at 1s. is equal to 2½ yards of another article in the market, the same width, at 9d. per yard. Samples for inspection sent free of expense.

C. D. Young & Co. manufacture every description of IRON and WIRE WORK required for this and foreign countries.

Workmen sent to all parts of Scotland, England, and Ireland.

GALVANISED WIRE GAME NETTING.—7d. per yard, 2 feet wide.



		Galvanised.	Japanned Iron.
2-inch mesh, light, 24-inch wide ...		7d. per yd.	5d. per yd.
2-inch ,, strong ,, ...		9 ,,	6½ ,,
2-inch ,, extra strong ,, ...		12 ,,	9 ,,
1½-inch ,, light ,, ...		8 ,,	6 ,,
1½-inch ,, strong ,, ...		10 ,,	8 ,,
1½-inch ,, extra strong ,, ...		14 ,,	11 ,,

All the above can be made any width at proportionate prices. If the upper half is a coarse mesh, it will reduce the price one-fourth. Galvanised sparrow-proof netting for pheasantries, 3d. per square foot. Patterns forwarded post-free.

Manufactured by BARNARD and BISHOP, Market-place, Norwich, and delivered free of expense in London, Peterborough, Hull, or Newcastle.

Sales by Auction.

DALSTON NURSERY.—TO NOBLEMEN, GENTLEMEN, NURSERYMEN, FLORISTS, AND OTHERS.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. J. Smith, in consequence of the premises being required by the London and Birmingham West-India Dock Junction Railway Company, to sell by Auction, on the premises, Dalston, Middlesex, on MONDAY, May 27, and following day, at 12 o'clock each day, the valuable GREENHOUSE PLANTS, consisting of choice Azalea indica, Erica, Epacris, Boronia, Burchellias, Diosma, Pimelea, Erythrina, Kennedya, Metrosideros, Fabiana, Geraniums, Fuchsias, Verbenas, Chrysanthemums, Lobelias, Calceolarias, Heliotropes, Cupheas, Myrtles, Hydrangea, Alstrœmerias, Cactus, Gardenias, Clianthus, Dahlias, Clematis, Jasmine, Aloes, Brooms, Roses, Magnolia grandiflora, &c.—May be viewed two days prior to the sale. Catalogues had (6*d.* each, returnable to purchasers) on the premises, at the Shop in Covent-garden, of the principal Seedsmen, and of the Auctioneers, American Nursery, Leytonstone, Essex.

TO GENTLEMEN, FLORISTS, AND OTHERS.

MESSRS. PROTHEROE AND MORRIS will sell by Auction, at the Mart, Bartholomew-lane, on THURSDAY, May 23, and FRIDAY, May 24, at 12 o'clock, about 1000 DAHLIAS, consisting of all the leading sorts and the newest varieties; together with Fuchsias, Verbenas, Heartsease, Geraniums, and a variety of Ornamental Plants for Bedding.—On view on the morning of Sale. Catalogues to be had at the Mart, and of the Auctioneers, American Nursery, Leytonstone.

TULIPS. — To be sold cheap, the ground being wanted for building on, a Bed of Choice TULIPS, 65 rows, 455 roots, price 10*l.*; a Bed of Offsets, 60 rows, 5*l.*; and a Bed of Seedlings and Breeders, 62 rows, 7*l.*; either together or separately in rows: and also Border Boards, iron Hoops, Canvas, Drawers, &c. The Tulips consist of a fine strain of Louis XVI., Victoria, Lavinia, Ada, Rainbow, Titian, Claude, Magnet, Solon, Rose Brilliant, Queen Boadicea, &c. Also a Garden Seat, 10 feet long and 6 feet high, with the back in the Chinese style, price 5*l.*—May be seen on application to Mr. T. CONSTABLE, Oil and Colourman, 36, Lower-street, opposite Church-street, Islington, London.

CORNWALL.

TO BE LET, for 14 or 21 years, from Michaelmas next, Three or Four FARMS, situated in the most fertile district of that county, containing about 200 acres each (to which more may be added) of Arable and Pasture Land, with thriving Orchards. Every information respecting these Farms, which are in a fair state of cultivation, may be obtained by addressing a letter to A. B., Post-office, Bodmin, Cornwall.

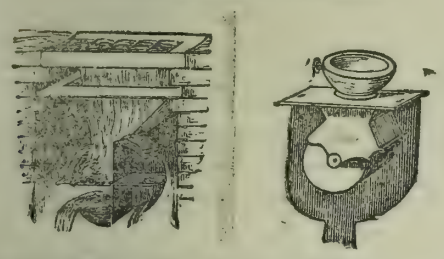
N.B. It may be right to add that none but men of skill and capital will be treated with, to whom long terms (at corn rents, if preferred) will be granted.—May 18.

TO GENTLEMEN FARMERS. — If this should meet the eye of any married gentleman largely engaged in farming pursuits, having more house accommodation than he requires, and residing in a part of the country that can boast of a good trout river, for fly-fishing, and fair general shooting, and who for society sake might wish to meet with, and to accommodate, a married gentleman, who is an officer in the army, without family, but with one servant, he may do so, by fully entering into particulars upon each point, with L. M. N. R., 10, Charles-street, St. James's-square, London.—Any offer that may appear eligible will be replied to.

STOUT AND PORTER.— JENNER, WICKING, AND JENNER are now delivering, for cash, to private families, their celebrated PORTER, at 1*s.*; and IMPERIAL STOUT, at 1*s.* 4*d.* per Gallon.—May be had in casks of 4½, 9, 18, and 36 gallons.

N.B. Their Ales are now in very fine condition.
South London Brewery, Southwark-bridge-road.

TO BUILDERS, &c.
IMPORTANT SANITARY INVENTION.



BY HER MAJESTY'S ROYAL LETTERS PATENT.

C. MARSDEN'S ROTARY WATER-CLOSETS and EFFLUVIA TRAPS, acknowledged by the most scientific to be the best and simplest self-acting Water-Closets and Effluvia Traps ever invented. A stench arises at the time of using all other Water-Closets—with this invention it can be got rid of. It is constructed in the shape of a drum, with four receivers or buckets caused to revolve by the weight of the matters falling into one of the receivers, when it instantly empties itself into the drain or sewer, and another bucket is ready from the opposite side to take its place, and two others on their ascent, to be emptied in their turn, while any upward escape of effluvia during these successive changes is effectually prevented, by overhanging and side flaps of vulcanised India-rubber, so placed that it is impossible to get choked up or get out of order; no balance weight or handles, no D or syphon traps required with these Closets. All traps that require water to keep them air-tight must necessarily leave a sediment to putrify. The value cannot be believed unless seen and tested.—Also Manufacturer of Decorative Marble Paper-hanging.—Waterloo House, King's Road, Chelsea, near the Bridge.

METCALFE AND Co.'s NEW PATTERN TOOTH-BRUSH and SMYRNA SPONGES.—The Tooth-Brush has the important advantage of searching thoroughly into the divisions of the teeth, and cleaning them in the most extraordinary manner, and is famous for the hairs not coming loose.—1*s.* An Improved Clothes-Brush, that cleans in a third part of the usual time, and incapable of injuring the finest nap. Penetrating Hair-Brushes, with the durable unbleached Russian bristles, which do not soften like common hair. Flesh-Brushes of improved, graduated, and powerful friction. Velvet-Brushes, which act in the most surprising and successful manner. The genuine Smyrna Sponge, with its preserved valuable properties of absorption, vitality, and durability, by means of direct importations, dispensing with all intermediate parties' profits and destructive bleaching, and securing the luxury of a genuine Smyrna Sponge. Only at METCALFE, BINGLEY, and Co.'s Sole Establishment, 130 B, Oxford-street, one door from Holles-street.

METCALFE'S ALKALINE TOOTH POWDER, 2*s.* per box.

CAUTION. — Beware of the words "From METCALFE'S," adopted by some houses.

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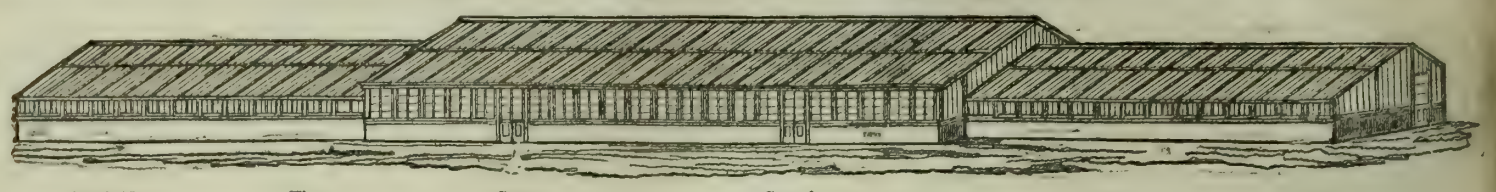
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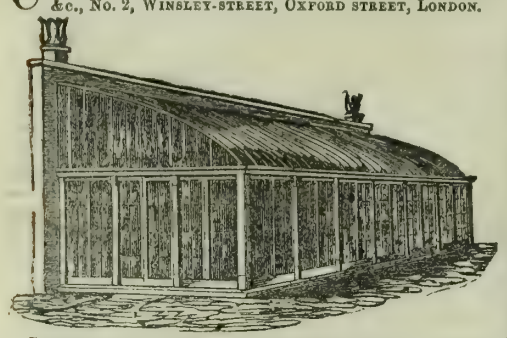
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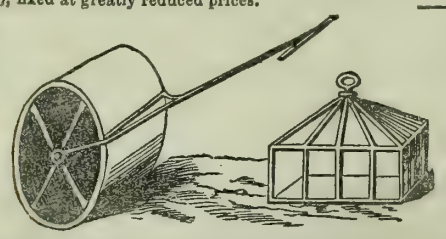
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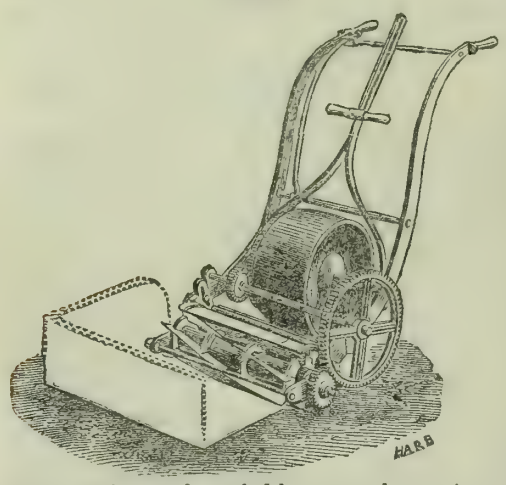
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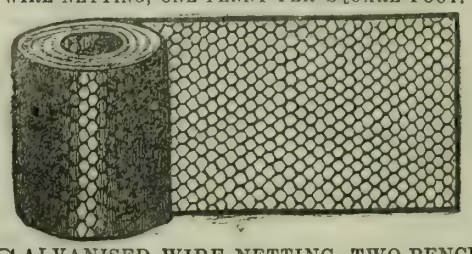
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THE GARDENERS' CHRONICLE AND AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 21—1850.] SATURDAY, MAY 25. [PRICE 6*d.*

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HORTICULTURAL SOCIETY OF LONDON.—EXHIBITIONS AT THE GARDEN.

The next Meeting will take place on SATURDAY, the 8th June. The Gates will be open to visitors at One, P.M. Tickets are issued to the orders of Fellows at this Office, price 5*s.* each, or at the Garden in the afternoon of the days of Exhibition, at 7*s.* 6*d.* each.

N.B. No Tickets will be issued in Regent-street on the day of Exhibition. 21, Regent-street.

J. COLE, NURSERYMAN and FLORIST, Rugby, Warwickshire, begs to inform the public that his SPRING CATALOGUE OF BEDDING PLANTS is now ready, at the following reduced prices:

DAHLIAS, fine named sorts, 6*s.*, 9*s.*, to 12*s.* per dozen.
VERBENAS, of last year, 6*s.* per dozen.
Do., good mixed varieties, 3*s.* 6*d.* per dozen.
HELIOTROPES, 4*s.* per dozen.
PETUNIAS, good mixed, 3*s.* 6*d.* per dozen.
GERANIUMS, good named, 8*s.* to 12*s.* per dozen.
PHLOXES, 6*s.* to 9*s.* per dozen.
ANTIRRHINUMS, 6*s.* per dozen.
Catalogues may be had by inclosing one penny stamp.

VERBENA—"MELINDRES ALBA."

G. H. BUNNEY, NURSERYMAN, Stratford, Essex, is sending out strong plants of the above VERBENA, price 2*s.* 6*d.* each, or 24*s.* a dozen. The usual allowance to the Trade.

The above Verbena is of dwarf compact habit, and a very profuse bloomer, making it one of the very best white Verbenas for small beds, or single plants in the flower border.

CHEAPEST BEDDING PLANTS OFFERED THIS SEASON.

VERBENAS, CALCEOLARIAS, PETUNIAS, Mimulus, Fuchsias, Heliotropes, Salvias, Mesembryanthemums, Dahlias, &c. Strong well-established plants, 3*s.* per doz.—THOMAS WATTS, Camden Nursery, Camberwell, London.

SPLENDID SPECIMEN AZALEAS.

WM. IVERY, Hanover Nursery, Peckham, has some Splendid Specimen AZALEAS for Sale, of the following celebrated varieties, which may be seen in full bloom at the above Nursery, or price given on application:—Lateritia Formosa or Conqueror (Ivery's), Iveryana (ditto), Rosea Elegans (ditto), Coccinea Superba (ditto), Delicata (ditto), Lateritia Pulchra.

GREENUS'S DWARF BONNET ASTER "MULTIFLORA."—Best Bedding Flower of last season, producing the greatest quantity of blossoms of the largest size in the smallest space of any flower yet introduced.

"Average height, 6 to 9 inches; diameter of plant, 15 inches; diameter of flower, from 2 to 2½ inches; average number of flowers on a plant, 30 to 40; perfectly double; colour, light purplish-crimson or high rose. As a bedding ornament it is unrivalled." See Gardeners' and Farmers' Journal, in Editor's remarks of 22d September last, at page 600.

EDWARD RUTTER GREENUS begs to say that he will be happy to supply healthy plants of the above at 2*s.* per dozen, and if five dozen or more are taken, carriage paid to any part of the kingdom. Poor soil most suitable to plant them in.

Post-office orders expected from unknown correspondents.

Railway Nursery, Watford, and Nurseries, Rickmansworth.

ESCALLONIA MACRANTHA.

LARGE RED-FLOWERING EVERGREEN ESCALLONIA.

MESSRS. VEITCH AND SON have much pleasure in calling the attention of the public to the above beautiful Escallonia (figured in Curtis's Botanical Magazine for October 1849, and therein described as "assuredly the handsomest of all the known species.") It has proved a perfectly hardy evergreen Shrub, having stood in the open border during the last severe winter, free from injury, without any protection whatever. The foliage is a dark glossy green, habit compact and good, and an abundant bloomer through the summer and autumn; it is altogether a very fine plant, and one they can confidently recommend. Fine well-established plants on and after the 1st of June at 21*s.* each; one plant over to the trade on every three taken.

A coloured Plate and letter-press description may be had (postage free) on application enclosing six postage stamps.

Also ready, on and after the 1st of June, the following new and desirable plants, viz.,

OXALIS ELEGANS, Elegant Wood-Sorrel from Peru.

This beautiful Oxalis, which is figured and fully described in Paxton's Magazine of Gardening for October 1849, also in Curtis's Botanical Magazine for January last, was exhibited and received a medal at the London Horticultural Society's meeting in Regent-street, July 1848. It has stood three winters uninjured, without shelter, in the open border, and may therefore be considered a hardy plant. It is an abundant bloomer, flowering from June till November, and a very desirable and showy plant for the flower-garden. Good established plants 5*s.* each, or six plants to the trade for 21*s.*

CALCEOLARIA GRANDIS.—A dwarf, compact, evergreen, shrubby, Peruvian species, with green glossy foliage, and an abundant bloomer; exhibited at Chiswick, May 1849, when the large silver medal was awarded it. Good established plants 5*s.* each, or six plants to the trade for 21*s.*—Exeter, May 25.

CEDRUS DEODARA.—Seeds of this magnificent hardy tree, recently imported from India, and warranted fresh, may be had till the end of June, when the remainder will be planted. Price 2*s.* 6*d.* per 100, or 20*s.* per 1000 seeds.

JAMES CARTER, Seedsman and Florist, 238, High Holborn, London.

SEEDS FOR PRESENT SOWING.—The following SEEDS may be sown any time during the month of May.

COLLECTIONS OF IMPORTED GERMAN SEEDS.

German Asters, Larkspurs, Stocks, Zinnias, &c.		£1	10 0
A smaller collection of ditto		0	15 0
50 fine Hardy Annuals, 10*s.*; 25 ditto		0	5 0
50 „ Half-hardy ditto, 15*s.*; 25 ditto		0	7 6
50 „ Hardy Perennials, 12*s.*; 25 ditto		0	6 0
25 „ Greenhouse Seeds, 7*s.*; 12 ditto		0	3 6
20 „ species of Erica, 10*s.*; 10 ditto		0	5 0
Cedrus Deodara, per 1000 seeds, 20*s.*; per 100		0	2 6

Nemophila maculata, 1*s.*, 2*s.* 6*d.*, and 5*s.* per packet.

PEAS FOR LATE CROPS.

Warranted Superior to any in Flavour.

Carter's Victoria, very large, per quart		0	2 0
Waite's King of the Marrows, per quart		0	2 0
Knight's Marrow, three varieties, each per quart		0	1 0

JAMES CARTER, SEEDSMAN and FLORIST, No. 238, High Holborn, London.

*** *The Flower Seeds will be forwarded prepaid. A new and revised Edition of* CARTER'S *Catalogue of Seeds is just published, and may be had gratis.*

DIELYTRA SPECTABILIS.

G. CLARKE (late WM. DANSON) begs to offer the above new and beautiful plant from the north of China, at the reduced price. Small healthy plants, 3*s.* 6*d.* each or 1*l.* 10*s.* per doz.; Flowering plants, 5*s.* to 7*s.* 6*d.* each; Fine specimens for 1*l.*

G. C. has fine healthy grown plants of most of the leading kinds of Ericas, Leschenaultia formosa, Pimelea spectabilis, Boronia serrulata, &c., at moderate prices.

Streatham-place Nursery, Brixton-hill, near London.

SEEDLING PELARGONIUM EXHIBITION.—The Seedling Pelargonium Exhibition is to be held this year at the Surrey Zoological Gardens, on WEDNESDAY, JUNE the 19th. The following Prizes are offered for Seedlings not less than two years old, and which have not yet been let out to the public: 1st, 5*l.*; 2d, 4*l.*; 3d, 3*l.*; 4th, 2*l.*; 5th, 1*l.*; 6th, 10*s.* To be paid immediately after the award.

Exhibitors will please to remember that the judges will be directed to withhold any of the prizes if the plants exhibited are considered no improvement upon the varieties already in cultivation. On the other hand, 2*l.* more than are offered will be at their disposal in case any deserving seedlings remain unrewarded after the distribution of the above prizes. The judges will be requested to bear in mind the object the Subscribers have in view, viz., the improvement of the Pelargonium in form, novelty, brilliancy, and beauty of colour, freedom of bloom, and habit of plant. The judges will be two nurserymen, two amateurs, and a fifth appointed by the Committee of the Royal South London Society. Any raiser is at liberty to compete, and no entrance money is required.

MESSRS. J. AND H. BROWN'S New List of Bedding out Plants can be had by post, and the following Select Plants immediately sent to any part.

	s	*d*
Verbenas, new and first-rate varieties, of all colours, per dozen	4*s.* to 6	0
Petunias, large crimson, white, lilac, pink, and mottled, per dozen	4*s.* to 6	0
Pentstemons, fine scarlet, blue, purple, and white, per doz.	6	0
Salvias, blue, white, scarlet, and variegated, per doz.	4	0
Heliotropiums, 4 sorts, 3 of each for	6	0
Lobelia erinus, grandiflora, alba, and lucida, per doz.	3	0
Lobelia fulgens, 6*s.* Other new scarlet vars., per doz.	9	0
Antirrhinums, best named varieties, per doz.	6	0
Cinerarias, fine varieties, flowering plants, per dozen	9	0
Calceolarias, pale and deep yellow, orange, red, crimson, and spotted, per dozen	4*s.* to 6	0
Zauschneria Californica, fine scarlet, per dozen	6	0
Torenia asiatica, and three sorts of Cupheas, per doz.	6	0
Geraniums, finest scarlets and mixed varieties, all named, 40*s.* per 100; per dozen, 6*s.*, 8*s.*, and	10	0
Fancy Geraniums, of best sorts, per dozen	9	0
Fuchsias, named varieties of the best kinds (last year's varieties), per dozen, 6*s.*, 8*s.*, and	10	0
Chrysanthemums, the most approved varieties, per doz.	6	0
Ditto, Lilliputian, 12 varieties, 1*s.* each; or the set	10	0
Dahlias, show and fancies, per dozen, 6*s.*, 8*s.*, and	10	0
Climbers, Maurandyas, 3 sorts; Cobœas, Thunbergias, Rhodochiton, and Lophospermums, per dozen	6	0
Climbing Roses, of choice sorts, in pots, per dozen	6	0
Fairy Roses, six sorts, ditto ditto	4	0
Crimson and White China for beds, per dozen	6	0
12 New Belgian Azaleas, in pots, one of a sort	15	0
12 American Azaleas, ditto ditto	12	0
12 Azalea Indica, splendid varieties	25	0
50 Select Greenhouse plants, one of a sort, by name	40	0
24 Choice Ericas, one of a sort, by name	18	0
Gloxinias in 12 superior new sorts	8	0
Achimenes, 12 beautiful new varieties	10	0
Orchidaceous Plants, 12 beautiful varieties	30	0
12 Tea-scented Roses, one of a sort, by name, in pots	9	0
12 Rhododendrons, scarlet, white, and rose	12	0
New Hardy Yellow Rhododendrons, each, 7*s.* 6*d.* to	10	6
Passifloras and Clematis, hardy and tender species, each	1	6
25 Select Hardy Herbaceous plants, by name	7	6
12 Hardy Ferns, and other Rock plants	8	0

Albion Nursery, Stoke Newington, London, May 25.

MEADOW AND PASTURE GRASS SEEDS.

GEORGE GIBBS AND Co. beg to notice their mixtures for laying Land down to Permanent Grass are now ready. The general satisfaction they have given for many years past, and the present low prices of 32*s.* per acre, allowing 2 bushels and 12 lbs. to each acre, they trust will ensure a continuance of orders. Mixed Seeds for improving old Grass Land, 1*s.* 3*d.* per lb.; fine sorts for forming Lawns, 1*s.* 4*d.* per lb. Their Priced List for the season of Turnips, Mangold Wurzel, and other Farm Seeds, will be forwarded on application to 26, Down-street, Piccadilly, London.

EXHIBITION OF TULIPS.

HENRY GROOM, Clapham Rise, FLORIST BY APPOINTMENT TO HER MAJESTY THE QUEEN, AND TO HIS MAJESTY THE KING OF SAXONY, respectfully informs the Nobility, Gentry, and the Public, that his superb Collection of TULIPS is now in flower, and can be viewed every day from 9 o'clock until 6 (Sunday excepted).

Admittance, 1*s.*; Children, Half-price.

TO NURSERYMEN, GARDENERS, AND OTHERS.

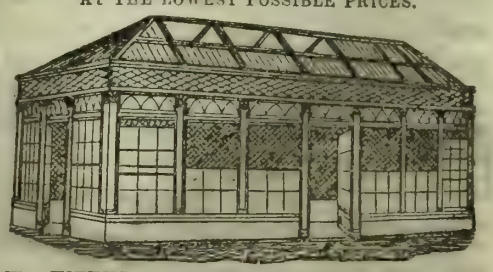
TURF.—For Sale, a quantity of excellent Lawn Turf.—For further particulars apply to W. CONQUEST, Builder, No. 14, Sleyman's-row, Holloway, London.

PINE PLANTS ON SALE.—Forty first-rate PINES, which will be strong Fruiting Plants next Spring; Forty very strong Succession Plants; Forty very strong Second-size Plants; Forty Crown and Suckers, one year old. The above are of the best description, and principally of the sort called about Liverpool "Black Jamaica," but better known about London and the south as "Montserrat;" they are well grown, and warranted free from all insects. They are offered for Sale in consequence of the death of the Proprietor, and the executors being anxious to reduce the Garden Establishment.

Apply to THOMAS WHALLEY, Seedsman and Nurseryman, 12, St. George's Crescent, Liverpool.

HORTICULTURAL BUILDING AND HEATING BY HOT WATER.

WARRANTED BEST MATERIALS AND WORKMANSHIP AT THE LOWEST POSSIBLE PRICES.



J. WEEKS AND CO., King's-road, Chelsea, Horticultural Architects, Hothouse Builders, and Hot-water Apparatus Manufacturers. The Nobility and Gentry about to erect Horticultural buildings, or fix Hot-water Apparatus, will find at our Hothouse Works, King's-road, Chelsea, an extensive variety of Hothouses, Greenhouses, Conservatories, Pits, &c., erected, and in full operation, combining all modern improvements, so that a lady or gentleman can select the description of House best adapted for every required purpose.

THE HOT-WATER APPARATUSES (which are efficient and economical), are particularly worthy of attention, and are erected in all the Houses, Pits, &c., for both Top and Bottom Heat, and in constant operation in the Stoves.

The splendid collection of Stove and Greenhouse Plants are in the highest state of cultivation, and for sale at very low prices. Also a fine collection of strong Grape Vines in pots, from eyes, all the best sorts.

Plans, Models, and Estimates of Horticultural Buildings; also Catalogues of Plants, Vines, Seeds, &c., forwarded on application.—J. WEEKS and Co., King's-road, Chelsea, London.

HORTICULTURAL TOOLS.

GREEN AND CONSTABLE, 36, King William-street, five doors from London Bridge, have a large assortment of GARDEN TOOLS, containing all the recent inventions, and including Lyndon's Patent Cast Steel Spades, Shovels, and Garden Forks, Lord Vernon's Hoe, Jointed Hothouse Syringes, Transplanting Tools, Registered Garden Labels, Ladies' sets of Gardening implements, Pruning Shears, Knives, &c. Agents for the Vitreous Porcelain Garden Bordering.—36, King William-st., five doors from London Bridge.

DEANE'S WARRANTED GARDEN TOOLS.—Horticulturists, and all interested in Gardening pursuits, are invited to examine G. and J. DEANE'S extensive Stock of GARDENING AND PRUNING IMPLEMENTS, best London made Garden Engines and Syringes, Coalbrookdale Garden Seats and Chairs.

Averuncators
Axes
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Bills
Borders, various patterns
Botanical Boxes
Cases of Pruning Instruments
Chaff Engines
Chaff Knives
Daisy Rakes
Dibbles
Dock Spuds
Draining Tools
Edging Irons and Shears
Flower Scissors
„ Stands in Wires and Iron
Fumigators
Galvanic Borders and Plant Protectors
Garden Chairs and Seats
„ Loops
„ Rollers
Garden Scrapers
Grape Gatherers and Scissors
Gravel Rakes and Sieves
Greenhouse Doors and Frames
Hammers
Hand-glass Frames
Hay Knives
Hoes of every pattern
Horticultural Hammers and Hatchets
Hotbed Handles
Ladies' Set of Tools
Labels, various patterns, in zinc, porcelain, &c.
Lines and Reels
Marking Ink
Mattocks
Menographs
Metallic Wire
Milton Hatchets
Mole Traps
Mowing Machine
Pick Axes
Potato Forks
Pruning Bills
„ Knives, various
„ Saws
„ Scissors
„ Shears [riety.
Rakes in great va-
Reaping Hooks
Scythes
Scythe Stones
Shears, various
Sickles
Sickle Saws
Spades and Shovels
Spuds
Switch Hooks
Thistle Hooks
Transplanting Tools
Trowels
Turfing Irons
Wall Nails
Watering Pots
Weed Extractors and Hooks
Wheelbarrows
Youths' Set of Tools

G. and J. DEANE are Sole Agents for LINGHAM'S PERMANENT LABELS, samples of which, with the Illustrated List of Horticultural Tools, can be sent, post paid, to any part of the United Kingdom.—DEANE'S Horticultural Tool Warehouse, opening to the Monument, 46, King William-st., London-bridge.

HORTICULTURAL SOCIETY OF LONDON.

EXHIBITION AT THE GARDEN, MAY 18, 1850.

AWARD OF THE JUDGES.

THE LARGE GOLD MEDAL.

1 To May, Gardener to Mrs. Lawrence, F.H.S., for a collection of 20 Stove and Greenhouse Plants
2 To Mr. Mylam, Gardener to S. Rucker, Esq., jun., F.H.S., for 20 species of Exotic Orchids

THE GOLD KNIGHTIAN MEDAL.

1 To Mr. Cole, Gardener to H. Colyer, Esq., of Dartford, for a collection of 20 Stove and Greenhouse Plants
2 To Mr. Green, Gardener to Sir E. Antrobus, Bart., F.H.S., for a collection of 15 Stove and Greenhouse Plants
3 To Mr. Williams, Gardener to C. B. Warner, Esq., F.H.S., for 20 species of Exotic Orchids

THE GOLD BANKSIAN MEDAL.

1 To Messrs. Frazer, of Lea Bridge-road, Leyton, for a collection of 20 Stove and Greenhouse Plants
2 To Mr. Carson, Gardener to W. F. G. Farmer, Esq., F.H.S., for a collection of 15 Stove and Greenhouse Plants
3 To Mr. Malyon, Gardener to T. Brandram, Esq., of Leagrove, Blackheath, for a collection of 10 Stove and Greenhouse Plants
4 To Mr. Rae, Gardener to J. J. Blandy, Esq., F.H.S., for 20 species of Exotic Orchids
5 To Messrs. Veitch and Son, of Exeter, for 15 species of the same
6 To Mr. Carson, for 10 species of the same
7 To Mr. May, for a collection of Greenhouse Azaleas in 12 varieties
8 To Mr. Terry, Gardener to Lady Puller, of Youngsbury, Herts, for 12 varieties of Roses in pots
9 To Messrs. Lane and Son, of Great Berkhampstead, for the same
10 To Mr. Mylam, for 10 varieties of Cape Heath
11 To Messrs. Fairbairn, of Clapham, for the same

THE LARGE SILVER-GILT MEDAL.

1 To Messrs. Pamplin, Lea Bridge-road, Leyton, for a collection of 20 Stove and Greenhouse Plants
2 To Mr. Gerrie, Gardener to Sir J. Cathcart, Bart., F.H.S., for a collection of 15 Stove and Greenhouse Plants.
3 To Mr. Stuart, Gardener to Thomas Huggins, Esq., of Norwood, for a collection of 10 Stove and Greenhouse Plants
4 To Mr. Kinghorn, Gardener to the Earl Kilmorey, Orleans House, Twickenham, for a collection of six Stove and Greenhouse Plants
5 To Mr. Franklin, Gardener to Mrs. Lawrence, F.H.S., for 20 species of Exotic Orchids
6 To Messrs. Rollisson, of Tooting, for 15 species of the same
7 To Mr. Blake, Gardener to J. H. Schröder, Esq., F.H.S., for 10 species of the same
8 To Mr. Kinghorn, for six species of the same
9 To Mr. Green, for a collection of Greenhouse Azaleas, in 12 varieties
10 To Messrs. Frazer, for the same, in six varieties
11 To Mr. Green, for Tall Cacti, in flower
12 To Mr. Roser, Gardener to J. Bradbury, Esq., of Streatham, for 12 varieties of Roses in pots
13 To Messrs. Paul, of Cheshunt, for the same
14 To Mr. Smith, Gardener to W. Quilter, Esq., of Norwood, for 10 varieties of Cape Heath
15 To Messrs. Veitch, for the same
16 To Mr. Smith, for the same, in 11-inch pots
17 To Messrs. Fairbairn, for the same
18 To Mr. Cock, F.H.S., for six new varieties of Pelargonium, in 8-inch pots
19 To Mr. Dobson, Gardener to E. Beck, Esq., F.H.S., for the same
20 To Mr. Cock, for six varieties of Pelargonium, in 11-inch pots
21 To Mr. Robinson, Gardener to J. Simpson, Esq., Thamesbank, Pimlico, for six Fancy Pelargoniums, in 8-inch pot

THE CERTIFICATE OF EXCELLENCE.

1 To Mr. Taylor, Gardener to J. Coster, Esq., of Streatham, for a collection of 15 Stove and Greenhouse Plants
2 To Mr. Speed, Edmonton, for a collection of 10 Stove and Greenhouse Plants
3 To Mr. May, Gardener to E. Goodhart, Esq., Langley-park, Beckenham, for a collection of six Stove and Greenhouse Plants
4 To Mr. Dobson, for 15 species of Exotic Orchids
5 To Mr. Ivison, Gardener to the Duchess Dowager of Northumberland, F.H.S., for six species of the same
6 To Mr. Cole, for a collection of Helichrysums
7 To Messrs. Lane and Son, for a collection of Greenhouse Azaleas, in 12 varieties
8 To Mr. Carson, for the same, in six varieties
9 To Mr. Gaines, F.H.S., for Greenhouse Rhododendrons
10 To A. Rowland, Esq., F.H.S., for 12 varieties of Roses in pots
11 To Mr. Francis, of Hertford, for the same
12 To Mr. Cole for 10 varieties of Cape Heath
13 To Messrs. Rollisson, for the same
14 To Mr. Cole, for the same, in 11-inch pots
15 To Messrs. Veitch, for the same.
16 To Mr. Parker, Gardener to J. H. Oughton, Esq., of Roehampton, for six distinct species of Pelargonium, exhibiting superior cultivation
17 To Mr. Robinson, for six new varieties of Pelargonium, in 8-inch pots
18 To Mr. Gaines, F.H.S., for the same
19 To Mr. Parker, for six varieties of Pelargonium, in 11-inch pots
20 To Mr. Gaines, F.H.S., for the same
21 To Mr. Stains, of Middlesex-place, New-road, for six Fancy Pelargoniums, in 8-inch pots
22 To Mr. Paxton, Gardener to His Grace the Duke of Devonshire, President of the Horticultural Society, for a Flower and Leaf of Victoria Regia
23 To Mr. Ivison, for the same
24 To Messrs. Veitch, for Rhododendron jasminiflorum
25 To Mr. May, for Pimelea spectabilis

THE LARGE SILVER MEDAL.

1 To Mr. Ivison, for a collection of 15 Stove and Greenhouse Plants
2 To Mr. Young, Gardener to C. Baron, Esq., Denmark-hill, Camberwell, for a collection of 10 Stove and Greenhouse Plants
3 To Mr. Stanly, Gardener to H. Berens, Esq., F.H.S., for a collection of six Stove and Greenhouse Plants
4 To Mr. Green, for six species of Exotic Orchids
5 To the same, for a collection of Helichrysums
6 To Mr. Roser, for 10 varieties of Cape Heath, in 11-inch pots
7 To Messrs. Rollisson, for the same
8 To Mr. Stains, for six distinct species of Pelargonium, exhibiting superior cultivation
9 To Mr. Bruce, Gardener to Boyd Miller, Esq., of Tooting, for a collection of Greenhouse Azaleas, in six varieties
10 To Mr. Glendinning, F.H.S., for Hoya imperialis
11 To Mr. Stains, for six new varieties of Pelargonium, in 8-inch pots
12 To Mr. Gaines, F.H.S., for six Fancy Pelargoniums, in 8-inch pots
13 To the same, for a collection of Cinerarias
14 To Mr. Stanly, for a new species of Hovea
15 To Mr. Jones, Gardener to Sir J. J. Guest, Bart., F.H.S., for a Ripley Queen Pine-apple
16 To Mr. Davis, of Oak-hill, East Barnet, for the same
17 To the same, for a Blood-red Pine-apple
18 To Mr. Davis, Gardener to Lord Boston, F.H.S., for a Providence Pine-apple, weighing 8 lbs. 5 oz.
19 To Mr. Davis, of Oak-hill, for the same, weighing 7 lbs. 2 oz.
20 To Mr. Ingram, Gardener to her Majesty, at Frogmore, for Black Hamburgh Grapes
21 To Mr. Davis, of Oak-hill, for the same
22 To Mr. Jackson, Gardener to H. Beaufoy, Esq., of South Lambeth, for Sweetwater Grapes
23 To Mr. Davis, of Oak-hill, for the same
24 To Mr. Spencer, Gardener to the Marquis of Lansdowne, F.H.S., for Cannon-hall Muscat Grapes
25 To Mr. Toy, Oatlands Palace Gardens, Weybridge, for Black Frontignan Grapes.

THE SILVER KNIGHTIAN MEDAL.

1 To Mr. Glendinning, F.H.S., for a collection of 10 Stove and Greenhouse Plants
2 To Mr. Bruce, Gardener to Boyd Miller, Esq., of Tooting, for a collection of six Stove and Greenhouse Plants
3 To Mr. O'Brien, Gardener to G. Read, Esq., of Bridgewater, Somerset, for six species of Exotic Orchids
4 To Mr. Cole, for Dendrobium Calceolaria
5 To Mr. Mylam, for 6 distinct species of Pelargonium, exhibiting superior cultivation
6 To Mr. Wood, of Norwood, for a collection of Alpine plants in 12 varieties
7 To Mr. Stanly, for a collection of Calceolarias
8 To Mr. E. G. Henderson, F.H.S., for a collection of Cinerarias in 6-inch pots
9 To Mr. Edmonds, Gardener to his Grace the Duke of Devonshire, F.H.S., for Rhododendron formosum
10 To Mr. Kinghorn, for Erica Cavendishii
11 To Messrs. Garraway and Co., of Bristol, for six Amaryllids
12 To Messrs. Veitch, for Bolbophyllum Lobbii
13 To Mr. Slowe, Gardener to W. R. Baker, Esq., F.H.S., for a Providence Pine-apple, weighing 7½ lbs.
14 To Mr. Turnbull, Gardener to his Grace the Duke of Marlborough, F.H.S., for Black Hamburgh Grapes
15 To Mr. Mitchell, of Kemp Town, Brighton, for the same
16 To Mr. M'Walter, Gardener to Col. Challoner, F.H.S., for Sweetwater Grapes
17 To Mr. Fleming, Gardener to his Grace the Duke of Sutherland, F.H.S., at Trentham, for a bunch of Black Hamburgh Grapes, weighing 1 lb. 7½ oz.
18 To Mr. Davis, of Oak-hill, for the same, weighing 2 lbs. 3oz.
19 To Mr. Fleming, for Royal George Peaches
20 To the same, for Murray Nectarines
21 To Mr. Slowe, for British Queen Strawberries, in pots
22 To Mr. Munro, Gardener to Mrs. Oddie, of Colney-house, St. Alban's, for a Seville Orange-tree, in fruit in a pot
23 To Mr. Fleming, for the heaviest Melon (Hybrid Greenfleshed Persian)
24 To the same, for the best flavoured Melon (Hybrid Greenfleshed Persian)

THE SILVER BANKSIAN MEDAL.

1 To Mr. Slowe, for a collection of 10 Stove and Greenhouse Plants
2 To Mr. O'Brien, for a collection of six Stove and Greenhouse Plants
3 To Mr. Gerrie, for six species of Exotic Orchids
4 To Mr. Turner, of Holloway, for a collection of Alpine plants, in 12 varieties
5 To Messrs. Lane, for a collection of Cinerarias, in 6-inch pots
6 To Mr. Mylam, for Erica vasæflora
7 To Messrs. Veitch, for Mitraria coccinea
8 To Mr. Williams, for six Lycopodiums
9 To Mr. Stanly, for Pimelea Verschaffeltii
10 To Mr. Fleming, for Black Hamburgh Grapes
11 To Mr. Toy, of Oatlands Palace Gardens, Weybridge, for the same
12 To Mr. Snow, Gardener to the Earl de Grey, F.H.S., for a collection of Apples and Pears of last year's growth
13 To Mr. Ingram, for Mayduke Cherries
14 To Mr. Toy, for British Queen Strawberries
15 To Mr. Elphinstone, Gardener to the Right Hon. the Speaker, F.H.S., for Keens' Seedling Strawberries
16 To Mr. Toy, for the same

THE CERTIFICATE OF MERIT.

1 To Mr. Ambrose, of Battersea, for six Fancy Pelargoniums, in 8-inch pots
2 To Mr. Miller, Gardener to R. Moseley, Esq., of Pine-apple-place, Edgeware-road, for the same
3 To Mr. Gaines, F.H.S., for a collection of Cinerarias, in 6-inch pots
4 To Mr. Mountjoy, F.H.S., for a Seedling Rhododendron
5 To Mr. Wood, of Norwood, for 18 variegated hardy Plants
6 To Messrs. Veitch, for Dendrobium transparens
7 To the same, for Stylidium ciliare
8 To Mr. Fleming, for Mayduke Cherries
9 To Mr. Meredith, Gardener to his Grace the Duke of Sutherland, F.H.S., at Cliefden, for Keens' Seedling Strawberries.

BEE HIVES.

GEORGE NEIGHBOUR AND SON respectfully announce that they have prepared for this season an extensive supply of their various IMPROVED BEE HIVES, which are offered to all who are desirous of cultivating that pleasing and profitable branch of rural economy—the Honey Bee. The collection consists of "Nutt's Collateral Hives," "The Single Box Hive," "The Amateur Bar Hive," "The Improved Cottage Hive," &c., from either of which the honey may be taken at any time without injury to the Bees, and may be worked with safety, humanity, and profit, by the most timid and unaccustomed to Bee manipulation. A descriptive paper, with drawings and prices, will be forwarded on the receipt of two postage stamps.—127, High Holborn, London.

Agents: WM. DRURY, Castle-street, Liverpool; HALL and WILSON, 50, King-street, Manchester; AUSTIN and M'ASLIN, 168, Trongate, Glasgow.

HOTHOUSES AND CONSERVATORIES made and fixed complete in all parts of the Kingdom, at a considerable reduction. One, two, and three-light Cucumber and Melon Boxes and Lights of all sizes, kept ready for use, packed, and sent to all parts of the Kingdom; warranted best material. Garden-lights of every description, at JAMES WATTS', Hothouse Builder, Claremont-place, Old Kent-road. Reference may be had to the Nobility, Gentry, and the Trade, in most of the counties in England.

COOPER'S PATENT PRESERVED FRUITS IN SYRUP, prepared for the Dessert.—A small hamper, containing various kinds of Fruit, one of which contains Raspberries and Currants, the growth of the year 1840, and is still warranted for three years in advance, for family use. A hamper will be forwarded, free of expense, to any part of London, for an order for 7s., directed to Mr. JOHN SMITH, 8, St. John-street, Clerkenwell, London.

NETTING, FLAGS, AND BUNTING.—Superior Tanned Garden Netting, for preserving Fruit-trees from Frost, Blight, or Birds; or as a fence for Fowls, Pigeons, Tulip and Seed-beds, can be had in any quantity from JOHN KING FARLOW'S Fishing-rod and Net Manufactory, 5, Crooked-lane, London-bridge, at 3d. per yard 2 yards wide, or 6d. per yard 4 yards wide. Woollen Bunting, any length or width, at 6d. per square yard. Forwarded to any part of the kingdom on receipt of remittance, Post-office order, or stamps. Several good second-hand Flags to be sold cheap.

DESTRUCTIVE ANIMALCULÆ.

READ'S GARDEN ENGINES AND MACHINES.—As summer approaches, the larvæ of destructive insects are propagated in infinite multitudes, to the great injury of the young shoots of Trees, Vines, Plants, and every species of vegetation put into motion and growth by the genial influence of the season. RICHARD READ, Instrument Maker (by special appointment) to her Majesty, begs to inform Amateur and Practical Gardeners, &c., that he has made considerable improvement in his Garden Engines and Machines, which are now so perfect that he will warrant the valves to keep in repair during the term of the patent.—Manufactured only at 35, Regent-circus, Piccadilly.

MARQUEES, SUN-BLINDS, RICK CLOTHS, &c.—Manufactory, Old Kent-road, facing the Bricklayer's Arms Railway Terminus, and 17, Smithfield-bars, London.

"The guests are arriving; my villa has got
Quite a park-like appearance—a beautiful spot;
The band on the lawn, in the spacious marquee,
This tent for our dinner, and that for our tea."

Marquees and temporary rooms superbly fitted up for fetes, &c., on most moderate terms, by THOMAS EDGINGTON and Co.—Tents of every description, Rick-cloths, with poles, &c. Tanned Netting, for the protection of fruit-trees from frost, blight, and birds, and for the security of fresh-sown seed either in gardens or fields, at unprecedentedly low prices, viz., 1d. per square yard, or 200 yards for 14s., or 500 yards for 30s., or 1000 yards for 50s. Sold to gardeners and shopkeepers by the cwt. —New Archangel Mats and Scrim Canvas for wall fruit; Tarpaulings for houses under repair, on hire. Orders and inquiries per post immediately attended to.

GLASS WATER PIPES.

MESSRS. COATHUPES AND Co., GLASS MANUFACTURERS, Bristol and Nailsea, Somerset, continue to supply GLASS PIPES for the conveyance of water, &c., in lengths of from 3 to 7 feet, and from ½-inch to 4-inch bores; they provide also the necessary joints, which enable them to stand very considerable pressure.

MONTGOMERY'S RAFTERS AND SASH BARS, FOR GREENHOUSES, SKY-LIGHTS, &c.

Prices of Sash Bars, Rafters, &c., including Waste, per 100 ft.

7 in. by	2½	...	...	£2	1	0	3 in. by	3	...	...	£1 2 6
6 ,,	2½	...	...	1	17	0	2 ,,	1½	...	...	0 13 0
1½ ,,	1	...	...	0	10	0	3 ,,	1½	...	...	0 14 6
2 ,,	1	...	...	0	11	0	1½ ,,	1	...	...	0 9 0
2½ ,,	1½	...	...	0	14	0	2½ ,,	1½	...	...	0 16 6
3½ ,,	2	...	...	1	2	0					

JAMES PHILLIPS AND CO. beg to inform the Nobility and Gentry they are appointed agents for the sale of the above by Mr. MONTGOMERY, and trust to be favoured with their orders. Lists and every information may be had at the Horticultural Glass Warehouse, 116, Bishopsgate-street Without.

GLASS FOR CONSERVATORIES.

JAMES PHILLIPS AND Co. have the pleasure to hand their New List of Prices of GLASS for Cash.

CUT TO SIZE.

16 oz. from 2d. to 3¼d. per foot.					
21	,,	3½	,, 5	,,	
26	,,	3½	,, 7½	,,	
32	,,	4	,, 9½	,,	

SHEET SQUARES.

In boxes of 100 feet.	s.	d.
Under ... ... 6 by 4	12	6
6 by 4 and under 7 by 5	16	6
7 by 5 ,, 8 by 6	18	6
8 by 6 ,, 10 by 8	20	6

100 feet and 200 feet cases of large Sheet Glass, for cutting up, at 2½d. per foot. British Plate Glass, from 1s. 2d. to 2s. per foot, according to size.

HARTLEY'S PATENT ROUGH PLATE, packed in boxes of 50 feet each:

6 by 4 and 6½ by 4½	...	10s.	6d.
8 by 6 ,, 8½ by 6½	...	13	6
7 by 5 and 7½ by 5½	...	12s.	0d.
9 by 7 ,, 10 by 8	...	15	0

MILK PANS.

12 in. diameter	...	2s.	0d.
14 ,,	...	2	6
16 ,,	...	3	0
18 ,,	...	3	6
20 ,,	...	4	0
22 ,,	...	4	6
24 ,,	...	5	0
26 ,,	...	6	0

CREAM POTS, from 2s. each.

PROPAGATING GLASSES.

2 in. diameter	...	0s.	2d.
3 ,,	...	0	3
4 ,,	...	0	4
5 ,,	...	0	6
6 ,,	...	0	8
7 ,,	...	0	10
8 ,,	...	1	0
9 ,,	...	1	2
10 ,,	...	1	4
11 ,,	...	1	6

BEE GLASSES, same sizes.

METAL HAND FRAMES.

12 inches	...	6s.	0d.
14 ,,	...	7	0
16 ,,	...	8	0
18 ,,	...	9	0
20 ,,	...	10	0
24 ,,	...	12	0

Open tops, 1s. extra.

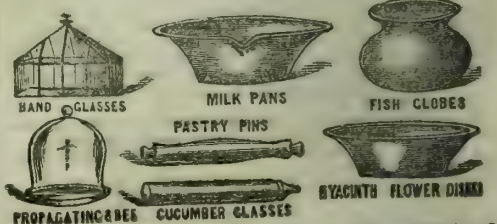
CUCUMBER TUBES.

12 inches long	...	1s.	0d.
14 ,,	...	1	2
16 ,,	...	1	4
18 ,,	...	1	6
20 ,,	...	1	8
22 ,,	...	1	10
24 ,,	...	2	0

Glass Shades; Tiles and Slates of any size; Wasp Traps, 3s. 6d. per dozen; Lamp Shades; Rough Plate Glass of every thickness. Lactometers, for trying the quality of milk, 4 tubes, 7s. 6d.; 6 do., 10s. Glass Stands for Pianoforte, and every article in the trade.

JAMES PHILLIPS AND Co., 116, BISHOPSGATE-STREET WITHOUT, LONDON.

GLASS FOR CONSERVATORIES, HORTICULTURAL PURPOSES, &c.



T. MILLINGTON'S SHEET GLASS, which is of the best description, varying from 16 to 32 ounces, at from 2d. per foot and upwards; 100 feet and 200 feet cases of from 2d. per foot and upwards; 100 feet and 200 feet cases of large Sheet Glass, for cutting up, at 2½d. per foot. British Plate Glass, from 1s. 2d. to 2s. per foot, according to size. Patent Rough Plate Glass, from ⅜ to 1 inch in thickness, from 4d. per foot upwards. Glass Slates and Tiles. Milk Pans from 12 to 24 inches diameter, from 2s. to 5s. each. Cucumber Tubes, from 12 to 24 inches long, at 1d. per inch. Lactometers, 7s. 6d. each. Wasp Traps.—Lists may be had, on application at the Warehouse, 87, Bishopsgate-street Without, same side as the Eastern Counties Railway.

EXOTIC AND INDIGENOUS FERN SEEDS.

WILLIAM MAY, F.H.S., begs to announce to the admirers of this interesting group of Plants, that he has been presented with a Collection of Seeds from one of the most celebrated growers in this country, consisting of 60 distinct species and varieties, which will be sent, post free, on receipt of 20s.—The Hope Nurseries, Bedale, Yorkshire, May 25.

THE FUNEBRAL CYPRESS—CUPRESSUS FUNEBRIS.

MESSRS. STANDISH AND NOBLE, of the Bagshot Nursery, beg to announce that they are now sending out the above magnificent Weeping Evergreen Tree, the hardiness of which is now proved beyond all doubt; and for particulars proudly refer their patrons to the highest authorities, viz., Dr. Lindley and Sir W. Hooker—see *Gardeners' Chronicle*, April 21, 1849, and April 13, 1850; Curtis's Botanical Magazine, for May; and the Gardeners' Journal, March 9 and 16 for the present year. Strong healthy plants, fit for immediate planting, 21s. each.—Bagshot Nursery, Surrey.

BASS AND BROWN'S DESCRIPTIVE PRICED CATALOGUE sent prepaid for four penny stamps, for postage. This Catalogue contains a rich assortment of the newest and best plants which can be procured. The stock of BEDDING PLANTS is unusually strong and fine. Several thousand plants of Verbenas are now ready for sending out, as well as our collection of other plants for bedding, the stock of which is also very extensive, consisting of Geraniums, Fuchsias, Petunias, Dahlias, Chrysanthemums, Anagallis, Bouvardias, Cupheas, Heliotropes, Plumbagos, Lantanas, Salvias, Lobelia Erinus grandiflora and compacta alba, Zauschneria californica, &c.

Persons requiring Plants for beds may depend on receiving a supply, strong, and in fine condition, at low prices.

Seed and Horticultural Establishment, Sudbury, Suffolk.

ACHIMENES TUGWELLIANA.—This beautiful Achimenes was raised by Mr. Carmichael, gardener to G. C. Tugwell, Esq., Crowe Hall, Bath. It was the admiration of all who saw it in bloom, and the following opinions were expressed upon its merits:

"ACHIMENES: *W. C.* Your hybrid between A. patens and A. longiflora, with deep violet-purple flowers, about the size of those of A. patens, is a decided cross, and is a very beautiful thing, nice in colour."—*Gardeners' Chronicle*, August 11, 1849.

"ACHIMENES: *William Carmichael.* Your hybrid between A. patens and A. longiflora is distinct from both the flowers, being about the size of A. longiflora, with a colour intermediate betwixt the parents. It is undoubtedly a desirable acquisition to this already useful and ornamental class of plants."—Gardeners' Journal, August 18, 1849.

R. GLENDINNING possessing the whole stock of the above desirable Achimenes, will be prepared to send out good plants the first week in June, at 7s. 6d. each. For every three ordered one extra will be added.—Chiswick Nursery, near London.

VALUABLE HARDY CONIFERÆ.—This being the best season for planting out these important Ornamental Trees, the following are offered as some of the most desirable of the hardy species. They are especially recommended as being all RAISED FROM SEEDS, none being either grafted or cutting plants. Many other species besides those enumerated may be obtained.

	s.	d.	s.	d.
Abies Brunoniana,	3	6 to	7	6
,, Douglasii			5	0
,, Pinsapo			2	6
Araucaria imbricata	2	6 to	5	0
Cedrus Africanus, Silver Cedar of Mount Atlas	2	6 to	10	6
Cedrus Deodar	1	6 to	10	6
Cryptomeria japonica	5	0 —	105s.	
Cupressus Goveniana		21	0	
,, macrocarpa	5	0 —	10	6
Picea Nordmanniana		5	0	
Pinus Benthamiana		21	0	
Pinus cembra	2	6 to	5	0
,, cembroides			5	0
,, excelsa	1	6—	7	6
,, Fremontiana			42	0
,, insignis	2	6—	7	6
,, Gordoniana			21	0
,, Grenvilleæ			42	0
,, macrocarpa			21	0
,, Sabiniana			21	0
,, maritime de corte			3	6
,, muricata			21	0
,, radiata			21	0
,, tuberculata			42	0
,, Wincheseteriana			42	0
,, occidentalis			10	6
,, Gerardiana	1	6—	5	0
,, Montezumæ			7	6

ROBERT GLENDINNING, Chiswick Nursery, near London.

CHRYSANTHEMUMS.

CHANDLER AND SONS, NURSERYMEN, Vauxhall, London, are now sending out young plants, strong and healthy, of all the best varieties of CHRYSANTHEMUMS for autumn flowering, at 9s. and 12s. per dozen; the newest sorts at 18s. per dozen; and good free flowering sorts for planting in the open borders, 50s. per 100.

The Plants are in small pots, and in good order for packing. A Descriptive List may be had on application.

It is requested a Post-office order may accompany all orders from unknown correspondents.

RENDLE'S CHEMICAL PLANT MANURE.—We have just received the following letter from Capt. JAMES WILLIAMS, R.N., Newport, near Barnstaple.

"Newport-terrace, Barnstaple, May 14, 1850.

"Sir,—I acknowledge the receipt of another supply of your Chemical Plant Manure, and I have very great pleasure in informing you of the beneficial effects I have found it produce on my plants in general. I am certain a short trial of it will be satisfactory to any person using it. I find my plants *strong and full of flowers*, particularly my Geraniums, which are grown in very small pots, producing now, at this time, *fine trusses of flowers, large*, and *their colours clear*. On my Calceolarias it has an *astonishing effect* in the produce of flowers, both in quantity and size; with regard to Petunias the same. I now use it in the compost of all my greenhouse plants. I have so far been successful in the quantity I have used—one pint of manure to two pecks of compost; and as it is *inexpensive*, I wish you a successful sale, and trust that your customers will be as well satisfied as I am.

"I remain, sir, yours truly, JAMES WILLIAMS."

"P.S. I shall most assuredly recommend all my friends to use it."

Samples can be had gratis, by enclosing six penny postage stamps to pay the postage. Sold in tin canisters, at 1s., 2s., and 3s. 6d. each, warranted to give satisfaction, or the money will be returned.

Apply to WILLIAM E. RENDLE & Co., Union-road, Plymouth.

HENRY BIERTUMPFEL, MANUFACTURER OF IMPROVED AND PATENT GARDEN SYRINGES, AND ORNAMENTAL ICE MOULDS, 68, Albany-street, Regent's-park, London, respectfully tenders his thanks to Gentlemen, Florists, Nurserymen, &c., for their continued and extending patronage, and ventures to hope that he may still be honoured with their commands. To those who have not at present used his Improved and Patent Garden Syringe, he respectfully solicits a trial, as he can confidently recommend them to be unsurpassed either for durability, cheapness, or utility; and being manufactured of the Imperial White Metal, they never corrode or cause verdigrease, to which the brass ones are liable.

H. B. would also take this opportunity of calling attention to his New and Ornamental Ice Moulds, they being a very great improvement upon the old shape. They are used and approved of by some of the first Club Houses in London, and by all the most eminent Confectioners, and are particularly admired for their elegant and unique shape.

N.B. Made in Pints, 1½ Pints, Quarts, and 3 Pints.

WORTON COTTAGE MEETINGS.—Raisers of Seedling Florist Flowers sending them to these meetings for the censors of BECK'S FLORIST AND GARDEN MISCELLANY are earnestly requested to be particular in packing them carefully, and in suitable tin boxes. They must be addressed, Mr. BECK, Worton Cottage, Isleworth, and be posted so as to reach him on the morning of the meetings.

The next Meeting will be held on Wednesday the 29th inst.

TO THE ADMIRERS OF THAT SPLENDID AUTUMNAL FLOWER, THE CHRYSANTHEMUM.

YOUELL AND Co. are now prepared to execute orders from their extensive and very select collection of the above, comprising all the new and fine continental varieties, at the following prices:

50	best new sorts	25s.
25	ditto	15s.
12	ditto	9s.

Well established in small pots, or per post free.

Their successful mode of cultivation is published in the *Gardeners' Chronicle* of Saturday last.

THE NEWEST AND MOST BEAUTIFUL PLANTS FOR BEDDING OUT can now be supplied by YOUELL and Co., comprising the most distinct and striking varieties of recent introduction, at 4s., 6s., 9s., and 12s. per doz., viz., Fuchsias, Verbenas, Petuniaa, Antirrhinums, Anagallis, Bouvardias, Calceolarias, Chrysanthemums, Cupheas, Carnations, Geraniums (scarlet and fancy kinds), Heliotropes, Lantanas, Lobelias, Lychnis, Mesembryanthemums, Nemophila maculata, Pansies, Pentstemons, Phloxes, Salvias, Double White Rockets, Zauschneria, &c., of which Catalogues can be had on application.—Royal Nursery, Great Yarmouth.

The Gardeners' Chronicle.

SATURDAY, MAY 25, 1850.

MEETINGS FOR THE ENSUING WEEK.

MONDAY,	May	27	Geographical (Anniversary)	1 P.M.
			Medical	8 P.M.
			British Architects	8 P.M.
TUESDAY,	—	28	Horticultural	3 P.M.
			Civil Engineers	8 P.M.
			Medical and Chirurgical	8½ P.M.
			Zoological	9 P.M.
WEDNESDAY,	—	29	Royal Botanic	3½ P.M.
			Society of Arts	8 P.M.
THURSDAY,	—	30	Antiquarian	8 P.M.
			Royal	8½ P.M.
FRIDAY,	—	31	Royal Institution	8½ P.M.
SATURDAY,	June	1	Royal Botanic Gardens (American Plant Show)	2 P.M.

COUNTRY SHOWS.—Tuesday, May 28: Whitby Floral, and Manchester Great Northern Tulip.—Thursday, May 30: Saltiouse Village Horticultural.—Friday, May 31: Darlington Horticultural.

WE entirely agree with the judgment of those who, on looking at parts of the EXHIBITION of flowers and fruit AT CHISWICK on Saturday last, declared that cultivation could go no further. It can go no further. We may see larger specimens, and greater variety, and more novelty, perhaps; but we shall never see better gardening. There was scarcely an ill-grown plant in the tents. The Roses, the Azaleas, the Heaths, the Orchids, and the various races of "Stove and Greenhouse Plants" were so many living fountains, from whose bosom poured a magnificent stream of wondrous forms, gay colours, and sweet odours.

"I don't see much novelty here," said a foreign gentleman, looking at the Orchids, of which he possesses a vast collection; "I think I have all that is brought to-day; but how *do* the gardeners make them *grow and flower in this wild profusion*." That is just the point; money will make a collection of plants; but skill alone will make them flourish.

Foremost among the wonders of the day were specimens in flower of THE VICTORIA, two leaves and a flower from the Duke of DEVONSHIRE, one leaf and a flower from the Duke of NORTHUMBERLAND; all in a state of admirable beauty. No description can give an idea of what this plant is; we may say, indeed, that its leaf is 15 feet in circumference, and like a huge tray, that it is sustained upon the water by purple ribs 2 inches deep, that its stalk resembles the pipe of a Hookah, that it is half pierced by thousands of microscopical chimneys, and coated next the water by millions of millions of glands (?), and that the whole fabric is the result of one week's growth. Yet to feel the force of this description, the leaf must be seen. Fortunately the flowers were in perfect order, and during the afternoon expanded very nearly, throwing off now and then volumes of fragrance which diffused itself around whenever the glasses which protected them were removed. Although no opportunity was afforded of a minute examination of their structure, yet there was evidence enough to show that Victoria is no GORGON, as some dreaming gentlemen still fancy.*

Among other novelties the first place was occupied by the *jasmine-flowered Rhododendron* from Messrs. VEITCH, of Exeter—an evergreen greenhouse bush, with long, narrow, waxy, white flowers, possessing a delicious fragrance. As it was stated to have been referred to Rhododendron by Sir WILLIAM HOOKER, we presume that the genus has been certainly ascertained.

Then came a beauteous Hovea, something like CELS's, but with very broad leaves, raised from New Holland seeds by the gardener to Mr. HENRY BERENS. This promises to be more manageable than CELS's Hovea, and if so it will be a great acquisition.

A most curious thing should next be mentioned, of which a well-grown plant came from Messrs. VEITCH, of Exeter. This was *Lobb's Bolbophyl*, a very remarkable stove plant, with large Maxillaria-like flowers, curiously spotted and striped with buff.

Inferior to these, but still of much merit, were the *transparent Dendrobe*, and the *fringed Stylewort*, both from Messrs. VEITCH, of Exeter; the former with gauzy white and pink blossoms, and the latter with flowers of the palest chalky yellow. The *great bracted Medinilla* was also there, but as a cut specimen, and injured in the carriage.

Of plants less novel the most striking was a large handsome specimen of the *plaited Gueldres Rose*, a Japan shrub, originally imported by the Horticultural Society, but on this occasion exhibited by Messrs. STANDISH and NOBLE, of Bagshot. By some mistake it was placed in a wrong class, and was, therefore, passed over by the judges; had it been in its proper class, it must have taken a first prize, for it was the finest thing among the non-novelties.

In another column will be found a full account of this remarkable exhibition, which, it must be allowed on all hands, was a triumphant example of our native skill and industry. The visitors to it, however, as always happens in May at the Horticultural Society's meetings, were more remarkable for their selectness than their number; so that, notwithstanding the issue of an unusually large number of tickets, the official returns do not show a greater attendance than 3142.

We may add that the new arrangements for facilitating the access to the tents, and for the accommodation of exhibitors, appeared to be universally considered as great improvements in the appearance of the Garden. Fortunately, however, their value as a protection against rain was not put to the test; for the day was dry, although chilly and frequently overcast.

* We believe we are correct in saying that the French notion still exists in England of Victoria being the same genus as Euryale!

IT is with many painful feelings and recollections that we have to announce the untimely death of Dr. CORDA, of Prague, who perished at sea on his return from Texas, where he had been residing 10 months, during which he had made many valuable collections and observations that, we fear, are now entirely lost to science. He was unfortunately implicated in the political agitation of his native city, Prague, in 1848, where he had a narrow escape from assassination. Being a man of very varied talents, and by no means a mere botanist, he had been employed by the Emperor of AUSTRIA to report on the Industrial Exhibition at Paris in 1844, where we had the pleasure of his society for some time; and a high sense of his abilities induced the Prince COLLOREDO to select him, as a fit person to conduct a large party of emigrants to New Braunfels, in Texas, where the Prince was about to establish a colony. His passage had been taken in the ill-fated ship from Bremen, which perished on the Kentish coast in the autumn of 1848, and while we were yet in doubt as to his escape, we had the pleasure of receiving intelligence from him from the Isle of Wight, announcing his safety, in consequence of being obliged to delay his voyage.

His contributions to mycology, and other branches of botany, were of first-rate importance, but they were, in some degree, impaired by too much haste, which led him sometimes into errors, and from a certain exuberance of fancy which induced him to jump to his conclusions without being sure of all the intermediate steps. There was, unfortunately, something of the same fault in his conversation as well as in his writings, which excited a prejudice against him in those who either did not know him well or were not disposed to make a little allowance, but he was sincerely esteemed by a large circle of friends, many of whom, as Baron STERNBERG, for instance, had considerable influence, who knew his kindness of spirit, and admired his undoubted talents. His "Icones Fungorum" contain a mass of observations, a great portion of which are entirely new to science; and we can vouch for the accuracy of a large part of the figures from the comparison of authentic specimens communicated for the express object of testing their correctness, which had been called in question rather unfairly. As a draftsman he was excelled by few. The "Prachtflora" is one of the most beautiful specimens of illustration with which we are acquainted. The figures in the grand work of "Krombholz" are all from his pencil, and indeed the text was also supplied by him. His magnificent work on fossil plants is one of the most valuable contributions to structural botany, and we have not only had the opportunity of examining the very specimens figured, and comparing them with the original drawings, but have, through his kindness, received several of his most interesting genera. Before he left Germany, drawings on stone were made for a sixth fasciculus, a vast portion of which consisted of Truffles. A complete set of the proofs was fortunately communicated to Dr. MONTAGNE, and an imperfect set is in our own possession. We trust, however, that the publishers, in whose hands the stones were left, will print them for general

circulation, even though they should be obliged to publish them without text.

It is intended shortly to dispose of his collections, but we fear that many of the subjects figured in the earlier fasciculi were lost, as appear from his private correspondence, which is the more to be regretted, as several of the figures are neither so accurate nor so well designed as in the later numbers.]

A COMMUNICATION was made at a late meeting of the Linnean Society respecting a peculiar form of DRY-ROT which spread with extreme rapidity in the church of King's Wear, Devonshire, by means of long, byssoid, rope-like shoots, different in the mode of their development, except on a very small scale, from anything which had before come within our notice.

A still more curious case, which we are inclined to refer to dry-rot, has lately been sent to us for inspection, reminding us of the mural leprosy of Judea, attacking, as it does, and more or less destroying not merely the timber, but the solid walls themselves. It occurred in an old house near Erith, on the banks of the Thames, where it has penetrated into every crevice in and between the walls and wood-work, separating the bricks and mortar, and rendering the whole so friable that the walls must be rebuilt, to prevent their falling down. The mycelium here forms a widely expanded net-work of threads, which are twisted together in every possible way, so as to form anastomosing strings, of considerable tenacity, as thick as small pack-thread. A strong solution of corrosive sublimate is an effectual cure for such affections, where it is possible to apply it; but where, as in the present instance, the plague infects the whole substance of the structure, destruction seems to be the only remedy. The circumstance of the mycelium penetrating into the mortar and brickwork to such an extent appears to be new, at least we do not recollect to have heard anything of the kind before.

It cannot be positively asserted, in the total absence of hymenium, that the mycelium is actually that of Merulius lachrymans, as there are seldom any distinctive marks by which the spawn of one fungus can be accurately known from that of another more or less allied species, and there are several besides the true dry-rot which pass under the common name. Many species concur frequently in the same ship in the work of destruction. Thelephora puteana is frequently the cause of dry-rot, wholly unaccompanied by the Merulius; and we have seen a large hothouse destroyed conjointly by Dædalea quercina and Polyporus versicolor. In Germany the Hausschwamm or domestic dry-rot is frequently due to a species of Polyporus (not yet observed in this country in such a situation, though it has been found near London on Fir stumps), whose development is said to be greatly favoured by the presence of foul air from drains, or other receptacles of impurities.

WE learn from Messrs. LOW and Co. that one of the STANWICK NECTARINES, purchased at the sale the other day, was for Mr. WOOD, of the Nursery, Huntingdon; and from Messrs. GARRAWAY, MAYES, and Co., of Bristol, that the plant purchased by Messrs. HURST and M'MULLEN was on their account.

AMONG our advertisements will be found an announcement of the sale of a part of Mr. BATEMAN'S great collection of ORCHIDS, in aid of the funds of a church to be constructed in that gentleman's parish. We understand that all Mr. BATEMAN'S finest specimens and rarest plants will be brought to the hammer on this occasion, some of the former being of from 10 to 15 years' growth.

ON HUMUS AND MANURES.

By M. E. SOUBEIRAN.

M. E. SOUBEIRAN addressed to the academy the resumé of his treatise on humus, and the part which manure plays in the nourishment of plants; this treatise having received the prize at the meeting of the Central Society of Agriculture of the Seine-Inferieure.

1. The woody fibre, which undergoes decomposition on contact with air and moisture, is converted into humus, and at the same time furnishes carbonic acid, which is perhaps absorbed by the roots of plants.

2. The proportion of carbon in humus and manures never exceeds 56 to 57 per cent. This is the extreme limit which the decomposition of woody fibre can attain to in contact with air and moisture.

3. Pure humus contains $2\frac{1}{2}$ per cent. of nitrogen, which appears to be essential to its composition.

4. Humus is scarcely altered in contact with air.

5. Humus, scarcely soluble of itself in water, acquires solubility by its combination with lime; but the principal agent of its solution is the carbonate of ammonia, which reacts equally on free humus, and on humus combined with calcareous matters.

6. Humus rendered soluble, is absorbed by the roots of plants; it serves in a direct manner for the nourishment of the plant.

7. Humus has also a favourable action on vegetation, by attracting and retaining the moisture of the air and ammonia, by facilitating the solution of the earthy phosphates, by ameliorating the physical qualities of the soil, and by moderating and regulating the decomposition of decaying animal matters.

8. Manure *par excellence* is that which at the same time contains the earthy and alkaline salts, ammoniacal salts, animal matter in a state of putrefaction, humus already formed, and vegetable remains in a state of transformation.

9. In valuing a manure, it is necessary to take into consideration not only the quantity of nitrogen furnished by analysis, but also the state in which that nitrogen exists in the manure; also the state of the ammoniacal salt, or of the putrescible animal matter, and the state of the soluble ammoniacal salt, or of the ammoniacal magnesian phosphate.

10. The analyses of fermented dung which have hitherto been made are defective, in that they have not taken into calculation the loss resulting from the action of carbonate of lime on the salts with an ammoniacal base, during the drying of this manure. The result is, that the tables which have been published, representing the proportion of nitrogen in manures, give only approximate results.

11. The comparative value of manures cannot be estimated by simply reckoning the quantity of nitrogen afforded by analysis; because, on the one hand, the nitrogenous matters are not the only active principles of manures; and on the other hand, because the value of manures depends much on the state of the nitrogen contained in them; and consequently it is impossible to frame a table of equivalents for manures.

DISEASES OF PLANTS.

(*Continued from p.* 309.)

MUCH has been written on the means of preserving our lands from the ravages of the Grillus grillotalpa, *L.*, (called by us *grillotalpa, zeccajuola, zuccajolo* or *baco da zucche*, and by the French *courtilière*). It may be true, as Bosc asserts, that it is carnivorous, not herbivorous, and that it cuts off plants in the search after insects; but it is not the less true that it is one of the greatest enemies of our gardens, Rice grounds, &c. Passing a heavy roller over the ground in the early spring is a practice much vaunted, but of little use. Deep ploughing in the middle of winter will cause many of these insects to perish. It is certain that every female that is killed prevents the development of 800 to 1000 eggs which she bears. Some sink into the earth vessels full of water into which these insects fall and are drowned. A more certain way is to pour water into the holes of these grillotalpa, and when full to the level of the ground drop a few drops of oil on it. The insect endeavouring to escape from the water has its organ of respiration covered over and choked by the oil and perishes. If the owner of a small garden takes this method of destroying the first grillotalpa he sees, he will stop the evil at its commencement, and thus avoid great future havoc.

Coleoptera are doubly injurious. In the state of larva they kill many plants by attacking and lacerating their roots. When perfect insects, during the few moments of their lives, they feed on the leaves and flowers of many plants. Among their number one of the greatest enemies to all vegetation, in the state of larva, is the cockchafer, or Scarabœus melolontha, *L.* It lives several years in that state. There is but one way of getting rid of it. When it is perceived that they are much multiplied in a piece of ground, let Lettuces be sown upon it. These larva are very fond of them, and they will all attach themselves to the young plants, and may thus be exterminated in the course of a few hours. In the spring also all those that are found in the perfect state should be destroyed, they are always abundant along hedges and ditches. This plague is greatest after mild winters and moist springs. It has been observed that most of the beetles which attack corn are much more readily developed if the eggs are deposited under patches of cowdung; these ought therefore never to be left lying on pasturages, especially on artificial meadows.

Amongst hemiptera the greatest injury is caused by the grillotalpa in its perfect state. But the numerous series of bugs, aphides, cicadæ, cocci, and flower eaters, are the more fatal the less we are able to guard against them. I am well aware how many fumigations have been invented to destroy them, but all require great caution in using them. I have observed, however, that their ravages are always much less where the ground has been well worked and kept in perfect order, and where the manures used have been well fermented and laid down at the right season. To destroy the [gorgoglioni]* which make such havoc among Cabbages, it is recommended to sow Rape seed amongst them, which the insects will attack, in preference. Some persons, like Gullet, in the "English Transactions" have asserted that the crops have been preserved from these insects by passing branches of Elder over them, and the experiment is also said to have been successfully tried with us.

By the lepidoptera of our country our crops are more frequently destroyed. Caterpillars, which are no other than their larvæ, strip branches of their leaves, penetrate into fruits and eat out their substance, cut off stalks, suck out the fluids, and sometimes suffocate plants with their webs. In the perfect state they are only injurious from depositing their eggs in plants. A very useful practice, which may very much diminish the dissemination of the eggs, more especially of moths, is the lighting a number of small fires at night. The moths fly into these fires, and great numbers are thus destroyed. As their larvæ are generally developed in the earth or on herbs rather than on trees, these burnings to which I have previously alluded, ploughings in the winter and early spring, and frequent changes of crops, are the best preservatives. For those lepidoptera that propagate upon trees, or climb them for their food, it is indispensable to destroy their nests. It has been observed that many lepidopteræ select for the deposit of their eggs dead stumps and broken branches, where there is rough dead wood, thence the importance of cutting all branches off clean and covering the wound with clay and cow-dung. Butterflies and moths are said to be kept away by the smell of dung. The taking caterpillars' nests is often practised, but the season selected is not always the right one. It commences in August and ends in February. Later than that there is danger that the remedy may be insufficient. Sufficient care is likewise not taken to burn the nests. A countryman who had with great care cleaned his trees, complained that they were nevertheless devoured by caterpillars, which he attributed to the season. On inquiry I found he had followed the usual practice of throwing the nests on the ground, and as the caterpillars were hatched they returned to the tree. For those caterpillars which are not bred on trees, but climb them for their food, which they generally do by night, the stem of the tree should be smeared with a ring of some thick glutinous matter to which the caterpillars in mounting will adhere, and may be easily taken in great numbers. I say nothing of aspersions and fumigations, as experience has taught me how useless they are.

It does not appear that neuroptera do any mischief to terrestrial plants, possibly it may be otherwise with aquatics.

Amongst hymenoptera, a few do mischief. Thus the cynips in laying its eggs produces galls, the calabrone [humble bee?] which with a kind of double saw cuts off the shoots of the Rose, for instance, in order to lay its eggs; and finally, the ant, which, though defended by many, commits nevertheless great ravages in gardens. All the contrivances of gardeners for the destruction of these insects have been hitherto attended with but little success. Fabbroni found that pouring upon their nests a few drops of a mixture of red-lead and honey, of the consistence of a syrup, disperses them, but even this method has not succeeded with me.

The diptera, as for instance flies and gnats, seem to confine themselves to flowers; and finally, among aptera several bugs, lice, spiders, &c., are injurious to plants.

In order not to exceed my limits, I will not enter into any further details on the destruction of insects, but I must say a few words on three genera of animals, which commit great ravages in the country, though they do not belong to the class of insects; one is the earthworm, of the class of worms, the two others belonging to mollusca, are the snail and the slug.

It is true that earthworms, by dividing and turning up the soil, are often of advantage in agriculture, but they also disturb and expose the tender roots of young plants. The best means of preserving gardens from them is keeping the soil dry. Some persons chase them, by pouring a quantity of water into their holes, which causes them to come to the surface, when they are easily taken.

Complaints are everywhere heard of the ravages of snails, of which there are several species known. I cannot here do better than transcribe the words of the celebrated Bosc, author of the article Helice in the "Nouveau Dictionnaire d'Histoire Naturelle." "Thousands of receipts for the destruction of snails have been published, but the only good one is the killing them one after another. A careful gardener will therefore make the tour of his garden early in the morning, and take all he can find. It is especially after summer rains that snails in the day-time issue forth from their hiding places, and it is at such times therefore that a particular search should be made for them." My own experience fully confirms what Bosc has said. I have tried a number of secrets, and all have proved useless.

* Ré generally calls aphides by this name, but it is applied to all small insects which are gregarious, and here he must mean something like the Turnip fly.

VILLA AND SUBURBAN GARDENING.

SUCCESS in gardening, in many cases, depends more upon continual watchfulness than on skill. Peach trees at this season are either preserved or destroyed, according to the attention now bestowed on them. Hot sunshine, for a few hours during the day, does much mischief; it causes swarms of green fly to spring into life; this sunshine is succeeded by dry easterly winds at night; these prevent the deposition of dew, and therefore all circumstances are favourable, as far as natural provision goes, for the destruction of the foliage. Little as my amateur readers may know of vegetable physiology, it will require but few lessons, or study, to fully comprehend how valueless a fruit tree—more especially one whose fruit is supposed to be set—must be when the leaves are either rendered useless as regards their necessary and natural functions, or the tree entirely denuded of them. The vegetable economy at this peculiar season is in the highest possible degree of excitement. Almost every plant is like a cauldron at the boiling point just about to run over. Nature, however, provides for the plant leaves which elaborate the excess of sap, and new combinations are formed, unless some event transpires to interfere with the ordinary laws by which vegetable life is controlled and regulated. When its foliage is destroyed, the Peach tree in an

especial manner suffers more than any other fruit-bearing plant I know of. The immediate effect is, that the warmth of the sun during the day excites the sap to such a degree that all the sap-vessels burst, and extravasated sap may be observed on all parts of the tree. A few hot sunny days expel the moisture from the extravasated matter, and it then assumes the form of gum, which envelopes every branch or twig in a thousand different places, until the tree actually expires in its grasp. Do not suppose that this is an overdrawn picture; I could point out where this has already occurred in one or two favoured counties, and even in their most renowned gardens. Trees, nay whole walls of the finest Peach trees, which the eye would have desired to look upon, are this season already numbered with the things that were. The amateur must, therefore, take measures of a precautionary kind as soon as possible, in order that the evil may be avoided. It would be wise, previous to the spring nailing or tying, as the case may be, to coat the trees well over in every part with the following mixture: 1 lb. of black or soft soap, ½ lb. of flowers of sulphur, and ½ lb. of tobacco; let these be well mixed in 4 gallons of boiling water. Strain the mixture through a sieve, and add sufficient soot to thicken it to the consistence of cream. Keep the mixture at a temperature of 150° at least, and cover every crevice of the tree with it, laying it on with a painter's brush. As soon as the foliage begins to open, keep a watchful eye, in order to detect when the larvæ begin to breed; then remove any leaves which are curled, and apply the above mixture reduced one-half, leaving the soot entirely out. Be careful that it reaches every crevice; and when the fruit is set, and the mornings mild, apply it also with the syringe. *Pharo.*

LONDON PARTICULAR GUANO.

Take of genuine guano 2 cwt., worth ...	£1	0	0
„ dried loam, 10 cwt., worth ...	0	10	0
„ blue Billy, 4 cwt., worth ...	0	0	0
„ ground stones, 4 cwt., worth ...	0	4	0
	£1	14	0

This makes capital guano, worth, among country flats, from 7*l.* to 8*l.* per ton.

Another Sort.

Genuine guano, 1 cwt., worth ...	£0	10	0
Dried loam, 10 cwt., worth ...	0	10	0
Blue Billy, 5 cwt., worth ...	0	0	0
Ground stones, 4½ cwt., worth ...	0	4	6
Ground coprolites, ½ cwt., worth ...	0	1	6
	£1	6	0

This is a particularly first class article, which by analysis will be provable to contain phosphates.

N.B. Where it can be had cheap, pounded limestone may be substituted advantageously for ground stones; unless it should be more profitable to sell it as bone dust.

Copied from a paper picked up in Mark-lane, and supposed to have been dropped by a guano merchant.

Home Correspondence.

Tender Aquatics.—The account given, May 18, of the Victoria regia, at Syon House, "that it has not only been grown, but flowered in the short space of three months in a slate tank," leads me to ask whether it would by any possibility, live and grow in water of the summer temperature, not of our running streams, but of our artificial and ornamental ponds, which is much higher. Is it one of those plants which require stove heat to keep it alive, or is it only tender in the usual gardening sense, namely, that the least touch of frost will destroy it? Because, if like the Calla æthiopica, it is only tender in the latter acceptation, it might be grown with advantage as a tender aquatic annual, by being raised in a stove, planted out at the end of May, with the prospect of affording a superb display of foliage and flowers, at least during the month of September. The introduction of a few showy robust summer-growing aquatics that would not stand our winter, would be most acceptable. They could answer their purpose and be renewed at pleasure without becoming the serious nuisance into which our native aquatics grow, beautiful as several of them are, if incautiously introduced into still waters, where the conditions are favourable for their increase. I have lately been carting away loads after loads of Water Lily roots, white as well as yellow, with some degree of sorrow, that their encroaching disposition should compel one to decline their acquaintance altogether; but if the Victoria regia could be made to occupy the now clear water, even for a month or two, I would endeavour to introduce one as soon as the plants become a little more easily procurable. *D.* [You can do nothing with it unless the water is 80°, and the temperature of the air which surrounds it at least as high.]

Cheiranthus Marshallii.—I see by the account of the show at Regent's Park, that you noticed my new Cheiranthus as being violet scented, and as being represented to be so by me. I believe the plant shown was one I sent through Mr. Moore, of the Chelsea Botanic Garden, and it may, by a "*lapsus calami*," have been so described by me. The plant in question, however, will remind those whose olfactory nerves are in right order more of honey than Violets. It is of the character of Galium verum and some other common plants, and, while strong, is not overpowering. You will doubtless ere long have an opportunity of testing it yourself, as I have every expectation it will become a very popular plant. It is a hybrid between Erysimum Perofskianum and Cheiranthus ochroleucus. *R. M. Stark, Edinburgh.* [To us the smell is more that of Violets than of honey.]

The Weather on the 3d of May.—In reply to "T. R.," I beg to state that on the morning of the 3d of May the thermometer stood here at 39° at 7 A.M. The lowest point registered during the night was 29°. —*Subscriber, Southborough, Tonbridge Wells, May* 14. ——In your Nos. of the 4th and 11th of May, mention has been made of the extreme cold which has occurred in the months of March and May. The following extracts from my journal show a simultaneity in the changes of temperature, although the precise degrees of cold do not correspond. The month of February was mild, the monthly mean being nearly 5° above the average of the last 35 years. The month of March was cold, more especially the last 10 days; the lowest temperatures on the nights of the

Date.	Five feet above the surface of the ground.	Radiator.
25th	20°	15°
26th	23	17.5
27th	20	13
28th	21.5	15
29th	31.8	27

The temperature of the dew point on the 25th, at 5h. 30m. P.M., was 20°; the sky was clear until midnight, after which snow fell to the depth of half an inch. On the 27th, between 6 and 7 P.M., a heavy shower of snow fell, which was succeeded by a clear night. In March there were 18 frosty nights. The temperature of April was above the mean until the 20th; during the last 10 days of the month the N. and N.E. winds prevailed, and the day temperature did not once rise to 60°; neither did the night temperature, at 5 feet above the surface of the ground, fall below the freezing point. The temperature from radiation receded five times below the freezing point; the minimum of cold was 28°. The month of May has been remarkable for its very low day temperatures; the temperature at night has fallen but once below the freezing point, which was on the night of the 2d of May, when the thermometer, at 5 feet above the surface of the ground, receded to 30°, the night being calm and clear, and the upper current from the N.E., the temperature from radiation fell to 23°; the subsequent nights being generally cloudy, no other degree of extreme cold has been registered. The mean temperature of the first 10 days of May was 45.5, which is about 7° lower than the average of the last 35 years. The low temperature at Oswestry on the 27th March may have been the consequence of a locality favourable to radiation, the effects of which would be greatly increased if the ground were covered with newly fallen snow. The temperature of the air at Sawbridgeworth on the 2d of May was 23°, the identical degree of cold from radiation at Greenwich on the same night. *John Henry Belville, Hyde Vale, Greenwich.*—A thermometer here, hanging 2 feet above the ground, and 20 feet from a south wall, registered 26° on the 3d of May. About two-thirds of the Peaches are dead. Early Cherries, Pears, and Plums are very much injured; they all looked well before the 3d of May. *S. Smee, Gosfield, Essex.*—The thermometer, a good one, made on purpose for Dr. Reid's use in the House of Lords, by Bennett, Cheapside, who makes for the Royal Observatory, marked 25° on 3d May. It is placed 3 feet from the ground, 3 feet from a wall, at the edge of a gravel walk, against a piece of board at the top of a post with a screen over it, pointing N. by E. Soil gravel. Locality between London and Dartford. Strawberries hurt, those that were out and the buds ready to open. Pears, including Duchess D'Angoulême, Beurrés, Coupan, Sweetwater, Marie Louise, Lammas, Gansell's Bergamot, Glout Morceau, Bon Chrétien, Chaumontelle, Bishop's Thumb, are heavy still, but do not appear to swell. Gooseberries suffered. Bigarreaus suffered; the blossom still most abundant. Bees busy on the Apples now in full bloom, but the blossom exceedingly pale. Wall fruit uninjured. Box edging much cut at the top. *Este.*—Although the frost of the night of the 2d inst. was severe enough to form ice of considerable thickness for the time of year, the nights of the 13th and 14th were more destructive at 100 miles N. of London. Potatoes turned quite black, and the Plums have been falling off by dozens since. Pears have escaped better, especially those with strong leaves. We have several of the choicer kinds on espaliers, which have been protected by the cotton frame net at 6*d.* a yard, 8 or 9 feet wide, which appears to have sheltered the blossoms. A Brown Beurré on a wall, E.S.E., which has never escaped damage, has set an abundant crop so protected; and even if only a quarter should remain on the tree, there would be sufficient. I have no faith in acclimatising plants. The fine old sorts of Pears, such as the above, or the Chaumontelle or Colmar, are not one step hardier than ever they were. *Amateur.*

Araucaria imbricata.—What is the cause of the leaves of Araucaria imbricata turning brown, in patches of 2 or 3 inches, more or less, principally near the extremities of the branches? There is generally only one patch on each branch. White moss is beginning to grow on the plant. I have another planted in the same year (1846) which made very fine growth in 1847 and 1848, but last year not so good, and this spring I observe an odd leaf turning brown, although to all appearance the plant is very healthy, and promises to make a fine specimen. I am situated in one of the wettest and most cold backward parts in the south of Ireland, 30 miles east of the Atlantic. Are A. imbricata and A. lanceolata much alike? A gentleman once told me that I had the lanceolata amongst my young plants; I could never observe any distinct difference. Is A. lanceolata equally as hardy as A. imbricata? *K., County Cork.* [The mischief is probably produced by wet. If by A. lanceolata is meant the old Pinus lanceolata, now called Cunninghamia sinensis, it is not so hardy as A. imbricata.]

The Cuckoo.—Has any one remarked the unusual absence of the cuckoo? Most certainly for the last three or four years its song has been but little heard in this part of Kent. I have seen three at a time in my orchard a few years ago; now I never see them, and others remark the same. *Este.*

A Country Gardener's Jottings on the Chiswick Fête.—Such a May day as Saturday was, even old Herrick himself would have rejoiced at, and doubtless could the old lover of out-door amusements have revisited the earth, a special invitation to his Corinna to go a-Maying would have celebrated the occasion. And Maying it was in earnest, if sunny skies and happy faces, flowers of every hue and clime, and music the most classical, could in their combination constitute a May festival. For all these were present. And the glory of an English garden—a lawn of velvety turf, in the highest possible condition, formed no mean adjunct in the combination. But of the flowers staged for competition, what could be said of them more than, as a whole, the superlative of excellence was stamped upon them. To enter into a minute description is not the object of this notice. Those who were present need it not; those who were not fortunate to look upon them would gather but a slight gratification from a description. All I wish to do is to offer a few remarks from jottings made at the exhibition, and such as possibly will not form part of the official report. Of course the queen of the exhibition was the Victoria regia, flowers and leaves of which were exhibited; novelties which few of us had previously the good fortune to behold. The chaste beauty of the flowers forcibly reminded one of the exquisite lines which Mrs. Hemans has addressed to our own less attractive but no less elegant "queen of the lake:"

"Bright Lily of the wave,
Rising with graceful form at every swell,
Thou seem'st as if a spirit meekly brave
Dwelt in thy cell."

The large drawing afforded a good idea of the habitat of this wonderful flower, The exclamation of an enthusiastic foreigner as he entered the grand tent, and caught a perspective view of a combination of floral beauty not to be described—"Superb, superb!" will convey as full a description as is possible. And superb indeed it was. If the shades of some of our old gardeners who have "slept with their fathers for half a century, could again have tenanted their clay," and mixed with the busy scene, what exclamations would have escaped them, and how would they have extolled the industry and skill of gardeners, and the enterprise of gentlemen and ladies, by which such scenes are produced! Here, in one galaxy of beauty, were collected the minute and hardy denizens of the Alpine heights—regions of snows and storms—the Papilionaceous plants of New Holland, and all the beauties of the Cape. From the woods and plains of the tropics, Orchids of every hue, and fragrance, exhibiting forms as indescribable as their beauty. From every latitude, tropical, temperate, and frigid, the industry and enterprise of man had borne some trophy of his perseverance, and bade them blossom in a foreign climate beyond their natural wont. As one stood amid such a scene, and allowed the mind to wander beyond the mere glittering surface, beautiful as it was, and in fancy beheld the toils and anxieties, the hopes and fears, the proud satisfactions which claimed their birth from circumstances connected with it, how was the mere ocular gratification augmented by a higher and nobler one, a mental gratification. To particularise the Orchids would be next to impossible, suffice it to say they were magnificent. Stanhopea tigrina was unquestionably the queen. As one wandered along, the eye was caught now by the chaste Calanthe veratrifolia, the quaint spider-like Brassia maculata, or the Weeping Scuticaria Steelii; Phalænopsis amabilis, resembling nothing earthly but a quantity of white butterflies perched on a slender twig; the singular Acanthophippium bicolor, and the no less so Acineta Humboldtii, with the Vandas, Oncidiums, and Saccolabiums, presented themselves in such rapid succession, that each vegetable beauty seemed to give place to a greater. The remark of a lady when examining this department of the exhibitions was a just one. It was to the effect, that our artificial flower makers and designers for fabrics would do well to study from them more than at present they appear to do. I recollect seeing the other day in a window in Regent-street, a carpeting with designs of Orchids. It is needless to say how novel and rich was the effect. Amongst the plants claiming notice from their comparative rarity in exhibitions was Lyperia pinnatifida, a mass of rosy purple blossoms, apparently an ordinary greenhouse plant; Indigofera decora, a native of China, with beautiful pinnate foliage and racemes of blossom; Siphocampylos microstoma and Franciscea macrophylla. Amongst the Gardenias, of which there were several, Fortunii must bear away the palm—a more superb plant it would be difficult to imagine. The petals are of so fleshy a nature as to give the flower an appearance of richness not to be described. A fair admirer,

"Herself a fairer flower,"

compared them to Roses transformed to marble. Acrophyllum venosum, with the foliage of an Ilex and the flowers of a Spiræa, must not, however, be omitted. Signs of a better taste in many climbing plants was

exhibited in the specimen of Tropæolum, by Mr. Stuart. When will the old pudding-shaped trellis give way to something more in accordance with taste and elegance? And now a word or two on the tendency of such exhibitions, as affecting the gardeners. Unquestionably they offer a great stimulus to exertion, and in minds rightly constituted the result must be beneficial. Bringing together, as such exhibitions always do, the best flowers of the best kinds, and in the highest degree of development, they form epochs in the history of gardening, periods at which we can look back upon, and from which we can note the rapidity of our progress. And as a *fête*, a gala day to all the lovers of flowers—and who does not love them?—it affords a means of the fullest gratification—a gratification which, unlike much that we extol, brings with it no sting for the morrow. The pleasure is purely an innocent one; it involves no cruelties, it has no immoral tendencies. The secret of this is, it produces no false excitement. *L., May* 19.

Distribution of Sewage Water.—Can you inform me what is the best method of applying liquid manure to garden ground under the following circumstances? The garden, containing 12 acres, is attached to a public institution containing about 450 inmates. The main sewer runs through the centre of the garden, and four excellent catch pits have been formed along its course. The quantity of water used daily is 16,000 gallons. The surface soil is sandy loam, the subsoil white sand. I have an excellent double action force-pump, moveable from one catch pit to another; but have experienced difficulty and expense in the management and duration of hose for the conveyance of the sewerage water from the pump to the crops. I began with 100 feet of patent 1½ inch hose of hemp, woven without a seam, which answered well for one season, but at the end of the second season was rotten and useless. This hose, with three unions, cost 9*l.* 17*s*. It was therefore too expensive to replace, as it lasted so short a time. I have since made two attempts to replace it by a hose made of the best sail-cloth, sewn by the most skilful sail-maker I could find; but this substance cannot be made to bear the pressure of water, although dressed with boiled oil, pitchy compounds, or white-lead, all of which I have tried. The water escapes through numerous minute orifices, so that a jet cannot be produced from the end of the pipe, and without a jet I find it difficult to apply the water to garden crops. A length of hose filled with water is heavy, and if much moved about in garden crops, beats down and injures them, so that it is indispensable to have a good jet, by which the gardener may stand in one spot and water around to a certain extent without shifting his position or that of the hose. I wish, therefore, to know if any hose can be procured which is at the same time impermeable, durable, and reasonably cheap. My experience of leather hose in the brew-house informs me that it is too expensive and too apt to become brittle after moderate use for this purpose, and I hesitate to incur the expense of vulcanised India-rubber hose, which has been recommended to me, because I observe that this material, when used for other purposes, becomes in a year or two brittle and useless, and the cost of 200 or 300 feet would be considerable. I have tried to irrigate the garden with sewage water by means of shoots laid upon the ground, but find that a small stream passes into the porous soil and away, and that a large stream is apt to wash the soil from the roots of plants; however, under certain conditions of crop, and when the soil has been previously soaked with rain, I have found it more convenient to distribute the sewerage by means of shoot than by the force-pump and hose. At present, for want of a good hose, I am adopting the dilatory and inefficient plan of hand barrows and watering pots. Has not a successful attempt been made to convey some of the sewerage water of one of the large towns in Lancashire to the fields adjoining a canal by means of barges? If so, can you give me the name and address of the company? *J. C.* [Perhaps some correspondent who has had experience in this matter would have the kindness to answer "J. C.'s" inquiries. If his land sloped enough, we should have thought that pierced pipes, fed by a "head," would have been the most simple means.]

Preserving Fruit.—Perhaps some of your readers may be desirous of trying the following method (which I believe to be the best yet invented) of preserving small fruits: to every quart of fruit add 6 ozs. of moist sugar, bottle in wide-mouthed bottles in the usual way; place the bottles in a cauldron of cold water over the fire; when it boils, keep it boiling for 20 minutes; remove the cauldron from the fire, and cork the bottles very closely, immediately, tying them over with bladder; but as this operation is not easy to perform without removing the bottles from the water, it is essential that it be done as rapidly as possible, and the bottles returned to the cauldron, there to remain till the water becomes cold. Care must be taken not to expose the hot bottles to currents of cold air, nor to place them on cold surfaces, during the operation of corking, &c.; perhaps a doubled flannel, dipped in hot water, would be as good as anything else to place the bottles on. The lady from whom I received this receipt, ties her bottles down with double bladders, without corks, before placing them in the water; but I think the method I have described is preferable, as from the expansion of the contained air, by the heat in boiling, occasionally the bladders, and also the bottles, burst; and moreover the air cannot be so perfectly expelled, on which very much depends. By the usual methods of bottling much of the peculiar flavour of the green Gooseberry is lost, which by this way is preserved. I partook, two or three weeks ago, of some Gooseberries, preserved in this way, in 1848, and they were perfectly good, and retained the young flavour admirably. Rhubarb, cut ready for tarts, and preserved in this way, will be excellent. My informant preserves Plums, and the smaller fruits, Currants, Raspberries, Strawberries, and Berberries, by placing them in a deep dish, stratified with the same proportion of sugar, and placing them in a moderate oven; when sufficiently done, she transfers them into hot jars, as quickly as possible, and secures them immediately with double bladder. *Lusor.*

Mildew. — On entering the kitchen garden one morning last summer, I observed that the leaves of all the black Currant trees were thickly covered with mildew. I immediately watered them, by means of a rosed watering-can, with the collected contents of the bedroom-vessels, urinals, and wash-hand basins; and before 4 o'clock on the same day the mildew had entirely disappeared, and both foliage and fruit were preserved. *E. E., Penegoes.*

The Guano Trade.—A person who deals in hay and straw was here last night, and in speaking about business being so bad, said that he knew of only one business that paid, and that was the mixing up of manures for the farmers. His son is at work at a manufactory of guano, where loam makes a large proportion, and his son says the owners are coining money. He heard that the loam came from Croydon, by rail, but he says it arrives in covered waggons. *Eyebright, Covent Garden.*

Green Peas.—Your observations last week respecting early Peas having been in Covent-garden Market a fortnight earlier than those I sent you, rather damped my energy, because I thought the circumstance impossible. I immediately instituted enquiry, and could hear of but one small parcel, which came from Cornwall at the time you name, and they were "forced." I have taken the trouble to ascertain the fact by sending to Cornwall, and with this I send a letter in reply, received this morning from there, which I beg you to peruse, and having done so, trust you will do me the justice to state as much in your next Number, as you will admit that "fair play is a jewel," and should be extended to all amateurs, particularly if they are to persevere in their discoveries; otherwise there is but little encouragement for them. *John Roberts, Eastcheap.* [The following is the letter alluded to: "I have this day made enquiries respecting the Peas, and find that one lot was sent to London about a fortnight since grown in this neighbourhood, but forced. Out-door Peas are very late this season. *J. Prockter, Penzance, May* 22."]

The Awards of the Judges at the Chiswick Exhibition on the 18th inst.—I am sorry to feel myself called upon to make any complaint on this subject. I had always been led to suppose that it was intended to make the miscellaneous collections as varied as possible, by not allowing duplicates in them. If this is the object in view, then the judges committed a mistake in giving the 3d prize for 15 stove and greenhouse plants, which ought to have either been disqualified or placed 5th, for it contained a small collection of six Azaleas and three Heaths, and a plant of Adenandra that was a disgrace to the exhibition. I am aware that the Council does not interfere with the award of the judges, but I have thought it advisable to remind the latter that exhibitors do not like such blunders. The judging the 12 Azaleas was also in my opinion discreditable to respectable men. *W. Taylor, Gardener to J. Coster, Esq.*

Societies.

HORTICULTURAL: GARDEN EXHIBITION, *May* 18.—The leading features of this great exhibition being fully reported in another column, we will confine ourselves to describing the scene in detail.

In collections of 20 STOVE AND GREENHOUSE PLANTS, the large Gold Medal was awarded to Mr. May, gr. to Mrs. Lawrence, of Ealing-park, for a group containing many excellent examples of the best cultivation. At the back stood an immense Epacris grandiflora, whose equal it would be difficult to find, and supporting it huge plants of Polygala acuminata, Eriostemon buxifolium, Polygala Dalmaisiana, a handsome kind; Bossiæa disticha, Ixora coccinea, Eriostemon intermedium, the best of all the Eriostemons; Podolobium trilobatum, a Pimelea spectabilis, than which we have never seen a better, except perhaps one from the same establishment shown as a single specimen; a double red Azalea, Eriostemon neriifolium, Boronia serrulata and pinnata, the larger variety of the beautiful blue Leschenaultia, L. formosa, Chorozema varium nanum, C. Lawrenceanum, a graceful species; Gompholobium barbigerum, Hovea Celsi, and a large Pimelea diosmæfolia. Without being too diffuse, these plants were sufficiently so to render them graceful, and, with one or two exceptions, hardly a stick was to be seen.—Another group of 20 was contributed by Mr. Cole, gr. to H. Colyer, Esq., of Dartford. It comprised Stephanotus floribundus, the bright red Azalea called optima, the showy Adenandra, Erica Cavendishii, a well flowered Clerodendron splendens, the beautiful Hovea Celsi, Leschenaultia formosa, Chorozema Henchmanni, Boronia serrulata and pinnata, the Hoya-like Cyrtoceras reflexum, Chironia glutinosa, a beautiful Aphelexis purpurea macrantha, Chorozema varium nanum, the useful Franciscea acuminata, Ixora coccinea, Erica ventricosa coccinea minor, one of the most free flowering of Heaths; the Box-leaved Eriostemon, Pimelea spectabilis, and an Azalea, on which were "worked" lateritia, Gledstanesi, and variegata, the three varieties forming a nice bush of various coloured blossoms. Groups of 20 plants were also contributed by Messrs. Frazer and Pamplin. The former had Epacris grandiflora, Polygala acuminata, three red Azaleas, Pimelea spectabilis, the larger variety of Leschenaultia Baxteri, Boronia pinnata and serrulata, Chorozema varium and Henchmanni, Erica propendens and Cavendishii, Eriostemon buxifolium, Hypocalymna robustum, a plant not very often seen; Lachnæa purpurea, Leschenaultia formosa, Aphelexis speciosissima, and the Nerium-leaved Eriostemon.—Messrs. Pamplin sent Epacris grandiflora, a huge Genista racemosa, a large Erica vestita, a white Azalea, Pimelea spectabilis, linifolia, and lanata, Eriostemon buxifolium, Polygala oppositifolia, a nice Hovea Celsi, a neat Erica propendens, E. intermedia, and Dillwynia juniperina.

Collections of 15 STOVE AND GREENHOUSE PLANTS were numerous. The best was produced by Mr. Green, gr. to Sir E. Antrobus, Bart. It consisted of Polygala oppositifolia, the Box-leaved Eriostemon, a large and finely flowered double red Azalea, A. variegata, Boronia pinnata, Aphelexis humilis, the sweet smelling white-flowered Sphenotoma gracilis, the dark green leaved Spiræa-like Acrophyllum venosum, Chorozema varium nanum, Baxter's Leschenaultia and L. formosa, a well flowered Erica depressa, E. Cavendishii, Pimelea spectabilis, and a purple Everlasting.—A group little inferior to the above was produced by Mr. Carson, gr. to W. F. G. Farmer, Esq. It contained the gracefully drooping yellow and brown flowered Bossiæa linophylla, Azalea variegata, Franciscea macrophylla, a coarse species, but when well flowered as this was tolerably attractive; a large Pimelea spectabilis, a neat Ixora coccinea, Smith's red Azalea, at least 6 feet high and quite a pyramid of flowers; Oxylobium Pultenææ, a useful greenhouse plant; Leschenaultia formosa, Polygala oppositifolia, a rampant Epacris grandiflora, Adenandra speciosa, the Anemone-leaved Boronia, Sphenotoma gracilis, Burchellia capensis, and "last, but by no means least," a charmingly flowered specimen of Mr. Fortune's Gardenia, whose large waxy blossoms of snowy whiteness were the admiration of everybody.—The third group was furnished by Mr. Gerrie, gr. to Sir J. Catheart, Bart. It comprised large plants of Eriostemon buxifolium, Azalea variegata and lateritia, Pimelea spectabilis; a good plant, but with few blooms on it of Æschynanthus Boschianus; a white Azalea at least 6 feet in height; Zichya villosa, the brilliant Epacris miniata, Erica halicacaba, a curious green-flowered species; Adenandra uniflora, and one or two other plants.—A fourth group was produced by Mr. Taylor, gr. to J. Coster, Esq., of Streatham. We remarked in it Adenandra speciosa; Aotus gracillima, a profuse blooming brown and yellow flowered New Holland plant, of rather recent introduction; a pyramidal Eriostemon buxifolium, Polygala oppositifolia, the broad leaved Daviesia, Pimelea linifolia, a badly flowered Azalea, the buff-blossomed Heath called Alberti, the cheerful rosy-pink flowered Adenandra fragrans, an Everlasting, Epacris lævigata, a nice Ixora crocata, and Erica elegans.—Mr. Ivison, gr. to the Duchess Dowager of Northumberland, showed a fifth group of 15 plants, among which were a large Euphorbia splendens, Polygala oppositifolia, a fine specimen of Gardenia Stanleyana covered with flowers, which however were unfortunately much past their best; Zichya coccinea, a huge Nerium-leaved Eriostemon, Gompholobium polymorphum, Hardenbergia monophylla, a white Azalea, a small Vinca rosea, a nice Aphelexis sesamoides, Lyparea pinnatifida (one of the most useful greenhouse plants an amateur could possess, for it is nearly always in flower), the brilliant scarlet Siphocampylus microstoma ruber, the double flowered Tabernæmontana coronaria, Mr. Fortune's elegant Chinese Indigofera, and a small Azalea called fulgens.

Six collections of 10 STOVE AND GREENHOUSE PLANTS were exhibited. The first was produced by Mr. Malyon, gr. to T. Brandram, Esq., Blackheath. It contained Pimelea spectabilis, Aphelexis humilis, Crowea saligna (insufficiently in bloom), Chorozema Lawrenceanum, a double-red Azalea, some Heaths, and other plants. Second, Mr. Stuart, gr. to T. Huggins, Esq., of Norwood, large Cytisus canariensis, Boronia anemonæfolia, Zichya longipedunculata, a pretty species; Podolobium staurophyllum, a white Azalea, a tastefully-trained Tropæolum tricolorum, Erica intermedia and depressa, Eutaxia myrtifolia, and Leschenaultia formosa. Third, Mr. Speed, of Edmonton, Erica perspicua nana, the pretty Tremandra verticillata, Dillwynia pungens, Azalea variegata, Aphelexis speciosissima, Erica hybrida, Chorozema Lawrenceanum, Azalea phœnicea, Pimelea Hendersoni, and Vinca rosea. Fourth, Mr. Young, gr. to C. Baron, Esq., of Denmark-hill, Camberwell, an Everlasting, a purple Azalea, Chorozema varium, Genista rhodopnœa, Pimelea spectabilis, Epacris miniata, Eriostemon buxifolium, Erica Cavendishii, Chorozema Lawrenceanum, and Dillwynia ericoides. Fifth, Mr. Glendinning, of Turnham-green, Eriostemon myoporoides, Chorozema varium nanum, a nice Polygala oppositifolia, Dillwynia speciosa, Tremandra verticillata, Sphenotoma gracilis, Muraltia Heisteria, an Everlasting, the creamy yellow flowered Heath called fastigiata lutescens, and Pimelea Hendersoni. Sixth, Mr. Slowe, gr. to W. R. Baker, Esq., Gompholobium polymorphum, Epacris grandiflora, Pimelea spectabilis, the blue Leschenaultia, Adenandra speciosa, Polygala oppositifolia, and a small plant of the seldom seen Eriostemon scabrum.

Collections of 6 STOVE AND GREENHOUSE PLANTS were numerous. Mr. Kinghorn, gr. to the Earl of Kilmorey, sent well managed plants of Leschenaultia formosa, quite a little pyramid of flowers; Eriostemon buxifolium, the brilliant Azalea optima, Erica ampullacea,

Chorozema Henchmanni, and Tremandra verticillata. The next best six plants were Erica Cavendishii, Aphelexis purpurea, Ixora coccinea, Sphenotoma gracilis, Chorozema Lawrenceanum, and a Franciscea, from Mr. May, gr. to E. Goodhart, Esq.; and Mr. Stanly, gr. to H. Berens, Esq., sent Epacris grandiflora, Franciscea augusta, Daviesia latifolia, Aphelexis humilis, Pimelea spectabilis, and Erica Cavendishii.—Mr. Bruce, of Tooting, had Erica vestita, Leschenaultia formosa, Epacris miniata, an Everlasting, the showy Adenandra, and Chorozema varium.—Mr. O'Brien, gr. to G. Read, Esq., of Bridgewater, Somerset, produced Cyrtoceras reflexum, the new Pimelea Verschaffeltii, Erica Sprengelii, an Everlasting, and a Boronia.

Orchids.—Fine as we have seen Mr. Rucker's productions in former years, they were completely eclipsed by the 20 plants exhibited by Mr. Mylam on Saturday last. Some of the Saccolabes more especially were magnificent—"perfect fountains of flowers." The collection consisted of Phalænopsis amabilis bearing a glorious spike of white blossoms, a capital Saccolabium guttatum, S. præmorsum with racemes at least 15 inches in length, the beautiful Dendrobium densiflorum, Low's Cœlogyne (C. Lowei), the scarce Huntleya meleagris, the rare Cymbidium eburneum, Lycaste tyrianthina with 11 flowers, Vanda tricolor with four spikes, V. cristata and suavis, the large flowered Phalænopsis, Chysis bractescens, Aerides affine, Dendrobium formosum with 16 flowers; a charming D. Devonianum, the handsomest of Dendrobes; a tall Vanda teres, the Aloe-leaved Epidendrum, Cattleya intermedia, and Cyrtochilum stellatum. The next group in point of merit was produced by Mr. Williams, gr. to C. B. Warner, Esq., of Hoddesdon; it contained Dendrobium macrophyllum, D. cærulescens, nobile, Jenkinsii, and fimbriata, Cattleya Skinneri, the best varieties of C. Mossiæ and C. intermedia; also Lælia majalis, a species seldom seen in flower; the beautiful L. cinnabarina, Lycaste cruenta, the orange-blossomed Epidendrum and E. macrochilum, Maxillaria tenuifolia, the Japan Calanthe bicolor, the larger variety of Brassia maculata, Odontoglossum pulchellum, and the large-flowered Phalænopsis.—A third group was produced by Mr. Rae, gr. to J. J. Blandy, Esq., of Reading. In this we remarked the orange-blossomed Epidendrum vitellinum, Aerides virens and crispum, Phalænopsis grandiflora, a highly coloured Cattleya Skinneri, Chysis bractescens, a variety of C. Mossiæ, the singular looking Scuticaria Steeli, with two fine flowers on it; Vanda Roxburghi, Dendrobium nobile, Oncidium guttatum, Calanthe veratrifolia, a fine plant of the pale yellow and brown flowered Epidendrum Stamfordianum, Dendrobium densiflorum, and Phalænopsis amabilis.—Mr. Franklin, gr. to Mrs. Lawrence, of Ealing Park, sent Aerides crispum, Dendrobium formosum, Saccolabium guttatum, the scarce Dendrobium Dalhousieanum, Cyrtopodium punctatum, Phalænopsis amabilis, two varieties of Cattleya Mossiæ, C. intermedia, Vanda teres and V. insignis, the charming Dendrobium densiflorum, D. nobile, Chysis bractescens, Calanthe veratrifolia, Lycaste cruenta, and Oncidium divaricatum.

Orchids in collections of 15 were shown by Messrs. Veitch, Rollisson, and Mr. Dobson, gr. to Mr. Beck. Messrs. Veitch had the curious rather than handsome Grammatophyllum multiflorum, Oncidium divaricatum and sphacelatum, Aerides crispum, Cypripedium barbatum, Camarotis purpurea, a large Dendrobium nobile, the larger variety of Oncidium ampliatum, the white-lipped Oncidium (O. leucochilum), a beautiful Calanthe veratrifolia, with nine spikes of chaste white flowers; Dendrobium moniliforme and the charming D. Devonianum, a good Cattleya Mossiæ, an Aerides, and a pretty Vanda suavis.—In Messrs. Rollisson's group we remarked Lycaste cruenta, Saccolabium præmorsum and S. guttatum, the rare Cypripedium Lowei, Acineta Barkeri, Epidendrum Stamfordianum, Calanthe veratrifolia, Dendrobium moschatum, Aerides crispum and affine, Oncidium divaricatum, and the pretty Leptotes bicolor.—Mr. Dobson had Phalænopsis amabilis, the rare Burlingtonia rigida, Epidendrum vitellinum, crassifolium, and selligerum; Dendrobium aggregatum, densiflorum, and nobile, all fine specimens; Saccolabium guttatum, Cattleya Skinneri, the larger variety of Oncidium ampliatum, and O. stramineum.

Ten Orchids were contributed by Mr. Carson, gr. to W. F. G. Farmer, Esq., and Mr. Blake, gr. to J. H. Schröder, Esq. In the former group were Lacæna bicolor, with a long spike of greenish-yellow flowers, Cyrtochilum stellatum, the large blossomed Phalænopsis, Acanthophippium bicolor, carpeting the surface of the pot with flowers, Mr. Skinner's Cattleya, Saccolabium guttatum, and a large and capitally flowered specimen of the minutely spotted Acineta Humboldtii in a square wire basket: this had nearly a dozen flower spikes on it.—Among Mr. Schröder's plants were Dendrobium pulchellum, Oncidium Papilio, Aerides virens, Lycaste cruenta, the rare Anguloa Clowesii, Calanthe veratrifolia, a fine specimen; Saccolabium guttatum, Cattleya intermedia, and Brassia verrucosa.

The best collection of six Orchids was shown by Mr. Kinghorn, gr. to the Earl Kilmorey. It consisted of Phaius grandifolius, Phalænopsis amabilis, Oncidium ampliatum majus, O. altissimum, Dendrobium cærulescens, and Calanthe veratrifolia.—Mr. Ivison had Dendrobium densiflorum, the larger variety of Oncidium ampliatum, O. altissimum, Dendrobium Wallichii, Epidendrum microphyllum, and Vanda tricolor.—Mr. Green sent a fine Dendrobium nobile, and in the collections of six plants from Mr. O'Brien and Mr. Gerrie, we observed Dendrobium Devonianum, Sobralia violacea, Stanhopea tigrina, and a good plant of the spotted Brassia.—Mr. Cole showed a large Dendrobium Calceolaria, as a single specimen.

Azaleas were numerous, large, and fine, and they made, as they always do at the May show, a striking display. Two excellent collections of 12 plants were produced—one from Mrs. Lawrence, of Ealing-park; the other from Mr. Green, gr. to Sir E. Antrobus, Bart. It is difficult to say which of these groups was the best; Mr. Green's plants were better flowered than those of Mrs. Lawrence; but they were all, or nearly all, trained "to a face," while those from Ealing-park were alike bushy on all sides. They consisted of coronata, optima, præstantissima, Gledstanesi, double red, Chinese yellow (the two latter possibly the worst in the group), variegata, Lawrenceana, lateritia, exquisita, magniflora, and Rawsonii. Mr. Green had a fine plant of exquisita, indica alba, triumphans, lateritia, Chinese yellow (a nice specimen), præstantissima, variegata, Gledstanesi, optima, and rosea punctata.—Mr. Lane, of Great Berkhampstead, sent indica alba, double purple, magniflora, optima, Leucomegista, mirabilis, double red, Broughtonii, grandis, triumphans, picturata, and punctata.—Groups of six plants were furnished by Messrs. Frazer, Carson, and Bruce. Among these we remarked optima, variegata, sinensis, Smithii coccinea, exquisita, lateritia, Gledstanesi, præstantissima, speciosissima, and splendens.

A collection of tall Cacti was exhibited by Mr. Green. It contained Epiphyllum Jenkinsoni, E. Russellianum, E. Ackermanni grandiflorum, E. speciosum majus, larger and much handsomer than the old speciosum; E. coccineum grandiflorum, and Cereus speciosissimus. A white variety, very like Cereus crenatus, was shown by Mr. Gandy.

Rhododendrons.—Mr. Gaines and Mr. Ivison had collections. Among the varieties were aureum, Caractacus, Venus, Symmetry, Empress, &c.—Mr. Edmonds, gr. to the Duke of Devonshire at Chiswick, sent a tall specimen of R. formosum, covered with large white flowers stained in the upper petals with yellow, and deliciously scented.—Messrs. Veitch produced the new Jasmine-flowered kind, mentioned below, and Mr. Mountjoy, of Ealing, received a Certificate of Merit for a seedling called campanulatum punctatum.

The Roses in pots equalled any exhibition of the kind we have hitherto seen. Mr. Lane's 12 plants were magnificent. The productions of Messrs. Paul and Francis, with the exception perhaps of Madame de St. Joseph, the beauty of which was over, were also shown in excellent condition, and the plants from Messrs. Terry, Roser, and Rowland likewise did them much credit. The sorts were nearly the same as those shown at Regent's-park on the 8th inst., and fully reported at p. 294.

Cape Heaths were numerous, and generally finely flowered. Excellent plants were furnished by Mr. Rucker, Mr. Quilter, Mr. Colyer, and Mr. Green; and in the Nurserymen's Class, Messrs. Fairbairn, Veitch, and Rollisson sent capital examples of good Heath growing. The plants in 11-inch pots, by the same growers, were also beyond all praise. In the different collections we remarked the following varieties: propendens, elegans, stricta, a nice kind; denticulata moschata, suaveolens, ventricosa coccinea minor, dilecta, the larger variety of aristata, Hartnelli, metulæflora, favoides purpurea, Sindriana, vestita coccinea, v. rosea, mutabilis, nitida, tricolor Wilsoni, Cavendishii, depressa, splendens, odore rosæ, Primuloides, ampullacea "carminbrata," Sprengeli, Macnabiana and its rose-coloured variety, vasæflora, nigrita, campanulata, tortulæflora, Beaumontia, florida, Bergiana, Victoria Regina, a new and good Heath; mundula, Jasminoides, and Peziza, a pretty white variety.

Single Specimens.—The best was an enormous Pimelea spectabilis, in the very best condition, from Mr. May, gr. to Mrs. Lawrence; a large and well flowered Hoya imperialis, from Mr. Glendinning; the Rhododendron formosum, already alluded to, from Mr. Edmonds; a good Erica Cavendishii, from Mr. Kinghorn; E. vasæflora, from Mr. Rucker; Mitraria coccinea, from Messrs. Veitch; and Zichya longipedunculata, from Mr. Ayres.

New Plants consisted of a flower and two leaves (one inverted, so as to show the under surface) of Victoria Regia from Mr. Paxton, gr. to the Duke of Devonshire, at Chatsworth, together with a landscape, representing the manner of growth of the plant in its native waters; a flower and leaf of the same queen of aquatics from Mr. Ivison, gr. to the Duchess Dowager of Northumberland, at Syon; Viburnum plicatum covered with large balls of white flowers, from Messrs. Standish and Noble; a jasmine-flowered Rhododendron, Stylidium ciliare, Bolbophyllum Lobbii, an Anguloa, and a Cœlogyne, Dendrobium transparens, Medinilla bracteata, Pimelea Neippergiana, and a Lycopod, from Messrs. Veitch; a promising species of Hovea, and Pimelea Verschaffeltii, from Mr. Stanly; P. Neippergiana and Bossiæa Hendersoni, from Mr. Taylor, gr. to J. Coster, Esq.; Dendrobium Farmeri, from Mr. Williams; an Anguloa from Mr. Schröder; a large variety of the box-leaved Eriostemon from Messrs. Rollisson; Hæmanthus multiflorus (!) from Messrs. Garraway and Co., of Bristol; Acacia grandis, Pimelea Neippergiana, and P. Verschaffeltii, from Messrs. Henderson, Pine-apple-place.

Pelargoniums, with a few exceptions, were nicely bloomed, and made a fine display. For new varieties in 8-inch pots, 1st, Mr. Cock, Chiswick, pictum, Salamander, Centurion, Rosamond, Mont Blanc, and Mars; 2d, Mr. Robinson, gr. to J. Simpson, Esq., Forget-me-Not, Gulielma, Orion, Armada, Negress, and Pearl; 3d, Mr. Stains, Middlesex-place, New-road, Alonza, Pearl, Negress, Lalla Rookh, Forget-me-Not, and Gulielma. Nurserymen: 1st, Mr. Dobson, gr. to Mr. Beck, Cuyp, Mont Blanc, Rosamond, Gulielma, and Emily; 2d, Mr. Gaines, Rosamond, Aspasia, Mrs. Beck, Juliana, Armada, and Duke of Northumberland. Old kinds in 11-inch pots, 1st, Mr. Cock, Rosamond, Salamanda, Bertha, Forget-me-Not, Pearl, and Orion; 2d, Mr. Parker, Roehampton, Orion, Zanzummim, Forget-me-Not, Pearl, Negress, and Rosy Circle. Nurserymen: In this class Mr. Gaines was the only competitor. His plants were insufficiently in bloom.

Fancy Pelargoniums.—1st, Mr. Robinson, Anais, Queen Superb, Statuiski, Jenny Lind, Fairy Queen, and Empress; 2d, Mr. Stains, Yeatmanianum grandiflorum, Nymph, La Belle Africana, Madame Miellez, Statuiski, and Queen; 3d, Mr. Gaines, Madame Miellez, Elegans, Jenny Lind, Anais, Madame Rosati, Odorata, and Magnifica.—Mr. Ambrose had Statuiski, Anais, Lady Rivers, Ibrahim Pacha, Duchess d'Aumale, and Picturata.—Mr. Moseley also had six varieties, but they were not different from the above.

Cape Pelargoniums were shown by Messrs. Parker, Stains, and Mylam. The kinds were nearly the same as those mentioned in our report of the Botanic Society's meeting, at page 294.

Seedling Pelargoniums.—Mr. Beck had Rosa and Incomparable, two varieties of great colour; also "Little but good," Diana, Major Domo, and others.—Mr. Hoyle sent a neat and striking sort called Ocellatum, with pale rosy-pink flowers, having a deep crimson spot on all the five petals. The same raiser had also some other seedlings.—Mr. Rendle had Beauty of Montpellier, large rose with a crimson spot in the top petal, and a white throat.

Calceolarias.—Collections were exhibited by Mr. Gaines and Mr. Stanly; in these we remarked Regulator, Baron Eden, Maid of Orleans, Nil Desperandum, Solicitor-General, Beauty, Medona, Enchantress, and Don Sebastian.—Mr. Kinghorn had three pretty seedlings, named Mary, Cleopatra, and Portia.—Mr. Gaines sent Magnifica, a finely shaped flower; also Arbela, Maid of Orleans, Canariensis, and Mielia, all good flowers both in shape and marking.

Cinerarias.—Six varieties in 8-inch pots. 1st, Mr. Henderson (Wellington-road), Attila, Wellington, Cerito, Camilla, Angelique, and Alboni; 2d, Mr. Lane; and 3d, Mr. Gaines.—Messrs. Henderson, of Pine-apple-place, had also some good plants of the best kinds.—Seedlings were numerous, and some of them good and distinct. Among the best were Madame Sontag (Mr. E. G. Henderson), Queen of England (Salter), Lady Hume Campbell (Mr. E. G. Henderson), Prima Donna (ditto), Mrs. Charles Kean (ditto), and Renville (Messrs. Henderson, Pine-apple-place).

Fuchsias.—Some nice seedlings were produced by Mr. Kendall, more especially a light kind called Dr. Gross.

Amaryllids.—Messrs. Garraway and Co., of Bristol, sent a small group, consisting of amœna, marginata odorata, marginata venusta, and a very fine large velvety, deep crimson sort, called "Ackermanni pulcherrima." (?)

Helichrysums.—Collections were shown by Mr. Cole and Mr. Green. The sorts were Aphelexis argentea, grandiflora, macrantha purpurea, sesamoides, &c.

Alpine Plants.—Two interesting collections were produced; one by Mr. Wood, of Norwood, the other by Mr. Turner, of Holloway. Mr. Wood's plants were Phlox nivalis, P. subulata, Sedum ternatum, Antennaria dioica, Cheiranthus ochroleucus, Veronica prostrata, Saxifraga tricuspidata, Alyssum alpinum, Ajuga genevensis, Linaria hepaticæfolia, Houstonia cærulea, and Stachys corsica.

Variegated Plants.—Mr. Wood showed the following varieties:—Bellis perennis, Euphorbia Characias, Arabis ciliata, Salvia officinalis, Funkia undulata, Euonymus japonicus, Glechoma hederacea, Alyssum saxatile and maritimum, Thymus serpyllum, Taxus baccata, Spartium scoparium, Melissa officinalis, Fragaria elatior, Rubus fruticosus, Iris Pseud-Acorus, Acorus gramineus, Sambucus niger, and Hedera Helix.

Fruit was scarce—a circumstance to be attributed to the long cold spring which we have experienced. Mr. Jones, gr. to Sir J. Guest, Bart, sent three nicely ripened Ripley Queen Pine-apples, whose weights were respectively 4½ lbs., 3 lbs. 8½ oz., and 3 lbs. 2½ oz. Mr. Davis, of Oak-hill, East Barnet, had a Queen weighing 2 lbs. 10 oz.; the same grower also sent a Blood Pine-apple weighing 3 lbs. 7 oz, and a black Jamaica 2lbs. 11 oz. Mr. Davis, gr. to Lord Boston, exhibited two Providences, one 8 lbs. 5 oz., and the other 8 lbs. 4 oz. Mr. Slowe, gr. to W. R. Baker, Esq., had an over-ripe Providence weighing 7½ lbs., and another over-ripe fruit of the same variety of Pine-apple, weighing 7 lbs. 2 oz., was shown by Mr. Davis, of Oak-hill. Black Hamburgh Grapes, well swelled and coloured, were contributed by Mr. Ingram, gr. to her Majesty at Frogmore, Mr. Turnbull, gr. to the Duke of Marlborough at Blenheim, Mr. Fleming, gr. to the Duke of Sutherland at Trentham, Mr. Elphinstone, gr. to the Right Hon. the Speaker; Mr. Davis, of Oak-hill; Mr. Mitchell, of Brighton; and Mr. Toy, Oatlands Palace-gardens, Weybridge. White Grapes generally were insufficiently ripened. Mr. Spencer, however, gr. to the Marquis of Lansdowne, had a dish of Cannon-hall Muscats, which were quite ripe, exhibiting the pale

yellow colour peculiar to this variety in that condition. These received a Large Silver Medal. Mr. Jackson, gr. to H. Beaufoy, Esq., showed good bunches of Sweetwater, and so did Mr. M'Walter, gr. to Col. Challoner, and Mr. Elphinstone. Bunches of the same kind of Grape were also produced by Mr. Davis, of Oak-hill. Mr. Toy had good Black Frontignans and Muscadines, and the latter were also shown by Mr. Ricardo's gardener. Mr. Fleming sent a specimen bunch of Black Hamburgh, weighing 1 lb. 7½ oz., and Mr. Davis, of Oak-hill, another weighing 2 lbs. 3 oz. A dish of large and highly coloured Royal George Peaches, and another of Murray Nectarines were contributed by Mr. Fleming. Mayduke Cherries were shown by Mr. Ingram and Mr. Fleming, and the latter received a Silver Knightian Medal for the heaviest Melon, and a similar award for the best-flavoured ditto, the sort in both cases being the Hybrid Green-fleshed Persian. Mr. Monro, gr. to Mrs. Oddie, produced a well-fruited Seville Orange tree in a pot. By far the best Keens' Seedling Strawberries exhibited were furnished by Mr. Elphinstone, gr. to the Right Hon. the Speaker; these were in every respect excellent. Mr. Toy and Mr. Meredith, gr. to the Duke of Sutherland at Cliefden also sent good examples of the same variety, and so did Mr. Patterson and Mr. Monro. British Queens were produced by Mr. Toy; and Mr. Slowe furnished well-fruited plants in pots of the same sort of Strawberry. Mr. Snow, gr. to the Earl de Grey, furnished dishes of Apples and Pears of last year's growth, in good condition; they consisted of Sturmer Pippin, Golden Reinette, Winter Queen, Ribston Pippin, Old Green Nonpareil, Court of Wick, Boston Russet, and a fine-looking unnamed red Apple. The Pears were Uvedale's St. Germain and Winter Warden.

Calendar of Operations.

(For the ensuing week.)

PLANT DEPARTMENT.

Orchids now require the most liberal treatment to induce them to fully develope their interesting characters. A good and healthy growth will be ensured by a warm humid atmosphere, with fresh air so admitted as to avoid draughts, and by shading with thin canvas during the brightest part of the day. In the afternoon the plants should be gently dewed over, using a syringe with a fine rose for the purpose; we have often seen such work done with a coarse syringe, and the water driven through it with all the force possible, but such a practice is very injurious to the plants. Some of the stove plants which commenced their growth earliest in the season, will now be about completing it; and that it may be properly matured, they will require to be exposed to stronger light, and a freer admission of air, than has been afforded them during their season of growth. These hints, at this time, will particularly apply to those winter-flowering plants, which produce their blossoms upon the young shoots of the previous year's growth. Among these we may mention the delightfully fragrant and abundant blooming Francisceas, and the several stove species of Jasminum, especially the one known as J. multiflorum, or J. hirsutum, than which a more charming winter plant does not exist, if it be grown very strong during the summer, and well ripened. We, last winter, had wreaths of its fragrant blossoms two to three feet in length; but if plants of this description are kept too long in a hot damp atmosphere, they will continue to grow without making preparations for flowering. The number of plants ready to commence the ripening process is not great at present, but it is increasing every week, and those which are not yet ready must be carefully watched, to ascertain when the proper time arrives for each. The practised eye will readily detect the proper period at which to commence the gradual admission of a greater quantity of air, and the freer exposure to the sun; but to the tyro this is not so easy a matter: he must, however, watch attentively the natural indications given by the plants, and the moment he observes the young shoots show an inclination to terminate their growth, he may conclude that the proper time is come for ripening them. In plants which flower immediately after they have completed their growth, this will evince the necessity of less excitement; and that the blossoms may be strong and abundant, the plants may no longer be confined in a hot moist atmosphere, but in all cases let it be observed that the transition be gradual. Other plants which do not at present exhibit any desire to pause in their growth, should be encouraged with an adequate supply of heat and moisture, and by shading from the scorching rays of the sun.

FORCING DEPARTMENT.

Where Pines are grown on the planting out system, it should be remembered that the soil ought to be entirely renovated once in three or four years; the time for this operation must be left to the judgment and convenience of the cultivator; but if all, or nearly all of the older plants in any pit have perfected their fruit, such is an excellent opportunity for the purpose, and this is a very favourable time of year for the operation. The younger plants (which have been put in, one after another, as vacancies occurred), after being well watered, may be carefully lifted with balls, and set in a close shed, while the soil is being changed. But if any remain of those which have already shown fruit, they may be left standing, with a small mound of earth about their roots. Or if they are not very far advanced, they may, for appearance sake, be removed with balls to the back row; as they do not suffer if it be carefully done. The soil should consist of about one-third of the best peat that can be obtained, and two-thirds of rich turfy loam, with an admixture of sand, according to the requirements of the other materials. The plants of the back row should be planted before the soil is put in for the second one; and the remaining rows proceeded with in the same order, that none of the soil be needlessly compressed. If the new soil is moderately moist, it will be better to withhold water from the roots for a few days, to allow the plants to make an effort of their own; and until they are thoroughly re-established a moister atmosphere must be kept up, and the pits shaded rather more than usual. Vineries.—A liberal supply of air in these houses is the best preventive against scorching. In finally regulating the Grapes of the latest crops, which are intended to hang through the winter, rather more should be cut away than from those intended for earlier use, that the bunch when ripe may hang looser. This will detract a little from their appearance, but the free circulation of air amongst the berries will do much to preserve them from the effects of damp weather.

FLOWER GARDEN AND SHRUBBERIES.

Attention should now be paid to the reserve stock, intended to supply the gaps which will occur, and especially in some of the beds which are filled at first with transient annuals, and which in the course of the season will require entirely renewing. To meet these demands, we prepare a bed of coal ashes rolled solid, and lay upon it 2 or 3 inches of soil composed of chopped turves, leaves, and coarse sand; in this we prick out young plants of such kinds as are likely to be required, at distances of from 4 to 6 inches asunder. In the preparation of plants for flower garden masses, we have tried various methods of economising labour and materials, and, for several years, have adopted this as the best. By it, the plants become established much sooner, and the cost of many thousands of small pots is annually saved. As the planting out will now be nearly finished, let all the beds be gone over, picking out weeds, pegging down, or tying up such as would blow about with the wind, and giving them every possible assistance, to enable them speedily to fill the beds. Herbaceous plants of all kinds are now growing rapidly, and many of them, unless immediately supplied with stakes, will have grown out of all shape, or the wind will blow them about and break them. Make everything in this department clean and tidy; and keep the turf and walks in the neatest order. Spare hand lights and frames may be placed in shady situations, and made use of for propagating double Wallflowers, choice Dianthuses, Phloxes, Iberis sempervirens, and many other select herbaceous and half shrubby plants.

FLORISTS' FLOWERS.

Ranunculuses.—Occasionally water in the evening between the rows; when requisite, do it effectually. This is far better than the little-and-often system. Destroy the Ciceda spumaria (Cuckoo-spit) which is apt to infest the plant. We do not recommend the surface soil to be removed, for Ranunculuses love a close and moist soil. Screen seedlings from excessive sun, and keep them slightly moist. Place the irons, or other support, ready to receive the awning as soon as the flowers require shade. Tulips will now be in their best around the metropolis; in the northern counties, a week later. The shows in the north which have already taken place, at Nottingham and Derby for instance, were miserable failures as far as Tulips were concerned. Protection from sun, rain, and wind is now only requisite. Carnations and Picotees. — Water and keep clean; tie the advancing spindles, and take care that the aphis or green fly gets no head. Polyanthuses and Auriculas should be now more attended to than ever; the former do not like excessive sun. If exposed to drought the red spider soon attacks them, and the consequences are serious.

HARDY FRUIT GARDEN.

The summer pruning and thinning of all fruit-bearing bushes is a vast improvement upon the common practice of allowing them to grow wild until winter. The superiority of the fruit, when this practice is adopted, is very encouraging, and an additional advantage consists in the work being done in half the time that it would require in winter. Tie in or nail the leading shoots of Pear trees, as they require it, but do not, even for the sake of neatness, stop all the shoots, lest by so doing the natural fruit-spurs for next season are forced into wood spurs; the former are readily known by their short thick stunted appearance, and instead of producing a shoot only produce a bunch of from four to seven leaves. Young trees which are being trained into pyramids or other shapes, should be examined once a fortnight, and the shoots which are not wanted pinched in with the thumb and finger, by which the growth of others may be encouraged. This process should commence with the upper shoots, that the sap may be directed into the lower branches; and after an adequate quantity of shoots of sufficient strength is secured to form the lower part of the tree, the leading shoots may be allowed to grow and furnish wood for the top of the tree. Stopping for wood is very different from stopping for the purpose of forming fruit buds; for the latter purpose it will be time enough to shorten the shoots a month hence. Gooseberries and Currants should have their young wood thinned out by immediately stopping at least half the number of shoots to four joints, to allow the air to circulate more freely in the centre of the bushes, and the remainder of the shoots should be stopped during the summer, according as the shape of the bushes requires it. This practice will almost entirely do away with winter pruning, while the flavour and size of the fruit will be greatly improved.

KITCHEN GARDEN.

Hand-lights should now be placed about a yard and a half asunder, upon the trenches which were prepared for ridge Cucumbers and Vegetable Marrows, and the plants carefully turned out the first dull day. It will be necessary that their watering be regularly attended to, and every fine evening they should be sprinkled over the foliage with a rose pot, till they are so far hardened as to admit of the foliage being removed. A few Vegetable Marrows, or ornamental Gourds may, with the strictest propriety, be planted against any spaces on the fruit walls which are unoccupied from bottom to top, owing to the small size of the fruit trees. The stations should be prepared for them by making large holes, and placing therein a couple of barrowsful of decomposed animal or vegetable manure, merely covering this with sufficient of the original soil to receive the plant.

State of the Weather near London, for the week ending May 23, 1850, as observed at the Horticultural Garden, Chiswick.

May.	Moon's Age.	Barometer.		Temperature.					Wind.	Rain.
				Of the Air.			Of the Earth.			
		Max.	Min.	Max.	Min.	Mean	1 foot deep.	2 feet deep.		
Friday.. 17	5	29.927	29.877	66	43	54.5	51	51	N.W.	.02
Satur... 18	6	29.782	29.767	68	40	54.0	51	50½	N.W.	.01
Sunday . 19	7	29.797	29.766	72	44	58.0	52	51	E.	.00
Monday 20	8	29.745	29.692	69	46	57.5	53	51½	E.	.02
Tues. .. 21	9	29.749	29.684	68	49	58.5	54	52	N.E.	.11
Wed. ..22	10	29.592	29.519	64	44	54.0	55	53	N.E.	.05
Thurs....23	11	29.518	29.467	72	41	56.5	54½	53	W.	.00
Average....		29.730	29.681	68.5	43.8	56.1	52.9	51.7		.22

May 17—Overcast; rain in the evening.
" 18—Slight rain early A.M.; foggy; cloudy.
" 19—Very fine; cloudy.
" 20—Uniformly overcast; fine; clear at night.
" 21—Fine; cloudless; cloudy and mild at night.
" 22—Rain; overcast; fine; clear.
" 23—Cloudy; overcast and mild; very fine; clear at night.
Mean temperature of the week, 1 deg. above the average.

State of the Weather at Chiswick during the last 24 years, for the ensuing week, ending June 1, 1850.

May. and June.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds.						
						N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 26	66.7	43 0	54.8	9	0.27 in.	1	8	3	1	2	4	3	2
Mon. 27	68.8	45.4	57.1	12	0.41	1	8	6	1	1	4	2	1
Tues 28	68.2	41.7	55 0	8	0.97	—	6	7	1	4	4	2	1
Wed. 29	66.4	45.7	56.1	9	0.97	1	8	1	2	3	5	4	—
Thurs. 30	68.4	45.8	57.1	8	0.22	—	5	4	—	2	7	2	2
Friday 3	70.3	46.5	58.4	7	0.38	—	6	3	—	3	7	4	1
Satur. 1	70.8	47.0	58.9	11	0.27	—	4	1	5	5	2	4	—

The highest temperature during the above period occurred on the 28th 1847—therm. 91 deg.; and the lowest on the 27th, 1835—therm. 33 deg.

Notices to Correspondents.

Cockroaches: *Emily.* Sink in the floors of the room a common basin partly filled with beer. They will tumble in in hundreds. After persevering nightly for a few weeks you will reduce the number to nothing; provided you kill with boiling water all that you catch. This should be done every morning.

Emigration: *A Young Gardener seeking advice* should apply to the Government Commissioners. We cannot undertake the duty of shipping agents.

Fruit Protectors: *A H.* These resemble bell-glasses, and are attached to walls by a little wire or other contrivance. They are described in our report of the proceedings at a meeting of the Horticultural Society, at p. 214 of the present volume.

Grapes: *Mediensis* observes that much difference of opinion exists with regard to the distinctions between varieties of Grapes denominated Muscats, Muscadels, Muscatels, Muscadines, and Musqué. In this country a Muscat Grape is generally understood to be the White Muscat of Alexandria; but in other countries the terms of Muscat, Muscadel, Muscatel, Moscatello, Moscado, and Muscateller, are applied to those kind of round-berried, black, white, or grizzly-coloured Grapes which we call Frontignans, and to these the Chasselas Musqué is allied. All those above mentioned have decidedly a Muscat flavour; but they form two very distinct classes, namely, those with *oval* or *obovate* berries, as the white and the black Muscats of Alexandria; and those with *round* berries, as the black, white, and grizzly Frontignans and Chasselas Musqué. The Muscadines are typified by the Royal Muscadine, alias Chasselas de Fontainebleau, and with it the Sweetwater, alias Chasselas Précoce, may be classed. ‖—*W C E.* The berries are rusty; but we are unable to say what is the matter with the leaves.‡

Insects: *W P.* We know of no other way of destroying "the swarms of insects in your leaf heap" except soaking it with boiling water.‡

Names of Plants: *M—l.* Lælia grandis.—*Hort.* Scorpion Senna.—*Z.* It is a fine white variety of the Wild Hyacinth. Lettuces, if of good sorts, will not run to seed if kept cool, and in damp ground. We fear that Calandrinia umbellata will not stand the winter. Œthionema membranaceum is a pretty and dwarf perennial. Pray do not apologise.—We hardly know whether it will be possible to find time to name some of the heaps of plants with which we are inundated by correspondents. There should be some consideration for the busy shown by the idle.

Paxton's Cottagers' Calendar may be had at the Office of this Paper, or of any bookseller, price 3*d.*, or 5*s.* for 25 copies for distribution amongst cottage tenantry.

Peach and Nectarine Trees: *A T C C.* The reddish, swollen appearance of the leaves is the effect of cold; those affected in this way may be gradually picked off when, in consequence of warmer weather, an abundance of fresh leaves are produced. No bad consequences will result from this affection. But a worse enemy is at work, the red spider, and you must destroy it, or it will ruin your trees. See that the roots have sufficient moisture, and clean the foliage by frequently syringing it above and below. ‖

Stanwick Nectarine: *A B.* See p. 275. It has hitherto been only worked on the Peach stock.‡

Strawberries: *R C.* Cut off the runners if you do not want them. It is much better to dispense with their presence, if you can, until after the fruit is over.

Vineries: *Dollycoss.* Figs will answer your purpose better than anything else; but even they must have light.

Wiring Walls: *E S.* Read Mr. Fleming's article on the subject at p. 435 of our last year's volume.‡

Misc: *J K J.* The best things to be had from Beyrout are the bulbous plants of the country. You will obtain nothing else worth growing. All the Pines and other trees are perfectly well known and common. The fruits of the country are either here already, or not worth bringing home.—*A Lover of Gardening,* Datura Metel is a tender annual; the two others are stove climbers.

SEEDLING FLOWERS.

Pansies: *R T P.* In their present state your flowers are no improvement on varieties already in cultivation.‡

HOME GROWN SEEDS, CARRIAGE FREE BY GREAT WESTERN, SOUTH WESTERN, OR SOUTH EASTERN RAILWAYS.

	per lb.	per gal.
THE ASHCROFT SWEDE TURNIP.—This is decidedly the best of all Swedes; it is very large and better shaped than the Liverpool Swede, which it somewhat resembles; it is perfectly hardy, and being of quick and strong growth it is so soon in rough leaf as to be much less subject to suffer from attacks of the fly. The colour is yellow, with purple top	1s 0d	6s 0d
EARLY SIX WEEKS TURNIP.—An excellent sort for early sowing to feed off for Wheat. *A Field of these Turnips grown (from Messrs. Sutton's Seed) by Mr. E. W. Moore, at Coleshill, gained the 20l. prize at the Farringdon Agricultural Show in December last*	1 0	6 0
SUTTON'S PURPLE-TOP YELLOW HYBRID.—*This sort is equal to a fine yellow Swede, may be sown much later, and keeps well till spring*	1 0	6 0
DALE'S HYBRID.—A fine green-top Turnip ...	0 10	4 6
YELLOW TANKARD.—Very excellent ...	0 11	5 0
LINCOLNSHIRE RED.—*The original stock of this superior New Turnip was presented to J. S. and Sons by Philip Pusey, Esq., M.P.*	1 0	6 0

Liverpool Swedes, Laing's, Matson's, Fettercairn, and other Swedes. Fine Green-round, Globe, Tankards, and other Turnips, true stocks of home growth, 20s. to 30s. per bushel (as see Sutton's Agricultural Seed Catalogue). True Italian Rye Grass, 6s. 6d. per bushel. Fresh imported Lucerne, 80s. per cwt. White Mustard Seed, 10s. per bushel. French Furze, 1s. per lb., and all other Agricultural Seeds at lowest market prices.

JOHN SUTTON and SONS, Nos. 7 and 8, Market-place, Reading, Berks, confidently recommend the above articles as being of very superior quality; *they beg also to refer to their Advertisement which appeared on the last page of the Gardeners' Chronicle on the 30th of March*, by which it will be seen that they supply GRASS SEEDS FOR PERMANENT PASTURE, either separate or mixed, AT MUCH LOWER PRICES than those usually charged. *Carriage free, as see above.*

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W. HILL, Horticultural Works, Greenwich.

The Agricultural Gazette.

SATURDAY, MAY 25, 1850.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

WEDNESDAY,	May	29—Agricultural Society of England.
THURSDAY,	—	30—Agricultural Imp. Society of Ireland.
WEDNESDAY,	June	5—Agricultural Society of England.
THURSDAY,	—	6—Agricultural Imp. Society of Ireland.

THE inquiry respecting a GARDEN FARM "of full half an acre—how to make the most of it—to make it remunerative"—printed in our number for March 23, from "A Country Curate of very small means," has, we believe, deservedly excited more interest than has yet appeared on the face of our pages. The declaration that his family did "not require the luxuries of the table, vegetable or other," grated harshly on the ear; for, from his position, he ought to have them in competent measure, if he has them not; if not for himself, at least for others; if not for his own household solely, then for neighbours and the sick poor. We will therefore offer a few hints, in the hope that the little patch of glebe may both be made as profitable as it can in inexperienced hands, and yet some few wholesome and decent luxuries be besides contrived to proceed from its cultivation. And the remarks we shall make may perhaps be usefully applied to the case of the farmer's garden—rarely a well-managed portion of his "occupation."

In the first place, as to the instruction to be derived from books. Paxton is excellent; but a student will know that to get a safe, that is a comprehensive knowledge of any one subject, it is good to read every book on that subject, that hands can be laid on. Glenny's "Gardening for the Million" (if it be not out of print) contains much that is useful; Cobbett's "Cottage Economy," and his other agricultural works, beautifully written, are still untrustworthy. Cobbett's practical value as an authority to be depended upon much reminds us of that of Voltaire; in this respect, they are both most lucid and charming writers, but, if you consult them on almost any special subject with which you are *well* acquainted, you will find them full of fundamental errors. Thus, in gardening and planting, Cobbett makes no distinction between the American summer and that of England. Hence the disappointment from Maize fields, Hickory woods, Catalpa groves, and plantations of other things which grow, but scarcely ripen, under our cloudy sky. DR. LINDLEY'S, LOUDON'S, and KNIGHT'S works, should be begged or borrowed, and read and re-read.

Some guidance how to manage certain crops having thus been obtained, an important advantage will be gained by observing a judicious *plan* of cropping the land, which is of more consequence in these cases than the mere rotation of crops, though that should be attended to, as far as may conveniently be, by making leguminous, cruciferous, and umbelliferous plants, each take their turn. In some allotments and cottage gardens, we see here a square of grain, there a patch of Cabbages, and so on, while these irregular phalanxes are now and then flanked by long straggling rows of Peas, Beans, or Scarlet-runners. The plot looks as if it were likely to become the more confused in its culture the longer it remained under cultivation by the same hands. Instead of this inconvenient muddle, let the land, if it be not a square, or a parallelogram or long square, be laid out as nearly as possible into conveniently sized parallelograms, and cropped entirely *in rows* extending the broad, not the long, way of these. The rows, which are each to consist of some one crop, may be of any breadth; the principle to be adopted will of course hold true all the same. All picturesqueness of arrangement is entirely discarded from this design, the grand object being convenience, utility, and an endeavour never to let the land be idle.

We suppose, then, an irregular piece of land, with the house at one end; we lay out in the centre one large, accurate, parallelogram, entirely surrounded by walks; if the ground be extensive, it will be convenient to make three or four such, all to be cropped on the same system: for instance, if three-fourths of, or even one entire parallelogram be cropped exclusively with Potatoes, it will still be the *row system*, in opposition to patch-work disorder. The odds and ends and trimmings of the land between the parallelogram and the irregular boundary of the garden are made into beds as nearly rectangular as possible, and applied to the raising and seeding of small matters, such as Radishes, salading, sweet and medicinal herbs, dwarf French Beans, &c., as well as for a temporary position for Cabbages, Celery, and those things that require pricking out. In the main body of the garden we place a bed of flowers as the front row nearest to the house; next, a row of Strawberries, which row may be either a plot of three or four beds, containing as many sorts, or a single line of plants, or none at all, according to the requirements of the cultivator; the successional order of the rest is likewise entirely optional, which constitutes one great merit of the plan. Asparagus sown where it is to remain, and the plants thinned out to their proper distance the second year, will cause little trouble or expense: the same may be said of Sea-kale grown as recommended in the *Gardeners' Chronicle*, vol. for 1847, p. 683. The writer of this supplies his own table, and has some besides to give away, with no further cost than the rent of the ground it grows upon, and the labour of earthing it up in winter, and unearthing it in spring: it is besides a crop which is always marketable by those who have the market in view, and it bears carriage to a distance well. Other crops may follow in the plan such as it may be desirable to raise. But of however great a width the rows are made, if, suppose, the space assigned to Cabbages extend to half the length of the parallelogram, these must still be planted in rows across it; and when the crop is cut, *each row should be finished and the stumps removed*, even though every single plant may not have attained its perfect maturity, before the cutting of another row is begun: for the strip thus vacated can be immediately manured and dug, and something

successional planted forthwith. The land will thus never lie uncropped nor get foul. Let a row of Beans or Cauliflowers be whipped in the moment there is planting room for them, and they will have half come to a crop by the time that the sluggard and the sloven would begin to think of hoeing the weeds which *ought* (according to *his* custom) to occupy their place for a while. We once knew an untidy market gardener declare that a few weeds—*i.e. not a few*—did the land good! But, in a large plot of Ash-leaved Kidney Potatoes—another remunerative, because early and inexpensive vegetable to cultivate—by taking up single rows, at intervals of 6 or 8 feet, as a first gathering, a crop of late Peas may be, not stolen, but coaxed, by these flattering and assiduous attentions, out of the liberal and good natured earth. So also of Celery, that most useful winter and spring vegetable, when there is little else to be had. Gooseberries, Currants, and Raspberries, may all be made to fall into the same plan of cropping; and if any of the perennial crops, like these, be thought unnecessary, or if the Strawberry beds become exhausted, they can be got rid of or dug in at any time; fresh plantations can be made, or the places occupied by something else, without the least unseemly gap, or even trace of ruinous removal. In short, the garden will be in a continual state of renovation and progress. If one kind of produce be taken in the morning, let some seed or seedling plant enter upon the vacant premises before night. For while men sleep, plants grow.

The next point to be considered is, *what* crops it may be most expedient to raise. And here, in the absence of any clue as to soil and situation, we can give only a few indications; and our remarks may, on that very account, perhaps be the more generally useful. The "Country Curate" will do well to make friends, as he is bound by his mission, with the neighbouring farmers of respectability. They will often give him valuable advice as to what is most prospective of a profitable return for his gardening labours. They will often, too, aid him by making little purchases for him, and by realising his produce—the great difficulty with persons in his position—on better and *smoother* terms than he could do himself. Besides the articles most in local demand, which this friendly advice will point out, a proportion of Wheat may perhaps be grown with advantage: under garden culture the produce may be large. The grain may be sent to the nearest mill, and the flour consumed by the family; the bran and the straw will come in for the pig—for a pig or two must be fattened every year—or both corn and straw can be turned into money. There may also be a proportion of Barley, which the mill will convert into meal for the pigs, to be in the end partially restored to the land as manure. A little of the Barley and the dross Wheat can be kept in hand for feeding or fattening fowls. Green spring food for horses and cattle is saleable almost everywhere, and in any quantity; therefore it may pay to sow in autumn a certain breadth of Rye, Rye mixed with Vetches, and Vetches alone, as successional crops. These in May and June will be worth from 6*d.* upwards the rod. As soon as they are cut, the ground must be made ready to receive Swedes, Turnips, Cabbages, Celery, Kidney Beans, or whatever else is requisite. Two or three crops in the year must be extracted from every yard of ground—a result which may be effected by contrivance and industry. The growing of a large breadth of *some one choice* seed of special quality, such as Mangold Wurzel, Turnip, Radish, Cauliflower, Pea, Bean, Onion, &c., frequently answers. In this speculation it is wise to get a previous order, and perhaps instructions as to particular points to be observed, from some seed-merchant of respectability and standing. Careful selection and most watchful culture are here needful; and the preservation of the ripening seed from winged vermin, and the housing it, are anxious tasks; but the crop, when safe, is very valuable. Large nurserymen sometimes require considerable supplies of certain plants that happen to become the mode. These, when of a hardy nature, may be budded, grafted, and propagated, as the case may be, with profit, if some understanding with the nurseryman has first been obtained. "*Il vaut souffrir pour les Roses,*" say the French, with somewhat of a double meaning, and more in *their* national spirit than in our own; "It is worth suffering for higher than mere pleasurable ends," would be the *mot* of a right-minded Englishman; but a few literal scratches and thorns will not be heeded by those who can perform the operation of budding, and to whom the remuneration for the labour is of essential importance.

And now as to live stock; for *some* there must be. Farmers, however good-natured, do not like obliging a friend too often with manure; and the greater the distance from a market, *i.e.* a town, as in the "Country Curate's" case, the more hard-hearted are they likely to be in this respect. So our garden-farmer must learn a good lesson, and depend upon his own resources. Muck is a necessary link in the endless chain of production and reproduction. It would be well here if a pony *could* be kept, and a handy lad to look after it, and help to dig and weed. A cow would produce both too much and not enough, and that in varying measure. Without the cow and the lad, the breeding sow would be a burden and a nuisance. The pigs, eight weeks old, calculated by our Lincolnshire informant at 12*s.* 6*d.* each, are supposed to fetch higher prices than could be obtained elsewhere at the same date. Besides the periodical sale of a litter of pigs becomes an actual annoyance to those persons who cannot, from the station they occupy, enter into the fun of enjoying the manœuvres of the little dealers. No; it must come to the store pig or two, bought in by, or of, a friendly neighbour, for the purpose of consuming and trampling into manure all refuse produce, dead leaves, and so on, that can be thrown down to them. But there must, moreover, be the utmost economy and covetousness as to everything that can be suspected to have a fertilising power, whether soap-suds, ashes, slops, or what not,—that is thrown out from the house; or, the *kosmos, i. e.*, the general order of the garden establishment, cannot go on as it ought. A few tame rabbits, for table supply, will be found very convenient, though not particularly profitable. A cock, and three or four hens, may be kept in some rustic aviary, which may be the contrivance and handywork of the proprietor's leisure hours; and it is surprising how well certain kinds of the domestic fowl will thrive in this way, if they are now and then indulged with a walk out of bounds. If any of these *are* kept, they should all be of one first-rate kind; for their grown progeny will be saleable at higher than ordinary prices, to the large metropolitan dealers, such as Mr. Baily, of Mount-street, who often in this way procure from country correspondents whom they can depend upon, those pure-bred and select specimens that are ordered by wealthy amateurs. Bees are very interesting to have, and they give a cheerful-practical look to a place; a glass cap of honey is an elegant dainty to place upon the breakfast-table; but can they safely be calculated on as a source of income? The garden-farmer who reckoned upon paying, not his rent, but merely his rates and taxes, from the profits of their produce, would, we fear, be subject every other year or so, to very unpleasant proceedings undertaken in the name of her Majesty. One year in five,—for we do not wish to speak too harshly of the English seasons, or treat them with the same severity that they are too apt to treat us—one year in five may be really a good year; and then, down comes the price of honey.

May we be allowed to add a few words on the *morale* of the inquiry which we are endeavouring to answer, although perhaps this department of advice-giving may scarcely lie within the province of the *Agricultural Gazette.* While profit may be the main and needful object, a liberal conduct should be combined with this pursuit.

The trifling matters that would be degrading, if Mammon held governance over them, how priceless are they, if administered with Christian, and that is true gentlemanly, liberality! A dish of Seakale, or Strawberries, or Asparagus, carried, with a kind word, to an invalid neighbour or neighbour's child, will heal a schism better than a personal sermon, a severe private lecture, or even a suit in an ecclesiastical court! A garden may be called a *paradisus* when it can thus be made to produce the fruits of peace, instead of just bringing in a few shillings a year in excess of the outlay. But if, unhappily, hard money is so needful to any, that they must debar themselves, for it, from these their fitting luxuries; then, a not offensive, and probably the true and best piece of advice, is, "You would do more wisely to let your land, and be satisfied with the rent of it, than to aim at the profits possibly derivable from cultivating it; for in unskilled hands they will dwindle and disappear."

STEAM POWER AND PRESENT PRICES.

Can any of your numerous and talented correspondents give me an answer to this one simple question, viz: What is the most desirable, the most advantageous, the most necessary to be sought for, to render agriculture a profitable business at "present prices?" The *Agricultural Gazette* teems with suggestions. I have endeavoured to examine impartially these suggestions, and find all of them (since agriculture is a manufacture) may be appropriately typified by or under the mechanical simile of "little wheels." The first suggestion is "economy;" under which is implied "no black horse-ponds," in other words, manure manufacturing and manure preserving is to be a constant study. Will this "little wheel" render agriculture a profitable business? No. Will cattle-feeding? No. Will pig-feeding? No. Will sheep-feeding? No. [Prove it!] So the whole "head" of stock may be dismissed as incapable of themselves, by themselves, of rendering agriculture a profitable business. Manure maybe dismissed with the machines. Everyone of these items may contribute a mite, but, it is such a mite, that the whole may be justly designated as "little wheels."

We will now leave the farm-yard and go into the fields—here we relinquish the item of economy, and come to that of skill or knowledge in operating on the material. The first little wheel we came in contact with (and by the bye this is the largest and most influential wheel of the whole series) is drainage. Now, will drainage of itself, by itself, render agriculture a profitable business? No. Will the removal of hedgerows and timber? No. Will subsoiling? No. Will superior cultivation by hoeing? No. Will thick or thin-seeding? No. Will artificial manuring or ammoniacising render it profitable? No. And, moreover, this last little wheel is the crankest concern of the whole lot. It is evident this catenary of items, with their various ramifications, is composed entirely of little wheels. Is there any one of these little wheels possessing sufficient power within itself of restoring agriculture? Certainly not. But some may say the whole together will; nay, that cannot be, for the strength of one link generally gives the strength of the whole chain. But you will further say "to adopt your mechanical language, we 'weld' the whole together, and thereby make an uncommon strong link." Yes, but there is another unlucky maxim in mechanics which may be opposed to this argument, viz: that what you gain in power by combination, you lose in time—and time is money! You cannot afford now to wait 12 months for the muck-money, nor the subsoil, nor the drainage money. What you require in your art to place you more on a par with your fortunate brother manufacturer, is a comparatively quick return for a small outlay. To this you will reply—But our crops cannot return aught under six months! Then to counterbalance that inherent drawback, the investment in proportion to what is returned should be a minimum; if you can receive a large per centage in six months for a small investment, that will be tantamount to a small per centage on a large investment, for a month. Your business in proportion to its extent positively requires the least capital of any art I can recall to my memory; it is in itself a cheap practice. But, you will say, we find it very dear in both first and last expense? No doubt about it; but, how is it that you have rendered a cheap practice both dear and unprofitable? This is the point I wish to bring you to consider. I hope we shall ultimately find out that it has arisen from the wants of true or useful science in the simplest of all human arts.

We may fairly assume, then, that the little wheels of agriculture being perfect in their way, but inoperative, the fault, error, or defect is in the "great wheel." It is the same with the domestic agricultural machinery as with every other of the sister arts—they must both have a "great wheel." That great wheel is of course the prime-mover—the mover of the "little wheels." Now what then is the constitution of the great wheel of agriculture, because it is evident the fault lies there?

My object in writing is this: I wish agriculturists to understand—thoroughly understand that the defect may be in their great wheel; and it is advantageous to discover what is wrong, even though we should not at the moment know how to repair the defect. To know the cause of a disease, the doctors tell us, is at least halfway towards the remedy, because we shall then, like sapient men, the more strenuously, assiduously, and heartily strive after that remedy. We must be struggling in the dark, when we do not know what it is we most stand in need of.

Now, I say, the whole, sole, and utter incapacity of the English farmer to compete with the foreigner, in conjunction with his brother manufacturer, is simply because his "great wheel" is defective; in other words his "prime-mover" is defective. And that I may substantiate this, or rather compel my brother agriculturists to do it for me, I shall put a question at the end of this letter (which after all is the question of the letter), and which question is to stand as an estimate of true valuation of all other manufactures, and by parity of reasoning serve the same office to agriculture; and I hope some of your readers will return me a candid answer thereto. I put the question in a friendly way, and with the hope that it will lead the minds of agriculturists from such incessant study of the "little wheels," to the infinitely more important study of the "great wheel."

Agriculture has existed upon, or, lives in facts—what she most needs now is "principles"—standard principles. It is principle that leads; facts are as nothing without it. Now that the comparative worthlessness of the political aid to a practical art has been demonstrated by the possibility of this unsubstantial aid being at any time withdrawn by those who gave it, leaving its quondam recipients in the lurch, we should now strive the harder to obtain that aid which no human power can remove. Let us seek to establish the principles of agricultural operations on a true and indestructible basis; that basis has evidently never yet been obtained, or we should not find ourselves in this helpless predicament, when the "crutch" has been withdrawn. The agricultural fabric was in truth an eyesore to the eyes of "progress;" but still the actual cautery was a rough remedy to apply; the patient might sink under the operation; but sturdy agriculture is not of that constitution—she will recover, but, the cure must proceed from herself. Begin *de novo*—strive to perfect every principle of your practice. My maxim for the esti-

mating a principle to be established is this—viz., a simple and certain principle in practice, which cannot be followed without profit, and which cannot be departed from without loss.

Now there are several principles to be established on this foundation in agriculture, and the enquiry should be, which is the first in importance to be studied, which the second, which the third, and so on. From the host of little facts exhibited in agricultural writings, I gather that the whole lot are dealt with at one and the same time. Now this should not be; the agriculturist has often been justly reproached for distributing his money and his manure over a too large space, and I think he may be somewhat reproached for distributing his intellectual powers also over too large a space. Concentration is strength, and so is unity, whether of mind or anything else. Side dishes, like the little facts of agriculture, are very good things, very requisite, and always read and viewed with pleasure, but there should be a genuine substantial matter for us all to dissect and digest nevertheless.

Suppose we now deem it of individual and national importance first to study and then establish genuine, that is, permanently profitable principles, for future agricultural practice. The enquiry will be, what is the first or primary principle in agriculture? I say the mechanical, others may say drainage is. Nay, that cannot be, for drainage will not cultivate *per se*. Another will say, chemistry is. Nay, that cannot be, for chemistry will neither insert the seed in the ground nor withdraw it therefrom. Another will say cattle-feeding, another the rotation in cropping, another thick or thin-seeding, &c., and probably the last and worst on the list will assert the "political" is. But I affirm and believe it will be admitted that the mechanical is the primary principle to agriculture. The question then is, is this primary principle established? Does it fulfil the maxim I have offered, viz., a principle which all may follow with profit, and none depart from without loss? Certainly not. But this principle, like those which will succeed it, may or must be divided into two parts, the primary and the secondary. Now the primary principle in the mechanical is the power employed, and here at once we prove that the mechanical is not yet established in agriculture, for, some use oxen as the prime mover, and others horses, and as usual when this occurs some advocate the one and some the other; from which we may infer that they are both so inferior, or rather, the one to the other is so little superior, that neither are worth much. Now, can we find a primary power in existence which will fulfil this requisite of "which no one can adopt or follow without profit, and no one neglect or depart from without loss?" because, this would afford us an opportunity of seeking to establish the primary mechanical principle in agriculture on a secure basis; the result of success being that it would influence and facilitate our approach to all the rest. I think this subject is of vast importance, because if the mechanical be the primary—chemistry, drainage, &c., must be secondary; and if you, neglecting the perfecting the primary, proceed to the secondary, why the result of your best efforts must be comparatively weak, imperfect, and profitless: unless you study to make the "great wheel" perfect, how can you possibly expect the little wheels "to do their duty?" You may analyse in chemistry for ever, and dig at drainage till doomsday; but except you render the prime-mover perfect, how can you expect the little wheels to operate with effect? Their efforts must be neutralised or rendered nugatory from the lack of perfection in that on which they depend. In another letter I wish to offer some remarks on the erroneous ideas entertained by the steam ploughman.

That question, the question of this letter which I wish to put to Mr. Huxtable, Mr. Mechi, Mr. Davis, and others as agriculturists; to Messrs. Ransome, Crosskill, Garrett, &c., as mechanists; and, to the agricultural chemists, is this "What would be the profits to cotton and other manufacturers on their products, at present prices?—What would be their profits if you withdrew the prime-mover they now employ, and compelled them to move the 'great wheel' of their machinery by the living horse? By the aid of this latter power what would be the profit on cotton goods at the present prices?" If any of these gentlemen will kindly answer me this question I shall be much obliged. I need scarcely add that nothing whatever is to be subtracted from the present economy of their manufactures, but the power, that power being merely replaced by the farmers' power. This done, what would be their profits? *C. B., Heacham, Norfolk.*

Home Correspondence.

Flax Cultivation in 1758—(from a letter dated Londonderry, 13th Dec., 1758).—Having observed with great concern the difficulties which we lie under in our linen manufacture, through the neglect of preserving our own Flax seed, the immense annual expense we are at in importing it from America or the Baltic, and the danger we are in some years threatened with of a total failure of this our staple manufacture either by accident at sea, or the importation of bad Flax seed; I determined to make an experiment whether we might not preserve as good Flax-seed at home as any which comes from abroad, and at the same time save the Flax, and make it fit for manufacturing early in the same season. To this purpose I applied to Mr. David Melvill, at the Linen-hall, for his advice and direction, who approved of my setting apart one of my fields near Londonderry, containing 3 Scotch acres, which is very little more than 2½ acres plantation measure. I sowed my Flax-seed in April, and most strictly adhered to Mr. Melvill's direction in the whole culture and management of my Flax crop—in preparing the land, sowing, rolling, pulling, watering, and beetling the Flax, as also in preserving the seed. In consequence of this I have nine hogsheads of as good Flax-seed as any ever imported from Holland or the Baltic, which I can sell at 2*l.* 15*s.* per hogshead. I let the Flax grow till it was full ripe. It was, in length, from 3 to 4 feet. After fermenting and beetling, it was made up into bundles weighing 20 lbs. each; of these I had 658 bundles, which, being dressed, each bundle turned out 5¼ lbs. of clean Flax fit for the market, which I can sell at 5*d.* per pound, and I am well assured that it can easily be heckled to spin into ten-hank yarn. I had the misfortune to meet with bad weather when the seed was ripe, which obliged me to defer pulling the Flax for nine or ten days, whereby near one-third of the seed was lost. I lost as much of the Flax as would make 100 bundles by the accident of horses breaking into the field. Notwithstanding these losses I have saved nine hogsheads of Flax-seed, and 658 bundles of Flax. The whole produce of the field comes to 91*l.* sterling, out of which, deducting 31*l.* for the rent, seed, culture, and expense of saving the seed and Flax, the net profit is 60*l.* I kept an exact account of all the expenses, and I make a large allowance. The success I had in this, my first attempt, encourages me to prepare and sow 7 acres with Flax-seed in the same manner this ensuing season. I have engaged above 40 of our farmers to come into the same method, and I hope this success will encourage all our farmers to pursue it, as they will thereby not only save a sufficient quantity for the use of the kingdom, but also will soon, from experience, be convinced of the superiority of ripe Flax over the unripe (as it is now generally when pulled). It will have a much greater produce, will be easier manufactured, and will be of considerable advantage in every branch of the manufacture. By the method I pursued, the great objection from stacking up the Flax, and postponing the manufacturing it for a season is removed; for I had all the seed saved in August, and the Flax prepared for the market in September and October, and I apprehend if this method of Mr. Melvill's is pursued, it will be an immense saving, and of the utmost advantage to the kingdom in general. *Anon.*

Wages of a Lammermuir Shepherd, 1850.—

1. House and garden, with peats cut by servant, and carted by master	£2	0	0
2. 1000 yards Potatoes, in 30-inch drills, at 6*d.* per score yards	1	5	0
3. Cow's keep per annum	5	0	0
4. 35 sheep grazed with master's, at 7*s.*	12	5	0
5. 80 imperial stones of Oatmeal, at 1*s.* 3*d.* per stone	5	0	0
6. 1½ quarters Barley, at 17*s.* 9*d.*	1	6	7½
7. Half-quarter of Peas or Beans	0	12	0
Value in Money	£27	8	7½

A Lammermuir Farmer. [Do you give no money at all?]

Wages of Labourers.—There is one point on which I cannot refrain from saying a few words—the practice of keeping a sort of open tap to farm labourers in cider countries. Take for example Worcestershire and Herefordshire, where the allowance varies from 1 to 10 gallons daily! Why a man might as well keep a public-house, and better too, because there would be a profit hang to that; whereas, here, it is all bother and no pay. Nay, even the failure of the cider crop is no advantage to the poor farmer; for drink he must find, either in meal or malt, as the saying is. I am afraid to name the sum which a farmer in this county once told me it cost him for malt to make good the deficiency in his stock of cider. The practice is got to such a pitch, that no conscientious man would willingly encounter it—how much less a teetotaller! I was once set to look out for a farm in this neighbourhood for a friend. I saw several; all boasting as an advantage of the oceans of cider and perry they could produce. Poor fellow! what was he, a regular out and outer in the temperance line, to do with such commodities? He had over and over again denounced them by retail; was he to go into the trade, wholesale, as it were. No, he wanted a farm, but (as they say of married men), "without incumbrance." Another friend of mine, then a resident in Lancashire, once bought an estate in Herefordshire, which he farmed himself. He resolved to break the neck of this cider swilling, and the way he set about it was this: he turned off all the old Herefordshire hands, and imported in their places a lot of Lancashire men, to whom, as an inducement to come, he was to pay much higher wages than the others, but not a drop of cider; a bargain the new settlers very readily agreed to, inasmuch as it was an indulgence they knew very little, and affected to care still less about. In course of time, however, they got a taste of the cider, and from tasting they came to downright guzzling, till their master found they were even worse than their predecessors; for they drank as much, or more, besides receiving extra pay for professed abstinence from the unclean thing! I dare say you have seen a lot of new bricks dipped into water to prevent their absorbing too rapidly the moisture of the mortar. And what a sight of water they will suck up surely! just so was it with these Lancashire bricks. They did imbibe wonderful, that's a fact; and the discovery was soon made, that of the two evils, the old one was the least: a sort of counter-revolution was the consequence, the former dynasty being restored, but with certain wholesome restrictions as to amount of allowance per diem. *Peter Stubbs, Gloucester.*

Societies.

ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

LECTURE ON SOILS AND MANURE.

Professor Way, Consulting Chemist to the Society, repeated, at the request of the Council, his lecture "On the Absorptive Properties of Soils in reference to Manure," on Wednesday, the 15th of May, in the presence of a large number of the members, at the House of the Society in Hanover-square. The chair was occupied by Mr. Raymond Barker, one of the Vice-Presidents of the Society; and among the company present we remarked Lord Braybrooke, Lord Bridport, Lord Camoys, Lord Charles Manners, M.P.; Hon. R. H. Clive, M.P.; Hon. Henry W. Wilson, Hon. J. J. Carnegie, Sir Robert Price, Bart., M.P.; Sir R. P. Jodrell, Bart.; Mr. Alcock, M.P.; Mr. John Bethell, Mr. Burke, Mr. W. G. Cavendish, M.P.; Mr. Chadwick, C.B.; Colonel Challoner, Mr. Clavering, Dr. Drummond, Mr. Dyer, Mr. Overman, Mr. E. Parkins, Mr. Pendarves, M.P.; Mr. Beauchamp Proctor, Prof. Sewell, Prof. Simonds, Mr. Slaney, M.P.; Mr. Stansfield, M.P.; and Mr. Wilson, of Stowlangtoft.

Prof. Way commenced his lecture by giving a short statement of the circumstances which had led him into the train of investigation that had resulted in the important facts to which he was again invited by the Council to call the attention of the members. About two years ago, the Rev. A. Huxtable had stated to him that urine, by its passage through certain filtering substances, might be so entirely deprived of its colouring matter and characteristic odour, as to be rendered in every respect, to the senses, as tasteless, inodorous, and colourless as spring water. About the same time, Mr. Thompson, of Moat Hall, related to him the singular effect of soils in arresting the volatile alkali, ammonia, when brought in contact with them. Prof. Way was not only deeply interested in these statements, but totally unable to account on chemical principles for the effects thus simply produced; and of so high a degree of importance did he consider them, as fertile in a series of new facts, which would lead not only to new views of chemical combination, under peculiar mechanical conditions, but also to a modification of the theory of the mode by which manure is reserved in the soil until required as food for plants, and to immediate applications in practical agriculture; that he lost no time in verifying these results, and in endeavouring to account for their occurrence. As he proceeded in this path of inquiry, the new facts, as they rapidly succeeded each other, were such as would have been totally unexpected on the ordinary principles of combination; and which would eventually, he had no doubt, lead to new modes of regarding chemical action when taking place under certain mechanical conditions. He had pursued these researches with undiminished interest and attention, until at length his results were brought to that connected and established form in which they could be laid with confidence before the Society, and the details submitted to the Journal Committee for publication. He had the great satisfaction of finding that Mr. Thompson also had pursued his inquiries on the same subject, and would be able to submit the results of his experiments to the Journal Committee. Carried out independently of each other, as Mr. Thompson's experiments and his own had thus been, it was highly gratifying to him to believe that the results obtained in each case would be found to be nearly the same, and their truth accordingly confirmed in the most satisfactory manner. Prof. Way then proceeded to show experimentally the power of finely-divided clay soils to abstract the colouring matter and smell from logwood water, London porter, putrid urine, infusion of Flax, and tank water; and to explain the probable manner in which such soils decomposed the salts of ammonia, arresting that alkali and replacing it by lime; and also by what a beautiful provision of Nature the substances valuable as food for plants were retained in the soil, while other results of such decomposition were allowed to pass through it, one of those provisions in the operation of natural laws which strikingly arrest the attention of the most inconsiderate, and mark the beneficence and wisdom of the Creator, of whose works only perfection is the unvarying attribute. Professor Way then congratulated the Society on the manner in which his Royal Highness Prince Albert had so strongly drawn public attention to the purification of the sewage of towns and the application of the manuring matter contained in it to the purposes of agriculture. He also referred to a great advantage possessed by the plan of upward filtration adopted by his Royal Highness for carrying out these important national objects, namely, the avoidance of that incrustation formed on the surface of downward filters by sewage water on clay, which retarded in a considerable degree the progress of percolation. Professor Way then proceeded to discuss the various conditions under which the new principle under consideration was found to prevail, and the explanations it furnished in the various practical applications connected with irrigation, artificial manuring, and sewage or tank water. As these details are similar in their character to those which formed the subject of the former lecture on the same subject, on the 20th of March last, and were fully reported to our readers in our first publication after that date, it will not be necessary to repeat them. The lecture on this occasion, as on the former, excited the most lively interest among the members present, and, at its close, an unanimous vote of thanks was passed to Professor Way for his kindness in repeating the lecture, on the motion of the Hon. J. J. Carnegie, seconded by Sir

John Johnstone, who concurred in expressing a hope that the Council would make arrangements for the continuance of these important lectures, and that Professor Way would kindly continue to favour the members with their delivery.

Mr. CHADWICK, referring to the communication made to the Society at a preceding meeting from Prince Albert, said it must be a matter of satisfaction that the direction taken by the studies of such men as Mr. Huxtable of ascertaining for the benefit of agriculture what the earths would detain, of the matter conveyed in solution or suspension by liquid manures, had been independently comprehended in the mind of his Royal Highness, with yet wider interests, when he had given his own attention, and had directed the attention of the Society to the conversion of the sources of pestilence into the means of fertility. He (Mr. C.) might state to the Society, that his colleagues of the General Board of Health, deemed it an event of great importance to their proceedings, that the Society had under these high auspices opened practical investigations so important to the populations of towns as well as of the rural districts. The fact must have been in the Prince's high view and forecast, that these investigations would tend to make manifest to the town and the country their mutual dependence, abate differences, and strengthen common interests. His Royal Highness would no doubt regard with much interest all well directed experiments upon the subject. Under the necessities of considering in what way the manures which encumbered the worst-conditioned districts of towns could be disposed of, he (Mr. Chadwick) had read all he could find, and enquired as to what had been done, not only in this country but in Belgium and other countries, especially with the liquid manures, by horticulturists as well as agriculturists; he therefore felt himself qualified to speak as to the originality of the views now propounded by their Professor. It had been hitherto the general belief that liquid manures were merely deposited in the soil in slight suspension, and that their effects were transient. In displaying the chemical action that took place, and the conversion of the manure into the permanent and insoluble form, which was not to be washed away by the first shower, a very serious obstacle to the use of sewer manure had been removed. At Liverpool and some other places it had been objected, that inasmuch as the sewer manure could only be used upon the growing crops, that is to say during short periods in the year, enormous reservoir room must be required, and the storage of sewer water must of course be a nuisance, and therefore it was argued it must still be thrown into the river. Now the Professor, in showing the greater permanence of the effect of the manure, had proved that it might be applied throughout the whole of the year, with no other interruption than the frost. He (Mr. C.) could give an instance in corroboration of the Professor's view. Trials of sewer manure were promoted by Lord Ellesmere on some farms near Manchester, for one year, but notwithstanding eminent success the first year, some of the farmers in despair, or in pet, during the second year would do nothing with the land; to the surprise of all parties, however, the fields manured with the liquid manure gave as good a crop the second year as those which had been heavily top-dressed with solid manure, and even as those which had been recently dressed. Professor Way, in showing the immediate chemical action of the manure upon the earth, or of the earth upon the manure, had shown how unfounded was the objection to its application, near the town, arising from the apprehension of the nuisance it must create. He Mr. C. could offer facts in corroboration of the Professor's conclusion. It was found in the distribution of liquid manure, containing three loads of night soil, in about seven times its bulk of water, as a dressing per acre. If such a quantity of human fæces were spread upon land undiluted, they must be aware what a nuisance it would be for days and weeks. Parties were surprised to find, that, within little more than half an hour, after the delivery of the liquid manure upon the land they might pass over it, without perceiving what had taken place; and so it was with sewer manures, distributed in a high state of decomposition. He hoped, however, that it would shortly be shown how erroneous in an engineering point of view was any system of house and town drainage, which occasioned the retention of such matter underneath habitations in a state of decomposition (and waste), and which did not remove it clear even from beneath from so extensive a site as the metropolis before it could pass into the state of decomposition. Even in its present usual state of delivery the effect of the earth upon it, and the immediate suppression of smell, was quite remarkable when the manure was so applied in the liquid form as to favour the chemical action of the earth. Persons at the west-end were accustomed to complain, and properly, of the effluvia arising from the solid manure spread on the surface of the parks. This manure, with three or four-fold fertilising powers diluted in water, might be applied in the liquid form early in the morning, and persons passing over them soon after would be unable to detect what had taken place. The application of sewer manure might even now be proposed as a means of obviating the nuisance arising from the common methods of manuring in such cases. The light opened upon them by the Professor's experiments on the powers of soils to detain matters in solution or suspension in common water were of the highest order of importance. Those who had read the older writers on irrigation would be aware how faint was the perception of the cause of the different fertilising powers of different waters, some ascribing them to warmth solely, others to rapidity of its motion, and others to the simple absorption of the water; on all this obscurity light was now dawning. The researches displayed before them had an important bearing on the supply of water to towns. He had considered the determination of what the earth would detain, of the matter carried into it by the fermentation of the surface rain water, so important as bearing upon the improvement of the water supply of towns, that he had proposed the subject as one for the investigation of the new college of chemistry, when it was first instituted; but it was objected that it would require the labours of a multitude of chemists. It was due to Professor Way to say that he had shown how much could be accomplished by the well directed exertions of a single hand. In showing how large a proportion the clays would, by thorough drainage, detain of what was good for the land, namely the lime contained in water, he displayed a valuable quality of depuration for the water supplies of towns in arresting the ingredients which were bad for them, more especially the lime, which rendered water hard, which diminished its solvent power for food, rendered the washing of the skin disagreeable, and the washing of clothes, by the increased quantities of soap required, more expensive. He might mention, for the information of the Society, that the investigations conducted under the General Board of Health, for the improvement of the sanitary condition of towns, strongly displayed the superiority of surface drainage waters over well and river waters. Out of upwards of 400 different waters, from different places and sources, examined under their directions, the general results stood thus:—the deep spring or well waters were of 20 degrees of hardness; the river waters were of 13 degrees of hardness; and the land drainage waters were of 5 degrees of hardness. These last degrees denoted the general rank of the land drainage water in relative purity when properly collected; they formed the ground for expectation of wide arrangements for the relief of land from the surplus water which encumbered it and impeded its fertility, for the service of the town districts which required it, and which would return it with powers of fertility for the disposal of the agriculturists. The researches opened by the Society would serve for the guidance of these great processes.

Mr. SLANEY, M.P., thought it very fortunate that his colleague, Mr. Chadwick, was present on that occasion, to bear his high testimony, as a practical authority on every question re'ating to the sanitary condition of towns, to the value of Prof. Way's researches. As Mr. Chadwick's coadjutor on the commission relating to that enquiry, he (Mr. Slaney) had himself visited many towns in the kingdom, so favourably situated for drainage, that their fall alone would, by very slight direction, carry off the whole of their sewage, which would bring great quantities of land throughout the country into a state of fertility. He hoped experiments would be made on this subject in the mode so clearly pointed out by Prof. Way. He (Mr. Slaney) had himself already made such an experiment on a piece of sour land of his own in Shropshire, which he had drained, subsoiled, comminuted, and manured; and the result was such a crop for the first time as to excite the astonishment of his neighbours. According to the principles laid down by Prof. Way, manuring might take place at any time throughout the year, excepting during the prevalence of frost and rain; thus increasing the wealth and strength of the land, and at the same time removing from the poorer classes the immediate cause of many of the evils affecting their health and comfort. Mr. Slaney then ventured to offer two suggestions: 1. Whether an instrument, similar to the saccharometer for ascertaining the amount of sugar in wort, could not be contrived for ascertaining the amount of manuring matter in sewage or tank water; so that by a preliminary testing with such an instrument, the strength of the liquid manure might be obtained by inspection, and the number of gallons or tons at once determined, which it would be requisite to apply to a certain quantity of soil of the same quality, and for any given purpose. 2. Whether the rate could not be ascertained, at which equal successive depths of soil have the power of taking up manuring matter.—Col. Challoner agreed with Mr. Slaney, in hoping that experiments would be tried on this subject. He dwelt on the advantage he had himself already derived from the former lecture. He had directed his farm-bailiff to collect together the scrapings of his yards, the bottom of ditches, peat, and earth; and he had so arranged his tank that every drop of liquid manure was caught. He had directed heaps of manure to be formed of these substances, with alternate layers of clay intervening, which he hoped would arrest the manuring matter as it became soluble, and attempted to pass through it, and thus obtain for him a much larger amount of that valuable substance than he had hitherto been able to secure, as the liquid would in that case pass out as clear and tasteless as water. A test would thus be afforded of the efficiency of the plan, which was so simple that any farmer might, by its means, avail himself of Prof. Way's researches, and satisfy himself of the correctness of his theory. He himself thanked Prof. Way for what he believed would prove a future advantage to practical agriculture.—Mr. Towers, of Weald Hall, stated that he had extensive trials in hand, on his estate in Essex, on the application of every kind of artificial manure and sewage he could meet with; and he would be happy to receive Professor Way and other members of the Society who would favour him with a visit, and submit to their inspection the arrangements he had made for those trials. His land consisted of singularly poor soil, in some parts sand and clay, in others wholly sand. He conceived the sewage of towns to contain untold wealth to the land, if properly deodorised by charcoal or other substances, and rendered in a fit state to be shipped from the place of manufacture to different ports along the coast of the kingdom. He agreed with Mr. Slaney in the necessity for draining, subsoiling, and manuring, as preliminaries to good cultivation. He concluded by referring to the experiments of his neighbour, Mr. Harvey, in ascertaining the value of a mixture of urine and distillery wash, as a liquid manure. He had already found it very powerful in its operation, but so great a nuisance in its present state as to render its application on the land inconvenient to his neighbours.—The Chairman concluded the proceedings by referring to the arrangements made by the Council for the delivery of these lectures; and the high gratification he had felt in again listening, on that occasion, to the important lecture of Professor Way, to whom he expressed personally his best thanks.

AUDIT OF ACCOUNTS.—The half-yearly audit of accounts was held at the Society's house, on Friday, the 17th inst.: present, Colonel Challoner, Mr. Raymond Barker, and Mr. Henry Blanshard, on the part of the Finance Committee; with Mr. Thomas Knight, of Edmonton, and Mr. Robert Beman, of Donnington, two of the appointed auditors on the part of the Society.—The whole of the accounts connected with the half-year ending December 31, 1849, having been laid before the audit, they were duly examined and certified as correct, under the signatures of the auditors then present; the total receipts during the half-year (including the balance in hand) being 5517*l.* 12*s.* 2*d.*, and the total payments 4474*l.* 11*s.* 9*d.*, leaving a balance in hand at that date of 1043*l.* 0*s.* 5*d.*

SPECIAL COUNCIL.—A Special Council, for agreeing to the Report to be made to the ensuing General Meeting of the Society, was held on the same day, Mr. Raymond Barker, V.P., in the chair. The various topics of business transacted by the Council, since the previous General Meeting in May, having been taken into consideration, the Report, on the motion of Sir Charles Lemon, Bart., M.P., seconded by Colonel Challoner, was finally agreed to, and ordered to be laid by the Secretary before the General Meeting, to be held on the followiug Wednesday.

GENERAL MEETING.

The half-yearly general meeting of the members was held at the Society's House, in Hanover-square, on Wednesday last, the 22d of May; Mr. Raymond Barker, V.P., succeeded by the Marquis of Downshire, President, in the chair. On the motion of Colonel Challoner, seconded by Mr. Druce, of Ensham, the Duke of Richmond was unanimously elected President of the Society for the year ensuing the Exeter meeting to be held in July next. Mr. Barker laid before the meeting his correspondence with the noble Duke on this subject, in which his Grace expressed the satisfaction it would give him at all times to obey the call of the Society to any station in which they thought it might be in his power to aid its laudable objects; he also expressed his regret that temporary indisposition prevented the personal attendance he had hoped to give at the meeting on that day.—Colonel Challoner, in proposing the Duke of Richmond to thus fill, for a third time, the highest office in the Society, passed a high eulogium on the noble Duke's long devotion to its interests, and to his powerful co-operation in promoting, on every occasion, its welfare, and the successful carrying out of its national objects.—On the motion of Lord Camoys, seconded by Mr. Brandreth, the Trustees of the Society were unanimously re-elected. On the motion of Mr. Grantham, seconded by Mr. Dyer, the Vice-Presidents of the Society were unanimously re-elected. The meeting then proceeded to the election of 25 members of Council; and the Chairman having named Mr. Barugh Almack, Mr. T. Knight, and Mr. G. Dyer, as Scrutineers, who retired with the balloting lists into one of the committee rooms, those gentlemen on their return from this scrutiny, declared the house-list of the Council, to have been unanimously adopted by the meeting, and the following 25 members to have been elected on the Council for the two years ensuing the Exeter meeting, namely, Lord Ashburton, Mr. John Beasley, Mr. Henry Blanshard, Mr. French Burke, Lord Camoys, Mr. W. G. Cavendish, M.P., Mr. S. Druce, Mr. R. Garrett, Mr. Brandreth Gibbs, Mr. Grantham, Mr. Fisher Hobbs, Mr. Jonas, Mr. Kinder, Mr. Lawes, Sir Charles Lemon, Bart., M.P., Hon. Capt. Dudley Pelham, R.N., M.P., Prof. Sewell, Mr. Shaw of London, Mr. Shaw of Northampton, Mr. Sheridan, M.P., Mr. Sillifant, Mr. Slaney, M.P., Mr. Robert Smith, Mr. H. S. Thompson, and Mr. Jonas Webb.

Mr. Hudson, the Secretary of the Society, by direction of the Chairman, read the following Report from the Council.

REPORT.

The Council have the satisfaction of reporting to the members at their present half-yearly meeting the most favourable condition of the Society, at the completion of the 12th year from its foundation. Although in point of numbers its census is diminished by 127 members since the last general meeting, such diminution is in a great measure more apparent than

real; for the average number of members periodically lost to the Society by death being deducted, the remaining names removed from the list will be found to be those of parties who have joined the Society at its country meetings for the local and temporary purposes only of the occasion. On the other hand, members of a permanent character, who feel a deeper and more general interest in the welfare of the Society and the promotion of its national objects, are constantly elected into its body, and are gradually increasing its list of efficient members. The Society at the present time comprises 5261 members, namely, 90 life governors, 169 annual governors, 627 life members, 4356 annual members, and 19 honorary members.

The funds of the Society are in a highly satisfactory state; every claim against it has been constantly discharged as it has become due; an ample cash balance lies available for current purposes in the hands of the bankers; and the invested capital has at length approximated to the gross amount of those sums which have been received from time to time, since the commencement of the Society, as compositions for life. The arrears of subscription, so long the source of trouble to the Finance Committee and of irregularity to the income of the Society and its means of usefulness, have at length, by the persevering attention of that Committee, been brought under salutary control, and placed in train for final settlement. The names of defaulters, whose tardy fulfilment of their obligations to a Society into which they had voluntarily entered, and whose unwilling compliance with the chartered regulations of the general body, have thus occasioned so much inconvenience to the Society and injury to its available income, have been gradually removed from the list of members, and replaced by the names of willing contributors to its funds, who cheerfully acquiesce in a recognition of the validity of general laws, enacted, under the charter of the Society, for indiscriminate application to all its members, and for carrying out by united efforts the great and useful objects of their incorporation. The Council, in dealing with this question of arrears, have accordingly felt it their bounden duty to the body at large, acting as their representatives and the appointed guardians of their common interest, to take the most decisive measures for bringing the settlement of this long-contested question to a final issue, by an appeal to the county courts of the kingdom. The administration of the Society being situate in London, and various obligations having been incurred within the jurisdiction of the metropolitan courts, the Council have commenced their actions by summoning to those courts such of their members in and about London as are more than two years in arrear of their subscription, and who are known, or are found on enquiry, to be in circumstances to justify, in their cases, the full enforcement of the claims in question. The summonses having been issued, the parties, on receiving them, have, with a single exception, declined offering any further opposition to the legal claim thus made upon them on the part of the Society, and have paid into court the whole amount of arrears, as well as the costs incurred. In the single case referred to, the summons was not answered by the defendant's either discharging the claim or making his appearance, and the action accordingly took its course; when His Honour the Judge of the Westminster County Court, in which the case came on, having heard the grounds on which the action was brought, as well as the evidence adduced of due election and membership, and having ascertained the powers of the Society conferred upon it by its charter, at once decided on the validity of the Society's claim, and made a formal order of court, that the amount of arrears claimed, with the accumulated costs incurred, should be paid by the defendant on or before that day week. When the Council shall have thus cleared off the London list of arrears they will feel it to be equally their duty to proceed in a similar legal manner to summon parties resident in the different counties of the kingdom whom they shall ascertain to be in a condition fully to meet their liabilities, and who by the time of such issuing of summons shall have failed to discharge their just obligations to the Society. The Council, however, having now established the principle on which they have sought to recover these arrears of subscription, and being thus fortified by a judicial decision which leaves no doubt of the validity of the claim of the Society against all its members, trust that the remaining defaulters will no longer evade their obligations, and impose upon the Council the invidious task of enforcing the payment of these arrears in a court of law—a final appeal as painful to the Council to make, as it must be inconvenient and derogatory to the parties in arrear to become subject to. When the arrear list shall have thus been disposed of, the income of the Society will lose its anomalous character, and correspond in actual amount to the payments due from the willing contributors, of which the Society will then consist; and the funds being thus established on a regular basis, the estimated income and expenditure of the Society may at all times be satisfactorily adjusted.

The Council have to report the favourable progress of the preparations for the country meeting of the Society, to be held this year in the city of Exeter, in July, in the week commencing on Monday, the 15th of that month, of which the Thursday will, as usual, be the principal day of the show. In order, however, to meet the wishes of the members and the public, heretofore so often expressed on this subject, that a longer period should be allowed for the due inspection of the live stock by all parties attending the meeting than the single day hitherto devoted to that object, the Council have decided this year to try, as an experiment, the extension of that period to a day and a half—namely, on the Thursday, as formerly, and on the Friday from six o'clock in the morning till noon, when the stock will be at liberty to leave the yard; the result of which experiment will be a guide to the Council in their arrangement for future years. The entries for implements and stock for the Exeter meeting promise to be as numerous as for the previous country meetings of the Society; and the various railway companies have received the application of the Council for concessions in favour of the Society's exhibitors in a spirit no less courteous than in former years, and there is every probability of an extension, on their part, of privileges no less liberal, thus aiding by their powerful co-operation the national objects of the Society. The Council have accepted from Mr. Slaney, M.P., a renewal of his prizes for ploughs to cut out to a certain extent, and to fill in, drains; and from the South Devon Association a schedule of prizes for their local breed of stock, known as the South Hams cattle; all of which prizes will be open to general competition, under the general regulations of the Society. The Council have also accepted the kind offers of Sir Thomas Dyke Acland, Bart., M.P., and Mr. Turner, of Barton, to submit to the members, during the period of the Exeter meeting, the construction and operation of their catch and water-meadows, and to take measures for explaining on the spot, to all such visitors as will favour them with their company on the occasion, the theory and practice of irrigation in Devonshire. Mr. Hamond, of Westacre Hall, in Norfolk, has accepted the new appointment of Steward-elect of Implements at the Exeter meeting, agreeably with the arrangement adopted for the first time this year, by which an opportunity will be afforded to the junior steward of implements to qualify himself for the duties and details of that department; and Mr. Jonas, of Ickleton, in Cambridgeshire, has accepted the appointment of a steward of cattle, at the country meetings of the Society, in the place of Mr. Kinder, who, after a long period of valuable services to the Society, retires this year by rotation from that office. The Council have again resorted to the same mode of appointing the judges for implements and stock as that of last year—namely, by requesting the members at large of the Society to favour them, at or before the present general meeting, with the names of parties proposed by them as judges, and on whose behalf each proposer shall be ready to certify, on his own personal knowledge, that they are in every respect qualified and willing to act as judges in the particular classes for which they may be respectively recommended, and that they are unconnected with any exhibitor of stock or maker of implements, and have no direct personal interest in the stock exhibited, as breeders of any of the animals upon which they may be called upon to adjudicate; and by referring these nominations to special committees, who will select and recommend to the Council the most fit persons, in their opinion, to fill respectively the office of judge in the particular departments and classes of the Show. The Council, however, feeling, as they do deeply, how much the character of the Society, and the value of its prizes, depend on the talent, experience, and integrity of the judges by whom the awards are made, and from whose decision there is no appeal, are fully sensible of the imperfection attendant on all the modes hitherto adopted for their nomination, selection, and appointment; and they are accordingly most anxious to receive and adopt any means that may be suggested to them, by which every just cause of suspicion and complaint, on the part of the exhibitors, may be obviated for the future. The remote position of the Western District, and the strong desire to receive and profit by the means of agricultural improvement with which the presence of the Society has hitherto been accompanied; the direct communication by railway, from every part of the kingdom, to its different chief towns, and by sea to convenient ports on its northern and southern coasts; the varied agricultural character of the south-western counties, of which that district is comprised; and the peculiar attractions offered to general visitors by the county of Devon alone, in which the meeting will be held; are circumstances that will no doubt conspire, with the especial and more immediate objects of the occasion, in drawing together, in the city of Exeter, a very large and interesting meeting. The parties composing this numerous assemblage, by their personal communication and interchange of sentiment on topics of practical agriculture, will be enabled to promote among themselves a spirit of inquiry by mutual comparison of local systems and their results, and at the close of the meeting will carry back to their different neighbouring or distant residences throughout the country, that conviction of the necessity of the strictest economy of time and means, in every department of husbandry, which will lead to the adoption of modes of management by which the most effective results may, in every case, be obtained at the least expenditure of time and money: a mutual conference on topics of deep practical interest to the agricultural community, which it has been one of the great objects of the Society to recommend and promote, through the medium of its country meetings.

The Council have accepted the invitation of the royal commission for the exhibition of the works of industry of all nations in 1851, to hold a show of cattle in Hyde Park in that year; but finding that the royal commission have included in the arrangements for their own exhibition a department for agricultural implements, the Council, with a view of not interfering with this department of the royal exhibition, have resolved to omit the implement portion of the Society's show in 1851, and to confine their exertions entirely to their show of cattle, as invited by the royal commission, and to take every means to render that show interesting as an exhibition of breeding stock. In order to meet this new arrangement for the year 1851, the Council have re-adjusted accordingly their districts for the country meetings of the ensuing four years, and have agreed to the following rotation:—

1851, Middlesex District, consisting of the county of Middlesex.
1852, South-Eastern District, comprising the counties of Kent, Surrey, and Sussex.
1853, South-Wales District, comprising the whole of South Wales, with the addition of the counties of Gloucester, Hereford, Monmouth, and Worcester.
1854, East-Midland District, comprising the counties of Leicester, Lincoln, Nottingham, and Rutland.

The Council trust that, as so large a portion of the country members of the Society, from every part of the kingdom, will probably visit London next year, the circumstance of the Society's show of cattle being held in Hyde-park will meet the wishes of a great majority of its body, and promote the general objects of the whole; while the postponement of the Society's accustomed country show for one year, in the pre-arranged rotation of districts, will prevent any failure that might probably occur in holding it at a time when another exhibition will be drawing public attention, in an especial manner, to the metropolis.

The Council have received from the Chemical Committee the annual report of Professor Way, the Consulting Chemist to the Society, on the satisfactory progress of the chemical investigations in his laboratory, of which the results will be published in the Society's Journal; and on the great increase, within the last quarter, of chemical analyses required for agricultural purposes by members of the Society. The Council have adopted, on the recommendation of that Committee, the following subjects for investigation during the ensuing 12 months:

1. The continuation of the investigation into the absorptive properties of soils, including clays.
2. The nutritive properties of the Grasses.
3. The agricultural properties of the chalks and marls.
4. The chemical properties of water, with a view to its effects on irrigation, and on the health of animals.

The members have already been favoured by Prof. Way with three very interesting lectures during the present year: the first, on Guano, and on that extensive adulteration at present prevailing in it, which entails so great a disappointment and pecuniary loss on the farmer who purchases the spurious article; the second, on the absorptive powers of soil in reference to manure, when a new faculty in certain soils was experimentally elucidated, by which manuring matter is arrested by them from liquids, and retained in intimate combination until required as food for plants; the third, on butter and cheese-making. In consequence of the great interest excited by Prof. Way's second lecture, he kindly consented to repeat its delivery, previously to laying before the Journal Committee the full details connected with the history of the important discovery to which it had reference, and the experimental researches by which the truth of that discovery has been extended and confirmed.

The Council have been honoured by his Royal Highness Prince Albert with communications on the result of an attempt to naturalise a hardy and prolific race of sheep from Thibet at her Majesty's farm at Osborn; and on a plan for turning the sewage of towns into a source of national wealth by its application to the purposes of agriculture. They have also been favoured by the Earl Grey, H.M.'s Principal Secretary of State for the Colonial Department, with a communication on asphaltic manure from Vice-Admiral the Earl of Dundonald, Commander of H.M.'s Naval Forces on the West Indian Station.

The Council, in conclusion, beg to remind the members of the Society of their privilege to attend the weekly meetings of the Council; the first Wednesday, however, of the month being excepted, when only the legislative business of the Society is under consideration, and the admission is consequently confined to members of Council and Governors. At the weekly meetings discussions take place on the communication of personal experience on topics of practical interest in agriculture; and on those occasions the presence and co-operation of the members generally of the Society are at all times desired and esteemed as a favour by the Council.

By order of the Council, JAMES HUDSON, Secretary.

On the motion of Sir Hugh Richard Hoare, Bart., seconded by Mr. Barugh Almack, this report was unanimously adopted by the meeting.

The Marquis of Downshire, the President, then took the chair, when Colonel Challoner, chairman of the Finance Committee, proceeded to lay before the meeting the report of the Auditors, and to make a few remarks on the state of the arrears of subscription, and the means of recovering them, agreeably with the special orders of the Council. He took that opportunity of referring to the satisfactory arrangements of the documents of the Society, placed by the Bye-laws under the charge and custody of the Secretary, by which every portion of the correspondence could at once be produced which had taken place at any time with members against whom actions were brought in the County Courts, and all other documentary evidence required in court to establish the due election and membership of any defaulter under those circumstances. The advantage of this arrange-

ment and ready production of papers had already proved of high value in each case, and led to the payments of arrears claimed. After the decision in the Westminster County Court, he thought there would now be no doubt of the Society's claims, or of the necessity of the Council enforcing them.

On the motion of Colonel Challoner, seconded by Mr. Thomas Rowlandson, the best thanks of the meeting were voted unanimously to the auditors, for their care in auditing the Society's accounts. Mr. Knight returned thanks. He had the satisfaction of informing the members that the accounts of the Society were so admirably kept, that there was not the slightest trouble in comprehending or examining them; on the contrary, that the auditors found it a pleasing task to audit them.

On the motion of Mr. Raymond Barker, seconded by Mr. Fisher Hobbs, a vote of thanks was passed to Prof. Way, for the kind manner in which he had taken the trouble of delivering three valuable lectures to the members during the present year. Mr. Barker having expressed his sense of the great scientific value of those lectures, and Mr. Fisher Hobbs having borne his testimony to their great practical utility, the noble President put the question from the chair, with his special amendment that the thanks offered should be "cordial" ones, and the motion was carried unanimously.—Prof. Way returned thanks; expressing the gratification that it gave him to find that his application of science to the purposes of agriculture were approved by the practical farmers of the country, of which on that occasion Mr. Fisher Hobbs might be regarded as the representative. It would always give him pleasure, whether officially connected or not with the Society, to aid in the advancement of the great art they were that day met together to support.

On the motion of Lord Camoys, seconded by Sir Richard P. Joddrell, Bart., the thanks of the meeting were voted unanimously to the President. The Marquis of Downshire acknowledged the compliment paid to him, and expressed the warm interest he felt in promoting the great objects of the Society, although distant engagements so frequently prevented his due attendance at its meetings. His lordship took that opportunity of stating to the members the result of his trials of azotised manure, and the great success attending its application.

Miscellaneous.

Rapid Butter-making.— The new American churn, patented in England, which was exhibited at the Mansion-house on Easter Monday, was again shown, a few days since, at the Ship Tavern, Water-lane, Tower-street, in presence of several gentlemen connected with the butter trade, and Dr. Ryan, of the Polytechnic Institution, when from four quarts of cream and two quarts of London sweet milk it produced 5 lbs. of butter of excellent quality and flavour. The result elicited unqualified approbation from the gentlemen present.

On the Growth of Oats.—Knowing that before grain ripens, much of its nutritive power remains in the stem, and having this unpropitious climate to deal with, it occurred to me that, if Oats were cut and made into hay some six weeks before the ripening of the grain, I should have a valuable product, avoid the risks of a late harvest, get the crop off the land in time to sow a second, or stolen crop, and last, but not least, make a larger money return from my Oat crop than if I allowed the grain to ripen. I therefore cut a certain acreage of Oats before any part of the straw ceased to be green and succulent; it was made into hay, not as hay is generally made, by exposing it to the bleaching and destructive action of sun and rain, but by putting it up into small stooks, as is done when the grain is ripe. It thus dried without exposure. This Oat-hay was (of course not threshed) given in the winter to sheep, cattle, and horses, and put in their racks side by side with the best Clover-hay. The animals invariably preferred it to the Clover-hay, leaving that untouched; they throve well upon the Oat-hay; and its high nutritive power is confirmed by chemical analysis. I carefully weighed from the same field a like acreage of ripened Oats and its straw, and the money produce of both kinds is as follows per Scotch acre:

An acre of ripened Oats gave 36 bushels of Oats, present value, say 2*s.* per bushel	£3	12	0
150 stones of straw, at 24 lbs. to the stone, 3*d.* ...	1	17	6
	5	9	6
Deduct cost of threshing	0	7	0
Net value of the acre	£5	2	6
An acre of unripe Oats gave 205 stone of hay, at 24lbs. to the stone, worth more than hay, which is sold here at 10*d.* per stone; say 205 stones, at 10*d.*	8	10	10

This leaves an increased product of 3*l.* 8*s.* 4*d.* over that of the ripened Oats; in addition to which I saved all the risk of a bad harvest, and cleared the ground in good time to put in a second crop. To those who wish to try this plan, I would recommend winter Vetches for the stolen or second crop, as I have proved they stand our winters without injury. *Martyn W. Roberts, Torlundy, Fort William, N.B., April* 17, 1850, *in Farmer's Herald.*

Education of Agricultural Labourers.—Now, on this point, I have no hesitation in speaking out, on the knowledge of cases that have come within my observation, as to the character and conduct of those who have left the school here, which has now been open nearly eight years; many who had been at shool for some time have now left, and are gone to different employments; some as domestic servants, and others in the usual employments of agricultural life; some as apprentices to trades; and I can affirm most conscientiously, that those who have remained longest in school, make the best servants, remain longest in their places, show more of personal respect to their superiors, have a feeling for greater physical comforts, and are in every social relation better and happier by the education which they have received. *Rev. R. Dawes, in his Remarks on the Educational Plans of the Committee of Council on Education.*

Calendar of Operations.

MAY.

SUSSEX FARM, *May* 20.—Wheat, on wet clay soils, looks yellow and sickly, but on dry land it looks tolerably well; Oats also begin to look rather blue; Barley looks more healthy, but is partly destroyed by the wireworm. The seeds intended to be cut for hay have the appearance of an average crop; the Potatoes come up regular, and as yet no appearance of being injured by the late frosts. The Hop bines grow slowly, but there are no signs of any damage being done as yet; a few fine days of sunshine would put everything a-going again. We have commenced to-day, as we have part of the ground ready to drill, dung, and sow Swedes, and, if time, we shall be engaged preparing the land and sowing for some time. The kinds we sow are principally Skirving's and purple-top, with a few of green-top and Laing's Swedes when too wet to sow Turnips. We shall plough Grass land, and sow Rape for autumn seeds for the sheep. Men are engaged turning up dung in the cattle yards, filling and spreading dung for the Swedes, hoeing Potatoes and Beans, and chopping and loosening earth round the Hop hills. Women are engaged hoeing Beans and Potatoes and pulling Thistles and Docks out of Wheat. *J. B.*

Notices to Correspondents.

CHICORY: *J C W.* On deeply cultivated, well-tilled and manured and clean land of somewhat clayey nature, sow now 4 lbs. of seed per acre in shallow rows 12 inches apart. They will be up towards the end of June, and must be singled out 8 inches apart, and hoed clean at intervals during the summer, and taken up in November.

CORN LAWS: *J B., J N.* The article on this subject must be declined: with thanks.

GRASS SEEDS: *An Old Sub.* Your question cannot have reached us, unless it is that answered to "G. A.," at page 286.

HYBRID GUINEA-FOWL: *Sylvanus.* There are such things as hybrids between the guinea-fowl and the domestic fowl, but they are extremely rare. Two such were lately living, and may still be alive, in the possession of the London Zoological Society, in the Regent's-park; and an account of two others, bred in America, that were surviving at the time the report was made, is given in the "Annals of Natural History," vol. xix., p. 210, by Dr. S. G. Morton. They have all proved barren monsters, of uncertain sex, with the male characters predominating. On what evidence does the friend of "Sylvanus" believe that his chickens are similar hybrids? Please let him describe them. They would be greatly valued by supporters of the "Vastigiarian" theory, who would rely much on the *possibility* of such crosses founding a new race, and on whose minds the long-recorded list of sterile mules seems to make no impression. *D.*

MANURE: *J B F.* Two cwt. of superphosphates mixed with two cwt. of guano will be an admirable manure for an acre of Swedes. "Hillyard on Practical Farming and Grazing" is a good book on the subject you name.

NETTING: *M A.* We have used the tar-twine netting, costing about 4*d.* per yard. The labour of shifting is much less than hurdles. They will last two years, and with mending, a third. Cocoa-nut fibre is spoken well of. We do not know it.

Markets.

COVENT GARDEN, MAY 25.

Vegetables are well supplied. Strawberries and Hothouse Grapes are both more plentiful, and the same may be said of Pine-apples. Walnuts and Chestnuts are abundant; Oranges and Lemons sufficient for the demand. Young Carrots and Turnips may be had at from 6d. to 2s. 6d. a bunch; some green Peas of good quality have been supplied from Cornwall and France. Frame Potatoes fetch from 1s. to 2s. per pound. Lettuces and other salading are sufficient for the demand, and so are Mushrooms. French Beans, Asparagus, and Rhubarb are plentiful. Cut Flowers consist of Heaths, Pelargoniums, Bignonia venusta, Primulas, Cinerarias, Azaleas, Lily of the Valley, Epacrises, Acacias, Lilacs, Pinks, Carnations, and Roses.

FRUITS.

Pine-apples, per lb., 6s to 10s	Oranges, per doz., 9d to 1s 6d
Grapes, hothouse, p. lb., 5s to 10s	— per 100, 5s to 12s
— Portugal, p. lb., 9d to 1s	Almonds, per peck, 6s
Strawberries, per oz., 4d to 1s	— sweet, per lb., 2s to 3s
Gooseberries, green, per half sieve, 5s to 7s	Walnuts, p. 100, 1s 6d to 2s
Apricots, green, p. pottle, 8d to 1s	— p. bush., 16s to 24s
Apples, kitchen, p. bsh., 4s to 6s	Nuts, Barcelona, per bush., 20s to 22s
— per 100, 6s to 12s	— Brazil, p. bsh., 12s to 16s
Lemons, per doz., 1s to 2s	Kent Cobs, 90s to 100s p. 100 lbs

VEGETABLES.

French Beans, p. 100, 2s 6d to 3s 6d	Onions, p. bushel, 7s to 9s
Asparagus, p. bund., 2s to 6s	— Spanish, p. doz., 1s 6d to 4s
Rhubarb, p. bundle, 3d to 8d	Shallots, per lb., 8d to 1s
Cabbages, per doz., 6d to 1s	Garlic, per lb., 4d to 8d
Cauliflowers, p. doz., 1s to 3s	Lettuce, Cab., p. sc., 2d to 1s
Broccoli, p. doz. bundl., 6s to 12s	Radishes, p. 12 hands, 3d to 6d
Greens, per doz., 1s to 2s	Mushrooms, p. pot., 9d to 1s
Sorrel, p. hf. sieve, 6d to 9d	Small Salads, per punnet, 2d to 3d
Potatoes, per ton, 60s to 120s	Fennel, per bunch, 2d to 3d
— per cwt., 3s to 7s	Savory, per bunch, 2d to 3d
— per bush., 2s 6d to 3s 6d	Thyme, per bunch, 2d to 3d
— frame, per lb., 1s to 2s	Parsley, p. doz. bun., 1s to 2s
Turnips, p. doz. bun., 2s 6d to 4s	— Roots, p. bdle., 9d to 1s
Red Beet, per doz., 1s to 2s	Marjoram, per bunch, 8d to 9d
Cucumbers, each, 6d to 2s	Mint, green, per bunch, 2d
Leeks, per bunch, 1d to 2d	Watercress, p. doz. bunches, 6d to 9d
Celery, p. bundle, 8d to 1s 6d	Horse Radish, p. bdl., 1s to 4s
Carrots, per bun., 5d to 7d	
Spinach p. sieve, 9d	

POTATOES.—SOUTHWARK, May 20.

The Committee report that the market is very moderately supplied with good English Potatoes, consequently high prices are obtained for anything that is of good quality. Foreign Potatoes are rather short, but are not selling at much advance. The following are this day's quotations:—York Regents, 120s. to 140s. per ton; Scotch cups, 65s. to 75s.; ditto whites, 45s. to 50s.; French whites, 40s. to 70s.; Rhenish do., 50s. to 70s.; Belgian do., 50s. to 65s.; Dutch, 40s. to 50s.

HAY.—Per Load of 36 Trusses.

SMITHFIELD, May 23.

Prime Meadow Hay	66s	to 74s	Clover	65s	to 84s
Inferior ditto... ...	54	63	New Clover	—	—
Rowen	50	60	Straw	23	28
New Hay	—	—		J. COOPER.	

CUMBERLAND MARKET, May 23.

Prime Meadow Hay	70s	to 75s	Inferior	70s	to 75s
Inferior ditto... ...	55	68	New Clover	—	—
New Hay	—	—	Straw	26	28
Old Clover	80	86		JOSHUA BAKER.	

WHITECHAPEL, May 23.

Fine Old Hay	65s	to 70s	New Clover	—s	to —
Inferior ditto	55	60	Inferior ditto... ...	60	65
New Hay	—	—	Straw	22	25
Old Clover	75	84			

SMITHFIELD, MONDAY, May 20.

The supply of Beasts is large and quality good. As usual on Whit Monday the demand is small, consequently lower prices are submitted to. There is a considerable increase in the supply of Sheep and Lambs, which causes a dull trade for them. Sheep in the wool are now quite out of season, we therefore cease to quote them. Good Calves are freely sold at 4*s.*; but second-rate meet with a dull sale. From Germany and Holland there are 238 Beasts, 650 Sheep, and 96 Calves; from Spain, 120 Sheep; from Scotland, 500 Beasts; and 2200 from Norfolk and Suffolk.

Per st. of 8 lbs.	s	d	s	d	Per st. of 8 lbs.	s	d	s	d
Best Scots, Herefords, &c.	3	0 to 3		4	Best Long-wools	...	to	...	
Best Short-horns	2	10 — 3		0	Ditto Shorn	3	4 — 3		6
2d quality Beasts	2	4 — 2		8	Ewes & 2d quality	...	—	...	
Best Downs and Half-breds	...	... —		...	Ditto Shorn	2	10 — 3		2
Ditto Shorn	3	8 — 3		10	Lambs	...	4	8 — 5	4
					Calves	... ...	2	10 — 4	0
					Pigs	... ...	3	0 — 4	0

Beasts, 3571; Sheep and Lambs, 26,230; Calves, 176; Pigs, 388.

FRIDAY, May 24.

The supply of Beasts is smaller, but quite adequate to the demand; no higher prices can be quoted. We have also a less number of Sheep, but only in very few instances is more money obtained. Lambs are still plentiful; however, trade is more cheerful for choice ones, but middling quality are very unsaleable. Good Calves are readily sold at an advance of about 2d. per 8 lbs. From Holland and Germany there are 6 Beasts, 710 Sheep, and 108 Calves; from Scotland, 240 Beasts; and 116 Milch Cows from the home counties.

Per st. of 8 lbs.	s	d	s	d	Per st. of 8 lbs.	s	d	s	d
Best Scots, Herefords, &c.	3	0 to 3		4	Best Long-wools	...	to	...	
Best Short-horns	2	10 — 3		0	Ditto Shorn	3	4 — 3		6
2d quality Beasts	2	4 — 2		8	Ewes & 2d quality	...	—	...	
Best Downs and Half-breds	...	... —		...	Ditto Shorn	2	10 — 3		2
Ditto Shorn	3	8 — 3		10	Lambs	...	4	8 — 5	4
					Calves	... ...	3	0 — 4	2
					Pigs	... ...	3	0 — 4	0

Beasts, 615; Sheep and Lambs, 10,020; Calves, 347; Pigs, 360.

COAL MARKET.—FRIDAY, May 24.

Buddle's West Hartley, 13s.; Tanfield Moor, 13s.; Wallsend Braddyll's Hetton, 15s. 3d.; Wallsend Haswell, 16s. 6d.; Wallsend Lambton, 15s. 9d.; Wallsend Tees, 16s.

HOPS.—FRIDAY, May 24.

Messrs. PATTENDEN and SMITH report that the market continues very firm. It is reported that the bine continues to progress, but is still backward and uneven. Very little doing on the duty, which is still estimated at 150,000*l.*

MARK LANE.

MONDAY, MAY 20.—The supply of English Wheat by land carriage samples to this morning's market was moderate; nevertheless, it was necessary to submit to a decline of 1s. per qr. upon the prices of this day se'nnight, before any progress could be made in selling. Foreign is held nominally at the rates of last week, but a similar reduction would in many instances have been accepted to have effected sales.—Our quotations for Barley, Beans, and Peas, are fully supported.—Oats are a slow sale, but not cheaper.—The Flour trade is heavy.

BRITISH PER IMPERIAL QUARTER.	s.	s.		s.	s.
Wheat, Essex, Kent, & Suffolk ...White	40—44		Red	37—39	
— — fine selected runs ...ditto	44—47		Red	39—41	
— — Talavera	46—52				
— Norfolk, Lincoln, & York ...White	40—42		Red	36—39	
— Foreign	33—51				
Barley, grind. & distil., 19s to 22s... Chev.	24—27		Malting	22—25	
— Foreign.....Grinding and distilling	15—20		Malting	19—22	
Oats, Essex and Suffolk	15—18				
— Scotch and Lincolnshire ...Potato	18—21		Feed ...	15—19	
— Irish .....Potato	14—18		Feed ...	12—16	
— Foreign .....Poland and Brew	14—18		Feed ...	12—16	
Rye	19—21		Foreign	18—20	
Rye-meal, foreign .....per ton	5*l.*—6*l.*				
Beans, Mazagan .....21s to 24s.....Tick	24—27		Harrow	24—27	
— Pigeon .....26s — 36s ...Winds	—		Longpod	—	
— Foreign ..... Small	24—36		Egyptian	20—22	
Peas, white, Essex and Kent.....Boilers	23—26		Suffolk	24—28	
— Maple .....24s to 27s.....Grey	22—24		Foreign	19—28	
Maize .....White	24—28		Yellow...	24—27	
Flour, best marks, delivered ...per sack	33—37				
— Suffolk .....ditto	28—33		Norfolk	28—33	
— Foreign .....per barrel	20—24		Per sack	28—33	

ARRIVALS IN THE PORT OF LONDON LAST WEEK.

Flour, 12980 sks	Wheat, Qrs.	Barley, Qrs.	Malt Qrs	Oats, Qrs.	Beans, Qrs.	Peas Qrs.
— 260 bls						
English	3064	914	2056	1155	474	74
Irish	—	—	25	—	—	—
Foreign	10740	5100	—	15259	744	—

FRIDAY, MAY 24.—There has been a fair arrival of foreign Oats during the week, but the supplies of all other grain are moderate. This morning's market was thinly attended, and business in all descriptions of corn was very restricted. Wheat was held at the nominal prices of Monday last, but to have forced sales some reduction must have been submitted to.—Barley, Beans, and Peas are unaltered in value.—The Oat trade is heavy, and late rates barely supported for inferior samples.—French Flour is a slow sale, and 1s. per sack cheaper.—Floating cargoes of Galatz corn arrived on the coast would fetch 33s. to 34s., cost, freight, and insurance.—During this week the temperature has been higher, with a varying wind and warm showers, which have forced vegetation and improved the appearance of the country.

ARRIVALS THIS WEEK.

	Wheat. Qrs.	Barley. Qrs.	Oats. Qrs.	Flour.
English ...	2580	570	60	2240 sacks
Irish	—	—	—	
Foreign ...	7830	1620	19550	— brls.

IMPERIAL AVERAGES.	WHEAT.	BARLEY.	OATS.	RYE.	BEANS.	PEAS.
April 13.....	38*s* 5*d*	22*s* 11*d*	15*s* 3*d*	20*s* 8*d*	23*s* 9*d*	26*s* 3*d*
— 20.....	37 10	22 8	15 3	21 6	23 9	24 9
— 27.....	37 1	22 1	15 0	21 8	23 8	25 1
May 4.....	36 11	22 0	14 7	19 11	23 11	24 9
— 11.....	38 0	22 0	15 3	19 1	24 8	24 9
— 18.....	39 7	22 5	15 5	21 7	25 6	24 11
Aggreg. Aver.	38 0	22 4	15 1	20 9	24 3	25 1
Duties on Foreign Grain	1 0	1 0	1 0	1 0	1 0	1 0

Fluctuations in the last six weeks' Corn Averages.

PRICES.	APR. 13.	APR. 20.	APR. 27.	MAY 4.	MAY 11.	MAY 18.
39*s* 7*d*	...	...	...	...	...	
38 5		...	...	...	...	...
38 0	...	...	...	...		...
37 10			...	...	...	...
37 1	...	...		...	...	...
36 11	...	...	...		...	...

LIVERPOOL, FRIDAY, MAY 24.—The receipts into this port, coastwise and from Ireland, since Monday last are still very small, and beyond 7000 qrs. of foreign Wheat, the arrivals from abroad are only moderate. At our market this morning a decided feeling of indifference almost generally prevailed. All descriptions of Wheat were excessively dull of sale, and indiscriminately depressed in value 1d. to 2d. per 70 lbs. from our last quotations. Barley, Beans, and Peas commanded less attention, and were rather cheaper. Oats, of which scarcely any remain here, advanced ½d. per 70 lbs.

DALSTON NURSERY.—TO NOBLEMEN, GENTLEMEN, NURSERYMEN, FLORISTS, AND OTHERS.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. J. Smith, in consequence of the premises being required by the London and Birmingham West-India Dock Junction Railway Company, to sell by Auction, on the premises, Dalston, Middlesex, on MONDAY, May 27, and following day, at 12 o'clock each day, the valuable GREENHOUSE PLANTS, consisting of choice Azalea indica, Erica, Epacris, Boronia, Burchellias, Diosma, Pimelea, Erythrina, Kennedya, Metrosideros, Fabiana, Geraniums, Fuchsias, Verbenas, Chrysanthemums, Lobelias, Calceolarias, Heliotropes, Cupheas, Myrtles, Hydrangea, Alstrœmerias, Cactus, Gardenias, Clianthus, Dahlias, Clematis, Jasmine, Aloes, Brooms, Roses, Magnolia grandiflora, &c.—May be viewed two days prior to the sale. Catalogues had (6*d*. each, returnable to purchasers) on the premises, at the Shop in Covent-garden, of the principal Seedsmen, and of the Auctioneers, American Nursery, Leytonstone, Essex.

BROOK-STREET, UPPER CLAPTON.

MESSRS. PROTHEROE AND MORRIS will submit to public competition by Auction, on the premises, Mr. Batten's Nursery, Brook-street, Upper Clapton, on THURSDAY, May 30, at 3 for 4 o'clock, precisely, a rich bed of TULIPS, about 120 rows, the property of an Amateur.—May be viewed prior to the sale. Catalogues had of the principal Seedsmen, and of the Auctioneers, American Nursery, Leytonstone, Essex.

TO GENTLEMEN, FLORISTS, AND OTHERS.

MESSRS. PROTHEROE AND MORRIS will sell by Auction, at the Mart, Bartholomew-lane, on WEDNESDAY, May 29th; THURSDAY, 30th; and FRIDAY, 31st, about 1000 first-rate DAHLIAS; also the newest varieties of Fuchsias, Verbenas, Geraniums, Heartsease, Climbing Roses, plants in bloom, and a variety of bedding plants.—May be viewed the morning of sale. Catalogues had at the Mart, and of the Auctioneers, American Nursery, Leytonstone, Essex.

MR. BATEMAN'S CELEBRATED COLLECTION OF ORCHIDS.—The Committee for providing a Church, Parsonage, and Schools in the wild, populous, and neglected district of Biddulph Moor, are happy to inform the growers of Orchidaceous Plants, that Mr. Bateman, in promotion of this important object, has generously placed at their disposal about 400 of his SPECIMEN PLANTS, among which will be found nearly all the rarest and most beautiful species at present in cultivation. These will be submitted for unreserved sale by Mr. STEVENS, at his Great Room, King-street, Covent-garden, on TUESDAY, the 11th day of June, on the morning of which day they will be on view. Catalogues are preparing, and will be ready in a few days, when they may be had on application to the Auctioneer, or from either of the Secretaries, who will be happy to give any additional information respecting the projected Church, &c.

Rev. EDWARD WILSON, Buglawton, near Congleton.
Rev. JOHN SUTCLIFFE, Oatlands, ditto.
May 25th. Hon. Secretaries

MR. ALEXANDER will Sell by Auction, on the premises, North-street, Poplar, on TUESDAY, May 28, at 12 o'clock, a choice Collection of TULIPS, the property of Mr. DARK, who is declining their cultivation, comprising Lady Stanley, Louis XVI., Brulante Eclatante (Betrel), Strong's King, Camuse de Craix, Thalia, Brown's Ulysses, Duke of Devonshire, Jeffery's Rose Elizabeth, Lila's Grand Vase, Sharpe's Victoria, Midway new, Eclipse new, Don Cossack (Biz. ex. ex.), Dangerous new, Samson, Water Witch, &c.; also many new broke flowers only in this collection, together with the stage, with cloth, patent pulleys, rollers, &c. May be viewed two days prior to sale; Catalogues had on the premises, the "City of Canton," Poplar, "White Swan," West Ham, and of the Auctioneer, Shacklewell, near London.

THE ERECTIONS OF THREE GREENHOUSES, GREENHOUSE PLANTS, &c.

MR. D. A. RAMSAY will sell by Auction, on the premises, King's-rd., Chelsea, opposite Cremorne Gardens, on TUESDAY, May 28, at 2 o'clock precisely, by order of Messrs Dennis (the lease of the Premises being expired), 3000 GREENHOUSE PLANTS, comprising Camellias, Geraniums, &c., finely in bloom. Also a quantity of Plants for Bedding out, consisting of Geraniums, Verbenas, Petunias, &c., in choice variety. With other Miscellaneous Nursery Stock. May be viewed one day prior to the sale. Catalogues had at the usual Seed Shops, on the Premises, and of the Auctioneer, Brompton Nursery, Fulham-road, Brompton.

STOVE CLIMBERS, GERANIUMS, FUCHSIAS, DAHLIAS, AND BEDDING PLANTS GENERALLY.

MR. HASLAM will sell as above, at the Auction Mart, on FRIDAY, May 31.—Catalogues to be had at the Mart, and of the Auctioneer, South Essex Nurseries, Epping.

WATER-CRESSES.

TO BE LET, half an acre of recently-planted WATER-CRESSES (Spring Water), capable of being increased to an acre or more, within 8 miles of London, near two lines of Railway. The Advertiser would not object to engage an industrious Man on weekly wages and a share in the profits, to one who understood the growing of Water-cresses.—Address or apply to Mr. WILSON, 24, Conduit-st., Regent-st., London.

TO MARKET GARDENERS.

TO BE LET ON LEASE, with immediate possession, a desirable MARKET GARDEN, situate at Turnham-green, near the high road, containing upwards of 16 Acres, with good House and Offices. To a tenant of undoubted responsibility, the extensive and valuable stock of Trees, Shrubs, and Bushes will be included in the Letting, and Scheduled in the Lease.—Apply to Mr. W. S. PATERSON, Solicitor, 7, Bouverie-street, Fleet-street, London.

NEWS, NEWS, NEWS.—The best, cheapest, and largest Newspaper in the World.—LLOYD'S WEEKLY LONDON NEWSPAPER contains 60 large columns of the latest intelligence from all parts of the Globe, price only Threepence, postage free. Send Three Postage Stamps to E. LLOYD, 12, Salisbury-square, London, and receive one copy as a sample.

CROWN, SHEET, AND ROUGH PLATE GLASS, FOR HOTHOUSES, CONSERVATORIES, &c.

The Improved Patent Rough Plate, made by Messrs. Hartley and Co., can be supplied from this Warehouse, of every size and substance, at the same prices as at the works.

100 and 200 feet cases of large Sheet Glass, from 2½*d*. per foot. Small ditto, 10*s*. 6*d*. per 100 feet, packed in boxes ready for immediate delivery. Curators of Botanical Societies, Florists, Railway Agents, and others requiring large quantities, will, on sending dimensions, receive estimates at the lowest prices.

GLASS MILK PANS, CREAM POTS, Lactometers, Bee Glasses, Fish Globes, and all kinds of Dairy Glass, Propagating Glasses, Hyacinth Dishes, Cucumber Tubes, and every other description of Garden Glasses.

PATENT GLASS PENS, self supplying, never blot, never soil the ruler, and will write continuously for 12 hours.

Also, Glass Rulers, Glass Inks for office-stands, desks, &c. Stationers and Schools supplied. Wholesale Warehouse for Ornamental Shades, Lamp Shades, Gas Glasses, Genuine White Lead, Paints, Colours, and Pumps for Farm purposes.

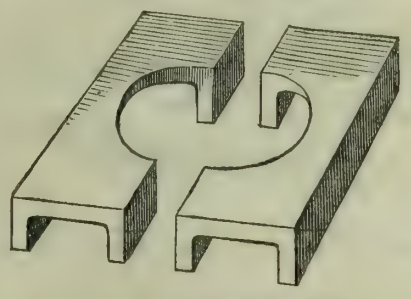
Our Catalogue of 18 folios is the most complete ever published. No Gardener or Farm Bailiff should be without one. May be had Gratis on sending two postage stamps to Messrs. COGAN and Co., 48, Leicester-square, London.

GLASS FOR CONSERVATORIES, &c.

HETLEY AND Co. supply 16-oz. Sheet Glass of British Manufacture, at prices varying from 2*d*. to 3*d*. per square foot, for the usual sizes required, many thousand feet of which are kept ready packed for immediate delivery. Lists of Prices and estimates forwarded on application, for PATENT ROUGH PLATE, THICK CROWN GLASS, GLASS TILES and SLATES, WATER-PIPES, PROPAGATING GLASSES, GLASS MILK PANS, PATENT PLATE-GLASS, ORNAMENTAL WINDOW GLASS, and GLASS SHADES, to JAMES HETLEY and Co., 35, Soho-square, London.

See the *Gardeners' Chronicle* first Saturday in each month.

IMPORTANT TO HORTICULTURISTS. — The great number of inquiries for a description of the REGISTERED STRAWBERRY and MELON TILES, renders it impossible for the inventor to answer each application separately, and he therefore now introduces a wood engraving of two of them, forming a pair, which he hopes will suffice to give an idea of their construction and mode of using them.



TWO STRAWBERRY TILES FORMING A PAIR.

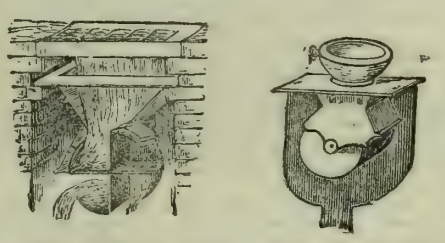
These Tiles are now being extensively used, and have been highly approved of by some of the highest standing in the Horticultural world—in confirmation of which the reader is referred to the published testimonial which appeared in the 1st page of this Paper of last week. An illustrated Pamphlet, with further particulars, can be had, on sending three postage stamps to the inventor, Mr. JOHN ROBERTS, 34, Eastcheap, City, London.

STEPHENSON AND Co., 61, Gracechurch-street, London, and 17, New Park-street, Southwark, Inventors and Manufacturers of the Improved CONICAL and DOUBLE CYLINDRICAL BOILERS, respectfully solicit the attention of scientific Horticulturists to their much improved method of applying the Tank System to Pineries, Propagating Houses, &c., by which atmospheric heat as well as bottom-heat is secured to any required degree, without the aid of pipes or flues. S. and Co. have also to state that at the request of numerous friends they are now making their Boilers of Iron, as well as Copper, by which the cost is reduced. These Boilers, which are now so well known, scarcely require description, but to those who have not seen them in operation, prospectuses will be forwarded, as well as reference of the highest authority; or they may be seen at most of the Nobility's seats and principal Nurseries throughout the kingdom.

S. and Co. beg to inform the Trade that at their Manufactory, 17, New Park-street, every article required for the construction of Horticultural Buildings, as well as for heating them, may be obtained upon the most advantageous terms.

Conservatories, &c., of Iron or Wood, erected upon the most ornamental designs. Balconies, Palisading, Field and Garden Fences, Wire-work, &c.

TO BUILDERS, &c.
IMPORTANT SANITARY INVENTION.



BY HER MAJESTY'S ROYAL LETTERS PATENT.

C. MARSDEN'S ROTARY WATER-CLOSETS and EFFLUVIA TRAPS, acknowledged by the most scientific to be the best and simplest self-acting Water-Closets and Effluvia Traps ever invented. A stench arises at the time of using all other Water-Closets—with this invention it can be got rid of. It is constructed in the shape of a drum, with four receivers or buckets caused to revolve by the weight of the matters falling into one of the receivers, when it instantly empties itself into the drain or sewer, and another bucket is ready from the opposite side to take its place, and two others on their ascent, to be emptied in their turn, while any upward escape of effluvia during these successive changes is effectually prevented, by overhanging and side flaps of vulcanised India-rubber, so placed that it is impossible to get choked up or get out of order; no balance weight or handles, no D or syphon traps required with these Closets. All traps that require water to keep them air-tight must necessarily leave a sediment to putrify. The value cannot be believed unless seen and tested.—Also Manufacturer of Decorative Marble Paper-hanging.—Waterloo House, King's Road, Chelsea, near the Bridge.

NOTICE.

ANTHONY'S PATENT AMERICAN CHURN.—COPY.—The first experiment with the New American Churn and the Old Suffolk Churn at Benacre Hall Farm, 10th May, 1850. From 13 quarts of Cream by the American Churn produced 11 lbs. 3 oz. of Butter in 12 minutes. From 18 quarts of Cream by the Old Suffolk Churn, produced 13½ lbs. of Butter in 30 minutes, being 1 oz. of Butter more to each quart of Cream of the same quality in favour of the American Churn.—CHRISTOPHER SMITH, Bailiff to Sir Thomas Gooch, Bart.

Apply to Messrs. KEY and MITCHELL'S Depôt for Patented and other new and useful Inventions, 97, Newgate-street; and Branch Establishment, 229, Blackfriars-road.

Parties infringing rigorously prosecuted.

DR S. NEWINGTON'S HAND-DRILL HOES, with their various fittings. With these Hoes a man or lad can hoe from two to three acres of Wheat, Beans, &c., daily, the tines being made with movable shares and adapted either for stirring or hoeing. Hand-Dibbles, with from 6 to 9 depositors each, Wheel-Dibbles for all corn, Mangold, Carrots, Turnips, &c. Drop-drills, and Hand-sowing Implements for dropping seed at defined intervals in the seams of the plough, or in pressed land, or in drills. A Prospectus and Lecture on Seeding sent gratis on application to Messrs DUFAUR and Co., Agricultural Depôt, 21, Red-lion-square, Holborn, London. The above Dibbles received the prize given by the Royal Agricultural Society at Norwich.

FLEXIBLE INDIA-RUBBER HOSE PIPES.

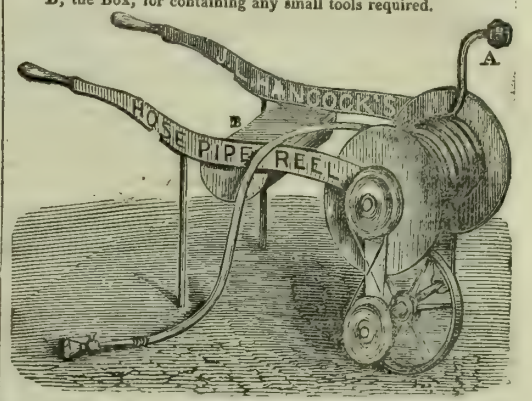
JAMES LYNE HANCOCK, Sole Licensee and Manufacturer of the PATENT VULCANISED INDIA-RUBBER PIPES and TUBING. These Pipes are well adapted for watering Gardens, conveying Liquid Manure, for Breweries, Gas Fittings, Chemical and all purposes where a perfectly sound WATERPROOF and FLEXIBLE PIPE is required. Hot Liquors or Acids do not injure them. No oil or dressing is required in using them. They do not leak from remaining out of use, are permanently flexible in all temperatures, and are therefore particularly suitable for Fire-Engines; and from their not leaking, are found exceedingly useful in conveying hot or cold water to baths in dwelling houses and such like purposes. Being extremely portable, stowing closely without danger of injury, resisting the influence of climate, insects, and vermin, frequently so injurious to such articles on board ship, and retaining their virtues though long out of use, render them particularly adapted for exportation.

N.B.—VULCANISED INDIA-RUBBER GARDEN HOSE, fitted with Roses, Jets, and Branches, complete, with Union Joints, ready to attach to Water Cisterns.

All letters or Orders addressed to J. L. H. at the Manufactory and Warehouse, Goswell-mews, Goswell-road, London, will meet with immediate attention.

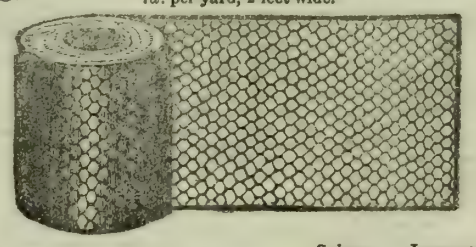
A, represents the Union-joint, for effecting the communication between the Hose-reel and the Tank, or Reservoir.

B, the Box, for containing any small tools required.



J. L. HANCOCK invites attention of parties using long lengths of the Flexible Garden Hose, to his SELF-ACTING HOSE PIPE REEL, which is found a most convenient machine for winding up and conveying away the Hose when out of use.

GALVANISED WIRE GAME NETTING.—7*d*. per yard, 2 feet wide.



	Galvanised.	Japanned Iron.
2-inch mesh, light, 24-inch wide ...	7*d*. per yd.	5*d*. per yd.
2-inch " strong " ...	9 "	6½ "
2-inch " extra strong "	12 "	9 "
1½-inch " light " ...	8 "	6 "
1½-inch " strong " ...	10 "	8 "
1½-inch " extra strong " ...	14 "	11 "

All the above can be made any width at proportionate prices. If the upper half is a coarse mesh, it will reduce the price one-fourth. Galvanised sparrow-proof netting for pheasantries, 3*d*. per square foot. Patterns forwarded post-free.

Manufactured by BARNARD and BISHOP, Market-place, Norwich, and delivered free of expense in London, Peterborough, Hull, or Newcastle.



CHEAP AND EFFECTIVE FENCE AGAINST HARES AND RABBITS.—Iron Wire Netting of various patterns, to exclude the smallest Rabbits, in coils of 50, 100, or any given number of yards, at prices varying from 4*d*. to 1*s*. per yard run. Aviary Net at proportionate prices. None sent out without at least two coats of the best Anti-corrosive Paint. Testimonials of the highest and most respectable character, received during the last 13 years, enable the Advertiser to speak with confidence as to the excellence of the article.—Apply to Mr. SAMUEL TAYLOR, Barnwood, near Gloucester; or to ROBERT WOODCOCK, at the Manufactory, Stoke Ferry, Norfolk.

TO NOBLEMEN and GENTLEMEN who require a plentiful and CONSTANT SUPPLY of PURE WATER to their Country Mansions.

Messrs. EASTON and AMOS beg to offer their improved PATENT HYDRAULIC RAM, which is perfectly self-acting, and without manual labour is capable of lifting water to 30 times the height of the waterfall by which it is worked.

THIS MACHINE CAN BE APPLIED WHEREVER A FALL OF WATER OF A FEW FEET CAN BE OBTAINED; and its cheapness and durability, with the fact that upwards of 500 of them erected in England and other countries by Messrs, EASTON and AMOS have now been at work many years, afford ample proof of its great value and efficiency.

Estimates of the expense of the Machine, Pipes for the conveyance of Water, Tanks, and Reservoirs, may be had on application to Messrs. EASTON and AMOS, CONSULTING ENGINEERS to the ROYAL AGRICULTURAL SOCIETY, at their office in Orange-street, Trafalgar-square, or at the Works in the Grove, Southwark, London.

BY HER MAJESTY'S ROYAL LETTERS PATENT.

PRICE TEN SHILLINGS

AND UPWARDS.

A PORTABLE INSTRUMENT

FOR

FUMIGATING GREENHOUSES,

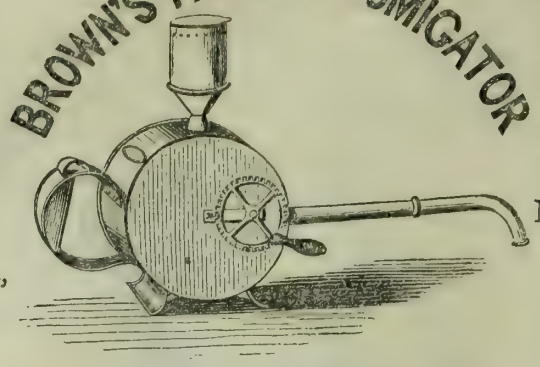
STOVES, AND FRAMES,

OR

SHRUBS AND FLOWERS, IN THE OPEN AIR,

Without injuring the most delicate plant;

BROWN'S PATENT FUMIGATOR



DELIVERING THE SMOKE COOL, IN A DENSE MASS,

And effecting a great saving of Tobacco.

MANUFACTURED AND SUPPLIED TO THE TRADE BY

MESSRS BARBER AND GROOM,

LONDON;

AND MAY BE HAD OF ALL

Ironmongers, Seedsmen, and Florists.

The Instrument is also available for Fumigating Apiaries; or Houses and Ships during the prevalence of Cholera or other epidemic Diseases, or when infested by Insects; with it, also Rooms and Closets may be scented by burning Lavender or other aromatic Herbs. It is of most easy application, the substance to be used for fumigation being placed in the magazine at top, and ignited with a match or paper, in precisely the same manner as an ordinary smoking pipe; it is so light that it can be carried about and used by a lady without inconvenience. All that is necessary is to introduce the nozzle into an aperture in the door of a Greenhouse, and by turning the handle it will soon be filled with smoke; nor is the machine less effective in the open air for the smoke being concentrated to a point, and made to issue in any required direction, the whole force of the instrument can be brought to bear on any particularly affected part. A great deal of Tobacco may be saved by placing the Plant under a paper tent, or some other temporary covering, during the operation.

TESTIMONIALS.

GARDENERS' CHRONICLE, Edited by DR. LINDLEY.—"Within the last few days I have given this invention a fair trial. The principles upon which it acts are admirable, causing a most complete, and hence economical, combustion of the most essential portions of the tobacco, and emitting a dense column of smoke in a perfectly cool state, so that all fear of scorching is avoided. To those who think of obtaining a machine, I would recommend the larger sizes, being more efficient for the fumigating of greenhouses and hothouses, or similar erections. *Frank Masters, Exotic Nursery, Canterbury.*—[We believe the praise thus given to Mr. Brown's invention to be perfectly well merited. We repeat that this is a nice, useful, effective machine—much the best we have seen.]"

COUNTRY GENTLEMAN, Edited by MR. GLENNY.—"One of the most economical and simple implements that can be applied to the fumigation of horticultural or other buildings; we have had one in use for a month with the greatest advantage. There is not the least waste, for there is no violence, as there must be with the common fumigating bellows. The tobacco is burned gently, and goes away entirely in smoke without heat, and we have had nothing equal to it for partial application to a single infected plant. It is available out of doors as well as in doors, and will be found one of the most useful instruments ever invented for the plantsman who is careful of his specimens."

GARDENERS' AND FARMERS' JOURNAL, Edited by MR. DICKSON.—"Tobacco smoke, since the very earliest of our recollection, has been to us the most intolerable thing, and many others equally and cordially detest it. Any invention, therefore, to obviate the necessity of exposure to its fumes on the part of those who are compelled to use it in the ordinary operations of gardening, would doubtlessly receive and welcome such an invention. We have therefore much pleasure in pointing to Mr. BROWN'S FUMIGATOR—a neat, portable machine, worked with a handle and wheels, by which air is supplied, and the smoke driven through a tube, the end of which may be pointed through a hole in the back or front of a garden frame, through which the smoke would pass without annoyance or inconvenience to the operator; or the machine might be carried in the hand, and the tube directed to the plants or parts of plants affected, and without applying it to the entire atmosphere of a house or frame. Amateurs, who manage their own plants, will find this to be one of their indispensable implements."

FLORIST AND GARDENER, Edited by MR. BECK.—"We have had one of these for some time, and are much obliged by the inventor's courtesy, as it has enabled us to test its merits in our houses. Every one knows the misery endured in fumigating plant-structures; how the operator has to enter with a handkerchief tied over his mouth and nose, and to stop there in a state of suffocation whilst with a pair of bellows he creates smoke enough from a quantity of burning tobacco to destroy the green-fly. Some gardeners cannot sleep the whole night afterwards; and amateurs cannot, or will not, undertake so disagreeable a task. With the instrument we are noticing, it only requires that the upper receptacle be filled with tobacco; place on that a piece of lighted paper, introduce the end of the tube into the greenhouse; and then, gently turning the handle, the whole of the smoke created in the combustion of the tobacco will be sent into the house in a state quite innocuous to the plants, but entirely destructive to the green-fly. It is a great improvement upon any contrivance for effecting the same object, and must command success."

COTTAGE GARDENER, Edited by MR. JOHNSTON.—"If a very small quantity of tobacco be put into the circular vase at the top, and a piece of lighted paper upon the tobacco, the spout then be introduced through a slightly raised sash of the house, and the handle of the fumigator slowly turned, there will be such a continued and copious flow of smoke that the house, though a large one, will be filled in very few minutes. It is the rapid and continuous production of smoke which renders this really an economical instrument, for it is quite certain that by its use less than half the tobacco is sufficient, compared with that required when its combustion is slower. For ladies, and other amateurs, it possesses this additional recommendation, that they need in no way be incommoded by the smoke: they stand outside the house to be fumigated, and not a whiff of the smoke escapes from the fumigator except that delivered by it into the house. It may be employed equally efficiently for fumigating pot plants, or bushes in borders; these need only be put under a tent, formed by driving a stake into the ground, and throwing a sheet or other covering over it, and the spout of the fumigator introduced beneath will sooner, and, consequently, more efficiently, fill the space with tobacco-smoke than any other mode we know."

MIDLAND FLORIST, Edited by MR. WOOD.—"These things we would buy ourselves, and therefore recommend them.—We have often used a machine for the purpose of destroying insects, which had a perforated tin box (in which was placed the lighted tobacco) screwed on the nozzle. When this was applied, the tobacco-smoke was driven HOT upon the plants, and often injured them. By the very excellent little instrument we now have, this is completely obviated, as the smoke is thrown in a continuous jet, so cool, that the most delicate plant is uninjured."

THE FLORIST'S GUIDE.—"This little machine, which has been recently patented, will be found a very useful implement. It consists of a small circular box, in the inside of which is a fan; on the top of the box, a copper funnel and tube, with grating inside, in which the tobacco is placed. When the tobacco is ignited, the smoke is drawn into the box, and is thence propelled through a second tube either against the plants in the open air, or, through an aperture, into the greenhouse frames or pits. This apparatus connected with a parapetticoat (don't be alarmed, reader, it is only a parasol with a petticoat), will be found excellent for fumigating standard Roses and other plants in the open air. On a large scale the machine will also be useful for large houses."

GARDENERS' HIVE, Edited by MR. NEVILLE.—"We congratulate our readers on the introduction of this important machine. MR. BROWN has succeeded in furnishing the Horticultural and Floricultural part of society with a most valuable instrument (and done what has long been wanting) for the destruction of the green-fly (the common aphis). The powers of this unique garden implement are astonishing, a column of cold tobacco smoke, free from any sparks of fire, is forced through the tube with amazing rapidity, sufficient to fill a large house in a very few seconds; one of the many advantages it possesses is its portability and ease of application; a portion of the tube is made to revolve, by which means the under parts of the foliage of plants can be fumigated with the same facility as the upper, even though they may be trailing on the ground."

JOHN EDWARDS, Esq., F.H.S., Wace Cottage, Holloway.—"Two months' trial of the Fumigator warrants me in asserting that it must supersede all other contrivances, being very superior to anything in use, on account of the ease with which it is applied, and being so effective and economic. I shall make a point of showing it in operation to everyone who visits me."

RICHARD STAINS, Esq., Middlesex-place, London.—"This is a very useful and economical instrument, and far superior to any other fumigator."

Mr. THOMAS INGRAM, Gardener to Her Majesty, Windsor.—"I have delayed writing until I gave the Fumigator a fair trial, and I can testify that it answers admirably, and is a great improvement on the old plan."

Mr. GEORGE WYNESS, Gardener to Her Majesty, Buckingham Palace.—"After giving the Fumigator a fair trial, I approve of it very much, and have no doubt that it will effect a great saving of tobacco."

Mr. JOSEPH PAXTON, Gardener to the Duke of DEVONSHIRE, Chatsworth.—"I have given the Fumigator a fair trial, and I find it most effective for smoking plants. I have no doubt but that it will come into universal use."

Mr. CHARLES TURNER, F.H.S., Royal Nursery, Slough.—"The Fumigator was tried here in the presence of several gardeners of noblemen and gentlemen; the whole of whom pronounced it an admirable invention, and greatly superior to anything of the kind. It is effective, economical, and easily worked. It only requires to be known to be appreciated."

Mr. W. HOLMES, F.H.S., Sudbury Nursery.—"This instrument is calculated for very general use, and will be found highly convenient and economical."

Mr. THOMAS THOMSON, Iver, Buckinghamshire.—"A very useful and economical instrument."

Mr. BRAGG, Star Nursery, Slough.—"Effects the object with certainty and celerity, without raising the temperature materially. The saving of tobacco being very great."

ALEXANDER SHANKS AND SON, MACHINE MAKERS, Ogilvy-place, Arbroath, respectfully solicit the attention of the Nobility, Gentry, and Gardeners to their IMPROVED GRASS CUTTING ROLLING MACHINE for LAWNS, the completeness of which has now been fully proved. The Machine works with perfect ease, producing a beautiful smooth surface, and attended with a saving of labour of 80 per cent.

FROM MR. CHARLES M'INTOSH, CHIEF GARDENER TO HIS GRACE THE DUKE OF BUCCLEUCH, DALKEITH PARK.

"Dalkeith Park, June 26, 1847.

"Gentlemen,—In reply to yours of the 15th inst., it gives me great pleasure to state that your Grass-Cutting Machine has far exceeded my expectation. We have it in constant use, and find that it does its work most completely. As to the saving of time, it is not easy to calculate accurately; but of this I am satisfied, that the expense of the Machine will be saved in one year in all places of similar extent with the grounds here.—I am, gentlemen, your obedient servant,

"Messrs. Shanks and Son." "CHAS. M'INTOSH."

A. S. and SON respectfully solicit the attention of the Farmers, Agriculturists, and others to an improved STRAW or HAY CUTTING MACHINE, which they have recently invented. The cheapness and utility of this improved Machine, combined with superior workmanship and durability, enable the inventors confidently to recommend it, as the most profitable Machine of the kind yet sent out. Further particulars and a list of prices may be had, by applying to the makers or to their Agents. Agents for London, Messrs. J. and C. Lee, Nursery and Seedsmen, Hammersmith; Hertford, Mr. George Folkard, Ironmonger; Liverpool, Messrs. Charles D. Young and Co., Castle Buildings, Derby-square; Manchester, Messrs. Francis and James Dickson and Co., Seedsmen, 106, Deansgate; Wakefield, Mr. Wm. Barratt, Nursery and Seedsman, St. Johns; Chester, Messrs. F. and J. Dickson, Nursery and Seedsmen; Glasgow, Messrs. Charles D. Young, and Co., 32, St. Enoch-square; Edinburgh, Messrs. Charles D. Young and Co., 48, North Bridge; Perth, Messrs. Dickson and Turnbull, Nursery and Seedsmen.

CARSON'S ORIGINAL ANTI-CORROSION PAINT, especially patronised by the British and other Governments, the Hon. East India Company, the principal Dock Companies, most public bodies, and by the Nobility, Gentry, and Clergy, for out-door work at their country seats, The Anti-Corrosion is particularly recommended as the most durable out-door Paint ever invented, for the preservation of every description of Iron, Wood, Stone, Brick, Compo, Cement, &c., work, as has been proved by the practical test of upwards of 60 years, and by the numerous (between 500 and 600) testimonials in its favour, and which, from the rank and station in society of those who have given them, have never yet been equalled by anything of the kind hitherto brought before the public notice.

Lists of Colours and Prices, together with a Copy of the Testimonials, will be sent on application to WALTER CARSON, No. 9, Great Winchester-street, Old Broad-street, Royal Exchange.

No Agents.—All orders are particularly requested to be sent direct.

IRON AND WIRE FENCING,

AND METALLIC BEDSTEADS.

THOMAS PERRY AND SONS,

252, OXFORD-STREET (NEAR HYDE PARK),

And Highfields Foundry and Wrought-iron Works, Bilston, Staffordshire, Manufacturers of all descriptions of

PLAIN AND ORNAMENTAL IRON AND WIRE FENCING,

Park Entrance, Carriage and Field Gates, Wickets, &c.;

Deer, Sheep, and other Hurdles;

Hare and Rabbit-proof Wire Fencing;

Iron Bedstead Makers to the Board of Ordnance;

And Government Contractors.

The works of Messrs. PERRY being situated in the heart of the first iron district, they are enabled to execute all orders with the greatest facility, and on the most moderate terms. Drawings made and estimates prepared, if required. The showrooms contain an immense variety of every description of Iron and Wire-work, and are the largest in London. An Illustrated Catalogue of Bedsteads, with dimensions and prices, sent on application, post-free.

HIGHLAND AND AGRICULTURAL SOCIETY OF SCOTLAND.

GLASGOW SHOW.—The Entry of Short-horn Bulls for the Sweepstakes closes on the 1st of JUNE. All other Stock, Implements, &c., must be entered on or before the 20th of JUNE.

Printed Certificates of Entry may be had on application to the Secretary. JOHN HALL MAXWELL, Secretary.

Edinburgh, 6, Albyn Place, 24th May, 1850.

LIGHT, CHEAP, AND DURABLE ROOFING.

CROGGON'S PATENT ASPHALTE ROOFING FELT is perfectly impervious to rain, snow, and frost, and has been tested by a long and extensive experience in all climates. Saves half the timber required for slates; can be laid on with great facility by farm servants, or unpractised persons. Price 1*d.* per square foot.

CROGGON'S PATENT NON-CONDUCTING FELT, for Steam Boilers and Pipes, saves 25 per cent. of fuel.

Samples and Testimonials sent by post, on application to CROGGON and Co., 2, Dowgate-hill, London.

BELL'S PATENT LIQUID CEMENT is ready for use, and only one-eighth the cost of oil-paint. For beauty it is pre-eminent, giving the exact appearance of FINE CUT STONE. Can be used at once on fresh Roman Cement, or any other plastering, and will protect the walls as well as Roman Cement. In casks of 1, 2, and 3 cwt., at 8*s.*, 15*s.*, and 21*s.*, casks inclusive.

PATENT MINERAL PAINTS.—Invaluable for cheapness, beauty, and permanence: not half the cost of other paints, always ready for use, will keep good for years, and therefore well suited for exportation. Brilliant black, 2*s.*; rich brown, 2*s.* 9*d.*; greens and light colours 4*s.* per gallon.

G. BELL and Co., 2, Wellington-street, Goswell-street, London.

Printed by WILLIAM BRADBURY, of No. 13, Upper Woburn-place, in the Parish of St. Pancras, and FREDERICK MULLETT EVANS, of No. 7, Church-row, Stoke Newington, both in the County of Middlesex, Printers, at their office in Lombard-street, in the Precinct of Whitefriars, in the City of London; and published by them at the Office, No. 5, Charles-street, in the parish of St. Paul's, Covent-garden, in the said county, where all Advertisements and Communications are to be ADDRESSED TO THE EDITOR.—SATURDAY, MAY 25, 1850.

THE GARDENERS' CHRONICLE
AND
AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 22—1850.] SATURDAY, JUNE 1. [PRICE 6*d.*

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HORTICULTURAL SOCIETY OF LONDON.—EXHIBITIONS AT THE GARDEN.

The next Meeting will take place on SATURDAY, the 8th June.

The Gates will be open to visitors at One, P.M. Tickets are issued to the orders of Fellows at this Office, price 5*s.* each, or at the Garden in the afternoon of the days of Exhibition, at 7*s.* 6*d.* each.

N.B. No Tickets will be issued in Regent-street on the day of Exhibition. 21, Regent-street.

ROYAL BOTANIC SOCIETY, REGENT'S PARK.

EXHIBITION OF PLANTS, FLOWERS, AND FRUIT, on WEDNESDAYS, JUNE 12th and JULY 3d.

Tickets to be obtained at the Gardens, only by orders from Fellows of the Society, price 5*s.* each; or on the days of Exhibition, 7*s.* 6*d.* Each ticket will admit one person on either one of the above-named days, or to the Collection of American Plants, on any one day from the 3d to the 8th of June, both included.

ROSE EXHIBITION.

DISS HORTICULTURAL SOCIETY.—The Townsmen of Diss will offer the following prizes for ROSES at the Meeting of this Society, to be held on THURSDAY, the 4th of July, 1850.

TO NURSERYMEN—OPEN TO ALL ENGLAND.

For 100 named varieties,	1st Prize, a Silver Cup	...	£10	0 0
,, ,,	2d Prize, Money	... ...	3	0 0
For 50 named varieties,	1st Prize, Silver Cup	...	5	0 0
,, ,,	2d Prize, Money	... ...	2	0 0
For 36 named varieties,	1st Prize, Money	... ...	1	0 0
,, ,,	2d Prize, Money	... ...	0	15 0

TO SUBSCRIBERS OF NOT LESS THAN TWO YEARS.

For 36 named varieties,	1st Prize, Silver Cup	...	5	0 0
,, ,,	2d Prize, Money	... ...	2	0 0
For 24 named varieties,	1st Prize, Money	... ...	3	0 0
,, ,,	2d Prize, Money	... ...	1	0 0
For 12 named varieties,	1st Prize, Money	... ...	1	0 0
,, ,,	2d Prize, Money	... ...	0	10 0
Also to Cottagers, in various Prizes		... ...	3	10 0

The above are in addition to the usual Prizes of the Society. All communications to be addressed to the Rev. C. H. BROWNE, Blo' Norton, East Harling, Norfolk.

AMERICAN NURSERY, BAGSHOT, SURREY.

JOHN WATERER begs to announce that his splendid collection of AMERICAN PLANTS is now in full bloom, and may be seen gratis.

The Nursery is near the Farnborough station of the South Western Railway, and three miles from the Blackwater station of the South Eastern Railway.

EXHIBITION OF AMERICAN PLANTS, KNAP HILL, WOKING, SURREY.

HOSEA WATERER begs to announce that the AMERICAN PLANTS at Knap Hill are just coming into bloom, and will continue in perfection during the month of June. As a display of flowers this is perhaps without a rival in this kingdom. May be seen, gratis, any day, except Sunday. The Knap Hill Nursery is within an hour's ride of London, being near the Woking station, South Western Railway, where every train stops, and from whence conveyances may at all times be had. H. WATERER is a principal contributor to the Exhibition in the Botanic Gardens, Regent's Park, orders for seeing which may be obtained on application to Fellows.

Knap Hill Nursery, Woking, Surrey, June 1.

ROSES.

ROBERT WHIBLEY begs to announce that his select collection is now in bloom, occupying one of the ranges of glass upwards of 50 feet long, and invites all admirers to view the same. Also a fine general stock of bedding, and all other plants in great variety, very select, and low in price.

Chester Nursery, Kennington, London.

NORLAND NURSERY, NOTTING-HILL.

W. TOWNSEND has the following Plants on sale: Fuchsia spectabile, 2*s.* 6*d.*; Mitraria coccinea, 2*s.* 6*d*; Dielytra spectabile, from 2*s.* 6*d.*; Cantua pyrifolia, 2*s.* 6*d.*; Tropæolum Smithii, 2*s.* 6*d.*; Rose Noisette pumila alba, 1*s.* Also four new Petunias, viz, Prince of Wales, 3*s.* 6*d*; Enchantress, 3*s.* 6*d.*; Rosea superba, 2*s.* 6*d.*; and Great Britain, 2*s.* 6*d.*, the two former were raised by G. Lennox, Esq., and obtained first-class certificates at the June show (1849) of the Horticultural Society.

W. T. has the entire stock; also a selection of the new (1850) Verbenas, Petunias, Mimulus, Antirrhinums, and Chrysanthemums sent out by Chauviere, Dufoy, and the most eminent growers, at 1*l.* per dozen. The older varieties at 4*s.* per dozen. Catalogues on application.

Remittance from unknown correspondents.

CEDRUS DEODARA SEED from this magnificent hardy tree, recently imported from India, and warranted fresh, may be had till the end of June, when the remainder will be planted. Price 2*s.* 6*d.* per 100, or 20*s.* per 1000 seeds.

JAMES CARTER, Seedsman and Florist, 238, High Holborn, London.

TO THE SUBSCRIBERS TO THE GARDENERS' BENEVOLENT INSTITUTION.

—The case of JOHN SHEPHERD, No. 7 on the List for the next Election, and the Fourth Application, is most respectfully recommended to the Subscribers. Proxies will be received by Mr. GRISSELL, 11, New Palace-yard, Westminster.

ROYAL BOTANIC SOCIETY, Regent's Park.—AWARDS offered for FRUIT at the Exhibitions to be held on WEDNESDAYS June 12th and July 3d, 1850.

CLASS VI.

FA Miscellaneous Collection to include the following kinds: one Pine-apple, one dish of Peaches, one dish of Nectarines, one dish of Cherries, one dish of Grapes. The selection of the several kinds will be left to the option of the Exhibitor. July 3, G.L.S., S.

PINE-APPLES.

FB Collections consisting of not fewer than six fruits, nor more than two of one kind. July 3, L.S.G., S.G.

FC A single fruit of Black Jamaica, Antigua, Enville, or any of the black varieties. S.G., S., S.S.

FD A single fruit of the Providence. S.G., S., S.S.

FE A single fruit of the Ripley Queen. S.G., S., S.S.

FF A single fruit of any one kind not already specified. L.S., S.G., S., S.S.

MELONS.

FG A single fruit of the Green-fleshed varieties. June 12, S.G., S., S.S. July 3, S.S., B.

FH A single fruit of the Scarlet-fleshed varieties. June 12, S.G., S., S.S. July 3, S.S., B.

N.B.—In FG and FH the fruit must be cut.

GRAPES.

FI Collections of three dishes of distinct varieties, any colour. July 3, L.S., S.G., S.

FK Collections of any kind, in quantity not less than 12 lbs., and may be exhibited in the box in which they are sent. July 3, S.G., S.S., C.

FL A single dish of any black variety. S.G., S., S.S.

FM A single dish of any of the white varieties commonly known as Muscats. June 12, S.G., S., S.S.

FN A single dish white, of any other kind not specified above, such as Sweetwater, Muscadine, Chasselas Musqué, &c. June 12, S.G., S., S.S.

FO A single dish of any white variety. July 3, S.G., S., S.S.

FP A single dish of Frontignan White. June 12, S.G., S., S.S.

FQ A single dish of Frontignan Red. June 12, S.G., S., S.S.

FR A single dish of Purple or Red of any kind not already specified. June 12, S.G., S., S.S.

FS A single dish of new Grapes of any colour; if introduced within the last seven years they will be considered new. June 12, L.S., S.G., S., S.S.

FT Vines in pots. July 3, S., S.S.

PEACHES AND NECTARINES.

FU A single dish of Peaches. June 12, S.G., S., S.S.

FV A single dish of Nectarines. June 12, S.G., S., S.S.

FW Collections of four dishes of distinct varieties. July 3, S.G., S., S.S.

FX Collections of two dishes of distinct varieties. July 3, S., S.S.

FY APRICOTS; single dish. July 3, B.

FZ PLUMS; single dish. July 3, B.

GA FIGS; single dish. July 3, B.

GB CHERRIES; single dish. June 12, S.S., B., C. July 3, B.

GC STRAWBERRIES; collections of two dishes of distinct varieties. June 12, S.S., B., C.

GD STRAWBERRIES; collections of four dishes of distinct varieties. July 3, S.S., B.

GE Tropical Fruits produced in the Gardens of Great Britain or Ireland. July 3, G., S.G., S.

NOTE.—A *dish* of fruit is defined thus: Grapes three bunches, Peaches, Nectarines, and Apricots, six fruits. Figs, Plums, Cherries, Strawberries, and other small fruit to be exhibited in quantities forming an ordinary-sized dish. All fruit must be perfectly ripe and sound; and (except Pine apples and Grapes) it must be exhibited in punnets 9 inches in diameter, dressed with the leaves respectively belonging to each kind of fruit.—Punnets will be provided at the Garden.

REGULATIONS.

The following extracts, taken from the Rules annexed to the Schedule of Prizes, must be scrupulously attended to.

4. At half-past 8 o'clock in the morning the gates will be closed, after which no subjects for competition can on any account whatever be received, nor can any further entries be made, notwithstanding that the plants (or fruit) are already in the Garden.

5. Exhibitors are requested to observe that the Judges must proceed at 10 o'clock to examine the merits of the subjects exhibited, by which hour the placing and arranging of all plants, flowers, and fruit must be completed.

6. At 7 o'clock in the evening the exhibitions will close, and the several articles exhibited will then be delivered up to the Exhibitors.

N.B. Persons residing at a distance, and who cannot attend personally, may forward to the care of Mr. MABNOCK, at the Royal Botanic Society, Regent's Park, such fruit as they may wish to exhibit. All such parcels of fruit must be delivered at the Garden by 12 o'clock of the day preceding the 12th of June and 3d of July; the fruit will then be attended to, exhibited, re-packed, and returned, carriage free, or delivered in town, as the owner may direct.

The following is the money value of the Medals offered.

E.G. Extra Gold	£20	S.G. Silver Gilt	£3 0*s.*
L.G. Large Gold	15	S. Silver	2 0
M.G. Medium Gold	10	S.S. Small Silver ...	1 5
G. Gold	7	B. Bronze.....	0 15
L.S.G. Large Silver Gilt...	5	C. Certificate	0 10
L.S. Large Silver	4		

Exhibitors would greatly facilitate the arrangements if they would, as early as possible, inform Mr. MABNOCK, at the Gardens, the probable number of articles which they purpose to contribute.

DAHLIAS—NEW AND CHOICE VARIETIES AT REDUCED PRICES.

WM. DENYER, SEEDSMAN and FLORIST, 82, Grace-church-street (near the Spread Eagle), London, has just published his Annual Descriptive List of DAHLIAS, containing all the new and most approved show varieties. The new varieties, 12*s.* to 18*s.* per doz.; the older kinds, but good sorts, 6*d.* each, or 5*s.* per doz.

Catalogues may be had on application.

Also, GENUINE PERUVIAN GUANO, in packages 1*s.* each, with directions for use, sufficient to make 50 gallons.

N.B. All kinds of Seeds suitable for present sowing, descriptive lists of which may be had.

TO THE ADMIRERS OF THAT SPLENDID AUTUMNAL FLOWER, THE CHRYSANTHEMUM.

YOUELL AND Co. are now prepared to execute orders from their extensive and very select collection of the above, comprising all the new and fine continental varieties, at the following prices:

50 best new sorts		25*s.*
25	ditto	15*s.*
12	ditto	9*s.*

Well established in small pots, or per post free.

Their successful mode of cultivation is published in the *Gardeners' Chronicle* of Saturday, May 18.

THE NEWEST AND MOST BEAUTIFUL PLANTS FOR BEDDING OUT can now be supplied by YOUELL and Co, comprising the most distinct and striking varieties of recent introduction, at 4*s.*, 6*s.*, 9*s.*, and 12*s.* per doz, viz., Fuchsias, Verbenas, Petunias, Antirrhinums, Anagallis, Bouvardias, Calceolarias, Chrysanthemums, Cupheas, Carnations, Geraniums (scarlet and fancy kinds), Heliotropes, Lantanas, Lobelias, Lychnis, Mesembryanthemums, Nemophila maculata, Pansies, Pentstemons, Phloxes, Salvias, Double White Rockets, Zauschneria, &c., of which Catalogues can be had on application.—Royal Nursery, Great Yarmouth.

SPANISH FOWLS' EGGS.—A Gentleman residing near Bath, celebrated for his breed of Spanish Fowls, desires to dispose of a few Eggs at 6*d.* each, or 6*s.* for 13.—Address R. M., Hayward's Library, Bath.

SELECT PLANTS.

BASS AND BROWN are sending out the following CHOICE SELECTIONS, at the annexed low prices, the plants of which are exceedingly strong and fine.

Goods carriage free to London, and extra plants presented with orders of 40*s.* and upwards. Descriptive Catalogues supplied for 4 postage stamps for postage.

		s.	*d.*
GERANIUMS.			
50	Fine Show varieties	40	0
25	Ditto, 22*s.*; or 12 ditto	12	0
25	Superb new varieties, 40*s.*; or 12 for ...	21	0
12	All new varieties of last season	42	0
	Fine varieties, per doz., 6*s.* to	9	0
12	Superb fancy varieties	15	0
	Scarlet, finest sorts, per dozen, 6*s.* to ...	9	0
FUCHSIAS.			
25	Fine varieties, 10*s.*; or 12 for	5	0
25	Superb ditto, 17*s.* 6*d.*; or 12 for ...	9	0
12	Superb new varieties	15	0
50	Varieties, in very choice assortment ...	25	0
PETUNIAS.			
12	Fine varieties, 5*s.*; 12 superior ditto ...	9	0
12	Superior new varieties	12	0
25	Varieties, in very choice assortment ...	15	0
VERBENAS.			
25	Fine varieties., 8*s.*; or 12 for	4	0
25	Superior ditto, 12*s.*; or 12 for	7	6
12	Superior new varieties	12	0
50	Varieties in very choice assortment ...	20	0
DAHLIAS.			
25	Fine varieties, 10*s.*; or 12 for	5	0
25	Superior ditto, 17*s.* 6*d.*; or 12 for ...	9	0
12	Superb new varieties	21	0
12	Showy Fancy varieties, 9*s.*; 12 new varieties	18	0
CHRYSANTHEMUMS.			
25	Fine varieties, 10*s.* 6*d.*; or 12 for	6	0
25	Superior, 17*s.* 6*d.*; or 12 for	9	0
12	Superior, all new varieties	15	0
40	Varieties, including newest	30	0
50	Varieties select Greenhouse Plants ...	50	0
12	Varieties ditto, Stove Plants	18	0
12	Varieties fine Achimenes	6	0
6	Varieties splendid new ditto	7	6
12	Varieties fine Gloxinias, 15*s.*; 6 superb new	9	0
12	Varieties Summer Climbing Plants ...	9	0
12	Varieties Azalea indica, fine, 18*s.*; 6 new varieties	10	0
12	Varieties Choice Cinerarias	10	0
100	Varieties Showy Herbaceous Plants, in pots	30	0
25	Varieties Rock Plants, 12*s.*; or 12 for ...	7	6
12	Varieties fine Antirrhinums, 6*s.*; or 12 superior do....	10	0
12	Varieties fine autumn Roses	12	0

SHOWY BEDDING PLANTS.

	Per dozen—*s*	*d*		Per dozen—*s*	*d*
Anagallis, 2 best vars., scarlet and blue ...	6	0	Lobelia erinus grandiflora, and compacta alba	5	0
Bouvardia splendens ...	6	0	Mimulus Harlequin ...	10	6
Chænostoma polyantha	5	0	Plumbago Larpentæ ...	9	0
Cuphea platycentra and strigulosa	6	0	Salvia, in 8 varieties ...	6	0
Gaillardia, in 6 varieties	6	0	Zauschneria Californica	9	0
Heliotropium, in 4 vars.	6	0	Erinus alpinus ...	6	0
Lantana crocea ...	6	0	Dianthus Hendersonii ...	10	6
,, Sellowii ...	9	0			

The above are all in pots, and are very fine plants.

Remittances requested from unknown correspondents. Post office orders to be made payable to either BASS and BROWN, or to STEPHEN BROWN, Seed and Horticultural Establishment, Sudbury, Suffolk.

MAYLE'S MODEL FUCHSIAS FOR 1850.—No grower can expect to win a prize at any of the principal exhibitions in town or country without these magnificent reflexed varieties.

Messrs. MAYLE and Co. will send out their SEVEN NEW FUCHSIAS on the 20th June, extra strong plants. From the very high opinions expressed of their merits by Dr. Lindley, Mr. Glenny, &c., they require no further comment from us. They are the things of the season, and must be had by all who wish to keep pace with the times.

No. 4, DIADEM, was shown at Walsall, near Birmingham, with two blooms, May 8 h, and was awarded an extra prize. Judges' opinion: "By far the best ever raised."

Also first prize at Wolverhampton, May 25, against some fine older specimen varieties; and first-class certificate awarded at the Birmingham and Midland Society on the 20th.

Those in bloom will be exhibited at Chiswick and Regent's-park June shows. The earliest orders will secure the strongest plants. Circulars can be had. Also Mr. Hoyles' superb Geraniums, a few extra strong b ooming plants being left.

Stove, Greenhouse, Bedding Plants, &c., including every novelty of the season.—105, New-street, Birmingham.

"THE FLOWER OF THE DAY" IS LEE'S NEW VARIEGATED SCARLET GERANIUM.—The habit of the plant is very vigorous, and the variegation perfectly constant. The foliage is bright green, beautifully margined with silver, with a light horse-shoe, and an occasional pink tinge. The trusses are large, of a light scarlet (the most conspicuous colour), and the general effect it produces is elegant beyond description.

"THE FLOWER OF THE DAY" may be seen in bloom at LEE's Nursery during the present month. On the 1st of August good established plants will be ready for delivery at 10*s.* 6*d.* each, with the usual allowance to the trade when three or more are ordered. Orders will be executed strictly in rotation.—Address, J, and C. LEE, Nursery and Seedsmen, Hammersmith, near London.—June 1.

HALLIMAN'S REGISTERED FRUIT PROTECTOR, PERFECTER, AND PRESERVER.—These Glasses are self-acting Hothouses, to fruit of any sort on the common walls; insects are easily kept out, the richness of the fruit being increased. When the utility of these glasses becomes known to the public, no garden will be without them, where fine wall fruit is desired; they can easily be used. Can be seen in use in many first-rate gardens round London, and are very ornamental to walls. Flint glass, 4 inches, for Peach, &c., at 9*s.* per dozen, 3*l.* 10*s.* per 100; 6 inches, for Grapes, 13*s.* per dozen, 5*l.* per 100. Common Glass will be one-third cheaper when C. H. can have it completed. Printed directions sent with each package.—Sold wholesale to the trade by the sole manufacturer, C. HALLIMAN, 1, Queen's-place, Norland-square, Kensington, London.

CUCUMBER AND MELON BOXES AND LIGHTS.

One hundred 1, 2, and 3-light Boxes and Lights of all sizes ready for immediate use. Warranted best materials, packed and sent to all parts of the kingdom; 2-light Boxes and Lights from 1*l.* 4*s.* Garden Lights of every description, Conservatories, Green and Hot-houses, made and fixed in all parts of the kingdom. References given to the Nobility, Gentry, and the Trade, in most of the counties of England. JAS. WATTS, Hothouse Builder, Claremont-place, Old Kent-road, London.

HENRY BIERTUMPFEL, MANUFACTURER OF IMPROVED AND PATENT GARDEN SYRINGES, AND ORNAMENTAL ICE MOULDS, 68, Albany-street, Regent's-park, London, respectfully tenders his thanks to Gentlemen, Florists, Nurserymen, &c., for their continued and extending patronage, and ventures to hope that he may still be honoured with their commands. To those who have not at present used his Improved and Patent Garden Syringe, he respectfully solicits a trial, as he can confidently recommend them to be unsurpassed either for durability, cheapness, or utility; and being manufactured of the Imperial White Metal, they never corrode or cause verdigrease, to which the brass ones are liable.

Improved Garden Syringe with two Roses, each 10*s.*; ditto, with return end, each 13*s.*; ditto, with Patent Syringe with three Roses, each 12*s.* A liberal allowance made to the Trade.

H. B. would also take this opportunity of calling attention to his New and Ornamental Ice Moulds, they being a very great improvement upon the old shape. They are used and approved of by some of the first Club Houses in London, and by all the most eminent Confectioners, and are particularly admired for their elegant and unique shape.

N.B. Made in Pints, 1½ Pints, Quarts, and 3 Pints.

TO BE DISPOSED OF, the Wholesale Department of an Old and Highly-respectable London Seed Establishment; any one wishing to embark in the trade, or to add to their own business, will find this an opportunity rarely to be met with.—Apply to Messrs. STUBBY and SIMPSON, 8, Wellington-street, London-bridge.

IMPORTANT TO HORTICULTURISTS.

CAUTION.—Whereas information has been given to Mr. JOHN ROBERTS, of No. 34, Eastcheap, London, that some unprincipled persons have been making and selling his REGISTERED STRAWBERRY TILES, and other Horticultural appliances, which are so deservedly approved and sought after by horticulturists, this is to give Notice, that whoever is discovered or detected in so doing will be prosecuted with the utmost rigour of the law. The penalty for every offence is 30*l.* A Reward of Twenty Pounds will be given for every offender, on proof of the offence, to Mr. CHARLES WELLBORNE, 31, Tooley-street, Southwark, Attorney to the Patentee. A pamphlet, descriptive of the inventions referred to, may be had on forwarding three postage stamps to the Inventor, as above.

HORTICULTURAL TOOLS.

GREEN AND CONSTABLE, 36, King William-street, five doors from London Bridge, have a large assortment of GARDEN TOOLS, containing all the recent inventions, and including Lyndon's Patent Cast Steel Spades, Shovels, and Garden Forks, Lord Vernon's Hoe, Jointed Hothouse Syringes, Transplanting Tools, Registered Garden Labels, Ladies' sets of Gardening implements, Pruning Shears, Knives, &c. Agents for the Vitreous Porcelain Garden Bordering.—36, King William-st., five doors from London Bridge.

NOVELTY, ELEGANCE, AND DURABILITY.

R. RESTELL'S PATENT METALLIC ORNAMENTAL GARDEN LABELS, composed of a combination of metals entirely new, in a variety of different patterns and sizes, are far superior to either zinc or porcelain. These elegant labels are perfectly white and well suited for either Lawns and Conservatories; they require no wire to attach them, but may be rolled round a branch, bent over a flower-stand or pot, or be fixed in the ground perfectly upright. They are calculated to last for 20 years, and may be written upon as freely as paper. If the names are to remain permanently, use ink and a steel pen; if only for the ordinary period, a good lead pencil. The ornamental borders of these labels may be had of any colour upon order, also with numbers, if required. For wine and ale cellars the plain labels will be found very useful.

Prices, varying according to weight, from 1*s.* 6*d.* per dozen. To be had of the principal Seedsmen and Florists, and dealers in horticultural implements, and wholesale at the Manufactory, 35, High-street, Croydon, Surrey.

EXHIBITION OF INDUSTRY, 1851.—The following is the LIST of LOCAL COMMITTEES announced up to this day (May 27) to the Royal Commission, with the number of returns of Subscriptions made by them, and the total amount at present reported by each town.

***Where no sum is put against the Town, it implies that the Local Committee of that town has not yet made its first return.

	£	s.	d.
Aberdeen, 1 return	119	16	0
Aberystwith			
Alloa			
Alton			
Appleby			
Arbroath			
Ashburton, 1 return	2	7	6
Ashton-under-Lyne			
Barnard Castle	11	15	0
Barnsley			
Barnstaple			
Basingstoke			
Bath, 2 returns	146	14	6
Batley, 1 return	133	10	6
Bedford, 1 return	115	13	2
Belfast, 4 returns	536	12	6
Berwick, North			
Beverley, 1 return	91	19	6
Bideford			
Bilston			
Bingley, 2 returns	120	3	0
Birmingham, 4 rets.	641	3	0
Blackburn, 4 returns	775	0	0
Bodmin			
Bolton, 3 returns	557	13	0
Boston, 1 return	40	0	0
Bradford (Yorks.), 2 returns	1495	0	0½
Braintree			
Brampton, 1 return	10	10	0
Brentford			
Brentwood			
Bridgenorth, 2 returns	21	1	0
Bridgewater, 1 return	37	6	0
Bridlington			
Bridport, 3 returns	69	19	0
Bristol, 3 returns	706	1	6
Bromsgrove			
Buckingham			
Burnley			
Burton-on-Trent			
Bury St. Edmunds, 1 return	26	19	0
Bury (Lancashire)			
Camborne			
Cambridge Univers., 3 returns	140	0	0
—— Town, 2 returns	126	4	6
Canterbury, 1 return	23	19	0
Cardiff, 1 return	95	3	0
Carlisle, 3 returns	257	11	6
Chatham, 1 return	43	16	8
Cheltenham, 1 return	164	14	6
Chelmsford, 1 return	78	18	0
Chelsea, 1 return	141	11	0
Chester, 1 return	50	0	0
Chichester, 1 return	90	0	0
Chiswick, 1 return	46	7	0
Chippenham, 1 ret.	21	7	0
Chorley			
Cockermouth			
Coggeshall			
Colchester			
Colne			
Congleton, 1 return	29	18	0
Cork			
Coventry			
Cupar			
Darlington, 1 return	48	2	6
Dartmouth			
Deal, 1 return	2	15	0
Derby, 2 returns	259	16	3
Devizes, 1 return	14	0	0
Devonport, 1 return	63	0	0
Doncaster, 1 return	56	0	0
Dorchester			
Dover, 4 returns	103	3	0
Driffield, Great, 1 ret.	35	0	0
Dublin			
Dudley, 1 return	253	19	0
Dunbar			
Dundee, 1 return	21	0	0
Dunfermline, 2 rets.	154	14	6
Durham, 1 return	139	12	10
Edinburgh, 1 return	446	14	6
Elgin			
Exeter			
Falmouth, 1 return	20	18	0
Farnham			
Fleetwood			
Forfar			
Frome			
Galashiels			
Glasgow, 2 returns	1150	0	0
Glossop			
Gloucester, 2 ret.	73	5	0
Gosport			
Grantham			
Gravesend			
Great Grimsby			
Greenock			
Guernsey, 1 return	116	10	0
Guildford, 2 returns	34	2	0
Haddington			
Halifax, 4 returns	679	3	0
Halstead			
Hammersmith 1 ret.	20	7	6
Hampstead			
Hartlepool, 1 return	39	4	0
Hastings, 2 returns,	100	4	0
Hawick			
Hayle			
Helston			
Hereford, 3 returns	85	7	0
Hertford, 1 return	23	2	6
Honiton			
Huddersfield, 3 ret.	866	15	6
Hull, 2 returns	209	14	0
Huntingdon, 1 ret.	50	2	6
Ilfracombe			
Ipswich, 3 returns	330	11	6
Isle of Wight, 1 ret.	52	11	0
Jersey, 2 returns	256	9	6
Keighley, 1 return			
Kendal, 2 returns	117	12	0
Kensington, 1 ret.	290	15	0
Keswick, 1 return	20	3	0
Kidderminster, 2 ret.	169	4	6
Kilmarnock			
Kirkcaldy			
Knaresborough			
Lancaster, 2 returns	88	7	0
Launceston			
Leamington, 1 ret.	43	2	6
Leeds, 3 returns	2010	16	10
Leicester, 1 return	199	6	6
Lewes, 2 returns	103	6	6
Litchfield, 1 return	26	11	0
Limerick			
Lincoln			
Liskeard			
Liverpool, 1 return	827	13	0
Llanelly, 2 returns	141	4	2
London, 4 returns,	24,866	14	0
Ditto, Ladies, 3 ret.	660	2	0
London (South), 1 ret.	252	15	6
Louth			
Macclesfield			
Maidstone			
Manchester, 3 rets.	3500	15	0
Marlborough			
Marylebone, 1 ret.	688	7	0
Melrose			
Merthyr Tydvil, 1 ret.	164	9	6
Middlesboro', 1 ret.	40	16	0
Montreal (Canada)			
Montrose, 1 return	56	1	0
Newark			
Newcastle-under-Lyne, 1 return	33	4	6
Newcastle-on-Tyne, 4 returns	518	16	0
Newnham, 1 return	53	5	0
Newport (Isle of Wight), 1 return	76	13	0
Newport (Mon.), 2 ret.	75	18	6
North Allerton, 1 ret.	22	0	0
Northampton, 2 ret.	56	10	0
Norwich, 1 return	339	13	6
Nottingham, 1 ret.	830	12	6
Odiham			
Okehampton			
Oldham			
Oxford, 2 returns	200	0	0
Paisley			
Penzance			
Perth			
Plymouth, 1 return	90	12	0
Pocklington			
Poole, 1 return	20	10	0
Portsmouth, 1 return	300	0	0
Preston, 2 returns	264	10	6
Putney			
Ramsgate, 2 returns	36	7	6
Reading			
Redruth			
Reigate			
Richmond (Surrey)			
Richmond (Y.), 1 ret.	68	10	0
Ripon, 1 return	25	0	0
Rochester			
Rotherham, 2 ret.	69	0	0
Rugby			
Runcorn			
Rye			
Salisbury, 1 return	62	3	0
Scarborough			
Selby			
Selkirk			
Settle			
Sheerness, 2 returns	24	10	0
Sheffield, 1 return	844	19	0
Shrewsbury, 2 ret.	297	3	0
Skipton			
Society of Arts	995	6	0
Southampton, 1 ret.	350	0	0
Southport			
South Molton			
South Shields			
Spalding			
Stamford			
Stafford, 1 return	30	0	0
St. Andrews			
St. Austell, 1 return	14	2	6
St. Colomb			
St. Helen's			
Stirling, 3 returns	56	7	0
Stockport, 1 return	292	0	0
Stockton, 1 return	65	13	6
Stoke-upon-Trent			
Stonehouse, 1 return	18	11	0
Stourbridge, 1 return	77	6	0
Stroud, 1 return	92	16	0
Sudbury			
Sunderland, 1 return	192	12	0
Swansea, 2 returns	150	8	0
Tamworth, 2 returns	49	7	6
Taunton, 1 return	88	0	0
Tavistock			
Tewkesbury, 1 return	20	13	0
Tiverton			
Torrington			
Totness			
Tower Hamlets			
Truro, 1 return	92	13	0
Uttoxeter, 1 return	30	0	0
Wakefield, 1 return	240	10	0
Walsall, 1 return	40	11	6
Warrington, 4 ret.	196	15	6
Warwick			
Waterford			
Wellington (Salop)			
Wellington (Som.)			
Westminster, 3 ret.	5216	8	3
Ditto, Ladies, 2 ret.	631	10	6
Wexford, 2 returns	3	17	6
Whitby			
Whitehaven, 3 ret.	115	5	0
Wigan, 3 returns	243	6	7
Winchester, 1 return	90	0	0
Windsor, 2 returns	385	14	0
Wolverhampton, 2 returns	270	17	0
Wolverton			
Woolwich, 1 return	57	7	0
Worcester, 2 ret.	171	5	6
Workington			
Worthing, 1 return	33	0	6
Yarmouth, Great			
Yeovil, 1 return	70	15	0
York, 1 return	77	6	0
	£61,704	5	3½

TO BE SOLD, Two large Greenhouses, about 80 feet by 14 feet, in a good state of preservation. Also two American ALOES, and two ORANGE TREES. To be seen at the corner of Swain's-lane, Highgate Rise. For particulars apply to Mr. G. THOMAS, Camden Station Timber-yard, Camden-town.

HOSE AND UNION JOINTS FOR LIQUID MANURE AND GARDEN PURPOSES.

BURGESS AND KEY, 97, Newgate-street, London, are the Patentees and Sole Manufacturers of the GUTTA PERCHA UNION JOINTS, and of Canvas Hose, lined and coated with Gutta Percha. Prices of Hose, per foot, coated on both sides, 1 inch, 7*d.*; 1½ inch, 9*d.*; 2 inches, 11*d.*; 2½ inches, 1*s.* 1½*d.*; 3 inches, 1*s.* 3½*d.* Gutta Percha Tubing, Sheeting, &c., supplied wholesale and retail. Estimates given.

FOR WATERING GARDENS, BREWERS' USE, &c. FLEXIBLE INDIA-RUBBER HOSE PIPES.

JAMES LYNE HANCOCK, Sole Licensee and Manufacturer of the PATENT VULCANISED INDIA-RUBBER PIPES and TUBING.

These Pipes are well adapted for Watering Gardens, conveying Liquid Manure, racking Beer and Cider, Gas Fittings, Chemical and all purposes where a perfectly sound WATER-PROOF and FLEXIBLE PIPE is required.

Hot Liquors or Acids do not injure them. No oil or dressing is required in using them. They do not leak from remaining out of use, are permanently Flexible in all Temperatures, and are therefore particularly suitable for Fire Engines; and, from their not leaking, are found exceedingly useful in conveying hot or cold water to baths in dwelling houses and such like purposes.

A LIGHT VULCANISED INDIA-RUBBER HOSE is now manufactured for conducting Water and Fluids, at the following prices per foot:

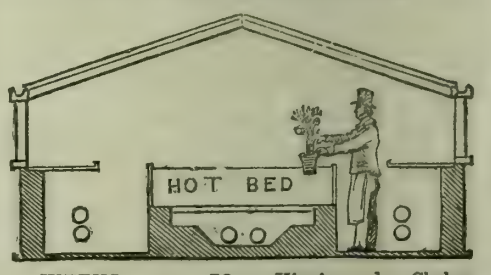
Size.	½ in.	⅝ in.	¾ in.	1 in.	1½ in.	2 in.	2½ in.	3 in.
1 ply	0*s.* 5*d.*	0*s.* 6*d*	0*s.* 8*d.*	0*s* 10*d.*	1*s.* 0*d.*	1*s.* 2*d.*	1*s.* 4*d.*	1*s.* 6*d.*
2 ply	0 8	0 9	1 0	1 2	1 5	1 8	2 0	2 3
3 ply	0 11	1 0	1 3	1 6	1 10	2 2	2 9	3 3

N.B. Vulcanised India-Rubber Garden Hose fitted with roses, jets, and branches, complete, with union joints ready to attach to pumps or water cisterns.

All orders or letters addressed to J. L. HANCOCK, at the Manufactory (and Warehouse), Goswell-mews, Goswell-road, London, will meet with immediate attention.

HORTICULTURAL BUILDING AND HEATING BY HOT WATER.

WARRANTED BEST MATERIALS AND WORKMANSHIP AT THE LOWEST POSSIBLE PRICES.



J. WEEKS AND CO., King's-road, Chelsea, Horticultural Architects, Hothouse Builders, and Hot-water Apparatus Manufacturers. The Nobility and Gentry about to erect Horticultural buildings, or fix Hot-water Apparatus, will find at our Hothouse Works, King's-road, Chelsea, an extensive variety of Hothouses, Greenhouses, Conservatories, Pits, &c., erected, and in full operation, combining all modern improvements, so that a lady or gentleman can select the description of House best adapted for every required purpose.

THE HOT-WATER APPARATUSES (which are efficient and economical), are particularly worthy of attention, and are erected in all the Houses, Pits, &c., for both Top and Bottom Heat, and in constant operation in the Stoves.

The splendid collection of Stove and Greenhouse Plants are in the highest state of cultivation, and for sale at very low prices. Also a fine collection of strong Grape Vines in pots, from eyes, all the best sorts.

Plans, Models, and Estimates of Horticultural Buildings; also Catalogues of Plants, Vines, Seeds, &c., forwarded on application.—J. WEEKS and Co., King's-road, Chelsea, London.

LIGHT, CHEAP, AND DURABLE ROOFING.

CROGGON'S PATENT ASPHALTE ROOFING FELT is perfectly impervious to rain, snow, and frost, and has been tested by a long and extensive experience in all climates. Saves half the timber required for slates; can be laid on with great facility by farm servants, or unpractised persons. Price 1*d.* per square foot.

CROGGON'S PATENT NON-CONDUCTING FELT, for Steam Boilers and Pipes, saves 25 per cent. of fuel.

Samples and Testimonials sent by post, on application to CROGGON and Co., 2, Dowgate-hill, London.

DEANE'S WARRANTED GARDEN TOOLS.—Horticulturists, and all interested in Gardening pursuits, are invited to examine G. and J. DEANE'S extensive Stock of GARDENING AND PRUNING IMPLEMENTS, best London made Garden Engines and Syringes, Coalbrookdale Garden Seats and Chairs.

Averuncators	Garden Scrapers	Pick Axes
Axes	Grape Gatherers and Scissors	Potato Forks
Bagging Hooks	Gravel Rakes and Sieves	Pruning Bills
Bills	Greenhouse Doors and Frames	,, Knives, various
Borders, various patterns	Hammers	,, Saws
Botanical Boxes	Hand-glass Frames	,, Scissors
Cases of Pruning Instruments	Hay Knives	,, Shears [riety.
Chaff Engines	Hoes of every pattern	Rakes in great va-
Chaff Knives	Horticultural Hammers and Hatchets	Reaping Hooks
Daisy Rakes	Hotbed Handles	Scythes
Dibbles	Ladies' Set of Tools	Scythe Stones
Dock Spuds	Labels, various patterns, in zinc, porcelain, &c.	Shears, various
Draining Tools	Lines and Reels	Sickles
Edging Irons and Shears	Marking Ink	Sickle Saws
Flower Scissors	Mattocks	Spades and Shovels
,, Stands in Wires and Iron	Menographs	Spuds
Fumigators	Metallic Wire	Switch Hooks
Galvanic Borders and Plant Protectors	Milton Hatchets	Thistle Hooks
Garden Chairs and Seats	Mole Traps	Transplanting Tools
,, Loops	Mowing Machine	Trowels
,, Rollers		Turfing Irons
		Wall Nails
		Watering Pots
		Weed Extractors and Hooks
		Wheelbarrows
		Youths' Set of Tools

G. and J. DEANE are Sole Agents for LINGHAM'S PERMANENT LABELS, samples of which, with the Illustrated List of Horticultural Tools, can be sent, post paid, to any part of the United Kingdom.—DEANE'S Horticultural Tool Warehouse, opening to the Monument, 46, King William-st., London-bridge.

BASS AND BROWN'S DESCRIPTIVE PRICED CATALOGUE sent prepaid for four penny stamps, for postage. This Catalogue contains a rich assortment of the newest and best plants which can be procured. The stock of BEDDING PLANTS is unusually strong and fine. Several thousand plants of Verbenas are now ready for sending out, as well as our collection of other plants for bedding, the stock of which is also very extensive, consisting of Geraniums, Fuchsias, Petunias, Dahlias, Chrysanthemums, Anagallis, Bouvardias, Cupheas, Heliotropes, Plumbagos, Lantanas, Salvias, Lobelia Erinus grandiflora and compacta alba, Zauschneria californica, &c.

Persons requiring Plants for beds may depend on receiving a supply, strong, and in fine condition, at low prices.

Seed and Horticultural Establishment, Sudbury, Suffolk.

THE FUNEBRAL CYPRESS—CUPRESSUS FUNEBRIS.

MESSRS. STANDISH AND NOBLE, of the Bagshot Nursery, beg to announce that they are now sending out the above magnificent Weeping Evergreen Tree, the hardiness of which is now proved beyond all doubt; and for particulars proudly refer their patrons to the highest authorities, viz., Dr. Lindley and Sir W. Hooker—see *Gardeners' Chronicle*, April 21, 1849, and April 13, 1850; Curtis's Botanical Magazine, for May; and the Gardeners' Journal, March 9 and 16 for the present year. Strong healthy plants, fit for immediate planting, 21*s.* each.—Bagshot Nursery, Surrey.

DIELYTRA SPECTABILIS.

G. CLARKE (late WM. DAWSON) begs to offer the above new and beautiful plant from the north of China, at the reduced price. Small healthy plants, 3*s.* 6*d.* each or 1*l.* 10*s.* per doz.; Flowering plants, 5*s.* to 7*s.* 6*d.* each; Fine specimens for 1*l.*

G. C. has fine healthy grown plants of most of the leading kinds of Ericas, Leschenaultia formosa, Pimelea spectabilis, Boronia serrulata, &c., at moderate prices.

Streatham-place Nursery, Brixton-hill, near London.

RENDLE'S CHEMICAL PLANT MANURE.—We have just received the following letter from Capt. JAMES WILLIAMS, R.N., Newport, near Barnstaple.

"Newport-terrace, Barnstaple, May 14, 1850.

"Sir,—I acknowledge the receipt of another supply of your Chemical Plant Manure, and I have very great pleasure in informing you of the beneficial effects I have found it produce on my plants in general. I am certain a short trial of it will be satisfactory to any person using it. I find my plants *strong and full of flowers*, particularly my Geraniums, which are grown in very small pots, producing now, at this time, *fine trusses of flowers, large*, and *their colours clear*. On my Calceolarias it has an *astonishing effect* in the produce of flowers, both in quantity and size; with regard to Petunias the same. I now use it in the compost of all my greenhouse plants. I have so far been successful in the quantity I have used—one pint of manure to two pecks of compost; and as it is *inexpensive*, I wish you a successful sale, and trust that your customers will be as well satisfied as I am.

"I remain, sir, yours truly, JAMES WILLIAMS."

"P.S. I shall most assuredly recommend all my friends to use it."

Samples can be had gratis, by enclosing six penny postage stamps to pay the postage. Sold in tin canisters, at 1*s.*, 2*s.*, and 3*s.* 6*d.* each, warranted to give satisfaction, or the money will be returned.

Apply to WILLIAM E. RENDLE & Co., Union-road, Plymouth.

EDWARD BECK, SLATE WORKS, ISLEWORTH. SLATE CISTERNS, &c.; COLE'S PATENT.

E. BECK informs Horticulturists and the Public generally that Mr. COLE has granted him the use of his Patent for the unexpired term, and he is now able to supply SLATE CISTERNS fastened without iron bolts or the usual oil cement, thereby doing away with the difficulty which has hitherto existed of forwarding such articles by rail or waggon, fixed and ready for use instead of in pieces, as heretofore.

E. B. will be happy to answer any inquiries as to the price of Cisterns, or any other Slate articles manufactured by him, such as Orange Tubs, Plant Boxes, Tanks, Shelves, Garden-path Edging, Hot-water Tank Covers, Flower Boxes for Balconies, Shelves fitted to hold water for Orchidaceous Houses, &c., all of which may be seen in use at Worton Cottage, Isleworth, on application to the Gardener, Sundays excepted.

Estimates given for Work as shown upon Drawings, and in specifications. A large stock of Slate Slabs of all sizes and thicknesses, kept on sale.

N.B.—Dairies fitted either with Shelves or Milk Pans, of very neat appearance.

MEADOW AND PASTURE GRASS SEEDS.

GEORGE GIBBS AND Co. beg to notice their mixtures for laying Land down to Permanent Grass are now ready. The general satisfaction they have given for many years past, and the present low prices of 32*s.* per acre, allowing 2 bushels and 12 lbs. to each acre, they trust will ensure a continuance of orders. Mixed Seeds for improving old Grass Land, 1*s.* 3*d.* per lb.; fine sorts for forming Lawns, 1*s.* 4*d.* per lb. Their Priced List for the season of Turnips, Mangold Wurzel, and other Farm Seeds, will be forwarded on application to 26, Down-street, Piccadilly, London.

BAKER'S PHEASANTRY, Beaufort-street, King's-road, Chelsea, by special appointment to her Majesty and H. R. H. Prince Albert.—ORNAMENTAL WATER FOWL, consisting of black and white swans, Egyptian, Canada, China, barnacle, brent, and laughing geese, shieldrakes, pintail, widgeon, summer and winter teal, gadwall, Labrador, shovellers, gold-eyed and dun divers, Carolina ducks, &c., domesticated and pinioned; also Spanish, Cochin China, Malay, Poland, Surrey, and Dorking fowls; white, Japan, pied, and common pea-fowl, and pure China pigs; and at 3, Half-moon-passage, Gracechurch-street.

BEE HIVES.

GEORGE NEIGHBOUR AND SON respectfully announce that they have prepared for this season an extensive supply of their various IMPROVED BEE HIVES, which are offered to all who are desirous of cultivating that pleasing and profitable branch of rural economy—the Honey Bee. The collection consists of "Nutt's Collateral Hives," "The Single Box Hive," "The Amateur Bar Hive," "The Improved Cottage Hive," &c., from either of which the honey may be taken at any time without injury to the Bees, and may be worked with safety, humanity, and profit, by the most timid and unaccustomed to Bee manipulation. A descriptive paper, with drawings and prices, will be forwarded on the receipt of two postage stamps.—127, High Holborn, London.

Agents: WM. DEURY, Castle-street, Liverpool; HALL and WILSON, 50, King-street, Manchester; AUSTIN and M'ASLIN, 168, Trongate, Glasgow.

NETTING, FLAGS, AND BUNTING.—Superior Tanned Garden Netting, for preserving Fruit-trees from Frost, Blight, or Birds; or as a fence for Fowls, Pigeons, Tulip and Seed-beds, can be had in any quantity from JOHN KING FARLOW'S Fishing-rod and Net Manufactory, 5, Crooked-lane, London-bridge, at 3*d.* per yard 2 yards wide, or 6*d.* per yard 4 yards wide. Woollen Bunting, any length or width, at 6*d.* per square yard. Forwarded to any part of the kingdom on receipt of remittance, Post-office order, or stamps. Several good second-hand Flags to be sold cheap.

SUPERB SEEDLING FUCHSIA—"CAPTIVATION."

EDWARD TILEY has much pleasure in offering the above beautiful FUCHSIA, which he is confident will give entire satisfaction. It was exhibited at the Victoria Park Exhibition in September last, and was awarded by the judges an Extra Certificate of Merit, and much admired by all who saw it. It was also sent to Mr. HENDERSON, of the Pine-apple Nursery, Edgeware-road, London, who gave his opinion as follows:—"I received the box containing Fuchsia Blooms quite safe; it is a really good variety—a vast improvement upon Smith's Ne Plus Ultra; tube good, deep red sepals, quite reflexed, I may say curling over, showing its fine violet-purple corolla to great advantage, being clean, smooth, and round. Send me plants of it when you send it out." It was twice sent to the Editor of the *Gardeners' Chronicle*, whose opinion was similar to the foregoing.

E. T. will commence sending out the above, after the 4th day of June, at 10*s.* 6*d.* per plant. The usual allowance to the Trade when three are ordered. They will be sent in strong tin boxes through the post, if required, package and postage free, on receipt of Post-office Order for the amount.—E. TILEY, Nurseryman, Seedsman, and Florist, 16, Pulteney Bridge, Bath.

The Gardeners' Chronicle.

SATURDAY, JUNE 1, 1850.

MEETINGS FOR THE ENSUING WEEK.

MONDAY,	June 3	Entomological	3 P.M.
		Chemical	8 P.M.
TUESDAY,	— 4	Linnean	8 P.M.
WEDNESDAY,	— 5	Royal Botanic	3½ P.M.
		Geological	8½ P.M.
THURSDAY,	— 6	Zoological	3 P.M.
		Antiquarian	3 P.M.
FRIDAY,	— 7	Botanical	8 P.M.
		Royal Institution	8½ P.M.
SATURDAY,	— 8	Horticultural Gardens	1 P.M.

COUNTRY SHOWS.—Wednesday, June 5: Glasgow and West of Scotland Horticultural.—Thursday, June 6: Birmingham Botanical and Horticultural.

IN a few days two pensioners are to be elected at the GARDENERS' BENEVOLENT INSTITUTION, and it may be useful to those who are uncertain how to give their votes, if we draw their attention to what we conceive ought to be the principle to be observed on these occasions.

We need not say that this, like all other recent charities, depends for its existence upon the support of the public. It has no estates, or large hoards of money, on which to rely. The utmost prudence which the managers have been able to exercise, has not resulted in the accumulation of more than a few thousand pounds. It must, therefore, be the first object of the friends of the charity to take every legitimate means of augmenting the annual subscriptions. And although it is to be hoped that the public at large will long continue to aid so good an institution, and that contributions from persons not immediately connected with gardening will become more and more numerous every year; yet it must be obvious that the main reliance of the committee ought to be on gardeners themselves. In fact, if gardeners will not help to increase the fund which *may* be destined for their own benefit, and which *must* be applied for the benefit of their brethren, it is not to be supposed that the general public will take that interest in the charity which might otherwise be anticipated.

Now, do gardeners support their own charity as they could and might? Do they, while in prosperity, contribute their annual mite? We regret to say that although many do, in the most honourable and liberal manner—yet the great body does not. We fear, indeed, that many are more eager to find fault with the committee than to support the charity; endeavouring to conceal or justify their own short-comings by picking holes in the proceedings of those whose only object is to aid them.

Nevertheless, when the day of adversity arrives, as it may arrive to any of them, they are ready enough to become candidates for the support of the charity, even although they have never contributed a shilling to its funds. For instance, in the list of 18 candidates now circulated by the committee, only seven have ever subscribed. We would, therefore, suggest to those who have votes, that they should absolutely refuse them in all cases where no subscription has been paid by the candidates; and that the votes should be confined to the remainder, preference being given, not to priority of application, but to the number of years during which the applicant has subscribed; for it is surely nothing more than justice to regard the available funds of the charity as being claimable in the first instance by those who have created them.

Yet we do not find this rule acted upon; for a candidate, who has never subscribed a farthing, appears to have received at the last election 169 votes, while another, who had subscribed for seven years, only gained 78 votes. Of course, this is the result of a persevering canvas; and, *if the friends of the charity do not act* INFLEXIBLY *upon some fixed principle*, such will always be the case. Elections will be carried by the well-known process of boring and persecuting voters, and not by the claims of the candidates. The best way to avoid this nuisance would therefore, we venture to suggest, be to support in all cases those candidates who have themselves subscribed for the longest period. It is a fair rule, to which no reasonable person can object; it furnishes an answer to all the importunities with which the voters are now assailed; and it cannot fail to add materially to the revenue of the charity. To ACT OTHERWISE IS SUICIDAL.

THE air we breathe, even at a distance from the smoke of the factory or the chemical death-blast, is far from being that pure unmixed æther which many suppose. A glance at a sunbeam peering into a room betrays multitudes of objects otherwise imperceptible, and the observations of the existence of various bodies in the atmosphere to which the question as to the origin of cholera gave rise last year, have lately been much extended by EHRENBERG, who has found a host of organised beings floating at large in the lift. The various instances recorded of the descent of differently coloured rain, are proofs of the enormous quantities of matter occasionally carried about to great distances by currents in the atmosphere. Many such cases have never been submitted to scientific observation, and therefore have been regarded frequently as founded on error, or dreaded by their eye-witnesses as ministers of wrath or foreboders of evil.

In the autumn of 1845, just before the prevalence of the disease in Potatoes, a shower of inky black rain fell in a wild and scantily inhabited district with which we are acquainted, and was believed to be the agent which carried the Potato murrain through the land. Unfortunately none of the fluid was preserved, or some easier solution of the mystery might possibly have been detected. A yellow rain fell on the 17th of last April, at 11 o'clock A.M., at the Mumbles, near Swansea, the sky being at the time bright and free from clouds. The spots of rain when fresh were of an ochre yellow, and the colour remained for many days, notwithstanding heavy rains, where the spots had fallen. Some of the sediment has been submitted to the microscope, and we find it to consist of what we believe to be pollen grains principally: as far as we can judge from the collapsed and distorted condition in which they now are, those of some species of Salix. At least many of the grains present a single groove in an elliptic body when seen laterally, and when seen from above three grooves or bands in a globular cell. Amongst the pollen grains are the spores of some fungus resembling those of a Cladosporium, but with a broader outline, but not agreeing exactly with anything with which we are acquainted, and branched threads consisting of short articulations, exhibiting the appearance of the infant mycelium of some Antennaria. There is no reason for supposing that these were after-growths, and the spores do not seem to belong to the mycelium, which is evidently young.

Two instances of coloured rain are recorded by Prof. BAILEY, in the "American Journal of Sciences and Arts" for January, 1842, one of which fell at Troy, New York, and the other in the harbour of Picton. Mr. HASSALL has made some observations on these in the "Annals of Natural History" for June, 1842. One of these was not a mere hasty shower, like that in Glamorganshire, but "a portion, alighting upon a vessel in the harbour, on a serene night in June, had to be collected and thrown over by the bucketful in the morning." The substance with which the rain was impregnated at Picton was found to consist wholly of the pollen of Pinus sylvestris; that at Troy presented several forms, amongst which the principal one seemed to be that of some Cupuliferous plant. It is curious that, in most instances of coloured rain, the sky is recorded as being unclouded, which would seem to indicate some electric agency.

BY adopting the mode of IRRIGATING GARDENS, usual in the south of France, our correspondent "J. C." (see p. 326), might distribute his sewage water without need for any hose or pipe. Gardens, as there prepared for irrigation, are first divided into compartments of a convenient length, and from about 30 to 40 feet wide; a channel for water is then formed along the side of each compartment, and the remaining part of it is made up into transverse beds of 3, 4, or more feet wide, according to the crops intended, a narrow water channel being beaten down between each bed, each lesser channel opening into the main one. The compartments are of course disposed longitudinally from a higher to a lower part of the ground. In making up the beds a dam of earth is formed in the main channel, just below each of the lesser ones.

Water for irrigation is usually raised from a well at the highest part of the garden by a chain of buckets; they deliver the water into a trough or reservoir of wood, from whence a stream is conveyed into some one of the main channels, and thence it flows between each transverse bed successively.

The operation of watering is dexterously and expeditiously performed with the tool called in *patois* the *Aissade*. The first dam across the main

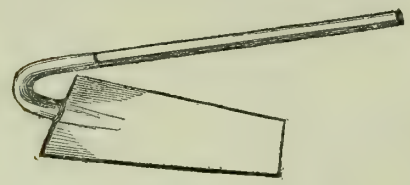
channel throws the stream into the first transverse channel; as soon as water has reached the bottom of it, the gardener, with his aissade, takes up the first dam in the main channel, and with the same mould forms a dam across the first transverse channel; by the time this is done, the water has run to the bottom of the second transverse channel; the gardener then takes up the second dam, closes the second transverse channel, and so on till the whole compartment has been irrigated. The next watering is commenced at the bottom of a compartment instead of the top, on account of the different situation of the dams; so, alternately, irrigation commences at the top or at the bottom of each compartment.

In this manner a market garden ground near Montpellier, of four acres, used to be kept in perfect order by the gardener himself, two boys his sons, and one man an assistant, with one woman to weed, though weeds seldom had time to appear.

For seed beds the ground is otherwise arranged; the bed for this purpose is made perfectly level, with a bank of mould 5 or 6 inches high around it; water is let gently through a cut in the bank till the whole bed is well soaked and flooded.

In a market garden the soil of which, like that of "J. C.'s" garden, was a sandy loam, where a crop, while growing, required additional manure, fertilising matter was mixed with the water in a channel as near as might be convenient to the head of the main channel, and thus manure was conveyed by water to the plants of a whole compartment. This affords reason to conclude that the fertilising parts of sewage water would be equally well distributed by the mode of irrigation above indicated.

The sketch of an aissade subjoined is from recollection, but it may give a notion of this useful tool.



The blade might be about 16 inches long, perhaps not more than 6 inches wide. The blade takes up often at once a whole dam, deposits it at once in its new place, then with the under surface of the blade beats down the mould water tight.

Gardeners in the south of France greatly prefer irrigation, as they practise it, to throwing water over the whole surface of a bed; they say that by the latter mode the earth is beaten down so as to exclude air from the roots of plants. And in this they reason justly. In fact, we believe that one of the causes which have impeded the application of liquid manure in this country is the mode of using it. Instead of allowing it to flow gently over the surface, and to soak gradually down to the roots of plants, it is precipitated upon the ground from a water cart, or urged upwards from a hose, so as to be thrown as far as possible from the operator, the result of which is that the earth is gradually rendered impermeable, and incapable of sustaining active vegetation.

We learn by letters from St. Petersburgh, dated May 10, that Dr. Fischer is about leaving the Imperial Botanic Garden, and that Dr. C. A Meyer, his successor, will continue the former relations of that establishment, and of the Imperial Garden at Nikita, in Crimea, with their foreign correspondents.

ENTOMOLOGY.

The House Ant.

The annoyances and actual injuries committed by different species of ants upon our choicest growing vegetable productions has long been known and complained of, but it is only very recently that our domestic economy, in England at least, has suffered from the presence of these troublesome insects. In the hot regions of the globe, however, the case is far otherwise, and various writers upon the East and West Indies have drawn lamentable pictures of the mischief which they commit; thus Captain Green informs us that a small red ant with a black head most pertinaciously detects and attacks sugar and oil, marching to the spot in files about three abreast, and when satiated returning in the same order by a different route. Brown, in his "History of Jamaica," mentions an ant, Formica omnivora, that consumes or spoils all kinds of food. Percival, in his "Ceylon," describes another ant, which inhabits dwelling-houses, devouring everything it can meet with, and which can be kept by no contrivance from invading the table, and settling on the bread, sugar, and such things as they like. But a more remarkable and detailed account of the saccharivorous propensities of an Indian species is described by Col. Sykes, in the first volume of the Transactions of the Entomological Society, which, on account of its large size (the females measuring 19-20ths of an inch in length), and remarkable powers of instinct, must be a formidable inmate in houses. The manœuvres by which these insects contrived to gain access to the fruit, cakes, and particularly China preserved fruits placed upon a table (the feet of which were plunged in water and subsequently surrounded by turpentine), display a most marvellous degree of instinctive faculties.

In England, and especially in the country, it is very rarely indeed that ants become troublesome in doors, although Messrs. Kirby and Spence mention that the large horse ant (Formica rufa) will occasionally plant its colonies in kitchens, and is not easily expelled. Within the last few years some of the houses in Brighton, London, and Liverpool (all seaport towns) have been attacked by swarms of a very minute ant (Myrmica domestica), and which has occasionally increased to such an extent as to drive the inhabitants from their residences, the ants attacking or devouring every article. In one instance these marauders have been traced to a piece of American Pine wood, newly laid down in a kitchen,* and there can, I think, be very little doubt that the species has been imported within the last few years. Dr. Bostock published a notice of this insect, and of the attempts which he had made to dislodge it from his own house (Trans. Ent. Soc. ii., p. 65). The ants were found in a cupboard, where stores were occasionally kept, and also on a range of shelves contiguous to the cupboard, the insects being most numerous in that part where the wall was heated by a fire in the contiguous house. In the month of June the cupboard and shelves were removed, when in all the parts where any of the woodwork had been let into the walls, or even where it had been in contact with the plaster, the animals were found in prodigious quantities, of two sizes, one considerably larger than the other, the larger kind constituting, perhaps, one-sixth of the whole. There were also a very great number of larvæ. They subsequently settled under the floor of the kitchen, and especially fixed themselves in the crevices about the fire-place, and were only dislodged by taking up the flooring, and removing and resetting the grate in cement.



Figure 3*a* represents one of the mandibles of the neuter very highly magnified, showing the four acute teeth with which it is armed, the opposite mandible is of the same shape.

The individuals described by Dr. Bostock, which are those commonly seen, are the small neuters or workers, (fig. 3) which, as in the ordinary ant hills, constitute the great bulk of the community, mingled with females which have lost their wings (fig. 2), and which are of a more elongate shape, as well as very much larger than the neuters. The males have not yet been described; and indeed the species may be said to be still undescribed, Mr. Shuckard's technical description being quite insufficient, consisting as it does of only three lines.† The discovery of the males (for which I am indebted to Mr. F. Smith), and, consequently, of the period when the species arrives at the winged state, is of considerable importance, since it teaches us the time when our attempts to eradicate the species are likely to be attended with most complete success, the destruction of the winged males and females, at the period of swarming, of course preventing the establishment of fresh broods. This event takes place at the end of May, at which time the swarms are in an unusual state of activity. The male (fig. 1), measures about 1⅓ line in length; the female (fig. 2), 2 lines; and the neuter (fig. 3), ¾ of a line. The male is black and opake, except the abdomen, which is glossy, with perfectly transparent wings; the veins (except the principal subcostal one and the stigma), scarcely visible; the antennæ are dirty whitish, with the tips and base dark, and the legs are similarly coloured and dark at the base. The females and neuters are pale yellowish red, with the hinder half of the abdomen brownish black; the female is richer coloured than the neuter, and has the thorax also varied with brown. The accompanying figures will render any description of the different forms of these three kinds of individuals unnecessary. I may add that they are the first figures which have been given of the insect in any of its states.

Various plans have been already proposed for the destruction of these insects. Those recorded in a late number of the *Gardeners' Chronicle* need not here be repeated. Rags, however, well saturated with turpentine thrust into the crevices where they abound will certainly destroy them, as will also oil, if it come in contact with their bodies. Dr. Bostock found lime very serviceable in expelling them, and water in which the outer green skins of Walnuts have been soaked has been used with success; salt has also been stated to be objectionable to them. One of the simplest and most effectual remedies is to lay wide-mouthed bottles in their tracks or near the mouths of their burrows, placing bits of raw meat within. The ants will greedily attack the latter, and may be destroyed from time to time by shaking the bottle over hot water. Of course the destruction of the winged males and females during the time of swarming merits the greatest share of our attention. *J. O. W.*

* Proceedings of Ent. Soc., i., xxv., xxxii.
† Charlesworth's Mag. of Nat. History, ii., 627.

REZOIL.

It is well known that the patience and labours of the horticulturist are frequently rendered unavailable by the appetite of some insects. For preserving their flowers from these enemies, gardeners have adopted several plans, not one of which appears to be effective, more especially against the earwig, which is most to be feared as the flowers approach maturity. How many show Dahlias are thus "cut off in their bloom!" With the hope that the following receipt will offer some check to these marauders, I send it to you, assured that its cheapness and easy application will render it universally appreciated.

Take of common resin, 1¼ lb.; sweet oil, 1 lb.; place them in a pipkin over the fire until the resin is melted, stir the materials together, that they may be well blended; when cold the substance formed, which I call "rezoil," will be of the consistency of treacle. To use the rezoil it should be spread with a brush upon threads or any fitting material, and wrapt round the stem of the plant; if any support is used that should be brushed over also. No insect can possibly, or will attempt to cross this barrier; the rezoil never dries, but always remains sticky and clammy—its action as a trap is therefore obvious. To preserve Grapes and other wall fruit we have only to nail a strip of list upon the wall, round the entire plant, and then paint it well with the rezoil, on both sides, if it can be managed, to keep insects from crawling under as well as over. Other modes of application will suggest themselves without my here enumerating them. Birds, cats, and mice equally avoid soiling themselves with this substance. *Septimus Piesse*, 43, *Molyneux-street.*

DISEASES OF PLANTS.

(*Continued from p.* 325.)

The mollusca of the genus Limax, or slugs, are quite as fatal to agriculture. Our peasantry and gardeners distinguish two species, the *lumaconi* and *lumacotti*, or large and small slugs. It is certain that tobacco or snuff sprinkled on the animal causes so copious a secretion of the viscous humour on the surface of the body, that it swells and dies. But this remedy is only applicable in the case of a few plants in pots, and to the large not the small kinds. Woe to the field once infested by the latter! their ravages are incalculable; there is not a vegetable production they do not devastate. Whilst the Limax hyalinus, *L.*, lays waste our gardens, attacking more especially the Kidney Beans, the Limax agrestis, *L.*, infests our corn fields, and I have often seen the whole of the epidermis and cellular tissue of the leaves of Wheat devoured by them, leaving the fibres intact. For the former kind it has been recommended, and may produce some effect, to cover the seed beds with ashes, for which others substitute lime or very fine sand. In most seasons, and in low ill drained ground, badly cultivated, they multiply in an extraordinary degree, so as that no portion of the plants escapes from their teeth. In gardens the larger slugs as well as snails may be easily got rid of by putting every here and there reversed garden pots on the ground, so placed as that they may creep under to shelter themselves from the heat of the sun. In this manner I have taken great quantities.

Class V. Indeterminate Diseases.—I have thus designated those diseases whose origin is either entirely unknown, or deduced from observations contradictory in themselves, or from hypotheses which, however brilliant, have no real foundation. It is indeed a mortifying thing to see amongst these diseases precisely those which from the earliest times have been the subject of the studies of philosophers, and that they are those which produce the greatest havoc in this country, whilst Nature refuses as yet to disclose to us the secret of their causes. Nevertheless, as I have said in my preliminary discourse, there are no vegetable diseases on which so much has been written by men of sound doctrine, of exactness of observation, and of careful judgment. I would mention in the first place Tillet's *Dissertation sur la cause qui corrompt et noircit les graines de blé dans les épis, et sur les moyens de prévenir ces accidens.* This writer has deserved well of agriculturists, because he first fixed the characters of diseases of corn, and indicated some means of warding off the most terrible of them. Haller, who in general is not much disposed to praise Italians, as may be easily seen in his "Bibliotheca Botanica," prefers to Tillet's treatise that of Count Francesco Ginanni, entitled *Trattato delle malattié del grano in erbo*, which appeared four years after Tillet's dissertation. Both writers worked simultaneously on the same subject. Ginanni treated it with more detail, and his book may be considered as one of the best we have. Much has since been written, but by all authors of good faith, Ginanni is deservedly and repeatedly quoted. Finally, the celebrated Tessier in his *Traité sur les maladies des graines*, and in his articles inserted chiefly in the agricultural part of the "Encyclopédie Méthodique," which may be considered as so many separate treatises,

has deservedly gained not only universal praise, but what is more, the well earned gratitude of cultivators, to whom his enlightened theories and practical experience have been of the greatest use. I have thought it my duty to mention these three works, in order that, as I shall myself only advert to the chief points, those who wish to become perfectly acquainted with the results of the long experience, and the fine observations and theories made on the diseases of cereals, may know where to look for them, and be sure that they are not wading in turbid waters.

VILLA AND SUBURBAN GARDENING.

The successful pot culture of plants was considered some few years back to be a secret in the hands of a few eminent gardeners. Continued investigation into the theory and practice of cultivation in relation to this department of gardening has, however, exploded this notion. The whole matter is now simplified, and the practice rendered easy even to the amateur. The nature of soils and the modes of mixing them are no longer involved in mystery. The secret of potting, if such a thing ever existed, is now numbered with the things that were. Watering has been rendered plain. In fact, the whole operations pertaining to plant cultivation are now perfectly known. The amateur has had ample opportunity of informing himself on all these points. It may be instructive, therefore, on the present occasion to lay down a few particulars relating to the treatment of plants during their growth, taking it for granted that all other conditions have been complied with.

As I stated on a former occasion, the use of stakes in plant culture has become an intolerable nuisance, opposed to every principle of propriety and good taste. It is true that the faggot system has ceased to have so many admirers; and, if a general war is waged against it, the skill of our cultivators will supersede its use, or will at least limit its application. One of the causes which has induced this superabundant use of props, has been a system of culture that aimed at the production of large specimens in a short period of time. Young plants in vigorous growth received large shifts; they were then placed in close or warm houses, in order to promote an unnatural growth. These rampant shoots demanded support, which under a more natural system of culture would not have been required. The result of such management proved that every successive growth required a fresh array of supports, until the plants at length exhibited a greater amount of dead wood than living branches. As I have stated, the taste for such things is rapidly changing, and a better system of management is daily being developed.

The above observations apply to plants requiring greenhouse protection. Let us therefore take a New Holland plant, in a small pot, that we may be desirous to grow and flower as a specimen; give it a moderate shift, and place it in a position to receive, in all suitable weather, a large proportion of atmospheric air; keep it perfectly cool, and as the season advances, expose it entirely in a situation partially protected from the direct rays of the sun. The recognition of art as an element in cultivation is not to be disputed; hence, as the plant progresses in growth, it will be necessary to stop the over-luxuriant shoots, which will throw strength into the plant generally. The abundance of air and light, with which it has been supplied during its growth, will produce a stout robust habit, contradistinct from the spindly, lanky, etiolated form similar plants exhibit under unnatural and tortuous culture. In stopping luxuriant shoots, under any circumstances, never destroy the form which Nature has given to the particular species. A plant may possess all the rigidity of growth necessary to support it, with little aid from props, without assuming the only shape given to nearly every plant by modern cultivators, viz., a hemispherical one. Avoid this by all means, and endeavour to produce every specimen after its natural habit. An Eriostemon and a Kalosanth surely take different forms. *Pharo.*

TRADE MEMORANDA.

Does any one know what is done with the loam that is stowed away under the arches of the Croydon Railway? It is uncommonly like guano.

Home Correspondence.

Width between rows of Vegetables and deep stirring in the intervals.—In your "Calendar of Operations" an excellent rule is given, which is not sufficiently attended to, viz., that of making the distance between the rows of plants wide enough to allow of deep stirring of the soil between them. In effecting this, I find Dr. Newington's hand-cultivator of the greatest service. Like all the inventions of that gentleman, it is not only quite original, but completely answers the purpose for which it is intended. A backward crop of Cabbages in my garden this spring, by the constant use of the cultivator, was converted into one of the earliest. The instrument not only loosened the soil, with trifling labour, deeper every time it was used, but also moulded up the Cabbages at the same time. This is important, for the spring growth of such vegetables is not from the original root, but from fresh rootlets, which are sent forth by the stem near the surface of the soil, and the looser it is the more vigorous is the growth of the plant. The implement has many other uses. With it one man will do the work of six in drawing drills for sowing Carrots and such crops. I have used it for two years, and can testify to its utility both as an agricultural and horticultural implement. I know of no hand instrument which will vie with it in performing the work it is adapted for so economically and effectually. *L. Stephenson, Souldern, Oxon.*

Shell Walks.—I have lately laid out a flower garden in the formal style; and, for the sake of colour, it was desirable that some of the walks should be laid with a whitish material. I have adopted shells for this purpose, and, as far as effect is concerned, they answer admirably, not being too white, but in practice they make untidy flower beds, as it is almost impossible to avoid scattering the shells over the borders in walking. Will any one inform me whether there are any means of making shell walks tolerably firm and compact, either by any peculiar method of making them, or by the use of any substance as a binding material, which will have the effect of concreting the shells together without destroying the colour? I ought, perhaps, to add, that the walks are only 3 feet wide, and form rather an intricate design of some extent, and therefore rolling them is almost out of the question. *B., Canterbury.* [We presume that your shells are too thickly put on the walks. Try a thinner coating rolled over with clay, or lime and clay in the state of mortar.]

Sewage Irrigation.—After two or three years' experience of the value of sewage for garden purposes, I am convinced that it has only to be fairly tried to be generally used. It is desirable (previous to using it), to pass the sewage through a filter of gravel or coarse sand, or what is better for permanent crops, such as Asparagus, or Vines, or Grass, through a basket or a box pierced with holes. It is not easy to use it extensively, through small permanently placed pipes, or pipes pierced with small holes, since they are too apt to be filled with one peculiar portion of sewage, viz., the mixture of grease and earthy matter, which soon prevents the passage of the sewage; for this reason (from the facility of cleansing the filter readily), it is best to filter the sewage downwards. In my own garden at Croydon, we have irrigated with house sewage four Asparagus beds, each about 60 feet in length, for the last two years. The Asparagus is planted in double rows, between which a little open channel is formed, and along this the sewage fluid flows. The irrigation, since February, has been repeated about once a fortnight; the beds were made in 1848, and the crop of this year has been abundant and more forward than any we have heard of in this neighbourhood. We have been cutting almost daily since the 17th of April. We remark a strong tendency in the Asparagus to grow towards and in the little sewage channels. In some recently made Grass plots, formed for experimental purposes in the same garden, the produce bids fair to rival all that is accomplished on an equal space in the meads of Clipstone and Edinburgh. In these, and for other purposes, I find no mode better for the distribution of the sewage than fixed earthen pipes, of 2 or 3 inches bore, which have their garden terminus at such an elevation as to empty their contents into open portable wooden troughs, pitched in the inside, and in lengths of about 20 feet each. As the valuable suggestions of Prince Albert will probably induce many of your readers to turn their house sewage to a profitable account, these results of between two and three years' trial, may be useful. *Cuthbert W. Johnson.*

Araucaria imbricata.—At page 325, "K.," of Cork, solicits information as to "the cause of the leaves of Araucaria imbricata turning brown." He describes the appearance of his plant and the situation in which it grows. Your reply is, that the mischief is probably produced by wet. I am disposed to attribute it to sudden exposure during or prior to the prevalence of cold winds, either by removing other plants which had afforded protection, or by planting out incautiously. I have plants of Araucaria imbricata as well of 10 years growth as very young, not one of which has suffered, however exposed, this year; but I also purchased in the spring (early) from Messrs. —— a very fine specimen (price 6 guineas), growing in a tub, and perfectly well rooted, though the leaves had not the fine dark gloss which my others have, and indeed the lower branches when examined carefully have a mossy appearance. This plant came down carefully packed (in the tub); it was perhaps a little injured in the extremities of some leaves; it was planted on the 5th of April, upon a mound of excellent compost of black soil and fresh loam, upon a layer of brickbats, and well drained, in a situation exposed to the east. Subsequently we have had great prevalence of dry weather and strong east winds; so long as they lasted the plant was protected by bunting, and has been occasionally watered since. It has every promise of making good growth this year, but nevertheless a great many of the leaves have the brown appearance alluded to by "K." I attribute it wholly to exposure, the plant having been under glass prior to its coming from the nursery garden; and although I agree with your observations in page 282, vol. 2, second series of the Horticultural Society's "Transactions," that the Araucaria imbricata is perfectly hardy, I do not think it so entirely prefers an open situation, that it can be planted out into one without considerable care. Should the leaves which have turned brown be removed, and if so when should that be done? *R. T. P., Lancaster.* [Wait till they are dead; they will then drop of themselves, or they may be readily broken off. This will happen near Midsummer.]

Transplanting Vegetables.—When the season arrives for transplanting Broccolies and other vegetables, I gently raise the seed-beds with a Potato fork, so as to spring the roots of the plants. I then water with a rosed watering-pot, and in 10 or 15 days, as circumstances permit, I water again, raise, draw, and plant; watering the bed if more plants were wanted for another period. Celery, Endive, Lettuces, flower beds, seed pots (with proper instruments), I have treated as above; and the plan may be extended to Strawberry runners for potting or for rows; Carrots, Onions, Beet, and Turnips; also to forest trees, shrubs, and grain, if it is desirous to increase any particular sort, such as the Peruvian Barley imported by Lord Lonsdale. *T. Torbron, Lower Tottenham.*

Skirretts.—For the last three or four years I have vainly endeavoured to raise a crop of these nice little roots, in consequence of the seed failing to vegetate. This has been procured both from provincial and London seedsmen. In the spring of 1848 a few plants were reared by sowing a little seed in heat, and from them seed was obtained in the autumn. This, sown in shallow drills in the open ground, April 5, 1850, has, up to this day, May 20, shown no signs of appearing above ground. Will some obliging correspondent help me to grow a few dishes of this agreeable old-fashioned vegetable? Is the seed of very short vitality? or does it require any peculiar mode of sowing as to depth, &c.? A few rows of it are worth having annually in one's garden, if only to set juvenile horticulturists and cloyed epicures a-wondering what capital and promising new esculent it can be. *D.*

Exhibition in 1851.—The *prestige* in favour of porous flower-pots being on the decline, I may express a hope that some public-spirited persons will not think it beneath their abilities to pay attention to them, so as to produce some specimens at the great exhibition of 1851, which shall unite the cheapness and utility of the present race with elegance of shape and improvement in colour. They are the means of providing rational and innocent amusement, and employment, to thousands of our fellow subjects; and the more such pursuits are encouraged amongst those who live by labour the less will the gin-shop be frequented. Drawing-room flower-pots may be soon devised, though porcelain pots have always an incongruous appearance; but it is a model for the million that is required—for those who under every disadvantage of means and station, yet cultivate with pride and delight flowers equal to any of those at the command of the rich and the great. I could have offered some suggestions, but they are perhaps out of your line. *An Amateur.*

Brown Scum on Water.—In the run of a spring, which issues out of a bank through a pipe, 2 feet above the level of a river, from which it is about 3 yards distant, I am growing Water-cress. The bed of the runlet spreads from one foot to about five or six at the lower end. The water is particularly good and clear, but a quantity of muddy scum came on the surface; I thought this might arise from the soil it ran over. I therefore got some gravel pebbles some inches thick, just under the surface, which I expected would be quite clear, and free from such appearance. I find, however, a sort of blackish weed spreading over the face of the stones, in which the roots of the Cress are striking, and a great deal of nasty looking scum all over the surface. Would this floating substance be best removed by occasionally flooding the place, and thereby bringing it to the top? *J. T. P., Newbold Vicarage, Rugby.* [The scum will probably disappear; the cause of it we should be glad if some correspondent would explain.]

A Country Curate's Garden.—I observe, at p. 197, a strong recommendation for country clergymen with small stipends to keep bees, as a means of increasing their annual income, and at the same time affording an interesting as well as profitable recreation. There is a little anecdote attached to the expression "keep bees," with which, as it may not be known to all your clerical readers, I will preface some other remarks on bee-keeping, made the better part of a century ago by a celebrated divine and naturalist in Suffolk. "A French bishop, on paying his annual visit to his clergy, observed one of his curates whose income was certainly very inadequate to his appearances of much comfort and plenty; so much so, that the rev. prelate was quite astonished, and could not avoid saying to the curate, 'How is all this, my friend; you are the first man in this visitation whom I have met with a cheerful face and a plentiful board. Have you any income independent of your curé?' 'Yes, my lord, I have,' replied the curate, 'otherwise my family would starve on the pittance I receive from the poor parishioners I instruct. Accompany me into my garden, my lord, and I will there show you my bank, from which I receive an annual dividend; it never stops payment, and is moreover a constant source of pleasure and health.' The good bishop was shown a long range of well managed bee-hives, and ever after this memorable visit, when any of his clergy complained of poverty, he said to them 'Keep bees! keep bees!'" About the year 1756, the Rev. Stephen White, then rector of Holton, in Suffolk, published a method of managing bees without destroying them when he partook of the luscious stores which they had collected for him, in what he called his collateral bee boxes. And his introduction, as well as his conclusion to the said treatise, are so perfectly in unison with the remarks made at p. 197, that I am induced to send you a transcript, for the sake of some of your clerical readers. The reverend author thus observes, at p. v. of his Introduction: "The smallness of my cure has afforded me more leisure hours than usually fall to the share of a great part of my brethren. Many of those hours, during almost the whole space of a now declining life, have been spent in my bee garden, with as much innocence, I hope, and a great deal more to my taste and

entertainment, than if they had been spent with a gun and a pointer in the fields, or in my parlour with a pack of cards. These fashionable amusements (especially the latter), can afford little entertainment to a contemplative mind, but the surveying the works of Nature, particularly the instinct and polity of many living creatures, and the wonderful methods they make use of for their sustenance and safety, will give a real and high delight to a rational soul; and as it is next to impossible to turn our thoughts to the observation of these creatures, without lifting them up, at the same time, in adoration of Him who formed them, this will in a manner sanctify our pleasures, and turn even our diversions into a sacrifice to our Maker. Manifold are the works of God, and in wisdom has he made them all; but if my partiality for my favourite insects does not very much deceive me, their indefatigable industry, their loyalty to their queen, the geometrical accuracy of their combs, &c., are wonders not to be met with in any of the innumerable beasts, birds, or insects that are upon the face of this earth. My fondness for these little animals soon put me upon endeavouring, if possible, to save them from fire and brimstone. I thought I had reason to be content to share their labours for the present, and great reason to rejoice, if I could, at the same time, preserve their lives, to work for me another year. The main drift, therefore, of all my observations and experiments has been to discover an easy and cheap method, suited to the abilities of the common people, of taking away so much honey as can be well spared, without destroying or starving the bees." The author, in conclusion, says, "Being now almost ready to take my leave of the reader, I will tell him honestly and seriously what he is to expect if it shall please him to make trial of my boxes. In a few years I will venture to promise him he will increase his stock to as great a number as the flowers in his neighbourhood will maintain, but my assurance will carry me no further; and sad experience has taught me, that in some situation like this, in which I am myself (in this respect) unhappily placed, that number will be found very small. There are now in the village where I dwell, which is a large one, only seven colonies of my own in boxes, and two poor hives of my neighbours: yet we have beautiful meads, and fine gardens, in which Flora discloses all her beauties; but, alas! they are beauties *indotatæ*. For want of a free and open air, as I conjecture, in these thick enclosures, our flowers yield so little food for the poor bees, that no greater number, I am well satisfied, than what I have mentioned, or thereabouts, can get a subsistence in this place; whereas in the neighbouring bleak county of Cambridge, where the inundations of the fens, or the farmer's plough, or the flocks that are grazing (should I say, or starving?) on barren heaths, will suffer hardly any flowers to spring or open their blossoms (excepting the flowers of eloquence, which thrive exceedingly on the banks of Cam, but these afford only a thin sort of *juice nectareous*, fitter for poets than bees to feed on), yet here, I say, there is such a profusion of honey in the few flowers which escape, that I have seen between 70 and 80 hives in one farmer's yard, and this just after the inquisition was over, and he had been murdering all he intended to murder that season, and these hives, I know too well, were much better stored with honey than any are found to be in these parts. I have often thought it very surprising that neither the authors who treat of bees, nor the keepers of them, ever imagine that any place can be overstocked, or that anyone's bees fare better or worse for the larger or smaller stock that is kept in his neighbourhood; they think, it seems, that every flower they see is a never-failing cruise of honey. Let me here acknowledge the bounty of our Creator, and, with due thankfulness and admiration, confess that in some sense it is so; for when a bee, with its little lambent trunk, has cleared a flower of all its present store, another comes, it is likely, in less than a minute and finds something; for the delicious juice is continually transuding through the pores of the plant. But it is certain, for all this, that the more of these guests visit a flower the worse must each of them fare; they will have the less to carry home, or, which is all one, they must go further, and spend more of their precious time before they can make up their burden. There is reason to believe, however, that in many parts of the kingdom the little labourers in honey and wax are not sufficient for the harvest." *Mellarius.*

Distribution of Liquid Sewage.—I observe that "J. C." is desirous of knowing the best and cheapest method of distributing liquid manure. The following results of recent experience in my own case are quite at his service: I lately got from Mr. Statham, Cornwallis-street, Manchester, a gutta percha pipe 1½-inch in diameter outside, and eight-tenths of an inch diameter inside, for the purpose of distributing the liquid from a tank over a meadow lying below the farmstead, and therefore very conveniently situated for such a purpose. I have used this pipe with a small forcing pump, and found it answer perfectly. The cost was 8*d.* a foot, or 2*s.* a yard, which is considerably less than that of "J. C.'s"—"100 feet of patent 1½-inch hose of hemp woven without a seam, which, with three unions, cost 9*l.* 17*s.*, and was at the end of the second season rotten and useless." The gutta percha pipe, for the same length, would be only 3*l.* 6*s.* 8*d.*, but I thought this too expensive for farm work; and being at Manchester a few days ago, I found on inquiry that the next-sized piping, which only differs from the former in not being quite so thick in substance, but in my opinion perfectly strong enough for the purpose, would only cost 6*d.* a foot, or 25 per cent. less than the one I got in the first instance. 100 feet of the latter piping would only cost 2*l.* 10*s.*, and there is every reason to think that this material, with proper care, will last for any length of time. If a great length were required, and it were desirable to have it made in lengths, Mr. Statham has a very neat and simple kind of joint, which he supplies, I believe, at 3*s.* 6*d.* apiece, but I have not yet tried one of these. *William J. Garnett, Bleasdale, Garstang.*——I have been using a flexible waterproof hose, made of canvas lined with gutta percha, and also a gutta percha union joint, of the most simple construction; both are perfectly tight under pressure. They appear very durable, and were not half the price paid by your correspondent. *Jas. Norris, Sion-hill, Brentford-end.* [This kind of tubing has been repeatedly advertised in our columns by Mr. Hancock, of Goswell-mews, Goswell-road, London. See also an advertisement from Messrs. Burgess and Key in another column.]——If "J. C." will apply to Mr. Patterson, Egerton-street, Hulme, Manchester, for information respecting hose piping and the distribution of liquid manure, I have no doubt he will be able to obtain the information he requires, the publication of which in your Paper would be an advantage to many people. *J. W. T.*

London Guano.—I visited the guano hill last week, and on my way met the Bermondsey waggon walking slowly towards town. It was the first time I had seen it walking; it appears that it does not trot until it comes near a village. As it passed me it smelt strongly of real guano, and it occurred to me that the bags must be dusted inside and out with the genuine article, in order to give the loam the "right flavour," reminding me of the practice of putting British brandy into French brandy casks. As soon as I had arrived at the steepest part of this "loam-guano hill" a post-master not far off passed a high compliment on the knowledge of an old Scotch bailiff. "Mr. J.," said he, "where can I purchase the best guano?" "Why, don't you know?—on the hill, to be sure." "There is no guano there." "Why," says Mr. J., "I see it passing every day;" and at that moment "the waggon" came by on its way to Mark-lane. A few houses and a small public-house occupy the left side of the hill; a newly made road, nearly opposite, winds round the north end, and is lost to view about 70 yards from the road, and in a few yards more the lane turns sharp round to the left into the bosom of the hill. It was of no use making any inquiry amongst the peasantry here; every one is making money out of the hill (the publican more than anybody), and therefore they keep quiet. I peeped into the premises, which consist of a nice cottage, with two brick-built and well-roofed sheds, about 30 feet long each. The bank of loam is about 15 feet deep, and although they have sent off many hundred tons they have not gone more than from 40 to 50 feet into the hill, and the same in breadth. It appears to be very solid and very dry, so that the further drying it on the hot plates occupies but little time; any one could get this loam a year ago for 3*s.* 6*d.* a single cart-load, and 7*s.* for a double cart-load, but now they do not want to see a stranger there at all. I was told that Mr. So-and-So was very poor 12 months ago, but now he is rich, and keeps his horse and chaise, many weeks obtaining 50*l.* for what costs him little in its manufacture. It is reported that he is very liberal to certain gentlemen, whose duty it is "to look about;" half-a-crown now and then makes them inform inquirers that this extraordinary stuff all goes abroad. Some is sent to a railway station about a mile off; some to Chelsea or Pimlico, some to Bermondsey, &c. I am afraid I shall be thought remiss for not seeing the works that were going on; but I remembered the story of the Highland guager and illicit still, "Did anybody see you come in?" "No." "Then (drawing his dirk) I am d— if anybody will see you gang ut." If gardeners will continue to purchase guano of any one, except agents duly authorised by the importers, they must expect to pay through the nose for that which they have already too much of. *Dulwich, May* 20.

Seedsmen's Lists v. *Florists' Catalogues.*—We have been hardly dealt by lately in your columns; no mercy has been shown us, and as if it would appear that there is some truth in what has been so liberally—I was about to say illiberally—heaped at our shop doors, no one has come forward to defend (if any defence can be set up) in a manly way our honourable trade. Mere skirmishing about a single-blossomed, and a double-blossomed, Pea, is, as they used to say when I was a boy, like fighting the French in an easy chair. Surely there are valiant men enough in our trade, with ample experience and sufficient research, to "break a lance" with "R. T." I say for one, give him no quarter. This subject being uppermost in my mind night and day, has almost made me forget what I had sat down to write about. A friend of mine has called to consult me respecting the purchase of a few plants for his greenhouse. He is an ardent grower and a spirited buyer, and has on one or two occasions succeeded in winning a prize of 10*s.*, which to him was a capital return for his annual expenditure of 20*l.* in plants. Why he came to consult me, a seedsman, is easily enough explained, because I always keep a few things such as he wanted in my shop window, and I grow a few likewise in my greenhouse in the suburbs, therefore he thought I might enable him to come to some decision as to what he ought to purchase, for in former years he considers that he has been grievously taken in. Through his 10*s.* prize my friend's name got into the gardening newspapers, and scarcely a post for the last month has failed to bring him a list, I was going to say, but better a catalogue, or rather book. All England poured in such contributions, and so did the Continent, and even America, so there was no lack of material from which to make a selection. From such an ample field we thought our task an easy one; but preserve us from such another! I thought of our seed lists, and derived comfort therefrom—Fuchsias, Verbenas, Pelargoniums, Chrysanthemums, &c., with their hundreds of fine names, and thousands of recommendations, completely bewildered us. My friend insisted on something distinct. Now, can any one propound a greater puzzle? I had, therefore, to relate what was told me by Mr. Neighbour, a most respectable man, of sound judgment, who was invited by an eminent cultivator of the Pelargonium to visit his collection last year, when in full perfection. After traversing two houses of magnificently cultivated plants, he turned round to a florist, and observed that they were certainly a gorgeous mass of bloom; but said he, "Why do you grow them nearly all of one sort?" The amazement and mortification of the florist may be imagined, considering that he scarcely had a duplicate in his whole collection, and he consoled himself by thinking that it was of "no use casting pearls before swine." I want now to observe that my friend, who had bought things over and over again, without any visible improvement, was desirous to do so no more, because every year he was, less or more, according to the amount of his purchases, "done brown," as he termed it. Let us now for a moment consider the case of my friend, whose labour and money were totally thrown away, and compare him with a gentleman's gardener whom one of my country customers has supplied with three kinds of Peas out of the Charlton bag and two kinds out of the Imperial sack. These being reputed always to be of comparative earliness, the gardener sowed them, and may have done so for 20 years, and obtained a succession of first-rate Peas, to the perfect satisfaction of his employer. In this, then, there is no disappointment, nor is he in a worse position than the writer of your Calendar, who of course is a first-rate judge, and only grows two kinds. Now when you have so readily lent your columns to smash us poor seedsmen, and that most unmercifully too, you will surely, in the same spirit of candour or honesty, if you like the term better, lend my friend and me a little assistance in our small way. He belongs to a class, who are, by-the-bye, the chief purchasers of these veritable, new, distinct, first-rate novelties! *A Seedsman.* [We insert this letter out of respect to the writer, but we can have nothing to do with disputes about florists' flowers; they stand in a very different relation to the public from seeds, and we rather think that the buyers of florists' flowers know pretty well how to take care of themselves. Seeds are objects of necessity, florists' flowers of fancy, and therein resides an important difference.]

Mr. Roberts's Root Ventilation.—In a recent communication from Mr. Roberts, of Eastcheap, on growing Peas a month earlier than usual, he stated that this is effected by "root ventilation." Perhaps he will help the uninitiated to the *modus operandi*, for I confess I am not *au fait*? One likes to keep pace with one's neighbours in the march of improvement if possible. *J. G.*

Plumbago Larpentæ.—I am so much pleased with this plant, that I am glad to find that it is perfectly hardy with me. Last summer I placed it out in a common border, and it flowered very well. Wishing to ascertain its hardiness, I allowed it to remain there without the least protection, and it is now making quite as vigorous shoots from the root as any of the herbaceous plants by which it is surrounded. *W. Wilkins, Nursery Grounds, Newport, Isle of Wight, May* 6.

Societies.

HORTICULTURAL, *May* 28.—J. R. GOWEN, Esq., Treasurer, in the chair; A. G. H. Battersby, Esq., was elected a Fellow. The following "Notice of alteration in the Bye-Laws" was read, and posted in the meeting-room:—"The Council hereby give notice that they propose to substitute for Chapter IV., Article 1, of the present Bye-Laws, namely, 'the admission fee to be paid by each Fellow shall be six guineas,' the following words, viz., 'the admission fee to be paid by each Fellow shall be two guineas.'"—Among subjects of exhibition was a new and extremely interesting Odontoglossum, from Mr. Loddiges, of Hackney, for which a Large Silver Medal was awarded. The same establishment also furnished Vanda teres, Aerides crispum and its pale-flowered variety, Saccolabium guttatum, miniatum, and ampullaceum (the last a valuable species, on account of the length of time it continues in bloom); Cattleya Mossiæ, and its variety, called aurantia; the bright-yellow flowered Oncidium bifolium, the orange Dendrobium Griffithianum, the rare Burlingtonia fragrans, the white-lipped Odontoglossum stellatum, and two Epidendrums.—Two red-flowered Azaleas were produced by J. Allnut, Esq., of Clapham.—Large and fine Vanilla pods, quite ripe, were exhibited by J. D. Llewellyn, Esq., of Penllergare, near Swansea, to whom a Certificate of Merit was awarded; and Mr. Chapman, gr. to J. B. Glegg, Esq., received a Banksian Medal for a dish of well-ripened scarlet Nectarines.—From the Garden of the Society came the two beautiful new Ceanothes — dentatus and papillosus; Mimulus ruberrimus, a grand kind; three species of Bossiæa, Lælia cinnabarina, Saccolabium guttatum, Cattleya intermedia, Glossocomia ovata, three varieties of Cape

Heath, an Everlasting, Zieria lævigata, Platylobium formosum, Chorozema varium, a New Zealand Parsonsia, Anadenia pulchella, Cryptolepis longifolia, two Achimenes, Dillwynia speciosa, and Nemophila maculata (a charming annual for pot culture).

Linnean, *May* 24: *Anniversary.*—The President in the chair. R. Dodd, Esq., jun., was elected a Fellow. Among the presents on the table were lithographed portraits by Maguire of the late Bishop of Norwich, the Dean of Westminster, R. Brown, Esq., President of the Linnean Society; Professor Ansted, Professor Bell, J. Curtis, Esq., C. Darwin, Esq., Professor E. Forbes, Professor Lindley, and Sir C. Lyell, presented by G. Ransome, Esq. Mr. F. R. Eagle exhibited a remarkable decumbent variety of Bromus mollis, from the neighbourhood of Lowestoffe, where it occurs in company with Viola flavicornis. Mr. Bowerbank presented, in the name of the subscribers, an oil painting of the late Bishop of Norwich, President of the Linnean Society. Mr. L. Reeve exhibited a drawing of a new species of Rhododendron, recently discovered by Dr. J. D. Hooker, in the Sikkim Himalaya. An abstract of the Society's accounts for the last year was read, and was favourable to the Society. The Secretary read biographical notices of the following Fellows, who had died during the past year: The Bishop of Norwich, W. T. Aiton, Esq., Sir D. J. H. Dickson, E. Doubleday, Esq., J. Kidd, M.D., C. Lyell, Esq., D. Mackinnon, M.D., L. H. Petit, Esq., A. T. Thomson, M.D., Professor Blainville, and Professor Kunth. At the ballot for council the following new members were elected: Professor E. Forbes, Dr. Lankester, E. Newman, Esq., W. Spence, Esq., and Sir G. T. Staunton, Bart. The following officers were re-elected: R. Brown, Esq., President; W. Yarrell, Esq., Treasurer; J. J. Bennett, Esq., Secretary; R. Taylor, Esq., Under-Secretary.——After the Secretary had read the balance of accounts, showing the expenditure to exceed the receipts, Mr. Curtis rose to ask when the next "Transactions" would be published, as none had appeared for three years, which was very prejudicial to the contribution of papers (as few persons would come forward with papers, which must either be rejected or kept back for so long a time), and country members have no other return for their subscriptions, which will amount to nine guineas for the next Part. He deeply regretted the unfavourable state of the finances, the Society being upwards of 40*l.* in debt, which must have been increased if any "Transactions" had been published. A reduction of expense might be made by publishing the "Transactions" in 8vo instead of 4to, after the completion of the 20th volume of the present series; but the best relief would be to obtain if possible a house from the Government, and he sincerely hoped that with her Most Gracious Majesty and his Royal Highness Prince Albert for patrons, it might not be long ere a suitable building would be found for the Society free of expense, as it was the oldest branch from the royal parent at Somerset-house. At all events he hoped the Society would not saddle itself with a house for a term of years. The President asked if Mr. Curtis intended to found any motion on the observations which he had made. Mr. Curtis replied that he would do so if he thought it would have a beneficial result. Mr. Graham entirely concurred in the remarks made by Mr. Curtis as to the disappointment to country members, not to receive any "Transactions" for three years. He also considered it inexpedient, in the present state of the Society's finances, that they should incur the expense of publishing such a voluminous report as that of the plants of the Gallapagos Islands, which occupied so large a portion of the last part of the "Transactions," to the probable exclusion of several short papers of domestic interest. He had not the slightest intention to disparage the value of that report; on the contrary, he highly appreciated it, and the object of her Majesty's Government in sending vessels on voyages of discovery; but for the reason before stated, he thought the report ought to have been published at the public expense. He also considered that it would greatly promote the interest taken in the "Transactions," if shorter papers on the several branches of natural history were encouraged, and brought out at regular periods. Mr. Adam White did not concur with the last speaker, considering the account of the plants of the Gallapagos to be most valuable, but considered it advisable that the Linnean collection of insects should be given to some society which would take more care of them. (How the parting with these venerable relics was to improve the condition of the Society, however, did not appear.) Mr. Solly objected to the alteration in the form of the "Transactions," considering it would not be more economical; upon which Mr. Curtis observed that Mr. S. knew nothing about it, as he was not a printer. After a few more observations, the President observed that the attention of the Council should be particularly called to the complaints which had been made. It was expected that Mr. Curtis's remark as to taking expensive premises on a long lease would have elicited some information as to the future plans of the Society, as the present lease has nearly expired, but nothing further was said on the subject. It cannot, however, fail to be a matter of anxiety to all who feel a real interest in the welfare of the Society, that they should not incur permanent liabilities on this head. *From an occasional Correspondent.* [The report is that the Linnean Society is to be saddled with a lease of the old house in Soho-square, and that the present leaseholder is to become a sub-tenant. We cannot believe that any intention of perpetrating such a job is seriously contemplated; the report has, we presume, been founded upon some misapprehension.]

Meeting at Worton Cottage, *May* 15.—Two seedling Polyanthuses from Mr. Costar, of Benson, "President" and "Regalia" are promising flowers, the latter is the better of the two, well-formed in most respects, flat on the surface, eye good and circular, lacing even and true, and good in colour. The tube is rather large and slightly angular. Both varieties appeared to have suffered a little in packing, and the trusses to have been taken off feeble plants. A number of single pips of this flower came from "J. A. C., of Newcastle," packed with some seedling Pansies in a paper box, which was so completely crushed that it was impossible to form anything like a correct judgment of them. Enough, however, remained of the former to show that they were when packed, in all probability, as fine if not finer than any varieties submitted to us this season. A twopenny zinc or tin box would have ensured their reaching in the best condition. The same must be said of a box of Auricula blooms from "L. of Falkirk," and a single pip of Sir John Moore, sent in a letter from the same party; they were past all judgment. A fine northern raised grey edged variety, grown by Mr. Edwards, was selected, and the plant was handed over to Mr. Andrews for figuring. Dr. Horner, of Hull, sent two seedling Auriculas; one, a grey-edged variety, is a very promising flower; it was past its prime, and had evidently suffered from the weather. The tube is rather too large, but of a fine deep waxy yellow, and well filled with anthers, the paste very fine and smooth, and a perfect circle; the ground colour a violet purple, leaving a proper margin of grey; the outer circumference of the flower round, and the pips (three) quite flat. This flower possesses decided novelty, being a grey with violet ground, and with white foliage. The second, a green-edged flower, did not please us, and we imagine is inferior to "L.'s" Sir John Moore beforementioned, when the latter is seen in proper condition. *Cinerarias.*—"H. B., Hastings," sent two trusses of a seedling, put into a good round tin box, but without anything to retain them in a quiet position; they were consequently spoiled. "M., of Taunton," sent, for the second time, a truss of a seedling, finer in colour than Salter's Clementine, not so good in shape, and with the decidedly bad habit of reflexing very greatly. *Calceolaria.*—A Calceolaria came from "M. W., Whitby," not sufficiently circular, and too large in the throat; ground-colour buff, prettily striped and spotted with dark rich brown. We hope this is a mere precursor of some fine things from a spirited raiser. *Pansies.*—Mr. Edwards produced a bold-eyed white ground seedling Pansy; the rays of the eye radiating into the margin disqualify what would otherwise prove a very useful flower from taking any place in a competing stand of first-rate varieties. Beside it Mr. Turner placed the finest bloom we have yet seen of his seedling, Mr. Beck, and some other leading varieties. *Seedling Pelargoniums.*—Three trusses came from "S., Windsor." No. 1 is a most charming rich crimson maroon top-petalled flower, small, but of excellent quality. The censors would request a sight of this again with real address. Nos. 2 and 3 possessed many points of merit, but are altogether inferior flowers to their companion. We must say the same of a seedling from "H., Putney-heath;" as the places are not very distant from each other, "H." may like to compare it with some varieties of the same colour at Worton Cottage, and so judge for himself, which is very desirable.—Petunias from "M., Taunton," possess little merit; the white is large but coarse, the lilac is very delicate in colour, but not superior to many we have seen. This is the verdict that must unavoidably be passed on scores of seedlings, for distinct character and colours are very hard to obtain. A seedling Erica, Ne plus Ultra, from Mr. Epps, Maidstone, was given to Mr. Andrews to take a coloured memorandum of, in case it should prove novel, which has to be decided by comparison with the tricolor varieties already in cultivation. N.B. The censors would earnestly impress upon raisers to give more attention to the careful and secure packing of their flowers. It has been a source of great regret at this meeting to see how much postage has been paid absolutely for nothing, because their repeated directions on this subject have been neglected.

Review.

The Heiress in her Minority; or the Progress of Character. 2 vols, 8vo. Murray.

These two volumes contain the result of much reading and diligent note-making. They in fact exhibit the contents of a very miscellaneous and voluminous common-place book, thrown into the form of a domestic story. The heroine is a young lady of impulse—inexperienced, thoughtless, Irish, and well meaning, for the improvement of whose character her friends and advisers are supposed to have instilled into her mind a profusion of gossip of all sorts, religious, heroic, geographical, botanical, classical, economical, entomological, historical, horticultural, &c.; arranged much in the order, or rather disorder that is expressed in this enumeration. To all impulsive, inexperienced, thoughtless, well meaning young ladies the work may be particularly recommended. And so it may to those who possess few of those qualities; for its pages abound in useful and amusing information, among which is a good deal of reasonably exact natural history.

We must not *criticise* a work of this kind; its mistakes are not alarming, its faults are far from glaring, and both are much outweighed by its utility. A few short examples will serve to indicate its style.

Economy of Time.—"How was it possible to divide his time among so many objects?" said Evelyn; "a single visit in the country, a morning's ride, accounts, letters, looking at his workmen, might each have furnished occupation for the day, and would each engross so much time!" "Certainly they did; but you know, Evelyn, as a trunk holds more when each article is smoothly folded and skilfully placed, so may the hours of the day be wonderfully stretched by those who are methodical in arranging their time. My grandfather always rose very early, usually at five, and he went to bed at ten. By this means he had the uninterrupted enjoyment of the prime of the morning; and before he met his family at breakfast he had read for some hours, had written his letters, and given directions to his steward for the day."

The Sawyer Beetle.—"It is the famous Cerambyx (Prionus cervicornis), of which I am sure you have read. Some incredulous people have doubted the truth of those travellers who have described it; but I assure you I had the pleasure of being myself an eye-witness of its actually sawing off a branch of a tree. Having first seized the branch with its powerful serrated mandibles or jaws, it then flew or whirled itself round and round like the vanes of a windmill, and in no very long time the job was fairly completed. I watched the whole process; and when nearly cut through, the weight of the branch, which was almost as thick as my wrist, brought it and the insect to the ground together. You see it is large and powerful; above 5 inches in length, and rather showy in appearance, as the wing-covers are striped with yellow."

Candelabra Tree.—"You have not mentioned any of the Cactus tribe," said Mrs. Manvers: "are they not very abundant in South America?" "So abundant," replied Charles, "that it would be endless to attempt to describe them; yet some are very remarkable. I have made no collection of them myself, but I might have mentioned to you one of such uncommon size, that I measured and noted its dimensions at the time. It was a Cereus, and really deserved the name of a tree, but its structure was of a different nature. The stem was above 6 feet in circumference, and the trunk rose 10 feet before it divided into numerous erect branches, some of them 40 feet high."

What we most regret to see is the number of instances of erroneous spelling, in proper names, such as cervi*carnia* for cervicornis, Alstra*mera* for Alströ*meria*, Bogotà de Fé for Santa Fé de Bogotà, hasti*le* for hasti*lis*, Mad*herea* for Mad*huca*, &c. &c.

Garden Memoranda.

Mr. Groom's Tulips.—The present season has been unfavourable to a fine display of Tulips. This fact, the last South London Floricultural show amply proved. Notwithstanding, however, the prevalence of dry north-easterly winds, which we have experienced, Mr. Groom has had a good exhibition of this favourite flower. His best bed, 120 feet long, and containing not less than 2000 flowers, has been nearly as fine as we have ever seen it in any former year. The following favourite sorts were in good condition when we saw them. Bizarres:—Polyphemus, Duke of Devonshire, Catafalque, Emperor of Austria, Nourri Effendi, Marshal Soult, Strong's King, Platoff, Everard, Pompe, Garrick, Optimus, Prince of the Netherlands, Countess of Wilton, Louise, Lord John Russell, Earl of Lincoln, and Duke of Norfolk. Byblœmens:—Victoria Regina, Laurence's Friend, Rubens, Louis XVI., Imperatrix Florum, Michael Angelo, Earl of Haddington, Violet Alexander, Duke of Buccleuch, Claude, Monte, Bijou des Amateurs, Desdemona, Bloemart, Homer, Lady Sale, and Camarine. Roses:—Duchess of Sutherland, King of Saxony, Cameuse de Crai, Cerise Blanche, La Tendresse, Claudiana, Emily, Aglaia, Lady Peel, Catalani, Triomphe Royal, Cerise Belle Forme, and Ponceau très Blanc. In addition to the above the collection contained some novelties. Dr. Horner and Prince of Wales, new bizarres, are promising flowers, and so are one or two others, which we hope to see again.

Miscellaneous.

The District of Biddulph Moor.—We have been requested to insert the following extract from an "occasional paper of the Pastoral Aid Society, which gives a graphic but melancholy picture of the state of the district of Biddulph Moor, in behalf of which (see Advertisement) Mr. Bateman's Orchids are to be sold: "The district is situate at the north-western extremity of the county of Stafford, and embraces portions of three parishes. In its physical aspect this district is wild and romantic, and contains large tracts of land, that, in consequence of their great elevation and exposure, have not been brought into cultivation. Here, almost beyond the pale of ordinary life, exists a large and rapidly-increasing colony of human beings sunk in the lowest depths of moral degradation, but presenting many features of deep and peculiar interest. Originally (as it is believed) of Moorish descent, they were introduced from Spain, about the 16th century, by one of the feudal lords of this parish, and being speedily cast upon their own resources, they established themselves upon the neighbouring heights, where they have ever since remained, as it were entrenched against the humanising power of civilisation on the one hand, and the elevating influences of religion on the other. While their features have much of the Moorish or gipsy cast, their mode of life and habits are quite in conformity with this supposed origin. They live crowded together in the most miserable hovels; and would rather undergo almost any privation than submit to the drudgery of regular labour. Having moreover, by long unmolested occupation, established a right of freehold in their houses and tenements, they not only exercise a most important influence in county elections, but maintain a spirit of proud exclusiveness in regard to the

population of the surrounding valleys; and to such an extent is this carried, that it has been found impossible to prevail upon them even to send their children to any school frequented by their lowland neighbours. In the summer the men spread themselves over the country, carrying pots or other wares for sale, while in the winter they chiefly subsist upon Potatoes or other produce of their plots of land. As might naturally be expected among such a nomad population, crime abounds, and in its most awful forms. Not only are the lawlessness, the dishonesty, and drunkenness of the district proverbial, but (on Sundays especially) scenes of the most open and revolting licentiousness may be witnessed in broad daylight; while theft, burglary, murder, and even fratricide, and other crimes too shocking to be mentioned, have within the last few years attracted the attention of the philanthropist to this unhappy spot. It has, however, been found impossible to reach the evil by means of any existing machinery, lying, as the district does, at the extremity of three large and populous parishes, the ministers of which are already greatly overworked and underpaid."—*Sept.*, 1849.

Calendar of Operations.

(For the ensuing week.)

PLANT DEPARTMENT.

It is at all times, and with every one, an important object to preserve plants in flower as long as possible. To this end, as soon as their blossoms are perfectly expanded, they should be removed to a cooler atmosphere than that in which they have been grown, and carefully shaded from gleamy sunshine. To counteract the drying effects of strong currents of air, which are unavoidable in hot weather, the air of the house should be kept moist by frequently sprinkling the floor and walls, or both plants and flowers will flag, in spite of the shading; much, however, may be done by hanging a thin bunting before the openings, and occasionally syringing it; this breaks and cools the current of air as it passes through it. In dull or damp weather, however, a directly opposite mode of proceeding must be pursued; moisture is then injurious, and must be carefully avoided; and the plants should stand sufficiently far apart to secure a full and free circulation of air amongst them. Let no blossoms remain after they fade, nor ever allow the energies of a plant to be exhausted in producing seed unless it is positively required. Plants of which it is desired to make large specimens in the shortest possible time, should not be allowed to produce flowers until they have attained the desired size. All specimen plants should have plenty of room, and should be occasionally turned round, in order to prevent their growing one-sided. Leaves of Gloxinias should now be inserted into pots of sand; these, if well managed, will form strong young bulbs this season, and will flower during February and March in 6-inch pots. Many greenhouse plants, and others from intermediate houses, of a sub shrubby or herbaceous character, as Salvias, Cinerarias, Begonias, Primulas, Calceolarias, Veronicas, &c., may now be planted out on warm borders in rich soil. These will form handsome plants by the beginning of September, when they will be in nice order for taking up and repotting.

FORCING DEPARTMENT.

Pineries.—Plants just showing or swelling their fruit will be considerably benefited by receiving liquid manure every alternate watering till the fruit begins to ripen. If the plants, which are just on the point of showing, are in pots, it will be an advantage to shift them immediately into larger ones; to top-dress them with some rich turfy loam, or to turn them out entirely into the soil, which is by far the most preferable method. Where the pot system is pursued, many of the plants, especially of the young stock, will require repotting, and at this time they should receive a large shift, as their most active growing season is now approaching. After potting a closer and moister atmosphere must be kept up for a few days, till they begin to root into the new soil. No plant stands in greater need of shading during bright sunshine than the Pine-apple; but as it is not only unnecessary, but injurious in dull weather, the canvas should be so adjusted, by means of rollers, that it can be applied or removed at pleasure. Vineries.—If the fruit is all gathered in the earliest house, the Vines should again be treated with a moderately warm atmosphere, and syringed daily, to destroy insects, and to keep the foliage in a healthy state as long as possible, that the Vines may have every means of recruiting their energies for next season. At the same time give liquid manure to the roots if they require watering, that they may have every chance of regaining their strength, after having been forced at an unseasonable period.

FLOWER GARDEN AND SHRUBBERIES.

All is now hope and activity with the enthusiastic gardener, in anticipation of the speedy realisation of the dreams of floral splendour, which he has been indulging in for the last six months, and for the accomplishment of which he has, during that period, striven most energetically. While this state of things is gradually developing itself, let due care be taken to have every part of the grounds in the most careful order. As the young plants progress, some will require pegging down, and others tying up. For the former purpose, small birch hooks are most substantial for plants of a stiff habit; but many plants, if once fixed in their position, retain it, either by emitting roots, or by the natural inflexibility acquired by their stems. For the fastening down of such plants, we reserve all the roughest and coarsest of our bass matting, and cut it into pieces about 6 or 8 inches long; these we form into loops, which clip the shoots, and the ends are fastened into the ground with a blunt dibble In performing this operation, the heads of the plants should be turned towards the north, as the young laterals will be drawn by the light towards the other points of the compass, and by this means the beds will appear well filled from all sides. The young plants in the beds will be considerably benefited by stirring the soil between them, especially when it has been caked over by rain. This operation will, at the same time, destroy weeds, and the ground will keep clean twice as long as it will with merely hoeing and raking.

HARDY FRUIT GARDEN.

The Strawberry beds should now be mulched or covered with some clean material, for the double purpose of keeping the fruit free from dirt in wet weather, and of preventing excessive evaporation in a dry or parching summer. The old-fashioned practice was to lay clean straight straw between the rows, and from this the fruit derived its name; but the unsightliness of this plan has long since condemned it. The material most generally used, and which answers the purpose very well, is the short Grass cut from the lawns; but, in preference to it, we would recommend a row of plain, dark-coloured roofing tiles, to be laid on each side of the plants. These may be procured at a trifling cost from the manufactories, as those which are generally denominated *wasters* are good enough for this purpose. Their colour gives to them the valuable property of absorbing heat, which facilitates the swelling and ripening of the fruit; and, if they are laid with the slightly-hollowed side downwards, they will keep the fruit clean and dry. Before anything is put on to the ground, it should be loosened with a fork between the rows; and, if dry, it should be well watered with liquid manure, which, with the mulching or tiles, will generally be all that is required during the season. At the same time, a good dressing of dry soot, under the leaves and amongst the stems of the plants, will assist their growth, and destroy vermin.

KITCHEN GARDEN.

Do not consider it too much trouble to employ head and hands to prevent or destroy birds and insects, which are now very actively at work robbing you of seeds and plants, and unless timely checked will give you a barren wilderness instead of a fruitful garden. Old spare roots of Carrots or Parsnips may be turned to a very good account by planting them in beds infested with wire-worms; these will attract the enemy from other plants, and if daily examined will in time rid your ground of this nuisance. The next time such ground is bare, do not forget to favour it with a good dose of salt, as they exist in that state which is so familiar to us for several years without undergoing any change, and thus afford an opportunity for the salt to act upon them. It is some satisfaction to know that they are only larvæ, and therefore do not breed; and the perfect beetle chooses for the deposition of her eggs ground which is not frequently stirred. The Leek is becoming so favourite a vegetable that it will well repay a little additional care in its cultivation, as its value depends upon the production of a long, thick, well-blanched stem. They may be grown in one season to 14 or 16 inches long, and upwards of 2 inches thick; and from their closeness together they form one of the most productive of kitchen garden crops. The ground should be trenched 18 inches deep, the bottom of the trench stirred up with a fork, 4 inches of good rotten manure laid on to it, and over the manure the whole of the soil from the next trench. If the ground has not been prepared previously, it is a very convenient course of proceeding, to carry on the planting and trenching together, so as to prevent in a great measure the compression of the soil after or during planting. This is the more necessary in the method about to be described; as raking or forking about the plants will be impossible for some time. The plants should be put in about 6 inches apart, and 9 inches from row to row. Premising that the soil is sufficiently moist to prevent its falling in, the holes for the plants should be made 14 inches deep with a dibber 2 inches in diameter, and into each of these a plant should be dropped and watered. The plants are thus placed in the most favourable position for growing, which they will continue to do till Christmas. As weeds are advancing rapidly, and must by some means be destroyed, and as forking or stirring the soil among the growing crops is highly beneficial to them, let this method be practised. Cutting should now be discontinued entirely from a portion of the Asparagus beds, especially from those intended for forcing early next winter. A few rows of Cauliflowers, Cabbages, and autumn Broccoli should now be planted at intervals of from 10 days to a fortnight, by which they will come into bearing in similar succession. The strongest plants should be selected from the nursery beds, and should be lifted and transferred with as much earth as will hang to their roots.

State of the Weather near London, for the week ending May 30, 1850, as observed at the Horticultural Garden, Chiswick.

May.	Month's Age.	Barometer. Max.	Barometer. Min.	Temperature. Of the Air. Max.	Of the Air. Min.	Of the Air. Mean	Of the Earth. 1 foot deep.	Of the Earth. 2 feet deep.	Wind.	Rain.
Friday.. 24	12	29.461	29.387	67	50	58.5	55	54	E.	.00
Satur... 25	13	29.563	29.506	65	48	56.5	55	54	S.W.	.03
Sunday . 26	14	29.716	29.614	64	49	56.5	55	54	S.W.	.03
Monday 27	15	29.737	29.692	64	46	55.0	55½	54	S.W.	.02
Tues. .. 28	16	30.167	29.980	63	42	52.5	55	54	S.W.	.10
Wed. ..29	17	30.221	30.137	72	45	58.5	56	54½	S.	.00
Thurs....30	18	30.050	30.026	70	46	58.0	57	55	E.	.00
Average....		29.845	29.763	66.4	46.5	56.5	55.5	54.2		.18

May 24—Slight fog; dry haze; cloudy.
— 25—Cloudy; shower; fine, with low white clouds; showery.
— 26—Showery; cloudy; windy with showers.
— 27—Cloudy; overcast; slight showers.
— 28—Fine; overcast; heavy showers; clear at night.
— 29—Fine; cloudy and fine; very clear at night
— 30—Foggy; overcast with light dry haze; fine; clear.
Mean temperature of the week, ½ deg. above the average.

State of the Weather at Chiswick during the last 24 years, for the ensuing week, ending June 8, 1850.

June.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds. N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 2	70.0	47.4	58.7	8	0.33 in.	—	—	4	1	2	3	5	5	4
Mon. 3	71.1	46.5	58.8	8	0.91	—	—	1	3	1	5	7	3	4
Tues 4	71.3	47.3	59.3	10	0.76	1	3	1	2	3	6	5	3	3
Wed. 5	70.8	46.9	58.8	13	0.64	2	3	2	—	3	5	6	3	3
Thurs. 6	68.8	47.3	58.1	12	0.28	4	4	1	2	3	5	2	3	3
Friday 7	68.6	47.6	58.1	8	0.53	2	5	—	2	4	4	3	3	3
Satur. 8	69.8	46.5	58.2	8	0.10	3	5	1	—	4	5	4	2	3

The highest temperature during the above period occurred on the 7th 1846—therm. 90 deg.; and the lowest on 3d 1837, and 8th, 1838—therm. 35 deg.

Notices to Correspondents.

Ants: *Old Friend.* See p. 293 of the present year's volume.‡

Azaleas: *K V R.* After they have done flowering keep them in the greenhouse, and repot them if they require it. When they have made young wood they may be placed out of doors for a few weeks in autumn, if the weather is favourable.‡

Geranium House: *Z.* It is immaterial whether it faces south or south-east.‡

Green-fly on Roses: *J M.* Envelope the bush in a para-petticoat (parasol and petticoat), and fill the interior with tobacco-smoke from one of Brown's large sized fumigators. Tobacco paper, a bad material, may be obtained in any of our large towns.‡

Guano Water: *O O.* No fixed rule of application can be given; a dose that would suit one sort of plant might kill another kind. It is much safer to use it weak and often, than to give strong doses at long intervals.‡

Insects: *Bort.* Your grubs found in a Pelargonium pot are the larvæ of those pretty little shining green flies with flat wings (Sargus cupreus) so often seen sitting on the leaves of plants. We believe both them and their larvæ to be quite harmless. *W.* — *W L.* The smaller brown beetles feeding upon the bark and wood buds of the Apple are a weevil called Nemoicus oblongus. The green ones found on the leaves are Polydrusus mali, which do no damage. The former should be collected by beating the branches over a sheet laid on the ground. *W.*—*S W.* The beetles which have done so much mischief to your grafted Roses are the weevils Otiorhynchus sulcatus. We know no better mode of checking their ravages than by laying a cloth under the trees and shaking them well at midnight, when the insects drop down on the least alarm, and must be destroyed. *W.*—*Sub* The insect sent is the domestic Lepisma saccharina found in cupboards and pantries; it undergoes no transformations, and does no harm. *W.*—*L R T.* The insects sent are a species of hair worm (Gordius), the natural history of which is enveloped in much doubt. In what position were they found? *W.*—*W H.* Your insect is a common water beetle (Acilius sulcatus), which, whilst on the wing, mistook the glass of your Melon-frame for water. *W.*—*E S.* There are pins expressly made for entomologists, which may be had at Messrs. Knight and Son's, Foster-lane, London. *W.*—*R M.* Your queries on the insects which have attacked your Pear leaves would require a small volume to answer them completely. The black spots on the leaves sent have not, in our opinion, been caused by the attacks of insects. The discoloration is quite of a different character from the autumnal blotched appearance, which is caused by the larvæ of a small moth (Argyromiges scitella) inclosed within the leaf, for the destruction of which no better remedies can be adopted than those which you have employed. The larvæ you sent were of course crushed to pieces, having been sent without the slightest protection. Among them we recognised the caterpillar of the tortrix, which spins the leaves together, and a looper caterpillar, most probably that of the winter moth. *W.*—*S F.* The insect sent is not the wireworm; it is the larva of a staphylinus, and feeds upon other soft-bodied insects. *W.*

Jonquils: *A J B.* Grow them in a warm south border. Let the leaves die down naturally. Take them up in the autumn, and pot them for forcing. When forced return them to the open ground, and give them a year's rest.

Lawns: *Sub.* Where they are perfectly level a mowing machine may be employed with advantage; but in most cases we would prefer a scythe in the hands of a clever workman.‡

Melons: *G A.* We are unable to say what is the matter with your Melons. The very clear statement accompanying the leaves seems to show that none of the common causes of disease are in operation. It will be necessary to examine the soil; has any raw or fresh animal matter been used in it?

Names of Plants: *W Spriggins.* Kennedya rubicunda.—*R E.* Epidendrum tripterum.—*E S.* Perhaps Linum arboreum.—*C M.* Genista cinerea; the Arabis is indeterminable in such a state, and with neither seeds nor any account of its history. —*A D H.* Tiarella cordifolia.—*A E N.* Genista cinerea.—*Jas. Clift.* Cyrtopodium Andersonii.—*Oak tree.* 1 and 2, the common Norway Spruce, of which there are many slight varieties; 3, two kinds together, the bit, having the leaves in a single row each side of the branch, is the Silver Fir; the other piece and No. 4 is the Balm of Gilead Fir.¶—*J.* It seems to be Ribes atropurpureum.—*A Constant Sub.* It is Bistort. You can eradicate it only by careful tillage, aided by thorough drainage. Keep pulling it up, and like all other perennial weeds it *must* gradually die.—*O P.* Sophora Jasminum azoricum has white flowers; J. heterophyllum has yellow flowers; J. chrysanthum is an alias of J. revolutum.—*J K.* Oncidium tetrapetalum and Dendrobium Heyneanum. —*Offa.* The violet variety of Œthalium septicum.—In two cases correspondents have favoured us with such numerous inquiries, that while waiting for leisure to answer them the subjects of the inquiries have perished. — *C L.* Gongora truncata and some Melastomad.

Peach Leaves: *A B C.* They are blistered—an unsightly deformity, concerning which much has been said in our volume for 1849.‡

Misc.: *J C S.* We are unable to say what is the matter with your Cuphea leaves. The air in the pit in which they have been grown is possibly too dry for them.‡—*L B S.* Dahlias are generally increased every year from cuttings taken off the "old roots;" but the latter often flower as well the second year as the first. Gas-water from the gas works, if you can get it, poured over your heap of leaves and Grass, will have a tendency to hasten their decay.‡—*E S.* You may "stop" the shoots of the Heaths and other plants you mention, when they have done flowering.‡

SEEDLING FLOWERS.

Calceolarias: *J L M.* Prettily marked varieties, but too small.*—*A P.* Yellow, spotted with brown; and creamy white, spotted with brown. Both nice sorts, but hardly large and round enough.*

Double Polyanthus: *J H Y.* An interesting variety, and, if constant, worth preserving.*

Mimulus: *M H.* A pretty sort, having considerable resemblance to M. ruberrimus.*

Pansies: *J F.* Received in bad condition, but apparently inferior to many now in cultivation.*

Pelargonium: *J M.* Dropped to pieces when received.*

Petunia: *S S T.* Bluish purple, and worth growing, on account of its colour.*

Roses: *C and Co.* The bud of "Jenny Lind" did not open with us, and therefore we can offer no opinion of its merits. It is very fragrant.*—*Anon.* Your seedling was too much faded when it arrived for us to give a *safe* opinion of its worth. Its colour is fresh rosy pink, resembling that of the Duchess of Sutherland. Form cupped and good, foliage large and handsome. A full and apparently promising flower.*

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The Agricultural Gazette.

SATURDAY, JUNE 1, 1850.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

WEDNESDAY,	June	5—Agricultural Society of England.
THURSDAY,	—	6—Agricultural Imp. Society of Ireland.
WEDNESDAY,	—	12—Agricu tural Society of England.
THURSDAY,	—	13—Agricultural Imp. Society of Ireland.

A WEEK or two since we directed attention to the fact that there are yet estates in England in which the land is cultivated on the three-course system of two white crops and a bare fallow. That such an ignorant and wasteful course of husbandry should be in existence in the 19th century might well have been doubted, had not the owner of an estate on which it was practised published it to the world, in a letter addressed to his tenantry.

The Marquis of LONDONDERRY deserves some credit for his determination that his land shall no longer be cultivated in a style fully a century behind every well farmed portion of the kingdom. He has intimated to his tenantry that the three-course system at present followed shall be discontinued. The Wheat is to be sown with Clover this spring, and he insists that a green crop or a drilled and manured crop shall always in future be grown between two white crops.

This summary method of getting rid of an obsolete practice is perhaps the best that could have been adopted. But that it could be adopted at all, tells a very serious tale as to the position of the tenantry. They must evidently be yearly occupiers. The owner of an estate on which two white crops and a fallow is the course of husbandry pursued, and on which the tenants are from year to year, has certainly made the best possible arrangement for securing "a constant process of abstraction and a gradual reduction of the good quality of the soil." There are, it is to be hoped, few estates in Great Britain under such a combination of disadvantages, but as there are sadly too many on which the farms are still let from year to year, and as the present time seems for some reason or other to be suitable for making changes, we will do our best to point out the folly and ignorance of such a course of management. On the continent, the class synonymous to the English farmer is nearly unknown. The estates are there cultivated by the serfs, who pay to the owner a certain proportion of the produce in kind. The only difference between the English farmer upon a yearly holding and these serfs, is that the former has commuted this payment in kind into a money rent. In both cases there is not merely the absence of all inducement to improve, but as increase of crop in both cases entails increase of rent, there is also a positive premium on bad cultivation.

However anxious a landowner may be to improve his estate, if it be of any extent, it is obviously impossible for him to ferret out those endless changes and improvements which must go on in every corner of it. But the tenant from year to year, or the serf, has no inducement to make any such changes or improvements; the former, because he has no security, and the latter, because he would by this means only entail a greater burden on himself. It is often a thankless task to reason with a man for his own good; and when the adoption of the path we recommend suggests an acknowledgment of error in his previous proceedings, it becomes still more so. This is precisely the position of the landowner who lets his farms from year to year.

There is not only an absence of every inducement to improve in the situation of a yearly tenant, but it must necessarily check in some degree the ordinary operations of husbandry. Under ordinary circumstances the farmer does not reap the full benefit of the manure employed in a shorter time than three or four years. How, then, can it be expected, that, having only one year's interest in the land, he is going to sink his capital for three years? But, if no other argument will convince the landowner of the folly of this practice, let him visit the county of Norfolk, and let him compare the rent-roll of Mr. COKE, when his farms were let from year to year, with the rent-roll of the Earl of LEICESTER when long leases are granted. Let him visit the best-farmed counties of England or Scotland, and he will always find that they are those in which leases are granted. During the days of coach travelling we have often been able to detect the boundary fence of the estate where the farms were let from year to year.

The Irishman, who kept his pig in his house to save the expense of a pig-stye, "because sure, your honour, I may not have the bit land another year," is the perfection, the *jewel* of yearly tenants. He spoke their feelings if he did not use their very words. The farmer, who assigned as a reason for his bad farming that for "the last seven or eight years he had expected his landlady to die," and was, therefore, taking advantage of the land, until its value was reduced one-half, was but actuated by the common principles of business.*

How a manufacturer would stare if asked whether the ground occupied by his mill was held on lease, or from year to year. A mill-owner, under the latter circumstances, would be considered a madman, a fool, a person without common sense. When will the time arrive, when the owner who lets his estate, and the farmer who takes the land, without the necessary security of a lease, shall also see their folly? When will the owner become convinced that by so doing, he checks improvement, robs his estate, and lowers his rental?

The time has now gone by when the landowner can safely turn his back on his estates for 30 or 40 years, except for the purpose of receiving his rents. He will soon be convinced by his pocket, if no other argument can reach him, that even *landowning* is a business, as well as farming, in which the receipts exactly correspond to the attention bestowed, and upon the security afforded for the investment of capital in its cultivation as well as in its purchase.

The landowners of this kingdom have paid too little attention to the management of their estates. Whilst Mr. CAIRD, and others of that class of men, have stirred up the farmers, to the advantages of high farming, any one who could, in like manner, convince the owners of the advantages of *high landlordism*, attention to the management of their estates, and a leasehold tenantry, would do them a great favour. For some reason or other our homely advice seems opposed to the fashionable habits of our landowners; the agents and the half-yearly receipt of the remittances are the only connexion which too many of them care to acknowledge with their estates. But such practices can no longer be followed with safety. Without pretending to the "sharpness" of the American, there is yet too much go-ahead in our composition for the owner of ever so large an estate not to be left behind, if he venture to rest on his oars.

Our remarks have no reference whatever to Lord LONDONDERRY, except to hold him up as an example to others. If his estates have been previously farmed on a bad principle, he can but alter it; if the buildings on his farms are insufficient, he has offered to provide the necessary accommodation. Let other landowners do likewise, or suffer the inevitable penalty in diminished rent rolls and impoverished estates.

So long as the ordinary course of cultivation was sufficiently remunerative to satisfy the English farmer, and the profits of his grain crop paid the losses of his green crops, and afforded him a fair return for his capital beyond, he might hesitate

* Evidence of Mr. OUTHWAITE, on Agricultural Customs.

to adopt new systems which involved risk and trouble with uncertain results; but now that it is clear that if he expects to make a profit he must make the intermediate crops pay for themselves, and not depend upon the grain crops, the farmer may well turn an attentive ear to any suggestions which may be offered him for turning the least profitable part of his system into one more remunerative; for if he could make more by his other crops he would of course become less dependant for his profits on the price of Wheat.

We find that the price of Wheat in Belgium has been, on the average of the last 10 years, about 52*s.* per quarter—a price which we imagine the majority of English farmers do not expect to realise for their Wheat for the next 10 years—and yet the Belgians have still considered the Flax as their golden crop, and looked to it for greater profit than from the Wheat crop. Why should not the English farmer do the same? *What advantage has the Belgian farmer over the British in the growth of Flax?* It does not appear that either the climate or the soil of Belgium generally are more favourable to the growth of fine Flax. We know that in Ireland much has been produced of excellent quality. Still, in spite of the exertions of Mr. WARNES and other zealous advocates, the cultivation of Flax has extended very little in this country. The reasons seem obvious. So long as the growth of Flax entailed upon the farmer not only the trouble and risk attendant upon sowing, weeding, pulling, housing, and threshing out the seed, common to this and most other crops, but also the steeping, drying, and scutching—nice and troublesome operations in which he has no skill or experience, and which if he ever attempted he probably gave up, disgusted at the trouble and loss which attended his imperfect means of executing them—added to the further difficulty which sometimes occurred to a single individual in a district in finding a satisfactory market for his fibre when prepared—no wonder that English farmers have been found little disposed to embark in so troublesome and uncertain a business, and have consequently not been tempted to try Flax growing. But are not circumstances now altered? when most farmers are looking not to make large profits but to save themselves from serious losses, at the same time that the difficulties which have hitherto beset the Flax-grower are greatly smoothed.

By the patented system of steeping Flax in warm water (which is described in the *Agricultural Gazette* of Nov. 11, 1848, and as to which abundant information may be obtained by application to the Flax Improvement Society in Ireland) Flax may be thoroughly retted in 60 hours, instead of taking from 7 to 21 days, and this may be carried on at any season, and all the year round, instead of depending upon the fluctuations of weather and temperature, and all the uncertainties of climate, as heretofore. It can be carried on, too, in tanks attached to the scutching mills, and the water warmed by steam from the engine which works them. With such facilities it may fairly be supposed that there would be no difficulty in finding parties ready to set up scutching mills in any part of the country where Flax was grown to a sufficient extent to keep them employed, otherwise it might be worth while for a party of agriculturists to establish a company for that purpose.

If the farmer after threshing out his seed could sell his Flax-straw in a rough state and deliver it at the mills, he would not have more trouble with this than with his other crops, with an equal certainty of a market. For, already, there is an enormous demand for Flax in this country, of which we import in seed, and fibre, and oilcake, to the value of some millions annually. This demand, it is believed, might be almost indefinitely increased if the price was slightly lowered so as to approach that of cotton. How many fabrics, now made of cotton, might be manufactured of linen with immense improvement to their quality? and if to any extent the linen manufacture could supersede the cotton, how great would be the national gain. If instead of being dependant upon the capricious and uncertain supply of a raw material of foreign growth, and the produce of slave labour, like cotton, for carrying on the most important branch of our manufacturing industry, we could keep our mills going from the produce of our own fields, all parties in this country would be enriched, and such a crisis as some fear is even now hanging over the cotton trade might be avoided. At present we are dependant upon Belgium for the greatest portion of our first quality of Flax, *but what advantage has Belgium over this country in the production of such quality, if it does not arise, as we have shown, from soil or climate?* No doubt at present the Belgian farmer owes his success in the production of fine Flax to his superior management, in which long experience and his well-known industry and minute care have given him the advantage. Now, in the art of cultivation, there is no reason to suppose that the improved English farmer is a whit behind the Fleming, so that there is little doubt he could raise as good a crop of Flax. But while he was dependant for the subsequent management of it upon the unskilled treatment of his agricultural labourers, and had to entrust the delicate operations of steeping the Flax and separating the fibre to their rough hands, he had little chance of producing an article which could compete with one which had been prepared with all the experience and minute and careful attention of the Belgian farmer. But if the straw, as soon as threshed, passed at once to the manufacturer, and was consigned to the care of skilful hands, whose attention was devoted the whole year round to the preparation of Flax, there is no reason to believe that they would not soon equal the most skilful Belgian in the performance of their daily task. We write from Gloucestershire, and fancy we can cast our eyes upon many mills in the valley of Stroud, which might be profitably converted to Flax scutching, possessing admirable water power and railway communication, and a population accustomed to mill labour. No doubt there are plenty of other localities in other counties equally favourable.

Whatever may be the range of future prices of corn, highly cultivated lands must have a decided advantage over wilder districts in the production of a fine quality of Flax, even if superior climate, a virgin soil, or the cheapness of labour and low taxation may give some other countries an advantage in growing cheaper corn. Anything therefore which could increase the profit of high cultivation in this country, and encourage its extension, is well worthy the attention not only of the owners and occupiers of land, but of all persons interested in the advancement of their country.

Hitherto the British farmer has devoted his energies almost exclusively to the production of food, and while he was protected in so doing, he had, under a sort of tacit pledge, to keep the market supplied. But now he shares the market only equally with the foreigner, and may well consider whether it is wise to confine himself only to the production of food, and leave the more profitable supply of the raw material of some of our most extensive manufactures to foreigners. *J. C. H.*

NOTES OF FARM PRACTICE IN 1776.

FARM MANAGEMENT, &C.—As Mr. Leeder is a very sensible man, I ask him a hundred questions about different things. "Suppose you farmed a strong wettish land," says I to him, "what would you do with it?" "I would not sow many Turnips, but fallow for Wheat; nor would I plough so often as we do on light lands. I would not sow much Barley. The year I fallowed, I would plough as often as I could do it dry, but at all other times, only once for Oats, or Peas, or Wheat, after any crop." These are the sentiments of an excellent Norfolk farmer, with regard to strong land. "Do you expect, then, that I shall introduce frequent ploughings into a wet country?" He told me that many people think they can farm a soil to which they are strangers, as well as that to which they are accustomed, and that many people have ruined themselves by this very thing. He stated that although he had had experience of 4 or 5 different farms for many years, yet to this day he could not manage any of them to such purpose as the one that he was bred upon. "There are," said he, "nice times and touches (what we call tidds in Scotland), which I nor no man can explain to you, and which are only to be learned by long and attentive experience. Nor is it that kind of experience which some farmers have of being upon a farm twice or thrice a week, that will teach it, he must be upon the ground every day and every hour of the day to acquire it thoroughly. No wonder then that so few are masters of it. For this reason I would never choose to leave the farm I have been bred in, and I would never advise any farmer to change his situation, even though a good place was offered to him. For a number of years he cannot reap advantages which he might have done at home, and he is now to sustain a great loss by removing his stock."

March 4.—Having met with a man who told me of a great farmer in Suffolk, who had improved a deal of waste land, I resolved to see his farm, which lies about 30 miles from Yarmouth, on the east coast. I had no recommendation to Mr. Howlet, but introduced myself by telling him what my intentions were. It was near 12 o'clock, and he begged that I should dine with him and then take a walk through the farm. He told me when he took the farm there were only 800 acres of ploughed land in it, but he ploughs up every year 100 acres of heath, of which he has about 2000 acres. His rent is 800*l.*, tithe free. There is clay on the farm, which is the foundation of everything to him. Mr. Howlet never dungs to Turnips, but either to the Peas or Wheat as convenient; his reason for this is that his land is so light, that he would not have Wheat without it. Dunging to the Turnips is not of such importance to the ground, as he always feeds off the Turnips upon the land, which is as good as a coat of muck. He folds sheep upon his Wheat, too, which is done immediately after sowing, and it answers admirably; but he does not get above 4 or 5 coombs an acre, yet he thinks it worth sowing. Into the bottom of his yards he has laid more than 2000 loads of sand, to make proper foundation, more than for manure. He does not board his harvest people, but gives them five guineas and 10 pecks of malt for the season. Digging, filling, and spreading clay 15*s.* per 100 loads; he has let out some, carriage and all, which costs about 40*s.* per acre, though the pit is in the field. He showed me an iron plough which is thought to go lighter than the wooden ones. After seeing all Mr. Howlet's farm, which took us part of two days, and which I thought well worth my journey, I took my leave of him with a good deal of reluctance. As an instance of Mr. Howlet's assiduity, he says he has not been absent from his farm above four days since he took it, which is four years ago; he sees all his people and stock twice a day. He has correspondents in London to whom he sends all his grain and fat cattle, so that it is only to buy cattle that he goes out. He keeps 1400 breeding sheep, takes very good care of them, and I have heard that he pays his rent by the lambs almost every year.

March 6.—From Blythborough I walked to Halesworth. It occurred to me on the road that Mr. Leeder had a Suffolk farm hereabouts, and, after inquiring for it, with great difficulty I reached it just as it turned dark. The upper servant is a discreet sensible man, and gave me all the information he could. In this strong wet country they never make a broader ridge than 6 feet, which is called eight-furrow work. For Turnips, they plough five times, and choose to give the first furrow before winter. Few have good Turnips here, owing to their sowing them late, but Mr. Ewel has introduced sowing before Midsummer, and got very good Turnips.

March 7.—In the morning I went out with Mr. Ewel to see the stock taken care of. The first thing he does is to go and bring a load of Turnips for the cattle; these he strews on the driest part of a Grass field. The park was very much poached and cut up. I asked him if that did not destroy the Grass. "So far from that," says he, "that where it is most trodden it will be the sweetest." This was new doctrine to me, but he assured me it was undoubtedly the case; and, further, it prevented fogging in the pasture land. Everybody complains of the want of straw this winter, and Mr. Ewel says it makes the greatest odds in the bullocks' thriving ever he saw. Last year they kept the yard quite dry, and the cattle, after getting a bellyful of Turnip without, would come in and immediately lie down to lick themselves, but this year the yard is so dirty that the cattle do not lie down till they are tired of standing.

PRODUCE, RENTS, AND PROFITS. *Norfolk, July* 10.—The following is the valuation of the crop on a little farm at Plumstead, and may give a better idea of things than I can:

Wheat, 7 coombs per acre, at 17*s.*	£5	19 0
Deduct for harvesting Wheat crop	0	7 0
	£5	12 0
Barley, 8 coombs, at 9*s.* 6*d.*	£3	16 0
Deduct for harvesting Barley crop	0	4 0
	£3	12 0
Peas, 6 coombs, at 12*s.*	£3	12 0
Deduct for harvesting Pea crop	0	7 0
	£3	5 0

Harvesting is either done by the season or the piece. Day work is not known at that time, and very properly it is so. When the crop is about one-half Wheat and one-half Barley, they allow about 15 acres to a harvest man; where it is mostly Barley, 20 acres. Two men reap an acre a day, and one man cuts from 2 to 3 acres with the scythe. The following is the expense and profit of an acre farmed on the Norfolk rotation:

PRODUCE.

Turnips	£2	10	0
Barley, 7 coombs	3	10	0
Clover	2	10	0
Wheat, 6 coombs	6	0	0
	£14	10	0

EXPENSES.

Four ploughings to Turnips, with harrowings	£0	14	0
Twice hoeing	0	0	6
Three ploughings to Barley, with harrowing and rolling	0	10	6
Seed, three bushels	0	7	6
Reaping and carrying in	0	5	0
Clover seed	0	5	0
Making hay and carrying	0	5	0
One ploughing to Wheat	0	3	6
Seed, 3 bushels	0	15	0
Reaping and carrying	0	7	0
Rent for four years	4	0	0
Tithe and town charges	1	4	0
Dung bought besides the produce	2	10	0
Four years' expenses	£11	18	6
Four years' produce	£14	10	0
Four years' expenses	11	13	0
	£2	17	0

Allow 17*s.* for tear and wear, repairs, &c. This calculation is very moderate. The whole of the crops generally exceed what they are set at, and often the dung made by the Turnips and straw serves without buying. There is nothing charged for threshing and carrying out the corn, the straw and offal being an equivalent, and there are many valuable articles raised independent of the above, such as poultry, pigs, &c., but these are mostly allowed to the wife for pin-money; so the farmer does not reap the profit. This is a more profitable method than any fallowing course, as though the crops may be greater, yet the loss of one crop, and

paying the rent too, reduces the produce very much. Better to buy dung than to fallow. Mr. Leeder, at Plumstead, does not confine himself to the common course at all; he sows a good deal of Peas, and has a field of Coleseed. I dare say he has not a sixth part of his farm in Turnips. He tries several methods that other farmers do not think of. He ploughs the Wheat stubble before winter; when it is for Turnips, it is ploughed as deep as ever they can, because if they do not then get plenty of mould, they never will afterwards. For Barley, they plough as shallow as possible. There are bad ploughmen here as well as at home, and we saw a farm quite foul, and in bad condition, which Mr. Leeder says is just owing to bad ploughing, for they plough as often as other people. This man, last summer, letting a crop of Turnips run on too long without hoeing, paid near 20*s.* an acre for hoeing them, and after all his crop was not worth that money; whereas if he had hoed them in time, he would have had a good crop. This may show us the use of proper hoeing better than a hundred good crops. So I think we are obliged to the bad farmer as well as the good. Strong land keeps dung much better than very light. Mr. Leeder does not like very light land, Clover or Wheat does not grow very sure upon it. A good mixed soil, with a dry bottom, is better worth 20*s.* an acre than such as Mr. Rackham's at 7*s.* 6*d.*; but rather light land for tillage as strong clay lands. I suppose he would rather farm the ground west of Linlithgow-bridge than the carse of Falkirk. The planting of Wheat is an improvement introduced here within these three years, and, as is often the case, the old and the new, or the practical and the speculative part of the farmers, do not agree upon it. It is said that besides the saving of seed, which is a public benefit, the crop is greater, and you may plant Wheat where you cannot sow it. Add to this, that Wheat may be set on old lea, and I think there is no doubt of its being a great improvement. *N. B.*

Home Correspondence.

Prevalence of Ergot in Wheat.—I have received a sample of ergot from a field of red Wheat of 1849 with an assurance that this disease has been very prevalent in some of our stiff clay lands hereabouts. I was asked whether the Wheat, having been grown on land which had been pre-occupied by Rye-grass, among which also the ergot had shown itself the year before, was likely to have become ergotted in consequence. Not supposing this to have been the cause, I solicited further inquiry, and have received the following information: "Although the Wheat to which I called your attention was taken from a field which had previously borne Rye grass, yet my men say that more still was found among the Wheat threshed for seed, and which did not succeed Rye-grass, and was moreover grown on one of my best fields, underdrained. But that crop was laid." It may be worth noticing that our farmers here declare our heavy lands to have produced them only half crops during 1849, whilst in other localities we hear of the great abundance of the last harvest. I think I never observed the Wheat midges (three species out of four now known), more abundant than they were last year, and very probably their evil influence must have been considerable. There is a notice concerning the habits of the Wheat midge in the "Annals and Magazine of Natural History" for Feb. 1850, to which it would not be amiss that agriculturists should direct their attention. It contains an account of observations made on this pest in Nova Scotia, by a gentleman who has taken up the question where it was left in 1842, in the Journal of the Royal Agricultural Society, and solved a difficulty which had not been mastered on this side of the Atlantic. *J. S. Henslow, May* 28.

Practice with Science.—In the raising of manure, one of the first things to be attended to, either in a large concern or a small one, is, "Let nothing be wasted." How often do we see the reverse of this to be the case. The dung is either wasted by the cattle in the fields, or else is thrown carelessly together by the side or within reach of a pond, into which escapes all the essence which constitutes its main fertility. There are a variety of ways by which the mixen may be increased or enriched, which are entirely disregarded. It has already been said that no farm-yard should be without a tank. The reservoir communicating with this should contain all the refuse herbage or other matters that by fermentation would become decomposed, and by this means afford a large material for the formation of a compost heap. If there is bog soil within reach, and which can be laid down under 4*s.* a ton, nothing is more valuable than this for becoming a component part in any stercoraceous mixture. We have long heard, from high Scotch authority, of two-thirds of peat and one-third dung, being placed in layers and then mixed together, forming a most valuable heap for fertilising almost any sort of soil, particularly strong clays. But peat may be made serviceable in a variety of ways. It should not be used in its raw state, as it then contains much of the tannin principle, which is injurious to vegetation, and in its natural composition prevents the growth of any other plants except those of an aquatic kind. It should lie exposed to the weather for some length of time, during which the miasma would evaporate. It would then serve as a valuable layer for the bottom of the farm-yard or for the different sheds, and after having embodied the strength of the liquid elements that flow from different parts of the yard, it might be carted out for use. There is a good practical essay in the Royal Agricultural Society's Journal, vol. i. p. 135, by James Dixon, Esq., on making compost heaps from liquid manure and other substances. In this is shown the great advantage of using peat earth mixed with liquid manure. The latter is quite one of the most powerful fertilisers that can be applied to the land; and near the large manufacturing towns may be rendered a most valuable aid for raising all sorts of crops. The urine from animals in given weights is more powerful than their solid excrements, after these have been diluted by wet or wasted by evaporation. The strength of what is obtained in the manner mentioned much exceeds that which comes from the common farm-yard, be it ever so well preserved. When this manure can be procured at a cheap rate, the feeding of cattle almost becomes superfluous, and it may be a question, where the profit arising from it is, in a general way, so small, whether the best mode of enriching a farm is not from purchased manure. Guano is of a most forcing character. Some suppose that it is a mere stimulative, that promotes a rapid and luxuriant growth, with very exhausting powers. This, to a certain extent, may be very true. No one will suppose that a manure of an alkaline quality, that raises a crop double in quantity, will leave the ground in as good a state as after the common process. But surely the increased produce in this case will compensate for some deterioration. The best proof of its value is shown in its increased consumption. The price used to be only 7*l.* the ton, and it has now risen to 10*l.* and upwards. Its wonderful productive faculty may be shown in a case which occurred to myself. A tenant of mine had a crop of Turnips grown with bought horse-dung. The dung cost 18*l.*, the carting 6*l.* I had a crop grown with guano, 3 cwt., which, at 10*l.* the ton, would be 1*l.* 10*s.* There was very little difference betwixt the two—mine somewhat inferior. The soil of the two was precisely the same, being almost adjoining to each other. Here then is a saving of more than 20*l.* in a single acre of Turnips; yet some are disposed to say that these manures are too expensive, and Mr. Hillyard says (p. 118), speaking of desiccated night-soil, guano, and many other costly manures, which may be called artificial, that they may be very well for no-rent paying farmers to buy them, but it is quite out of the question for those who have to pay rent; and he adds, a good farm, well managed and properly stocked, will, like a good joint of meat, baste itself. That no farming of any extent can be properly carried on without a good supply of farm-yard dung, is most certain. From its being near at hand, and from its more substantial and permanent qualities, it is necessary to keep up the soil to its proper mark for a continuance, but these stimulating manures will often come, as a rate in aid, and be of the greatest service; and in some cases they can be used when the other cannot. A sprinkling of them is most beneficial for different crops, if applied in moist weather. They can be used either for white crops, on the surface, when in their early growth; or for Mangold Wurzel, Carrots, &c., after the plants have shown themselves above ground. Perhaps the best way of growing Turnips is to use half dung, half guano, which gives both strength and luxuriance to the crop, and does not exhaust the land so much as with guano alone. There is another manure most deserving of attention, which is, bones dissolved in sulphuric acid. This subject is treated of at length in the "New Husbandry," p. 265. It may suffice here to say, that Mr. Pusey considers that, from the trials made of it, good hopes are held out of the most important saving that was ever made in the use of manure; and the Duke of Richmond states, that he had tried one acre with it, another with guano, and a third with stable-yard dung. Early in November he had a quarter of each drawn and weighed, the heaviest crop was from the land manured with the sulphuric acid, though it did not cost him above 11*s.* or 11*s.* 6*d.* an acre. *Law. Rawstorne.*

Potato Planting in Ireland, 1850.—I have delayed sending the accompanying answer to your inquiry till I could do so with as much accuracy as my judgment permitted. The general hyperbolical expression is, "that more Potatoes are planted than ever;" this is strictly true, if the "ever" is limited to the last four years, but there are many causes to prevent their being planted to the extent to which they were previous to the epidemic; the conacre, which before covered half the Potato land, does not exist; a large part of our population which before existed solely on the Potato is now fed from the poor-house on other articles of diet; labour is now necessarily paid for in money, for the labourer has not his summer store of Potatoes to subsist on while the new crop was growing; large tracts of land are thrown out of tillage, and are on the landlord's hands; as manure was only of value in connection with the Potato, less care has been taken in accumulating it; as seed is not now in the hands of the people, for any extensive culture it must be purchased, and few can afford to do this to any considerable amount; many, too, are forcing crops of grain, as being more readily disposable, with a view to cut and run after harvest, with what they can carry off from their landlords, for the tide of emigration is still fast and furious. Yet as many of the same causes which militate against a very large tillage of Potatoes will also limit their consumption, the quantity now likely to be produced will probably be as equal to the demand as it was in the years of our widest tillage of them. The probability is then that we shall have them very cheap next year, and from the facility this will well afford for seeding the land, and from increased confidence in the crop, I think we may reckon upon a largely increased tillage of them. They have this year nearly superseded Turnips, for which I see very little preparation. The confidence in the Potato is revived, and as a food to a people who cannot use animal food, it is invaluable; we cannot therefore be surprised at the avidity all show for its production. It is indeed a bread fruit, for which oatmeal and Turnips afford a very meagre substitute. Its restoration is the first step to our recovery, we have from want of energy lost any advantage we might have obtained from its failure, and our only resource is to fall back as soon as possible to our old system.—Compared with 1849 four times more are being planted. Compared with the years before the Potato rot, about one-third in Longford—more, perhaps one-half, in Cavan. There is scarcely any revival of the conacre system, the only instances I am aware of are some very few instances of land so given or let out for manure convenient to towns. The present price of Potatoes for seed, per cwt., is 4*s. J. M. Goodiff, Granard, Longford.*——It is difficult to arrive at any just estimate of proportions, but I think the quantity planted in this district must be at least double that of 1849. It seems to be the general opinion that there is not yet more than from a fourth to a third of the full quantity that used to be planted before the Potato disease. The conacre system, happily for this district, never had place among us. In February and March choice early varieties, such as Cruffles and Forty-folds, chiefly the former, sold at 6*s.* per 112 lbs. for seed. The price afterwards declined, and common varieties have lately sold at 4*s.* down to 3*s.*, for small. *John Andrews, Comber, Down.*

The Economy of Manure is deservedly engaging the attention of farmers at the present time. It may be inferred from a late interesting lecture by Professor Way that a clay soil is an efficient retainer of ammonia, and when it is generated by the decomposition of manures buried in the soil, it is absorbed and held there until required as food for the next crop, and that sandy and calcareous soils possess this property in a much lower degree. These facts, which have been proved by careful investigation, appear to coincide with the experience that heavy soils do not require applications of manure so frequently as those of a light and porous nature, and that a naked fallow is highly beneficial to the following crop on a strong clay; whereas the light soils lose by long exposure a great part of the soluble matter they contain. It follows then that manures, either in a solid or liquid form, may safely be applied to land containing a fair proportion of clay, a considerable time before the sowing of the crop. As most soils possess the power of retaining the valuable portions of manure as they are evolved by decomposition, which discovery exhibits a beautiful provision in nature, how does it happen that we do not apply it to the land before it has sustained the great loss which often occurs during fermentation in the heap, and drainage during the process? And with regard to liquid manure, if applied in the recent state, though its operation may not be so immediate, I do not see why it should not be as effectual, unless the nitrogenous substances from which the ammonia is produced are more liable to suffer loss after being mixed with the soil than ammonia itself, being formed previously by fermentation; or it may be that a more favourable combination of particles is induced by such fermentation than by the slow decomposition which takes place in the soil. Perhaps some of your readers will be kind enough to explain the difference in the effects of these two kinds of decomposition, and also of their experience in the application of artificial modes of fixing ammonia. It is not always convenient, even if it should be proved desirable, to apply manure immediately it is produced, and perhaps there is no better way of preserving it than by throwing it up into a compact heap, rounded at the top, and covered with soil 1 or 2 inches in thickness, preserving the drainage by channels leading to a cask sunk in the ground. By this method, the loss, though not entirely avoided, would perhaps be less than the expense of obtaining other means. *T. W., West-hill, Wandsworth.*

The Qualification of Farmers.—A correspondent in a late *Gazette* draws a comparison between the qualifications of gardeners and those of farmers, and considers that it is as important for the farmer as the gardener to give a public unequivocal proof of his fitness for his profession. The cases are quite dissimilar—the gardener is the servant of another, and the farmer is his own. The want of qualification in the gardener affects the master primarily and seriously, and if a party could obtain a diploma of efficiency in his gardener, it would be a great convenience. The gardener works with his master's capital; the farmer is his own master and trades on his own capital. A man may pass an admirable examination in the natural sciences, and also in practical agriculture, and yet be unsuccessful as a farmer. Marketing judiciously is equally important with rational and enlightened cultivation, and no evidence of this qualification could be given. It would be perfectly futile to attempt to induce the present generation of farmers to pass an examination. What would be the good of it? whom would it benefit? The mere circumstance of passing the test would not enable the farmer to make 1*l.* a year more, and those that were rejected and denied the diploma would go on farming as before, and perhaps show a better balance at the end of the year than the highest graduate in agricultural science. The idea of giving evidence of qualification is worthy of consideration, but only as regards the young. Let the farmer see the importance

of having his son properly trained and instructed before he allows him to enter on the detail of every-day farm life. The usual system of education pursued by farmers' sons is quite inadequate to the important functions that they are called on to perform. A boy is sent to school until he is 14 or 15 years of age, and devotes his whole time to routine studies, which are equally suitable for him as a draper, a grocer, or a farmer. Many of the youths leave school before they can write a piece of English correctly, from dictation, much less express their thoughts in passable English. There are, we are happy to say, some institutions recently established where a most excellent and suitable course of education for agriculturists is pursued. But they all labour under the same difficulty—the pupils are too ignorant when they are admitted, and remain too short a time under instruction. As soon as, or even before, the several masters have laid a broad and deep foundation in the elements of physics, botany, geology, chemistry, zoology, accounts, and mathematics, the youths are taken home or sent out to a farmer for the period of two or three years. It is here that the error lies. These lads are not expected to work as labourers, they are not fond of reading, and they are glad to pass away the time in talking to the men, hunting rats, or in other pursuits that are equally improving. How is this to be remedied? I apprehend in a very simple manner. Let the agricultural college at Cirencester extend its encouragement to all those schools that are following in its wake. Let it publish a series of good manuals (similar to the one that its late professor of chemistry Dr. Blyth did on his own department), let it found a few scholarships, to be obtained by competition, and it will thus raise a standard to which the elementary schoolmaster may work. The Royal Agricultural Society have done much for agriculture, but they are guilty of a serious omission. They have not, as a body, given encouragement to agricultural education. It would be an easy matter for the society to establish a few scholarships of 50*l.* a year, each to be held for three years. These exhibitions might be enjoyed at Cirencester, and at others of the schools who chose to put themselves under the inspection of the society, and give a guarantee for carrying out its objects. The Royal Agricultural Society might give a prize annually for the best essay on the education of the farmer. In the course of a few years those young men who receive a suitable education will be the best persuasive for the farmer to educate his son. There is a great lack of suitable books for agricultural pupils—in some departments we have useful manuals. I may mention that most valuable book of Dr. Lindley's called "School Botany"—perhaps a sequel to it, containing the cultivated plants and the most troublesome weeds, might be given to the world under the auspices of some of these powerful institutions. This subject may be worthy of the consideration of your numerous and enlightened contributors and readers. *D. W.*

Parish Roads.—Having long desired to see trust and parish roads amalgamated, and both maintained by a road tax on horses, I was very glad to see the *Gazette* take up the advocacy of such a measure. Your Paper being read by men at once most fond of considering how earth-works can be best performed, and whose interests are most deeply concerned, may be made an excellent committee room for considering suggestions on the subject. I apprehend the partial existence of trust roads to be a great difficulty, as hindering the adoption of a general system. Seeking some equitable arrangement, my idea has been somewhat this—that there should be (1) a uniform rate on horses over the country for the repair of the roads, and for the eventual extinction of the trust debts. Thus I tax the country at large, for their share of benefit conferred by local trust roads. 2. An additional local rate on the horses of each parish, union, or hundred, but collected with the other, to pay the present net annual interest of the trusts in such parish, union, or hundred. I should prefer a general rate for the kingdom to one for each county; but, whichever were chosen, I should have large districts let by tender on long terms to parties, who if they pleased would sublet in smaller portions. *E. M.*

Game.—You have not been deficient in pointing out to farmers and others the necessity of saving every atom of manure, and the best manner, I believe, of making the most of what they already possess. That farming at the present day must be very different to what it was 50 years ago, is generally admitted. It will perhaps not be out of order at the present time, to get you to raise your pen for the benefit of the farmer, in the destruction—the entire destruction of game—that spoils his crops. "Fair play (it is said) is a jewel," why is the agriculturist to be denied it? It is well known within the last 10 years game has been preserved to a ruinous extent. Within the last 2 or 3 years, some admirable examples have been in existence of the routing of it all, only I regret as yet partially accomplished. If one time or period is more pressing than another, now is the time; why hesitate to banish these costly pests? That the landowner and the poor cottager would be greatly benefited by it, is not a question; and as far as a day's recreation of shooting is concerned, surely a man may as well, if not better, walk 10 or 20 miles in the pursuit of it, than if he only went 5. No doubt that sense of duty which prompts the scientific, or the practical man, not to hesitate in announcing the way to the high road of improvement, will also guide him to preserve that produce from destruction. *A Man in Daily Practice.*

Farmers' Income Tax.—There can be but one opinion upon some portions at least of the petition presented by Lord Stanley on Monday last on behalf of the agriculturists of the Isle of Thanet. The petitioners complained that they were assessed for the income tax upon an assumed rate of profit, greatly exaggerated in the best of terms, but now out of all character. The justice of this complaint is apparent to everyone, and upon what principle the Government assumed half of the rent to be the farmers' profit, we are utterly at a loss to make out. It would have been equally just if ten times or any other number of times this rent had been assumed to be the profit of the grocer or linendraper. There was a time when the agricultural body were the pet children of Government; each endeavour to interfere with their vested interests ending in the certain downfall of the minister who ventured to propose a change in existing arrangements. But times are changed, and now they certainly have not a fair share of attention. Why should not farmers enjoy the same privilege as the merchant or manufacturer? The latter makes a return of his profits. Upon what principle of justice is the farmer to be prevented from doing the same? It is worth while enquiring why the agriculturists, as a body, do not now meet with the same attention as the other portions of the community. Are they less deserving now than formerly? Is it not rather that, like the cartman, who shouted to Jupiter for help to get his cart out of the mud, instead of putting his own shoulder to the wheel, they are too prone to look to others for the help already within their own reach. Men of every shade of opinion must admit the hardship of paying an income tax when the year's transactions have ended in a loss instead of a profit. On this point the farmers have an acknowledged ground of complaint. Let them therefore petition for its removal, confining themselves to this point, on which they are sure of sympathy, and not like the petitioners represented by Lord Stanley, branching off into debateable ground. Let every agricultural journal lend its aid, and that justice which is not denied to every other branch of industry, cannot, will not, be denied to agriculture. We are not seeking the removal of a tax, as is now so much the fashion. All we desire is to be allowed, in common with every other trade and profession, the privilege of paying the income tax upon our actual income, and not upon an arbitrary and unjustly assumed scale of profits. *T. L. C.*

A Word more respecting Roads.—The present system of maintaining the highways by means of toll-bars is admitted by every one to be objectionable. It interferes with the necessary intercourse between districts, checks improvements in building or draining, is a fertile source of litigation and quarrels, and, as has been already remarked in your columns, it is the clumsiest tax that is levied, as not one-half of the money paid is actually applied to the roads, the other moiety being swallowed up by "pikemen," clerks, surveyors, and interest of debt. It is said that there are about 6000 turnpike gates in the kingdom, and that the cost of collection alone amounts to nearly 1,000,000*l.* per annum. The great opponents to any change will be these "pikemen," the clerks, and the lessees. The trusts are mostly composed of the landowners adjoining the line of road; and as few of them are men of business, or what is worse, still fewer of them bestow any attention to the subject, it is in vain, therefore, to look for any improvement from them, if, indeed, the system be capable of any; but our opinion is, that however well it might be adapted to the wants of the community 150 or 200 years ago, the present system of management by turnpike trusts is a disgrace to the legislature, and a burden upon the public that cannot, will not, be much longer tolerated. The apathy of turnpike trusts, and the landed gentry, on this important subject, seems something like infatuation. It concerns them much more than the people of the towns, and unless they stir in it, they must continue to bear the consequences of their own indolence. You have already stated objections against the proposed alteration in our township and parish roads. It leaves the great evil altogether untouched, and I never hope to see the management of them taken out of the hands of the rate-payers. Local management, though sometimes defective, is of the highest value, in cultivating a knowledge of affairs, and preserving constitutional freedom. Let turnpike trusts, toll-gates, and all their abominations be swept away, and let local taxation be organised on better models. The consequence of the proposed measure will be a host of Government officials to manage what they are quite capable of managing for themselves—increased expense—and, to crown all, the perpetuation of the toll-gates for another generation. To bearing all this John Bull seems to be quietly settling his broad shoulders, and yet we are satisfied, if one single petition on the question were presented, the measure would be abandoned—a step we would ten times over prefer to the proposed alteration. *T. L. C.*

Poultry Management.—I have always considered the rearing and management of poultry a matter of much more importance to the farmer than he is generally willing to believe. My poultry are of the same sort as may be found in any of the neighbouring farm-yards; the eggs of the largest and best hens have been selected for sitting, so that the stock consists of birds capable of covering 15 eggs, which is the largest number I ever place under a hen. The cocks are changed every two years, taking care to supply their place with fine healthy birds of the previous year. Hens are useless after the third year; my plan is, in a stock of say 30 hens, to introduce 10 young pullets every year, and part with 10 of the oldest hens. One male bird must be kept to every seven hens; but when more than 50 hens are kept, one to every six is necessary. On the proportion of male birds kept depends, I am confident, the number as well as the successful fecundation of the eggs. About a month since, as an experiment, I placed 13 eggs, which I had procured from a farm-yard where the proportion of male to female birds is about 1 to 15, under a hen, and mark the result. From 13 eggs were produced three chickens; seven of the eggs, at the end of the three weeks, were almost as fresh as when just laid, and three were addled. My chickens are fed twice a day, in the morning about half-past 7 (later of course in winter), and at 2 in the afternoon. Their food consists, during the five summer months, of dry Barley, and from October till April of boiled Barley given warm, and 20 oz. per day each of tallow cake or chandlers' greaves (the same as used by Mr. Huxtable for his pigs); the cost of this latter is a fraction under a penny per lb., and is I think the best and cheapest substitute for the animal food they are unable to procure in the form of flies and insects, at that season. I have found by experiment that fowls will lay more regularly on Barley than on any other grain. Hens during the period of incubation should be fed on dry Barley, as the greater the heat maintained in the body of the hen the finer and more numerous will be the progeny. Never turn the eggs, as some do; the hen will do this herself. Leave the chicks till nestled, *i. e.*, till the down becomes dry; feed them with soaked bread for the first two days, returning them as soon as fed to the mother, after which they may be kept on tail Wheat (and curds, if you have the milk), until they are seven or eight weeks old, when, and not till when, they may be fed on Barley and Barley-meal, mixed with bran or pollard. I have this year only 18 hens and three cocks, the foxes having stolen rather more than one-third of my stock during the winter; these 21 fowls consume a sack of Barley, which costs now 11*s.*, in 31 days, and have laid on an average 16 eggs per day since the 1st of March. I find the expenditure for corn, tallow cake, &c., for the old stock (not for the chickens produced by them) pretty nearly balanced by the receipts from the eggs one time with another. The following is the account, Dr. and Cr., of a stock of eight hens and one cock kept by myself, in an enclosed yard, during the year 1849.

DEBTOR.	£	*s.*	*d.*
Eggs sold—number unknown, but furnished all food consumed by the nine fowls mentioned	0	0	0
Chickens reared.—33 couple sold at 3*s.* 3*d.*	5	7	3
13½ couple reserved for stock for present year at 3*s.*	2	0	6
3½ couple of ducks at 2*s.* 9*d.* ...	0	9	7½
	£7	17	4½

CREDITOR.	£	*s.*	*d.*	£	*s.*	*d.*
1 sack of barley consumed by young chickens	£0	15	6			
1 strike of barley for do., and grinding ...	0	4	4			
1 cwt. bran	0	5	0			
6 pecks tail Wheat	0	6	0			
Marketing expenses	0	6	1	1	16	11
				£6	0	5½

6*l.* 0*s.* 5½*d.*, divided by 8, the number of hens, gives a net profit of rather more than 15*s.* for each hen. *The Son of a Country Rector.*

Allotments.—In answer to "R. G.," in respect to allotments, I reply that I have for 10 years let out land with good effect to myself and my tenants—a quarter of an acre to each tenant, and where there is an active wife and family half an acre—at 4*d.* a pole or 2*l.* 13*s.* 4*d.* an acre, free of all taxes and rates. The land is of two qualities, good rubbly or stone brash and sandy clay, which is far preferable for the cottager, as it retains the manure much longer, and with spade cultivation will improve yearly. This system works well for the poor and the rich—gives a great deal of employment to the tenant's family, or relations, the very young or the very old who would otherwise get no work. It breeds up a family to cheerful labour, for all work gladly for their own interests. It gives them plenty of vegetables, enables them to keep a pig, and so encourages cookery, and the purchase of one of the cheap and useful grates, and thus introduces skill and comfort into families. As this system gives a great deal of employment, and at a time of year when labour is not greatly wanted, it must lower the rates, and so be good to the rich. *Anon.*

Foreign Correspondence.

STETTIN, *May* 16.—The road to Stettin (from Berlin) affords good exercise for the imagination. Nobody could or would believe that one of the finest capitals of Europe lay behind him, and one of its chief corn-ports before him. The country is a blank: a hopeless blow-away desert of sand. 'Where *does* the corn come from?' you now and then ask yourself, as you look from one side to another, whilst the pertinacious map still keeps the word of promise to the eye, in the meandering course of the Oder, down whose left bank you are travelling, though you never get a sight of it. ——Yes; here is Berlin, and there is Stettin, and there is the Oder, as plain as map and print can make them: but—Where in the world am I? you ask, as you look incredulously around you. A compound of Siberia and Sahara is the only description that can be given of it. For miles and miles—German miles too—not a blade of Grass is visible; the chief variation in the landscape consisting of here and there a ridge of drifted sand, with a long-legged stork majestically perched upon it, like a surveyor-general. Slowly and thoughtfully he opens about four yards of wing as you approach, doubles his long red shanks under him, as if he were packing up a fishing-rod, and laboriously wafts himself off to the next ridge, lets them drop again, and watches you off like a sentinel.——At last a few Pines, barely rooted in the white sand, and struggling for a hungry existence upon earth, begin to show themselves; they

thicken gradually, and take courage as they thicken. The eye grows comforted as the dark green mantle rises slowly, shuts out the bleak horizon, and—you are in a Pine-forest !——Of all the sights of Germany, I know none more deeply characteristic, more truly and irresistibly poetical than the forest of Pine. Darker and darker, on it goes with you mile after mile, suggestive of everything that gloom, and depth, and silence, and countless, endless, giant stems hemming you round in grim shadow—*could* suggest to Fear or Fancy. The dead threatening silence, made more striking by the murmur now and then in the branches far aloft, the snagged trunks repeating each other in stern sameness far as ever the eye can reach, probe which way you will, the narrow road threading away before and behind you, like a tunnel through the darkness that frowns over it, and shuts out its 'Whence' and 'Whither,' as if both were hopeless and impossible for evermore; all this comes over you with a power, and impressiveness, and undefined feeling of painful vastness, and mystery, and awe —like a dream. Howling wolves and growling bears, and prowling huntsmen, with their heads off—anything that darkness and distance, and gloom encompassed solitude could bring forth, seems likely and imminent every instant; anything to break the heavy silence that threatens you from every winding, and from behind every tree. At last the obscurity begins to break, the trunks divide, and dwarf; a few white Birch-stems disturb the uniformity of the wood—like cracks letting in sunshine; a Grassy patch appears; you enter it and see the sky again; the spell is off, and you emerge presently upon some 'blasted heath,' where the very Pine-roots can hold their own no longer: you look back, and the long dark outline of the forest stretches away to right and left, behind you, across hill, plain, and valley—like the great black eagle of Prussia, spreading its wings over the land — symbolically enough.——But there were many places, as I approached nearer to Stettin, where nothing but the hand of Industry was wanting—or rather of Enterprise, which king-led Prussia wants more than Industry —to make them fertile enough. Green rank morasses, with ridges across and around them, which only want shovelling into them: stagnant water, with sloping ground near it, that asked but one well-laid master-drain to turn the bog into a meadow; patches of thin wiry-looking Rye, half-perished, that a few thousand Southdowns or new Leicesters would soon tread into 'four course husbandry.' Then came regiments of disbanded-looking geese and goslings, like strolling companies of players, with an open world for a stage, and all to themselves. I understand these gentry are now killed, *dried*, and packed, at a pretty handsome average annually, for the English market. How they must 'hate Peel,' and cackle curses on the 'arch traitor!' ——Then some more storks, standing in the Rye-fields without sign of life or motion; listening for frogs: *which* "when found make a note of," they are quick at not forgetting. Let one *irresistible* unhappy croak escape —and down comes the great yellow beak like a crowbar, in the twinkle of an eye, and up goes froggy, writhing and struggling at the end of it, higher and higher, till he gets to the family-supper at the barn-top, in a nest as big as a washing-tub, amidst a clattering and fluttering of Mrs. Stork and the young Storks, that would make an English farmer think his barn was in possession by the foul fiend himself. But the stork has free quarters all the world over; and here in Pomerania, he and his great nest are as welcome and essential to the barn-top as the cricket to the kitchen fire-place, or Parsley to the garden. His nest is enormous, and has the most lumbering ridiculous appearance on the gable of the barns, which you seldom see unoccupied.——The shipping at Stettin makes a very respectable appearance, as you come in sight of it. The Oder is navigable up to Breslau, for craft of one sort or another; but only on condition that it is neither winter nor summer: ice at one time, and impassable neglected shallows at the other, being its Scylla and Charybdis, which can only be steered *between* in spring and autumn; so these are busy times. Cargoes of Wheat are frequently detained *a twelvemonth* on the passage down! A railway would bring it in a day: but though there is one as far as Posen, it is considered too expensive for grain carriage: which is the more remarkable, as passenger-fares are very moderate—little more than half what they are in England. 'Sandars on Prices' is still the staple of conversation at Stettin, and has generated some very sore feeling in the place. Every daily paper has got 'a letter,' or 'an answer,' or 'a rejoinder,' still lingering out the subject. As far as I gather the truth of the matter, it seems to have consisted in an individually correct assertion, leading by its generality to an erroneous impression. Every merchant, in admitting the possibility of the bargain named to the House, laughs at the conclusion aimed at by the Speaker. The idea of extreme cheapness seems to be regarded as a sort of reflection on the mercantile capital of the 'holders,' who are apparently long-winded enough, and as little fond of low prices as we are. In reply to a remark on the recent rise in the English markets, the answer I received was, "Oh! you will see we are ahead of you: for every shilling you go up, we shall go a thaler!" (three shillings.) This is not unlikely for awhile, if the explanation that was added be true; namely that France has over exported, and will feel it doubly from the probable late harvest of this year. Certainly she seems to have been a pernicious meddler in the corn market; as must always be the case when a buyer suddenly becomes a needy seller. In Brussels it was said three weeks ago, that flour had not been so cheap in Paris *for* 40 *years*. But all this seems to be fast changing at home and abroad; and if it be true that a late harvest is seldom a good one, the price must change a good deal more yet. The weather is more like March than May. The winters must be much severer here than I imagined, judging from the signs which have met my eyes and ears, in going over a couple of farms yesterday, in the neighbourhood; on which I hope to send you a future line. *C. W. H.*

Farmers' Clubs.

LONDON, *April* 1: *The Principles which should regulate the Valuation between the Landlord and the incoming and out-going Tenant, under an equitable System of Tenant-right.* Mr. SHAW said:

I understand tenant-right to be "the right of the tenant to require compensation legally for outlay in the improvement of the soil or buildings, when the period of his occupation has not been of sufficient duration to enable him to reimburse himself that outlay." It is essentially necessary to observe the distinction between the subject matter of "tenant-right" and "tenants' rights," inasmuch as the confounding the two together exposes the former to the well-merited obloquy which in most cases attaches to the latter. An especial instance of this will be found in the evidence of a gentleman given before the Agricultural Customs Committee, in reference to the tenants' rights of the county of Surrey, which he severely and properly condemned, and which induced many persons who did not distinguish between the two systems, to condemn tenant-right. Another instance has just occurred, in which the *Times* Commissioner, in a letter which appeared in that journal on Friday last, confounds the Surrey system with "compensation for unexhausted improvements," or tenant-right. The tenants' rights in Surrey, which form the subject of valuation, consist of labour, rent and taxes, produce, as hay and straw, and, with the exception of lime, the manurings which would be applied in the ordinary course of husbandry annually, and without which crops cannot be produced. The subject matter of tenant-right, in respect to which we contend the tenant is entitled to compensation, consists of extraordinary outlay in draining, liming, marling, chalking, boning, the use of artificial manures, erection of buildings, &c., the legitimate return for which can only be obtained by a succession of crops and a lengthened occupation. The question of tenant-right was very fully discussed at the meeting of this Club (10th of December, 1845), and the following resolution was passed: "That, in the opinion of this meeting, a system of tenant-right would promote the interest of both landlord and tenant, and most materially conduce to the advancement of practical agriculture." The proceedings at that meeting attracted very general attention throughout the country, and a feeling was engendered amongst landlords that the "right" which the tenant sought to obtain, although it was nothing more than a fair and proper security for the investment of his capital, involved "wrong" to the owners of the soil. In order, therefore, to prove that such an opinion was without foundation, and to disabuse the minds of those who harboured such a notion, a special meeting of all the members of the Club was held on the 11th January, 1847, when the subject was again discussed in another form, the question proposed being, "How far would a well-regulated system of tenant-right be beneficial to the landlord?" The chairmen and secretaries of all the local farmers' clubs and of the protection societies were invited to attend the meeting, which was numerous. Upon that occasion the duty of opening the discussion devolved upon me. The debate was long and interesting, and terminated in a resolution, "That a well-regulated system of tenant-right would be beneficial to the landlords of this country." It is, I think, to that most important branch of the question that we should direct our special attention. We cannot too much impress it on the minds of landlords, nor adduce too many proofs to convince them that they cannot be injured by tenant-right. I will here venture to read to you a certain number of reasons which I enumerated on the occasion last alluded to, for the purpose of showing that tenant-right would not prejudice the interests of landlords. "1st. That the nearer the nature of the tenure or occupation approaches to definite ownership, the more valuable the holding to the occupier. This is especially shown in land let for building, upon which large sums were expended in consideration of the security afforded by the duration of the term. 2d. That the undisturbed possession of a farm for the term of (say 20) years, affording opportunity to the tenant to carry out his system of improved cultivation, will enable him to give a higher rent with advantage to himself. 3d. That a system of tenant-right, giving compensation for unexhausted improvements in the event of eviction, affords the tenant the next best security to a lease. 4th. That there are many tenant farmers who, if they possessed security of tenure by lease with proper covenants, or an agreement securing compensation for exhausted improvements, would give a higher rent for land capable of improvement, if so secured, than they would on a tenancy from year to year. 5th. That security of tenure would enable the tenant to increase his capital by loan. 6th. That such terms being granted, many improvements would be effected, which, at the termination of a lease or occupation where a system of tenant-right was adopted, would increase the value of the estate to the landlord. 7th. That as well where leases are granted as where tenant-right exists, rents are higher than when the tenancy is only from year to year. 8th. That the only sacrifice on the part of the landlord in granting a lease, is the placing his property out of his control for a term of years; but which he is amply compensated for by the absence of change of tenant, which sometimes occasions loss of rent, and always occasions expense. 9th. That this annoyance, if such it can be called, is avoided by tenant-right. 10th. That many expenses which in tenancy of year to year fall on the landlord, would in such case be borne by the tenant." These are the propositions which I submitted to the Club as reasons which ought to induce landlords to adopt the principle of tenant-right. So strongly did that meeting feel the importance of the subject that a committee was appointed to carry out the object. The result of these proceedings, coupled with a communication made to the several local farmers' clubs, led to still more general attention being given to the subject, and the bringing a bill into the House of Commons by Mr. Pusey, in the session of 1847, for the purpose of establishing tenant-right by law. The bill was read a second time, and referred to a select committee, by which it was so materially altered and damaged that Mr. Pusey deemed it most prudent to withdraw it, there being little hope of its passing. In December, 1847, the question was incidentally discussed in another shape, the subject proposed for discussion being the "Practical Impediments to the Development of British Husbandry." Finding that very many persons still entertained mistaken views on the object and meaning of tenant-right, in December 1848 I submitted the following question to the Club for discussion, "On the pernicious consequences resulting from the payment by the incoming to the outgoing tenant for tillages and manure made on the farm, according to the custom in some districts, and commonly called tenants' rights," the object being to correct the misapprehension resulting from confounding the one system with the other. That discussion ended in a resolution to the effect "That there are certain customary payments by the incoming to the outgoing tenants, in some districts, which are pernicious in their operation." Mr. Pusey again introduced a bill of an altered, but I can scarcely say of an improved character, in the session of 1848, and thereupon a select committee of the House of Commons was appointed "to inquire into the agricultural customs of England and Wales in respect to tenant-right." Whereupon a sub-committee was appointed by the managing committee of this Club to render any aid which might be required in procuring the best informed and most experienced parties to be examined before the committee. Fifty able and intelligent practical men, farmers and land-valuers, extensively engaged in their pursuits in almost as many counties, were examined before the committee, and furnished a most valuable body of evidence, which has been arranged as a digest under several heads, easy for reference and printed in a readable form. Upon the favourable report of the Agricultural Customs Committee, Mr. Pusey introduced a bill in 1849 (which was merely to enable landed proprietors and others, not at present possessing the power, to grant agreements giving compensation for unexhausted improvements to their tenants which should bind their successors); it passed the House of Commons, by was rejected by the Lords. Nothing daunted, Mr. Pusey has again brought in a bill this session; and although, if passed into a law, it would only enable landlords, who do not possess the power, to grant such agreements to their tenants, and hence would be very limited in its operation, still as its passing would be a recognition of the principle of "compensation for unexhausted improvements," and consequently of the justice of giving security to the capital of the tenant farmer, it merits support and approval. The effect of this discussion and agitation of the question for now nearly five years is, that landlords and tenants, understanding the principle better, have become alive to its importance as affecting the progress of agricultural improvement. The results of the adoption of the system in Lincolnshire have been adduced as a successful illustration of the benefits to be derived from affording compensation for unexhausted improvements; and such an impression has been made upon the minds of landed proprietors and managers of landed estates, that the system has been introduced in many cases in other parts of the country, and doubtless will be extensively adopted. A new difficulty has, however, recently presented itself, and which I have reason to fear is operating seriously with landlords, in disinclining them to enter into covenants granting compensation for unexhausted improvements to their tenants, and which arises from an apprehension that in case of dispute and a reference to arbitration, the question to be decided might ultimately rest with an umpire, who having the sole power vested in him, might have more regard for the interests of the tenant than of the landlord, and hence unfair advantage might be obtained by the former, and serious loss and inconvenience might be incurred by the latter. It is for the purpose of removing this impression, of obtaining and recording the opinions of the members of this club as to the best means of remedying the evil, if it really exist, that I have brought forward the question for discussion this evening. I may first observe that, irrespective of the influence of principles of honour and integrity, as a general rule I think that valuers, usually employed as arbitrators and umpires in such cases, are as much interested in maintaining the good opinion of the landowners as they are of the tenantry, which alone must have a great effect in preventing them from doing injustice. That solitary instances may occur of improper exercise of the powers with which an arbitrator or umpire is invested, is no sound ground for condemning the system. The severest laws are insufficient to prevent breaches of trust; the per-centage of such cases is happily, however, but small. The wisest plan is to adopt the best possible precautions, and such course I should venture to recommend in respect to the question under consideration. I should lay it down as a primary rule, that the general improvement of the farm belongs to the landlord; that compensation to the tenant for unexhausted improvements should never be measured by a reference to the rental paid as compared with the value of the farm to let when the tenant is quitting. Various circumstances may occur to improve the value of an estate, irrespective of the outlay of the tenant; and even of that outlay the landlord may be entitled to enjoy a portion of the termination of a long occupation. Compensation should be made to the tenant upon particular improvements only, the expense of which, as well as the period when executed, he should be called upon to prove by documentary evidence when practicable. That is comformable, I think, with what was stated before the Agricultural Customs Committee, by gentlemen from Lincolnshire, who had themselves practised as valuers in that county. Indeed, it already amounts to something like a custom in that part of the country. A man may take a farm at the rent of 10*s*. per acre, and at the expiration of a lease of 21 years the land may be improved by his outlay and capital so as to be worth 25*s*. per acre, and yet he may not in my opinion be entitled to any compensation for unexhausted improvements. I will say a word or two here on the question of what are improvements, and in respect of what improvements the tenant is entitled to compensation. I consider that an estate may alter and improve in value from a great variety of causes, in the benefits of which, I conceive, the tenant will have no right to participate, beyond what he can obtain from the use of the farm during the period of his occupation. I hold that in all cases, whether with or without tenant-right, the general conduct of the farm should come under the ordinary rule of what is called "good husbandry." What I understand by the proposition, that the tenant should be entitled to receive compensation for unexhausted improvements, is, that when he steps beyond what is ordinarily good husbandry, and gets to extraordinary husbandry, making an outlay which requires a longer period to obtain a return than that for which he has agreed, or he is evicted before he has occupied sufficiently long to reimburse himself, he should be entitled to compensation; but I contend that any increase of value which may have arisen in the ordinary course of husbandry belongs to the landlord, and that —to put an extreme case—if at the termination of a 21 years' occupation the land have improved, by ordinarily good management, from 10*s*. to 25*s*. per acre, the tenant is not entitled to bring it down again from 25*s*. to 10*s*., and to say, "I leave it as good as I found it." That is the distinction which I am desirous of drawing in reference to the right of the tenant to compensation. It is well known that draining, liming, marling, and chalking, improvements of a more durable character, will repay the outlay in a certain number of years, according to soil and circumstances. If these operations have been performed sufficiently early in the lease for the period held sufficient in that district to enable the tenant to recover his outlay, he would not be entitled to compensation; but if otherwise, he would have a right to claim for a proportion of the unexpired time. The same principle will of course apply to expenditure in artificial manure, cake, &c., &c. The evidence given before the Agricultural Customs Committee exhibits an extraordinary difference in the length of time deemed sufficient to enable the tenant to reimburse his outlay in the several operations which constitute the improvements in respect to which he may be entitled to compensation. Some of the witnesses speak of seven years, others of twelve. I observe that, as to Sussex, Mr. Smith, speaking of the draining of Hop land—whether there is any peculiarity in that case I do not know—says that, in his opinion, the return should be spread over 16 years. I find also, with respect to chalking, liming, and other operations of a similar description, the same disparity. Hence I have come to this conclusion, that as in all cases it is desirable to guard against evil rather than to remedy it when it has arisen, in any agreement securing to a tenant compensation it should be specified precisely what allowances are to be made: inasmuch as, from some cause or other,

whether it be variety in the prices of different localities, or from any other cause, the allowances made by the best valuers are greater in one place than in another. I say it is impossible to lay down any general rule, and to prescribe that draining shall extend over so many years, chalking over so many, and so on. I would therefore have a schedule framed for each neighbourhood, and then those circumstances which influence the matter in the particular locality would have their due weight. Whereas in one district the period over which the tenant would be entitled to compensation would be 12 years, and in another seven would be sufficient; by the adoption of a schedule fitted to each locality justice would be done to all parties. In every agreement the items should be specified, and nothing should be taken upon trust. Not only should there be a specification of the items for which allowance is to be made, but there should also be, as far as practicable, a statement of the nature of the evidence to be given in support of the tenant's claim to compensation, so as to guard against any mischief which might result from misapprehension, or from improper motives on the part of the valuer. I would, in fact, vest in the valuer the least possible amount of discretion, leaving him to decide simply upon what was placed before him, upon the nature of the evidence, and the quality of the work performed. In every case bills should be produced when the articles were purchased, and a statement given in of the places where the articles were obtained, and the distance they were brought, so as to enable the arbitrators or umpire to estimate the correctness and reasonableness of the charges. The arbitrators should not, however, be wholly governed by the outlay, inasmuch as by an injudicious mode of expenditure an unnecessary cost may have been incurred, and the tenant should only be allowed the fair expenses of the operation as it could be executed in the neighbourhood. Now, gentlemen, as I said at the outset, I hope we shall adopt some resolution of a practical and tangible character, in order to remove (I am now speaking advisedly) the misapprehension which exists amongst landlords in reference to this question. I know that a feeling does exist among landed proprietors that they may be suddenly and unexpectedly called upon to make large allowances, for which they may not be able to provide, and that undue advantage may be taken of them. I know there is such a feeling, for the fact has been communicated to me; and, though I myself consider it entirely unfounded, we must not omit to do what we can to remove it. Now, I trust that the principles with which the minds of valuers generally throughout the country are imbued are such, that, although there may be some few black sheep amongst the number—as there will be in almost all classes of society—they are, as a body, well fitted to deal with this subject, and to do justice between the parties. But, further, it should, I think, be remembered that the interest of such men is, as I before observed, almost as much bound up with the landlords as with the tenantry of the country. If there are valuations on the one side, there must be valuations on the other.—Mr. Shaw was followed by a number of other speakers, and the discussion concluded by the adoption of the following resolution: "That in case of valuations between the landlord or the incoming tenant and the outgoing tenant, justice to the parties may be amply secured by defining in the agreement the period over which the claim for compensation should extend; the operations or articles for which the tenant should be entitled to claim; and, as far as possible, the nature of the evidence which should be furnished to the valuers in case of reference to arbitration."

After this meeting another was immediately held for the purpose of presenting to Mr. Shaw a Testimonial subscribed for by tenant farmers, in acknowledgment of his services as the advocate of tenant-right. It consisted of a handsome salver and a silver tea and coffee service, more remarkable for solidity and massiveness than for anything like ornamental display. The following inscription was engraved on the salver: "Tenant Right. To William Shaw, Esq., a mark of esteem and admiration for the manner in which he has so long and ably advocated the tenant farmers' rights, this token is offered by some of those friends who appreciate the conduct of the man and the justice of the cause.—London Farmers' Club, April, 1850."

Calendar of Operations.

MAY.

EAST SUFFOLK FARM, *May* 27.—Horse and hand-hoeing Beans, horse-hoeing Wheat and Barley furrows; hand-hoeing Barley, &c.; preparing land for Swedes and other Turnips, which will be manured, if weather permits, in a few days; also ploughing between the baulks where the Mangold Wurzel are planted. During the last ten days the Wheats are very much improved in appearance; they were then looking yellow, now of a healthy strong green, both on clay and mixed soils. The Barleys, also, are greatly improved; a few days more of cold and wet would have put them past recovery; they now, however, are promising. Clover and Grass very short; and unless warmer and kindlier weather for their growth succeed, they will be a very light swath. The late frosty nights, and cold wet days, have made the early planted Mangold Wurzel look very yellow, in some cases injured the plant; still we hope an early, although only a three-quarter plant may produce a good, if not the heaviest crop. *W. G.*

EAST LINCOLNSHIRE FARM, *May* 27.—Until very lately this month has been unusually cold for May; north and north-east winds prevailing, with more than one sharp frost, which has consequently retarded vegetation, the pastures being still short; the weather, however, now seems becoming more favourable, with some genial showers. It has been a fine time for stirring the Turnip fallows, in which occupation we are now engaged. We generally sow about a month after May-day. Sheep washing took place last week; the clipping begins 10 days after, and is finished in two days: the men coming when they can, on Saturday and Monday: there are about 800 to clip; the lambs are now growing strong and healthy. We have about 30 calves reared and rearing. The 18 steers mentioned in last report were forced to go at a very low figure. The Wheats are looking remarkably well; which report applies to Lincolnshire generally. A large breadth of Potatoes has been planted in the fens this year. We have been, generally speaking, fortunate with them in these parts, last year's being very fine; and it is probable the disease is now disappearing altogether. *H. E.*

Notices to Correspondents.

ABSTINENCE FROM INTOXICATING LIQUORS: *C Turner*. We must confine the discussion to the economics of the question, and we must endeavour to avoid the use of terms which can only irritate and annoy. A statement may be untrue without being "false."

AGRICULTURAL SOCIETY OF ENGLAND: *A Scotsman* may obtain its rules by application to the Secretary, 12, Hanover-square, London. The improvement of the labourer is one of its objects. Agricultural servants are generally engaged by the month: unless they are mere day labourers, when they can be dismissed without notice. They are often engaged at hiring markets, or, as they are sometimes called, "mops."

AMERICAN CHURNS: *Rusticus*. We cannot reply to questions here whose answers ought to be in our advertising columns.

A TON OF SWEDES: *T D*. It is generally supposed able to produce an imperial stone of beef. That is a very good return from it.

DISEASED PIGS: *Navan*. With regard to the hens, we think there must be some error in diet or locality, which should if possible be discovered or removed. For the pigs we would recommend the following: 20 grains supertartrate of potash, 15 grains nitrate of potash, 1 grain submuriate of mercury, 20 grains sulphur, 1 grain tartarised antimony. One of these powders to be given in the food twice a day for three successive days. *W C S.*

DISEASES OF FOWLS: *An Irish Subscriber* is informed that Spanish fowls are liable, in severe weather, to a sort of chilblain, or frost-bitten sore on the comb, for which the coming warm weather, together with high feeding, is the best remedy; but the case may be aided by washing the part with any stimulating lotion that would have efficacy on a human patient, and which a druggist will supply. After an eye is lost, there is little chance of saving the life of the bird, but in the earlier stages of the disease a solution of sulphate of zinc is an excellent eye-water.

FARM HORSES: *T M C*. We give our horses about 10 lbs. of Oats a day, and Clover *ad lib*. during the summer months. They eat a very variable quantity, sometimes nearly a cwt. in the day, though about 60 lbs. is their ordinary consumption.

GUANO: *Sandwich*. You had better apply the superphosphate of lime and the guano separately: and let some such operation as ploughing or scarifying intervene; 2 cwt. of each per acre will be a good dressing.

GUTTA PERCHA HOSE: *Messrs. Burgess and Key*. The passage referred to is a report received from the Secretary of the English Agricultural Society. The mistake originated there, and you had better apply for its correction to him. We had the pleasure of inspecting your hose a year or two ago, and know its excellent quality.

LABOUR: *J F*. There is an essay "On Wages paid for Labour of different kinds," in the 7th vol. of the English Agricultural Society's Journal; and another in our vol. for 1846.

LENTILS: *Subscriber*. They are the seed of Ervum lens—a plant grown in France, Holland, &c., to a considerable extent. They are used as food in soups, and the haulm is given to cattle. The Grass for lawns should contain per acre on medium soils—6 lbs. of Cynosurus cristatus, 3 lbs. of Fustuca duriuscula, 2 lbs. of F. tenuifolia, 20 lbs. of Lolium perenne, 3½ lbs. of Poa nemoralis, 1½ lb. of P. trivialis, 7 lbs. of Trifolium repens, 2 lbs. of T. minus; or, in all, 45½ lbs. per acre.

PAXTON'S COTTAGERS' CALENDAR may be had at the Office of this Paper, or of any bookseller, price 3*d*., or 5*s*. for 25 copies for distribution amongst cottage tenantry.

SHELL-LESS EGGS: *F D K* is advised to let her golden bantam hen that always lays shell-less eggs, have two or three oyster shells, calcined and crushed, thrown down to her daily; also two or three shells of the eggs that have been used in the house, besides bones to pick, and free access to insect food. But the laying of shell-less eggs arises from two causes: first, the inability of the hen to obtain a sufficiency of phosphate of lime, and secondly, from derangement and over irritably of the ovarium; if this has become chronic, a cure is not likely to be effected, and the fowl had better be sent to table while still in good condition. The same answer will apply to *F D S*.

STEAM ENGINE, &c.: *Mr Crockford's* machinery is already disposed of.

WATER: *A Constant Reader*. Water in an iron tank will not injure cattle, and it is preferable to cold water fresh from the well. *W.C.S.*

*** Communications reaching town after Wednesday cannot be answered till the following week.

Markets.

COVENT GARDEN, JUNE 1.

Vegetables are well supplied. Strawberries and Hothouse Grapes are both plentiful, and the same may be said of Pine-apples. Some Peaches and Nectarines may be obtained. Walnuts and Chestnuts are abundant; Oranges and Lemons sufficient for the demand. Young Carrots and Turnips may be had at from 6d. to 1s. 6d. a bunch; some green Peas of good quality have been supplied at 12s. a quart. Frame Potatoes fetch from 1s. to 1s. 6d. per pound. Lettuces and other salading are sufficient for the demand, and so are Mushrooms. French Beans, Asparagus, and Rhubarb are plentiful. Cut Flowers consist of Heaths, Pelargoniums, Cinerarias, Lily of the Valley, Pinks, Carnations, Rhododendrons, Ranunculuses, and Roses.

FRUITS.

Pine-apples, per lb., 6s to 10s	Lemons, per doz., 1s to 2s
Grapes, hothouse, p.lb., 5s to 10s	Oranges, per doz., 9d to 1s 6d
— Portugal, p. lb., 9d to 1s	— per 100, 5s to 12s
Peaches, per doz., 30s	Almonds, per peck, 6s
Nectarines, per doz., 30s	— sweet, per lb., 2s to 3s
Strawberries, per oz., 4d to 1s	Walnuts, p. 100, 1s 6d to 2s
Gooseberries, green, per half sieve, 5s to 7s	— p. bush., 16s to 24s
Apricots, green, p. pottle, 8d to 1s	Nuts, Barcelona, per bush., 20s to 22s
Apples, kitchen, p. bsh., 4s to 6s	— Brazil, p. bsh., 12s to 16s
— per 100, 6s to 12s	Kent Cobs, 90s to 100s p. 100 lbs

VEGETABLES.

French Beans, p. 100, 2s 6d to 3s	Onions, p. bushel, 7s to 9s
Asparagus, p. bund., 2s to 5s	— Spanish, p. doz., 1s 6d to 4s
Rhubarb, p. bundle, 3d to 8d	Shallots, per lb., 8d to 1s
Cabbages, per doz., 6d to 1s	Garlic, per lb., 4d to 8d
Cauliflowers, p. doz., 1s to 3s	Lettuce, Cab., p. sc., 2d to 1s
Broccoli, p. doz. bundl., 6s to 12s	Radishes, p. 12 hands, 3d to 6d
Greens, per doz., 1s to 2s	Mushrooms, p. pot., 9d to 1s
Sorrel, p. hf. sieve, 6d to 9d	Small Salads, per punnet, 2d to 3d
Potatoes, per ton, 60s to 120s	Fennel, per bunch, 2d to 3d
— per cwt., 3s to 7s	Savory, per bunch, 2d to 3d
— per bush., 2s 6d to 3s 6d	Thyme, per bunch, 2d to 3d
— frame, p. lb., 1s to 1s 6d	Parsley, p. doz. bun., 1s to 2s
Turnips, p. doz. bun., 15s to 18s	— Roots, p. bdle., 9d to 1s
Red Beet, per doz., 1s to 2s	Marjoram, per bunch, 8d to 9d
Cucumbers, each, 6d to 2s	Mint, green, per bunch, 2d
Leeks, per bunch, 1d to 2d	Watercress, p. doz. bunches, 6d to 9d
Celery, p. bundle, 8d to 1s 6d	Horse Radish, p. bdl., 1s to 4s
Carrots, per bun., 9d to 1s	
Spinach p. sieve, 9d	

POTATOES.—SOUTHWARK, May 27.

The Committee report that the arrivals during the past week have been limited, both coastwise and Continental, but the demand, from the mild weather and the holidays, not being great, it has been equal to our wants. The following are this day's quotations:—York Regents, 80s. to 160s. per ton; Scotch cups, 65s. to 80s.; ditto whites, 50s. to 60s.; French whites, 40s. to 70s.; Rhenish do., 50s. to 75s.; Belgian do., 60s. to 70s.; Dutch, 45s. to 55s.

HAY.—Per Load of 36 Trusses.

SMITHFIELD, May 30.

Prime Meadow Hay		68s to 75s	Clover		65s to 84s
Inferior ditto... ...	55	65	New Clover	—	—
Rowen	54	60	Straw	23	28
New Hay	—	—		J. COOPER.	

Very little doing.

CUMBERLAND MARKET, May 30.

Prime Meadow Hay		70s to 75s	Inferior		65s to 75s
Inferior ditto... ...	55	65	New Clover	—	—
New Hay	—	—	Straw	24	28
Old Clover	78	84		JOSHUA BAKER.	

WHITECHAPEL, May 30.

Fine Old Hay ...		65s to 70s	New Clover		—s to —
Inferior ditto ...	50	55	Inferior ditto... ...	65	70
New Hay	—	—	Straw	24	26
Old Clover	80	84			

SMITHFIELD, MONDAY, May 27.

The number of Beasts is not quite so large; we are consequently enabled to quote 3s. 6d. again for choicest qualities. A pretty good clearance is effected. We have not quite so many Sheep and Lambs as on Monday last; however trade is dull, but prices are certainly on the average better. Trade is heavy for Calves, and it is exceedingly difficult to make anything over 4s. of the choicest. From Holland and Germany there are 150 Beasts, 1000 Sheep, and 115 Calves; from Scotland, 300 Beasts; and 2200 from Norfolk and Suffolk.

Per st. of 8 lbs.—	s	d	s	d
Best Scots, Herefords, &c. ...	3	4 to 3	6	
Best Short-horns	3	2 — 3	4	
2d quality Beasts	2	8 — 3	0	
Best Downs and Half-breds	—	...		
Ditto Shorn ...	3	8 — 4	0	

Per st. of 8 lbs.—	s	d	s	d
Best Long-wools		to ...		
Ditto Shorn ...	3	6 — 3	8	
Ewes & 2d quality ...	—	...		
Ditto Shorn ...	2	10 — 3	4	
Lambs	4	8 — 5	4	
Calves	3	0 — 4	0	
Pigs	3	0 — 4	0	

Beasts, 3317; Sheep and Lambs, 22,850; Calves, 190; Pigs, 320.

FRIDAY, May 31.

We have a large supply of Beasts, and a dull trade; buyers are very cautious, the weather being hot. Prices are on the average about 2d. per 8 lbs. lower. The number of Sheep and Lambs is considerable; the trade is dull, and it is exceedingly difficult to maintain Monday's quotations. Calves are plentiful; although a choice one still makes 4s., this is an extreme price. From Germany and Holland there are 49 Beasts, 530 Sheep, and 204 Calves; from Scotland, 120 Beasts; from Norfolk and Suffolk, 400; and 121 Milch Cows from the home counties.

Best Scots, Herefords, &c. ...	3	2 to 3	4
Best Short-horns	3	0 — 3	2
2d quality Beasts	2	6 — 2	10
Best Downs and Half-breds	—	...	
Ditto Shorn ...	3	8 — 4	0

Best Long-wools		to ...	
Ditto Shorn ...	3	4 — 3	8
Ewes & 2d quality ...	—	...	
Ditto Shorn ...	2	10 — 3	2
Lambs	4	8 — 5	4
Calves	3	0 — 4	0
Pigs	3	0 — 4	0

COAL MARKET.—FRIDAY, May 31.

Carr's Hartley, 13s. 6d.; West Hartley, 13s. 6d.; Wallsend Braddyll's Hetton, 15s. 6d.; Wallsend Haswell, 16s. 6d.; Wallsend Hetton, 16s. 6d.; Wallsend Lambton, 16s.; Wallsend Stewart's, 16s. 6d.; Wallsend Tees, 16s. 6d.—Ships at market, 218.

HOPS.—FRIDAY, May 31.

Messrs. PATTENDEN and SMITH report that there is considerably more doing in all kinds of Hops, more particularly in fine yearlings, which were advanced about 15s. per cwt. from the lowest point.

Mid. and East Kents ... p. cwt.	16Cs to 20Cs
Weald of Kents ...	130 — 160
Sussex	115 — 135

Farnhams, p. cwt.	—s	—	—s
Yearling Kents ...	40	—	100
Yearling Sussex...	40	—	80
Old Hops	20	—	70

MARK LANE.

MONDAY, MAY 27.—The supply of English Wheat from Essex, Kent, and Suffolk to this morning's market was small, and cleared (partly on speculation), at fully the prices of this day se'nnight. Foreign met an improved but retail demand at our quotations of Monday last.—Barley barely supports last week's prices.—Beans must be written 1s. per qr. cheaper.—Peas are unaltered in value.—Inferior Oats are the turn lower, other sorts as last quoted.

BRITISH PER IMPERIAL QUARTER.	s.	s.		s.	s.
Wheat, Essex, Kent, & Suffolk ...	White	40—44	Red	37—39	
— — fine selected runs ...	ditto	44—47	Red	39—41	
— — Talavera		46—52			
— Norfolk, Lincoln, & York ...	White	40—42	Red	36—39	
— Foreign		33—51			
Barley, grind. & distil., 19s to 22s...	Chev.	24—27	Malting	22—25	
— Foreign.....Grinding and distilling		15—20	Malting	19—22	
Oats, Essex and Suffolk		15—18			
— Scotch and Lincolnshire ...	Potato	18—21	Feed ...	15—19	
— Irish	Potato	14—18	Feed ...	12—16	
— Foreign .....Poland and Brew		14—18	Feed ...	12—16	
Rye		19—21	Foreign	18—20	
Rye-meal, foreign .....per ton		5l.—6l			
Beans, Mazagan .....21s to 24s.....	Tick	24—27	Harrow	24—27	
— Pigeon .....26s — 36s ...	Winds	—	Longpod	—	
— Foreign	Small	24—36	Egyptian	20—21	
Peas, white, Essex and Kent.....	Boilers	23—26	Suffolk	24—28	
— Maple .....24s to 27s.....	Grey	22—24	Foreign	19—28	
Maize	White	26—30	Yellow...	25—30	
Flour, best marks, delivered ...	per sack	33—37			
— Suffolk	ditto	28—33	Norfolk	28—33	
— Foreign	per barrel	20—24	Per sack	28—32	

ARRIVALS IN THE PORT OF LONDON LAST WEEK.

Flour, 13698 sks — — bls	Wheat. Qrs.	Barley. Qrs.	Malt Qrs	Oats. Qrs.	Beans. Qrs.	Peas Qrs.
English	3299	717	4223	30	480	110
Irish	—	—	227	—	—	—
Foreign	17796	7514	—	27503	363	266

FRIDAY, MAY 31.—The arrivals of English corn this week have been small, those of foreign Wheat good, but the market being thinly attended, business in all descriptions of grain was of a limited and retail character, the prices of each article may be considered nominally the same as on Monday.—Indian Corn must be quoted 1s. per qr. cheaper.—The Flour trade is heavy. —The weather since our last has been finer and somewhat forcing—rather too much so for the Wheat in some districts; large foreign arrivals have caused it in one or two of the principal markets to recede about 1s. per qr. in value, but generally great confidence is manifested in the maintenance of present prices. The value of Beans and Barley has slightly receded, but no alteration from our quotations of Peas and Oats is observable.

ARRIVALS THIS WEEK.

	Wheat. Qrs.	Barley. Qrs.	Oats. Qrs.	Flour.
English ...	1040	220	410	1020 sacks
Irish	—	—	—	— brls.
Foreign ...	9330	2450	15110	

IMPERIAL AVERAGES.	WHEAT.	BARLEY.	OATS.	RYE.	BEANS.	PEAS.
April 20.....	37s 10d	22s 8d	15s 3d	21s 6d	23s 9d	24s 9d
— 27.....	37 1	22 1	15 0	21 8	23 8	25 1
May 4.....	36 11	22 0	14 7	29 11	23 11	24 9
— 11.....	38 0	22 0	15 3	19 1	24 8	24 9
— 18.....	39 7	22 5	15 5	11 7	25 6	24 11
— 25.....	40 7	22 10	16 3	22 4	26 4	25 6
Aggreg. Aver.	38 4	22 4	15 3	21 0	24 8	25 0
Duties on Foreign Grain	1 0	1 0	1 0	1 0	1 0	1 0

Fluctuations in the last six weeks' Corn Averages.

PRICES.	APR. 20.	APR. 27.	MAY 4.	MAY 11.	MAY 18.	MAY 25.
40s 7d	...	...	...	...	...	
39 7	...	...	...	...		...
38 0	...	...	...		...	...
37 10			...	...	...	...
37 1	...		...	...	...	...
36 11	...	...		...	...	...

LIVERPOOL, FRIDAY, MAY 31.—There was a thin attendance of millers and dealers at our corn exchange this morning. Wheat was taken sparingly by the local buyers, but we had more demand from a distance. Flour was unchanged in value. Good Oats were scarce; the best Irish sold at 2s. 7½d. per 45 lbs. which is an improvement of ½d. per bushel. Barley, Beans, and Peas were without alterations. The demand for Indian Corn was fair, but the fresh supply being good, 6d. to 1s. per quarter less money than on Tuesday was taken on sales, ex ship.

TO GENTLEMEN, FLORISTS, AND OTHERS.

MESSRS. PROTHEROE AND MORRIS will sell by Auction, at the Mart, Bartholomew-lane, on THURSDAY, June 6th, a first-rate Collection of DAHLIAS, also the newest varieties of Fuchsias, Verbenas, Geraniums, Heartsease, Roses, and other plants in bloom; together with a variety of Ornamental Plants for bedding.—May be viewed the Morning of Sale; Catalogues had at the Mart, and of the Auctioneers, American Nursery, Leytonstone, Essex.

TO NOBLEMEN, GENTLEMEN, NURSERYMEN, FLORISTS, AND OTHERS.

MESSRS. PROTHEROE AND MORRIS are instructed to sell by public Auction, on the premises, Sheep-lane, Cambridge-heath, Hackney, on MONDAY, June 10, at 1 o'clock, Three Newly-erected GREENHOUSES, each 120 feet long; about 1000 feet of Hot-water Pipe, Boilers, and Cisterns, Stages, a quantity of Slate, Shelving, &c.—May be viewed two days prior to the sale. Catalogues may be had on the premises, of the principal Seedsmen in London, and of the Auctioneers, American Nursery, Leytonstone, Essex.

CHELSEA.

MR. D. A. RAMSAY will sell by Auction, on the premises (Cook's Ground, King's-road, Chelsea), by order of Mr. HARRIS (the ground being taken for building purposes), on THURSDAY, June 6, at 1 o'clock, without any reserve, all the Stock, &c., comprising a quantity of Greenhouse Plants, Pansies, Evergreens, &c.; also a small Greenhouse, Box, Lights &c. May be viewed the day prior and morning of sale. Catalogues to be had on the premises, and of the Auctioneer, Brompton Nursery, Fulham-road, Brompton, near London.

MR. BATEMAN'S CELEBRATED COLLECTION OF ORCHIDS.—The Committee for providing a Church, Parsonage, and Schools in the wild, populous, and neglected district of Biddulph Moor, are happy to inform the growers of Orchidaceous Plants, that Mr. Bateman, in promotion of this important object, has generously placed at their disposal about 400 of his SPECIMEN PLANTS, among which will be found nearly all the rarest and most beautiful species at present in cultivation. These will be submitted for unreserved sale by Auction, by Mr. J. C. STEVENS, at his Great Room, 38, King-street, Covent-garden, on TUESDAY, the 11th day of June, at 12 for 1 o'clock, on the morning of which day they will be on view.—Catalogues may be had on application to the Auctioneer, or from either of the Secretaries, who will be happy to give any additional information respecting the projected Church, &c.

Rev. EDWARD WILSON, Buglawton, near Congleton,
Rev. JOHN SUTCLIFFE, Oatlands, ditto,
Honorary Secretaries.

TO FLORISTS, NURSERYMEN, AND OTHERS.

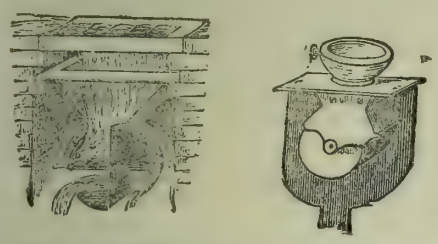
PARTNERSHIP.—A rare opportunity now offers itself for going into a most profitable Business. A Nurseryman of great experience, and with a thorough knowledge of Floriculture and Gardening in all its branches, and having two establishments at some distance from each other, is desirous of meeting with a competent PARTNER to take charge of one of them, his own personal superintendence being indispensably required at the other, where there is an opportunity of greatly increasing the present amount of business. The capital required is moderate, and the profits large. Or one of the concerns would be sold at a reasonable premium.—For further particulars apply to HENRY EDGER, Esq., Solicitor, 4, Verulam Buildings, Gray's-inn, London.

TO NOBLEMEN, LANDED PROPRIETORS, AGRICULTURISTS, ENGINEERS, CONTRACTORS, AND OTHERS.

THE PATENT ALKALI COMPANY'S Metallic Black, Bright-red, and Purple-brown PAINTS are applicable for covering iron and wood work of every description, also stuccoed and brick buildings, and are remarkable for their superior preserving properties, cheapness, and durability.—Offices of the Company, 1, New Broad-street, London.

JOHN A, WEST, Secretary.

TO BUILDERS, &c.
IMPORTANT SANITARY INVENTION.



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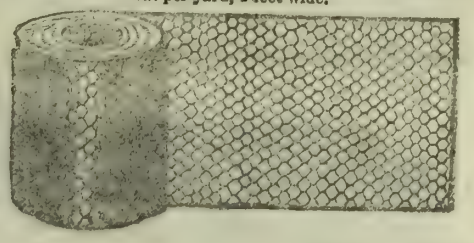
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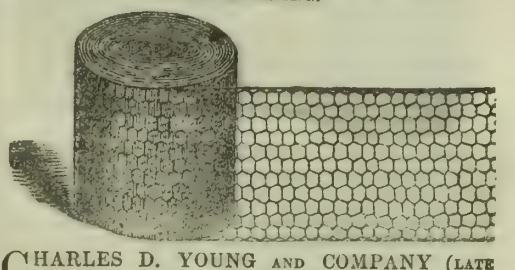


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2-inch mesh, light, 24-inch wide	...	7*d.* per yd.	5*d.* per yd.
2-inch ,, strong ,,	...	9 ,,	6½ ,,
2-inch ,, extra strong ,,	...	12 ,,	9 ,,
1⅝-inch ,, light ,,	...	8 ,,	6 ,,
1⅝-inch ,, strong ,,	...	10 ,,	8 ,,
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Or a web of 100 yards, 18 ins. wide, will cost	..	..	£3 15 0
Do. of 100 yards, 24 ins. wide	..	..	5 0 0
Do. of 100 yards, 30 ins. wide	..	..	6 5 0
Do. of 100 yards, 36 ins. wide	..	..	7 10 0

If more or less than a web is required, it would be charged at the same rate per yard.

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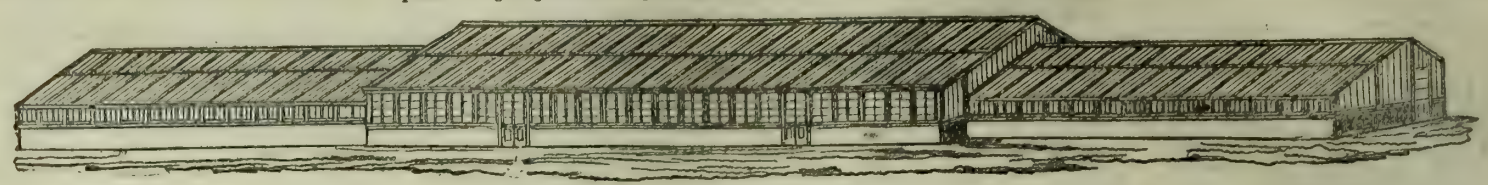
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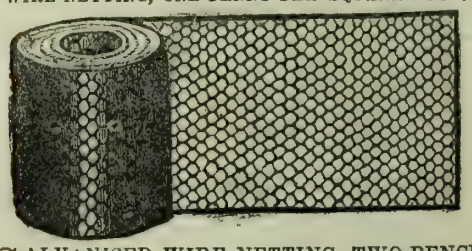
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(Signed.) "JAMES FRASER, Gardener, Luton Hoo Park."

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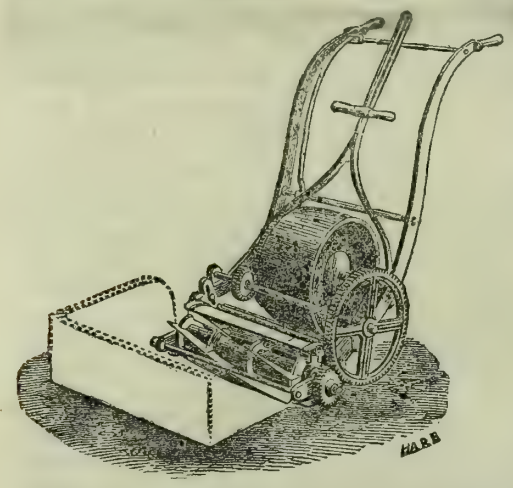
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THE GARDENERS' CHRONICLE
AND
AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 23—1850.] SATURDAY, JUNE 8. [PRICE 6*d*.

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ROYAL BOTANIC SOCIETY, REGENT'S PARK. The Second EXHIBITION THIS SEASON OF PLANTS, FLOWERS, AND FRUIT, will take place on WEDNESDAY next, the 12th instant. Tickets to be obtained at the Gardens, only by orders from Fellows of the Society, price 5*s*. each; or on the day of Exhibition, 7*s*. 6*d*. The Gates open at 2 o'clock.

ROYAL SOUTH LONDON FLORICULTURAL SOCIETY.—Under the patronage of her Most Gracious Majesty the QUEEN.—The THIRD EXHIBITION of the season will be held at the Royal Surrey Zoological Gardens, on WEDNESDAY, the 19th JUNE (open to all exhibitors), when Prizes will be awarded for the following productions, viz., Miscellaneous, Orchids, and Specimen Plants, Pelargoniums, Cape Heaths, Roses, Pinks, Ranunculus, and Fruit. In addition to the Prizes offered by the Society, Messrs. Paul and Son, of Cheshunt, offer Two Prizes for 12 New Roses, to Amateurs, and 17*l*. 10*s*. will be awarded for Seedling Pelargoniums (see Pelargonium Fund advertisement in this Paper). The following Exhibitions will also take place at the Royal Surrey Zoological Gardens, on Tuesday, July 23d, and Wednesday, September 4th. List of Prizes, and the Rules for Exhibitors, may be obtained from JOHN TAYLOR NEVILLE, Secretary.
Ebenezer House, Peckham, Surrey.

TO THE SUBSCRIBERS TO THE GARDENERS' BENEVOLENT INSTITUTION. —Your Votes are earnestly solicited for JOHN HURDEN, of Claverton-street, Bath, a very deserving Man, in the 67th year of his age, and for the last six years has been unable to work or walk without crutches, having broken his thigh by a fall from a ladder whilst gathering Pears. His case is strongly recommended by Mr. POND, Devonshire Cottage; Mr. G. WARREN, Coombe, Devon; and many others.—Bath, June 8.

TO THE SUBSCRIBERS TO THE GARDENERS' BENEVOLENT INSTITUTION. —The case of JOHN SHEPHERD, No. 7 on the List for the next Election, and the Fourth Application, is most respectfully recommended to the Subscribers. Proxies will be received by Mr. GRISSELL, 11, New Palace-yard, Westminster.

AMERICAN NURSERY, BAGSHOT, SURREY. JOHN WATERER begs to announce that his splendid collection of AMERICAN PLANTS is now in full bloom, and may be seen gratis.
The Nursery is near the Farnborough station of the South Western Railway, and three miles from the Blackwater station of the South Eastern Railway.

EXHIBITION OF AMERICAN PLANTS, KNAP HILL, WOKING, SURREY. HOSEA WATERER begs to announce that the AMERICAN PLANTS at Knap Hill Nursery are now in bloom, and will continue in perfection during the month of June. As a display of flowers this is perhaps without a rival in this kingdom. May be seen, gratis, any day, except Sunday. The Knap Hill Nursery is within an hour's ride of London, being near the Woking station, South Western Railway, where every train stops, and from whence conveyances may at all times be had. H. WATERER is a principal contributor to the Exhibition in the Botanic Gardens, Regent's Park, orders for seeing which may be obtained on application to Fellows.
Knap Hill Nursery, Woking, Surrey, June 8.

AMERICAN NURSERY, BAGSHOT, SURREY. GEORGE BAKER begs to inform the Nobility and Public his extensive collection of AMERICAN PLANTS are now in bloom, and will continue till the end of this month, and may be seen gratis. The Nursery is about 6 miles from the Staines Station, on the South Western Railway, and 3 from Virginia Water, from whence conveyances may be obtained.
G. BAKER is a contributor to the Exhibition in the Botanic Gardens, Regent's Park.—June 8.

INDIAN CATTLE FOR SALE, AS PARK STOCK. TWO BEAUTIFUL BRAHMIN COWS, of high caste, with their calves, a BULL, and HEIFER. Price moderate. Can be seen in the Prince's Park, Liverpool. For further particulars, apply to Messrs. THOMAS TINLEY and SONS, 8, Orange-court, Liverpool.

MEADOW AND PASTURE GRASS SEEDS. GEORGE GIBBS AND Co. beg to notice their mixtures for laying Land down to Permanent Grass are now ready. The general satisfaction they have given for many years past, and the present low prices of 32*s*. per acre, allowing 2 bushels and 12 lbs. to each acre, they trust will ensure a continuance of orders. Mixed Seeds for improving old Grass Land, 1*s*. 3*d*. per lb.; fine sorts for forming Lawns, 1*s*. 4*d*. per lb. Their Priced List for the season of Turnips, Mangold Wurzel, and other Farm Seeds, will be forwarded on application to 26, Down-street, Piccadilly, London.

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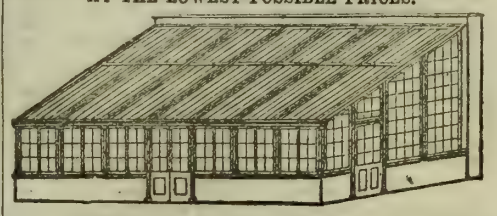
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BY HER MAJESTY'S  ROYAL LETTERS PATENT.

PATENT HOTHOUSE WORKS, KING'S ROAD, CHELSEA.

E. DENCH invites the attention of Gentlemen about to erect Hothouses, &c., to the vast superiority in every respect possessed by his PATENT HOUSES, which he will warrant superior in every respect to any others. Good Glass from 16 to 21 oz. per foot, 1 foot wide, 3 feet long, furnished, and the Houses, when completed charged, from 1s. 3d. to 1s. 6d. per superficial foot, according to size and quantity; on one principle the roof is formed without wood or putty, and on another principle with wood rafters, and the glass put in with putty. Patent Sashes, requiring no paint, from 7d. to 9d. per foot. HEATING BY HOT WATER.

HOT WATER APPARATUS AND HORTICULTURAL BUILDING.



W. HILL begs respectfully to announce that his improved "FLUE BOILER" may now be had in sizes to suit every description of Apparatus, from that of 100 feet to 2000 feet of 4-inch pipe. Improved STEAM BOILERS, from one-horse power and upwards, adapted either for stationary or portable engines, and guaranteed to be most effective.

Every description of Horticultural Building constructed upon the best principle. Buildings of any kind heated by hot water.

*** A liberal Discount to the Trade.

W. HILL, Horticultural Works, Greenwich.

CHEAP AND DURABLE ROOFING.

BY HER MAJESTY'S  ROYAL LETTERS PATENT.

F. M'NEILL AND Co., of Lamb's-buildings, Bunhill-row, London, the Manufacturers and only Patentees of THE ASPHALTED FELT FOR ROOFING Houses, Farm Buildings, Shedding, Workshops, and for Garden purposes, to protect Plants from Frost.

At the Great National Agricultural Shows, it is this Felt which has been exhibited and obtained TWO SILVER MEDAL PRIZES, and is the Felt SOLELY patronised and adopted by

HER MAJESTY'S WOODS AND FORESTS,
HONOURABLE BOARD OF ORDNANCE,
HONOURABLE EAST INDIA COMPANY,
HONOURABLE COMMISSIONERS OF CUSTOMS,
HER MAJESTY'S ESTATE, ISLE OF WIGHT,
ROYAL BOTANIC GARDENS, REGENT'S PARK,

And on the Estates of the Dukes of Sutherland, Norfolk, Rutland, Newcastle, Northumberland, Buccleuch (at Richmond), the late Earl Spencer, and most of the Nobility and Gentry, and at the ROYAL AGRICULTURAL SOCIETY'S HOUSE, Hanover-square.

It is half the price of any other description of Roofing, and effects a great saving of Timber in the construction of Roofs. Made to any length by 32 inches wide.

PRICE ONE PENNY PER SQUARE FOOT.

*** Samples, with Directions for its Use, and Testimonials of seven years' experience, with references to Noblemen, Gentlemen, Architects, and Builders, sent free to any part of the town or country, and orders by post executed.

☞ The Public is cautioned that the only Works in London or Great Britain where the above Roofing is made, are F. M'NEILL AND CO.'S Patent Felt Manufactory, Lamb's-buildings, Bunhill-row, London, where roofs covered with the Felt may be seen.

The new Vice-Chancellor's Courts, at the entrance to Westminster Hall, were roofed with F. M'NEILL and Co.'s Felt about two years since, under the Surveyorship of Chas. Barry, Esq., R.A. Her Majesty's Commissioners of Woods and Forests are so satisfied with the result that they have ordered the Committee Rooms at the Houses of Parliament to be roofed with their Felt. Quantity altogether used, 24,000 feet.

NOTE.—Consumers sending direct to the Factory can be supplied in lengths best suited to their Roofs, so that they pay for no more than they require.

Every information afforded on the construction of Roofs, or any proposed particular application of the Felt.

IRON AND WIRE FENCING, AND METALLIC BEDSTEADS.

THOMAS PERRY AND SONS, 252, OXFORD-STREET (NEAR HYDE PARK), And Highfields Foundry and Wrought-iron Works, Bilston, Staffordshire, Manufacturers of all descriptions of PLAIN AND ORNAMENTAL IRON AND WIRE FENCING, Park Entrance, Carriage and Field Gates, Wickets, &c.; Deer, Sheep, and other Hurdles; Hare and Rabbit-proof Wire Fencing; Iron Bedstead Makers to the Board of Ordnance; And Government Contractors.

The works of Messrs. PERRY being situated in the heart of the first iron district, they are enabled to execute all orders with the greatest facility, and on the most moderate terms. Drawings made and estimates prepared, if required. The show-rooms contain an immense variety of every description of Iron and Wire-work, and are the largest in London. An Illustrated Catalogue of Bedsteads, with dimensions and prices, sent on application, post-free.

PATENT SPADES, DAISY RAKES, SCYTHES, Draining, and other Garden Tools. Mole Traps, 6s. per dozen. Carpenters and Smiths' Tools, &c. Ladies' Garden Tools, 7s. 9d. a set. Sword-scrapers for Gardens, 1s. 2d. each. Patent Fumigators for destroying insects on plants, in greenhouses, &c.: at Messrs. J. H. BOOBBYER and Co.'s (late STURCH and BOOBBYER), Ironmongery, Brass-foundry, Nail and Tool Warehouse, 14, Stanhope-street, Clare-market, London. Established nearly 200 years for the sale of goods from the best Manufactories at the lowest prices. Goods forwarded to any part on the receipt of remittance.

STEPHENSON AND Co., 61, Gracechurch-street, London, and 17, New Park-street, Southwark, Inventors and Manufacturers of the Improved CONICAL and DOUBLE CYLINDRICAL BOILERS, respectfully solicit the attention of scientific Horticulturists to their much improved method of applying the Tank System to Pineries, Propagating Houses, &c., by which atmospheric heat as well as bottom-heat is secured to any required degree, without the aid of pipes or flues. S. and Co. have also to state that at the request of numerous friends they are now making their Boilers of Iron, as well as Copper, by which the cost is reduced. These Boilers, which are now so well known, scarcely require description, but to those who have not seen them in operation, prospectuses will be forwarded, as well as reference of the highest authority; or they may be seen at most of the Nobility's seats and principal Nurseries throughout the kingdom.

S. and Co. beg to inform the Trade that at their Manufactory, 17, New Park-street, every article required for the construction of Horticultural Buildings, as well as for heating them, may be obtained upon the most advantageous terms.

Conservatories, &c., of Iron or Wood, erected upon the most ornamental designs. Balconies, Palisading, Field and Garden Fences, Wire-work, &c.

DR. S. NEWINGTON'S HAND-DRILL HOES, with their various fittings. With these Hoes a man or lad can hoe from two to three acres of Wheat, Beans, &c., daily, the tines being made with movable shares and adapted either for stirring or hoeing. Hand-Dibbles, with from 6 to 9 depositors each, Wheel-Dibbles for all corn, Mangold, Carrots, Turnips, &c. Drop-drills, and Hand-sowing Implements for dropping seed at defined intervals in the seams of the plough, or in pressed land, or in drills. A Prospectus and Lecture on Seeding sent gratis on application to Messrs. DUFAUR and Co., Agricultural Depôt, 21, Red-lion-square, Holborn, London. The above Dibbles received the prize given by the Royal Agricultural Society at Norwich.

CARSON'S ORIGINAL ANTI-CORROSION PAINT, especially patronised by the British and other Governments, the Hon. East India Company, the principal Dock Companies, most public bodies, and by the Nobility, Gentry, and Clergy, for out-door work at their country seats, The Anti-Corrosion is particularly recommended as the most durable out-door Paint ever invented, for the preservation of every description of Iron, Wood, Stone, Brick, Compo, Cement, &c., work, as has been proved by the practical test of upwards of 60 years, and by the numerous (between 500 and 600) testimonials in its favour, and which, from the rank and station in society of those who have given them, have never yet been equalled by anything of the kind hitherto brought before the public notice.

Lists of Colours and Prices, together with a Copy of the Testimonials, will be sent on application to WALTER CARSON, No. 9, Great Winchester-street, Old Broad-street, Royal Exchange.

No Agents.—All orders are particularly requested to be sent direct.

PENTSTEMON MURRAYANUM.

JAMES BURLEY, NURSERYMAN, begs to inform the trade, and admirers of the above beautiful plant, that he has a few dozen to dispose of at 18s. per doz.; also 60,000 Drumheads, pricked out plants, at 3s. per thousand.—Post-office orders will oblige, from unknown correspondents, on the Westerham Post-office to JAMES BURLEY, Simpsfield, Surrey.

SHADES FOR GREENHOUSES.

J. WEEKS AND CO., King's-road, Chelsea, HORTICULTURAL BUILDERS, &c.—Greenhouses, Conservatories, Pits, &c., built—or BLINDS, for Shading the same, fixed—in any part of the Country.—A great variety to be seen in operation at their Hothouse Works, King's-road, Chelsea, near London.

COOPER'S PATENT PRESERVED FRUITS IN SYRUP, prepared for the Dessert and other Family purposes.—A small hamper enclosing an assortment of various kinds of Fruit in half-pint jars, one of which contains Raspberries and Currants, the growth of the year 1840, and is still warranted for three years in advance, for family use.—For an order for 7s., directed to Mr. JOHN SMITH, 8, St. John-street, Clerkenwell, London, a hamper will be delivered free of expense to any part of London.

CUCUMBER AND MELON BOXES AND LIGHTS.

One hundred 1, 2, and 3-light Boxes and Lights of all sizes ready for immediate use. Warranted best materials, packed and sent to all parts of the kingdom; 2-light Boxes and Lights from 1l. 4s. Garden Lights of every description, Conservatories, Green and Hot-houses, made and fixed in all parts of the kingdom. References given to the Nobility, Gentry, and the Trade, in most of the counties of England. JAS. WATTS, Hothouse Builder, Claremont-place, Old Kent-road, London.

BELL'S PATENT LIQUID CEMENT is ready for use, and only one-eighth the cost of oil-paint. For beauty it is pre-eminent, giving the exact appearance of FINE CUT STONE. Can be used at once on fresh Roman Cement, or any other plastering, and will protect the walls as well as Roman Cement. In casks of 1, 2, and 3 cwt., at 8s., 15s., and 21s., casks inclusive.

PATENT MINERAL PAINTS.—Invaluable for cheapness, beauty, and permanence: not half the cost of other paints, always ready for use, will keep good for years, and therefore well suited for exportation. Brilliant black, 2s.; rich brown, 2s. 9d.; greens and light colours 4s. per gallon.

G. BELL and Co., 2, Wellington-street, Goswell-street, London.

LIGHT, CHEAP, AND DURABLE ROOFING.

CROGGON'S PATENT ASPHALTE ROOFING FELT is perfectly impervious to rain, snow, and frost, and has been tested by a long and extensive experience in all climates. Saves half the timber required for slates; can be laid on with great facility by farm servants, or unpractised persons. Price 1d. per square foot.

CROGGON'S PATENT NON-CONDUCTING FELT, for Steam Boilers and Pipes, saves 25 per cent. of fuel.

Samples and Testimonials sent by post, on application to CROGGON and Co., 2, Dowgate-hill, London.

TO NOBLEMEN, LANDED PROPRIETORS, AGRICULTURISTS, ENGINEERS, CONTRACTORS, AND OTHERS.

THE PATENT ALKALI COMPANY'S Metallic Black, Bright-red, and Purple-brown PAINTS are applicable for covering iron and wood work of every description, also stuccoed and brick buildings, and are remarkable for their superior preserving properties, cheapness, and durability.—Offices of the Company, 1, New Broad-street, London.

JOHN A. WEST, Secretary.

ALEXANDER SHANKS AND SON, MACHINE MAKERS, Ogilvy-place, Arbroath, respectfully solicit the attention of the Nobility, Gentry, and Gardeners to their IMPROVED GRASS CUTTING ROLLING MACHINE for LAWNS, the completeness of which has now been fully proved. The Machine works with perfect ease, producing a beautiful smooth surface, and attended with a saving of labour of 80 per cent.

A. S. and SON respectfully solicit the attention of the Farmers, Agriculturists, and others to an improved STRAW or HAY CUTTING MACHINE, which they have recently invented. The cheapness and utility of this improved Machine, combined with superior workmanship and durability, enable the inventors confidently to recommend it, as the most profitable Machine of the kind yet sent out. Further particulars and a list of prices may be had, by applying to the makers or to their Agents. Agents for London, Messrs. J. and C. Lee, Nursery and Seedsmen, Hammersmith; Hertford, Mr. George Folkard, Ironmonger; Liverpool, Messrs. Charles D. Young and Co., Castle Buildings, Derby-square; Manchester, Messrs. Francis and James Dickson and Co., Seedsmen, 106, Deansgate; Wakefield, Mr. Wm. Barratt, Nursery and Seedsman, St. Johns; Chester, Messrs. F. and J. Dickson, Nursery and Seedsmen; Glasgow, Messrs. Charles D. Young, and Co., 32, St. Enoch-square; Edinburgh, Messrs. Charles D. Young and Co., 48, North Bridge; Perth, Messrs. Dickson and Turnbull, Nursery and Seedsmen.

FOR WATERING GARDENS, BREWERS' USE, &c. FLEXIBLE INDIA-RUBBER HOSE PIPES.

JAMES LYNE HANCOCK, Sole Licensee and Manufacturer of the PATENT VULCANISED INDIA-RUBBER PIPES and TUBING.

These Pipes are well adapted for Watering Gardens, conveying Liquid Manure, racking Beer and Cider, Gas Fittings, Chemical and all purposes where a perfectly sound WATER-PROOF and FLEXIBLE PIPE is required.

Hot Liquors or Acids do not injure them. No oil or dressing is required in using them. They do not leak from remaining out of use, are permanently Flexible in all Temperatures, and are therefore particularly suitable for Fire Engines; and, from their not leaking, are found exceedingly useful in conveying hot or cold water to baths in dwelling houses and such like purposes.

A LIGHT VULCANISED INDIA-RUBBER HOSE is now manufactured for conducting Water and Fluids, at the following prices per foot:

Size.	½ in.	⅝ in.	¾ in.	1 in.	1¼ in.	2 in.	2½ in.	3 in.
1 ply ...	0s. 5d.	0s. 6d.	0s. 8d.	0s 10d.	1s. 0d.	1s. 2d.	1s. 4d.	1s. 6d.
2 ply ...	0 8	0 9	1 0	1 2	1 5	1 8	2 0	2 3
3 ply ...	0 11	1 0	1 3	1 6	1 10	2 2	2 9	3 3

N.B. Vulcanised India-Rubber Garden Hose fitted with roses, jets, and branches, complete, with union joints ready to attach to pumps or water cisterns.

All orders or letters addressed to J. L. HANCOCK, at the Manufactory (and Warehouse), Goswell-mews, Goswell-road, London, will meet with immediate attention.

TO UPLAND FARMERS AND GENTLEMEN REQUIRING A GOOD SUPPLY OF WATER BY THE MOST ECONOMICAL MEANS.

W. NASH has on hand one of his SUPERIOR WINDMILLS, for Raising Water, &c., embracing all the modern Improvements, and combining great power with simple and strong construction, and would form a very handsome and interesting object on any Estate; securing likewise a good supply of Water without expense, beyond the first outlay.—May be seen, and particulars obtained, by applying at the Factory, Ball's-pond, Islington, London.

THE FUNEBRAL CYPRESS—CUPRESSUS FUNEBRIS.

MESSRS. STANDISH AND NOBLE, of the Bagshot Nursery, beg to announce that they are now sending out the above magnificent Weeping Evergreen Tree, the hardiness of which is now proved beyond all doubt; and for particulars proudly refer their patrons to the highest authorities, viz., Dr. Lindley and Sir W. Hooker—see *Gardeners' Chronicle*, April 21, 1849, and April 13, 1850; Curtis's Botanical Magazine, for May; and the Gardeners' Journal, March 9 and 16 for the present year. Strong healthy plants, fit for immediate planting, 21*s.* each.—Bagshot Nursery, Surrey.

BASS AND BROWN'S DESCRIPTIVE PRICED CATALOGUE sent prepaid for four penny stamps, for postage. This Catalogue contains a rich assortment of the newest and best plants which can be be procured. The stock of BEDDING PLANTS is unusually strong and fine. Several thousand plants of Verbenas are now ready for sending out, as well as our collection of other plants for bedding, the stock of which is also very extensive, consisting of Geraniums, Fuchsias, Petunias, Dahlias, Chrysanthemums, Anagallis, Bouvardias, Cupheas, Heliotropes, Plumbagos, Lantanas, Salvias, Lobelia Erinus grandiflora and compacta alba, Zauschneria californica, &c.

Persons requiring Plants for beds may depend on receiving a supply, strong, and in fine condition, at low prices.

Seed and Horticultural Establishment, Sudbury, Suffolk.

SUPERB SEEDLING FUCHSIA—"CAPTIVATION."

EDWARD TILEY has much pleasure in offering the above beautiful FUCHSIA, which he is confident will give entire satisfaction. It was exhibited at the Victoria Park Exhibition in September last, and was awarded by the judges an Extra Certificate of Merit, and much admired by all who saw it. It was also sent to Mr. HENDERSON, of the Pine-apple Nursery, Edgeware-road, London, who gave his opinion as follows:—"I received the box containing Fuchsia Blooms quite safe; it is a really good variety—a vast improvement upon Smith's Ne Plus Ultra; tube good, deep red sepals, quite reflexed, I may say curling over, showing its fine violet-purple corolla to great advantage, being clean, smooth, and round. Send me plants of it when you send it out." It was twice sent to the Editor of the *Gardeners' Chronicle*, whose opinion was similar to the foregoing.

E. T. will commence sending out the above, after the 4th day of June, at 10*s.* 6*d.* per plant. The usual allowance to the Trade when three are ordered. They will be sent in strong tin boxes through the post, if required, package and postage free, on receipt of Post-office Order for the amount.—E. TILEY, Nurseryman, Seedsman, and Florist, 16, Pulteney Bridge, Bath.

"THE FLOWER OF THE DAY" IS LEE'S NEW VARIEGATED SCARLET GERANIUM.—The habit of the plant is very vigorous, and the variegation perfectly constant. The foliage is bright green, beautifully margined with silver, with a light horse-shoe, and an occasional pink tinge. The trusses are large, of a light scarlet (the most conspicuous colour), and the general effect it produces is elegant beyond description.

"THE FLOWER OF THE DAY" may be seen in bloom at LEE'S Nursery during the present month. On the 1st of August good established plants will be ready for delivery at 10*s.* 6*d.* each, with the usual allowance to the trade when three or more are ordered. Orders will be executed strictly in rotation.—Address, J. and C. LEE, Nursery and Seedsmen, Hammersmith, near London.—June 8.

SELECT PLANTS.

BASS AND BROWN are sending out the following CHOICE SELECTIONS, at the annexed low prices, the plants of which are exceedingly strong and fine.

Goods carriage free to London, and extra plants presented with orders of 40*s.* and upwards. Descriptive Catalogues supplied for 4 postage stamps for postage.

		s.	*d.*
	GERANIUMS.		
50	Fine Show varieties	40	0
25	Ditto, 22*s.*; or 12 ditto	12	0
25	Superb new varieties, 40*s.*; or 12 for	21	0
12	All new varieties of last season	42	0
	Fine varieties, per doz., 6*s.* to	9	0
12	Superb fancy varieties	15	0
	Scarlet, finest sorts, per dozen, 6*s.* to	9	0
	FUCHSIAS.		
25	Fine varieties, 10*s.*; or 12 for	5	0
25	Superb ditto, 17*s.* 6*d.*; or 12 for	9	0
12	Superb new varieties	15	0
50	Varieties, in very choice assortment	25	0
	PETUNIAS.		
12	Fine varieties, 5*s.*; 12 superior ditto	9	0
12	Superior new varieties	12	0
25	Varieties, in very choice assortment	15	0
	VERBENAS.		
25	Fine varieties., 8*s.*; or 12 for	4	0
25	Superior ditto, 12*s.*; or 12 for	7	6
12	Superior new varieties	12	0
50	Varieties in very choice assortment	20	0
	DAHLIAS.		
25	Fine varieties, 10*s.*; or 12 for	5	0
25	Superior ditto, 17*s.* 6*d.*; or 12 for	9	0
12	Superb new varieties	21	0
12	Showy Fancy varieties, 9*s.*; 12 new varieties	18	0
	CHRYSANTHEMUMS.		
25	Fine varieties, 10*s.* 6*d.*; or 12 for	6	0
25	Superior, 17*s.* 6*d.*; or 12 for	9	0
12	Superior, all new varieties	15	0
40	Varieties, including newest	30	0
50	Varieties select Greenhouse Plants	50	0
12	Varieties ditto, Stove Plants	18	0
12	Varieties fine Achimenes	6	0
6	Varieties splendid new ditto	7	6
12	Varieties fine Gloxinias, 15*s.*; 6 superb new	9	0
12	Varieties Summer Climbing Plants	9	0
12	Varieties Azalea indica, fine, 18*s.*; 6 new varieties	10	0
12	Varieties Choice Cinerarias	10	0
100	Varieties Showy Herbaceous Plants, in pots	30	0
25	Varieties Rock Plants, 12*s.*; or 12 for	7	6
12	Varieties fine Antirrhinums, 6*s.*; or 12 superior do.	10	0
12	Varieties fine autumn Roses	12	0

SHOWY BEDDING PLANTS.

Per dozen—*s*	*d*	Per dozen—*s*	*d*
Anagallis, 2 best vars., scarlet and blue ... 6	0	Lobelia erinus grandiflora, and compacta alba ... 5	0
Bouvardia splendens ... 6	0	Mimulus Harlequin ... 10	6
Chænostoma polyanthum 5	0	Plumbago Larpentæ ... 9	0
Cuphea platycentra and strigulosa ... 6	0	Salvia, in 8 varieties ... 6	0
Gaillardia, in 6 varieties 6	0	Zauschneria Californica 9	0
Heliotropium, in 4 vars. 6	0	Erinus alpinus ... 6	0
Lantana crocea ... 6	0	Dianthus Hendersonii ... 10	6
„ Sellowii ... 9	0		

The above are all in pots, and are very fine plants.

Remittances requested from unknown correspondents. Post office orders to be made payable to either BASS and BROWN, or to STEPHEN BROWN, Seed and Horticultural Establishment, Sudbury, Suffolk.

MEETINGS AT WORTON COTTAGE.—The Censors for "THE FLORIST AND GARDEN MISCELLANY," give notice that there will be no other Meeting until Wednesday, June 26th, on account of the Botanical and the South London Shows falling on the two next Wednesdays. Flowers, for opinion, may be forwarded as usual.—June 8.

The Gardeners' Chronicle.

SATURDAY, JUNE 8, 1850.

MEETINGS FOR THE ENSUING WEEK.

MONDAY,	June 10	British Architects	8 P.M.
		Geographical	8½ P.M.
TUESDAY,	— 11	Syro Egyptian	7½ P.M.
		Medical and Chirurgical	8½ P.M.
		Zoological	9 P.M.
WEDNESDAY,	— 12	Royal Botanic Gardens	2 P.M.
		Literary Fund	3 P.M.
		Microscopical	8 P.M.
		Ethnological	8 P.M.
THURSDAY,	— 13	Royal Soc. of Literature	4 P.M.
		Antiquarian	8 P.M.
		Royal	8½ P.M.
FRIDAY,	— 14	Astronomical	8 P.M.
		Philological	8 P.M.
SATURDAY,	— 15	Asiatic	2 P.M.

COUNTRY SHOWS.—Monday, June 10: Bath Horticultural.—Tuesday, June 11: Oxfordshire Horticultural.—Wednesday, June 12: Durham Horticultural, Leamington Spa Horticultural, and Warwickshire Horticultural.—Thursday, June 13: Guildford Horticultural.—Friday, June 14: Berkshire Horticultural.—Saturday, June 15: Scottish Pansy.

SOME readers of the *Chronicle* are no doubt aware that M. BOUSSINGAULT, the distinguished French writer upon rural economy, proposed, some years ago, a method of determining what amount of HEAT a plant requires, in order to be enabled to perform the functions allotted to it by Nature. This method consisted in determining the length of time over which a function extends, and also the mean temperature during that period. Thus, if a given plant requires 20 days to ripen its seeds after flowering, and the mean temperature during that time was 10°, it would be assumed that the plant in question requires 200° of heat to complete the ripening process. Or if the period occupied was 10 days, and the mean heat 10°, then only 100° of heat would be required, and so on.

M. BOUSSINGAULT'S method was a great improvement upon the previous modes of computation. Observers had been previously contented with annual or quarterly, or other long means of temperature, as furnishing the elements required to determine whether a given plant could be advantageously cultivated in a given country. But these means were all more or less fallacious, and not only led to little practical application, but sometimes led to serious practical mistakes.

Mean temperatures are useless to cultivators unless they represent what takes place during the period of vegetation. We do not want to know what the temperature is of seasons when, or of places where, plants do not grow, unless for the purpose of determining the amount of winter protection which they may require; and all indications of climate in which the dormant season is mixed with the growing season only mislead. Suppose, for example, it was to be said that the mean annual temperatures of Longville and Bretville are the same (say 35°), this would be no proof of similarity of climate, for Longville might have the winter mean 20°, the summer mean 50°; while Bretville might have the winter mean 30°, and the summer mean 40°—cold winters and temperate summers characterising one place, mild winters and bad summers characterising the other. Nor are daily means much more useful. Let us suppose that Longville has in June a daily mean of 45°, while that of Bretville is 50°; it might be that these means represented hot days and cold nights in the one case, and cool days and mild nights in the other—conditions which for the purposes of cultivation are wholly different. So again when the temperature of soil is assumed to be shown by that of springs; in such cases the indications are fallacious; for as springs do not take their rise in places where vegetation is active, so neither do they represent the temperature to which the roots of plants are exposed. We want to know the daily, or at least the monthly temperature of that part of the earth in which the roots of plants are placed, not that of deep places in which no roots are found.

That M. BOUSSINGAULT'S method of explaining the relation between plants and climate was an important improvement upon the usual indications is not to be denied. But it was not wholly satisfactory. Pushed to its limits the theory was manifestly untenable, for it amounted to this—that if a plant requires 20 days with 10° of heat in each day, or 200° to do a certain thing, and if it can do the same thing in 10 days with 20° of heat in each day, then it ought to accomplish the same end in one day by the aid of 200° of heat, which is absurd.

The subject has been lately taken up by Prof. ALPHONSE DE CANDOLLE, in an able essay, from which we venture to make a few extracts. The learned and ingenious author wholly objects to thermometrical observations, as representing truly the heat to which plants are exposed. "Plants," he says, "are almost always placed in the sun, and all the thermometrical observations from which the temperature of a country is deduced, are made in the shade. We also know that the heat of the solar rays is different according to season, geographical position, height above the sea, and various local causes. Consequently 10° of mean temperature in the shade, for 10 days, will correspond, in one place, with a certain effect on plants exposed to sunshine, and in another place, or at another season, to a greater or less effect." "Philosophers," he goes on to remark, "who have desired to determine the amount of solar heat, have always used thermometers exposed at the same moment, or successively, to shade and sunshine. The differences are always great, and connected with season and geographical position; but such differences also depend much upon the nature of the thermometer, and on the way in which the bulb receives the solar rays during the day, or radiates at night. Sometimes the bulb has been covered with black wool, a substance possessing great absorbing and radiating power. Sometimes the bulb is naked. One class of observers guard it from the action of rain and dew; others leave it exposed to these causes of cooling. The series of observations in the Garden of the Horticultural Society of London has been made with thermometers covered with black wool—one in the shade, another in the sun—compared with a common thermometer in the shade. M. DE GASPARIN, wishing that his thermometers should be placed in the same position as plants, or at least the uppermost roots of plants, covered their bulbs with a millimeter of earth.

"It appears to me useless to discuss which of these thermometrical contrivances is the best. I regard them as all bad when applied to vegetable life. No one, indeed, can suppose that the surfaces of branches or of leaves are heated by the sun, or cooled by radiation, in the same way as this or that thermometer. We have to deal with solid bodies into which heat penetrates slowly, and we compare them to liquid mercury where the molecules shift their place as they are heated. We have to deal with green surfaces, mixed more or less with brown, yellow, &c., and we compare them with surfaces of one uniform colour, sometimes very different from green. The shining surface of a leaf reflects a part of the light, and we compare it with the round bulb of a glass thermometer, or with black wool; neither of which will reflect a single luminous ray. In a plant the cold of night does not force back the leaves or flowers which are formed during the day; alternations destroy nothing; and yet we compare a plant to a thermometer, in which the retreat of the mercury is calculated by subtracting the amount of its previous rise. Finally all physiologists know that the chemical part of the solar rays has an immense influence upon vegetable tissue, for it is this (independently of heat) which causes carbonic acid to be decomposed, and much water to be evaporated through the stomates. A luminous ray, almost devoid of heat, must certainly exercise its influence. It would, therefore, be useful to have a measure which shall determine at one and the same time both the heating and chemical action of the solar rays."

Hence M. ALPHONSE DE CANDOLLE contends that the only logical way of measuring the effect of solar rays upon vegetation is to observe plants themselves, "that is to say, to compare their growth; 1, in shade and in sunshine; 2, under different degrees of solar intensity, according to season and situation."

In what way he proposes to do this we shall explain on a future occasion.

TIME was when persons particularly distinguished for rascality were called "Rogues in Grain." It is now necessary to alter the designation; the title of ROGUES IN GUANO must henceforward be conferred on people characterised by cheating, lying, and all imaginable dishonesty. The extent to which the public is now being plundered would be incredible, if it were not notorious that fraud can find any amount of folly on which to operate. We boast of the advance of intelligence, of the progress of knowledge, of the mighty changes produced by education, and yet we yearly witness worse cases than ever of gigantic swindling on the one hand, and still more prodigious credulity on the other.

According to the Parliamentary return, published in our columns (p. 314), it appears that the total quantity of Peruvian guano imported in 1849 was 73,567 tons. Is any one simple enough to suppose that this represents the amount sold in London, Liverpool, and Bristol? Why, there cannot be a doubt that the deliveries by the guano dealers—of course we do not mean the importers—are at least 200,000 tons; probably much greater. There is now before us a list of 10 houses, *in London alone*, engaged in the adulteration of this substance. One of the agents employed by one of these houses contracts for the delivery of 30 tons of mere loam per week, and thus sends about 15,000*l.* worth of fraud annually into the guano market. But as mere loam

will not sell as guano, but requires to be flavoured, so as to deceive the country buyers, it is probable that this contract really represents at least 60,000*l.*; and if we only suppose each of the ten London houses to have dealings to the same extent, we have from London alone above half a million's worth of adulteration disposed of annually. In other words, the landed interest is fleeced to this extent by the frauds practised in the metropolis alone.

This may sound like exaggeration, but we believe it to be near the truth. Indeed the large expenses, the ingenious and costly expedients which the Rogues in Guano are driven to, in order to procure genuine guano with which to flavour their stuff, sufficiently show the magnitude of their operations. The importers not choosing to supply them directly they are driven abroad in search of it: and cargoes sent out in good faith to Holland, Belgium, and France, are actually repurchased in the foreign ports on English account, and reimported for the purposes of adulteration. In addition to this, all sorts of devices are employed to obtain guano here, ostensibly for one party but in reality for another. An example may serve to explain the system. It is not more than six weeks ago that one of the most respectable merchants on our Corn Market was asked by a correspondent at Amsterdam to purchase a cargo of guano for exportation. He did so, fully believing the representation made to him to be true. But the London dealers contrived to obtain possession of the order for the delivery of the guano, and would have smuggled it into one of their mixing places, had not an accident disclosed their intention and put an end to the scheme, after a good part of the cargo had actually been put on board their receiving ship. Men would never play a game of this sort if the stakes were not high, and the chances of winning all in their favour.

One may wonder how, in the face of such facts, the trade in adulteration thrives so much. But it is to be remembered that these doings are not known in the country, that the guano mixers are among the foremost in expressing their horror of such practices, and that the small buyers are far more remarkable for simplicity than for quick-sightedness. The simplicity of the class of small buyers is indeed beyond belief. We could lay our hands upon a district, not a thousand miles from Birmingham, where guano, mixed with 30 per cent. of plaster of Paris, actually sells for a better price than genuine guano, *because it looks nicer!* There is a story of a gentlewoman who declared that she quite enjoyed the neighbourhood of a dunghill—because it smelt of high rents; but that the value of manure should be estimated by the niceness of its look was a discovery reserved for our enlightened age. This is probably one reason why the trade in guano-mixing thrives so hugely,—guano looks so much better when mixed with loam, and gas-lime, and plaster of Paris, and ochre, than in its unadulterated condition.

Surely this is a most serious state of things. Surely it is a matter of very grave national concern that between scoundrels on the one hand, and dupes on the other, the land of England should be unable to produce the crops which it is capable of yielding. For ourselves we regard the guano question as one the importance of which is very insufficiently understood. Country gentlemen should consider that it is to them that cultivators look for advice, and guidance, and aid, in a case like this. The limited means of gardeners and farmers,—nay, we will add, in hundreds of cases their limited perceptions—render them unable to contend with so great an evil as the guano fraud. It is to their landlords, or masters, as the case may be, that they naturally turn for PROTECTION; and that protection they may fairly claim. What the small people—and they are the sufferers—cannot do, the great people may do for them, and effectually. One thing we would suggest is that the assistance of middle-men should in this matter be dispensed with as far as possible; and that guano be bought in the docks from the ships that bring it. It is understood that the importers deliver quantities as small as 30 or 40 tons. For this purpose gentlemen would have only to notify to their tenantry that as soon as such a quantity is subscribed for they will purchase it of the importers and cause it to be sent to the nearest market town, where the subscribers can each receive their quota without any addition to the first cost beyond the expenses of transit; and the middle-man's trade is gone. None but fools or lunatics would in such a case think of obtaining guano otherwise than from the local centres here proposed; for in the first place it would be cheaper, and in the next place its purity would be beyond suspicion.

If this suggestion were but carried out the trade [illegible]tion would fall to pieces; or it would be in adultera[illegible]e sole benefit of the foreigner, who, carried on for t[illegible] already under considerable it must be owned, obligations to the "Rogues in Guano." And we will take leave to submit that such a policy would be of more real public advantage than idle hustings speeches, or dreary parliamentary harangues, or even than abusing Sir ROBERT PEEL.

THE MARKET GARDENS ROUND LONDON.

By JAMES CUTHILL, Florist, Camberwell.

COVENT-GARDEN, the head market of this great metropolis, has long been celebrated for the finest fruits, vegetables, and flowers in the world, being different now from the time when the poor German gardener settled on a piece of land near the Monster public-house, Chelsea, on the lands of the Westminster family. This man bought dung where he could find it, and put it on his ground. The landlord brought an action against him; "but," says the landlord, "as you are an industrious man, I shall forgive you if you will promise me never to poison my land any more, by putting such filthy stuff on it." The market gardeners round London from time to time have been stimulated by receiving large prices for their articles, from living in the vicinity of such wealth. It being the head-quarters of the government of this mighty empire of a hundred millions of people, can it be doubted that the most extravagant prices could be obtained in Covent-garden market? For dung the carter is allowed 2*s.* 6*d.* for a single load, and for waggons 5*s.* I have known many coachmen in the Mews at the west end, that were obliged to give those carters 6*d.*, 9*d.*, and 1*s.* to clear the manure away. These men have long hours; but between wages, which are from 15*s.* to 20*s.* weekly, and the buying of manure, their wages sometimes reach 30*s.* per week. A country person will hardly believe me when I tell him that nine cart and waggon loads of vegetables have been brought by one grower, the celebrated Messrs. Fitch, of Fulham, off their 100 acres of land, and all sold in Covent-garden by Mr. Fitch by 9 o'clock in the same morning. Those men once sent in a four-horse waggon of scarlet Ten-weeks Stock, all pulled up by the roots, and in full bloom; they were sold by 7 o'clock in the morning, and fetched 30*l.*; but it did not pay the expenses, and was discontinued another year.

Sixty pounds have been obtained for an acre of Cabbages, and upwards of 100*l.* for an acre of Rhubarb, and more for Asparagus, 140*l.* for an acre of white Cos Lettuce, 150*l.* for an acre of Strawberries, &c. I have myself taken 30*l.* for 15 rods of ground of early Potatoes in the open ground, managed as I have directed in my pamphlet; 10*s.* for a Cucumber, and 20*s.* for a Melon, 2*s.* an ounce for forced Strawberries, and 25*s.* for forced Grapes per pound. I have also taken 6*s.* a pound for early Strawberries, in the open ground, upon early borders. The above prices seem high, but the expenses are enormous. Mr. Fitch, of Fulham, has told me that his 100 acres have some years cost him, everything included, very nearly 4000*l.* The above prices cannot any longer be maintained; an immense change has taken place since free trade and railroads have been introduced.

The change is fearful upon the old market gardeners—they cannot understand it. They little think how many fresh market gardens have sprung up in all directions, and along the lines of railways—land at 30*s.* an acre instead of 10*l.*, labour low, railway carriage cheap, and everything else in proportion. And again, all those families that used to consume the London grown article, now have their own garden produce sent by railway. They little think, also, that railways and steamboats are continually emptying London on the Sundays, and all other times, by the tens of thousands, to eat the fruits and vegetables of country gardens. That was not the case a few years back. However hard it may be for those near London who are high rented and most severely taxed, yet it is a great and decided change for the general benefit of mankind. Railroads have given one great advantage in the early spring to the London growers. Having the climate in their favour, they send a great deal of their vegetables northwards—as early Potatoes, Peas, French Beans, Cauliflowers, Rhubarb, Melons, Cucumbers, and other finer sorts of fruits and vegetables. The foreign articles do not hurt our markets in the vegetable line, because being grown in a warmer climate, they come in long before we do, and by the time our early Potatoes, Cauliflowers, Peas, French Beans, &c., are in, the foreigners' early crop is over, or at least it would not pay them to contend against us, unless in Cucumbers, and they are bad. As for Dutch Melons, no one of refined taste will eat them. The foreign growers have hurt our fruit trade to an immense degree—such as Apples, Pears, Plums, Cherries, Apricots, &c. As for Dutch Grapes, they look beautiful, but are tough, and three seasons out of four tasteless. The middle classes in and round London cannot afford themselves Strawberries more than a few times, and that only when a great crop is in full bearing. When a pottle is sold by the cultivators at 6*d.*, the weight of which is three-quarters of a pound, the grower gets only 3*d.*, and after paying ¾*d.* for the pottle, and 10*l.* an acre, with all other expenses, the Strawberry grower is but poorly paid. Much more could be said about the market gardening of London, but the conclusion we must come to is, that it consists in continual dunging, trenching, digging, sowing, hoeing, planting, taking the produce to market, bringing home money and dung, paying for labour, taxes, and breakage. I shall not disregard skill altogether, but dung is the very fountain-head—it is the gold in a half-formed state; and from the immense profits returned, it stimulates to the use of still more manure, till at last the ground is almost a hotbed. The crops are no sooner planted than they find their food at once, and their growth is rapid and fine. This will explain why a London gardener can get up acres of Turnips where farmers fail. Rotation, no doubt, is good in all crops where the land is poor, but as I have grown Potatoes these ten years upon the same ground, and every year the crop increases, I for one care little about rotation.

The market gardeners of London could bring the early produce in much sooner by forming beds, the perpendicular part facing the north, the bed sloping to the south, as I have practised myself years ago in a stiff soil, and light, too; and with the protection of glass over these beds, as recommended in the *Gardeners' Chronicle* for Peaches, Apricots, and Nectarines, they might almost bid defiance to the foreign grower. With the assistance of glass and the slopes together, they would certainly be equal to the gardens round Paris. Without protection of glass we can prolong fruits and vegetables out of doors without any loss, but what is most wanted is early fruits and vegetables at a cheap rate, which can only be effected by some cheap process such as has been recommended above. I am about to publish a pamphlet on 12 of the leading and most useful plants and vegetables. I have proposed an entirely new plan of growing Asparagus and Seakale, and if carried out properly, the million will partake of those most delicious vegetables which at present they never taste. *Abridged from the Maidstone Journal.*

DISEASES OF PLANTS.

(*Continued from p.* 341.)

GENUS I. BLIGHT [*Nebbia*].—I thus designate that disease of plants which shows itself by spots in the first instance of a pale and dead colour, but which subsequently become reddish, or sometimes yellow or black, or of other colours, but generally dark. They usually cover the surface of the plant, but sometimes also they attack the internal substance. Sometimes, after the appearance of the spots, there may be seen on them an exudation, either dense and even or powdery. The appearances vary also according to the part of the plant affected. Thence we may distinguish several species.

First species. EXTERNAL BLIGHT.—The external parts of plants, whether green or variously coloured, are liable to be suddenly covered with larger or smaller spots, and in greater quantities under one aspect than on the other side. These spots first appear of a pallid hue if on a green surface, or of a whitish colour where the organs are variously tinted; they then rapidly pass to a darker shade, and, as I have observed, differing according to the species of plant. Sometimes the evil stops at these symptoms, and then it is of little consequence, but only too often the leaves attacked shrivel and die. He who is aware of the importance of leaves in the vegetable economy, will understand the injury this blight inflicts on trees, preventing the buds from attaining the necessary perfection. It is well known that leaves thus spotted are most injurious if given to cattle as food. Sometimes the stalks also are spotted; and Beans and other leguminous plants often afford sad instances, where they become quite black, and it is useless gathering their seeds. For the most part this disease declares itself in spring; at that season when, after a slight rain, the sun bursts out at intervals, it strikes the plants with its ardent rays, and the spots appear. The same thing happens when at that season or in summer a fog arises through which the sun bursts forth. On that account this disease has been designated as solar spots; but, correcting what I have said in my essay on Nosology, I have thought it better to designate it, with all our agriculturists, by the name of blight (nebbia). On Mulberry trees it shows itself in the form of purplish spots, which, if given to silkworms, causes their death. The spots of the Elm and of several other plants are of a rusty colour, whilst those of the Vine are red. The epidermis of fruits becomes variously spotted. I have observed that pericarps or seeds which are white have reddish spots, and in general others have them dark, or brownish. Fruits are never equally covered with them, but more on one side than on the other. In leaves their colour is darker on the upper than on the under side. In some years the spots are smaller, but more numerous than in others. It appears to me that amongst trees, those whose leaves are the most delicate are the most subject to them. In shady places trees are rarely exempt from some traces of this external blight. Among herbs, those in gardens are the most affected.

Second species. INTERNAL BLIGHT.—Sometimes neither the leaves of plants, the flowers, nor any other external parts, give any visible sign of blight; but if the fruits are opened it will be observed that those, for instance, which have a fleshy pericarp, are full either of small dots or of blackish or yellowish spots, which corrupt the whole pulp and render it insupportable to the palate. The seeds, also, may be full of black dots in their farinose substance. The same occurs in edible roots, especially when cultivated in gardens; as also in leguminous seeds, which often turn out to be most afflicted by them when the general appearance of the plants is the finest. I have observed in the case of these seeds, that when fresh shelled they have a greenish white spot, from whence exudes a fluid which indurates as the seed dries. Unfortunately, we in some years find many fruits also thus affected; amongst those of our country, this internal blight is most

frequent in Pears, Apples, and more especially in Figs of the first crop; those of the second crop are mostly subject to it externally. Oranges, when blighted, have no juice, but are full of a substance resembling *semolina*. Beans, amongst leguminous plants, Wheat, Maize, Barley, Rye, Oats, and many wild Gramineæ, are subject to this disease, which, however, is less common in Wheat than in other grains. Those growing along ditches, or which have little access to air and light, or are in very watery places, are particularly liable, if proper attention is not paid.

Third species. YELLOW BLIGHT.—This disease is common to many plants, and is very nearly allied to the first species. In spring it attacks more especially all kinds of corn; but, as far as I have seen, does no great damage. The leaves, in the height of their vegetation, are observed to assume gradually a whitish green tinge, in spots of a long shape, which by degrees become yellow, but do not pass that stage; they do not turn brown, nor are they covered by any extraneous matter on their surface. I have often observed them, in years when vegetation has commenced with great vigour, and has then become languishing in May, on account of the abundance of wet, the disease is more frequent. I have never observed it on trees, and very rarely on any herb not gramineous.

Fourth species. MELUME BLIGHT. — Under this name of *melume*, I understand a disease which not unfrequently occurs among corn, especially in Wheat, and known in Lombardy under the name of *fumana*. The grain is covered with spots, as in the preceding species; but, besides that, amongst the chaff which incloses the grain there appears a yellow glutinous and fœtid powder. If rain comes to wash it away, it has no prejudicial effect on the grain, but otherwise it suffers considerably, and often remains ill-nourished and of bad quality. In the province of Reggio, where I have had the best opportunity of observing, it is seldom that it does not appear more or less, precisely when the ear has been fecundated. The substance in question has a vesicular and spotty appearance. It may also be found in the axillæ of the leaves and about their sheaths. This and the preceding species may afflict the plant at one and the same time, and be likewise accompanied by one of the sorts of rust.

VILLA AND SUBURBAN GARDENING.

THE following materials are essential to the successful cultivation of plants in pots, and should be kept always within reach of the potting bench, in a condition fit for immediate use. It is this foresight which has rendered the course easy to many a successful aspirant; the want of it is, and has been, the ruin of half the plants propagated in this country. The foundation of all cultivation depends upon having loam, peat, sand, and decayed manure at all times in proper condition. Loam, to be in condition for potting, requires to be laid up in a heap for at least 8 or 10 months, in order that its vegetable fibre may be in a state of decomposition. The best of all loams is that procured from very old pastures or commons. The surface should be pared off not more than 2 inches in thickness. This should be of medium texture, neither too stiff nor too much inclining to sand. Where convenience admits of having two kinds, a heavier and a lighter soil will be found of great advantage in pot culture, as they will tend to accommodate plants of different habits. Peat, suited for plants, is difficult to obtain in some localities. Wimbledon Common affords an abundant variety for selection. In choosing it, let it always be procured from a dry rather than from a wet, boggy, spongy situation; and, if it is covered with Fern or Heath, it will be necessary to stack it for some time previous to its being used, in order that the coarse roots and heathy matter may be easily broken up. This is a very essential and important item in the compost, as it tends to keep it open, and it also assists in promoting good drainage. Manure in a reduced state, perfectly sweet, should also always be kept in store for general purposes; stable dung, kept until it is quite rotten, is perhaps as good as anything. If possible to prevent it, it should never be allowed to undergo violent fermentation. For some kinds of plants, cow-dung, three or four years old, will prove very useful. Sand of a pure white kind is the most desirable; the nearer it approaches pounded silica the better. Few localities furnish this; and hence large quantities are continually being sent from the neighbourhood of London to plant cultivators in the country. To attempt anything beyond mediocrity, without being possessed of the above materials, will be found to be a waste of labour; for although success may occasionally be obtained in indifferent soil, it will after all be but a mere exception, and must not be taken as a proof that plants will grow and thrive in any compost, however carefully attended to, unless some attention is paid to their natural wants and habits; and, further, it should always be recollected that plants in pots are in an artificial position, and that they require a proportionate amount of care in their cultivation. *Pharo.*

Home Correspondence.

Distribution of Sewage.—Permit me to add some details to the hints contained in a leader last week. In the south of France a compartment of a garden being ready to be formed into beds and channels for irrigation, the gardener takes up with the aissade a charge of earth lengthways from the intended transverse channel, and with a sideway jerk of the tool scatters the earth over the intended bed; he then takes a step backward, repeats the same operations, and so on till he attains the place of the intended main channel. Gardeners become so very dexterous in this business that no line is needed for marking out the transverse beds; yet they are all made straight and of uniform breadth. By slight pressure of the aissade on the ground it is sufficiently hardened for the channel, and any loose mould that may have remained in the first aissade-length of channel is taken up with the second charge of the tool. When all the transverse beds and channels have been formed, a line is used to mark out the main channel, which is then formed in the same way that the transverse channels had been made, excepting that the earth taken out of it is used to form the dams across it. If it should happen that earth falls into a channel, or that any part of it allows water to sink in too rapidly, the gardener when watering remedies the defect by drawing the aissade along the faulty channel. No English garden tool could well supply the place of the aissade, but the manner of using it being so different from what English gardeners are accustomed to, they might perhaps be discouraged on first trial of it, but a little practice and perseverance would doubtless bring it into favour. In some few gardens where water has to traverse a very great length, as also sometimes for crossing footpaths, half pipes of common pottery are used; they are about a yard long, from 3 to 6 inches diameter, are bedded in the ground end to end, and common puddling at the joints suffices to make them water-tight. I can quite confirm what is said in the *Chronicle* as to the number of hands employed in such gardens. I knew a similar one in the south of France. The whole garden was irrigated twice a week in hot weather, that is for three or four months of summer; but there was another time-consuming and fatiguing business of the men—they carried on their heads a load to market a mile off every day; the garden produce was arranged in baskets on a board 5 or 6 feet long, which they balanced on their heads (the gardener himself, that is, and his man); the gardener's wife also carried a load in a basket. The boys were 10 and 12 years old; they had their schooling in the winter. The gardener's wife, aided by the weeding women, every afternoon washed and packed what was to be taken to market the next morning. Market gardeners about Montpellier are a most laborious set; they are well fed, well clothed, well lodged, most of them have clean linen every day, and those I saw had every part of their summer dress washed once a week. *B.*

Plumbago Larpentæ has proved hardy here. I saw a plant this morning growing very freely in the garden of Mr. Bunting, a nurseryman. It was planted out last spring. *Thos. Taylor, Colchester Hospital, June* 4.

Amaryllis Acramanii.—This beautiful Amaryllis has a bulb very large and round, with rather a long neck. The leaves are pale green, revolute, and tapering to a point; scape two or more flowered, pale glaucous green; flowers very large and spreading; petals long, broad, acuminate, and slightly undulated; deep green at the base, becoming nearly white to about one-half their length, and from the middle to the point of each, of a very fine deep rich scarlet, beautifully lined and reticulated with deep crimson, extending over the whole except the central stripes, which are white and broad; the sides of the base of each petal are richly marked with deep brownish purple. The stamens are about one-third their length green, the remainder fine bright red; the pistil is similarly coloured. The anthers before bursting are of a rich purple; farina yellow. This magnificent hybrid was raised in 1835 between A. aulica platypetala, and A. psittacina, and flowered March 22d, 1839. The above is a copy of the original description of A. Acramanii, which I made at the time of its first flowering. It was named in honour of Mr. E. Acraman, a gentleman of this city. The origin of A. Acramanii pulcherrima, which was shown at the last Chiswick fête, differs from that of A. Acramanii in being a cross between A. aulica and A. Johnsoni, but we were induced to give it that name in consequence of its resemblance to the original A. Acramanii in the size and form of its flowers; but its colours are far more beautiful; indeed, amongst the number of varieties of this truly magnificent tribe which I have had the good fortune to raise, none have yet equalled the one in question in brilliancy of colour and general good qualities. *James Garaway and Co., Bristol.*

Flued Peach Walls (see p. 293).—Why are flued walls not more generally worked in spring, with a view to keep off frost? The wall formerly mentioned by me was built 28 years ago, and has been worked every year, the first fires being applied in autumn to ripen the wood. Fires are again lighted in spring as soon as the buds begin to expand, which is generally about the first week in March, and they are continued until about the middle of May. An Elruge Nectarine, 28 years old, and covering a space of 14 feet (the height of the wall) by 16 in breadth, has a beautiful crop of fruit on it, some of them, on the 20th of May, measuring 4 inches round. A Peach tree, 20 years of age, 14 feet by 20, had 230 fruit taken off it at the first thinning on the 20th of May. Some of the fruit left measured 4½ inches in circumference. The gardener states that he generally gathers ripe fruit from the lower part of the wall in the first week in August, and that he continues to have plenty through the greater part of September. If this can be done in the centre of Fifeshire, can it not be effected elsewhere? And if it can, is it necessary for gardeners to put their employers to the expense (where flued walls already exist) of erecting glass houses on the principle recommended by Mr. Fleming and others for growing Peaches out of doors? and if they were put up, would it be safe to trust Peach trees in full bloom to 10 or 12 degrees of frost? As to the protection recommended for the sides of such houses, no one can put much faith in it; if such protection was sufficient, "Pharo" would not have to state (see p. 325) "that whole walls of Peaches are already numbered with the things that were." I may mention that the situation of the garden to which I allude is low and naturally damp, and that it is seldom necessary to light fires in autumn to ripen the wood, as it is generally thoroughly ripened by solar heat. *A Peach Admirer.*

Hartley's Patent Rough Plate Glass.—I have for nearly two years been trying rather extensively Hartley's patent rolled glass, and have watched with considerable interest the various accounts of its successful application which have been noticed in the *Chronicle*. I am satisfied that it only requires to be generally known to be universally adopted in preference to any other kind of glass. I have used squares 48 inches long by 18 inches wide, and find that from the smaller quantity of wood required, the great diminution of labour in making, painting, and glazing, that there is an actual saving in price of nearly 25 per cent., as compared with a house covered with ordinary crown or sheet glass. Its practical advantages are, however, the most important. The plants being protected from the injurious evaporation of the direct rays of a scorching sun, require one-third less watering; their foliage is of a much deeper and healthier hue, and it has that peculiar crispness to the touch indicative of a most perfect state of health. I find that under it plants are scarcely drawn at all; in fact, not more than if planted in the open ground, and although their flowering is retarded seven or ten days, yet the bloom lasts so much longer in a better state of preservation as to more than counterbalance this little objection. For Camellias and other plants whose leaves are liable to burn it is invaluable. One strong objection used against it was that during the winter months it would lessen the light to a serious extent. I have paid particular attention to this, but do not find it exist; similar to ground glass the light is universally diffused all over the house; and although the southern side of a plant may not receive so strong a ray, yet the majority of the leaves receive a much larger portion of light. I have used about 2000 feet of it, chiefly in a span-roofed house 70 feet long; and I am so much satisfied with it that I contemplate fitting up a house 40 feet by 30 for specimen plants. In all my pits it is used only on the south side; the only objection I have to it is the appearance outside, which is certainly far from pleasing, but this is of very minor importance. *W. Wailes, Newcastle-upon-Tyne.*

Gravel Walks.—In a new gravel road which I have had constructed down a gentle declivity, with the surface below the adjacent turf, I have been annoyed by the gravel having been washed down along the depressions on the two sides. Taking your advice, I have had the turf taken up, a quantity of the under soil removed, and the turf relaid so as to leave the road higher than the turf. The cure is complete. The showers, instead of forming gutters in the road, pass off to the turf without causing the slightest injury to the gravel. *Sigma.*

Country Curate's Garden.—If I were to advise on this subject, I should say, "keep a cow" instead of bees, and plant the garden chiefly with Mangold Wurzel. There is often enough Grass by the road sides to keep a cow during the summer, if there is a place to turn in at night, and the Mangold Wurzel will provide for her in winter. I do not think anything else would be so profitable. *F. J. Graham, Cranford.*

Rose Stocks.—The cause of my failure with the crimson Boursault was not occasioned by "working on Boursault stocks raised from thick sappy, instead of small hard, cuttings." The cuttings were selected with extreme care from small, hard, well-ripened wood. Sappy cuttings on removal from the cutting bed will be found to be more or less decayed; indeed a large portion of them will not be fit to plant out. Few therefore would think of putting out such cuttings a second time. I alluded to its liability to decay (when grown from small hard cuttings), under favourable circumstances. To explain myself more fully: The crimson Boursault partakes more of the habit of a Raspberry stool than anything else to which I can compare it—in trying to renew itself annually by strong succulent shoots from the root. True, there is this difference, that the Raspberry canes die down annually, whilst old shoots of the Boursault will last for some years. When this Rose is cultivated for the beauty of its flowers, the old shoots should be annually well thinned out, laying in their places well-ripened young wood, which will bloom finely; if the old shoots are suffered to remain, small foliage and wretched flowers will be the result. Let us suppose a strong Bourbon to be worked upon this stock. For the first year or two it will grow and bloom finely. During this time Nature strives hard to regain her place; strong thick suckers will be sent up in abundance from the stock, below the point of union, and from the roots. These of course will be continually rubbed off, and on account of their succulent watery nature the stock will speedily commence decaying at the wounds made by their removal, and it will very soon perish. If this calamity is escaped, after a few years the plants become unhealthy, and eventually die; but had they been worked on stocks free from this stooling propensity—stocks that would send and continue to send a

more direct current of sap to the plant, a very different result would have been obtained. In order to explain the effects of this stock on small delicate Tea Roses, I shall take, for the purpose of illustration, the case of a Genista tinctoria flore-pleno worked upon a Laburnum. The Genista grows splendidly and flowers profusely the first season, forms most beautiful heads; but how long does this last? Alas! when the plants sink into repose in the autumn, many never awake again, and those that do linger on, die bit by bit and branch by branch, and ere a second autumn returns, they too are swept away. This is exactly the fate of delicate Teas worked upon such stocks. If I am asked the reason of all this, I reply that it is caused by the stock possessing an abundance of organisable matter which pushes the bud out vigorously the first season, but whilst this vigorous growth proceeds there is also a vigorous root action propelling into the small and delicate foliage abundance of crude matter, which it is impossible for such small and delicate organs to digest and assimilate—operations formerly performed by the large foliage of the stock; hence come sickness, decay, and death. "I happen," says "An Amateur," "to have living proofs in plants of these kinds (many of which trees are as many years old as the Manetti stock has been known in England)." Mr. Rivers states that he received the Manetti stock from Italy some 12 or 15 years ago. To what extent were Celine and crimson Boursault grown as stocks at that period? Many of the Roses named by "An Amateur" have been introduced since that time. "The finest Cloth of Gold and Devoniensis in the kingdom," says "An Amateur," "are on the Celine and crimson Boursault stocks." Why did he not say plainly that the Cloth of Gold to which he alludes, is worked upon Celine? which I have reason to know it is, and which is the stock I recommended for it on the authority of Mr. Rivers. When a cat shall be able to consume the same amount of food as a lion or a tiger; when a Shetland pony will be capable of eating and digesting the same amount as a dray-horse, and when a child will take the same quantity and quality of food as a man, then, and not till then, shall all the delicate Teas and Chinas have their nature changed by being worked upon Celine and crimson Boursault. *John Saul, Durdham Down Nursery, Bristol.*

——It is my conviction that the qualities of the Manetti stock are at present very much overrated. It has been grown here to some extent for many years; various experiments have been made with it, but it continues to sink in our estimation. I believe it is recommended chiefly on these grounds—1st, as a stock for the small and delicate growers on all soils; 2dly, as a stock for all kinds on light soils. To take the first point, my experience tells me that it is a bad stock for the delicate growers on good soils. It there forces an unnatural growth; the first growth from the bud is, I grant, of an astonishing vigour; but we should no more regard this as an index of health or longevity than the physician would the hectic glow on the cheek of a consumptive patient. The leaf falls; on the return of spring the growth is feeble, and the plant never recovers its pristine vigour. But the worst quality of this stock is its great excitability. The buds are developed so thickly and so rapidly that unless the plants are closely watched the stranger bud is soon starved; and hence it appears reasonable that Roses will prove shorter lived on this stock than on any other. It may be useful for the small and delicate growers on bad soils. It may also be useful for pot culture. In general it is a better stock for the free than the shy growers; but where do the former refuse to grow on the Dog-Rose or on their own roots? Then, as to soils; in light soils, as far as my observation serves, most kinds thrive better on their own roots than on any stock. The Manetti being comparatively new is but little known, and those who are fond of experimenting may do well to try it, but the present high estimation in which it is held will, I fear, cause no little disappointment. *William Paul, Nurseries, Cheshunt, Herts.*

Economical Application of Waste Steam.—I used it first to heat a tank, but I have lately put up a small Pine stove and a Melon pit, 18 feet each, upon Mr. Fleming's plan (who was kind enough to show me his), and I have introduced the steam into the boiler which heats the pipes, so that at nights, and other times when there is no steam, I have only to light a fire under the boiler and it works as a common hot-water apparatus, keeping the top heat at 75° and bottom heat at 85°, or more if required. When the steam is in action, the condensation not only keeps the apparatus quite full of water, but a large quantity runs to waste; and I shall be obliged by your informing me if this distilled water is suitable to water plants with; as if it is, I have a constant supply of warm water always at hand. *D. H., Bilston.* [Yes.]

Distribution of Sewage Water.—I should recommend your correspondent to try either ¾ or 1 inch gutta percha tubing, which is much cheaper than leather. I tried hemp hose, which would only last one season; and I have leather hose, but it requires a great deal of care and attention to keep it in order, and it has burst two or three times with the pressure from our water-works—about 200 feet—but the gutta percha which we tried last season requires no care or attention, for it is frequently left on the Grass or under the trees for a week or more at a time, when it is frequently used; and when it is put by, there is no occasion to do anything to it. The gutta percha tubing has never burst, and it appears quite as good as when it was first purchased. I should not recommend a larger sized tubing than 1 inch, and if ¾ would be of sufficient size it would be better for turning about. *B. M. Jalland, Holderness House, Hull.*

The Gardeners' Benevolent Institution.—Two highly respectable gardeners from Cheshire called upon me last week. They complained very much of the mode of electing pensioners for the above institution; they said there was no chance for a country gardener getting elected. I stated that that was not true. The majority of subscribers however being round London, no doubt most of the pensioners belong to its neighbourhood. I nevertheless altogether disapprove of the mode of electing the pensioners. My plan would simply be this—that no old gardener or widow be allowed their names on the books unless they are *eligible*, then the oldest on the list to be chosen at once. If this were the case, hundreds more would join the institution; I also object to clause 2, in rule 3, which says that "A market gardener cannot be eligible unless he has held 5 acres and been duly rated in the parish books for 20 years;" this no doubt excludes many persons. Again in clause 3 of the same rule, "All nurserymen and seedsmen must be rated in the parish books for 20 years;" this excludes myself and many others, and if the above objections are not immediately removed, I for one must withdraw my name. *The Originator of the Institution.*

Transmutation of Species.—To some of the readers of the *Gardeners' Chronicle*, who may feel interested in this marvellous doctrine, the following remarks will probably be acceptable. They are taken from a little work, by Professor Whewell, entitled "Indications of the Creator," and evidently designed as a reply to the startling views propounded some years ago in "Vestiges of the Natural History of Creation." To the questions, "In what manner do species which were not, begin to be?" and "How we are to recognise the species which were originally created distinct?" Dr. Whewell observes, "the most remarkable point in the attempts to answer these and the like is the controversy between the advocates and opponents of the doctrine of the transmutation of species. This question is, even from its physiological import, one of great interest; and the interest is much enhanced by our geological researches, which again bring the question before us in a startling form, and on a gigantic scale. We shall, therefore, briefly state the point at issue. We see that animals and plants may, by the influence of breeding, and of external agents operating upon their constitution, be greatly modified, so as to give rise to varieties and races different from what before existed. How different, for instance, is one kind and breed of dog from another! The question then is, whether organised beings can by the mere working of external causes, pass from one type of one species to that of another? Whether the ourang-outang may, by the power of external circumstances be brought within the circle of the human species? And the dilemma in which we are placed is this: that if species are not thus interchangeable, we must suppose the fluctuations of which each species is capable, and which are apparently indefinite, to be bounded by rigorous limits; whereas, if we allow such a transmutation of species, we abandon that belief in the adaptation of the structure of every creature to its destined mode of being, which not only most persons would give up with repugnance, but which has constantly and irresistibly impressed itself on the minds of the best naturalists as the true view of the order of the world. The question of the limited or unlimited extent of the modifications of animals and plants has received full and careful consideration from eminent physiologists; and in their opinions we find an indisputable preponderance to that decision which rejects the transmutation of species, and which accepts the former side of the dilemma; namely, that the changes of which each species is susceptible, though difficult to define in words, are limited in fact. It may be considered, then, as determined by the overbalance of physiological authority, that there is a capacity in all species to accommodate themselves, to a certain extent, to a change of external circumstances; this extent varying greatly according to the species. There may thus arise changes of appearance or structure, and some of these changes are transmissible to the offspring; but the mutations thus superinduced are governed by constant laws, and confined within certain limits. Indefinite divergence from the original type is not possible, and the extreme limit of possible variation may usually be reached in a short period of time; in short, species have a real existence in nature, and a transmutation from one to another does not exist." *W. B. B.*

After-treatment of Potatoes cut down by Frost.—My Potatoes were all cut down by frost on the 10th of May; and when the leading shoots are destroyed, it is well known that the whole of the buds or eyes below, which under other conditions would not have grown, start into growth. The large quantity of shoots thus produced weakens and very much diminishes the crop. With a view to induce the leading shoots to grow as strongly as before, pull off all the small shoots which will separate freely, and allow only the strongest to remain. Large fields of Potatoes might be thus operated on by women and children, and it would be found that the result would pay for the extra labour. I have left several alternate rows unpulled, and the difference between them and the pulled rows is very visible, although they have only been denuded of their branches about a week. The plan might be practised in regard to small whole tubers, which throw up many stems. The pulled up shoots have good roots, and might be used for filling vacancies. I have planted a row of them. *James Cuthill, Camberwell.*

The Brown Scum on Water is, I believe, the incipient state of a common Conferva. I cannot send you the name, as I have no work in which it is figured. It consists of numerous catenate threads, which in time become felted together, and may often be seen after floods in the form of whitish-brown paper, adhering to boughs by the sides of rivers and pools. I send you a sketch of a fresh filament and a portion of the dry substance. It might have suggested the manufacture of paper, and is a beautiful object for the microscope. *F. J. Graham, Cranford.*

Societies.

LINNEAN, *June* 4.—The President in the chair. The Chairman nominated Dr. Horsfield, Dr. Wallich, Sir W. J. Hooker, and W. Yarrell, Esq., Vice-Presidents of the Society. A paper was read by Dr. Lankester, entitled "Notice of some Peculiar Bodies found on the Epidermal Tissue of Callitriche verna." These bodies are of a stellate form, and thickly stud the surface of the stems and leaves of the common species of Callitriche. They are generally composed of eight cells, one in the centre and seven around it. These bodies have a spheroidal form, and are connected with the tissue of the plant by a short thick pedicel. They are more numerous on the upper than under surface of the leaf, and are irregularly distributed over the whole plant, with the exception of the ovary and stamens. Dr. Lankester regarded these bodies as analogous to the hairs and scales which occur in the epidermis of plants growing in the air. He also alluded to the probability of their resembling the stellate bodies found in Victoria regia. The President thought these bodies were not analogous to those found in Victoria and other Nymphæaceæ. He also referred to the structure of the scales in Tillandsia and some other plants. Mr. Ralfs stated that the bodies described by Dr. Lankester closely resembled some he had observed on the leaves of Dionæa muscipula, and which he believed were stomates. Part of a paper was read from W. Bollaert, Esq., on the "Botany of the Texas."

BOTANIC, OF EDINBURGH, *May* 16.—The President in the chair. A communication on the Roots of Umbelliferous Plants, was announced from Dr. Hoffman, of Giessen. The following papers were read: 1. On Colchicum autumnale, by J. Maclagan, Esq. 2. On Dickieia, by J. Ralfs, Esq. The author, after describing the characters of the genus, showed how it differed from Schizonema, and then gave the characters of D. ulvoides (Berk. and Ralfs), and D. pinnata (Ralfs). Specimens of Dickieia ulvoides were shown under the microscope, to illustrate the paper. 3. On Arum maculatum, by J. Kay, Esq. The author sent specimens of the plant in various stages of its development. The object of his paper was to show that, judging from the venation and development of the spathe, it is to be considered as a modification of the lamina of the leaf, and not of the petiole, as some have supposed. A specimen of starch from the corms of the Arum was exhibited. Mr. Stark showed a mode of making cells for the microscope by cutting off thin slices of gutta percha tubes and fastening them on glass by means of gentle heat. He exhibited under the microscope several preparations of sea weeds put up in this manner. A note was read from Mr. C. E. Parker, Torquay, containing some observations on Narcissus biflorus. He stated that the corona of Narcissus biflorus does not acquire a white edge until the blossom is fully expanded, and in its prime. In its young condition, it is of the same colour as the rest. He likewise mentioned that the plant frequently occurs with one flower in the spathe. Mrs. Robertson, Stirling, sent a notice (accompanied by fresh specimens) of the discovery of Buxbaumia aphylla in large quantity on Ben Ledi. Fresh specimens of the Buxbaumia were likewise exhibited from Mr. Oglivie, Dundee, having been gathered by him on the Sidlaw Hills, along with Bæomyces roseus from the same place. Various garden plants were also exhibited.

ENTOMOLOGICAL, *May* 6.—J. F. STEPHENS, Esq., F.L.S., V.P., in the Chair. Mr. Stainton exhibited various species of Micro-lepidoptera, including nine species belonging to the genus Ornix, six of which were British, and one new to science, taken in Devonshire at the end of April, also specimens of Bedellia somnulentella, and of various species of Micropteryx. Mr. Shepherd also exhibited specimens of Lobophora polycomata (fem.), and of different species of Micropteryx, taken at Darenth Wood, Kent, in the preceding month, one of which was a singular coloured variety. The chairman also exhibited three new British species of moths, namely Stigmonota dorsalis, Fab., from Scotland, Depressaria capreolella, Zeller, from Darenth, and Tinea caprimulgella, Heyd., from the neighbourhood of London. Mr. S. S. Saunders exhibited a specimen of Andrena Trimmerana, in spirits, parasitically infested with a female Stylops, and read a supplemental paper on the latter insect. Mr. A. White exhibited and read the description of a remarkable Indian beetle, which he proposed to name generically, in honour of the late Mr. E. Doubleday, Doubledaya viator, allied to the g. Languria. Mr. Newman read the description of a new species of Panorpa, from Australia, being the first species of that genus hitherto described from that quarter of the globe; but Mr. Fortnum stated that he had captured several species of Panorpidæ, in South Australia, and that among them were at least two species of Panorpa, now in Mr. Hope's collection, presented to the University of Oxford. Mr.

Fortnum also exhibited a parasitic Gordius, which he had taken from a German specimen of Locusta biguttula, and also a parasitic dipterous larva from another locust. Mr. Douglas completed the reading of his memoir on Gelechia, enumerating 20 additional species. The President stated that the report of the committee appointed at the last meeting, to consider the prize Essays, sent in upon a genus of Tortricidæ, would be announced at the next meeting of the Society.

June 3. — G. R. Waterhouse, Esq., President, in the chair. The President announced that the Curatorship of the Society had become vacant, by the resignation of Mr. F. Smith (to whom a vote of thanks had been passed by the Council), and that the situation would be filled up at the next meeting. Mr. J. F. Stephens exhibited specimens of the true Chrysomela sanguinolenta of Linnæus, from the north of Scotland, the species known under that name in the English cabinets being distinct. Also specimens of the linear scale insect (Coccus linearis), which had destroyed several trees of Ribes sanguineum in his garden, and had now attacked the Apples and Almonds. Mr. Shepherd exhibited the rare Xylina conspicillaris from Darenth, and Mr. Bedell various micro-lepidoptera, including Depressaria assimilella reared from the tips of Broom shoots, and Tortrix strobilella, from Spruce Fir cones. Mr. Westwood exhibited specimens of both sexes of the very rare Lyda fasciata, reared from the larvæ, which feed in society on espalier Pear trees in his garden at Hammersmith. Also the curious cased larvæ of a species of moth of the genus Astyages, which are at the present time doing much injury to the foliage of Pear trees in the Horticultural Society's Garden at Chiswick. Mr. S. Saunders read the descriptions of several remarkable species of hymenoptera from Albania, and exhibited specimens illustrating the natural history of the little Crabronideous Rhopalum rufiventre, which burrows on Raspberry stems. Mr. Stainton exhibited the rare Lithocolletes tenella taken in plenty on the Hornbeam in Epping and Hainault forests, and Mr. S. Stevens specimens of Dryophilus anobioides and Hylurgus rhododactylus, which burrow in old Broom stumps. Also Fumea retiella, and a new British species of Dorytomus from Wimbledon Common. Mr. W. W. Saunders exhibited leaves of Rhododendron ponticum, gnawed in a remarkable manner by Otiorhynchus sulcatus; also some extremely interesting nests and cocoons from the banks of the river Amazon. Mr. F. Smith made some observations on the Pediculus melittæ of Kirby, and on the young larvæ of Meloe proscarabæus and violaceus and also exhibited three new British species of Nomada, Chrysis and Crabro, from the collection of Mr. Hewitson. Mr. Yarrell read a note on the entomological peculiarities of the island of Guernsey, and also stated the remarkable circumstance that he had lately noticed that the temperature of the canal near Stockbridge, in Hampshire, was at least one degree colder than that of the adjacent river, but that notwithstanding, the May flies are always developed in the canal several days earlier than in the river.

Worton Cottage, *May* 29. — Pansies. — "T T." several blooms of each, and well packed; 38, style of optimus, and a considerable improvement upon it, having more ground colour; 2, yellow ground, bronzy purple top petals, lower ones margined with same colour, bold eye, showing to great advantage: a fine flower for exhibition. Nos. 63, 43, 51, and 16, are no improvement on varieties already out. Cinerarias.—"D. J." 10 flowers. Striking, circular, and with broad obtuse petals, white ground, deep blue tip and moderate-sized disk; a useful flower. E. G. Henderson exhibited named varieties, Mrs. Sidney Herbert, Lady Hume Campbell, and Madame Sontag, which were handed to Mr. Andrews to figure. Seven seedlings of 1850 accompanied them, some of a very promising character; 20, too small at present, but fine in form, white ground tipped with rosy lilac; 10, has also a similar ground colour, with heavy edge of deep rosy lilac, good size and shape; 195, very bright blue, but not so good in form as is desirable; 12, reddish purple of some promise. Of 192 and 199, both rosy lilac flowers, the former has the most good points. The deep bright blue is too small, and too starry. Pelargoniums.—A selection of single flowers was exhibited by Mr. Hoyle, of Reading, several of them possessing very great merit in form and colour; these were arranged in a Pansy stand of 24, and a similar stand was filled from the Worton Cottage collection. Upon the merits and faults of both a very interesting conversation took place, evidencing the utility of these meetings. Mr. Stedman produced a two-year-old seedling of good habit, and a free bloomer, in colour reminding us of Foster's Sylph. Phloxes were received from Messrs. Garraway and Co., of Bristol. They consisted of four distinct varieties, in present, but not general cultivation; Oculata, white with purple eye; Jarrattii, lilac with white eye; Atropurpurea, crimson purple and dark eye; and Leopoldiana, now common. All are well worthy of cultivation. Cactus.—Mr. Hoyle presented a flower of a seedling Epyphyllum, form of speciosissimum, large and handsome. Mr. Beck's collection is now in full bloom, and makes a very fine display.

June 5. — Tulip: A bloom of Haward's Magnificent, figured in a "Florist" for 1848, was sent, in order to prove the fidelity of the drawing, which it did most satisfactorily. Calceolarias.—"C. J." sent a considerable number of single flowers, but they were all defective in form, too flat and too much indented. In colours, No. 12 is the most novel. "G. S:" the flowers forwarded under this signature were all go backs. "M. W.'s," on the contrary, were of an excellent class, one was selected for Mr. Andrews to take a coloured memorandum of. "W. W's." seedling, though pleasing, has no novelty in it. Fuchsias came from "E. B., Deal;" they were sadly bruised, but there appeared nothing novel, although possessing many points of excellence. Cinerarias.—"W. W." All these flowers were perfectly dry and withered; the one from "G. S." is a very pretty variety, clear white ground, with purple top and neat small disk, flower rather too small. Pelargoniums.—"H., Cornwall," three seedlings, too much bruised to speak of correctly, but evidencing much refinement and quality. "M. W.'s" is a bright flower, but it had fallen to pieces, as had all the fancy varieties from "W. H. S.;" the hot weather had occasioned this no doubt, for they were capitally packed. Primula sinensis.—Two plants from "M." were very good in colour for the time of year. No note accompanied them. — N.B. Two boxes from Deal cost 6*d*. "W. W.'s" Cinerarias 6*d*. The Censors protest against these charges.

Review.

Six Lectures on Astronomy. By George Biddell Airy, Astronomer Royal. 8vo, pp. 247. Simpkin and Marshall.

The subject of astronomy not falling within the legitimate scope of a journal devoted to horticulture, we should not perhaps have brought the present volume before our readers, had it not been for the peculiar circumstances under which Mr. Airy's lectures were delivered.

Our readers may remember that between two and three years ago, there was established at Ipswich a museum for the express object of giving facilities for the study of natural history by the lower classes. (See the *Gardeners' Chronicle* for 1848, p. 35.) It was not intended, however, that a knowledge of natural history alone should be brought within the reach of the uneducated and the poor; lectures on other scientific subjects were promised, and in pursuance of that promise the Astronomer Royal, in the month of March 1848, delivered a course of six lectures on astronomy. Those six lectures were taken down by short-hand writers at the time of their delivery, were afterwards revised by the lecturer, and have since been published by the directors of the Ipswich Museum, in the volume which is now before us.

Of the lectures themselves we need say nothing; the great reputation and well-known learning and ability of the lecturer were such as to ensure to his hearers an accurate and clear outline of the subject, with which he is so familiar. By the publication of these lectures, the directors of the museum have placed within the reach of those who had not the opportunity and advantage of being orally instructed, the best exposition that we have ever seen in any language of the great principles of the science of astronomy, and of the reasons on which our belief in them is founded. It is by such means as these that solid valuable information is best conveyed to the public; it is only by the publication of good elementary works, of works cheap enough to enable an industrious poor man to purchase them, and simple enough to enable a person of ordinary intelligence, but without any previous knowledge of the subjects of which they treat, thoroughly to understand them, that knowledge can be effectually diffused amongst the mass of English workmen. Had we more of such books as these we should no longer have people taking for granted everything a village schoolmaster may choose to say is true, we should no longer have men like the Astronomer Royal complaining of the first task imposed upon them of unteaching what has been taught; at present, however, it is necessary so to do, as the following extract from Mr. Airy's very first lecture shows.

"I dare say everybody here, like myself, has in his time studied books containing measures—so many Barleycorns make an inch, so many inches make a foot, so many feet make a yard, &c., as well as so many yards make a mile, and so many miles make a degree. But the publication in a book of measures of such an expression as '69 miles make a degree' is in the highest degree reprehensible, as giving false ideas on one of the most important expressions in science. No schoolmaster ought to introduce books into his school, teaching that 69 miles make a degree. What do we mean by a degree? The use of the word degree is to define inclination, and it ought to be looked upon as defining a measure of inclination only, and not a measure of length. If I had to describe the position of two arms of a pair of compasses, I should say they were inclined; but the notion of their inclination is entirely different from the notion of a measure of length. But we want some means for describing how much these two arms are inclined. Now the method of describing how much these two arms are inclined is got at in this way: we use the word *degree* for a certain small inclination, such that if we first give one arm an inclination of one degree to the other, then incline it one degree further, then one degree in addition, and so on to 360 degrees, the arm will have gone through a whole circle of inclination, and will have returned back again to its first position. But these degrees, you will perceive, have nothing to do with lineal measures; they are inclinations and nothing else; they have nothing more to do with lineal measures than they have to do with pounds weight or pounds sterling."

After the above clear definition of what a degree really means, we wonder how long the poor and uneducated, and the well educated too, will be told that 69 miles make a degree, that 90 degrees make a right angle, and be left to infer that a right angle consists of 6210 miles!

The present lectures, with others of the same class, should be placed in all the reading rooms, which are gradually being formed throughout the country, and let not gardeners and other students of natural history despise them as not bearing on their more immediate pursuits, for they will find, in Professor Airy's words, "that their subjects are so closely connected, the habits of thought which they induce and the mode of treating them are so similar in many respects, that what applies to the one will in a great degree apply to the other."

Miscellaneous.

Some Account of the Victoria Regia in its Native Waters.—"We at length reached the igarape, and were at once gratified by seeing the Victoria growing by the opposite shore of the igarape itself. We were warned by the people not to go amongst the plants, as their prickles were venomous; but I got both hands and feet considerably pricked without experiencing any ill effects. We were fortunate in finding the plant in good flower, but, according to the testimony of all at Santarem who have seen it, the leaves attain their greatest dimensions in the winter. Captain Hislop assures me he has seen many leaves 12 feet in diameter, whereas the largest we saw measured a very little above 4 feet across, and they were packed as close as they could lie. But I can easily conceive how, in the wet season, their dimensions should be considerably augmented, for whereas at present the plant is growing in less than 2 feet of water, in winter the igarape will be filled to its topmost banks, or at least 15 feet deeper than at present, while its breadth will also be greatly increased; so that the petioles of the Victoria, lengthening doubtless with the rise of the waters, will bring the leaves to a much greater surface, on which they will have room to dilate to about twice their present size. The aspect of the Victoria in its native waters is so new and extraordinary, that I am at a loss to what to compare it. The image is not a very poetical one, but assuredly the impression the plant gave me, when viewed from the bank above, was that of a number of tea-trays floating, with here and there a bouquet protruding between them; but when more closely viewed, the leaves excited the greatest admiration, from their immensity and perfect symmetry. A leaf turned up suggests some strange fabric of cast-iron, just taken out of the furnace; its colour, and the enormous ribs with which it is strengthened, increasing the similarity. I could find no prostrate trunk, as in the other Nymphæaceæ. The root is central, the thickness of a man's leg, penetrating deep into the mud (we could not dig to the bottom of it with our trésados), and sending out fascicles of whitish radicles, about 25, from below the base of each petiole, the thickness of a finger and 2 feet or more in length. The radicles are imperforate, and give out here and there a very few slender fibres. From the same root I have seen flowers uniting the characters of Victoria regia and cruziana (of the latter I have only the brief description in Walpers), so that I can hardly doubt their being the same species, as had been already more than suspected. The igarape, where we gathered the Victoria, is called Tapiruari. I had two flowers brought to me a few days afterwards from the adjacent lake, which seems to have no name but that of the sitios on its banks; Mr. Jeffreys has also brought me flowers from the Rio Arrapixuna, which runs into the Tabajoz above Santarem, and in the wet season unites the Tabajoz and Amazon. I have further information of its growing abundantly in a lake beyond the Rio Mayaca, which flows into the Amazon some miles below Santarem. Mr. Wallace, who recently visited Monte Alegre, had a leaf and flower brought to him there; I have seen a portion of the leaf, which he dried. Lastly, I have correct intelligence of its occurring in the Rio Trombetas near Obidos, and in lakes between the rivers Tabajoz and Madeira, so that there can be no doubt of its being plentifully distributed throughout the whole of this region, both north and south of the Amazon." *Mr. Spruce's Voyage up the Amazon, in Hooker's Journal of Botany.*

Damaging Ornamental Trees.—At *nisi prius* the proprietor of a villa at St. John's-wood lately brought an action of damages against a tenant who had lopped five trees of the Weeping Willow, Birch, Laburnum, and Acacia tribes, which stood between the villa and the high road, concealing the view between the two. The plaintiff estimated the deterioration of his property at 15*s*. a week on 3*l*., the whole amount of the rent, as the trees were of 20 years' growth, and so much injured that 12 or 14 years would scarcely restore them. On the other hand evidence was led to show that 3*l*. a week were still asked for the villa, and that the pruning had not deteriorated the value of the property,—a nurseryman declaring that in two or three years the trees will be handsomer than ever they had been. The jury awarded 30*l*. damages. *The Builder.*

Calendar of Operations.

(For the ensuing week.)

PLANT DEPARTMENT.

In addition to the ordinary routine of watering, syringing, and giving air, make it a point to enforce thorough cleanliness in the houses, and amongst the

plants. Nothing conduces more to a disarrangement of the machinery than neglect on this point. The principal operations will be tying and cleaning. In tying or training plants, avoid formality; study in your "mind's eye" the form or habit which the plants would assume in their wild state, and let your training be directed to assist Nature, by giving support and symmetry of shape; for instance, the Passionflower never displays itself to such advantage as when allowed to festoon itself gracefully from the roof of a lofty conservatory: and why? Because this is in accordance with the natural habit of the plant. If this principle be judiciously carried out, the plants will be always interesting, whether in or out of flower. Every individual will still be a perfect specimen of art, in the truest and most enlightened sense of the word; as art will in this case have confined itself to that province in which it never offends, namely, that of aiding Nature in the perfect development of that infinite variety which is her universal characteristic. It is too much the prevailing taste to train all kinds of plants after two or three distinct models; such as the conical, the hemispherical, the peltate, and the cylindrical; and the nearer they are made to approach these set forms, the more perfect they are accounted. The two first of these are the shapes in which shrubby and sub-shrubby plants are generally trained. An immense number of species has a natural tendency to assume one or other of these forms, and, in such cases, it is of course deserving of approbation to assist them in attaining it; but at the same time, we object to their specific peculiarities of habit being too much smothered by artistical clipping and tying. If we could understand the works of Nature thoroughly, we should see that the form, colour, size, texture, and habit of the flowers, leaves, and stems of every distinct species are admirably arranged in accordance with each other, so as to form one perfect whole; and that if these relationships be altered or mutilated, the original design is lost, and the harmonious combination in a great measure destroyed.

FORCING DEPARTMENT.

Grapes just colouring should be assisted by a high temperature in fine weather, accompanied, however, with abundance of air, and with a moderate fire heat in dull or cold weather. The greater part of the litter should now be removed from the front borders, leaving a little of the most decayed, to prevent too sudden a check, and to be forked into the soil a week or two hence; or if, as is commonly the case, the roots have entered it, it may be allowed to remain on the surface, instead of being forked in. In the late houses, where the fruit is just set, let it be the aim to preserve the health of the foliage, to which end, the atmosphere, which was kept dry during the setting of the flowers, should now be supplied abundantly with moisture by means of the syringe. Care should be taken to prevent, by the frequent use of sulphur, the establishment of red spider or other insects. When no plants are grown beneath the Vines, the laterals may be allowed to extend themselves, so long as they do not by their shade interfere with the action of the sun on the principal leaves. Pay particular attention to the tying of the shoots in the direction which will afford them the best opportunity of a healthy development. PEACH-HOUSES.—In the earliest house, as soon as the crop is gathered, the trees should be well washed with the engine, and syringed daily; the hot-water pipes, and any part of the house which is exposed to the action of the sun, should be washed over with lime and sulphur, to keep down red spider; and if the soil is dry it should be well watered. These directions are given with a view to preserve the leaves, and to keep the plants in a healthy steady growing state as long as possible. By this means the plants accumulate an extra quantity of elaborated sap, and avoid the injury arising from the alternate checks and excitements which are generally experienced during autumn in our variable climate by plants which are allowed to go early to rest.

FLOWER GARDEN AND SHRUBBERIES.

Active measures should be taken to prevent the ravages of caterpillars, aphides, and other insects, which, if allowed to establish themselves unchecked, will soon do considerable damage. The best means of getting rid of caterpillars is by hand picking, and of other insects by means of the garden engine. Caterpillars, however, are very numerous, and, unless active measures are taken to destroy them, they will soon do material injury to the flower-buds. Pinks should be propagated immediately; it should not on any account be put off after the expanding of the first flower in each plant, and the only good reasons for waiting so long are to secure the correct labelling of the young plants and the selection of cuttings from the best varieties. If slippings are taken from the plants now they will strike with much greater facility than either slippings or cuttings taken a month hence, besides having the advantage of a longer season to establish themselves in before winter. Particular attention should be paid to the plants which were plunged in the reserve garden, to fill up any gaps which may occur during the early part of summer; and if any more can be selected from the late spring stock, it should be done; as it is worth while to be at a little pains in keeping up a creditable display as late in the season as can be managed. As many of the fancy Pelargoniums are admirably adapted for planting in masses, attention should be paid thus early to their propagation, by those who possess only a few plants, that they may be able to make a creditable display next season. Amongst the most suitable varieties are Nosegay, Anais, Jehu Superb, Hero of Surrey, Bouquet de Flore, &c. Shepherd's Victoria is too delicate for out of doors, except in very favourable situations. Dashing rains quite disfigure the flowers of it and some few others, which are very beautiful in the greenhouse, but whose flowers are wanting in texture to stand the storms.

HARDY FRUIT GARDEN.

If it is the desire of the cultivator to carry out the principle of pruning with the finger and thumb, instead of with the knife, he must now be very active. To allow wood to be produced, which must not only be cut away again, but which, during its growth, is materially damaging the portion which is to remain, carries with it the appearance of very bad management to every reflecting mind. Thin the young shoots which have been thrown up by the Raspberry stools, leaving from three to six of the best, according to their strength; these will form fine strong canes to form arches with, or to tie to rails, at the next winter pruning. Any young shoots coming up at a distance from the old stools may be left to form plants, which may be taken up in winter to furnish new plantations, if such are likely to be required. Caterpillars on Gooseberry or Currant trees should be destroyed by hand picking, or by dusting the trees with a little quick-lime. The cleanest way of proceeding is to dissolve some lime in water, and after allowing it to subside, to syringe the trees with the clear liquid.

FLORISTS' FLOWERS.

The beauty of the Tulip is now fast passing away, and, as soon as the petals drop, we would advise the capsule (or seed vessel) to be broken off, unless seed is required. When this is removed, the foliage sooner becomes yellow, and their taking up is expedited. We do not like bulbs as they are ripening to be exposed to soaking, heavy rains; for our experience tells us that it is detrimental rather than otherwise. Where the amateur has an awning over his bed, it will be better to remain on until the roots are taken up. CARNATIONS AND PICOTEES.—Examine the points of the shoots which are spindling for bloom. They are often attacked with aphis or green-fly; a camel-hair brush is perhaps the best thing to remove them with; a man will look over a large stock in a few hours. Water well; when applied, let the mass of soil in each pot be thoroughly soaked. Great care also must be taken in tying up the spindles; they must not be drawn too close, but room allowed for them to elongate. Weak liquid manure in damp weather will be highly beneficial. POLYANTHUSES are apt to suffer at this time of the year from the action of the sun; calico, tacked on light deal frames, makes an efficient shelter; when this is not attended to, the red spider will make great havoc with them. PINKS.—Give liquid manure, remove superfluous pods, and, when forward enough, secure the pods retained with a small ligature. DAHLIAS will be all the better for copious waterings; place the sticks to which they are to be attached immediately.

KITCHEN GARDEN.

All crops, which it is an object to bring to a high state of perfection in a short space of time, as early Peas, Cauliflowers, &c., will be considerably benefited by being watered with liquid manure; first loosening the surface of the soil with a fork, to allow the liquid to permeate the mass more thoroughly, and at the same time to produce a surface less favourable to evaporation. Another advantage arising from frequently stirring the soil, is in its allowing a freer action of sun and air, and at the same time the growth and increase of worms will be prevented. Advantage should be taken of all dull and showery weather to prick out young seedlings of Celery, Cabbages, &c., into nursery beds, and to transplant the strongest plants of earlier sowings into their proper places. Basil, Savory, Tomatoes, and other things raised in hotbeds, should now be transplanted. Continue to sow Peas, Broad and Kidney Beans, in succession, as soon as those of the last previous sowing appear above ground. Peas of former sowings must be furnished with stakes as soon as they appear above ground, taking care that stakes of the requisite height are used in all cases. As soon as they have grown within a few inches of the tops of the stakes, the tops of the plants should be pinched off. Do not allow any crops which are cultivated for the sake of their roots or leaves to run into flower or seed, as Onions, Spinach, Parsley, Rhubarb, Lettuce, &c. Let the whole energy of every plant be directed, if possible, to the perfect development of that part for which it is cultivated, whether it be leaf or fruit; and any plants which have passed the stage in which they are useful should be immediately removed. The early grown crops of Parsley now require thinning; for the present it will be sufficient to leave them about 4 inches asunder, retaining the finest curled ones; as the plants increase in size, the intermediate ones may be cut away as they are required for use. Radishes and Lettuces should now be sown on very rich moist ground; but, if the soil is of a hot and sandy nature, it will be better to cultivate these salads under the shade of a north wall during the summer.

State of the Weather near London, for the week ending June 6, 1850, as observed at the Horticultural Garden, Chiswick.

May and June.	Month's Age.	Barometer. Max.	Barometer. Min.	Temperature. Of the Air. Max.	Of the Air. Min.	Of the Air. Mean	Of the Earth. 1 foot deep.	Of the Earth. 2 feet deep.	Wind.	Rain.
Friday.. 31	19	30.201	30.090	76	41	58.5	57	55	E.	.00
Satur... 1	20	30.323	30.274	74	38	56.0	57	56	E.	.00
Sunday . 2	21	30.366	30.355	76	40	58.0	57½	56	E.	.00
Monday 3	d	30.417	30.272	75	37	56.0	58	56½	E.	.00
Tues. .. 4	23	30.214	30.078	78	44	61 0	58	57	E.	.00
Wed. .. 5	24	30.005	29.814	78	55	66.5	59	57	S.	.00
Thurs.... 6	25	29.699	29.539	62	49	55.5	60	57½	S.W.	.03
Average....		30.175	30.060	74.1	43.4	58.7	58.1	56.4		.03

May 31—Fine; slightly clouded at night.
June 1—Very fine; clear.
— 2—Clear; slightly clouded; very fine; clear and cold at night.
— 3—Slight dry haze; fine; air excessively dry; clear and cold.
— 4—Fine; very fine; air still excessively dry; slightly clouded.
— 5—Fine, with dry slight haze; sultry; cloudy.
— 6—Overcast; rain commenced at 1 P.M.; showery.
Mean temperature of the week, equal to the average.

State of the Weather at Chiswick during the last 24 years, for the ensuing week, ending June 15, 1850.

June.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds: N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 9	71.3	48.5	59.9	10	0.50 in.	2	4	1	1	3	8	3	2
Mon. 10	71.5	48.9	60.2	10	0.95	1	5	1	1	2	7	4	3
Tues 11	72.3	49.6	60 9	7	0.47	—	7	1	1	3	5	7	—
Wed. 12	72.8	49.4	61.1	9	0.78	—	5	3	1	5	6	2	2
Thurs. 13	73.7	49.8	61.7	9	0.56	1	5	3	1	2	6	4	2
Friday 14	74.7	50.4	62.5	8	0.24	1	2	4	1	4	6	5	1
Satur. 15	74.5	50.6	62.5	9	0.30	1	3	4	2	4	4	2	4

The highest temperature during the above period occurred on the 12th and 13th, 1842—therm. 90 deg.; and the lowest on 15th, 1841—therm. 36 deg.

Notices to Correspondents.

TO OUR CORRESPONDENTS.—May we beg it to be understood that *we cannot answer inquiries privately through the post.* We are ready to give reasonable information through our columns, but we cannot consent to the labour of writing letters.

BACK NUMBERS: Full price will be given for Numbers 29, 46, and 47, for 1848.

CHISWICK FETES: *A Country Reader.* May we beg of you to consult the *weekly* advertisements. The next is July 13—and then they end.

GLASS: *Wisehead.* There is no room to doubt the excellence of Hartley's patent rough plate. See some correspondence about it in another column.

GRAPES: *A B.* Your Grapes split because they receive more sap than they can hold; so of the Melons. The cause may be either that the skin does not grow fast enough, owing to injury inflicted upon it, or that sap is poured into the fruit in undue quantity.

GUANO WATER: *Norwood.* Half-a-pint of guano dissolved in 6 or 8 gallons of water, and applied as circumstances required, has been found of service to many kinds of flowers; but, as we stated last week, no fixed rule of application can be given; for what suits one kind of plant might kill another. As to vegetables which are wanted to grow quickly, you can hardly go wrong with them. Of course they will take stronger doses than flowers.‡

INSECTS: *S R F.* The Julus sent is one of the larger and rarer of the British species, but it came crushed to pieces. The volumes of British insects in Jardine's "Naturalist's Library," with Westwood's "Entomologist's Text-book," will most probably answer your wants. *W.—Mediensis.* The insects sent are the common cockroach. Place basins on the floors at night, with a bit of bread in each, and some rags round it, to enable them to creep up. The smooth surface of the basins will prevent them crawling out again, and they must be scalded to death in the morning. Poisoned wafers, and such like nostrums, are useless. *W.—A R T.* Thanks for your notes on the Gordii, they shall be borne in mind. *W.—H R B.* The insects which have done so much injury to the buds of your (and most other persons') Roses this year, are a species of Weevil, Otiorbynchus tenebricosus. The best plan for their destruction is to spread a cloth under the trees at midnight, when they are feeding, and then shake the trees, when the beetles will fall to the ground, and must be destroyed. *W.*

NAMES OF PLANTS: *Diss.* A white variety of Orchis Morio.—*T D.* Wretched fragments of some Hyoscyamus, perhaps H. aureus.—*W M.* Silver weed, Potentilla anserina. It may be killed if continually pulled up as it reappears.—*W D.* Hibbertia volubilis.—*L N R.* Geranium pyrenaicum.—*Anon.* Epidendrum alatum.—*J W.* Your letter contained nothing more than a morsel of a leaf secured by a piece of stiff paper. Whatever you may have intended to send must have escaped.

PARROT: *Clergyman.* Feed it on soaked bread and Hemp-seed; but Hemp-seed of itself will do.‡

PAXTON'S COTTAGERS' CALENDAR may be had at the Office of this Paper, or of any bookseller, price 3*d.*, or 5*s.* for 25 copies for distribution amongst cottage tenantry.

PEACH TREES: *A Young Sub.* Curl is caused by cold and damp. Yours is caused by cold, damp, and mildew. Sulphur will kill the last, shelter in time will prevent the first.

POTATOES: *A Country Curate.* Your Potatoes are suffering from a well known disease called in Cornwall "Bobbin Joan." The cause is unknown; but is supposed to be parental debility.

RURAL CHEMISTRY, by E. Solly, price 4*s.* 6*d.*, second edition, revised and enlarged, may be had of all booksellers, and at the Office of this Paper.

THE TREE ROSE: *W D.* At the request of numerous subscribers the price of this work is now reduced from 4*s.* 6*d.* to 3*s.* 6*d.*, post free; it can be forwarded to any address by a Post-office order being sent to James Matthews, at the Office of this Paper.

WALL PLANTS: *Citizen.* All Sedums and all Alpine Saxifrages will do equally well for your dwarf stone wall which is built without mortar; but they ought to be planted in a mixture of clay and cowdung, or they will never make a start. Take *all* the sorts you can procure.

MISC: *J S.* Apply to Dr. Newington. See advertisement in another column.—*G F P.* If Seakale be not cut before it is too far advanced for use, the plants should not be cut down, for they will be stronger for the next season by allowing them to remain uncut.

SEEDLING FLOWERS.

BEGONIA: *Anon.* A good addition to this useful tribe of plants.*

CALCEOLARIAS: *Salopian.* All prettily spotted varieties; but none of them equal to kinds already in cultivation.*—*M B.* The above remark also applies to your seedlings. We must have something more distinct and better formed.*—*A S.* Shrivelled up when received, but apparently worthless.*

CINERARIAS: *S W.* No improvement on kinds already in cultivation.*—*T M. a* and *e* are the best, and the white may be worth growing, for pure whites are scarce; but they are all short-coming in the properties essential to a good florist flower.*

MIMULUSES: *A C.* The orange seedling in the way of formosa elegans is well worth growing. The others are inferior to your seedling raised some time ago, called ruberrimus, which is one of the best Mimuluses in cultivation.*

PANSIES: *J N, Boston.* The sulphur-coloured flower has yellow under the eye, and the eye of the white ground flower joins the margin; therefore both are useless as show flowers. The dark seedling is much the best; but it has some defects, as serrated edges and long, &c.*

PHLOXES: *A C.* "Splendens" is uncommonly like "Madame Celeste," a variety "sent out" by Messrs. Henderson last year.*

WALLFLOWER: *J C.* Your double, dark (nearly black) Wallflower is handsome, and well worth cultivating.*

*** As usual, many communications have been received too late, and others are unavoidably detained till the necessary inquiries can be made. We must also beg for the indulgence of those numerous correspondents, the insertion of whose interesting contributions is still delayed.

CORN MANURE FOR WHEAT, BARLEY, OATS, BEANS, &c., &c.

THE LONDON MANURE COMPANY most confidently recommend the above, as they are daily receiving very satisfactory accounts from parties who used it with great success last season. It will be found fully equal to and much cheaper than Peruvian Guano, and is not so liable to produce so large a growth of straw. Price Seven Guineas per ton, 3 cwt. per acre. They also beg to offer their Concentrated Urate, Superphosphate Lime, Nitrate of Soda, Sulphate and Phosphate of Ammonia, Fishery and other Salt, Gypsum, Sulphuric Acid, and genuine Peruvian Guano. To insure this free from adulteration, all purchasers can receive it direct from the Warehouses of the Importer.

Bridge-street, Blackfriars. EDWARD PURSER, Secretary.
Country Dealers and Agents supplied.

MANURES.—The following Manures are manufactured at Mr. LAWES's Factory, Deptford Creek:

Corn and Grass Manure, per ton	£10	0	0
Clover Manure, do.	11	0	0
Turnip Manure, do.	7	0	0
Superphosphate of Lime	7	0	0
Sulphuric Acid and Coprolites	5	0	0

Office, 69, King William-street, City, London.

N.B. Peruvian Guano, guaranteed to contain 16 per cent. of Ammonia, 9*l.* 15*s.* per ton; and for 5 tons or more, 9*l.* 10*s.* per ton, in dock. Sulphate of Ammonia, &c.

LAWES'S PATENT MANURE.

WILLIAM E. RENDLE AND CO., Plymouth, are Mr. Lawes's Wholesale Agents for the Sale of his MANURES, and can supply them at Mr. Lawes's prices, delivered at his Factory, Deptford Creek.—Apply to WILLIAM E. RENDLE and Co., Union-road, Plymouth.

GUANO AND OTHER MANURES.—Superphosphate of Lime (See reports of experiments in Royal Agricultural Society's Journal, Vol. 6, Part 2), Guano, Peruvian and Patagonian, Gypsum, Salt, Nitrate of Soda, and all other Manures of known value on sale. A Pamphlet on the above forwarded on receipt of four postage stamps.—Apply to MARK FOTHERGILL, 201A, Upper Thames-street, London.

PERUVIAN GUANO.—As Agents of the Peruvian Government for the importation and sale of this valuable MANURE, we think it right, for the protection of consumers and respectable dealers, to apprise them that the adulteration of the article is still extensively practised, and to recommend them to apply either to ourselves, to our agents, Messrs. GIBBS, BRIGHT, and Co., of Liverpool and Bristol, or to dealers of established character, in whose honesty and fair dealing they can place implicit confidence. ANTONY GIBBS and SONS.

CORN MANURE.

BLASHFIELD'S PATENT COPROS.—A new Manure for Corn and other Crops, containing Ammonia, Phosphate of Lime, Potash, Soda, Magnesia, Silicate of Potash, &c. Price, delivered alongside a vessel, or any Wharf in London, 8*l.* per ton. It is sold in a finely-ground dried powder, by the Patentee, at No. 3, New London-street, Mark-lane, London.

Superphosphate of Lime, Gypsum, Sulphate of Ammonia, Sulphate, and Nitrate of Soda.

ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

THE ROYAL AGRICULTURAL SOCIETY OF ENGLAND is desirous of receiving TENDERS from Innkeepers or others, to supply a COLD DINNER for 900 Persons, in the Society's Pavilion at Exeter, on THURSDAY, the 18th of July, 1850.

Printed Forms of Tender will be delivered or forwarded on application to the Secretary; and they must be filled up and returned to him, at the House of the Society (No. 12, Hanover-square, London), on or before Tuesday, the 18th of June; the Society not binding itself to take the lowest Tender.

By Order of the Council,
London, June 5, 1850. JAMES HUDSON, Secretary.

The Agricultural Gazette.

SATURDAY, JUNE 8, 1850.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

WEDNESDAY, June	12—	Agricultural Society of England.
THURSDAY, —	13—	Agricultural Imp. Society of Ireland.
WEDNESDAY, —	19—	Agricultural Society of England.
THURSDAY, —	20—	Agricultural Imp. Society of Ireland.

THE PRIZE-LIST OF THE BIRMINGHAM AND MIDLAND COUNTIES' EXHIBITION OF FAT CATTLE, SHEEP, PIGS, AND POULTRY for 1850 is now out, and competitors who propose entering into this honourable and friendly rivalry may be glad to know that the scheme is to be had on application to Mr. J. B. WRIGHT, the Hon. Sec., who has already done so much for the Exhibition since the first idea of it was entertained, to the credit of himself and the thankful satisfaction of all parties who have come into intercourse with him. But we do not propose at present to meddle with the quadrupeds, although, if the pigs be as good this year as they were last, they alone will give a high character to the show. The Birmingham meeting takes place at much about the same time with that of the Smithfield Club: but London and Birmingham are surely far enough apart to avoid all clashing of the interests of the two shows, while the railway quite puts it into the power of whoever requires to see both, to gratify the desire with ease. The principle of competition amongst the cattle is different at these two meetings; one running breed against breed without distinction, the other only allowing specimens of each breed to compete with those of their own kind. As to the respective merits of these plans, good authorities are not agreed; but we may believe that in each Association are to be found men of sufficient candour to adopt that system which, after a separate trial of a year or two, shall be found to work in decidedly the best manner. At least there is ample room, for the present, for both shows to go on progressing without injury to each other.

But the poultry department is our immediate concern; and the name of his Royal Highness Prince ALBERT has been added as a patron to the Birmingham Poultry Prize List, as well as to those for the animals, and we may now, therefore, hope to see a few lots from the royal aviaries, as some were last year exhibited from the Prince's farm. Indeed, it was believed at the time, that but for the adverse circumstance of the death of the late QUEEN DOWAGER, the Exhibition would have been honoured with the presence of the Prince Consort.

Now is the time when poultry matters are in their highest activity, and therefore a perusal of the Prize List will opportunely suggest the plans which it will be most desirable to lay out for success. One thing should be remembered, which is, to keep a correct poultry stud-book. In one of the best and most generally admired classes, namely, 14.—"For the best pen of six Chickens (of many different breeds) of 1850"—it is required that "the age of the specimens exhibited in this class must be accurately stated, viz., the day on which they were hatched." The amount of money to be awarded has been considerably increased, although the former prizes were found to be sufficiently stimulant. But two honorary rewards have been added, which will cause no little excitement among the exhibitors, and no small difficulty to the judges, whose anxieties increase as they find lots, of high merit, running each other closely, and who perhaps would be thankful to be spared this further responsibility. The task is almost as hard as the Choice of Hercules.

"The large Silver Medal will be awarded as an additional prize for the best pen of Fowl in the Exhibition, to be selected from the prize Fowl exhibited in the first 13 classes.

"The small Silver Medal will be awarded as an additional prize for the best pen of Chickens in the Exhibition, to be selected from the prize Fowl in Class 14."

So, those who mean to bear the bell, and take supreme rank above even the successful exhibitors, must immediately collect their materials, and go to work. The chance is that whose destiny it is to rise, *crême de la crême* above all, have already steamed up their incubators (Gallinaceous, Anserine, or Cantelonian) to the hatching-fever temperature.

One regulation on the list shows the liberality of the committee more, we fear, than their prudence or caution. "Cottagers may compete in any of the poultry classes without subscribing." Gentlemen who have been connected with provincial Horticultural Shows in populous districts will easily prophesy what will be the result of this. Much future perplexity might perhaps have been spared by inserting a definition of the term "cottager;" though we hold it would have been far better to offer liberal encouragement to cottagers, in a class by themselves, strictly defined. No fowl-dealer, small farmer, gentleman's servant, game-keeper, &c., or person whose rent exceeds (the maximum to be stated) —*l.* a-year, ought to be allowed to exhibit as a cottager; and a certificate should be required from the clergyman of the parish, or some other respectable referee, that the birds had been seen in his possession for such and such a time previously. But as the rule stands, a troop of cottagers may invade the Exhibition, each one coming from

> "A cottage with a double coach-house;
> A cottage of gentility!"

And instead of manifesting the "Pride which apes humility," may prefer to enact the comedy of "He or She stoops to Conquer," and sweep away the best of the prizes. Who is not a cottager, if the resident tenant of a cottage be not one?—whether it stand as a lodge at a nobleman's park-gate, or belong to the class styled *ornée*, or be *bonâ fide* a poor labouring man's home. "But why attach so much importance to such things as mere poultry? We can understand the use of encouraging the aiming at perfection in such substantial suppliers of food and clothing as are the cattle, the sheep, and the pigs; but the fowls are of so little value, and, in point of quality, are already as good as can be desired."

If their individual value is trifling, their numbers are, not infinite, but certainly incalculable, and the rule of multiplication will demonstrate that the aggregate *is* of great importance. The merits of our ordinary run of poultry are, we admit, considerable, but they are diverse; and the use of such Meetings as that expected in Birmingham is to help poultry-keepers to get exactly *what* they want, and that the best of its kind. Thus, if you require chickens, you will be disappointed to get nothing but eggs from your home farm, all summer long; and, on the contrary, if your cook keeps calling out for 'eggs, more eggs!' you will be annoyed to be overswarmed with chickens only. And of each kind of produce there are various grades suited for a special set of consumers more than for any others. At Birmingham a sight, at least, and a clear idea of these diversities among fowls will be to be obtained, to say nothing of the ocular proof of how much beauty may be made to consist with usefulness, and homely merits with the gratification of taste. An extract from a friend's letter will show that some leading standard exhibition to assist in making a selection of the best poultry, is, just now, really wanted.

"26th April, 1850. At —— I went to the Duke's private farm to see the poultry there, and was very much disappointed to find a perfect mongrel breed. He had one or two very good game hens, what we call the black-breasted red, but nothing else worthy of notice; in fact I have not seen any good poultry in the whole county. There were one or two good specimens of the golden pheasant (spangled Hamburgh or copper moss) hens; but the most common kind is a sort of speckled fowl, brown and grey, with a little tuft on the head."

It would be a breach of confidence to name either the county or the noble Duke that are thus unfortunately below par in respect to the feathered portion of their live stock. His Grace is a nobleman of cultivated taste and acknowledged liberality, and should these columns meet his eye, as is very possible, he may perhaps be led to inquire into the condition and merits of his own stud of fowls, and those of his tenantry and neighbours, and think whether there will be any harm in extending a little patronage to, and deriving a little benefit from, the Birmingham Exhibition of next December.

IT will be seen from the advertisement in another page, that the Great Annual Cattle Show of the Royal Agricultural Improvement Society of Ireland will take place at Cork on the 24th and 25th of July, in the week after the meeting of the English Agricultural Society at Exeter. Implements and stock can be transmitted, free by steam, from the ports of London, Portsmouth, Plymouth, Bristol, and Liverpool, an advantage which will, no doubt, be widely made use of—so that this meeting promises to be one of the most interesting and useful that has yet taken place under the auspices of the Society.

The three national societies have this year so timed their annual meetings that a visitor may attend them all: Exeter, Cork, and Glasgow may thus be visited in succession during three successive weeks; and we have no doubt that many will avail themselves of the opportunity thus afforded of inspecting the bright page of agriculture in each of the three divisions of the country.

ARABLE AND PASTURE LAND, AS REGARDS THE PRODUCE OF MEAT.

IT will be our first duty to compare Grass and arable land in reference to our particular subject. But I must confess that it will not be any result to which that comparison may lead that will justify or condemn the continuance of the former. It is the value of the *free* produce—the worth of the remainder after all outgoings have been deducted from the gross returns of the land, except those for division between the only parties immediately concerned in the proposition, that will determine whether the condition to which those are owing shall continue. And it must be confessed that over a large extent of good land now in pasture, the deduction on account of labour is so small, and the gross produce so considerable, that neither landlord nor farmer has any interest in breaking them up. Land yielding 12 or 15 tons of green food per acre yearly without any labour but that of repairing the fences which divide it, destroying the Docks and the Thistles which invade it, and supplying manure to maintain it, is producing more at less expense than perhaps it could do in any other condition. It is not in such cases as this, then, that our comparison must be made: there is much poor pasturage in the country, which lies nevertheless under a climate proper for arable farming; and it is about this that the question obtains.

There is no doubt that over much of this which, though drained, would not yield 30 tons of green food per acre, in four years, an equal quantity might, if it were properly cultivated, be obtained in Turnips and Clover, with probably 2 tons of straw and 60 or 70 bushels of grain in the same time. Grass is probably more nourishing per ton than Turnips; but when the one is consumed in all weathers by unsheltered animals, and the other in well-bedded houses, it may be doubted whether the resultant produce of meat may not be about the same in either case—with a clear balance of course of so much grain as food for man in favour of arable culture. But this matter requires a detailed estimate, and this I shall endeavour to give, merely premising that the above figures are not given without reason; as on the farm I write from, three quarters of which were formerly Grass, a stock of about 40 head of oxen fattening to 60 or 70 stones, and between 200 and 300 sheep fattening to 24 lbs. a quarter, with 50 or 60 pigs, are now kept during winter, and about half those numbers during summer, where formerly a herd of 25 cows and about 20 yearling and 2-year-old heifers, with a few pigs, were maintained in store condition; while, in addition to the above, the land now permits an annual sale off it of about 4000 bushels of Wheat.

Grass-land worth 30*s.* per acre of annual rent may be

supposed to yield 8 tons of Grass per acre per annum; and this may be believed able, by careful consumption, to produce 9 imperial stones of beef; or at 6*d.* per lb. a money value per acre of 18*l.* 18*s.* in six years.

The same land, broken up, would under good management, yield during—

The 1st year	25 cwt. of Wheat-straw
2d	24 tons of Mangold Wurzel
3d	25 cwt. of Wheat-straw
4th	18 tons of Swedish Turnips
5th	20 cwt. of Barley-straw
6th	10 tons of Clover

Or 52 tons of green food, and 3½ tons of litter, in six years, beside the produce of grain. Of course it is easy so to state figures as to arrive at any result that may be desired; but in the above I have gone upon what I believe to be reasonable data, viz:

That 24 or 25 cwt. of hay is a probable produce from land of such value;

That hay is one-fifth or more of the Grass from which it is made;

That the growth of aftermath is to the growth up to hay harvest as 1 to 3 on such land.

We know from experience that Turnips consumed without any artificial food, as it is called, given with them, will not generally yield more than 1 lb. of beef or mutton for every 150 lbs. of green food; and giving Grass credit for a little more nourishment than this, we have assumed that 140 lbs. of it will yield the same meat.* On the side of arable land, again, I have stated amounts of produce which from several years' experience I know to be probable. The 52 tons of green food (supposing the straw to be all used as litter) will on the above datum yield 776 lbs. of beef, and this at 6*d.* per pound is worth 19*l.* 8*s.*, an amount rather larger than that which was the whole return from the Grass, while here we have, in addition, the produce of three crops of grain. Whether the whole extra expense of this mode of managing the land will be more than paid by this extra produce is hardly within the province of this inquiry. We may now suppose another case—that of arable land wholly devoted to meat-producing crops, and it may be supposed to yield thus:

1st year	26 tons of Mangold Wurzel
2d	30 cwt. of Bean-straw, and 34 bushels of winter Beans, harvested in time for Rye to be sown, which would yield
3d	12 tons of green food in the following May, to be succeeded by Rape, yielding 16 tons in November
4th	30 cwt. of Barley-straw, and 48 bushels of Barley
5th	20 tons of Swedish Turnips
6th	30 cwt. of Pea straw, and 32 bushels of Peas; the land then to be thoroughly tilled for the following Mangold crop.

Here we have 26 tons of Mangold Wurzel
12 ,, Rye
16 ,, Rape
20 ,, Turnips

Or in all 74 tons of green food
And 30 cwt. of Bean straw
30 ,, Barley
30 ,, Peas

Or in all 4½ tons of straw.
And 34 bushels of Beans
48 ,, Barley
32 ,, Peas

Or in all about 3 tons of grain.

The average produce per acre of the different crops is put higher now than before, as every farmer will admit that under such circumstances (all the produce being converted into manure) it ought. Now, if an ox consume 1 cwt. of Turnips daily, in the above case he will need to eat 5 lbs. of grain and use 8 lbs. of litter daily, in order that all may be finished together. The straw will be little enough, but oxen fattening to 7 cwt. will fare well on the food: they will pay at least 5*s.* a week upon it, *i.e.* 5*s.* for every 7 cwt. of roots and 35 lbs. of grain; and the stock of food would at these rates keep 4 oxen for 50 weeks, yielding a money return of about 50*l.* from the sale of the meat produced. According to this, about 8*l.* 10*s.* per acre is the highest produce of meat from land of the quality named; and whether that, taking the large labour of crops into account, is a profitable produce does not appear. But we may suppose a third method of cultivation in which the produce, summer and winter, is fed upon the land by sheep, and the following amount of the several crops may be expected:

1st year	20 tons of early Turnips, followed by Rye, yielding next May
2d	12 tons of green food, followed by Rape, yielding in November 16 tons of Rape
3d	26 tons of Mangold Wurzel, followed by Vetches
4th	16 tons of Vetches, consumed in time to sow Italian Rye-grass
5th	8 tons of Rye-grass, followed by 20 tons of Swedish Turnips
6th	20 tons of Belgian Carrots

Here we have a gross produce of 138 tons of green food in six years, which at 1 lb. from every 150 would yield 2060 lbs. of meat, or 51*l.* 10*s.* worth per acre in six years; rather more than in the former case. The two latter cases are not likely to be generally adopted until long experience shall have determined their profitableness: and to no subject, we are convinced, could an agricultural experimenter more usefully devote himself than this. If a cultivation of this kind would pay, it would be a source of immense wealth in many parts of Ireland, where waste-land reclamation proceeds so slowly mainly because of the unprofitableness of corn-cultivation under their watery skies. The results of our first estimate, therefore, must be the standard with which to compare the productiveness of Grass, and it has been seen that the former, besides the large crops of grain on the arable land, yields more meat than the latter. The conclusion which therefore seems to be unavoidable is, that in cases when equal skill and care have been brought to bear both on arable and pasture farming, the latter might be converted without diminishing, and probably with an increase to the national supply of animal food. What other advantages would follow the breaking up of poor Grass-lands have already been considered in this Journal. *English Agricultural Society's Journal.*

* The best grazing land in Lincolnshire we are told on first-rate authority will, under the best circumstances, feed an ox and a sheep from New May-day till Old Michaelmas. The former will gain 20 stones, or 280 lbs., and the latter 10 lbs. a qr., or 40 lbs. in the time. The acre will thus yield 320 lbs. of meat. Its produce of Grass may be 16 tons—perhaps more. This is 1 lb. of meat for every cwt. of Grass, but we must remember that the Grass of such land differs from the average in the quality as well as the quantity of its produce.

TOWN SEWERAGE.

PUBLIC attention has been once more directed to the economical and sanitary importance of the sewage of towns by a paper from his Royal Highness Prince Albert, read at a late meeting of the Royal Agricultural Society by Colonel the Hon. Charles Grey.

The sewage of towns is important in two points of view. Where large populations are gathered together, as in our modern towns and cities, it becomes an object of the first importance to get rid of the filth and refuse of all kinds in as summary a manner as possible. For this purpose no better arrangement has hitherto been devised than was adopted in ancient Rome, or perhaps in cities still older. In Rome, the Cloaca maxima, or main sewer, after the lapse of 20 centuries, still in part accomplishes for modern Rome what its builders believed to be necessary for the ancient city. Then, as now, the only object aimed at with regard to the sewage was to get rid of it as speedily as possible; the more quickly this was effected, and every improvement in the arrangement of the sewers to effect this purpose, being justly considered to be the best possible means for securing the public health. To obtain this important blessing, we are, however, at present sacrificing an enormous quantity of valuable manure. At the same time that we are ransacking the globe for the dung of sea birds, we are losing thousands of tons per annum of a substance nearly as valuable as guano, and that, too, at our very doors. Still, though we are perfectly aware of this, no means have hitherto been devised which would at the same time avoid this waste and secure our health from injury.

The plan which Prince Albert suggests is a modification of the cesspool (in use in many parts of London, and nearly universally in Paris), into which the drainage of each house is collected, so that the solid matters settle to the bottom, and the watery part is carried off by the usual drains. The objection to this arrangement is, that under each house is placed a mass of putrifying matter, which must prove a hotbed of disease and death.

The proposed plan in some respects obviates this difficulty. It is proposed by a simple filtering apparatus to retain the solid matter of the sewage water, and to allow the liquid part at once to run off. The filter is to consist of a tank with a perforated false bottom, upon which the filtering medium is to be laid. The sewage water is to be admitted below the false bottom, the conducting pipe being so arranged that the water shall rise up through the bottom by pressure, and pass off into the drain. Charcoal, gypsum, and burnt clay are recommended to be used as filtering substances for placing in the perforated bottom.

We leave to more experienced hands in such matters the discussion as to the cost of affixing such an apparatus to a modern dwelling house. Our reason for meddling with the question is its importance to agriculture, on which no greater boon could be conferred than the solution of this vexed question.

In Paris the contents of the cesspools are lifted out by properly constructed pumps, and conveyed away in covered carts to a manufactory at some distance, where they are emptied into immense shallow reservoirs. After standing to settle, the liquid part is run off, and the solid matter is then dried and carried to all parts of the kingdom under the name of "poudrette." The proposed filter avoids one part of the evil attendant on the Parisian method, as the conducting pipe acts as a most effectual stench trap. But at the same time we greatly fear that the difficulty of clearing it out, and the expense of the filtering medium, will prove a serious drawback. Besides, the substance obtained, by being mixed with the charcoal or gypsum, will also be of less value than the "poudrette."

These are the difficulties which beset the subject. Of the value of the sewage of towns to agriculture there cannot be a question; but to secure it, by means of cesspools or filters, it is of the highest importance to prove to the householder that he will receive interest for the money he may expend in the construction of the necessary apparatus. As a farmer, I would not consider the contents of one of these filters worth more than 7*s.* or 8*s.* a ton on the spot, in the state in which they would be removed from the tank. This price does not leave much margin for profit on the outlay necessary for the adaptation of the arrangement to a dwelling house.

If anything like a correct estimate could be formed of the value of what is, by our present arrangements, annually lost to agriculture, the importance of the question, in a national view, would at once be evident to every one. The present age presents the singular anomaly of the English farmer seeking his fertilisers from the further ends of the globe, and yet, at the same time, unable to obtain any benefit from thousands of tons of a valuable manure, which at present is only devoted to the pollution of every navigable stream in the country.

It is hoped that this paper by his Royal Highness Prince Albert will at least have the merit of calling attention to this important question—a question involving the health of the community, and the prosperity of agriculture is not unworthy of the attention of any person, however important his situation, and now that such an example has been set, good results are sure to follow.

The "sewage of towns" and its application to agriculture is a question we would recommend to the attention of the Royal Agricultural Society, as a most appropriate subject for a prize essay. The bearing of the question upon public health deserves more attention from Government than it has hitherto received. *T. L. C.*

A VISIT TO SUTTON WALDRON.

MUCH having been said for and against Mr. Huxtable's system of farming, I was anxious to judge of it with my own eyes. Accordingly, last month (Feb., 1850), I visited Sutton Waldron, where the rev. gentleman resides, whose name is now so widely known over England, Scotland, and Ireland. He is rector of the parish, and much beloved by its population as a pious, active, and exemplary minister of the gospel. At his own expense he has erected a parsonage house and a beautiful church; and although much more might be said of his conduct as a pastor, it is sufficient for my present purpose to show that, in patronising in the hope of improving various processes connected with secular employments, and thus instructing others, he by no means neglects his still more essential spiritual duties.

About 11 years ago he commenced farming, less for his own advantage than from the more generous impulse of diffusing employment, at a period when work was scarce, wages low, and the labourers within the locality suffering severely. As a preliminary he taught himself agricultural chemistry; and after acquiring an intimate knowledge of that great hand-book to husbandry, he composed a most instructive essay "On the Science and Application of Manures," afterwards delivered in the form of a lecture, at Blandford, Feb. 3, 1847, to a large assemblage of farmers from Wiltshire and Dorsetshire.

Mr. Huxtable occupies two farms as a tenant, and rents both from the same landlord. The first consists of 100 acres on the galt formation; in other words, a stiff, stubborn, tenacious clay. The second farm comprises 300 acres, surmounting chalk, and naturally exhibiting a dry, porous soil, elevated 500 feet above the valley beneath, bleak from exposure, and destitute of shelter. In the beginning he had literally everything to do—erecting farm-buildings—cutting and metalling roads at great expense; draining and subsoil-ploughing the whole of the clay possession; and laying wooden pipes to conduct from the different tanks the liquid manures requisite for watering his crops. Over the stiff land he demolished and cleared all and every fence by throwing the whole into a single large inclosure, from the circumstance that the house system of feeding adopted for sheep as well as cattle, renders minute fencing a hindrance, and not a help.

The system adopted at Sutton Waldron, stall-feeding stock summer as well as winter, is extensively practised on the continent, and particularly in the meat producing countries of Switzerland, Belgium, Denmark, and Holland, which are constantly pouring into Great Britain their in-door fattened produce, whether in the dead or living state. And it says much for Mr. Huxtable's acumen—priority in introducing the foreign improved system; and thereby demonstrating how many more animals may be profitably nurtured on a given extent of ground—mainly in consequence of increased supplies of manure, and economy alike searching, measured, and minute, in all the outgoings and incomings connected with cultivation. This of itself constitutes a great fact, teaching, as it has done already, and must do with added force hereafter, how the foreigner may be met and beaten with his own weapons in the manufacture of beef and mutton as cheaply produced at home, as where seas divide, implying freight, insurance, commission, and other expenses. Large wooden buildings, of the cheapest construction, have been erected on both the farms alluded to, for feeding under cover cattle, sheep, and pigs; and architectural contrivances so adapted to the floors of these as to avert the slightest waste of liquid manure, all of which finds its way into tanks, and is afterwards conducted by a forcing pump through the underground conduits, which intersect the clay farm in all convenient directions. The clay pipes, 1 inch thick, cost 7*d.* per yard, or 1*l.* per acre; and are tightly cemented together with Portland lime. At every 200 yards there are discharge cisterns, where the manure is drawn out and used for fertilising vegetable products. Red Clover and Italian Rye-grass are thus watered immediately after cutting; for if the stalks are allowed to become dry, growth receives a check requiring an interval for recovery, unless quickly re-stimulated in the manner mentioned. The precaution, however, is a simple one, and wherever it is attended to, Clover may be cut four times in the season.

Equal care is taken in economising more solid manures. Wooden sheds, 40 feet long by 15 in width, are employed to contain it, so that neither sun nor rain can either lessen bulk or impair quality by evaporation. Part is stored by itself free from all straw; and another

part is mixed with straw and litter. The heap kept by itself is composed of horse, cattle, sheep, and pig dung, the droppings of animals fed in the sheds. When dried it is used like guano in the drills for sowing Turnips; and is also dibbled in the rows for Mangold Wurzel. Manure mixed with straw in the sheds is daily saturated with liquid manure thrown over it from the tanks; and is thus kept in a sufficiently prepared state when needed for root and other crops. The hints just given, from personal observation, speak volumes as to the care with which Mr. Huxtable collects and prepares every available species of stimulants. This, as regards modern farming, is becoming more and more the one thing needful; nor would it be easy to estimate the loss which ensues to heaps washed for months by the rains so incident to northern climates. That reform in this respect should not have earlier riveted public attention is indeed surprising; but the period cannot be now distant when roofed dungsteads and good tanks will be considered as essential as barns and byres. To render urine receivers serviceable, the eaves of all houses that fall in the same direction should be spouted, and every effort made to preclude the entrance of surface-water.

The sheep, pigs, and cattle, at Waldron, stand for the most part on board floors. The framework on which they stand is made of spars, with interstices half an inch wide, through which liquids pass with ease. The said flooring, however, must be perfectly level, and raised 6 inches from the water-tight bricks or stone-flooring below, the under part being inclined to the drain communicating with the tanks. The space below the floors admits of room for a scraper like a gardener's hoe, used in cleansing out any manure that falls through between the interstices of the spars. Each wooden spar must be 2½ inches wide, and 1½ thick. Still cattle cannot well do without a little straw spread on the boards; much less, however, suffices than when they stand on a brick or stone basement.

The sheep and cattle in-doors are supplied with chopped straw, mixed with green food, such as Turnips and Mangold Wurzel, oilcake and Bean-meal, during winter; and in summer with Tares or Grasses—cut by a machine into small pieces, mixed with straw. The latter substance, in absorbing the juices of the succulent food, renders it more bulky; while its astringent qualities correct the diarrhœtic tendency in green food, which retards fattening in tied-up animals. The Furze or Whin is extensively cultivated for feeding both in winter and spring. When pressed down and its prickles flattened by a heavy stone moving in a circle, the bestial not only relish, but thrive on this diet, particularly when blended with cut straw. At Sutton Waldron none of the Grasses are made into hay; hence the substitutes found in straw, which enable Mr. H. to administer in a green state all the Grasses. The Turnip-cutter he employs is made by Moody of Frome, which divides roots as well as bulbs into pieces of a very small size, thus promoting amalgamation with other substances. The preparation of cattle food, in common with threshing grain, is performed by a six-horse power steam engine; that grinds corn into meal, cuts straw, turns the machine that slices bulbs, bruises the Whin or Gorse, &c.

The sheep-house interested me much; for it was a novel spectacle to see a hundred bleaters tied up like so many bullocks, and treated not dissimilarly in preparing them for market. The house is 54 feet long, by 15, with a passage dividing the centre, along which the animals stand in two rows, fronting each other. A manger contains their food, and in munching they stand on a boarded floor, 3 feet wide, furnished with wooden spars similar to those already described. The passage behind the sheep struck me as too narrow for every purpose requisite. The hirsel thus confined seemed in high health; and not a trace of foot rot observable. Great attention is necessary in securing thorough cleanliness, adequate ventilation, and regulated temperature; otherwise, as experience has shown elsewhere, weakness of some type would steal into the fold. The sheep are of the Southdown breed, and although confined scarcely three months, were on the eve of going fat to market. Weighing machines are used to test the progress of feeding, and experiments made every fortnight.

The pigs enjoy most comfortable quarters, and are in all respects managed in a manner which deserves imitation. Most of the pens have spar-boarded flooring, with a stone floor underneath, shaped like the letter V, to collect manure. At the clay farm there is a dairy of 30 cows—one cow had been in the byre four years; the calves are reared on the chalk farm; about 90 cattle are constantly undergoing the fattening process; much the same number, or more pigs; and as often as number is reduced by sales, recruits of the classes named are purchased to supply their place. Of the cropping system pursued I cannot speak with the same precision. The great object appears to be, by the alternation of grains and roots, to raise as much food as possible, as the seasons revolve, for economy and profitable consumption.

It appears very probable that where arrangements are made enabling tenant farmers to cultivate their possessions, so as to raise succulent food of one kind or other all the year round, to be consumed by the more advanced bestial on the system recommended above, important changes must supervene, affecting as much the relative positions of proprietors and cultivators, as did the great forerunner improvement—thorough draining. And here I allude to extended outhousing, for the accommodation not only of many more animals in winter than are shedded at present; but to get rid of the old-fashioned open-air heaps; and the maturation of all fertilising substances, under circumstances setting at defiance everything like access to rain-water, and the possibility of improvident evaporation—now a *sine qua non* under liberal covenants in high farming. *James Stuart Menteath.*

Home Correspondence.

Mr. Mechi's Accounts.—In common, I hope, with most of your readers, I feel myself beholden to Mr. Mechi for his public-spirited intention of testing his farming operations by the publication of his accounts. Mr. Mechi commenced his career with the avowed purpose of bringing into simultaneous operation all proved profitable appliances, and if his plan has been carried out in detail with practical skill equal to the sound principle laid down, there ought now to be no doubt of its success, except so far as the altered range of prices consequent on free-trade shall affect his calculations. Why, then, so much doubt? In my opinion, because operations treated by Mr. Mechi as demonstrably profitable were considered by practical men not to be of universal application, and not to be supported by sufficient testimony. It was also thought to be by no means certain that operations each singly productive of advantage would, when in union, produce a total of advantage equal to the sum of the separate advantages of each, because it had been found by experience that neither grain nor green crops can bear forcing beyond a limited degree. It was observable also that by comparison of Mr. Mechi's table of expenditure and his estimate of the return to be made from each item of expense, that if the return was no greater than he put it at, much of his expenditure would be wasted; and particularly that on buildings, which appeared to give not more (speaking from memory) than 1½ per cent., per annum. Mr. Mechi, I presume, has now got his farm, both buildings and land, into order; has served his apprenticeship; is to have a new valuation, and to start afresh; and it is of his proceedings from this time forth that he is to give us his accounts. We cannot fairly expect more of him in that way. But as Mr. Mechi is no common farmer, but in some sort an experimentalist, and like Mr. Huxtable and others, endeavouring to improve the science, I would suggest to him, if these lines should fall under his eyes, that, out out of his past experience, he should enlighten us through your sheets from time to time as to how far the doubts suggested in the former part of this paper have been found by him to be well founded, and how far not; and also that he should keep, if he conveniently can, a separate account of his experimental agriculture, and not merge it in the general account of his routine farming. *A. H. Hall, Watergate, Petersfield.*

Practice with Science.—A series of articles have been given with the view of laying down the principles of good farming, and showing in what manner these may be best brought to a successful issue. The principles upon which good farming is founded are few, plain, and intelligible, the whole of them being comprised in four simple operations, viz.: making land dry, clean, fine, and rich. All the works of our most eminent agriculturists, all the discussions at our great shows, all the performances of our best farmers, have served only to elaborate these four processes. It is not by taking any of these separately that good farming can be attained, but rather by a happy combination of the four put together, and by a judicious adaptation of the parts to the whole. It may here perhaps be of use to bring into a small compass the leading points of each process. 1st. Draining is intrinsically important, not only in doing good of itself, but likewise in being essential to the well working of the other three. Stagnant water, under any circumstance, must be injurious, but by the removal of it further advantages are obtained. When the land is laid dry the work of the plough may be going on at most seasons of the year; the soil is brought into a more friable state, and it does not become so consolidated from a heavy fall of rain. Such are its advantages, that the expense may often be repaid in a single year. 2d. Land being kept clean is one of the first things in good farming. It would seem needless to say that weeds take from the soil that strength and fertility which ought to be reserved for the crop alone, were it not that the dirty farming prevailing in so large a part of the kingdom seemed to set this truism at defiance. On drained land weeds are easily eradicated or killed; and if this be once done effectually there will not be much trouble in the matter afterwards. A proper rotation of cropping will attain what is here wanted, with ease and advantage; the introduction of the green crop system has much facilitated this operation. The old fallows being now discontinued on almost all lands, a well worked crop of Turnips or Beans will equally serve the purpose of ameliorating the soil by frequent turnings, and perhaps keep it clearer by the overshadowing they create than can be done by its being baked even by a hot sun, and much better than with a sunless sky. It is too often supposed that the clean green crop named is all-sufficient for effecting the purpose alluded to, and that the corn crop following may be left to itself, but this may be considered a great error. There can be no reason why a crop of corn should not be kept just as clean as a crop of Turnips, and modern inventions have so facilitated this matter, that there can be no excuse for bad farming in this particular. If the corn crop be grown in drills (and there certainly can be no pretensions to the higher order of farming without drilling), by the use of Mr. Garrett's horse-hoes, and followed by Dr. Newington's hand-hoe cultivator, the land may, with little trouble and expense, be kept perfectly clean and friable. This brings us to the 3d section, that of tillage, which is perhaps about the most important of the whole. Nothing can show more the low state of farming in general in this country than this very process. The drill system was invented more than a century ago by Jethro Tull, yet at the present time in many parts it is not practised; in others it is not even understood. The object of this is not only to give such an equal distribution of the seed in sowing that each root may have its proper share of nutriment from the soil, but, by the plants being grown in rows, a clearer space is given for working the soil, by which it is not only rendered more friable for the spread of the fibres, but it is cleaned from the superfluous growth of weeds. This friable state of the soil is not only required near the surface, but by deep stirring must give ample room and facilities for the roots to shoot their fibres to the extent they will do under favourable circumstances. The high authority already quoted considered that one or two ploughings were good, but a third ploughing better, and a fourth best of all, as it was by the extreme diminution of the different particles that he was able to grow good crops of Wheat (more than 30 bushels per acre), for 12 years running on the same soil without an atom of manure. This brings us lastly to the fourth part—making land rich. And here, though it may be possible to grow successive corn crops without manure, yet no one will deny that by judicious management and the application of suitable manures, the bulk and goodness of the crop may be greatly increased. Infinitely more attention is now paid to this branch of farming than it used to be formerly. The farm-yard and buildings are better constructed. Much of the old system of constantly turning out the cattle is by degrees wearing out, and more dung and of a better description is made. The Turnip culture has greatly contributed to this, as, if green crops be raised, it is in most cases indispensable that cattle should be kept to consume them. The profits of a farm are perhaps chiefly dependant on the quantity of dung made and at command, as, though in bad farming much of it may be either wasted or misapplied, yet in that of a superior order the crop, be it green or grain, may be so forced and increased by the application of rich fertilisers as to put three or four times the money into the farmer's pocket, that could be done without it. The discovery of guano has been highly favourable to the farmer's profits; about 3 cwt. of this, costing about 30*s.*, will go as far towards raising a good crop of Turnips as perhaps 10 or 12 tons of dung. Bones with sulphuric acid have been found still more economical than guano. There are also a number of artificial manures composed of various ingredients, which at least profess to be cheap and useful. Soot, too, which may be bought near the large towns at 2*d.* the bushel, is an excellent stimulant, and when mixed with different alkali, will force a quick and luxuriant growth in most plants. The different processes now named should be the chief objects aimed at by every farmer, who wishes to make his pursuit not only creditable to himself, but profitable as a pecuniary investment. Some splendid specimens in this line have been lately exhibited, and it has been proved from undoubted authority, that the profits arising from it are such that they may be made to counteract many of the disadvantages under which the farmers labour at the present time. At all events, if high farming will not answer, low farming never can. If 40 bushels of Wheat (not an exaggerated quantity) are grown, where only 20 bushels (a very common quantity) were grown before on an acre, it is not saying too much that this will amply counterbalance the present fall of prices. By an improved system the greatest benefit will accrue both to landlord and tenant, but to be going on in the old beaten track, and to neglect the opportunities which science, combined with capital, holds forth to an enterprising spirit, must be ruinous to both. It therefore becomes the duty, as it is the interest, of the landed proprietor, to give encouragement to modern improvements, and by co-operating with tenants of intelligence and ability to work out the four processes here described, and thus bring his undertakings to a successful termination. *Law. Rawstorne, Penwortham, May* 15.

Garden Allotments.—Having for 15 years let garden allotments to the poor of a parish of about 600 inhabitants, I offer the following answers to the questions of "R. G.," in your Paper of May 4. The amount of land let out—5 acres. Let at 4*d.* per pole, not including footpaths. The quality of the land when first let out—a foul and neglected condition. Its present quality—a high state of cultivation. The system works well for the poor. The system was introduced about the time of the new Poor-law; though I have no answer to this and the following question, I have been often told that the allotments have prevented many from going into the workhouse. A tenth part of an acre is allotted to each family, in some few cases a little more or less, but this quantity is deemed sufficient. The question as to the number of labourers out of employ cannot be satisfactorily answered from local circumstances. The farmers made no opposition to the introduction of the system, though they were not in favour of it. The farmers now approve of it, and regret was expressed by many, when, at one time, there was a prospect of the land passing into other hands and being otherwise occupied. The moral tendency, though not easily defined, may be assumed to be good. The rule that only half the land be cropped the same year with Potatoes, is found to promote good garden cultivation; no corn is allowed to be sown. *J. C. C., May* 10.

Societies.

ROYAL AGRICULTURAL SOCIETY OF ENGLAND

A WEEKLY COUNCIL was held at the Society's House, in Hanover-square, on Wednesday, the 29th of May: present, the Earl of CHICHESTER, V. P., in the chair; Lord Camoys; Sir Charles Lemon, Bart. M.P.; Sir James Ramsay, Bart; Sir Robert Price, Bart. M.P.; Col. Austen; Mr. Raymond Barker; Mr. Burke; Mr. W. Clavering; Mr. Pendarves, M.P.; Mr. P. Severn, and Mr. Richard Trench.

The following new members were elected:
Carter, Thomas, Scales, Richmond, Yorkshire
Collins, Rev. C. M. E., Chudleigh, Devon
Morris, Thomas, Maisemore, Gloucester
Savery, John, Silverton, Exeter
Bingham, Richard, Binghams, Melcombe, Dorchester
Ley, Henry, Ley House, Mamworth, Devon
Chetwynd, Viscount, Teignmouth, Devon
Tucker, John, Morehard-Bishop, Crediton
Walker, Samuel, Barn Park, Teignmouth.

The names of 39 candidates for election at the next meeting, were then read.

MISCELLANEOUS COMMUNICATIONS.—Result of trials to naturalise Thibet sheep in Wales, from Mr. C. R. Mansel Talbot, M.P., and information connected with their natural history, from Colonel Sykes.—Letters from Mr. Curtis, expressing his opinion on the character of insects destructive to the Wheat and Potato crops, transmitted by Mr. Fisher Hobbs and Colonel Napier.—Suggestions from Mr. G. Robinson, of Wolverhampton, for papers on feeding sheep and pigs, and on crops, to be adopted on the failure of Turnips.—Copy of resolutions passed at the Botley and South Hants Farmers' Club, on questions connected with land-drainage, from Mr. W. C. Spooner, the secretary of that club.—Letter from Mr. Drake, on the mottled and white-faced Hereford cattle.—Letter from Mr. Brutton, reporting the local advantages offered at Exeter, for the trial of H. R. H. Prince Albert's plan of arresting the progress of sewage matter, and converting it into manure for the land.—Copy from Mr. A. Castellian, of Liverpool, of M. Hamoir's details, connected with the extraction of sugar from the Beet-root.

The noble Chairman and Sir Robert Price favoured the Council with interesting local information, connected with the history of the breeds of Southdown sheep and Hereford cattle, respectively; and with the change of taste, at different periods, in the preference given to particular varieties by breeders, on account of certain occurrences of colour or conformation, supposed by them to indicate excellence.

WHEEL-AXLES.—Mr. LEE, C. E., of 103, Long Acre, had leave to exhibit to the Council his axle and wheel, intended, by the arrangement of its double action, to prevent the injury sustained by ordinary axles, when subjected to the sudden jerk occasioned by a casual obstacle to the progress of the wheel; by the mode in which lubricating matter could be applied and retained for a long period, in contact with the parts liable to friction, to promote freedom and uniformity of motion; and, by the simplicity of its fastenings, to make the putting on, or taking off, of the wheel, the work only of a moment. Mr. Lee stated that the expense of this construction of axle, applied to agricultural vehicles, would be very little greater than that of the ordinary axles at present in use. The Council gave no opinion on the invention submitted to them, but thanked Mr. Lee for the trouble he had kindly taken in bringing it before their notice, and explaining to them its peculiarities of construction.

PRESENTS.—Among the numerous presents made to the Society were the following:—Treatise on Poultry, from Mr. Nolan, of Dublin; Transactions of the Royal Asiatic Society, and the Yorkshire Agricultural Society; Prize List from the Manchester and Liverpool Agricultural Society; and Reports from the Royal Institution of Great Britain, and the Athenæum Club.

A MONTHLY COUNCIL was held on Wednesday last, the 5th of June:—present, the Marquis of DOWNSHIRE, President, in the chair; Earl of Lonsdale; Viscount Hill; Lord Bridport; Lord Portman; Hon. R. H. Clive, M.P.; Hon. W. G. Cavendish, M.P.; Sir Thos. Dyke Acland, Bart., M.P.; Sir Matthew White Ridley, Bart.; Sir Charles Lemon, Bart., M.P.; Sir Robert Price, Bart., M.P.; Mr. Raymond Barker; Mr. Bramston, M.P.; Mr. Brandreth; Mr. Burke; Colonel Challoner; Mr. Evelyn Denison; Mr. Garrett; Mr. Brandreth Gibbs; Mr. Gould, of Poltimore; Mr. Fisher Hobbs; Mr. Lawes; Mr. Kinder; Mr. Neill Malcolm; Mr. Miles, M.P.; Mr. Milward; Mr. Pendarves, M.P.; Mr. Pusey, M.P.; Prof. Sewell; Mr. Shaw, of London; Mr. Villiers Shelley; Mr. Sillifant; Mr. W. Simpson; Mr. Stansfield, M.P.; Mr. Turner, of Barton; and Prof. Way.

Edward Ludd Betts, Esq., of Preston Hall, Maidstone, was elected a Governor of the Society.

The following new members were elected:
Riccard, Russell M., Southmolton, Devon
Thomas, John, Cholstrey, Leominster
Fisher, Rev. John Campbell, Harpford, Sidmouth
Wright, Richard, Field Bank, Macclesfield
Pennell, Richard Lewin, M.D., Exeter
Overell, John, Aspenden, Buntingford
Webb, Richard Anthony, Oxton, Exeter
Owen, William, Rotherham, Yorkshire
Howard, James, Alphington, Exeter
Mackay, Thomas Henry, jun., Petham House, Canterbury
Merson, Richard, Brinsworthy, Northmolton, Devon
Monday, John, Staplegrove, Taunton
Croote, G. H., Crooke, North Tawton, Devon
Sidney, John, Wolaston, Wolverhampton
Prickman, Thomas, Broadnymet, North Tawton, Devon
Fryer, William Fleming, The Wergs, Wolverhampton
Norrish, Samuel, Horwell House, Colebrooke, Crediton
Moorsom, Capt. W. S., Great George-street, Westminster
Wills, George, Whelmstone, Colebrooke, Crediton
Sedgwick, Rev. Leonard, Lathkirk, Middleton-Teesdale
Wreford, Samuel, jun., Grattan, Crediton
Douglas, James, Athelstan-ford, Drôm, Haddingtonshire
Drake, Charles, Cutcliffe, Springfield, Barnstaple
Dunn, Colonel, R.A., Denford House, Hungerford
Kinneir, Richard, M.D., Livingshays, Silverton, Collumpton
Dewe, William, Westleigh House, Bideford
Brown, William Williams, Allerton Hall, Leeds
Mogridge, Richard, Molland, Southmolton
Wainwright, Chas. Rawlinson, Shepton-Mallet
Paramore, J. Rawle, Southmolton, Devon
Ward, John, Donnel Farm, Whittington, Oswestry
Karslake, Rev. W. Heberden, Mesham, Southmolton
Kennedy, Rt. Hon. Thos. Francis, Dunure, Ayrshire
Quartly, John, Champson-Molland, Southmolton
Campbell, Sir Alex. T. C., Bart., Newton House, Barnstaple
Harness, Thomas B., M.D., Tavistock, Devon
Badcock, Henry, Taunton, Somerset
Winter, John, Ash-Priors, Taunton.

The names of 10 candidates for election at the next meeting were then read.

FINANCES.—Colonel CHALLONER, Chairman of the Finance Committee, laid before the Council the report on the accounts of the Society to the end of the previous month; from which it appeared that, on the 31st of May, the current cash-balance in the hands of the Bankers was 2493*l*. The Chairman explained that this general balance included 1260*l*. as the Exeter subscription, and 210*l*., as the amount received on account of life-compositions, to be invested; leaving a balance of 1023*l*. available for current purposes. The Chairman added, that the arrears of subscription remaining unpaid were in due course of recovery, by means of the County Courts, agreeably with the instructions of the Council.—This report was adopted.

PRIZE ESSAYS.—Mr. PUSEY, M.P., Chairman of the Journal Committee, reported the further awards made by the Judges of Essays; and the motto-papers being laid before the Council, the following result was declared:

I. The prize of 50*l*. for the best Report on the Farming of Lincolnshire, awarded to JOHN ALGERNON CLARKE, of Long-Sutton.—The judges "highly commended" the essay, in the same class, bearing the motto "Hope."

II. The prize of 20*l*. for the best Essay on the Rearing and Management of Poultry, awarded to WILLIAM TROTTER, of Healey Mill, Stocksfield, near Gateshead, Durham.—The judges "commended" the essay, in this class, bearing the motto "Dorset."

Mr. PUSEY, M.P. having passed his high opinion on the great value of the two Lincolnshire Essays, then brought before the notice of the Council, Mr. Miles, M.P. expressed his regret that there was at the disposal of the Journal Committee no second prize, by which they might have had it in their power to mark their estimation of the peculiar value of the second Essay, which the judges had highly commended. Having himself had the pleasure of reading both the Essays, he could say, that although the prize was justly due to the first Essay, it happened in a remarkable manner, that its deficiencies were just those topics which in the second Essay were so fully and admirably treated: so that, great as were their respective merits, neither of them was complete without the other; but by an amalgamation of the two, the most perfect Essay might be produced that had ever appeared in the Journal on that subject, or any other. He made these remarks with confidence, having been for so long a period well acquainted with the peculiarities of Lincolnshire farming, as well as with its progress and present condition. He hoped the talented author of the second Essay, bearing the motto "Hope," would allow acknowledged notes to be added from his own Essay to that of Mr. Clarke, when it should appear in the Journal, in order that the report on Lincolnshire farming might be rendered complete. The Council concurred with Mr. Pusey and Mr. Miles, in hoping that the author would allow this second Essay to be published.

ESSAY PRIZES FOR 1851.—Mr. PUSEY then submitted to the Council the schedule of prizes for the Essays and Reports of next year, the following subjects and respective amounts of which were discussed and agreed to; subject to such conditions of competition as shall be published in the ensuing prize-list of the Journal, and to the Essays being sent to the Secretary at the house of the Society, on or before the 1st of March, 1851:—namely,

Farming of Shropshire	£50
Farming of Northamptonshire	50
Diseases arising from the mismanagement of horses	20
Diseases of Cattle after parturition	20
Agricultural Geology of England and Wales	50
Production of Butter	10
Any subject in Agricultural Chemistry	20

Mr. FISHER HOBBS then called the attention of the Council to the desirableness of attracting public consideration more strongly to the application of steam and other motive power to the purposes of agriculture; and an interesting discussion ensued. Mr. Pusey agreed with Mr. Hobbs on the importance of this question, and the only doubt he felt on the adoption of any means taken to procure an Essay for the Journal, was the interference it might occasion with the objects of the stewards of implements, who, at the country meetings of the Society, only allowed prizes to be awarded after actual trial of the practical value of the implements entered for competition.—Colonel Challoner thought, that where a steady uniform draught was required, as in the use of the windlass, and in the case of the mole and draining ploughs, horses might be much more advantageously employed than they had hitherto been.—Mr. Miles and Mr. Pusey referred to Nottinghamshire and other counties where draining ploughs had been drawn by means of a moveable windlass.—Mr. Garrett could bear his testimony to the great interest felt very extensively at the present moment on the application of steam-power to agricultural purposes. The minds of many men were actively on the alert to devise means by which steam power could be best adapted to the requirements, not only of ploughing, but of other field operations; and many patents having in view the accomplishment of these important objects, were now in the course of enrolment. No new engine or new power was required, but simply the adaptation of the present steam-power. Mr. Hobbs's suggestion he thought a very good one, and well-timed; for two years ago it would have been premature, two years hence it will be too late. With regard to horses, Mr. Garrett thought it should be borne in mind that the horses on a farm consumed one-fifth of the whole produce of the land, while steam-power would call manual labour and human superintendence into extensive requisition. He conceived that an essay expounding the possibility and advantages of the adaptation contended for, would lead the way to the actual construction, exhibition, and trial of the agricultural engine so much desired.—Mr. Shelley considered, that with reference to motive power, that of water was not to be neglected where it was to be had. With regard to steam-power, he had himself employed it largely, and to his great benefit, for the last two years, and the commonest labourer could manage it. He believed that nothing would so much tend to set the farmer on his legs as the adoption of steam-power, and the efficiency and economy with which its application was in every case attended. He had, however, great difficulty in getting his neighbours to look at his own arrangements, much less to get them to adopt them. He therefore hoped that such a prize-essay as Mr. Fisher Hobbs proposed would reach the eye of farmers, and tend to convince them of the opportunities within their reach, but which they had neglected. He thought the Council owed their best thanks to Mr. Hobbs for having brought forward the proposition.—Mr. Shaw, of London, fully concurred in the desirableness of the prize proposed. We were not yet aware of the extent to which steam may be applied, nor the consequent amount of advantage to be derived from its means to the practical farmer. He conceived that a statement of the present application of steam on the one hand, and its prospective applications on the other, to agricultural purposes, would prove of the highest value.—Mr. Pusey concurred in the general opinion of the Council, that such a prize would not interfere with the operations of the country meetings, but in a great degree tend to promote them, by detailing the various modes of applying steam-power to farm operations, and proving its advantages, by showing its economy; he had therefore much pleasure in seconding Mr. Fisher Hobbs's proposition. It was then carried unanimously, "that a prize of 30*l*. be offered for the best essay on the relative advantages of steam and other motive powers, applicable to agricultural purposes," to be sent to the Secretary, at the House of the Society, on or before the 1st of March, 1852.

EXETER MEETING.—Lord PORTMAN laid before the Council the Report of the General Exeter Committee, which was unanimously adopted. The points to which it had reference were the following:

1. Preparations for the Pavilion Dinner.
2. Contracts for the Pavilion and Show-yard.
3. Lecture requested of Professor Simonds: "On the Structure, Functions, and Diseases of the Liver in domesticated animals," to be delivered in the Athenæum at Exeter, at 6 p.m., on Wednesday, the 17th of July.
4. Awards of prizes in the classes of Cattle to be read at the conclusion of that Lecture.
5. Sale of tickets to members only during that day from 10 a.m. till 6 p.m., and on the Thursday to members and any of their friends, from 8 a.m. till 3 p.m.

Mr. SHELLEY thought the Society was so much indebted to those railway companies who so liberally lent the aid of their extensive opportunities to promote the great objects of the Society at its country meeting, that he would desire the Secretary to report to the Council the present state of his correspondence on that subject. The following is accordingly the list of the companies who, up to the present time, have, in the handsomest manner, granted concessions to the Society's exhibitors at the Exeter Meeting; namely,

Bristol and Exeter Railway—Chester and Holyhead Railway—Cockermouth and Workington Railway—Eastern Counties Railway—Great Western Railway—London and South Western Railway—London, Brighton, and South Coast Railway—Manchester, Sheffield, and Lincolnshire Railway—Shrewsbury and Chester Railway—South Devon Railway—Stockton and Darlington Railway—Stockton and Hartlepool Railway—Taff Vale Railway—York, Newcastle and Berwick Railway.

The Secretary was in communication with the remaining railway companies, and there was no doubt that they would, in the same liberal and enlightened spirit, renew their former concessions for promoting the success of the Society's country meeting at Exeter this year.

JUDGES.—Lord PORTMAN reported progress that the judges' committees were in active communication with the parties whom they had decided to recommend as judges at the Exeter meeting.

MEETING OF 1851.—Lord PORTMAN also reported, on the part of the Inspection Committee, that H.R.H. the Duke of Cambridge, as Ranger of Hyde-park, had in the most gracious and condescending manner expressed the satisfaction it gave him to place at the disposal of the Society, for the show of breeding stock in 1851, that part of Hyde-park near Kensington-gardens, which lay between the Serpentine River and the Victoria Gate in

the Bayswater-road.—The Council expressed their satisfaction at this additional instance of His Royal Highness's interest in the Society, and his appreciation of the value of its public objects.

COGGESHALL: *Steam-power in Agriculture.*—Mr. Mechi lately gave a lecture on this subject before the Mechanics' Institution here; he said—I need hardly say that steam will do on a farm that which horses cannot do. I must now descend to the dry details of first cost and daily expense of my own six-horse power steam engine, and the uses to which it is applied, because I know too many of my practical friends have considered or believed Mr. Mechi a visionary theorist, or crazy enthusiast in agriculture; but time (aided by a certain number of goodly stacks) is working changes of opinion; and I would advise certain folks to look after their laurels, for the physic of sound theory is beginning to operate at Tiptree Hall Farm—(laughter)—as the forthcoming crops promise most abundantly to illustrate. In another century it will scarcely be credited that in this great agricultural county, of one million of acres, there could not be found half-a-dozen agricultural steam engines! indeed, it is only recently that steam power is being gradually applied to our county corn mills; so that if we depended on meal for our stock they would alike be subjected to starvation by a long calm, a heavy flood, or a dry summer. Having adverted to the drainage of the Bedford Level as one of the great benefits already derived by agriculture from steam power, the lecturer proceeded—There is no doubt but ultimately we shall avail ourselves of steam for irrigation in our warm and dry districts, and that it will ultimately be applied to the working and stirring of the soil; already many experimental trials have taken place. One thing is certain—that the general application of steam power in cultivation will necessitate such a squaring and levelling and re-parcelling of the soil as will thoroughly reform the hedge-and-ditch-row-ism and topography of this kingdom. (Laughter.) It will equally compel a re-adjustment of the system of transfer or exchange of land, which should change hands as easily as the 3 per cents. A farm of 600 acres should represent a square mile with a farmery in its centre, having half a mile diverging roads to its extremities; whereas now, under the system of old custom and unalterability, a farm of that size generally involves the intricate threadings of miles of almost impassable green and muddy lanes, with fields of every form except the right one. A difficulty has hitherto been experienced from the scarcity of engineers; but two working young men, of ability and experience (Messrs. Stiffler and Algar) having located themselves at Kelvedon, myself and others have found their services truly valuable; and if they succeed, great will be the advantage to this neighbourhood, since the good going of an engine, like that of a watch, depends not only on the skill and ingenuity of its original maker, but also on the ability of those employed to repair it when out of order. I am enabled to form a correct comparative estimate of the relative power of horses and steam, because, unfortunately, my first attempt was with six real horses—the remembrance of that great mistake awakens many unpleasant and unprofitable reflections. (Laughter.) The mere working space required for the six horses is three times as great as that necessary for the engine and boilers—to say nothing of the stalls, attendance, and food. If a steam-horse costs only 25*l.*, it is quite clear that it is in first cost, power, maintenance, and durability, more advantageous than a real horse; besides, if you feed it well with coals and water, you may work it all night as well as all day.

	£	*s.*	*d.*
First cost and outlay of my own 6-horse power engine, best wrought boiler	150	0	0
Fixing shaft, brickwork, &c.	70	0	0
Pair of mill stones, gearing, and miller's tools ...	50	0	0
Turner and Harwood's linseed crusher and gearing...	15	0	0
Pump and gearing	15	0	0
Sack tackle and gearing	10	0	0
Threshing machine and gearing, shutters, &c. ...	50	0	0
Dressing machine and gear	20	0	0
Chaff-cutter and gearing	20	0	0
Grindstone and gearing	10	0	0
	£410	0	0

I believe Messrs. Stiffler and Algar would undertake the whole for a much smaller sum; but of course the cost must vary in some degree with the buildings. For a small additional cost, I could, if necessary, drive an extra pair of stones.

Daily Charge.	£	*s.*	*d.*
Coals	0	10	0
Wages of man as miller and engine-driver	0	3	4
Sperm oil, rags, candles, packing, &c.....	0	0	6
Wear and repairs to engine, &c.	0	1	6
	0	15	4
Interest of capital, 400*l.* at 5 per cent.	0	1	4
	£0	16	8

Daily Work Done. (Charged at the price we should have to pay in the regular way, independent of cartage to mill, &c.)	£	*s.*	*d.*
Seven quarters of corn ground	1	1	0
130 bushels of chaff cut one-eighth of an inch long (less woman's time 7*d.*)	0	3	6
Miller's toll saved, 4lbs. per sack, is 56¼ lbs.	0	3	6
Linseed crushed, water pumped, sacks raised, grindstone turned, water boiled, food steamed.....	gratis.		
	£1	8	0

Deducting expenses as above, this gives a daily profit of 11*s.* 4*d.*, and the work done by the engine is more than ten horses could accomplish. But even if, instead of 11*s.* 4*d.* daily gain we only conducted our business at the ordinary cost, still there would be an immense convenience in being able to do everything in our own way and at the right time, without cartage to mill and the uncertainties of supply.

Cost of a Day's Threshing.	£	*s.*	*d.*
30 quarters of long mowed Wheat (or 40 quarters of reaped ditto) threshed, dressed, and sacked up in eight hours. This would cost in addition to expense of the engine given above, viz.....	0	16	8
Wages of seven men at 1*s.* 6*d.*.....	0	10	6
Three women and three boys at 8*d.* each.....	0	4	0
	£1	11	2

Or 1*s.* per quarter for the mowed and 9*d.* per quarter for the reaped Wheat. The engine would do more, but these quantities are as much as a good man can pass through his hands in the time. Having thus disposed of the statistical part of the question, I may observe that steam will have the effect of abolishing or diminishing the extent of land in Grass. The facility of cutting straw into chaff, and grinding corn into meal by steam power, will convince landlords and tenants too that the poor Grass lands will be more advantageously converted into good corn and root growing arable land. The Scotch system of two years Grass for rest will naturally give way to the improved method of obtaining abundant manure by purchased corn on boarded floors, or under sheds. My daily consumption of chaff is more than 130 bushels. If, by any mischance or repair, the engine is not at work for a few days, great is the outcry for its use. Everything seems out of joint without it. But on what sized farms can steam be advantageously used? Here I am sure I shall differ most widely from the majority of landlords and of tenants of the present day. Before I answer the question I should ask, what amount of live stock per acre do you mean to keep? If you determine to keep, as I do, 4*l.* to 5*l.* worth of live stock per acre, you will require a steam-engine on a farm of 130 to 200 acres varying in power from four to six-horse. Mine of six-horse power finds ample employment on a farm of 170 acres. In fact, as I extend my accommodation I shall increase my quantity of live stock, being convinced that on this depends the increased fertility of our soil. It may be said, "If everybody did as you do meat would be very cheap." I can honestly assure you there is no fear of everybody doing so; prejudice, or want of capital, both by landlords and tenants, will be an effectual bar to its general and immediate extension; but the sooner we begin the better, for it is quite clear that even in this well-cultivated county we are a desperately long way from perfection. It has been urged that the employment of steam power displaces manual labour. However specious this objection may appear, it is not founded in fact, because the same principle of profit and economy that would induce an agriculturist to employ steam would also cause him to drain and subsoil his land, open his ditches, square his fields, trim his fences, mend his roads, burn earth, cart chalk, keep his lands free from weeds, and do many things that tend to the increased employment of labour. Besides the making of a steam-engine is nearly all labour, except the mere iron ore obtained by labour. Thousands of labourers are rendered permanent and premature paupers by the slavery of agriculture—I mean threshing and chaff-cutting. These operations are generally paid for by the piece, or task work. The result is over-exertion, a short cough, asthma, pain in the side, or some permanent disability. I see too many instances of this kind. Steam power would prevent them. In conclusion, I recommend the use of steam-engines in agriculture—1st, on the principle of humanity, as improving, by the cheapening and increase of food, the physical, moral, and social condition of the working classes; secondly, on the score of economy and profit, individual, parochial, and general; thirdly, on the ground of providing food and employment for our mechanical engineers and miners, rather than for our horses; and last, though not least, as the basis for promoting the honour and safety of the nation, by increasing the number of hardy tars to navigate our coal laden vessels, or, if need be, to man and defend

"Old England's wooden walls."

In answer to a question from F. U. Pattison, Esq., Mr. Mechi said he employed eight horses on his farm, but thought he could do with six. Mr. Pattison considered eight horses amply sufficient upon a farm of 170 acres without a steam-engine, so that no saving was shown in that respect. Mr. Mechi said it was the opinion of his bailiff that it released two horses, besides which it should be recollected that by subsoiling and deep cultivation he used more horse power than many of his neighbours. The discussion also turned upon the amount of corn which the engine would grind in a day of 10 hours, in which Mr. Stiffler stated that Mr. Mechi's calculation of 15 sacks was a small quantity, he having seen a sack of Barley ground by that gentleman's engine in 20 minutes. As to the durability of engines, Mr. Mechi quoted a statement of Mr. Garrett, that one he had had in use 12 years was in as good order as at first. In this respect he was corroborated by Mr. Hall, of the Coggeshall silk factory, who mentioned that an engine which he bought second-hand, used 20 years, and which had since been used for a similiar period by the person to whom he sold it, was now as good as ever. Mr. Swinborne (isinglass manufacturer) referred to Mr. Mechi's estimate of 1*s.* 6*d.* per day for repairs, observing that in his experience, although his engine had broken down three times from being over worked, it had not cost so much as that. He for one should be very sorry to return to horse-power.

Mr. Pattison, after again adverting to the small saving of horse-power, proposed a vote of thanks to Mr. Mechi, observing that he was always pleased to see him and to look over his farm. He never met Mr. Mechi without a smile, and it did one good to see him. (Laughter and cheers.) *Essex Standard.*

Farm Memoranda.

STANTON, NEAR BAKEWELL.—"The farm now occupied by W. P. Thornhill, Esq., at Stanton, was previously occupied by a tenant, and on his leaving the same Mr. Thornhill took it into his own hands, and set about improving this farm in earnest by giving a thorough drainage of the land where wanted; at the same time trenching or double digging a great portion of the land. In this important operation, which must be at the foundation of all good husbandry on wet lands, complete success has been the result, the water being carried off by the drains—the land being thus brought into a fit state for the growth of root crops. The next improvement was (the farm being full of old crooked fences, and the fields small in proportion to the size of the farm) to take down, remove, and rebuild in straight lines the wall fences; the fields thus having been very much enlarged, appear to be well proportioned to the size of the farm. Rotation of cropping—the four course system is practised. First year, Mangold Wurzel, Swedish and other Turnips. Second year, Wheat, Oats, or Barley, principally Wheat. Third year, red Clover with an admixture of Rye-grass, cut twice, first time for hay; second, hay and the milk cows. Fourth year, Wheat and Oats. The root crops sown on the ridge, 27 or 28 inches apart, manured principally with farm-yard dung, with an addition of 1½ cwt. of guano to the acre. A large breadth of Mangold has also been grown this season, the crop exceedingly heavy: a great proportion of the Mangold top is spread on the stubbles to be ploughed in. The Turnips are drawn off, to be consumed by cattle in the yards. Forty-eight acres of root crops have been grown this year. A great breadth of artificial Grasses were annually grown on this farm; quantity of seed sown per acre of red Clover, 11 lbs. of red Clover, with two pecks of Rye-grass, sown with the Grass seed drill; the whole of the grain crops put in with the drill. Judging from the appearance of the stubble and stack yard, which is large, and filled with stacks of considerable magnitude, notwithstanding the stack yard is inadequate to contain the whole of this year's produce, one large stack being built outside, we have no hesitation in saying the grain crop on this farm the last season was not of an ordinary but most extraordinary character for quantity, as large as can be profitably grown. A large dairy of cows are kept on the farm of a really useful description, for both milking and grazing; upwards of 30 calves are annually reared; thus, with the milking cows, two years and yearling heifers and bullocks, a great number of cattle is regularly kept on this establishment; the farm horses are in the stable all the year; in the summer season they are fed on Vetches, Italian Rye-grass, &c. Mr. Thornhill has an annual sale of fat and store stock. A considerable portion of oilcake is consumed by the fat stock; the enriching qualities of which in the manure, together with the great quantity of manure made on the farm, is the grand secret, with skilful management, in the production of those great crops before referred to. The buildings at the farmery have been much extended to accommodate the cattle. In all the improvements made on this farm, we do not discover that there has been any unnecessary or fanciful expenditure of capital; the object steadily kept in view by Mr. Thornhill being, that in every addition or alteration made, they should be of the character to pay. We are decidedly of opinion that the system of farming pursued on this farm is highly meritorious, and worthy of imitation by every tenant farmer occupying land of a similar character. As Mr. Thornhill has kindly permitted the public to inspect his farm, we promise those who do so, and who take pleasure in farming operations, a gratification rarely to be met with. The people in the neighbourhood must be deeply indebted to the owner and occupier of this farm for annually expending so large a sum of money in labour. On the south-east side of the farm in question, we were shown by the bailiff a tract of land that may be called an appendage to the farm before referred to. This tract of land is of considerable extent, having a most uneven surface, a great portion of it covered in a great measure with large stones; in its natural state almost valueless. This portion of the estate is, by the expenditure of a large amount of capital, being brought into a state of cultivation, and made to grow Potatoes, Turnips, and excellent crops of Oats. We cannot but regard Mr. Thornhill, not only as a most spirited agriculturist, but a true benefactor to his country in creating a vast amount of employment for the labouring classes, and thereby producing an increased quantity of food for an increased population. PETER P. FIDLER, BENJAMIN SWAFFIELD, and WILLIAM WAYER," (a committee of the Bakewell Farmers' Club). The above report has evidently been drawn up with much care by the committee, but there is one important fact which has been overlooked—the manner in which liquid manure is applied, so that two crops of seeds can be cut twice every year without detriment to the land; this omission we are happy in being enabled to supply. The seeds are top-dressed twice each year before each cutting, the first time with 2000 gallons, and the second time with 1500 gallons of liquid manure; and the system pursued by which 30 acres of seeds are manured in this manner twice every year is this:—a liquid manure tank is sunk under the whole of the farm-yard, and arched over; this tank holds 95,000 gallons of liquid manure, which is caught during the five months that 150 head of cattle are tied up, and also the liquid

of between 50 and 60 pigs during a whole year. It is by these means that 30 acres of seeds are enabled to be manured twice every year, yielding a crop the first time of cutting at the rate of 2 tons of hay to the acre, and 30 cwt. per acre at the second cutting. The first top-dressing is applied about the middle of April, as soon as the seeds begin to spring, at the rate of 2000 gallons per acre; and the second application of 1500 gallons per acre is made as soon as the first cutting is carried off the ground. One of the great benefits which the ground derives from such a top-dressing of liquid manure every fourth year is, that it is now entirely free from the ravages of the wireworm; before it was applied the crops suffered greatly in this respect; the ammonia from the liquid manure is fatal to the wireworm. *Chesterfield Gazette.*

Reviews.

Treatise on the cultivated Grasses and other Herbage and Forage Plants; with the kinds and quantities of seeds recommended for sowing down land to alternate husbandry, permanent pasture, lawns, &c. By Peter Lawson and Son, Seedsmen and Nurserymen to the Highland and Agricultural Society of Scotland. Third Edition.

WE cordially recommend this work to those of our readers who are interested in the improvement or formation of Grass lands. A new edition, prepared most carefully, has been issued at a time when advice and instruction on the subject treated of seem most in demand. A number of useful tables are given, stating the kinds and quantities of Grass seeds required for sowing an imperial acre in the cases of alternate husbandry and permanent pastures under various circumstances—as for fields, lawns, water meadows, &c. We have no doubt they will be found highly useful.

Seed List. By John Sutton and Sons, Reading, Berks.

WE refer to it here in commendation of the very detailed statement of prices which it gives. About 50 different kinds of Grasses are specified, and their present prices named—a matter of great convenience to any who may wish to determine the cost per acre of any recommended mixture.

Miscellaneous.

Roots choking Drains.—In a recent case, where some Poplar and Larch trees stood about 16 to 18 feet from the line of a main drain, laid through a field, it was found that in two years the drain had become choked with roots; and it is believed that in many instances where drainage has not produced those improvements in land which were anticipated, and even where hedge-rows cross or adjoin any portion of a main drain, the cause may be an obstruction of this nature. In the case quoted, however, the precaution of placing vertical pipes at the junction of each of the parallel drains with the main aided greatly in pointing out the cause. The drains in this case are said to have been made of horse-shoe tiles, well laid, and fitting closely at the joints. *From the Builder, May* 18.

Calendar of Operations.

JUNE.

BEDFORDSHIRE, *June* 3.—The weather for some time past has been alike favourable for the operations of the field, as for the growing crops. Every description of crop looks well now, and Turnip sowing is well advanced. We have about half our "Swedes" sown, and shall be likely to finish in another fortnight. We can sow three acres a day, with seven horses, seven men, and six boys; one man ridges up the land for the dung with two horses; three men fill to three carts; one boy drives the intermediate cart; one man lays down the dung; one man and five boys spread; and one man with two horses covers it in. We sow on the flat in some instances, and prefer doing so after Tares, or any other green crop, which leaves a portion of refuse, which is most useful under the furrow, and prevents the due preparation of the land for the ridge system, by repeated ploughings. We think Tares never ought to be sown on land intended for Turnips, unless well dunged in the autumn. The crop of Tares is thereby increased, and the land, after the crop is consumed, is in good preparation generally with one ploughing. There is no loss of labour then, nor loss of moisture from the soil by stirring it about in hot weather to make it firm enough for the Turnip seed. We have upwards of 120 acres of green crops this season, and 22 acres have grown, and are growing one crop which will shortly be succeeded by another. We expect to have the greatest part of the Turnips sown before hay-making commences, and always endeavour to have all other kinds of labour as forward as possible, that the hands may be concentrated. The Potatoes have received their first hoeing, and the Mangold Wurzels will soon be ready for hoeing also. The horses are now living upon Tares, a bushel of Oats, and a bushel of rice meal each per week. The sheep are chiefly living upon Tares; and 40 cattle in yards and houses. The cattle have some Clover hay and Wheat straw cut into chaff, and mixed with the cut Tares. They appear to thrive very well, and make a good deal of manure. No system of management however, we know of, an be remunerative with present prices for marketable ommodities, while the general expenses remain as they are. *R. V.*

Notices to Correspondents.

AGRICULTURAL SHOW AT GLASGOW: *Forward.* It will take place on the last day of July and the 1st and 2d of August.

CHURN: *B, Lymington.* The tin becoming smeared with the butter is not any consequence of the metallic surface; but it is owing to the cream and butter being warm and soft. Fill the vessel in which the churn is placed with as cold water as possible.

CORN-LAWS: *J B—J N.* If you would favour us with your address we could explain satisfactorily.

GRASSES, &c.: *Inquirer.* 1, Festuca ovina; 2, Poa pratensis; 3, Anthoxanthum odoratum; 4, Cynosurus cristatus. The two last of little value as pasture Grasses.—Rape may be sown in July and mown during December for forage for cattle in the house.—*W C E.* For marshy grounds, occasionally overflowed by fresh water, Lawson recommends —Agrostis stolonifera, 2 lbs.; Festuca elatior, 3 lbs.; Festuca loliacea, 3 lbs.; Glyceria aquatica, 5 lbs.; Glyceria fluitans, 5 lbs.; Phalaris arundinacea, 2 lbs.; Phleum pratense, 2 lbs.; Poa trivialis, 3 lbs.; Lotus major, 2 lbs. This is in the case of alluvial soils. Where the soil is of a dry porous nature, on an open gravelly soil—and this corresponds more to the specimen you have sent—it is advised to sow: Achillea millefolium, ½ lb.; Agrostis vulgaris, 2 lbs.; Arrhenatherum avenaceum, 4 lbs.; Festuca rubra, 4 lbs.; Holcus mollis, 1 lb.; Lolium italicum, 4 lbs.; L. perenne, 6 lbs.; Medicago lupulina, 3 lbs.; Onobrychis sativa, 3 lbs.; Poa pratensis, 2 lbs.; Poterium Sanguisorba, 2 lbs.; Trifolium filiforme, 2 lbs.; T. repens, 2 lbs.; in all 35½ lbs., along with one bushel of Rye.

NETTLES: *Mr. Garrett* says that, advised by a correspondent of the *Agricultural Gazette*, he tried Nettles as food for pigs, boiling them in the same boiler in which he boils up their victuals usually. He gave them to the store pigs, who eat greedily every vegetable refuse offered them, but they will not touch the Nettles, nor even the liquor in which they are boiled.

RED-LEGGED GUERNSEY PARTRIDGE: Will some reader kindly state his experience of the time the eggs of this bird require in hatching? The books state the incubating period of the common partridge to be three weeks, leaving it to be inferred that all partridges agree in this respect; but I have good reason to believe that the eggs of the red-legged partridge require a longer time, and till the point can be settled by further experiment, should be thankful to know if others have noted the duration of the hatching process of these birds. *D.*

SCHOOL: *A Subscriber.* Mr. Dawes refers to the school at King's Somborne, Hants; where, we imagine, he may be addressed.

TANKS: *W M.* Your plan seems perfect. Pumps can be had with metal valves and metal pistons, with no leather about them at all. They are a good deal more expensive, but they are much more lasting, especially in the case of liquid manure.

TILE MACHINE: *A B C.* Mr. Whitehead, of Preston, Lancashire, has carried off the prize at the Society's shows in York and Norwich. He has machines varying from 17*l.* 10*s.* to 38*l.* in price. And we believe the grounds of the judgment in its favour to be trustworthy. 2*l.* 10*s.* per cent. on the rental is an ordinary charge for valuing estates. It includes all expenses; 5*l.* 5*s.* a day and expenses we should not consider a very high charge under these circumstances. Valuations merely for the information of the owner may be made by any one without a license, and there is no need that they should be drawn out on stamped paper. When the valuation is between two parties, and has the effect of a bond, of course the case is different. We do not know to what book to refer you about farm buildings. Mr. Donaldson is about to bring out a book, we believe, on rural architecture.

WEEDS, &c.: *B M.* The Plantain must be got rid of by spudding up the plants. Bone-dust sown broadcast immediately after the hay crop will improve the aftermath, and especially the crop of the next year; 8 bushels per acre of bone-dust, with two or three bushels which have been acted on by half their weight of sulphuric acid, would be a good dressing per acre. —If you are about erecting a stable, Stewart's "Stable Economy" would probably furnish you with useful hints.—*W D C.* Thistles and Sorrel must be pulled up; that is the true method of destroying them.

Markets.

COVENT GARDEN, JUNE 8.

Vegetables are abundantly supplied. Strawberries and Hothouse Grapes are both plentiful, and the same may be said of Pine-apples. Peaches and Nectarines are far from scarce. Walnuts and Chestnuts are abundant; Oranges and Lemons sufficient for the demand. Young Carrots and Turnips may be had at from 6d. to 1s. 6d. a bunch. The supply of green Peas is on the increase. Frame Potatoes fetch from 9d. to 1s. per pound. Lettuces and other salading are sufficient for the demand, and so are Mushrooms. French Beans, Asparagus, and Rhubarb are plentiful. Cut Flowers consist of Heaths, Pelargoniums, Cinerarias, Lily of the Valley, Pinks, Carnations, Rhododendrons, Ranunculuses, and Roses.

FRUITS.

Pine-apples, per lb., 6s to 10s	Lemons, per doz., 1s to 2s
Grapes, hothouse, p. lb., 4s to 8s	Oranges, per doz., 9d to 1s 6d
— Portugal, p. lb., 9d to 1s	— per 100, 5s to 12s
Peaches, per doz., 15s to 24s	Almonds, per peck, 6s
Nectarines, per doz., 15s to 24s	— sweet, per lb., 2s to 3s
Strawberries, per oz., 3d to 8d	Walnuts, p. 100, 1s 6d to 2s
Gooseberries, green, per half sieve, 5s to 7s	— p. bush., 16s to 24s
Apricots, green, p. pottle, 8d to 1s	Nuts, Barcelona, per bush., 20s to 22s
Apples, kitchen, p. bsh., 4s to 6s	— Brazil, p. bsh., 12s to 16s
— per 100, 6s to 12s	Kent Cobs, 90s to 100s p. 100 lbs

VEGETABLES.

French Beans, p. 100, 1s 6d to 2s 6d	Onions, p. bushel, 7s to 9s
Asparagus, p. bund., 2s to 5s	— Spanish, p. doz., 1s 6d to 4s
Rhubarb, p. bundle, 3d to 8d	Shallots, per lb., 8d to 1s
Cabbages, per doz., 6d to 1s	Garlic, per lb., 4d to 8d
Cauliflowers, p. doz., 3s to 6s	Lettuce, Cab., p. sc., 2d to 1s
Broccoli, p. doz. bundl., 6s to 12s	Radishes, p. 12 hands, 3d to 6d
Greens, per doz., 1s to 2s	Mushrooms, p. pot., 9d to 1s
Sorrel, p. hf. sieve, 6d to 9d	Small Salads, per punnet, 2d to 3d
Potatoes, per ton, 100s to 200s	Fennel, per bunch, 2d to 3d
— per cwt., 10s to 12s	Savory, per bunch, 2d to 3d
— per bush., 4s to 6s	Thyme, per bunch, 2d to 3d
— frame, p. lb., 9d to 1s	Parsley, p. doz. bun., 1s to 2s
Turnips, p. doz. bun., 15s to 18s	— Roots, p. bdle., 9d to 1s
Red Beet, per doz., 1s to 2s	Marjoram, per bunch, 8d to 9d
Cucumbers, each, 6d to 1s	Mint, green, per bunch, 2d
Leeks, per bunch, 1d to 2d	Watercress, p. doz. bunches, 6d to 9d
Celery, p. bundle, 8d to 1s 6d	Horse Radish, p. bdl., 1s to 4s
Carrots, per bun., 9d to 1s	
Spinach p. sieve, 9d	

POTATOES.—SOUTHWARK, June 3.

The Committee report that the trade is heavy, considering the shortness of our supply, which is accounted for from the very warm weather during the last few days. The following are this day's quotations:—York Regents, 120s. to 160s. per ton; Scotch cups, 70s. to 80s.; ditto whites, 50s. to 60s.; Rhenish do., 60s. to 85s.; Belgian do., 60s. to 75s.

HAY.—Per Load of 36 Trusses.

SMITHFIELD, June 6.

Prime Meadow Hay	70s to 75s	Clover	68s to 84s
Inferior ditto... ...	55 65	New Clover	— —
Rowen	54 60	Straw	23 27
New Hay	— —		J. COOPER.

A very slow trade.

CUMBERLAND MARKET, June 6.

Prime Meadow Hay	70s to 74s	Inferior	65s to 75s
Inferior ditto... ...	55 65	New Clover	— —
New Hay	— —	Straw	24 28
Old Clover	78 84		JOSHUA BAKER.

WHITECHAPEL, June 6.

Fine Old Hay ...	65s to 68s	New Clover	—s to —
Inferior ditto ...	50 55	Inferior ditto... ...	65 70
New Hay	— —	Straw	22 26
Old Clover	80 84		

HOPS.—FRIDAY, June 7.

Messrs. PATTENDEN and SMITH report that the accounts from the plantations speak of a slight attack of fly generally, but it is not sufficient to cause any alarm. Middling and fine yearlings are in fair demand, as also fine 1846's and 1847's.

Mid. and East Kents ...	p. cwt. 160s to 200s	Farnhams, p. cwt.	—s — —s
Weald of Kents ...	130 —160	Yearling Kents ...	40 —100
Sussex	110 —130	Yearling Sussex...	40 —100
		Old Hops	20 — 70

SMITHFIELD, MONDAY, June 3.

The supply of Beasts far exceeds the demand. Trade is very dull, and 3s. 4d. is quite an extreme quotation. The number of Sheep and Lambs is rather larger; late prices are with difficulty supported. Calves are plentiful, but the average quality is not good, consequently choice ones make 4s. readily. From Holland and Germany there are 341 Beasts, 1040 Sheep, and 207 Calves; from Spain, 120 Beasts; from Scotland, 200; and 2000 from Norfolk and Suffolk.

Per st. of 8 lbs.—s d s d		Per st. of 8 lbs.—s d s d	
Best Scots, Herefords, &c.	3 2 to 3 4	Best Long-wools	to
Best Short-horns	3 0 — 3 2	Ditto Shorn	3 6 — 3 8
2d quality Beasts	2 6 — 2 10	Ewes & 2d quality	— —
Best Downs and Half-breds	—	Ditto Shorn	3 0 — 3 4
Ditto Shorn	3 8 — 3 10	Lambs	4 8 — 5 4
		Calves	3 0 — 4 0
		Pigs	2 8 — 3 8

Beasts, 3261; Sheep and Lambs, 26,720; Calves, 243; Pigs, 310.

FRIDAY, June 7.

The supply of Beasts has very considerably fallen off; they are readily sold at an advance of about 2d. per 8 lbs. We have an average number of Sheep and Lambs; for the former, trade is cheerful at rather higher prices, but for the latter it is not better. There is a very large supply of Calves; they are with difficulty disposed of at a considerable reduction. From Germany and Holland there are 30 Beasts, 590 Sheep, and 253 Calves; from Scotland, 50 Beasts; and 119 Milch Cows from the home counties.

Best Scots, Herefords, &c.	3 4 to 3 6	Best Long-wools	to
Best Short-horns	3 2 — 3 4	Ditto Shorn	3 6 — 3 8
2d quality Beasts	2 8 — 3 0	Ewes & 2d quality	— —
Best Downs and Half-breds	—	Ditto Shorn	3 0 — 3 4
Ditto Shorn	3 8 — 4 0	Lambs	4 8 — 5 4
		Calves	2 6 — 3 6
		Pigs	2 8 — 3 8

Beasts, 601; Sheep and Lambs, 13,030; Calves, 684; Pigs, 350.

COAL MARKET.—FRIDAY, June 7.

Buddle's West Hartley, 13s.; Carr's Hartley, 13s.; Wallsend Braddyll's Hetton, 15s. 6d.—Ships at market, 37.

MARK LANE.

MONDAY, JUNE 3.—The supply of English Wheat to this morning's market was small, and cleared at about the prices of this day se'nnight. Foreign met a very retail inquiry, but we do not alter our quotations.—Beans are 1s. per qr. cheaper. —Barley and Peas are unaltered in value.—The Oat trade is firm, and the finest qualities command rather more money.

BRITISH PER IMPERIAL QUARTER.	s. s.		s. s.
Wheat, Essex, Kent, & Suffolk ...White	40—44	Red	37—39
— — fine selected runs ...ditto	44—47	Red	39—41
— — Talavera	46—52		
— Norfolk, Lincoln, & York ...White	40—47	Red	36—39
— Foreign	38—51		
Barley, grind. & distil., 19s to 22s...Chev.	23—27	Malting	22—25
— Foreign.....Grinding and distilling	15—20	Malting	19—22
Oats, Essex and Suffolk	15—18		
— Scotch and Lincolnshire ...Potato	18—21	Feed ...	15—19
— Irish .....Potato	14—18	Feed ...	12—16
— Foreign .....Poland and Brew	14—18	Feed ...	12—16
Rye	19—21	Foreign	18—20
Rye-meal, foreign .....per ton	5*l.*—6*l.*		
Beans, Mazagan .....21s to 23s.....Tick	24—26	Harrow	24—26
— Pigeon ..... s— s...Winds	—	Longpod	—
— Foreign ..... Small	24—34	Egyptian	19—21
Peas, white, Essex and Kent.....Boilers	23—26	Suffolk	24—28
— Maple .....24s to 27s.....Grey	22—24	Foreign	19—28
Maize .....White	26—30	Yellow...	25—30
Flour, best marks, delivered ...per sack	33—37		
— Suffolk .....ditto	27—33	Norfolk	27—33
— Foreign .....per barrel	20—23	Per sack	28—32

ARRIVALS IN THE PORT OF LONDON LAST WEEK.

Flour, 13714 sks	Wheat.	Barley.	Malt	Oats.	Beans.	Peas
— — bls	Qrs.	Qrs.	Qrs	Qrs.	Qrs.	Qrs.
English	1960	229	5066	500	637	18
Irish	—	—	167	—	—	—
Foreign	18097	3143	—	20535	576	1276

FRIDAY, JUNE 7.—With the exception of 10,250 qrs. of foreign Wheat, the arrivals of all grain during the week have been moderate. To-day's market was thinly attended, and the amount of business transacted very trifling; the value of Wheat, Barley, Beans, and Peas may be considered nominally the same as on Monday; but where it was imperative to force sales of Wheat from ship, the demand was so limited that they could only be effected at a decline of 1s. to 2s. per qr.—The Oat trade is firm, and fine qualities are the turn dearer.—Flour is a dull sale, and the turn of prices in favour of the buyer.—There has been some little business done in floating cargoes of Galatz Maize during the week at 31s., cost, freight, and insurance. Although the weather has been fine, and the value of Wheat has been generally well supported in the principal markets of the kingdom, and in two or three even symptoms of improvement have been manifest, with the exception of Beans, which are 1s. per qr. cheaper, prices of spring corn are maintained. The country continues to wear a promising appearance. Konigsberg, 1st inst.: High mixed and mixed Wheat in good demand, at 39s. to 37s.

ARRIVALS THIS WEEK.

	Wheat. Qrs.	Barley. Qrs.	Oats. Qrs.	Flour.
English ...	2310	170	520	2270 sacks
Irish	—	—	—	
Foreign ...	10250	4770	14590	— brls.

IMPERIAL AVERAGES.	WHEAT.	BARLEY.	OATS.	RYE.	BEANS.	PEAS.
April 27.....	37*s* 1*d*	22*s* 1*d*	15*s* 0*d*	21*s* 8*d*	23*s* 8*d*	25*s* 1*d*
May 4.....	36 11	22 0	14 7	19 11	23 11	24 9
— 11.....	38 0	22 0	15 3	19 1	24 8	24 9
— 18.....	39 7	22 5	15 5	21 7	25 6	24 11
— 25.....	40 7	22 10	16 3	22 4	26 4	25 6
June 1.....	40 2	23 0	15 11	22 0	26 11	26 2
Aggreg. Aver.	38 9	22 5	15 5	21 1	25 2	25 2
Duties on Foreign Grain	1 0	1 0	1 0	1 0	1 0	1 0

Fluctuations in the last six weeks' Corn Averages.

PRICES.	APR. 27.	MAY 4.	MAY 11.	MAY 18.	MAY 25.	JUNE 1.
40*s* 7*d*	...	...	...	...	...	...
40 2	...	...	...	...	...	...
39 7	...	...	...	...	...	...
38 0	...	...	...	...	...	...
37 1	...	...	...	...	...	...
36 11	...	...	...	...	...	...

SEEDS.—June 7.

Canary, per qr.	78s to 86s	Coriander, per cwt.	18s— 22s
Caraway, per cwt.	31 — 34	Mustard, white, p. bush.	7 — 8
Hempseed, per qr.	34 — 35	— brown, do.	10 — 13
Linseed, foreign, do.	37 — 45	Rape, per last	34*l.*—38*l.*
Clover, red, per cwt.	24 — 46	Cakes, Linseed, p. 1000	8*l.* 5*s*
— — foreign, do.	— —	— — foreign, p. ton	6*l.* 0*s*
— white, do.	36 — 48	— Rape, foreign, do.	4*l.* 5*s*
— — foreign, do.	— —	Tares, per bush.	3*s* 0*d*—5*s* 6*d*

LIVERPOOL, FRIDAY, JUNE 7.—There was a small number of buyers at our Corn Exchange to-day, and a general determination on the part of millers to remain inactive, and we have to note a dull sale for Wheat of all descriptions. Barley, Malt, Beans, and Peas meeting very little notice, scarcely maintained our last quotations. Oats, of which few good mealing samples remain undisposed of, were held firmly, but moved sparingly at late prices. In Oatmeal no variation. Indian Corn, upon a more limited demand than before, receded 6d. per qr. for parcels not yet landed.

TO NOBLEMEN, GENTLEMEN, AMATEURS, NURSERYMEN, AND OTHERS.

MESSRS. PROTHEROE AND MORRIS are directed to sell by public Auction on the premises, Rosary, Breadmore, Hammersmith, on MONDAY, June 17th, 1850, at 12 o'clock, by order of the trustees of H. G. Hannington, Esq., three newly-erected Greenhouses, about 100 capital one, two, and three-light Boxes, Hand-lights, two Iron Rollers, Barrow, Seakale and other Pots, 100 Avenue Irons for climbers, 12 Hives of Bees, a large quantity of Chinese Figures, Vases, and Statues, 150 Fancy and other Rabbits, 100 Pigeons and Houses, 40 Doves; a fine assortment of fancy Poultry, Spanish and other breed; Store and Guinea Pigs; 13 large Zinc Store Canisters, three Garden Engines, 60 Mats; together with the selected Stock of Greenhouse Plants, 200 doz. of German Miniature Plants in pots, 15 gross of handsome German Pots, and sundry effects.—May be viewed two days prior to the Sale. Catalogues may be obtained (6*d.* each, returnable to purchasers, without which no person can be admitted) on the premises of the principal Seedsmen in London, and of the Auctioneers, American Nursery, Leytonstone.

TO NOBLEMEN, GENTLEMEN, NURSERYMEN, FLORISTS, AND OTHERS.

MESSRS. PROTHEROE AND MORRIS are instructed to sell by public Auction, on the premises, Sheep-lane, Cambridge-heath, Hackney, on MONDAY, June 10, at 1 o'clock, Three Newly-erected GREENHOUSES, each 120 feet long; about 1000 feet of Hot-water Pipe, Boilers, and Cisterns, Stages, a quantity of Slate, Shelving, &c.—May be viewed two days prior to the sale. Catalogues may be had on the premises, of the principal Seedsmen in London, and of the Auctioneers, American Nursery, Leytonstone, Essex.

TO GENTLEMEN, FLORISTS, AND OTHERS.

MESSRS. PROTHEROE AND MORRIS will sell by Auction, at the Mart, Bartholomew-lane, on THURSDAY, June 13th, a first-rate Collection of DAHLIAS, also the newest varieties of Fuchsias, Verbenas, Geraniums, Heartsease, Roses, and other plants in bloom; together with a variety of Ornamental Plants for bedding.—May be viewed the Morning of Sale; Catalogues had at the Mart, and of the Auctioneers, American Nursery, Leytonstone, Essex.

EAST INDIAN ORCHIDS.

MR. J. C. STEVENS will sell by Auction, at his Great Room, 38, King-street, Covent-garden, on MONDAY, June 10, at 12 for 1 o'clock precisely, 20 plants of Phalænopsis amabilis or grandiflora, just received from Manilla in fine health, and a small consignment from Ceylon, including some good Saccolabiums, Vandas, Dendrobiums, Cœlogynes, &c.—May be viewed the morning of sale, and Catalogues had.

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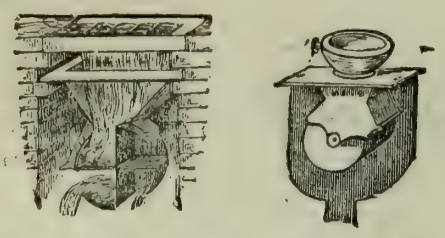
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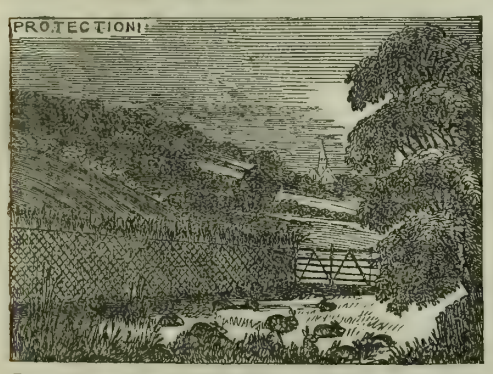
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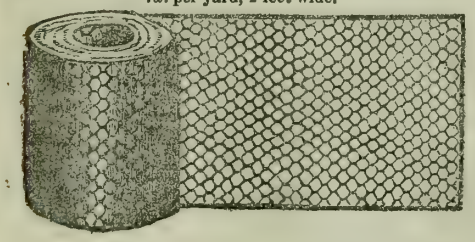


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2-inch " extra strong " ...	12 "	9 "
1⅝-inch " light " ...	8 "	6 "
1⅝-inch " strong " ...	10 "	8 "
1⅝-inch " extra strong " ...	14 "	11 "

All the above can be made any width at proportionate prices. If the upper half is a coarse mesh, it will reduce the price one-fourth. Galvanised sparrow-proof netting for pheasantries, 3d. per square foot. Patterns forwarded post-free.
Manufactured by BARNARD and BISHOP, Market-place, Norwich, and delivered free of expense in London, Peterborough, Hull, or Newcastle.

METCALFE AND CO.'S NEW PATTERN TOOTH-BRUSH and SMYRNA SPONGES.—The Tooth-Brush has the important advantage of searching thoroughly into the divisions of the teeth, and cleaning them in the most extraordinary manner, and is famous for the hairs not coming loose.—1s. An Improved Clothes-Brush, that cleans in a third part of the usual time, and incapable of injuring the finest nap. Penetrating Hair-Brushes, with the durable unbleached Russian bristles, which do not soften like common hair. Flesh-Brushes of improved, graduated, and powerful friction. Velvet-Brushes, which act in the most surprising and successful manner. The genuine Smyrna Sponge, with its preserved valuable properties of absorption, vitality, and durability, by means of direct importations, dispensing with all intermediate parties' profits and destructive bleaching, and securing the luxury of a genuine Smyrna Sponge. Only at METCALFE, BINGLEY, and Co.'s Sole Establishment, 130 B, Oxford-street, one door from Holles-street.
METCALFE'S ALKALINE TOOTH POWDER, 2s. per box.
CAUTION.—Beware of the words "From METCALFE'S," adopted by some houses.

NEWS, NEWS, NEWS.—The best, cheapest, and largest Newspaper in the World.—LLOYD'S WEEKLY LONDON NEWSPAPER contains 60 large columns of the latest intelligence from all parts of the Globe, price only Threepence, postage free. Send Three Postage Stamps to E. LLOYD, 12, Salisbury-square, London, and receive one copy as a sample.

ROYAL AGRICULTURAL IMPROVEMENT SOCIETY OF IRELAND.

LIST OF PRIZES FOR THE GREAT NATIONAL CATTLE SHOW AND EXHIBITION OF IMPLEMENTS, &c.

AT CORK, ON WEDNESDAY AND THURSDAY, THE 24TH AND 25TH OF JULY, 1850.

OPEN FOR GENERAL COMPETITION.

Sec.	CLASS A.—SHORT-HORNED.	£
1	For the best bull calved after the 1st of January, 1845, and previous to the 1st of January, 1848	30
	Second best ditto	10
2	The best bull calved in the year 1848	20
	Second best ditto	5
3	Best bull calved after the 1st of January, 1849	10
	Second best ditto	5
	Best bull in the above sections—the Medal.	
4	Best cow in calf, or that has had a calf in the year 1850	15
	Second best ditto	5
5	Best heifer, in calf or in milk, calved in the year 1847	10
	Second best ditto	5
6	Best heifer, in calf or in milk, calved in the year 1848	10
	Second best ditto	5
7	Best heifer calved after the 1st of January, 1849	10
	Second best ditto	5

CLASS B.—LONG HORNED, DEVONS, HEREFORDS, AYRSHIRES, POLLED ANGUS, GALLOWAYS,
Or any other distinct breed not qualified to compete as Short-horns. Same classification as Class A.

	CLASS C.—WEST HIGHLANDS, KERRIES, Or any other Mountain breed.	£
1	Best Bull calved after the 1st of January, 1844	5
2	Best cow, in calf, or that has had a calf in the year 1850	3
3	Best lot of two heifers	3

CLASS D.—FAT STOCK.—15 Sovs.
Best of all the prize bulls exhibited at the show—the Gold Medal.
Breeder of the best prize bull—the Medal.
Best of all the prize cows or heifers exhibited at the show—the Gold Medal.
Breeder of the best prize cow or heifer—the Medal.
The AGRICULTURAL CHALLENGE CUP, value £100, given by the late Peter Purcell, Esq., for the best animal in the neat cattle classes, possessing most merit of its kind in the estimation of the judges.

	CLASS E.—HORSES.	
1	Best cart stallion over three years old, and foaled since the 1st of January, 1843	30
	Second best ditto	10
2	Best cart stallion, foaled since the 1st of January, 1847	20
	Second best ditto	5
3	Best thorough-bred stallion—the Medal.	
4	Best cart mare in foal, or with a foal at her foot, or having reared a foal in the year 1849	10
	Second best ditto	5
5	Best cart filly, not exceeding three years old	5

	SHEEP. CLASS F.—LEICESTERS.	
1	Best shearling ram	10
	Second best ditto	5
2	Best two shear ram	10
3	Best ram of any other age	5
4	Best pen of five shearling ewes	5
5	Best pen of five ewe lambs	3

CLASS G.—Any other long-woolled sheep, not qualified to compete as Leicesters. Same classification as Class F.

	CLASS H.—SOUTHDOWNS.	
1	Best shearling ram	8
2	Best ram of any other age	4
3	Best pen of five shearling ewes	3

CLASS I.—CHEVIOTS. Same as Class H.

	CLASS K.—SWINE.	
1	Best boar of the large breed	5
	Second best ditto	3
2	Best boar of the small breed	5
	Second best ditto	3
3	Best breeding sow of the large breed	4
	Second best ditto	2
4	Best breeding sow of the small breed	£4
	Second best ditto	2
5	Best lot of three pigs of the same litter, not more than nine months old	3
	Second best ditto	2

CLASS L.—EXTRA STOCK.—20 Sovs.
CLASS M.—POULTRY.—15 Sovs.
CLASS N.—DAIRY PRODUCE.—20 Sovs.

	CLASS O.—IMPLEMENTS. £100 in Money, and the Medals of the Society, subject to the following classification:—	£
1	Best plough for the ordinary work of the farm	3
2	Best plough for deep trench ploughing	3
3	Best implement for breaking up the subsoil	5
4	Best grubber or cultivator, to be worked by two or more horses	5
5	Best horse hoe, for tilling the intervals of drilled green crops	2
6	Best constructed harrow for covering grain	2
7	Best break harrow or other implement for pulverising the soil	3
8	Best roller or clod-crusher	3
9	Best horse rake	3
10	Best farm cart	5
11	Best drill for sowing Turnip seed in one or two drills	3
12	Best Turnip drill, with apparatus for distributing light and portable manures	3
13	Best machine for distributing light and portable manures broadcast	5
14	Best machine for distributing liquid manure	5
15	Best machine for sowing grain and Grass seeds broadcast	3
16	Best machine for drilling grain	5
17	Best machine for cleaning grain	2
18	Best machine for cutting Turnips	2
19	Best Chaff-cutting machine	3
20	Best machine for cutting and bruising furze, which shall best combine efficiency of work with lowness of price	4
21	Best machine for grinding or crushing agricultural produce into meal	4
22	Best apparatus for steaming food for cattle	4
23	Best machine for making drain tiles or pipes	10
24	Best lot of draining tiles	1
25	Best assortment of draining tools	1
26	Best and cheapest set of tools for digging and subsoiling the land by manual labour	1
27	For any valuable improvements in the construction of any agricultural machine—the Medal.	
28	For any new and useful agricultural implement that has been satisfactorily tested in actual work, and more particularly for the best portable steam engine, applicable to horse threshing machines (either fixed or movable), straw or chaff cutters, or oat bruisers, and with the least expensive alteration of the machinery heretofore in use for horses	20

The judges will also mark as "commended" such improvements in machines as appear to them deserving of notice, although not altogether meriting the society's medals.
Exhibitors when entering their stock will be required to send a complete priced catalogue of the several articles they intend to exhibit, and to specify distinctly the premium and number for which the said article is to compete.

CLASS P.—For the best assorted collection of Seeds, Roots, Grasses, Vegetables, &c. Medals, &c.

MONDAY, the 1st of JULY, will be the last day for serving Notices of Entry for the Show, and Premium Sheets and blank Forms of Entry can be had on application, from the Secretary in Dublin, or from J. B. Hartland, Local Secretary, Cork, by whom every information will be given. Every accommodation will be afforded by steamers from London, Portsmouth, Plymouth, Bristol, and Liverpool, for Stock and Implements direct to the Show.

Signed by Order, EDWARD BULLEN, Secretary,
41, Upper Sackville-street, Dublin.

MARQUEES, SUN-BLINDS, RICK-CLOTHS, &c.—Manufactory, Old Kent-road, facing the Bricklayer's Arms Railway Terminus, and 17, Smithfield-bars, London.
"The guests are arriving; my villa has got
Quite a park-like appearance—a beautiful spot;
The band on the lawn, in the spacious marquee,
This tent for our dinner, and that for our tea."
Marquees and temporary rooms superbly fitted up for fetes, &c., on most moderate terms, by THOMAS EDGINGTON and Co.—Tents of every description, Rick-cloths, with poles, &c. Tanned Netting, for the protection of fruit-trees from frost, blight, and birds, and for the security of fresh-sown seed either in gardens or fields, at unprecedentedly low prices, viz., 1d. per square yard, or 200 yards for 14s., or 500 yards for 30s., or 1000 yards for 50s. Sold to gardeners and shopkeepers by the cwt. —New Archangel Mats and Scrim Canvas for wall fruit; Tarpaulings for houses under repair, on hire. Orders and inquiries per post immediately attended to.

GERMAN SPRING MATTRESSES, permanently elastic, very durable and cheap.

3 feet wide	£2 8 0	4 feet 6 inches wide	£3 3 0		
3 feet 6 inches	2 13 0	5 feet	3 10 0		
4 feet	2 18 0	5 feet 6 inches	3 18 0		

The best, top stuffing all horsehair:

3 feet wide	£3 10 0	4 feet 6 inches wide	£5 0 0
3 feet 6 inches	4 0 0	5 feet	5 10 0
4 feet	4 10 0	5 feet 6 inches	6 0 0

One of these Mattresses, with a French Mattress on it, is a most excellent and soft bed. HEAL AND SON'S List of Bedding, with full particulars of Weight, Sizes, and Prices of every description of Bedding, sent free by post.
HEAL AND SON, Bedding Manufacturers, 196, opposite the Chapel, Tottenham-court-road, London.

DEPOT FOR PATENTED AND OTHER NEW AND USEFUL INVENTIONS, 97, NEWGATE-STREET.
ANTHONY'S PATENT AMERICAN CHURN.—"LONDON GOSSIP.—Then there is another bit of art,—which has been exhibiting itself in high quarters—A New American Churn, which makes butter almost as fast as cooks can use it. What will our dairy farmers say to this Yankee achievement? Will they take a hint, remembering that in these times butter travels by railway?"—*Chambers's Edinburgh Journal*, 18th May.
KEY's Patent American Force and Suction Pump, Ransome and Parson's Filters, Flexible Canvas Hose, lined with Gutta Percha, &c., to be had of KEY and MITCHELL.

ENORMOUS SAVING! GOING WITH THE TIMES!
HOW TO KEEP A HORSE for less than ONE SHILLING per DAY. The articles and numerous references may be seen, and a list of prices had at MARY WEDLAKE and Co.'s, 116, Fenchurch-street. A Pamphlet on the above may be had, each (post free) 1s. Also
HOW TO MOW, Cut, Cart, and Stack HAY, for less than HALF the usual cost, in any county and in any weather.—N.B. A Pamphlet on the above may be had, each (post free) 1s.

A BOON TO THE FARMERS.
FARMERS, be of good cheer, all is not yet lost.
Come to us, you will find us ready to meet the times!
As you cannot get the same price for your produce, so we cannot expect from you the same price for our IMPLEMENTS, and without first-class manufactured Implements you cannot stand these times! By inclosing two stamps, a list, with illustrations, will be forwarded. Real makers of what they sell.—Most liberal discount for cash.

PORT NATAL, NEW ZEALAND, AUSTRALIA.
Emigrants are informed MARY WEDLAKE and Co. have from time to time supplied the first settlers to Swan River and Port Natal, and all the Australian Colonies, with AGRICULTURAL IMPLEMENTS, and tools of first-rate class. They beg an inspection of their stock.—N.B. Purchasers may have the benefit of an introduction. Most liberal discount for cash.

A LIVER COMPLAINT OF A MOST HOPELESS NATURE CURED BY HOLLOWAY'S PILLS.—Mr. Thomas Clark, of Lake George, New South Wales, was seriously afflicted for years with a liver complaint. His medical attendants, after trying all their skill, candidly gave their opinion that his case was hopeless. In this situation, and when expecting that every day would terminate his earthly career, a friend recommended him to try HOLLOWAY'S Pills, assuring him that he knew a person who was cured by them of that complaint. He adopted the advice and found speedy relief from taking them, and was in a short time perfectly restored to health.—Sold by all vendors of medicines, and at Professor HOLLOWAY'S Establishment, 244, Strand, London.

Printed by WILLIAM BRADBURY, of No. 13, Upper Woburn-place, in the Parish of St. Pancras, and FREDERICK MULLETT EVANS, of No. 7, Churchrow, Stoke Newington, both in the County of Middlesex, Printers, at their office in Lombard-street, in the Precinct of Whitefriars, in the City of London; and published by them at the Office, No. 5, Charles-street, in the parish of St. Paul's, Covent-garden, in the said county, where all Advertisements and Communications are to be ADDRESSED TO THE EDITOR.—SATURDAY, JUNE 8, 1850.

THE GARDENERS' CHRONICLE
AND
AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 24—1850.] SATURDAY, JUNE 15. [PRICE 6*d.*

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GARDENERS' BENEVOLENT INSTITUTION.—At a General Meeting of the Subscribers to this Institution, held at the London Coffee-house, Ludgate-hill, on Wednesday, the 12th of June, for the purpose of electing Two Pensioners on the funds of this Charity, the following was the result of the Ballot:

Name.	Residence.	Application.	Votes.
EDWARD MARSHALL ...	London ...	9th ...	171
JOHN APPLEBY ...	Clapham ...	5th ...	101
JAMES BATTEY ...	London ...	4th ...	187
EDWARD BEACH ...	Quedgley, Gloucester.	4th ...	358
JOHN COCKS ...	Brixton ...	4th ...	289
RICHARD RUDLAND ...	Sutton-at-Hone ...	4th ...	137
JOHN SHEPHERD ...	Clapham ...	4th ...	480
WILLIAM BROWN ...	Andover ...	3d ...	8
RICE EVANS ...	Stone ...	3d ...	22
JOHN HURDEN ...	Bath ...	3d ...	11
CORNELIUS ROBINSON ...	Blackheath ...	3d ...	68
JOHN SNOW ...	Farnborough ...	3d ...	147
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WILLIAM CARTER ...	Chigwell ...	1st ...	4
JAMES GREEN ...	Fairford ...	1st ...	77
JOHN SKEATES ...	Brixton ...	1st ...	—

The Meeting then declared JOHN SHEPHERD and EDWARD BEACH, as having the greatest number of Votes, duly elected Pensioners of this Charity. EDWARD R. CUTLER, Sec.

37, Farringdon-street, June 15.

HALSTEAD AND NORTH ESSEX FLORAL AND HORTICULTURAL SOCIETY.—A GRAND FLORAL AND MUSICAL FETE will take place in the old Baronial Hall, at Hedingham Castle, near Halstead, Essex, on TUESDAY, the 9th of JULY, when the following Extra Prizes for SEEDLINGS (open to all England) will be given, namely, to be shown in pots, best Seedling Geranium, dark or crimson variety, 10*s.* 6*d.*; ditto, light variety, 10*s.* 6*d.*; ditto Fuchsia, dark variety, 10*s.* 6*d.*; ditto, light variety, 10*s.* 6*d.*; ditto Petunia, dark variety, 5*s.*; ditto, light variety, 5*s.*; ditto Calceolaria, 5*s.* CUT FLOWERS.—Best Seedling Verbena, 3 trusses, 7*s.* 6*d.*; ditto Pansy, 6 blooms, 7*s.* 6*d.*; ditto Pink, 6 blooms, 7*s.* 6*d.*; ditto English Iris, 6 blooms, 7*s.* 6*d.*; ditto Ranunculus, 6 blooms, 7*s.* 6*d.* G. P. ARDEN, Hon. Sec.

THE CHELTENHAM HORTICULTURAL SOCIETY will hold their 3d Annual Exhibition on Tuesday, June 18, at Pittville Spa. Gates opened at 2 o'clock. Admission, 2*s.* each. This Society holds five exhibitions in each year, and a Chrysanthemum Show in November. The days fixed for the other exhibitions are July 23d, Sept. 10th, and Nov. 12th.

By order of the Committee, C. F. WICKES, Secretary.

OXALIS ELEGANS FROM PERU.—A beautiful hardy species of Oxalis, in two distinct varieties; an abundant and constant bloomer, flowering in the open border from May till November—a desirable hardy plant for permanent beds.

Messrs. VEITCH and SON are now sending out flowering plants of the above at 5*s.* each, or six plants to the trade for 21*s.*, for either or both varieties together. Figured and described in Paxton's "Magazine of Gardening" for October, 1849, and Curtis's "Botanical Magazine" for January, 1850.

Exeter, June 15.

PLANTS OF CABBAGE, SAVOY, KALE, BROCCOLI, CAULIFLOWER, AND CELERY.

JOHN CATTELL, SEEDSMAN and NURSERYMAN, Westerham, Kent, begs respectfully to inform the public that Plants of his superior true sorts of the above are now ready, and will be forwarded, as usual, to order, on receipt of postage stamps or Post-office orders, at the undernamed prices, basket or mat and package included:

All the sorts of early Cabbage, Savoy, and Kale, including Brussels Sprouts, 4*s.* 6*d.* per 1000; all the sorts of Autumn and Spring Broccoli and Red and White Celery, 6*s.* per 1000; Cauliflower, early and late, and Red Cabbage, 9*d.* per 100; Drumhead or Cattle Cabbage, 3*s.* 6*d.* per 1000, 6*d.* per 1000 less when no mat or package is required. Packages of 1000 and upwards delivered free of carriage to the Edinbridge Station of the South-Eastern Railway.

Seeds of CATTELL'S superior "Dwarf Barnes," and his "Dwarf Reliance" Cabbage, may be had in packets, by post, for 12 penny stamps per packet, the former containing 1 oz., as usual, and the latter ½ oz.

ESCALLONIA MACRANTHA, beautiful, hardy evergreen, flowering Shrub from Patagonia.—The largest flowers, and handsomest of all the known species of Escallonia; the foliage a dark glossy green, habit compact and good, and an abundant bloomer, producing its clusters of beautiful rose-coloured flowers through summer and autumn.—Messrs. VEITCH and SON are now sending out fine established Plants of the above at 21*s.* each, or one over to the Trade on every three Plants taken. It is a Plant they can confidently recommend, and may now be seen in their Nursery covered with bloom. A coloured Plate and letter-press Description will be sent, postage free, on receipt of six postage stamps.—Exeter, June 15,

TO THE LADIES THAT TAKE AN INTEREST IN THEIR FLOWER GARDENS, AND WHO DOES NOT?

D. FERGUSON, with much pleasure states he can supply them with well-rooted plants, from cold frames, of first-rate Verbenas, Calceolarias, Geraniums, Heliotropes, Fuchsias, Anagallis, Cupheas, Ageratums, Pentstemons, &c., for bedding out, at 1*s.* 6*d.* per dozen, if 5 to 20 dozen are taken; 1*s.* 3*d.* if 20 to 50; above 50, 1*d.* each; and if 100, five dozen will be added: carriage free to London, Birmingham, Leamington, Peterborough, Banbury, Bedford, and all intermediate stations on the North-Western Railway. Lists marked for selection at the above prices, sent free on application: but those not already in possession of a collection, D. F. advises parties to state the colour and quantity they want, and leave the selection to him; and to those who have no convenience for wintering plants, they will find it advantageous to give their annual orders in July or August for the following Spring, as they, on taking five dozen and upwards, will have the choice, not only of those marked in the list, but any other bedding-out plant, if possible to procure, at equally low prices.

Letters directed Buckingham, in place of Aylesbury, reach D. F. one day sooner: where all post-office orders are requested to be made payable.

CACTI AND CAMELLIAS.—To be Sold, by order of the Executors of the late Mr. ROBERT STONE, Frognal, Hampstead, Middlesex, a Choice Collection of the above Plants, some of which are very curious specimens; also a very superior variegated American Aloe, to blow in eight years' time.—May be seen on application on the premises, Frognal, Hampstead.

CALCEOLARIA GRANDIS, a shrubby Peruvian species, an abundant bloomer, habit neat and dwarf, foliage small, fine glossy green, flowers bright yellow.

Messrs. VEITCH and SON are now sending out good established plants of the above at 5*s.*, or six to the trade for 21*s.*

Exeter, June 15

TO GENTLEMEN AND FLORISTS.

TO BE DISPOSED OF, about 50 CAMELLIAS, fine healthy plants, in good variety, 25 of them standing from 5 to 7 feet high, and 4 feet across. The price for the whole, 25*l.* The plants may be seen on application to F. J. BUCK, Manor Nursery, Shacklewell-lane, near Kingsland, London.

TO LADIES AND OTHERS INTERESTED IN HORTICULTURE.

THE STRAWBERRY.—An eminent Medical Writer thus notices the properties of the Strawberry:—"The act of eating this fruit cleauses the teeth and gums, and purifies the breath: it assists digestion, fortifies the stomach, and being entirely soluble never turns sour or undergoes fermentation. In many cases it is positively medicinal, removing rheumatic affections and other diseases arising from obstruction of the system."

How essential therefore it is to cultivate such fruit in perfection! Those who are desirous of so doing should apply to Mr. JOHN ROBERTS, of 34, Eastcheap, London, who has recently published a pamphlet on the cultivation of this delicious fruit, together with many other fruits and vegetables, which may be obtained by enclosing three postage stamps, addressed to him as above.

BEE HIVES.

GEORGE NEIGHBOUR AND SON respectfully announce that they have prepared for this season an extensive supply of their various IMPROVED BEE HIVES, which are offered to all who are desirous of cultivating that pleasing and profitable branch of rural economy—the Honey Bee. The collection consists of "Nutt's Collateral Hives," "The Single Box Hive," "The Amateur Bar Hive," "The Improved Cottage Hive," &c., from either of which the honey may be taken at any time without injury to the Bees, and may be worked with safety, humanity, and profit, by the most timid and unaccustomed to Bee manipulation. A descriptive paper, with drawings and prices, will be forwarded on the receipt of two postage stamps.—127, High Holborn, London.

Agents: WM. DRURY, Castle-street, Liverpool; HALL and WILSON, 50, King-street, Manchester; AUSTIN and M'ASLIN, 168, Trongate, Glasgow.

NOVELTY, ELEGANCE, AND DURABILITY.

R. RESTELL'S PATENT METALIC ORNAMENTAL GARDEN and CONSERVATORY LABELS, in a variety of patterns; may be written upon freely, are flexible, and calculated to last for 20 years.

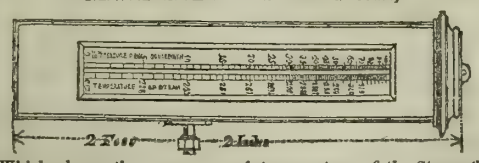
To be had of the principal Seedsmen and dealers in Horticultural Implements.

Manufactory, 35, High-street, Croydon, Surrey.

TO BE DISPOSED OF, the Wholesale Department of an Old and Highly-respectable London Seed Establishment; any one wishing to embark in the trade, or to add to their own business, will find this an opportunity rarely to be met with.—Apply to Messrs. STUBMY and SIMPSON, 8, Wellington-street, London-bridge.

STEAM BOILER EXPLOSIONS.

HENRY BAKER begs to call the attention of Engineers and Proprietors of Steam Engines to his NEWLY-INVENTED STEAM-GUAGE,



Which shows the pressure and temperature of the Steam (it slightly differs from the drawing annexed). This instrument is an ornament to the Engine-room, and supersedes the ordinary Steam-guages in these respects. It is less cumbersome, cheaper, cannot get out of order in carriage, and is warranted accurate. Boiler explosions, in many instances, occur through Steam-guages not being in good working order, therefore every attention should be paid to these very necessary adjuncts.

HENRY BAKER'S STEAM-GUAGES may be fixed in a Counting-house, and will show the pressure the same as if it were fixed in the Engine-room, thereby having a check upon the man working the Engine. Price 2*l.* 5*s.*, and 2*l.* 2*s.*; Vacuum-guages, 3*l.* 3*s.* each.

HENRY BAKER, Barometer, Thermometer, and Philosophical Instrument Maker to the Board of Admiralty, 90, Hatton-garden, London.

GREENHOUSES.

HENRY FREEMAN, HOTHOUSE BUILDER and HOT WATER APPARATUS MANUFACTURER, Triangle, Hackney, London, begs to solicit the attention of the gentry to his low prices for cash. Good substantial-built Greenhouses, fixed complete, 42 feet long, 13 feet wide, 90*l*; 21 feet long, 13 feet wide, 50*l*.; 12½ feet long, 10 feet wide, 30*l*. A large assortment of Conservatories, Hothouses, Pits, Melon and Cucumber boxes, Iron hand-lights, Summer-houses, Seats, &c. Estimates in the above line, either in wood or iron.

BLENHEIM PALACE KITCHEN GARDENS.

TO BE DISPOSED OF, the whole of the growing and now ripening crop of TWO PEACH HOUSES, TWO NECTARINE HOUSES, TWO VINERIES (finest Black Hamburgh and White Muscat), and an unequalled collection of the most splendid PINES, many of which will weigh 10 lbs. and upwards. This unrivalled assortment of Fruit offers an unusual opportunity to Tavern-keepers, Contractors for Balls, Public Breakfasts, or Dinners, to supply themselves for the next six or seven weeks with the finest fruit in the kingdom, at prices considerably lower than the exorbitant demands of the London Market Gardeners.—Applications from parties, to purchase the whole or part of the above, may be made to Mr. TURNBULL, Gardener, Blenheim, who will show the same.

TO GARDENERS AND OTHERS.

TO BE SOLD, A BARGAIN, A Six-roomed House, and a quarter of an acre of land, with two Greenhouses, &c., in a flourishing Building Society, which has been established more than six years, about five miles from Covent Garden Market.—For particulars, apply to Mr. STEPTOE, Herbalist, Covent Garden Market; and of Mrs. M'ALLISTER, Middle-row, Kensal New Town, Middlesex

TO FLORISTS AND OTHERS.

TO BE SOLD, very cheap, the LEASE of a Nursery, within two miles of London, containing one acre of ground, together with two good Dwelling-houses, let to respectable tenants, which nearly covers the rent of the whole. The Lease can be taken with or without the Stock (wholly pot plants) and Glass, or with a part thereof, to suit the convenience of the purchaser. For particulars, apply, if by letter post-paid, to A.B., 14, Sommerford-grove, Stoke Newington-road, near London.

TRUE DRUMHEADS FOR CATTLE, at THOS. WELLAND'S, Surrey Gardens, Wheeler-street, Godalming, Surrey, packed and delivered at Godalming Station, 3*s.* 6*d.* per 1000; other garden plants in great variety.

RANUNCULUSES, new and first-rate.—WALTERS'S Mixtures, which he offered in January last at 21*s.* per 100, may be seen during the week at Messrs. HURST & M'MULLEN'S, 6, Leadenhall-street, London, and orders taken for the same.

TO NURSERYMEN, GARDENERS, AND OTHERS.

PARTNERSHIP.—A young Man, aged 34, who has about 3½ acres of Land on a long Lease (more Land may be obtained, if required, adjoining the same), most desirably situated for a Nursery, in one of the greatest thoroughfares in a fashionable flourishing town, with a population of 8000, where there is but one more in the like business for many miles round. The Land is in a good state of cultivation, being at the present time well cropped with all kinds of Vegetables. There is also an increasing Seed Business. The Advertiser is desirous of meeting with a PARTNER, for the purpose of carrying out the business on a more extensive scale. Such an opportunity rarely offers itself.—For further particulars, apply by letter, prepaid, to H. P., care of Mr. George Warder Jordan, 11, Bell-yard, near Temple-bar, London.

HARTLEY'S PATENT ROUGH PLATE GLASS.

JAMES PHILLIPS AND CO., 116, Bishopsgate-street Without, beg to hand their list of Prices of the above description of GLASS.

		Cut to order in panes of	
8 by 6	and under	10 by 8	at 4½*d.* per foot.
10 by 8	,,	14 by 10	at 5*d.* ,,
14 by 10	,,	1½ foot, or sizes not exceeding 20 inches long	at 5½*d.* ,,
1½ foot	,,	3 feet, or sizes not exceeding 30 inches long ...	at 6*d.* ,,

PACKED IN BOXES of 50 feet each.

6 by 4 and 6½ by 4½...10*s.* 6*d.* 8 by 6 and 8½ by 6½...13*s.* 6*d.*
7 by 5 and 7½ by 5½...12*s.* 0*d.* 9 by 7 and 10 by 8 ...15*s.* 0*d.*

We do not pledge ourselves to execute large orders for small squares at the above prices, but only as far as they turn up in cutting. Should any quantity of small squares be required, a special contract is necessary.

Milk Pans from 2*s.* to 6*s.* each, Metal Hand-frames, Tiles, and Slates; Propagating and Bee Glasses from 2*d.* each; Cucumber Tubes, 1*d.* per inch; Peach Glasses, 10*d.* each; Wasp Traps, 3*s.* 6*d.* per dozen; Pastry Slabs, Hyacinth Glasses and Dishes, Shades for Ornaments, Fish Globes, Plate and Window Glass of every description, and Lamp Shades. Lactometers for trying the quality of Milk, 4 tubes, 7*s.* 6*d*; 6 tubes, 10*s.* Self-registering Thermometers for Greenhouses, Horticultural Glass, &c.

From the *Gardeners' Chronicle*, December 8, 1849.—"As to the article substituted for Rough Plate, and which is actually in the market for the purpose of imposing upon gardeners, it is wholly unfit for any horticultural purpose. The best samples of it which we have yet seen is sold by Mr. JAMES PHILLIPS, 116, BISHOPSGATE STREET, LONDON."

HORTICULTURAL SOCIETY OF LONDON.

EXHIBITION AT THE GARDEN, JUNE 8, 1850.

AWARD OF THE JUDGES.

THE LARGE GOLD MEDAL.

1 To Mr. May, Gardener to Mrs. Lawrence, F.H.S., for a collection of 20 Stove and Greenhouse Plants
2 To Mr. Mylam, Gardener to S. Rucker, Esq., jun., F.H.S., for 20 species of Exotic Orchids

THE GOLD KNIGHTIAN MEDAL.

1 To Mr. Cole, Gardener to H. Colyer, Esq., of Dartford, for a collection of 20 Stove and Greenhouse Plants
2 To Mr. Green, Gardener to Sir E. Antrobus, Bart., F.H.S., for a collection of 15 Stove and Greenhouse Plants
3 To Mr. Blake, Gardener to J. H. Schröder, Esq., F.H.S., for 20 species of Exotic Orchids

THE GOLD BANKSIAN MEDAL.

1 To Messrs. Frazer, of Lea Bridge-road, Leyton, for a collection of 20 Stove and Greenhouse Plants
2 To Mr. Gerrie, Gardener to Sir J. Cathcart, Bart., F.H.S., for a collection of 15 Stove and Greenhouse Plants
3 To Mr. Carson, Gardener to W. F. G. Farmer, Esq., F.H.S., for a collection of 10 Stove and Greenhouse Plants
4 To Mr. Williams, Gardener to C. B. Warner, Esq., F.H.S., for 20 species of Exotic Orchids
5 To Messrs. Veitch and Son, of Exeter, for 15 species of the same
6 To Mr. Carson, for 10 species of the same
7 To Mr. Green, for Tall Cacti, in flower
8 To A. Rowland, Esq., F.H.S., for 12 varieties of Roses in pots
9 To Messrs. Lane and Son, of Great Berkhampstead, for the same
10 To Mr. Smith, Gardener to W. Quilter, Esq., of Norwood, for 10 varieties of Cape Heath
11 To Mr. Epps, F.H.S., for the same

THE LARGE SILVER-GILT MEDAL.

1 To Messrs. Pamplin, Lea Bridge-road, Leyton, for a collection of 20 Stove and Greenhouse Plants
2 To Mr. Taylor, Gardener to J. Coster, Esq., of Streatham, for a collection of 10 Stove and Greenhouse Plants
3 To Mr. Kinghorn, Gardener to the Earl Kilmorey, Orleans House, Twickenham, for a collection of six Stove and Greenhouse Plants
4 To Messrs. Rollisson, of Tooting, for 15 species of Exotic Orchids
5 To Mr. Franklin, Gardener to Mrs. Lawrence, F.H.S., for 10 species of the same
6 To Mr. Gerrie, for six species of the same
7 To Mr. Green, for a collection of Greenhouse Azaleas, in six varieties
8 To Mr. Roser, Gardener to J. Bradbury, Esq., of Streatham, for 12 varieties of Roses in pots
9 To Mr. Francis, of Hertford, for the same
10 To Mr. Mylam, for 10 varieties of Cape Heath
11 To Messrs. Rollisson, for the same
12 To Mr. Smith, for 10 varieties of Cape Heath, in 11-inch pots
13 To Mr. Epps, F.H.S., for the same
14 To Mr. Cock, F.H.S., for six new varieties of Pelargonium, in 8-inch pots
15 To Mr. Dobson, Gardener to E. Beck, Esq., F.H.S., for the same
16 To Mr. Cock, F.H.S., for six old varieties of Pelargonium, in 11-inch pots
17 To Mr. Robinson, Gardener to J. Simpson, Esq., Thames-bank, Pimlico, for six Fancy Pelargoniums, in 8-inch pots

THE CERTIFICATE OF EXCELLENCE.

1 To Mr. Bruce, Gardener to Boyd Miller, Esq., of Tooting, for a collection of 10 Stove and Greenhouse Plants
2 To Mr. May, Gardener to E. Goodhart, Esq., of Beckenham, for a collection of six Stove and Greenhouse Plants
3 To Mr. Dobson, for 15 species of Exotic Orchids
4 To Mr. Kinghorn, for six species of the same
5 To Mr. Green, for a collection of Helichrysums
6 To Mr. May, Gardener to Mrs. Lawrence, F.H.S., for a collection of Greenhouse Azaleas, in six varieties
7 To Mr. Terry, Gardener to Lady Puller, of Youngsbury, Herts, for 12 varieties of Roses in pots
8 To Mr. Cole for 10 varieties of Cape Heath
9 To Messrs. Veitch, of Exeter, for the same.
10 To Mr. Cole, for the same, in 11-inch pots
11 To Messrs. Rollisson, for the same
12 To Mr. Parker, Gardener to J. H. Oughton, Esq., F.H.S., for six distinct species of Pelargonium, exhibiting superior cultivation
13 To Mr. Black, Gardener to E. Foster, Esq., Clewer Manor, Windsor, for six new varieties of Pelargonium, in 8-inch pots
14 To Mr. Bragg, of Slough, for the same
15 To Mr. Gaines, F.H.S., for six Fancy Pelargoniums, in 8-inch pots
16 To Mr. Cole, for Roupellia grata
17 To Mr. May, Gardener to E. Goodhart, Esq., of Beckenham, for Aphelexis purpurea

THE LARGE SILVER MEDAL.

1 To Mr. Malyon, Gardener to T. Brandram, Esq., of Leagrove, Blackheath, for a collection of 10 Stove and Greenhouse Plants
2 To Mr. Young, Gardener to C. Baron, Esq., Denmark-hill, Camberwell, for a collection of six Stove and Greenhouse Plants
3 To the same, for a collection of Helichrysums
4 To Mr. Terry, for a collection of Roses, in 25 varieties
5 To Messrs. Fairbairn, of Clapham, for 10 varieties of Cape Heath
6 To Mr. Taylor, for the same, in 11-inch pots
7 To Messrs. Fairbairn, for the same
8 To Mr. Stanly, Gardener to H. Berens, Esq., F.H.S., for six distinct species of Pelargonium, exhibiting superior cultivation
9 To Mr. Stains, of Middlesex-place, New-road, for six new varieties of Pelargonium, in 8-inch pots
10 To Mr. Gaines, F.H.S., for the same
11 To the same, for six old varieties of the same, in 11-inch pots
12 To Mr. Ambrose, of Battersea, for six Fancy Pelargoniums, in 8-inch pots
13 To Mr. Gaines, F.H.S., for a collection of Calceolarias
14 To Mr. Bassett, Gardener to R. S. Holford, Esq., F.H.S., for Camarotis purpurea
15 To Mr. May, Gardener to E. Goodhart, Esq., for Erica depressa
16 To Mr. Chapman, Gardener to J. B. Glegg, Esq., F.H.S., for a Providence Pine-apple, weighing 9 lbs. 11 oz.
17 To Mr. Frost, Gardener to Lady Grenville, F.H.S., for Black Hamburgh Grapes
18 To Mr. Davis, of Oak Hill, East Barnet, for Black Hamburgh Grapes
19 To Mr. Toy, of Oatlands Palace Gardens, Weybridge, for Muscat Grapes

THE SILVER KNIGHTIAN MEDAL.

1 To Mr. Stanly, for a collection of 10 Stove and Greenhouse Plants
2 To Mr. Epps, for a collection of six Stove and Greenhouse Plants
3 To Mr. Cole, for Dendrobium speciosum
4 To Mr. Terry, for a collection of Yellow Roses.*
5 To Mr. Stains, for six distinct species of Pelargonium, exhibiting superior cultivation
6 To Mr. Robinson, for six new varieties of Pelargoniums, in 8-inch pots
7 To Mr. Stains, for six Fancy Pelargonium, in 8-inch pots
8 To Mr. Glendinning, F.H.S., for a collection of Calceolarias
9 To Mr. Cole, for a collection of Helichrysums
10 To Mr. Wood, of Norwood, for a collection of Alpine plants
11 To Mr. Ivison, Gardener to the Duchess Dowager of Northumberland, F.H.S., for Indigofera decora
12 To the same, for Platycerium grande
13 To Messrs. Veitch and Son, for Nepenthes sanguinea
14 To Mr. Davis, Gardener to Lord Boston, for a Providence Pine-apple, weighing 8 lbs. 3 oz.
15 To Mr. Chapman, Gardener to J. B. Glegg, Esq., F.H.S., for the heaviest bunch of Grapes (Black Prince), weighing 2 lbs. 8 oz.
16 To Mr. Stent, Gardener to W. Herbert, Esq., of Clapham Common, for Black Hamburgh Grapes
17 To Mr. Toy, for Black Hamburgh Grapes.
18 To Mr. Chapman, of Vauxhall, for Sweetwater Grapes
19 To Mr. Robertson, Gardener to the Marquis of Waterford, at Curraghmore, for Royal George Peaches
20 To Mr. Chapman, Gardener to J. B. Glegg, Esq., F.H.S., for Scarlet Nectarines
21 To Mr. Munro, Gardener to Mrs. Oddie, of Colney-house, St. Alban's, for the heaviest Melon ("Munro's Egyptian Hybrid Green-fleshed"), weighing 7 lbs. 8 oz.
22 To Mr. Gadd, Betchworth Castle, for the heaviest Melon in the Market Gardeners' Class (Canteloup), weighing 6 lbs. 13 oz.
23 To Mr. Fleming, Gardener to his Grace the Duke of Sutherland, F.H.S., at Trentham, for the best flavoured Melon (a Hybrid between the Hoosainee and Ispahan).
24 To Mr. Elliott, Gardener to J. B. Boothby, Esq., F.H.S., for British Queen Strawberries in pots

THE SILVER BANKSIAN MEDAL.

1 To Mr. Glendinning, F.H.S., for a collection of 10 Stove and Greenhouse Plants
2 To Mr. Stuart, Gardener to T. Huggins, Esq., of Norwood, for the same
3 To Mr. Speed, of Edmonton, for a collection of six Stove and Greenhouse Plants
4 To Mr. Hamp, Gardener to J. Thorne, Esq., South Lambeth, for the same
5 To Mr. Stanly, for a collection of Calceolarias †
6 To Mr. Bruce, for Oncidium flexuosum
7 To Mr. Stanly, for a collection of Helichrysums
8 To Mr. W. Turner, of Holloway, for a collection of Alpine plants
9 To Mr. Ivison, for a new species of Bejaria
10 To Mr. May, for Leschenaultia biloba major
11 To Mr. Bruce, for Aphelexis humilis
12 To Messrs. Lee, of Hammersmith, for Azalea indica ("Symmetry")
13 To Mr. Hoyle, of Reading, for Epiphyllum platypetalum
14 To Mr. Slowe, Gardener to W. R. Baker, Esq., F.H.S., for a Providence Pine-apple, weighing 6 lbs. 11 oz.
15 To Mr. Davis, of Oak-hill, East Barnet, for the same, weighing 6 lbs. 12 oz.
16 To Mr. Foggo, Gardener to the Marquis of Abercorn, F.H.S., for Black Hamburgh Grapes
17 To Mr. Rust, Gardener to J. Maclaren, Esq., F.H.S., for Muscadine Grapes
18 To Mr. Kemp, Gardener to Mrs. Grillion, of East Acton, for Muscat of Alexandria Grapes
19 To Mr. Chapman, Gardener to J. B. Glegg, Esq., F.H.S., for Grosse Mignonne Peaches
20 To Mr. Foggo, for Elruge Nectarines
21 To the same, for Brown Turkey Figs
22 To Mr. Toy, for Keens' Seedling Strawberries in pots
23 To Mr. Busby, Gardener to S. Crawley, Esq., Stockwood Park, Luton, for British Queen Strawberries
24 To Mr. Wilding, Gardener to Captain Kennett, of Ham, for the second best-flavoured Melon (Hybrid Green-fleshed)

THE CERTIFICATE OF MERIT.

1 To Mr. Fraser, Gardener to J. L. Leigh, Esq., of Luton Hoo Park, Beds, for Cattleya Mossiæ
2 To Mr. Green, for Dendrobium nobile
3 To Mr. Turner, of Barnet, for a collection of Alpine Plants
4 To Mr. Hill, Gardener to T. Davis, Esq., F.H.S., for Pimelea decussata
5 To Mr. Ivison, for Nymphæa cœrulea
6 To Mr. Salter, F.H.S., for a collection of Irises
7 To Mr. Wood, of Norwood, for a collection of Hardy Variegated Plants
8 To Mr. Vare, Gardener to General Lygon, Spring Hill, Oxon, for Royal George Peaches
9 To Mr. Toy, for Keens' Seedling Strawberries

* Other collections of Yellow Roses were shown, but they were disqualified on account of the exhibitors not having conformed to the regulations.

† A collection of Calceolarias from Mr. Franklin, Gardener to Mrs. Lawrence, F.H.S., was disqualified in consequence of being shown contrary to the regulations.

CANTERBURY SETTLEMENT.—NOTICE IS HEREBY GIVEN to PURCHASERS of LAND who are desirous of recommending servants or labourers for free or assisted passages to the Canterbury Settlement, that in order that such passages may be secured in the first ships the necessary recommendation must be sent in without delay. Forms of application may be obtained from the secretary at the offices of the Canterbury Association in Cockspur-street.—By order of the Committee of Management.

H. F. ALSTON, Secretary.

NEWS, NEWS, NEWS.—The best, cheapest, and largest Newspaper in the World.—LLOYD'S WEEKLY LONDON NEWSPAPER contains 60 large columns of the latest intelligence from all parts of the Globe, price only Threepence, postage free. Send Three Postage Stamps to E. LLOYD, 12, Salisbury-square, London, and receive one copy as a sample.

SHADES FOR GREENHOUSES.

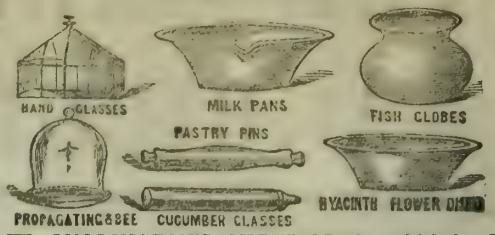
J. WEEKS AND CO., King's-road, Chelsea, HORTICULTURAL BUILDERS, &c.—Greenhouses, Conservatories, Pits, &c., built—or BLINDS, for Shading the same fixed—in any part of the Country.—A great variety to be seen in operation at their Hothouse Works, King's-road, Chelsea near London.

TO NURSERYMEN, SEEDSMEN, AND FLORISTS.

BETHAM AND BLACKITH (late JOHN BETHAM), CUSTOM HOUSE and GENERAL FORWARDING AGENTS, Cox and Hammond's Quays, Lower Thames-street, London, respectfully solicit the above to use their medium for the transmission of Plants, BULBS, &c., to or from all parts of the world. Constant communication maintained with the Continental and Foreign Nurseries.

Cox and Hammond's Quays, Lower Thames-street, June 15.

GLASS FOR CONSERVATORIES, HORTICULTURAL PURPOSES, &c.



T. MILLINGTON'S SHEET GLASS, which is of the best description, varying from 16 to 32 ounces, at from 2d. per foot and upwards; 100 feet and 200 feet cases of large Sheet Glass, for cutting up, at 2½d. per foot. British Plate Glass, from 1s. 2d. to 2s. per foot, according to size. Patent Rough Plate Glass, from ⅛ to 1 inch in thickness, from 4d. per foot upwards. Glass Slates and Tiles. Milk Pans from 12 to 24 inches diameter, from 2s. to 5s. each. Cucumber Tubes, from 12 to 24 inches long, at 1d. per inch. Lactometers, 7s. 6d. each. Wasp Traps.—Lists may be had, on application at the Warehouse, 87, Bishopsgate-street Without, same side as the Eastern Counties Railway.

CROWN, SHEET, AND ROUGH PLATE GLASS FOR HOTHOUSES, CONSERVATORIES, &c.

The Improved Patent Rough Plate, made by Messrs. Hartley and Co., can be supplied from this Warehouse, of every size and substance, at the same prices as at the works.

100 and 200 feet cases of large Sheet Glass, from 2½d. per foot. Small ditto, 10s. 6d. per 100 feet, packed in boxes ready for immediate delivery. Curators of Botanical Societies, Floriste, Railway Agents, and others requiring large quantities, will, on sending dimensions, receive estimates at the lowest prices.

GLASS MILK PANS, CREAM POTS, Lactometers, Bee Glasses, Fish Globes, and all kinds of Dairy Glass, Propagating Glasses, Hyacinth Dishes, Cucumber Tubes, and every other description of Garden Glasses.

PATENT GLASS PENS, self supplying, never blot, never soil the ruler, and will write continuously for 12 hours.

Also, Glass Rulers, Glass Inks for office-stands, desks, &c. Stationers and Schools supplied. Wholesale Warehouse for Ornamental Shades, Lamp Shades, Gas Glasses, Genuine White Lead, Paints, Colours, and Pumps for Farm purposes.

Our Catalogue of 18 folios is the most complete ever published. No Gardener or Farm Bailiff should be without one. May be had Gratis on sending two postage stamps to Messrs. COGAN and Co., 48, Leicester-square, London.

GLASS FOR CONSERVATORIES, &c.

HETLEY AND Co. supply 16-oz. Sheet Glass of British Manufacture, at prices varying from 2d. to 3d. per square foot, for the usual sizes required, many thousand feet of which are kept ready packed for immediate delivery. Lists of Prices and estimates forwarded on application, for PATENT ROUGH PLATE, THICK CROWN GLASS, GLASS TILES and SLATES, WATER-PIPES, PROPAGATING GLASSES, GLASS MILK PANS, PATENT PLATE-GLASS, ORNAMENTAL WINDOW GLASS, and GLASS SHADES, to JAMES HETLEY and Co., 35, Soho-square, London.

See the *Gardeners' Chronicle* first Saturday in each month.

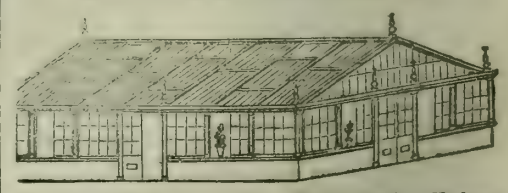
DEANE'S WARRANTED GARDEN TOOLS.—Horticulturists, and all interested in Gardening pursuits, are invited to examine G. and J. DEANE'S extensive Stock of GARDENING AND PRUNING IMPLEMENTS, best London made Garden Engines and Syringes, Coalbrookdale Garden Seats and Chairs.

Averuncators	Garden Scrapers	Pick Axes
Axes	Grape Gatherers and Scissors	Potato Forks
Bagging Hooks	Gravel Rakes and Sieves	Pruning Bills
Bills	Greenhouse Doors and Frames	,, Knives, various
Borders, various patterns	Hammers	,, Saws
Botanical Boxes	Hand-glass Frames	,, Scissors
Cases of Pruning Instruments	Hay Knives	,, Shears (riety.
Chaff Engines	Hoes of every pattern	Rakes in great va-
Chaff Knives	Horticultural Hammers and Hatchets	Reaping Hooks
Daisy Rakes	Hotbed Handles	Scythes
Dibbles	Ladies' Set of Tools	Scythe Stones
Dock Spuds	Labels, various patterns, in zinc, porcelain, &c.	Shears, various
Draining Tools	Lines and Reels	Sickles
Edging Irons and Shears	Marking Ink	Sickle Saws
Flower Scissors	Mattocks	Spades and Shovels
,, Stands in Wires and Iron	Menographs	Spuds
Fumigators	Metallic Wire	Switch Hooks
Galvanic Borders and Plant Protectors	Milton Hatchets	Thistle Hooks
Garden Chairs and Seats	Mole Traps	Transplanting Tools
,, Loops	Mowing Machine	Trowels
,, Rollers		Turfing Irons
		Wall Nails
		Watering Pots
		Weed Extractors and Hooks
		Wheelbarrows
		Youths' Set of Tools

G. and J. DEANE are Sole Agents for LINGHAM'S PERMANENT LABELS, samples of which, with the Illustrated List of Horticultural Tools, can be sent, post paid, to any part of the United Kingdom.—DEANE'S Horticultural Tool Warehouse, opening to the Monument, 46, King William-st., London-bridge

HORTICULTURAL BUILDING AND HEATING BY HOT WATER.

WARRANTED BEST MATERIALS AND WORKMANSHIP AT THE LOWEST POSSIBLE PRICES.



J. WEEKS AND CO., King's-road, Chelsea, Horticultural Architects, Hothouse Builders, and Hot-water Apparatus Manufacturers. The Nobility and Gentry about to erect Horticultural buildings, or fix Hot-water Apparatus, will find at our Hothouse Works, King's-road, Chelsea, an extensive variety of Hothouses, Greenhouses, Conservatories, Pits, &c., erected, and in full operation, combining all modern improvements, so that a lady or gentleman can select the description of House best adapted for every required purpose.

THE HOT-WATER APPARATUSES (which are efficient and economical), are particularly worthy of attention, and are erected in all the Houses, Pits, &c., for both Top and Bottom Heat, and in constant operation in the Stoves.

The splendid collection of Stove and Greenhouse Plants are in the highest state of cultivation, and for sale at very low prices. Also a fine collection of strong Grape Vines in pots, from eyes, all the best sorts.

Plans, Models, and Estimates of Horticultural Buildings; also Catalogues of Plants, Vines, Seeds, &c., forwarded on application.—J. WEEKS and Co., King's-road, Chelsea, London.

ROYAL SOUTH LONDON FLORICULTURAL SOCIETY.—Under the patronage of her Most Gracious Majesty the QUEEN.—The THIRD EXHIBITION of the season will be held at the Royal Surrey Zoological Gardens, on WEDNESDAY, the 19th JUNE (open to all exhibitors), when Prizes will be awarded for the following productions, viz., Miscellaneous, Orchids, and Specimen Plants, Pelargoniums, Cape Heaths, Roses, Pinks, Ranunculus, and Fruit. In addition to the Prizes offered by the Society, Messrs. Paul and Son, of Cheshunt, offer Two Prizes for 12 New Roses, to Amateurs, and 17. 10s. will be awarded for Seedling Pelargoniums (see Pelargonium Fund advertisement in this Paper). The following Exhibitions will also take place at the Royal Surrey Zoological Gardens, on Tuesday, July 23d, and Wednesday, September 4th. List of Prizes, and the Rules for Exhibitors, may be obtained from JOHN TAYLOR NEVILLE, Secretary.
Ebenezer House, Peckham, Surrey.

THE FUNEBRAL CYPRESS—CUPRESSUS FUNEBRIS.
MESSRS. STANDISH AND NOBLE, of the Bagshot Nursery, beg to announce that they are now sending out the above magnificent Weeping Evergreen Tree, the hardiness of which is now proved beyond all doubt; and for particulars proudly refer their patrons to the highest authorities, viz., Dr. Lindley and Sir W. Hooker—see *Gardeners' Chronicle*, April 21, 1849, and April 13, 1850; Curtis's Botanical Magazine, for May; and the Gardeners' Journal, March 9 and 16 for the present year. Strong healthy plants, fit for immediate planting, 21s. each.—Bagshot Nursery, Surrey.

EXHIBITION OF AMERICAN PLANTS, KNAP HILL, WOKING, SURREY.
HOSEA WATERER begs to announce that the AMERICAN PLANTS at Knap Hill Nursery are now in bloom, and will continue in perfection during the month of June. As a display of flowers this is perhaps without a rival in this kingdom. May be seen, gratis, any day, except Sunday. The Knap Hill Nursery is within an hour's ride of London, being near the Woking station, South Western Railway, where every train stops, and from whence conveyances may at all times be had. H. WATERER is a principal contributor to the Exhibition in the Botanic Gardens, Regent's Park, orders for seeing which may be obtained on application to Fellows.
Knap Hill Nursery, Woking, Surrey, June 15.

AMERICAN NURSERY, BAGSHOT, SURREY.
GEORGE BAKER begs to inform the Nobility and Public his extensive collection of AMERICAN PLANTS are now in bloom, and will continue till the end of this month, and may be seen gratis. The Nursery is about 6 miles from the Staines Station, on the South Western Railway, and 3 from Virginia Water, from whence conveyances may be obtained.
G. BAKER is a contributor to the Exhibition in the Botanic Gardens, Regent's Park.—June 15.

MIMULUS INSIGNIS.
HENRY MAJOR, Knosthorpe, near Leeds, has ready for sending out healthy plants of the above most beautiful MIMULUS, price 3s. 6d. each, or three plants for 7s. 6d., post free.
This Mimulus has been very kindly presented to H. M. by the raiser, A. Clapham, Esq., who raised Mimulus "rubinus," and others. The following is the opinion of the Editor of the Gardeners and Farmers' Journal upon it:—"M. H. Your seedling is very attractive. Form excellent; throat bright straw colour deepening to chrome; lip brilliant crimson; edge perfect; throat spotted with rich crimson; the consistency of the flower most desirable."
It is respectfully requested that all orders be accompanied by a Post-office order or postage stamps.

MAYLE'S MODEL FUCHSIAS FOR 1850.—No grower can expect to win a prize at any of the principal exhibitions in town or country without these magnificent reflexed varieties.
Messrs. MAYLE and Co. will send out their SEVEN NEW FUCHSIAS on the 20th June, extra strong plants. From the very high opinions expressed of their merits by Dr. Lindley, Mr. Glenny, &c., they require no further comment from us. They are the things of the season, and must be had by all who wish to keep pace with the times.
No. 4, DIADEM, was shown at Walsall, near Birmingham, with two blooms, May 8th, and was awarded an extra prize. Judges' opinion: "By far the best ever raised."
Also first prize at Wolverhampton, May 25, against some fine older specimen varieties; and first-class certificate awarded at the Birmingham and Midland Society on the 20th.
Those in bloom were exhibited at Chiswick and Regent's-park June shows. The earliest orders will secure the strongest plants. Circulars can be had. Also Mr. Hoyles' superb Geraniums, a few extra strong blooming plants being left.
Stove, Greenhouse, Bedding Plants, &c., including every novelty of the season.—105, New-street, Birmingham.

BASS AND BROWN'S DESCRIPTIVE PRICED CATALOGUE sent prepaid for four penny stamps, for postage. This Catalogue contains a rich assortment of the newest and best plants which can be procured. The stock of BEDDING PLANTS is unusually strong and fine. Several thousand plants of Verbenas are now ready for sending out, as well as our collection of other plants for bedding, the stock of which is also very extensive, consisting of Geraniums, Fuchsias, Petunias, Dahlias, Chrysanthemums, Anagallis, Bouvardias, Cupheas, Heliotropes, Plumbagos, Lantanas, Salvias, Lobelia Erinus grandiflora and compacta alba, Zauschneria californica, &c.
Persons requiring Plants for beds may depend on receiving a supply, strong, and in fine condition, at low prices.
Seed and Horticultural Establishment, Sudbury, Suffolk.

MEADOW AND PASTURE GRASS SEEDS.
GEORGE GIBBS AND Co. beg to notice their mixtures for laying Land down to Permanent Grass are now ready. The general satisfaction they have given for many years past, and the present low prices of 32s. per acre, allowing 2 bushels and 12 lbs. to each acre, they trust will ensure a continuance of orders. Mixed Seeds for improving old Grass Land, 1s. 3d. per lb.; fine sorts for forming Lawns, 1s. 4d. per lb. Their Priced List for the season of Turnips, Mangold Wurzel, and other Farm Seeds, will be forwarded on application to 26, Down-street, Piccadilly, London.

BAKER'S PHEASANTRY, Beaufort-street, King's-road, Chelsea, by special appointment to her Majesty and H. R. H. Prince Albert.—ORNAMENTAL WATER FOWL, consisting of black and white swans, Egyptian, Canada, China, barnacle, brent, and laughing geese, shieldrakes, pintail, widgeon, summer and winter teal, gadwall, Labrador, shovellers, gold-eyed and dun divers, Carolina ducks, &c., domesticated and pinioned; also Spanish, Cochin China, Malay, Poland, Surrey, and Dorking fowls; white, Japan, pied, and common pea-fowl, and pure China pigs; and at 3, Half-moon-passage, Gracechurch-street.

HOTHOUSES AND CONSERVATORIES made and fixed complete in all parts of the Kingdom, at a considerable reduction. One, two, and three-light Cucumber and Melon Boxes and Lights of all sizes, kept ready for use, packed, and sent to all parts of the Kingdom; warranted best material. Garden-lights of every description, at JAMES WATTS', Hothouse Builder, Claremont-place, Old Kent-road. Reference may be had to the Nobility, Gentry, and the Trade, in most of the counties in England.

EDWARD BECK, SLATE WORKS, ISLEWORTH.
SLATE CISTERNS, &c.; COLE'S PATENT.
E. BECK informs Horticulturists and the Public generally that Mr. COLE has granted him the use of his Patent for the unexpired term, and he is now able to supply SLATE CISTERNS fastened without iron bolts or the usual oil cement, thereby doing away with the difficulty which has hitherto existed of forwarding such articles by rail or waggon, fixed and ready for use instead of in pieces, as heretofore.
E. B. will be happy to answer any inquiries as to the price of Cisterns, or any other Slate articles manufactured by him, such as Orange Tubs, Plant Boxes, Tanks, Shelves, Garden-path Edging, Hot-water Tank Covers, Flower Boxes for Balconies, Shelves fitted to hold water for Orchidaceous Houses, &c., all of which may be seen in use at Worton Cottage, Isleworth, on application to the Gardener, Sundays excepted.
Estimates given for Work as shown upon Drawings, and in specifications. A large stock of Slate Slabs of all sizes and thicknesses, kept on sale.
N.B.—Dairies fitted either with Shelves or Milk Pans, of very neat appearance.

The Gardeners' Chronicle.
SATURDAY, JUNE 15, 1850.

MEETINGS FOR THE ENSUING WEEK.

MONDAY,	June	17	Chemical	8 P.M.
			Statistical	8 P.M.
TUESDAY,	—	18	Horticultural	3 P.M.
			Linnean	8 P.M.
WEDNESDAY,	—	19	Royal South London	1 P.M.
			Royal Botanic	3½ P.M.
			Geological	8½ P.M.
THURSDAY,	—	20	Numismatic (Anniversary)	7 P.M.
			Antiquarian	8 P.M.
			Royal	8½ P.M.

COUNTRY SHOWS.—Monday, June 17: Guildford Horticultural.—Tuesday, June 18: Hampshire Horticultural.—Wednesday, June 19: Stamford-hill Horticultural.—Thursday, June 20: Cheltenham Horticultural and Floral, Chichester Horticultural, and Bath Horticultural.—Friday, June 21: Newbury Horticultural.—Saturday, June 22: Staines Horticultural.

THE gem of the CHISWICK EXHIBITION on Saturday last was the purple Camarote (*Camarotis purpurea*) produced by Mr. HOLFORD's gardener, BASSETT. In this instance a poor and undervalued plant was shown to possess a degree of beauty which is hardly surpassed by any of its order: for what it wanted in breadth of colour it made up in gracefulness of form. To show that it could become a living pyramid of green and purple, most beautifully blended, was a great gardening achievement, and has for ever rescued a charming species from undeserved neglect.

The crown of the Exhibition, set with many gems, was a collection of Orchids from Mr. RUCKER's garden. Although it contained nothing so fine as the Camarote, yet it was studded with brilliants of the first water. No one ever before saw such glowing colours on these matchless jewels. The lemon-scented Toothtongue (*Odontoglossum citrosmum*) had exchanged its pallid hue for a ruddy glow that would have done no injustice to a Rose; the lip of the intermediate Cattleya rivalled the tint of JUNG BAHAUDER's amethysts; and no sapphire that glitters on his turban was more rich than the stain in the centre of Beauty Dendrobe's lip. How these things are to be done it boots not here to tell; it is clear that other growers still want the crowning art of throwing into their specimens such colour as gleamed from beneath the skin of Mr. RUCKER's favourites.

But unusual colour was not on this occasion confined to flowers only. The Marquess of WATERFORD's Irish Peaches were as perfect in their way as the London Orchids. No summer sun ever could have given a deeper colour, or elicited a richer perfume. To the very stalk they were ripened thoroughly. Much honour to our old acquaintance ROBERTSON, the Scotch gardener at Curraghmore; we only wish he had been an Irishman.

The next best specimens of good gardening were, to our mind, Mrs. LAWRENCE's Calceolarias. The florists, indeed, thought little of their "points," but everybody thought much of their cultivation. Short, stout, fat, healthy plants, with none of your spindling fly-bitten branches, and shrivelled leaves perishing under the influence of sulphur and red spider, but as healthy, and full of juice and life as a market gardener's Lettuce. If people could but turn out Calceolarias like these, they would soon recover their rank in public esteem. Thus grown they are charming; as they are usually grown they are hideous.

Of novelty there was little. The Roupellia, which gained the first prize, is a twining plant, with the habit and blossoms of a Stephanote, only the flowers want washing, and are not improved by 10 long brown tusks sticking out of the mouth. Messrs. VEITCH's Dipladenia nobilis was very much finer, but wanted the degree of novelty demanded of plants here exhibited as NEW.

Mr. COGAN, of the glass warehouse, in Leicester-square, placed upon the tables a glass Fern-temple, concerning which we shall only say for the present that it represented an excellent idea, which cannot fail to be worked out advantageously hereafter.

The day was fine; the garden delicious; and the number of visitors 7452, exclusive of 267 exhibitors and attendants.

THE beautiful appearance of the Rhododendrons and other AMERICAN PLANTS everywhere this spring, notwithstanding the severity of the winter—and the great improvements which the shows near London prove to have been effected among them, beyond anything that could have been anticipated—induce us to place at once, and prominently, before our readers some judicious observations on their cultivation, which have been recently published by Messrs. STANDISH and NOBLE, of Bagshot, in their new Catalogue of Hardy Ornamental Plants.

After remarking upon the general want of an accurate knowledge of the true principles of managing American plants, they proceed to remark to the following effect:*

"Comparatively few persons have succeeded in the cultivation of Rhododendrons; and those few, more from accidental circumstances than from a real knowledge of their natural requirements. In fact, it is a prevailing idea, that few localities are to be found where they will creditably exist—to luxuriate is out of the question. But, on the contrary, extensive practice shows that with a small expenditure of well-directed labour, Rhododendrons may be induced to repay the attention of the cultivator in any part, and almost any locality in Great Britain.

"A more unpromising appearance than that originally belonging to the present American Nursery at Bagshot, can scarcely be imagined. In its present improved state, it affords a good example of what can be done in the most sterile spots. The ground in question forms part of 50 acres, the whole of which is rated in the poor's-rate book at 8*l.* The soil, which is from 12 to 15 inches in depth, is a black sandy peat, resting upon a clayey subsoil very deficient in vegetable matter, and naturally incapable of producing any crop. With cultivation it has been rendered in the highest degree productive. The first operation was to drain it from 3½ to 4 feet deep; it was then trenched 2 feet deep, and to every acre so treated, from 30 to 40 tons of good farm-yard manure was added; and as a precautionary measure, in order to exhaust the rankness attendant upon this treatment, it was deemed necessary to take off the land a root crop of Potatoes, Carrots, Turnips, and Mangold Wurzel. After this treatment, American plants were found to thrive amazingly; but, like all crops in very poor soils, they continue to be benefited by the application from time to time of suitable enriching materials.

"It must not, however, be understood that American plants will flourish in a very poor soil; on the contrary, there is evidence everywhere that nearly all plants delight in a rich one. Even Mosses, Lichens, and Heath, are more healthy and vigorous in the richest localities. With a trifling expense, however, the poorest soil may be rendered suitable for Rhododendrons. An excellent compost may be made as follows:—To two parts of sandy loam or peat, or in fact any sandy soil that does not contain much calcareous matter (American plants exhibit a great dislike to that), add one-fourth leaf-mould, one-eighth sand, and one-eighth rotten manure. If wanted immediately, the whole should be well beaten, and thoroughly incorporated before using. It would, however, be of great advantage to allow the mixture to remain 12 months, turning it well two or three times during that period. In old exhausted beds, a good dressing of rotten manure forked in will be found highly beneficial.

"Another point of the highest importance, for it is the foundation of all success in the cultivation of the Rhododendron and fine-rooted plants of a similar character, is *never to allow them to become thoroughly dry at the root.* If this occurs, the whole structure of the plant is affected, deficiency of vital energy is the result, and the natural consequence of a deteriorated constitution is disease, and possibly death. The Rhododendron and its allies suffer more from excessive dryness than any plants which we recollect; therefore a damp situation must be provided for their site. If, however, stagnant water is present, drains must be employed, and they should be 3 feet in depth. If the plants can enjoy the shade of trees without drip from them, so much the better.

"At Highclere, the seat of the Earl of CARNARVON, in the lake at Milford, are several small islands of from 10 to 20 yards in diameter, planted with American plants, presenting the highest state of luxuriance; many of the plants are from 10 to 15 feet high, and constitute, in the blooming season, masses of beauty, from their summits to the very surface of the lake. The soil of these islands is not more than 18 inches above the water.

"On the Himalaya Mountains, the Rhododendron is invariably found growing near or on the margin of morasses. So magnificent is the appearance of masses in flower of the scarlet species of these mountains, that Dr. WALLICH compares the effect to that of regiments of soldiers in scarlet uniforms in the full sun when viewed at a distance. In America and other parts of the world, where any of the very

* We place this matter between inverted commas although it is not a literal transcript, because it is essentially the statement of Messrs. STANDISH and Co.

extensive tribe, commonly known as 'American Plants' are found, it is always on the margin of lakes, rivers or bogs, or on the nearest portions of dry land in their vicinity. Surely, then, if the many boggy places and swamps which are to be found in the plantations, on the borders of 'drives,' and even in view from many of our noblemen's princely mansions, are not worth reclaiming for any other purpose, they afford excellent situations for the display of taste and liberality: the ultimate result of which must be to gratify the eye of the proprietor, to enrich the landscape, and to give to our woodland scenery a beauty which is now, except in a few isolated cases, confined to the shrubbery and the pleasure ground.

"If only a moderate amount of stagnant moisture is present, ordinary draining is all that will be requisite. But there are situations in which this is not available, or would be too expensive, as, for instance, where the bog is of such a depth as would require a large amount of labour to procure sufficient 'fall' for the drains. Under such conditions the desired end can be arrived at by the following means: Procure a quantity of brushwood, faggots, poles, old 'pollards,' or any materials of a like nature, and with them form a foundation on the spot you wish to plant; upon this sufficient soil must be placed, that, allowing for subsidence, not less than 18 inches of suitable compost will remain above the surface of the bog. In such localities the Rhododendron will flourish in all its native beauty, and as the growth will be rapid, the whole substance of the soil will quickly become matted together by the roots of the plants, completely preventing any subsidence in the soil after the wooden foundation is decayed."

Suppose, however, that soil is naturally dry, and therefore the reverse of what "American" plants require, then Messrs. STANDISH and NOBLE give the following directions for nevertheless securing an adequate amount of moisture.

"The means by which this can be attained are—1, deep trenching the natural soil; and 2, keeping the beds perfectly flat, and *below* the surrounding surface, in order to prevent the escape of moisture, otherwise than by evaporation. In such situations, it is absolutely necessary to trench or in some way prepare a soil, 3 or 4 feet in depth; and the following will be found an excellent method. Having determined the outline of the beds, remove the soil a good spade's depth, with all its attached vegetation, to some convenient spot immediately contiguous to the operations; then cart away from 18 inches to 2 feet of the remaining soil, well breaking up the bottom; trenching it 18 inches would be better still. Upon this cast in the surface soil previously removed, well chopping it with the spade as the work proceeds; filling up with a sufficient quantity of prepared soil, so that after settling down it shall be a few inches below the natural surface. During dry weather, after the beds are planted, the surface should be kept constantly stirred with the hoe and rake, for the double purpose of preventing the growth of weeds, and retarding evaporation. Should an excessively dry season occur, the whole surface of newly-planted beds may with advantage be wholly covered with the short Grass from the lawns. It will at least prevent the necessity of a frequent use of the watering-pot, the application of which in all out-door gardening is a practice 'more honoured in the breach than in the observance.' If the beds are situated in the neighbourhood of trees, they are sure to be invaded by a legion of roots which, if allowed unmolested possession, will in a few seasons appropriate the whole of what you had intended for your favourites. But as we recommend American plants, in such situations, to be replanted and the soil trenched to a depth of 2 feet every autumn, and every third or fourth year the whole mass of soil trenched to the bottom—there will not be much to fear upon that point, and the mass of soil, by being constantly rendered permeable to the autumn rains, will always contain a large amount of moisture. There need be no fear of the plants suffering from removal, as Rhododendrons can be transplanted with perfect safety, even after they have attained an immense size, more especially when they have constantly been subjected to such treatment."

In conclusion the writers point out the error of supposing that these directions will involve a large outlay. "Nothing can be more erroneous. The directions apply to the poorest soils, and to situations of the worst character. In trenching and cultivation a small pecuniary outlay will accomplish much. Labour in this respect is cheap, and employment much needed. The sweepings of lawns, consisting of leaves and Grass, the trimmings of walks, and the refuse and clearings of the flower-beds, will, when thoroughly decayed, furnish a compost in every way available for the purpose, where the natural soil is not what could be desired; and here the preparation of the beds constitutes a mere nominal outlay."

We shall take some opportunity of commenting upon these good practical remarks, which, in the meanwhile, we recommend as safe rules to be observed by those who wish to emulate the Rhododendron growers of Bagshot and its neighbourhood.

NOTES OF A TRAVELLER.—No. XII.

PLANTS AND GARDENS OF THE ENGLISH AT SHANGHAE IN CHINA.—The gardens of the English residents in Shanghae far excel those of the Chinese in the number of species of trees and shrubs they contain, and also in the neat and tasteful manner in which they are laid out and arranged. In 1845 only one or two small English houses had been built, and no gardens had been formed; but now a large English town has risen on the banks of the river, and almost every house is surrounded by a garden.

The late Mr. Hetherington was the first to attempt rearing vegetables on a large scale. He introduced Asparagus, which now succeeds admirably at Shanghae, Rhubarb, Seakale, and all the vegetables common in English gardens. He also raised the Strawberry from some seeds I sent him in 1846; but, curious enough, although it grows luxuriantly, it scarcely bears any fruit. The blossoms appear to go blind soon after they expand. I have no doubt, however, that some method will be devised to overcome this habit, and I expect to see Strawberries produced in great abundance and in perfection in Shanghae. The ground about the town is too low and wet for the growth of the Potato, and hence no one has succeeded in rearing what would be called a good crop of this desirable vegetable. In the course of time, however, when the cultivation is attempted in the higher parts of the country, we may expect to get better Potatoes here than at Macao, although the latter are usually most excellent.* Mr. Hetherington fell a victim to a fever of a very fatal kind, which prevailed in the autumn of 1848. He was a true specimen of the old English gentleman, and was deeply regretted by all who had the pleasure of knowing him.

The English Consul, Mr. Alcock, has also a good vegetable garden on the grounds attached to the consulate. There is a noble plant of the Glycine sinensis in this garden, which flowers most profusely, and becomes covered with its long legumes or pea-like fruit, which it ripens to perfection.

The two first ornamental gardens are those of Mr. Beale and the Messrs. Mackenzie. Mr. Beale's house—a fine square building of two stories—is placed in the centre of the garden. In front is a fine Grass lawn, which extends from the house to the boundary wall near the river. Behind the house there is another lawn surrounded with a dwarf ornamental wall. A wide gravel walk leading from the entrance to the back part of the garden divides the house from the business part of the premises. This garden is rich in plants indigenous to China, and also contains many which have been introduced from other parts of the world. On entering the gate the first thing which strikes a botanist is a fine specimen of the new Funebral Cypress nearly 6 feet high, and just beginning to show its beautiful weeping habit. This has been obtained from the interior, and does not grow in the neighbourhood of Shanghae. Mr. Beale intends to plant another specimen on the opposite side of the gate, and when the two grow up, a very striking and pretty effect will be produced. In the same border there are fine specimens of Weigela rosea, Forsythia viridissima, Chimonanthus, Moutans, Lagerstrœmias, Roses, &c., and nearly all the new plants sent home to the Horticultural Society from 1843 to 1846. In this part of the garden there is also a nice plant of the new Berberis japonica, lately obtained from the interior, and described in my last letter.

The American Magnolia grandiflora has been introduced here, and promises to be a very ornamental tree; its fine green leaves and noble flowers are much admired by the northern Chinese. Several plants of Cryptomeria japonica are succeeding admirably, and will soon be much more beautiful than any the Chinese have in this part of the country. The garden has been raised with a large quantity of fresh soil considerably above the level of the surrounding ground, so that all the family of the Pines succeeds much better than in those places where they are usually planted by the Chinese; besides the latter generally spoil all their trees belonging to this family by lopping off the lower branches for firewood.

Large quantities of the Olea fragrans—the Qui Wha of the Chinese—are planted in different parts of the garden. These succeed much better here than in the south of China. In the autumn, when they are in bloom, the air is perfumed with the most delicious fragrance. Another most fragrant plant is the new Gardenia (G. Fortuniana), now common in English gardens, to which it was introduced by the Horticultural Society in 1845. In Mr. Beale's garden many of the bushes of this charming species are 10 or 12 feet in circumference, and in the season are covered with large double white flowers, as large as a white Camellia, and highly fragrant. Altogether this is a most interesting garden, and promises to be to Shanghae what the well-known one of Mr. Beale's father was to Macao.

* I have made a great many inquiries about the Potato disease in China, but it does not seem to have made its appearance. The Macao Potatoes have always been good and sound. *R. F.*

The Messrs. Mackenzie's garden here is also well worthy of notice. It resembles some of the neat suburban residences near London. The shrubs are arranged with great taste in groups and single specimens on the lawn, and consist of all the species and varieties common in this part of China. The collection of Azaleas is particularly fine. During the summer time, when these plants are in bloom, they are placed on a stage, and protected from the sun and rain. They flower in great profusion; the individual flowers are larger, and the colours are more brilliant than they are at home. Here, too, are gorgeous specimens of the new Viburnums (V. plicatum and V. macrocephalum) sent home to Chiswick in 1845. The first English Apple tree fruited in this garden about a year ago.

The gentlemen connected with the London Missionary Society have a village of their own about a quarter of a mile back from the English town. Each house has a nice garden in front of it, full of interesting Chinese shrubs and trees. Dr. Lockhart has the finest collection.

These short statements are sufficient to show your readers what has been done since the last Chinese war. Chinese plants have not only been introduced to Europe and America, to enliven and beautify our parks and gardens, but we have also enriched those of the Celestial Empire with the productions of the west. Nothing, I believe, can give the Chinese a higher idea of our civilisation and attainments than our love for flowers, or tend more to create a kindly feeling between us and them.

Before all these gardens could be stocked, the demand for shrubs and trees has been necessarily great. Things which, in former days, were comparatively rare about Shanghae, have been brought down in boat-loads, and sold at very low prices. Good young plants of Cryptomeria, 3 to 4 feet in height, are sold for 30 cash each, about a penny of our money; 100 fine bushy plants of the new Gardenia just noticed have frequently been bought for a dollar. It is amusing to see the boat-loads of plants ranged along the river banks to tempt the eye of the English planter. They are chiefly brought from the large towns of Soo-chow and Hang-chow, the former 50 miles distant, and the latter about 100. "Heaven is above," says a Chinese proverb, "but below is Hang-chow and Soo-chow." *R. F.*

DISEASES OF PLANTS.

(*Continued from p.* 357.)

Fifth Species, RUSTY BLIGHT; and, *Sixth Species*, COAL BLIGHT OR CARBUNCLE.—From the earliest times, agriculturists have understood by *rust* in corn, those spots which appear on different kinds of grain, and are covered externally with a humour which either condenses and dries into a powder, or at other times never resolves into powder. I should confine the name of *rust* more specially to those spots which assume a yellowish, or brown-red, or rusty colour, and give that of *carbuncle* to those which are not only larger than the former, but blackish and covered with a black powder; this kind having appeared to me always the most injurious to corn. Wheat, Barley, and Oats suffer the most from it; but, if closely observed, other Gramineæ will be found to be affected by it. In damp valleys, and sometimes in mountain woods, whilst examining plants in my botanical excursions, I have observed gramineæ covered with yellow spots, which I have considered as *rust*. Some assert that where the *rust* appears the epidermis is wanting. Others have observed that the spots are always preceded by a little swelling in the form of a vesicle or pustule. The spots of rust are always longitudinal, and it has been said that they first commence in the form of yellowish dots. I have not had the opportunity of applying the microscope to the disease in its early stage, but with the naked eye I have not always found the pustules, and never seen the black dots. The first symptom which has presented itself to me has been a spot of very pale green.

I have united under one genus the above six species of blight, contrary to the course usually followed by writers on rural economy, and which I myself adopted in my essay on vegetable nosology. I have been induced to do so from a close examination of these diseases, which have, for the most part, shown similar symptoms. The yellow blight alone has no extraneous substance adhering to the surface of the spots. But in many cases the external blight has a humour like that of the rust, and in others the form and symptoms of the carbuncle. Thus in 1761 the leaves of the Pines of the forest of Ravenna were sprinkled with a dry tenacious exudation in the form of very white globules which were black inside. All these forms of disease may also be occasionally found on one individual at the same time. I once observed several Wheat plants, of which some leaves were infected with the dry rust, others with the carbuncle. The upper leaves had spots of the external blight without any appearance of exudation, although they were black, the chaff was covered with melume, and the grain was sadly spotted in the inside; and the finding these diseases thus united is not so rare as is supposed. I have not yet collected a sufficient number of facts, but it will probably be ascertained, as I myself believe, that all these diseases are but so many various symptoms of *one* malady, of which the last stage consists in the presence of them all. There is a kind of blight called honey-dew, which is no other than a liquid produced by aphides, although it has been erroneously confounded with the others by many authors, and this may be a further reason for distinguishing the latter under one genus. Finally, the cir-

cumstances under which we see plants become blighted, rusted, or yellow-spotted, being generally the same, may be considered as a farther proof that these diseases may be all one.

VILLA AND SUBURBAN GARDENING.

Few articles produced in the kitchen garden are more esteemed than Celery, especially if it be of good quality, a circumstance somewhat rare in the villa garden. How often do we find it sticky, hollow, and rusty, and not unfrequently running to seed, if planted at all early. These imperfections are imputed to the seed being bad, never, or rarely, to ill-management. From numerous trials with various varieties, I am led to conclude that good culture is, after all, the principal point to be kept in view in order to secure quality.

The red and white varieties sent out by Seymour are the best in cultivation. For the amateur, March will be found early enough for the first sowing, which may be made under a hand-glass on a slight hotbed, such as would be used for the raising of annuals, or a small portion of seed sown in a pan, and placed in a greenhouse, will accelerate its early vegetation. In either case when the plants are about 2 inches high, they must be pricked out on a warm border 3 inches apart, in a bed of light vegetable soil. Advantage should be taken of showery weather for this operation. Should bright sunshine follow, a slight shading should be resorted to for a few days, until they begin to root in their new quarters. Later sowings may be made in the open ground in April and May, and the same course of preparation pursued with the young plants. When the latter have become strong, and about 6 inches high, trenches must be prepared to receive them. An open situation will be found an eligible one. Mark out the trenches a foot wide, and at least 3 feet from trench to trench. Take out the soil a foot deep, and bank it up on either side of the trench. Then place 6 or 8 inches of rich decomposed manure in the bottom. This should then be well and carefully intermixed with the soil immediately beneath it, at least a foot deep; when this is done, the trenches will be ready for planting.

Take up the plants carefully with a trowel, retaining as much soil as possible about the roots, and at the same time securing all the fibres which can be retained. In planting, the trowel must be used to remove the soil so that the roots may be properly spread out; when the transplanting is finished, give the trench a good watering, to settle the soil about the roots. It is desirable, when taking up the young plants, and before transplanting them, to trim back the outside leaves; but this must be cautiously and not violently effected. The growth of Celery is greatly promoted by a plentiful supply of water, and liquid manure water has been found to accelerate its progress in an astonishing degree.

To produce Celery of the finest quality only a single row must be planted in a trench, and as it advances in growth it must be earthed up occasionally, care being taken not to smother the hearts of the plants; and in order to prevent this a boy should hold each plant with his hands, so that the foliage may be kept close together, and not embedded in the mould. Always select a dry day for the purpose of handing up. This operation may be continued with the first planted rows until the stems are covered 12 or 15 inches. The later crops will not require more than from 9 to 12 inches of soil. If this system is pursued in the culture of Celery, an article of first-rate quality will be produced, bearing in mind that a cardinal point is an abundant supply of moisture during dry weather. *Pharo.*

THE GUANO TRADE.

A Conversation.—*A.* Well my man, what do you want with me? *B.* Why, mister, I should like to spake to you by yourself, if *you* please. *A.* Oh! There is no one here but friends; you can say what you like. *B.* Don't you dale in guaner? *A.* Yes; and pretty considerably, I think. *B.* Well, then, what do you think of that there stuff? [*Producing a nice looking, pale brown, smooth powder, in a sample bag.*] That'll do, won't it? *A.* Do! my good man; do what? *B.* Why *you* know what wery well. [*Grinning.*] Wery like guaner, an't it? *A.* Oh! this is mixing stuff! Aye, aye! I see. Well, old fellow, what do you want for it? *B.* Why, master, that'll depend on how much you'll have. For a small lot, say 27*s.*; for a good lot, less. *A.* Twenty-seven shillings a ton! that will never do; Why, this is nothing but loam. How do you make it out to be worth 27*s.*? *B.* No, 'tan't loom—not altogether — there's more than that. You smell on it! Bless your soul, I was a 'mazing long while afore I larned the trick. You try, you ca'nt make such nice looking stuff as this out o' nothing but loom. *A.* Pooh; nonsense. *B.* Well, you try, then, that's all. But how much 'll you take? *A.* How much will you deliver at a pound a ton? That's the point. *B.* That's wery low, 'tis indeed, master. But I'll tell you what; if you'll take 1000 ton, I'll do it for a guinea. I'm sure you can wery well afford that, for you know you'll sell it for 9*l.* or 10*l.* *A.* Well, I'll think about it. Where do you live? [*Whispers clerk, who goes out.*] *B.* Oh, I lives Lambeth way. Here's my direction. No, I won't give you that, I'll call again. *A.* Very well, then call again to-morrow. [*Exit B, followed by clerk, who dodges him to —— wharf.*]

Home Correspondence.

The Manettii Rose Stock.—In reply to Mr. W. Paul on this stock, I can only give the result of double the number of years' experience he can have had with it, before I ventured to say anything about its qualities as a stock. I grew it for, I think, five or seven years; it has annually increased in favour, and I now decidedly think it will, with the hybrid Bourbon Rose Celine, entirely supersede the Dog-rose as a stock for dwarf Roses. There may be other hybrid Roses equally eligible, but they will not in general strike so freely from cuttings; in this respect, although the hybrid Rose Celine is very excellent, it is objectionable, as two-thirds of the cuttings often die. The best, not the "worst" quality of this stock is its great excitability, for it will grow well in the poorest soils, and may be budded freely in the driest seasons for pot-culture; for spring grafting, or the *greffe herbacée* (summer grafting) it is really invaluable; it does not here develope buds so rapidly as the Dog-rose, and after the first season requires but little care; but then I plant it in poor soils, and find it valuable on this account. I have near my house some borders on which Roses budded on the Dog-rose were cultivated for many years, till indeed the ground was thoroughly exhausted, and they refused to grow any longer. I gave these borders a dressing with sand from my sand-pit—no manure—and planted them with Manettii stocks; these were budded last season; one bed with 1000 of the Rose Géant des Batailles. Their state is perfect; they are not too robust; they have not the "hectic glow;" and next season they will, I have no doubt, come forth with "pristine vigour." I am much older than Mr. W. Paul; for "time has thinned my hair." I cannot turn fine periods; but I can give an account of what I see and practise. A Persian yellow Rose, now six years old, on the Manettii stock, is now in fine health; has never given a sucker from its roots, and the last four years not a shoot from its stem. Lady Alice Peel, and other Hybrid Perpetuals, from four to five years old, are in perfect health, the stock swelling with the head. They have never given a sucker from their roots, and but rarely a shoot from their stems. The Hybrid Perpetuals Comte de Paris, Dr. Marjolin, and several others that make but feeble growth on the Dog-rose, on the Manettii grow well and bloom admirably. What can we want more? These discussions about stocks in your columns are very proper, for they often elicit valuable facts. We have yet much to learn. *Thomas Rivers.*

The Weather.—I observe in your Paper a wide range of temperature registered during the week ending June 6; and on two occasions a great degree of cold is recorded. This occurred on the nights of the 1st and 3d; the former being 38°, and the latter 37°. The following is the temperature during the same week at Pimlico, and, for the sake of comparison, I have added that at Chiswick:

	Pimlico.			Chiswick.		
		Max.	Min.		Max.	Min.
May	31	75°	49°	31	76°	41°
June	1	73	48	1	74	38
	2	73	49	2	76	40
	3	74	48	3	75	37
	4	75	51	4	78	44
	5	77	56	5	78	55
	6	67	48	6	62	49

I have frequently observed, by your Journal, a great degree of cold occurring at Chiswick at night. Is it because Chiswick, being so near the Thames, is exposed to cold winds off the water as soon as the sun goes down? My thermometer is a self-registering one, and at night hangs outside a second-floor window, exposed westerly perhaps, 35 feet from the ground; in the morning I remove it to a wall in the garden, about 5 feet from the ground, because, if suffered to remain during the day where it hangs at night, the sun in the afternoon would shine upon it. It was bought at Casella's, in Hatton-garden, and is a correct one. It coincides with all I see hanging out at the different opticians' shops. All my temperatures are shade temperatures. *A Young Gardener.*

Cuthill's Black Prince Strawberry.—Although the early blossoms of this very prolific Strawberry were cut off by frost on the 10th of May, I am able to send you a basket of perfectly ripe fruit from the open ground, where they have had no artificial assistance in ripening whatever. My first gathering was made on the 10th inst. *J. Cuthill, Camberwell, June* 12. [Very good they were.]

Destruction of Ants.—I have suffered much trouble and inconvenience by being visited with these pests in my underground apartments, and I have tried many remedies, such as tobacco-water, poisoned sweets, as honey, &c., but all without success. I then directed my attacks to the outside of the house. I dug a trench the whole length of the wall. I then poured a good supply of hot water into the trench, which completely saturated the earth, and might have destroyed some of my little enemies; still I do not think that leaving them at this stage would have completed the business. I procured an iron rod, and, the earth being softened by the water, I forced the rod 3 or 4 feet through the bottom of the trench, and thus pierced holes all along the house, and by these means probed to the foundation. I then obtained from the gas-works a quantity of water which had been used in their purifying process. I poured this into the holes I had made, and, in filling up the trench, I well mixed the gas-tar water with the mould. I soon found the numerous army was retreating. Still, for a few days, I thought I had not succeeded, as the number appeared to have increased; the colony, however, bore the appearance of confusion; the numbers afterwards daily decreased, and now I am quite rid of my foes. They consisted of the black or very dark kind of ant. *Achores.*

Portable Greenhouse.—I have seen mentioned somewhere, under this heading, a French contrivance, consisting of one or more oil lamps, warming a pan of water, and above the water again a pan of sand, in which to plunge flower-pots; the whole covered by a large hand-glass. You will oblige me by saying whether some such plan is likely to answer for the purposes of striking cuttings, raising tender annuals from seed, and occasionally as a seed bed for Melons and Cucumbers. If you think it is likely to answer, will you add whether such things are kept by any tradesman, whether a dwelling-room will be an unsuitable place for it, and to what heat I must have the means of raising the water, in order to secure enough of bottom heat; also whether the glass ought to have the means of ventilation at the top, and any other conditions of success which may occur to you. If the plan is a good one, it may perhaps be worth the notice of your excellent contributor, "Pharo;" as, if useful to any one, it will be so to those for whom his articles are designed. An apparatus only 18 inches by 12 inches will hold 24 3-inch pots, and may be used for four or five successive batches of cuttings in one season, which will probably supply the wants of a large proportion of your readers. *T. P.* [Such a contrivance was mentioned by us, on French authority, some years since. It could hardly fail to answer.]

Statice armeria.—One of my young men has brought me a few plants, with flowers nearly pure white, and some slightly tinged with pink; they were found growing on the shore of Belfast Lough, between Bangor and Donaghadee. Perhaps some of your correspondents will inform me whether it is common or not, as I have not seen any of it before. Many interesting plants are to be found round this part of that fine but unfortunate country. *Pride, Bangor Castle, Down, June* 8.

Way in which Toads Shed their Skins.—At p. 181 of the *Gardeners' Chronicle* for this year is an account, by W. Turner, of the manner in which he saw a toad shed its skin. This statement does not materially differ from that given in Bell's "British Reptiles," except in one point. Bell describes the cuticle as "pushed by the two hands into the mouth in a little ball, and swallowed at a single gulp." I have this morning witnessed an exhibition of this remarkable economy in the disposal of his old clothes, by one of the large Jersey toads, of which I received two living specimens a few days ago. Observing the back parts of the animal to be bright and moist, and seeing it raise its hand, as if to scratch its back, I at once perceived what was going on, and summoned my family to witness the process. The toad continued at intervals of a few seconds to open its mouth wide, and at the same time to assist the removal of the cuticle, by stretching its arm and contorting its body, much in the way we see our amateur boatmen of the Cam divest themselves of those seamless knitted jackets, which they pass over their heads. A great part of the cuticle had already disappeared from the hinder quarters, and I observed a continuous and almost imperceptibly slow progression of what remained round one of the corners of the mouth and down the throat. In this way the cuticle became removed in proportion as it was detached. The whole of the left side was cleared first, with the exception of a small tattered fragment that adhered round the fingers, and which I did not observe to be removed by the mouth. The right arm was then more successfully liberated, the cuticle slowly disappearing round the right angle of the mouth, much as we might fancy a long strip of ribbon maccaroni would descend if carefully swallowed without a rupture. I did not notice any direct pushing of the cuticle by the hands into the mouth; nor yet any pellet formed of it, to be bolted at a single gulp. Whether there has been any mistake in the description of the process adopted by our English toads I will not venture to assert, but certainly my own pet swallowed his Jersey jacket in a very gradual and deliberate manner. *J. S. Henslow, Hitcham, March* 11.

Irish Peat Charcoal.—The fertilising qualities of peat charcoal, even in its plain state, are very great; but when mixed with night-soil, its good properties are of course much increased, and in the latter condition a less quantity is required for an acre. Farmers often fail in raising small seeds, Turnips, for instance; more especially in the south of England. The Turnip seeds are sown in a poor hot soil, without any stimulant being immediately available. The seeds in consequence vegetate slowly, giving the fly time to eat the seed-leaf before the rough leaves have been produced. This can only take place in poor soils. On the other hand, market gardeners never fail in obtaining excellent crops, however hot the weather may be, a result owing entirely to their land being rich. This fact, therefore, should induce farmers to mix their small seeds with powdered peat charcoal before they sow them, all complaints of their failing then would cease. Everything ought to be done that can be done to stimulate young plants. They cannot grow too fast. Farmers, like gardeners, do not want to occupy the land six months with one crop, if the same can be grown in four. Charred peat might be used in many ways. It might be employed with advantage in cow-houses, piggeries, and in dung-heaps. When Potatoes are planted, if charred peat is used instead of dung, the young crop will have none of those scabby appearances which always occur where dung is used in the furrow; and the latter offers a great harbour for all sorts of insects. Mr. Smith, of Deanston, informs me that, in the island of Lewis, he is burning peat and using the ashes as manure, after

the plan which I recommended two years ago. It answers admirably. The farmers of the south of England have no idea what peat moss or bog is; they imagine that it is simply heath soil, which is a poor, sandy, black mould, generally covering the surface of the ground, not more than 6 or 8 inches deep. On the other hand, I have seen peat moss 20 feet deep, and in some places 30; all being one solid black mass. The Irish Amelioration Society ought to manufacture two sizes, one as large as the lump sugar we put into our tea; this size would keep strong clay land opener, warmer, and drier; the lumps of peat would also retain moisture in the earth longer in hot dry weather, and pieces of this size would be more lasting as a fertiliser. The smaller size would suit light land, and would be serviceable for top dressings. It would be a pity to burn such valuable manure, or it could be easily compressed in a machine and dried; it might then be bought in London readily, and it makes the best of fuel. If Mr. Rogers's plan of mixing the charred peat with night-soil could be carried out on a large scale, it would be much better than allowing the night-soil to be emptied into the common sewers, making them what may be termed elongated cesspools, from whose chimneys or "gully holes" are evolved the most deleterious gases. Peat charcoal has been proved to be a perfect deodoriser, and mixed with this material our town filth might be carted to the country and made available at once. This is the more necessary, as the hardness of the times will not now allow the farmer to send his waggon and four horses, with a man or two, to fetch home a load of dung, much of the goodness of which has been washed and heated out of it. For my own part, I have for some years used nothing but liquid manure water, salt, soot, and wood ashes, but now I shall employ charred peat. All the plants I cultivate grow most luxuriantly in it plain as well as mixed with night-soil. To amateurs I am sure it will prove a boon, as it will do away with the filth and nuisance of dung. *James Cuthill, Camberwell, London.*

Leaking in a Swimming Bath.—I should be obliged by some information as to the best mode of preventing leaking in a swimming bath. The bath is situated in an old quarry, one side being good rock, from whence flows the stream which supplies the bath. The other sides and the bed of the quarry are entirely composed of rotten stuff and rubbish, which, notwithstanding constant puddling, is continually breaking away at the sides, and letting the water out. The size of the bath is 16 by 18 yards, and it ought to be 8 feet deep. Different cements have been repeatedly advertised in your paper, but I shall be glad to know if they will hold so much water. *J. C. C., Wales.*

Societies.

HORTICULTURAL: GARDEN EXHIBITION, *June* 8.—The leading features of this, in all respects, excellent Midsummer show being touched upon in another column, we shall, as before, confine ourselves here strictly to details.

In collections of 20 STOVE AND GREENHOUSE PLANTS, the first prize was awarded to Mr. May, gr. to Mrs. Lawrence, of Ealing-park, for a group, beautifully bloomed, and, with perhaps two exceptions, exhibiting the very best cultivation. At the back stood an enormous Epacris grandiflora (not the same plant which was exhibited in May), well furnished with foliage and blossoms to the very pot; supporting it on one side was an immense Polygala acuminata, quite a mass of purple flowers, and on the other, an equally fine Coleonema rubrum. In front were Ixora coccinea, richly ornamented with noble heads of scarlet flowers; the purple blossomed variety of Aphelexis macrantha, the best of all the Everlastings; a pyramidal Eriostemon buxifolium, a well flowered Pimelea spectabilis, at least 4 feet across and as much in height; Erica Bergiana, 3 feet high and as much through, covered with small round rosy-purple blossoms; the clear yellow Allamanda grandiflora, the blossoms of which suffered much from exposure, the plant having been brought out of a close warm house; Epacris miniata, by far the most brilliant of the genus; a beautiful blue Leschenaultia, and a plant of the red variety, forming quite a globe of flowers; a capital bush of the rosy-pink Pimelea Hendersoni, a yellow Cape Heath, the fragrant Adenandra, a small Chorozema ovata, loosely supported on a few sticks so as to form a well flowered little bush; the sweet scented Sphenotoma gracilis, Franciscea acuminata, and Azalea variegata.—The second prize was awarded to Mr. Cole, gr. to H. Colyer, Esq., of Dartford, for evenly grown plants, approaching so closely the perfection of those from Ealing-park that when they were first staged in the morning some persons imagined that they would be placed first. At the top was an Allamanda Schottii with bright yellow blossoms nearly 6 inches across, and in front an excellent Stephanotis floribunda, also beautiful plants of Dipladenia crassinoda, Pimelea Hendersoni, Ixora coccinea and crocata, Gledstane's Azalea, a large spreading Pimelea decussata, the Box-leaved Eriostemon, not very thickly flowered; two capital Everlastings, a good plant of the red-blossomed Leschenaultia, the beautiful Echites splendens with six open flowers on it; Sphenotoma gracilis, Chironia glutinosa, Chorozema Henchmanni, Crowea saligna, a good plant, but insufficiently in bloom; the showy Clerodendron squamatum, and a Cape Heath.—A third collection was contributed by Messrs. Frazer, of Lea-bridge. It consisted of the large flowered Epacris, two red Azaleas, Ixora coccinea, Chorozema varium, the yellow-blossomed Hibbertia Cunninghami, Erica Cavendishii, and a variety of E. Linnæoides, Polygala acuminata, an Everlasting, Henderson's Pimelea, the white-flowered Lachnæa eriocephala, Gompholobium polymorphum, in the shape of a dwarf bush, supported by a few sticks; Franciscea acuminata, Boronia pinnata, the Jasmine-like Rhynchospermum, and Hypocalymna robustum.—Mr. Pamplin, of Lea-bridge-road, sent a fourth group, in which were the opposite-leaved Polygala, a large white Heath, the woolly Pimelea (P. lanata), Epacris miniata, the brilliant red Azalea called optima, a neat well-flowered Erica cubica minor, the Box-leaved Eriostemon, two Vincas, the fragrant Stephanotis floribunda, and a few other plants.

In collections of 15 STOVE AND GREENHOUSE PLANTS, the first prize was awarded to Mr. Green, gr. to Sir E. Antrobus, Bart., of Cheam. In this group we remarked well managed plants of the large flowered Allamanda, Rondeletia speciosa, Stephanotis floribunda, the best of all climbers for the roof or stove, when it can be planted out in the bed; Epacris miniata, two Helichrysums, Sphenotoma gracilis, the opposite-leaved Polygala, Wilson's excellent variety of Erica tricolor, Chorozema varium, Leschenaultia formosa, Henderson's Pimelea, Erica depressa, Ixora coccinea, and the variegated Azalea.—Mr. Gerrie, gr. to Sir J. Cathcart, Bart., sent the next best group, in which were five varieties of Cape Heath, the flesh-coloured Gloxinia, Sollya linearis, insufficiently in bloom; the red and white Vincas, a large Stephanotis floribunda, Epacris miniata, a small Gardenia radicans, and Adenandra uniflora.

In the class of 10 STOVE AND GREENHOUSE PLANTS there were seven exhibitors, all of whom sent creditable collections. A Gold Banksian Medal was awarded to Mr. Carson, gr. to W. F. G. Farmer, Esq., of Cheam, for large and well managed plants of Polygala oppositifolia, Allamanda cathartica, Epacris grandiflora, the Anemone-leaved Boronia, a purple Everlasting, Leschenaultia formosa, and the best variety of L. biloba; Sphenotoma gracilis; a small Ixora coccinea, with 13 fine heads of flowers, and the showy Medinill (M. speciosa). A second prize was assigned to Mr. Taylor, gr. to J. Coster, Esq., of Streatham, for a group in which were a beautiful Erica Westphalingia, quite a mass of bright crimson blossoms; E. Cavendishii, a red Azalea gracilis, a large bush of the opposite-leaved Polygala, the white-blossomed Pavetta caffra, Boronia serrulata, Azalea variegata, a purple-flowered Helichrysum, and Leschenaultia formosa. The next group in point of merit came from Mr. Bruce, gr. to B. Miller, Esq., of Tooting. We remarked in it good plants of Pimelea Hendersoni, Ixora coccinea, Acrophyllum venosum, Gompholobium polymorphum, trained over an egg-shaped trellis; Leschenaultia formosa, two Helichrysums, Epacris heteronema, and Chorozema varium.—Mr. Malyon, gr. to T. Brandram, Esq., of Blackheath, sent well cultivated plants of Phymatanthus tricolor, forming quite a little globe of flowers; Aphelexis humilis; Erica elegans and E. propendens, the latter loaded with small pink bells; Epacris miniata, the still somewhat scarce Aotus gracillima, Azalea lateritia, Polygala cordifolia, Chorozema varium, and Pimelea linifolia. Mr. Stanly, gr. to H. Berens, Esq., Sidcup, Kent, produced the large-flowered Epacris, two red Azaleas, the rose-coloured Vinca, Henderson's Pimelea, the useful Franciscea augusta, a Cape Heath, and small plants of Leschenaultia formosa and Boronia serrulata.—Mr. Glendinning, of the Chiswick Nursery, Turnham-green, furnished Pimelea Hendersoni, Tremandra verticillata, Aphelexis humilis, Erica splendens, the blue Leschenaultia, Gledstane's Azalea, Polygala cordifolia, Erica Cavendishii, E. perspicua nana, and Gesnera microrhiza.—Finally, from Mr. Stuart, gr. to T. Huggins, Esq., of Norwood, came Gompholobium polymorphum, on a large circular trellis; a pretty good Epacris miniata, a nice little plant of Mason's Heath, Bossiæa linophylla, a small but good Aphelexis macrantha purpurea, Erica Cavendishii, Leschenaultia formosa, and Zichya longipedunculata.

In collections of six STOVE AND GREENHOUSE PLANTS, the first prize was awarded to Mr. Kinghorn, gr. to the Earl of Kilmorey, Orleans House, Twickenham, for a large and fine Erica Cavendishii in a tub, the large-flowered Epacris, a flat and spreading Azalea Gledstanesii, Leschenaultia formosa, a little cone of flowers; Aphelexis humilis, and a charming bush of the violet blossomed Tremandra verticillata.—Second, Mr. May, gr. to E. Goodhart, Esq., Beckenham, Kent, for Ixora coccinea, Pimelea Hendersoni, Erica Cavendishii, Chironia glutinosa, Aphelexis sesamoides, and Acrophyllum venosum.—Third, Mr. Young, gr. to C. Baron, Esq., Denmark-hill, Camberwell, for Coleonema rubrum, Polygala cordifolia, Pimelea decussata, Franciscea villosa, and Erica ventricosa alba.—Fourth, Mr. Epps, of Maidstone, for a small Pimelea Hendersoni, covered with blossoms; P. mirabilis, a seldom seen species; a double red Azalea, and Aphelexis macrantha purpurea.—Equal prizes were awarded to Mr. Hamp, gr. to J. Thorne, Esq., and to Mr. Speed, of Edmonton. In these two groups we remarked a well flowered Erica Cavendishii, Ixora coccinea, a large Pimelea decussata, Mr. Fortune's Gardenia, an Everlasting, Clerodendron fallax, Tremandra verticillata, the rose-coloured Vinca, two Cape Heaths, and Chironia glutinosa.

HELICHRYSUMS.—Collections were shown by Messrs. Green (1), Young (2), Cole (3), and Stanly (4). In these we remarked Aphelexis sesamoides purpurea, humilis, and its large flowered variety, argentea; macrantha purpurea, spectabilis grandiflora, and Phænocoma proliferum.

ORCHIDS.—Fine as these were in May, they were far excelled both in quality and quantity on Saturday last. Mr. Holford's gr. Bassett produced a Camarotis purpurea 5 feet in height, quite a pyramid of purple flowers from the top to the bottom. This formed, as well it might, an object of general admiration. Scarcely inferior to it was an Odontoglossum citrosmum in the collection of Mr. Mylam, gr. to S. Rucker, Esq. This had five glorious spikes of flowers on it, and they were most beautifully coloured. Indeed the amount of colour which they possessed formed a distinguishing characteristic of all Mr. Mylam's productions. His yellows were decidedly yellows, his purples purples, and his pinks pinks. Each colour, whatever it might be, was "brought distinctly out." By this means even Vanda cristata, usually a dingy looking plant, was, in Mr. Mylam's hands, really chatming. But in addition to his plants exhibiting to the best advantage all the colours which they naturally possessed; they were capitally cultivated and flowered, and on this account richly deserved the Large Gold Medal which was awarded them. The group comprised, in addition to the Odontoglossum citrosmum and Vanda cristata above alluded to, Cattleya violacea, with six spikes of handsome flowers; C. Mossiæ, with from 17 to 20 expanded blossoms; the true C. intermedia, C. candida, Dendrobium formosum, with some 20 blossoms on it, large and beautiful; the rare Anguloa Clowesii, with three yellow blossoms; a copiously bloomed Barkeria spectabilis, in a wire basket; the same excellent Saccolabium præmorsum that was produced on the 18th of May, still in perfection; the rare Aerides maculosum, and Odontoglossum Karwinskii; the large flowered Butterfly plant (Phalænopsis grandiflora), Cypripedium barbatum, a large Aerides affine, A. odoratum, a tall Vanda teres, and Brassia verrucosa. The second prize was awarded to Mr. Blake, gr. to J. Schröder, Esq., of Stratford, for the large blossomed Phalænopsis, Aerides maculosum, A. odoratum, crispum, and a variety called Schröderi; Saccolabium præmorsum and S. guttatum, Barkeria spectabilis, Anguloa Clowesii, with three open blossoms, and one about to expand; and a beautiful specimen of the white flowered Calanthe veratrifolia.—Mr. Williams, gr. to C. B. Warner, Esq., of Hoddesdon, obtained a third prize, for Maxillaria tenuifolia, an Odontoglossum citrosmum which had lost all its colour, and was perfectly white. Several finely flowered species of Brassia, the scarce Cœlogyne Lowei, the charming Dendrobium Devonianum, an Oncidium or two, Aerides crispum, and Cattleya Mossiæ—the latter, although it had been fine, was rather past its best.—In the Nurserymen's Class of 15 Orchids there were three exhibitors, Messrs. Veitch, Rollisson, and Dobson. The Exeter group consisted of the rare Cattleya Acklandiæ, a handsome species; a small plant of the as yet scarce transparent Dendrobe, a large Sobralia macrantha, Cattleya veratrifolia, a conically trained plant of the beautiful Dendrobium Devonianum, Oncidium sphacelatum, with seven spikes of brown and yellow flowers; the larger variety of Oncidium ampliatum, Aerides crispum, Saccolabium guttatum and præmorsum, the bearded Lady's Slipper (Cypripedium barbatum), Lacæna bicolor, and a miserable Barkeria spectabilis.—Messrs. Rollisson sent a large Dendrobium moschatum, D. Devonianum, and D. formosum; Oncidium divaricatum, one of the handsomest of the small brown and yellow kinds; the violet-flowered Huntleya, with six shell-like blossoms; Stanhopea tigrina, a large Aerides odoratum, the spotted variety of Oncidium luridum, and one or two other plants.—Mr. Dobson had his large and fine Dendrobium nobile, which was produced on the 18th of May last, still in perfection; also a beautiful specimen of the large flowered variety of Oncidium ampliatum, a fine example of Aerides crispum, the orange-blossomed Epidendrum vitellinum, E. crassifolium, and a few less striking plants.

Collections of 10 ORCHIDS were contributed by Mr. Carson, gr. to W. F. G. Farmer, Esq., and Mr. Franklin, gr. to Mrs. Lawrence. Mr. Carson produced an Acanthophippium bicolor, covering the surface of the pot with curiously formed red and yellow blossoms; the bearded Lady's Slipper (Cypripedium barbatum); the large flowered Phalænopsis, Oncidium divaricatum and flexuosum, Saccolabium guttatum, a large and fine Aeridus odoratum, the rose coloured variety of Epidendrum macrochilum, Lacæna bicolor, with two noble spikes of flower, and an Odontoglossum.—Mr. Franklin furnished small plants of Phalænopsis grandiflora, Oncidium divaricatum, Odontoglossum citrosmum, two varieties of Cattleya Mossiæ, the tortuous flowered Trichopil (T. tortiliflora), Stanhopea oculata, Aerides crispum, and Dendrobium pulchellum.

Groups of six ORCHIDS were communicated by Mr. Gerrie, gr. to Sir J. Cathcart, Bt., and Mr. Kinghorn, gr. to the Earl of Kilmorey. The former had a capital Stanhopea oculata, but it was not forward enough; another species of Stanhopea, Cattleya Mossiæ, two Oncids, and Saccolabium guttatum.—Mr. Kinghorn sent Cattleya Mossiæ rather past its best, Calanthe veratrifolia, the large flowered Phalænopsis, and a Stanhopea in the way of Wardii.

Specimen ORCHIDS consisted of the noble Camarotis purpurea, already alluded to, from Mr. Bassett; a good Dendrobium speciosum, from Mr. Cole; Oncidium flexuosum, from Mr. Bruce; Cattleya Mossiæ, from Mr. Frazer, gr. to J. L. Leigh, Esq.; Dendrobium nobile, from Mr. Green; and an Aerides crispum, from Mr. Dobson, gardener to Mr. Beck.

Azaleas.—Collections of six were shown by Mr. Green and Mr. May, gr. to Mrs. Lawrence, and although past their best, they made a good display. The two groups were again nearly equal in point of merit. Mr. Green's kinds were Apollo, decora, variegata, lateritia, optima, and rosea punctata. Mr. May had fulgens, decora, Minerva, variegata, coronata, and Gledstanesii. —Messrs Lee, of Hammersmith, had a seedling called "Symmetry," apparently a considerable improvement on lateritia, which it very much resembles.

Tall Cacti in flower were shown by Mr. Green. They consisted of Epiphyllum Russellianum, Jenkinsoni, Ackermanni, and rubrum cæruleum; Cereus speciosissimus and C. Egertonii, the latter a beautiful variety, at present but little known.—Mr. Hoyle, of Reading, showed a seedling Epiphyllum called "platypetalum," a most brilliant coloured variety.

Roses, although good, wanted the richness and beauty which they possessed in May. The plants then exhibited were past, and the interval between the May show and the present was too short to admit of fresh plants being brought nicely into flower. Nevertheless the exhibitions of Messrs. Lane and Francis were very nearly in perfection, and so were those of Messrs. Rowland, Roser, and Terry. The boxes of cut blooms from Mr. Terry and others, maintained their condition throughout the day, and were much admired. Among the different varieties shown we observed Aubernon, Fulgens, Duc de Cazes, Coupe de Hebe, Mrs. Elliott, Madame Laffay, Blairii No. 2, Triomphe de la Queue, William Jesse, &c.; and among yellows La Pactole, Persian, Smith's, Pauline Plantier, Vicomtesse de Cazes, and Harrisonii. Several collections of yellows were disqualified on account of their not being exhibited according to the regulations.

Cape Heaths were plentiful, well cultivated, and finely flowered. Those in 11-inch pots consisted mostly of small plants; but they were generally perfect examples of good Heath growing.—In collections of 10 varieties, a first prize was awarded to Mr. Smith, gr. to J. Quilter, Esq., of Norwood, for beautiful plants of elegans, Bergiana, vestita coccinea, v. alba, suaveolens, Cavendishii, metulæflora, perspicua, Westphalingia, and Bruneoides. Second, Mr. Mylam, gr. to S. Rucker, Esq., for tricolor rubra, t. Wilsonii, Cavendishii, halicacaba, jasminoides, ventricosa hirsuta, v. grandiflora, inflata rubra, &c. Mr. Cole was third, with Cavendishii, Wilson's tricolor, t. rubra, Bergiana, gemmifera, and splendens. — Among Nurserymen, Mr. Epps was first, with good plants of splendens, perspicua nana, vestita coccinea, propendens, ventricosa alba, ampullacea vittata, Cavendishii, tricolor dumosa, and ventricosa coccinea minor. Messrs. Rollisson, who were second, had ventricosa hirsuta, v. prægnans-superba, v. breviflora, v. grandiflora, Cavendishii, tricolor, amabilis, Beaumontiana, and ampullacea nana. Messrs. Veitch were third, with densa, a distinct looking species; rubella, a minute rosy-flowered kind; splendens, depressa, florida, ventricosa grandiflora, Cavendishii, and metulæflora. — Messrs. Fairbairn produced perspicua nana, tricolor, depressa, Bergiana, Cavendishii, mutabilis, elegans, Beaumontiana, and ventricosa breviflora. Mr. Epps showed three pretty seedlings; one more especially, called tricolor Eppsii, is a promising flower.

Single Specimens consisted of splendid plants of Aphelexis purpurea and of Erica depressa, from Mr. May, gr. to E. Goodhart, Esq.; a charming Indigofera decora, from Mr. Ivison, gr. to the Duchess Dowager of Northumberland, at Syon; the best variety of the blue Leschenaultia, from Mr. May, gr. to Mrs. Lawrence; Aphelexis humilis, from Mr. Bruce; Pimelea decussata, from Mr. Hill, gr. to T. Davies, Esq.; Polygala acuminata, from Mrs. Lawrence; an Everlasting and Chironia glutinosa, from Mr. Cole; Erica depressa, from Mr. Green; the same species of Cape Heath, from Messrs. Fairbairn; Epiphyllum Jenkinsoni, from Mr. Collins, gr. to Miss Elliotson, of Clapham, and a large Coleonema, from Mr. Terry, gr. to Lady Puller.

New Plants.— Mr. Ivison, gr. to the Duchess Dowager of Northumberland, at Syon, again sent a flower and two leaves (one inverted so as to show the under surface) of the queen of aquatics (Victoria Regia); also a pink-blossomed Bejaria, which was probably B. Lindeniana, but its flowers were not expanded enough to allow a correct opinion to be formed of it.—Mr. Cole, gr. to H. Colyer, Esq., had Roupellia grata, a plant possessing little beauty.—Messrs. Veitch, their Jasmine-flowered Rhododendron, and Dipladenia nobilis, but, although very handsome, the latter was not sufficiently new to be noticed by the judges.—Mr. Glendinning, of Chiswick Nursery, and Mr. Henderson, of St. John's-wood, furnished the white variety of Campanula nobilis.—Messrs Garaway, of Bristol, Achimenes grandis, and Messrs. Frazer, of Lea-bridge, Hypocalyptus obcordatus, not a new plant.

Miscellaneous Subjects.—Nepenthes sanguinea, a noble species, with great pitchers that would hold more than a pint, of a warm brown colour outside, and mottled with purple inside, from Messrs. Veitch. Also a truss of a rose coloured Rhododendron from the same nurserymen. A large mass of Platycerium grande attached to a circular board, and a tubful of Nymphæa cærulea, finely in flower, from Mr. Ivison. An assortment of Iris blooms from Mr. Salter, of Hammersmith; variegated and alpine plants from Mr. Wood, of Norwood; and alpines from Mr. Turner, of Holloway, and from Mr. Turner, of Barnet, Herts. A beautifully flowered plant of the curious Gloxinia Fyfiana from Mr. Dobson, gr. to Mr. Beck; six Amaryllids from Messrs. Garaway, of Bristol; Dielytra spectabilis from Mr. Mountjoy, of Ealing; and an ornamental glass Fern case, on the principle of Dr. Ward's invention, from Mr. Cogan, of Leicester-square.

Pelargoniums were shown in excellent condition, and formed one of the most attractive features of the exhibition. Mr. Cock, of Chiswick, obtained the 1st prize for six plants in 8-inch pots, beautifully grown and well flowered, of Gulielma, Rosamond, Orion, Mont Blanc No. 2, Centurion, and Sikh; a 2d prize was awarded to Mr. Black, gr. to E. Foster, Esq., Clewer Manor, Windsor, for six superior kinds, but they were not sufficiently in flower. They consisted of Gipsy Bride, Constance, Narcissus, Alonzo, Victory, and Ariel; 3d, to Mr. Stains, Middlesex-place, New-road, for Negress, Orion, Alonzo, Pearl, Victory, and Rosamond; 4th, to Mr. Robinson, Pimlico, for Rosetta Superb, Gulielma, Forget-me-not, Negress, Pearl, and Orion.—Six plants in 11-inch pots: 1st, to Mr. Cock (the only exhibitor in this class), for Rosamond, Pictum, Salamander, Centurion, Thisbe, and Pearl. Nurserymen.—Six plants in 8-inch pots: 1st, to Mr. Beck, of Isleworth, for Rosalind, Emily, Delicatissimum, Prince Arthur, Mont Blanc, and Star; 2d, to Mr. Bragg, of Slough, for Centurion (Beck), Gulielma (Beck), Pearl, Phyllis, Norah, and Marian.—Six plants in 11-inch pots: one exhibitor, Mr. Gaines, Gulielma, Model, Miss Holford, Negress, Emma, and Aspasia.

Fancy Pelargoniums: 1st, to Mr. Robinson for capitally managed plants of Fairy Queen, Queen Superb, Madame Miellez, Statiaski, Reine de Francais, and Anais; 2d, to Mr. Gaines for Orestes, Priam, Hero of Surrey, Odoratum magnificum, Elegans, and Reine de Francais; 3d, to Mr. Ambrose, of Battersea, for Madame Miellez, Magnificum, Anais, Defiance, Jenny Lind, and Ibrahim Pacha; 4th, to Mr. Stains, for Jehu, Superb, Statiaski, Madame Miellez, Queen Victoria, Bouquet tout fait, and Yeatmanianum grandiflorum.

Cape Pelargoniums were exhibited by Mr. Parker, Mr. Stanly, Mr. Stains, and Mr. Malyon. Among these were well cultivated plants of elatum, roseum, glaucum, Blandfordianum, tricolor, reniforme, flexuosum, ardens, bipinnatifidum, quinquevulnerum, glaucifolium, and others.

Calceolarias.—By far the best collection was contributed by Mr. Franklin, gr. to Mrs. Lawrence; but unfortunately it was disqualified, on account of the plants being in pots larger than the regulations allowed. Each plant was an example of the most perfect cultivation, good foliage, dwarf, and bearing heads of flower from 2 to nearly 3 feet in diameter. The sorts were—Catherine Seaton, Earl of Roslyn, Queen Victoria, elegans, Baron Renfrew, and Lucy Ashton. Mr. Gaines, who received the first prize, had Regulator, Pantha, Baron Eden, and Nil desperandum, &c. Mr. Glendinning, Full Moon, Lady Gray, Homer, Mulberry, Marquess of Abercorn, and Lord Cockburn. Mr. Stanly sent Sebastian, Solicitor-General, Chancellor, Beauty, Attraction, and Canary.

Seedling Florist Flowers.—A tent was devoted exclusively to the exhibition of these, an arrangement which appeared to give general satisfaction. As usual the principal occupants were seedling Pelargoniums. Mr. Beck had Incomparable, a rich bright crimson of fine shape, but perhaps a little inconstant; also Tyrian Queen, a fine purple but bad in form; Major Domo, rose, very large and a free flowerer.—Mr. Hoyle exhibited Ajax, a very dark purple, of good shape and a free bloomer; Nectar Cup, rose or fawn colour, a pleasing variety of good form; also Ocellatum and May Queen, which have been noticed before.— Mr. Ponty sent Prince Arthur, a good shaped rose with a clear white throat.—Several fancy varieties were staged, but they did not appear to be any improvement on those already in cultivation. Some Fuchsias and Petunias were shown, about which we have nothing to state.

Fruit, with a few exceptions, was not above mediocrity. A well-formed Providence Pine-apple, weighing 9 lbs. 11 oz., was exhibited by Mr. Chapman, gr. to J. B. Glegg, Esq.; Mr. Davis, gr. to Lord Boston, had the same variety of Pine-apple, weighing 8 lbs. 3 oz.; and Mr. Slowe, gr. to R. W. Baker, Esq., another Providence, weighing 6 lbs. 11 oz. — In the Market Gardeners' class, Mr. Davis, of Oak-hill, East Barnet, produced a Providence weighing 6 lbs. 12 oz. The same grower also had a Queen, 2 lbs. 14 oz., and a Black Jamaica, 2 lbs. 8 oz. Mr. Rust, gr. to J. Maclaren, Esq., sent a Queen weighing 3 lbs.; and Mr. Brewin, gr. to R. Gunter, Esq., the same kind of fruit, weighing 2 lbs. 12 oz.

Grapes. — Fine bunches of Black Hamburgh and Black Prince were exhibited by Mr. Frost, gr. to Lady Grenville, at Dropmore; Black Hamburgh by Mr. Stent, gr. to W. Herbert, Esq., of Clapham; the same variety by Mr. Foggo, gr. to the Marquis of Abercorn; Black Hamburgh, good Muscats, white Muscadines, and Black St. Peter's, by Mr. Rust, gr. to J. Maclaren, Esq.; Black Hamburgh by Mr. Turnbull, gr. to the Duke of Marlborough, at Blenheim; the same variety, Dutch Sweetwater, and Muscat of Alexandria, by Mr. Brewin; tolerably good Muscats by Mr. Kemp, gr. to Mrs. Grillion; Stillwell's Sweetwater and Muscat of Alexandria, by Mr. M'Walter, gr. to Col. Challoner; and Chasselas Musqué by Mr. Chapman, gr. to J. B. Glegg, Esq.—In the Market Gardeners' class, Mr. Davis, of Oak Hill, produced excellent Black Hamburgh; Mr. Toy, Oatlands Palace-gardens, Weybridge, Black Hamburgh, Black Prince, and very good bunches of Muscat of Alexandria; and Mr. Chapman, of Vauxhall, good samples of Sweetwater. A single bunch of Black Prince, weighing 2½ lbs., was furnished by Mr. Chapman, gr. to J. B. Glegg, Esq.; Mr. Davis, of Oak Hill, had a monstrous bunch of Black Hamburgh, weighing 3 lbs. 4 oz.; but it was disqualified by the judges, on account of their considering it to be, not the heaviest single bunch, but three distinct bunches issuing from one eye.

The best Peaches, by far, were a half-dozen Royal George from Ireland, produced by Mr. Robertson, gr. to the Marquis of Waterford, at Corraghmore. These were very large, handsomely grown, beautifully coloured, and notwithstanding the distance of transit, in excellent condition; Mr. Chapman, gr. to J. B. Glegg, Esq., had good specimens of Grosse Mignonne; and Mr. Vare, gr. to Gen. Lygon, Spring Hill, Oxon, fair fruit of Royal George and Bellegarde; Mr. Fleming, gr. to the Duke of Sutherland, at Trentham, sent Late Admirable; and Mr. Gardiner, gr. to Sir G. Philips, Bart., Royal George, and Yellow Alberge. Fine looking Scarlet Nectarines were shown by Mr. Chapman, gr. to J. B. Glegg, Esq.; Elruges, by Mr. Foggo, and Brugnon Nectarines by Mr. Evans, gr. to Mrs. Newdigate, Nuneaton, Warwickshire.

Uvedale's St. Germain Pears, and Sturmer Pippin Apples of last year's growth, still in good condition, were communicated by Mr. Nottidge, of Streatham; Brown Turkey Figs by Mr. Foggo; the same kind of Fig by Mr. Chapman, gr. to J. B. Glegg, Esq.; and May Duke Cherries, from the Royal Gardens, Hampton Court, by Messrs. Jackson, of Kingston.

Strawberries.— Fine specimens of British Queen were exhibited by Mr. Busby, gr. to S. Crawley, Esq., Stockwood Park, Luton, and the whole of these, even the tips, frequently pale in this variety, were well coloured. The same sort was exhibited by Mr. Elliott, gr. to J. B. Boothby, Esq., and by Mr. Toy. The latter likewise contributed Keens' Seedling, as did also Mr. Monro, gr. to Mrs. Oddie, of Colney House, St. Alban's. Well-grown British Queen Strawberries in pots were produced by Mr. Elliott, Keens' Seedling by Mr. Monro, and the same variety by Mr. Toy.

Melons.—Several were exhibited, and, considering the season, they were generally well ripened. Mr. Monro showed (as the heaviest Melon) a fruit of his Egyptian Hybrid Green-fleshed, weighing 7 lbs. 8 oz.; and Mr. Gadd, of Betchworth Castle, a Canteloup weighing 5 lbs. 13 oz. The first prize for the best flavoured Melon was awarded to Mr. Fleming, for his Hybrid raised between the Hoosainee and Ispahan; and the second to Mr. Welding, gr. to Capt. Kennett, of Ham, for a Hybrid Green-fleshed. Other Melons consisted of a Beechwood, 6 lbs. 4 oz.; a Hybrid Green-fleshed, 3 lbs. 12 oz.; Snow's Green-fleshed, Hybrid Persian, Cuthill's Scarlet-fleshed, and Wood's Egyptian Green-fleshed.

Mr. Hamp, gr. to J. Thorne, Esq., sent a small cluster of fruit of the Musa Cavendishii, in the production of which he is very successful.

Royal Botanic, *June* 12.—The plants mentioned in the preceding report having been very generally reproduced at this show, we confine our observations entirely to the subjects which we did not remark at Chiswick. Messrs. Henderson, of Pine-apple-place, had a small plant of their charming Begonia cinnabarina; Messrs. Veitch, their evergreen shrub Escallonia macrantha, which is reported to be hardy, and Dipladenia urophylla, a rather pretty species, but wanting in brilliancy of colour. Mr. Ivison, gr. to the Duchess Dowager of Northumberland, sent Curcuma cordata, a somewhat scarce plant.

Mr. Falconer, gr. to A. Palmer, Esq., of Cheam, exhibited a group of tall Cacti, large, and well flowered. The sorts were Epiphyllum Jenkinsoni, and its large flowered variety, E. speciosum, Cereus speciosissimus and C. Mallesonii, and its rose-coloured variety.—Messrs. Lee, of Hammersmith, showed their dwarf Cereus called Leeanus, a beautiful kind, with four large semi-double orange scarlet flowers placed on its summit, one, as it were, at each corner of a square, and bending gracefully outwards.

Orchids.—Mr. Barnes, gr. to H. Hanbury, Esq., sent a collection consisting of Brassia Wrayæ, Oncidium altissimum, O. luridum guttatum, the Brassia-like O. phymatochilum, the large flowered Phalænopsis, Saccolabium guttatum and præmorsum, a very fine plant of the hardy Lady's Slipper (Cypripedium spectabile), Aerides Brookii, and the rosy variety of Epidendrum macrochilum. The same grower also had Barkeria melanocaulon.—Mr. Mylam, gr. to S. Rucker, Esq., sent a large and fine Aerides odoratum, hardly forward enough; Odontoglossum Lindleyanum, and Paphinia cristata. —Mr. Schröder had Coryanthes macrantha, with one flower open, and Vanda tricolor.—Messrs. Rollisson, Acineta Barkeri, with a fine spike of yellow flowers, and Coryanthes macrantha.

Stove and Greenhouse Plants.—Mr. Barnes, gr. to H. Hanbury, Esq., produced Tremandra verticillata, Erica Cavendishii, Boronia serrulata, Ixora coccinea, Azalea variegata, Æschynanthus Boschianus, Henderson's Pimelea, Franciscea acuminata, Dipladenia splendens, and D. crassinoda. D. crassinoda, a beautiful plant when well flowered, was pretty generally exhibited at this show. Another collection of 10 well grown plants was shown by Mr. Croxford, gr. to H. Barnes, Esq., of Stamford-hill. It consisted of Gompholobium versicolor, Ixora coccinea, Aphelexis macrantha purpurea and humilis, Stephanotis floribunda, Epacris miniata, very highly coloured; Phænocoma proliferum, the blue Leschenaultia, the white-flowered Vinca, and Allamanda cathartica.—Mr. Laybank, gr. to T. Maudslay, Esq., of Norwood, sent the best variety of Aphelexis sesamoides, Erica depressa and E. ventricosa alba, Hoya carnosa, the red-blossomed Leschenaultia, Boronia serrulata, a Chorozema, a Dillwynia, and an Azalea.—Mr. Green had an excellent specimen of Mr. Fortune's Gardenia, but its beauty was unfortunately over. It had had a dozen blossoms on it at one time.—Mr. Carson sent Mussænda frondosa in excellent condition, its large white bracts contrasting strikingly with the broad green leaves and small yellow flowers.—In Mrs. Lawrence's collection were Gompholobium splendens, so trained as to form a charming little bush of the clearest yellow; and a capitally bloomed plant of the Fuchsia-like Abelia floribunda. The latter was at least 3 feet high and as much through.

Roses were in good condition. Messrs. Lane had a most beautiful specimen of the comparatively new Rose Souvenir d'un Ami—white, tinged in the centre with salmon, large and handsome. Their "Queen," too, was the admiration of everyone. The other kinds were Chénédolé, Comtesse Molé, Great

Western, Madame Plantier, Paul Perras, Souvenir de la Malmaison, Fabvier, Miellez, Miss Glegg, and Devoniensis. Mr. Francis had Las Cases, Belle de St. Cyr, Pauline Plantier, Fulgens, Duc de Cazes, Mrs. Elliott, Madam Laffay, William Jesse, Chénédolé, and Coupe d'Hebe. Among Messrs. Paul's were Baronne Prevost, Charles Duval, Mrs. Bosanquet, finely bloomed, Nephetos, Augustine Mouchelet, and others. In Mr. Terry's group was a fine example of La Dauphine. Yellows consisted of Harrisonii, Persian, Queen Victoria, Smith's Vicomtesse de Cazes, flavescens, La Pactole, and Pauline Plantier. Mr. Standish had a new Rose in the way of Safranot.

Some Fuchsias were shown, and we remarked an interesting collection of Ranunculuses from Mr. C. Tyso, of Wallingford. The following are a few of the leading sorts which the collection contained: Berinus, Dr. Channing, Kilgour's Queen, Apollo (dark), Niobe, Robert Burns, Lambton, Gomer, Amasis, Enchanter, and Tyso's new seedlings—Exhibitor, Elegance, Captivator, Festus, and Tysonius.

Fruit was produced at this show, but with one or perhaps two exceptions it was not remarkable either for quality or quantity. Of tropical fruits Mr. Ivison sent examples of Gamboge, Star Apple, Loquat, ripe and unripe Vanilla, and Diospyros Sapota.

Miscellaneous.

Mr. Bateman's Orchids.—The following list of some of the prices obtained at the late sale of these plants will probably interest a good many of our readers:—Angræcum eburneum, a fine specimen, fetched 19*l.* 19*s.*; A. caudatum, two plants in one, each coming into flower, 18*l.* 18*s.*; Aerides affine, fine specimen, 14*l.* 14*s.*; A. odoratum, ditto; A. maculosum, 8*l.* 18*s.* 6*d.*; A. quinquevulnera, 6*l.* 15*s.*; Vanda suavis, 17*l.* 17*s.*; V. Batemanni, 5*l.*; Cattleya labiata, 11*l.* 11*s.*; C. Aclandiæ, two plants in one, 11*l.* 11*s.*; C. Walkeriana, 7*l.* 17*s.* 6*d.*; C. maxima, 6*l.* 6*s.*; Cœlogyne cristata, 7*l.* 7*s.*; Coryanthes Fieldingii, 7*l.* 7*s.*; Saccolabium guttatum, fine plant, 12*l.* 1*s.* 6*d.*; S. ampullaceum, 10*l.* 10*s.*; Dendrobium densiflorum, fine plant, 11*l.* 6*s.*; D. Dalhousieanum, 5*l.* 10*s.*; D. Devonianum, 4*l.*; D. cærulescens, 4*l.* 5*s.*; D. moniliforme, 4*l.* 10*s.*; D. Veitchianum (Java), 6*l.* 6*s.*; D. palpebræ (Moulmein), 4*l.* 5*s.*; D. nobile, 3*l.* 5*s.*; D. transparens, 4*l.* 5*s.*; Epidendrum phœniceum, 4*l.* 5*s.*; Lælia Perrinii, fine plant, 11*l.*; L. acuminata, 5*l.*; L. crispa (Cattleya crispa), 4*l.* 10*s.*; L. cinnabarina, 3*l.* 15*s.*; Miltonia candida grandiflora, 3*l.* 10*s.*; M. cuneata, 4*l.* 5*s.*; M. spectabilis, 4*l.*; variety of ditto, "with whole coloured purple flowers," 5*l.* 15*s.*; Oncidium Martianum, 4*l.*; O. pelicanum, 5*l.* 10*s.*; Phalænopsis amabilis, 4*l.* 5*s.*; P. grandiflora, 3*l.* 5*s.*; P. rosea, 1*l.* 3*s.*; Ansellia africana, 3*l.* 12*s.* 6*d.*; Anguloa Ruckeri, 3*l.* 3*s.*; A. Clowesii, 2*l.* 15*s.*; Barkeria Skinneri, 2*l.* 15*s.*; Bolbophyllum Lobbii (Java), 2*l.* 3*s.*; and Odontoglossum citrosmum, 3*l.* 10*s.* Other lots, of which there were in all 202, fetched from 10*s.* to 2*l.* 10*s.*

Calendar of Operations.

(For the ensuing week.)

PLANT DEPARTMENT.

Particular attention should at all times be paid to the preparation of winter-flowering plants, and first and foremost of these is the Azalea. Those plants which were forced early, and have completed their growth, should be gradually exposed to a cooler temperature; and, when their blossom buds are perfected, they should be placed out in an open airy situation. As soon as the season is turned, those which have filled their pots with roots should be favoured with a slight shift, which will be found particularly serviceable to those varieties of a half-deciduous habit, like A. indica alba; for the consequent activity of the roots tends very considerably to preserve their foliage under cool treatment in autumn, besides giving additional substance and stability to the flowers. As habit becomes a second nature, these earliest forced plants of last season will, of course, come in for the same purpose this year. Euphorbia, Eranthemum, Justicia, Vinca, Begonia, Gesnera, Gardenia, Franciscea, Jasminum, Aphelandra, Poinsettia, Torenia, Cactus truncatus, &c., are useful for autumn and winter flowering. The existing plants of this kind should continue to receive every encouragement in the way of rich soil, liberal pot room, and an adequate amount of heat and moisture, that they may form handsome, healthy specimens. It is well also to propagate some young plants of many of these kinds, as they will be useful for flowering in small pots this season, and will be grown on to make the larger specimens for next. All free-growing plants should be encouraged with weak manure water once or twice a week, according to the progress which the roots have made towards the sides of the pots.

FLOWER GARDEN AND SHRUBBERIES.

Hyacinths, Tulips, and other bulbs, whose foliage is now fully matured, should be taken up, dried, cleaned, and stored in an airy room till autumn. It is a common practice to throw away the old bulbs which have been forced, or to stick them into some out-of-the-way border, and take no further notice of them; but they are well worthy of a greater share of attention. If, after being well ripened, they are taken out of the soil, carefully stored in a dry room during their season of rest, and in autumn replanted in beds of light rich soil, a healthy stock will be established in a few years, and from these the largest and soundest bulbs can annually be selected for forcing. Of the remainder, those which are large enough to flower at all may be planted in the flower garden, where they are highly ornamental during the spring months, and are at the same time preparing themselves for forcing in future years. Therefore let all the old bulbs you have in or out of the ground be taken care of till the planting season arrives. Hollyhocks, Dahlias, Delphiniums, Phloxes, and other herbaceous plants, must be neatly tied to good strong stakes; but this is very different to bundling them up in such a manner as to deprive them of light and air. The object of tying is to support the weight of the plants; but, at the same time, light and air should be freely admitted amongst the branches. In tying the Hollyhock, it is a common practice to bind up six or eight shoots to one stake, in which case the flowers are almost entirely concealed by the leaves. The proper way is to select a few of the strongest shoots of each plant, and tie them to separate stakes, placed sufficiently distant to admit light and air; so treated, the flowers display themselves to advantage, and their appearance is truly noble.

HARDY FRUIT GARDEN.

The shoots which are retained on wall fruit trees require attention in nailing or tying, as the fruitfulness of the trees very much depends upon the shoots not being allowed to crowd or interfere one with another; and if their ornamental appearance, in an artistical point of view, is any object, the shoots should be laid in at proper angles while they are young. Continue pinching the points of Gooseberry and Currant shoots, and especially where they are blighted; it is a very quick way of destroying myriads of insects, while at the same time it forms a necessary part of the cultivation of the plant. Continue the exterminating process wherever insects make their appearance, as well upon the smaller bush fruits as upon the wall trees. The garden engine should be at work every night and morning upon these and the walls. Early Cherries particularly require this, as the black fly is making its appearance, and if not destroyed in time will soil the fruit as well as injure the leaves. Where common tiles have been adopted as a means of keeping Strawberry fruit clean, they should occasionally be turned up, by which a congregation of snails, beetles, and other injurious insects, will be exposed to view, and may be easily destroyed. The facility with which this may be done gives the tiles a great advantage over Grass or straw, as the latter materials harbour insects without affording the means of getting at them.

KITCHEN GARDEN.

No crops after this time should be sown so thickly as to require much thinning, for in hot dry weather considerable injury is thereby done to the plants which are retained. Plants sown now for future transplanting should be sown much thinner than would have been thought necessary a month or six weeks back; this is to allow them a longer period to grow before they will need to be removed, and in order that they may then be carefully lifted with large balls of earth. Make regular sowings of Turnips and Spinach, and of Lettuces and other salads, once in two or three weeks; sow a bed of Carrots, and of Onions, for using in a young state; and as small roots of Beet are generally preferred, a late crop of them should now be sown. A sowing should be made of the Vanack, or early dwarf Sugar-loaf Cabbage, for late summer and autumn use; and of Knight's Protecting Broccoli, for late spring use. Cardoons should now be transplanted from the frames or pots, choosing a moist or dull day for the purpose, and watering them afterwards in hot weather till they are thoroughly established. Let the leaves of Garlic be tied in knots, to check the production of flowers, and assist thereby the development of the roots.

State of the Weather near London, for the week ending June 13, 1850, as observed at the Horticultural Garden, Chiswick.

June.	Moon's Age.	Barometer. Max.	Barometer. Min.	Temperature. Of the Air. Max.	Of the Air. Min.	Of the Air. Mean	Of the Earth. 1 foot deep.	Of the Earth. 2 feet deep.	Wind.	Rain.
Friday.. 7	26	29.737	29.539	66	43	54.5	57½	57½	S.W.	.03
Satur.. 8	27	30.000	29.886	69	41	55.0	58	57	S.W.	.06
Sunday . 9	28	30.197	30.141	74	40	57.0	58	57	S.W.	.00
Monday 10	●	30.118	29.890	80	50	65.0	58	57½	S.	.00
Tues. .. 11	1	29.899	29.844	80	46	63 0	60	58	W.	.00
Wed. ..12	2	29.918	29.696	68	47	57.5	61	59	S.W.	.00
Thurs....13	3	29.716	29.672	66	42	54.0	60	59	W.	.04
Average....		29.941	29.809	71.9	44.1	58.0	58.9	57.8		.13

June 7—Cloudy and boisterous; showery; cloudy.
— 8—Cloudy and dull; showers; fine in afternoon; slightly clouded.
— 9—Very fine throughout.
— 10—Very fine; overcast and mild at night.
— 11—Very fine; cloudy at night.
— 12—Fine; cloudy; overcast.
— 13—Fine; cloudy; some heavy showers; clear at night.
Mean temperature of the week, 2 deg. below the average.

State of the Weather at Chiswick during the last 24 years, for the ensuing week, ending June 22, 1850.

June.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds. N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W
Sunday 16	72.8	50.1	61.4	5	0.17 in.	2	2	4	1	6	5	2	2
Mon. 17	73.9	51.2	62 5	14	0.86	1	4	2	—	5	6	3	3
Tues 18	73.3	51.2	62 3	13	0.25	2	2	2	2	3	5	6	2
Wed. 19	70.9	50.0	60.4	13	0.37	—	3	1	2	1	1	10	6
Thurs. 20	72.5	51.4	61.9	10	0.21	1	3	1	1	4	6	7	1
Friday 21	74.2	51.8	63 0	9	0.68	1	3	3	1	1	11	4	—
Satur. 22	73.4	49.2	61.3	11	0.59	1	1	1	1	2	9	7	2

The highest temperature during the above period occurred on the 19th and 22d, 1846—therm. 93 deg.; and the lowest on 16th, 1829, and 22d, 1830—therm. 39 deg.

Notices to Correspondents.

Asparagus: *Anon.* You may apply, in February or March, as much as 20 lbs. of salt to a bed 33 feet in length by 4 feet in width.‡

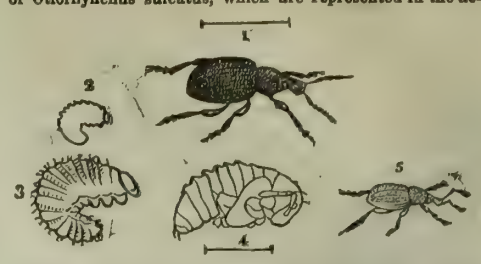
Black Beetles: *G C.* If your floor cannot be pierced as we formerly recommended, then you had better procure one of *the capital traps* sold by Marchant, 253, Regent's Circus, Oxford-street; or Jackson, 19, Threadneedle-street.

Books: *Alpha.* Baxter's "British Flowering Plants" is very useful; but it only contains one species of each genus. Moore on Ferns is cheap, Newman's is more costly, Francis's, of which there is a new edition just out, is between the two; either will probably serve your turn.—*J Poole.* You must study—1, "School Botany;" 2, "Elements of Botany," in which you will find all the information you seek. You have put the cart before the horse.

Garden Memoranda: *Helmsley.* We cannot insert statements from anonymous correspondents or interested parties.

Guano: *A Subscriber.* If the public will support us, merely by adopting our advice, or by opening their eyes a little wider than usual, we shall break up the nest of thieves, numerous and strong as they fancy themselves. But the men of Liverpool should do there what we do in London. It is not quite fair to ask a metropolitan Paper to perform purely local duty. There is plenty to do at Liverpool and every other principal port.

Insects: *W F.* You will find an account with figure of the Otiorhynchus tenebricosus in its perfect state in the *Gard. Chron.*, p. 316, 1842. Its transformations are similar to those of Otiorhynchus sulcatus, which are represented in the accompanying woodcut. 1, the perfect insect somewhat magnified; 2, its larva or grub of the natural size; 3, ditto magnified; 4, the pupa magnified; 5, Otiorhynchus picipes. The larvæ of all these species feed at the roots of plants, and consequently the more perfect insects you now destroy the less will your Filbert plantation suffer by-and-bye. *W.*—*S H H W.* The caterpillars sent, which have done so much damage to your Ranunculus bed, are the larvæ of the common Daddy-long-legs (Tipula oleracea). Examine the roots of the plants carefully as soon as they appear to flag, and destroy all the flies as soon as they appear in the winged state, which will now be in a very short time. *W.*—*E T C.* Why did you not send specimens of the Smother fly? We can only guess what it is—Psylla Fagi, Linn. If repeated syringing fail, try whether smartly shaking the trees, placing under them large sheets of paper covered with pitch, will not lessen the evil. *W.*—*G B.* Earwigs may be trapped by placing a little dry moss in the bottom of small garden pots, and inverting the latter on stakes a short distance from the ground. Withered Hemlock or Bean stalks also make excellent traps for them. These should be examined daily, and the insects in them destroyed ‡—*T D H.* We cannot guess what is the species of insect found at the root of your Orchids without seeing a specimen. If it be a Podura, we should scarcely think it would injure healthy plants. Please to send us some specimens for identification. *W.*—*T S P.* The insects sent from Pembroke dockyard, where they are destroying the Oak stuff, are the larvæ of the destructive Lymexylon navale (killed by being sent loose). The plan suggested by Linnæus for their destruction was to sink the timber in water, at the time the perfect insects make their appearance, by which they are destroyed. We should be very much obliged to you for a piece of the wood containing some of the insects sent up uninjured, in order to trace their transformations. *W.*—*J W.* The beetles infesting the bacon are the common bacon beetle (Dermestes lardarius), and the small insects sent with them are their young. In so bad a case as this the sooner the bacon is eaten the better; plunging it into hot water will kill the insects. *W.*



Lilium: *E H.* Cold, acting upon a rank watery growth, has probably done the mischief.

Names of Plants: *Erzeroum.* 97, Ribes alpinum.—*P B.* 1, Epidendrum tripterum; 2, a variety of Epidendrum aromaticum; 3, Cymbidium chloranthum; 4, Phaius bicolor. We must decline answering your inquiries in future, if you *will* not state where the plants come from. Refusing this, surely very reasonable, information, quadruples our trouble.—*An Old Subscriber.* No; it is the Ivy-leaved Pelargonium.—*Rougham.* Smilacina racemosa.—*G P H.* Some Hypnum; Ervum hirsutum and Festuca ovina.—*Ravenswood.* Collomia lateritia.—*R Cox.* Anagyris indica.

Peas: *A Market Gardener.* The "Early May" Pea is not invariably single blossomed. Whether it, or any other variety, may or may not produce only single blossoms, depends upon circumstances over which a seedsman has no control, and therefore he cannot be liable to an action, we should suppose, if what are called "single blossomed" should occasionally produce double blossoms; but if he warrant the contrary, of course he must abide by the consequences.‖

Pines: *B A L.* No Conifers like chalk. If you have any near you which form an exception, then you may form an opinion by comparing the habits of those you want with what you have.

Pits: *Sub.* The drip will be carried down, if the back is 2 feet higher than the front on a width of 8 feet; or, in other words, the sashes may be made to slope 1 foot in 4.‡

Potatoes: *John Lawson.* Your plant has been killed by excess of water. All plants are injured by excess of water; the Potato more readily than many. The "disease" is not indicated by your roots, &c., rotting. They could not do otherwise.

Slugs: *Strawberries.* Slices of Swede Turnip make good decoys for slugs; or ducks will eat them, and lime-water applied night and morning, when slugs are feeding, will soon rid you of them; but perhaps the most effectual remedy is pretty strong gas water applied at feeding time, provided you can use it without its touching your plants.‡

Misc: *F Z.* We must refer you to advertisements; we cannot undertake to do the business of advertisers.—*Ravenswood.* Glycine sinensis may be propagated by cuttings of the root, struck in heat, or by layers. A Pomegranate is certain to flower against a south wall, as soon as it is old enough, provided the border is well drained. The Laburnum is mildewed; you cannot prevent it now; it is probably of no great consequence. The common English Buckbean is not sold, but grows everywhere in marshy places. You had better try the tank water experimentally before you use it on a serious scale. We have no experience with it.—*W M, Ely.* You can have the Numbers; the price is 2*s.* 6*d.*—*W A A Rothwell.* We do not know what Lilly band is.

SEEDLING FLOWERS.

Calceolarias: *J R R.* Crushed to pieces in coming through the post.*—*W C.* So shrivelled up that no opinion of their merits could be formed. Can you favour us with fresh blooms.*—*J G.* Prettily marked. All inferior to kinds already in cultivation. The best are 9, 13, 18, 26, 27, and 30.*—*Kilnwick.* Clear yellow, mottled with rich brown; size and substance good, but hardly round enough.*—*Anon.* Numbers all detached when received, therefore we cannot distinguish them. They are all more or less deficient in shape; of one of them, however—the largest—we should like to see better specimens. The white ground variety is striking; but it is much too small, and otherwise defective.*

Honeysuckle: *T B.* Your seedling does not appear to be any improvement on the Scarlet Trumpet.*

Pansies: *Y Y.* 38, white ground, top petals dark purple, lower petals margined with the same colour, good eye, which joins the margin—a great defect. 4, purple, with a white ground; worthless as a show flower. 65, white ground, top petals rosy purple, lower petals margined with the same colour; large, but thin and rough. 61, rich dark mulberry self; a promising flower. 2, rich yellow ground, top petals dark maroon, lower petals margined with the same colour, eye good; a full sized and fine flower.*

Scarlet Pelargonium: *W Turner.* Your seedling had fallen to pieces before it reached us. We can therefore only speak of its colour, which is brilliant.*

TURNIP SEEDS.

DUNCAN HAIRS having personally superintended the selection and growth of the Turnip Seed he offers, can with confidence recommend them as genuine. Likewise, AGRICULTURAL SEEDS of every description, of first-rate quality and low in price. Catalogues with prices free.

Garden Tools, Nets, and every article connected with the trade wholesale and retail.

Seedsman and Florist, 109, St. Martin's-lane, Charing-cross.

AGRICULTURAL DRAINING: THE DERBY LEVEL.—A Very Superior Draining Level, of great simplicity, price 3*l.* 5*s.*, to be had of the Maker, Mr. JOHN DAVIS, Optician, Derby. The above is securely packed and sent to any part of the empire.

BELL'S PATENT LIQUID CEMENT is ready for use, and only one-eighth the cost of oil-paint. For beauty it is pre-eminent, giving the exact appearance of FINE CUT STONE. Can be used at once on fresh Roman Cement, or any other plastering, and will protect the walls as well as Roman Cement. In casks of 1, 2, and 3 cwt., at 8*s.*, 15*s.*, and 21*s.*, casks inclusive.

PATENT MINERAL PAINTS.—Invaluable for cheapness, beauty, and permanence: not half the cost of other paints, always ready for use, will keep good for years, and therefore well suited for exportation. Brilliant black, 2*s.*; rich brown, 2*s.* 9*d.*; greens and light colours 4*s.* per gallon.

G. BELL and Co., 2, Wellington-street, Goswell-street, London.

CORN MANURE FOR WHEAT, BARLEY, OATS, BEANS, &c., &c.

THE LONDON MANURE COMPANY most confidently recommend the above, as they are daily receiving very satisfactory accounts from parties who used it with great success last season. It will be found fully equal to and much cheaper than Peruvian Guano, and is not so liable to produce so large a growth of straw. Price Seven Guineas per ton, 3 cwt. per acre. They also beg to offer their Concentrated Urate, Superphosphate Lime, Nitrate of Soda, Sulphate and Phosphate of Ammonia, Fishery and other Salt, Gypsum Sulphuric Acid, and genuine Peruvian Guano. To insure this free from adulteration, all purchasers can receive it direct from the Warehouses of the Importer.

Bridge-street, Blackfriars. EDWARD PURSER, Secretary.
Country Dealers and Agents supplied.

MANURES.—The following Manures are manufactured at Mr. LAWES'S Factory, Deptford Creek:

Corn and Grass Manure, per ton	£10	0	0
Clover Manure, do.	11	0	0
Turnip Manure, do.	7	0	0
Superphosphate of Lime	7	0	0
Sulphuric Acid and Coprolites	5	0	0

Office, 69, King William-street, City, London.

N.B. Peruvian Guano, guaranteed to contain 16 per cent. of Ammonia, 9*l.* 15*s.* per ton; and for 5 tons or more, 9*l.* 10*s.* per ton, in dock. Sulphate of Ammonia, &c.

LAWES'S PATENT MANURE.

WILLIAM E. RENDLE AND CO., Plymouth, are Mr. Lawes's Wholesale Agents for the Sale of his MANURES, and can supply them at Mr. Lawes's prices, delivered at his Factory, Deptford Creek.—Apply to WILLIAM E. RENDLE and Co., Union-road, Plymouth.

GUANO AND OTHER MANURES.—Superphosphate of Lime (See reports of experiments in Royal Agricultural Society's Journal, Vol. 6, Part 2), Guano, Peruvian and Patagonian, Gypsum, Salt, Nitrate of Soda, and all other Manures of known value on sale. A Pamphlet on the above forwarded on receipt of four postage stamps.—Apply to MARK FOTHERGILL, 201A, Upper Thames-street, London.

PERUVIAN GUANO.—As Agents of the Peruvian Government for the importation and sale of this valuable MANURE, we think it right, for the protection of consumers and respectable dealers, to apprise them that the adulteration of the article is still extensively practised, and to recommend them to apply either to ourselves, to our agents, Messrs. GIBBS, BRIGHT, and Co., of Liverpool and Bristol, or to dealers of established character, in whose honesty and fair dealing they can place implicit confidence. ANTONY GIBBS and SONS

HOT WATER APPARATUS AND HORTICULTURAL BUILDING.



W. HILL begs respectfully to announce that his improved "FLUE BOILER" may now be had in sizes to suit every description of Apparatus, from that of 100 feet to 2000 feet of 4-inch pipe. Improved STEAM BOILERS, from one-horse power and upwards, adapted either for stationary or portable engines, and guaranteed to be most effective.

Every description of Horticultural Building constructed upon the best principle. Buildings of any kind heated by hot water.

*** A liberal Discount to the Trade.

W. HILL, Horticultural Works Greenwich.

BY HER MAJESTY'S  ROYAL LETTERS PATENT.

PATENT HOTHOUSE WORKS, KING'S ROAD, CHELSEA.

E. DENCH invites the attention of Gentlemen about to erect Hothouses, &c., to the vast superiority in every respect possessed by his PATENT HOUSES, which he will warrant superior in every respect to any others. Good Glass from 16 to 21 oz. per foot, 1 foot wide, 3 feet long, furnished, and the Houses, when completed charged, from 1*s.* 3*d.* to 1*s.* 6*d.* per superficial foot, according to size and quantity; on one principle the roof is formed without wood or putty, and on another principle with wood rafters, and the glass put in with putty. Patent Sashes, requiring no paint, from 7*d.* to 9*d.* per foot. HEATING BY HOT WATER.

STEPHENSON AND Co., 61, Gracechurch-street, London, and 17, New Park-street, Southwark, Inventors and Manufacturers of the Improved CONICAL and DOUBLE CYLINDRICAL BOILERS, respectfully solicit the attention of scientific Horticulturists to their much improved method of applying the Tank System to Pineries, Propagating Houses, &c., by which atmospheric heat as well as bottom-heat is secured to any required degree, without the aid of pipes or flues. S. and Co. have also to state that at the request of numerous friends they are now making their Boilers of Iron, as well as Copper, by which the cost is reduced. These Boilers, which are now so well known, scarcely require description, but to those who have not seen them in operation, prospectuses will be forwarded, as well as reference of the highest authority; or they may be seen at most of the Nobility's seats and principal Nurseries throughout the kingdom.

S. and Co. beg to inform the Trade that at their Manufactory, 17, New Park-street, every article required for the construction of Horticultural Buildings, as well as for heating them, may be obtained upon the most advantageous terms.

Conservatories, &c., of Iron or Wood, erected upon the most ornamental designs. Balconies, Palisading, Field and Garden Fences, Wire-work, &c.

LIGHT, CHEAP, AND DURABLE ROOFING.

CROGGON'S PATENT ASPHALTE ROOFING FELT is perfectly impervious to rain, snow, and frost, and has been tested by a long and extensive experience in all climates. Saves half the timber required for slates; can be laid on with great facility by farm servants, or unpractised persons. Price 1*d.* per square foot.

CROGGON'S PATENT NON-CONDUCTING FELT, for Steam Boilers and Pipes, saves 25 per cent. of fuel.

Samples and Testimonials sent by post, on application to CROGGON and Co., 2, Dowgate-hill, London.

SOUTH WALES RAILWAY.—NOTICE is hereby given, that this Railway will be opened for Passenger Traffic on the 19th of June, 1850. Trains will start as under:

	A.M.	A.M.	P.M.	P.M.		A.M.	P.M.
Swansea—Week Days	7.0	10.30	2.0	6.0	Sunday	7.0	6.0
Chepstow do.	8.0	12.0	4.30	7.0	do.	7.0	6.0

Calling at Intermediate Stations as per Train Bills, which will be procurable at the Stations on the Railway on and after the 18th June. By order of the Directors,

FREDERICK G. SAUNDERS, Sec.

WANTED, A GELDING, 15 hands high, not exceeding six years of age, powerful, with good action, and quiet to ride or drive. Any breeder or farmer having a horse of the above description, well broke in and perfectly sound, may hear of a purchaser by stating full particulars, with price, to T. M, 12, Star-street, Paddington, London.

N.B.—No dealer will be attended to.

GARDEN NETS, FISHING NETS, SHEEP NETS.—New Garden Net, made by machinery, 1½*d.* per yard; Tanned Fishing Nets, ¾*d.* per yard; 3-strand Thread Nets, to protect fruit from wasps and flies, 6*d.* per square yard—this article has been approved by the Horticultural Society, dipped in preparation to prevent decay. All kind of Seine, Trammel, Casting, Drag, Hoop, and other Nets cheap. Strong Sheep Nets of New Zealand Cord or Cocoa-nut Fibre, 4½*d.* per yard, 4 feet high.—R. RICHARDSON, 21, Tonbridge-place, New-road, London. N. B. Maker of the Patent Rabbit-proof Wire Fencing, 6¾*d.* per square yard.

The Agricultural Gazette.

SATURDAY, JUNE 15, 1850.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

WEDNESDAY, June 19—Agricultural Society of England.
THURSDAY, — 20—Agricultural Imp. Society of Ireland.
WEDNESDAY, — 26—Agricultural Society of England.
THURSDAY, — 27—Agricultural Imp. Society of Ireland.

A MOVEMENT has recently taken place in several influential quarters to obtain an alteration of THE SCOTCH LAW OF HYPOTHEC so far as regards the landlord's power to compel a repayment by a purchaser for grain bought by sample in open market from a tenant against whom a right of hypothec has been executed by his landlord for arrear of rent.

The English Law of Distress, in such cases, gives the landlord a right over the tenant's property only as long as it remains on the farm, and ceases when sold to, and in the possession of a *bona fide* purchaser; but if purchased by a person in collusion with the seller, with a fraudulent intention, then the right of recovery still remains with the landlord. In Scotland, on the contrary, if a tenant be placed under the bar of hypothec by his landlord for arrears of rent, no corn-dealer, miller, or any other person, can purchase grain from him by sample or otherwise, even in open market, without being subjected to the liability either of returning the grain or paying the landlord for it, even although he has already paid the price to the person from whom the corn was purchased. Farther, this law gives the landlord a *preferable* claim over his tenant's property, to the exclusion of all *common* creditors—the Crown, superiors, farm-servants, and creditors for funeral expenses, alone being excepted.

The obvious operation of such a law is to exclude the business of farming from participating in the advantages of ordinary mercantile transactions. The tenant can neither purchase goods nor borrow money upon the same conditions as the manufacturer or merchant, because of the existence of a law which concedes the privilege to the landlord of stepping in, whenever an arrear of rent occurs, and taking possession of the whole property on the defaulter's farm, and retaining it, or selling it for his own behoof, and in full payment of those arrears to which the hypothec extends. Agriculture thus becomes severed and isolated from other branches of industry; it and those engaged in it are helotised, and deprived of the unfettered freedom which characterises and has made glorious the commerce of Great Britain.

The ordinary term of taking possession of a farm in Scotland, in localities where the practice of steelbow does not exist, is at Martinmas (11th Nov). The tenant occupies the farm for 18 or, at least, 15 months from that date before being called upon to pay any rent. Thus a person entering a farm at Martinmas, 1850, would not require to pay rent until Candlemas or Whitsuntide, 1852, and then only a portion of it. Rents in Scotland are either paid half-yearly, tertially, or quarterly, but in the last year of the lease the whole rent must be paid before the tenant can sell off, or remove his crop and stock; or failing this, proper security must be granted for its being paid. From the nature of this engagement it seems not unreasonable for the landlord to demand the most unexceptionable security from a tenant for the payment of his rent; but unfortunately out of this long-credit system has arisen a special law which excludes all ordinary creditors from participating in a share of the effects of a bankrupt tenant until the landlord's claim is settled in full. Such a law as that of hypothec is probably well adapted to the condition of bondsmen—for whom it was originally concocted—but in a free and enlightened age it is a blot on the statute-book. A law claiming, for the lord of the soil, a lordship also over the bodies and chattels of his vassals might correspond, in some degree, to the condition of the tenantry in the times of the earlier Stuarts, but now as there is liberty to the person and freedom of thought, so should agricultural property be disenthralled from a law which is so emphatically feudal in its every feature. The *Faith* which merchants and commercial men repose in each other's integrity, and which has infused a spirit of honour and truth into the transactions of business life in Britain, seems to have neither part nor lot in the bargain between the owner and occupier of the soil, wherever a law exists to give one creditor an exclusive preference over all others.

But what, we may inquire, have been the practical effects of this system on the business of farming in Scotland, a country where the law of hypothec has existed so long, and is still so impregnably intrenched behind the accumulated ramparts of custom, and existing engagements, combined with the inability of the farmers to free themselves from its operation, and the unwillingness of their landlords to forego the privileges it confers? Its first effect undoubtedly has been to induce farmers to occupy land with comparatively small capital, in consequence of the long-credit system, which gives them the privilege of sowing, reaping, and selling the first crop of a new lease before any rent is asked. The obvious effect of this privilege is to encourage competition for land among individuals whose capital in nine cases out of ten is greatly inadequate to stock and improve it properly. This competition so fostered has not unfrequently presented the anomalous fact of land rising in price, while the value of corn, cattle, &c., has been long and rapidly diminishing. The law of hypothec has therefore contributed greatly to the existence of two evils—the first an unnatural competition for land, and secondly an occupancy with a capital generally much below what is requisite to extensive and permanent improvements.

The ultimate effect of removing the law of hypothec entirely from the statute book of Scotland, and substituting in its stead the more rational and equitable law of distress, as in England, would prove highly beneficial to the interests of the farmers themselves, by restricting the competition for land to that point at which the capital employed must necessarily correspond to the requirements of the particular subjects upon which it is to be expended. Were this law abolished a landlord would reasonably require an instalment of rent at the end of the first six months' occupancy, instead of at the end of 15 or 18 months, as at present, and consequently the capital required in such a case must not only be sufficient to stock the land with cattle, horses, implements, manures, seed corn, &c., but also leave a surplus to pay a half-year's rent. The law of distress would, under such circumstances, be perfectly competent to protect the landlord against any default on the part of the tenant.

As matters are at present, a tenant, with a 15 or 18 months' credit from his landlord who has a preferable claim over all common creditors to his tenant's effects, is placed out of the pale of an unfettered trader. In proportion to the amount of credit afforded by the landlord, and the extent of preferable claims guaranteed to him by law, so must the commercial status of the tenant be lowered in the estimation of all with whom he may have dealings. The banker freely lends money to the merchant or manufacturer upon very ordinary security, because he knows that, happen what may, he has an equal right with other creditors to the effects of the individual he has trusted. With a farmer this can never be the case as long as the law assigns to the landlord the "lion's share" of his effects in the event of a sequestration being taken out against him. The manufacturer may, and often does, surmount a bankruptcy, and future prosperity sometimes enables him to clear off old scores, but a farmer once a bankrupt in Scotland, it has been more alliteratively than feelingly said, has no resource but a "turnpike or a tavern." The case of an enterprising tenant who has sailed too near the wind and run himself aground in consequence of his very efforts to obtain greater scope for improvement, is a particularly hard one—all he needs being time to extricate himself from his present difficulties; his capital is not lost, it is only invested in his farm and will reproduce itself sooner or later, either in part, in whole, or with increase according to the skill displayed in laying out, but he falls on "evil times"—a bad harvest, or a fall in the price of farm produce occurs, his outgoings exceed his income, and he finds himself by and bye not in a position to meet his landlord's agent at rent day. He cannot

go to a capitalist or banker to ask assistance, because the landlord's right of hypothec stands in the way; and finally he is thrown upon the landlord's mercy, who may, under such circumstances, dictate his own terms. This is by no means a fanciful picture, it is a stern reality of every day occurrence, and this year more frequent than ever. Is the landlord to blame? No, certainly not for adopting a course which the law recognizes; but, assuredly yes, if the tenant's defalcation can be satisfactorily proved to be the result of improvements, the benefits of which are still unrealised, the justice either of ejecting him for arrear of rent, or the exaction of usurious interest on the balance due may fairly be questioned. If an ejectment be made, the landlord retains property which the *civil* law recognises as his, but which the *moral* law can never sanction as such. Let landlords concede this point—remuneration for unrealised improvements—and the law of hypothec bad as it is both in principle and practice, would press much more lightly on the tenant, while at the same time his status in the estimation of the money dealer would be materially changed to the better.

Lord BROUGHAM'S bill for altering the law of hypothec only goes the length of depriving the landlord of the power to reclaim farm produce sold in open market to a *bonâ fide* purchaser. The terms of the bill are so moderate and reasonable that even the most stringent sticklers for maintaining the other provisions of the law of hypothec can scarcely object to it, or refuse concurrence in its object, which is virtually to acknowledge the integrity of all public sales of farm produce, and to protect the buyer against the liability of paying his purchases twice over—a state of matters most revolting to the spirit of British love of fair play and common sense. *J.*

ESSEX FARMING.

THOUGH the county consists of various soils, the system of agriculture followed on the heavy and lighter lands respectively is pretty uniform. Corn farming is the distinguishing feature of the district, and long fallows and diligent hoeing keep the land very clean and free from weeds. The four-course system is generally adopted. Barley is sometimes sown after Wheat, when the land is in a rich state, and excellent crops are got by this management. To illustrate the mode of cultivation we shall take a farm of 200 acres near the Roothings—a clay marl district, some miles west of Chelmsford.

The soil is on a gentle slope, by no means a strong clay, mixed with small stones and chalk, the fields large, and not encumbered with wood or wide hedgerows. The farm buildings are abundantly commodious for the stock at present kept by the farmer. They are erected by the landlord and kept in repair by the tenant, who farms on a lease of 14 years. Where the tenant thinks it necessary, he drains the land at his own expense, making the drains 22 inches deep and about 32 feet apart, and filling them with haulm (stubble). The subsoil being a stiff clay forms an arch over the haulm, which remains open after the stubble itself has rotted away. Such drains are supposed to last a 14 years' lease, and are of much benefit to the land. They are made in the division that is to be fallowed. The fallow is ploughed and harrowed as often during the summer as the farmer thinks it necessary, never less than five or six, and occasionally as often as eight times. A portion of it is burnt annually, and that which is in the most foul condition is chosen for this operation; indeed, it is found advantageous to sow Rye-grass occasionally with the preceding crop, in order to get plenty of roots and organic matter to assist in the combustion of the clay. Early in May the land to be burnt is ploughed very light, well dragged about, and then gathered into heaps, a quantity of haulm having been previously placed in the centre. This is set on fire, and the earth packed round it, care being taken not to let the fire burn through without putting on more earth, while too heavy a quantity at a time must also be guarded against, as that would extinguish the fire. The fire is kept burning slowly night and day till the whole is reduced to ashes. These are spread over the ground at the rate of 100 or 120 yards an acre, and at a cost in labour of from 20*s.* to 25*s.* The effects of the burning are, that after it the land dries sooner, can be worked and sown earlier in spring, and that both the quantity and quality of crops are improved, especially so of Barley and Clover. Experienced farmers say that the oftener it is burnt the more the soil is improved, and in many cases the process is repeated every sixth year. It is most necessary that the land should be well under-drained before being burnt. Four or five acres of the division in fallow are sown with Swedes and Mangold Wurzel, well manured. Half of this division is sown in autumn with Wheat (6 pecks an acre), the other half early in spring with Barley (4 bushels an acre); the Barley taking the place of the Wheat in the next rotation. The Barley land is sown with 14 lbs. of red Clover to the acre, the greater portion of which is fed off, and a small portion mown for hay. The Wheat is followed by Beans, the land being dunged and the seed dibbled in. The Beans are not horse-hoed, but kept remarkably clean with the hand-hoe. They are hand-hoed by men at a cost of 3*s.* an acre for each hoeing, and that is repeated five times in a season if necessary, but never less than three times. The Clover and Beans are both followed by Wheat. In the 200 acres there are thus annually—45 acres in long fallow, 5 acres in roots, 75 in Wheat, 25 in Barley, 25 in Clover, 25 in Beans. The haulm already mentioned is the stubble which is mown and stacked up in long heaps after harvest. The stubble for this purpose is left about 2 feet long, the farmers arguing that the less bulky he can make his crop in harvest, when wages are high, the better. In this way a much greater number of bushels of grain is carried home in the waggon, stored in the rickyard, and finally much more easily passed through the threshing-machine. When the busy harvest period is over, the haulm or stubble is then cut with the scythe and carried to the field where the operations of burning and draining are to be effected next season. Under this management the crops reaped average 28 bushels of Wheat, 40 of Barley, and 32 bushels of Beans. The whole stock kept on this 200-acre farm is 80 sheep in summer, five or six cows, and 12 or 14 straw-yard cattle. Eight work horses to do the horse work; three in a plough in winter, two in summer. The rent is 20*s.* an acre; tithe and rent charge, 6*s.*; poor-rate, &c., 4*s.*; or about 30*s.* an acre altogether. There is no hay or straw sold, and about a ton of guano is annually bought.

On the farm of Mr. W. Hutley, of Witham, we found a much more enriching system adopted. By heavy applications of purchased manures, and the conversion of all his straw into excellent dung—by feeding his roots in conjunction with cake and corn—he keeps his land in a high state of fertility.

His lighter land he drains at his own cost, with 2-inch pipes, 32 inches deep, and 32 feet apart. Heavy land, he thinks, with many others in this county, receives no benefit from tile drainage. His fences are kept very narrow, and the land ploughed close into their roots. On land which is not too heavy for roots he thinks it advisable to have a long fallow, perhaps once in eight years, on the principle "that soil which is generous to him should be treated gratefully in return." A crop of Tares preceding a fallow "draws" the land, in his opinion, to the extent of 20 bushels of Wheat an acre; that is, he would expect 40 bushels an acre without a crop of Tares, and only 20 bushels when a crop of Tares had been previously taken. He manures highly for his Mangold Wurzel, the yellow globe variety, using 30 loads of dung, 4 cwt. of Rape dust, and 2 cwt. of guano per acre. The result is a yield of 35 tons an acre over his whole crop, and that he is now selling at 15*s.* per ton on the spot, to be sent to London, which is equal to 26*l.* 5*s.* an acre. The green crop thus appears to be much more remunerative than the corn crop, when it can be disposed of on such advantageous terms; 40 bushels of Wheat per acre, and 56 bushels of Barley are reckoned equivalent crops when the soil is in equally favourable condition. Wheat is sown broadcast, after Clover and Beans, at the rate of 6 pecks an acre; Barley is drilled in after a long fallow in spring. Mr Hutley's system is to have one-fourth of his farm in Wheat, one-fourth in fallow and roots, one-fourth in Barley, and one-fourth in Clover, Trefoil, and Beans. By changing the latter every rotation, red Clover is repeated only once in 12 years, and a plant seldom or never fails. In the management of stock Mr. Hutley's practice is to turn his horses into a large open yard, in front of the stable, after they have had their bait of corn, and here they remain out night and day, when not in the yoke, summer and winter. He is never troubled with grease or other ailments among his horses. His sheep are fed partly in the field and partly in the yards; the couples are fed in the field on roots; 300 tegs are kept in two adjoining yards, 150 in each—one provided with shelter sheds, the other quite open. Both yards are well littered with straw, and in these the sheep have been kept during the winter. They receive roots, cut chaff, and 200 lbs. of oilcake daily, among the 300. They are now being sold out at an increased price, between carcase and wool, of 18*s.* to 20*s.* for 30 weeks' keep; thus leaving the cost of the cake (about 9*s.* a head), a large quantity of rich manure, and 4*d* a week for the roots and chaff. The feeding of pigs is carried on to a great extent by Mr. Hutley. He breeds none, but buys pigs at about 18*s.* and feeds them five weeks, when they are ready for the London market. They are fed on meal of different kinds, and sometimes on boiled Indian Corn. The difference between the buying and selling prices of the pig stock for one year has reached more than 2000*l.*, and seldom falls below 1200*l.* or 1500*l.* As this sum goes to pay for the corn consumed by the pigs, it shows how much Mr. Hutley is adding every year to the fertility of his farms. Oxen are fed on meal and chaff; few are kept, as they are not, with this management, a paying stock. Mr. Hutley attributes his success in farming to a liberal application of capital to the land, by drainage, chalking, artificial manures, and, above all, by keeping a large stock and employing sufficient labour. To do this he has been encouraged by a moderate rent, and entire confidence in his landlord.

At Tiptree-hall we examined the well-known and much-discussed farming operations of Mr. Mechi. The regularity and luxuriant appearance of the Wheat crops on the fields next the public road led us to anticipate an instructive visit, and we were not disappointed. It is of course quite unnecessary to enter into any history of the farm, as Mr. Mechi himself has already made that public. We shall, therefore, confine ourselves to a short description of some interesting matters of detail:

The farm is 170 acres in extent, principally a strong soil, with a very impervious clay subsoil. It adjoins Tiptree-heath, which is naturally very barren. By drainage, ample manuring, and liberal expenditure, the whole farm is kept in constant tillage; one-half of it every year under Wheat, the other half in Clover, Italian Rye grass, Tares, and roots. The Wheat is drilled in stetches, about 7 feet wide; it is twice horse-hoed; Beans, Peas, and Tares are also sown by the drill. Red Clover is sown on the same land once in eight years, and never misses a plant, 12 lbs. of seed being allowed to the acre. The Italian Rye-grass, though thin on the ground, is the most forward spring feed we have seen this season. Having walked over every field on Mr. Mechi's farm, we have no hesitation in saying that, for clean cultivation and healthy appearance of Wheat and other crops, it is equal to any, and superior to most, farms we have met with in this county. In the management and accommodation for stock Mr. Mechi is yet experimenting. The stock always kept on the farm are 150 sheep, 200 pigs young and old, 24 fatting bullocks and cows. Besides roots, 10 sacks of meal are used daily in feeding them; 700 to 1000 quarters of corn are bought annually for this purpose. All the animals are kept on boards, to economise the straw, and, with the exception of some of the pigs, they looked clean and comfortable. Mr. Mechi considers it proved that pork at 6*d.* per lb. will pay for Barley at 36*s.* a quarter; and at 4*d.* per lb., for Barley at 24*s.*, besides the manure. Two bullocks are placed in each box, 10 square feet of space being allowed to each. The boards on which they stand are 3 inches broad, with 2-inch intervals. For calves, 1½-inch intervals, and for sheep 1¼, are found best. One man feeds 200 pigs, mixing and carrying them food. They are fed thrice a day. A 6-horse power steam-engine is employed in threshing the crop, cutting chaff, grinding meal, bruising Linseed, hoisting sacks, &c. In short, no expenditure is spared by Mr. Mechi; and whether it has, on the whole, been profitable or not, there can be no doubt whatever that his example has in many points been instructive to the agricultural community.

From Colchester eastwards towards the sea stretches a tract of well-farmed land. We may especially notice that held by the Messrs. Ward, of Great Bentley, whose cleanly cultivated fields and admirable stock of every description are sure to claim the attention of the observant traveller. From Colchester, in the opposite direction, and nearly on the borders of Suffolk, is Boxted Lodge, the residence of Mr. Fisher Hobbs, a distinguished stock breeder.

His improved breed of Essex pigs is well known at all the great agricultural shows. They are perfectly black, rather a small size, and of somewhat delicate appearance, peculiar for early maturity and fineness of flesh. They are superior to any other breed as "jointers," of 50 lbs. weight or so, for the London market, which weight they make at about three months old. When kept to a greater age they feed well, making, with good management, a score, or 20 lbs. weight a month; a 10 months' pig usually weighing 10 score. The breed being kept perfectly pure by Mr. Hobbs is in much demand for crossing. With the Berkshire it makes an excellent cross, keeping its properties of early maturity with increased size. All the perfect animals are retained by Mr. Hobbs for breeders. They are sent to many parts of the United Kingdom and abroad, and are so much in demand that 10 guineas each is commonly realised. One litter of 12, which we saw, Mr. Hobbs expects to sell before the end of the year for 100*l.* Besides pigs Mr. Hobbs keeps a very pure breed of Leicester sheep, Hereford cattle, and Suffolk horses. His agricultural management is also deserving of notice. Having lately succeeded, by the decease of an aged relative, to the estate he now occupies, he is actively engaged in its improvement, levelling down unnecessary fences and abrupt eminences, clearing the land of superfluous timber without sacrificing its natural beauty, grubbing out useless underwood, forming irrigated meadows, opening up better roads of access to the different parts of his farms, and by a better style of cultivation adding fertility to his fields and affording constant employment to his labourers. The residence of such men as Mr. Hobbs, Mr. Mechi, Mr. Hutley, Mr. Baker, and the Messrs. Ward, in different parts of the county, must give a great stimulus to the development of the agricultural resources of Essex.

In concluding our observations on Essex, we may point to the fact that hitherto the chief dependence of the farmer has been on his corn crops, stock being kept for manure, but not generally as a source of profit. Considering the proximity of this county to London, and the consumption of milk which might ensue if the enormous population of the metropolis could obtain a supply of good milk on moderate terms, we are of opinion that farmers would find it very advantageous to turn their attention to this source of profit. Intersected as the county is with railways, there is nothing in the distance to prevent daily supplies being sent to London, and milk is a commodity in which we are not likely to have much foreign competition. To obtain a supply of this on the clay farms, we should expect a system of house-feeding on Clover and Tares in summer, and on Mangold Wurzel, Cabbages, &c., in winter—the most economical, while it would also provide an advantageous means of converting into fertilising matter the haulm which is now looked upon almost as a nuisance by many Essex farmers. *The Times Commmissioners.*

BOX-FEEDING, THIN-SEEDING, &c.

Error in pluribus est; correctio autem in paucis. *Ambros.*
Non errare angelicum, est; errorem defendere diabolicum. *August.*

THE readers of the *Agricultural Gazette* will remember that some months since, on closing the discussion on box-feeding, I stated it was too monstrous an abomination to continue long; but that returning better sense in its advocates would soon induce them to abandon it; and that ultimately it would become a mere matter of history, and of wonder that such a monstrosity had ever existed in this country.

It will be remembered also that I gave an account of three ranges of "cattle boxes," which I inspected, being the most conspicuous and extensive of all I had seen. The owner of one of them, which I will call No. 1, became ashamed of his boxes as soon as he had read my article condemning them; and he told me that had the article appeared before he sunk his abominations, the lives of several fine beasts which had died in their filthiness from diseased lungs would have been saved, as he should have kept them clean and above ground. No. 2 was a range excavated *secundum artem* by my esteemed friend Mr. Mechi, and when I examined those "boxes," they were in glorious operation, having as much filth and effluvia in them as the most loving advocates of the nuisance could desire. The cattle, also, had their sides and legs delightfully plastered over with a mortar composed of their own liquid and solid excrements. No. 3 was a fine range of buildings, and really the best boxes I had seen, but as three oxen only had died in them when I visited them, I notice them on the present occasion no further than merely to observe that I had not forgotten them. I return then to No. 2, that is, to Tiptree-hall boxes. About 12 months since all my esteemed friend Mr. Mechi's thoughts seemed to dwell on the beautiful working of his boxes; they were then in perfect working, dark, dismal, cadaverous and offensive enough even for the inventor himself, and as I groped my way at the head of them I heard a man down in a box with a currycomb puffing and blowing, and scrape, scrape, scraping the clotted dung off a restless and fidgetty beast in his muck dungeon. I explained to the worthy proprietor that I preferred light, pure air, and cleanliness for cattle, as I did for myself, and not darkness, noxious vapours, and filth; but my friend replied, that his boxes were perfect specimens of the system of box-feeding, and in complete and profitable operation, and that my objections to them arose from my ignorance of the virtues existing in pits sunken 3, 4, or 5 or more feet in the ground, and full of liquid and solid animal excrements, and particularly to the cattle in them, and that the manure thus made was wonderful as a fertiliser. Of course, having for many years adopted a different opinion and system, I bid adieu to my friend for that time, he retaining his sentiments and I retaining mine, as is often the case with other disputants, and in other matters of more rationality.

But time rolls on, works wonderful changes, and thus it has been with my esteemed friend, Mechi, the box-feeder, and myself. A fortnight since I visited my friend again, and, although I found he had five times, or ten times, or even a hundred times, for aught I know, more cattle than formerly, yet he has now not one single box, they having, as I said they would be, all become a mere matter of history at Tiptree-hall, and are now remembered only as things that had been, but are not. All my friend's living-cattle graves have lately been covered over with open frameworks of boards, fitted close enough together to prevent the cattle from falling through them and being smothered in the cloacæ below, but not so close as to stop the excrements from dropping through; for, although my friend now repudiates the cattle being forced down into

the cloacæ, he still retains the opinion that the effluvia arising from the fermenting and putrefying masses of animal excretæ immediately under his cattle have a very beneficial effect upon them. Hence, Tiptree-hall homestead is now excavated into a number of cattle cloacæ, and all immediately under the beasts, which are enclosed over them, recreating, puffing, blowing, and fattening in vapours, which, had I not witnessed to the contrary, I should have thought would have destroyed them all in less than 24 hours. And, oh! what numbers of pigs; there were pigs of all ages and sizes stalking about in an open pen up to their bellies in their own excrements; and, as my friend and I passed along it was delightful to hear him explain how clean and decent they were, leaving no offensive matters on the boards, but causing all to glide into the cesspools below, whence they sent up the exhilarating and fattening vapours, cheering and perfuming the happy cattle above. But another feature in my friend's new system is still more wonderful and deserving of notice—he is now enabled to dispense, he says, with straw bedding for his cattle, having learnt the art of transmuting that article, formerly so requisite for litter, into nutritive food, as the adepti in past ages transmuted lead and iron and other base metals into pure gold. I examined the laboratory in which the mysterious operations were going on, and even saw some of the precious elixir by which the transmutation was effected. Two young alchemists were engaged upon these mysteries, and I was pleased to see how the chopped straw was thrown into an alembick full of the boiling elixir by them; and how quickly it was changed into hay and corn, and as effectually as old people at a fair are ground young in a mill. This was a pleasing and a valuable operation, and I have no doubt but it will very soon become as general as box-feeding was 12 months since, though that mystery is now almost defunct.

I must, however, not conceal from the readers of this article that, on examining the straw after it came out of the precious elixir, it appeared to me to be no more hay and corn than it was before it was thrown into the mysterious cauldron; but that it was nothing but straw still. But the adepti attributed my want of discernment to my ignorance, and perhaps that was the case; but I still think that the transmutation is merely imaginary, and that straw, valuable as it is for cattle-bedding, is nearly worthless for food for them: my friend's cook will make rich soups from chips of wood as easily as he himself will cattle food from straw.

Hence, although my friend, in reference to his cattle and pig feeding has made an upwards motion by covering over his cloacæ and raising his cattle out of them; yet, in my humble opinion, he has merely changed one error for another, and is as far from the simple and natural plan as ever he was.

"Incidit in Scyllam qui vult vitare Charybdim"

is an ancient proverb, which my friend Mechi in this change seems to have verified to the letter.

But I have another crow to pick with my friend. Until last year he was an eloquent advocate of agricultural improvements, and particularly for the seeding of land with a rational quantity of seed only. In this he demonstrated as clearly as possible that the quantity of seed generally used was doubly or trebly too much; that it both exhausted the soil and produced less crops than a rational quantity, and that it produced an abundance of impoverishing straw, but very little corn. But since my friend has discovered the precious elixir of transmutation, and has erected his apparatus for the turning of straw into hay and corn, he has changed his system of corn-growing as effectually as he has his cattle-feeding, and is become one of the thickest seeders, if not the ultra-thickest seeder, in the county of Essex, or of any county. In examining my friend's corn fields a fortnight since I found that the corn had been thrown into his rows as if it had been shovelled in for the double purpose of seeding and manuring the land with it. I took up handfuls after handfuls of Wheat plants having from 14 to 20 grains of seed to each of them, and half a dozen of such handfuls were in a space not too large for one single grain to come to maturity in; in fact, I never in my life saw land thicker seeded than my friend Mechi's now is. Now, why this sudden change from an advocacy of the thinnest to the practice of the thickest possible seeding? Surely if in 1847 to seed land thin was wise, it was wise also to do so in 1849. But my friend replies, not so; that he has lately discovered that thick-seeding is right and that thin-seeding is wrong. Then, I ask, why did not my friend make this discovery before? But what proof have we that he was not right in 1847 and wrong in 1849? and that he was so I have not the least doubt whatever, and will here prove that he was. But my friend may retort upon me, and say that corn is so cheap now that he cares but little about it, and especially as by his transmuting straw into fattening food for cattle, straw is more valuable than corn, and so he changes with the times, and grows an abundance of straw instead of corn. This reason may appear feasible, but it will not bear examining. It is easy to demonstrate that straw alone cannot be grown but at a very great loss, that it is nearly worthless as food for cattle, and is fit only for litter and manure; whoever, therefore, grows more straw than is really requisite for a good crop of corn, does so at a great and ruinous loss to himself and his country. But on my remonstrating with my friend on the enormous thickness of his crops, his reply was, that he should "flag" his Wheat, and that he had discovered that 6 pecks an acre was the minimum quantity of seed Wheat which ought to be sown, for he could flag off the superfluous growth. Now, my friend, permit me to reason with you; you should flag your Wheat, you said, but is there a more barbarous operation in existence than the flagging of Wheat? the flags are the lungs of the plants, and you cut them off just when they are the most wanted to feed the plant. But you were a thin-seeder, and you discovered that thick-seeding was better: 40 years since I assisted in dibbling an acre of land with 1 peck of Wheat, and ever since that time I have advocated and practised thin-seeding, and it has never failed me. This year I have a field, a part Wheat for the fifth time, but the greater part Wheat the fourth time in five years. The seed was—a part 2 pecks an acre, a part 1½ peck an acre, and a part not 6 quarts an acre. Now, I will back an acre of this field against any acre of Wheat on Tiptree-hall farm, and if I am allowed to choose my acre I will undertake to produce 3 coombs more upon it than there shall be upon any acre on Tiptree-hall farm. But perhaps my humble doings may be thought unworthy my friend's notice; but if so, I will back two of my parishioners' farms against my friend's, and one farm upwards of 200, and the other upwards of 300 acres of arable land. I will take 20 or 30 acres on the larger of these farms; for every 3 pecks of seed sown on them, the produce shall be equal or superior to every 6 pecks sown at Tiptree-hall farm; or, I will take the smaller of those farms, and for every 5 pecks there the produce shall be equal to the 6 pecks at Tiptree-hall, nor do I see why my small occupation should be despised. I have a field of Beans, a field of Barley, and a field of Wheat. The Bean-field is miserably poor and full of Twitch Grass, as it only came into my possession last autumn when I had not an opportunity for cleaning it. The Barley field was drilled with only 2 pecks of Barley an acre; it was Barley also in 1847, 15 coombs and 3 bushels an acre; Barley in 1849, nearly as good a crop; and I have a field the fourth time Wheat in five years. A part of this field was drilled with 2 pecks an acre, a part with 1½ peck an acre, and a part was transplanted with plants from the other parts pulled up for that purpose. Now, I will back the Beans against any at Tiptree-hall, the Barley against any Barley at Tiptree-hall, and the Wheat against any Wheat at Tiptree-hall, and if that part of the field be chosen where the least seed was put in, I will undertake to have, as I have stated, 3 coombs an acre more than on any acre on Tiptree-hall farm. And should my friend not deign to contend with me this year, I will take my Bean-field next autumn and seed it in his presence with 12 times less seed than he has proclaimed to be the minimum quantity he can produce a fair crop with, and still I will beat him by 2 coombs an acre. Nor, let my friend suppose, that I make these challenges to him in a hostile spirit; by no means: but, on the contrary, I esteem my friend too much for that, but I challenge him on public grounds alone. My friend proclaims that he cannot grow a good crop of Wheat with less seed than 6 pecks an acre; I undertake to grow more from my 6 quarts an acre than he can from 6 pecks; but I do not boast of this. I am pleased nevertheless at seeing some of my parishioners and neighbours, but particularly some of my parishioners, following my example, and with half the quantity of seed that appears to be requisite at Tiptree-hall producing a larger produce at harvest, and in my opinion also of a better quality. This is cheering, because I feel satisfied, that when men have once reflected upon and proved that my friend's minimum quantity is full from 6 to 12 times more than is requisite in skilful hands, they will learn to use their own judgments, and at length sow no more seed than nature requires, and that is a very small quantity indeed.

Both my Wheat and Barley this year is at least five times too thick for a truly fine crop, and the former did not average 1½ peck of seed an acre, and the latter was but exactly 2 pecks. In conclusion, Mr. Editor, permit me to invite, through your journal, those numerous gentlemen who have favoured me with their correspondence, and others, also, to come to Wix and see my doings; I will undertake to show them such growing corn as they shall not find in any other part of this country, and I add it will give me a pleasure to see them. I will also exhibit to them the two-horse drill I invented and made for my use, my horse-hoes likewise, and one of my friend Dr. Newington's patented dibblers, the first of which was first used on my land. *George Wilkins.* P.S. Wix is six miles from Manningtree Station.

Home Correspondence.

Agricultural Errors.—Though it is an unpleasant task, it may nevertheless be a friendly office to point out errors, that they may be corrected. It is a very common error to think that large farms, low rents, high prices, and richness of land, are requisite to enable farmers to cultivate profitably. These, if the farmer be equal to the most perfect management of a large farm, are all of them extremely desirable. But we have known tenants unthrifty with all these advantages combined. We have also seen others thriving on well cultivated farms, possessing few or none of these advantages—thus proving the possibility of doing so; for "what one man has done, another man may do," or even surpass his teachers, for every succeeding generation should be wiser than their predecessors, having, in addition to the experience of the past, the discoveries of the present; and each new improvement being a step towards still further advances. Many years ago, when corn and stock were very high, I noticed a fine estate belonging to a kind landlord, who, like his father before him, never raised a rent or discharged a tenant, but let his farms so low that the tithe was actually valued at more than the rent; and yet, though the situation was good (only that some fine land was dispersed in distant parts of large open fields), the tenants did not thrive, and many of them had commonly to go to "Borrowby bank" for a part of the rent. And why did not the farmers prosper with such advantages? I answer, the lowness of the rent made them careless; for rents may be too low, as well as too high; and much of the land laying dispersed about open fields, and some of it far from the homestead, they could not, if ever so desirous, manage it as well as if it had been laid out in compact farms of moderate size, with a homestead near the centre of each. Besides this, they were like men working "the chain gang," unable to exert their powers to the best advantage, for they were bound to the unprofitable, and even yet not very uncommon system, of two white corn crops and a summer fallow, and the preservation of a wasteful stock of game. This was the more absurd, as a considerable portion of the estate, if enclosed, was suitable for Turnips, Barley, and seeds. On this latter system, or something like it, other land, which formerly was considered unworthy of cultivation, has for several years been producing grand crops, and fine flocks, under the management of enterprising and thriving tenants, paying for land of natural inferiority, far higher rents to judicious landlords, allowing and encouraging their tenants to make the most and best of their farms, by good cultivation, without fettering them with improper restrictions, or taxing them with the keep of an unreasonable stock of game. Thus the landlord's portion, and the tenant's too, was very small in one case, and very fair in the other; and the condition of the labourers resembled that of their respective employers. While the fox-hunting squire, and travelling lord, could obtain small rents from illiterate, servant-like tenants, they went on easily, without aiming at any improvement. But since the prop is removed, efforts are required to make great improvements. As both landlords and tenants have been accustomed to grow heedlessly together in past times, so now, they must unite their exertions to make such progress as is consistent with this age of progression. *An Old Farmer.*

Farming Accounts.—The Dutch have a proverb that "no one is ever ruined who keeps correct accounts," and this saying, there is no doubt, contains much truth; and if it applies to the merchant, trader, and manufacturer, it must do so still stronger to the farmer, whose business it is by small outgoings to create a stock, which at the year's end shall afford, in addition to returning the expenditure, a surplus for his remuneration. But farmers are seldom accountants; it does not enter their ideas that a knowledge of booking can be a necessary part of their education, and yet what is more evident than the occasion for their knowing not only what proportion their general expenditure bears to the gross returns, but that they should also be aware in detail of the cost and returns of the several products of their farm, so that they may ascertain not only their position as to profit or loss at the year's end, and be able to develope the profitable branches of their farming by a sacrifice of the unprofitable; but, further, that they may readily estimate the advisability of a practice or of an outlay by a calculation of the cost and return. It is to the neglect of this very important branch of education, to the want of this aid to good farming, that great numbers of landowners as well as farmers sink their money so unprofitably. They are led into plans by gross returns, without a knowledge of the cost, and then fancy their lost capital has gone in improvements or amendments of their land, which are to make a return hereafter. When, in reality, some vicious system, some false views of profit have swallowed it. I often see land yearly depreciating, but which the owner or occupier fancies he must have been doing much to greatly improve, simply because he finds he is yearly becoming poorer by his use of it. How often does the stock master, delighting in his stock, reconcile the consumption of nearly all his produce, the appropriation of half his farm, to the maintenance of animals which at the year's end give but a comparative trifle for their keep, with the impression he shall recover their cost in the return of grain. A better system of accounts, an accurate knowledge of the cost on one side, and of the return on the other, would often set many right who are going very wrong indeed. Figures should be the farmer's test of every operation, every system should undergo a comparison of cost to the return. Why should manufacturers, traders, and merchants, be governed by their estimates, and their debtor and creditor accounts, and farmers not? I confess I like the present cry for balance sheets, for my early education was a mercantile one, and much I owe to it; but at the same time the desirability of figure proof be admitted, we must not forget that good farming when first planted requires time to produce fruit—it is a tree which takes years of care and attention before it blossoms. Four or five years must be expected to pass before it must be regarded for its returns. The greater the occasion therefore for accounts, to distinguish money lost from money invested. On a future occasion I will go into details as to the books a farmer must keep to correctly understand what he each year is doing. *Hewitt Davis, 3, Frederick's-place, Old Jewry, London.*

Value of Manure.—Mr. Mechi, in your Paper of the 4th inst., reverting to his live stock account, estimates the value in manure created by the consumption of his green crops and bought food, and this value he treats as a credit. But he must debit his Wheat crop either

with the cost of the green crop or with the value of the manure, and in either case the charge amounts to not less than 3*l.* or 4*l.* per acre, as I showed in a former comment. I repeat the question, can this pay? I am no enemy to high farming, but as Mr. Mechi is a man of figures (as we all ought to be) I want to see him work out his calculation, as it is important not to deceive ourselves or one another. I must say that I quite agree with "Amicus Tull" that high farming if carried out by many must cause overproduction; and that it cannot be relied on as a panacea, though it may be made very advantageous to particular individuals. I may add, with reference to "Amicus Tull's" project of successive Wheat crops, that from the time of Tull it has been frequently attempted and given up after a few years' trial. Wherever I find mention of it, it has been accompanied by horse or hand-hoeing, in order to keep the land clean; and Cobbett, who edited Tull's work, gives as a reason for the failure of the plan, that the additional culture keeps the crop in a state of growth too long, and makes the ripening late and the harvest uncertain and critical. Still, under some modifications, and with the aid of improved hoes, which would enable the rows to stand closer together, thus facilitate the earlier maturity of the crop, the experiment might perhaps be tried again with a prospect of success. Indeed, I believe it has been tried, and is still in course of trial on garden ground at West Dean, in Sussex, under the auspices of the Hon. and Rev. Vernon Harcourt. *A. H. Hall, Watergate, Petersfield.*

Wages of Labourers.—Under this heading I was pleased to see, in your last publication, some remarks on the practice, in Herefordshire, of giving cider to farm labourers, as part of their wages, and from which it would appear that it was almost impossible to break through this baneful, absurd, and ridiculous custom, whereas the contrary is the fact. I have, for some years past, though farming in the middle of the county, discontinued and discountenanced the practice by every means in my power, and in lieu of cider, or other liquor, give an equivalent in money; and among other advantages, thus avoid my house being beset every morning by applicants for leave "to be drunk on the premises," as the excise vocabulary runs, whilst it at the same time affords them the means of purchasing what drink they require; and I found that, generally speaking, I get a better class (certainly the more sober) of men about my farm; they stick to their work more regularly, do it better, and earn more money; and though they of course purchase liquor of some sort, I invariably find that what, under such circumstances they deem sufficient, is little more than one-half the quantity they stipulate for when it forms part of their wages; but in making this allowance it is of course necessary to have regard to the price at which it can be procured by them from the retail dealer. By this plan more money is taken home on pay night, and the wife and children are benefited, instead of an unnecessary portion of the labourer's wages being selfishly swallowed in drink. The second plan answers equally well at all times; in harvest, for instance, when cider generally is given in wasteful profusion, I find it answer so well that I rarely see a drunken man about my premises. At this period, when a number of hands take a job together, say reaping, they often purchase half a hogshead or a hogshead of cider on wholesale terms from some neighbouring farmer, and for which I make myself responsible, pay, and charge them with the amount consumed on a final settling, finding them of course a safe place to keep it in, and a tap key for their own use. They thus can have what they require; and I find that they consume less than they would expect when, as I have said before, it is given as part of their wages. I hold the practice of paying a mixed wage to be analagous to the truck system, bad in principle and demoralising in effect, and consider that it is much better that the labourer should receive the full value of his hire in money, in order that he may spend it in such a way as he may deem most profitable to himself and family. I am aware that many farmers, having to pay rent for large quantities of orcharding, object to the system for which I am contending upon the ground that they might find some difficulty in disposing of their cider; but this is, I submit, to a great extent a mistake, inasmuch as an ample demand or consumption would be still kept up, the difference being merely the channel of demand and supply, and I admit this amount of consumption almost with regret, because I am fain to regard the great quantity of orcharding in Herefordshire as the curse of the county. We have, perhaps, taken as a whole, one of the deepest and naturally most fertile soils, in England, in too many instances inefficiently cultivated, not so much from the negligence or otherwise of the farmer, as from the besotting influence of cider on the labouring classes, rendering them physically inactive, of inferior mental capacity, and frequently inducing premature infirmity; whilst other counties, not possessing the same natural advantages, but happily without orcharding in excess, have, mainly by the superior activity, health, sobriety, and intelligence of the labouring class, been raised to the highest state of cultivation. I by no means intend to say that men can be expected to sustain a hard day's toil out of doors, and especially in hot weather, without drink of some kind, or that such drink should be water only; but what I mean is that it should not be supplied to them as part of their wages—that they should receive the full value of their hire in money. *Thomas France, Massey Hall, near Ledbury.*

Drilling. — Nothing can show more strongly the backward state of farming on a large part of this kingdom, than the little progress which has been made in the drill system for the cereal crops. Here is a system the most beautiful in theory, the most ingenious in contrivance, and the most perfect in practice that can be imagined, invented by Jethro Tull, now much more than a century ago, yet at the present time it is still in many places quite unknown, in others only partially or imperfectly executed. Nor do we seem to be making much more rapid advances towards the attainment of it. Some there are who profess to teach others in the art of agriculture, and therefore might be supposed to be more conversant with it in its higher branches, yet seem to know no more about Tull, than they are likely to do about Tully. It highly becomes these, unless they could sit down content with that mediocrity of performance, suited rather to the plodding husbandman than to the enlightened agriculturist of the present day, to study the works of this long neglected sage, to use their utmost endeavours to bring them before the public, and to the means of carrying out into practice the principles and elements which he lays down for scientific husbandry; and of whom Cobbett (no mean authority) says, that till he read Tull he knew nothing of these principles; but what struck him most forcibly, when he came to read Tull, was, that all that he had read before, with anything like principles in it, had been stolen from him, shockingly disfigured indeed, but still, whatever there was of good, was his. Now what are the objects which Tull points out are to be attained by the drill system? 1st, the regular and economical deposition of the seed; 2d (by far the most important part), the after culture. It is to be recollected that it was on the principle of deep and thorough tillage that all the great work of Tull was performed—that of raising capital crops of Wheat for a number of years running without manure; and when this so great an effect is produced from such a cause, does it not stand to reason that every effort should be made to bring the soil into a fine friable state, not only before the seed is sown, but also after the plant has appeared above ground? Tull says (p. 197), "The horse-hoeing is performed after the great frosts are passed, and when the weather will allow it. As to how many times Wheat is to be hoed in the summer, it depends upon the circumstances and the condition of the land and weather; but be the season as it will, never suffer the weeds to grow high, nor let any unmoved earth lie in the middle of the intervals long enough to grow hard." A feeble attempt has been made in some cases to introduce the drilled system, but it is much to be doubted whether in this the objects just pointed out have been at all attended to. Much as I admire the superior farming of the Lothians, their noble fields of Turnips from 50 to 100 acres, and a great deal of their management, yet I may be allowed to say they are deficient in the particular to which I have just alluded, of which I may here give an instance. Having been taken by a very intelligent conductor to visit one of the crack farms near Dunbar, I remarked to the tenant that I had not seen in Scotland any of the drilled husbandry, to which he replied he had a field of Wheat drilled. On inspecting this field we found it drilled at narrow intervals, but it was a poor crop, not more than 23 bushels an acre; and it may be here remarked that at the great show in Edinburgh, in 1847, there was only one drill machine exhibited, and that came from England, sent by Messrs. Garrett. With such an inefficient execution, it would be in vain to expect such a redundancy of growth as a continued course of tillage would assuredly bestow. The greater strength of the stem, the larger size of the head, the more numerous grains in each ear, and those more full and plump, are certain indications of the drill husbandry properly conducted. There is no excuse for this not being totally and fully carried out in the present day, the facilities for it so far exceeding those which Mr. Tull possessed when he invented his first, and therefore rude implement, the idea of which he took from the barrels of an organ. The drill machine of Messrs. Garrett, with the horse-hoe adapted to it, is a most admirable implement. It will also deposit the seed of the Turnip or Mangold Wurzel in a very regular manner. In former years I have always dibbled my Mangold Wurzel, and have invariably had great failures; this year I used Garrett's machine with a small roller, which I had made and fastened to the hinder part of the machine. This effectually kept out the drought, from which we have lately been suffering; and since some genial showers have fallen, the plants have risen beautifully. I do not profess to show any first-rate farming, as I only take farms into my own hands which have been worked out by bad, slovenly tenants. When a farm is one mass of weeds, rubbish, undrained, untilled, and perhaps has to be drained at the time when the Turnips should be sown, it is quite impossible to make any great figure in this way; but it may be here mentioned, by way of proving that present rents may be supported with present prices, that having so had a farm of this kind in hand for two years, I let it a short time ago to an excellent tenant, at an advanced rent. There have been published reports of the farming in this county, and there has been shown in them some good farming in certain parts, but chiefly in those near the large towns of Liverpool and Manchester. This is more like market gardening than what is called self-supporting farms, as they have the advantage of having large quantities of manure cheap, and they can sell their Turnips from 15*s.* to 20*s.* a ton. In these reports it is mentioned that some attempts have been made at drilling; but it is nowhere stated that the after culture has been adopted; and it therefore only resembles the old story of the play of Hamlet being advertised in a country village, with the part of Hamlet omitted. Until this after culture be applied, let nothing more be said of the drill system being used. I hope to show at some future time, from undoubted facts, in a field grown in three different ways, the far greater produce there was from the drilled part over that which was sown broadcast. Messrs. Garrett's machine and horse-hoe are expensive in the first instance; but so great are the advantages arising from them that on a farm of considerable size it is believed they will repay the cost almost in a single year. *Law. Rawstorne, Penwortham, May 25.*

Italian Rye-grass.—I shall be much obliged by your opinion, or by the experience of any of your correspondents, as to the practicability of making Italian Rye-grass a permanent crop by periodical top-dressing and renovation by fresh seed. My plan has been, for some land capable of irrigation, to dig it up every third year for a crop of roots, which year I lose much of the advantage of irrigation, and moreover the soil is made so loose that a great proportion of the water is lost through the drains. *T. Green.*

Societies.

ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

A Weekly Council was held at the Society's House in Hanover-square on Wednesday last, the 12th of June: present, Mr. Raymond Barker, V.P., in the Chair; Earl of Lonsdale, Hon. R. H. Clive, M.P., Hon. Dudley Pelham, M.P., Sir Montague Cholmeley, Bart., Sir E. M. Elton, Bart., Mr. B. Almack, Mr. Bastard, Mr. Berners, Mr. Burke, Mr. Burton, Dr. Calvert, Mr. Clavering, Mr. Capel Cure, Mr. Dyer, Mr. Fuller, M.P., Mr. Brandreth Gibbs, Mr. Baskerville Glegg, Mr. S. Grantham, Mr. P. Love, Col. MacDouall, Mr. Lennox Naper, Mr. Parkins, Mr. Pendarves, M.P., Rev. Reginald Chandos Pole, Mr. T. Rowlandson, Prof. Sewell, Prof. Simonds, and Prof. Way.—Colonel Morris, Vice-President of the New York State Agricultural Society, attended the meeting.

The following new Members were elected:

Gomm, Lieut.-General Sir William Maynard, K.C.B. (Commander-in-Chief of the Forces at Bombay), 10, New-street, Spring-gardens
Shelley, John, Avington, Hampshire
Mules, Rev. James, Yarnscombe, Barnstaple, Devonshire
Carden, John, Barnane, Templemore, Ireland
Woollcombe, Rev. H., High-Hampton, Crediton, Devonshire
Feilden, H. Master, Croston Lodge, Chorley, Lancashire
Woollcombe, John M., Ashbury, Okehampton, Devonshire
Cotton, H. P., Quex Park, Isle of Thanet, Kent.
Gibbs, Robert, Carhampton, Dunster, Somerset
Barnard, Rev. Mordaunt, Little Bardfield Rect., Braintree

The names of six candidates for election at the next meeting were then read.

Steeping Wheat.—Mr. James Smith, of Wainfleet, Lincolnshire, informed the Council that arsenic having been used this season, by two farmers of his acquaintance, for dressing Wheat, Barley, and Oats, previously to sowing, had proved unnecessarily destructive to the feathered game on their land. He was desirous of ascertaining whether some other equally efficacious, but less deadly poison, might not be employed for the preparation of seed-grain. Mr. Fuller, M.P., corroborated, from his own experience, the destructive effects attending the use of that mineral.—Prof. Sewell had recently seen a statement of a very large number of sheep having been poisoned from the same cause.—Mr. Dyer had found blue vitriol most effectual for steeping grain.—Mr. Raymond Barker had been in the habit of using dry lime with great advantage.

Lime for Slugs.—The Rev. Thomas Cator, of Skelmersdale-park, near Pontefract, communicated to the Council a statement of the mode by which Mr. Leetham Reynolds, one of his tenants, had in 1837, and subsequently, prevented the ravages of slugs, by applying lime to his Clover and Seed-leys, before ploughing them up in the autumn; a plan which had been extensively adopted afterwards by the other tenants of Mr. Cator in that part of Yorkshire, and with the same success. The lime employed had been that obtained at the Womersley quarry; and it had been applied at the rate of three "dozens" to the acre. In one case, that of Mr. Geo. Stones, of Stubbs-Walden, a single acre, in the middle of a six-acre field, had been limed before ploughing up, while the remaining five acres had been left in their ordinary state, the whole of the six-acre field being afterwards submitted to the same uniform management. The result was, that the crop on the single acre was full and good, while on the other five acres the roots were nearly all destroyed by the slug, and had to be resown.—Mr. Almack and Prof. Way thought the lime might probably have had a greater action on the growth of the Clover-plant than on the slug, which was often known to withstand the application of lime, especially in dry weather. At the suggestion of Mr. Almack, inquiries were addressed to Mr. Reynolds, on the following points:—1. The peculiar quality of the lime, its difference from the Nottingley lime, and its chemical analysis, if made. 2. Its state, on application. 3. Rate of bushels applied per acre; and definition of "dozens" of lime. 4. Interval of time between application and breaking up the ley. 5. Whether the application of the lime occasioned a decided increase of growth in the Clover.

Ventilation of Drains.—Mr. Turner, of Barton communicated a statement made to him by Mr. John Piper, a tenant of Lord Ashburton's, residing on a farm of 300 acres, at Bucklandfilleigh, near Crediton, on the success with which he had employed for the last 12 months a system for the ventilation of the pipe and tile

drains on his lands, which promoted the passage of water through them, and prevented their "blowing up:" a system, as far as he, Mr. Piper, was aware, which he had been the first to employ, having devoted his attention for the last 12 years to the theory and practice of land-drainage; and in consequence of the perfect state of drainage to which one of his fields had been brought, it had now growing upon it a crop of Wheat, such as he believed had not before been seen in that part of the country. His plan of ventilation was very simple, economical, and durable, and offered no obstacle to the working of implements in the subsequent preparation of the land: it would increase the flow of water through the drains in wet weather, admit the air into them during the summer months, and prevent the growth of fungi within their recesses. Mr. Piper did not enter into a detailed statement of his plan, but referred simply to the principle on which it was founded, namely, the free admission of atmospheric pressure.

Diseases of Cattle.—Prof. Simonds took that opportunity of returning his thanks to the Council, for having again done him the honour to request that he would deliver a lecture before the Members of the Society at their country meeting: a request with which he most readily complied. The subject of the lecture, as requested by the Council to be delivered by him at the ensuing Exeter meeting, namely, the Liver in Domesticated Animals, would enable him, he hoped, to lay before the members some views and details of great practical value in reference to the diseases of that important organ of the animal frame. Its structure was thought too well known to require elucidation; but there were many conditions connected with its derangement of function and change of structure which were of great interest and importance: of these, the "rot" in sheep, and the "red-water," were familiar instances.—The Hon. R. H. Clive, M.P., inquired of Prof. Simonds the extent of pleuro-pneumonia among stock at the present time. He had himself been a sufferer to a great extent. He had been recommended to give alcoholic drinks to cattle affected with that complaint: he wished to know Prof. Simonds's views on the subject.—Mr. Baskerville Glegg also stated, that in Cheshire the dairy cows had been very liable to the attacks of pleuro-pneumonia.—Prof. Simonds had always been opposed to bleeding in that complaint. He regarded it as a purely inflammatory disease, in which diffusible stimulants might be of service; but in that case, there were better remedies of that class than the alcohol referred to. He had found kreasote a very valuable remedy: but no specific could be safely recommended, so much depended on the stage of the disease and the particular constitution of the animal.—Dr. Calvert inquired whether camphor and ammonia had been tried.—Prof. Simonds replied that the acetate of ammonia and various other preparations of that alkali had been usefully employed in the disease.—Prof. Simonds then stated to the Council the progress of the inquiry he had been directed by the Veterinary Committee of the Society to make in reference to cows belonging to tenants of Lord Portman in Somersetshire, affected for several years with a kind of atrophy or wasting of substance, from some unknown cause. The circumstantial evidence had appeared to fix the cause of the malady on the water the animals had been in the habit of drinking; but Prof. Way's examination detected in that water no ingredient prejudicial to health, and his own anatomical examination of one of the animals slaughtered for the purpose, led to no discovery of the poisonous action of such water. The serous membranes of the body, those in particular of the lungs and abdomen, were much affected. He hoped by the next month to complete his report on this subject, and in it to submit to the Council, through the Veterinary Committee, the whole details of the case. In the meantime, two of the animals had been removed to the Royal Veterinary College, and were rapidly improving in their condition, although only ordinary care was taken of them.—Mr. Raymond Barker thought that in many cases animals were lost from the want of a sufficient amount of wholesome and nutritive food.—Mr. Capel Cure then submitted to the Council the case of disease among his own stock. He had occupied his farm at Blake Hall, in Essex, for the last 30 years. The arable and pasture grounds were very good, and well drained. His stock consisted of 17 dairy cows, 6 bullocks, and 12 calves, the health of all which had been very good until June last year, since which time he had lost 20 of them. The disease had first appeared among the fatting stock, and very little time had elapsed between the attack and death; and it prevailed variously among animals of different age and condition. It had been prevalent in the neighbourhood, but not so severe as in Mr. Cure's case. The outbreak could not be traced to any particular circumstance of contagion or infection. The symptoms were shortness of breath, and other indications of pleuro-pneumonia. All the animals attacked had died excepting one.—This case having been referred to the Veterinary Committee, Professor Simonds has been directed to proceed to Mr. Capel Cure's farm, and to report the result of his inspection.

The Agricultural Society of Caen transmitted various Reports and Essays connected with their proceedings, for which the Council ordered their thanks.

The Chairman informed the Council that Prof. Way's Lecture "On Variations in the Chemical Composition of Water, as affecting its agricultural uses," would be delivered to the Members of the Society, in that place, on the following Wednesday, the 19th inst.; and that the next Weekly Council would be held on the 26th inst.

Farmers' Clubs.

Newtownards and Comber: *House Feeding.*—The following remarks on this subject were made by Mr. J. Andrews, of Comber, near Belfast:—"The addition of Beans or of Peas which may be raised on land too light for profitable culture of the Bean, seems to have supplied everything that was formerly deficient in cattle food, as they contain, in large proportion, those substances which are necessary for the production of the flesh and bones of animals, and thus largely encourage the supply of milk. The Belgians long since discovered this fact, and Beans are used liberally by them during the entire year. Following their example in this as in other matters, I consume the entire of my Bean crop in enriching the food of my black cattle and swine. Each cow in summer receives 2 lbs. daily dissolved in her drink, by steeping 12 hours; and in winter, after 24 hours' steeping, the infusion is applied to moisten the cut straw, Bean-haulm, and hay mixed with chaff, which it was formerly the practice to boil or steam, the boiling or steaming process being no longer considered necessary. The Flax-seed from my own crop, with the husks, is also ground into coarse meal, and is mixed with the Bean-meal before steeping, and applied to the same purpose during the winter. My succession of house-feeding for cattle is as follows:—The first spring food is Rape, which is generally ready soon after the middle of April, and affords an abundant supply till about the 20th May, or a little later, when the Clover is ready for first cutting. From the 29th May till about the 20th June the first cutting of Clover and Italian Rye-grass is used, the portion of Clover not required for green feeding having been converted into hay about the middle of June. From about the 20th June till near the 1st of August, the winter Vetches fill up the place between the first and second cuttings of Clover. The second cutting of Clover having been stimulated by liquid manure, affords a luxuriant supply from the end of July till the early part of September. Spring Vetches, sown the end of May, are then ready, and some of the early Cabbages, which are planted alternately with late varieties, can then be saved from the swine to help the cows. After these Vetches a portion of the Clover affords a third cutting. Late Cabbages come in aid, and I have never been obliged to resort to Turnips till about the 12th November. From that time till April, when the Rape is again ready for use, Turnips, with cut hay and Bean and other straw moistened, as before stated, with dissolved Bean and Flax-seed meal, and aided by a little distiller's pot-ale, supply the winter food. I should add that the Oat-straw, which is not threshed till late in the spring, is reserved and mixed with the fresh Clover hay. The Wheat straw is partially cut down for the cattle, and the remainder used for litter. A small portion of bran, about 7 lbs. per week each, is given with the Bean-meal to the milch cows. The pigs during winter are fed upon boiled Turnips, with a little sour buttermilk, and the refuse of the house, to which a little Bean-meal is added. From May, when Turnips are out of season, Mangold Wurzel takes their place, and affords excellent food till August. Cabbages succeed, and fill up the blank till Turnips are again ready. By such means pigs may be fed more successfully and in greater numbers than during the best days of the Potato. On our large farm 30 large pigs were fed during last summer in the manner I have described. The house-feeding of so large a stock produces an abundant supply of manure, which is preserved in a waterproof pit, into which all liquid from the byre is conducted by a pipe, all surface water being excluded. Your attention is directed to this mode of preservation, as simple and effectual. The dressings of manure being frequent are not heavy, and they are aided by vitriolised bones, which we prepare ourselves, about 1 cwt. of bones per acre so dissolved being strewed on the manure when put into the drill for the Turnips; and a similar quantity being applied and worked into the spaces between the drills of Beans, during the cleaning process. Twenty barrels of lime in flour are scattered over the drills of the Turnip field, which is intended for Wheat and Clover seed the following year, after the Turnips are sowed and rolled down, which I consider the best time and mode of applying that useful substance." *Quoted in the Scottish Farmer.*

Hadleigh, *May* 15: *Annual Meeting.*—In the course of the evening Mr. Mechi said,

He had all his animals on boards, and was extending the operation; and he assured them they would succeed as he had done in making better manure, more manure, and more meat, by having their animals on boards, instead of putting them on straw and removing that straw after it had been worked into muck, and turning it over and recarting it after it had lost many of its valuable properties. Instead of that let them take the pure excrement from the animals, carry it on the soil, and plough it in, and he was sure their crops so treated would exceed those grown with the primest guano. When they came to see him they might judge of the facts, both as regarded stock and crops; they would speak more than he could on the subject. He should naturally be asked what he did with his straw; he replied, "Eat it," that was, he let the cattle eat it, and he could keep four times as much stock. He could assure them that if they increased their stock in proportion, taking care to add something better to the straw, they would get more manure, of a better quality, and grow more corn. He thought the time was coming when the old system of management—of a small quantity of stock, and a large quantity of land—would not do. He thought the landlords would have to reform as well the tenants—that they would be obliged to provide better buildings—that the little fields must become large ones, and that the tenantry should pay rent for land, but not for timber and fences. (Cheers.) He thought the spirit of the age was opposed to the retention of antiquarian customs not at all adapted to the present population, and the keen competition going on in the struggle for superiority. It was inconsistent with practice that they should retain the antiquities of agriculture, and one of the great benefits of such meetings as these was that they enabled the farmers to speak their sentiments, with a due regard, he hoped, to every interest in the country, and at the same time with a due regard to the interests of truth and progression. (Cheers.) He thought also that they did not manage their cattle well, that was, that they did not administer their food in the best mode. He was convinced that one-half the food administered in the usual way passed through the animal undigested. If they would do as he had done, and pour water on the excrements of the various kinds of cattle and horses they fed, they would be astonished to find uncrushed Beans and even uncrushed Oats and oil-cake—it would be found almost in an entirely natural state, undigested. This would lead to the consideration whether it would pay the farmers to administer a smaller amount of food, but to render that food perfectly available to the stomach of the animal? He had lately been visited by two or three agriculturists, who said they were making money in these difficult times by stock, and he was naturally led to inquire how it was that they succeed, for he could not do so under the old system—(cheers)—and he was bound to say that they succeeded by adopting the principle he had been explaining. For instance, one gentleman said, "You give your oil-cake in lumps, which are indigestible; I grind the oil-cake after having been broken up; I grind it through mill stones, and render it into flour, then it is put in water 24 hours till it becomes mucilaginous, and I find, in practice, a moderate quantity is better and more advantageous to the animal than double the quantity given in lumps." He (Mr. Mechi) had found the result much as stated. If they endeavoured to soak oil-cake in water, in the way in which it was usually given, viz., in lumps, they would find it remain for days in the water and not become soluble. (Hear, hear.) He must think they were making a great mistake in giving so much food to their animals at so great waste. A bullock would not put on more than 2lbs. of meat per day, probably not more than one, and the average very likely would not be more than one and a half; a stone per week would be doing very well; 2 lbs., at 5*d.* per lb. would be 10*d.* a day. If they gave that animal half-a-crown's worth of food, which was often done (generally 2*s.* worth), he could not pay for it. He might make muck in return for his food; but it was impossible that he could pay for more than a given quantity. A shrewd Scotchman, Mr. M'Culloch, of whom no doubt they had heard, said to him the other day, that he could never make a beast pay for more than 5 lbs. of meal or oil-cake per day, and when he gave that he crushed it to macerate it, he cooked it and mixed it with chaff and hay. His friend, Mr. Everett, he observed, was shaking his head; but he would refer to any man or boy on his farm, who had seen his bullocks before he adopted the plan, as to what had been the result of this system. They would all agree that the animals had progressed 50 per cent. more after adopting it, and at much less cost. He merely stated this fact to the meeting, and the experiment was one which he thought every one was bound to try—it was well to see if they could not get a little more money, or lose a little less. But let them remember that, as he was annually to produce his accounts, it was of no small importance to him, and of no small importance to the community, that he should be able to carry on his business in the best way—that was the sole object of experiments. He had said before that his animals were all on boards. They might exclaim "What an expensive way that must be, what a quantity of buildings must be required?" He assured the landlords of the country, whose duty he considered it to be to put up good buildings for good tenants, that brick and slated buildings of the best description, with boarded floors, could be put up, at an expense (if they wished or should choose to charge their tenants 5 per cent. for them), of only half a farthing per week for each pig or sheep, to keep that animal in the best way, and his manure in the best possible condition of dryness and availability; and for a bullock ¾*d.* per week would give him an excellent lodging. He was particular on this point, because he was laying out 200*l.* or 300*l.* additional, and from a close calculation of the cost per score of slating, flooring, and every part connected with the buildings, he was charging himself 10 per cent., and a fat hog only paid a farthing a week for his lodging. (A voice: "Is washing included with lodging?") He assured them that the animal neither required washing nor bedding, and it was one of the beauties of this principle that they might have 1000 bullocks, hogs, or sheep on boards, and they would neither require sweeping, littering, or attending to in any way beyond the mere act of feeding them, yet they would be as clean as possible, and fit for a lady's drawing-room. (Laughter.) As his friend Everett would say, he might be thought to be coming it "rather too strong," but it was perfectly true. He was often asked the question by those who came to look at his animals, both bullocks, pigs, and sheep—"How often do you sweep the floor?" Not at all; they sweep it themselves. He assured them that by the addition of a little gypsum on the boards, the ammonia was perfectly fixed, there was no disagreeable smell at all, and the manure was taken away at intervals just as it might be wanted. He had no doubt that in the course of time the farming of this kingdom would generally be conducted on the principle of putting the animals on boards, of crushing their food, bringing it home to them, and carting their manure back again. Nothing could be worse than the management of manure in this country generally. He had often asked farmers how they had grown their best Turnips? "Why, we take out the long manure, plough it in, and let it lay all the winter, and then we have far better Turnips than when we put in the remainder of the muck-heap, 'washed, dried, and mangled,' by the road side." The management of manure was a positive national and individual waste and loss; it was the very essence of losing money. He knew there were some practical difficulties in carrying out the plan; he knew that the landlords would not find troughing very often; but he did think that public attention should be drawn to the subject; it was quite clear the principal object of the farmer now was by very expensive means to get the best manure to force remunerative crops: therefore, that these very means should be sacrificed by mismanagement was a great national calamity—he believed there were but few farmers who had sold beasts lately, who were not aware of the cost of producing manure for their Wheat crops.

Miscellaneous.

Mr. Smith, of Deanston.—We are sorry to have to announce the sudden death of James Smith, of Deanston, the eminent agriculturist. He was found dead in bed on Monday last, at the house of his cousin, Mr. Buchanan, Catrine, Ayrshire. Perhaps in our day there is no man to whom agriculture owes so much. He was acknowledged by all agriculturists to have been the inventor and chief promoter of the modern system of thorough drainage—that is, the drainage through the land by pipe drains, instead of over the land by surface drains. He had been engaged in the direction of extensive works of land drainage. He had acted as one of the commissioners for inquiring into the means of improving the health of towns, and had pursued that subject with so much energy that his health suffered from it. Latterly he had been engaged as one of the superintending inspectors of the General Board of Health, by whom his exertions were more especially directed to the application of the sewage water and refuse of towns to agricultural production. He was

a man noted for his fertility of invention, and a very high order of ability. He was personally highly esteemed by those who served under him, as well as by those who served with him, by whom he will be greatly lamented. *From the Times, June* 12.

Experiments on the Application of Guano and other Manures, in the Duke of Somerset's Park at Stover, near Newton Abbot, Devon. By E. S. Bearne.—No. 1. Report of an experiment to test the comparative efficiency of five different kinds of artificial manure in improving pond mud, the experiment being made on an acre of inferior pasture land in Stover Park, in the years 1847, 1848, and 1849. The land on which the experiment was conducted is of uniform quality, the soil being a light, sandy loam, a few inches in depth, incumbent on a stratum of white clay. The land underwent thorough draining in 1844, prior to which it would not produce a rent of more than 5*s.* an acre. No manures were applied to the land in 1848 or 1849. The object sought to be attained by extending the experiment over a period of three years was to test the durability of the different manures.

No.	Manures applied in 1847.	Weight of hay cut in 1847.	Weight of hay cut in 1848.	Weight of hay cut in 1849.	Weight cut per acre in 1847.	Weight cut per acre in 1848.	Weight cut per acre in 1849.	Cost of the Manures.
		lbs.	lbs.	lbs.	Seams of 3 cwt.	Seams of 3 cwt.	Seams of 3 cwt.	£ s. d.
1	Six cubic yards of mud, mixed with 6 cwt. of Salt ...	312	327	613	4⅔	4¾	9	0 14 0
2	Six cubic yards of mud mixed with 1½ hhd. of Lime.	353	337	538	5¼	5	8	0 13 6
3	Six cubic yards of mud mixed with 3 bshls. of Bone-dust.....	511	419	670	7½	6¼	10	0 14 3
4	Three cubic yards of mud, mixed with 3 cubic yds. of Tan-yard refuse	524	354	558	7¾	5¼	8⅓	0 14 0
5	Six cubic yards of mud mixed with 90 lbs. of Peruvian guano	930	550	725	13¾	8	10¾	0 14 0

N.B.—The after-grass in 1847 was stocked with sheep, but in 1848 it was left unconsumed.

No. 2. Report of an experiment made with the undermentioned manures on an acre of pasture land in Stover Park, in the year 1849. The manures, when mixed with a small quantity of fine earth, were applied broadcast on March 29th, and during the rainy weather which prevailed at the time. The land is of a fair average quality, and was formerly used as tillage land, but has been in pasture for many years. The crops were mown on 22d June, and the herbage produced by the different manures was of a superior quality.

No.	Manures applied	Quantity of Manures applied.	Quantity applied per acre.	Weight of hay cut.	Weight cut per acre.	Cost of the Manures.	Cost of the Manures per acre.
		cwt.	cwt.	lbs.	Seams of 3 cwt.	£ s. d.	£ s. d.
1	None	..	..	401	4¾	..	..
2	Superphosphate of Lime	2½	9	616	7⅓	0 18 0	3 12 0
3	Nitrate of Soda.	1	4	706	8⅓	0 18 0	3 12 0
4	Peruvian Guano	1½	6	1210	14⅓	0 18 0	3 12 0

E. S. Bearne, in the 10th vol. of the Eng. Ag. Journal.

Calendar of Operations.

JUNE.

East Lincolnshire Farm, *June* 10.—The time for Turnip sowing has now again recurred with a favourable season. We have just commenced with early Purple-top Whites, drilling them at the distance of 18 inches apart. The land is both of good quality and in fine tilth; we grow splendid crops of Turnips without going to the expensive assistance of artificial manures, but, as I before mentioned in a former report, we lay on our farm-yard dressing in winter: in the spring we plough the land back, harrow, roll, and thoroughly cleanse from weeds, finishing with a third ploughing before sowing. Swedes we do not grow, as they are not so much required here, because we do not on the Wolds graze many beasts, but merely keeping them in the yards during winter to make manure (with an allowance of cake), to sell off in the spring, when they go down to the marshes to be finished off. The pastures are now fast improving with the late fine showers; our other occupations have been threshing out the Wheat remaining in the stack-yard by steam-power, which saves the horses this hot weather, and also enables them to proceed with the farm work without interruption. I will just add, in conclusion, a few lines with reference to the "*Times* Commissioners' Report" last month of the system of farming pursued on the Lincolnshire Wolds. With regard to sheep, it is mentioned that they are generally grazed off at two years, whereas in many cases, on this farm for example, we sell them off as shearlings (or as hogs), having been caked through the winter on Turnips, which brings us to another point touched on by the Commissioners, where it is stated that oilcake is never given to the sheep on Turnips, but only to ewes on seeds with twin lambs. Now we give it to all the sheep on Turnips, and continue it to the hogs after they are turned to Grass, and this system is invariably pursued on all the large holdings in the neighbourhood. The fact is, that true reports of the farming of different counties, and of districts in those counties, can only be obtained by a residence of some time in the country, and not by mere visits through, where very often the best districts are missed. *H. E.*

Lammermuir Sheep Farm, *June* 3.—The 6th of May, 1850, will long be remembered in this district, as the "late snow-storm." The oldest people we have asked—some of them bordering on four-score—never remember such a heavy fall of snow, accompanied with severe drift, so late in the season. The face of some wreaths was above 6 feet deep. The average fall in our hills was about 8 inches, while on the Roxburgh hills it was about 18. Appearances being no worse on the 5th, than for some time previous, the shepherds had made no provision for what was coming, by putting the sheep into shelter; the consequence was, that they scattered up and down in every direction. In the morning most of the lambs being very young it was impossible to move them in the drift. At first it was the care of the shepherds to look after those dropped the previous night, but matters soon got so serious that their anxiety was directed to the saving of the old sheep. Had the storm continued much longer than it did, the consequences must have been very severe, but fortunately it abated about mid-day. Our loss was very trifling, and arose from the lambs falling into pasture drains, drifted level with the general surface, and as the snow quickly melted under a May sun, unless relieved, they were speedily drowned. Though the actual loss is very small, yet the effects of the cold and want of Grass in putting the milk off the ewes, is still to be seen on the lambs, which, in most cases, want that blooming appearance which is desirable. However, the weather is hot enough now (70° in the shade), and Grass, though late, is coming abundantly. The lambing is now finished, and except a few of the youngest, all are castrated and docked. We purpose shearing the rams in the course of two or three days, but two or three weeks will elapse before the regular work commences. At present all the attention of the shepherds is necessary to prevent loss from rolling, the heat being great, and the nature of the ground unfavourable. Turnip sowing was completed yesterday; the greater part are now brairded, and looking well. The cutting of peat, carting out of any manure made during the past month, getting things in readiness for sheep-shearing, and other odd jobs, will occupy our attention for some time. The thermometer during May has been 37°, 55°, and 37°, morning, noon, and evening respectively. *A Lammermuir Farmer.*

Notices to Correspondents.

A Country Curate's Garden: *A Well Wisher* agrees with "J.F." as to the desirability of keeping a cow, and would advise also a pig; but animals, like bipeds, must have a change in diet to keep them in health. He would therefore suggest, in addition to Mangold Wurzel, that Swedes, Dale's Hybrid Turnip, Lucerne, and Clover be grown, and that a portion of the two latter be made into hay for winter use.

Butter: *Inquirer.* Milk butter contains more cheese than that made from cream, and is therefore not so capable of being kept. We cannot explain the singular instances which do sometimes occur with churns of all constructions—American or otherwise—in which no butter comes after hours of churning. Can any one suggest an explanation.—We do not know Cooper's Rye-grass. Can any one say whether it is earlier for cutting than other sorts.

Gorse: *T M'C.* Hack the land over, and sow 8 lbs. of the seed per acre in shallow drills, 18 inches apart, early in April. It would probably answer very well in the situation you allude to—unless it is exposed to severe frosts, which will kill it.

Hybrid of Hen and Pheasant: *J.* We do not know Mr. Warren's address.

Implements: *W Islam.* Your recommendation of the firm you name amounts to an advertisement.

Officer: *Tyro.* What are the duties of a "ground officer" in Scotland?

Oyster-shells: *J L.* Certainly they are worth having. Crushed oyster-shells, or calcined oyster-shells, are more powerful than lime.

Pasture: *Amateur Farmer.* In the case of a small farm, we should prefer applying manure during the last winter's frosts. When there is a large extent to be manured, it is unsafe to depend upon having a sufficiently long period of frost during which the carts may go on the land without poaching it, and therefore in such a case you must adopt the practice of manuring after hay harvest when the ground is dry.

Pigeons: *Ballandyne.* Are you sure that you have 50 *pairs?* we should doubt your having that number of hen birds.

Reports of the State of Agriculture in New York: *Inquirer.* Possibly your bookseller might procure you the necessary information. The work itself is published by Dutton and Wentworth, Boston, U.S.

Markets.

COVENT GARDEN, June 15.

Vegetables are abundantly supplied. Strawberries and Hot-house Grapes are both plentiful, and the same may be said of Pine-apples. The supply of Peaches and Nectarines has greatly increased, and they are, in consequence, cheaper. Walnuts and Chestnuts are abundant; Oranges and Lemons sufficient for the demand. Young Carrots and Turnips may be had at from 6d. to 9d. a bunch. Frame Potatoes fetch from 6d. to 8d. per lb. Lettuces and other salading are sufficient for the demand, and so are Mushrooms. French Beans, Asparagus, and Rhubarb are plentiful. Cut Flowers consist of Heaths, Pelargoniums, Cinerarias, Lily of the Valley, Pinks, Carnations, Rhododendrons, Ranunculuses, and Roses.

FRUITS.

Pine-apples, per lb., 6s to 10s	Oranges, per doz., 9d to 1s 6d
Grapes, hothouse, p. lb., 4s to 8s	— per 100, 5s to 12s
— Portugal, p. lb., 9d to 1s	Almonds, per peck, 6s
Peaches, per doz., 12s to 21s	— sweet, per lb., 2s to 3s
Nectarines, per doz., 12s to 21s	Walnuts, p. 100, 1s 6d to 2s
Strawberries, p. punn., 2s to 4s	— p. bush., 16s to 24s
Melons, each, 5s to 8s	Nuts, Barcelona, per bush., 20s to 22s
Gooseberries, green, per half sieve, 2s to 3s 6d	— Brazil, p. bsh., 12s to 16s
Apples, kitchen, p. bsh., 4s to 6s	Kent Cobs, 90s to 100s p. 100 lbs
Lemons, per doz., 1s to 2s	

VEGETABLES.

French Beans, p. 100, 1s 6d to 2s 6d	Onions, p. bushel, 7s to 9s
Asparagus, p. bund., 2s to 5s	— Spanish, p. doz., 1s 6d to 4s
Rhubarb, p. bundle, 3d to 8d	Shallots, per lb., 8d to 1s
Cabbages, per doz., 6d to 1s	Garlic, per lb., 4d to 8d
Cauliflowers, p. doz., 3s to 6s	Lettuce, Cab., p. sc., 2d to 1s
Greens, per doz., 1s to 2s	Radishes, p. 12 hands, 3d to 6d
Sorrel, p. hf. sieve, 6d to 9d	Small Salads, per punnet, 2d to 3d
Potatoes, per ton, 100s to 200s	Fennel, per bunch, 2d to 3d
— per cwt., 10s to 12s	Savory, per bunch, 2d to 3d
— per bush., 4s to 6s	Thyme, per bunch, 2d to 3d
— frame, p. lb., 9d to 1s	Parsley, p. doz. bun., 1s to 2s
Turnips, per doz. bun., 6s to 8s	— Roots, p. bdle., 9d to 1s
Red Beet, per doz., 1s to 2s	Marjoram, per bunch, 8d to 9d
Cucumbers, each, 6d to 1s	Mint, green, per bunch, 2d
Leeks, per bunch, 1d to 2d	Watercress, p. doz. bunches, 6d to 9d
Celery, p. bundle, 8d to 1s 6d	Horse Radish, p. bdl., 1s to 4s
Carrots, per bun., 9d to 1s	
Spinach p. sieve, 9d	
Mushrooms, p. pot., 9d to 1s	

POTATOES.—Southwark, June 10.

The Committee report that the supply of English Potatoes is nearly finished for this season, but the supply from the Continent is quite equal to the demand. The following are this day's quotations:—York Regents, 100s. to 160s. per ton; Scotch cups, 70s. to 80s.; ditto whites, 50s. to 60s.; Rhenish do., 75s. to 85s.; Belgian do., 60s. to 70s.

HAY.—Per Load of 36 Trusses.

Smithfield, June 13.

Prime Meadow Hay	70s	to 75s	Clover	68s	to 84s
Inferior ditto... ...	55	65	New Clover	—	—
Rowen	54	60	Straw	23	28
New Hay	—	—		J. Cooper.	

The trade very dull.

Whitechapel, June 13.

Fine Old Hay ...	65s	to 68s	New Clover	—s	to —
Inferior ditto ...	55	60	Inferior ditto... ...	65	70
New Hay	—	—	Straw	22	26
Old Clover	80	84			

HOPS.—Friday, June 14.

Messrs. Pattenden and Smith report that there is a steady trade doing in new and fine yearling Hops at late prices. There is no increase of fly in the plantations.

SMITHFIELD, Monday, June 10.

The supply of Beasts is moderate and demand good; consequently Friday's quotations are well supported, and in some instances choice Scots have reached 3s. 8d. The number of Sheep and Lambs is a fair average; the former are selling rather dearer, the latter about the same as of late. Trade is exceedingly dull for Calves, at about the rates of Friday last. From Holland and Germany there are 280 Beasts, 1010 Sheep, and 142 Calves; from Scotland, 120 Beasts; and 2800 from Norfolk and Suffolk.

Per st. of 8 lbs.—s d	s d	Per st. of 8 lbs.—s d	s d
Best Scots, Herefords, &c. ...	3 4 to 3 6	Best Long-wools ...	to ...
Best Short-horns	3 2 — 3 4	Ditto Shorn ...	3 6 — 3 8
2d quality Beasts	2 8 — 3 0	Ewes & 2d quality ...	— ...
Best Downs and Half-breds	— ...	Ditto Shorn ...	2 10 — 3 4
Ditto Shorn ...	3 10 — 4 0	Lambs	4 8 — 5 4
		Calves	2 6 — 3 6
		Pigs	2 8 — 3 8

Beasts, 3385; Sheep and Lambs, 27,200; Calves, 289; Pigs, 320.

Friday, June 14.

We have a large supply of Beasts, consequently trade is heavy, and prices are lower on the average. Only the choicest Scots reach our top quotations. The number of Sheep and Lambs has considerably increased. They cannot be all sold, although there is a disposition to take lower prices. We have far too many Calves for the demand. Our top quotation is only obtained for very good quality. Several second-rate remain unsold. From Germany and Holland there are 205 Beasts, 530 Sheep, and 152 Calves; and 121 Milch Cows from the home counties.

Per st. of 8 lbs.—s d	s d	Per st. of 8 lbs.—s d	s d
Best Scots, Herefords, &c. ...	3 4 to 3 6	Best Long-wools ...	to ...
Best Short-horns	3 0 — 3 4	Ditto Shorn ...	3 4 — 3 6
2d quality Beasts	2 6 — 2 10	Ewes & 2d quality ...	— ...
Best Downs and Half-breds	— ...	Ditto Shorn ...	2 8 — 3 0
Ditto Shorn ...	3 8 — 4 0	Lambs	4 4 — 5 4
		Calves	2 4 — 3 4
		Pigs	2 4 — 3 6

Beasts, 1211; Sheep and Lambs, 15,550; Calves, 664; Pigs, 300.

COAL MARKET.—Friday, June 14.

Eden Main, 14s.; West Hartley, 14s.; Wallsend Braddyll's Hetton, 15s. 6d.; Wallsend Haswell, 16s.; Wallsend Hetton, 16s.; Wallsend Lambton, 15s. 6d.; Wallsend Stewart's, 16s.; Walsend Tees, 16s.—Ships at market, 116.

MARK LANE.

Monday, June 10.—The supply of English Wheat to this morning's market was small, and the red was taken off early in the morning at rather over the terms of this day se'nnight. This, combined with the accounts from the country markets, and the quality of the white being generally fine, induced factors to hold for more money, which checked business, and the sales subsequently became dull, leaving a large proportion undisposed of towards the close. For foreign the demand was very inanimate, and a difficulty would have been experienced in forcing the sale of a quantity of Dantzic at a reduction of 1s. to 2s. per qr. from our quotations of Monday last.—Barley, Beans, and Peas are unaltered in value.—The Oat trade is firm, and fine qualities being scarce command rather more money.

British per Imperial Quarter.	s. s.		s. s.
Wheat, Essex, Kent, & Suffolk ...White	40—44	Red	37—39
— — fine selected runs ...ditto	44—47	Red	39—41
— — Talavera	46—52		
— Norfolk, Lincoln, & York ...White	40—42	Red	36—39
— Foreign	33—51		
Barley, grind. & distil., 19s to 22s...Chev.	23—27	Malting	22—25
— Foreign.....Grinding and distilling	15—20	Malting	19—22
Oats, Essex and Suffolk	15—18		
— Scotch and Lincolnshire ...Potato	18—21	Feed ...	15—19
— Irish .....Potato	14—18	Feed ...	12—16
— Foreign .....Poland and Brew	14—18	Feed ...	12—16
Rye	19—21	Foreign	18—20
Rye-meal, foreign .....per ton	5*l*.—6*l*		
Beans, Mazagan .....21s to 23s.....Tick	24—26	Harrow	24—26
— Pigeon ..... s — s ...Winds	—	Longpod	—
— Foreign ..... Small	24—34	Egyptian	19—21
Peas, white, Essex and Kent.....Boilers	23—26	Suffolk	24—28
— Maple .....24s to 27s.....Grey	22—24	Foreign	19—28
Maize .....White	26—30	Yellow...	25—30
Flour, best marks, delivered ...per sack	33—37		
— Suffolk .....ditto	27—33	Norfolk	27—33
— Foreign .....per barrel	20—23	Per sack	28—32

Arrivals in the Port of London last week.

	Wheat. Qrs.	Barley. Qrs.	Malt Qrs	Oats. Qrs.	Beans. Qrs.	Peas Qrs.
Flour, 10505 sks — — bls						
English	2387	182	2687	602	410	81
Irish	—	—	130	50	—	—
Foreign	11491	6118	—	15942	581	229

Friday, June 14.—The arrivals of English corn this week have been moderate, of foreign Wheat large. This morning's market was moderately attended; the English Wheat left over from Monday was disposed of at a decline of 1s. per qr. upon the prices of that day week. Foreign was difficult of sale, and for out of conditioned cargoes it was impossible to find buyers.—We observe no alteration in the value of Barley, Beans, or Peas.—The majority of Oats fresh up are in bad order, and very unsaleable; fine qualities are sought after at former prices.—Flour is more easy of sale, and generally held for a slight advance.—There are buyers of Galatz Maize at 29s., cost, freight, and insurance, but holders generally demand 1s. more money.

Arrivals this week.

	Wheat. Qrs.	Barley. Qrs.	Oats. Qrs.	Flour.
English ...	1720	40	1290	3210 sacks
Irish	—	—	—	
Foreign ...	13620	6210	13050	— brls.

Imperial Averages.	Wheat.	Barley.	Oats.	Rye.	Beans.	Peas.
May 4.....	36s 11d	22s 0d	14s 7d	19s 11d	23s 11d	24s 9d
— 11.....	38 0	22 0	15 3	19 1	24 8	24 9
— 18.....	39 7	22 5	15 5	21 7	25 6	24 11
— 25.....	40 7	22 10	16 3	22 4	26 4	25 6
June 1.....	40 2	23 0	15 11	22 0	26 11	26 2
— 8.....	39 8	22 4	16 7	23 7	27 0	26 8
Aggreg. Aver.	39 2	22 5	15 8	21 5	25 9	25 6
Duties on Foreign Grain	1 0	1 0	1 0	1 0	1 0	1 0

Fluctuations in the last six weeks' Corn Averages.

Prices.	May 4.	May 11.	May 18.	May 25.	June 1.	June 8.
40s 7d	...	...	...		...	...
40 2	...	...	...	...		...
39 8	...	...	...	...	...	
39 7	...	...		...	...	...
38 0	...		...	...	...	...
36 11		...	...	...	...	...

Liverpool, Friday, June 14.—At our market to-day the Wheat trade exhibiting a rather better feeling, our home millers operated to a moderate amount, and being aided by a few speculative inquiries, the small decline of Tuesday was pretty nearly if not fully recovered. Barley, Malt, Beans, and Peas, upon a slow gradual demand, merely sustained the last quotations. Oats and Oatmeal met a limited demand, but maintained former prices. The Irish millers being inclined to use up their stocks of Indian Corn, bought sparingly this morning at a reduction of 1s. per qr.

TO NOBLEMEN, GENTLEMEN, AMATEURS, NURSERYMEN, AND OTHERS.

MESSRS. PROTHEROE AND MORRIS are directed to sell by public Auction on the premises, Rosary, Breadmore, Hammersmith, on MONDAY next, June 17th, and TUESDAY, the 18th, 1850, at 12 o'clock, each day, by order of the trustees of H. G. Hannington, Esq., three newly-erected Greenhouses, about 100 capital one, two, and three-light Boxes, Hand-lights, two Iron Rollers, Barrow, Seakale and other Pots, 100 Avenue Irons for climbers, 12 Hives of Bees, a large quantity of Chinese Figures, Vases, and Statues, 150 Fancy and other Rabbits, 100 Pigeons and Houses, 40 Doves; a fine assortment of fancy Poultry, Spanish and other breed; Store and Guinea Pigs; 13 large Zinc Store Canisters, three Garden Engines, 60 Mats; together with the selected Stock of Greenhouse Plants, 200 doz. of German Miniature Plants in pots, 15 gross of handsome German Pots, and sundry effects.—May be viewed two days prior to the Sale. Catalogues may be obtained (6*d.* each, returnable to purchasers, without which no person can be admitted) on the premises of the principal Seedsmen in London, and of the Auctioneers, American Nursery, Leytonstone.

WINDING UP SALE FOR THE SEASON.

MESSRS. PROTHEROE AND MORRIS will sell by Auction, at the Mart, Bartholomew-lane, on FRIDAY, June 21, 1850, at 12 o'clock, a first-rate Collection of DAHLIAS, also the newest varieties of Fuchsias, Verbenas, Geraniums, Heartsease, and other plants in bloom, together with a variety of Ornamental Plants for bedding.—May be viewed the morning of Sale; Catalogues had at the Mart, and of the Auctioneers, Leytonstone.

EVENLEY RECTORY FARM,
NEAR BRACKLEY, NORTHAMPTONSHIRE—600 ACRES.

TO BE LET, the above eligible TURNIP and SHEEP FARM, for a term of years, from Michaelmas next.—Apply to Messrs. PICKERING and SMITH, 14, Whitehall-place, London.

DR. S. NEWINGTON'S HAND-DRILL HOES AND CULTIVATORS, to the frames of which are fitted Coulters for earthing up Potatoes and drawing out furrows for seeds. The chisel-pointed tines have moveable hoeing shares fitted to them, which can be removed when the tines are only required for stirring. These shares, which are made of any required width, hoe from 2 to 4 inches below the surface, according to the soil; on the shares being removed, the tines stir from 5 to 6 inches deep, a lad being enabled to hoe 2 acres of Turnips, &c., daily, cutting off every weed, and setting out the plants, reducing the price of labour from 4*s.* to 8*d.* an acre, or being able to hoe the crop six times, and much more effectually, for the same money now paid for hand-hoeing. Messrs. DUFAUR and Co. will exhibit, at the Royal Agricultural Show at Exeter, the following implements invented by Dr. NEWINGTON: A Drop Drill for horse power; the same for hand power; an implement to supersede broadcasting seed by hand, for horse power; the same by hand power; an implement for broadcasting artificial manures or depositing it in rows by horse power; the same by hand power; a horse Dibble; a hand wheel Dibble; a subsoil Plough; a Scarifier or Cultivator; a paring Plough; a single horse Plough; hand drill Hoe and Cultivators, with various other fittings; a strike Plough —Apply to Messrs. DUFAUR and Co., 21, Red Lion-square London, who are the sole manufacturers and vendors of Dr. NEWINGTON'S inventions.

PATENT SPADES, DAISY RAKES, SCYTHES, Draining, and other Garden Tools. Mole Traps, 6*s.* per dozen. Carpenters and Smiths' Tools, &c. Ladies' Garden Tools, 7*s.* 9*d.* a set. Sword-scrapers for Gardens, 1*s.* 2*d.* each. Patent Fumigators for destroying insects on plants, in greenhouses, &c.: at Messrs. J. H. BOOBBYER and Co.'s (late STURCH and BOOBBYER), Ironmongery, Brass-foundry, Nail and Tool Warehouse, 14, Stanhope-street, Clare-market, London. Established nearly 200 years for the sale of goods from the best Manufactories at the lowest prices. Goods forwarded to any part on the receipt of remittance.

MESSRS. NESBIT'S CHEMICAL AND AGRICULTURAL SCHOOL, 38, Kennington-lane, London.—A sound practical knowledge of Analytical and Agricultural Chemistry, Geology, Surveying, Levelling, Railway Engineering, &c., may be obtained in Messrs. NESBIT'S Academy, in addition to a good modern education.

Mr. NESBIT'S works on Arithmetic, Mensuration, Gauging, Land Surveying, English Parsing, &c., are published by LONGMAN and Co., and may be had of all Booksellers.

The terms of the School can be had on application either personally or by letter.

FOR WATERING GARDENS, BREWERS' USE, &c.
FLEXIBLE INDIA-RUBBER HOSE PIPES.

JAMES LYNE HANCOCK, Sole Licensee and Manufacturer of the PATENT VULCANISED INDIA-RUBBER PIPES and TUBING.

These Pipes are well adapted for Watering Gardens, conveying Liquid Manure, racking Beer and Cider, Gas Fittings, Chemical and all purposes where a perfectly sound WATERPROOF and FLEXIBLE PIPE is required.

Hot Liquors or Acids do not injure them. No oil or dressing is required in using them. They do not leak from remaining out of use, are permanently Flexible in all Temperatures, and are therefore particularly suitable for Fire Engines; and, from their not leaking, are found exceedingly useful in conveying hot or cold water to baths in dwelling houses and such like purposes.

A LIGHT VULCANISED INDIA-RUBBER HOSE is now manufactured for conducting Water and Fluids, at the following prices per foot:

Size.	¼ in.	⅜ in.	½ in.	1 in.	1½ in.	2 in.	2½ in.	3 in.
1 ply ...	0*s.* 5*d.*	0*s.* 6*d.*	0*s.* 8*d.*	0*s* 10*d.*	1*s.* 0*d.*	1*s.* 2*d.*	1*s.* 4*d.*	1*s.* 6*d.*
2 ply ...	0 8	0 9	1 0	1 2	1 5	1 8	2 0	2 3
3 ply ...	0 11	1 0	1 3	1 6	1 10	2 2	2 9	3 3

N.B. Vulcanised India-Rubber Garden Hose fitted with roses, jets, and branches, complete, with union joints ready to attach to pumps or water cisterns.

All orders or letters addressed to J. L. HANCOCK, at the Manufactory (and Warehouse), Goswell-mews, Goswell-road, London, will meet with immediate attention.

IRON AND WIRE FENCING,
AND METALLIC BEDSTEADS.

THOMAS PERRY AND SONS,
252, OXFORD-STREET (NEAR HYDE PARK),
And Highfields Foundry and Wrought-iron Works, Bilston, Staffordshire, Manufacturers of all descriptions of
PLAIN AND ORNAMENTAL IRON AND WIRE FENCING,
Park Entrance, Carriage and Field Gates, Wickets, &c.;
Deer, Sheep, and other Hurdles;
Hare and Rabbit-proof Wire Fencing;
Iron Bedstead Makers to the Board of Ordnance;
And Government Contractors.

The works of Messrs. PERRY being situated in the heart of the first iron district, they are enabled to execute all orders with the greatest facility, and on the most moderate terms. Drawings made and estimates prepared, if required. The showrooms contain an immense variety of every description of Iron and Wire-work, and are the largest in London. An Illustrated Catalogue of Bedsteads, with dimensions and prices, sent on application, post-free.

HIGHLAND AND AGRICULTURAL SOCIETY OF SCOTLAND: GLASGOW SHOW.—Stock, Implements, &c., to be exhibited at GLASGOW, must be entered with the Secretary not later than the 20th inst.

6, Albyn-place, Edinburgh, June 15. J. HALL MAXWELL, Secretary.

TO NOBLEMEN, LANDED PROPRIETORS, AGRICULTURISTS, ENGINEERS, CONTRACTORS, AND OTHERS.

THE PATENT ALKALI COMPANY'S Metallic Black, Bright-red, and Purple-brown PAINTS are applicable for covering iron and wood work of every description, also stuccoed and brick buildings, and are remarkable for their superior preserving properties, cheapness, and durability.—Offices of the Company, 1, New Broad-street, London.

JOHN A. WEST, Secretary.

HYDRAULIC ENGINES, WATER RAMS, &c., on Improved Principles; Engines worked by Steam or Hydraulic power, to raise from 1 gallon to 1000 per minute to a height of 500 feet, and from a depth of 900 feet. Douche, Vapour, Hot-air, and all other kinds of Baths. Buildings, Conservatories, &c., heated by Steam, Air, or Water. Boring, Sinking, and Collecting of Water, &c. Towns supplied.
Direct to JOHN LEGG, Cheltenham.

PURE WATER raised to any height from a small stream, where a fall can be obtained, by FREEMAN ROE and HANSON'S IMPROVED RAM; less waste, by two-thirds, than those ordinarily in use. Portable Steam Engines for Agricultural purposes, Threshing Machines, Deep-well Pumps, Water-wheels, Baths, Hot-water Apparatus, and Fountains. Towns supplied with Gas or Water. Drawings and Estimates made.—FREEMAN ROE and HANSON, Hydraulic and Gas Engineers; Office, 70, Strand, London.
Works, Sumner-street, Southwark-bridge-road.

ENORMOUS SAVING! GOING WITH THE TIMES!

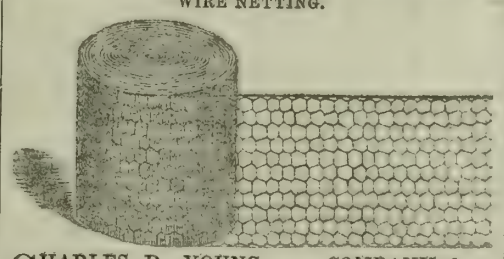
HOW TO KEEP A HORSE for less than ONE SHILLING per DAY. The articles and numerous references may be seen, and a list of prices had at MARY WEDLAKE and Co.'s, 118, Fenchurch-street. A Pamphlet on the above may be had, each (post free) 1*s.* Also
HOW TO MAKE, Cut, Cart, and Stack HAY, for less than HALF the usual cost, in any county and in any weather.—N.B. A Pamphlet on the above may be had, each (post free) 1*s.*

A BOON TO THE FARMERS.

FARMERS, be of good cheer, all is not yet lost.
Come to us, you will find us ready to meet the times!
As you cannot get the same price for your produce, so we cannot expect from you the same price for our IMPLEMENTS, and without first-class manufactured Implements you cannot stand these times! By inclosing two stamps, a list, with illustrations, will be forwarded. Real makers of what they sell.—Most liberal discount for cash.

PORT NATAL, NEW ZEALAND, AUSTRALIA.
Emigrants are informed MARY WEDLAKE and Co. have from time to time supplied the first settlers to Swan River and Port Natal, and all the Australian Colonies, with AGRICULTURAL IMPLEMENTS, and tools of first-rate class. They beg an inspection of their stock.—N.B. Purchasers may have the benefit of an introduction. Most liberal discount for cash.

STRONG PREMIUM HARE AND RABBIT PROOF WIRE NETTING.



CHARLES D. YOUNG AND COMPANY (LATE W. AND C. YOUNG),
MANUFACTURERS OF IRON AND WIRE WORK, &c.,
22, PARLIAMENT STREET, WESTMINSTER, LONDON;
48, NORTH BRIDGE, EDINBURGH;
22, ST. ENOCH SQUARE, GLASGOW;
1, CASTLE BUILDINGS, DERBY SQUARE, LIVERPOOL;
beg respectfully to call the attention of Landed Proprietors and others to their strong Wire-Net Fence, for excluding Hares and Rabbits from Gardens, young Plantations, Nurseries, &c.

This Net was exhibited at the Show of the Highland and Agricultural Society of Scotland, held lately at Inverness, where its Efficiency, Great Strength, and Exceeding Cheapness attracted general attention, and had awarded from the Judges the Society's Silver Medals, with high commendations.

The immense damage done by Hares and Rabbits in Gardens and Young Plantations is often so great, that in the course of a year or two it will amount to more than the entire cost of protecting them with this Net. It is so durable, that when Plantations are sufficiently advanced to be independent of its protection, it can be removed to other exposed situations with the greatest facility, by any labourer. As a Fence against Hares and Rabbits, it is of itself quite sufficient, having only to be unrolled and attached, with small wire sent for that purpose, to wooden stakes driven into the ground, about every six or seven feet apart. It is, besides, peculiarly adapted for rendering Hedges, Paling, or other existing Fences, *completely impervious* to such vermin; and by being cut up into small pieces of three or more feet, as required, it forms a most efficient guard, at little expense, for individual Plants and Shrubs.

PRICES.—18 ins. high, 9*d.*; 24 ins., 1*s.*; 30 ins., 1*s.* 3*d.*; and 36 ins., 1*s.* 6*d.* per lineal yard.

Or a web of 100 yards, 18 ins. wide, will cost	..	£3 15	0
Do. of 100 yards, 24 ins. wide	..	5 0	0
Do. of 100 yards, 30 ins. wide	..	6 5	0
Do. of 100 yards, 36 ins. wide	..	7 10	0

If more or less than a web is required, it would be charged at the same rate per yard.

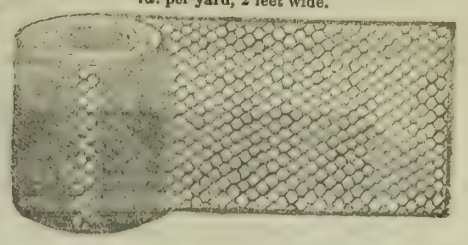
This Netting is also admirably adapted for Pheasantries and Poultry-yards, and is charged at the same rate. As carriage has, in many instances, been an obstacle to parties at a distance requiring this Net, C. D. Y. and Co. have made arrangements by which they will undertake to deliver it at any of the principal ports of Scotland, England, and Ireland, for One Halfpenny per lineal yard.

C. D. YOUNG and Co. cannot give a better idea of the great strength of their Premium Wire Netting than by stating that the weight of one yard of their 24-inch at 1*s.* is equal to 2¼ yards of another article in the market, the same width, at 9*d.* per yard. Samples for inspection sent free of expense.

C. D. YOUNG & Co. manufacture every description of IRON and WIRE WORK required for this and foreign countries.
Workmen sent to all parts of Scotland, England, and Ireland

THE HIPPOPOTAMUS presented by H. H. the Viceroy of Egypt to the Zoological Society of London, is exhibited daily from One to Six o'clock, at their Gardens in the Regent's Park. The Band of the First Life Guards will perform, by permission of Colonel Hall, every Saturday, at Four o'clock. Admission One Shilling, on Mondays Sixpence.

GALVANISED WIRE GAME NETTING.—7*d.* per yard, 2 feet wide.

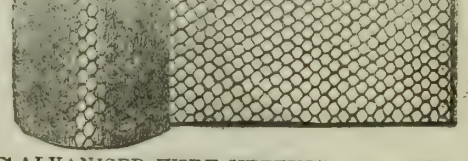


		Galvanised.	Japanned Iron.
2-inch mesh, light, 24-inch wide	...	7*d.* per yd.	5*d.* per yd.
2-inch „ strong „	...	9 „	6½ „
2-inch „ extra strong „	...	12 „	9 „
1⅝-inch „ light „	...	8 „	6 „
1⅝-inch „ strong „	...	10 „	8 „
1⅝-inch „ extra strong „	...	14 „	11 „

All the above can be made any width at proportionate prices. If the upper half is a coarse mesh, it will reduce the price one-fourth. Galvanised sparrow-proof netting for pheasantries, 3*d.* per square foot. Patterns forwarded post-free.

Manufactured by BARNARD and BISHOP, Market-place, Norwich, and delivered free of expense in London, Peterborough, Hull, or Newcastle.

WIRE NETTING, ONE PENNY PER SQUARE FOOT.



GALVANISED WIRE NETTING, TWO-PENCE PER SQUARE FOOT.—This article requires no painting, the atmosphere not having the slightest action on it. It was exhibited at the late Metropolitan Cattle Show, and was highly eulogised both for its utility and pretty appearance, and acknowledged to be the cheapest and best article ever produced. It forms a light and durable fence against the depredations of hares, rabbits, and cats, and is peculiarly adapted for Aviaries, Pheasantries, and to secure poultry; and by the galvanised requiring no paint, it answers admirably for training all kinds of creeping plants. Large quantities always kept in stock, of 18, 24, 36, and 48 inches wide; it can, however, be made to any dimensions desired. Patterns forwarded free of expense.

12 inches wide	3*d.* per yard		30 inches wide	7½*d.* per yard	
18 „	„ 4½*d.*	„	36 „	„ 9*d.*	„
14 „	„ 6*d.*	„	48 „	„ 1*s.*	„

Galvanised do., 1*d.* per foot extra.

Extra strong Imperial Wire Sheep Netting, 3 feet, 1*s.* 6*d.* per running yard; if galvanised, 2*s.* Also every description of Wire Nursery and Fireguards, Wire House Lanterns and Shades, Fly-proof Dish Covers, Meat Safes, &c.; Window Blinds, 1*s.* 10*d.* per square foot, with bolts complete, in mahogany frames; Gothic Garden Bordering, 6*d.* per running foot; Flower Trainers, from 3*d.* each; Garden Arches, 20*s.* each; Flower Stands, from 3*s.* 9*d.* each; Galvanised Tying Wire for plants and trees, Dahlia Rods, and every description of Wire-work; Weaving, for the use of paper-makers, millers, &c.—At the Manufactory of THOMAS HENRY FOX, 44, Skinner-street, Snow-hill, London.

PROFESSOR LINDLEY'S INTRODUCTION TO BOTANY, 4th Edition, with Corrections and Additions, now ready, in 2 vols. 8vo, with Six Copper-plates and numerous Wood Engravings, price 24*s.* cloth.
London: LONGMAN, BROWN, GREEN, and LONGMANS.

EASTERN COUNTIES RAILWAY.—On and after the 15th instant, the following reduced rates for PERIODICAL TICKETS will come into operation:

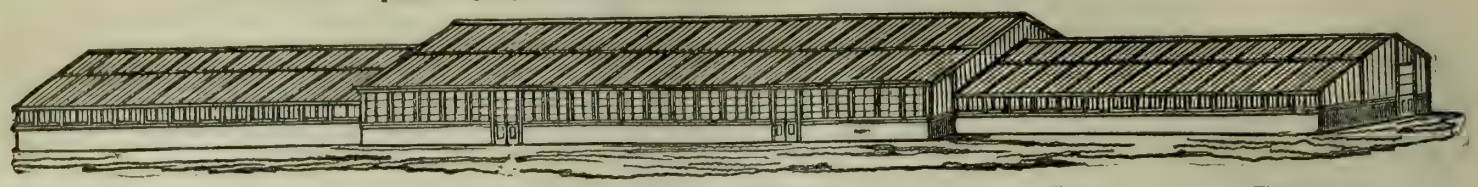
Between London and	First Class. Twelve months.	First Class. Six months.	First Class. Three months.	Second Class. Twelve months	Second Class. Six months.	Second Class. Three months.
	£ *s. d.*	£ *s. d.*	£ *s. d.*	£ *s. d.*	£ *s. d.*	£ *s. d.*
Mile-end ... Bow ... Stratford ...	9 0 0	7 0 0	4 4 0	7 0 0	4 10 0	3 0 0
Forest Gate... Ilford ... Lea-bridge ... Tottenham ...	12 0 0	8 0 0	4 10 0	8 0 0	5 0 0	3 10 0
Marsh-lane... Water-lane...	15 0 0	10 0 0	6 0 0	10 0 0	6 0 0	4 0 0
Edmonton ...	16 0 0	10 10 0	6 10 0	12 0 0	7 10 0	5 0 0
Ponder's-end	18 0 0	11 0 0	7 0 0	14 0 0	8 10 0	5 10 0
Enfield ... ... Romford ...	20 0 0	12 0 0	7 10 0	16 0 0	9 10 0	6 0 0
Waltham ...	21 0 0	12 12 0	8 0 0	17 0 0	10 0 0	7 0 0
Cheshunt ...	22 0 0	13 0 0	8 10 0	18 0 0	10 10 0	7 10 0
Broxbourne Brentwood	25 0 0	15 0 0	9 0 0	20 0 0	12 0 0	8 0 0
St. Margaret's Ware ... ... Hertford ... Roydon ... Burnt-mill ... Harlow ...	28 0 0	16 16 0	9 10 0	22 0 0	13 10 0	9 5 0
Sawbridge-worth ...	30 0 0	18 0 0	11 5 0	24 0 0	14 10 0	10 0 0
Ingatestone... Bishop's Stortford ... Chelmsford...	35 0 0	21 0 0	13 0 0	28 0 0	16 16 0	11 15 0
Stanstead ... Elsenham ... Newport ... Audley-end... Witham ... Kelvedon ... Maldon ... Braintree ...	40 0 0	24 0 0	15 0 0	32 0 0	19 10 0	13 13 0
Chesterford... Whittlesford Marks Tey ...	45 0 0	27 0 0	17 0 0	36 0 0	21 10 0	15 0 0
Shelford ... Cambridge ... Colchester ...	50 0 0	30 0 0	18 15 0	40 0 0	24 0 0	16 16 0
Ely	60 0 0	36 0 0	22 10 0	50 0 0	30 0 0	21 0 0
Woolwich, N. and S. ...	10 10 0	6 0 0	4 0 0	7 10 0	4 0 0	2 10 0

Applications to be addressed to Mr. DAVIS, Accountant, Bishopsgate Station. By order, C. P. RONEY, Secretary.
Bishopsgate Station, June 15.

GRAY, ORMSON, AND BROWN,

DANVERS STREET, CHELSEA

Respectfully solicit the attention of the Nobility and Gentry to their superior manner of Erecting and Heating every description of Building connected with Horticulture. They have much pleasure in giving the following testimonial referring to the range of houses shown below.



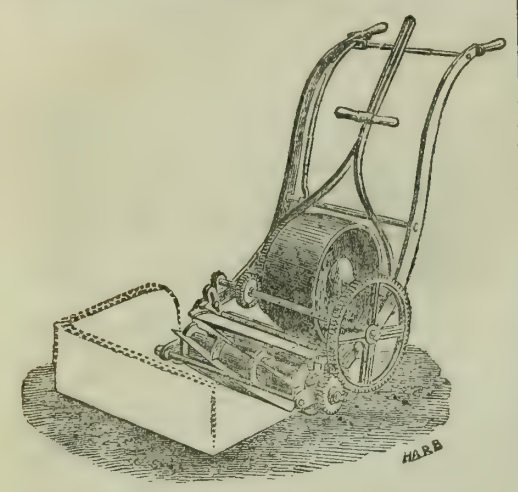
Peach House, 30 by 16 feet. | Vinery, 30 by 16 feet. | Stove, 45 by 20 ft. | Greenhouse, 45 by 20 ft. | Vinery, 30 by 16 ft. | Vinery, 30 by 16 ft.

[ERECTED FOR JOHN SHAW LEIGH, ESQ., LUTON HOO.]

Extract of a Letter from Mr. FRASER.—"I have much pleasure in expressing my entire satisfaction with the range of houses you erected here. I may also state that my honoured employer, JOHN SHAW LEIGH, Esq., is perfectly satisfied. I have no hesitation in stating, that to the best of my knowledge, there is not a more complete range of glass in the country, as regards both building and heating. I may add that they are admired by every Gardener who has seen them. I shall have much pleasure in answering any references you may please to direct.

(Signed.) "JAMES FRASER, Gardener, Luton Hoo Park."

BUDDING'S PATENT MOWING MACHINE.



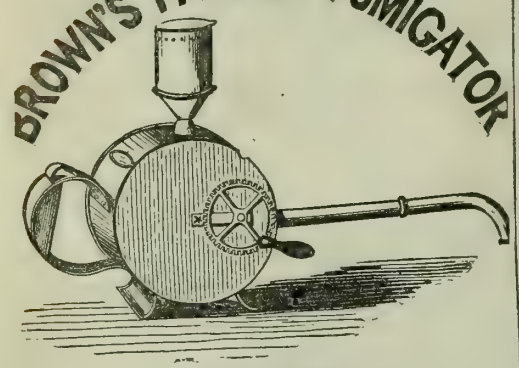
This Machine may be worked by persons who cannot use a Scythe. It may be adjusted to cut any length, and leaves a more even surface than can be produced by the most skilful mower. The Grass may be cut when dry, and may be collected in the box, which enables the gardener to cut his lawns at the most convenient time, and renders sweeping afterwards unnecessary, while with the same amount of labour more than double the quantity of work can be done than with a scythe. Various sizes are made both for manual and horse power, and the prices have this year been reduced to the lowest possible scale. There are now between 3000 and 4000 of these Machines in use.

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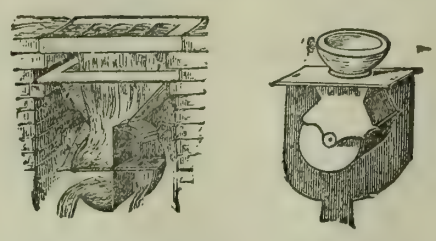
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THE GARDENERS' CHRONICLE
AND
AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 25—1850.] SATURDAY, JUNE 22. [PRICE 6*d.*

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HANDSWORTH AND LOZELLS FLORAL AND HORTICULTURAL SOCIETY.

The SECOND EXHIBITION this Season will (by the kind permission of JOSEPH BARROWS, Esq.), be held at Handsworth Hall on TUESDAY next, June 25th. By permission of Colonel the Hon. A. A. Dalzell and the Officers of the 48th Regiment, the celebrated Band, consisting of 30 performers, from the Military Station at Weedon, will attend. In addition to an extensive List of Prizes, the following will be awarded, open to all England:

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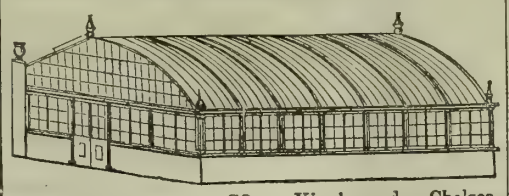
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MESSRS. COATHUPES AND Co., GLASS MANUFACTURERS, Bristol and Nailsea, Somerset, continue to supply GLASS PIPES for the conveyance of water, &c., in lengths of from 3 to 7 feet, and from ½-inch to 4-inch bores; they provide also the necessary joints, which enable them to stand very considerable pressure.

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100 and 200 feet cases of large Sheet Glass, from 2½*d.* per foot. Small ditto, 10*s.* 6*d.* per 100 feet, packed in boxes ready for immediate delivery. Curators of Botanical Societies, Florists, Railway Agents, and others requiring large quantities, will, on sending dimensions, receive estimates at the lowest prices.

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A FARM HOUSE, AND TWENTY-SIX ACRES OF LAND TO BE LET (entry at Michaelmas next), at Tempsford, Bedfordshire, by St. Neot's, a compact, commodious FARM HOUSE, situate a little off the Great North-road, with very convenient Out-buildings, in good repair; a new Bake-house, a productive Garden, 22 acres of MEADOW LAND (now put up for Hay), and 4 acres of ARABLE LAND. If desired, perhaps the House might be had without the Land.—Apply by letter (prepaid) to GEORGE PEPPERCORN, Esq., care of H. C., Tempsford, by St. Neot's, Huntingdonshire. Satisfactory references will be required.

ROYAL BOTANIC GARDEN, REGENT'S PARK.

SECOND EXHIBITION, JUNE 12th, 1850.

THE JUDGES AWARDED THE PRIZES AS FOLLOWS:

EXTRA GOLD MEDAL.

To Mr. May, Gardener to Mrs. Lawrence, Ealing-park, for 30 Stove and Greenhouse Plants
To Mr. Mylam, Gardener to S. Rucker, Esq., Wandsworth, for 25 Exotic Orchids

LARGE GOLD MEDAL.

To Mr. Cole, Gardener to H. Colyer, Esq., Dartford, Kent, for 30 Stove and Greenhouse Plants.

MEDIUM GOLD MEDAL.

To Mr. Green, Gardener to Sir E. Antrobus, Cheam, Surrey, for 20 Stove and Greenhouse Plants
To Mr. Mylam, Gardener to S. Rucker, Esq., for 15 Cape Heaths
To Mr. Blake, Gardener to — Schröder, Esq., Stratford-green, for 25 Exotic Orchids
To Messrs. Rollisson, Nurserymen, Tooting, Surrey, for 15 Exotic Orchids.

GOLD MEDAL.

To Mr. Taylor, Gardener to J. Coster, Esq., Streatham, Surrey, for 20 Stove and Greenhouse Plants
To Mr. Smith, Gardener to W. Quilter, Esq., Crier's-hill, Norwood, for 15 Cape Heaths
To Messrs. Rollisson, Nurserymen, for 12 Cape Heaths
To Mr. Carson, Gardener to — Farmer, Esq., Nonsuch-park, Cheam, for 10 Exotic Orchids
To Mr. Cock, Chiswick, for 12 Pelargoniums, in 8-inch pots
To Mr. Dobson, Gardener to E. Beck, Esq., Worton Cottage, Isleworth, for ditto
To Messrs. Lane, Nurserymen, Great Berkhampstead, Herts, for 12 Roses in pots.

LARGE SILVER-GILT MEDAL.

To Mr. Carson, Gardener to — Farmer, Esq., for 10 Stove and Greenhouse Plants
To Mr. Franklin, Gardener to Mrs. Lawrence, for 15 Exotic Orchids
To Mr. Dobson, Gardener to E. Beck, Esq., for 10 Exotic Orchids
To Mr. Barnes, Gardener to R. Hanbury, Esq., for 10 Exotic Orchids
To Mr. Black, Gardener to E. Foster, Esq., Windsor, Berkshire, for 12 Pelargoniums, in 8-inch pots
To Messrs. Paul, Nurserymen, Cheshunt, Herts, for 12 Roses in pots
To Mr. Terry, Gardener to Lady Puller, Youngsbury, Herts, for 8 Roses in pots
To Mr. Williams, Gardener to C. B. Warner, Esq., Hoddesdon, Herts, for 25 Exotic Orchids

LARGE SILVER MEDAL.

To Mr. Falconer, Gardener to A. Palmer, Esq., Cheam, Surrey, for 6 tall Cacti
To Mr. Cole, Gardener to H. Colyer, Esq., for 15 Cape Heaths
To Mr. Epps, Nurseryman, Maidstone, Kent, for 12 Cape Heaths
To Mr. Cock, Chiswick, for 6 Pelargoniums, in 11-inch pots
To Mr. Bragg, Nurseryman, Star Nursery, Slough, for 12 Pelargoniums, in 8-inch pots
To Mr. Robinson, Gardener to J. Simpson, Esq., for 6 Fancy Pelargoniums
To Mr. Turnbull, Gardener to the Duke of Marlborough, Blenheim, for Cayenne Pine-apple.

SILVER-GILT MEDAL.

To Messrs. Frazer, Nurserymen, Lea-bridge-road, Leyton, for 20 Stove and Greenhouse Plants
To Mr. Laybank, Gardener to T. Maudslay, Esq., Norwood, for 10 Stove and Greenhouse Plants
To Mr. Barnes, Gardener to R. Hanbury, Esq., Poles, Ware, Herts, for ditto
To Mr. Green, Gardener to Sir E. Antrobus, Cheam, Surrey, for 6 tall Cacti
To Mr. Ivison, Gardener to the Duchess Dowager of Northumberland, Sion House, for Victoria Regia
To Mr. Parker, Gardener to J. H. Oughton, Esq., Roehampton, Surrey, for 6 species of Pelargoniums
To Mr. Dennett, Gardener to W. H. Gilliot, Esq., Clapham-park, for 6 Cape Heaths
To Mr. Green, Gardener to Sir E. Antrobus, for 6 Azaleas
To Messrs. Henderson, Nurserymen, Pine-apple-place, for 6 Calceolarias
To Mr. Parker, Gardener to J. H. Oughton, Esq., for 6 Pelargoniums, in 11-inch pots
To Mr. Stains, Amateur, Middlesex-place, New-road, for 6 Fancy Pelargoniums
To Mr. Roser, Gardener to J. Bradbury, Esq., Streatham, Surrey, for 8 Roses in pots
To Messrs. Lane and Son, Nurserymen, for 6 yellow Roses in pots
To Mr. Chapman, Gardener to J. B. Glegg, Esq., Withington-hall, Knutsford, for Providence Pine-apple
To Mr. Jones, Gardener to Sir J. J. Guest, Dowlais House, Glamorganshire, for a Ripley Queen
To Mr. Bray, Gardener to E. Lousada, Esq., Peak House, Sidmouth, for old Queen
To Mr. Robertson, Gardener to Lady E. Foley, Stoke Edith House, for Hybrid Persian Melon
To Mr. Barnes, Gardener to J. C. Whitmore, Esq., Apely-park, for a dish of black Grapes
To Mr. Turnbull, Gardener to the Duke of Marlborough, for a dish of Muscats
To Mr. Davey, Gardener to Mrs. Smith, Colney Hatch, for a dish of white Grapes
To Mr. Munro, Gardener to Mrs. Oddie, Colney House, St. Alban's, for red Frontignan Grapes
To Mr. Patterson, Gardener to the Right Hon. Baroness Wenman, Oxford, for Noblesse Peaches
To Mr. Chapman, Gardener to J. B. Glegg, Esq., for a dish of scarlet Nectarines
To Mr. Ivison, Gardener to the Duchess Dowager of Northumberland, for Tropical Fruits
To Mr. Ambrose, Nurseryman, Battersea, for 6 Fancy Pelargoniums.

SILVER MEDAL.

To Mr. Croxford, Gardener to H. H. Barnes, Esq., Stamford-hill, for 10 Stove and Greenhouse Plants
To Mr. Green, Gardener to Sir E. Antrobus, for 6 Cape Heaths
To Mr. Robinson, Gardener to J. Simpson, Esq., Pimlico, for 12 Pelargoniums, in 8-inch pots
To Mr. Stains, Amateur, for 12 Pelargoniums, in 8-inch pots
To Mr. Gaines, Nurseryman, Battersea, for 12 Pelargoniums, in 8-inch pots
To the same, for 6 Pelargoniums, in 11-inch pots
To the same, for 6 Fancy Pelargoniums
To Mr. Miller, Gardener to R. Mosely, Esq., Pine-apple-place, for 6 Fancy Pelargoniums
To Mr. Henderson, Nurseryman, Wellington Nursery, St. John's-wood, for ditto
To Mr. Cutleugh, Gardener to — Griffith, Esq., Avenue-road, for 6 Calceolarias
To Mr. Tivey, Gardener to — Weguelin, Esq., Goldings, Hertford, for 6 Fuchsias
To Mr. Francis, Nurseryman, Hertford Nursery, Herts, for 12 Roses in pots
To Mr. Terry, Gardener to Lady Puller, for 50 cut Roses
To Messrs. Veitch and Son, Nurserymen, Exeter, for Escallonia macrantha
To the same, for Mitraria coccinea
To Mr. Lee, Nurseryman, Hammersmith, for Cereus Leeanus
To Mr. Cole, Gardener to H. Colyer, Esq., for Roupellia grata
To Mr. Bray, Gardener to E. Lousada, Esq., for a Providence Pine-apple
To Mr. Davis, Nurseryman, Oak-hill, for a Ripley Queen ditto
To Mr. Robson, Gardener to the Earl of Cornwallis, Linton-park, Kent, for a green-flesh Melon
To Mr. Stent, Gardener to — Herbert, Esq., Clapham-common, for a dish of black Grapes
To Mr. Jackson, Gardener to H. Beaufoy, Esq., South Lambeth, for a dish of black Grapes
To Mr. Harrison, Market Gardener, Oatlands, Weybridge, for Muscats
To Mr. Taylor, Gardener to J. Coster, Esq., for white Grapes
To Mr. Chapman, Gardener to J. B. Glegg, Esq., for a dish of Peaches (Gros Mignonne)
To Mr. Foggo, Gardener to the Marquis of Abercorn, Priory, Stanmore, for a dish of Elruge Nectarines
To Mr. Munro, Gardener to Mrs. Oddie, for a collection of 12 Melons

SMALL SILVER MEDAL.

To Mr. Malyon, Gardener to T. Brandram, Esq., Blackheath, for 10 Stove and Greenhouse Plants
To Mr. Mylam, Gardener to S. Rucker, Esq., for Erica Cavendishii
To Mr. Franklin, Gardener to Mrs. Lawrence, for Odontoglossum hastilabium
To Messrs. Henderson, Nurserymen, for Begonia cinnabarina
To Mr. Laybank, Gardener to T. Maudslay, Esq., for Gomphrolobium speciosum
To Messrs. Veitch, Nurserymen, for Dipladenia urophylla
To Mr. Ivison, Gardener to the Duchess Dowager of Northumberland, for Bejaria sp.
To Mr. Mason, Gardener to — Vivian, Esq., Claverston Manor, for Cinchona Calesya
To Mr. Taylor, Gardener to J. Coster, Esq., for correct Labels, in Class 1st
To Mr. Wood, Nurseryman, Norwood, for 12 Alpines
To Mr. Stains, Amateur, for 6 Cape Pelargoniums
To Mr. Taylor, Gardener to J. Coster, Esq., for 6 Cape Heaths
To Mr. Williams, Gardener to C. B. Warner, Esq., for 30 British Ferns
To Mr. Dobson, Gardener to E. Beck, Esq., for "Incomparable," a seedling Pelargonium, bright scarlet
To Mr. Turner, Nurseryman, Slough, for 24 Pansies
To Mr. Franklin, Gardener to Mrs. Lawrence, for 8 Calceolarias
To Mr. Layton, Nurseryman, Hammersmith, for 6 Fuchsias
To A. Rowland, Esq., Lewisham, Kent, for 8 Roses in pots
To Mr. Francis, Nurseryman, for 6 yellow Roses in pots
To Mr. Roser, Gardener to J. Bradbury, Esq., for 50 cut Roses
To Mr. Munro, Gardener to Mrs. Oddie, for a green-fleshed Melon, "Egyptian Hybrid"
To Mr. Cuthbert, Nurseryman, Wyer-hall, Edmonton, for a dish of black Grapes
To Mr. Kemp, Gardener to Mrs. Grillion, East Acton, for Muscats, one dish
To Mr. Turnbull, Gardener to the Duke of Marlborough, for a dish of Peaches
To Mr. Ferguson, Nurseryman, Stowe and Aylesbury, for a dish of Cherries
To Mr. Harrison, Market Gardener, for two dishes of Strawberries
Mr. Hunter, Gardener to — Clifton, Esq., Cross-street, Islington, for three Cucumbers.

BRONZE MEDAL.

To Mr. Bruce, Gardener to Boyd Miller, Esq., Collyer's-wood, Lower Tooting, for 10 Stove and Greenhouse Plants
To Mr. Stanly, Gardener to H. Berens, Esq., Sidcup, Kent, for 10 Stove and Greenhouse Plants
To Mr. Hamp, Gardener to J. Thorn, Esq., South Lambeth, for 10 Stove and Greenhouse Plants
To Mr. Dennett, Gardener to W. H. Gilliot, Esq., for Erica intermedia
To Mr. Barnes, Gardener to R. Hanbury, Esq., for Barkeria melanocaulon
To Messrs. Henderson, Nurserymen, for Gloxinia grandis
To Mr. Ivison, Gardener to the Duchess Dowager of Northumberland, for Curcuma cordata
To Messrs. Veitch, Nurserymen, for Garcinia mangostana
To Mr. Smith, Gardener to J. Anderson, Esq., for correct Labels, in Class 1st
To Messrs. Rollisson, Nurserymen, for correct Labels, in Class 2d
To Mr. Turner, Gardener, Holloway, for 12 Alpines
To Mr. Stanly, Gardener to H. Berens, Esq., for 6 Cape Pelargoniums
To Messrs. Pamplin, Nurserymen, Lea-bridge-road, Leyton, for 12 Cape Heaths
To Mr. Williams, Gardener to C. B. Warner, Esq., for 12 Exotic Ferns
To Mr. Smith, Gardener to J. Anderson, Esq., for 30 British Ferns
To Mr. Bragg, Nurseryman, Star Nursery, for 24 Pansies
To Mr. Layton, Nurseryman, Hammersmith, for 6 Calceolarias
To Mr. Davis, Oak-hill, for a Providence Pine-apple
To Mr. Foggo, Gardener to the Marquis of Abercorn, for brown Turkey Figs
To Mr. Gainsford, Market Gardener, Brentford, for a dish of Mayduke Cherries
To Messrs. Henderson, Nurserymen, for Schizanthus retusus albidus
To Mr. Tyso, Nurseryman, Wallingford, for a collection of Ranunculi
To Mr. Salter, Nurseryman, Versailles Nursery, Hammersmith, for a collection of Irises
To F. Wigan, Esq., Clare House, East Malling, Kent, for 50 British Plants
To Mr. Wood, Nurseryman, Norwood, for 24 variegated plants.

CERTIFICATE OF MERIT.

To Mr. Bruce, Gardener to B. Miller, Esq., for Aphelexis humilis
To Mr. Cole, Gardener to H. Colyer, Esq., for Dipladenia crassinoda
To Messrs. Rollisson, Nurserymen, for Bishoffia javanica
To Mr. Macqueen, Gardener to H. Jones, Esq., for Lycopodium cæsium arboreum
To Mr. Mylam, Gardener to S. Rucker, Esq., for correct Labels, in Class 1st
To Messrs. Pamplin and Son, Nurserymen, for correct Labels, in Class 2d
To Mr. Epps, Nurseryman, for correct Labels, in Class 2d
To Mr. Smith, Gardener to J. Anderson, Esq., for 12 Alpines
To Mr. Ambrose, Nurseryman, Battersea, for "Prince Albert," a seedling Pelargonium of 1850
To Mr. Ayres, Nurseryman, Blackheath, for "Formosissimum," ditto
To Mr. Epps, Nurseryman, for a Seedling Heath, "Erica tricolor Eppsii"
To Mr. Munro, Gardener to Mrs. Oddie, for Wood's Hybrid Persian Green-fleshed Melon
To Mr. Bruce, Gardener to B. Miller, Esq., for Butler's green-fleshed Melon
To Mr. Chapman, Gardener to F. B. Glegg, Esq., for a dish of black Grapes
To Mr. Henderson, Gardener to Sir G. H. Beaumont, Coleorton-hall, for ditto
To Mr. Bragg, Nurseryman, for "Joseph Hunt," a Seedling Pansy
To Mr. Keynes, Nurseryman, for a collection of Ranunculi
To Messrs. Henderson, Nurserymen, for "Mrs. Stanley," a Seedling Calceolaria
To Mr. Dunsford, Market-gardener, Chingford-green, for a dish of Queen Strawberries
To Mr. Smith, Nurseryman, Hornsey-road, for Fuchsia "Inimitable"

ANTHONY'S PATENT AMERICAN CHURN.—A Correspondent writes as follows:—"I have much pleasure in bearing testimony to the superiority of Anthony's Patent Churn. Our dairy-maid generally gets the butter in five minutes, never more than 10. It requires care in admitting air through the handle, always removing any cream that may obstruct the opening from within."

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THREE SUPERIOR LARGE PLANTS in good condition; viz., A BLOOD ORANGE in full bearing, about 25 years old, A CYCAS REVOLUTA, about 30 years old, and an AGAVE AMERICANA about 40 years old. The above are worthy of notice to those who may be in want of such.—Apply to SMITH and CARDNO, Seedsmen, Aberdeen.

STEPHENSON AND Co., 61, Gracechurch-street, London, and 17, New Park-street, Southwark, Inventors and Manufacturers of the Improved CONICAL and DOUBLE CYLINDRICAL BOILERS, respectfully solicit the attention of scientific Horticulturists to their much improved method of applying the Tank System to Pineries, Propagating Houses, &c., by which atmospheric heat as well as bottom-heat is secured to any required degree, without the aid of pipes or flues. S. and Co. have also to state that at the request of numerous friends they are now making their Boilers of Iron, as well as Copper, by which the cost is reduced. These Boilers, which are now so well known, scarcely require description, but to those who have not seen them in operation, prospectuses will be forwarded, as well as reference of the highest authority; or they may be seen at most of the Nobility's seats and principal Nurseries throughout the kingdom.

S. and Co. beg to inform the Trade that at their Manufactory, 17, New Park-street, every article required for the construction of Horticultural Buildings, as well as for heating them, may be obtained upon the most advantageous terms.

Conservatories, &c., of Iron or Wood, erected upon the most ornamental designs. Balconies, Palisading, Field and Garden Fences, Wire-work, &c.

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Quite a park-like appearance—a beautiful spot;
The band on the lawn, in the spacious marquee,
This tent for our dinner, and that for our tea."

Marquees and temporary rooms superbly fitted up for fetes, &c., on most moderate terms, by THOMAS EDGINGTON and Co.—Tents of every description, Rick-cloths, with poles, &c. Tanned Netting, for the protection of fruit-trees from frost, blight, and birds, and for the security of fresh sown seed either in gardens or fields, at unprecedentedly low prices, viz., 1d. per square yard, or 200 yards for 14s., or 500 yards for 30s., or 1000 yards for 50s. Sold to gardeners and shopkeepers by the cwt. —New Archangel Mats and Scrim Canvas for wall fruit; Tarpaulings for houses under repair, on hire. Orders and inquiries per post immediately attended to.

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CROGGON'S PATENT ASPHALTE ROOFING FELT is perfectly impervious to rain, snow, and frost, and has been tested by a long and extensive experience in all climates. Saves half the timber required for slates; can be laid on with great facility by farm servants, or unpractised persons. Price 1d. per square foot.

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NEW FUCHSIAS, VERBENAS, AND PETUNIAS of Spring 1850, at very reduced prices, viz.:

FUCHSIAS.—Inaccessible, Kossuth, Beauty of Stortford, Mrs. W. Taylor, Sir J. Falstaff, Distinctus, Yorkshire Eclipse, Beauty of Richmond, Story's Striata, Unique, Duplex, Multiplex, South Devon, Mirabilis, and Ignea.

VERBENAS.—Mrs. Mills, Desdemona, Masterpiece, Monster, Calliope, Lura, Letitia, St. Catherine, Adonis, Gem, Rosea Alba, Rosy Morn, Village Maid, Beauty of Eye, Delicata, Magnificent, Margaret Catchpole, Sunset, and Wonderful. French varieties: Adela, Amie, Bajeans, General Brea, Gloire de Paris, M. Lequay, Niobe, Pauline, Phaeton, and Perrier.

PETUNIAS.—Queen, Herseeana, Picta, Letitia, Youngii, North London, Exquisite, Queen of England, King of Crimsons, Attraction, Gem of the North, and Rose Superb.

The above Verbenas may be had at 12*s.* per dozen, or six for 7*s.* 6*d.*

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All orders will be supplied in strict rotation. Apply to HENRY WALTON, Edgend Marsden, near Burnley, Lancashire.

All orders to be prepaid, and made payable at Burnley.

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Persons requiring Plants for beds may depend on receiving a supply, strong, and in fine condition, at low prices.

Seed and Horticultural Establishment, Sudbury, Suffolk.

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MESSRS. STANDISH AND NOBLE, of the Bagshot Nursery, beg to announce that they are now sending out the above magnificent Weeping Evergreen Tree, the hardiness of which is now proved beyond all doubt; and for particulars proudly refer their patrons to the highest authorities, viz., Dr. Lindley and Sir W. Hooker—see *Gardeners' Chronicle*, April 21, 1849, and April 13, 1850; Curtis's Botanical Magazine, for May; and the Gardeners' Journal, March 9 and 16 for the present year. Strong healthy plants, fit for immediate planting, 21*s.* each.—Bagshot Nursery, Surrey.

PLANTS OF CABBAGE, SAVOY, KALE, BROCCOLI, CAULIFLOWER, AND CELERY.

JOHN CATTELL, SEEDSMAN and NURSERYMAN, Westerham, Kent, begs respectfully to inform the public that Plants of his superior true sorts of the above are now ready, and will be forwarded, as usual, to order, on receipt of postage stamps or Post-office orders, at the undernamed prices, basket or mat and package included:

All the sorts of early Cabbage, Savoy, and Kale, including Brussels Sprouts, 4*s.* 6*d.* per 1000; all the sorts of Autumn and Spring Broccoli and Red and White Celery, 6*s.* per 1000; Cauliflower, early and late, and Red Cabbage, 9*d.* per 100; Drumhead or Cattle Cabbage, 3*s.* 6*d.* p. 1000.—6*d.* per 1000 less when no mat or package is required. Packages of 1000 and upwards delivered free of carriage to the Edenbridge Station of the South-Eastern Railway.

Seeds of CATTELL'S superior "Dwarf Barnes," and his "Dwarf Reliance" Cabbage, may be had in packets, by post, for 12 penny stamps per packet, the former containing 1 oz., as usual, and the latter ½ oz.

BEAUTIFUL BOUQUETS OF FLOWERS are kept perfectly Fresh and Blooming for several days in Glasses constructed for the Button-hole, the Hand, or to be inserted in any part of a Lady's Dress or Hair, at 2*s* per dozen; or forwarded by post to any part of Great Britain or Ireland—in boxes containing one dozen, 2*s.* 6*d.*, postage included, on receipt of stamps to the amount, by JACKSON and TOWNSON, 89, Bishopsgate Within, (opposite St. Helen's-place), London.

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GEORGE BAKER begs to inform the Nobility and Public his extensive collection of AMERICAN PLANTS are now in bloom, and will continue till the end of this month, and may be seen gratis. The Nursery is about 6 miles from the Staines Station, on the South Western Railway, and 3 from Virginia Water, from whence conveyances may be obtained.

G. BAKER is a contributor to the Exhibition in the Botanic Gardens, Regent's Park.—June 22.

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GEORGE NEIGHBOUR AND SON respectfully announce that they have prepared for this season an extensive supply of their various IMPROVED BEE HIVES, which are offered to all who are desirous of cultivating that pleasing and profitable branch of rural economy—the Honey Bee. The collection consists of "Nutt's Collateral Hives," "The Single Box Hive," "The Amateur Bar Hive," "The Improved Cottage Hive," &c., from either of which the honey may be taken at any time without injury to the Bees, and may be worked with safety, humanity, and profit, by the most timid and unaccustomed to Bee manipulation. A descriptive paper, with drawings and prices, will be forwarded on the receipt of two postage stamps.—127, High Holborn, London.

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One hundred 1, 2, and 3-light Boxes and Lights of all sizes ready for immediate use. Warranted best materials, packed and sent to all parts of the kingdom; 2-light Boxes and Lights from 1*l.* 4*s.* Garden Lights of every description, Conservatories, Green and Hot-houses, made and fixed in all parts of the kingdom. References given to the Nobility, Gentry, and the Trade, in most of the counties of England. JAS. WATTS, Hothouse Builder, Claremont-place, Old Kent-road, London.

GREENHOUSES.

HENRY FREEMAN, HOTHOUSE BUILDER and HOT WATER APPARATUS MANUFACTURER, Triangle, Hackney, London, begs to solicit the attention of the gentry to his low prices for cash. Good substantial-built Greenhouses, fixed complete, 42 feet long, 13 feet wide, 90*l.*; 21 feet long, 13 feet wide, 50*l.*; 12½ feet long, 10 feet wide, 30*l.* A large assortment of Conservatories, Hothouses, Pits, Melon and Cucumber boxes, Iron hand-lights, Summer-houses, Seats, &c. Estimates in the above line, either in wood or iron.

HORTICULTURAL SOCIETY OF LONDON.—HIS GRACE THE DUKE OF DEVONSHIRE, President of the Horticultural Society, has kindly directed the Grounds of Chiswick House to be opened for the reception of the visitors to the Society's Gardens at the next Exhibition, on SATURDAY, the 13th JULY. Tickets are issued to the orders of Fellows of the Society only, at this office, price 5*s.*; or at the Garden, in the afternoon of the 13th July, at 7*s.* 6*d.* each, but then also only to orders signed by Fellows of the Society. But respectable strangers, or residents in the country, who will forward their addresses in writing to the Vice-Secretary, 21, Regent-street, on or before Thursday, the 11th of July, may obtain from that office an authority to procure Tickets on this occasion. No official orders for Tickets will be issued after that day.

N.B.—No Tickets will be issued in Regent-street on the day of Exhibition.

ROYAL BOTANIC SOCIETY, Regent's Park.—The LAST EXHIBITION this season of Plants, Flowers, and Fruit, will take place in the Gardens on WEDNESDAY, July 3. Tickets to be obtained at the Gardens, only by orders from Fellows of the Society, price 5*s.* each, or on the day of Exhibition, 7*s.* 6*d.*

SLOUGH PINK ANNUAL SHOW will be held at the Star Nursery, on MONDAY, JULY 1. Prizes will be given to Amateurs and Nurserymen for 12 blooms. Certificates will be awarded to Seedling Florists' Flowers.—Flowers to be ready for the judges at 1 o'clock.

HERTFORD ROSE NURSERIES.

E. P. FRANCIS'S new and extensive collection of ROSES will be in bloom on and after June the 25th, and will continue in flower during the autumnal months. The greatest perfection of bloom will be about the first and second week in July. An early inspection of Amateurs, &c., is respectfully solicited. Cut blooms will also be exhibited at Mr. CLARK'S, Seedsman, 25, Bishopsgate-street, during the season. Trains direct to Hertford from Shoreditch Station.

Hertford Nurseries, June 22.

ROSES.

H. LANE AND SON, Great Berkhampstead, have the honour of informing those who take an interest in this beautiful flower, that their Splendid and Extensive Collection will be in Bloom after the 27th of June. Those who wish to inspect the whole should devote six or eight hours at the Nurseries, which commence within a few minutes' walk of the Berkhampstead Station of the London and North Western Railway.

NOVELTY, ELEGANCE, AND DURABILITY.

R. RESTELL'S PATENT METALLIC ORNAMENTAL GARDEN and CONSERVATORY LABELS, in a variety of patterns; may be written upon freely, are flexible, and calculated to last for 20 years.

To be had of the principal Seedsmen and dealers in Horticultural Implements.

Manufactory, 35, High-street, Croydon, Surrey.

The Gardeners' Chronicle.

SATURDAY, JUNE 22, 1850.

MEETINGS FOR THE ENSUING WEEK.

MONDAY,	June	24—British Architects	8 P.M.
TUESDAY,	—	25 { Medical and Chirurgical	8½ P.M.
		{ Zoological	9 P.M.
WEDNESDAY,	—	26—Royal Botanic	3½ P.M.
THURSDAY,	—	27—Royal Soc. of Literature	4 P.M.
FRIDAY,	—	28—Philological	8 P.M.

COUNTRY SHOWS.—Tuesday, June 25: Handsworth and Lozells Horticultural.—Wednesday, June 26: Manchester Botanical and Horticultural.—Thursday, June 27: Liverpool Horticultural, and North Wilts Horticultural.

IF a man talks of VIRGILIUS, or HORATIUS, or JUVENALIS, he is set down in Scotland as a Dominie, and in England as an ass. Yet the naturalist who dares to speak of Clianth and Oncid, instead of Clianthus and Oncidium, is regarded as a troublesome innovator; and if he ventures somewhat further, and prefers Birthwort to Aristolochia, Tangle to Fucus, or Liverwort to Marchantia, he may expect to take rank as a scientific Chartist. Nevertheless, the very persons who condemn such modes of speaking would be the first to exclaim against calling *Viburnum opulus* by any other name than Gueldres Rose, or *Galanthus nivalis* otherwise than Snowdrop.

How is it that the practice of pedantry among scholars is admitted on all hands to be an offence against good taste, and that the absence of it among naturalists is also looked upon as an offence against good taste? Why do men thus blow hot and cold with the same breath? How is it that scholars who understand Greek and Latin, drop those languages in English composition, and that naturalists require persons who know nothing of such tongues to be always making grotesque efforts at talking them. This seems to deserve some examination on the part of those who think that natural history should be made interesting to all classes, and identified with their familiar thoughts, a result that will never be arrived at so long as the nomenclature of organised bodies is a chaos of Greek and Latin compounds, whether barbarous or formed upon the soundest principles.

It may be alleged that the practice of adapting classical names to the English tongue is not universal; and that, if we have pruned VIRGILIUS and OVIDIUS down to VIRGIL and OVID, we have left CORNELIUS NEPOS and QUINTUS CURTIUS in their ancient shape. Why this has happened we know not. Possibly because these names are much less used in conversation than the others, for CORNEL sounds as well as VIRGIL, and would arise out of an application of the same process of curtailment; nor do we see why QUINTIN CURT should be excluded from a language which recognises QUINTIN DICK. At any rate, among the best authorities, the practice has gone much further than is suspected; in proof of which we have only to refer to the words Cynosure, Zephyr, Ethiop, Arcady, employed by MILTON and others, or to such names as CEPHISE, HIPPOLYT, ÆSCULAPE, DIAN, CAMILL, and HYACINCT, which are familiar to all readers of SPENSER.

Our good old Saxon tongue consists mainly of words of one or two syllables; and it will always be found that the purest and best English writers shunned long words taken from Greek and Latin. The sonorous but corrupt style of some of our great authors introduced, indeed, a great change in this respect. With them language was—

> "English cut on Greek and Latin,
> Like fustian heretofore on satin."

But scholars happily saw the evil of this, and hence the sesquipedalian style has made no progress. Had it been otherwise we should by this time, like the Germans, have excited the astonishment of the world by words extending across a page. Does any one imagine that our forefathers would have kept even Quercus in their vocabulary, if they had not possessed its equivalent in Ac or Oak; undoubtedly they would have cut it down to Querk in spite of the lawyers. And, in like manner, Fagus would have become Fage, or Fege, or Phege; but they seem to have found a substitute in Beech.

The universal practice of society is to expel technical words from familiar language, wherever it is possible to do so. A naturalist would be laughed at who talked of a *Rana temporaria*, meaning a frog, or of *Curruca Luscinia*, meaning a nightingale, or of *Falco fulvus*, or *Aquila chrysaëtos*, meaning a golden eagle. Would anything be more preposterous than to call KEENS' Seedling Strawberry, *Fragaria virginiana*, or Sweet Vernal Grass and Cocksfoot, *Anthoxanthum odoratum* and *Dactylis glomerata?* It is only necessary to allude to such cases to show their extreme absurdity.

The truth is, that all nations like to speak their own language, if they can, and to fashion foreign words to the shape of their own organs of speech as nearly as they find possible; and hence we English have changed TAILLEBOIS into TALBOT, cinqfeuille into cinqfoil, and so on. And we cannot but think that those who have kept this in view in modifying the foreign names current in natural history, have acted upon a principle the soundness of which cannot be well disputed. It does not, however, follow that the principle has been judiciously applied. On the contrary, it must be conceded that an error has been committed—that error is translation instead of adaptation. A better course would have been adaptation to the exclusion of translation. The best course is the skilful mixture of the two.

The objection to translated names consists in this—that the naturalist who uses them has to burthen his memory with two names instead of one—the vernacular and the technical. And this we take to be the true and only valid objection to translated names, provided the translation is made on correct principles. It must we think be admitted that Toothtongue is more conformable to the English language than *Odontoglossum*, and Cutridge than *Acrotemnus*. Nor is there anything in such names at variance with the usual construction of English compounds. Objections to them on such a ground are only prejudices. The great fault in Toothtongue and Cutridge is—not that they are badly constructed words but—that they compel the naturalist to recollect them, in addition to *Odontoglossum* and *Acrotemnus*, which are indispensable. Science requires a universal nomenclature, suitable to all countries, and that must be preserved, in addition to any local nomenclature.

We freely admit the force of this objection, and for this reason, but for no other, willingly advise the abandonment of further attempts at translated words—unless in cases where the English equivalent is in general use, as in Birthwort for *Aristolochia*, or Daisy for *Bellis*, or where the technical word is not susceptible of adaptation. We would therefore rest content with Dendrobe for *Dendrobium*, Camarote for *Camarotis*, and Acroteme for *Acrotemnus*. But there is an abundance of cases in which adaptation is impracticable. We may legitimately curtail *Odontoglossum* into Odontoglot and *Ionopsidium* into Ionopsid; but what is to be done with names like *Hypoelytrum*, *Holmskioldia*, *Luzuriaga* or *Ornithocephalus?* No art can Anglicise them. They must be translated, or changed, or left in their original deformity. This question however need not be raised just now, because they are either of rare occurrence or confined to technical science.

We own that this question appears to be one of much public interest; and we shall gladly publish any adverse views with which our correspondents may favour us. We shall scarcely be suspected of writing to embarrass science. Our real purpose is to make it easy and popular, and we firmly believe that if natural history is not to be locked up in the cabinets of *virtuosi* its language must be made as familiar as household words. In saying this we

believe that we express the opinion of a vast majority of all classes of society; an opinion in which we are the more confirmed from seeing that a large number of adopted words have already established themselves securely in common language within these few years.

In the fourth volume of the Journal of the Horticultural Society is a remarkable paper by Mr. GLENDINNING on the best season of the year in which TO TRANSPLANT LARGE EVERGREENS. In opposition to the usual opinions upon this subject, he selected the hottest and driest month of the year. His words were these:

"It would be travelling over a beaten track to enter into any general detail respecting the ascent and descent of the fluids in plants, and the formation and deposition annually of new wood in all ligneous vegetation. It will be sufficient for my purpose to state that this extension and formation takes place chiefly after Midsummer, and principally in evergreens during autumn, when the young shoots begin to attain a certain degree of consistency. It is during this downward tendency of the fluids, and when the solar action is in some measure on the decline, that I should seize and conduct with all rapidity the operations of transplanting; and, if this is intended to be conducted extensively, I should recommend the end of August as a good time to begin, September being the *safest* month in the year; selecting such plants to commence with as have matured their shoots." Another and very important reason remains to be stated why autumn is to be preferred for undertakings of this kind in preference to winter. The force of the sun during summer, although now on the decline, has warmed the earth to a considerable degree and depth, so that the mutilated roots are comparatively situated on a gentle bottom-heat, which rapidly promotes cicatrisation, and frequently aids the emission of young spongelets during the current autumn.

"That the season which I have here ventured to urge for the performance of the work under consideration is undeniably theoretically the right period, appears beyond all question; and being no mean experimentalist in rural embellishment, with plants of considerable magnitude, I can attest also that it is practically the season to be preferred beyond all others. I had occasion to superintend the removal of upwards of 2000 trees and shrubs, all evergreen, and varying in size from 6 to 40 feet high, during one autumn. The trees were prepared as formerly described the previous spring, and as the undertaking was rather gigantic, the work was begun in August and finished with the year. The result was of course watched with some interest, and the following summer, when an examination took place, I found that those trees which were transplanted early in the season indicated little change from their removal, but the contrary was the case with those which had undergone similar transplantation during December. In fact the gradual diminution of the motion of the sap, accompanied with declining atmospheric action, which tended, in conjunction with the usual autumnal precipitations, to cool and saturate the earth, clearly and progressively exhibited our comparative success."

In alluding to this statement on a former occasion we said that some experiments were in progress with a view to testing the soundness of Mr. GLENDINNING's advice; and we now proceed to report the result. In September, 1849, the following work was done within our own observation.

1. Some hundred feet of a Holly hedge, about 25 years old, were transplanted, and although from the dryness of the soil, badness of roots, and other causes, there was great reason to fear the result, these plants are now (June 20, 1850), with a very small number of exceptions, safe and growing.

2. A Holly tree about 12 feet high, forming part of the same hedge, which had been left for some days with its roots covered by a mat, and was much dried, was carried a quarter of a mile and replanted. It is now casting its old leaves, and pushing well.

3. The following plants were also transplanted at the same time. Several common Laurels and Portugal Laurels, from 4 to 6 feet high, dug out of a shrubbery; 75 Rhododendrons, 14 Arbor-Vitæ, 4 to 5 feet high; 16 Laurustinus; 9 Yews, 4 to 5 feet high; 4 green Hollies of the same size, 2 Cupressus torulosa, and some other plants. They were all taken from the open quarters of a nursery, not having been potted; the weather was hot and dry. The only casualty among them consists in one Arbor-Vitæ being dead. The Cypresses were half killed by the winter; and a few of the Yews are making buds slowly, but they are beyond all risk of death.

All that was done in aid of the operation was, to scatter superphosphate of lime among the roots of the transplanted Hollies, to throw mats over the old Laurels, for the first three weeks, their shoots drooping under the influence of the hot sun and dry air; and to wrap a straw bandage round the stem of the largest Holly, in order to keep it a little moist.

This experiment is, we think, conclusive in favour of the advice given by Mr. GLENDINNING; and thus it appears that those who wish to form evergreen plantations, in harvest time, may do so not only with security, but advantage; for it is probable that much greater loss would have been sustained even in November.

THE MANETTII ROSE—AN AUTOBIOGRAPHY.

SOME time in the year 1836, or it might be 1837, my master, Signor Manetti, then living on the banks of the Lago de Como, and in whose garden (Oh! what a beautiful climate for gardening) I was growing, took it into his head to graft and bud some delicate sorts of Roses into my branches. I was so foolishly good-natured as to suffer them to grow; aye, even to nurse them into a vigour foreign to their nature. Alas, that I should find such ingratitude in man; for my beloved master, seeing the effects of my careful nursing, immediately cut me to pieces, distributed a great portion of my branches among his friends, and the remainder planted in his own garden. I felt so strong an attachment to him and such lively gratitude, for he was indeed the author of my being, that I determined to show him how docile and kind I could be. Accordingly I managed to put out roots from every shoot, however minute, little thinking of the consequences. Guess, then, my astonishment to find one day in November, a part, a very small part, of myself, with those unlucky roots attached, packed in a small box, introduced into a large case called a "bookseller's parcel," and sub-directed to a Mr. Rivers, living in a small obscure village, so I understood it to be, in England. "Alas! my beloved Como," I could not help saying, "must I then leave thee, thy sunny skies, thy charming waters, to live in exile in that foggy England, in a village with a barbarous name, quite unpronounceable to refined and musical ears—a name beginning with S and ending with h; no, it cannot be." Such was my box soliloquy; the end of all this was my safe arrival at Saw— (I cannot write the remainder), my being unpacked by a regular enthusiast, and my transference to a very pleasant locality and agreeable soil. The coolness of the climate, in contrast with my beloved, but rather too warm, Italy, delighted me; so I determined to enjoy myself by growing as fast as I could, even in what they call here the "heats of the summer." Poor creatures, they know not what heat is! I thought my new master would feel so delighted with my docility that I should remain unmolested, but no; the moment he found it out (for, on his planting a small piece of me the first season I came into his possession, I put forth all the roots I could), he cut me absolutely all to pieces.

My axiom at the outset of life was the well-known precept, "Return good for evil." I did not forget it; and every cutting rooted, while my ill-tempered neighbour (Rosa indica grandiflora), who came over in the same case, being cut up in the same way, would not put forth a root; I thought then he was wiser and better than myself, but I now think otherwise, for while I am daily making friends all over the world, my companion is unpruned, untouched, and despised for his selfishness. To pursue my narrative; my English master, taking advantage of my docility, propagated me largely, and distributed my offspring among his friends with a liberal hand. I cannot trouble you with all my adventures, for be it understood, although formed into cuttings innumerable, my spirit was not divided, my sympathy remained intact; I am able, therefore, to tell how that my master sent me over as a valuable present to a place with a long outlandish name called Berkhampstead, also in Hertfordshire. Many places and persons in this county are, I believe, very rude and barbarous. My new master at this place, Mr. L., did not seem to look upon me with a very affectionate eye, and for three or four years he insulted me very frequently, and cut me to the heart by saying "What occasion have we for any new Rose stocks, the Dog-rose is good enough for everything. I think, Mr. Manetti, you are a humbug, like your Italian fiddlers and your English master who sent you to me are." Here I lost the remainder of his speech; he has, however, lately atoned for past neglect, and has been very attentive and respectful to me.

My journey to Cheshunt, alas! has not been attended with the like result; my friend Rivers, wishing to make every one acquainted with my merits, sent me to his neighbour, Mr. P., some five or six years ago, with a very high character. Anxious to support this, I grew away with all the vigour I could muster, for I found the soil very rich, cool, and agreeable. My rival, the Dog-rose, growing in the same bed, told me, with a malicious grin, that "the soil was too good for me." I despised the inuendo, and grew and towered up above him, looking down upon him in the autumn with the same contempt that my new master, Mr. P., looked up to me, for he soon began to find fault, and said that I was too sappy, too luxuriant; in fact, good for nothing. Now this was really very unjust, and I explained to him that I did not want so rich a soil, that I should indeed prefer Bagshot-heath, and that if I did not find friends at Cheshunt, I might be distributed among his customers, and perhaps find favour in poor light soils. My master, however, seems to have what they call in my country "*una testa di porco*," a very expressive term, and would not listen to my defence. Were it not, therefore, for my old first friend, and some new friends at York, I should be in a most neglected state; but I hope for assistance from you, and in return, if you ever wish to bud me, I will not prick your fingers. *Rosa Manettii.*

DISEASES OF PLANTS.

(*Continued from p.* 373.)

THE principal opinions on the causes of rust, blight, melume, yellow blight, and carbuncle, may be reduced to four. Some attribute them to the mists, which either by their acrid and corrosive humidity, or by the minute drops acting on the tender young plants like so many lenses, burn, corrode, and disorganise those parts of the plant on which they act. Others, with our Ginanni, will have it that these diseases, especially the rust, consist of a mass of minute insects which eat into the plant; that these insects, under the epidermis of the leaves, cause the rust to appear in the form of vesicles, and corrode the stalk, if rain does not come to wash them away. The most generally received theory, first put forward in 1766 by the celebrated Dr. Giovanni Targioni-Tozzetti, is, that these diseases consist in the vegetation of cryptogamic plants, arising under the epidermis of corn; and, according to others, also on leaves and fruits of trees: and this has been confirmed by the microscopic observations of Fontana, Saussure, and more recently of Bauchs, who has published several figures of them. Finally, Tessier, in his treatise on the diseases of corn, attributes rust to a stoppage of the transpiration of the plant, caused by mists, and he remarks that it is precisely the most vigorous plants which, from their more copious tranpiration, are the most infected by it.

The opinion of Targioni has been latterly illustrated by several others, but I confess that I cannot yet bring myself to adhere to it. Some difficulties occur to me in the fact that notwithstanding the microscopical researches of Bauchs, others see differently, also through the microscope. It appears also that he was unacquainted with the chemical and microscopical investigations of Girod-Chantrans, which have been passed over in silence by all those who have written on these diseases. Unless his work be treated as a mere romance, his arguments ought at least to be refuted; for although some may not be confirmed, there are others which appears to deserve paying some attention to. Not, however, that I agree with him in seeing swarms of insects where others see series of plants, for I rather follow Knight in thinking that even in the case of aphides they require a morbid predisposition in the plant to attack it.

Another difficulty in the explaining these diseases by their being the result of cryptogamic, as it were intercutaneous vegetation, is the necessity of having recourse to principles which will not so readily be admitted by all impartial persons. In the case of the rust, for instance, some will have it that it is one plant, some that it is two different ones; and the manner in which they explain its appearance is precisely the same as that which those adopt who consider it an animal production. It is agreed that the seeds of these plants attack the cerealia externally; and to show how this can be, they say they are minute enough to penetrate through the organic pores of the epidermis, establish themselves underneath it, and take root in the cellular tissue or parenchyma of the plant. Gautieri, on the other hand, in a memoir on the means of destroying rust in Wheat, gives a totally different explanation of its mode of production, though founded also on the observations of Bauchs and Carradori. With all due honour to these great men, I confess that they leave me still in doubt, and I have therefore classed all these blights amongst diseases of which the cause is not determined.

If to all these opinions it is wished that I should add my own, I should commence by remarking that all agree in one point, that is, in the circumstances under which rust usually shows itself. I say usually, because some exceptions observed have occasioned those doubts which prevent me from laying down new hypotheses. Fields in low situations are generally the most subject to the disease, although in some years elevated spots have been more infected than low ones; so also fields well manured or naturally rich have been the most affected. The milder or hotter the season the more these blights abound, especially in hot and moist years. Fields adjoining irrigated or Rice grounds have most rusty plants. In little mountain valleys, much subject to fogs, blights abound. The greater the vigour of vegetation in the plant, the more it has to fear from them. All this would induce me to lay down that the cryptogamic plants, the minute insects, or the exudations, whether dry or not, are rather symptoms of the disease than the disease itself, which is a result of excessive vigour or over-repletion. And I am the more induced to believe it, as I have observed that weak trees and corn growing in poor soils are less liable to blights and rust. It may also be that the transpiration is checked by the particles of wet (and for that they need not act as lenses but as mere obstacles), and that there follows a disorganisation occasioned by the matter of transpiration itself, which might easily happen, considering that it is chiefly oxygen, and that facilities are thus given for the development of extraneous matter, vegetable, animal, or whatever it may be.

I regret that I am unable to suggest any means, easy of execution, to ward off or to cure these diseases. I am forced to repeat what has been said from the days of Theophrastus to the present time. Many books tell us that when seed beds are exposed to fogs or mizzling rains, lines of packthread stretched across will preserve

them from rust. This method is easy to suggest, but not so easy to put in practice in fields on a large scale. Others propose shaking trees to prevent their fruit being affected. If it be the case of a very small orchard or garden that may be done, or copious aspersions of water may have the same effect, as we know that if when rust appears after a fog, heavy rains follow, the plants will recover. Bauchs recommends the rooting up all young plants of Wheat attacked by rust, conceiving that the disease may be contagious. But even where this course can be adopted there will always be the objection of the mischief occasioned by disturbing the remaining plants. The only remedy applicable to grain, if it is not yet in ear, is to mow it down so that it may shoot up again. I would even advise the mowing down, though the ears be already formed, if they be not yet or barely fecundated. I have seen Wheat fields, destroyed by hail and cut down to a third of their height, produce fresh ears, although much smaller than the previous ones. Care must be taken not to give the rusty haulm as food to any animals, as it is very hurtful.

To preserve trees from blight, or diminish its ravages, it appears that the working the ground round them, and the so disposing the branches as not to crowd each other, may be useful. Above all, I should recommend that the ground be well drained, and no stagnant waters allowed in the vicinity. No dung should be used as manure, especially for Wheat, that is not well rotted. I know well that, in spite of all precautions, blights will attack both grain and fruit trees, but still neglect of precautions will very much increase the mischief.

VILLA AND SUBURBAN GARDENING.

It is a truism oft repeated that a garden can afford but little enjoyment unless good cultivation and cleanliness form its chief characteristics. Roses covered with aphides, Cabbages spoiled by caterpillars, Gooseberry bushes stripped of their foliage by similar means, are matters of but too common occurrence. What possible enjoyment, then, can be derived from such wretched gardening? To reap pleasure, and profit likewise, such things must not be permitted to exist; ordinary attention, combined with a little perseverance, will soon overcome the ravages of such pests. Much, however, depends upon the period when the attention I speak of is brought to bear upon the enemy. It is useless to lock the door when the steed is stolen. The first evidence of the presence of our foes ought to put us on the alert. To those accustomed to watch the ravages of caterpillars, and the rapidity with which they destroy the leaves of Cabbages or Gooseberries, the necessity of early vigilance will be apparent. In a few hours, in the early stage of that evil, by careful picking, one person will do as much as ten will when the mischief is permitted to exist for only a few days; and I question much if any of the numerous recipes so confidently recommended are likely to cure the evil so economically or so effectually as hand picking. This is at least a safe and sure remedy. It is prudent too, just when the young foliage begins to develope itself, to distribute fresh slacked lime every two or three days over the soil and close up to the stem of the trees. To some extent at least this will check their migratory movements. It is true that caterpillars do not consume the fruit, but then fruit ripened without leaves, if it swells or ripens at all, is tasteless and worthless.

With respect to the Cabbage tribe, which is subject to the attacks of caterpillars, the only remedy yet devised is hand-picking, and if early and careful attention is paid to this, no such thing as tattered leaves will exist. In small gardens, where the atmosphere is confined, insects of all kinds are more abundant, and they increase with much greater rapidity than in larger and more open situations; consequently the amateur suffers more, and hence the necessity of urgently drawing his attention to this matter, and emphatically pointing out the mode of suppressing these evils.

Red spider is another of the enemies which deface the foliage of many plants, especially in small gardens, and particularly plants against walls with projecting copings, or trees trained against houses where the eaves prevent either the rains or the dews from reaching the foliage. Although this formidable enemy is not quite so easily discovered with the naked eye as a caterpillar, it is nevertheless a more destructive and more unconquerable opponent. Still, if it is taken in time, it can also be subdued, and even expelled. Water and sulphur are the only known practical subjugators. If these are applied early and sedulously, no red spider can exist under their influence. Indeed, where it can be applied with impunity, through a powerful syringe or garden engine, water alone will completely subdue this tiny pest. *Pharo.*

TRADE MEMORANDA.

John Handford.—The following is a list of the various names and addresses which have been used by this man, to whom you have frequently alluded. It may be some satisfaction to know that he is safely in the gaol at Glasgow, having been committed for trial last week on the charge of obtaining goods under false pretences from a tradesman in that city.

Should the names, and the fact of his committal, meet the eye of your readers who have executed his orders, I should be glad to have particulars of their transactions with him, as also the letters they may have received from him. *Jas. Reay, Secretary to the Guardian Society for the Protection of Trade, Commerce-court, Lord-street, Liverpool.*

The names and addresses alluded to are—John Handford, 15, Norfolk-street, and Warwick-house, Park, Liverpool, Ruabon, Wrexham, Lytham near Preston, Bradford, Yorkshire, and Bridgewater-street, Salford, Manchester; John W. Handforth, Heath-street, St. James, Liverpool; Robert Warham, Warwick-house, Park, Liverpool; James Warham, Hurst Mills, Ashton-under-Lyne; John Wild, Eastham, Ellsmere Port, Chester, Preston Brook and Warwick-house, Liverpool; Robert Jackson, 15, Norfolk-street, Liverpool; John Roberts, Great Crosby, near Liverpool; John Robinson, Lower Frederick-street, Liverpool; Henry Soulby Melson and Co., Stock Exchange Chambers, Dale-street, Liverpool; John Bamford, 30, Gamble-street, Belfast; Joseph Handford, 11, George's-lane, Belfast; Charles White, Ashton-under-Lyne; John Newton, Bridgewater-street, Salford, Manchester; and Joseph Handford, Dudley, Warwickshire.

Home Correspondence.

Orchids for the Million.—The prices paid for the Orchidaceous plants at Mr. Bateman's sale, will, I fear, in some degree deter the humbler aspirant, but it must be recollected that these were many of them very rare, and many were fine specimens; and whether it was the *prestige* of Mr. Bateman's name, or the desire to benefit the charitable object of the sale, the plants sold, in most instances, at double the price they might have been bought for of the nurserymen. The slow growing plants, such as the Aerides, Vandas, Saccolabiums, &c., will always be dear. They are rare in their own country, and make but a few leaves a year; but the demand will, even as to these, soon increase the supply. Already we have had importations of Barkerias, and at the sales at Mr. Stevens' this year they might be bought in lots of 8 or 10 plants for less than a small scrap might three months before have been purchased. The Phalænopsis amabilis, so rare, is already becoming comparatively common—the demand created the supply—and 25 plants (new importations) were sold at Stevens' last week, and I have no doubt but that many more will soon arrive. It was only last week I received a basket of Orchidaceous plants from Rio, and found inside a bill printed in Portuguese and English, stating that the sender sold Epiphytes, tuberous roots, walking-sticks, bulbs, shrubs, &c., from Minas, Petropolis, New Fribergh, the Organ Mountains, Tijuco, Gaven, and several other parts of Brazil. I do not, therefore, mean to allow the high prices of Mr. Bateman's sale to deter me from urging the growing these plants in small cheap houses. Those who have any doubt on the question of their houses have only to pay a visit to Mr. Rivers, at Sawbridgeworth. There is a good sized house, made of boards, glazed, and heated for about 30*l.*; and his son has begun a collection of Orchids, and I own I never saw any plants better grown; and I should state that the house was not devoted to the Orchids alone, for up the rafters were trained Cucumbers; and I believe this year's crop has gone near to pay the whole cost of the house. Nothing can be more successful and interesting than Mr. Rivers' experiments in building cheap glazed sheds; he has several, in which he has planted the more delicate Pears (dwarf), Figs, standard Peaches, Vines trained to upright stakes, Strawberries, &c., and all bearing good crops. I think it is only necessary to see the great success of Mr. Rivers in the management of these houses, and the economy of their construction, to ensure his example being largely followed. *Dodman.*

Transmutation of Species.—The remarks of Professor Whewell on this subject, quoted in your Paper of the 8th inst., are very interesting; but I demur to his conclusion, "That species have a real existence in nature, and a transmutation from one to another does not exist." I apprehend that the greyhound and the spaniel would now be held to be distinct species, if we had not good grounds for believing that they came from the same stock. The short-tailed cat of the Isle of Man, whose motions strongly resemble those of the rabbit, is another striking instance of a strongly marked variety produced "under the influence of external causes." It is only by facts that the question can be settled, and statements have been published in your columns relating to some of the cereals, which show, if they are authentic, that the very transmutation which Professor Whewell denies, has actually taken place. However, all I wish to impress is, that it does not yet become either side to dogmatise. As bearing on this question, I enclose a "sport" (see woodcut), gathered from a yellow Calceolaria named "Heap's Defiance." It is the leading flower on one of the side shoots, and the corresponding flower of the other shoot is of the same anomalous form—I send both. I enclose also the true flower. The sport is certainly no improvement on the original, but it seems to me sufficiently curious *C. J. D., Rivington.* [It is an example of what is called technically a Peloria, that is, of an irregular flower recovering its regularity from the operation of some unknown cause.]



Leakage in a Swimming Bath.—It strikes me that your correspondent's bath leaks because (the foundation being upon an unequal bearing) one side is constantly changing its position, according as external influence may predominate; if so, the way to remedy the evil is to rebuild the whole bath, upon the old quarry, and clear of the rock, the water to be conducted from the rock to the bath by a wooden leat or trough of sufficient length; this being done the subsidence will be equal, and it will have no local tendency to separate. If this is thought too expensive, a trial may be made with Dutch terras mortar, which can be procured at Francis and Sons, Nine Elms, London; it has the property of vegetating, so as to fill up cracks as they occur. *W. Thorold, Thorpe Bower, near Norwich.*

Rose Stocks.—Although Mr. Saul is unfortunate in being unable by any means to grow the Crimson Boursault stock successfully, this misfortune cannot entitle him to assume that none can succeed where he fails. With respect to his description of the Boursault stock, I shall only observe that if I were to judge from my own stocks of the kind, and the favourable report of it by many large growers, instead of from Mr. Saul's experience, I should pronounce his (Mr. Saul's) opinion of its liability to decay to be erroneous, and its tendency to throw up suckers somewhat exaggerated; but believing that by some inexplicable accident of soil, cultivation, or some undiscoverable cause, Mr. Saul has found the stock to be faultful as he describes it, I shall pass on to that part of his letter which runs thus: "I happen," says "An Amateur," "to have living proofs in plants of these kinds (many of which trees are as many years old as the Manettii stock has been known in England)." Mr. Rivers states that he received the Manettii stock from Italy some 12 or 15 years ago. To what extent were Celine and Crimson Boursault grown as stocks at that period? Many of the Roses named by "An Amateur" have been introduced since that time. Had Mr. Saul asserted that neither the stocks nor any of the Roses I named were introduced here before the Manettii, then they who believed him must have disbelieved me; but while he admits that both of these stocks and some of these Roses were cultivated previously to the introduction of Manettii, what can there be wonderful in the foregoing quotation from "An Amateur?" In 1846 Mr. Rivers writes that the Manettii stock was received by him "some eight or ten years since from Como." Why, then, does Mr. Saul go beyond the extreme, and mention "15 years," especially since he must be aware that this stock has only been known generally amongst us about six or seven years at the utmost? But the facts contained in the paragraph he quotes from "An Amateur," remain untouched. The Roses, amongst which is a Goubault on the Boursault, of Mr. Rivers' growth, I mentioned in my former letter, were kept under my own charge, and I thus am enabled to declare them in no way subject to the evils Mr. Saul attaches to the unfortunate object of his antipathy. Mr. S. has misunderstood my remarks on the Cloth of Gold and Devoniensis. My expression meant that the finest Cloth of Gold in the kingdom was on the Celine, and the finest Devoniensis on the Boursault. Although Mr. Saul's failure may have been even more lamentable than he describes, it cannot weigh against the testimony in favour of the Crimson Boursault by our first Rose cultivator, Mr. Rivers, and many others. I cannot refrain from referring Mr. S. to Mr. Rivers's instructions for making cuttings, as calculated to stay a multitude of the ills which Mr. Saul has found to attend his cultivation of the Crimson Boursault stock. *An Amateur, Bristol.*—The poor Crimson Boursault and Celine stocks have been so abused lately by Mr. Saul, that I must really endeavour to give them fair play by stating the treatment proper for them, which does not appear to be generally understood. The Crimson Boursault is a Rose of remarkable vigour, but the wood is apt to suffer in winter from intense cold; it naturally produces strong root suckers, but as a stock we overcome these disadvantages, and turn this extraordinary vigour to account, when we take out all the eyes from the root part of the cutting and use it almost as a root stock, by budding nearly close to the soil. Mr. Rivers, in his valuable "Guide," most properly describes the manner in which cuttings should be made for stocks, but for the Crimson Boursault I think he will agree with me that 7 inches is a preferable length to a foot. The cuttings should be made from hard twiggy wood—in June, the top of the stock immediately above the shoot for budding should be carefully headed off with a knife (scizzors should on no account be used for this), it then thoroughly heals over, and there is no danger from decay. As many delicate growing Roses thrive best on the Crimson Boursault, while some grow more freely on other stocks, we must give in our adhesion to the belief that particular Roses have an affinity to particular stocks. Having myself introduced the Hybrid Bourbon Celine to public notice, I am happy to have received Mr. Rivers's approbation of the superior adaptability of this stock to the growth of several varieties. I freely admit that the Rosa Manettii is a most valuable stock for many, but I consider the Celine possesses an advantage in a greater rigidity of growth, with an equal degree of vigour and hardihood; for the Cloth of Gold it is acknowledged to be the best stock, and I have found it equally well adapted for very many others, delicate as well as free growers; there is however one disadvantage, viz., it does not strike quite so freely from cuttings in stiff soil as Manettii. *Henry Curtis, West of England Roseries, Moorend, Bristol.*

The Worton Cottage Meetings. — These weekly meetings for the examination of seedlings are evidently calculated to render good service to the cause of floriculture, and the reports in the *Gardeners' Chronicle* on the merits of the flowers sent there are read in the

north with much interest. The notices on new flowers in some periodicals are viewed with suspicion, and perhaps justly so; but the productions exhibited at these meetings are not only seen and reported upon by the censors of "Beck's Florist" alone, but also by those of the *Gardeners' Chronicle* and the "Midland Florist;" and they are likewise subjected to the inspection and scrutinising eye of many highly respectable florists who attend the meetings—florists who are successful cultivators of all the best varieties which are to be obtained; and it is this that gives a confidence in the reports, and stamps the adjudication of the censors as the "best authority on florists' flowers;" for no point either good or bad can well escape the critical eye of all the judges. The reports in the *Gardeners' Chronicle* must enhance the value and importance of the meetings considerably, as the exhibitors are thus enabled to ascertain every week the estimation in which their productions are held, instead of having to wait perhaps a month for the result; so that if any of the flowers are wanted for a second inspection they have a chance of sending them again before the bloom is past, which would not in many instances be the case if they had to wait until the issue of a monthly periodical. A great boon has unquestionably been conferred on both the trade and the amateur cultivator by the establishment of these meetings, and I congratulate Mr. Beck on the success which has already attended them, and which I have no doubt will soon become more apparent. *Zephyrus, Whitby, June 7.*

Spirits of Wine a Remedy for the Sting of a Bee.—One of my children, having been stung by a bee, was crying most piteously from the pain. After extracting the sting, having some spirits of wine at hand, I immediately rubbed the part with them, and the child ceased crying instantaneously. No swelling followed. Have any of your readers tried this remedy? *A Constant Reader.*

Adulteration of Soot.—One imposition is no sooner exposed than another just as bad is discovered. A small sweep in my neighbourhood is carrying on a famous trade in adulterated soot, which he sells with a large profit to gardeners and farmers. My attention was drawn to the subject by a gentleman of my acquaintance, who has for a long time past observed a copper coloured material being frequently unloaded from a cart which is drawn into a passage just opposite his house. This "copper coloured sawdust cart" never stops at the sweep's door, showing at once that something is amiss. I send a sample of the material, which mixes well with soot, and it would make a famous adulterer of guano, but some loam would be required to give it weight. *Dulwich.* [We believe this to be ground Valonia, or some such substance.]

Birds.—A pair of chaffinches having constructed their nest in a Rose-bush that ornamented a verandah in front of our windows, in due time introduced to the world three finely fledged birds; these, showing a desire (not unnatural) to resist parental authority, and return to the nest, the male chaffinch had recourse to castigation, by which method he succeeded in reducing his offspring to obedience, and drove them forth to seek a subsistence for themselves. Afterwards he returned to his labours, and on examining the nest we found that it still contained three birds, apparently not long hatched. Not far from the chaffinches' abode, and under the eaves of the verandah, a pair of tomtits (Parus cæruleus) had at the same time successfully reared and disposed of their young. A combat now took place between the male chaffinch and the male tomtit (the females having disappeared); the latter, although so much smaller, succeeded in driving his antagonist from the nest, and continued to chase him over the garden, heedless of the melancholy cries he uttered, as he flew disconcerted from place to place, with the ready food in his mouth. It appeared probable that the young birds would starve, whilst the rivals contended for the honour of acting a parent's part. At last, however, they have made something like an amicable arrangement. Both feed the young, and appear to avoid any encounter at the nest; but when they meet by accident the conflict is renewed, the chaffinch takes refuge in flight, and the tomtit delights in victory, after which they return again to the labours of feeding, which are carried on so incessantly that the voracious young birds now appear as likely to die from repletion as they were before from starvation. Is not this a singular infringement of the laws of Nature? *A. S. M., Spinfield, Great Marlow, Bucks, June 8.*

Plumbago Larpentæ.—I turned this plant out into the border last year, and left it there, little caring whether it lived or died; but I see, as others do, that it will stand the winter. *C. J. D., Rivington.*

The Gardeners' Benevolent Institution.—Your observations in the leading article of the 1st inst., relative to this institution, perfectly accord with my own opinion on the subject. When the charity commenced, and for several years afterwards, I took a good deal of interest in it, and went to some expense in writing to a great number of my brother gardeners, in order to induce them to become members; but even in those days my hopes were at times blighted; for nine out of every 10 of my applications were often ineffective. One said he would stop and see how the affair worked before he subscribed; others said at once that they were sure it would never answer; a third stated that he belonged to a benefit society; while a few imagined that being hearty and well circumstanced they were not likely to require any extraneous assistance. In reply to the first of these excuses, I said, "how can it be possible for an institution to be established or maintained while such a state of things prevail?" To the last I stated that I trusted I should never require the aid of the institution, but that while I lived I hoped to be enabled to subscribe my mite to so good a cause. I need hardly state, that in the course of time I did enlist many subscribers. I must acknowledge, however, that hitherto I have not entirely confined my support at elections to those who have been subscribers. When the society was in its infancy there were aged, unfortunate, afflicted people, of good principle, and really deserving, who had it not in their power to subscribe, even if ever so much inclined to do so, but now the Society having been established long enough for all to have made a commencement, in future I shall give my support to those only who have been or have become subscribers; and of course, except any very urgent case is brought forward, I shall only give my vote to those who have subscribed the longest. I am sure that all my brother gardeners who have become subscribers, and not grudgingly, will feel a pleasure in observing afflicted, aged, honest, and worthy men and their wives cared for. It will be gratifying to know that they are not obliged to go into a union, though I consider even the union workhouse a grand institution in its way; at the same time, people of industrious habits, who have weathered the storms of life, will make any kind of sacrifice before they will break up a little home, let it be ever so poverty stricken. It is certainly a hard case after a couple have weathered the storm until well advanced in years, that they should be obliged to break up their little respected home, and possibly be kept from each other's society for the remainder of their days. I therefore beg to solicit the attention of my brother gardeners to your remarks made on the 1st inst., and I trust that those who may have not yet joined this useful charity, and can afford it, will be induced to do so forthwith, and at the same time endeavour to make use of their best influence to induce others to support so good a cause. I have no doubt, also, that many well-behaved, industrious, well-respected gardeners will have no difficulty in inducing their employers to become subscribers. I can speak feelingly on this point, for years ago, on representing the matter to my present kind-hearted, liberal, and respected employer, I was at once desired to commence a yearly subscription, which has been continued ever since. I say again try if "thou cannot do likewise." My best wishes are towards the success of the charity, and I trust it may ever go on prosperously, and that those who may be induced to become subscribers may never require its support; but as it is natural to suppose that cannot always be the case, I trust that its support may at all times fall upon the most worthy of its members. *James Barnes, Bicton Gardens.* [If there were vacancies for all applicants, then we should not urge subscribers to confine their votes to the greatest subscribers; but as only a very small number of elections can take place annually, we adhere to our opinion, in which we know that all who, like Mr. Barnes, have no personal object to attain, must concur.]

Tropæolum speciosum.—This plant was left in the open border all winter, and it is now coming up vigorously in many places, the tubers having gone deep enough to escape the frosts. My garden is 500 feet above the level of the sea, but I never mark the thermometer so low as is given in the lists from Chiswick. *C. J. D., Rivington.*

Tomtits and Fruit-buds.—I have much satisfaction in being able to clear up the point in question, as to the object of tomtits and other birds in pulling off the blossoms of Cherry trees. It has been denied that they do this to any extent; yet one morning since I last wrote I saw the ground beneath one of my trees strewed with blossoms, and the birds plucking them off; and stooping down I picked up more than 100 within a square yard, not one particle of which appeared to have been removed, but they were all squeezed flat. On examining the blossoms on the trees at the same time, I found that each fully expanded flower contained about half a drop of clear honey, of a fine ratifia flavour, filling up the angular trough formed between the base of the tube of the calyx and the pistil. This honey appears to be secreted by the cells or glands at the base of the tube; for when the flowers first open, it is seen in the form of very minute dew-like globules, corresponding in position to the structure of the cellular tissue. In a short time, however, these globules increase in bulk until they touch each other; they then become confluent, and flow down in several channels into the trough above described. As no substantial portion of the flower is abstracted, I feel confident the birds feed on this honey. One may suppose that the old name of "nectary" had reference to its being either a secreting organ or a receptacle for this nectar. If the blossoms are examined about 24 hours after they are fully developed, it will be found that the greater portion of this honey has disappeared, and I believe it is partly absorbed by the pistil or embryo, for the peculiar high flavour of the honey is imparted to it, which is eventually found in the kernels of this and most stone fruits; the rest may be evaporated, as the aroma of the blossoms is of the same character. I have kept the blossoms I picked up for inspection. At the base of the tubes of the flowers of the Honeysuckle, there exists a thickening of the structure like the surface of a tongue, on which the honey globules are secreted, and this fluid is produced in such large quantities by Fuchsia corallina, that it flows down upon the foliage, owing to the pendulous nature of the flowers. Your talented correspondent "Mellarius" states that the honey is continually transuding through the pores of plants; yet my experience, which is only recent, shows that the process is only of short duration, and the quantity supplied dependent on the sunshine and other appliances. *F. J. Graham, Cranford.*

The Temperature of the present Month, June, sufficiently proves that this climate is not secure from frost until the sun has reached the solstice. On Saturday, the 16th inst., the temperature in Greenwich-park remained nearly the whole day below 50°, a piercing wind blowing from the North, with occasional showers of rain. The evening and night were cloudless and nearly calm, and a standard self-registering thermometer at Hyde-vale fell to 38°; another instrument placed upon a wine-cooler, 2 feet above the surface of the ground, registered 29½°. Low temperatures occur from radiation in the neighbourhood of Greenwich, at intervals, in the month of June. On the 8th, in the year 1838, it fell to 34°; on the 13th, in 1849, it fell to 32°. The coldest June on record, for the last 40 years, was in 1821, when the mean of the month was 5° below its average. The low temperatures of June, being generally preceded by storms of thunder and hail, would lead one to infer that the cold is a phenomenon of electricity—an inference borne out by the sudden formation of the clouds, the peculiar internal motion of their dense masses, and the restoration of an equilibrium in the atmosphere. The increase of the mean of the lowest temperature by night of June, upon January, is 18.33°; the increase of the mean of the highest temperature by day is 28.37°. The mean temperature of this month (June), for the last 35 years (for Greenwich), is 59.74°. *J. Henry Belville, Hyde-vale, Greenwich, June 17.*

Early Strawberries.—I perceive that Mr. Cuthill considers it early to send you this year a basket of his Black Prince Strawberry, gathered in the open air at Camberwell on the 12th of this month. Were I not 200 miles from you, as I am by rail, I could have sent you a basket of another variety gathered on that day in the open air, 2° to the northward, where vegetation averages at least a fortnight later. Mine were of the Aberdeen Beehive, a variety for which I gave a high price, and can by no means recommend. But it appears to have the good quality of coming in very early, probably earlier than any other; though part of the effect is doubtless to be ascribed to my liquid dressing, which I sent you some years ago; and which since I have used it has prevented my ever failing in a good crop, and having it much earlier than my neighbours. It is simply a mixture in equal proportions of the four salts—the carbonates of soda and potass, and the sulphates of soda and magnesia, in the usual quantity of an ounce to the gallon. In my ground it has done wonders; but I should add that it does not appear to have an equally good effect in every soil, some persons having complained to me that their beds have been injured by it. I have now used it for 9 or 10 years with uniform success. I have Keens' Seedlings ripe in the open beds now (18th), and have had for three or four days. *Iota, Lincolnshire, June 18.* [The Aberdeen Beehive has long ago been shown in this Journal to be an old discarded variety under a new name. The Black Prince is no doubt the earliest of the good varieties.]

The Cuckoo.—Has any one observed the cuckoo so as to be sure of any peculiar change or variety in its note? For the last fortnight one keeps near here, and even on Sunday it was in my garden. Its note is distinctly cŭck-cŭck-kōō, the first two notes in the usual tone, the last also. More than 20 persons have heard it. It is possible that there may be more than one, but I think there is but one. *Este, June 18.*

Salting Asparagus Beds.—This year I followed as closely as possible the directions given in your Paper some time ago for renewing apparently worn out Asparagus beds. My beds are situated on limestone land, but the soil is deep and rich. The beds have never been raised more than 18 inches or 2 feet from the level (not being considered necessary). They are at least 20 or 21 years old, and every year they have been gradually declining, but whether from bad management or age I cannot determine. About the end of January or beginning of February, the weather being tolerably mild for the season, I raked the soil off the beds with a small hand-rake until I had sufficiently bared them, without hurting the plants. I then laid 1½ inch or 2 inches of rich stable manure over them, and afterwards completed the beds with soil from the trenches which had been thrown back. Next day I watered with salt and water (refuse salt, 2*d.* per stone), the weather being mild and dry, and in wet weather I sprinkled them over with dry refuse salt, which the rain most effectually washed in. The effect was more expeditious than I had anticipated. About the end of March I cut a tolerably good dish very much larger and more delicate than I have had during the last two years, and on Tuesday, June 4, I had cut my eighth dish. They now seem disposed to run to seed, so I have ceased cutting. The beds I have are only 17 feet long by 4 feet broad, but they occupy so favourable a situation that they should be more productive than they are (with proper management). So far I have followed the plan recommended in your Paper, and I am satisfied with it this season. Another year must be the decisive one, but eight fine dishes this year, and only three poor ones last, seem to augur well for the future. *John T. Y., Parkhead.*

The Potato Disease has again made its appearance in Ireland. My attention having been directed to the subject by complaints from various parties, I examined my crop yesterday, and I find that it is decidedly diseased. The leaves are withered and crumpled up, with

the leaf stalks blackened, and brown streaks on the stem, below ground, to the very bottom; and as I have found many healthy looking stalks affected below the surface, I should say that the decomposition of the plant proceeds upwards from the roots, although the poison may have been imbibed through the leaves from the atmosphere. The kind I examined was the Ballygawley Pinks, a variety which has hitherto escaped with comparative impunity. I have seen some disease in another kind called McMullens. In a particular part of my crop, where the field was not so well manured, I should say that a fifth is diseased; where a better kind of manure was used, the plants look healthier, and are less diseased. But in a neighbouring field belonging to another person, I am certain that a third is affected. *A., Lurgan, Armagh, Ireland, June* 19.

Societies.

Horticultural, *June* 18. — J. R. Gowen, Esq., Treasurer, in the chair. F. W. Roberts, Esq., E. Hailstone, Esq., W. J. Myers, Esq., W. Cavendish, Esq., M.P., C. S. Maria, Esq., and W. R. Sams, Esq., were elected Fellows. The following "notice of alteration in the bye-laws" was read a second time. "The Council hereby give notice that they propose to substitute for Chapter VI., Article I., of the present bye-laws, namely, 'the admission-fee to be paid by each Fellow shall be six guineas,' the following words, viz.: 'the admission fee to be paid by each Fellow shall be two guineas.'" Among subjects of exhibition, Mr. Loddiges, of Hackney, sent a plant like Saccolabium Blumei, from Bombay, with a curiously formed lip, which looked as if its end had been snipped off. Mr. Cuthill, of Camberwell, received a Certificate of Merit for well ripened examples from the open ground of his Black Prince Strawberry, a kind now becoming universally cultivated, more especially for early crops. It is well flavoured, and very prolific. Specimens of his "ornamental metallic garden labels," both for hanging up and sticking into the soil, were exhibited by Mr. Restell, of High-street, Croydon. These were of various shapes, triangular and square; they ranged from 1*s.* 6*d.* to 10*s.* a dozen, according to their sizes, &c. From the garden of the Society were the somewhat scarce Cattleya granulosa, a variety of Epidendrum asperum, the spotted Brassia (B. maculata), Oncidium hastatum, Mr. Skinner's large flowered variety of Epidendrum cochleatum, two Cape Heaths, two Pimeleas, an Everlasting; the pretty New Holland shrubs, Tremandra verticillata and Hugelii; Dillwynia rudis, Boronia spathulata, a much better plant than was expected; Achimenes Escherii, Kleei, and the dwarf bright-scarlet A. pyropœa; Phyteuma violæfolia, a nice little hardy plant for rockwork; Statice mucronata, and the two Californian Abronias umbellata and pulchella, half-trailing coast plants, requiring nearly the same treatment as a Verbena. The latter has more colour than umbellata, but in all other respects it is less handsome.

Linnean, *June* 18.—The President in the chair. The Hon. East India Company presented a collection of plants, found chiefly in Assam by the late William Griffith, Esq., F.L.S. The President exhibited portions of trunks of winter bark trees, from the Straits of Magellan, cut down in 1826 by Captain King, R.N., affording inscriptions made through the bark by a midshipman accompanying the expedition of Captain Cordoba in 1786, and by a companion of Captain Bougainville in 1767, the annual rings in the former case distinctly corresponding with the interval between the two voyages; and made some observations on the structure of the woody vessels of the genus, which he described as closely resembling that of Coniferæ. Mr. Adam White exhibited some drawings of Rotiferæ by Mr. Gosse. The Secretary read some observations on the structure of the fruit of Punica, by J. Hance, Esq., Ph.D. The author was of opinion that the carpel of the Pomegranate is compound. With regard to the curious structure of the cells, he states that the lower ones arise from a central row of carpella, the cohering apices of which constitute the diaphragm, the ovules springing from the two united inner margins of the same carpellary leaf, and are consequently directed toward the centre of the ovary. The upper cells are formed by an external series of longer carpels alternate with the other, their cohering summits constituting the external portion of the style, and the ovules are borne on the entire inner face of the carpidia, as in Nymphæaceæ. The remaining portion of Mr. Bollaert's paper on the botany of the Texas was also read by the Secretary. The climate of the Texas was described as exceedingly favourable to vegetation; the species of useful trees and plants are numerous, and the soil and climate adapted to the culture of the Orange, Pine-apple, Vine, Cotton, and other plants requiring an equable warm temperature throughout the year.

Microscopical, *June* 13.—Dr. A. Farre, in the chair. A paper was read from J. C. Sorby, Esq., on the occurrence of fossil non-gymnospermous wood in the lias of Gloucestershire. The author stated that he had long had in his possession a piece of fossil wood from the lias, when, on recently submitting it to examination under the microscope, it exhibited distinct indications of the presence of ducts and vessels with imperfect spiral fibre. No indications of glandular woody tissue were seen in the specimen examined. Drawings were exhibited displaying the structure of the wood. Dr. Carpenter observed that annular vessels and ducts had been found in the Club-mosses and Ferns, although the specimens exhibited presented some of the characters of an exogenous vegetation. Should its structure turn out to be truly that of an Exogen, it would be the lowest bed in which these plants had been found. A paper was read by Mr. Legg, from Mr. Williamson, of Manchester, on the structure and habits of the animals belonging to the group Foraminifera.

Caledonian Horticultural, *May* 11. — Shrubby Greenhouse Plants.—Nurserymen: 1st, Messrs. Dickson and Sons, for Hovea Celsi, Chorozema Lawrenceanum, Bossiæa linophylla, Platylobium rhombifolium, Podolobium staurophyllum, and Azalea vandesiana. Practical gardeners: 1st, Mr. Reid, gr. to Professor Syme, for Tetratheca verticillata, Chorozema Lawrenceanum, Azalea lateritia grandiflora, A. Gledstanesi, Epacris miniata, and Pimelea Hendersoni; 2d, Mr. Sleigh, gr. to the Lord Advocate, for Eutaxia myrtifolia, Pimelea Hendersoni, Epacris miniata, and Azaleas exquisita, splendens, and Cupid; 3d, Mr. Cameron, gr. to S. Hay, Esq., for Pimelea spectabilis, &c. Rhododendrons: 1st, Mr. Rooney, gr. to Professor Dunbar, for R. fragrans and Cunningham's hybrid. Stove Plants (Orchids and Cacti excluded): 1st, Mr. Ritchie, gr. to W. M. Innes, Esq., for Gesnera splendens, Begonia coccinea, and Balsamina latifolia. Perennial Tropæolum: 1st, Mr. Douglas, gr. to H. Craigie, Esq., for T. tricolorum, trained upon a balloon-shaped trellis; 2d, Mr. Reid, for the same sort, trained on a pyramidal trellis. Cacti: 1st, Mr. Pender, gr. to D. Anderson, Esq., for Epiphyllum glaucescens and E. Hitchinii; 2d, Mr. Cossar, gr. to Lady Hay, for Epiphyllum speciosum and Conway's Giant Cactus. Tropical Orchids: 1st, Mr. Thomson, gr. to Dr. Neill, for Trichopilia tortilis, bearing 18 expanded flowers, and Calanthe veratrifolia. Auriculas: 1st, Mr. Forrester, for Ne plus Ultra, Fletcher's Mary Ann, Syke's Complete, Lord Brougham, General Morello, and Thomson's Revenge; 2d, Mr. Grieve, for Stritche's Alexander, Harrison's William Pitt, Eclipse, Smith's Waterloo, Ringleader, and Stritche's King. Broccoli: 1st, Mr. Gordon, gr. to J. H. Mackenzie, Esq., for Macdougall's Late White; 2d, Mr. Addison, Gosford, for a variety named Blackey's. Spring Cabbages: 1st, Mr. Lauder, for M'Ewan's Cabbage. Salads: 1st, Mr. Pender, for Radishes three sorts, Cresses four sorts, a brace of Cucumbers, Lettuces, and young Onions; 2d, Mr. Anderson, gr., Oxenford Castle, for Radishes, Endive, Corn Salad, Cucumber, Beet, Chicory, and Lettuce. Cinerarias, in 8-inch pots: 1st, Mr. Henderson, gr. to C. K. Sivewright, Esq., for Bessy, Carlotta Grisi, Eleanor, Nymph, Delight, and Newington Beauty; 2d, Mr. Ritchie, for Adela Villiers, Cerito, Flora MacIvor, Delight, Climax, and Pauline. Messrs. Dickson and Co. sent greenhouse plants, and a basket of Alpines. Messrs. Dickson and Sons, Exotic plants, including Mimulus sibiricus, Gloxinia grandis, &c. Greenhouse plants from Mr. Carstairs, consisted of Geraniums, Heaths, Rhododendrons, Cinerarias, and Epacrises; also a Giant Asparagus. Mr. Stark exhibited Cheiranthus Marshallianus, &c. Messrs. Downie and Laird two boxes of Cinerarias and Pansies. Mr. Methven contributed hybrid Rhododendrons; and Mr. Mackintosh two plants of Pimelea spectabilis. From Messrs. Ballantyne were herbaceous plants and cut Tulips, together with the Rose Géant des Batailles. Lady Hay sent Azaleas Lateritia superba, Gledstanesi, Fulgens, &c. Professor Dunbar, Camellia blooms and Rhododendron Dunbarianum. The Society's silver medal was voted to I. Anderson, Esq., for Rhododendron Gibsonii, and he also exhibited cinnamomeum, Nemophila maculata, Aquilegia nepalensis, and a Conifer. Dr. Neill sent the Myrtle-leaved Orange, Alpine plants, including Polemonium pulcherrimum, Saxifraga erosa, Knappia agrostidea, Androsace septentrionalis, &c. Professor Syme, Pentstemon Cobœa, Nemophila maculata, Kennedya inophylla floribunda, and Oranges; also four pots of Keens' Seedling Strawberry. Messrs. Dickson and Turnbull exhibited a scarlet Rhododendron, raised from Himalayan seeds; and C. Cobbold, Esq., sent Aotus gracillima. A certificate of merit was granted to Mr. Baxter, Riccarton, for a fine display of Seedling Border Auriculas. Mr. Pender showed flowering plants of Echinocactus concinnus, with other Cacti, and 12 pots of forced Strawberries, including Keens' Seedling, British Queen, Grove-end Scarlet, and Beehive. Mr. Stirling sent several rare Alpines, with flowering plants of Primula Stewartii, and Houstonia cœrulea.

Royal South London Floricultural, *June* 19.—A few Orchids, several nice collections of Stove and Greenhouse Plants, and some well cultivated Cape Heaths were produced. A whole tent was filled with Pelargoniums, admirably bloomed. Roses in pots were furnished by Mr. Francis, and there were also one or two stands of cut Roses. Among the latter we remarked Mrs. Bosanquet, Proserpine, Archduke Charles, Gigantique, Augustine Mouchelet, Elise Sauvage, Devoniensis, Niphétos, &c., shown as *new Roses!* and as such they received a prize! Pinks were scarce and "out of character." It was too early for them. There were in all, three stands of 24 blooms and three of 12 blooms. In the Nurserymen's Class, Messrs. Norman, of Woolwich, obtained the first prize for Lady Dartmouth, Musqueteer, Harriet, Smith's Goliah, Young's Lady Mildmay, Willmer's Princess Royal, Hilyer's Goliah, Elridge's No. 10, Smith's Diana, Garrett's Alpha, Willmer's Surplus, Hodges' Melona, Henbrey's Rubens, Young's Winchester Rival, White's Warden and Duchess of Kent, Omega, Elridge's Pickwick, Hodges' Gem, Coster's Alfred Morrison, King of Purples, Willmer's Laura, Giddy's Jenny Lind, and Reed's Maryanne.—Among Amateurs, the first prize was won by J. Edwards, Esq., of Holloway. His stand contained Benjamin, Winchester Rival, Morning Star, Rubens, Mrs. Herbert, Laura, Melona, King of Purples, Blackheath Rival, Jenny Lind, Joseph Sturge, and Duchess of Kent. There were no less than 14 stands of Ranunculuses, most of them beautiful productions. Among Nurserymen, Mr. Tyso, of Wallingford, was first, with Festus, Mrs. Neilson, Sabine, Demosthenes, Eliacine, Coronation, Amasis, William Penn, Melange, Kilgour's Queen, Naxara, and Village Maid, &c.—Mr. Franklin was second with Nomius, Rob Roy, Prince Albert, Dr. Franklin, Lord John Russell, Apollo, Mrs. Wyse, Veriatt, Princess Royal, Marshal Soult, Elizabeth, Burns, Nonpareil, Eliza, Annette, Atlas, Charlotte, and Dr. Gardiner. Mr. Hook was third with Parody, Triumphant, Dolphin, Alice Maude, Marshal Soult, Beauty of Suffolk, Rhododendron, Amaryllis, Princess, Mary Queen of Scotts, Milo, Wonder, Catherine, Village Maid, Clarissa, Alexander, Albemarle, and Duchess of Leeds.—In the Amateurs' Class, Mr. Airzee was first with Victory, Claudine, Bijou, President, Jenny Lind, Ferdinand, Herald, Theresa, Jane, Ariel, Miranda, and Britannia, all seedlings of his own, except Herald, which is Lightbody's. In a box of 24 Verbenas from Mr. Smith, of Hornsey, we observed the beautiful varieties Robinson's Defiance, and St. Margaret. Some Pansies were shown, but they were not in good condition. The seedling Pelargonium-fund exhibition took place on this occasion. The prizes awarded were, equal second prizes for Mr. Foster's Gipsy Rival and Mr. Hoyle's Ajax (the former very much like Gipsy Bride), and equal third prizes to Mr. Beck's Incomparable and Mr. Hoyle's Ocellatum. Mr. Bates received a certificate for a pretty bedding variety in the way of luceum roseum, called Hydrangiæflorum. It was dwarf, and apparently a free bloomer.—First Class Certificates were also awarded to the following productions: Verbena Lady of the Lake, and Petunia Attraction, from Mr. Young; fancy Pelargonium, Formosissimum, from Mr. Ayres; ditto, Ada, from Mr. Ambrose; Antirrhinum, Diana, from J. Wooler, Esq.; ditto, Virgin Queen, from Mr. Pawsey; and an extra prize was given to Mr. Layton, of Hammersmith, for Calceolarias.

Garden Memoranda.

Messrs. Rollisson's Nursery, Tooting.—This establishment has long been celebrated for its excellent collection of Cape Heaths. Most of the species are now in full bloom in the open air, under a temporary canvas covering, and to admirers of this charming tribe of plants, a sight of them forms an exquisite treat. Among them we remarked a beautiful variety of ventricosa called v. magnifica, a seedling, we believe, of Mr. Storey's. It is something in the way of v. breviflora, but a *very great* improvement on that variety, both in size and colour. In a frame were some exceedingly dwarf seedlings, obtained chiefly between E. v. coccinea minor and E. Parmentieri. In the extensive collection of Orchids here some good specimens were in flower. They consisted of Dendrobium moschatum, Aerides odoratum, Huntleya violacea, with seven flowers; Oncidium divaricatum and others; and at one end of the house we noticed an apparent variety of the singularly formed Javanese Bolbophyllum Lobbii, with creamy yellow blossoms. In addition to the Orchids, this house also contained a nice group of Pitcher plants, among which N. distillatoria, Rafflesiana, and others, were covered with pitchers. The new Californian Ceanothes—dentatus, papillosus, and rigidus, have wintered safely, on a south west wall here, where the old Ceanothus azureus has been considerably injured. They are now in flower, and beautiful wall shrubs they make, their bright blue blossoms having a lively and cheerful appearanee. Mr. Fortune's Berberis and Pavetta japonica have also wintered out of doors without any protection. Amongst novelties we remarked Æschynanthus candicans, several species of Rogiera, Capanea grandiflora, a plant from which much is expected; a new Siphocampylus called reticulatus, an Allamanda, and a white variety of Campanula nobilis. The shelves of a span-roofed house were entirely occupied with small plants of the beautiful Rhododendron javanicum, raised from imported seeds, and Messrs. Rollisson have some thousands of young plants, just coming through the soil, of the wondrous Sikkim Himalayan Rhododendrons, which in a few years are expected to enhance so much the appearance of our American gardens. Sown in gentle heat on the surface of fine sandy peat, and left uncovered, except by a piece of paper supported on the labels about an inch above the pots, they germinate as freely as Grass seeds. When large enough to handle, they are transplanted into 3-inch pots, and afterwards transferred to a colder situation to harden; if "worked" on R. catawbiense, which makes the best stock for Rhododendrons, we may expect to see their flowers about three years from this time. The Ceylon Rhododendron (R. Rollissonii) has been found to stand the winter here in the open border, but it has not yet flowered; it is known to blossom beautifully in the open air in Cornwall. The Cinnamon Rhododendron has also resisted the frost. Mr. Lod-

diges' Rhododendron robustum occupied a bed in the centre of the nursery, where it has blossomed in a very dwarf state. Its flowers are like those of the campanulate Rhododendron, except that they are more tinged with violet. In another part of the grounds was a Rhododendron named fastuosum, a pretty, hardy, semi-double variety, which remains long in bloom; also the Nepaul Andromeda formosa, which is hardy; Dielytra spectabilis, and a pretty variety of Arbutus, an improvement on A. hybrida. Large Magnolias, 25 years of age, on a west wall, have not flowered well this year, on account of the long severe spring, which has considerably impaired the beauty of many of our hardy plants, even in the most favoured localities. This nursery is about 4 acres in extent, well sheltered by high walls, and contains extensive ranges of glass houses and pits. In addition to the home nursery, there are 20 acres elsewhere, covered with fruit trees, shrubs, &c., and 6 acres with hardy Azaleas, Rhododendrons, and American plants, which are now blooming in perfection.

Calendar of Operations.

(For the ensuing week.)

PLANT DEPARTMENT.

As the daylight and sunshine have now arrived at their climax for this season, stove plants which are in a growing state should be supplied with the maximum amount of heat and moisture, that they may the sooner complete their growth, and have a longer period to ripen it in. Water should be freely and frequently sprinkled on every evaporating surface, with a view to counteract the drying effects of the abundant ventilation so indispensable in hot weather. Houses which are not so situated as to receive the first rays of the morning sun should be assisted with fire heat, if necessary, early in the day, that the plants may enjoy the benefit of a high temperature in conjunction with the strong daylight of these summer mornings. Incessant exertions must be made to keep insects in check, particularly red spider; syringing, and washing the walls and hot-water pipes with lime and sulphur, will have the desired effect if the means are perseveringly used. The flowering season of many plants may be retarded by pinching off the earliest flowers, thereby husbanding their strength and inducing them to make a longer season of growth; the latter object may be assisted by means of liquid manure. Forcing pits should now be actively employed in forwarding Achimenes, Gloxinias, Balsams, Cockscombs, Globe Amaranths, and other plants for immediate and autumnal display. Shading and ventilation must now be attended to with watchful anxiety, taking care however not to habituate the plants to an excess of the former, as it is only necessary in strong sunshine.

FORCING DEPARTMENT.

PINERIES.—When the bottom heat is declining, it may be recruited by surfacing the beds with a few inches of new tan; as, independently of its own fermentative power, it absorbs a considerable quantity of heat from the sun, and attracts the roots to the surface, where they revel amongst the new material. In addition to these advantages, it checks evaporation, economises labour in watering, and keeps the roots in a more equable state of moisture during hot weather. The syringe must be freely used every fine afternoon, and the pits shut close for an hour or two, to compensate the plants for the loss by evaporation during the day. VINERIES.—Let the late Vines be supplied with a sufficient amount of heat and moisture to keep them growing at a healthy rate; and do not be fearful of the Grapes ripening too early, as, by the retarding process, nothing is gained except ill-flavoured, badly-coloured berries. Grapes intended to be kept through the winter should be perfectly ripe by the middle of September; and as it is important to the flavour that the ripening process should be gradual, let them be grown briskly till they are beginning to change colour, and then by giving plenty of air, accompanied by heat, they will ripen thoroughly, and hang long upon the Vines without shrivelling. PEACH-HOUSE.—Continue to keep insects in check, using the syringe freely to keep down the red spider, and tobacco smoke to destroy thrips. The foliage must be kept healthy, to ensure success in the crops of this and future seasons. Should mildew make its appearance in the late house, dust the plants with sulphur immediately. MELONS.—Keep up the top temperature, and a bottom heat of 85°, and a moderately moist atmosphere to the successional plants, and give occasional waterings. Those plants which are ripening their crops will require less water and a drier atmosphere. If it be desired to obtain another crop from them, care must be taked that the soil does not become too dry; water should be given to the lower part of the soil, by making holes with a tin tube.

FLOWER GARDEN AND SHRUBBERIES.

The most pressing work at present is that of keeping the place in order. A little pains taken with the walks at this season will be amply repaid by the air of comfort and pleasure which well-kept walks give to any place. The old surface should be loosened a little with a sharp rake, and then receive a slight sprinkling of fresh clean gravel; the best time for the operation is when they are in a medium state between wet and dry, as the roller is then more effective in restoring the hard smooth surface than when the gravel is too dry. In connection with the repairs of the walks, any irregularities in the edges should be put right; and the edgings, whether of Grass or Box, or other evergreen, should be repaired and clipped. This is the best time of all to clip evergreen hedges or edgings, as they have time to make and mature a new growth, while the season is far enough advanced to prevent their growing very materially out of shape. Watch the different annuals as they come into flower, and mark those varieties whose superior habit of growth, size of flower, or brilliancy of colour, make it desirable to procure seed from them; and that these good qualities may be perpetuated in their progeny, destroy inferior ones as soon as they expand their first flower.

HARDY FRUIT GARDEN.

The stopping, thinning, and training of the young Peach and Nectarine shoots must receive the most careful and judicious attention, in order to secure an adequate supply of well ripened fruitful wood of moderate strength. Continue to stop any exuberant shoots, not only on account of the uselessness of the wood they produce, but also that they may not, by monopolising the sap, deprive the fruit of its necessary sustenance. Gross shoots stopped, according to directions given in former Calendars, will have produced several laterals, of which one or two of the most convenient should be selected for laying in, and the rest removed. The stronger of the more moderate-sized shoots should also be stopped, at lengths varying from 12 to 18 inches, according to their strength, and the weaker shoots at from 8 to 12 inches; this stopping will cause many laterals to be produced, but of these one only should be allowed to grow at or near the point of each shoot, with a view to maintain a healthy activity at the roots, and to secure an escape for any superabundant sap. This practice is always beneficial, and in late cold localities particularly so, by causing the energy of the plant to be early directed to the maturing of the wood, and the formation of fruit buds for another season. When shoots are permitted to go on unchecked, they form little except leaf buds, and the trees appear crowded, as if there were too many shoots, when the fault lies in their being allowed to grow too long. The most important point is to allow no more to remain than will be required to fill up the portion of wall allotted to each tree.

KITCHEN GARDEN.

Successions of the Brassica family may be planted upon land which has already been cleared of its former occupants, or intermediately amongst other crops which will shortly be removed, provided that the ground had been well manured previous to the existing crop being planted. The last sowing of Peas should now be made, selecting dwarf varieties, which come earliest into bearing, are of a hardy constitution, and not liable to mildew. Sow Cabbage for Coleworts, Endive for main crop, and make the usual sowings of Radishes, Turnips, Lettuces, Chervil, &c. Attention should be paid to the earthing up of Potatoes, using the three-pronged hack instead of the sharp draw hoe, which it is a common practice to use, although it is liable to cut off the young strings which lie near the surface of the ground. The soil for earthing should be drawn from the centre of the space between the ridges. The earliest crop of Celery now requires partially earthing up. As this crop is for immediate use, it should be earthed up by degrees as it requires it. Carrots, Parsnips, &c., should be thinned, as the perfection of such plants greatly depends on the space allotted to them individually.

FLORISTS' FLOWERS.

DAHLIAS.—Every means must now be taken to encourage their growth; mulch the surface of the soil with rotten manure, afterwards give an abundant supply of weak liquid manure. Place the main supports without delay, to which the young plants may be fastened. Begin to entrap snails &c., prevention at all times being better than cure. Roots of Dandelions will be found an excellent decoy, these should be examined early every morning. Earwigs may be caught, by small bundles of sticks being reared against a hedge or paling, or lying on the ground. These destructive insects, if in the neighbourhood, will resort to them in great numbers. TULIPS.—Offsets will generally be ready to take up, before the main bed; it often happens that they throw their bulb deep into the soil, therefore great care must be taken in raising them, or the trowel or small spade may cut them in two. They must be carefully dried in the shade. We have known a valuable collection of bulbs seriously injured by exposure to the direct rays of the sun. PINKS.—Strike cuttings or pipings; these root readily in light compost, prepared from thoroughly decomposed leaves and sand. The bed should be made in the shade, and the pipings watered, to settle the soil about them, but allowed to get thoroughly dry before the glasses are placed over them. CARNATIONS must be carefully tended; see that no ligatures are too tight, or that the plants get not too dry. Destroy aphis as previously advised.

State of the Weather near London, for the week ending June 20, 1850, as observed at the Horticultural Garden, Chiswick.

June.	Moon's Age.	Barometer.		Temperature. Of the Air.			Of the Earth		Wind.	Rain.
		Max.	Min.	Max.	Min.	Mean	1 foot deep.	2 feet deep.		
Friday.. 14	4	29.742	29.442	58	45	51.5	59	58½	S.W.	.19
Satur... 15	5	29.859	29.507	57	30	43.5	57½	57½	N.E.	.04
Sunday . 16	6	30.041	30.019	67	36	51.5	56	57	N.E.	.00
Monday 17	7	30.144	30.070	68	35	51.5	57	57	S.W.	.00
Tues. .. 18	8	30.290	30.247	75	42	58.5	56½	56½	W.	.00
Wed. ..19	9	30.370	30.339	78	48	63.0	58	57	N.	.00
Thurs....20	10	30.278	30.187	81	47	64.0	60	57½	S.	.00
Average....		30.103	29.973	69.1	40.4	54.7	57.7	57.3		.23

June 14—Uniformly overcast; rain; overcast; showery.
— 15—Densely overcast and cold; rain; clear and frosty at night.
— 16—Clear; cloudy; very fine; cloudy; cold at night.
— 17—Fine; cloudy and very fine; clear; cold.
— 18—Cloudless; very dry air; low white clouds; clear.
— 19—Fine; hot and dry; cloudy and very fine.
— 20—Fine; very fine throughout.

Mean temperature of the week, 6½ deg. below the average.

State of the Weather at Chiswick during the last 24 years, for the ensuing week, ending June 29, 1850.

June.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds. N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 23	70.4	50.0	60.2	6	0.44 in.	1	1	3	1	3	10	4	1
Mon. 24	72.9	50.6	61.7	9	0.49	—	3	3	1	2	9	3	1
Tues 25	71.1	50.2	60.6	13	0.72	1	1	5	1	3	7	4	2
Wed. 26	71.3	50.7	61.0	11	1.00	1	2	4	—	1	8	7	1
Thurs. 27	79.8	49.2	59.5	13	0.30	2	2	1	2	3	8	6	—
Friday 28	72.4	50.3	61.4	8	0.65	2	2	3	1	2	5	3	6
Satur. 29	73.2	49.8	61.5	7	0.20	2	4	2	—	1	8	5	2

The highest temperature during the above period occurred on the 27th 1826—therm. 93 deg.; and the lowest on 25th, 1825—therm. 37 deg.

Notices to Correspondents.

ANACHARIS ALSINASTRUM: *M D.* Can any correspondent oblige her by saying if the above plant may be rooted in a fish bowl with Valisneria spiralis? or whether the growth of the one plant would be injured by the other?

BACK NUMBERS: Full price will be given for Nos. 46 and 47 for 1848, and for No. 49 for 1849.

BEES: *J C* states that the consumption of honey having been much greater in his district (Boston, near Tadcaster, Yorkshire) during the winter than was ever known, namely, from 15 lbs. to 25 lbs., he, as well as many others, negiected (through the idea that they would have plenty) to feed; the consequence was, that most of the bees in one hive perished. The queen left the hive, leaving about 500 bees in, and an entire cessation from labour was the result. On the third day they began working again, and in the course of a fortnight another queen made her appearance; but there was no activity in the hive. He saw the queen leave the hive several times, fly out of sight, and then return to the hive. Fancying she was a young queen, and not fertilised, last Thursday he caught a drone belonging to another hive, and put it to the hive where she was, and to-day (June 18) they are labouring (as far as the number of bees will permit) with great activity. How had he best proceed? Perhaps some correspondent will favour him with information on the subject.—*K K K.* Your hive is too small for your swarm. That is all.—*R B.* There are various modes of weighing hives of bees. The most common way is to lift the hive and its board (after closing the entrance with a piece of cotton wool slightly pushed in) on to a cloth, tying the four corners together, passing the hooks of a steelyard under the knot, and weighing as a truss of hay, and then deducting the supposed weight of the hive and the board. But to ascertain the actual increase or decrease of weight in a given time, it is necessary that the weight of the hive, board, &c., be taken separately, and marked on each article previous to their having been used, or the gross weight taken before commencing the experiment. A pair of patent scales, with a flat plate of 12 or 14 inches square on one side, are perhaps the most handy. Care should be taken to load the weight-pan nearly to the weight of the hive, &c., before placing the hive on the other side, to prevent any jarring to the hive, and also by balancing the scales with the finger till the exact weights are in the scale. *Y.*

BOTANICAL REGISTER: *K L M.* The plants illustrated in the following plates are—304, Cactus speciosus; 369, Diosma hirta; 402, Leucadendron corymbosum; 570, Philadelphus grandiflorus; 615, Amaryllis revoluta; and, 754, Curculigo latifolia.

DEUTZIA: *C Bundy.* The discovery you have made is an old one. The little disks are hairs of a peculiar kind; such structures are very common.

FILBERTS: *Diss.* You have certainly not got the purple-leaved Filbert; the paleness of the leaf renders it doubtful whether you have even the red-skinned Filbert.‖

GLASS: *Iota.* 1, yes; 2, yes; they are very respectable people.

GREEN CENTRE IN ROSES: *W D.* It is not unlikely to have been the sudden changes in the weather that have produced this evil in your case; but any sudden change whatever will effect the disturbance, and some varieties are more liable to it than others. Read the remarks on the subject at p. 171 of our volume for 1847.‡

HEMP: *F R.* We suppose the "Nettle Hemp" to be Urtica cannabina, a common North American plant. If so, it will be found, we fear, that the fibre, though strong, is not durable.

MONSTROUS PLUM: *F D.* It is a curious thing. A woodcut of it is in preparation; when published you will hear our opinion of it.

NAMES OF PLANTS: *Juvenis.* 1, Rhinanthus Crista-galli; 2, Polygala vulgaris; 3, Orchis maculata; 4, Ophioglossum vulgatum. Bentall's botanical paper is what we use.—*P Q.* As what gardeners call Cinerarias are Senecios, it is probable that what you saw called a Cineraria was really one.—*G H.* Apparently a bit of Spiræa sorbifolia.—*J Rogers.* We are unacquainted with the plant, and do not find the name in books. Would you be good enough to send a fair specimen in flower.

PEARS: *Londonderry.* Neither Hacon's Incomparable nor Knight's Monarch is considered longer in bearing than the generality of Pears. Better root-prune your trees.‖

ROADS: *An Irish Sub.* We should knock off the tops of the stones and regravel; but floods will again reduce it to its present state, unless you can make a watercourse to take them off. Cannot you form a loose open edge to the road on each side, lower than the level of the crown, with fragments of stone and coarse gravel, through which the water will soak off? Or cannot you drive channels obliquely into the sides of the banks? It is difficult to say what you can do, without inspecting the place? A clever land-drainer would tell you at once, if you have such a man at hand.

ROSES: *A Subscriber.* The leaves contain no explanation of the cause of their rolling back. They seem healthy and free from insects. Perhaps the appearance is caused by cold.—*Enquirer.* You had better allow the shoots to which you allude to grow on until you remove them from their parent trees in autumn.‡

SLUGS: *Tris.* See our Number for last week, p. 376.‡

SQUIRRELS: *Rusticus* will thank some correspondent to inform him in what way the haunts of squirrels are to be detected in a Fir plantation. Their ravages are most evident, but the woodman has not been able to get sight of them, to shoot them. At what time of the day are they most abroad? Is there any way of destroying them better than by the gun?

THE ELDER: *L.* If you strike the variegated branch, the change of colour will probably be permanent.

VINES: *Const. Reader.* They are attacked by the Vine Mildew (Oidium Tuckeri). Sulphur will kill it if it is applied *the moment the mildew appears.* That is the point.‡

MISC: *Henry.* Sow your Deodar seeds in pure yellow loam, in pans, and place the latter in a cold frame. The "seeds, or stones," of preserved Dates, are not unlikely to germinate.‡

SEEDLING FLOWERS.

CALCEOLARIAS: *W C.* The best is 16, a pretty variety, well formed, smooth, and having a small throat; but the flower is altogether rather small. 15 is good, but hardly round enough. 18 is striking on account of its bright colours; but it is much too large in the throat. The rest are common.*

PANSIES: *G R.* Will you kindly favour us with another bloom of your Fairy Queen? The one sent was too much spoiled, when received, for us to offer any opinion of it.*—*W D.* All perfectly worthless as show flowers.*

PELARGONIUMS: *C J S.* They had fallen to pieces before we received them.*

PETUNIAS: *J Mann.* All inferior to many of the same colours now in cultivation.*

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The Agricultural Gazette.

SATURDAY, JUNE 22, 1850.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

WEDNESDAY, June 26—Agricultural Society of England.
THURSDAY, — 27—Agricultural Imp. Society of Ireland.
WEDNESDAY, July 3—Agricultural Society of England.
THURSDAY, — 4—Agricultural Imp. Society of Ireland.

GASPARIN, in his *Cours d'Agriculture*, has well remarked that there is no department within the range of scientific inquiry which holds out a richer prospect to industrious, persevering research, than agriculture does at the present time.

Since the days of Sir HUMPHRY DAVY, Chemistry and every other branch of natural philosophy has made such rapid progress, as to be now ready to render the most effectual assistance.

STEPHENS' "Book of the Farm," JOHNSTON'S "Agricultural Chemistry," and other similar works, have diffused amongst farmers a clear knowledge of how far modern science has enabled us to explain the varied practices of our farms; and what is quite as important, these publications also show us in what particulars we require further information.

This is an important step, as all future inquiries into agricultural phenomena have now a definite point to start from. It will yet be some time before the practices of a farm can be laid down as systematically as botany, in LINDLEY'S "Vegetable Kingdom," or as astronomy in HERSCHELL'S writings. But, as we are old enough to remember geology merely a crude, ill-digested, and unarranged string of theories based on a jumble of imperfectly known, and often misunderstood facts, we do not despair of seeing agriculture, like geology, make rapid advances towards greater exactness.

The benefit which is sure to redound to agriculture, when its *principles* shall be thoroughly understood, instead of being a mere collection of empirical practices, built on the good old foundation known as "the rule of thumb," will be as great as the discovery of the compass was to navigation. We are aware that such expectations expose us to ridicule from men who call themselves practical farmers, and who have hitherto prided themselves not a little on their superior discernment in escaping the mistakes of those whom they scornfully designate "book farmers." For by a strange fatuity farmers have generally held themselves tolerably aloof from connection with books; in this respect acting the reverse to the manufacturer. For instance, so valuable does the latter now consider the assistance of chemistry, that it is common to find a small laboratory and a professional chemist attached to the manufactory as systematically as the book-keeper and counting-house. There are two ways by which this prejudice against book learning may be removed from the mind of farmers—the first is, by some obvious good resulting from scientific inquiry. This would of course be effectual so far as it went; and as the last two or three years have furnished us with a notable example in the instance of artificial manures, we quote them as a case exactly in point. It is difficult to estimate the good which must ultimately spring from their use, and as they are entirely the result of the application of the discoveries of chemistry to agriculture, and as they have already attained a degree of perfection such as the good old "rule of thumb" could never of itself have arrived at, the use of artificial manures will do more to remove the prejudices farmers feel against "book learning" than volumes of argument could ever have effected.

Another equally effectual means will be the diffusion of a better education amongst agriculturists. How this is to be done is the difficulty. Model schools and agricultural colleges have been strenuously recommended, and in part acted upon. The Royal Agricultural and Highland Agricultural Societies, by their yearly prizes for the best Essays on agricultural subjects, which, in many cases, must be written by practical farmers, have also contributed, directly by the information thus obtained, and indirectly by the competition thus excited, to spread amongst us a better opinion of "book learning." Farmers' clubs are also contributing their assistance in this onward movement. It was with extreme regret that we observed the proposition of the Highland Society to confer degrees for proficiency in knowledge on matters bearing on agriculture, so unceremoniously knocked on the head by the powers that be. But this subject cannot, must not, be abandoned here, as we are utterly at a loss to know why a privilege freely conceded to scientific bodies should be refused to agricultural societies. We venture to call the attention of the Royal Agricultural Society to the question, as one in which they might, with great benefit, act in concert with the Highland Society.

SHEEP.

THE different localities in which the sheep are used in Britain may be placed under four heads—the low-land situation, the lower highland, and the upper highland grounds, and the highest elevations or the Alpine range. According to these different elevations, Nature has been found to arrange the various kinds and degrees of animal and vegetable life. The low grounds are universally the most fertile; the soil is alluvial, deep, and warm, and being aided by a corresponding geniality of temperature, it produces an herbage that is rich, juicy, and succulent. This herbage being eaten by quadrupeds, it communicates to the bodies and the dispositions of the animals the same qualities of largeness of bulk and of a heavy temperament. It naturally imparts a sluggishness of disposition and a disinclination to wander, as the food is abundant and easily gathered. It also produces an early maturity of growth, and consequently a shorter period of existence. The flesh of these hastily-produced animals is flabby in its nature and loose in the texture, and wants the vigorous firmness that is derived from exercise and a cold exposure. The wool is of excellent quality, as the improvement of it from a state of hair is not so sensible as the flesh to the accompanying influences that affect the quality. It is very long in the staple and abundant in the quantity. Under the name of low grounds are comprehended all the best improved lands that are placed within the range of moderate elevation.

The lower highland grounds comprehend the higher cultivated lands, with a portion of the best natural pastures. The food is more scanty and of an inferior quality as to juicy bulk, and consequently requires animals of a smaller size and more capable of exertion. The soil is not so rich as the lowlands, and the herbage is more scanty; the animal is quicker and produces less wool. But the quality of the flesh and the wool is not lessened by the reduction of the size of the body, for though the food is altered in the most succulent points, the essences that constitute the refined quality are more concentrated, and tend to produce flesh of a more delicate fibre, and a firmer texture. The wool is similarly affected, and is rendered shorter and somewhat more crisp, but little or nothing diminished in value. In both situations that have been mentioned, the supply of winter food is understood to be ample and of first-rate quality.

The third locality is the upper highland grounds, where little winter food is given, by reason of the small extent of cultivation, and where the rigour of the climate is very considerable. The steep formation of the grounds, and the bleak exposure, require an animal of an active undaunted nature, and the herbage, being scanty and poor in quality, would not support an animal of a heavy carcase and lazy habits. This situation is inhabited by a small animal that is active, brisk, and lively, and which can wander in search of its food without enfeebling the body and ruining the constitution. The wool becomes more hairy by reason of the coldness of the exposure.

The fourth and last locality is the highest mountain range, consisting of snowy tops and Alpine valleys. Nature has also provided this sterile region with inhabitants that are suited to the severity of its natural qualities. The few animals that live in these high latitudes are slow in growth and small in bulk, hardy in constitution, and coarse in the hairy covering.

Nature having assorted the kinds and natures of the animals to each particular soil and climate, it remains for the care of man to improve the condition of each species in providing a better maintenance, and in altering the nature of the animal by an alien admixture of blood which is not so far unlike or different in qualities as to unfit the progeny for the circumstances of the situation. Our knowledge of the breeds of sheep that exist in the different localities amounts to the knowing that they were found on the ground, and beyond that bare fact nothing is known whence they came, or how they acquired the distinctive qualities. The present improvements know only one case of alteration by the admission of alien blood, and that mixture was not very distant or unlike in qualities and appearance. The other beneficial alterations have been made by using the native elements, and providing a better maintenance for the improved progeny, which has been produced by breeding from the best forms of animals. The more elevated situations do not admit of any improvement in the animals by change or by a fresh introduction, and a mixture with the better breeds would be wholly unsuitable to the circumstances of the locality.

The rich herbage of the lowland grounds, and the artificial Grasses of the cultivated lands, maintain animals that are large in bulk, heavy in carcase, forward in growth, and rich in flesh and wool. The food being abundant and easily obtained, and the situation being warm, the necessity is not imposed upon the animal of wandering in seach of its meat, or seeking for shelter; the propensity is created and indulged of living at ease, and attaining maturity at an early age. To suit these purposes, under existing circumstances, no breed of sheep has yet been found equal to the improved Leicester, which was got from the natural elements that were found in the localities of richness and warmth, and by improving on the productions of Nature. By acting on the unerring maxim that "like produces like," and the no less necessary maxim of providing an ample maintenance for the feeding of the improved productions, any breed of animals may be improved, and also assisted by being intermingled with the blood of a near alliance of similar qualities, but superior, or different in some communicable point or points, and which may be further improved by the circumstances of the situation. This point demands the chief consideration in breeding animals, viz., that qualities be not introduced that are above the power of being supported by the situations, and where degeneracy must evidently happen in place of improvement. It may be very truly said that no qualities are in existence which the best lands are unable to support; in that case it remains to intermix and blend the qualities, in order to produce a form that possesses a greater number of points of excellence than were previously obtained from. On this principle the Leicester sheep have reached their present excellence, and have maintained superiority against every competitor yet brought against them. The body is formed to produce much weight in a small compass. The offal is proportionally small, which is the first point in every kind of improved breeding. At the same time the intestinal organs are not reduced below the power of performing the necessary functions. The pelt is thin and resilient, and affords a ready promotion to every enlargement. The bone is fine, yet capable of carrying much weight of flesh. The head is small, the eye is pert and lively, and the ear agile and quick in motion. The back of the Leicester sheep is straight and broad, and affords ample room for lateral extension and the curvature of the ribs. The chest is broad and roomy, and allows the ample play of the lungs. The refinement of the whole constitutional organs induces the rapid growth and early maturity of the different parts, which tendency is very powerfully assisted by the circumstances of the situation. As regards the wool, the fibre is fine and long, the quantity is large, and the fleece is high in estimation for the most valuable application of wool.

The conformation and the disposition of the improved Leicester sheep is exactly what the situation requires—a valuable carcase suitable to the richness of the locality, and the speedy maturity of the animal. The disposition of the animal, though it inclines to ease and quietude, is not thoroughly incapable of exertion; on the other hand its activity is fully equal to the circumstances of the locality in which it is most properly placed, on the low natural pastures and the best cultivated grounds. A lighter breed of the animal is found to be very suitable on all lands where Clovers are sown, and in moderately cold latitudes. The animal is by no means delicate, as is by many supposed; but the very thin pelts that are now frequently seen are unfit for any but the very richest and warmest localities. In breeding, very great care must be used that the constitution be not debilitated nor the body enfeebled by breeding from too near affinities, for whatever may be said on the contrary side, the truth shows that the above results do happen from the joining of a close consanguinity. Of all the points in the value of animal life, none is more necessary than a vigour of constitution, in order that every functional organ be capable of performing the part that Nature has assigned to it. The most valuable good loses its worth in being given to an

animal whose intestinal organs are unable fully to assimilate the elements of its composition. This vigour becomes more necessary according to the quality of the food, as it is rich or poor, succulent or wiry. Quiet and rest encourage the secretion of fat, but some exertion is required to stimulate the necessary action of the organic functions even for that purpose.

The chief recommendation of the Leicester sheep is a very great beauty and fulness of form, which contains in the same dimensions a greater weight than any other breed of sheep—a propensity to fatten almost unequalled, and an early maturity of growth that quickly fetches a remunerative value, and a very large diminution in the proportion of offal to the size of the animal. The Leicester breed of sheep have their head long, small, tapering towards the muzzle. The eyes are prominent, quick and lively, but with a quiet placid expression. Ears long and thin, standing backwards, and quick in motion. The neck full and broad at the shoulders, and gradually tapering to the head. The breast broad and full, shoulders broad and round, and no hollow behind them, arm fleshy down to the knee. Bones of the legs small and bare of wool, chest and barrel deep and round, ribs circular from the spine, back straight from the root of the tail to the root of the ears. Quarters and thighs wide and full, legs moderately long, pelt fine and moderately thin, soft and elastic, and covered with a fine wool of medium length. It is precisely the form of a sheep that must be provided with an abundance of food, and is not required to travel far, or to make much exertion in gathering it. It is therefore placed on the very best lands that produce natural pastures, or which are in cultivation and yield artificial Grasses. The more hardy varieties of the breed will thrive under inferior circumstances, both of soil and climate, if the cultivation be good, and where the attention to the animal is proportionate. An abundance of food is most essential in every case.

The animal arrives at maturity in two years, when the female drops lamb, and the castrated males are fit for sale in a fattened state. They may be disposed of even at 14 months. The average weight that is most generally saleable is 18 lbs. per quarter, varying from 15 to 20 lbs. Summer fed animals will reach a much greater weight, 20 to 30 lbs. per quarter, but large weights are not liked, nor are they so generally useful; the quality of the flesh is coarser, and the fat lies in lumps and clusters, and is unpalatable to many tastes. Quick maturities are all of them liable to the objection of the unequal mixture of fat and lean, and of the flesh being less firm than that of slower advancements; and hence the propriety of being used at an early period, before the faulty parts attain a disagreeable pre-eminence. This objection is very much removed by not allowing the age of the Leicester sheep to much exceed the clipping of the second fleece. At that time the precocious growth has not arrived at the full development of the objectionable parts that attend the early maturity of the system.

The second class of grounds are steep and poorer in the quality of the soil than the first — the exposure is considerably colder, and the herbage is more scanty; but if the cultivation be good, and the soil be of medium quality, and the aspect be moderately bleak, the close-woolled hardy variety of the Leicester breed will be very suitable, even though it require a very considerable attention in providing the requisite quantity and quality of good Turnips and Clovers which are essential.

In the southern counties of England, the geological formation is chiefly "chalk," rising into high hills, that are covered with a short herbage, which is generally sweet, from all calcareous substances on which it grows. These grounds require a clever animal, that is capable of climbing the sides of the hills, and in wandering in search of the food which grows more scantily than on the lowland grounds. Accordingly there was found on these downs or Grassy hills a breed of sheep that had been adapted by the continuation of Nature's usage to the circumstances of the locality—smaller in bulk than the lowland productions, more delicate in the fibre, slower in growth, and the wool shorter and less in quality. These qualities have been all impressed by the external circumstances to which the organisation of the body is exposed. The improvement in arable culture soon afforded a better maintenance, by which the size was somewhat increased, and the other qualities correspondingly brought forward. The animals received the name of the "southdown" breed, from the locality where they were found and improved, and are now well known over the United Kingdom.

The animal is smaller than the Leicester breed, and fitted for more exertion. It is consequently adapted for grounds where the food is scarcer, and requires labour to be gathered. It is short-woolled and horn-less; the face is black, or a dark dun colour. Body short, round, and compact. Legs of a medium length, and moderately fine in the bone. Breast wide, deep, and projecting forwards, indicating a good constitution and a disposition to thrive. Twist particularly full. Head small; eye full and bright, but not prominent. Belly well covered with wool, which comes down to the knee and to the hock; the wool short, close, curled, and fine, and free from any projecting fibres. It fetches the highest price of short wools.

The southdown sheep is hardier than the Leicester breed, and adapted for a greater number of soils and situations. It is patient of short keep, and of thick stocking on the ground; the maturity has been made early, and the flesh possesses a quality in the fibre and in the juice and flavour that is equalled by few and exceeded by no animal in Britain. The improvements that have been made in the shape and qualities of the animal have proceeded from using the natural progeny in the best specimens, and without any mixture of foreign blood—the sheep is consequently purely indigenous. In the localities of the second quality, the southdown sheep holds the first place, and it is undecided how far it is inferior, if at all, to the Leicester breed on the very best grounds in Britain. The treatment of the animal, in point of food and exposure, has produced at least two varieties; the one is improved to a degree that suits the best lands in the kingdom; but is still mostly confined to the elevated grounds of the dry formations of South Britain, where the herbage is short and sweet, whether it be cultivated or natural. The coarser variety is used on the more inferior grounds where the Grass is less abundant and grateful, and where the winter food is more scanty. The animal is well adapted for the purpose of folding on the land; and in some particular situations, very great benefits are obtained from the custom.

For the situations now mentioned, the southdown sheep is preferable to the Leicester breed; the animal is smaller and more active in climbing acclivities, and in gathering a more scanty food; the wool is of equal value, and the quality of the flesh is superior. It is adapted for a greater extent and variety of situations, comprehending the whole circle of cultivated grounds, from the very first-rate quality to an altitude that absolutely forbids the use of any lowland sheep.

The third locality that was mentioned is included in the range of the highest cultivation of crops, and the grassy pastures that extend to the beginning of the Alpine range. This elevation exists all over Scotland and the north and west of England, sometimes accompanied with a portion of cultivated grounds, and very often with none at all. This position of pasture ground requires an animal of a medium quality, between the sheep of the lowlands and the goat-like climber of the snowy regions; and it has been most admirably found in the Cheviot breed, so called from the hills of that name which separate England and Scotland, and where the animal was found and yet lives in the original purity. The breed is hornless and wholly white in colour; eye prominent and lively, countenance open and pleasing, ear large and distant from the eye, back straight, ribs round and quarters well proportioned, legs clean and small boned, pelt thin and very thickly covered with short fine wool. The thighs are well covered with muscle and wool down to the knee, and although the wool be rather coarse on the thigh, the quantity very amply compensates for the want of quality. The maturity is complete at the age of three years, when the weight varies from 12 to 15 lbs. per quarter. The flesh is of the first-rate quality. This animal forms one of the most valuable breeds of sheep in Britain. It is very patient of wetness, and resists much cold, and thrives in all situations where the grazing and the shelter are in any way tolerable. And when it is transported to the improved situations no animal is more profitable, as it fattens quickly, and the wool and the flesh bring the highest price. It has been introduced with much success upon the hills of Wales and of the north of Scotland, where the elevations are not the very stormiest, and where a valley pasturage is joined with the range of the hills. The circumstance of some winter keep being given to the animal, has yielded a superior variety of the animal which inhabits the lowland range, and is well qualified to be fattened on the best lands in Britain. A cross-bred animal of much value is got from the Leicester ram and the Cheviot ewe, in which both the flesh and the wool are much improved. This advantage very conveniently occurs in the last year of breeding from the ewes, and before they are fattened for sale. Thus it is seen that the Cheviot breed of sheep are capable of being applied to several useful purposes, than which no greater recommendation can be possessed by any article either animate or inanimate.

The fourth and last locality that was mentioned is the highest elevation of mountainous tracts that are found in Scotland and Wales, and where snows and tempests almost universally prevail. Nature has not left even these inhospitable regions unpeopled or untenanted; sheep were found there as well as on the richest lowlands, and are seen to be impressed with the permanent marks of the external influences to which their organisation is exposed. A black-faced horned breed of sheep was found over the whole of Scotland, and in the north-west counties of England, varied in some cases into varieties wanting horns, and the bodies being dun in colour and the faces mottled. They have perhaps lived in the greatest purity on the Lammermuir hills of the south of Scotland, and in the county of Selkirk, both of which situations are not far removed from the native land of the Cheviot breed, to which they are as dissimilar as can be imagined. How two breeds so very unlike to each other came to inhabit two districts so near in situation, neither history nor tradition has attempted to explain.

This animal is mostly horned, the female, however, being often destitute of horns. The faces and legs are black, or sometimes mottled. The wool is open and long, coarse and shaggy—the hard, crispy feeling lessens its value. The mutton is of first-rate quality, being unequalled in colour and flavour. It is always best in quality when fed on the mountains; the wild and restless nature of the animal renders it very unfit to be fattened in a lowland enclosed country. Much is sent in carcase by steam-boat to London and other large towns.

The crossing of this sheep with any other breed has wholly failed, but the original animal has been very much improved by judicious selection. The best maturity is the age of four years, when the average weight will be about 14 lbs. per quarter. The wool is small in quantity, hairy and coarse, and of little value, but the flesh is excellent, being tender and juicy, and resembling venison in the black colour it assumes. It is much relished by the amateurs in animal flesh.

This breed yet holds the undisputed possession of the highest Alpine pasturage on the mountains of Scotland. The Cheviot breed approaches to the foot of the heathy range, and there stops; it thrives on all green and comparatively low grounds, but cannot advance beyond these limits. And no other breed has yet been found to progress so far and invade the territory of the original tenants. An animal capable of resisting the number and the power of the external influences of the locality will be very rare, if at all to be found; and to raise a new breed from any existing elements to suit the very peculiar circumstances, will be a very difficult if not wholly hopeless attempt, and is very different from the lowland situations, where the opposing circumstances are fewer in number, and less virulent in their nature. In such cases, the sure way to improvement is by working on the existing materials, by means of using the best parts for the purpose of reproduction.

The mountains of North and South Wales have been occupied from time immemorial by a small hardy race of sheep, differing only in the one point of the northern animals being mostly polled, and in the south they are generally horned. But both kinds are often intermixed, and many are found varying in colour between a dirty white and a perfect black. The head is small, neck long, erect, and delicate; the fore-quarters light, with narrow breast and shoulders; sides flat; the back and loins narrow; legs slight and long; the animals possess much agility and a very unquiet habit, and are very troublesome when confined in enclosures. The fleece seldom weighs above 2 lbs.; it is coarse in quality, and brings a very inferior price. The mutton is uncommonly fine, delicate in fibre, rich in flavour, it always commands a higher price, and a large quantity of it is sent to London in carcase. From the irreclaimable disposition to wander, and other causes, the breeding of the genuine Welch sheep has never been pursued in England, and they are still confined to their native mountains, where no other breed has yet been found that is so well adapted to the climate and the herbage. In the situations that possess a valley pasturage along with a midway mountain range, the Cheviot breed has been introduced, and successfully, but on the unmixed Alpine range of the highest mountains the aboriginal breed yet most firmly hold their ground. The animals may be very much improved in quality by a judicious selection in breeding from the best forms, though it is questionable if any increase in the size of the carcase would be advisable. The wethers require full four years to arrive at maturity, and then weigh 40 to 50 lbs. at an average. The mutton is much best in quality when fed on the mountains.

In improving any breed of animals, or in producing a new breed from the consorting of elements that are dissimilar, but which retain the permanent qualities, the difference in the natural properties must not be very great, or the gap will be much too wide, and may never be filled up, so as to produce a beneficial meeting of the extremes of separation. Animals that are bred on the ground possess a most prodigious advantage over any foreign introduction, and it requires a very considerable time to reconcile and inure the constitution of animal life to the circumstances of external influence. The latter power very often proves too strong to be withstood by the organisation of the elemental structure, and totally destroys the hopes that were entertained of a beneficial change. The failures of new introductions that have been made either in the whole animal or by bringing forward more refined elements in a definite degree, have arisen from the ignorance and neglect of the considerations that are due to the obstacles which will be met, and the influences that will occur. The Leicester sheep has been produced by consorting elements that were exposed to similar affections, and which when joined and mutually refined, were capable of withstanding the circumstances under which they would be used in the same situations. The southdown breed has been got by using the best elements of the native locality without any foreign blood; and in proportion as the animal was improved, the maintenance was also changed into a greater supply, and of better quality, by means of the improvements in arable cultivation. It is a fixed law that animals which are improved in quality require a corresponding degree of better maintenance, and this truth should always strictly be borne in mind in the attempts to improve the structure of animals. If the good be deficient in quantity and quality, the properties of the animal will tend to accommodate themselves to the quality of the nutriment, and the tendency will be further aided by the external agency of the exposure. These most certain truths will ever direct the success or failure of the introduction of the Leicester and southdown sheep, into any strange locality. Constant wetness rather than cold is pernicious to sheep, and more so than the food that is eaten. This property of the climate claims much consideration, and the next is the capability of the soil to produce the necessary food. If these two qualities cannot exist in the necessary degree, the attempt should not be made.

The localities of the cheviot, black-faced, and Welsh breeds of sheep, do not admit the introduction of any

foreign elements of better quality, which are wholly alien to the circumstances of the situation. They would dwindle into insignificance, and speedily disappear altogether. The only improvement that can be made, is by choosing the best qualities for the purpose of perpetuation in the progeny. These refinements are the offspring of the locality, are inured to its influences, and are capable of living under its laws. But even in this case there is a danger of overstepping the power of the nutriment to support the improved organism, and very considerable judgment is required in operating in this way, as the situation does not admit the aliment being improved by cultivation. *J. D.*

Home Correspondence.

Ireland: Potato Planting and Prospects in Mayo, June 8th, 1850.—Up to the present time I had not been in a position to send you such a report of our Potato planting and prospects as deserved to be relied upon. And what I now send you is but an instalment of what you might expect, and what I am resolved to give as time and other circumstances will permit. In no county in Ireland, where so many anomalies exist, are they so visible as in Mayo, once called by the great Irish chief "the fag-end of Ireland." In some places where the soil is naturally fertile to an extraordinary degree, you would not for miles see an acre of Potatoes planted, nor of anything else sown or planted, nor a house, cabin, or living biped of any sort, save an occasional poor-rate or cess collector, searching for quadrupeds to seize for rates, and in the majority of such cases the only quadrupeds now to be found are the hares and foxes, not so readily seized on in the absence of hounds and horses; they, too, having gone "the way of all flesh." In other places where the land is what is called poor, such as the barony from which I write this, and portions of some of the baronies adjoining it, it can be truly said that never in any one year since the creation has there been so much Potatoes planted, so much corn sowed, or the land so well or so extensively tilled as at the present time; and I will further add, the rents were never better paid, though increased instead of being diminished in amount. This will make some of your readers at this and your own side of St. George's Channel stare, perhaps in doubt of the truth of my statement; but such is the fact, the why and wherefore I hope to show when I come to discuss the causes—the effects are well known of this anomalous state of things in the always notorious county Mayo. But to the Potato question. Of the amount of land planted all over the county, no one can form anything like a correct estimate beyond the fortunate districts to which I have just alluded, and in these they are as I tell you. Prices in the towns of Ballaghaderreen, Newtown Dillon (a town which has sprung up within the last three years, and has swallowed up its next door neighbour, Bellaghy, on the edge of the county Sligo), Swinford, Kiltermagh, Clanemorris, Bally Hauris, Kilkelly, and others of that stamp, they have been all through the season from 1*s.* 6*d.* to 3*s.* 6*d.* per cwt. of 112 lbs.; and from those towns much of the counties of Sligo, Galway, Roscommon, Leitrim, and parts of Longford and Westmeath have been supplied with what is termed "seed;" and were it not for the demand from these outskirts, the prices would have been from 6*d.* to 2*s.* per cwt. in several of the towns I have noted here. Present appearances of the crops: In most places forward overground, rank, rich, luxuriant, and healthy in appearance; that is, according to the ordinarily received opinion, but in my opinion they are too much so; and mind I tell you so now, though I may probably have another tale to tell hereafter, but perhaps I should not anticipate evil. The crops though, as I describe them, are thin in plants, as in many places the tubers, provincially termed "slits," or "schkillawns," have perished from a dry rot, such as scourged many parts of Ireland between the years 1830 and 1840. This dry rot has in many places (in which its effects are now visible), destroyed from one-eighth to one-half the tubers planted, and its effects will, I fear, be the same on the lately planted crops not yet overground. I was surprised to see, in the letter of one of your Irish correspondents, the following given *ex cathedra*: "All the judicious proprietors and others are getting rid of the population as speedily and quietly as they can, and laying down all their land to sheep and cattle pasture. Cultivation will not pay here now." I can write it thus: "All injudicious proprietors and others are getting rid of the population unscrupulously, and leaving their lands to grow weeds, having no means left to stock them. Notwithstanding that, it is by good tillage they should and can hope to keep the country from ruin; for good pay and middling tillage will pay here now, as it has paid and is paying all sensible men who hold land on fair terms." *Edward Carroll, Friar's-hill, Ballaghaderreen, co. Mayo.*

Lammermuir Shepherd's Wages.—In printing our note of the wages of a Lammermiur shepherd, you ask if we give no money at all? None whatever. There are considerable differences in the number of sheep and other things given, and we gave the list referred to as being something like an average; but in no instance that we are aware of, is any money paid. To many, such a practice may seem to savour very strongly of the truck system, but we can refer to the character and status of our herds generally, as being the "aristocracy" of our farm servants. To provide the number of sheep required to make up his pack, a considerable capital is necessary—at least 50*l.* or 60*l.*—and then, none but the steadiest and most active men will do for the business. A farmer will hire his ploughman and other servants in the market, without making any or much enquiry about them, but he never thinks of doing this with his shepherd. He must know something of him before hand. In the merse, most of the farm servants are paid principally in kind, the amount of money wage being very small, only 4*l.* a year. This is called "sheep money"; they at a former period had so many sheep grazed, but as this was attended with many inconveniences, it was commuted to money. Notwithstanding this, we will back our farm servants against those of any district in the kingdom, for respectability and general appearance. Of course, bad managers are to be found everywhere under any system; but to show that it is not between hand and mouth with them all, we know of several in our limited acquaintance, who can show deposit receipts from our chartered banks for considerable sums. We are convinced that the more general adoption of such a system would be attended with great benefit to our farm labourers. Perhaps, Mr. Editor, you may be induced, some day, to open your columns to the discussion of the subject. *A Lammermuir Farmer, June 3.*

Three-course Rotation of Crops.—In one of your recent Numbers you express astonishment at the course of cropping adopted by some north country farmers, *i. e.*, the taking a Wheat crop after a fallow, and following that with an Oat crop; but I think your astonishment will be increased when I inform you that such a course is not only permitted by landlords, or I should rather say landlord's agents, as most of them leave the management of their estates entirely to their agents, and who, being paid a per centage on the rental, are interested in obtaining the highest possible rent, irrespective of the means that the bidder may have to continue longer on his farm than a year or two; and that further by their agreements, the tenants are actually bound to apply not less than two chaldrons of lime per acre each year of fallowing—the nature of the lime being quite various. As this mode of cultivation has been practised for 40 years to my knowledge, you may suppose the *caput mortuum* to which the soil is reduced; and now that such tenants are ruined, the landlords blame free trade for their own inattention and ignorance. Did the landlords or their agents bestow as much knowledge upon their estates as the manufacturers have been compelled to do on their mills, teach their tenants to economise manure and improve it by taking care of it, build them proper buildings to carry on the manufacture of cheese, butter, and beef, and see that their attempts to improve were acted upon, a very different state of things would then arise, and I have no hesitation in saying that 10 per cent. might be realised in following out the design of the great Creator, who sent man into the world to till the ground. *Radix.*

Potato Planting in Ireland, 1850: *Clifden, Kilkenny.*—On close enquiry, I find that the breadth of Potatoes planted in this locality will not materially exceed, on the whole, that of 1849. I was at first disposed to believe that it would be double or at least one and a half, from the fact that more poor persons holding a few roods of land, have planted them, which was not the case heretofore, but I find that farmers in general have planted a much less quantity than in 1849 and 1848. Generally it is thought double the quantity has been planted in Ireland, compared with the years before the Potato rot. In this locality, which is principally a stiff Wheat soil, there are not more than one-fifth planted. The conacre scarcely exists at present, nor is its revival likely, at least for some time. The poor persons alluded to under head of query 1st, are those having small particles of land attached to their cottages, or having scraped some manure together, were given land for it, on which to grow Potatoes. The present price of Potatoes for seed, per cwt., from 5*s.* to 6*s.* *Patrick Blanchfield.*

Dung-heaps.—I quite agree with Mr. Mechi in the opinion expressed at a meeting of the Farmers' Club House, that the days of dung-heaps are being numbered, or that farm-yard dung will be used fresh from below the feet of the cattle, without undergoing any preparation by the fermentative process. I have during my practice had the solid fæces carried to the field, almost in a fresh state, and having no mixture of straw. The dung was laid in drills in the usual way and quantity, and Turnip seed sown on the reversed ridgelets. The crop was very much superior to any part of a 50 acre field, on which were used fermented dung, bones, and guano. The dung was lifted from the door of the cow-shed, in which the animals were tied to stakes. But as animals cannot be kept clean and comfortable without litter, I recommend my old plan of all straws being cut into short lengths by the threshing machinery, which will admit the intimate mixture of the straw, fæces, and urine. And I have ever suggested that all Turnip soils be prepared from a deep winter ploughing, altogether by Finlayson's harrow, and that the farm-yard dung be mixed with the land by the two last workings of the grubber. This mode will preserve the moisture, by moving and pulverising the ground, without turning it up to exposure, which, in the common way, converts lands of any tenacity into a mass of clods. *J. D.*

Steeps for Wheat.—It has become the practice before sowing Wheat, Barley, &c., to steep them in preparations of arsenic, mercury, and other strong poisons, for the purpose of preventing bunt or rust. This has proved highly detrimental to the feathered game, killing them by wholesale. I do not feel convinced that any steep is of much use, but if it is, will you or your correspondents be so kind as to tell me whether some less pernicious mixture, as brine (which I have heard well spoken of), or lime water may not be equally efficacious? or what harmless steep is recommended? I am sure that feathered game consume an immense quantity of insects, particularly wireworm and all sorts of grubs, ants and their eggs; and indeed when they can get insects they will not touch grain. It is therefore the farmers' interest not to grudge them a little grain before the insects appear. I shall be obliged by any information. *H. B. R.* [Float the grain in a strong brine for a few minutes, and after lifting out, let it drain on the floor; afterwards dust newly slaked lime over it, and mix it up till it is dry. Or dissolve about 12 oz. of blue vitriol in water enough to wet 4 bushels of Wheat; and pour the solution on the Wheat as it lies in a heap on the floor and mix well. It will dry spontaneously in half an hour.]

Guano.—The business of preparing cheap guano and cheap artificial manures seems to prosper. I have just visited the warehouse of one of these worthies who has exposed for sale several samples of bone dust, varying in quality from the genuine article to genuine rubbish, completely innocent of bones. He assured us, in confidence, that he sold far the larger quantity of the latter, as "farmers will have it cheap in these bad times." Another of these gentry has issued circulars offering silicate of potash as a top dressing for corn, at 4*l.* per ton. As it consists of broken fire bricks and lime rubbish from his alkali furnaces reduced to powder, we can easily estimate his profits, and cannot sufficiently admire the folly of farmers in purchasing an article for 4*l.*, which could not possibly be manufactured genuine under 10*l.* per ton. *T. L. C.*

Societies.

Highland and Agricultural. — The half-yearly general meeting of the Society was held in the Hall, Albyn-place, on Wednesday, the 12th inst., the Right Hon. Lord Blantyre, one of the Vice-Presidents, in the chair.

Professor Low moved the adoption of the amended bye-law, namely, "That tenant farmers, who are members of any local agricultural association, shall pay an admission, and afterwards annually, in advance, the sum of 10*s.*, with the option and power of redeeming the same by payment of five guineas, as the purchase of a life subscription."—Mr. Maconochie, of Meadowbank, seconded the motion, which was unanimously agreed to.—The Secretary said he had now the pleasure of submitting to the meeting the largest list of candidates for admission ever presented in that hall, namely, 159. Of these, he might mention, 106 were tenant farmers, who took advantage of the new rate, and 53 were gentlemen who came in under the old subscription. *Chemical Department.*—Professor Christison said, he must certainly acknowledge, when he looked to previous scientific investigations, that they did not seem to have been carried on with that direct practical bearing that they ought to have been, when it was considered that this important department was as yet in its infancy. Holding these views, the committee were determined that they would undertake no investigation unless according to the suggestions of skilful agriculturists who were members of the committee; and accordingly no such investigations had been undertaken, except of the kind which he had mentioned. He believed he might mention that, in the next publication of the Society's Transactions, the first efforts of Dr. Anderson's inquiries in this department would be made known. These would embrace analyses of Wheat soils taken from various parts of Scotland, being celebrated for the large quantity and the fine quality of the Wheat grown on them. Another investigation having an important practical bearing was already far advanced, but not so far as to enable Dr. Anderson to produce the result in the next number of the Society's Transactions, namely, what was the cause of the difference in the feeding quality of Turnips grown in low and high situations? He had now to refer to a subject introduced last year, with some degree of despondency, namely, the small amount of the funds contributed to the chemical branch of the Society's operations. He was instructed by the committee to state that, although there had been several contributions in addition to those obtained last year, the number was yet far from being so great as this important branch of the Society would lead them to expect. At the same time, it was but right to state that the committee had not taken any active measures for making their wants known. They wished before doing so, however, to produce some effect by the publication of the valuable results to which he had referred; and he might mention that it was proposed that Dr. Anderson should take the opportunity at the approaching exhibition of the Highland Society in Glasgow, of explaining the principles on which the chemical institution proposed to conduct its business.—Dr. Anderson said, that it only remained for him to report the progress which had been made in the investigations now occupying their attention in the laboratory. One of them, that of the analysis of Wheat soils, which had been made with all possible accuracy and minuteness, was completed, and would appear in the next number of the Transactions. The examination of the Turnips of different districts had extended itself to a very lengthened inquiry, and was being prosecuted with as much rapidity as the very laborious character of the analysis admitted. Another important branch of the work of the laboratory was that of performing analyses of different manures, and other substances, for members of the Society and the public. And in this department, he was glad to say that a considerable increase had taken place—about 130 analyses of different substances having been executed since January last; and, during the same period, nearly 200 letters have been written on the business of the laboratory.—Mr. Finnie, Swanston, said: After another year's experience of the privileges I enjoy from being a subscriber to the chemical department, I am free to state, without the fear of contradiction, that I have been enabled to make my selections of manures and feeding stuffs, upon which I have paid many hundreds of pounds, on more advantageous terms than those who have not availed themselves of the aid of our chemist; and I am more and more satisfied, that without a knowledge of the nature and properties of the materials employed by the agriculturist, it is certain that the results of many of the laborious and expensive processes incident to his daily occupation, must be a matter of mere chance, and thus materially affecting the precariousness of the profits upon which his prosperity depends. No doubt, many farmers celebrated in their profession, never trouble themselves about analysis; but I would ask such the question—whether, when about to expend some hundreds on fertilising or feeding substances, it would not be more satisfactory to know whether the articles they are purchasing are actually the best and cheapest they could obtain in the market, and whether the certainty of being protected against imposition would be dearly purchased at a few shillings per annum. I am

satisfied that often pounds are paid more than what is their comparative value, from neglect of the necessary precaution I have referred to; thus most truly making applicable the remark—"penny wise and pound foolish." Now, when there is such dependence on manufactured manures and feeding stuffs, for I hold that there is no grower of Turnips to any extent, but what will be benefited by the use of no small proportion of those manures in addition to what is made upon the farm; and further, that the facilities for adulteration are so great, and the practice of adulteration had been proved to be so extensive, I cannot conceive how, for one instant, it should be a matter of hesitation on the part of landlords and tenants to aid the Society in maintaining its chemical department on the most efficient footing. We are met by the question—What has chemistry done for agriculture? but that is one of easy solution. Chemistry has been the means of manufacturing manures throughout Great Britain to an extent which absorbs many hundreds of thousands of the agriculturist's money And what, I would ask, would have been our position at the present moment, with an extended cultivation of Turnips, and dependent on a monopoly of the Peruvian guano? Thanks to these manufacturers, we are able, and with success, to keep guano, bones, Rape-cake, &c., upon which we at one time entirely depended, in check. But then, inasmuch as these manufacturers have increased in numbers, and inasmuch as scientific knowledge can alone explain how far their preparations may be relied on, the greater is the need for any farmer having the purity and nature of the substances he employs tested before application; and further, however extended the cultivation of Turnips, there is not an enterprising feeder of live stock but what will acknowledge that he is to a very great degree dependent upon manufactured feeding stuffs; and if made by himself, to test the quality of what he uses. It is fruitless, then, for one moment to contend he can dispense with the aid of the chemist. Were I to mention an advice to my brother farmers, I would say, put yourselves in communication with Dr. Anderson; get him to test the manufactured article you purchase, whether guano, oilcake, or such like, and your wonder and surprise will be, how you have been so long in availing yourselves of so invaluable an auxiliary. I should be guilty of injustice to that gentleman were I not to mention that during this last session I have had calls from some of the pupils attending on his instructions, intending to be practical farmers, and have not failed to profit from conversations I had with them regarding greater economy in the manure of the farm. But it is not only those of my brother farmers who have not availed themselves of the aid of our chemist, who are the only parties who may be said to undervalue the Society's exertions to advance agriculture. We may reasonably include every proprietor who has hitherto withheld his support, as I am not aware of any other way they could more effectually secure the improvement of their estates than by encouraging everything that has a tendency to enlighten their tenantry, not only as to how they may better economise the manure obtainable from the farm, but induce attention, and insure confidence in employing, in addition to it, what will be certain to procure a better crop of Turnip, the valuable reproducer of manure. I do think some sad misapprehension must exist on the part of landlords. It is not, in fact, the interest of enterprising farmers to ask their aid at all to the chemical department. Such will avail themselves of chemistry independent of the Highland Society. But, how, in that case, would their exertions in the cause of agriculture prove beneficial to the general agricultural community? Supposing the Highland Society had no chemist, and a farmer analysed regularly his manures and feeding stuffs, would it be expected he should make his own individual investigations patent to the public? Assuredly not. Worldly prudence is against such a supposition. I would therefore say that if no other argument would prevail, this one alone should secure every landlord in Scotland as a supporter of the chemical department. You will obtain, through means of the chemist's labours, the benefit of those farmers foremost in their profession, and you will bring that knowledge to bear on those most backward. And if you fail to encourage the exertions of enterprising farmers who communicate with the chemist, with the view of the same being made available to the whole community, the time may come that such will retain the knowledge they acquire for their own individual benefit, and an effectual check will thus be given to that free and unreserved publication of all agricultural experience, which is so essential to develop everything that has a tendency to improve the art of agriculture.—Mr. DICKSON, Saughton Mains, said, in corroboration of what my friend, Mr. Finnie, has said regarding the advantages which are derived from the facilities which are now afforded to members for getting correct analyses of the various manures, at a moderate cost, I would just mention that three weeks ago I purchased 25 tons of what seemed to be, from appearance, and what was also warranted to me by the party from whom I purchased it, as the best quality of Peruvian guano; and after sending for two tons, and taking a fair sample, which I had analysed by Dr. Anderson, it was found to contain 41 per cent. of sand, in place of from 2 to 5 per cent., which is the quantity in genuine Peruvian guano. You will at once see that by getting this guano analysed, I made fully 100*l.*, which I would have lost by purchasing sand, at the price of guano. I believe the party from which I purchased the guano—who is highly respectable—to have been quite ignorant of the quality of the stuff he was selling, and that he himself had been cheated, having bought it in London; and I afterwards got from the same person part of a direct cargo to Leith—the quantity of sand in which was only 3 per cent. I am also aware that our secretary, Mr. Hall Maxwell, got a quantity of guano sent to him—also by a highly respectable party—as the best Peruvian, which, on analysis, turned out to contain 38 per cent. of sand. I could adduce other instances, but these are sufficient to show the dangers to which the public are exposed in the purchase of this article, as well as others of a similar nature. As a member of the committee, it is my duty to be cognisant of the state of the subscription list, and I regret to have to corroborate what has been stated as to its insufficiency. The Society, in its efforts to promote this most important object, has not met with that support from the landed proprietors of the country to which it is entitled to look. Not only is the fund thereby decreased, but the moral effect is otherwise injurious. The tenants of a proprietor who withholds his support, naturally infer that he is actuated not so much by a desire to save the trifling subscription required, as by a disapproval of the branch Society's operations. I regret to observe lately, that some gentlemen who have contributed hitherto, have intimated their intention to discontinue their subscriptions; and as I know that there are many valuable investigations in progress, which require a long time and much attention to bring out a result that would be really of value, and which, if done hurriedly, would be useless, I beg these parties to suspend their judgment till there has been a fair opportunity afforded of proving the practical value of this, in my opinion, most important department. The report was then unanimously approved of. *The Show at Glasgow.*—Mr. C. HORNE, of Langwell, said he had the honour to report from the directors, that the arrangements for the show at Glasgow, on the 31st of July and 1st and 2d of August, were in a satisfactory state of advancement. As on former occasions, they had received the ready co-operation and liberal assistance of the Lord Provost and magistrates of Glasgow. The Green had been granted for a show-yard, and a subscription of 200*l.* from the corporation funds; and the Lord Provost and magistrates have taken an active part in the necessary arrangements. The subscriptions from counties embraced in the show are in progress, but the amount could not be estimated, as the lists in many parishes and districts have not yet been received. The directors have acted on the reliance that the subscriptions would justify the very large amount of premiums for which they had pledged the Society. He might notice the very effectual and liberal conduct of the county of Argyll in having raised 200*l.* in support of the show by voluntary assessment. A contract had been entered into for inclosing the show-yard with Messrs. Miller and Bannerman, who performed the work in 1844. The cost would, from the extended accommodation, considerably exceed that of 1844. The banquet, which was under the charge of the Glasgow Committee, had been contracted for. The dinner would be held in the City Hall; and the Duke of Roxburgh, the President of the Society, would preside; and it was hoped that the Duke of Argyll, convener of the local committee, would act as croupier. As on the last two occasions, there will only be one dinner. On the evening of the first day, Dr. Anderson would deliver a lecture on some popular subject connected with agricultural chemistry. It was yet too early to form an estimate of the show, as the entries would not be completed before the 20th; but they anticipated one of the largest exhibitions ever held; and the new feature of a sweepstakes for short-horn bulls had created great interest. It had closed with 25 subscribers, and the prize plate had been ordered. Several applications from local societies had been made for premiums, which the directors had felt compelled to refuse, more upon principle, and in accordance with the rules laid down for such shows, than the amount of the premiums. In order, however, to meet the views of west country breeders, a sweepstakes for Ayrshire bulls had been sanctioned.

Farmers' Clubs.

LONDON: *What is the best mode of securing a heavy crop of Swedes? What is the cost per acre? And what proportion of such cost is chargeable to the succeeding crops in rotation?*—Mr. C. LAWRENCE, of Cirencester, said,

The questions proposed for our evening's discussion embrace matter of such interest and importance to the farmer that we might well have devoted a separate evening to the consideration of each of them. With respect to the first, practice will necessarily vary as much as the soils on which we have to operate. The object in view is to elicit the details of that practice which has been found successful by the more experienced cultivators of various soils, for the instruction of those who have the same materials to work on. The answer to the second question must also, to some extent, depend on similar considerations. It is possible that all may arrive at the same point in resolving the third, however various the soils, and the course of their cultivation. The economy of the root or green crop has become a matter which presses much on the attention of the agriculturist, and demands very careful consideration. Those only who have bestowed most of this on all the details of the subject can correctly appreciate the difficulties which are yet in the way of sound conclusions. We can do little more than explain our own views and the practice we have adopted on a farm, the greater proportion of which consists of a fair depth of soil lying upon the ordinary rubble or stonebrash which overlies the oolite, and the remainder exhibits a greater depth of loam lying upon the Bradford clay. The surface soil is for the most part of an aluminous character, which adheres to the implements in moist weather, and is injured by the treading of animals in that state. The practice we have adopted has, in the course of one rotation, so greatly increased the facility of working, that we have been enabled to dispense with one team out of four. On preparing for any root crop, we cannot too strongly insist on deep tillage as the rule, rarely admitting of exception. This we commence as soon as the Wheat has been carried. We set the first plough as deep as the nature of the surface soil may admit, gradually increasing this depth; we have increased our depth from between 3 and 4 inches to from 6 or 7 for this plough. That is followed by Reid's plough (each plough drawn by a pair of horses), which stirs the subsoil from 5 to 6 inches. Each subsequent furrow slice is laid as roughly as may be on the preceding subsoiled furrow; the entire depth of 12 inches and upwards then receives the benefit of atmospheric influence for the next seven months, especially of frost, that most effective of all pulverisers. The bridle of the first plough is so extended on the off side as to admit of both horses walking on the land, for if the near horse be allowed to walk upon the subsoiled furrow much of the advantage would be lost. Minute subdivision of the soil is material for various reasons. It facilitates the early decomposition of its inorganic or mineral constituents, so beneficial in the first stage of growth of the embryo plant; the temperature of its bed is thereby increased; it also induces the formation of fibrous rather than of tap roots, and thereby a quicker absorption of food by these numerous mouths. The preceding Wheat crop having been thoroughly horse-hoed after the annual weeds had commenced vegetation in the spring, the stubbles are found to be perfectly clean. Under these circumstances, provided there has been frost during the winter, and on hauling over the land since it was ploughed, we find no spring ploughing necessary in ordinary seasons; and that after a few days' dry weather the land will work down with the cultivator and harrows to a fine tilth, in a fit state to be ridged up to receive the manure in the trenches. We have not found it necessary to plough a single field so treated this spring for the root crops of the present season. We would here advert to a common objection urged against deep tillage, which we submit has no foundation, viz., that you bring to the surface an infertile soil. A well-constructed subsoil plough merely loosens the earth through which it passes, and brings nothing to the surface, excepting large stones with which it may come in contact. The first plough, if set deeper than the land has been ploughed before, undoubtedly brings soil for the first time to the surface which, but for the previous subsoiling, it must be admitted would be comparatively ill adapted to the growth of plants, for want of the organic matter which accumulates in the surface soil, and of the inorganic constituents having been set free by the disintegration effected by atmospheric influences. But is it infertile? Excepting only in the cases of alluvial and diluvial deposits, the original composition of the surface and subsoil was identical; they contained the same mineral agents essential to the growth of plants. Furthermore, the immediate subsoil has been enriched by soluble salts, &c., washed down by rains from the manures spread from time to time on the surface, and it speedily becomes fertile from exposure by thorough tillage. If we double the quantity of available soil by deep tillage, the space between our plants may be considerably reduced, and the number may be consequently increased. In fact, by the process recommended we practically increase our acreage on a given area. We will now consider the subject of manure, and the mode of its application, a matter on which we feel as one walking in the dark over ground he has never seen in daylight. Practice has led us to put great faith in manure, the ordinary produce of our farms. Science has taught us that no manure combines so many essential elements of fertility, and has also pointed out to us ample reasons for making and preserving it with great care. We have recently had a sample of manure made in our boxes subjected to careful analysis by Professor Way. You will, perheps, be somewhat surprised to hear that though not one drop of water had ever come in contact with this, other than the urine of the animal, the manure contained 71 per cent. of water. Now, when it is considered that our farm-yard manure of the best description is commonly filled and carted to a heap, and is subsequently filled a second time and carted to its ultimate deposit on the land, containing this large proportion of valueless water; and that so far as bullock feeding goes, the root crop, containing about 90 per cent. of water, is filled and carted to the sheds, we cannot conceive this to be an economical system, and invite the attention of our brother farmers to a review of it. We have hitherto adopted mineral manures drilled in contact with the seed, having found this by experience the best security for an abundant plant, and for carrying it rapidly through the first stage of growth. We believe there is no cheaper or better agent for this purpose than that now in general use—superphosphate of lime in the shape of ground bones, first wetted and dissolved in about one-third their weight of sulphuric acid, diluted with an equal weight of water, to which three parts more of water may be subsequently added. In the latter stages of growth, when the formation of bulb commences, we have observed the plant to flourish more in manures of a different description, containing an abundance of organic, particularly carbonaceous matter, and in nothing better than in carefully preserved farm manure. We therefore apply from 15 to 25 tons of farm manure per acre, according to its quality, laid in the furrows, and then split the ridges over it, and we drill with the seed 4 bushels to the acre of the dissolved bones mixed with 20 bushels of turf ashes. In the case of Mangold Wurzel, we find dibbling insures the most regular plant. We have been pleased to find this practice identical with that recommended in the admirable essays and analyses contributed by Mr. Lawes and Dr. Gilbert to the Transactions of the Royal Agricultural Society, in which the specific action of these manures is clearly explained, and their advantages demonstrated by numerous experiments which appear to have been conducted with unusual care. The results from those experiments are, that the effect of dung is attributable mainly to the large supply of carbonaceous matter which it contains, so congenial to the development of bulb; and that the nitrogenous matter, essential to the growth of corn and all crops the seed of which is the object of cultivation, has very little influence on the production of bulb, the special object of the root crops; that the mineral manures may be most efficiently applied in contact with the seed, and that this is injurious in the case of organic manures, which should be so placed as not to come in contact with the embryo plant until it has developed its powers of feeding, and attained a state of vigour. The experiments of Mr. Lawes are usually interesting and instructive, from the fact of their having been conducted on land previously rendered nearly sterile as respected natural supply of food for the Turnip. This land had been cropped with Wheat, Beans, and Wheat, since it had been manured. It was then sown with Turnips four years successively, without any addition up to the commencement of the experiments recorded. The state to which it had been reduced is best explained by this table.

Seasons.	Produce of Bulb per acre.				Average weight of Bulb in lbs. and 10ths.
	Tons.	cwt.	qrs.	lbs.	
1843	4	3	3	2	0.52
1844	2	4	1	0	0.36
1845	0	13	2	24	0.11

In all these experiments a portion of the field was left unmanured, in order that the effects of the supply of various artificial stimulants should be in each case distinctly shown, as well relatively to each other as to the land unmanured. Those who feel sufficiently interested in this important subject to ascertain the relative effects of a great many specific applications are referred to the Tables in the 8th volume of the Journal of the Royal Agricultural Society. We will now only mention three selected results from those Tables in confirmation of the practice we have ventured to recommend, founded on our own observation:

	Bulb per acre.				Average weight of Bulbs in lbs. and 10ths.	Number of plants p. acre.
	Tns.	cwt.	qrs.	lbs.		
Unmanured	0	13	2	24	0.11	13,296
Mean by purely mineral manure	12	8	2	3	1.16	23,882
Farm-yard dung	17	0	3	6	1.61	23.731

All Mr. Lawes' experiments clearly show the superior efficacy of mineral manures in establishing plant, and of organic manures in carrying it forward, and promoting the formation of bulb. Before we leave the subject of manuring, we would suggest, as a matter for future consideration and discussion, whether, on a four-course shift, the usual practice of applying the manure to the root crop is at the most advantageous period. It must be borne in mind that ordinary manure, from well fed animals, made and preserved on the best principles, contains much nitrogenous matter as well as phosphates and carbonaceous matter; that the former is calculated to produce exuberant top rather than bulb, and is supposed to be the most important agent in the nutrition of the cereal crops, though it is generally deemed ineligible by the most scientific agriculturists to employ it immediately to those crops; and that after the cereal crop has appropriated from such manure its most essential food, the carbonaceous food most suited for the Turnip remains. Would not these considerations rather indicate the seeds as the crop in the rotation on which the manure might be applied with the best effect on the whole? Mr. Garrett having enabled us by his admirable implement to hoe from 8 to 10 acres a day with one horse, in the most effective manner, we strongly urge the frequent repetition of this process; and that though the land may be perfectly clean, for we believe it is impossible to overrate the value of the influence of this tillage in rendering the soil readily accessible to those influences which contribute so materially to the formation and extension of roots. After the final hoeing, if from wet weather or other causes the intervals between the ridges have become hard or close, we recommend a turn with a small implement having three tines slightly carried forwards, one in front and two behind, something after the fashion of the Ducie cultivator on a small scale, drawn by one horse, which stirs the soil 3 or 4 inches deep. This treatment produced a crop of Swedes in 1848, which weighed 24 tons per acre, on an impoverished field, which had never been previously ploughed more than 3 or 4 inches deep, nor had produced a crop of roots of half that weight. We now proceed to consider the cost of this crop. The elements of this will probably vary more or less in every instance, certainly in various soils and in different seasons. We have heard such a variety of opinions on this point, ranging from 4*l.* to 12*l.* per acre, that we can hardly hope to assign any specific cost which would meet with general concurrence; we will therefore merely state the actual cost according to our own practice and experience. This, amounting to 11*l.* per acre, is the charge in a favourable season, involving no additional ploughings or spring tillage.

Estimate of the Cost of the Root Crop per Acre.

	£	s.	d.
Rents, rates, tithes, and taxes	2	0	0
Interest on capital (12*l.* per acre)...	0	12	0
Ploughing and subsoiling two days, four horses, at 3*s.*	1	4	0
Two men two days, at 1*s.* 8*d.*	0	6	8
Twice harrowing in spring, and rolling...	0	4	0
20 tons of farm manure, and filling	4	0	0
Hauling out and spreading...	0	11	0
Four bushels of bones dissolved in acid...	0	16	6
Double bouting	0	4	0
Drilling and seed	0	6	0
Horsehoing, man and boy	0	1	0
Singling...	0	3	6
Horsehoeing, man and boy, twice	0	2	0
Hand-hoeing the ridges	0	2	6
Pulling, topping, and storing in clamps...	0	8	0
Sundries...	0	3	10
	£11	0	0

It was objected by a farmer to whom this statement had been submitted, and who estimated the expenses at about 7*l.* per acre, that the item for manure, excepting as respects the hauling, ought not to form an item of charge, unless the manure were actually purchased, assuming that every farm ought to produce its own manure. In these days, however, we presume farmers to keep accounts. If so, the cattle will be debited with their prime cost, with the food they consume, and the beds they lie on; when sold, that account will be credited with the sale price, and the value of the manure left behind to the debit of the root crop. Mr. Huxtable estimated this cost on a different principle, on which he states the cost at 5*l.* 12*s.* 4*d.* Assuming his mode of getting at the motive power per acre to be correct, we cannot agree with him in considering 1*l.* 12*s.* per acre for manual labour sufficient, neither can we think he is entitled to take credit for 20 tons of Swedes per acre on land rented at 20*s.*, at the cost of 20*s.* only for manure. We now arrive at the last point in the inquiry, and that which involves by much the greatest difficulty, viz., what portion of the large cost of the root crop is chargeable to the other crops in the rotation? This question has arisen in consequence of the very general conviction that the root crop is not self-remunerative, but forms an essential basis for the other crops in the rotation, and which ought therefore to be charged with some portion of the cost. It is an axiom in Norfolk that a ton of Swedes will make a stone of beef. Assuming a crop of 20 tons to the acre, and 6*d.* per lb. for beef, this would only give 4*l.* per acre. We have seen some experiments recorded on feeding sheep which seem to prove that we cannot, on Swedes alone, get more than 3*s.* worth of mutton from a ton of roots. This upon our assumed produce would not return a third of the cost. Authorities may be adduced, founded on carefully conducted experiments too, for any feeding value of the root crop from nothing to 10*s.* per ton and upwards. Excluding from our consideration instances in some parts of Scotland, where the value of the Swede crop is clearly ascertained by letting the crop for feed to Highland flockmasters, and those cases in which roots are grown for the supply of London and other large towns, after examining a great number of experiments and calculations, we are inclined to think, under favourable circumstances, the feeding value of a good crop of roots may be put at 5*s.* a ton, or 5*l.* an acre. What is the value of the manure left on the farm for the succeeding crops by the consumption of the roots alone (for we are not entitled to take into account for our present purpose the excreta, liquid and solid, of the hay, straw, and other feeding stuffs consumed by the animals, nor the straw with which they have been littered)? The analyses, which have been published of the Swede, and especially the papers of Mr. Lawes, supply us with the data for an approximate estimate. We all know that nitrogen is a very important agent to the full development of the cereal crops which follow in the course, however little we as yet know of its specific operation. It is a very curious fact, clearly demonstrated by the experiments of Mr. Lawes, that increase in the weight of animals bears a direct relation to the quantity of nitrogen consumed in the food up to a certain point, beyond which the proportional effect is lessened. In one experiment a pen of sheep swallowed food which contained 246 lbs. of nitrogen, of which 16¾ lbs. only were carried off in the carcass; while in another case, in which 96 lbs. of nitrogen were swallowed, 15¼ lbs. were carried off. In the former case there was an unusual consumption of highly nitrogenous food—oilcake, linseed, Barley, malt, and Clover. Assuming that all the analyses were correctly performed, it would seem a legitimate inference, that a very large proportion of nitrogen consumed in each case was left in the manure, capable of giving out ammonia in some shape for future fertilisation. From analysis it appears that 20 tons of the bulbs of Swedes contain about 80 lbs. of nitrogen. We may take tops at 5 tons, which would contain about 50 lbs. of these 130 lbs. of nitrogen it has been shown by Mr. Lawes that under ordinary circumstances about one-fifth is carried off by animals fed, leaving four-fifths in the manure, or 104 lbs. of nitrogen, equivalent to something more than 124 lbs. of ammonia. The money value of this, at the usual estimate of 6*d.* per lb., would be 3*l.* 2*s.*, which, if added to our estimate of 5*l.* per acre as the feeding value of the Swede crop, would give a return in money value somewhat under the cost of the crop. We wish it to be clearly understood we give this as the market value of the article, for the present state of knowledge does not justify us in assigning to nitrogen a specific agricultural value. We may, however, confidently state that, in addition to the nitrogen left in the land, the root crop also leaves potash, soda, lime, magnesia, phosphoric and sulphuric acids, and chlorine, with other elements of fertility; and furthermore, that the tillages charged against this crop have a very material influence on the produce of the succeeding crops. We think, therefore, after a careful consideration of the whole subject, we may safely conclude that on well drained land, thoroughly tilled and skilfully manured, the root crop, judiciously consumed, is remunerative, if we stop there and receive from our successor the fair value of the manure arising from its consumption and of the tillages, the benefit of which extends beyond that crop. We submit, therefore, that in the case of the four-field shift the excess of cost beyond the actual return from the animals fed is chargeable in equal parts on the three succeeding crops, none of which upon this system receive any further manuring. Though the remunerative price of Wheat and beef is not the subject for our discussion this evening, some of the calculations of Mr. Huxtable have so much bearing on it, and they have been so generally read and received by the owners of land (the pamphlet having gone through some seven or eight editions within a short period), that a few observations on it may not be deemed irrelevant. Mr. Huxtable has founded—chiefly on the experiments of Mr. Lawes—arithmetical conclusions, which, if demonstrated, would not only resolve the questions under our consideration, but many others which are now perplexing both landlords and tenants. The chemist only undertakes to inform us that certain food contains a given quantity of nitrogen convertible into a fixed quantity of ammonia; but Mr. Huxtable undertakes to give us in figures, the exact quantity of ammonia which will produce a bushel of Wheat or a pound of beef. He appears to have established to his own satisfaction on those data, by simple arithmetic, that Wheat can be grown profitably at 40*s.* a quarter, and beef at 5*d.* per lb. Far be it from us to undervalue the most important aid of science to our pursuit; neither would we in any degree discourage the more ardent spirits (of whom Mr. Huxtable may be considered the type), the pioneers of agriculture, whose onward course indicates to those behind) the bogs and quicksands to be avoided, as well as the ground which may be safely ventured on; but to Mr. Huxtable's position we must say, "Not proven." We know that ammonia is an important agent in vegetation, but we do not as yet know with any certainty from what source plants immediately derive it, nor in what manner it is assimilated by them. Liebig, who would be generally admitted an authority on such a subject, characterises this very course which has been adopted by Mr. Huxtable, in estimating the value of a manure according to the amount of its nitrogen, as quite fallacious; and he adds, that its value does not stand in proportion to its nitrogen. We may safely rely on the laboratory of the chemist for the elements of any compound, and their relative proportions, and we may obtain from his analysis many highly useful indications; but our operations are conducted in the laboratory of nature, whose *modus operandi* is extremely obscure, and often baffles our most elaborate contrivances.—The discussion terminated with the unanimous adoption of the following resolution:—"That the best mode of securing a heavy crop of Swedes is by the use of a fair proportion of farm-yard manure, with the addition of a dressing of some accredited artificial manures, and that the cost per acre will necessarily vary according to circumstances. That as regards the proportion of the expense chargeable to the succeeding crops in rotation, there has not been sufficient information afforded to warrant a positive conclusion, but that it may be estimated at from one-third to one-half."

NEWCASTLE, *Nov.* 3.—Mr. WILLIAM GLOVER, the exemplary Secretary (who always either procures a member to supply a paper, or fills up the gap by writing one himself), read a paper "*On the Cultivation of Strong Clay Soils,*" as follows:

Without attempting minutely to define the strong clay soils, I shall perhaps best describe them as being those on which, as yet, Turnip growing is the exception to the rule. It cannot but seem strange to us all, that whilst Turnip farming has arrived at a perfection of which we may justly be proud, the system of farming on strong clays has scarcely undergone the slightest change since the introduction of Clover 70 or 80 years ago. On strong clays we follow as yet the practice of our grandfathers, nor has the learning of the nineteenth century as yet even suggested an improvement. I shall begin first with the fallow. The foundation of all improvements on such soils is a judicious and thorough system of draining. Without this all other efforts are in vain. But as this subject has already been ably introduced to you, and has also to be brought before you as a prize essay, it is unnecessary for me to say more than that it is absolutely requisite that such soils should be well drained. When this is not done, in addition to the weeds which usually accumulate, there is a constant growth of what is commonly called "water Grass," which naturally increases the labour and expense of a fallow. If the land be not drained, I cannot too strongly urge upon the tenant the necessity of keeping all his ditches clean. They should be attended to the year before the field comes in course for fallow. As a manure, none has yet been found equal to the common farm-yard dung, which is the "mother of money;" but I have seen guano, or prepared bones, where sufficient manure cannot be obtained, applied with good results; and such are much preferable to the thousands of loads of lime which are wasted (though to a much less extent than formerly), by being applied as a fallow dressing upon strong inferior clays. If you have in any corner of your farm an old hedge, covering from five to ten yards of ground in width, I would suggest that it should be burnt, and applied to your fallows—along with perhaps, a smaller quantity of farm-yard manure than usual, or a hundredweight or two per acre of some prepared or other artificial manure. When speaking of these manures, I may remark that for strong clay soils, though invaluable for green crops, they are, I am afraid, not to be depended on for good Wheat crops, or following crops, unless applied along with burnt clay, or, what is still better, a portion of farm-yard manure. I would suggest their application to the use of those farmers who may be at so great a distance from a market town as not to be able to procure any other manure than is made on their farms. It is to farmers in such situations that my observations are most applicable. In all old-going fields, the low headlands often get very high. These I would suggest should be burnt when in the lea furrow. The burning must not be carried on too far, or the clay comes out of the heap like a brick, and, is, consequently, useless. It is difficult, and perhaps impossible, for me to describe this process, but plenty of men can be found who are accustomed to the work, and will do it well for about 10*d.* per yard, the farmer providing them with a few loads of coals to begin the fires, and a few cuttings of hedges to continue them. If any of you should be so fortunate as to have a peat bog in any corner of your farms, it may also be rendered a most valuable addition to your farm, by slightly charring, not burning, like the clay, this substance, which, with the addition of best Peruvian guano, or a good prepared manure, comes neared to farm-yard dung than anything I know. As to Fallow Crops upon strong clays, such as Turnips, &c., I feel convinced that, as far as our present knowledge leads us, they must still be exceptions to the rule. But unquestionably there is a considerable portion of undrained land in this district which is bare-fallowed every fourth year, mucked with 8 or 10 loads of rubbish led from Newcastle streets, and producing 12 or 16 bushels of Wheat per acre, which, if drained, would produce a great change in the character of such soils; but they would undoubtedly require to be high farmed, which can only be done by keeping more stock, and instead of the everlasting corn crops, green crops must be produced, which is a great desideratum in high farming. The cleanest and best fallow, the driest and kindliest field must be selected. The green crops must be stored for consumption at home. They must be economically used, and given with cake or Warnes's Linseed compound, or whatever you can get cheapest, which involves a double profit, for you thus depend, not solely on your corn, but also upon your cattle; and, again, your manure is richer in its fertilising properties, which will enable you to grow more corn, thereby producing more straw, which increases the manure heap, and so augments the breadth of green crops. In speaking of green crops, I do not mean only Turnips, but Italian Rye-grass, Clover, Rye, Mangold Wurzel, Kohl Rabi, &c. However, we have to do with land in its present condition; and I perfectly agree with a gentleman whom I have the pleasure of knowing, and who is undoubtedly one of the best farmers in this district, who, in speaking of our inferior clay soils, says:—"Much has been said upon the folly of allowing one-fourth of the land to lie fallow every year, and I even question if on soils of the best description, where Turnips cannot be eaten on with sheep, that the growth of that root can be persisted in year after year, when the field comes in course for fallow, without a great depreciation of the land. But upon inferior soils the growth of Turnips must be still rarer, or the farmer will most assuredly suffer in his following crops." The Potato is a much less objectionable fallow crop for such lands as we are now speaking of, and I have often seen a better crop of Wheat after it than upon a bare fallow. I am at a loss to understand why this should be the case, as chemical analysis shows us that both the Potato and Turnip remove about the same quantity of inorganic matter from the soil. Beans, Peas, Tares, and such-like have been recommended as fallow crops for strong undrained clays; but I cannot concur in such recommendation, for when I have seen them tried to any extent, they proved, I consider, injurious to the land. Their place on such soils is further on in the rotation. I need not, to a body of practical farmers, tell you that the fallow must be well cleaned; the working with any pinching or niggardliness being here, as in every other case, the worst economy. In some parts of the south of England it is usual to allow the land to lie two winters in fallow, and sow Barley in the spring, Wheat being grown in the Clover lea, which seems to answer very well there; but I have seen on a clay farm of a friend of mine, who adopted this plan, some very indifferent crops. He persisted for some time, but he has now abandoned the system; and I feel convinced that Wheat will rarely do well after Clover in this district, particularly in such soils as we are now discussing. This brings me to the second step in the farming operations of strong clays—the Wheat crop. Notwithstanding that there has lately been a great deal of discussion as to the rotation of soils, I very much question whether there is any better system than—1st, fallow; 2d, Wheat; 3d, Clover; 4th, Oats; or, 1st, fallow; 2d, Wheat; 3d, Clover; 4th, pasture; 5th, Oats; 6th, fallow; 7th, Wheat; 8th, Beans; 9th, fallow, and 10th, Wheat. Indeed, the great difficulty with strong undrained clay is, that we cannot vary our system; the land is not what is called "convertible." The variety of seed which I have observed to succeed best in this district, is the "Old Creeping Wheat;" next comes the "Spalding Prolific." The fine varieties, which have lately been so prominently brought forward, have, in the majority of instances, been, as far as my own observation shows, the source of disappointment upon the soils we are considering. As to quantity of seed to be sown, a great deal of discussion has lately arisen respecting the awful waste perpetrated by the farmer in sowing as much as two bushels, the quantity we were in the habit of sowing broadcast. Wherever I have seen a less quantity sown, in this district, the crop has always suffered (although, by the bye, half a bushel may be saved by drilling). It is true that the Wheat stools out, and appears to do its utmost to occupy the land; but the consequence is, that the crop is very much later in being ripe, which you will agree with me is a matter of importance in this part of the country. Should the quantity of seed be still smaller, the crops suffer in quantity; and as for half a bushel, or even a bushel, no one will try it a second time upon the soil now under discussion. When, by any chance, a crop of Turnips has been grown, Barley generally succeeds better than Wheat; and I must not forget to remark that the Turnips must be pulled off early, and the land ploughed, so as to lie some time before sowing the Barley. It has been recommended to manure the land, before sowing Wheat or Barley (after Turnips), upon strong clay. When this can be done, of course it is a very great advantage; but I have seen when it was a difficulty to get the Turnips off the land, to say nothing about getting manure on. Mr. Robson's mode of ploughing-in the Turnip-tops I think a good one, and would advise you to adopt his plan, for they are almost valueless as food for cattle, but are useful as a manure. The harvesting and securing the Wheat crop scarcely comes within the scope of this discussion. I may, however, remark, that if cut before being quite ripe, the sample is brighter, and in fact much improved; though this must not be carried too far, or the yield suffers. The third step in the rotation we have mentioned is the Clover crop; and of all others this is the most unmanageable. The discussion we recently had on the "Failure of Red Clover," though perhaps eliciting some new suggestions, has not furnished us with any solution of the difficulty. Many farmers in this neighbourhood sow 5 lbs. of broad, 1 lb. of hop, and 1 lb. of white Clover, with half a bushel of Rye-grass, per acre. Others sow Pacey's Perennial Rye-grass, instead of the Rye-grass above mentioned. The advantage of this is, that Pacey's is generally thoroughly clean from the seeds of weeds. It is more expensive than the annual Rye-grass, and the yield of hay is also less. With regard to the Italian Rye-grass, I question if it is at all suitable to our cold clays. I would recommend you to try Cow-grass, a species of perennial Clover, when the land is tired of common Clover. The Cow-grass does not yield so much hay as a good crop of Clover, nor does it give a second crop; but as it grows where common Clover does not, it is on this account extremely valuable. In purchasing Cow-grass, or indeed any seed, none should be purchased but of seedsmen of established character, as it exactly resembles over-year's Clover, which is consequently easily sold at four times its value, to say nothing of the disappointment. I would here just wish to impress upon you to purchase good Grass seeds, whether it be merely for one year's Grass or permanent pasture. A few days ago, when walking over a farm, I heard the tenant express regret at the failure of the Grass which he had sown down for permanent pasture. On viewing the same, I found it had been sown away with very indifferent seeds. On inquiring what Grasses had been sown, I could get no information on this point, but was told, "They cost a sight of money." I asked how much per acre. The answer was, "16*s.*" Now we know it is impossible for any seedsman to sell a mixture of good seeds for permanent Grass for any such sum; and if we will not give a remunerating price, can we wonder at the rubbish that is put into our hands? can we feel surprised at the many failures in laying land down to permanent pasture that are constantly coming to our knowledge? The only way that we are sure of obtaining good seeds is to send a list of such kinds as our experience shows us are suitable for our lands, to such firms as are known to be practical seedsmen and men of established character, upon whom we can place reliance. To proceed with the subject:—With regard to the failure of Clover, I am unable to assign any reason for the misforture—I can perhaps suggest something in palliation. In the first place, the land must be kept in good heart; in the next place, the land should (when drained) be ploughed very deep after the Oat crop; in the third place, Beans, or some other pulse crop, should be grown after Wheat, once in eight years, or at least once in twelve, so as to prevent the Clover crop from recurring so frequently. I am at a loss to account for the beneficial effect of the intervention of the Bean crop, but it is nevertheless true that the interval thus given to the recurrence of the Clover crop is the best preventive of its failure. Upon the poorer classes of undrained strong clay soil, Beans cannot be profitably cultivated, but the Scotch Grey Pea may be grown. It is somewhat singular that this change is not near so effectual in preventing the failure of the broad Clover as Beans. The mottled or partridge Pea does not suit strong clay soils so well as the Scotch Grey Pea, the former being apt to run too much to straw. I would suggest, when possible, that manure should be applied for the Clover crop, as it is no doubt better farming to apply manure in small quantities and often than in large quantities at once. I also think the Clover crop is the part of the rotation of strong clays on which to apply artificial manures. Nitrate of soda, which at one time was highly spoken of, gives a rapid growth, but I believe no increase in the weight of the crop. Guano I have never seen tried; but what we want is some special and judiciously prepared artificial manure for Clover. I now come to the Oat crop, which can be very briefly disposed of; for all that is required is to plough, sow, harrow, and reap; but I should like to see some manure applied also to this crop, for I have already said, and wish to impress upon you, that it is undoubtedly better policy to apply the manure often than all at once. In working the strong clays I think that the implements we have in use in this district are very inefficient, consisting of three:—viz., the plough, the harrow, and the smooth roller. Now I should like to see in the possession of every farmer a Crosskill's roller, which is an invaluable implement, and will pulverise and make fine in a day what would otherwise perhaps take a month. I should also like to see a Ducie's drag, which is admirably adapted for stirring the fallow; it is an implement the utility of which it is very difficult to overrate; it only requires to be seen at work, to be at once convinced of its practical worth. Mr. Robson (who, by the bye, possesses the most complete set of implements of any farmer in this district), has had one in use for some time, and will, I have no doubt, be glad to show it to you in operation. There are several other very useful implements, which only require to be seen at work to convince you of their utility; and we should all endeavour to economise time, which is capital. Every hour in the day we are expending money, paying rent and taxes, interest of capital, wear and tear; therefore we should strive to do all our work with ease and dispatch; and good implements can assist us materially in our labours; and I trust that there are better times in store for the strong clay farmers.—Mr. BROWN observed, as to the difficulty which Mr. Glover felt to account for Wheat being a better crop after Potatoes than a bare fallow, the cause was this—that you applied twice the quantity of manure in the first instance. As to 5 lbs. or 6 lbs. of Clover per acre for laying down land to permanent pasture, he did not consider that quantity to be half sufficient; besides the omission of many other seeds which were most essential for the purpose. He was quite sure that were they to sow a peck of red and white Clover-seed with a full quantity of Rye-grass, it would amply repay them for the extra outlay, if but for one year. It would, for instance, enable the land to carry an extra quantity of stock—say one or two sheep extra per acre—which would more than pay for the additional quantity of seed; and the

land must also be benefited in proportion to the number of stock it carried. With respect to Crosskill's roller, Mr. Brown thought it a good implement under some circumstances—when the land was ploughed out of season: the best way was to prepare it early in the autumn, and one ploughing in the spring, before sowing the Turnips would be sufficient: any clods raised then would be pulverised by the frost. He was no great advocate for rolling.—The CHAIRMAN said, it would be well if some improvements could be suggested, and carried out, in the cultivation of strong clays. There was no land in this district which stood so much in need of improvement. It was, indeed, the only kind of soil that stood still. He found it, himself, the most difficult to manage. It would not pay to cultivate it at the present price of Wheat: there was no rent in it. The better way would perhaps be not to plough it, but let it lie in Grass, until Wheat got to 50*s.* or 52*s.*, and then fallow it out. He could not agree with Mr. Brown that it was owing to the manure that Wheat was of better quality and more abundant after Potatoes. Then with regard to what Mr. Glover had said of seeds, he thought 16*s.* an acre was a good round sum of money for laying the land away to Grass, supposing it to be a free soil. (Mr. G.: No! inferior clay.) Well! that would make some difference.—Mr. BROWN was so far from thinking 16*s.* an acre an exorbitant sum, that he thought it much too little, and would refer the Chairman, first, to Mr. Thornhill's treatise on seeds. Then go to a merchant, and ascertain the price of suitable seeds, and it would be found that the land could not be laid down to permanent Grass, as it should be, for less than 36*s.* or 40*s.* an acre. You must have six or seven sorts, some of them expensive ones, or you would never get a close bottom.—The Chairman said he spoke of free soils, but Mr. Glover checked him, saying he meant clays.—Mr. BROWN could not make any great distinction. The growth might be more free on the one soil than on the other, but to obtain a good permanent Grass you must in either case go to much about the same expense. To get a suitable quantity of Cocksfoot and Crested Dogstail alone would take at least 16*s.* an acre. Turn to Thornhill's specimens of Grass seeds, and if you selected but a few of the best, you would find that 16*s.* an acre was nothing like a sufficient sum for permanent Grass. Some farmers recommend letting the first crop, after being laid to permanent pasture, stand without feeding any kind of stock upon it until it was quite ripe, and then allowing it to shake, as they said, for seeding the ground. He considered this a bad plan. A sufficient quantity of seed should be sown at the first. Nothing, he must say, so much impoverished a soil as letting the plant, whatever it was, run to seed. You might grow corn or Oats for ever, if you did not allow the plant to seed. He never allowed his Grass to go to seed — a hint which he got from the late Mr. Thomas Bates. He would, before sitting down, move a vote of thanks to the Secretary for his paper. Mr. Glover was the life and soul of the Club, and deserved the gratitude of its members. (Applause.)—Mr. ROBERT ORMSTON seconded the motion, and it was carried by acclamation.

Farm Memoranda.

SALTHROP FARM, NEAR SWINDON.—Unlike some professional breeders, Mr. Stratton is a good farmer as well as breeder. His farm, which consists of 900 acres of excellent land, lies partly on the secondary range of hills which succeed the high chalk hills of the North Wiltshire downs, and partly in the vale. The upper land, about 400 acres, is all arable, and consists of a strong marl, which, when well managed, is most productive. The house and homestead are on the hill, and the multitude and size of the Wheat stacks which fill the rick-yard tell both of the fertility of the land and the well-doing of the occupier. Here there is one large yard and several smaller ones occupied by breeding heifers, each of which has a pen to herself, one-half covered over. The greater part of the herd, however, is in the vale, where Mr. Stratton holds 500 acres of Grass land. This part of the farm is managed as a dairy farm with the strictest regard to profit; the breeding department is made not exactly subservient to, but entirely consistent with, the profitableness of the dairy. Its management, which I will proceed to detail, is worthy of imitation by dairy farmers. It should be remarked that so good a system could not be followed out where the farmer has no arable land. The whole of the surplus straw grown on the hill beyond what is used for the stock at the homestead is brought down into the vale and used as litter; and the large quantity of manure thus made is all applied to the Grass land. The fertility of the arable land is well kept up by feeding off roots and green crops with fatting sheep bought for the purpose, as Mr. Stratton does not keep a breeding flock. He divides his herd into an ordinary herd and a selected one. The former is kept at the dairy, and consists at present of 34 cows, which are kept in a yard divided into four or five compartments, each division having a shed for shelter. The yard is enclosed all round, and all the liquid manure is preserved. Above the hill there are some 12 or 14 heifers, which belong to the ordinary herd, which therefore contains altogether about 50 cows. Attached to this yard there are several warm and roomy sheds with outlets for calves, as Mr. Stratton rears all his calves, making steers of such of them as he does not consider good enough to keep for bulls. The selected herd is kept in a separate yard half a mile from the dairy, and consists of about 40 cows and heifers, with calves. Here are all the select calves, the young bulls, and the feeding beasts; and each animal has a separate pen half covered, and a spring of beautifully clear water is carried through every pen, so that each has a constant supply of fresh water. The principal yard has the sheds round three sides, being open towards the south, and there it is protected by a high Thorn hedge, kept high but well pruned, for the express purpose of affording shelter to this yard. Though the accommodation here afforded is very complete, there is nothing very expensive, and even without the landlord's assistance such a yard might be made on most dairy farms with a little management and at a moderate expense by the tenants. The select herd also contribute to the dairy, and the large and well-filled cheese room gives evidence that the herd does its duty. The select herd is composed of first-rate stock, all bred by Mr. Stratton; and their size, shape, touch, coats, and milking qualities, all show accuracy of judgment. Mr. Stratton never keeps a cow unless she is a good milker; and he has also attained all the shape and feeding qualities to which many breeders sacrifice milk-giving power. This is unwise, and is quite unnecessary. The position Mr. Stratton has attained as a breeder, the number of prizes he wins every year sufficiently proves; and he has done all this in the comparatively short period of 12 years. But what to my mind is still more important, he has done it at comparatively little expense, and by means which are within the reach of most dairy farmers. I mean, of course, that observation to be subject to the condition that equal judgment and perseverance with that displayed by Mr. Stratton be exercised. Now, Mr. Stratton has never bought expensive cows. He has kept up his ordinary herd by the purchase of the best heifers he can meet with at the different fairs, but he has always been most careful in the selection of his bulls, and in purchasing them he does not spare his purse. His plan, when he wants a bull, is to spend a month or six weeks in looking over the herds of the different breeders, and selecting an animal likely to suit his purpose. Mr. Stratton is not so particular in buying a bull of great beauty and symmetry, as he is in regarding the character and purity of its blood, and he especially requires that its sire and dam shall be good animals. He is at present using a splendid beast called the Red Duke and a white bull purchased from Earl Ducie. From his ordinary herd thus managed he obtains every year a considerable number of heifer calves, which are taken into the selected herd, and if they turn out to be good milkers, and prove by the calves they produce that they are worthy of the promotion, they are there continued. There is one fine roan cow, now 10 years old, from which many of the best herd are descended, and a two-year-old roan heifer, of which she is the dam, is certainly one of the most perfect animals I ever saw. Her last calf, a roan bull, now about two months old, promises to be something extraordinary. In short, Mr. Stratton's herd deserves to be resorted to by breeders, as, indeed, it largely is; while the smallest dairy farmer may apply to a considerable extent to his own farm the general economy of Mr. Stratton's management. His neighbours are very generally availing themselves of the means his herd affords for improving their stock; and, in fact, the value of well-bred short-horns in the dairy is now very generally admitted in this district. Mr. Stratton's efforts are seconded, as they deserve to be, by his landlord, Mr. Parkinson, of Lincoln's-inn, who is the active trustee and ostensible owner of the property; which, with other considerable farms adjoining, has, within the last few years, been purchased by, or rather on behalf of some unknown person. The tenants have not the slightest notion who is their landlord. If, however, they are all dealt with as Mr. Parkinson deals with Mr. Stratton, they need not be very curious to inquire further for a landlord. He is about to build on Mr. Stratton's farm extensive additional accommodation for his stock, and to drain yearly 250 acres of his farm. This is as it should be. Mr. Stratton has just taken an additional farm at Broad Hinton, from Mr. Parkinson, on which 1000*l.* is at once to be laid out by the landlord. The farm, which years ago I knew very well, is a large and good one, extending to 11,000 acres. Its situation is precisely similar to Salthrop Farm, being about two miles to the west on the same range of hills, and consists of very similar proportions of arable land above the hill, and Grass land in the vale. That his enterprise will be as successful on this farm as at Salthrop I have no doubt, for Mr. Stratton is one of those men who command success, and he has a landlord able and willing to bear his own share of the adventure. In what a different position would English farmers be placed, if landlords, generally did so! how different would be the state of English agriculture! I have been led into giving full details of Mr. Stratton's management of his dairy land, because it is so truly practical and adapted to the means and position of tenant farmers; and the dairy farmers, as a class, have not taken farms beyond their available capitals in anything like the same proportion as the arable land farmers have done. Consequently, if seconded by their landlords, they would be in better condition than many grain farmers, who can only thrive by giving up part of their land or going into smaller farms. But efficient improvement of dairy farms will require considerable outlay by the landlords, as they are required to be drained throughout, and to have proper yards and buildings erected for accommodating their stock. And dairy farm tenants could well afford to pay interest on such outlay, in addition to their present rents; for when the land has been drained, and proper buildings supplied, from one-fifth to one-third more stock might be kept. This is on the assumption that the land is all to remain in pasture as at present, though in most cases the inferior and second-rate pastures should be broken up. This, however, would scarcely be acceptable to many of the present race of dairy farmers. *A Midland Counties Farmer, in the Daily News.*

Miscellaneous.

Exhausted Land and Green Manure.—Now that so many small estates are thrown on hand, mostly in a very exhausted condition, it is desirable to landlords to restore their fertility at the least cost of culture. Farming, in the regular course, will be a losing concern to those not practically acquainted with it; and covering the land with green crops to feed down, requires an outlay, for live stock as well as culture, more than inconvenient to many whose chief income has been their land rental; and with little prospect of an adequate return. Thus some thousands of acres are said to be left, especially in Ireland, without a plough or a hoof. But this outlay may be considerably reduced, and the land equally improved (leaving of course out of the question the precarious return), by fallowing with green manure, to plough down two or three successive crops during the season. A mere list of cheap quick growing plants suited for this purpose would not much avail; but it would be very useful if such of your correspondents who have tried them, would inform us which they have found answer best for restoring impoverished soils. Belgian practice gives Spurry the preference; ploughing down two or three crops one upon another at 10 or 12 weeks' interval. In this country, white Mustard has been found to throw up a rich produce in less than 10 weeks; and appears to have expelled the wireworm. The roots of Rape and Clover have been found very effective. White Lupin seed was imported two years since for this purpose; but I have seen no accounts of its efficacy. In Italy it has been employed for centuries, with the most unequivocal benefit; but the climate may make great difference. Until more satisfactory practical information appears, I will venture to recommend the trial of white Mustard * against Spurry, acre for acre; not only for the apparent quantities thrown up, but for their effect on the quality of the soil. And in addition, a third plot of the two mixed; a method which is found in many other cases to increase the produce and improve the condition of both crops. In this way, much land which the owners cannot conveniently farm or stock, may be brought into condition, in moderate time, and at comparatively small expense. Can you say where Spurry seed may be obtained of good quality, at what price, and how much is sown per acre for green manuring in Belgium? *J. Prideaux, in Plymouth Herald.*

Notices to Correspondents.

PHEASANTS: *R Bosworth* asks for some plan to prevent pheasants eating their own eggs. He has a gold pheasant which lays regularly every other day, and devours the egg as soon as it is dropped. She used to lay from 5 to 6 o'clock in the afternoon, but since he has watched her closely, lays early in the morning. She appears to lay eggs for the express purpose of eating them. [Remove them as soon as laid. Try her with a hard-boiled egg just out of the pot; she may scald her throat and give up the practice for the future.]

WEEDS: *W W R.* No dressing will kill Knapweed that will not kill Grass. Spread them out, or pull them up, when the ground, being moist, the roots will come.

WARTS ON THE UDDER: *W D C.* The only plan is to wait till the cow is dry, and then remove them with the knife. *W. C. S.*

Markets.

COVENT GARDEN, JUNE 22.

Vegetables are abundantly supplied. Strawberries and Hothouse Grapes are both plentiful, and the same may be said of Pine-apples. The supply of Peaches and Nectarines has greatly increased, and they are large and fine. Walnuts and Chestnuts are abundant; Oranges and Lemons sufficient for the demand. Young Carrots and Turnips may be had at from 6d. to 9d. a bunch. Frame Potatoes fetch from 4d. to 6d. per lb. Lettuces and other salading are sufficient for the demand, and so are Mushrooms. French Beans, Asparagus, and Rhubarb are plentiful. Cut Flowers consist of Heaths, Pelargoniums, Cinerarias, Lily of the Valley, Pinks, Carnations, Rhododendrons, Ranunculuses, and Roses.

FRUITS.

Pine-apples, per lb., 6s to 10s	Lemons, per doz., 1s to 2s
Grapes, hothouse, p. lb., 4s to 8s	Oranges, per doz., 9d to 1s 6d
— Portugal, p. lb., 9d to 1s	— per 100, 5s to 12s
Peaches, per doz., 6s to 18s	Almonds, per peck, 6s
Nectarines, per doz., 6s to 18s	— sweet, per lb., 2s to 3s
Strawberries, p. punn., 6s to 1s 6d	Walnuts, p. 100, 1s 6d to 2s
Cherries, per lb., 2s to 6s	— p. bush., 16s to 24s
Melons, each, 5s to 8s	Nuts, Barcelona, per bush., 20s to 22s
Gooseberries, green, per half sieve, 2s to 3s	— Brazil, p. bsh., 12s to 16s
Apples, kitchen, p. bsh., 4s to 6s	Kent Cobs, 90s to 100s p. 100 lbs

VEGETABLES.

French Beans, p. 100, 1s 6d to 2s 6d	Onions, p. bunch, 2d to 7d
Asparagus, p. bund., 9d to 4s	— Spanish, p. doz., 1s 6d to 4s
Rhubarb, p. bundle, 2d to 4d	Shallots, per lb., 8d to 1s
Cabbages, per doz., 6d to 1s	Garlic, per lb., 4d to 8d
Cauliflowers, p. doz., 2s to 4s	Artichokes, per doz., 3s to 5s
Peas, per sieve, 2s 6d to 4s	Lettuce, Cab., p. sc., 2d to 1s
Greens, per doz., 1s to 1s 6d	— Cos, per score, 6d to 1s
Sorrel, p. bf. sieve, 6d to 9d	Radishes, p. 12 hands, 9d to 1s
Potatoes, per ton, 100s to 200s	Small Salads, p. punn, 2d to 3d
— per cwt., 10s to 12s	Mushrooms, p. pot., 9d to 1s 6d
— per bush., 4s to 6s	Fennel, per bunch, 2d to 3d
— frame, p. lb., 4d to 6d	Savory, per bunch, 2d to 3d
Turnips, per doz. bun., 3s to 6s	Thyme, per bunch, 2d to 3d
Red Beet, per doz., 1s to 2s	Parsley, p. doz. bun., 1s to 2s
Cucumbers, each, 6d to 1s	— Roots, p. bdle., 9d to 1s
Leeks, per bunch, 3d to 4d	Marjoram, per bunch, 3d to 9d
Celery, p. bundle, 1s 6d to 2s	Mint, green, per bunch, 2d
Carrots, per bun., 6d to 10d	Watercress, p. 12 bunch., 6d to 9d
Spinach p. sieve, 1s 6d to 2s	Horse Radish, p. bdl., 1s to 4s

POTATOES.—SOUTHWARK, June 17.

The Committee report that the supply of English Potatoes is finished for this season, but the arrivals from the Continent are so large and trade so heavy, that it has caused less prices to be submitted to. The following are this day's quotations:—York Regents, 60s. to 100s. per ton; Scotch cups, 70s. to 75s.; ditto whites, 50s. to 60s.; Rhenish do., 70s. to 80s.; Belgian do., 50s. to 60s.

HAY.—Per Load of 36 Trusses.

SMITHFIELD, June 20.

Prime Meadow Hay	70s	to	74s	Clover	68s to 84s
Inferior ditto	55		65	New Clover	— —
Rowen	54		60	Straw	24 28
New Hay	—		—		J. COOPER.

Very little doing.

CUMBERLAND MARKET, June 20.

Prime Meadow Hay	70s	to	75s	Inferior	65s to 72s
Inferior ditto	50		65	New Clover	— —
New Hay	50		60	Straw	26 28
Old Clover	78		84		JOSHUA BAKER.

HOPS.—FRIDAY, June 21.

Messrs. PATTENDEN and SMITH report that the accounts from the plantations state that the bine continues to progress rapidly, but that the fly continues about the same. Duty, 165,000*l.* Market about the same.

* Not black Mustard, which is troublesome to get out of the land. The white is easily eradicated.

SMITHFIELD, Monday, June 17.

The supply of Beasts is larger, consequently trade is slow, and prices on the average are lower. The number of Sheep has also increased; trade is more cheerful than on Friday, but prices are lower than on Monday last. Lamb is a ready sale at rather more money. We have a good supply of Calves; they make about the same as of late. From Holland and Germany there are 350 Beasts, 1180 Sheep, and 173 Calves; from Scotland, 240 Beasts; and 2400 from Norfolk and Suffolk.

Per st. of 8 lbs.—	s	d	s	d	Per st. of 8 lbs.—	s	d	s	d
Best Scots, Herefords, &c.	3	4 to 3	8		Best Long-wools	...	to	...	
Best Short-horns	3	2 — 3	6		Ditto Shorn	3	4 — 3	6	
2d quality Beasts	2	8 — 3	0		Ewes & 2d quality	...	—	...	
Best Downs and Half-breds	...	... —	...		Ditto Shorn	2	8 — 3	0	
Ditto Shorn	3	8 — 3	10		Lambs	...	4	8 — 5	4
					Calves	...	2	8 — 3	6
					Pigs	...	2	8 — 3	8

Beasts, 3601; Sheep and Lambs, 31,780; Calves, 328; Pigs, 315.

Friday, June 21.

The supply of Beasts is not very large; it however exceeds the demand. Buyers are cautious, owing to the warm weather. Prices are lower. The number of Sheep is very large; they cannot be sold, although there is a disposition to take rather less than we quote. Lamb is, on the average, lower. The supply of Calves is again very large, and Monday's rates cannot be supported. From Germany and Holland there are 104 Beasts, 800 Sheep, and 243 Calves; from Spain, 750 Sheep; and 108 Milch Cows from the home counties.

Best Scots, Herefords, &c.	3	4 to 3	6		Best Long-wools	...	to	...	
Best Short-horns	3	0 — 3	4		Ditto Shorn	3	2 — 3	4	
2d quality Beasts	2	8 — 3	0		Ewes & 2d quality	...	—	...	
Best Downs and Half-breds	...	... —	....		Ditto Shorn	2	8 — 3	0	
Ditto Shorn	3	6 — 3	10		Lambs	...	4	6 — 5	0
					Calves	...	2	4 — 3	4
					Pigs	...	2	8 — 3	8

Beasts, 623; Sheep and Lambs, 15,750; Calves, 638; Pigs, 325.

COAL MARKET.—Friday, June 21.

Bate's Hartley, 12s.; Eden Main, 14s. 3d.; Tanfield Moor, 11s. 6d.; Wallsend Bewicke and Co., 13s.; Wallsend Braddyll's Hetton, 15s.; Wallsend Haswell, 16s.; Wallsend Hetton, 16s.; Wallsend Lambton, 15s. 6d.; Wallsend Stewart's, 16s.; Wallsend Adelaide Tees, 16s.; Wallsend Tees, 15s. 9d.—Ships at market, 82.

MARK LANE.

Monday, June 17.—The supply of Wheat from Essex, Kent, and Suffolk to this morning's market was small, and realised at the prices of this day se'nnight. Foreign met rather an improved demand, and a fair business was done at our quotations.—Barley, Beans, and Oats, of fine quality, are each the turn dearer: secondary sorts difficult of disposal.—In the value of Peas we observe no alteration.

British per Imperial Quarter.	s.	s.		s.	s.
Wheat, Essex, Kent, & Suffolk ...White	40	44	Red	37	39
— — fine selected runs ...ditto	44	47	Red	39	41
— — Talavera	46	52			
— Norfolk, Lincoln, & York ...White	40	42	Red	36	39
— Foreign	33	51			
Barley, grind. & distil., 19s to 22s...Chev.	23	27	Malting	22	25
— Foreign.....Grinding and distilling	15	20	Malting	19	22
Oats, Essex and Suffolk	15	18			
— Scotch and Lincolnshire ...Potato	18	21	Feed ...	15	19
— Irish .....Potato	14	18	Feed ...	12	16
— Foreign .....Poland and Brew	14	18	Feed ...	12	16
Rye	19	21	Foreign	18	20
Rye-meal, foreign .....per ton	5l.	6l.			
Beans, Mazagan .....21s to 23s.....Tick	24	26	Harrow	24	26
— Pigeon.....25s — 28s...Winds	—		Longpod	—	
— Foreign ..... Small	24	34	Egyptian	19	21
Peas, white, Essex and Kent.....Boilers	23	26	Suffolk	24	28
— Maple .....24s to 27s.....Grey	22	24	Foreign	19	28
Maize ..... White	26	30	Yellow...	25	30
Flour, best marks, delivered ...per sack	33	37			
— Suffolk .....ditto	27	33	Norfolk	27	33
— Foreign .....per barrel	20	23	Per sack	28	32

Arrivals in the Port of London last week.

Flour, 8977 sks — — bls	Wheat. Qrs.	Barley. Qrs.	Malt Qrs	Oats. Qrs.	Beans. Qrs.	Peas Qrs.
English	2147	41	3812	892	286	105
Irish	—	—	119	—	—	—
Foreign	17144	7213	—	13286	1313	286

Friday, June 21.—The arrivals of all grain this week have been moderate, with the exception of 12,840 qrs. of Wheat from abroad, a large proportion of which, also of Barley and Oats, are in very bad condition, and consequently almost unsaleable. This morning's market was thinly attended, and business circumscribed. A little English Wheat remained unsold late in the day. We do not alter our quotations of any article, but Barley and Oats in good order must be considered the turn dearer.—There is rather more inquiry for Flour, but buyers are unwilling to pay higher prices.—Floating cargoes of Maize are nominally held at the rates of this day week.—Since our report of the 14th inst. the weather has been fine, warm, and genial for the growing crops, which continue to be well reported of. The former value of Wheat has been maintained throughout the kingdom, moderate supplies, with a growing scarcity of French Flour, giving more confidence to the trade. Konigsberg and Dantzic, 15th inst.: Sales have been limited, and prices of Wheat are unaltered. Stettin, 17th inst.: The Wheat market is less animated than it has been, but prices are as last quoted.

Arrivals this week.

	Wheat. Qrs.	Barley. Qrs.	Oats. Qrs.	Flour.
English ...	2510	520	270	1560 sacks
Irish	—	—	—	
Foreign ...	12840	6570	12520	— brls.

Imperial Averages.	Wheat.	Barley.	Oats.	Rye.	Beans.	Peas.
May 11.....	38s 0d	22s 0d	15s 3d	19s 1d	24s 8d	24s 9d
— 18.....	39 7	22 5	15 5	21 7	25 6	24 11
— 25.....	40 7	22 10	16 3	22 4	26 4	25 6
June 1.....	40 2	23 0	15 11	22 0	26 11	26 2
— 8.....	39 8	22 4	16 7	23 7	27 0	26 8
— 15.....	39 11	21 9	16 11	22 8	26 10	27 3
Aggreg. Aver.	39 8	22 5	16 1	21 11	26 2	25 10
Duties on Foreign Grain	1 0	1 0	1 0	1 0	1 0	1 0

Fluctuations in the last six weeks' Corn Averages.

Prices.	May 11.	May 18.	May 25.	June 1.	June 8.	June 15.
40s 7d	...	...		...	...	...
40 2	...	...		...	...	...
39 11	...	...	...	...	...	...
39 8	...	...	...	....	...	
39 7	...	...	...	....		...
38 0			...	...	...	...
	...	...	...	....	...	...

Liverpool, Friday, June 21.—At the opening of this day's market holders of Wheat were firm, and in some cases required rather higher prices, but the current rates of Tuesday having been subsequently complied with, sales upon a moderate scale were effected, and for all descriptions of English, Irish, and foreign, therefore, we repeat our last quotations. Although in Barley, Malt, Beans, and Peas little business was apparent, the value of each remained unvaried. Oats and Oatmeal in limited request at late rates. The consumption of Indian Corn is still extensive in Ireland, buyers seeming to pay with reluctance 6d. per qr. under the rates of Tuesday last.

CANTERBURY SETTLEMENT.—NOTICE IS HEREBY GIVEN to PURCHASERS of LAND who are desirous of recommending servants or labourers for free or assisted passages to the Canterbury Settlement, that in order that such passages may be secured in the first ships the necessary recommendation must be sent in without delay. Forms of application may be obtained from the secretary at the offices of the Canterbury Association in Cuckepur-street.—By order of the Committee of Management.

H. F. Alston, Secretary.

TO NOBLEMEN and GENTLEMEN who require a plentiful and CONSTANT SUPPLY of PURE WATER to their Country Mansions.

Messrs. EASTON and AMOS beg to offer their improved PATENT HYDRAULIC RAM, which is perfectly self-acting, and without manual labour is capable of lifting water to 30 times the height of the waterfall by which it is worked.

THIS MACHINE CAN BE APPLIED WHEREVER A FALL OF WATER OF A FEW FEET CAN BE OBTAINED; and its cheapness and durability, with the fact that upwards of 500 of them erected in England and other countries by Messrs. EASTON and AMOS have now been at work many years, afford ample proof of its great value and efficiency.

Estimates of the expense of the Machine, Pipes for the conveyance of Water, Tanks, and Reservoirs, may be had on application to Messrs. EASTON and AMOS, CONSULTING ENGINEERS to the ROYAL AGRICULTURAL SOCIETY, at their office in Orange-street, Trafalgar-square, or at the Works in the Grove, Southwark, London.

ENORMOUS SAVING! GOING WITH THE TIMES!

HOW TO KEEP A HORSE for less than ONE SHILLING per DAY. The articles and numerous references may be seen, and a list of prices had at Mary Wedlake and Co.'s, 118, Fenchurch-street. A Pamphlet on the above may be had, each (post free) 1s. Also

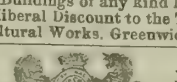
HOW TO MAKE, Cut, Cart, and Stack HAY, for less than HALF the usual cost, in any county and in any weather.—N.B. A Pamphlet on the above may be had, each (post free) 1s.

A BOON TO THE FARMERS.

FARMERS, be of good cheer, all is not yet lost. Come to us, you will find us ready to meet the times! As you cannot get the same price for your produce, so we cannot expect from you the same price for our IMPLEMENTS, and without first-class manufactured Implements you cannot stand these times! By inclosing two stamps, a list, with illustrations, will be forwarded. Real makers of what they sell.—Most liberal discount for cash.

PORT NATAL, NEW ZEALAND, AUSTRALIA. Emigrants are informed Mary Wedlake and Co. have from time to time supplied the first settlers to Swan River and Port Natal, and all the Australian Colonies, with AGRICULTURAL IMPLEMENTS, and tools of first-rate class. They beg an inspection of their stock.—N.B. Purchasers may have the benefit of an introduction. Most liberal discount for cash.

HOT WATER APPARATUS AND HORTICULTURAL BUILDING.



W. HILL begs respectfully to announce that his improved "FLUE BOILER" may now be had in sizes to suit every description of Apparatus, from that of 100 feet to 2000 feet of 4-inch pipe. Improved STEAM BOILERS, from one-horse power and upwards, adapted either for stationary or portable engines, and guaranteed to be most effective.

Every description of Horticultural Building constructed upon the best principle. Buildings of any kind heated by hot water.

*** A liberal Discount to the Trade.

W. Hill, Horticultural Works, Greenwich.

BY HER MAJESTY'S  ROYAL LETTERS PATENT.

PATENT HOTHOUSE WORKS, KING'S ROAD, CHELSEA.

E. DENCH invites the attention of Gentlemen about to erect Hothouses, &c., to the vast superiority in every respect possessed by his PATENT HOUSES, which he will warrant superior in every respect to any others. Good Glass from 16 to 21 oz. per foot, 1 foot wide, 3 feet long, furnished, and the Houses, when completed charged, from 1s. 3d. to 1s. 6d. per superficial foot, according to size and quantity; on one principle the roof is formed without wood or putty, and on another principle with wood rafters, and the glass put in with putty. Patent Sashes, requiring no paint, from 7d. to 9d. per foot. HEATING BY HOT WATER.

CARSON'S ORIGINAL ANTI-CORROSION PAINT, especially patronised by the British and other Governments, the Hon. East India Company, the principal Dock Companies, most public bodies, and by the Nobility, Gentry, and Clergy, for out-door work at their country seats, The Anti-Corrosion is particularly recommended as the most durable out-door Paint ever invented, for the preservation of every description of Iron, Wood, Stone, Brick, Compo, Cement, &c., work, as has been proved by the practical test of upwards of 60 years, and by the numerous (between 500 and 600) testimonials in its favour, and which, from the rank and station in society of those who have given them, have never yet been equalled by anything of the kind hitherto brought before the public notice.

Lists of Colours and Prices, together with a Copy of the Testimonials, will be sent on application to Walter Carson, No. 9, Great Winchester-street, Old Broad-street, Royal Exchange.

No Agents.—All orders are particularly requested to be sent direct.

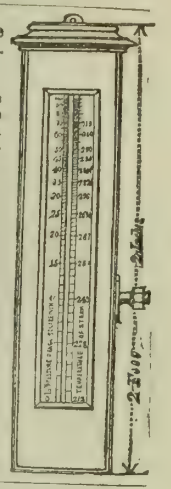
ALEXANDER SHANKS and SON, Machine Makers, Ogilvy-place, Arbroath, respectfully solicit the attention of the Nobility, Gentry, and Gardeners to their IMPROVED GRASS CUTTING ROLLING MACHINE for LAWNS, the completeness of which has now been fully proved. The Machine works with perfect ease, producing a beautiful smooth surface, and attended with a saving of labour of 80 per cent.

A. S. and Son respectfully solicit the attention of the Farmers, Agriculturists, and others to an improved STRAW or HAY CUTTING MACHINE, which they have recently invented. The cheapness and utility of this improved Machine, combined with superior workmanship and durability, enable the inventors confidently to recommend it, as the most profitable Machine of the kind yet sent out. Further particulars and a list of prices may be had, by applying to the makers or to their Agents. Agents for London, Messrs. J. and C. Lee, Nursery and Seedsmen, Hammersmith; Hertford, Mr. George Folkard, Ironmonger; Liverpool, Messrs. Charles D. Young and Co., Castle Buildings, Derby-square; Manchester, Messrs. Francis and James Dickson and Co., Seedsmen, 106, Deansgate; Wakefield, Mr. Wm. Barratt, Nursery and Seedsman, St. Johns; Chester, Messrs. F. and J. Dickson, Nursery and Seedsmen; Glasgow, Messrs. Charles D. Young and Co., 32, St. Enoch-square; Edinburgh, Messrs. Charles D. Young and Co., 48, North Bridge; Perth, Messrs. Dickson and Turnbull, Nursery and Seedsmen.

TO BE DISPOSED OF, the Wholesale Department of an Old and Highly-respectable London Seed Establishment; any one wishing to embark in the trade, or to add to their own business, will find this an opportunity rarely to be met with.—Apply to Messrs. Sturmy and Simpson, 8, Wellington-street, London-bridge.

STEAM BOILER EXPLOSIONS.

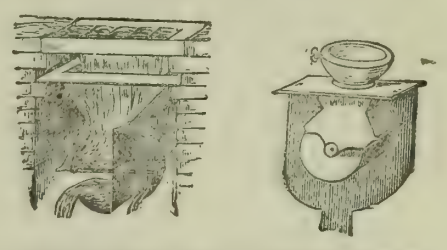
HENRY BAKER begs to call the attention of Engineers and Proprietors of Steam Engines to his NEWLY-INVENTED STEAM-GUAGE, Which shows the pressure and temperature of the Steam (it slightly differs from the drawing annexed). This instrument is an ornament to the Engine-room, and supersedes the ordinary Steam-guages in these respects. It is less cumbersome, cheaper, cannot get out of order in carriage, and is warranted accurate. Boiler explosions, in many instances, occur through Steam-guages not being in good working order, therefore every attention should be paid to these very necessary adjuncts.



HENRY BAKER'S STEAM-GUAGES may be fixed in a Counting-house, and will show the pressure the same as if it were fixed in the Engine-room, thereby having a check upon the man working the Engine. Price 2l. 5s., and 2l. 2s.; Vacuum-guages, 3l. 3s. each.

Henry Baker, Barometer, Thermometer, and Philosophical Instrument Maker to the Board of Admiralty, 90, Hatton-garden, London.

TO BUILDERS, &c.
IMPORTANT SANITARY INVENTION.



BY HER MAJESTY'S ROYAL LETTERS PATENT.

C. MARSDEN'S ROTARY WATER-CLOSETS and EFFLUVIA TRAPS, acknowledged by the most scientific to be the best and simplest self-acting Water-Closets and Effluvia Traps ever invented. A stench arises at the time of using all other Water-Closets—with this invention it can be got rid of. It is constructed in the shape of a drum, with four receivers or buckets caused to revolve by the weight of the matters falling into one of the receivers, when it instantly empties itself into the drain or sewer, and another bucket is ready from the opposite side to take its place, and two others on their ascent, to be emptied in their turn, while any upward escape of effluvia during these successive changes is effectually prevented, by overhanging and side flaps of vulcanised India-rubber, so placed that it is impossible to get choked up or get out of order; no balance weight or handles, no D or syphon traps required with these Closets. All traps that require water to keep them air-tight must necessarily leave a sediment to putrify. The value cannot be believed unless seen and tested.—Also Manufacturer of Decorative Marble Paper-hanging.—Waterloo House, Kingsland-road, near the Bridge.

PATENT SPADES, DAISY RAKES, SCYTHES, Draining, and other Garden Tools. Mole Traps, 6s. per dozen. Carpenters and Smiths' Tools, &c. Ladies' Garden Tools, 7s. 9d. a set. Sword-scrapers for Gardens, 1s. 2d. each. Patent Fumigators for destroying insects on plants, in greenhouses, &c.: at Messrs. J. H. Boobbyer and Co.'s (late Stubch and Boobbyer), Ironmongery, Brass-foundry, Nail and Tool Warehouse, 14, Stanhope-street, Clare-market, London. Established nearly 200 years for the sale of goods from the best Manufactories at the lowest prices. Goods forwarded to any part on the receipt of remittance.

CHEAP AND DURABLE ROOFING.

BY HER MAJESTY'S  ROYAL LETTERS PATENT.

F. M'NEILL and Co., of Lamb's-buildings, Bunhill-row, London, the Manufacturers and only Patentees of THE ASPHALTED FELT FOR ROOFING Houses, Farm Buildings, Shedding, Workshops, and for Garden purposes, to protect Plants from Frost.

At the Great National Agricultural Shows, it is this Felt which has been exhibited and obtained two Silver Medal Prizes, and is the Felt solely patronised and adopted by

Her Majesty's Woods and Forests,
Honourable Board of Ordnance,
Honourable East India Company,
Honourable Commissioners of Customs,
Her Majesty's Estate, Isle of Wight,
Royal Botanic Gardens, Regent's Park,

And on the Estates of the Dukes of Sutherland, Norfolk, Rutland, Newcastle, Northumberland, Buccleuch (at Richmond), the late Earl Spencer, and most of the Nobility and Gentry, and at the Royal Agricultural Society's House, Hanover-square.

It is half the price of any other description of Roofing, and effects a great saving of Timber in the construction of Roofs. Made to any length by 32 inches wide.

Price One Penny Per Square Foot.

*** Samples, with Directions for its Use, and Testimonials of seven years' experience, with references to Noblemen, Gentlemen, Architects, and Builders, sent free to any part of the town or country, and orders by post executed.

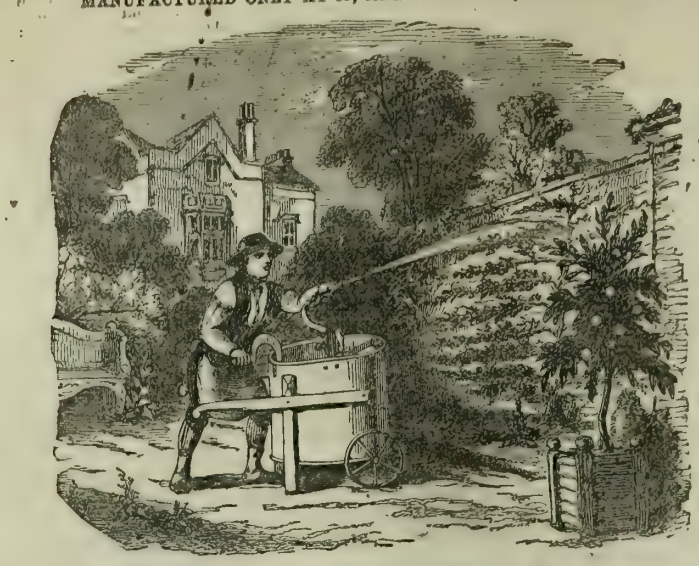
☞ The Public is cautioned that the only Works in London or Great Britain where the above Roofing is made, are F. M'NEILL and CO.'S Patent Felt Manufactory, Lamb's-buildings, Bunhill-row, London, where roofs covered with the Felt may be seen.

The new Vice-Chancellor's Courts, at the entrance to Westminster Hall, were roofed with F. M'Neill and Co.'s Felt about two years since, under the Surveyorship of Chas. Barry, Esq., R.A. Her Majesty's Commissioners of Woods and Forests are so satisfied with the result that they have ordered the Committee Rooms at the Houses of Parliament to be roofed with their Felt. Quantity altogether used, 24,000 feet.

Note.—Consumers sending direct to the Factory can be supplied in lengths best suited to their Roofs, so that they pay for no more than they require.

Every information afforded on the construction of Roofs, or any proposed particular application of the Felt.

READ'S NEW PATENT GARDEN ENGINE, MACHINES, AND SYRINGES,
MANUFACTURED ONLY AT 35, REGENT-CIRCUS, PICCADILLY.



THIS ENGINE, which contains about 28 Gallons, will discharge Water in a powerful stream a distance of 50 feet; it is applicable to all Horticultural purposes, particularly for cleansing Wall and Standard Trees from those destructive insects which are so injurious to the young shoots. The value of this Engine is enhanced by the circumstance that its utility is not restricted to the Garden; from its power and portability it will be found of the most essential service in case of Fire. Price 8*l*.

*** Garden Machines and Syringes of every description Manufactured by RICHARD READ, 35, Regent-circus, Piccadilly.

TO THE LADIES THAT TAKE AN INTEREST IN THEIR FLOWER GARDENS, AND WHO DOES NOT?

D. FERGUSON, with much pleasure states he can supply them with well-rooted plants, from cold frames, of first-rate Verbenas, Calceolarias, Geraniums, Heliotropes, Fuchsias, Anagallis, Cupheas, Ageratums, Pentstemons, &c., for bedding out, at 1*s*. 6*d*. per dozen, if 5 to 20 dozen are taken; 1*s*. 3*d*. if 20 to 50; above 50, 1*d*. each; and if 100, five dozen will be added: carriage free to London, Birmingham, Leamington, Peterborough, Banbury, Bedford, and all intermediate stations on the North-Western Railway. Lists marked for selection at the above prices, sent free on application: but those not already in possession of a collection, D. F. advises parties to state the colour and quantity they want, and leave the selection to him; and to those who have no convenience for wintering plants, they will find it advantageous to give their annual orders in July or August for the following Spring, as they, on taking five dozen and upwards, will have the choice, not only of those marked in the list, but any other bedding-out plant, if possible to procure, at equally low prices.

Letters directed Buckingham, in place of Aylesbury, reach D. F. one day sooner: where all post-office orders are requested to be made payable.

THE ROYAL WATER LILY.

Preparing for publication, in large folio,

VICTORIA REGIA.

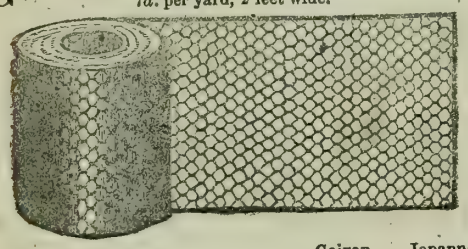
BEAUTIFULLY ILLUSTRATED WITH PLATES,

DRAWN BY MR. FITCH, FROM SPECIMENS NOW IN FLOWER AT SION HOUSE AND KEW GARDENS.

THE DESCRIPTIONS BY SIR W. J. HOOKER, F.R.S.

London: REEVE, BENHAM, and REEVE, King William-street, Strand.

GALVANISED WIRE GAME NETTING.—
7*d*. per yard, 2 feet wide.



	Galvanised.	Japanned Iron.
2-inch mesh, light, 24-inch wide ...	7*d*. per yd.	5*d*. per yd.
2-inch " strong " ...	9 "	6½ "
2-inch " extra strong " ...	12 "	9 "
1½-inch " light " ...	8 "	6 "
1½-inch " strong " ...	10 "	8 "
1½-inch " extra strong " ...	14 "	11 "

All the above can be made any width at proportionate prices. If the upper half is a coarse mesh, it will reduce the price one-fourth. Galvanised sparrow-proof netting for pheasantries, 3*d*. per square foot. Patterns forwarded post-free.

Manufactured by BARNARD and BISHOP, Market-place, Norwich, and delivered free of expense in London, Peterborough, Hull, or Newcastle.

IRON AND WIRE FENCING,
AND METALLIC BEDSTEADS.

THOMAS PERRY AND SONS,
252, OXFORD-STREET (NEAR HYDE PARK),
And Highfields Foundry and Wrought-iron Works, Bilston, Staffordshire, Manufacturers of all descriptions of
PLAIN AND ORNAMENTAL IRON AND WIRE FENCING,
Park Entrance, Carriage and Field Gates, Wickets, &c.;
Deer, Sheep, and other Hurdles;
Hare and Rabbit-proof Wire Fencing;
Iron Bedstead Makers to the Board of Ordnance;
And Government Contractors.

The works of Messrs. PERRY being situated in the heart of the first iron district, they are enabled to execute all orders with the greatest facility, and on the most moderate terms. Drawings made and estimates prepared, if required. The show-rooms contain an immense variety of every description of Iron and Wire-work, and are the largest in London. An Illustrated Catalogue of Bedsteads, with dimensions and prices, sent on application, post-free.

NEWS, NEWS, NEWS.—The best, cheapest, and largest Newspaper in the World.—LLOYD'S WEEKLY LONDON NEWSPAPER contains 60 large columns of the latest intelligence from all parts of the Globe, price only Threepence, postage free. Send Three Postage Stamps to E. LLOYD, 12, Salisbury-square, London, and receive one copy as a sample.



EMIGRATION TO AUSTRALIA.
New Line of Packets from Liverpool.
SALACIA...1200 tons, to sail about June 30.
PETREL ...1200 " " " Aug. 30.
CONDOR...1500 " " " Oct. 30.
A 1 New Ships, coppered and copper fastened.—For freight or passage apply to the owners,
GIBBS, BRIGHT, and Co., Liverpool.

FOR WATERING GARDENS, BREWERS' USE, &c.
FLEXIBLE INDIA-RUBBER HOSE PIPES.

JAMES LYNE HANCOCK, Sole Licensee and Manufacturer of the PATENT VULCANISED INDIA-RUBBER PIPES and TUBING.

These Pipes are well adapted for Watering Gardens, conveying Liquid Manure, racking Beer and Cider, Gas Fittings, Chemical and all purposes where a perfectly sound WATERPROOF and FLEXIBLE PIPE is required.

Hot Liquors or Acids do not injure them. No oil or dressing is required in using them. They do not leak from remaining out of use, are permanently Flexible in all Temperatures, and are therefore particularly suitable for Fire Engines; and, from their not leaking, are found exceedingly useful in conveying hot or cold water to baths in dwelling houses and such like purposes.

A LIGHT VULCANISED INDIA-RUBBER HOSE is now manufactured for conducting Water and Fluids, at the following prices per foot:

Size.	¼ in.	⅜ in.	½ in.	1 in.	1½ in.	2 in.	2½ in.	3 in.
1 ply ...	0*s*. 5*d*.	0*s*. 6*d*.	0*s*. 8*d*.	0*s* 10*d*.	1*s*. 0*d*.	1*s*. 2*d*.	1*s*. 4*d*.	1*s*. 6*d*.
2 ply ...	0 8	0 9	1 0	1 2	1 5	1 8	2 0	2 3
3 ply ...	0 11	1 0	1 3	1 6	1 10	2 2	2 9	3 3

N.B. Vulcanised India-Rubber Garden Hose fitted with roses, jets, and branches, complete, with union joints ready to attach to pumps or water cisterns.

All orders or letters addressed to J. L. HANCOCK, at the Manufactory (and Warehouse), Goswell-mews, Goswell-road, London, will meet with immediate attention.

ASHBY'S INDIA EXPORT PALE ALE.—London Stores, under the South-Western Railway Terminus, Waterloo-road. India Pale Ale, 21*s*., 18 gallons; 10*s*. 6*d*., 9 gallons; Family Ale, 16*s*., 18 gallons.—CHAS. ASHBY and Co. invite the particular attention of private Families and Clubs to their PALE ALE, as brewed by them for the COLONIAL MARKETS for the past 20 years. Supplied in small casks direct from the Brewery, Staines, and the London Stores, or from their agents—Messrs. W. Hancock, 80, Connaught-terrace, Hyde-park; Chidell and Stewart, 40, Lime-street, City; W. H. Chaplin, 11, Sebbon's-buildings, Upper-street, Islington; J. Shenton, Greenwich; W. Ferguson, Reading; Thos. Berry, Brighton and Lewes; A. J. Richardson and Co., Portsea and Southsea; J. Skidmore, Rickmansworth; Cooksey, Brothers, Southampton.

ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

PROGRAMME.

THURSDAY, July 11.—Last day of receiving Implements, Seeds, &c., to be exhibited in the Implement-yard, and arranged by the Stewards for the Judges' inspection.

TUESDAY, 16.—Stock received in the Show-yard from Eight in the morning till Four in the afternoon. At Six o'clock in the afternoon (provided the Judges have completed their trials by that hour) Members of Council and Governors of the Society will have the privilege of admission into the Implement-yard at the same rate as the public next day, namely, at 2*s*. 6*d*.

WEDNESDAY, 17.—The Implement-yard open to the public from Eight in the morning till Six in the evening; admission 2*s*. 6*d*. The Judges to inspect the Live Stock and award the Prizes. At One o'clock (or as soon after as all the Judges shall have delivered in their awards) the public to be admitted into the Cattle-yard, on the payment of 10*s*. each person, at the Special Entrance; Members of Council and Governors being admitted by tickets, to be purchased at the Finance Department of the Society, in the Guildhall. N.B.—Notice will be posted up over such entrance when the Judges have completed their awards. At Six o'clock, Professor Simonds's Lecture in the Athenæum, "On the Structure, Functions, and Diseases of the Liver in Domesticated Animals;" at the conclusion of which the awards of the Judges of Live Stock (with the exception of the awards for Horses) will be read.

THURSDAY, 18.—The Cattle and Implement-yards open to the public from Six o'clock in the morning till Two in the afternoon; admission 2*s*. 6*d*.; and from Two till Six in the evening, at 1*s*. The Dinner of the Society in the Great Pavilion (at the extremity of Queen-street) at Four o'clock. Doors open at half-past Three.

FRIDAY, 19.—The Cattle and Implement-yards open to the public from Six o'clock in the morning till Twelve at noon; admission 1*s*. each person. General Meeting of the Members in the Guildhall at Ten o'clock in the forenoon. At Eleven A.M., Mr. Turner will attend and explain to the Members the construction of his Catch-meadows at Barton, near Exeter; and at Three P.M., Sir Thomas Dyke Acland, Bart., M.P., will receive the Members at his Water-meadows, at Killerton, and make arrangements for their due explanation.

The Cattle and Implement Show-yards are situate at Mount Radford, on the eastern side of the city, between the Heavitree and Topsham turnpike-roads, about three quarters of a mile from the Cathedral.

PRESIDENT.
THE MARQUIS OF DOWNSHIRE.

STEWARDS OF DEPARTMENTS.

Cattle—Mr. HUDSON, of Castleacre, Mr. STOKES, Mr. JONAS.
Implements—Col. CHALLONER, Hon. DUDLEY PELHAM, M.P., Sir MATTHEW WHITE RIDLEY, Bart.
Finance—Col. AUSTEN.
Sale of Tickets—Mr. HENRY WILSON, of Stowlangtoft.
Receipts and Admission to Show-yards—Mr. RAYMOND BARKER.
Pavilion Dinner—Hon. ROBERT HENRY CLIVE, M.P., Sir JOHN V. B. JOHNSTONE, Bart., M.P., and Mr. SHAW, of London.
General Arrangement of Show—Mr. BRANDRETH GIBBS.

By Order of the Council, JAMES HUDSON, Secretary.
London, June 22.

By the Regulations of the Society, all persons admitted into the Show-yards, or other places in the temporary occupation of the Society during the Meeting, shall be subject to the Rules, Orders, and Regulations of the Council.

SALE OF TICKETS
AT THE GUILDHALL, EXETER.

I. CATTLE-YARD TICKETS.—To Members of Council and Governors only; for admission into the Cattle-yard on the afternoon and evening of Wednesday, 2*s*. 6*d*. each; sold on Wednesday from 10 A.M. till 6 P.M.

II. LECTURE TICKETS.—To Members or their Friends; for admission to Professor Simonds's Lecture in the Athenæum, distributed gratis on Wednesday from 10 A.M. till 6 P.M.

III. PAVILION DINNER TICKETS, price 10*s*. each (including a pint of wine).—(1.) To Members only; on Wednesday from 10 A.M. till 6 P.M. (2.) To Members or their Friends; on Thursday from 8 A.M. till 3 P.M.

The Tickets for admitting the public into the Show-yards will be sold at the entrance of the Show-yards during the respective periods of the exhibition of Implements and Stock.

Subscriptions due to the Society will be received by the Finance Committee, at the Guildhall.

On the 31st ult. was published, price 2*s*. 6*d*., No. IV. of
PAXTON'S FLOWER GARDEN.
Edited by DR. LINDLEY and JOSEPH PAXTON,
And Illustrated by highly finished Plates and Woodcuts.
London: BRADBURY and EVANS, 11, Bouverie-street.

METCALFE AND Co.'s NEW PATTERN TOOTH-BRUSH and SMYRNA SPONGES.—The Tooth-Brush has the important advantage of searching thoroughly into the divisions of the teeth, and cleaning them in the most extraordinary manner, and is famous for the hairs not coming loose.—1*s*. An Improved Clothes-Brush, that cleans in a third part of the usual time, and incapable of injuring the finest nap. Penetrating Hair-Brushes, with the durable unbleached Russian bristles, which do not soften like common hair. Flesh-Brushes of improved, graduated, and powerful friction. Velvet-Brushes, which act in the most surprising and successful manner. The genuine Smyrna Sponge, with its preserved valuable properties of absorption, vitality, and durability, by means of direct importations, dispensing with all intermediate parties' profits and destructive bleaching, and securing the luxury of a genuine Smyrna Sponge. Only at METCALFE, BINGLEY, and Co.'s Sole Establishment, 130 B, Oxford-street, one door from Holles-street.

METCALFE'S ALKALINE TOOTH POWDER, 2*s*. per box.

CAUTION.—Beware of the words "From METCALFE'S," adopted by some houses.

THERE IS NOTHING BETTER THAN HOLLOWAY'S PILLS FOR BOWEL COMPLAINTS, DIARRHŒA, AND DISORDERED STOMACHS.—Persons subject to these complaints cannot use a finer medicine than these invaluable Pills, and if taken in moderate doses and the diet attended to, a certain cure will be effected. Their strengthening nature speedily renovates the impaired tone of the stomach, and renders the digestive organs more powerful. Bile, and disorders of the liver may be infallibly cured by their use, and those who are suffering from a long residence in hot climates cannot adopt a more effectual remedy than HOLLOWAY'S Pills. They are also the best family medicine extant.—Sold by all Druggists, and at Professor HOLLOWAY'S Establishment, 244, Strand, London.

Printed by WILLIAM BRADBURY, of No. 13, Upper Woburn-place, in the Parish of St. Pancras, and FREDERICK MULLETT EVANS, of No. 7, Church-row, Stoke Newington, both in the County of Middlesex, Printers, at their office in Lombard-street, in the Precinct of Whitefriars, in the City of London; and published by them at the Office, No. 5, Charles-street, in the parish of St. Paul's, Covent-garden, in the said county, where all Advertisements and Communications are to be ADDRESSED TO THE EDITOR.—SATURDAY, JUNE 22, 1850.

THE GARDENERS' CHRONICLE
AND
AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 26—1850.] SATURDAY, JUNE 29. [PRICE 6*d*.

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HORTICULTURAL SOCIETY OF LONDON.—HIS GRACE THE DUKE OF DEVONSHIRE, President of the Horticultural Society, has kindly directed the Grounds of Chiswick House to be opened for the reception of the visitors to the Society's Gardens at the next Exhibition, on SATURDAY, the 13th JULY. Tickets are issued to the orders of Fellows of the Society only, at this office, price 5*s*.; or at the Garden, in the afternoon of the 13th July, at 7*s*. 6*d*. each, but then also only to orders signed by Fellows of the Society. But respectable strangers, or residents in the country, who will forward their addresses in writing to the Vice-Secretary, 21, Regent-street, on or before Thursday, the 11th of July, may obtain from that office an authority to procure Tickets on this occasion. No official orders for Tickets will be issued after that day.

N.B.—No Tickets will be issued in Regent-street on the day of Exhibition.

ROYAL BOTANIC SOCIETY, REGENT'S PARK. The Last EXHIBITION THIS SEASON of PLANTS, FLOWERS, AND FRUIT, will take place on WEDNESDAY next, July 3d. Tickets to be obtained at the Gardens, only by orders from Fellows of the Society, price 5*s*. each; or on the day of Exhibition, 7*s* 6*d*.

ROYAL BOTANIC SOCIETY, REGENT'S-PARK, CONVERSAZIONE.—The Fellows of the Society are reminded that the CONVERSAZIONE will be held at the Gardens, on Saturday next, JULY 6th, from 3 to 6 P.M.; also, that if any Fellows of the Society, or their friends, have any subject, either natural or artificial, connected with Botany of sufficient interest to be exhibited, and will kindly inform the Secretary, at the Gardens, they will be sent for, or may be forwarded by carrier, on or before the 5th of July, and will be carefully returned free of expense.

HUGH LOW AND CO. have to offer a fine and extensive collection of CHRYSANTHEMUMS, in strong established plants, including the greater part of the French varieties of last season, at 6*s*., 9*s*., and 12*s*. per dozen; also 10 varieties of the much admired Liliputian Chrysanthemum, raised by Mr. Bonamy, of Toulouse, and sent out last summer for the first time. Price 1*s*. each.

In addition to the above, H. L. and Co. have imported largely the new Continental Verbenas, Phloxes, Fuchsias, &c., a list of which can be had on application.—Clapton Nursery, June 29.

EDWARD DENYER, NURSERYMAN, Loughborough-road, Brixton, within three miles of London, informs his kind patrons in general that his unrivalled Collection of ROSES, reaching to nearly 1000 varieties, are now in bloom and free to the inspection of all visitors, Sundays excepted. Orders taken at this time and executed in November next. Price of Standard Roses, 15*s*. to 20*s*. per dozen. Fruit Trees, &c., &c.

E. D. informs his friends that he has no Seed Shop in London.

HERTFORD ROSE NURSERIES.

E. P. FRANCIS'S New and Extensive Collection of ROSES is now in bloom, and will be in perfection the first and second week in July. The morning and evening are the most favourable parts of the day for seeing them to advantage. The inspection of amateurs is respectfully solicited.

Trains from Bishopsgate Station direct to Hertford.

Hertford, June 29.

CHOICE CINERARIA SEED.

LUCOMBE, PINCE, AND Co. have saved from a select collection of all the newest and finest varieties of 1850, which they have this season grown in great perfection, some Cineraria Seed of excellent quality, and they beg leave to offer it for sale in packets, sealed and warranted by them at 2*s*. 6*d*. and 5*s*. each, free by post; if sown soon strong plants will be produced, which will flower early in 1851.

Exeter Nursery, June 29.

CHOICE SEEDS FOR PRESENT SOWING which can be confidently recommended:

	s.	*d*.
CINERARIA, saved from the best named prize flowers, by a celebrated grower, per paper	1	0
ANTIRRHINUM, saved from a superb collection, per paper	0	5
PINK, saved from named show flowers, per paper ...	1	0
PANSY, from the best show flowers, saved by Thomson and other eminent growers, per paper	1	0
INTERMEDIATE STOCKS, 6 beautiful vars., collection	1	6
GIGANTIC, or BROMPTON STOCKS, 6 bright and distinct colours, collection	1	6
BARNES' EARLY DWARF CABBAGE, per paper ...	0	6
IMPROVED NONPAREIL, or INCOMPARABLE EARLY CABBAGE, per paper	0	6

The above may be had of WM. DENYER, Seedsman and Florist, 82, Gracechurch-street, London.

GRAND HORTICULTURAL AND FLORAL EXHIBITION. Open to all England.

The FIRST EXHIBITION of the LEEDS HORTICULTURAL and FLORAL SOCIETY will take place in the INFIRMARY GARDENS, on the 10th and 11th of July.

Upwards of 100 Guineas will be awarded in Prizes. Cottagers' Prizes, 15*l*. Schedules may be had on application to J. BUCKTON and L. HICKS, Secretaries, Briggate, Leeds.

ROSES.—The Collection at Sawbridgeworth is now in Full Bloom. The Harlow Station of the Eastern Counties Railway is the most convenient for the Nursery.

June 29. THOMAS RIVERS.

EDWARD GEORGE HENDERSON, Wellington-road Nursery, St. John's Wood, London, begs to inform the public that he can now supply CINERARIA SEED at 2*s*. 6*d* and 5*s*. per packet, saved this year from all the choice named varieties, which, if sown now, will give the conservatory a very gay appearance next winter. Pre-payment, by stamps or otherwise, is respectfully requested from unknown correspondents.

MESSRS. STANDISH AND NOBLE'S new descriptive CATALOGUE OF SELECT HARDY ORNAMENTAL PLANTS is just published, and may be had for four postage stamps. Besides a Treatise on the cultivation of American Plants, it contains a Plate and Description of the Funebral Cypress, Notices of Cephalotaxis Fortunii, Cryptomeria japonica, Quercus sclerophylla and inversa, Viburnum plicatum and macrocephalum, with many recent introductions from the north of China, quite new to English gardens.

Messrs. S. and N. take this opportunity of stating that they give Designs for Laying out New Grounds and Plans for Improvements; also Estimates for all kinds of Planting, whether ornamental or economic.—Bagshot Nurseries, June 29.

CARNATIONS AND PICOTEES.—Grand Trial Exhibitions for Northern *versus* Southern raised varieties. Fifty Prizes—70*l*. value.—Schedules for the above Exhibitions may be had upon application to Mr. John Keynes, Salisbury; Mr. John Holland, Middleton; Mr. W. Bragg, Star Nursery, Slough; Messrs. T. Scholefield and Son, Knowsthorpe, near Leeds; Mr. J. F. Wood, Midland Florist, Nottingham; Mr. C. Turner, Royal Nursery, Slough; Mr. T. Dobson, Worton Cottage, Isleworth; Mr. E. S. Dodwell, Derby; the Office of this Paper; and Mr. J. Edwards, Treasurer, Wace Cottage, Holloway.—The Southern Exhibition will be held at the Royal Nursery, Slough, on Thursday, July 25; the Northern in the County Hall, Derby, on Wednesday, August 7.

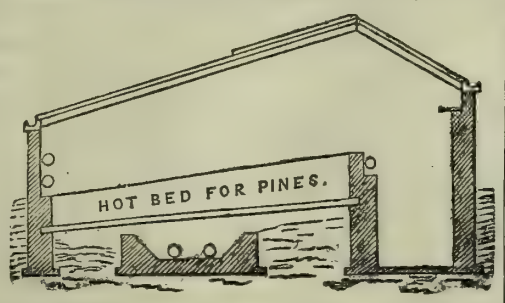
Subscriptions received by any of the above-named parties.—Each Exhibition is open to all England.

TO STRAWBERRY GROWERS, HORTICULTURISTS, &c.—Those who are desirous of having clean and fine Strawberries are informed that the only effectual method of so securing them is to apply ROBERTS'S PATENT TILES, which protects them from being splashed with dirt during heavy rains, and at the same time greatly improves the flavour and size of the fruit, and secures many advantages over the old plan of cultivation. A Pamphlet, with a description of the Tiles, together with several other appliances for Fruit and Vegetables, can be had by enclosing three postage stamps to Mr. JOHN ROBERTS, 34, Eastcheap, London.

COOPER'S PATENT PRESERVED FRUITS, in Syrup, prepared for the dessert and other uses. A small hamper, containing an assortment of various kinds of fruit, in half-pint jars (hermetically closed), one of which contains Raspberries and Currants the growth of the year 1840, and is still warranted for three years in advance for family purposes. For an order for 7*s*. directed to Mr. JOHN SMITH, 8, St. John-street, Clerkenwell, London, a hamper will be delivered free of expense to any part of London.

HORTICULTURAL BUILDING AND HEATING BY HOT WATER.

WARRANTED BEST MATERIALS AND WORKMANSHIP AT THE LOWEST POSSIBLE PRICES.



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THE HOT-WATER APPARATUSES (which are efficient and economical), are particularly worthy of attention, and are erected in all the Houses, Pits, &c., for both Top and Bottom Heat, and in constant operation in the Stoves.

The splendid collection of Stove and Greenhouse Plants are in the highest state of cultivation, and for sale at very low prices. Also a fine collection of strong Grape Vines in pots, from eyes, all the best sorts.

Plans, Models, and Estimates of Horticultural Buildings; also Catalogues of Plants, Vines, Seeds, &c., forwarded on application.—J. WEEKS and Co., King's-road, Chelsea, London.

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TO HORTICULTURAL AND FLORICULTURAL SOCIETIES.

BENJAMIN EDGINGTON, Manufacturer to the Horticultural Society, Chiswick, and the Royal Botanic Society, Regent's Park, solicits attention to his stock of Marquees and Tents of every variety, and suitable for all climates. Orders per post duly attended to. Address, BENJAMIN EDGINGTON, 2, Duke-street, Southwark. A Warehouse, 208, Piccadilly.

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JAMES PHILLIPS AND Co. have the pleasure to hand their New List of Prices of GLASS for Cash.

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16 oz. from 2*d*. to 3¼*d*. per foot.				
21	„	3½	„ 5	„
26	„	3½	„ 7½	„
32	„	4	„ 9½	„

100 feet and 200 feet cases of large Sheet Glass, for cutting up, at 2½*d*. per foot. British Plate Glass, from 1*s*. 2*d*. to 2*s*. per foot, according to size.

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6 by 4 and 6½ by 4½	...	10*s*. 6*d*.		7 by 5 and 7½ by 5½	...	12*s*. 0*d*.
8 by 6	„	8½ by 6½	... 13 6	9 by 7	„	10 by 8	... 15 0

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12 in. diameter	...	...	2*s*. 0*d*.
14 „	...	...	2 6
16 „	...	...	3 0
18 „	...	...	3 6
20 „	...	...	4 0
22 „	...	...	4 6
24 „	...	...	5 0
26 „	...	...	6 0

CREAM POTS, from 2*s*. each.

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12 inches	...	...	6*s*. 0*d*.
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16 „	...	...	8 0
18 „	...	...	9 0
20 „	...	...	10 0
24 „	...	...	12 0

Open tops, 1*s*. extra.

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In boxes of 100 feet.	*s*.	*d*.
Under ... ... 6 by 4	12	6
6 by 4 and under 7 by 5	16	6
7 by 5 „ 8 by 6	18	6
8 by 6 „ 10 by 8	20	6

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2 in. diameter	...	...	0*s*. 2*d*.
3 „	...	...	0 3
4 „	...	...	0 4
5 „	...	...	0 6
6 „	...	...	0 8
7 „	...	...	0 10
8 „	...	...	1 0
9 „	...	...	1 2
10 „	...	...	1 4
11 „	...	...	1 6

BEE GLASSES, same sizes.

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12 inches long	...	...	1*s*. 0*d*.
14 „	...	...	1 2
16 „	...	...	1 4
18 „	...	...	1 6
20 „	...	...	1 8
22 „	...	...	1 10
24 „	...	...	2 0

Glass Shades; Tiles and Slates of any size; Wasp Traps, 3*s*. 6*d*. per dozen; Lamp Shades; Rough Plate Glass of every thickness. Lactometers, for trying the quality of milk, 4 tubes, 7*s*. 6*d*.; 6 do., 10*s*. Glass Stands for Pianoforte, and every article in the trade.

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GLASS FOR CONSERVATORIES, HORTICULTURAL PURPOSES, &c.



T. MILLINGTON'S SHEET GLASS, which is of the best description, varying from 16 to 32 ounces, at from 2*d*. per foot and upwards; 100 feet and 200 feet cases of large Sheet Glass, for cutting up, at 2½*d*. per foot. British Plate Glass, from 1*s*. 2*d*. to 2*s*. per foot, according to size. Patent Rough Plate Glass, from ⅛ to 1 inch in thickness, from 4*d*. per foot upwards. Glass Slates and Tiles. Milk Pans from 12 to 24 inches diameter, from 2*s*. to 5*s*. each. Cucumber Tubes, from 12 to 24 inches long, at 1*d*. per inch. Lactometers, 7*s*. 6*d*. each. Wasp Traps.—Lists may be had, on application at the Warehouse, 87, Bishopsgate-street Without, same side as the Eastern Counties Railway.

CROWN, SHEET, AND ROUGH PLATE GLASS, FOR HOTHOUSES, CONSERVATORIES, &c.

The Improved Patent Rough Plate, made by Messrs. Hartley and Co., can be supplied from this Warehouse, of every size and substance, at the same prices as at the works.

100 and 200 feet cases of large Sheet Glass, from 2½*d*. per foot. Small ditto, 10*s*. 6*d*. per 100 feet, packed in boxes ready for immediate delivery. Curators of Botanical Societies, Florists, Railway Agents, and others requiring large quantities, will, on sending dimensions, receive estimates at the lowest prices.

GLASS MILK PANS, CREAM POTS, Lactometers, Bee Glasses, Fish Globes, and all kinds of Dairy Glass, Propagating Glasses, Hyacinth Dishes, Cucumber Tubes, and every other description of Garden Glasses.

PATENT GLASS PENS, self supplying, never blot, never soil the ruler, and will write continuously for 12 hours.

Also, Glass Rulers, Glass Inks for office-stands, desks, &c. Stationers and Schools supplied. Wholesale Warehouse for Ornamental Shades, Lamp Shades, Gas Glasses, Genuine White Lead, Paints, Colours, and Pumps for Farm purposes.

Our Catalogue of 18 folios is the most complete ever published. No Gardener or Farm Bailiff should be without one. May be had Gratis on sending two postage stamps to Messrs. COGAN and Co., 48, Leicester-square, London.

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HETLEY AND Co. supply 16-oz. Sheet Glass of British Manufacture, at prices varying from 2*d.* to 8*d.* per square foot, for the usual sizes required, many thousand feet of which are kept ready packed for immediate delivery. Lists of Prices and estimates forwarded on application, for PATENT ROUGH PLATE, THICK CROWN GLASS, GLASS TILES and SLATES, WATER-PIPES, PROPAGATING GLASSES, GLASS MILK PANS, PATENT PLATE-GLASS, ORNAMENTAL WINDOW GLASS, and GLASS SHADES, to JAMES HETLEY and Co., 35, Soho-square, London.

See the *Gardeners' Chronicle* first Saturday in each month.

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One hundred 1, 2, and 3-light Boxes and Lights of all sizes ready for immediate use. Warranted best materials, packed and sent to all parts of the kingdom; 2-light Boxes and Lights from 1*l.* 4*s.* Garden Lights of every description, Conservatories, Green and Hot-houses, made and fixed in all parts of the kingdom. References given to the Nobility, Gentry, and the Trade, in most of the counties of England. JAS. WATTS, Hothouse Builder, Claremont-place, Old Kent-road, London.

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PIMLICO SLATE WORKS. — Cisterns, Filters, Milk and Salting vessels, Corn and Flour Chests, Sinks, Dairy and Larder Shelves, Malting and other Flooring, Skirting, Refrigerators, Garden Edging, Flower Boxes, Pine pit Linings, Hot-bed Frames, moveable Cattle Sheds, Coping, Drain Stones and Traps, Steps and Risers, Balcony Landings, Roofing Slates, ridge roll and flap; Waste Slate for drains, Sun Dials, Fountains, and all descriptions of plain Slate Work in Town, or direct from Mr. MAGNUS'S Works in North Wales.

ENAMELLED SLATE Chimney-pieces, Billiard Tables, Console and other Table Tops, Mural Tablets, &c., in imitation of marble, surpassing the choicest marbles in beauty and durability, at less than half the cost of the commonest descriptions. Price Lists forwarded on application to Mr. MAGNUS, 39 and 40, Upper Belgrave-place, London.

ANTHONY'S PATENT AMERICAN CHURN.—Canterbury Colonists' Rooms, Adelphi.

The Churn was exhibited before a large and respectable body of the colonists, and although the weather was heavy and lowering, and much against butter-making operations, it maintained its well-earned reputation by producing from 3 quarts of cream and 1 quart of sweet milk, 3 lbs. 6 oz. of butter in 12 minutes. The butter being fully prepared in the churn without human hand touching it, was spread on bread and eaten by those present, who expressed themselves delighted with the exhibition.

Kase's Patent American Force and Suction Pump, Ransome's Improved Purifier Canvas Hose, lined with Gutta Percha, &c.

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Apply to H. MANNING, at the Holborn Iron Works, 251, High Holborn, London. A portion of the Hurdles may be seen in front of the Grand Stand, and at the Manufactory.

PURE WATER raised to any height from a small stream, where a fall can be obtained, by FREEMAN ROE and HANSON'S IMPROVED RAM; less waste, by two-thirds, than those ordinarily in use. Portable Steam Engines for Agricultural purposes, Threshing Machines, Deep-well Pumps, Water-wheels, Baths, Hot-water Apparatus, and Fountains. Towns supplied with Gas or Water. Drawings and Estimates made.—FREEMAN ROE and HANSON, Hydraulic and Gas Engineers; Office, 70, Strand, London.

GREENHOUSES.

HENRY FREEMAN, HOTHOUSE BUILDER and HOT WATER APPARATUS MANUFACTURER, Triangle, Hackney, London, begs to solicit the attention of the gentry to his low prices for cash. Good substantial-built Greenhouses, fixed complete, 42 feet long, 13 feet wide, 90*l.*; 21 feet long, 13 feet wide, 50*l.*; 12½ feet long, 10 feet wide, 30*l.* A large assortment of Conservatories, Hothouses, Pits, Melon and Cucumber boxes, Iron hand-lights, Summer-houses, Seats, &c. Estimates in the above line, either in wood or iron.

BELL'S PATENT LIQUID CEMENT is ready for use, and only one-eighth the cost of oil-paint. For beauty it is pre-eminent, giving the exact appearance of FINE CUT STONE. Can be used at once on fresh Roman Cement, or any other plastering, and will protect the walls as well as Roman Cement. In casks of 1, 2, and 3 cwt., at 8*s.*, 15*s.*, and 21*s.*, casks inclusive.

PATENT MINERAL PAINTS.—Invaluable for cheapness, beauty, and permanence: not half the cost of other paints, always ready for use, will keep good for years, and therefore well suited for exportation. Brilliant black, 2*s.*; rich brown, 2*s.* 9*d.*; greens and light colours 4*s.* per gallon.

G. BELL and Co., 2, Wellington-street, Goswell-street, London.

AGRICULTURAL DRAINING: THE DERBY LEVEL.—A Very Superior Draining Level, of great simplicity, price 3*l.* 5*s.*, to be had of the Maker, Mr. JOHN DAVIS, Optician, Derby. The above is securely packed and sent to any part of the empire.

ENORMOUS SAVING! GOING WITH THE TIMES!

HOW TO KEEP A HORSE for less than ONE SHILLING per DAY. The articles and numerous references may be seen, and a list of prices had at MARY WEDLAKE and Co.'s, 118, Fenchurch-street. A Pamphlet on the above may be had, each (post free) 1*s.* Also

HOW TO MAKE, Cut, Cart, and Stack HAY, for less than HALF the usual cost, in any county and in any weather.—N.B. A Pamphlet on the above may be had, each (post free) 1*s.*

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As you cannot get the same price for your produce, so we cannot expect from you the same price for our IMPLEMENTS, and without first-class manufactured Implements you cannot stand these times! By inclosing two stamps, a list, with illustrations, will be forwarded. Real makers of what they sell.—Most liberal discount for cash.

PORT NATAL, NEW ZEALAND, AUSTRALIA. Emigrants are informed MARY WEDLAKE and Co. have from time to time supplied the first settlers to Swan River and Port Natal, and all the Australian Colonies, with AGRICULTURAL IMPLEMENTS, and tools of first-rate class. They beg an inspection of their stock.—N.B. Purchasers may have the benefit of an introduction. Most liberal discount for cash.

DR. S. NEWINGTON'S HAND-DRILL HOES AND CULTIVATORS, to the frames of which are fitted Coulters for earthing up Potatoes and drawing out furrows for seeds. The chisel-pointed tines have moveable hoeing shares fitted to them, which can be removed when the tines are only required for stirring. These shares, which are made of any required width, hoe from 2 to 4 inches below the surface, according to the soil; on the shares being removed, the tines stir from 5 to 6 inches deep, a lad being enabled to hoe 2 acres of Turnips, &c., daily, cutting off every weed, and setting out the plants, reducing the price of labour from 4*s.* to 8*d.* an acre, or being able to hoe the crop six times, and much more effectually, for the same money now paid for hand-hoeing. Messrs. DUFAUR and Co. will exhibit, at the Royal Agricultural Show at Exeter, the following implements invented by Dr. NEWINGTON: A Drop Drill for horse power; the same for hand power; an implement to supersede broadcasting seed by hand for horse power; the same by hand power; an implement for broadcasting artificial manures or depositing it in rows by horse power; the same by hand power; a horse Dibble; a hand wheel Dibble; a subsoil Plough; a Scarifier or Cultivator; a paring Plough; a single horse Plough; hand drill Hoe and Cultivators, with various other fittings; a strike Plough.—Apply to Messrs. DUFAUR and Co., 21, Red Lion-square, London, who are the sole manufacturers and vendors of Dr. NEWINGTON'S inventions.

ASHBY'S INDIA EXPORT PALE ALE.—London Stores, under the South-Western Railway Terminus, Waterloo-road. India Pale Ale, 21*s.*, 18 gallons; 10*s.* 6*d.*, 9 gallons; Family Ale, 16*s.*, 18 gallons.—CHAS. ASHBY and Co. invite the particular attention of private Families and Clubs to their PALE ALE, as brewed by them for the COLONIAL MARKETS for the past 20 years. Supplied in small casks direct from the Brewery, Staines, and the London Stores, or from their agents—Messrs. W. Hancock, 80, Connaught-terrace, Hyde-park; Chidell and Stewart, 40, Lime-street, City; W. H. Chaplin, 11, Sebbon's-buildings, Upper-street, Islington; J. Shenton, Greenwich; W. Ferguson, Reading; Thos. Berry, Brighton and Lewes; A. J. Richardson and Co., Portsea and Southsea; J. Skidmore, Rickmansworth; Cooksey, Brothers, Southampton.

MARQUEES, SUN-BLINDS, RICK-CLOTHS, &c.—Manufactory, Old Kent-road, facing the Bricklayer's Arms Railway Terminus, and 17, Smithfield-bars, London.

"The guests are arriving; my villa has got
Quite a park-like appearance—a beautiful spot;
The band on the lawn, in the spacious marquee,
This tent for our dinner, and that for our tea."

Marquees and temporary rooms superbly fitted up for fetes, &c., on most moderate terms, by THOMAS EDGINGTON and Co.—Tents of every description, Rick-cloths, with poles, &c. Tanned Netting, for the protection of fruit-trees from frost, blight, and birds, and for the security of fresh sown seed either in gardens or fields, at unprecedentedly low prices, viz., 1*d.* per square yard, or 200 yards for 14*s.*, or 500 yards for 30*s.*, or 1000 yards for 50*s.* Sold to gardeners and shopkeepers by the cwt.—New Archangel Mats and Scrim Canvas for wall fruit; Tarpaulings for houses under repair, on hire. Orders and inquiries per post immediately attended to.

AGRICULTURAL EDUCATION.—THE COLLEGE, MAIDSTONE.

Visitor—His Grace the Archbishop of Canterbury.
President—The Earl of Romney.
Head Master—DAVID WALKER, Esq., M.A., F.G.S., &c.

At this Institution youths are instructed in the general branches of science bearing on Agriculture, in addition to the routine of a commercial and mathematical education.

The religious education is superintended by a resident Clergyman. Terms inclusive, 34*l.* a year.

NEW AGRICULTURAL IMPLEMENT.

BROWN'S PATENT FUMIGATOR, manufactured on a scale applicable for agricultural purposes, such as injecting a strong volume of smoke upon growing Turnips and other drilled crops, and thus obstructing the ravages of the fly. Also for fumigating Hops, Wall or Standard Fruit Trees, and driving vermin from their haunts. Price Eight Guineas.

Manufactured and supplied to the Trade by Messrs. COTTAM and HALLAM, 76, Oxford-street, London, where the Engine may be seen in operation.

SCHOOL FOR GENERAL AND SCIENTIFIC EDUCATION (especially with regard to Agriculture), Wickham Market, Suffolk, under the immediate patronage of the Right Hon. Lord Rendlesham, M P., Conducted by Mr. G. Downes. The Classical and Mathematical branches are entrusted to a Graduate of Cambridge, the Commercial and other departments to efficient Assistant Masters. A Laboratory, collection of Philosophical Apparatus, Library, &c., are attached to the School. Terms are moderate and inclusive, and may be known upon application to Mr. G. DOWNES, Wickham Market, Suffolk.

A vacancy for an articled Pupil.

IRON AND WIRE FENCING, AND METALLIC BEDSTEADS.

THOMAS PERRY AND SONS, 252, OXFORD-STREET (NEAR HYDE PARK), And Highfields Foundry and Wrought-iron Works, Bilston, Staffordshire, Manufacturers of all descriptions of PLAIN AND ORNAMENTAL IRON AND WIRE FENCING, Park Entrance, Carriage and Field Gates, Wickets, &c.; Deer, Sheep, and other Hurdles; Hare and Rabbit-proof Wire Fencing; Iron Bedstead Makers to the Board of Ordnance; And Government Contractors.

The works of Messrs. PERRY being situated in the heart of the first iron district, they are enabled to execute all orders with the greatest facility, and on the most moderate terms. Drawings made and estimates prepared, if required. The show-rooms contain an immense variety of every description of Iron and Wire-work, and are the largest in London. An Illustrated Catalogue of Bedsteads, with dimensions and prices, sent on application, post-free.

THE SUMMER RIDE OR PROMENADE.—The peculiar virtues of C. and A. OLDRIDGE'S BALM OF COLUMBIA completely remove the difficulty experienced by Ladies in preserving their ringlets after exercise; its use so invigorates the hair, that tresses, previously the straightest and most destitute of curl, rapidly acquire a vigour which maintains in permanent ringlets the head-dress of the most persevering votary of the ball-room, the ride, or the promenade. After the Minerals and Vegetables of the Old World have been compounded in all imaginable ways in fruitless attempts to discover so important a desideratum, we are indebted to the Western Hemisphere for furnishing the basis of OLDRIDGE'S BALM OF COLUMBIA, the efficacy of which in preserving, strengthening, and renewing the hair has become a matter of notoriety among all civilised nations. Its restorative virtues are indeed a proverb, and the most satisfactory attestations to its infallibility in reproducing hair upon persons otherwise hopelessly bald, have been published from time to time by the Proprietors, 13, Wellington-street North, Strand, a few doors above the Lyceum Theatre on the opposite side.

3*s.* 6*d.*, 6*s.*, and 11*s.* per Bottle; no other prices are genuine. When you ask for "Oldridge's Balm," never let the shopkeepers persuade you to buy any other article as a substitute.

MRS. LOUDON begs to give Notice that she ceased to Edit the Weekly Journal entitled THE LADIES' COMPANION AT HOME AND ABROAD, with No. 27, completing the first volume, and that she has no longer the slightest connection with that Paper.—Bayswater, June 29.

MECHI'S DESKS, WORK-BOXES, AND TEA-CHESTS, 4, Leadenhall-street, London, combine all that is superb and cheap, with the most approved patterns, invented by himself, manufactured on his own premises, where may be seen some of the richest specimens in the world of Papier Maché Goods, Dressing-cases, Bagatelle-tables, Ivory Chess-men and Chess-boards, rich Card-cases, Tablets, and in fact everything for the work-table and dressing-toilet, displayed in a style of elegance not surpassed by any in this kingdom. MECHI is the sole and original inventor of the Castellated Tooth-brushes, Magic Strop and Paste, the Peculiar Steel Razor, the Cushioned Bagatelle-tables, and various improvements in Portable Desks and Dressing-cases combined.

METCALFE AND Co.'s NEW PATTERN TOOTH-BRUSH and SMYRNA SPONGES.—The Tooth-Brush has the important advantage of searching thoroughly into the divisions of the teeth, and cleaning them in the most extraordinary manner, and is famous for the hairs not coming loose.—1*s.* An Improved Clothes-Brush, that cleans in a third part of the usual time, and incapable of injuring the finest nap. Penetrating Hair-Brushes, with the durable unbleached Russian bristles, which do not soften like common hair. Flesh-Brushes of improved, graduated, and powerful friction. Velvet-Brushes, which act in the most surprising and successful manner. The genuine Smyrna Sponge, with its preserved valuable properties of absorption, vitality, and durability, by means of direct importations, dispensing with all intermediate parties' profits and destructive bleaching, and securing the luxury of a genuine Smyrna Sponge. Only at METCALFE, BINGLEY, and Co.'s Sole Establishment, 130 B, Oxford-street, one door from Holles-street.

METCALFE'S ALKALINE TOOTH POWDER, 2*s.* per box.

CAUTION.—Beware of the words "From METCALFE'S," adopted by some houses.

THE HIPPOPOTAMUS presented by H. H. the Viceroy of Egypt to the Zoological Society of London, is exhibited daily from One to Six o'clock, at their Gardens in the Regent's Park. The Band of the First Life Guards will perform, by permission of Colonel Hall, every Saturday, at Four o'clock. Admission One Shilling, on Mondays Sixpence.

THE TEETH.—How often do we find the human face divine disfigured by neglecting the chiefest of its ornaments, and the breath made disagreeable to companions by non-attention to the Teeth! Though perfect in their structure and composition, to keep them in a pure and healthy state requires some little trouble; and if those who are blessed with well-formed Teeth knew how soon decay steals into the mouth, making unsightly what otherwise are delightful to admire, and designated unhealthiness by the impurity of the breath, they would spare no expense to chase away these fatal blemishes. But although most ladies are careful, and even particular in these delicate matters, yet few are sufficiently aware of the imperative necessity of avoiding all noxious or mineral substances of an acrid nature, and of which the greater part of the cheap Tooth Powders of the present day are composed. It is highly satisfactory to point out Messrs. Rowlands' Odonto, or Pearl Dentrifice, as a preparation free from all injurious elements, and eminently calculated to embellish and preserve the dental structure, to impart a grateful fragrance to the breath, and to embellish and perpetuate the graces of the mouth.—*Ladies' Gazette of Fashion.*

ROWLAND'S ODONTO

Is a white powder compounded of the choicest and most *recherché* ingredients of the oriental herbal, of inestimable value in preserving and beautifying the Teeth, strengthening the Gums, and in rendering the breath sweet and pure. Price 2*s.* 9*d.* per box.—Sold by A. ROWLAND and SONS, 20, Hatton-garden, London, and by Chemists and Perfumers.

OLD FEATHER BEDS RE-DRESSED, AND PURIFIED BY STEAM WITH PATENT MACHINERY.—This new process of dressing not only removes all impurities, but by expanding the feathers the bulk is greatly increased, and consequently the bed rendered much fuller and softer.—Charge for dressing, 3*d.* per lb. Old and Mothy Mattresses effectually cured and removed, fetched and returned, carriage free, within five miles.—HEAL and SON'S List of Bedding, containing full particulars of weights, sizes, and prices, sent free by post on application to their factory, 196 (opposite the chapel), Tottenham-court-road, London.

TOOTHACHE PERMANENTLY CURED by using BRANDE'S ENAMEL for filling decaying Teeth, and rendering them sound and painless. Price 1*s.* Enough for several Teeth. The only substance approved by the medical faculty, as being unattended with pain or danger, and the good effects of which are permanent.

Sold by all Chemists in the United Kingdom. Twenty really authorised Testimonials accompany each box, with full directions for use. Sent free, by return for post, by J. WILLIS, 24, EAST TEMPLE CHAMBERS, WHITEFRIARS, FLEET-STREET, LONDON, in return for 13 penny stamps.

CAUTION.—The great success of this preparation has induced numerous unskilful persons to produce spurious imitations, and to Copy BRANDE'S ENAMEL Advertisements. It is needful, therefore, to guard against such impositions, by seeing that the name of JOHN WILLIS accompanies each packet.

TO BE LET, on advantageous terms, an established NURSERY, in a northern county, within a mile of the Great North-Western Railway, containing about five acres. It is well stocked with young and thriving stuff, which will be turned over at a reasonable valuation. The present proprietor retires in consequence of a pressure of business of a very different character. An active person will find this a good chance for the investment of a moderate capital. It may be had with or without Three Cottages and a Barn. A small Greenhouse will be available, if necessary, also.

Apply to Mr. S. WILLIAMSON, Wine Merchant, Over, Cheshire.

TO NURSERYMEN, GARDENERS, &c.

TO BE LET OR SOLD, the Lease of the well-known and long established PARADISE NURSERY, Hornsey-road, Islington. The whole or part of the Glass and Stock may be taken at a valuation.—Further particulars may be had by applying to Messrs. PROTHEROE and MORRIS, Leyton-stone, Essex; or to Mr. WM. PAMPLIN, jun., on the premises.

PENTONVILLE.—A COTTAGE-BUILT HOUSE, near the Chapel, TO BE LET, No. 4, Collier-street, in substantial and ornamental repair, containing five bed-rooms, two parlours, and drawing room 22 feet by 16; replete with family conveniences, with good garden, well stocked, and summer-house.

May be viewed, and particulars had of Mr. JOHN SMITH, 8, St. John-street, Clerkenwell, London.

TO BE DISPOSED OF, the Wholesale Department of an Old and Highly-respectable London Seed Establishment; any one wishing to embark in the trade, or to add to their own business, will find this an opportunity rarely to be met with.—Apply to Messrs. STUBMY and SIMPSON, 8, Wellington-street, London-bridge.

MAYLE'S MODEL FUCHSIAS FOR 1850.—No grower can expect to win a prize at any of the principal exhibitions in town or country without these magnificent reflexed varieties.

Messrs. MAYLE and Co. will send out their SEVEN NEW FUCHSIAS on the 20th June, extra strong plants. From the very high opinions expressed of their merits by Dr. Lindley, Mr. Glenny, &c., they require no further comment from us. They are the things of the season, and must be had by all who wish to keep pace with the times.

No. 4, DIADEM, was shown at Walsall, near Birmingham, with two blooms, May 8th, and was awarded an extra prize. Judges' opinion: "By far the best ever raised."

Also first prize at Wolverhampton, May 25, against some fine older specimen varieties; and first-class certificate awarded at the Birmingham and Midland Society on the 20th.

Those in bloom were exhibited at Chiswick and Regent's-park June shows. The earliest orders will secure the strongest plants. Circulars can be had. Also Mr. Hoyles' superb Geraniums, a few extra strong blooming plants being left.

Stove, Greenhouse, Bedding Plants, &c., including every novelty of the season.—105, New-street, Birmingham.

BASS AND BROWN'S DESCRIPTIVE PRICED CATALOGUE sent prepaid for four penny stamps, for postage. This Catalogue contains a rich assortment of the newest and best plants which can be procured. The stock of BEDDING PLANTS is unusually strong and fine. Several thousand plants of Verbenas are now ready for sending out, as well as our collection of other plants for bedding, the stock of which is also very extensive, consisting of Geraniums, Fuchsias, Petunias, Dahlias, Chrysanthemums, Anagallis, Bouvardias, Cupheas, Heliotropes, Plumbagos, Lantanas, Salvias, Lobelia Erinus grandiflora and compacta alba, Zauschneria californica, &c.

Persons requiring Plants for beds may depend on receiving a supply, strong, and in fine condition, at low prices.

Seed and Horticultural Establishment, Sudbury, Suffolk.

PLANTS OF CABBAGE, SAVOY, KALE, BROCCOLI, CAULIFLOWER, AND CELERY.

JOHN CATTELL, SEEDSMAN and NURSERYMAN, Westerham, Kent, begs respectfully to inform the public that Plants of his superior true sorts of the above are now ready, and will be forwarded, as usual, to order, on receipt of postage stamps or Post-office orders, at the undernamed prices, basket or mat and package included:

All the sorts of early Cabbage, Savoy, and Kale, including Brussels Sprouts, 4*s.* 6*d.* per 1000; all the sorts of Autumn and Spring Broccoli and Red and White Celery, 6*s.* per 1000; Cauliflower, early and late, and Red Cabbage, 9*d.* per 100; Drumhead or Cattle Cabbage, 3*s.* 6*d.* p. 1000.—6*d.* per 1000 less when no mat or package is required. Packages of 1000 and upwards delivered free of carriage to the Edenbridge Station of the South-Eastern Railway.

Seeds of CATTELL'S superior "Dwarf Barnes," and his "Dwarf Reliance" Cabbage, may be had in packets, by post, for 12 penny stamps per packet, the former containing 1 oz., as usual, and the latter ½ oz.

EDWARD BECK, SLATE WORKS, ISLEWORTH. SLATE CISTERNS, &c.; COLE'S PATENT.

E. BECK informs Horticulturists and the Public generally that Mr. COLE has granted him the use of his Patent for the unexpired term, and he is now able to supply SLATE CISTERNS fastened without iron bolts or the usual oil cement, thereby doing away with the difficulty which has hitherto existed of forwarding such articles by rail or waggon, fixed and ready for use instead of in pieces, as heretofore.

E. B. will be happy to answer any inquiries as to the price of Cisterns, or any other Slate articles manufactured by him, such as Orange Tubs, Plant Boxes, Tanks, Shelves, Garden-path Edging, Hot-water Tank Covers, Flower Boxes for Balconies, Shelves fitted to hold water for Orchidaceous Houses, &c., all of which may be seen in use at Worton Cottage, Isleworth, on application to the Gardener, Sundays excepted.

Estimates given for Work as shown upon Drawings, and in specifications. A large stock of Slate Slabs of all sizes and thicknesses, kept on sale.

N.B.—Dairies fitted either with Shelves or Milk Pans, of very neat appearance.

LUCOMBE, PINCE, AND CO. beg to call public attention to their Advertisement in the last week's Numbers of the *Gardeners' Chronicle* and "Journal," of PENTSTEMON CYANANTHUS, and to Sir W. Hooker's description and drawing in the "Botanical Magazine" for September, 1849. Fine healthy plants will be ready on the 15th July.

Exeter Nursery, June 29.

The Gardeners' Chronicle.

SATURDAY, JUNE 29, 1850.

MEETINGS FOR THE ENSUING WEEK.

MONDAY,	July	1—Entomological	8 P.M.
TUESDAY,	—	2—Horticultural	3 P.M.
WEDNESDAY,	—	3—Royal Botanic Gardens	2 P.M.
THURSDAY,	—	4—Zoological	3 P.M.

COUNTRY SHOWS.—Monday, July 1: Slough Pink.—Tuesday, July 2: Hampshire Horticultural, and Halstead Floral and Horticultural.—Wednesday, July 3: York Horticultural.—Thursday, July 4: Diss Horticultural.

WE are informed that the rare and valuable collection of hot and greenhouse plants, the property of his late Majesty WILLIAM II., King of the Netherlands, will be publicly sold by auction in the month of August next. The catalogue of this superb collection is now preparing, and will be published shortly: on its appearance, we shall return to this interesting subject.

MESSRS. GARRAWAY and Co., of Bristol, and Mr. WHEELER, of Gloucester, have achieved an unenviable success. They have managed to fasten upon the GARDENERS' BENEVOLENT INSTITUTION an annuitant, who has not paid one farthing to the funds of the charity, at the expense of others who have subscribed to it for years. EDWARD BEACH, *who has never subscribed one farthing*, is, after five struggles, elected as a pensioner, while JAMES GREEN, *who has subscribed for* 12 *years*, IS PASSED OVER.

If this is not a discreditable job, we do not know what a job is. Had the intention been to ruin the charity, a more certain course could not have been taken; for it is clear that nothing is gained by subscribing to its funds; on the contrary, to subscribe is to be declared ineligible. Why should a gardener now continue to subscribe when he sees that those are best off who give nothing? The guineas that he pays the institution produce no advantage to himself; he is more likely to be elected if he keeps his pockets buttoned up.

A comparison of the number of votes that each candidate obtained on the last occasion with the amount of his previous subscriptions to the institution, is highly instructive. The returns officially published give the following result:

No. of years' Subscription.	No. of Votes.	Name.
12	77	GREEN.
7	187	BATTEY.
5	289	COCKS.
5	480 (elected)	SHEPHERD.
4	137	RUDLAND.
4	68	ROBINSON.
4	147	SNOW.
0	171	MARSHALL.
0	101	APPLEBY.
0	358 (elected)	BEACH.
0	8	BROWN.
0	22	EVANS.
0	11	HURDEN.
0	138	FITZGERALD.
0	20	HOPKINS.
0	98	SCHNEIDER.
0	4	CARTER.
0	—	SKEATES.

So that it appears that BEACH, who had never subscribed one farthing, polled almost five times as many votes as GREEN who had subscribed 12 years, or as ROBINSON who had subscribed four years. It also shows that FITZGERALD, an applicant brought forward by Messrs. LEE, of Hammersmith, having paid nothing, was better placed upon the poll than BATTEY who had given his hard earnings for seven long years.

It is evident that this method of managing matters, although it may afford a wretched triumph to a few nurserymen, must end in the ruin of the charity, unless it is immediately put an end to. It completely justifies the assertion, which we have often heard made, that the Gardeners' Benevolent Institution would become a mere nurserymen's convenience.

We therefore call upon the committee to come forward at once with some declaration, and as quickly as possible with some bye-law, the effect of which shall be in the first place to limit the candidates to those who have been subscribers to the charity, and secondly to secure the pension to those who have subscribed longest; so that no contest shall be possible except among those who shall have subscribed the same number of years. Thus suppose there were two vacancies and five candidates, of whom A has subscribed 7 guineas, C and D 5 each, B and E 4 each; then A would be elected without poll, C and D would go to the poll for the second vacancy, and B and E would be excluded for that time.

That such a course would produce a great accession to the income of the charity is highly probable; but whether it would or would not, is of much less consequence than putting an end to jobbing, and rendering it impossible to prefer strangers to the true and steady friends of the institution.

THE following fact seems to deserve the attention of our readers: *Rain at Chiswick*—1850.

	Inches.
JANUARY	1.43
FEBRUARY... ...	0.95
MARCH	0.13
APRIL	1.79
MAY	1.84
1st to 24th of JUNE	0.39
	6.53

Average amount for the whole year—about 24 inches.

Hence it appears that about 6½ inches have fallen in the first half of the present year, leaving the complement of 17½ inches for the next six months.

A FORTNIGHT since we drew attention to some sound practical observations by Messrs. STANDISH, of Bagshot, upon the cultivation of AMERICAN PLANTS. That the instruction thus conveyed was the result of experience was sufficiently proved by the operations which it described. That the practice is also strictly conformable to theory we shall now endeavour to show.

The three points which a gardener must attend to, if he wishes to grow American plants well, are the following:—1, the soil must be loose and rich; 2, there must be free and constant access of moisture without stagnation; and 3, there must be no chalk. In these three rules the whole art and mystery consists; and all the tedious directions which books contain on the subject are either superfluous or are included in them.

The soil must be light and rich. Peat is not insisted upon; on the contrary, it is expressly stated that other substances will answer the same purpose, provided they are in the same mechanical condition. The reason of this is obvious. "American" plants have in all cases delicate hair-like roots, which remain for years without any considerable increase in diameter; such roots cannot force their way through a soil which offers much resistance to their progress. Therefore clays, stiff loams, and any other adhesive compact kinds of earth, are unsuitable to them. Excluding these we have nothing left except sand, very sandy loam, and decayed vegetable matter; and those substances intermingled form, in fact, the very soil that American plants demand. The idea of peat being essential is a mistake; it is a very good material, because it consists of sand and decayed vegetable matter; and so will any other mixture of the kind be also a good material. Decayed leaves, fragments of rotten branches, dead roots, (probably charcoal), and such matters mixed with sand, in order to prevent the soil from becoming too compact, replace it perfectly. The only value of peat consists in its being a good natural mixture of what is wanted, and readily procurable in large quantities, in many districts. As to the addition of loam, the necessity of that depends, we imagine, upon little except its power of retaining moisture longer than dead or decayed vegetable matter. Provided the requisite moisture can be constantly secured, loam ceases to have value. As to manure, no mistake can be greater than to suppose that, because plants happen to grow in poor barren soil, they prefer it. With the single exception of Conifers, we believe that all known plants are improved by manure skilfully applied, provided it is not in too recent a state. Phosphates, sulphates, and azotised matter in small quantities are the all but universal food of plants, and "Americans" like them as well as their neighbours. If any one doubts it he has only to drench them now and then with weak liquid manure; that made from Peruvian guano, or cow-dung, is the most active, apparently in consequence of its abounding so much in phosphates.

There must be free and constant access of moisture, without stagnation. In this respect "Americans" offer no exception to the general rule; the roots of all plants, if to be kept in high health, must have free and constant access to moisture, and without stagnation. That is the law. What then is peculiar in American plants is merely this, that their roots are much more quickly dried up than the roots of other plants. They are not thick, fleshy, cellular masses, coated with a spongy bark capable of detaining moisture with great force. On the contrary, they are, as has been already stated, and as we all know, delicate hair-like fibres, whose bark is little more protection to them than the skin of a leaf. Such being their structure, they are emptied of whatever fluids they may contain the moment that the earth in contact with them becomes dry; and once emptied they necessarily perish. All those directions, therefore, which insist upon keeping the level of American beds completely below the surrounding surface, when the situation is not naturally damp, are founded upon a correct appreciation of the nature of these plants.

Why chalk should be offensive to them we are unable to explain. Such is certainly the fact; and we apprehend that one of the reasons why the American plants at Knap Hill and Bagshot are so much finer than any in the valley of the Thames, is essentially owing to the great abundance of lime in the water of all the latter district. It appears from analysis that while London water, that is to say Thames water, contains 16 grains of lime in a gallon, Bagshot water contains only one grain, or less.

The true difficulty, then, in growing American plants, is not, as is generally alleged, the want of proper soil, for that may be made anywhere, but the want of a sufficient supply of pure water; and it may be a question whether a very material difference would not be found in those places where American plants grow badly if rain-water alone were used in watering them, instead of that from pumps and ditches.

IN another column will be found what letters we have received upon the subject of the NAMES OF PLANTS. That signed "*Nomenclator*" ably expresses the views of those who are opposed to absolute change in scientific nomenclature when introduced into familiar language. As it is probable that others will also reach us, and as we are anxious that both sides of the question should be fully and fairly argued, we defer such remarks as we may ourselves have to offer until somewhat more time shall have been given for our correspondents to express their opinions. That they *will* express their opinions we earnestly hope; for this is no light matter; and unless we are much mistaken, the present is one of the most favourable opportunities that can be taken for collecting the views of intelligent persons. Many readers of our columns will no doubt shrink from expressing publicly any opinion whatever. In such cases we would

earnestly solicit them to favour us *privately* with their sentiments, so that we may collect the votes on both sides for our own guidance; and we promise to report the result faithfully for the general benefit.

The best way, perhaps, of expressing an opinion, without offering an argument, will be to say merely, "I agree with the Editor," or "I differ from the Editor," as the case may be.

EXPERIENCE TEACHES FOOLS.

I TOOK your advice—bought "A Packet of Seeds saved by an Old Gardener," which I have sown in a patch of poor shallow ground, for fear they should all run to leaves. I wish to save some of the sorts for next year, especially the species said to require a hot-bed in winter. To get my hand into practice, I am picking up seeds of wild flowers, not for their beauty but their worth. Should you think them of any use for your Horticultural Garden, I don't mind sending you a few occasionally, while they are fresh.

No. 1. "EXPERIENCE TEACHES FOOLS." — I have just been seeing my neighbour, who, instead of shaking hands with me in the usual way when we met, looked at me as if I had been a thief. "What's the matter with you now, Sam?" said I. "What's the matter! you d——l, you have made me kill my best specimen plant. When I came over the other day to see you, I admired the looks of your plants, they were so bushy, and even the two or three Heaths you have are growing away like Grass in a meadow. I thought myself very fortunate to catch you in the act of potting one of them, and took it for granted that your system must be right. When I came home I went to work, drained my pot, prepared my soil, and potted my plant exactly in the same way as you did, only I was afraid of my plant damping off at the neck, and placed the old ball a little higher than you did. Confound the plant, there it is, and I am afraid two or three more will soon follow it." "Well, my good friend, if you do as I do, your plants will grow as mine grow; but let us turn this once fine plant out of its pot, and I think I will be able to show you where the rogue lies." Out it came, the old ball was hard as a brick-bat, and as dry as dust. "Now are you satisfied that the fault is yours?" "Well, but you see the new soil is wet enough, and although dry in the centre, how comes the plant to go off at the neck first?" "Had the soil been kept wet enough in the centre, there would have been no fear of damping off at the neck. You have kept on watering, and your old ball being elevated, all the water is thrown from the centre into the new soil, in which there are no roots to absorb it; stagnation has taken place, which, together with a dry centre, has destroyed the vitality of the whole root, and that part nearest the surface of course shows the first symptome of decay." "Well, then, if that be the case, I do think it too bad of those big people about London to lead such as me astray. I have a scrap of an old paper on the cultivation of Heaths, written by a Mr. Leach (and he is said to be one of the best Heath growers in England); speaking of repotting, he says, 'Place the collar of the plant a little above the fresh soil, in order that no water may lodge round that part. Now, this is in print, which I will show you."—"Well, I have seen some of Mr. Leach's Heaths, and certainly they looked very well; but if you believe all you see in newspapers, and depend upon it more than you do on your own eye-sight and common-sense, why I will say you are a simpleton. Think for yourself, and try for yourself; the field of art and science is as free to you as to any other. I have seen the cream of all the collections of plants about London, more than once gathered together, from which I have learned more than ever I did from scraps of old newspapers. I have had plants die under my care, as well as you, and exactly from the same cause as that one of yours; but I never had a death without making a *post mortem* examination, with a view to ascertain the cause, and I can frankly tell you that, in almost every case, it proved to be drought at the centre; nor are we the only growers who have lost plants in this way. I have seen the same happen with others, even some of the best cultivators for Chiswick exhibitions. Yes; and I have been one of the jury on several inquests, too, when in every case the verdict passed was, 'Died in consequence of the heart having become too hard to admit moisture.' It is a general practice with those who grow plants on pages to have the 'crown' or 'collar' elevated; even the late Mr. N'Nab, of Edinburgh, the father of specimen Heath growing, sanctioned this system; doubtless led away, like many others, with the idea that water might 'lodge round that part,' so as to cause death. All stuff. I wonder how long a plant would live, if the soil about its roots were made or allowed to become so hard that water could not filter through it? What then is to become of it when repotted, if the 'collar' is raised up to prevent the water from getting into it? Why the first shift to the rubbish heap. This system being so often seen both in practice and print few people suspect the evil, and even some must have their plants potted in this way; I have myself been obliged by my employer to do so, although I knew all the while what I was doing, but not a word could be said; it was in print, and therefore must be right.

"Now, Sam, before we part, I will tell you how I do, then you can please yourself about believing it. I use rough soil, of course varying it according to the subjects I have to deal with; but recollect when I repot a specimen, such as yours was (now in pieces before us), I place the old ball as low as I intend the soil to be, then I keep the new earth up as high as the brim of the pot, all round, thus, as it were, forming a basin round the 'collar' of the plant; but do not suppose that I allow this bankment always to remain; no, only for a few weeks, or such time as I think the roots have penetrated through their new bed, then I take it away, leaving the surface as even as I possibly can. Since I have adopted this plan, I have not lost a single plant." We parted good friends. *An Old Showman, June 14.*

DISEASES OF PLANTS.

(*Continued from p.* 389.)

GENUS II.; *one species.* SMUT. — This disease has many names, and is often confounded with Bunt. It is called amongst us by the names of *fuliggine, filiggine, carbone, carboncino, ustilagine, nero, abbruciamente, arsura* (coal, burn, black), and by some of our cultivators by that of *marciume* (rottenness). Cerealia are much afflicted by it, but not exclusively, for besides infecting, I may say, all Gramineæ, it will also attack other plants. It appears to me, however, as far as my observation goes, that it is confined to monocotyledonous plants, as I have only met with it on Liliaceæ.

In our fields it affects more especially Wheat. I have not as yet verified the assertion of Tessier that it commits great ravages on Millet, Barley, Oats, and Maize. Possibly it may have been confounded with the fungus of the Maize which I have referred to in my second class. The ears of Wheat attacked by the smut appear, when first shooting out, to be blackish and decaying. When freed from their sheaths, they soon dry up and resolve into a minute impalpable and fœtid dust, which is carried off by the wind or any slight shock, leaving the extremity of the stalk truncated and bare, but always entire, green, and well formed. This disease is very ancient, and was observed by Ambrosini in the Bolognese fields, and has been very improperly confounded with the bunt, which, as we shall see, is a very different thing. Ambrosini calls it *ustilogine*, or *burn*, because the plant looks as if the top were burnt off. Very rarely the ear before resolving into powder preserves for a short time something of its natural shape, supported by the sheath of the uppermost leaf, but it always ends by decomposing into dust. Very often the disease may be known by the colour of the plant, the leaves before the development of the ear turning yellow, and withering at the extremity. Amongst us, if corn is attacked by smut alone, it does not do much mischief; but it is usually accompanied by the bunt, and the latter causes great havoc often attributed to the former. It is true, indeed, that smutted plants make fewer stems than healthy ones, and I have myself never seen a single sound ear on a plant once affected.

I have scarcely seen the disease on Barley, but it may have escaped me for want of a sufficiently careful search, for the ear is not so entirely destroyed by it in Barley as in Wheat. I once saw it, however, in my garden on some plants of *Hordeum hexastichum*. The appearance agreed exactly with those observed by Tessier. I have never found the smut on Maize, but from what I have read I think what has been so called is very near to the fungus of the Maize.

Besides Oats, I have observed the smut on various species of Bromus and Briza, on the Melica ciliata, on some Agrostides, and generally on almost all kinds of Grass which have fallen under my eyes, but especially those of water meadows. Some smaller kinds of Squills, and of yellow Ornithogala, have exhibited all their organs of fructification converted into a black powder, the stalk alone remaining, but I have never found either this or the next disease upon any dicotyledonous plants. Tessier asserts that he has seen Oat plants one-half sound and the other destroyed.

This disease has been variously attributed to manures of bad quality, to bad cultivation, to the thickness of fogs, to the humidity of the soil, to the work of insects, and to a defect in fecundation; but in fact the true cause has not yet been discovered. It has only been ascertained that the deeper the seeds are sown the more general it is. It remains also undecided whether this disease be contagious or not, owing to the difficulty of making experiments, from the rapidity with which the brown-green dust is dispersed. Tessier says that sowing grain gathered from a field attacked by smut will reproduce the disease; and there is no doubt that it may be prevented by steeping the seed corn in the same manner as for the bunt. For this and the two following diseases, Ginanni's treatise is well worth reading, in which it is clearly shown that the smut is produced before the ear is yet visible. No one has written more in d tail upon it than Tessier, who says that the smut of Oats is not contagious for Rye.

BEST TWELVE CARNATIONS AND BEST TWELVE PICOTEES.

Compiled by J. EDWARDS, Esq., F.H.S., Wace Cottage, Holloway,

From returns obtained from the following gentlemen, viz.: Messrs. Bragg and Turner, Slough; Barringer, Bedford; Creed, London; Ellis, Newhall, Norman, and Ward, Woolwich; Dodwell, Derby; Hallam and Pope, Birmingham; Holliday, Northampton; Hollyoake and Marris, Leicester; Hudson, Kingston, Notts; Keynes, Salisbury; May, Sonning, Berks; Pemble, Chatham; Sealey, Bristol; Slater, Manchester; Terry, Rochester; Wood, Nottingham; and Matthews, Weston-on-the-Green.

Where Raised.	NAMES.	RAISERS.	Barringer.	Bragg.	Creed	Dodwell.	Ellis.	Hallam.	Holliday.	Hollyoake.	Hudson.	Keynes.	Marris.	Matthews.	May.	Newhall.	Norman.	Pemble.	Pope.	Sealey.	Slater.	Terry.	Turner.	Ward.	Wood.	Total Votes.
	CARNATIONS.																									
	Scarlet Bizarres.																									
N	Admiral Curzon	Eason	1	1	1	1	1	1	..	1	1	1	1	..	1	1	1	..	1	..	1	1	1	1	1	19
S	Brutus	Colcutt	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	1	..	..	..	..	..	2
N	Duke of Sutherland	Elliott	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1
S	Lord Ranclifle	Holliday	..	..	1	1	1	1	..	1	1	1	..	1	..	..	1	1	..	..	1	..	..	..	1	13
S	Prince Albert	Hale	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	1
S	Splendid	Martin	..	1	..	..	..	..	1	1	..	..	..	..	..	1	..	..	1	1	..	..	1	1	..	..	8
	Crimson Bizarres.																									
S	Caliban	May	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	1
S	Count Pauline	Holmes	..	1	1	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	1	..	..	..	..	4
S	Edgar	May	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1
S	Georgiana	Jacques	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	1
N	Hugo Meynall	Ely	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	1
N	Lord Milton	Ditto	..	1	..	1	1	1	1	1	1	1	1	..	1	..	1	..	1	..	1	..	1	1	1	17
S	Mercutio	May	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	1	..	..	..	2
N	Rainbow	Cartwright	..	..	..	..	1	1	..	..	..	..	..	..	..	..	1	..	..	1	1	..	..	..	..	5
N	Rainbow	Elliott	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1
N	Robert Burns	Mansley	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	1
N	Thomas Hewlett	Holliday	..	..	..	1	1	..	1	1	..	1	1	..	..	..	1	..	..	..	..	..	1	1	1	10
	Pink Bizarres.																									
S	Prince Albert	Puxley	..	1	1	1	1	1	1	1	1	1	1	..	1	1	..	..	1	..	..	1	1	..	..	17
S	Princess Royal	Sealey	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	1	..	..	..	..	..	2
S	Princess Victoria	Smith	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	1	..	..	..	..	..	..	1	2
S	Sarah Payne	Ward	..	1	1	1	1	1	1	1	1	1	1	..	1	1	1	1	1	1	..	1	1	1	..	21
	Purple Flakes.																									
N	Beauty of Woodhouse	Mansley	..	1	..	1	1	1	1	1	..	1	1	..	1	1	1	..	1	1	..	..	1	1	..	16
S	Dr. Solander	Willmer	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	1	..	..	..	2
S	Earl Spencer	Barringer	..	1	..	..	..	1	..	..	..	1	..	..	..	..	..	..	..	..	1	..	..	..	..	4
N	Lord Byron	Taylor	..	..	..	..	..	..	1	1	..	1	..	..	..	..	..	..	..	..	..	..	..	..	1	4
N	Mango	Ely	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	1
N	Premier	Milwood	..	..	..	1	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	3
S	President	Martin	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1
S	Queen of Purples	Holliday	..	..	1	..	..	..	..	1	..	..	..	..	..	..	1	..	..	..	1	..	..	..	..	4
N	Rev. J. Bramhall	Clarke	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	2
N	'Squire Meynall	Brabbin	..	..	..	..	..	..	..	..	..	1	..	..	..	..	1	1	..	..	1	..	1	..	1	6
N	'Squire Trow	Jackson	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	1
	Scarlet Flakes.																									
S	Bishop of Glo'ster	Brown	..	..	1	1	..	..	..	1	..	..	..	..	..	..	..	..	1	..	..	..	1	..	..	..	5
S	Bright Phœbus	Hodges	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	1
N	Brilliant	Elliott	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	2
N	Defiance	Haines	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	1
S	Dr. Pattison	Hardwick	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	1
S	Firebrand	Ditto	..	1	..	..	1	1	..	..	1	1	..	..	..	..	..	..	..	..	..	..	..	1	1	7
S	Hero of Middlesex	Willmer	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	1
N	Jenny Lind	Merryweather	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	1
N	King of Scarlets	Ely	..	1	1	1	..	..	1	1	..	..	..	1	..	1	..	..	..	1	1	..	1	1	..	12
S	Lydia	Addenbrook	..	..	..	..	..	1	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2
N	North Midland	Ely	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	1
N	Queen Victoria	Simpson	..	..	..	..	1	..	..	1	..	..	1	..	1	1	1	..	..	..	..	..	..	1	..	7
S	Ulysses	Bucknall	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	1
S	William the IVth	Wilson	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	1	..	..	..	..	2
	Rose Flakes.																									
S	Ariel	May	..	..	1	1	..	..	1	..	..	..	1	..	..	1	..	..	..	..	1	1	..	..	..	7
S	Flora's Garland	Brooks	..	1	1	..	..	1	1	1	1	..	..	1	..	..	1	1	1	1	1	..	1	1	1	16
S	Harriet	Wilson	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	1
N	Lady Ely	Ely	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	1	..	..	..	..	1	3
S	Lorenzo	May	..	..	..	1	1	..	..	1	1	..	1	1	..	1	..	..	..	..	..	..	..	1	..	8
N	Lovely Ann	Ely	..	1	..	..	1	..	..	..	..	1	..	..	..	..	..	1	..	..	..	1	1	..	1	7
N	Mrs. Pickering	Pickering	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	1
S	Princess Royal	Puxley	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1
	PICOTEES—Heavy Red.																									
S	Antagonist	Read	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	1
S	Duchess of Cambridge	Brooks	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	2
S	Duke of Wellington	Sharp	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	1
S	Goliah	Brinklow	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1

NOTE.—The figures in each column denote the varieties returned by the respective cultivators under whose names they are placed; N indicates Northern raised, S. Southern raised.

BEST TWELVE CARNATIONS AND BEST TWELVE PICOTEES—*continued.*

Where Raised.	Names.	Raisers.	Barringer.	Bragg.	Creed.	Dodwell.	Ellis.	Hallam.	Holliday.	Hollyoake.	Hudson.	Keynes.	Marris.	Matthews.	May.	Newhall.	Norman.	Pemble.	Pope.	Sealey.	Slater.	Terry.	Turner.	Ward.	Wood.	Total Votes.
	PICOTEES.																									
	HEAVY RED.																									
S	Isabella	Wildman		1		1												1	1	1						5
S	King James	Headley		1	1		1		1		1		1	1	1	1	1					1	1	1		14
S	Mr. Trahar	Dickson						1	1																	2
S	Mrs. Bevan	Burroughes																1				1				2
N	Prince of Wales	Marris			1	1					1	1	1	1			1					1		1	1	12
S	Schamel	Read		1																						1
S	Sebastian	May						1								1			1	1					1	5
	LIGHT RED.																									
S	Duchess of Bedford	Brinklow	1																							1
S	Duchess of Sutherland	Burroughes	1	1	1	1				1		1	1	1	1		1				1		1		1	13
S	Emma	Ditto																				1				1
S	Ernest	Edmonds					1	1	1															1		4
S	Gem	Youell		1	1	1	1	1	1	1	1	1	1	1		1	1		1	1	1	1	1	1	1	20
S	Jenny Lind	Edmonds								1							1	1								4
S	Lady Flora	Burroughes																1								1
S	Miranda	May													1											1
N	Prince of Wales	Marris														1										1
	HEAVY PURPLE.																									
S	Constance	May												1								1	1			3
S	Delicata	Holliday																1						1		2
S	General Jackson	Burroughes																1								1
N	Jenny Lind	Ely						1																		1
S	Jessica	May	1		1							1			1								1			5
S	Lady Chesterfield	Brinklow																				1				1
S	Marquis of Exeter	Holliday		1					1																	2
N	Nulli Secundus	Mitchell																			1					1
S	Olivia	May						1												1						2
S	President	Burroughes							1																	1
N	Prince Albert	Marris		1	1	1				1	1	1	1	1							1			1	1	11
S	Princess Alice	Wood																	1						1	2
S	Portia	May	1			1	1	1		1			1		1	1			1	1						10
S	Queen Victoria	Crask														1		1								2
N	Regina	Gatliff									1															1
S	Rising Sun	Brinklow																1								1
	LIGHT PURPLE.																									
S	Amy	Burroughes															1			1						3
S	Ann Page	May																							1	1
S	Delicata	Holliday					1		1							1					1					4
S	Duke of Newcastle	Burroughes																1		1						2
N	Exquisite	Hudson									1															1
S	Fairy Queen	Barringer						1																		1
S	Juliet	May	1	1	1	1	1	1				1	1	1	1			1	1	1		1	1			16
S	Lady Harriet Moore	Turner								1																1
S	Leader	Brinklow	1																							1
S	L'Elegant	Sharp			1																					1
S	Lorina	Burroughes		1		1				1			1		1									1		1	7
N	Mrs. Favell	Ely																	1							1
S	Prince Albert	Crask																					1			1
S	Purple Perfection	Brinklow									1															1
S	Regina	Cox										1		1		1	1								1	5
	HEAVY ROSE.																									
N	Miss Rosa	Merryweather				1																				1
N	Princess Royal	Marris							1																	1
S	Princess Royal	Willmer	1	1	1		1	1			1	1	1	1	1		1	1	1	1			1	1	1	17
S	Queen Victoria	Green	1	1			1	1		1	1					1		1		1	1	1				11
S	Venus	Headley			1	1			1	1		1	1	1	1	1	1		1		1	1	1	1	1	16
	LIGHT ROSE.																									
S	Bride	Burroughes																1								1
S	Ivanhoe	Crouch						1											1							2
S	Lady Alice Peel	Burroughes				1						1	1												1	4
S	Lady Dacre	Garratt	1		1		1		1	1	1				1	1		1			1	1	1	1	1	14
S	Mrs. Barnard	Barnard	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	23
S	Mrs. Trahar	Dickson		1																						1
S	Sophia	Ditto														1										1

VILLA AND SUBURBAN GARDENING.

Few plants contribute more to decorate the greenhouse of the village gardener than the different varieties of Achimenes. On this account they deserve more than a passing notice, for they are very easily cultivated, and occupy little space in winter. All who possess a cold pit or greenhouse may grow them well; but of course those who have warm pits or hothouses may enjoy their beauties for a longer period of time. A few years ago we had little in this genus to attract our notice except the old coccinea, and its culture was much neglected; like many other plants it only existed as a botanical curiosity, gardening skill had not then been brought to bear upon it, and we never saw such specimens of it as we have seen of late years.

It is now well known that the Achimenes are all easily propagated, that almost every scale of the tubers forms a plant, and that these may be made to bloom during the current season. The amateur who may possess tubers, and whose object is to secure strong blooming plants rather than numbers, will do well to retain the tubers entire. Before they are divided, and when first brought from their winter quarters, let them be plunged in a pan of water until the soil is completely wet through, in every part, then place the pots on a warm shelf to drain. In this position they may remain until they begin to show symptoms of growth, when they may be turned out of the pots, and the tubers collected from the soil. If single specimens are desired, then place the tubers singly in 3-inch pots, and when they are 3 or 4 inches high repot them into 8-inch pots. By good treatment they will throw up numerous shoots from the base of the first shoot, and these will throw out laterals, and will ultimately render the plant an object of much interest. Another mode of culture is to place eight or nine tubers in a seed pan 12 inches in diameter. These eventually make magnificent specimens wherewith to adorn either conservatories, greenhouses, or drawing-rooms.

The soil which I would recommend for the Achimenes, and in which they will bloom beautifully, is equal parts turfy peat, fibrous loam, and leaf mould, and one-fifth silver sand.

In their culture be very particular that the pots or pans are perfectly drained; as they begin to grow in spring, let the supply of water be limited, but as they advance in growth a more plentiful and more frequent application will be required; and when in full vigour of growth, liquid manure may be administered with much advantage. This will also tend, in a great measure, to prolong their flowering season. When decay in the flowers and foliage begins to be apparent, carefully, but progressively, withdraw all waterings, place the plants in the full sun under cover, until their stems are withered, when they may be stowed away under a greenhouse stage in any dry place, laying the pots on their sides, in order to prevent the ingress of moisture. *Pharo.*

Home Correspondence.

Scientific Nomenclature. — I am happy to find that the writer of the Leading Article in your last Number seems inclined to modify his views with respect to the substitution of an English nomenclature for the binomial system, adopted by all cultivators in every department of science since the days of Linnæus. This is no trivial question, and one that ought not to be submitted to the caprice of any individual, however great his name or exalted his station in the ranks of science. It is a world-wide question, and should not be disturbed without the sanction of a general congress of science. There are three modes by means of which, either singly or collectively, the advocates for the alteration seek to carry out their views: 1st, By the literal translation of the technical terms; 2d, by Anglicising their terminations; and, 3d, by the use of vernacular names. To the first mode an objection rises *in limine*, almost insuperable, in the inapplicability of the English language to convey the meaning of the classical names without the use of phrases inconvenient for their length and inelegant in their construction. How, for instance, can we translate Epidendrum selligerum and Phalænopsis amabilis otherwise than the Saddle-bearing Tree-dweller and Loveable Moth-face? and when we have accomplished our task to the entire satisfaction of the village schoolmaster (that stalking-horse and pretext, in these days, for the dissemination of so much trash, falsely styled useful knowledge), what can be more ridiculous than the result of our labours? and what more intelligible idea do we convey to the general reader than by the use of the more euphonious and more easily remembered appellations derived from the dead languages? Generic and specific names, when properly constructed and judiciously applied, ought and do convey to the scientific reader certain definite peculiarities appertaining to the thing named; but in order to the just appreciation of the information so imparted, a certain amount of previous knowledge of the subject is indispensable; and to any one not possessing that knowledge, such a name as Bean-like Cutridge would convey no more information than Acrotemnus Faba, and consequently the only important argument adduced in favour of the innovation, namely, the desire to disseminate scientific knowledge amongst the lower classes, falls to the ground. In point of fact, to the generality of readers, the names given by men of science to certain objects constitute a sort of *memoria technica*, by means of which they are enabled to commit to memory, without effort, a considerable number of the objects so named; and, for this purpose, a technology compounded from the dead languages is far more appropriate than any combination of English words, as we have proof in the fact, that the best system of artificial memory ever constructed was upon the principle of Latinising the words, and arranging them in hexameter verse. There are various other objections to the plan, as, for instance, the inconvenience attending the transposition of the generic and specific names, and the ambiguity produced by using translated terms of species, well known by their technical appellations. I am at a loss to know what plant is alluded to in the *Chronicle*, of June 15, as "Beauty Dendrobe," whether Dendrobium formosum, speciosum, or pulchellum? To the other two modes of providing English names there is less objection; indeed, they may frequently be adopted (in addition to the classical names) with advantage, when not applied to species. The plan of Anglicising the terminations of the technical terms, when using them in English composition, often renders the construction of the sentences more concise, and the phraseology more elegant; it also facilitates the use of the plurals, without the seeming pedantry of declining the Latin or Greek words. Oncid, Dendrobe, and Orchids are decidedly preferable to Oncidium, Dendrobium, and Orchidaceæ. With respect to vernacular appellations, when you have them known and recognised, by all means use them in preference either to Anglicised or translated names. Let us have Snowdrop, not Milkflower; Oak and Beech, not Querque and Fage. Let the Frenchman enjoy his Chêne, and the German his Eiche; but let us not, nevertheless, lose sight of the cosmopolitan designation Quercus, which conveys now, as it has done since the days of Virgil, the same idea to the mind of the whole world. *Nomenclator.*

Out-door Vines.—A friend of mine in Gloucester has an out-door Vine of the Dutch Sweetwater variety which yearly produces a vast show for fruit, but scarcely ever ripens any of it. Only here and there are there any stones in the Grapes; the main body are mere abortions. What is the cause of all this? The soil is of extraordinary depth and richness, but at 3 or 4 feet you come to water. Would root-pruning be safe in such a case, so as to enable him, by undermining the tree, to deposit a quantity of brick-bats, old mortar rubbish, and other rough but dry materials, to cut off the communication with the moisture beneath? *Samuel Taylor, Barnwood, Gloucestershire.* [Instead of pruning the roots, raise them gradually, and bring them near the surface.]

Botanical Names.—While resting on my oars after some lengthened exertion as a contributor to the *Gardeners' Chronicle*, I have been roused to a fresh attempt by the excellent leading article of last Saturday, on the important subject of botanical terminology. The practical wit exhibited in that paper, the union of the *utile cum dulci* (the useful with the sweet), seems to ensure to the writer the full realisation of his own views, provided he will continue to favour the public with such illustrations as he has thus furnished. I shall not, therefore, enter the lists as an advocate on the general merits of the question, but merely glance at a collateral topic, which yet has an important bearing on the main argument. I allude to the aid which is lent to mere empiricism and learned ignorance by an unnecessarily scientific phraseology. I know a working gardener at this time who keeps the visitors to his master's greenhouse in a continual titter by his mal-pronunciation of Latin and Greek names, which, if Anglicised, would be correctly uttered, and yet the honest man believes all the time that the *oses* and *uses* are as much a part of his art as digging, and potting, and grafting. If this were all, the evil would be scarcely worthy of notice; but it strikes its roots into general society. I meet with persons who, if botanical terms were expunged from the Queen's English, would stand on their own merits as ignoramuses; but who are enabled, by Greek and Latin, to throw dust in the eyes of their auditors and pass themselves off as profound botanists and learned men of the first water. Apart from the more professional advantages which will result from the reform you recommend, pedantry and quackery would, by it, be deprived of some of their plume: this is, I was about to say, a desideratum, but acting on my own precept, I prefer to call it, "a consummation, devoutly to be wished." *Henry Burgess.*

What Effect has Guano upon Pelargoniums?—My gardener has applied it, and I fancy that the wood is much stronger, but that the flowers are smaller. *H. E. W.* [The effect of any stimulating manure, in certain conditions of the plant, is to make growth in leaves and wood at the expense of the flowers. When the pots are quite full of roots, and the bloom coming up strongly, guano water, or similar liquid manure, may be given with advantage.]

Names.—If there was one portion of his labours for which the late Mr. Loudon deserved praise more than another, I think it was his ceaseless endeavour to make everybody pronounce the names of plants correctly. The very marked improvement in the catalogues of nurserymen is some proof that he did not labour in vain. Still, however, it is not unco mmon to hear Gladíolus made to rhyme with bolus, and Camellia (though

spelled with two l's) with Amelia. But bad as this is, it is, in my estimation, far less offensive than to read and hear of Oncids and Ceanothes. Only in your last Paper it was thought necessary, in one short sentence, to use both Ceanothe and Ceanothus. This is more puzzling to the nurseryman than adhering solely to the Latin name. Besides, where is this Anglicising scheme to stop? What right have we to appropriate tropical plants that abhor our climate? Not to go any further than hardy plants, what publication is popular and influential enough to induce people to talk of Campanules, Ranuncules, Rudbecks and Crokes? Asparagus must of course for the future be called Grass; but what shall we do with Eschscholtzia and Chætogastra? I am firmly persuaded that no man of acknowledged taste will acquiesce in this new scheme. "Gents," perhaps, may be grateful for your abbreviation. *O. P.*

Orchids, and the Establishment of a new Society relating to them.—I have for some time been satisfied that it would be very desirable to establish a small society for the propagation of the knowledge of Orchidaceous plants, recording novelties, and any peculiarities as to their culture, &c. The taste for these plants is spreading daily, and Mr. Bateman's sale, where the principal growers or their gardeners were collected, reminded me of the Roxburgh book club, founded after the great sale of the rare Roxburgh books. I think from 100 to 200 might be reckoned on; and, say that the subscriptions were 2 guineas per annum, and 1 guinea entrance, this would enable the society to defray the small expense of periodical meetings, and probably to publish a small journal. Perhaps the society might hire "for a consideration" the occasional use of the meeting room of the Horticultural Society, and the 1 guinea entrance would go towards defraying any small preliminary expenses. I think I know at least 25 persons who would join the society, and I throw out these few random hints to see how the subject is taken up by yourself and your readers. The society as proposed would not interfere with the great Chiswick and Regent's-park exhibitions, as I only propose that plants should be exhibited at the meetings of the members. The process of lithograph enables persons to publish figures of plants at a comparatively cheap rate, so that the journal would not I conceive be very expensive, and some small return may be expected from its sale to non-subscribers, especially on the Continent. *Dodman.* P.S. I protest against all Punch-like jokes suggesting that the new society should be called the Parasites, &c.

Rose Stocks: R. Manettii, v. R. canina, &c.—In looking over the remarks on this interesting subject, I do not observe any notice made of the great difference of habit that obtains in the Dog-rose. By a careful inspection of the stocks of this kind, it will be seen that the foliage differs considerably in size, colour, and form, and that the shoots differ also in their vigour and manner of growth. Some are like the Noisettes, some the Gallicas, some the albas, some the sempervirens, &c., and yet in budding but little regard is paid to these differences. Is it wonderful, then, if the buds take, that the plants should ultimately fail? In looking over a border of Teas this season, I found that several very vigorous growers had lost their buds. It seems that the delicate infant had been placed in charge of an elephant, and in the animal's endeavour to place it on its back the babe was strangled in its trunk. In budding indiscriminately on this stock, then, we know not what we are doing, or rather we are setting our knowledge at defiance and taking the risk. By careful attention we may classify these varieties, and ascertain their adaptation to the several scions; but is it wise to reject the results of experience so slowly acquired? Facts are stubborn things. The Dog-rose, as a family, differs in its vigour in the proportion of fully one to three. The Manettii, Celine, Boursault, &c., are uniform in their growth, and the habit of the scion has only to be studied to insure success, while the chopped uncouth roots of the Dog-rose almost unfit it for pot culture; its spawn gives incessant trouble, and its mutilation prepares it for decay. In my retentive soil the dwarfs succeed but indifferently, and are far inferior to the standards, so I cannot but hail the prospect of their giving place to their betters. In a light sandy loam, by a water-course, I have found cuttings of Celine root as freely as the Manettii. *J. J. Foster, Edgeware Nurseries.*

Exhibitions of Northern and Southern raised Carnations and Picotees.—It will be seen by your advertisement pages that schedules for these exhibitions are being distributed. The prizes appear to be of sufficient value to tempt growers from distant localities to exhibit, and they are numerous enough for the due encouragement of the many. The discussion with respect to showing "on or off cards" seems to be settled pretty amicably in a fair compromise, and subscriptions are liberally forwarded. Mr. J. F. Wood, Nottingham, has sent 2*l.*; Mr. Merryweather, 10*s.*; Mr. Buswell, 10*s.*; Mr. Holland, 1*l.*; Mr. Wallis, 5*s.*; Mr. Elliott, 2*s.* 6*d.*; Mr. Jackson, 5*s.*; Mr. Gibbons, 5*s.*; Leeds Committee, per Mr. J. Rhodes, 3*l.* 10*s.*; Superintendent of "Florist and Garden Miscellany," 5*l.*; Mr. C. Turner, 5*l.*; Mr. J. Keynes, 5*l.*; Derby and neighbourhood, 20*l.*; and many promises are yet to be performed. I understand that the subscription list closes on the 10th of July, after which date an entrance fee will be charged to intending exhibitors that may then be non-subscribers. These exhibitions have been instituted with the intention of testing northern with southern raised flowers, and no doubt the result will be highly interesting to florists. *J. Edwards.*

The Potato Disease.—Some of my Potatoes were planted in a hotbed, about 3 yards square, without any manure, and from that quantity of ground I have not had more than a pint fit for table; others have been more tainted this year than I have had them before. They were the early Ash-leaved Kidney, planted whole, and at the usual depth. *J. Taylor, Weddington, near Nuneaton, June* 23.

Garden Terraces.—In the rage for change, and the introduction of clumps, and shrubbery walks, and serpentine paths, the fine, broad, elevated garden terrace got out of favour. The good taste, however, of the present day is restoring this grand feature of the flower garden. Southey, like myself, had seen the magnificent terraced gardens of Lisbon and Cintra, and felt their beauty. To prove this, I send the following extract from one of his letters just published:—"I congratulate you on exchanging the pavement of Whitehall for your noble terraces, which I never can think of without pleasure, because they are beautiful in themselves, and carry one back to old times. Anything that does this is good. Were I to build a mansion with the means of Lord Lonsdale or Lord Grosvenor, I would certainly make hanging gardens, if the ground permitted it. They have a character of grandeur and of permanence, without which nothing can be truly grand, and they are fine even in decay." R. Southey to C. W. W. Wynn. *Dodman.* [Yes; but who is to do such things without the princely fortunes of these great nobles?]

Monstrous Plums.—The inclosed, which I suppose is a malformation of the fruit, I have taken from a



Plum tree, which is nearly covered over with such productions. *F. D., Newburgh-park, Easingwold, June* 17. [This is a disease which occasionally attacks some kinds of stone fruit. It consists in a fungous enlargement of the shell of the young fruit, which then grows up into a distended leathery bag. The cause is unknown. In a Bird Cherry, found in the Himalayas, a similar appearance is so common as to have given rise to the supposition that the plants in this condition are a peculiar species, and to the name Cerasus cornuta.]

Change of Note in the Cuckoo.—I imagine that the observers of natural history will agree that the change of note alluded to by "Este" is by no means uncommon. About the same period I noticed in my locality the same fact—the note being frequently repeated, cŭck-cŭck-koo, and in one or two instances cŭck-cŭck-cŭck, without the usual final koo. In Essex there is an old rhyme, a part of which is as follows, viz.:

> "May, they sing night and day;
> In June, they change their tune;
> July, away they fly," &c.

So that it would appear the change is not uncommon. So much has it been observed and known in this county, that the common mode of accounting for it is, that the eggs of small birds cease to be so plentiful as nature may require for perfecting the note, and hence the defect. *W. M. Fisk, Ely Bowers, Danbury, Essex.*

——Though I have not observed the change of note in the cuckoo in England, I have repeatedly done so, in several successive years, in Germany. The change which "Este" names appeared to begin towards the middle of June; the notes preserved their clearness for two or three weeks, then they became hoarse, then confused, and finally ceased to be heard before the end of July, perhaps somewhat earlier. *R. A. H.*

Descent of the Sap.—The agitation of such a question as you have suggested to your correspondents, in asking their opinions of what is meant by the "Descent of the Sap," is calculated to awaken attention to many facts that may bear upon the general theory of vegetation. I was glad to see the communications at p. 117, though I do not find in them anything that throws new light upon the subject. Without proceeding to search after the authority of old experiments in support of the general impression they have left upon my own mind, I consider the fact established (as I believe we all do), that an absorption of water, with whatever it may hold in solution, is constantly taking place through the extremity of the rootlets, and that this "crude sap" is carried forward, either through the intercellular passages or through particular vessels (of which there still seems to be need of better proof), or through both, by a force which acts "by propulsion," and not "by attraction," as Mr. Beaton supposes. The celebrated experiment of Hales upon the Vine, and the experiments of Dutrochet and others have sufficiently established this. If Mr. Beaton had cut away the two buds at the end of his Vine branch, he would have found it fill with sap, notwithstanding such mutilation; and if he had taken a portion of a perfectly dry branch, and held it vertically, and poured water upon the upper cut surface, this would have been imbibed, and ultimately have passed through and dropped out at the lower end. Moreover, in talking of "proving the simplest axiom in Euclid," he has forgotten that an axiom does not admit of proof; nor can it be assumed, as an axiom, that the sap descends as well as ascends in the way he describes; for trees are not transparent, and we cannot see this to be the case. We must test the fact by experiment, and his experiment is not sufficient for this purpose. But allow the branches to be filled as you will with crude sap, then, by exhalations through the stomata, a large amount of the water introduced is carried off, leaving whatever it held in solution still in the remainder of the water that has not been exhaled. The stimulus of light, acting on the cellular tissue in the leaves, or on certain stems that are not provided with leaves, enables these parts to concoct (if I may use the expression) those organic compounds—sugar, gum, &c., which are soluble in water, and are capable of being transmitted through the membranes of the cells themselves into the same spaces that are occupied by crude sap. Thus, a general diffusion of such organic compounds throughout the plant takes place. This diffusion has been termed the "descent of the sap." It is from these organic compounds that the general tissue, in whatever part of the plant, is developed. Whatever other compounds may be found, in particular parts of the tissue, may be derived from special functions of the tissue in those parts, after they have been supplied with the ingredients previously prepared in the leaves, and very possibly with other ingredients also among the various matters held in solution in the crude sap. I quite agree with you in supposing the starch in the tubers of a Potato to have been formed from the gum that was previously prepared in the leaves of that plant, and afterwards found its way to the tubers; and I am surprised to find the ordinary explanation of the fact has been doubted at all. I have the results of a very simple experiment (no novelty) which I prepared a few years ago, to satisfy the members of a farmers' club that the leaves of plants were far more absolutely necessary to the general development of their root-crops than they seemed to imagine. Two seeds of Ricinus communis were planted, one of which was allowed to grow untouched, till it became a plant about 6 feet high, and had put forth its flowers; whilst the other had its leaves constantly removed as soon as they began to expand. The cotyledons on the former specimen turned yellow and fell off, whilst those on the latter became intensely green, and were perfectly vigorous to the end of the experiment. Both plants were growing for the same period, but the mutilated specimen did not attain above 4 or 5 inches in height; and it must be sufficiently evident that its being kept alive at all was to be attributed to my allowing the cotyledons to remain. I think we cannot doubt that the return into the system of the materials elaborated in the leaves is necessary to the growth of all parts of a plant, and that this effect results from what has been called the "descent of the sap." Perhaps I have been too particular before alluding to the manner in which a wounded surface becomes covered with new wood, as I believe the view I have here taken is no uncommon one. Which side of a decorticated portion of a stem or branch is likely to be first and most efficiently healed, will depend, I should conceive, upon which side is best supplied with those organic materials which in solution have been called "the descending sap." I do not suppose that gravity has much to do with their general transformation, or that it affects the question at issue. Unless my memory fail me, it has been proved that the upper edge of the wound on a ringed branch, when purposely bent downward in order to test this point, has been found to form a larger amount of new tissue than the other edge (though this latter was now uppermost in position). Where there are no leaves or branches below a ringed surface, we cannot expect the supply of organic matter to be so great as above it. It could only be obtained from what had already been accumulated in the lower portion of the trunk, and would be gradually wasted, without fresh

additions being made to it; whereas above the ring the general supply would be even more ample than before, the ring intercepting its diffusion. In cases where a ring is taken from some part of a branch which is also supplied by organisable matter from a source below the incision, it seems probable that the difference between the new matter formed at the two edges would be very slight, and might even, in some cases, be greater at the lower edge than the upper. If a wound on the trunk of a tree should bear a small proportion to the whole surface, we might also expect very little or no difference between the amount of matter formed on different sides of the wound. That superabundant development of new matter which takes place round the immediate edge of the wound, and forming a swollen border, may probably arise from some additional stimulus produced by the morbid condition under which the tissue is placed, rather than from any special relation it bears to the course of the sap. Thus the expansion of galls, bezoars, and other excrescences, is induced by punctures and injuries at particular spots, and exhibit the results of a morbid action to a greater extent than we see them in the edges of such wounds as are inflicted by pruning. Of course in these cases there is something beyond the mere wound which is affecting the unusual growth of such excrescences; but still we may suppose that any unusual growth about the edge of an ordinary wound is in part owing to the result of a more actively induced secretion at those places. Similar effects are produced by ligatures; the common Honeysuckle (Lonicera periclymenum) furnishes us with spirally-channelled boughs of Oak, and other trees. In these cases the upper edges of the channels are frequently, but not always, the most swollen. Why the upper edges above a spiral ligature should be generally more largely developed than the lower, may possibly be in unison with what has also been stated to be the case, viz., that roots are more readily developed from the upper edge of a ringed branch than from the under. Perhaps, here, a greater energy may sometimes be exerted by the developing forces in a downward direction than in an upward, and yet this may be quite irrespective of the course of the sap.—*J. S. Henslow, Hitcham.*

Potato Disease in Ireland.—I am sorry to learn that disease is again beginning to show itself in Ireland, in the leaf and stalk, as well as in the shape of blotches on the tap roots. This may perhaps be the most favourable opportunity that has yet occurred for observing where the true seat of the disease is. Favourable weather, invigorating the vital force, has brought up the plant in the finest apparent condition, above ground. But is the tap root clean and white as it used to be 12 or 14 years ago? If Potato-growers generally will ascertain this, with the least convenient delay, and continue their observations until the Royal Agricultural Society's meeting, and be ready to report them there, this great point may be settled. In all my observations since 1845, I do not remember a single case in which the blight appeared above ground before the blotch on the tap root occurred; but many where the root was blotched and even ulcerated, whilst the plant above ground remained green and vigorous, so long as it was favoured by fine weather. *J. Prideaux.*

Thunder-storm.—We were visited here (Tonbridge Wells) last night by a dreadful thunder-storm. The day had been oppressively hot, the thermometer in the shade indicating 85°. Towards the afternoon distant thunder was heard, but it did not become alarming until half-past 11 at night, after which the peals of thunder shook the houses to their foundations, and the lightning flashed so vividly that I could distinctly tell the time on my watch-dial. A few minutes after 12 o'clock I heard a sudden crash, which I expected to be the destruction of some of the hothouses; but I discovered next morning that it was a fine Poplar which had been struck by the lightning. I found pieces of the bark within a few paces of my cottage, which is 50 yards from the tree; long strips of wood in the shape of laths, and "Mistletoe boughs" (with which the tree was beautifully clothed), were strewed around in all directions. Several houses have been injured, but I have not heard of any lives having been lost. *J. Rust, Eridge Castle, June 27.*

Hard Words.—I wants to now, Mr. Edditur, what u meddels with hour nams fur. Hear as I bin a larnin them names o' plants all mi lif, an now u says ta'nt o' no yeuse; i shud lik to now why *saucidacious* plants shouldent be call'd so isted o' *aukids.* I can't see nuthing in 'em lik a kid, an master says no more can't hee. To be suur theyr aukard enuff to grow; praps that's it. *Merredith.*

Societies.

Botanical, of London, *June* 14.—A. Henfrey, Esq., in the chair. Various donations having been announced, the Chairman read a paper "On Sagina apetala, L., and S. ciliata, Fries; with some remarks on the mode of discriminating species." After alluding to a paper by M. Beneken, published in the "Botanical Gazette" for April 1849, and another by Mr. Babington on the same subject, which appeared in that journal in July, 1849, the author stated that he had investigated many specimens of the plants, English and French, derived from his own collections, from the herbarium of Dr. Cosson, of Paris, together with an English example of S. ciliata, named by Mr. Babington, and authentic specimens of S. patula, Jord., from that author. The conclusion he had arrived at was that the S. ciliata, with which S. patula, Jord., appears to be identical, as stated by MM. Grenier and Godron, is but a variety of S. apetala, L. He had found the mucro on the sepals inconstant on the same plant, occurring on specimens with all the other characters of the form taken as the true apetala. The degree of divergence of the sepals in the fruit, he was inclined to attribute to the existence and size of the petals, which are persistent. The form apetala (which has petals and is usually ciliated), grows on drier and more exposed spots; the form ciliata generally in the shade, or damper situations. The author then drew attention to a plan of determining critical species which are at present so perplexing to European botanists, as he thought that by the aid of some of its country members the Botanical Society might do much towards settling the question in many cases. Regarding condition, such as aspect, climate, soil, &c., as the usual cause of variation, he did not look upon the cultivation of a plant in artificially prepared land, in one place alone, as a satisfactory test of the value of characters, as artificial culture has rather a tendency to perpetuate varieties than to reduce them to their types. He suggested that a few, say six to 12 botanists, residing in as distant parts of the country as possible, should form an association for cultivating critical plants, all corresponding with a metropolitan botanist, who might cultivate here also, and who should receive from any source specimens of plants to be carefully preserved, together with seeds to be distributed to all the cultivators. These should make a return annually of specimens of the plants they have raised, with their remarks, and when a change has taken place, seeds also to be re-distributed. By the help of a certain number of co-operators, one residing in the west of England, another in the east, another in the midland counties, others in the north, and in the different climatal regions of Scotland; or, if it were possible, by the help of a member residing in every one of the districts, given in Mr. Watson's Cybele, the doubtful forms might be exposed to every variety of condition, while the preservation of the original type specimens would render all the observations at once applicable as exact scientific evidence. If a number of provincial botanists will agree to carry on these observations, Mr. Henfrey stated that he was willing to take charge of the metropolitan part of the work, to receive and distribute the specimens and seeds, and also to cultivate them for the London climate in the Garden of the Royal Botanic Society.

Botanical, of Edinburgh, *June* 13.—The President in the Chair. Dr. Balfour announced that the Commissioners of Woods and Forests had agreed to form a Botanical Museum in the Garden. Mr. Priestley read a paper on some British Carices. Mr. C. Lawson, jun., read a communication by Dr. Hoffmann, on the Roots of Umbelliferous Plants. Mr. Evans directed attention to a curious instance of the effects of the graft upon the stock, which had occurred in a tree at Morningside House, the residence of Mr. J. Deuchar. The tree in question is Pyrus Aria, grafted upon P. aucuparia as a stock. Its entire height is 18 feet, and the stock forms a clean trunk to the height of 4 feet, where the union of the graft and stock is conspicuously shown. At 13 inches from the base of the trunk there are shoots of P. aucuparia, and at the height of 1½ foot branches of P. Aria appear (being 2½ feet below the point of junction), while farther up the trunk a branch has been accidentally taken off, which is believed to have been P. aucuparia. Mr. M'Nab exhibited a peculiar creeping form of Sarothamnus scoparius (Common Broom), which had been sent from Alderney. Specimens of the fruit of Atropa Mandragora, and of the ripe fruit of Alströmeria acutifolia, were exhibited, the latter having been sent by Mr. M'Intosh of Dalkeith. Mr. M'Nab made a communication on the effects of Lightning on Trees. He remarked:—"A few days ago I accidentally heard of a tree which had been struck by lightning on the 5th inst. (June, 1850), at Pitferrane, Fifeshire, the residence of A. Buchanan, Esq.; and, being anxious to ascertain the species, I wrote for a small branch, with any history which could be given regarding it. I have just received the leaves shown, which prove it to be the Ulmus montana, or Wych Elm. About this time last year a very large Oak on the grounds of John Wauchope, Esq., of Edmonston, was shattered to pieces; and a few years previously a Laburnum standing close to the Oak was likewise destroyed. While on a tour over a portion of the American continent some years ago, I had several opportunities of observing gigantic trees torn to pieces by electric influence. In every instance I observed they were Oaks. During a thunderstorm I found the workmen (chiefly in Canada) resorting to the Beech trees for protection, from an idea that they were not liable to be struck by lightning; certain it is that I saw none, notwithstanding the prevalence of large sized Beeches in many districts. The Elm above alluded to at Pitferrane had an iron fence standing close to it, which was supposed by the inhabitants to have had some influence in attracting the fluid. The above observations are thrown out, in the hope of ascertaining if there be anything in the composition of one species of tree rendering it less liable than another to electric influence." Mr. Brand stated that he knew a marked instance of a Beech in Aberdeenshire having been struck by lightning. The Horse Chestnut and Ash were likewise mentioned by other members as having been struck.

Meeting at Worton Cottage, *June* 25.—The extremely sultry weather has proved most unfavourable for flowers sent by post, as will be seen by the following report. Pelargoniums: "A. W. G's" flowers had fallen all to pieces, but enough remained to show that they were not sufficiently distinct to render them worth keeping. With much high breeding, and many points of excellence, we fear that there is nothing in "T. E.'s" flowers surpassing varieties already in cultivation. Primate is the best in form and colour, it is a great improvement upon the Vicar; Archdeacon has capital top petals, but very inferior lower ones; Abercrombie will not do. A large box of blooms sent C. S. Stapleton were a mass of petals, but had they been in the best condition they would have been worthless. Pansies: Mr. Lightbody sent a bloom each of Sir William Allan and Lord Jeffery; both arrived in very bad condition, owing to the warm state of the weather. The same must be said of his Ranunculuses, which had fallen entirely to pieces. Calceolarias: "W. H." supplied single blooms of several varieties, but they came in a sadly disfigured state; enough, however, remained to show that they are, in most respects, fine flowers. Fancy Pelargoniums were placed on the table by Mr. E. G. Henderson, and a very good selection they were; some for the amateur, more for the nurseryman. Mr. Andrews was directed to make a drawing of three of them, viz., Beauty of St. John's Wood, Exquisite, and Princess Royal. A Delphinium flower was produced by the same nurseryman, large, handsome, and desirable as an addition to this valuable tribe of ornamental border plants. Potentillas and several other articles were present, but they were past all judgment, from the unfortunate state in which they arrived, attributable to the weather alone. Pinks: Mr. Turner, of Slough, sent a box containing nine blooms of his seedling Sappho, a very useful flower, moderately smooth and bold, colour bright rosy purple, and constant; it was handed to Mr. Andrews to take a coloured memorandum of, in case nothing better appeared during the season. Rosalind: of this there were two blooms; it is a very distinct variety, but far too irregular in its lacing. Pindar, a dull purple, not sufficiently smooth; and blooms of Huntsman, Harriett, and Whipper-in accompanied the above. Who shall send Fuchsias fit for an illustration? The only ones present this day, from Deal, were sadly mutilated from careless packing. The flowers were large, but coarse.

Reviews.

Concise Notices of British Grasses best suited to Agriculture, with preserved specimens of each kind. By D. Moore. 2d Edition. Dublin: M'Glashan. Folio. Pp. 80.

On the Cultivated Grasses and other Herbage and Forage Plants. By Peter Lawson and Son. Edinburgh: Lawson. 4to. Pp. 48.

These two works should be in the hands of every gardener, land-steward, and farmer. Though occupying little space, and having few pretensions to the character of fine books, they contain a rich fund of sound, practical, and most useful information concerning the different purposes to which different kinds of Grass are found by experience to be applicable.

Mr. Moore's work contains well dried specimens of all the common agricultural Grasses,—and no figures are equal to these natural representations—with valuable instructions for employing them in Ireland. Messrs. Lawson's book is a reprint of their well-known pamphlet, with such additions and improvements as increased experience shows to be necessary. Both contain tables of the quantity of seed required for an acre of land, whether for lawns, permanent pastures, alternate husbandry, &c., and on different soils; and both give different opinions; Mr. Moore's advice being intended for Ireland, Mr. Lawson's for Great Britain. What surprises us is the much larger quantity of seeds required per acre in the former than in the latter country. We presume that the explanation is to be sought in the different condition of cultivated land in the two cases.

Miscellaneous.

Wasps.—The Earl of Burlington having commissioned his gardener, Mr. Wilson, to give a penny each for every wasp brought to him that may have been caught in or about his lordship's gardens, from the 23d of April up to the present time, he has received no less than 2364. As every wasp killed at this time of the year is a nest destroyed, the number thus prospectively abolished is almost incalculable. *Old Bell's Messenger, June* 24.

Calendar of Operations.

(For the ensuing week.)

PLANT DEPARTMENT.

This is a good time for grafting or inarching Oranges, Camellias, Azaleas, choice Rhododendrons, &c. For grafting, forward ripe shoots of this year's growth are generally selected; but of small weakly growing kinds, it is preferable to take a portion of two-year-old wood along with the shoot. Until a junction is effected, the plants should be plunged in a close moist heat, rather stronger than that required for growing them in, and carefully shaded. Many other puny-growing, fine-rooted, stove and greenhouse plants may with great advantage be grafted on stronger growing species of the same kinds; amongst these we may mention Gardenia radicans, Ixoras, Chorozema Henchmanni, Pimeleas, Leschenaultias, &c. Seedling Cinerarias, for autumn

and winter-flowering, should be potted as they require it in light rich soil, containing about one-fourth of loam. The plants obtained by dividing the old ones of approved sorts should be stimulated into vigorous growth, to produce fine specimens for late flowering, by repotting them progressively as soon as the roots reach the sides of the pots. It will, however, be advisable to retain a portion of the plants in small pots, for flowering during autumn and early winter. Old plants of Chinese Primroses should now, after their partial repose, be shaken carefully out of the old soil, repotted in light sweet compost, moderately rich, and placed in a warm frame for a few days, till they have begun to produce roots into the new soil, after which they must be removed to a position near the glass in a cold frame, and kept close till the plants are thoroughly re-established. These plants succeed best in moderate-sized pots.

FLOWER GARDEN AND SHRUBBERIES.

Perhaps no plants are more generally useful than the hardier kinds of Carnations, Picotees, and Cloves. Their beauty and fragrance not only recommend them to a prominent place in flower beds, but render them invaluable for glasses or bouquets. If pipings of them are taken off about this season, they sometimes strike as freely as Pinks; but the operation will be more certain to succeed if the handlights are set on a slight hotbed, or the pots plunged in a frame where there is a gentle bottom-heat. Points which require special attention are, that the cuttings be taken not later, on any account, than the expanding of the first flower; and that they be carefully shaded from every ray of sunshine. The most certain method of propagating them is by layers; but it is equally important that it should be done early, as the plants root sooner, and thereby become better established before winter. But in all cases, it will be found the most satisfactory mode of proceeding, to defer the transplanting of Carnations raised from layers, till the spring following; as they are liable to be thrown out of the ground by frost in winter. And in unfavourable localities, it becomes necessary to remove the young plants to a frame during winter. Late sown annuals, intended for autumn flowering, should be thinned out or transplanted, before they crowd one another, and become too weak to support themselves; choosing moist weather for the operation. Timely tying, staking, and regulating of all plants, is of much importance, both as regards the effect produced, and the time occupied in doing so.

KITCHEN GARDEN.

As every available means should be adopted for stimulating the various crops into a vigorous growth, let due use be made of liquid manure, if this valuable auxiliary is available. This is the best time of year to make use of it, by applying it to every plant which it is desirable to stimulate into very vigorous growth, as the object in the cultivation of plants for the sake of their roots, stems, or leaves, is to induce a luxuriant growth, and to prevent or retard the production of flowers or seeds. Make every provision for autumn and winter, by planting good breadths of Brussels Sprouts, Cabbage, Savoys, Broccoli, and other winter vegetables, taking care that the ground be previously well manured. Let there be no idle ground in this department; but, as the quarters are gradually cleared out of their summer occupants, let them be succeeded by something else. Celery planting should also be completed with the least possible delay. Sow Chicory, Endive, Parsley, American Cress, &c., for winter; and Lamb Lettuce or Corn Salad for late autumn use. Kidney Beans, Peas, and other crops with weak collars, should be earthed up before they are blown aside. A supply of Watercress for the autumn and winter may be easily obtained by planting some strong young tops, about 4 inches long, in a line at the foot of a north wall. The cuttings should be of pieces which are protruding roots from the joints. The Watercress will grow freely in such a situation; and in many places where there are no artificial beds, and where natural ones are a considerable distance off, these will be found very useful.

State of the Weather near London, for the week ending June 27, 1850, as observed at the Horticultural Garden, Chiswick.

June.	Month & Age.	Barometer. Max.	Barometer. Min.	Temperature. Of the Air. Max.	Of the Air. Min.	Of the Air. Mean	Of the Earth. 1 foot deep.	Of the Earth. 2 feet deep.	Wind.	Rain.
Friday.. 21	11	30.175	30.121	81	46	63.5	61	58½	S.W.	.00
Satur... 22	12	30.206	30.177	82	47	64.5	63	60	W.	.00
Sunday . 23	13	30.256	30.222	86	54	70.0	63	60	N.W.	.00
Monday 24	14	30.244	30.162	83	49	66.0	65	61	E.	.00
Tues. .. 25	15	30.153	30.000	82	49	65 5	65	62	S.E.	.00
Wed. ..26	16	29.954	29.851	84	53	68.5	65	62	S.E.	.69
Thurs....27	17	30.038	29.983	69	49	54.0	65	63	E.	.01
Average....		30.146	30.073	81.0	49.5	65.2	63.8	60.9		.70

June 21—very fine throughout.
— 22—Very fine; clear at night.
— 23—Very fine; quite cloudless and hot; clear and fine.
— 24—Very fine; hot, with slight dry haze; clear.
— 25—Very fine; hot and dry; clear and fine at night.
— 26—Hazy; hot and sultry; cloudy; thunder, lightning, heavy falls of rain, alternately boisterous and calm at night.
— 27—Rain; very fine; cloudy at night.
Mean temperature of the week 4 deg. above the average.

State of the Weather at Chiswick during the last 24 years, for the ensuing week, ending July 6, 1850.

June and July.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds. N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 30	72.5	50.0	61.2	9	0.80 in.	—	4	3	2	4	5	4	2
Mon. 1	72.0	52.6	62.3	9	0.30	1	2	4	—	4	6	5	2
Tues 2	73.2	52.7	62 9	12	0.38	1	2	2	—	5	5	7	2
Wed. 3	75.2	52.4	63.8	11	0.78	1	2	2	—	4	6	8	1
Thurs. 4	76.9	53.0	64.9	10	0.78	—	3	2	1	1	9	7	1
Friday 5	78.3	52.6	65.5	5	0.24	—	1	4	1	4	7	7	—
Satur. 6	76.6	52.5	64.6	9	0.59	—	3	—	4	5	6	5	1

The highest temperature during the above period occurred on the 5th 1846—therm. 95 deg.; and the lowest on 30th, June, 1848, and 1st July, 1837—therm. 37 deg.

Notices to Correspondents.

AMERICAN BLIGHT: *R C.* There is no excuse for allowing trees to become infected with it; wash the branches with spirits of tar, very strong vinegar, or oil. Apply them with a painter's brush.

AMERICAN FORCE-PUMP: *G T.* It is a double action force and suction pump, worked by a horizontal lever, resting by its middle on a fulcrum between the two pumps. By attaching a hose to the discharge-pipe, it is stated to be capable of throwing water, or liquid manure, a distance of from 30 to 40 yards, but we have had no experience of its working.‡

BEES: *L* asks if any one has observed a deficiency of drones in their stocks this season? Out of seven stocks he has four in which he has not seen a drone this year. One of the four has sent off a strong swarm. He was standing by the hive during the rush out of the new colony, but not a drone could he see going forth with it. It has been active and apparently prospering ever since.

CUCUMBERS: *T P G.* No doubt your Cucumbers are attacked by gum, which arises from their roots taking up water faster than the leaves can part with it. The true remedy is a perfect ventilation of the Cucumber-house, without the admission of cold air.

DEODARS, &c: *W E.* See last week's Number, p. 392.‡

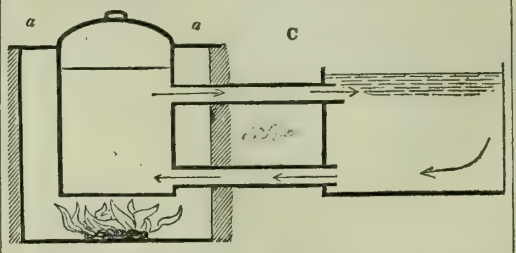
DEUTZIA SANGUINEA: *A H* asks on what ground is this plant so named? We never heard of such a plant. It is probably a blunder for *staminea*.

DIGITALIS: *Dble Yew.* It is a most singular production, concerning which we shall have something to say as soon as a woodcut, now in preparation, is ready.

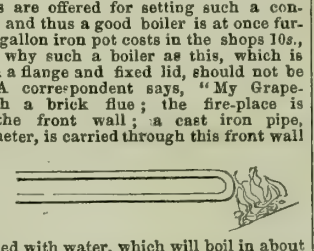
EMIGRATION: *A F Z.* Your only way is to procure the works on Colonies, published for the use of emigrants; or to consult the agents of the different companies.

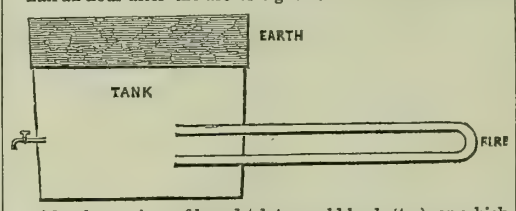
GRAPES: *Derbyshire Sub.* Grapes now ripening will do well with a temperature of from 70° to 85° by day, and from 65° to 75° at night. Admit plenty of air during the day-time, and a smaller portion at night. The same temperature will suit your Vinery that is to ripen its fruit some six weeks later. *F.*

HEATING: *S V.* We should imagine that by means of simple contrivances like the following, or modifications of them, sufficient bottom heat might be obtained for striking a few cuttings, or raising a few seeds where there is no hotbed at command. 1st. Let us take section C, which represents an iron

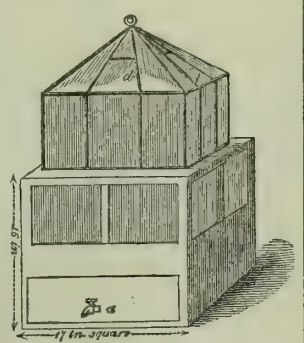


saucepan with a lid fastened down by a bayonet catch, and adapted to the tank by a flow and return pipe. By casting a flange *a a* upon the upper edge of the saucepan, 6 inches deep, sufficient means are offered for setting such a contrivance in brickwork, and thus a good boiler is at once furnished. A common 6 gallon iron pot costs in the shops 10*s.*, and we see no reason why such a boiler as this, which is nothing but a pot with a flange and fixed lid, should not be sold for 15*s.* 2d. A correspondent says, "My Grape-house is heated with a brick flue; the fire-place is about 3 feet from the front wall; a cast iron pipe, about 2 inches in diameter, is carried through this front wall to the fire-place, thus: The two open ends of the pipe are introduced into a wooden tank, about 2 feet long, 4 feet wide, and 18 ins. deep. This is kept filled with water, which will boil in about half an hour after the fire is lighted. The tank is covered





with a large piece of board (slate would be better), on which rests a wooden frame about a foot deep, and filled with earth, which is always warm enough to strike cuttings or raise seeds in. The tank is, however, too small, and if not well attended to it gets overwarm. The pipe would heat a much larger tank." 3d. The following cut gives a view of a little portable greenhouse, which is readily taken to pieces, can always be ventilated, and may be heated like an ordinary greenhouse. The apparatus consists of a stout box, the upper half of which has panes of glass let into its sides, on which a moveable glass roof, like a hand glass, is placed, and in the bottom of which slides a copper drawer or box, which may contain hot water. An open shelf is fixed over the latter, upon which pots may be placed. In cold weather the copper drawer is filled with hot water night and morning, and in this way tender plants have been wintered, seeds raised, and cuttings struck. *a* is the copper drawer, furnished with a cock, which serves as a handle, and at the same time is used for turning off the water when cold; *d d* are doors in the roof.



INSECTS: *Old Sub.* Insects sent to be named must be forwarded so as to arrive in a determinable state. Yours, folded up in a little bit of paper, were completely destroyed. One was the small brimstone moth (Geometra cratægata); another was some species of Phryganea; the others quite unintelligible. They have nothing to do with the absence of the cuckoo on the Malvern Hills. *W.—T D H.* We could discover no insects, even with a lens, in the box of sand. *W.—M J B.* The larvæ with which the Turnip-pods are infested appear to be those of a species of Cecidomyia, or gall midge. The fact is quite new to us. We will endeavour to rear them, and hope you will do so too. They will most probably go into the earth, to undergo their changes. *W.—L R F.* Julus sabulosus. *W.—J C M.* The Mangold Wurzel leaves are infested with the grubs of the two-winged fly belonging to the genus Tephritis, which we will endeavour to rear. Leaves much blotched should be picked off and burned. *W.—S and J D.* The Hollyhock leaves are gnawed by myriads of Chrysomela Polygoni, a little beetle found generally on the common Mallow, very like the Turnip fly or Jack, but which has not the power of leaping. Shake the plants sharply, placing sheets of paper on the ground daubed with pitch, which will secure the insects. *W.—B.* The insects on the red Currant twigs are females of a species of Coccus, apparently identical with that of the Vine, Coccus vitis, with the cottony matter filled with eggs, which will very shortly hatch and produce the young active nits; it would, therefore, be well to cleanse the trees forthwith by hand picking. *W.—J H S.* The beetles sent are the common Hylobius Abietis, one of the most destructive species of weevils. The destruction of the perfect beetle can scarcely be effected, but as they breed in the old stumps these should be rooted up and burned, and young trees if much infested with the larvæ should also be rooted up. Cut branches laid on the ground in the vicinity of healthy trees are a good decoy. *W.—G D.* Your furniture is attacked by the common furniture beetle, Ptilinus pectinicornis, which will not, however, touch the mahogany. If you can manage to do so it would be well, now that the insects are arriving at the perfect state, to place the pieces of furniture in a spare room and fumigate them well for several days with burnt brimstone. The destruction of every beetle now seen ought to be carefully effected. We have by that means saved our own furniture. *W.—T S P.* Thanks for the piece of wood sent from Pembroke dockyard. The Lymexylon is a long, narrow, soft-winged beetle, something like one of the soldiers and sailors, as they are called by children, now so common in gardens. They are probably imported, the insect being a very rare native species. The name is generally pronounced with the accent on the second syllable. We shall be glad to know the result of putting the wood in the steam-kiln. *W.—T C.* The insect of which you have sent a sketch is the common British Membracis cornuta. The flies are not moths, but belong to the order Trichoptera (Phryganea, Linn). 1, Leptocerus niger; 2, Goera fusca? 3, Sericostoma maculatum Pictet; 4, Phryganea —— ? *W.*

IRIS: *A H* asks will any, and what, Irides, besides the wild Iris Pseud-acorus (assuming that *that* will), live in water?

LARCH BARK: *Anon.* It is selling at present at 3*l.* per ton, which is half the price of Oak bark. When made ready for the fellmonger, it will cost 2*l.* 15*s.* per ton, leaving a profit of 5*s.*; which is more loss than gain, as the unpeeled Larch is worth more by 1½*d.* per foot than that which is peeled.

MIMULUS: *J C.* Rubinus and ruberrimus are names given to a variety of Mimulus raised by Messrs. Clapham and Co. It was first called rubinus, afterwards ruberrimus.‡

NAMES OF PLANTS: *J M K.* It is common Woad—Isatis tinctoria.—*O P.* Berberis aristata, a common plant.—*Edward Thompson.* A seedling Jasmine! why, it is the common Tecoma jasminoides.—*A L S.* This is a very poor specimen to judge by; but it appears to us to be a form of the Parsley-leaved variety of Athyrium Filix-fœmina. *S.—C Bar.* A red variety of Rosa spinosissima; Sedum acre.—*H R J.* Crataegus punctata.—*A Constant Sub.* Not in a state for determination. One morsel looks like Brachycome iberidifolia.—*J B.* Campanula glomerata; Bangia fusco-purpurea.—*T W.* 1, Vicia lutea; 2, Arenaria ciliata?; 3, Potentilla verna.—*G H K.* All Brome Grasses; and all varieties of Bromus mollis.

ORANGES: *R C.* You are perfectly right to turn your Orange trees out of doors, as soon as frosts are gone.

PEACHES: *Derbyshire Sub.* They require plenty of air, to give them flavour and colour, with a temperature of from 65° to 70° by night, and from 70° to 85° by day, according as the external temperature is high or low. At this season artificial heat is not required during very hot weather, but only when the thermometer gets down nearly to the minimum of the temperatures you wish to maintain. *F.*

PEARS: *An Irish Sub.* The leaves are attacked by a fungus called Fusisporium griseum. Better try flowers of sulphur early.

PINE-APPLES: *A Derbyshire Sub.* Maintain an artificial heat in your fruiting Pinery of from 70° to 85° by day, and from 65° to 70° by night. This temperature will be exceeded naturally in hot weather, unless you take means to prevent it, by shading during sunshine, and giving air at night; both of which practices, under skilful management, are good. The thermometer must be your guide as to the time for applying artificial heat, in the morning and evening. The bottom-heat for fruiting Pines should be from 80° to 85°, at the depth of 9 inches from the surface. If you cannot obtain this heat by adding a few inches of tan to the surface, between the pots, then it will be necessary to remove the plants, turn the old tan, and add a sufficient quantity of fresh material. We presume that you have no tanks or pipes for bottom-heat, which would save you this trouble and expense, as well as prevent the plants from being checked every time they are taken out of the pits. *F.*

POLYGALA: *A H.* The beautiful blue and pink herbaceous Polygalas of our pastures may be cultivated without difficulty. They are much improved by it.

STRAWBERRIES: *John St.* Your letter makes us smile. What you think a feat is, in our eyes, a very sorry performance. Why, it is little more than 1 oz. per pot!

SWANS: *W C* will thank some one to inform him what size a piece of water must be to keep a swan on? also, whether a single swan will remain quietly? and whether swans will devour trout? He has a small pond in which there are trout, and the beauty of the water is entirely done away with by a nasty green scum, which, he has been told, a swan will clear.

SWIMMING BATH: *Falcon* states that he has found bricks or stone set in well-tempered clay, and the back of the wall well puddled with the same, to hold water better than cement, which is apt to crack if the frost reaches it.

VALISNERIA: *F N E.* Seek for this in botanic gardens, and for water snail in the Thames.

VINES: *Col B.* The reason why Vines throw out roots along their branches is, that the atmosphere of the Vinery is very hot and damp, at the time when the border is cold. The real roots having little power of action, the branches throw out supplemental roots into the warm damp air, as if for the purpose of seeking therein the food which the chilly border denies to the ordinary roots.

WAGES: *A Subscriber.* It is a legal question, upon which we can express no opinion.

SEEDLING FLOWERS.

CALCEOLARIAS: *C T P.* See p. 376, signature "Anon." If these were not your seedlings, and you will be kind enough to send us fresh specimens, we shall be glad to notice them.*

PANSIES: *G R.* Pale sulphur, tinged with purple; eye good, substance bad. The warm weather had too much shrivelled it up for us to judge of its shape.*

PELARGONIUMS: *W C.* "Kossuth" is apparently a flower of good colour; but that is all we can say of it, for it had fallen to pieces before it reached us, as had also your other seedling.*—*R W.* Clean looking, and a good trusser, but worthless as a "show flower."*

PINKS: *E C.* A flower of superior quality, but much too small for the purposes of exhibition.*

RHODODENDRONS: *J F W.* The white variety is like maximum, and the purple one is in the way of roseum splendens. Both are neat close-headed kinds; but not equal to many now in cultivation.*

*** As usual, many communications have been received too late, and others are unavoidably detained till the necessary inquiries can be made. We must also beg for the indulgence of those numerous correspondents, the insertion of whose interesting contributions is still delayed.

GUANO AND OTHER MANURES.—Superphosphate of Lime (See reports of experiments in Royal Agricultural Society's Journal, Vol. 6, Part 2), Guano, Peruvian and Patagonian, Gypsum, Salt, Nitrate of Soda, and all other Manures of known value on sale. A Pamphlet on the above forwarded on receipt of four postage stamps.—Apply to MARK FOTHERGILL, 201A, Upper Thames-street, London.

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Country Dealers and Agents supplied.

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Superphosphate of Lime	7	0	0
Sulphuric Acid and Coprolites	5	0	0

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N.B. Peruvian Guano, guaranteed to contain 16 per cent. of Ammonia, 9*l.* 15*s.* per ton; and for 5 tons or more, 9*l.* 10*s.* per ton, in dock. Sulphate of Ammonia, &c.

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Conservatories, &c., of Iron or Wood, erected upon the most ornamental designs. Balconies, Palisading, Field and Garden Fences, Wire-work, &c.

The Agricultural Gazette.

SATURDAY, JUNE 29, 1850.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

WEDNESDAY, July	3	Agricultural Society of England.
THURSDAY, —	4	Agricultural Imp. Society of Ireland.
WEDNESDAY, —	10	Agricultural Society of England.
THURSDAY, —	11	Agricultural Imp. Society of Ireland.

THAT "You may drive a coach and four through any Act of Parliament," is an assertion which has become general from the failure of any measure to meet all the contingencies comprised under any one appellation. Yet many of our farmers believe their welfare and prosperity to depend in a great degree upon their obtaining a legislative enactment to enforce tenant right.

For any decree to be universally effectual, it must be based upon "fixed" and fundamental principles of practice; but, where are they to be found in our farming operations? Nowhere. Every parish in every county has many practices totally different and opposite in their operation. Nay, more—what one farmer considers best on his farm, his neighbour considers quite wrong.

If we ask what is tenant right, we are told "compensation for unexhausted improvements," viz., draining, lime, chalk, marl, purchased manures, acts of husbandry, &c. "Compensation for unexhausted improvements" is only another expression for compulsory order on the landowner or his tenant to purchase an out-going tenant's expenditure or investment, to obtain which order, justice would demand that the expenditure of the amount claimed had not only been made with due economy and caution, but that it was, considering all the circumstances of the case, the best and cheapest mode of procedure to obtain the necessary effect. But, are attempts at farm improvements always made with proper care and discretion? Far from it. Blundering and chance-medley are too often characteristic of the operations intended for agricultural improvement. It is quite possible for any man to lay out money for which he expects an adequate return, but in reality neither he nor his successors may ever receive anything; witness many of our railways—the holder exhibits certificates for the amount which he has invested, and which are absolutely worth nothing; this is also the value of very many of the farmer's intended improvements.

An outgoing tenant says, "I have expended *l.* in the drainage of the farm; there is the bill for tiles, and here is the labour account." "What!" exclaims the landlord or incoming tenant, "7*l.* per acre, and after all it is not half done; were I to employ a competent engineer he would perform the drainage in a much better manner for 4*l.* per acre. The drains are only 3 feet deep, and laid in the wrong direction; the tiles are of bad quality, and the work cannot remain permanent—I won't pay for it."

If the outgoing tenant determines to rely upon his tenant right act, evidence must be received. One says, in such stiff land 2 feet is deep enough; another thinks three better. Per contra—if the drains had been laid at a depth of 5 feet, with a greater distance between them, the drainage would have been perfect, and the cost would not have much exceeded one-half of what is claimed. Who is correct, and what is agricultural truth?

A few weeks since we walked across a field in course of draining at a depth of 18 inches, in a stiff clay; the drains were cut with a common spade, and 8 inches wide at bottom; the flat-bottomed pipes were of miserable quality, some of them turned up at one end and down at the other, making a tolerable approach to the figure 8; many had pieces broken off their ends and sides, and to make the "jointure" perfect a stone was placed upon each hole. With such a width at the bottom it is impossible to lay the pipes so as to insure their continuity; and in this instance they diverged from one side to the other, reminding one of a snake in motion. Such drainage cannot remain permanent; it is just possible that a contorted and defective drain may inexplicably run much longer than could reasonably be expected, and continue to do so when all the rest are silted up, but, wherever bad workmanship and bad materials are used, no reliance can safely be placed upon the permanent drainage of the soil; and to us it seems impossible that these drains can escape being silted up the very first heavy rains that fall. The stones on the holes certainly afford little guarantee for keeping out the earth. A large sum has been expended for the expected benefit to be derived from such drainage. If we were the incoming tenant to the farm to-morrow, we should be sorry to give the present tenant as many shillings as he has sunk pounds in the drainage; and it would be a deep injustice to enforce from any one compensation for such a waste of money. He intrusted the performance to the "Village Conjuror," whose only qualification was that he "had been draining all his life, and had cut more drains than any one within 100 miles of the place."

As to the other particulars to be specified in any bill for enforcing the repayment of his unexhausted improvements to an outgoing tenant, we may just refer to the differences, not merely of opinion but of fact, as regards the value of one and the same investment in different localities. Take the instance of food for cattle—the very point on which a division unfavourable to Mr. PUSEY's bill took place in the House a few days ago. The value of the manure from the consumption of any purchased cattle food depends materially upon the nature of the growth to which that food has contributed. Manure is food *minus* growth. And that from young cattle or milch cows is, as every farmer knows, very poor stuff compared with that of full-grown fatting stock—whatever their food may have been.

"What is the value of a ton of Turnips" has been very freely argued in this Paper, and the result shows that independently of the price obtained for the produce from a ton of roots, the actual feeding value of Turnips is influenced by many circumstances—soil, manure, climate and cultivation, each exercises its influence.

Again as regards the effect of manures:—A very bulky crop of roots may not be so valuable for food as another crop of less weight, yet to the incoming tenant the feeding value should alone be considered; and who has yet ascertained it relatively between roots raised with all our purchased manures, or rather all the manures which the farmer may purchase, not forgetting brown loam at 7*l.* per ton, and under all the circumstances of soil, climate, and cultivation.

The object of all good farmers ought to be, and of an Act of Parliament for agriculture certainly should be, the production of the utmost quantity of animal and vegetable food through the medium of perfect fertility. That happy acme once attained, there would be no need of purchased manures. The manufacture of the utmost quantity of animal food would produce the utmost quantity of manure, and this again the utmost quantity of vegetable food.

And as to the tenant right in respect of buildings: how many questions must be answered before it can be rightly expressed! Given a certain number of acres of arable land, for what number of cattle should there be accommodation?—"One for 10 acres, or one for 5 acres?" and some lover of high farming would probably chime in, "one for 2 acres." The want of proper accommodation for his cattle is one of the greatest evils to the farmer and the farm: the means of providing an abundance of manure will be more beneficial to both than a world-wide tenant-right act. The landlord ought to provide either houses, in which a farmer might manufacture a sufficiency of manure, or the manure itself; but what proportion the house-room should bear to the extent of arable land has yet to be demonstrated, and the farmers themselves must do so (this would be a proper subject for discussion at our agricultural clubs).

But this does not exhaust the subject—"Should there be house-room for sheep also, and to what extent?" The farmers must by discussion among themselves reduce these and many other knotty points to a certainty before they can expect the gentlemen of wigs and long robes to understand a measure including such terms as these.

Until our farming practices become fixed and defined, it is impossible to believe they can be controlled by one comprehensive measure, which in its operation would be found useless and paradoxical in the extreme; at the present day they are such a mixture of incongruities that we fear, under evidence regarding them, a jury would often be forced to perform the "poker trick"—"if it falls to the right, it is to be for the plaintiff; if to the left, for defendant; but if forwards or backwards, then there is no hope of our agreeing." That tenant *right* has existence, we do not deny; on the contrary, we contend for its recognition by landowners, as being evidently for the interest of all parties; but that it can be enforced by legislative enactment we do not believe. *T.*

OUR readers may remember the statements made in past volumes of this Journal, in reference to the farms of Mr. BATSON, at Kynaston, near Ross, and Mr. WHITMORE, at Dudmaston, near Bridgenorth—where successful exertions have been put forth to employ boys in agriculture at wages equal to their maintenance, in exchange for labour which should be profitable to the farmer. Now, an institution has been lately established near London, styled the AGRICULTURAL ORPHAN SCHOOL, which seems to offer a reasonable prospect of success in the effort to withdraw from ruin in the streets some of that multitude of poor children who, deprived of their parents, are exposed in this city to all the evils and temptations incident to poverty. We refer to the subject here because such a society seems peculiarly deserving of assistance and support* by the benevolence of agriculturists. The following passages, from the prospectus of the Society, sufficiently explain its objects:

"The early employment of children in agriculture, which is a subject of complaint in all rural schools, is, apart from any details of particular experiments, a proof of the value of their labours. These labours commence earlier than the labours of children engaged in manufactures; and as compared with the wages of adults, children employed in agriculture are higher paid than those engaged in manufacture. It may then be inferred that their labours are proportionally more

* The Hon. Secretary is the Rev. W. DENTON, Incumbent of St. Bartholomew's, Cripplegate.

valuable. In many parts of England the wages of children of 12 years of age amount to 4*s.* a week; but in very few places indeed will the necessary maintenance of such a child exceed his earnings. We may then assume as a general rule, that a child employed in agriculture, by the labours of his hands more than provides for his own maintenance. And this conclusion is amply borne out if we examine the results of particular experiments. On Mr. BATSON'S farm, near Ross, we find 20 boys, of ages varying from 9 to 14 years, boarded, lodged, and instructed, and yet returning a profit to their employer. They have been so employed for nearly three years, and the advantages to both children and employer have been yearly increasing. A statement of these results may be found in the 'Labourers' Friend' for August, 1848; and in an interesting communication made to us by Mr. BATSON, at the end of another year, he states himself more satisfied with his experiment (if it can now be called so). 'I have at all times,' he says, 'found the boys' work on my farm to more than realise my first expectation.' Again in the Quatt Union-house school, near Bridgenorth, on an area of 4½ acres, the same experiment has been tried, and with similar success; 15 boys of all ages under 14, together with the same number of girls, some of whom are employed in household and dairy work, under judicious management, have by their industry paid the rent, and produced 65*l.* net per annum towards the expense of their own maintenance. These two instances, one conducted by the energy of an individual, the other labouring under the disadvantages of a board of conductors, might not have been entitled to much weight, had not the results been identical with the general fact of the value of boys' labour throughout the country.

"Nor is this value confined to those cases where they are able to attend on and assist the adult labourer, children being found competent, with some little assistance from men, to perform all the labours which usually devolve upon a farm servant. In some partial experiments made a few years since, the results of which are detailed by the late Mr. Duppa, in a paper published by the Central Society of Education, the returns from the labour of children employed during a part of the day in gardening was most encouraging. The late Mrs. Davies Gilbert, seeing the advantage to children of such a training, and its tendency to diminish the expenses of education, established agricultural schools on her estate for the children of her labourers. But here all her efforts were fruitless through her success. The partial training of these children in farming-work so greatly increased the value of their labours that the parents were tempted, by the high wages offered, to withdraw their children from school. A proof of the enhanced worth of skilled labour, and a singular instance of failure through success.

"Now these facts sufficiently prove the capacity of children; and yet in the face of these, next to nothing has been done for the destitute children of London. After long consideration it has been resolved to commence an Asylum for the poorest class of orphans, provision being made:

"1. For the industrial training of the children in agriculture, with a view to the diminution of the expenses of the establishment, and the early inculcation of the connexion between labour and maintenance.

"2. To avoid the system of crowding a large number of children in one building, but by breaking them into small groups or families to reconstruct, as far as possible, the homes of which they have been deprived; and thus to foster and mature the domestic affections, which make up so large and important a part of man's moral nature.

"3. To provide for the emigration of the orphans, when arrived at such an age as to be able to maintain themselves without direction, to British colonies, where they will not be subjected to greater spiritual destitution than they would have experienced in this country.

"To enable the committee to carry out this design, which has received the approbation and encouragement of the Bishop of London, a sum of 5000*l.* is required. When the benefit to those children who will immediately be withdrawn from ruin is considered, and that thus a commencement will have been made for the maintenance and training of all poor orphans, and their ultimate settlement in the world, the committee doubt not that those whom God has blessed with means will not hesitate to devote a portion thereof for the education of the orphans of the poor of Christ's flock."

CHEESE MAKING IN LEICESTERSHIRE.

IT is the usual practice of this neighbourhood to retain a certain portion of the farm, and generally some of the oldest turf lying contiguous to the house and farm buildings, for the use of dairy cows; and this plan is maintained, not only month after month, but year after year; and so strong is the prejudice in favour of age in the turf, that many farmers would by no means turn their cows upon seeds. They would say, by so doing they should certainly spoil their cheese. Others, also, are equally averse to manuring or liming their dairy pastures, asserting that such management would have a prejudicial effect; that the quality would be deteriorated, or the cheese would not stand. Now I cannot tell from my own experience whether there are substantial grounds for such opinions; but it must be obvious to all thinking persons, that if these opinions or prejudices are carried out, the dairy pastures must decrease in quality, till finally they will produce no cheese at all. Such has been found to be the case in Cheshire; and bones I believe have been applied with good effect as restorative of the cheese-making properties of the soil. I am fully aware it will be asserted that practice does not bear out this theory here, and that there are Leicestershire dairy pastures which have been grazed upon for many years, which are rather improved than injured in that time. I trust, if any gentleman should support such assertion, that he will also tell us as near as he can how many acres of meadow ground were robbed of their hay by his cows whilst they were daily turned out in the winter season, or how many tons of Turnips were consumed by his sheep stock upon the sound dairy pastures, when such could not be eaten upon the dirty ploughed land.

It is a matter of great consideration to all who make cheese-making a point of profit, that they secure to the land the due constituents of milk. A cow producing 4 cwt. of cheese in the season will remove from the land annually inorganic matter to the weight of upwards of 19 lbs., as phosphate of lime, magnesia, iron, &c.; which can only be restored to it by extraneous aid. Soils rich in the before-mentioned ingredients may long withstand this slow exhaustion of their inorganic riches, but the constant withdrawal of these must eventually be found, and the milk will be wanting in its true constituents. Besides this exhaustion of the inorganic particles of the soil, a cow making 4 cwt. of cheese will, through the medium of the soil and vegetable, bear from the field to the dairy 240 lbs. weight of carbonised and nitrogenised matter. Now I cannot say that Nature in her abundant resources will not supply this demand; but as far as practice is concerned, I must bear testimony to the fact that land manured and irrigated will bear the most Grass, and cows fed on Grass so produced will give a richer milk and yield a greater quantity of cheese.

I am willing to acknowledge that there may be apparent grounds for the assertion, "that cheese cannot be made well from seeds or manured land;" for in the autumn, when the Grass of the pastures is richer than in spring or summer, we have on this farm experienced a difficulty in making the cheeses keep their shape, and maintain the compact appearance which (with the same care bestowed upon them) they will ordinarily assume. I believe it to be very possible that persons have experienced some inconvenience in manufacturing a cheese when their cows have gone upon seeds, or into a lately manured pasture; and not having patience and perseverance enough to try other plans, they have at once pronounced the pasturage to be the cause of an evil which they have chosen rather to avoid than to overcome. We meet with such cases occasionally in cheese-making, and unless patience and perseverance are had recourse to, and trials are made to obviate the difficulty, the Grass, seeds, Turnips, producing such cheeses, must be summarily and lastingly condemned. I believe that by taking away a little of the cream, or by putting the milk together at higher temperature, these cheeses might be made to stand. I must here express my conviction, from five years' experience, that seeds or manured turf are not decidedly prejudicial to the cheese; and my belief that without manuring and attention the land will deteriorate, and finally become comparatively useless for dairy purposes.

This perhaps may be a suitable place to observe, that land of second-rate quality for the feeding of cattle may not be unprofitably managed by adopting the production of cheese as the mode of employment. This farm does not feed cattle well, beasts taking a considerable time and never becoming thoroughly fat upon it, without the assistance of corn or oilcake. It also yields butter indifferently, which might be expected from the fact that its Grass feeds stock slowly. The first year we attempted cheese-making we set up the Sunday's milk for butter, and the calculation I then made as to the proceeds of this milk gave this result—whilst the cows were making 7*l.* value in butter, the same made 13*l.* value in cheese.

I will now notice briefly the different varieties of stock employed in the conversion of vegetable matter into cheese. And although I admire the large size, symmetrical form, the silky hair, the early maturity, and the exterior beauty of the Durhams, I must admit that as far as my inquiry goes, the old long-horned breed are at present the best adapted for cheese-making purposes. Whenever I have heard of great quantities of cheese per head being made, it has always been (or with a single exception) from a dairy of long-horned beasts.

It must have been apparent to every one who has had the care of stock under his hands, that some individuals will bear greater hardships than others, and that such will hold their flesh, or rather increase in weight, whilst the same quantity of food given to an adjoining animal will gradually make her poor. I have noticed this particularly with some half-bred Herefords; let circumstances be what they might, these were always in the best plight in the herd. Now, I have had little to do with long-horns myself; but if the assertions of some of my friends are correct, the old long-horned breed of cattle must be the most economical for a dairy farmer's purpose, as they will bear more hardships, and consume less food while dry and in an unprofitable state,—as well as when milking, they will produce most of that liquid from which our cheese is to be made.

I find that the long-horned cows are not estimated so highly for milkers in other parts of the kingdom as they are in Leicestershire and Warwickshire; and that in distant places the Herefords, a race of cattle which we here regard as very indifferent milkers, are for the property of milking preferred before them. I think these observations will somewhat bear me out in a suggestion I am about to make—that the milk-producing qualifications of the Warwickshire and Leicestershire long-horns may not be more inherent in this than in other breeds of cattle, but may be the result of cultivation, and long continued care. I think I may be fully justified in venturing such an opinion, for a glance round this neighbourhood will show that dairies of long-horns are chiefly, if not entirely, in the possession of farmers who have for many years cultivated and maintained these breeds, chiefly in reference to their milking qualifications. I dwell rather strongly upon this point; for if years of care and cultivation have made the long-horns as a race the greatest milk-producers, we have then the course pointed out for us to follow by which we may hope to succeed in making the short-horns a cheese-producing breed.

It may be expected, perhaps, that I should draw a comparison between the actual weight produced by the long-horned and Durham, or short-horned, dairies. I have heard of 5½ cwt. off a cow being made from long-horns; I have heard, too, of 5 cwt. from short-horns; but I think it would be unfair to compare the distinct breeds in reference to their cheese-making properties, unless there was, also, a fair comparison of their food. I believe that in either case, such produce was in great measure the effect of management, and was not entirely to be attributed to peculiarity of breed.

A gentleman lately told me, in answer to my inquiries, that his cows fed their calves first, and then made 5 cwt. of cheese during the season! And the best of this was, that these cows (and long-horns they were) ate nothing but a little Grass in the summer, and Barley straw in the winter! Seeing, some time afterwards, a long-horned dairy not far from this gentleman's house, I inquired if they made much cheese. Not above 3 cwt. was the reply. I mentioned my surprise, for Mr. So-and-so made 2 cwt. more. I then was informed that his cows ate what they liked?

It is with a dairy as with feeding: cows, to produce, must first consume. When a breeder says of his pet beast "he has had nothing to eat," and, on being gently pressed on that point, "only a little cake or corn, or a few Turnips"; in short, whatever he would eat: so these cows, though they may be hereditary milkers, without constant attention to their comfort—without abundance and variety of food—would not be annual producers of 5 cwt. of cheese. The dairyman's object in forcing the yield of milk to the greatest possible extent should be circumscribed only by calculations—by this question, "Will it pay?" And there are certain times, as at this moment, when the cold weather is keeping back the Grass, in which he must not be too particular on this point, but must maintain their milk by artificial food, till the fields are ready to receive the cows, though it be at considerable cost, and at a rate which will not pay.

SHED.—We will now take some notice of the management of the cow-shed—a subject of great importance to the dairy farmer; for in this place, according to the opinions of some authorities, the cows should pretty constantly be kept, and there receive their supply of water and food. It is said that, by a due attention to warmth, provision of food, &c., there is no reason why the cheese-making process should not go on through the whole of the winter; and there is, in fact, no really preventing cause why such might not be the case. To meet, then, a winter supply of milk, large quantities of hay must be provided, and extraneous aids—such as corn, grain, and oil-cake—must be bought, which will (as far as my experience has hitherto informed me), considerably reduce the profit upon winter cheese-making. Whilst I admit the possibility of making cheese throughout the winter (and we have done so here), I still am doubtful whether it is a proper plan to be followed as a pounds, shillings, and pence speculation. I believe it to be more profitable to consume what would be saved for hay for the winter feeding in an early stage of growth, as the same quantity of ground will yield more milk when its produce is consumed as Grass than after it is dried up and made into hay.

There is also another point to be considered in connexion with the question of the winter dairy system. Cows must be allowed to go dry two months at least before calving; and this rest may as well be given during the shortest days and coldest weather—and they may, as a matter of convenience, be made to have this rest at the same time. I will not, for various reasons, advocate the uninterrupted making of cheese upon a farm, but will rather confine my observations to the best methods of managing the cows for the period of nine or ten months in which they are useful for dairy purposes.

We will take the beginning of March for the time of commencing our notice of the management of the cow-shed, and will suppose that there is laid up a store of Swede Turnips (or Mangold Wurzel, as some will say; but I do not, from my experience, speak in praise of this root), sufficient for the herd till the middle of May, also of hay, enough to give a little every day to each cow after calving till Grass; and an abundant supply of straw, which straw is to be picked over by the cattle, allowing them to make plenty of waste for their litter.

The cows at this time should be found in good condition, full of flesh, and healthy in their skins—the forwardest of them having calves. The calf, if we consider the profit of the cheese, according to my judgment, should be immediately taken away from its mother, and the cow kept warm and abundantly supplied

with food. I must here notice, that warmth has a very great influence upon the secretion of milk; and even a walk out of the shed for the purpose of drinking tends very materially to lessen the quantity given by a cow in the cold season of the year. Every cow-shed, for milking beasts especially, should have a supply of water, so that the animals may help themselves without exposure to the influences of wet weather or a lower temperature. This is no fancied or theoretical view, but is actually the fact; and that a great decrease in the quantity of milk delivered in our dairy was traced to this simple cause. Some one, for mischief, had sent down the main water pipe that supplied the shed a small bundle of straw, which lodged in one of the branches, and completely cut off the flow on that side. Sixteen cows were then in milk, and half (in consequence of the water being cut off from them), were turned out twice a day to the pit, not 100 yards off, to drink, and were immediately brought back again. A complaint was made to the man in charge of the cows that the milk was falling off considerably in quantity—and, further inquiry being instituted, it was ascertained from the milker that the loss lay upon the eight cows turned out to water, for every one had abated in her milk. This accident was at the time very satisfactory to myself, as it proved that an outlay which had been made upon theoretic views was really useful, and had not in practice been thrown away. To make you fully assured that the abatement in the milk of the eight cows was caused by their simple exposure to the unfavourable influences of a lower temperature and different atmosphere, I must tell you that with the removal of the stoppage in the pipe, and the consequent flow of water permitting the cows again to drink in the warm shed, they gradually recovered their former quantity of milk.

So much for the influence of warmth upon the secretion of milk; but a time must come when the herd must leave the shed to get the principal part of their living (for a short time at least) in the open field; and then care must be taken to prevent the changes of temperature from suddenly and unduly affecting them. Before turning them out, the doors of the shed should be partially unclosed, gradually inuring the inmates to a change. The first time for the herds going abroad should be chosen when the wind is still and the sun is shining; they must not remain out too long at a time, nor must they be exposed during the night until the temperature of the atmosphere is considerably and permanently raised.

But although I admit there is generally a necessity for turning out the dairy beasts for a few weeks in the spring—that is, until a growth of Clover or Grass rises to the scythe—I must, both upon principle and experience, recommend the soiling of cows throughout the summer season as a matter of economy, and thence as a point of profit. It would be difficult to obtain the relative produce from land grazed by the cattle themselves, and from other land mown daily, and its Grass brought home. But any one who has fed off a quantity of seeds or Grass in this way, will be surprised that a given quantity of land has kept a given quantity of stock so long; and it must be remembered that land well attended to furnish two, three, or four crops in one year. I shall perhaps be told that this mode creates expense and increases trouble—which I at once admit; but I think if any one will try the method upon my recommendation, he will tell me hereafter that he is well paid for his extra labour by the quantity of extra keeping which he thus obtained from his land. Some people will say that exercise is necessary to the cow for milking. We allow ours to walk out in the cool of the morning, and during night in the heat of the summer; but such exercise as that given to a herd by the attack of the gad-fly I thoroughly object to, and do my utmost to prevent.

In forward seasons we may begin to mow seeds about the third week in May. Rye will furnish a little keep before; but it generally runs so rapidly, that this food is of little more value than a few days. After seeds, Grass comes in—then Vetches, a second crop of seeds; and about the end of August, with management, we have plenty of Turnips, Cabbages, and spring-sown Vetches, to mix and alternate with some later saved Grass. Get once over May, we generally find little trouble in obtaining an abundant and regular supply of food. Towards the end of the year, if the weather is favourable, and the cows are housed at night, I should not recommend that the beasts should be tied up entirely; but that they be turned out in the middle of the day. When the cold season sets in, or heavy rains make the land tender, the cows are better confined wholly to their winter quarters. There is then less waste in flesh, milk, and manure; and, with warmth, a smaller quantity of food is consumed.

But if cattle are to receive the principal part of their food in sheds, very great attention must be given to them. They must have change and variety in their food, and they must be regularly served with it. A man in my employ, who attended to a lot of 33 milking beasts, went to the funeral of one of his relations; I left home the same day on business, giving these cows in charge to a young man who lived with me at that time, under his promise that they should have plenty to eat. I believe he was afraid of the rain, which fell on that day, and therefore neglected his charge; for on my return at night I heard the cows in the shed calling loudly for something to eat. The next morning there was a falling off of milk to the extent of 9 gallons; at night 11; and the following morning 13. This was late in the year; but the cows, for that season, never recovered the quantity of milk which they had previously given.

I have mentioned this fact to show how very dependent the secretion of milk is upon the supply of food, and how much the success of dairy operations depends upon the attention bestowed upon the animals which are to produce the milk. Kindness, gentleness, and quietness are requisites with cleanliness, in all engaged in a cow-shed; and all bad tempers, quarrelsome dispositions, and noisy boisterous persons, should never be allowed to set their foot therein!

Ere we leave the shed for the dairy, I have a few words to say upon the time of milking. The usual method pursued in this county is to milk twice a day—morning and evening. In Lincolnshire they will milk thrice; and in Scotland sometimes five times in the day. Last season I adopted the plan of milking thrice in one shed only; this season we are milking three times at both; you will therefore infer that I have proved it to answer. I will also tell you that, in May last, I mentioned this plan to a gentleman who supplies his milk to Leicester; he tried it upon a lot of 29 cows, and he told me that on the third day from the commencement of his trial, these cows gave him in the day 15 gallons more milk. I met this gentleman on Saturday last, and he said he should adopt this plan again. In addition to his former opinion of its utility, he gave me this further information:—that his cows had formerly been greatly troubled with sore bags, but after the thrice-a-day milking commenced, he had no more of them. We have all seen the udders of the cows greatly distended with milk, and it is no wonder that the animal feels pain, and that local inflammation ensues.

Objections may be raised to this third milking—some will say the cows require more keep. I answer the cows are machines to convert Grass into cheese, and if I can make each cow do more work I save the outlay of capital in purchasing an unnecessary number of beasts. Some will say it must be injurious to the animal. The lot milked last year thrice-a-day on this farm are equal in health and condition to the lot milked twice, and are now open to inspection.

Before I quite close this portion of my subject, I must observe that milking qualifications in an animal are equally capable of transmission by descent, with the distinctive marks of the various breeds, or with their propensities to fatten;—and if they are capable of transmission, they are also equally capable of improvement by cultivation. It behoves, then, the farmer who rears the supply of cows for his own dairy, to be particular in looking for a good line of descent in the milking qualifications of all animals introduced into his herd. It behoves him to see that these qualifications are maintained in full power to each individual, and that they be further improved in his hands by stimulating foods and regularity of milking—by kindness, warmth, and general attention to their health and habits. In short, a dairy farmer should not only care for his herd, that they give milk at the present moment in the greatest abundance, but that they have their milking powers kept to the utmost stretch as the means of producing fine milkers in generations yet to come. Perhaps I ought not to omit some practical notice of the secretion of milk. It may be styled a sympathetic operation, and the supply, in a great measure, will be regulated by the demand. This is an all-wise provision of nature for the necessities of the young of animals; and we only follow the teaching of nature a little more closely by milking oftener than twice a day. To use the words of our man who looks after a part of the cows, "the milk does not flow to the hands (that is, the udder is not so distended) now as it was in twice a day milking; nevertheless, after milking a minute the supply will come." To illustrate more particularly the sympathetic affection between the action of milking and the consequent flow of milk, I quote this man a little further. He was speaking of a particular cow, and said she had no milk in her bag when he commenced milking; but it came by milking a short time, and in such quantity, that he has often wondered where she had previously put it. This man is not a physiologist or theorist; he spoke only matter of fact.

I am well aware that the efforts of many years may in a single season be cast away by some of the diseases lately introduced into this county; almost all of us, more or less, have suffered by them. Four years ago I lost upwards of 30 calves from the mouth-disease; and since then some of my neighbours have had half their dairy cows carried off by pleuro-pneumonia. It is to be hoped that these pestilences will, in the process of time, become less virulent, or that science may afford them more decided relief. I believe it to be right in all of us to make known, for the benefit of the public, any good thing we may have discovered, even though it should expose us to the criticisms of our friends. I shall therefore tell you that one evil constantly hanging over dairy farms—and a great one it has often proved to be, viz., abortion in the dairy cows—has been successfully treated and prevented in the only three cases which have come under my inspection this season, by administering the specifics and doses of homœopathy. This science is as yet but little known among us; it has been laughed at, and I have joined in the laugh; but I do so no longer. A trial of some months has convinced me of its efficacy, as applied to animals, and I shall be happy to afford such information as my limited knowledge permits me to give, to any one who may wish to inquire into the subject. We will now leave the shed for

The Dairy.—I will not attempt a minute and chemical account of the process by which the milk we delivered from the cow-shed is here to be converted into cheese, but will content myself with practical observations on the management of the dairy. The object of all is to produce the greatest money profit; and, according to my ideas, this is best achieved by making the best quality of cheese. At Leicester fair, last autumn, there was a difference in the value of dairies to the amount of 18*s.* per cwt., which, at 3 cwt. per cow, will give 2*l.* 14*s.* per cow, or 54*l.* in a dairy of 20 cows. Now when it is considered that a little extra care and attention form perhaps the chief item in the higher prices, it is surely worthy of consideration whether we can in any way amend our plans. There is also another point upon which I would suggest a question—Can we by thought and contrivance lessen the labour of cheese-making operations? I lived formerly in a county where butter alone was made. I had occasionally seen the cheese-pan at work on my visits from home, with all its attendant discomforts to the families in which it was employed; and in comparison with the easier labours of butter gathering, I then certainly should not have been by choice an amateur producer of cheese. But a change in locality requires a change in management, and five years ago I was induced to contemplate cheese-making as the most profitable means of working this farm. As improvements had been carried out in other departments of agriculture, as well as in all the various trades and sciences of this country, I thought the art of cheese-making might be susceptible of improvement too. I was much indebted to several of our friends for the information their practical knowledge enabled them to give me, but I determined, if possible, to do with less labour in the manual part of cheese-making. I tried several schemes, some rather expensive—some of them failures; while some were attended with success.

The object I had in view was to secure the whole of the curds, and also of the butter in the cheese. To effect this, it is necessary to avoid breaking the curd by the hand, either in the cheese-pan or the vat; for by much breaking and crushing, a large quantity of minute particles of curd and butter are separated from the mass, and are carried off by the whey, to the loss both in weight and quality of the cheese.

To remove the whey from the curd with the least disturbance, we introduced the use of the syphon—and to save ladling out the remainder of the whey and curd from the cheese pan into the vat, we adopted the plan of swinging the pans on pivots fixed to their centres. The cheese-vat is merely placed upon a lead, the pan is turned upon its pivots, and its contents are delivered at once into the vat, whilst the whey which had not been entirely removed by the syphon escapes into the vessel, where it is to be skimmed for the butter it contains. On reference to our last year's account, I find 10 ounces per cow was the weekly average of the butter removed by this method from the cheese.

I will not unnecessarily occupy your time by a description of the mechanical means we have adopted, for I invited you to Bagworth Park that you might give them a personal inspection. I will now notice a few points that have become known to us in our experiments in cheese-making, after which, and the discussion which I hope will follow, I shall have pleasure in showing you the dairy, where the arrangements in use may speak for themselves.

One of the greatest desiderata now is a means of testing properly and accurately the strength of the rennet. So far as my knowledge extends, this can only be arrived at by actual trial. The common method is to make a large quantity; and by ascertaining the actual strength upon a cheese, there is some little guide obtained for future operations, so long, at all events, as the manufacture of rennet will last. But it is of very great importance that a better guide for the dairymaid's use should be laid down; for all excess of rennet, after the production of curd—that is, all that is not required to convert the milk into curd—will remain in the cheese to promote early decomposition, and is often the cause of great pecuniary loss.

The process of cheese-making depends upon chemical causes and influences, which in themselves are as unvarying as other natural laws. To procure the conversion of milk into curd, a certain degree of temperature must be obtained; and we have observed that 82-84° (about 12° lower than when it comes from the cow) is the proper heat to be observed in the summer season for putting the milk together, and about 2° higher in cold weather, to allow for the greater decrease of heat by surfaces coming into contact with a cooler atmosphere. A thermometer is now a necessary appendage to the cheese-pan. I may as well add in this place that 52½° is the proper temperature for conversion of milk into butter, and that two or three days' churning of cream (which we sometimes hear of) in winter before butter is collected, is solely to be attributed to its low temperature.

But although 82° to 84° is the proper heat for putting the cheese together—producing, according to present experience, the greatest quantity of curd—still it is not then sufficiently high in temperature to allow its complete separation from the whey. To facilitate this separation, it is found desirable to run off a portion of the whey, which must then be made hot enough to raise the whole mass in the cheese-pan to 90°. This in a few minutes will cause the curd to fall; and the whey must then be drawn off as quickly as possible, for, if allowed to remain too long, it has a tendency to toughen

the curd. Our practice is then to put the milk together at 82° to 86°, according to the weather. We let it stand an hour and a half before breaking in the pan; this is half an hour longer than generally allowed; but as we wish to use the smallest quantity of rennet in converting the milk into curd, we find it necessary to give a longer time than ordinarily is allowed for its full conversion. After breaking and settling a few minutes, we apply a syphon to run off the whey, and for this reason—it disturbs and breaks the curd far less than is done by ladling. From putting the cheese and rennet together, till the curd is removed from the pan to the vat, the time occupied is about 2½ hours.

I have seen both in Gloucestershire and Leicestershire a mill employed in grinding up the curd, and I notice often in our neighbourhood, also, that several break up by hand, to what I consider the injury of the cheese. I see likewise round us two, three, or four persons about a cheese-vat, crushing with their hands; and I have been told that it is generally thought right to continue such process for an hour at least, before the cheese goes to press. Now we dispense with a great deal of this (to us) unnecessary attention. The curd goes from our cheese-pan directly under the press without any hand-crushing whatever. There it remains 10 or 15 minutes; the edges of the curd are then pared off, and put into the middle of the cheese, which is pierced with a skewer on both sides, and returned to the press. In a quarter of an hour it is pierced again—the edges are cut off on the opposite side—and again it is put under press. In half an hour the cheese is pierced the third time—put into a dry cloth—and the press is now allowed to complete the work. I should explain that the press used in this process is a lever press, working up to 23 cwt., and that the weight brought to bear upon it at first is small, but is increased as the cheese advances in solidity. From the delivery of the curd into the vat, till it is fixed for final pressure in the press, about two hours are taken up; but for full half that time the person employed in attending upon the making may be occupied in the other work belonging to the dairy. And it must be borne in mind, that with the separation of the liquid from the solid matter, our trouble with regard to the former is ended, as there needs no carrying to the whey lead for skimming, and no further carriage from thence to the cistern. You will observe, in the dairy, the whey goes at once into the leads, and from them is removed by taking up a plug, which allows its escape to the cistern. I need not go into the minute details of brining, salting, &c., as everyone conversant with cheese-making must be well acquainted with them; but I will observe that many points which appear to be of little consequence to a casual observer will make a great difference to the economy or the profit of cheese-making.

It is the object of all of us—at least, it ought to be so—to make a good quality of cheese; and this is undoubtedly best achieved by making up at each meal immediately; every gallon of milk so converted will produce at the lowest 16 ounces of curd; and there must be some mismanagement if it ever falls below that quantity. At the autumnal season the relative value of the milk for cheese-making is greatly increased, and will sometimes yield one-eighth more of curd to the gallon. With the above object (quality of cheese) we often combine also those of size and family convenience; and for that purpose milk will sometimes be kept till the next meal. In warm weather this keeping of milk is attended with some care, for unless the temperature is brought below 56°, milk will acquire an acidity, and the result will be a sour-milk cheese. This cheese will be of less value per pound, but this will not be the whole of the loss; for experience has told us that the same measure of milk which has yielded 56 lbs. of curd in a sweet state, has, by a slight change, yielded only 45 lbs. To keep milk sweet over the meal it is necessary to cool it by water; 52½° is the temperature of water, which, being brought in contact with the vessel containing milk, and occasionally changed, will secure the milk from going sour. We have accomplished this object in our dairy by passing through it a running stream. By setting tins of milk in a trough through which this stream passes, we can keep the whole of the Sunday's milk sweet for Monday's use. There is also another advantage derived from this plan—by cooling the milk in deep tins, and occasionally stirring it, the cream is prevented from rising to the surface, and does not require the trouble of skimming and remixing with the milk, which reunion by artificial means is never thoroughly accomplished.

Among other discoveries from my various trials, I have found that tin vessels will not answer for cheese-pans. I thought to save expense by using such, but, after the first season, was obliged to lay them aside, for the chemical affinity between tin and curd is so great that we could not separate it wholly by the breaker, and slip-curd consequently was found in almost every cheese.

I will close my remarks upon the dairy in Professor Way's word's: "Scrupulous attention to cleanliness is another essential of dairy management—the scalding, cleansing, and airing of the dairy-vessels being of the greatest importance. No stable and drain should be near it, and the cheese itself, where possible, should be separated from it."

CHEESE-ROOM.—A few remarks upon the cheese-room ere I close my subject. Too often this is inconveniently situated under the slates of the house. In the summer it is too hot; in the winter it is too cold. The great heat of summer may be lessened by hanging up wet blankets at the window; and I have just heard that by allowing a few worsted threads to drop from these into a bucket of water, the blankets will be kept wet by the force of capillary attraction. In the winter the external air must be excluded as much as possible, and artificial heating by steam or other means must be employed. I recommend, where it can be conveniently done, that hot water should be used—the heat is more generally diffused, and the air is not rendered so dry as to crack the cheese.

With the utmost care employed, some of the cheeses will be found to crack. These should be filled up, and a little paper pasted over to prevent the attack of flies. I can only recommend as general rules—that you should allow no extremes of heat or cold, moisture or drought, to affect the cheeses whilst in your possession, and exchange them for money as soon as you can effect a sale. *Mr. Harrison at a Meeting of the Sparkenhoe Farmers' Club. Abridged from the Leicestershire Mercury.*

Home Correspondence.

Mr. Wilkins v. *Box-feeding.*—Perceiving in your *Gazette*, of June 15, that the Rev. George Wilkins ("P.S. of Wix, six miles from Manningtree Station") has emerged from his dignified silence, on finding for some months past that you preferred to devote your columns to more practically useful purposes than agricultural objurgations persisted in against facts which had been adduced to show the error of the Rev. Mr. Wilkins's sentiments—perceiving that the rev. gentleman has again appeared in print, treating in no very friendly way his "friend" Mr. Mechi, whose endeavours at improvement through the best road—that of practice, are at least to be praised for his benevolent desire to acquire and impart useful agricultural knowledge by experiments for the benefit of others, I shall venture to break a spear with the Rev. Mr. Wilkins as to his assertion that his esteemed "friend" Mr. Mechi's (cattle) boxes, No. 2, were made *secundem artem* 3, 4, or 5 feet in the ground. If the rev. gentleman's measurements (apparently dubious enough by his own wording) were not mere guess work, then it follows that they were not made *secundem artem*, nor in the manner recommended and practised by Mr. Warnes and others who have usefully, as regards the health of the animals, and beneficially in point of profit, compared the fattening of cattle in boxes with the old system of fattening stock in open yards, with open hovels annexed to them, whether chained up or running loose, the box-fed animals becoming much sooner ripe for the butcher, without injury to health or subjecting them "to filth and fœtid air," as described by the objector as the result of his inspection at Tiptree-hall, where, if his account be correct, I take upon myself (as an extensive feeder of cattle in boxes for some years) to say that Mr. Mechi must have fallen into error, inasmuch as Mr. Warnes has never, that I am aware of, used or recommended cattle boxes to be formed in such a manner or to a depth which Mr. Wilkins has denominated *secundem artem*, as exhibited at Tiptree Hall, viz., 3, 4, or 5 feet deep. Further, I deny that Mr. Warnes has objected to a reasonable admission of light or fresh air. So far otherwise that by his approval my ranges of boxes are open, with power to shut if necessary, about a foot the whole length of the frontage; thick glass panes are, at certain distances, let into the tiling, and there are windows to open at pleasure on the contrary side of the range, to obtain a moderate current of air in hot weather, and the excavations have been constructed with brick sides and chalk bottoms, 2½ feet only in depth, according to Mr. Warnes' system and judicious recommendation, with a moveable wooden inclined plane for beasts to enter; and whether Mr. Mechi be right or wrong in adopting Mr. Huxtable's practice of manure receptacles beneath the wooden frameworks, must depend, it is reasonable to presume, on the correctness of his application of Mr. Huxtable's plan, which it is to be hoped may be more correct than his adaptation of Mr. Warnes' system, *i. e.*, supposing his friend the Rev. Mr. George Wilkins' statement to be more entitled to attention than his unfounded abuse of what he permits himself to term "muck making in muck," "dungeons, living cattle graves, amidst darkness, filth, and noxious vapours," &c., epithets wholly unjustified by facts; for wherever the boxes are properly constructed, ventilated, and sufficient light admitted, and proper but not wasteful attention paid to the supplies of litter, no noxious vapours whatever arise, but quite the contrary, for by the frequent treading of the animals, and thorough protection from rain, the bed beneath the litter at night becomes so firm, that when a box requires to be cleared out (generally when the beast is sold), the use of the pickaxe as well as the spade is requisite, and previous to which there is no perceptible escape of ammonia whatever; and among hundreds of all classes who have inspected my boxes, the universal remark has been, and in many instances surprise expressed at the absence of all unpleasant effluvia. The Rev. Mr. George Wilkins appears to consider that, like a second Hercules, he has destroyed the Hydra; but if he will trot (if he be a horseman), or steam by rail into Norfolk, I have good information, leading me implicitly to believe that he will find the imaginary defunct hydra lively and raising many heads; in other words, the box-feeding system much on the increase in that county, whence the practice emanated, through the intelligence and praiseworthy zeal of Mr. Warnes, to whom, in these days of miscalled free-trade, by his advocacy of box-feeding and culture of Flax upon the Belgian improved principle, the agriculturists of this country, who have taken the trouble to comprehend it, have good cause to consider themselves greatly indebted; and the more so, inasmuch as Flax culture judiciously adopted finds much extra work for labourers of all ages above childhood, and especially in the winter months, when so many industrious persons through the effect of mistaken legislation, proportionally beneficial to foreign industry, as subversive of the just reward of British labour, are thrown out of employment, and have no resource but the poor-house for themselves and their families. As I have no taste for publicity, I prefer to place my name and address in the hands of the editor; and so, taking my leave of Mr. Mechi's friend, I sign myself *Verax.*

The Scotch Law of Hypothec.—You are not quite correct in your view of the Scotch law of hypothec. You apparently assume that a sale of grain in open market by a tenant is necessarily a fair sale, which the landlord's right ought not fairly to affect. But it is plain that a sale by sample in open market may be effected by a fraudulent tenant with as great, perhaps more, secrecy than on his farm. On the other hand, the present law is in some respects beneficial to the tenant. It enables the landlord to grant the lease on a postponed rent, and leaves the tenant so much the more capital to apply to the stocking and working of his farm. It also enables the landlord, with safety to himself, to grant indulgences to an industrious tenant, in the occasional postponement of the termly rent, when adverse circumstances require it, in place of being obliged by Lord Brougham's bill rigidly to exact the rent on the term day, and sequestrate the crop in default of payment, thereby ruining the tenant's credit. It is quite a mistake to think that the law of hypothec prevents or is even any hindrance to a tenant obtaining accommodation credit at the bank. You will find on inquiry at any Scotch bank that any tenant of respectable character and credit readily obtains such accommodation. And it is notorious that the prosperity of agriculture in Scotland has been mainly imputed to the facility with which which the wisely constituted banks of that country granted advances to respectable tenants for the improvement of their farms. A repeal of the law will be found to be pregnant with great evil to the tenantry. *J. S. H.* [We submit that the so-called advantage to a tenant of a postponed rent, is in its effect injurious, inasmuch as it increases the competition for land, and thus raises rents.]

The late Mr. Smith, of Deanston.—In common with every friend to practical agriculture, and to the application of science to the management of land, particularly of strong clays, I deeply lament the loss of so eminent and intelligent a labourer in the good cause, as the late Mr. Smith, of Deanston. He had the merit of being one of the first, if not the very first, to direct the attention of the heavy-land farmer to what ought to be done beneath the surface, as well as upon it, for he was none of your skin-deep, eye-pleasing reformers; but, in matters of agriculture, a thorough radical. He went to the root of the matter, began at the beginning, and successfully demonstrated by his own experience the importance of a thorough stirring the subsoil, with a view not only to its gradual amalgamation with the surface soil, but to the more ready admission of water to the drains, and of air to the roots of the growing crops. Of the operation of the common plough, Mr. Smith appears to have entertained ideas very much resembling those so powerfully set forth by Mr. Wren Hoskyns: "The plough, and all the instruments that follow it, are only the 'animal power' substitute for that more perfect process accomplished in brief by the spade;"* or, we might add, by some other, and better mechanical means, than the old plough, of breaking without uplifting the subsoil. "This," observes Mr. H., "is what mechanical power must imitate; not the sluggish cleaving of the ploughshare, which only splits up an unbroken seam of surface, making a fulcrum of that which lies below, and thus pressing and polishing the subsoil year after year, into barren and impermeable induration which the roots of no annual can penetrate."† Such was the professed object of his subsoil plough; his spade, though somewhat [of Brobdignagian operation; and though opinions have differed, and probably will continue to differ, on the quantum of good derived from the process, surely no reasonable doubt can exist as to the superiority of a broken substratum, full of fissures, over a dense compact mass of clay, alike impervious to the action of air and water. Nearly simultaneous with his own, was the appearance of Sir Edward Stracey's subsoil plough, of Rackheath, in Norfolk. Which had the merit of priority I know not, nor is it worth entering upon here. The object was the same in each, to increase and improve the area desired to be occupied by the roots of corn, or other crops, and to facilitate the operation of the under drains. On one point advanced by the writer of the obituary in question, I must be allowed to enter my decided protest. He calls Mr. Smith the inventor and chief promoter of what he is pleased to designate, as "the modern system of thorough drainage." Now a person may be a promoter, without being an inventor of a system, and this was just Mr. Smith's case. The practice of under draining is not modern, it was known to and adopted by the farmers of Norfolk, Suffolk, and other East Anglian districts, years and years before Mr. Smith, or his father, or his grandfather saw the light. It was a matter of course on all wet lands; and he would have been reckoned a very sorry manager who neglected this, the foundation of all good husbandry.

* History of Agriculture, p. 139. † Ibid.

No merit was claimed for the practice of what appeared so obvious a branch of heavy land culture. He went on smoothly, quietly, and successfully. My father entered upon his Hinton farm (Suffolk), in 1779, and was in the habit of recording in a book the principal events of last year. That book is at this moment before me, and at the very beginning of it, appears the following passage. "It may be laid down as an invariable rule, that, as Wheat always suffers more or less from wet and cold, too much care cannot be taken to lay it on small round stetches, and to use the precaution of under-draining, water-furrowing, &c., so as to lay the land as dry as possible." This was 70 years ago, and he does not allude to it, as anything very new, or out of the common way, but of course, and one which he followed up during the whole of his long career as a farmer. *Samuel Taylor, Barnwood, Gloucester, June* 20.

The Establishment of "Penny Savings' Banks" is a favourable sign of the growth of provident habits among the labouring classes. The necessity of these institutions which bring within their reach the means of even the lowest class, must be evident to all. Hitherto the savings' bank, receiving no deposit less than 1*s.*, was of little use to the humble depositor, and hence many, for whose benefit it was intended, have been unable to avail themselves of its advantages. Now the poorest of the labouring classes have an opportunity afforded them of making some provision for their future wants, as well as their neighbours, who are somewhat better off, with the additional advantage of greater facilities for the deposit and withdrawal of their pence. The present success of these new institutions is very remarkable and encouraging. I would suggest whether "penny savings' banks" might not be beneficially established in our rural districts, for which they seem especially adapted, and be made to supply the place of the clothing club and the coal fund, where not already existing, or, what is not least important, to supersede the present public-house sick club. While on this subject, I would recommend the perusal of an excellent plain "Address to the Labouring Classes, on the Advantages of Savings' Banks and Friendly Societies," published by Lovejoy, Reading. *W. E.*

Bran as a Manure for Turnips.—I tried bran, and it failed most completely; the first year it was used in the original dryness, the second year it was steeped in water, and afterwards mixed and dried with quick-lime. In both cases the bulk of bran formed a damp mouldy consistence, in which the seed vegetated, but never pushed beyond the lump, and not one plant ever brairded. Maggots were numerous. The circumstance puzzles me very much, having read the success of bran in Mr. Blackie's Cyclopedia. *J. D.*

American Churn.—My experience differs so widely from the advertised testimonials, that I am very curious to learn what has been the case with others who have tried the American churn. My dairymaid has had a six-pound churn in use for the last month (perhaps 10 or 12 churnings) under the most favourable circumstances, at 58° or 60°. The butter has never come in less than 17 minutes, usually in about 18, and once it did not come in less than three quarters of an hour; while the advertised testimonials state a much shorter time, viz., from 12 minutes even to 4 minutes. *Experting.*

Farmers' Clubs.

STRANRAER, *May* 10: *The Feeding of Cattle.*—The CHAIRMAN said the subject which had been appointed for discussion was "The most profitable method of feeding cattle fat, more particularly in regard to hammel, box, or stall feeding." He said cattle feeding had left little return during the last two years, but this state of matters could not continue. The low price of cattle was, no doubt, caused by excessive production of Turnips—forced upon farmers by the failure of Potatoes, and induced also by the extraordinary profits of feeding for some years previous to 1847-48. The evil was increased by many farmers commencing the system of feeding without experience, and sending half-fed cattle into the market, depressing the price of all kinds of beef. Like all evils, this one will necessarily cure itself. When feeding ceases to pay, farmers will cease to feed, at least to the same extent; and accordingly on a late tour in the Lothians, Berwickshire, Stirlingshire, Ayrshire, &c., he saw more Potatoes planted this year than had probably ever before been planted in these districts, and also an extraordinary breadth of Beans.—Mr. GIBSON said his own experience was chiefly confined to stall feeding, though he kept his young cattle in hammels. He considered that less food and litter would feed cattle tied in stalls than in any other way; but young growing cattle would thrive better as he had them in hammels—that he found the best feeding in winter was a full allowance of Turnips, with 1½ lb. of Linseed, and about 3 lbs. of Bean-meal, boiled with chaff and cut straw—the cattle could be fed as cheaply and as well in summer on cut Grass in lieu of Turnips, and that the smaller cost of the Grass consumed, compared with Turnips, would allow 2 lbs. extra of Bean-meal, and in this way cattle could, in summer, be house-fed as economically and profitably as in winter. With a view to this summer feeding it was the more important to save litter in winter, by stall feeding, in place of box, or hammel-feeding. He considered there was a great economy and profit in house-feeding on cut Grass and other green food in summer, both for cattle and horses. —Mr. BOWIE, Balyett, said a great deal of Bean-meal had lately been given to feeding cattle, as he thought, unprofitably. He had given to one-half a lot of cattle, 3 lbs. of Bean-meal, and to the other half nothing but Turnips, and they all went away at the same price, and the one lot as good as the other. He thought, however, that Bean-meal given to dairy cows, mixed with their boiling, had an excellent effect in producing milk. Perhaps Bean-meal, if mixed with boiling or draff, so as to afford something for the animal to chew, might do more good to feeding cattle.—Mr. M'NEEL CAIRD, had last week paid a visit to Mr. Kennedy's farm of Myremill, in Ayrshire, where both stall-feeding and box-feeding were practised; and he learned from Mr. Kennedy that although the cattle were sooner ready for market under the box system, they consumed more food; and that he considered stall-feeding much to be preferred for the collection of the liquid and solid manure. He had been exceedingly interested by his visit to that farm, which was probably the best equipped agricultural establishment in the United Kingdom—perhaps in the world. Mr. Kennedy had two immense tanks for liquid manure, and was in the course of forming two others. The united capacity of these tanks when completed would be 200,000 gallons. He had pipes laid, by which he could convey his liquid manure and apply it without cartage, over no less than 350 acres. Mr. Kennedy thought the liquid of much greater value when kept for some months till it has undergone fermentation, than when applied in a crude state. He had it in view to dissolve his solid manure, so as to transmit it also through the pipes without cartage. With that object the great mass of his straw would be used as food instead of litter. Agitators would be kept at work in the dissolving tank by the use of a steam-engine; steam would be introduced into the tanks to regulate the temperature, and, when required, hasten fermentation; and, in short, the economy of manure was there in the course of being exemplified in the highest perfection. The buildings on Mr. Kennedy's farm were newly constructed, and all the arrangements admirable. He understood from Mr. Kennedy, as the result of his experience, that six cattle could be kept during the summer months on a single acre of Italian Rye-grass, treated with the liquid dressing, according to the new system. Mr. Kennedy was a thoroughly practical man. He had been well known in the agricultural world long before this system was introduced. He was no amateur, like Messrs. Huxtable and Mechi—not even a factor, like Mr. M'Culloch. There was little or no moss on his farm; and yet he had carried out the system of high farming on a scale which distanced all his competitors, and was still bent on carrying it out further, with unshaken reliance on the soundness of its principles. He had been supported by an intelligent and liberal landlord, who knew how to appreciate such a tenant; and his case was another and perhaps a more remarkable example than any which had yet been exhibited of how much may be done, in spite of all discouragements, by the active and intelligent co-operation of landlord and tenant.—Mr. JOHN M'CAIG, Barnultoch, approved of hammel-feeding if he had houses sufficient. He thought sheaf corn improved cattle very much; that he would approve very much of a mixture of Beans and Oats bruised—say 4 bushels of Beans and 6 bushels of Oats, which he thought better than the Beans alone; that he approved of feeding at least four times each day. —Mr. M'LEAN, considering that our object is to get cattle prepared and sent fat out to market with the least expense for food, had no doubt this could best be done by stall-feeding. He would not approve, suppose he had conveniences, of allowing his cattle to go about a court. If the cattle when put up were very wild, and not accustomed to a house, it might be different. He thought the best feeding for cattle was prepared grains along with Turnips. Bean-meal, or Bean-meal and bruised Oats, mixed with steamed straw or chaff. He never used Bean-meal, or Bean-meal and Oats, without a mixture of steamed straw or chaff. He gave 3lbs. of Bean-meal and 2lbs. of bruised Oats per day, early in the season, and at the end of the season perhaps 6 lbs. of Bean-meal and 3 lbs of bruised Oats. He thought some people fed cattle too frequently. He thought they never should have above three feeds of Turnips, and in the short days perhaps only twice Turnips, and once steamed grains. That horses agreed with frequent feeding, having a small stomach, but that cattle, having a large stomach, should have less frequent feeding, and be allowed to rest, which would assist digestion and fattening.—Mr. ANDREW MURRAY approved of Bean-meal as one of the best foods for cattle, and of stall-feeding; and that greater quantities even than those stated would be profitable—in fact that the more liberal feeding, either of the land or of the animal, there would be the better return. He mentioned that by liberal manuring 1½ acre of Grass, he had fed from it for the summer two cows and a horse, and sold besides about 15*l.* worth of Grass.—The CHAIRMAN said he was in favour of stall-feeding, because it saved litter, and enabled the farmer to keep comfortably a greater number of stock than could be kept in boxes or hammels, with the litter which most farms could afford. He thought we should follow, as far as possible, the example set at Auchness, of feeding summer and winter, and of keeping a larger quantity of stock than we had been in the habit of doing. He thought we should, in fact, go to the utmost limit that our fodder and litter would allow. He considered it a wasting of valuable material to tread good straw into a puddle, as is done in many districts, merely to make manure. If we had cut Grass and Vetches for summer, we need not have our feeding-byres standing so deserted and dismal-looking as they generally are in the summer months, but might be adding to our muck heaps, and realising a little profit, too, to make up for our small winter pay for feeding. There was no doubt that Grass would feed further by cutting than pasturing, not merely in the narrow view of loss by treading, but because, the ground being covered during the dry season, there is a damp retained in the ground, and from that and other natural causes a rank luxuriance which you will not find in pastures picked bare by cattle. He hoped one result of this evening's discussion would be the general adoption of house-feeding in summer in all cases of horses, and to some extent also of cattle, if it were only for the manufacture of better manure. He thought also it was worth considering the principle involved in what has been the experience of several intelligent farmers as to the advantage found in feeding with Oats in the straw. He did not say that plan ought to be followed, for he thinks there is a loss in it, and a want of certainty as to the quantity of rich feeding actually given to the animal. But he thought we should consider whether it would not be an advantage in giving Bean-meal or other rich food, to have it mixed with something that would induce the animal to chew, as it does the Oats in the straw. He must say that he had this season been disappointed in the effect of Bean-meal and bruised Linseed given to his feeding stock, and the discussion to-night had led him to think that the same quantity of those which he had given, merely mixed with hot water, as a roll or bannock, would have a much better effect if mixed with some coarser food, both to fill the animal's stomach and to lead it to chew and salivate. That during the last 16 years he had tried various modes of feeding. He had not found boiled food successful or profitable. He had never been so successful in feeding as with about 1 cwt. of Turnips and 4 lbs. of oilcake to each beast per day. Although the nourishing food in oilcake is as much concentrated as in Bean-meal, it required a good deal of mastication. All experience showed that Bean-meal, mixed in boiling for dairy cows, had been most beneficially applied. Probably in some mixed state for feeding cattle it would be also beneficial. He believed there was no more expensive mode of feeding than with Turnips in April and May. By that time Turnips contained little nutriment. In Norfolk they had Mangold Wurzel, which keeps fresher than Turnips to feed far on in the spring, but that crop did not seem to grow well in Scotland. He thought it would generally be found profitable to grow a few acres of coarse Potatoes, to feed in April and May, and to have cut Grass again to take their place as early in May as possible. He believed we could feed cheaper on cooked grains alone, at this season, than on preserved Turnips. He had carried his stall-feeding so far as to tie up his calves. He had done this for convenience rather than from a conviction that they would feed better than in loose sheds. But he saw the weak animals get their full shares, and as care was always taken that they were not put out till the weather was warm, and the Grass well up for a full bite, they have always done remarkably well turned out to pasture.

PENWITH, *June* 14: *Box-feeding.*—Colonel SCOBELL said he thought many people were frightened unnecessarily about the expense of feeding cattle in boxes. It did not take so much room as persons imagined. He considered it took as much room to box-feed two bullocks as to stall three. ("Oh, no; more.") The tying-up cattle required a great width of house, while box-feeding did not. Last winter he had some as large Durham cattle as ever he had in his life; and very good they were. He found that 8½ feet by 7 feet was ample room for the largest bullock. If he tied up his bullocks, a great deal of room was required to go behind and in front of them; but, in box-feeding that was not required. If a farmer had a house 11½ feet wide, it would give a sufficient passage in front of the bullocks and for the box. But, for the ordinary bullocks of the country, 7½ feet by 6 feet was ample. There was a disadvantage in having too large a box, because it gave the cattle too much room, and they did not trample down the manure alike. If a farmer would only take a moderate house and put a passage in the middle of it, he would find room enough on each side; at all events, there would be room enough on one side for a large bullock, and on the other side for a smaller one. And if they allowed 3½ or 4 feet for tying up bullocks in the ordinary way, it would not require more room for two cattle in box-feeding than for three for the stall. In building a narrow house, the scantling of the timber throughout was considerably less than for a wide one. But, if they had already a wide house, they might make a ridge down through, like a table, and have the cattle on each side.—Mr. PIDWELL said he believed, as far as concerned the retaining of ammonia by means of box-feeding, it would be merely stopped up for a time, like carbonic acid in a soda-water bottle, and when the manure was moved out, the ammonia would all escape at once, instead of having escaped gradually as from the ordinary dung piles. He believed, however, that box-feeding was a convenient plan, if, with that plan, the additional care was provided to sprinkle every morning a handful of sulphate of lime over the manure, in order to fix the ammonia.—Mr. CLEVERDON said, where Turnips were eaten down, there were no sheep would stand folding like the South Downs; and there was no better way of improving land than by eating down green crops in season. They might stick the South Downs, in folding, as thick as they liked; every sheep would dress 5 feet square every day, and that was the cheapest way of depositing liquid manure. There was a deal of talk about gypsum and all those theories; but they would never do. He had seen a good many theory farmers in his day; but he had never seen any one of them do any good. He had no objection to taking care of liquid manure; he knew that the liquid was the very essence of manure; but they must consider how were the buildings to be carried out. Where were the gentlemen who could knock down their old buildings and put up new, and build tanks and all those things? It can't be done. (Laughter.) And there was no occasion for it. Let them keep their manure in a proper manner; not by the side of a hill, but where no liquid could run away except it was over meadows. Mr. Scobell had been talking about box-feeding. Now, he should be sorry to say anything to offend any gentleman; but he knew it would never be carried out to any extent. He had seen box-feeding very handy by him, and he had tried it himself. He had tried every experiment that could be thought of at Trebartha; but box-feeding would never do. Mr. Scobell said a narrow house would do; but what would they do with the old houses? If people had more money than they knew what to do with, they might try it. It was said they must have 6 feet to 7½ feet; but that was not room enough. The cattle would twist round and dung into their meat; and he never saw any cattle kept in boxes which looked well. When he saw box-feeding turn out better bullocks than those which were kept tied up, well-fed, and tended, he would turn box-feeder, but not till then. But it could not be done; there was not the capital in the country to do it to any extent. He never saw any theory farmer pay 20*s.* in the pound yet. (Loud laughter.) —Col. SCOBELL thought Mr. Cleverdon was mistaken in one or two points. He (Col. Scobell) never had bullocks more comfortable than in box-feeding; and he never had a farmer come to look at them but highly approved them. He had been for 45 years fattening cattle; and he never knew cattle thrive so in his life. Last year, he (Col. Scobell) had as much aversion to the plan as Mr. Cleverdon had now. But he was determined to try it, and he ran up a cheap shed, made of the limbs of trees; it cost about 8*l.* or 10*l.* to box seven or eight bullocks. He agreed with Mr. Cleverdon that it would be impossible to do away with the old farm buildings and build new ones; but he assured Mr. Cleverdon that the old farm buildings might be altered with small expense—not like such as Mr. Cleverdon had mentioned, which would require an expense that no farmer could pay for. If Mr. Cleverdon were to try the box-feeding, he would find most striking advantages from it, both as to manure and as to fattening. He never knew such a circumstance as bullocks dirtying their manger; they were perfectly comfortable, and he never had cattle fatten in such a way as his had this last winter. He had as many as 150 bullocks at a time tied up in the old-fashioned mode of stall-feeding, and he had been all his life accustomed to that plan; but he never found bullocks so comfortable or fatten so well as those box-fed. *Abridged from the Royal Cornwall Gazette.*

Review.

Practical Horsemanship. By Harry Hieover, Author of "The Pocket and the Stud," &c. Longmans: London.

MR. HARRY HIEOVER has again presented us with a volume full of information and instruction on his favourite subject. It is marked by the same colloquial style, full of funny anecdote somewhat prosily told, which characterised the volumes preceding it. Its first sentence—"All who have ever ridden will admit that their first step towards horsemanship consisted in getting astride something or other"—at once introduces us to the humorous manner of the writer. And till the end of the work his descriptions and instructions, always accurate and trustworthy, are given after a similar, somewhat comical fashion.

Calendar of Operations.

JUNE.

DORSET FARM, *June* 24.—Turnip sowing is now far advanced, and in many cases finished, and they have been got in in very good order, so far as cleaning of the land is concerned. We have had the weather so very dry that dragging and clearing off weeds has been a very light operation; but the fly has been very busy with us, and already some fields have been sown a second time, but those which have escaped their ravages are doing well. In some cases the fly has attacked the Mangold Wurzel, a circumstance which is far from common. Haymaking now goes on very favourably, and promises to be a very fair crop. The corn crops look very healthy, and Wheat is now beginning to show the ear. Pasture has been plentiful up to this time, but if the present dry weather continues much longer it will get scarce, as many of the fields are now getting somewhat burned. I have observed in a field, part of which we dunged and part not to Turnips that the fly showed itself more vigorous in the dunged part than in the rest, and both parts had the same allowance of artificial manure, viz., 2 cwt. of superphosphate per acre. This I think tends to prove that it is not always the best method to use the dung, or at least much of it for the Turnip crop, but rather apply it to the Wheat. *G. S.*

SUSSEX FARM, *June* 24.—Our teams are still for the most part engaged ploughing, preparing, and sowing the remainder of the Turnip crop, carting hay, and skimming Hops. Men are engaged haymaking, hoeing Potatoes, Carrots, filling dung, planting Cabbages, &c. We shall commence to thin our first-sown Turnips to-morrow; the fly has been very bad here this

year, and a good many have lost all their first sowing. Rain is now very much wanted for the Turnips, Carrots, &c.; but still the dry warm weather is quite the thing for this busy time of haymaking. Seeds are for the most part cut; ours are a good crop, but the general complaint is, "Clover is thin." Some have commenced to cut meadow hay, and hitherto the cut is good; the Hop looks well, and the bines are getting very forward; Potatoes also look much more healthy than they have done for two years past. *J. B.*

Notices to Correspondents.

AMERICAN CHURN: *Mary* asks if any one will be kind enough to give his experience of the churn. Is the butter made so quickly as good as usual?

BOARDED FLOORS FOR CATTLE: *Improver.* Enquiries have been made.

GRASS SEEDS: *A Subscriber.* Where the Barley is laid you will probably lose the Grass. No cutting now would help, except the mowing of the crop entirely off. Where it is not laid, to cut the tops off would diminish its risk of falling; but at this late season it would injure the crop. On the whole, we fear you can do nothing now, and the seeds must take their chance.

LIMING: *J S H.* We do not believe that the practice of laying the lime over the seed furrow before sowing Barley and seed brings it into injurious contact with the dung of the previous year; for the common cultivation of Turnips tends to mix the manure pretty fairly with the soil.

OATS: *Lucas.* We have no hesitation in expressing our belief that 20 quarters of Oats have never been raised per Imperial acre from any field in Scotland or out of it. We have known 13 quarters, but that must be regarded as very nearly a maximum.

OYSTER-SHELLS: *A Young Farmer.* They will not rot very easily, but they will ultimately dissolve in sulphuric acid—and the result will for the most part be gypsum—obtained very expensively, however.

PHEASANTS: *R Bosworth.* Insectivorous birds that are kept in confinement, and fed principally on grain, seem to experience an intense longing for animal food, which they must gratify. Their system demands the introduction of certain elements, which they instinctively devour if offered to them in almost any shape. This has always appeared to me to be the true explanation of the frequent cases of confined pheasants eating their own eggs so ravenously. As a probable and rational remedy, let "R. Bosworth" try the supplying his golden pheasants with plenty of worms, maggots, insects, chopped beef, hard boiled egg coarsely chopped, and crushed egg-shells, in succession, and report the failure or efficacy of the diet. A natural gratification may check or forestall the indulgence of an unnatural appetite. The desire of the imprisoned pheasants for the animal food, which they would have in habitual abundance if at liberty, may be like the longing for salt and for bitters which is experienced by man, if debarred from them for any length of time *D.—R Bosworth.* Pheasants eat their eggs for the sake of the lime contained in the shell. Give them now and then a handful of pounded oyster-shells, and the evil will be stopped. *Phil.*

PROVIDENT HABITS: *C W.* The little tract on this subject, entitled "A Plain Address to the Labouring Classes, on the Advantages of Savings Banks and Friendly Societies," is published by G. Lovejoy, Reading, where you will have no difficulty in procuring copies for circulation.

SEED STEMS: *J S H.* It is best to pull up the prematurely shooting flower stems of Carrots and Mangold Wurzel. To cut them off will only *check* the formation of flowers and seed: it will not save the root.

Markets.

COVENT GARDEN, JUNE 29.

Vegetables are abundantly supplied. Strawberries and Hot-house Grapes are both plentiful, and the same may be said of Pine-apples. The supply of Peaches and Nectarines has greatly increased, and they are large and fine. Walnuts and Chestnuts are abundant; Oranges and Lemons sufficient for the demand. Young Carrots and Turnips may be had at from 3d. to 6d. a bunch. Frame Potatoes fetch from 2d. to 4d. per lb. Lettuces and other salading are sufficient for the demand, and so are Mushrooms. French Beans, Asparagus, and Rhubarb are plentiful. Cut Flowers consist of Heaths, Pelargoniums, Cinerarias, Lily of the Valley, Pinks, Carnations, Rhododendrons, Ranunculuses, and Roses.

FRUITS.

Pine-apples, per lb., 6s to 10s	Oranges, per doz., 9d to 1s 6d
Grapes, hothouse, p. lb., 4s to 8s	— per 100, 5s to 12s
— Portugal, p. lb., 9d to 1s	Almonds, per peck, 6s
Peaches, per doz., 6s to 18s	— sweet, per lb., 2s to 3s
Nectarines, per doz., 6s to 18s	Walnuts, p. 100, 1s 6d to 2s
Strawberries, p. punn., 6 stols 6d	— p. bush., 16s to 24s
Cherries, per lb., 6d to 1s 6d	Nuts, Barcelona, per bush., 20s to 24s
Melons, each, 4s to 6s	— Brazil, p. bsh., 12s to 16s
Gooseberries, green, per half sieve, 1s 6d to 2s 6d	Kent Cobs, 90s to 100s p. 100 lbs
Lemons, per doz., 1s to 2s	

VEGETABLES.

French Beans, per 100, 1s to 2s	Onions, p. bunch, 2d to 7d
Asparagus, p. bund., 9d to 4s	— Spanish, p. doz., 1s 6d to 4s
Rhubarb, p. bundle, 2d to 4d	Shallots, per lb., 8d to 1s
Cabbages, per doz., 6d to 1s	Garlic, per lb., 4d to 8d
Cauliflowers, p. doz., 2s to 4s	Artichokes, per doz., 3s to 5s
Peas, per sieve, 2s 6d to 4s	Lettuce, Cab., p. sc., 2d to 1s
Greens, per doz., 1s to 1s 6d	— Cos, per score, 6d to 1s
Sorrel, p. hf. sieve, 6d to 9d	Radishes, p. 12 hands, 9d to 1s
Potatoes, per ton, 100s to 200s	Small Salads, p. punn, 2d to 3d
— per cwt., 10s to 12s	Mushrooms, p. pot., 9d to 1s 6d
— per bush., 4s to 6s	Fennel, per bunch, 2d to 3d
— frame, p. lb., 2d to 4d	Savory, per bunch, 2d to 3d
Turnips, per doz. bun., 3s to 6s	Thyme, per bunch, 2d to 3d
Red Beet, per doz., 1s to 2s	Parsley, p. doz. bun., 1s to 2s
Cucumbers, each, 6d to 1s	— Roots, p. bdle., 9d to 1s
Leeks, per bunch, 3d to 4d	Marjoram, per bunch, 3d to 9d
Celery, p. bundle, 1s 6d to 2s	Mint, green, per bunch, 2d
Carrots, per bun., 6d to 10d	Watercress, p. 12 bunch., 6d to 9d
Spinach p. sieve, 1s 6d to 2s	Horse Radish, p. bdl., 1s to 4s

COAL MARKET.—FRIDAY, June 28.

Bate's Hartley, 12s.; Buddle's West Hartley, 13s.; Carr's Hartley, 13s.; Eden Main, 13s. 9d.; Tanfield Moor, 12s.; West Hartley, 13s.; Wallsend Bewicke and Co., 13s.; Wallsend Braddyll's Hetton, 15s.; Wallsend Haswell, 16s. 6d.; Wallsend Hetton, 15s. 6d.; Wallsend Killingworth, 12s. 9d.; Wallsend Lambton, 15s.; Wallsend Stewart's, 15s. 6d.; Wallsend Adelaide Tees, 14s. 6d.; Wallsend Tees, 15s. 3d.—Ships at market, 135.

POTATOES.—SOUTHWARK, June 24.

The Committee report that there have been several fresh cargoes arrived since our last report, in good condition; but the weather is so hot that they are selling very slowly, at the following quotations:—York Regents, 60s. to 90s. per ton; Scotch cups, 60s. to 70s.; Rhenish whites, 60s. to 70s.; Belgian do., 60s. to 65s.

HAY.—Per Load of 36 Trusses.

SMITHFIELD, June 27.

Prime Meadow Hay	68s to 74s		Clover	65s to 80s	
Inferior ditto... ...	55	65	New Clover	55	65
Rowen	54	60	Straw	23	28
New Hay	55	65		J. COOPER.	

WHITECHAPEL, June 27.

Fine Old Hay ...	65s to 70s		New Clover	60s to 70	
Inferior ditto ...	50	58	Inferior ditto... ...	55	60
New Hay	50	60	Straw	—	—
Old Clover	75	80			

HOPS.—FRIDAY, June 28.

Messrs. PATTENDEN and SMITH report that the market continues in the same state as for some time past. The bine is progressing favourably in most places; there is still a slight sprinkling of fly. Duty estimated at 175,000*l.*

SMITHFIELD, MONDAY, June 24.

We have a large supply of Beasts, and a short attendance of buyers, consequently prices are lower. A considerable number remain unsold. It is only in a few instances that 3s. 4d. is realised. There is an extraordinary supply of Sheep. Trade is very bad, especially for big fat sheep; all kinds are lower, and many remain unsold. There is rather more demand for choice Lambs, but middling ones sell low. Calves are plentiful; they are with difficulty disposed of, at rather lower rates. From Holland and Germany there are 503 Beasts, 1780 Sheep, 154 Calves, and 20 Pigs; from Spain, 400 Beasts; from Scotland, 200; from Norfolk and Suffolk, 2000; and 400 from Cambridge.

Per st. of 8 lbs.—s d	s d	Per st. of 8 lbs.—s d	s d
Best Scots, Herefords, &c. ... 3 2	to 3 4	Best Long-wools	to ...
Best Short-horns 2 10	— 3 2	Ditto Shorn ... 3 0	— 3 4
2d quality Beasts 2 4	— 2 8	Ewes & 2d quality ...	— ...
Best Downs and Half-breds	— ...	Ditto Shorn ... 2 4	— 3 0
Ditto Shorn ... 3 6	— 3 8	Lambs 4 4	— 5 0
		Calves 2 4	— 3 2
		Pigs 2 8	— 3 8

Beasts, 3832; Sheep and Lambs, 36,900; Calves, 203; Pigs, 320.

FRIDAY, June 28.

The number of Beasts fresh up to this day's market is not very large, but there being on hand a considerable proportion of last Monday's supply, the trade for them is exceedingly dull, and higher prices cannot be realised. We have a good supply of Sheep and Lambs; the demand for them has increased, and we are able to quote an advance in price. Calves are still plentiful, and sold at very low rates. From Germany and Holland there are 128 Beasts, 1490 Sheep, 287 Calves, and 20 Pigs; from Scotland, 100 Beasts; and 119 Milch Cows from the home counties.

Best Scots, Herefords, &c. ... 3 2	to 3 4	Best Long-wools	to ...
Best Short-horns 3 0	— 3 2	Ditto Shorn ... 3 2	— 3 6
2d quality Beasts 2 4	— 2 8	Ewes & 2d quality ...	— ...
Best Downs and Half-breds	— ...	Ditto Shorn ... 2 8	— 3 0
Ditto Shorn ... 3 6	— 3 10	Lambs 4 4	— 5 0
		Calves 2 4	— 3 2
		Pigs 2 8	— 3 8

Beasts, 959; Sheep and Lambs, 15,320; Calves, 639; Pigs, 237.

MARK LANE.

MONDAY, JUNE 24.—The supply of English Wheat to this day's market was even less than it has been of late, and brought the full prices of this day se'nnight. The majority of arrivals from abroad continue to come very much out of condition, which, with a continuance of very fine weather, and the fact of a large number of mills having ceased working, causes the demand to be exceedingly limited; nevertheless, prices may be considered nominally unaltered.—Barley, Beans, and Peas bring the extreme prices of last week.—Oats are scarce, and good conditioned qualities 6d. to 1s. per qr. dearer. —New York, 13th June, per telegraph: The market was firm for Wheat and Flour; and from Baltimore, shipments of the latter were being made to New Orleans. Indian Corn dull.

BRITISH PER IMPERIAL QUARTER.	s. s.		s. s.
Wheat, Essex, Kent, & Suffolk ...White	40—44	Red	37—39
— — fine selected runs ...ditto	44—47	Red	39—41
— — Talavera	46—52		
— Norfolk, Lincoln, & York ...White	40—42	Red	36—39
— Foreign	33—51		
Barley, grind. & distil., 19s to 22s...Chev.	23—27	Malting	22—25
— Foreign.....Grinding and distilling	15—20	Malting	19—22
Oats, Essex and Suffolk	15—18		
— Scotch and Lincolnshire ...Potato	18—21	Feed ...	15—19
— Irish .....Potato	14—18	Feed ...	12—16
— Foreign .....Poland and Brew	14—18	Feed ...	12—16
Rye	19—21	Foreign	18—20
Rye-meal, foreign .....per ton	5*l.*—6*l.*		
Beans, Mazagan .....21s to 23s.....Tick	24—26	Harrow	24—26
— Pigeon .....25s — 28s ...Winds	—	Longpod	—
— Foreign ..... Small	24—34	Egyptian	19—21
Peas, white, Essex and Kent.....Boilers	23—26	Suffolk	24—28
— Maple .....24s to 27s.....Grey	22—24	Foreign	19—28
Maize .....White	26—30	Yellow...	25—30
Flour, best marks, delivered ...per sack	33—37		
— Suffolk .....ditto	27—33	Norfolk	27—33
— Foreign .....per barrel	20—23	Per sack	28—32

ARRIVALS IN THE PORT OF LONDON LAST WEEK.

Flour, 11430 sks	Wheat.	Barley.	Malt	Oats.	Beans.	Peas
— 120 bls	Qrs.	Qrs.	Qrs	Qrs.	Qrs.	Qrs.
English	2530	520	4119	170	206	52
Irish	—	—	67	—	—	—
Foreign	14967	6602	—	13919	1195	576

FRIDAY, JUNE 28.—The arrivals of Foreign Wheat this week have been large, but small of all other descriptions of grain. This morning's market was thinly attended, and the business transacted in Wheat, Barley, Beans, Peas, or Oats, so limited, that we observe no alteration in the value of either article. Flour continues to be a slow sale. At 26s. per quarter there is a speculative demand for Galatz Maize. The hot parching atmosphere which prevailed during the early part of the week was succeeded on Wednesday night by severe thunder storms, and the weather has since remained cool and unsettled. The supplies of English Wheat in the provincial markets have been barely adequate to the demand, and command extreme prices.

ARRIVALS THIS WEEK.

	Wheat. Qrs.	Barley. Qrs.	Oats. Qrs.	Flour.
English ...	1420	40	1430	2210 sacks
Irish	—	—	—	
Foreign ...	16420	3340	12690	— brls.

IMPERIAL AVERAGES.	WHEAT.	BARLEY.	OATS.	RYE.	BEANS.	PEAS.
May 18.....	39*s* 7*d*	22*s* 5*d*	15*s* 5*d*	21*s* 7*d*	25*s* 6*d*	24*s* 11*d*
— 25	30 7	22 10	16 3	22 4	26 4	25 6
June 1.....	40 2	23 0	15 11	22 0	26 11	26 2
— 8.....	49 8	22 4	16 7	23 7	27 0	26 8
— 15.....	39 11	21 9	16 11	22 8	26 10	27 3
— 22.....	40 5	22 8	16 10	22 6	26 7	26 9
Aggreg. Aver.	40 0	22 6	16 4	22 5	26 6	26 2
Duties on Foreign Grain	1 0	1 0	1 0	1 0	1 0	1 0

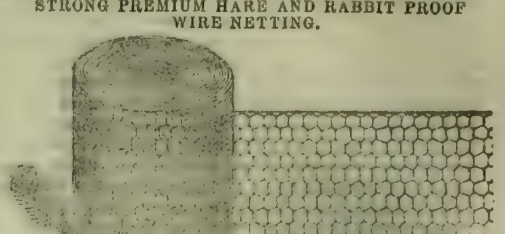
Fluctuations in the last six weeks' Corn Averages.

PRICES.	MAY 18.	MAY 25.	JUNE 1.	JUNE 8.	JUNE 15.	JUNE 22.
40*s* 7*d*	...	...	...	...	...	...
40 5	...	...	...	...	...	
40 2	...	...	...	...	...	...
39 11	...	...	...	...		...
39 8	...	...	...		...	...
39 7		...	...	...	...	...

LIVERPOOL, TUESDAY, JUNE 25.—At this day's market trade was dull for Wheat of all descriptions, and holders refrained from pressing business on lower terms; we are therefore scarcely warranted in reducing our quotations below those of this day week. Barley was rather more saleable at late prices, and Malt remained steady in value. Beans, upon a moderate demand, supported previous rates. Peas, moving sparingly, were the turn cheaper. Oats, although in moderate request, declined ½*d.* per 45 lbs. Prices: Wheat, English, red, per 70 lbs., 5s. 6d. to 5s. 10d.; white, 5s. 6d. to 6s. Barley, Scotch and Irish, per 60 lbs., 2s. 9d. to 3s. Malt, English, per qr., pale, 48s. to 52s. Oats, English and Scotch, 2s. 8d. to 2s. 10d. Beans, English, per qr., 27s. to 31s. Peas, do. do., 25s. 6d. to 26s. 6d.

HYDRAULIC ENGINES, WATER RAMS, &c., on Improved Principles; Engines worked by Steam or Hydraulic power, to raise from 1 gallon to 1000 per minute to a height of 500 feet, and from a depth of 900 feet. Douche, Vapour, Hot-air, and all other kinds of Baths. Buildings, Conservatories, &c., heated by Steam, Air, or Water. Boring, Sinking, and Collecting of Water, &c. Towns supplied.
Direct to JOHN LEGG, Cheltenham.

STRONG PREMIUM HARE AND RABBIT PROOF WIRE NETTING.



CHARLES D. YOUNG AND COMPANY (LATE W. AND C. YOUNG),
MANUFACTURERS OF IRON AND WIRE WORK, &c.,
22, PARLIAMENT STREET, WESTMINSTER, LONDON;
48, NORTH BRIDGE, EDINBURGH;
32, ST. ENOCH SQUARE, GLASGOW;
1, CASTLE BUILDINGS, DERBY SQUARE, LIVERPOOL;
beg respectfully to call the attention of Landed Proprietors and others to their strong Wire-Net Fence, for excluding Hares and Rabbits from Gardens, young Plantations, Nurseries, &c.
This Net was exhibited at the Show of the Highland and Agricultural Society of Scotland, held lately at Inverness, where its Efficiency, Great Strength, and Exceeding Cheapness attracted general attention, and had awarded from the Judges the Society's Silver Medals, with high commendations.
The immense damage done by Hares and Rabbits in Gardens and Young Plantations is often so great, that in the course of a year or two it will amount to more than the entire cost of protecting them with this Net. It is so durable, that when Plantations are sufficiently advanced to be independent of its protection, it can be removed to other exposed situations with the greatest facility, by any labourer. As a Fence against Hares and Rabbits, it is of itself quite sufficient, having only to be unrolled and attached, with small wire sent for that purpose, to wooden stakes driven into the ground, about every six or seven feet apart. It is, besides, peculiarly adapted for rendering Hedges, Paling, or other existing Fences, *completely impervious* to such vermin; and by being cut up into small pieces of three or more feet, as required, it forms a most efficient guard, at little expense, for individual Plants and Shrubs.
PRICES.—18 ins. high, 9*d.*; 24 ins., 1*s.*; 30 ins., 1*s.* 3*d.*; and 36 ins., 1*s.* 6*d.* per lineal yard.

Or a web of 100 yards, 18 ins. wide, will cost	..	..	£3 15 0
Do. of 100 yards, 24 ins. wide	..	..	5 0 0
Do. of 100 yards, 30 ins. wide	..	..	6 5 0
Do. of 100 yards, 36 ins. wide	..	..	7 10 0

If more or less than a web is required, it would be charged at the same rate per yard.
This Netting is also admirably adapted for Pheasantries and Poultry-yards, and is charged at the same rate. As carriage has, in many instances, been an obstacle to parties at a distance requiring this Net, C. D. Y. and Co. have made arrangements by which they will undertake to deliver it at any of the principal ports of Scotland, England, and Ireland, for One Halfpenny per lineal yard.
C. D. YOUNG and Co. cannot give a better idea of the great strength of their Premium Wire Netting than by stating that the weight of one yard of their 24-inch at 1*s.* is equal to 2½ yards of another article in the market, the same width, at 9*d.* per yard. Samples for inspection sent free of expense.
C. D. YOUNG & Co. manufacture every description of IRON and WIRE WORK required for this and foreign countries.
Workmen sent to all parts of Scotland, England, and Ireland.

GALVANISED WIRE GAME NETTING.—7*d.* per yard, 2 feet wide.



		Galvanised.	Japanned Iron.
2-inch mesh, light, 24-inch wide	...	7*d.* per yd.	5*d.* per yd.
2-inch ,, strong ,,	...	9 ,,	6½ ,,
2-inch ,, extra strong ,,	...	12 ,,	9 ,,
1⅝-inch ,, light ,,	...	8 ,,	6 ,,
1⅝-inch ,, strong ,,	...	10 ,,	8 ,,
1⅝-inch ,, extra strong ,,	...	14 ,,	11 ,,

All the above can be made any width at proportionate prices. If the upper half is a coarse mesh, it will reduce the price one-fourth. Galvanised sparrow-proof netting for pheasantries, 3*d.* per square foot. Patterns forwarded post-free.
Manufactured by BARNARD and BISHOP, Market-place, Norwich, and delivered free of expense in London, Peterborough, Hull, or Newcastle.

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FLEXIBLE INDIA-RUBBER HOSE PIPES.
JAMES LYNE HANCOCK, Sole Licensee and Manufacturer of the PATENT VULCANISED INDIA-RUBBER PIPES and TUBING.
These Pipes are well adapted for Watering Gardens, conveying Liquid Manure, racking Beer and Cider, Gas Fittings, Chemical and all purposes where a perfectly sound WATERPROOF and FLEXIBLE PIPE is required.
Hot Liquors or Acids do not injure them. No oil or dressing is required in using them. They do not leak from remaining out of use, are permanently Flexible in all Temperatures, and are therefore particularly suitable for Fire Engines; and, from their not leaking, are found exceedingly useful in conveying hot or cold water to baths in dwelling houses and such like purposes.
A LIGHT VULCANISED INDIA-RUBBER HOSE is now manufactured for conducting Water and Fluids, at the following prices per foot:

Size.	¼ in.	⅜ in.	½ in.	¾ in.	1 in.	1¼ in.	1½ in.	2 in.	2½ in.	3 in.
1 ply ...	0*s.* 5*d.*	0*s.* 6*d.*	0*s.* 8*d.*	0*s* 10*d.*	1*s.* 0*d.*	1*s.* 2*d.*	1*s.* 4*d.*	1*s.* 6*d.*		
2 ply ...	0 8	0 9	1 0	1 2	1 5	1 8	2 0	2 3		
3 ply ...	0 11	1 0	1 3	1 6	1 10	2 2	2 9	3 3		

N.B. Vulcanised India-Rubber Garden Hose fitted with roses, jets, and branches, complete, with union joints ready to attach to pumps or water cisterns.
All orders or letters addressed to J. L. HANCOCK, at the Manufactory (and Warehouse), Goswell-mews, Goswell-road, London, will meet with immediate attention.

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WIRE FENCING, less than Two-inch mesh, made from Iron Wire, and painted, to exclude Hares and Rabbits, Cats, Dogs, Deer, Sheep, &c. &c.; 15 inches high, 3*d.* per yard; 2 feet, 4½*d.*; 3 feet, 6¾*d.*; 4 feet, 9*d.*; 6 feet, 1*s.*; or any width required, at ⅔*d.* per square foot. Well adapted for enclosing Fowls, Pheasants, &c.—ROBERT RICHARDSON, 21, Tonbridge-place, New-road, London.

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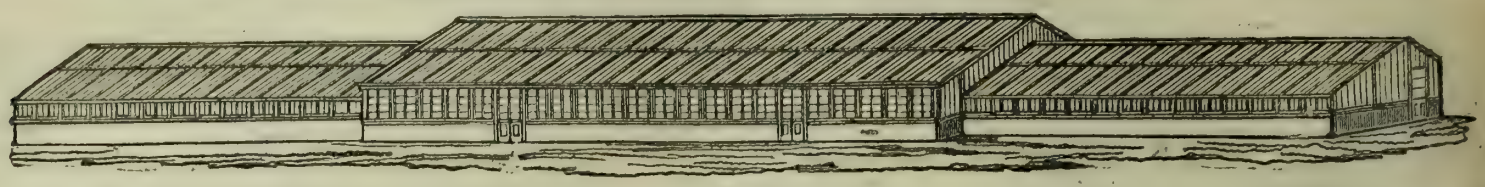
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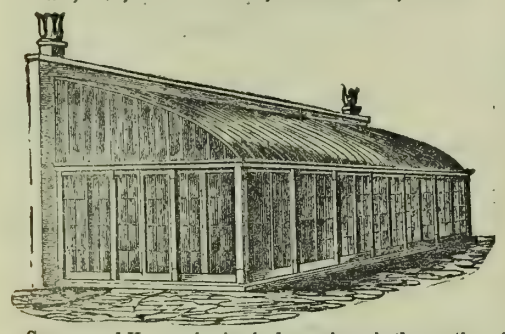
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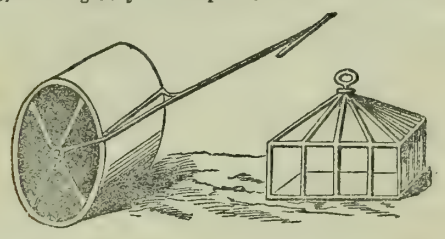
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THE GARDENERS' CHRONICLE
AND
AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 27—1850.] SATURDAY, JULY 6. [PRICE 6*d.*

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HORTICULTURAL SOCIETY OF LONDON.—HIS GRACE THE DUKE OF DEVONSHIRE, President of the Horticultural Society, has kindly directed the Grounds of Chiswick House to be opened for the reception of the visitors to the Society's Gardens at the next Exhibition, on SATURDAY, the 13th JULY. Tickets are issued to the orders of Fellows of the Society only, at this office, price *5s.*; or at the Garden, in the afternoon of the 13th July, at *7s. 6d.* each, but then also only to orders signed by Fellows of the Society. But respectable strangers, or residents in the country, who will forward their addresses in writing to the Vice-Secretary, 21, Regent-street, on or before Thursday, the 11th of July, may obtain from that office an authority to procure Tickets on this occasion. No official orders for Tickets will be issued after that day.

N.B.—No Tickets will be issued in Regent-street on the day of Exhibition.

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CARNATIONS AND PICOTEES.—Grand Trial Exhibitions for Northern *versus* Southern raised varieties. Fifty Prizes—*70l.* value.—Schedules for the above Exhibitions may be had upon application to Mr. John Keynes, Salisbury; Mr. John Holland, Middleton; Mr. W. Bragg, Star Nursery, Slough; Messrs. T. Scholefield and Son, Knowsthorpe, near Leeds; Mr. J. F. Wood, Midland Florist, Nottingham; Mr. C. Turner, Royal Nursery, Slough; Mr. T. Dobson, Worton Cottage, Isleworth; Mr. E. S. Dodwell, Derby; the Office of this Paper; and Mr. J. Edwards, Treasurer, Wace Cottage, Holloway.—The Southern Exhibition will be held at the Royal Nursery, Slough, on Thursday, July 25; the Northern in the County Hall, Derby, on Wednesday, August 7.

Subscriptions received by any of the above-named parties.—Each Exhibition is open to all England.

CARNATIONS AND PICOTEES.—By an error of the Printer (and not discovered until the Schedules had been freely distributed), the line for the division of NORTH from SOUTH is given LYME REGIS (which is in Dorsetshire), instead of LYNN REGIS, Norfolk.

Intending Exhibitors, Raisers, and the general Carnation-loving Public will please to bear in mind, that Condition 1 (see Schedule), should read, "That a line commencing at Pembroke and ending at Lynn Regis, Norfolk, be the line separating North from South." JOHN EDWARDS.

HORTICULTURAL FETE, CHISWICK, July 13.—Persons visiting those noted Gardens will find Good Accommodation at GEORGE BATTERSBY'S, "PRINCE OF WALES," Turnham Green. An Ordinary on Fête days, at 2 o'clock, at *1s. 6d.* each. N.B.—Wines and Spirits of the first quality.

Turnham Green, July 6.

G. CLARKE begs respectfully to inform ROSE Admirers that his fine Collection is in BLOOM, comprising all the new varieties. Orders taken now and executed in November. Price of Standards, *15s.* per doz., and upwards.

Fine specimens of Ericas at moderate prices.

G. CLARKE, Streatham-place Nursery, Clapham New-park, Brixton-hill, Surrey.

TO CINERARIA GROWERS AND OTHERS.

HARDY AND SON, SEED-GROWERS, Maldon, Essex, is supplying new CINERARIA SEED for present sowing from a large collection of first-rate flowers, in packets, *1s.* each. N.B. Choice Sweet William, from 70 distinct varieties approved of by Dr. Lindley. Also Superior Giant Stock, each *6d.* per packet. A plant or packet of seeds of the Heraclium Giganteum can still be supplied for *1s.*—All free by post.

TRUE DRUMHEADS FOR CATTLE, by THOS. WELLAND, at the Surrey Gardens, Wheeler-street, Godalming, Surrey. Packed to Godalming Station, *3s. 6d.* per 1000. A great variety of choice garden plants.

GREENHOUSES.

HENRY FREEMAN, HOTHOUSE BUILDER and HOT WATER APPARATUS MANUFACTURER, Triangle, Hackney, London, begs to solicit the attention of the gentry to his low prices for cash. Good substantial-built Greenhouses, fixed complete, 42 feet long, 13 feet wide, *90l*; 21 feet long, 13 feet wide, *50l.*; 12½ feet long, 10 feet wide, *30l.* A large assortment of Conservatories, Hothouses, Pits, Melon and Cucumber boxes, Iron hand-lights, Summer-houses, Seats, &c. Estimates in the above line, either in wood or iron.

HOTHOUSES AND CONSERVATORIES made and fixed complete in all parts of the Kingdom, at a considerable reduction. One, two, and three-light Cucumber and Melon Boxes and Lights of all sizes, kept ready for use, packed, and sent to all parts of the Kingdom; warranted best material. Garden-lights of every description, at JAMES WATTS', Hothouse Builder, Claremont-place, Old Kent-road. Reference may be had to the Nobility, Gentry, and the Trade, in most of the counties in England.

MAGNUS'S ENAMELLED SLATE is handsomer and more durable than the choicest Marbles, is less than half the cost of the commonest, and is PATRONISED by her MAJESTY and PRINCE ALBERT, the Nobility, Clergy, Architects of Eminence, Engineers, Builders, Railway Contractors, and the Public generally. It is suitable for Chimney-pieces, Pier-table tops, Vases, Ink-trays, and ornaments of various descriptions, Billiard-tables, Baths, Wash-stand, and Dressing-table Trays, Door Furniture, Candelabra, Columns, Monuments, Head Stones, Mural Tablets, Pilasters, Plinths, Fonts, Grand Staircases, Balusters, &c., and is made to represent not only the marbles in ordinary use but all the more costly descriptions, as Porphyry, Rose Granite, Broccatella, Brescia, Lapis Lazuli, Malachite, and Florentine Mosaics, and has obtained the Medal from the Society of Arts. Bored Chimney-pieces, from *25s.* upwards. Price lists sent on application to Mr. MAGNUS, PIMLICO SLATE WORKS, 39 and 40, Upper Belgrave-place, London.

*** Roofing and Plain Slate work, of all descriptions, at low prices.

DIXON'S NEW (REGISTERED) VENTILATOR.—This Ventilator is much neater and more simple than any hitherto invented, can be made of any shape, or size, and can be as easily cleaned as any other part of a window. It does not interfere with the blinds, or opening of the windows, and if accidentally broken can be repaired by any glazier at the cost of a single pane of glass. Models can be seen, and every information obtained, by applying to the London agents.—JAMES PHILLIPS and Co., 116, Bishopsgate-street, Without.

HARTLEY'S PATENT ROUGH PLATE GLASS.

JAMES PHILLIPS AND CO., 116, Bishopsgate-street Without, beg to hand their list of Prices of the above description of GLASS. Cut to order in panes of

8 by 6	and under	10 by 8	at 4½*d.* per foot.
10 by 8	,,	14 by 10	at *5d.* ,,
14 by 10	,,	1½ foot, or sizes not exceeding 20 inches long	at 5½*d.* ,,
1½ foot	,,	3 feet, or sizes not exceeding 30 inches long ...	at *6d.* ,,

PACKED IN BOXES of 50 feet each.

6 by 4 and 6½ by 4½...10*s.* 6*d.* 8 by 6 and 8½ by 6½...13*s.* 6*d.*
7 by 5 and 7½ by 5½...12*s.* 0*d.* 9 by 7 and 10 by 8 ...15*s.* 0*d.*

We do not pledge ourselves to execute large orders for small squares at the above prices, but only as far as they turn up in cutting. Should any quantity of small squares be required, a special contract is necessary.

MILK PANS *2s.* to *6s.* each, Metal Hand-frames, Tiles, and Slates; Propagating and Bee Glasses from *2d.* each; Cucumber Tubes, *1d.* per inch; Peach Glasses, *10d.* each; Wasp Traps, *3s. 6d.* per dozen; Pastry Slabs, Hyacinth Glasses and Dishes, Shades for Ornaments, Fish Globes, Plate and Window Glass of every description, and Lamp Shades. Lactometers for trying the quality of Milk, 4 tubes, *7s. 6d*; 6 tubes, *10s.* Self-registering Thermometers for Greenhouses, Horticultural Glass, &c.

From the *Gardeners' Chronicle*, December 8, 1849:

"As for the article substituted for Rough Plate, and which is actually in the market for the purpose of imposing upon gardeners, it is wholly unfit for any horticultural purpose. The best samples of it which we have yet seen is sold by Mr. JAMES PHILLIPS, 116, BISHOPSGATE STREET, LONDON."

GLASS FOR CONSERVATORIES, GREENHOUSES, PIT FRAMES, &c.

HETLEY AND CO. are supplying 16-oz. Sheet Glass, of British Manufacture, packed in boxes containing 100 square feet each, at the following REDUCED PRICES for cash, A reduction made on 1000 feet.

Sizes. Inches.			Inches.			Per foot.	Per 100 feet.
		Under	6	by	4	at	1½*d.* is £0 12 6
From 6	,, 4	,,	7	,,	5	,,	2*d.* ,, 0 16 8
7	,, 5	,,	8	,,	6	,,	2½*d.* ,, 0 18 9
8	,, 6	,,	10	,,	8	,,	2¾*d.* ,, 1 0 10
10	,, 8	,,	12	,,	9	,,	3¼*d.* ,, 1 2 11

Larger sizes, not exceeding 40 inches long.

16 oz. from *3d.* to 3½*d.* per square foot, according to size.
21 oz. ,, 3¾*d.* 5*d.* ,, ,, ,,
26 oz. ,, 3¾*d.* 7½*d.* ,, ,, ,,

PATENT ROUGH PLATE, THICK CROWN GLASS, and PATENT PLATE GLASS for Horticultural purposes, at reduced prices, by the 100 square feet.

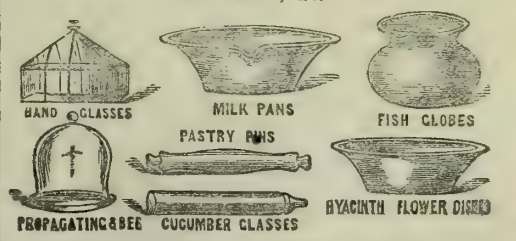
GLASS TILES AND SLATES made to any size or pattern, either in Sheet or Rough Plate Glass.

Propagating Glasses, Bee-hive Glasses, Cucumber Tubes, Glass Milk Pans, Glass Water Pipes, and various other articles not hitherto manufactured in glass.

PATENT PLATE GLASS.—The present extremely moderate price of this superior article should cause it to supersede all other inferior window glass in a gentleman's residence. No alteration connected with the sash is required.

GLASS SHADES, as ornamental to, and for the preservation of every description of goods susceptible of injury by exposure. Prices, since the removal of the Excise duty, reduced one-half. List of Prices and Estimates forwarded on application to JAMES HETLEY and Co., 35, Soho-square, London.

GLASS FOR CONSERVATORIES, HORTICULTURAL PURPOSES, &c.



T. MILLINGTON'S SHEET GLASS, which is of the best description, varying from 16 to 32 ounces, at from *2d.* per foot and upwards; 100 feet and 200 feet cases of large Sheet Glass, for cutting up, at 2½*d.* per foot. British Plate Glass, from *1s. 2d.* to *2s.* per foot, according to size. Patent Rough Plate Glass, from ⅛ to 1 inch in thickness, from *4d.* per foot upwards. Glass Slates and Tiles. Milk Pans from 12 to 24 inches diameter, from *2s.* to *5s.* each. Cucumber Tubes, from 12 to 24 inches long, at *1d.* per inch. Lactometers, *7s. 6d.* each. Wasp Traps.—Lists may be had, on application at the Warehouse, 87, Bishopsgate-street Without, same side as the Eastern Counties Railway.

ANTHONY'S PATENT AMERICAN CHURN.—At the Avondale Farming Society's Cattle Show, June 13, two sizes of the Churn were tested in the open air—a 6 lb. one making butter in 8 minutes, and a 24 lb. one in 12 minutes. Any female can turn the 24 lb. Churn, without extra exertion, as was the case on this occasion. The Butter was got up in half-pound prints, and sent in to the Dinner. It was equal in quality and hardness to the Prize Butter, and much approved of. The President of the Society took the agency of the Avondale district.—KEY and MITCHELL, 97, Newgate-street, London

GLASS WATER PIPES.

MESSRS. COATHUPES AND CO., GLASS MANUFACTURERS, Bristol and Nailsea, Somerset, continue to supply GLASS PIPES for the conveyance of water, &c., in lengths of from 3 to 7 feet, and from ½-inch to 4-inch bores; they provide also the necessary joints, which enable them to stand very considerable pressure.

CROWN, SHEET, AND ROUGH PLATE GLASS FOR HOTHOUSES, CONSERVATORIES, &c.

The Improved Patent Rough Plate, made by Messrs. Hartley and Co., can be supplied from this Warehouse, of every size and substance, at the same prices as at the works.

100 and 200 feet cases of large Sheet Glass, from 2½*d.* per foot. Small ditto, 10*s.* 6*d.* per 100 feet, packed in boxes ready for immediate delivery. Curators of Botanical Societies, Florists, Railway Agents, and others requiring large quantities, will, on sending dimensions, receive estimates at the lowest prices.

GLASS MILK PANS, CREAM POTS, Lactometers, Bee Glasses, Fish Globes, and all kinds of Dairy Glass, Propagating Glasses, Hyacinth Dishes, Cucumber Tubes, and every other description of Garden Glasses.

PATENT GLASS PENS, self supplying, never blot, never soil the ruler, and will write continuously for 12 hours.

Also, Glass Rulers, Glass Inks for office-stands, desks, &c. Stationers and Schools supplied. Wholesale Warehouse for Ornamental Shades, Lamp Shades, Gas Glasses, Genuine White Lead, Paints, Colours, and Pumps for Farm purposes.

Our Catalogue of 18 folios is the most complete ever published. No Gardener or Farm Bailiff should be without one. May be had Gratis on sending two postage stamps to Messrs. COGAN and Co. 48, Leicester-square, London.

MARQUEES, SUN-BLINDS, RICK-CLOTHS, &c. —Manufactory, Old Kent-road, facing the Bricklayer's Arms Railway Terminus, and 17, Smithfield-bars, London.

"The guests are arriving; my villa has got
Quite a park-like appearance—a beautiful spot;
The band on the lawn, in the spacious marquee,
This tent for our dinner, and that for our tea."

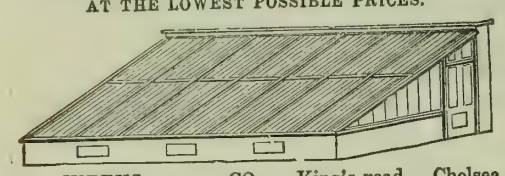
Marquees and temporary rooms superbly fitted up for fetes, &c., on most moderate terms, by THOMAS EDGINGTON and Co.—Tents of every description, Rick-cloths, with poles, &c. Tanned Netting, for the protection of fruit-trees from frost, blight, and birds, and for the security of fresh sown seed either in gardens or fields, at unprecedentedly low prices, viz., 1*d.* per square yard, or 200 yards for 14*s.*, or 500 yards for 30*s.*, or 1000 yards for 50*s.* Sold to gardeners and shopkeepers by the cwt. —New Archangel Mats and Scrim Canvas for wall fruit; Tarpaulings for houses under repair, on hire. Orders and inquiries per post immediately attended to.

TO HORTICULTURAL AND FLORICULTURAL SOCIETIES.

BENJAMIN EDGINGTON, Manufacturer to the Horticultural Society, Chiswick, and the Royal Botanic Society, Regent's Park, solicits attention to his stock of Marquees and Tents of every variety, and suitable for all climates. Orders per post duly attended to. Address, BENJAMIN EDGINGTON, 2, Duke-street, Southwark. A Warehouse, 208, Piccadilly.

TO BE SOLD, on very advantageous terms, a Retail SEED BUSINESS in a good Market Town, with or without a small Nursery.—Address by letter to S. B., Crosby-hall Coffee-house, Bishopsgate-street, London.

HORTICULTULAL BUILDING AND HEATING BY HOT WATER.
WARRANTED BEST MATERIALS AND WORKMANSHIP AT THE LOWEST POSSIBLE PRICES.

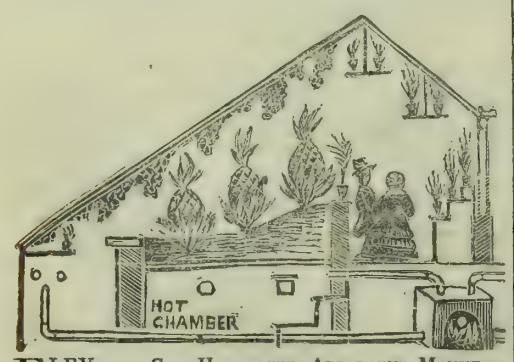


J. WEEKS AND CO., King's-road, Chelsea, Horticultural Architects, Hothouse Builders, and Hot-water Apparatus Manufacturers. The Nobility and Gentry about to erect Horticultural buildings, or fix Hot-water Apparatus, will find at our Hothouse Works, King's-road, Chelsea, an extensive variety of Hothouses, Greenhouses, Conservatories, Pits, &c., erected, and in full operation, combining all modern improvements, so that a lady or gentleman can select the description of House best adapted for every required purpose.

THE HOT-WATER APPARATUSES (which are efficient and economical), are particularly worthy of attention, and are erected in all the Houses, Pits, &c., for both Top and Bottom Heat, and in constant operation in the Stoves.

The splendid collection of Stove and Greenhouse Plants are in the highest state of cultivation, and for sale at very low prices. Also a fine collection of strong Grape Vines in pots from eyes, all the best sorts.

Plans, Models, and Estimates of Horticultural Buildings; also Catalogues of Plants, Vines, Seeds, &c., forwarded on application.—J. WEEKS and Co., King's-road, Chelsea, London.



ELEY AND CO., HOT-WATER APPARATUS MANUFACTURERS, HOTHOUSE and IMPROVED PIT BUILDERS, beg to inform the nobility and gentry, they, being practical and working men, defy competition, and are enabled to supply their IMPROVED PORTABLE CAST-IRON BOILERS, requiring no Brickwork, being more durable than Copper or Wrought Iron, and surpass all others. These Boilers, placed inside the House or Pits with the furnace-doors outside, require no stoke-hole, and prove the most economical mode of heating. 4-inch best Hot-water Pipe, 1*s* per foot; 3-inch, 10*d.*; 2-inch, 8*d.*; Tank-work, 1*s.* 9*d.* per foot. Superior Valves and all other connections equally low. Building and Hot-water Apparatus can be supplied and arranged so that any gentleman's tradesman can fix them, or their own services can be had at a trifling expense. Can be highly recommended by the nobility and gentry, for whom the most complete works have been erected. —The Trade supplied. Estimates free. Boilers of every description supplied. Conservatories in Metal, Iron, or Wood on the most ornamental designs.—Address, City-road, near the Toll-gate, London.

TO AGRICULTURISTS.

ABRAHAM HARDY AND SON, SEED GROWERS, Maldon, Essex, feel pleasure in introducing to their friends and supporters their NEW EARLY YELLOW STONE TURNIP, which they can confidently recommend for field culture. This variety may be sown after Vetches or Wheat with certain success.

The advantageous properties this Turnip possesses over others are—1st. That it comes in quicker by three weeks than the early white Stone. 2d. It is particularly adapted for a hot climate or soil. 3d. It does not taste strong in the driest seasons. 4th. Is a small-bladed variety, and consequently can be grown closer. 5th. It is 25 per cent. heavier than any white variety, and is not diminutive in size. 6th. It is more nutritious than any other, and nearly as solid as the Swede. 7th. Keeps better after storing. 8th. It may be sown three weeks earlier or later than all others, and with equal success.

One oz. packets 8*d.*, free by post. In order to test its superior qualities and stock, it may be procured for general crops at 2*s.* per lb. Early orders are requisite, as the growing stock is limited. Orders of 20*s.* or above, carriage paid to London. Remittances requested.

N.B.—A strong Plant, or packet of Seeds, of the HERACLEUM GIGANTEUM can still be sent for 12 postage stamps, post free.—July 6.

SCIENTIFIC ACADEMY AND AGRICULTURAL TRAINING SCHOOL, Kennington, near London, July 1, 1850.

MESSRS. NESBIT take the liberty of directing the attention of Parents to the advantages offered by their Establishment, in the education of youth intended for the Arts, Manufactures, or Agriculture. Though the power, influence, and wealth of England, depend, in a great measure, upon the proper application of scientific knowledge to the working of her minerals and soils; yet, in the education of her youth, Science has hitherto been almost wholly neglected. It is, however, evident that a young man, who, in addition to the common education, possesses a sound knowledge of Analytical Chemistry, Mineralogy, and other kindred subjects, will be the best prepared to engage with success in any technical branch of business for which he may be designed.

In their system of instruction, Messrs. NESBIT give a prominent position to the physical sciences; and experience has proved that instead of retarding the pursuit of the ordinary studies, they materially assist in their acquirement.

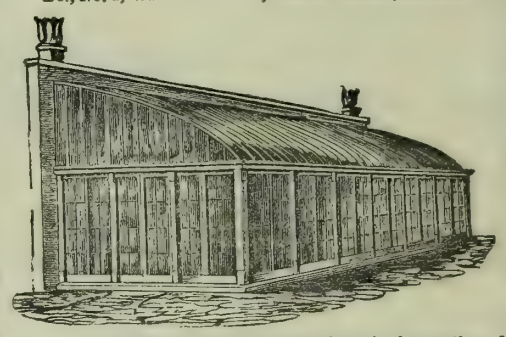
The pupils have repeatedly been examined by some of the first Professors in the Metropolis, who have expressed themselves highly gratified with their general knowledge, and with their attainments in physical science.

Terms and other particulars may be known on application.
38, Kennington-lane, London.

MESSRS. NESBIT'S CHEMICAL AND AGRICULTURAL SCHOOL, 38, Kennington-lane, London.—A sound practical knowledge of Analytical and Agricultural Chemistry, Geology, Surveying, Levelling, Railway Engineering, &c., may be obtained in Messrs. NESBIT'S Academy, in addition to a good modern education.

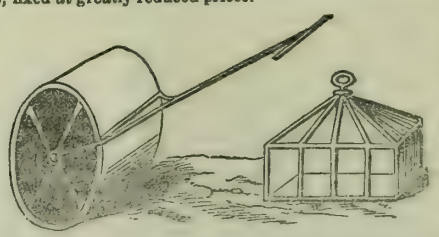
Mr. NESBIT'S works on Arithmetic, Mensuration, Gauging, Land Surveying, English Parsing, &c., are published by LONGMAN and Co., and may be had of all Booksellers.

COTTAM & HALLEN, ENGINEERS, IRON FOUNDERS, &c., No. 2, WINSLEY-STREET, OXFORD-STREET, LONDON.



COTTAM and HALLEN having had experience in the erection of HOTHOUSES and CONSERVATORIES (made of Iron or of Iron and Wood combined), and from many improvements they have made during that time, can with confidence undertake to erect such buildings with economy and dispatch.

HOT WATER APPARATUS for heating the above and other buildings (of which they have constructed upwards of 3000), fixed at greatly reduced prices.



COTTAM and HALLEN have on show, at their repository, No. 2, Winsley-street, Oxford-street, a great variety of the following articles, for GARDENS, &c., at Greatly REDUCED PRICES, viz.:

Garden Rollers,	Hand-glass Frames,
Garden Engines,	Flower Stakes,
Garden Syringes,	Flower-bordering,
Watering Pots,	Flower Stands,
Garden Vases,	Garden Arches,
Mowing Machines,	Garden Chairs.

Every description of Work, both plain and Ornamental, in wrought and cast iron, for Gardens, &c. &c.

HORTICULTURAL TOOLS and AGRICULTURAL IMPLEMENTS of all kinds.

STRONG IRON HURDLES, strained Wire Fencing, &c.

Show Rooms at the MANUFACTORY, 2, Winsley-street, and 76, Oxford-street, three doors West of the Princess's Theatre.

ASHBY'S INDIA EXPORT PALE ALE.—London Stores, under the South-Western Railway Terminus, Waterloo-road. India Pale Ale, 21*s.*, 18 gallons; 10*s.* 6*d.*, 9 gallons; Family Ale, 16*s.*, 18 gallons.—CHAS. ASHBY and Co. invite the particular attention of private Families and Clubs to their PALE ALE, as brewed by them for the COLONIAL MARKETS for the past 20 years. Supplied in small casks direct from the Brewery, Staines, and the London Stores, or from their agents—Messrs. W. Hancock, 80, Connaught-terrace, Hyde-park; Chidell and Stewart, 40, Lime-street, City; W. H. Chaplin, 11, Sebbon's-buildings, Upper-street, Islington; J. Shenton, Greenwich; W. Ferguson, Reading; Thos. Berry, Brighton and Lewes; A. J. Richardson and Co., Portsea and Southsea; J. Skidmore, Rickmansworth; Cooksey, Brothers, Southampton.

MRS. LOUDON begs to give Notice that she ceased to Edit the Weekly Journal entitled THE LADIES' COMPANION AT HOME AND ABROAD, with No. 27, completing the first volume, and that she has no longer the slightest connection with that Paper.—Bayswater, July 6.

CARSON'S ORIGINAL ANTI-CORROSION PAINT, especially patronised by the British and other Governments, the Hon. East India Company, the principal Dock Companies, most public bodies, and by the Nobility, Gentry, and Clergy, for out-door work at their country seats, The Anti-Corrosion is particularly recommended as the most durable out-door Paint ever invented, for the preservation of every description of Iron, Wood, Stone, Brick, Compo, Cement, &c., work, as has been proved by the practical test of upwards of 60 years, and by the numerous (between 500 and 600) testimonials in its favour, and which, from the rank and station in society of those who have given them, have never yet been equalled by anything of the kind hitherto brought before the public notice.

Lists of Colours and Prices, together with a Copy of the Testimonials, will be sent on application to WALTER CARSON, No. 9, Great Winchester-street, Old Broad-street, Royal Exchange.

No Agents.—All orders are particularly requested to be sent direct.

BELL'S PATENT LIQUID CEMENT is ready for use, and only one-eighth the cost of oil-paint. For beauty it is pre-eminent, giving the exact appearance of FINE CUT STONE. Can be used at once on fresh Roman Cement, or any other plastering, and will protect the walls as well as Roman Cement. In casks of 1, 2, and 3 cwt., at 8*s.*, 15*s.*, and 21*s.*, casks inclusive.

PATENT MINERAL PAINTS.—Invaluable for cheapness, beauty, and permanence: not half the cost of other paints, always ready for use, will keep good for years, and therefore well suited for exportation. Brilliant black, 2*s.*; rich brown, 2*s.* 9*d.*; greens and light colours 4*s.* per gallon.

G. BELL and Co., 2, Wellington-street, Goswell-street, London.

CHEAP AND DURABLE ROOFING.

BY HER MAJESTY'S ROYAL LETTERS PATENT.

F. M'NEILL AND CO., of Lamb's-buildings, Bunhill-row, London, the Manufacturers and only Patentees of THE ASPHALTED FELT FOR ROOFING

Houses, Farm Buildings, Shedding, Workshops, and for Garden purposes, to protect Plants from Frost.

At the Great National Agricultural Shows, it is this Felt which has been exhibited and obtained TWO SILVER MEDAL PRIZES, and is the Felt SOLELY patronised and adopted by

HER MAJESTY'S WOODS AND FORESTS,
HONOURABLE BOARD OF ORDNANCE,
HONOURABLE EAST INDIA COMPANY,
HONOURABLE COMMISSIONERS OF CUSTOMS,
HER MAJESTY'S ESTATE, ISLE OF WIGHT,
ROYAL BOTANIC GARDENS, REGENT'S PARK,

And on the Estates of the Dukes of Sutherland, Norfolk, Rutland, Newcastle, Northumberland, Buccleuch (at Richmond), the late Earl Spencer, and most of the Nobility and Gentry, and at the ROYAL AGRICULTURAL SOCIETY'S HOUSE, Hanover-square.

It is half the price of any other description of Roofing, and effects a great saving of Timber in the construction of Roofs. Made to any length by 32 inches wide.

PRICE ONE PENNY PER SQUARE FOOT.

*** Samples, with Directions for its Use, and Testimonials of seven years' experience, with references to Noblemen, Gentlemen, Architects, and Builders, sent free to any part of the town or country, and orders by post executed.

☞ The Public is cautioned that the only Works in London or Great Britain where the above Roofing is made, are

F. M'NEILL AND CO.'S

Patent Felt Manufactory, Lamb's-buildings, Bunhill-row, London, where roofs covered with the Felt may be seen.

The new Vice-Chancellor's Courts, at the entrance to Westminster Hall, were roofed with F. M'NEILL and Co.'s Felt about two years since, under the Surveyorship of Chas. Barry, Esq., R.A. Her Majesty's Commissioners of Woods and Forests are so satisfied with the result that they have ordered the Committee Rooms at the Houses of Parliament to be roofed with their Felt. Quantity altogether used, 24,000 feet.

NOTE.—Consumers sending direct to the Factory can be supplied in lengths best suited to their Roofs, so that they pay for no more than they require.

Every information afforded on the construction of Roofs, or any proposed particular application of the Felt.

IRON AND WIRE FENCING,
AND METALLIC BEDSTEADS.

THOMAS PERRY AND SONS,
252, OXFORD-STREET (NEAR HYDE PARK),
And Highfields Foundry and Wrought-iron Works, Bilston, Staffordshire, Manufacturers of all descriptions of
PLAIN AND ORNAMENTAL IRON AND WIRE FENCING,
Park Entrance, Carriage and Field Gates, Wickets, &c.;
Deer, Sheep, and other Hurdles;
Hare and Rabbit-proof Wire Fencing;
Iron Bedstead Makers to the Board of Ordnance;
And Government Contractors.

The works of Messrs. PERRY being situated in the heart of the first iron district, they are enabled to execute all orders with the greatest facility, and on the most moderate terms. Drawings made and estimates prepared, if required. The show-rooms contain an immense variety of every description of Iron and Wire-work, and are the largest in London. An Illustrated Catalogue of Bedsteads, with dimensions and prices, sent on application, post-free.

FOR WATERING GARDENS, BREWERS' USE, &c.
FLEXIBLE INDIA-RUBBER HOSE PIPES.

JAMES LYNE HANCOCK, Sole Licensee and Manufacturer of the PATENT VULCANISED INDIA-RUBBER PIPES and TUBING.

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1 ply ...	0*s.* 5*d.*	0*s.* 6*d*	0*s.* 8*d.*	0*s* 10*d*	1*s.* 0*d.*	1*s.* 2*d*	1*s.* 4*d.*	1*s.* 6*d.*
2 ply ...	0 8	0 9	1 0	1 2	1 5	1 8	2 0	2 3
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The Gardeners' Chronicle.

SATURDAY, JULY 6, 1850.

MEETINGS FOR THE ENSUING WEEK.

TUESDAY,	July 9	Zoological	9 P.M.
WEDNESDAY,	— 10	Literary Fund	3 P.M.
		Royal Botanic	3½P.M.
SATURDAY,	— 13	Horticultural Gardens	1 P.M.

COUNTRY SHOWS.—Tuesday, July 9: Whitby Floral, and Lichfield Floral and Horticultural.—Wednesday, July 10, and Thursday, July 11: Leeds Horticultural and Floral.—Thursday, July 11: Malvern Horticultural and Floral.

The great and good is gone! Mourn, England, mourn the gentle heart and iron nerve that saved you at your utmost need. Sir ROBERT PEEL is dead.

OUR readers are aware that notice has been given of the reappearance of the POTATO DISEASE here and there in Ireland. Knowing, as we do, the great extent of land unhappily replanted in that country, a general failure of the crop cannot be anticipated without very serious apprehensions. We believe, however, that the alarm which has been taken may be described to be premature. That disease has reappeared is certain; and in more places than have yet been mentioned, as about Kenmare for example. Nevertheless, the cases are few and far apart, and could probably have been paralleled last year, which was a favourable season.

We say this with a view to allay such alarm as has been taken. At the same time, it is our duty to declare that it is a serious mistake to imagine the Potato disease to be gone. On the contrary, a good many instances of its mischief in our English counties last year might be named, and in the month of April last we saw Potatoes rotting in bins, in Hertfordshire, exactly as they rotted in the Dublin cellars in 1845. Probably, if we should have a hot dry autumn, there will be little to fear, provided, as is said, the Irish have at last discovered the importance of very early planting. But it is to be remarked that we have before us the danger, and something much more than the danger, of a wet autumn; and if that should unhappily occur, no man can foresee to what extent the Potato rot may spread once more.

Should it again ravage Ireland, it can only be regarded as a visitation of Providence for the purpose of arresting the progress of that fatal course—Potatoes, pigs, cabins, conacre, and above and beyond all, competition for land—which has brought the western province of the British empire into a state of all but hopeless ruin.

MUCH as the cultivation of the Pear and other fruit-trees has been improved, by grafting upon suitable stocks, with the view to make them bear sooner, and also by ROOT-PRUNING in November, so strongly and clearly described by Mr. RIVERS, in his "Miniature Fruit Garden," yet, in some soils and situations, they grow so late in autumn, and ripen their wood so imperfectly, that mere winter pruning and summer stopping are not sufficient of themselves to effect the desired end. This over luxuriant habit of growth is mainly induced by stimulating soil, aided by the mulching generally applied as soon as the young trees are planted, after coming from the nursery. So well have Pears in particular been managed of late years, by some of those who have made it their business and study to provide the public with the best kinds on the most suitable stocks, that we not unfrequently see them come from the nurseries in the most perfect condition; being handsome miniature trees, with numerous short-jointed shoots, covered with beautiful well-matured buds, ready to burst into bloom, while the warmth of spring is scarcely yet perceptible. This is partly the result of frequent root-pruning and removal, with the view of inducing fruitfulness; and fruitful they are, for we have had no fewer than a dozen fine Pears upon a small tree, the first year after planting. But it is a question whether cutting the roots in winter is the safest time for the operation; for if much rain happens to fall, and the soil becomes soddened, the newly-cut parts may, and often do, suffer injury. The practice of cutting the roots yearly while the tree is young, and before it has attained the size desired by the owner, tends, on the one hand, to cripple its energies, and make it old when it is yet young; while the extremely fruitful habit of the trees, as now sent out, is incompatible with that quick growth which we all like to see in trees intended to be trained to a particular form and size, and kept to that, when it is once attained, by judicious root-pruning.

The new owners are, of course, delighted on receiving such trees from the nursery, and are soon busy in placing them in their stations in the garden. The trees are planted, staked, and mulched, and in dry weather during the first spring, well watered. All this is perfectly right; for although the young trees are interesting to look at in their dwarfed state, most people prefer having them of a larger size as soon as possible; and trained either into a handsome pyramidal form, from 4 to 6 feet high, well furnished with shoots from the base to the top, or it may be into a cylindrical or an umbrella shape according to fancy. In order to cause them to attain the form and size desired in the shortest possible time, good soil, and careful management as to mulching and watering, with frequent stopping and training for a few years, are indispensable. But during this time the plants in most soils lose that short-jointed and fruitful habit which the skilful nurseryman had been at such pains to give them, and acquire what may be termed a rampant habit of growth, notwithstanding that the depth of soil in which they are planted has been limited to a foot or 18 inches, and rests upon an impervious bottom of rubble and concrete to prevent their roots from going too deep.

Now as rapid growth and a fruitful habit cannot obtain at the same time, the great matter is to be enabled to grow the tree into the form and size desired in the shortest space of time, and then, in one season, to bring it into a fruitful state. The former of these objects can easily be attained in the manner mentioned above; and the latter, which is the more important, would, we presume, be a desideratum to many of our readers, who, like ourselves, would prefer seeing trees covering their allotted spaces quickly, and without regard to having more fruit than chance or good seasons might produce while this is going on; and afterwards to be enabled to ensure plenty of fruit-buds for the ensuing season.

To many it will be a startling assertion, but it is true, that the best time for root pruning fruit trees, with a view to make them ripen their wood well, and set plenty of fruit-buds, is in July or early in August; or in forward situations, as soon as they have formed their first growth; for many trees make a second shoot, or what is termed a midsummer growth, among which are the Apple and Pear; although vigorous young trees sometimes continue to grow throughout the season until their progress is arrested by cold on the approach of winter. Than this latter state, nothing can be more unfavourable to the production of fruit; and to remedy it quickly, summer root pruning is a certain means; as the moment the operation is performed all growth is checked, and the perfect elaboration of the sap in the tree commences. This principle applies to all fruit trees, whether trained on walls or kept as standards, that are unfruitful or in too gross a state. It also accords beautifully with the system of summer pruning and stopping, as a proper balance is preserved by it between root and branch. The natural tendency of an over vigorous tree, after being stopped, to throw out a forest of laterals, is also prevented. The excessive flow of sap in the tree is checked at the warmest period of the year; and any fresh accession of crude juices from the root, being in a great measure stopped by the root pruning, the sap already in the tree, through being acted on by the heat of autumn, becomes perfectly elaborated, and fruitfulness is the result. I have never seen a tree so treated that has not been covered with fruit buds in the autumn, and when a favourable spring followed, an abundant crop has been invariably obtained; while, by November pruning, the grossness of the following season only is checked; and in the summer which intervenes between the period of root pruning and the time when the fruit may be expected, the trees not unfrequently recover their over luxuriance, especially in rich soil, or moist situations. As a matter of course, this process is unnecessary with trees in a bearing state; but those with only a partial crop, and which are growing too freely, may be moderately root-pruned, without danger of the fruit suffering; taking care not to neglect giving a good soaking of water immediately after the operation.

It is certainly a great triumph in the art of gardening, to be able to bring Pear and Apple-trees into a bearing state while they are young, and only two or three feet in height; and it also affords satisfaction to purchasers to ascertain (often in the first year after planting), if the trees they are to be at some pains with, are the kinds they wished for; but in order to give them a stronger constitution than trees can have which are constantly kept in a dwarfed state, we are of opinion, that it will be found better to allow them to grow pretty freely for a few years, after they are planted in their permanent situations, and then summer root-prune them.

We confess that we often envy the position of those who are situated where fruit trees ripen their wood, and bear, with scarcely any assistance in the way of root-pruning. In such situations, the grower has only to order his trees already in a bearing state, as supplied by our leading nurserymen, and he will secure plenty of the finest fruit from the season in which they are planted, instead of having as formerly to wait for years. Some trees planted by ourselves in February 1849 have this year made shoots from 3 to 4 feet in length; and some pyramidal trellises 5 feet high and 3 feet wide at the base are becoming pretty well covered with wood. These trees we shall root-prune in a few days, commencing by opening a trench round them about 2 feet from the stem down to the hard platform below; and all the roots that are inclined to be strong will be cut back to within 18 inches of the stem: but few, except the stronger leading roots, will have advanced so far out at present, and by shortening these, the vigour of the trees will be arrested, and some fruit buds will be formed in the present autumn. Some Pear trees grafted on Pear stocks, covering an arched trellis 60 yards long, 6 feet wide, and 9 feet high, were root-pruned, for the first time, in July, 1848, when the trees, which had been planted five years in strong rich soil, were exceedingly gross. The result of this was, that, in 1849, we had a plentiful crop of fruit on every tree; although, previous to this, scarcely a Pear was obtainable. Numerous other instances of success with Pears, Apples, Peaches, and Apricots, could be mentioned, but it is scarcely necessary. The only difficulty which amateurs are likely to find, in applying this system of root-pruning, will be in determining the distance from the stem at which the trench should be made; and it is not easy to give precise directions on this point. Trees that have only been planted two, three, or four years may, with safety, be cut to within about 2 or 3 feet of the stem, proportioning the distance to the size which they may have attained. The roots of trees may, by frequent pruning, be kept within a comparatively small space, by beginning with them the second or third year after planting, and at every successive operation going 3 or 4 inches further from the stem, and adding some fresh loamy soil; but trees that have been long established, and have not been root-pruned, should not be cut too close. Apricots and Peaches may be kept in a fine bearing state by root-pruning in the summer, when they have no crop, and early in the autumn when they have a crop, but are still too gross. We operate upon wall trees in this state as soon as the fruit is gathered, and the wood ripens admirably.

It will be well to add, by way of conclusion, that after pruning or shortening the strong roots, which are the cause of unfruitfulness, we put some decayed turf, or fresh loamy soil against them, in order that they may strike freely into it; which they immediately do, as the season of growth is at its height. The food supplied by the new roots during the autumn will have nothing crude in it; but will supply sap of a kind calculated to form fruit buds. In soils where the Pear bears well naturally, without all this labour, it will be superfluous to meddle with it; but hundreds will be glad to avail themselves of a simple, quick, and certain means of ensuring fruit buds in a month or two, where there was before nothing but masses of watery, fruitless shoots. *F.*

ON TRANSPLANTING LARGE EVERGREEN TREES AND SHRUBS.

IN your Leading Article, at p. 387, some observations are made upon experiments which were instituted to confirm or otherwise the views I advanced in a communication to the London Horticultural Society. It might be inferred from the remarks you have made on more than one occasion, that this very important consideration in ornamental gardening—the transplanting

of large evergreens at the particular season I have recommended, is a new light thrown upon the subject, but this is by no means the case. The late Mr. M'Nab, of Edinburgh, published a pamphlet on transplanting, many years ago, and the views therein set forth went to perpetuate the vicious and fatal plan of winter transplanting.* His opinion on all matters relating to gardening are entitled to the highest consideration and respect; but from repeated trials I have found that early autumn is the most preferable season for the operation. In 1826, which was hot and dry, I had a large number of evergreens either to cut down or remove, in consequence of some alteration which required the work of transplanting to commence in July. The shrubs were of different kinds, most of them requiring horse labour to drag them on trucks to their new quarters. My success was perfect. I had subsequently numerous opportunities of proving the importance of early autumn planting up to 1836, when I made the following remarks, after the publication of Mr. N'Nab's views, in a gardening work of the day.

"The observations I have now to make are applied to the transplanting of large plants, as small ones may be removed at almost any season with nearly equal success. I may premise that an opinion, and not an erroneous one, is commonly entertained, that, should evergreen shrubs be removed during the months of November, December, January, and February, the effect will be nearly the same. Notwithstanding this, I am still, however, persuaded that there is a certain time better than any other for performing every operation, especially of gardening, the data for the fixing of which are found in the immutable laws of vegetable economy.

"The period, then, of the greatest action in the economy of evergreen shrubs is surely not the most desirable time for transplanting them; neither can that be the most fitting season when they are in a comparatively torpid state. In the former instance, the plants will suffer from the natural season of excitement, which the more or less unavoidable mutilation of the roots will render them unfit to sustain; whereas, in the latter case, the fibrous roots will perish from the extended period during which the plants will be compelled to remain in a torpid condition. Well, then, a time between the two extremes (say during the month of April) may be suggested; but this would be a fatal suggestion, as at this season vegetable life is waiting the influence of a genial sun to discharge its accumulated provisions into leaves, flowers, and fruit. The branches must sympathise with the roots, which, at the three periods cited, ought not to be disquieted. It will be perceptible, from the preceding observations, that there is yet another season at which the proceedings of the skilful and cautious may be rendered successful; and the guide for discovering this period is a very simple one. The time I propose shall be alike free from the extremes of either present or immediate prospective excitement, and shall yet not be the season of maximum transpiration. It is a well known and understood fact, as well as a matter of common practice, that the successful propagation of a great number of evergreen shrubs is prosperously effected at the time the young shoots have attained a firmness of texture easily distinguished by the practical operator. We may instance the Laurel, Camellia, &c, which will have arrived at this condition about the end of August. These cuttings then contain abundance of the active circulating fluid, which, in its downward course, forms a callosity which presently emits roots. It is this time, during the declining year, which I have found the most desirable season to conduct the operation of transplanting evergreen shrubs. The young shoots at this season will have attained maturity to render their suffering from removal, or from the aridity of the season, very trifling; as the whole plant will contain enough of the active sap to propel fresh spongioles when located; so that, after a copious watering, the general appearance of the plant will have sustained little change."

Such were the opinions I entertained 14 years ago upon this subject, and extensive experience during these last 7 years in different parts of England, where local circumstances have considerably varied both in respect to soil and climate, fully confirm their soundness. Transplanting at the particular period I have recommended, does not rest upon hypothetical grounds, but upon well tested experience, extending over a period of more than 20 years; the result has long ceased with me to be matter of speculation or doubt. Some, however, have been successful at other seasons; as, for instance, Mr. Barron, whose operations at Elvaston Castle have been of the most extensive kind. He prefers moving shrubs in the middle of their growth. Supposing that a large shrub, say 20 feet high, and the same in diameter of branches, was about to undergo the operation of removal from the position it had occupied for many years previously, we may infer that had such a shrub been allowed to remain where it was, it would have extended its branches a foot in all directions. Mr. Barron would consider the middle of its growth, when the shoots had grown probably about 6 inches, the best time for transplanting it. Now this appears somewhat startling. One can readily imagine that small plants might be shaded and kept moist, but this could not have been done with the gigantic subjects operated upon at Elvaston. It is quite clear that plants so treated must either grow or die instantly, especially in such a season as the present. If they do not instantly root into the soil, the fierce action of the sun must soon exhaust the sap. Their existence, therefore, depends upon an immediate supply from below.

The success which has attended this apparently paradoxical period for the transplantation of large evergreen trees and shrubs at Elvaston, places the matter, however, beyond cavil or doubt. Mr. Barron is no wild experimentalist, but a most successful operator of long and extensive practice. We have here (for there is no denying the fact) the longest and hottest days of the year recommended for this work, in opposition to the old practice of performing such tasks in the dead of winter. The sap, in the one case, is in the highest state of action; in the other it is dormant. I will leave those who take an interest in this subject to reconcile these apparently opposite practices if they can. *R. Glendinning.*

* Mr. M'Nab's words are: "Although, however, I have planted evergreens 10 months out of the 12, with little difference in the success, yet one season has a preference over the others with me, and when there is a power of choice, I would recommend late in autumn, winter, or very early in spring; that is, any time from the middle of October till the middle of February, and in general the beginning of this period is best." Page 16. Ed.

DISEASES OF PLANTS.

(*Continued from p.* 404.)

GENUS III.; *one species.* BUNT (*Golpe or Volpe or Fama*).—I restrict this name to a disease particularly fatal to Wheat in our country, by which, although the external form of the ear remains intact, the inside of the grain is more or less corrupted. Ginanni calls it Grano carbone or charred grain. In Lombardy it goes generally by the name of Fama, although sometimes by those of *carbone, carboncino marzetto.* The French, after Tillet, call it *Carie.* It appears certain that it was first introduced into Italy, and more precisely into Lombardy, with grain imported from Hungary during the war about the year 1730; from thence it spread into the Romagna towards the year 1738. Having last year had unfortunately abundant opportunity of observing it, I am enabled fully to confirm what I had stated from the writings of others in my "Elements of Agriculture," and to give the following details with greater accuracy, This disease appears at the moment of the germination of the plant. The affected individuals are of a dark green, and the stem is discoloured. As the ears are issuing from the sheaths, their stalks are of a dark green, but very slender. When the ear has fully grown out, its dull dirty colour causes it to be immediately distinguished from the healthy ones, and it soon turns white. From the first the diseased ears are larger than the healthy ones, and are sooner matured. What appears singular, but which I have not perhaps quite sufficiently verified, is, that the seeds are more abundant than in a sound ear. The seeds have a more oblong form, though their absolute length is less than that of good ones; they are of a brown colour, and at one end are two filaments joined together and turned upwards. The lower extremity shows the scar or point of attachment with the receptacle. The inside of the grain is converted into a blackish, fine, viscid, glutinous substance, insipid, but very fœtid. It is remarkable that it is not all the ears of one plant that are infected, nor even all the seeds of one ear, and it happens sometimes that one part of a seed only is corrupted; it thus remains half black and half white. The outer covering and chaff remaining sound, and the seed preserving its form, may serve alone to distinguish the bunt from the smut.

I cannot affirm that this disease is confined to Wheat and Rye-grass. It appears certainly to be contagious, from numerous experiments, which show that the contagious principle lasts a long time. I have tried it myself. Some, however, doubt it; but it cannot be denied that seed sown infected with bunt, produces plants similarly affected; every one who has had the slightest experience must be convinced of it. Some have inquired whether all kinds of Wheat are equally subject to it. It appears that the *blé de miracle* (Triticum turgidum, Vill.), and the *touzelle rouge* (a long-reeded, beardless, red Wheat), are the least attacked.

It would carry me too far, and would be of little advantage to enter into an examination of the different opinions given as to what produces bunt, which Ginanni considers as one disease with the smut, the latter being its last stage. I shall at once proceed to mention the certain preservative against both diseases, and which may be applicable to all analagous diseases affecting the seed from the moment that it is placed in the soil.

In the first place, although experience tends to show that over manuring cannot alone give the bunt, yet it has been observed that there are always a greater number of infected ears in fields where the dung has been mixed with the refuse of the threshing-ground;* it is therefore a matter of common prudence to avoid mixing with the dung for corn fields any kind of matter proceeding from infected plants, unless it be fully decomposed by fermentation. This is a point of great importance to attend to, with the present custom of using manures too fresh, to which abuse may be ascribed a great number of the diseases in our corn-fields. Whoever has the misfortune to have bunt in his corn is well aware that he must only select for seed perfectly sound and healthy grains. But as notwithstanding that attention he is not safe from the reproduction of bunt, he must steep his seed corn. Books of agriculture are full of receipts more or less stamped with quackery, and the more they are enveloped in learned verbiage and calculations, the more they are apt to mislead the unwary. I can reduce them all to two, of which I have myself witnessed the success, and in favour of which I can adduce the testimony of a great portion of the agriculturists of my department. In the year 1806 we had a great deal of bunt, but all those who had followed the course I am about to recommend were free from it. The seed corn must not only have been winnowed in the ordinary way, but it must be repeatedly tossed in the air with the shovel, in order to deprive it of any dust which may remain with it, as where the bunt has been very abundant, a single steeping may not be sufficient to destroy it all. Tessier remarks that the steeping has the advantage of causing to float all bunted grains which may chance to remain, so that they may be removed with a skimmer.

Take quick-lime in the proportion of one measure of lime to 24 measures of corn, and let it be quite fresh and in lumps; its strength may be ascertained by throwing it into cold water, when it should immediately effervesce. Those who sow at different periods, must always take care to have fresh supplies, as the lime is useless when old. I have said one twenty-fourth of lime is sufficient, but even one-twentieth may be better. Take of water one-fourth or fifth of the Wheat in weight, not in measure. Divide the water in two equal parts, boil one-half and throw the lime into it, to slake whilst it is boiling, then stir it about, and pour in the cold water, or put the cold water in the tub or vat in which the corn is to be steeped, and then empty the cauldron with the lime into it. The grain must be put in as soon as the liquor is cool enough not to injure it, and left for 24 hours, after stirring it well up with a stick, and skimming off all the bad or diseased grains which rise to the surface. After 24 hours the corn must be spread out to dry and sown immediately. Some toss it, if the weather permits, in order to get rid of the lime, that it may not hurt the hands in sowing it. Others get rid of the lime by passing the grain through a wire sieve—the presence or removal, however, of the lime makes no difference as to the growth of the future crop and its freedom from disease.

Some, instead of using pure water, prefer a lye, or water passed through wood-ashes and boiled with them as for washing. Others again mix with the water liquid manure from stables. All these practices are good, as they tend to add to the certainty of success of the preventive process.

Circumstances may render the procuring hot lime either very difficult or impossible; its place may then be supplied by a lye (*lessive*) of wood-ashes fresh burnt; to which should be added liquid manure. If fresh ashes cannot be procured, soda or potash may be substituted; and in this consists the second method. But it is much more expensive and less certain than the steeping in lime-water. This steeping, although now commonly practised in some localities, is still almost unknown in others, as in the department of the Reno. If once universally adopted it might entirely deliver our Wheat fields from this pestilence.

Two observations, made in various places, deserve to be recorded. Wheat sown deep is proportionately more affected by the bunt. So also that which is sown in fresh ploughed ground, probably from the seed falling deeper into the ground. Perhaps the grain which remains near the surface suffers less from the bunt being washed away by rain, or deprived of its malignant qualities. Lastly, I would remark, that if bad cultivation, and especially bad drainage does not produce bunt or smut, it is certain that those fields, the worst treated in these respects, suffer the most from these diseases.

* In Italy, as in the greater part of south Europe, threshing is performed by treading out the corn on open threshing-grounds, which leaves a great deal of refuse after the corn, straw, and chaff have been collected; and winnowing, on the same ground, by tossing the corn into the air with a shovel, so as that the wind shall blow away the chaff.

VILLA AND SUBURBAN GARDENING.

GLASS structures contribute pleasure and interest only in proportion to the continued floral display maintained in them, and when we consider how easily this is affected by a judicious selection of easily cultivated plants, it is astonishing to find plant houses, during summer and autumn, where the principal stock which they protect during winter is placed in the open air, presenting a naked and cheerless aspect, in no respect assimilating with the season. What can be more easily cultivated than a Balsam? Yet how frequently do we find this beautiful plant forgotten, or if remembered, presenting anything but vigour or perfection of growth. I maintain that with no very great attention, and with little gardening knowledge, an amateur may produce Balsams in first-rate beauty. Let us see then, what system is to be adopted, in order to attain this point.

The first thing is to get seed of good double varieties of various colours; the mottled kinds are much prized; the selfs, if double, are, when in perfection, much and deservedly esteemed; the seed, if sown in March, will be early enough to supplant the greenhouse plants. It should only be slightly covered, and placed in a stove, or the warm end of a greenhouse, or in a Cucumber or Melon frame; but be careful that it is protected from mice, for if within their reach the whole may be destroyed in a night. When the plants are 2 inches above the soil, and the cotyledons fully expanded, they should be potted singly into 3-inch pots, and placed close up to the glass. During their whole culture, let this be kept constantly in mind, or they will soon become drawn and feeble, and the beauty of their cultivation depends much upon their habit and sturdiness of growth. When they have attained the height of 6 inches, they may then be shifted into the pots in which they are to bloom;

8-inch pots will be found a good and convenient size for this purpose. And let me urge the importance of growing no more plants than space can be well found for their perfect expansion, in order that they may have plenty of air, and also that an opportunity may be afforded of fully viewing each plant individually. When they begin to expand their blossoms, diluted guano water will be of great benefit to them. Should the weather prove hot and dry, place them in pans, which can be supplied with liquid to enable them to sustain the dry weather without injury.

The Balsam being a gross feeder, the soil should be of a rich nature. Equal parts of loam, leaf-mould, and decayed manure of the richest kind will suit it, and by using such soil and feeding with liquid manure, fine examples of cultivation will be obtained in comparatively small pots, which is without doubt the object which the villa cultivator, should more especially aim at accomplishing, with a view to securing variety in the little space he has for such plants. Let him bear in mind that they are mere annuals, and not destined permanently to occupy any portion of his limited space. *Pharo.*

Home Correspondence.

Summer Pruning the Vine.—Among the physiological questions bearing upon horticulture, none is more important than that which involves the connection between the head and roots of a plant. Not that an important connnection is not admitted and appreciated by all good gardeners, but because the real nature of that connection is not understood; and I am desirous of raising a discussion upon the point, because it has become the fashion in these latter days to draw practical conclusions from what I conceive to be false premises. I have chosen the Vine as the subject of illustration, because the practice which I am about to call in question is oftener prescribed for that plant than any others, and because one instance is as good as a thousand. The practice I allude to is that of allowing the laterals produced from the effects of "stopping" to grow to a considerable length, under the impression that by so doing the roots are materially augmented and strengthened preparatory to their being called into action in the ensuing season. Now I cannot understand the grounds upon which such a conclusion is based. I can fully appreciate the intimate connection between the well-being of a branch and that of a root, but cannot perceive why an unnatural growth—and the production of laterals induced by stopping a growing shoot is essentially unnatural—can in the remotest degree augment the bulk or efficiency of the roots of a plant. In your "Calendar of Operations" for June 22d, under the head "Hardy Fruit Garden," occurs the following sentence, which refers to the Peach, but the principle is the same as that immediately under discussion: "Stopping will cause many laterals to be produced, but of these one only should be allowed to grow at or near the point of each shoot, with a view to maintain a healthy activity at the roots, and to secure an escape for any superabundant sap." Here the stopping is evidently not meant for the purpose of increasing the amount of wood, by the production of laterals, because we are directed to destroy all but the leading one, but we are told it is with the view of maintaining a healthy root action. I am glad the writer has constructed the sentence so as to imply a doubt, because from that I infer he has no just grounds for believing the result aimed at will be realised. It would be difficult to conceive how it could be; but perhaps some of your correspondents well versed in these matters will give their experience upon the question. In the meantime it may not be amiss to investigate the principle by the theoretical axioms of physiology, which, by-the-bye, is, I believe, the only test which has hitherto been applied to the opposite side of the question. And when we recollect that very opposite conclusions may be drawn from the same premises, in other subjects than physiology, it can excite no wonder that it should be so in this. The growth of a Vine shoot is, as every one knows, very rapid, and in its earlier stages perfectly independent of root action. A Vine may be covered with shoots, the whole of which are several inches in length, the production entirely of organisable matter stored up in the tissues of the wood during the last season of growth and maturation. During this, which may be considered the preliminary process of development, the shoots consist of simple cellular tissue, possessing all the elements of bark, wood, and pith, but presenting no distinction of parts, beyond the external organs, leaves and tendrils, or the nascent bunch of Grapes. The leaves possess no power of assimilating, in fact they perform no functions whatever; they are, in the state of which I speak, mere extensions of the cellular matter of the shoot. But presently the wonderful process—of which we know nothing but by its effects—organisation, commences; the base of the shoot assumes a solidity of character, and you can distinguish the several parts of which it is composed, and the leaves assume their functions; in a word, the vital energies of the plant are roused, and the roots commence their office, and the whole body of the plant rapidly increases in bulk. In this stage we will imagine a shoot 3 feet in length to be reduced to 2, by destroying its point, of course laterals will be immediately produced in abundance. The question is, will the growth of such laterals beneficially increase the organic matter of the tree, and the capability of roots for another season. I think not. The substance of such laterals is produced mainly from the shoots which produce them, and no good result can arise from expending in laterals, to be afterwards destroyed, what should have formed part of the shoot to be retained for the next season's bearing wood. I cannot understand the policy of topping a shoot, to induce others to grow, afterwards to be cut away; nor upon what principle of physiology laterals can augment root action beyond that of a leading shoot. I can only look upon lateral shoots produced after the destruction of a leader, and allowed to ramble, as robbers of the vital juices of the plant producing them. If at the period of cessation of growth in a shoot, we could fix upon the precise time to gradually destroy all buds not required for the next season, and to throw all the powers of the plant into the remaining ones, then we should have arrived at the acme of scientific pruning. That this could be done there is no doubt, because it is possible; from such treatment the best results must follow. But by allowing a tree to become a wilderness of spindly laterals on the one hand, or to destroy a leader merely to allow a lateral to take its place, as recommended in the case of the Peach on the other, appears to be anything but judicious. If my conclusions are wrong, I shall willingly acknowledge my error. *George Lovell.*

Swans.—I believe a swan may be kept on a piece of water of almost any size; though if "W. C.'s" pond is very small, it will be necessary to feed the bird, at all events in winter. Eight swans, four old birds and four cygnets, have done very well here, on about four acres of water. I think a single swan, if pinioned, would remain quietly, for one of mine was "sent to Coventry" by the rest, and has since remained by himself on a small stream within sight and reach of the other birds, without attempting to associate with them. The water here is subject to the "green scum" of which "W. C." complains; it always rises to the surface in very hot and calm weather. The swans are most useful in keeping down other weeds, but I think they do not eat the "green scum;" at least, not in any appreciable quantity, though, from their size and strength, they are able to swim through it, and break it up, when it is gradually carried away by the current. If "W. C.'s" pond has no stream running through it, I fear the swan alone will not do much good. Yarrell, in writing of swans, says, "their food consists of water-plants, &c., and occasionally small fish; a swan has been seen to eat a small roach." I infer from this, that fish is not their usual food, and as far as my own observation goes, I believe they do little or no harm to my trout. The large trout, however, devour many of the small ones. *B., Canterbury.*

Botanical Nomenclature.—The shifting and inexact character of English names, when not vernacular (as in many translations), and their frequent variation in different localities, even when of indigenous growth, are some of the objections which might be urged against a very general adoption or substitution of English names in the stead of the usual classic ones. The inconvenience and uncertainty of *aliases*, which exist now in the case of technical or scientific names, would be increased to a great extent, under circumstances in which a greater number of botanists than are competent or willing to meddle with the dead languages would feel themselves justified in christening novelties. English names, too, are in general longer, more compound, and less easily remembered, because less strikingly different from common language than are the classic names now employed. As to the information they convey, it amounts to nothing without some previous knowledge, and with this knowledge such classic names become nearly if not quite as instructive; besides no names can be sufficiently descriptive to be of much assistance towards identifying plants, but often mislead (as in the many instances where the most expressive or characteristic term has been forestalled by some earlier-named species). To make any name of any use as a means of leading to the recognition of a given plant, whether used orally or otherwise, there must have been a distinct act of the mind in the person to be informed identifying the one with the other; and there must be a distinct act of memory recalling that identification. It is in this lies the great effort of learning the names of plants to any practical use; and this must be equally gone through whether the names be English or classic ones—the mere learning and remembering of which, in either case, requires no more effort than would be needed to commit to memory a portion of an English vocabulary. In short, the idea or form (of plant) to be conveyed by the name must be learned, and the form to which the name is to be applied must be mentally recognised; and the connection between the one and the other must also be realised in the mind, before the name of a plant can be said to be known, or can be really made use of. These several acts of mind appear to be as easily brought out in connection with a classic as with an English name—often, indeed, much easier, from the simpler character of the former. Therefore but little advantage—so far as aiding the learner—seems to me to be likely to follow a more extended use of Anglicised names; and none in comparison with the inconveniences likely to arise from the multiplication of *aliases*. If, however, English names are by common consent to be preferred, the Anglicised scientific name, in which enough of the latter is preserved for identification, is decidedly preferable to either a literal or a free translation. I must doubt, however, whether the advantage to be gained by the unscientific is of such moment as to require that the naturalist should "burthen his memory with two names instead of one—the vernacular and the technical." Those who wish to know the names of plants must bestow the smal amount of application required to master them. By those who have little other employment the change would no doubt be hailed with pleasure, as it would open up a new kind of study, in which they might show off their acquirements. Change is not always reform. *M.*—As the Report of the British Museum Commission cannot be in the hands of many of your readers, I beg to hand you the following paragraphs containing the valuable opinion of Professor Owen, on the subject of popular nomenclature. "*Q.* 2641. How far would you advise giving the vernacular names?—*A.* Only to the extent of the actual existence, so to speak, of a vernacular name; only to such an extent as that the vernacular name should be understood. I should conceive that the inventing of English literal translations of the technical names of science, where no English equivalent existed previously, was multiplying what appears to the unlearned, generally, one of the pedantries of our science, viz., the manufacture of hard names. The rule, with regard to the introduction, and there must be such an introduction of technical and scientific names, into one common language, would appear to be by giving an English form to the compound, whether from the Latin or Greek. As, for example, the word mammal, which has become an English word, may be applied, in the singular number, more accurately in many cases than the word 'quadruped,' which seems more vernacular from having been longer in use, and it can be used with an English plural, mammals, converted from the Linnæan term mammalia, given to the class.—2642. Do you consider that it would be advisable to exhibit such names as are contained in the list which I will now read you: Gyrodus macropthalmus, the large-eyed Whirltooth; Acrotemnus Faba, the Bean-like Cutridge; Rhacolepis brama, the Bream Ragscale; Sparnodus macropthalmus, the large-eyed Gaptooth; Isurus macrurus, the great Eventail; Ductor leptosomus, the Slender Guide; Hybodus grossiconus, the large cone Hunchtooth; Dendrodus strigatus, the streaked Shrubtooth; Holoptychius nobilissimus, the noble Allwrinkle; Pachycormus macropterus, the large-finned Thicktrunk; Belonostomus cinctus, the border-toothed Needlenib; Pygopterus Humboldti, Humboldt's Hind-wing; Sauropsis latus, the broad Dragon-face; Dopedius Colei, Lord Cole's Aistrefish; Coccosteus cuspidatus, the prickly-pointed Berry bone?—*A.* I perceive that these are attempts to give English equivalents to technical names principally of fossil fishes; but such equivalents, if exhibited to the public, would be more apt to excite a smile, and to throw an air of ridicule over our attempts to make the rarer things of science familiar to the public, than to produce any benefit.—*Report, page* 127." *Nomenclator.*

Rhododendrons.—It is stated by Messrs. Standish and Noble, in your Paper of the 15th ult., that "in the Himalaya Mountains the Rhododendron is invariably found growing near or on the margins of morasses." As this is put forth with a view of giving hints for the successful cultivation of Rhododendron arboreum, I think it worth while to mention that I have seen many thousand tree-Rhododendrons in the Himalayas, and I never saw one near a morass. In fact morasses are very rare in the Himalayas, and over many miles of country thickly studded with Rhododendrons there is not such a thing as a drop of water to be found. Rhododendron arboreum grows on the Himalayas in disintegrated granite, mica slate, and gneiss, without anything approaching to peat. Rhododendron nilagiricum, a species first indicated by Zenker, and one I believe generally considered distinct from arboreum, does in the Neelgherries grow in a thin stratum of peat, which however is frequently not more than 6 or 8 inches in depth, and consequently the roots must soon pass through it into the soil below. The finest mass of Rhododendron arboreum I ever saw was within 500 feet of the top of Dodotolia, a hill 10,000 feet high, in Kumaon, between Almorah and Sireenugger, on the Bhaugeruttie river, growing in company with Quercus Kamroopii, and just above the Deodar. Here every possible variety of colour capable of being produced by a mixture of crimson and white was to be found amongst the Rhododendrons; the whole side of the hill was one blaze of colour. A thirst-exciting ascent, in the middle of the day, 23d April, made me search eagerly for water, which I could only find in the shape of some unmelted snow on the north side of the hill in a shady nook, till I descended at least 5000 feet to the stream in the valley below. *William Munro, Capt., Belfast, June* 27.

Voracity of the Pike.—The voracity of the pike is proverbial, but perhaps never has this been more forcibly exemplified than in an instance which has fallen under my immediate notice. A son of Mr. Longhurst, baker, Ascot-heath, while bathing in Inglemoor Pond, in the neighbourhood, was attacked by a pike of very large dimensions. The lad, who is about 12 years of age, had entered the water till it reached his breast, and while in the act of moving his arms, in the attitude of swimming, the right hand and arm were severely bitten by the monster fish, and on the lad extricating the limb it was again seized. Foiled in the second attempt it then attacked the other hand, which was also severely bitten. The youth, after a considerable struggle, beat the fish off, and retreated. I have seen the lad; on the right hand and arm are seven wounds, on the other several. One of the little fingers was completely divided at the point, so much so as to disfigure it much, now the wound is healed. The lad and his companion described the fish as being 2 yards in length, and of proportionate

bulk. As the water in the pond is of no greater depth than 6 feet, this enormous fish might easily be caught. The pond is on the royal property. P.S. Since writing the above, I have heard it asserted, as being the intention of some of the authorities, to endeavour to capture the fish. *George Lovell.*

Paxton's Cottagers' Calendar and English Names.—I have been for some time going to write to you, to hint to Mr. Paxton to add the Latin names as well as the English, in his list of annuals in the "Cottagers' Calendar," as they are certainly known by the former far more generally than by the latter in common parlance. Your discussion about the nomenclature of plants has recalled the matter to my mind. I doubt, indeed, if in many seedsmen's shops they would understand readily what was wanted if I were to ask for "Clammy Eutoca," or "Musk-scented Monkey-flower," or "Garland Poppy Windflower." I am sure I have been puzzled by many of these Anglicised names, and think many dwellers in cottages, and something larger still, would be rather puzzled in the arrangement of their flower garden from this list. I think one most important reason why the Latin names should be retained for plants and flowers, especially when there is such a great intercommunication with foreigners, is that I can chat with Monsieur V. of Paris, Herr K. of Vienna, Mynheer D. of Amsterdam, or Signor G. of Rome about the same plant by the same universally-known name. *Birkhurst.*

Novel Mode of Propagating the Common Ash Tree.—In Midsummer, three years ago, I placed near the stem of the parent tree, and under a branch of it, a few sods. Over the branch were placed other sods. The thickness of the branch was that of my finger, and its length about 2 feet. In October it had a strong root. The branch was then chopped off by a knife, and planted, forming a semicircle with its other end. It has gradually become erect, and is now flourishing, and shooting forth several branches of half a yard long. *G. C. Stephen, Curate of Dalby, Isle of Man, July* 1.

Slough Carnation Show.—As you are always willing to give a hint, allow me to suggest that at the Carnation show at Slough the exhibitors put their names to the flowers after the censors have awarded the prizes. *An Old Amateur, July* 3.

The Way in which Toads Shed their Skins.—I have a postscript to the account I gave at p. 373 of the way in which I witnessed a toad shed its skin. The second specimen in my possession was seen to divest itself of its cuticle two days after the former had performed this feat. I happened to be out of the way myself, but have the account from one of my daughters. Its mode of working about its body or legs was after the manner in which she had seen the former specimen comport itself; but the present example appeared to have no relish for digesting old clothes, for some reason or other it left them as a perquisite for me, who have duly laid them up in spirits for the inspection of the curious. The animal contrived to get rid of more than two-thirds of its worn garments; but there was an obstinate adhesion of one part of its trousers to one of the legs, and this fragment was only removed by my aid two or three days afterwards. It then came off as entire as a glove, with the fingers perfect. I send the account, because it shows how necessary it is to multiply observations before we can arrive at sure conclusions respecting the habits of animals, and the extent to which they may become varied by circumstances. *J. S. Henslow.*

Statice armeria (see p. 373.)—I have often seen it with flowers almost if not altogether white, on the links of Warburton, three miles north-east of Montrose; and I believe a white variety is not considered by botanists to be any great rarity in this quarter. *J. Forman, Kinnaber.*

The Viper.—As the batteries of the electrical eel and the torpedo, as the poison bag of the serpent are for a time exhausted by active use, so the minds of your correspondents seem to have relapsed into quietude after the vehement war which was carried on relative to this subject. In begging a quiet word about it, it is not my intention to risk any assertions on the disputed fact, "whether the young vipers seek refuge from danger in the stomach of their mother;" but bearing in mind the story of the chameleon, let us endeavour to ascertain whether both sides may not be at all events right in part. It is a well known physiological fact that the action of the stomach is excited by the introduction of foreign bodies; that is, from its coat an acrid juice is distilled, which immediately begins to dissolve, or, as we say, to digest such bodies, if they be soluble. But if an animal can live in the stomach, it resists the action of the gastric juice; so will a dead substance that is insoluble, and in such cases the greatest inconvenience results to the owner of the stomach. This gastric juice is so powerful that the living stomach which successfully resists it, is in a few hours after death often corroded and completely eaten through by its own juice. Now, supposing the stomach of the maternal viper to be empty, doubtless, according to this law, a sudden rush of young vipers would be productive of the greatest inconvenience, and a waste of gastric juice, which would certainly end in a fit of indigestion. But suppose the stomach to be full of food, and the serpent tribe are known to eat to repletion—sometimes even leaving a little in their throats till there is room for it down below—how are the young ones to get in? And if they did get in, by turning something else out, what a commotion they would make in the larder running in and out every two minutes. How could nature carry on at necessary and quiet operation—the assimilation of food? She never committed such a blunder as to provide a retreat that was not always, under ordinary circumstances, available. No; for a hundred reasons that are obvious to physiologists the young vipers are not wanted in the stomach—they are to it foreign bodies. But it is said "the young run into the maternal mouth." The testimony on this head is weighty, and may not be disregarded. Does it follow that they go into the stomach? Does the young of the opossum go into the stomach when it scrambles into its mother's pouch? If it does not, it may be at least admitted that it goes very near it. But tell us, cry the impatient, where do the juveniles go to? truths should not be too hastily jumped at. First, catch your viper. If the young ones have just run in, so much the better. Then ascertain whether there are not near the throat two other openings which lead into one sack, provided for the purpose, and into which they can go to avoid danger, without insulting nature, or asking the old viper to breathe into its stomach for their special accommodation. If, therefore, a dissection, conducted it may be at the proper period, shall establish this view, then will all mystery be cleared away, which would not be the case if they were proved to go into the stomach, for many questions would in that case arise infinitely more difficult to solve than the one under consideration. *Henry Chaytor, Croft, June 7.*

Rosa Manettii.—Absence from home has prevented me from replying earlier to Mr. Rivers's strictures on my remarks on the Manettii stock. I can only now say that I discover no reason to change my opinion. His great experience I admit, and I believe that no practical horticulturist of the age has done more to advance the interests of gardening. On the other hand, if I am unfortunate in being young, it is a misfortune I cannot help; and I do not claim more credit for my opinions than they are entitled to. The Manettii stock has, however, had five or six years' fair and unprejudiced trial here, and my first letter contained an honest—if a mistaken—opinion of its merits. I was about to say more in support of it, but my eye has, for the first time, caught sight of the sensible and truthful letter of Mr. John Saul, which also appeared in the *Chronicle* of the 8th of June. To this letter I in preference refer. There are facts and reasons there evidently the result of observation and study, which those who have not seen may do well to look at, and those who have may be repaid by a second perusal. To the next point. "Rosa Manettii" is unfortunate in his autobiography. A charge of egotism is the least serious charge I have to bring against him. The warm imagination engendered by his "charming waters and sunny skies" appears to have led him far astray even in "foggy England." When I hear him say of the poor soil of Cheshunt—a soil dry, harsh, and almost destitute of vegetable matter—"I found the soil very rich," "I did not want so rich a soil," what answer can I give? As I look upon his sharp broad thorns, and hear him again state, "If ever you wish to bud me, I will not prick your fingers," I can only reply, "Oh! Signor, I dare not trust you. I judge by acts and not by words."

"However fair he seems to be,
Take care,
Lest what he says should not be true,
Beware!
Trust him not,
He is fooling thee." *W. Paul.*

The Cuckoo.—About a month ago I heard, and mentioned as a curious circumstance, the peculiar variety in the cuckoo's note, described by your correspondent "Este." The bird was flying before me, and alighting on trees and hedges, and each time it was still uttering its new cry; the effect of which was as if an echo were repeating the last note; thus cuck-koo-koo. *Brecon, June* 26.——I heard the cuckoo in several different places yesterday (June 26), but I did not perceive any change in its note. During the whole of the season of its singing its note is occasionally cŭck-cŭck-koo, and sometimes merely cŭck, especially when taken by surprise, or chased by a magpie or a hawk. *R. M., near Derby.*——The change of note in the cuckoo is so common in Gloucestershire that there is a nursery rhyme to that purport:

"The cuckoo comes in April,
Sings a song in May;
Then in June another tune,
And then he flies away."—ELMESTREE.

——The change of the usual note to cuck-cuck has been repeatedly noticed by myself and others in this county (Norfolk), and a friend who remarked the same circumstance in Surrey, assures me that it is by no means an uncommon occurrence for these birds, late in the season, to repeat the first syllable several times in succession, leaving the usual note unfinished. *O. C. S.*

——The Cuckoo altered his note here a fortnight ago or more to cŭc-cŭc-kōō, and sometimes cŭckōō-ăh. *M. B., Canterbury, July* 3.

Can Grapes be Profitably Cultivated in Pots?—I had a few eyes of Hamburgh and Welbeck Black Tripoli, which I put into pots in the first week of March, 1849; they rooted in three weeks, and were potted off singly. At the end of 28 days, when they had made four leaves, they were pinched off at the top, the lateral that was afterwards produced forming the fruiting plant. The 12 plants were kept in a strong moist heat of from 70° to 90°; they were twice shifted during their summer growth, and by the end of September they had each made 17 feet of wood. They were then removed to a south wall; very little water was given them, and on the 1st of January, 1850, they were put into a pit heated by hot water. They broke regularly from the pot to the top of the plant, many of the eyes showing two bunches of fruit, and some of the plants had 30 bunches on them, but these were reduced to seven bunches to each plant. They ripened perfectly, and I commenced cutting on the 12th of May. When the fruit was removed, the plants were liberally supplied with strong manure water, and they are now in a fair way to bear a good crop next season. *River Head, Louth, Lincolnshire.*

Ancient Timber Felling.—You asked me if I could give you any clue to old records of the time of felling timber, in this country, four or five centuries ago. A few days since I lighted upon a paper of Professor de Morgan's, in the "Companion to the British Almanack for 1846" (pp. 1 to 31), in which the following is quoted, amongst other lines, from an old Almanack of 1518:

"NOVEMBER.—Pingues ditibus anseres November
Vendo, et ligna seco favente lunâ."

Now, as "favente lunâ," if it alludes to the idea of timber keeping best when felled at a particular time of the moon, must refer to building, not burning timber, I imagine the above extract refers to timber for building purposes. Moreover, the verse may be taken to give the practice of the century preceding the date of publication, so that to a certain extent it answers your question. "Favente lunâ" can hardly mean by moonlight, which is the only other interpretation that occurs to me. *J. R.*

Remedy for the Sting of a Bee.—Spirits of wine are stated to be a remedy for the sting of a bee. A handful of common garden earth, rather moist, applied immediately over the sting, like a poultice, and kept in its position by a handkerchief tied round the part, is an equally efficacious cure. If necessary, the earth may be renewed, when it becomes dry, but the first application generally removes all pain. This remedy I have frequently tried with my own children, and always with entire success. *O. C. S., Norfolk.*

The Gardeners' Benevolent Institution was founded for the relief of aged and indigent gardeners, and such is poor old Beach, who was elected a pensioner on its funds a few days ago. It is now about 65 years since he was apprenticed to a leading gardener of the day, and he has followed the business all his life. The last few years he has been unable to work, through the many infirmities consequent on old age. I regret that he did not subscribe to the institution; but in the days of his prosperity it did not exist, and, until the last few years, the Gardeners' Benevolent Institution was not extensively known to the gardeners of this country. Beach is now 80 years old; his poor wife was ill 15 years; the little money he saved was unfortunately lost; his character has always been very good, and I feel convinced that of the 358 votes which were polled in his favour, he would have had every one of them had the persons who gave them been acquainted with him. True he never has subscribed one farthing to the funds of the charity, but is he to be left to starve or go to the parish? A man who has borne the burden and heat of the day—who has weathered the storms of 80 winters. Placing such a man on the funds of the institution will not tend to ruin the charity, but to promote its interests. I agree with you that the subscribers to the institution should in general vote for candidates who have subscribed to its funds, but this should not be compulsory; we give our money, not to a benefit club, but to a benevolent institution, and we should have the privilege of voting for whom we choose. Place on the list of pensioners, without election, the man who happens to have subscribed longest to the funds (be his character good or bad), and you have signed the death-warrant of the institution—its downfal is speedy and certain. What aged gardener who perhaps hopes in a few years to enjoy his pension of 16*l.* a year, would then commence subscribing? It would immediately occur to him that those who had commenced subscribing previously would have the prize, and he would have no chance; perhaps he has been more steady than they, has served longer and in better situations, has a better character, but all to no purpose—they happened to begin sending up their annual guineas a few years before him—they are elected—he must live on his relations if he has any, or go to the parish if he has none. No, the interests of the charity would be served in a far greater degree if the committee were to put down the very expensive process of sending circulars (begging letters I may say) to each subscriber, praying for votes. Whoever would get in, under the present system, must do it. The poor fellow who has five or ten pounds must spend them in printing, advertising, and postage, to get elected. If he is destitute he has no chance, unless he can get his friends to assist him. If the committee would be extremely particular to ascertain all particulars of the character and, as much as possible, the life of the applicant, before they admit him a candidate, and from these full particulars, if Mr. Cutler would draw up an account of the man in the voting papers (far more voluminous than he does at present), stating where he has lived, how many years in each place, and many other particulars, so that the person voting could form a pretty accurate estimate of the man's character for whom he was voting, and then not allow any one to send circulars; this I think would tend to make the institution more prosperous than it even is at present, and the worthy candidate, though very poor, would stand an equal chance with the man who had a few pounds to fight the battle with. The Gardeners' Benevolent Institution is thriving now, and I hope—I sincerely hope—it will continue to do so. What I can do for it, what little influence I may possess, I will use for its benefit, and although I may, in conjunction with Messrs. Garraway and Co., of Bristol, "have achieved an unenviable success" by assisting by our votes and exertions to place Beach (a non-subscriber) on the pension list, I conscientiously believe that if you search the list of subscribers through, you will not find a more upright worthy old man, nor one more grateful to the subscribers and friends of the institution, who have kindly placed him a pensioner on their bounty. *J. C. Wheeler, Kingsholm Nursery, Gloucester.*

Societies.

ROYAL BOTANIC, REGENT'S PARK, *July* 3.—A large number of Pelargoniums, a good display of Orchids, many well-cultivated stove and greenhouse plants, good collections of Cape Heaths, and some Cacti were assembled on this occasion, and there was an extensive exhibition of fruit.

In collections of 30 STOVE and GREENHOUSE PLANTS, the first prize was this time awarded to Mr. Cole, gr. to H. Colyer, Esq., of Dartford, for beautiful plants of Allamanda cathartica, Schottii, and grandiflora; Dipladenia splendens and crassinoda, four well-managed Cape Heaths, Cyrtoceras reflexum, Rondeletia speciosa, Æschynanthus fulgens, with four flower-spikes; four Everlastings, two Vincas, Crowea saligna, Franciscea angusta, Sphenotoma gracilis, Ixora coccinea, beautifully grown and flowered; Leschenaultia formosa, a spreading Polygala cordifolia, Kalosanthes coccinea, Ixora crocata, Epacris miniata, and two Clerodendrons. Mrs. Lawrence's group, which was second, contained Allamanda cathartica, Schottii and grandiflora; two very fine plants of Stephanotis floribunda, Pavetta caffra, insufficiently in bloom; two capital

specimens of Sollya linearis, a large Burchellia capensis, three Cape Heaths, Ixora coccinea, and a splendidly flowered I. javanica, Pimelea decussata, Phænocoma proliferum, two Vincas, Franciscea acuminata and angusta, Crowea saligna, Aphelexia macrantha. Kalosanthes versicolor, a small Gardoquia Hookeri, Sphenotoma gracilis, a Clerodendron, and one or two plants of less importance. Another collection of 30 was supplied by Mr. Stanly, gr. to H. Berens, Esq., but among these we did not observe anything remarkable.

In the collections of 20 Stove and Greenhouse Plants, Mr. Green, gr. to Sir E. Antrobus, Bart., was first. His group contained good examples of Stephanotis floribunda, Allamanda cathartica, Metrosideros floribundus, Erica Massoni, Æschynanthus pulcher, Ixora coccinea, Pieroma elegans, not nearly at its best as regards bloom; and Echites atropurpurea.—Mr. Taylor, gr. to J. Coster, Esq., was second, with Phænocoma proliferum, Dipladenia crassinoda, Ixora coccinea, Allamanda Schottii and cathartica, in good condition; the charming Erica metulæflora bicolor, a small Tristania neriifolia, Azalea Gledstanesi, a variety of Kalosanthes coccinea, an Everlasting, Cyrtoceras reflexum, Erica Cavendishii, and Sphenotoma gracilis.

Various groups of 10 Stove and Greenhouse Plants were produced. A first prize was awarded to Mr. Williams, gr. to Miss Traill, of Bromley, for Allamanda Schottii, Ixora coccinea, Phænocoma proliferum, the blue Leschenaultia and L. formosa, Pimelea Hendersoni and decussata, Rondeletia speciosa, Polygala cordifolia, and the larger variety of Kalosanthes coccinea.—Second, Mr. Croxford, who had good plants of Phænocoma proliferum and Kalosanthes coccinea.—Perhaps the best of Mr. Laybank's plants were Pimelea decussata, Gompholobium splendens, Leschenaultia formosa, Allamanda cathartica, Boronia serrulata, an Everlasting, Erica depressa, and Posoqueria versicolor.—Mr. Speed, who was fourth, had fair examples of Allamanda cathartica, Schubertia graveolens, Dipladenia crassinoda, and Chironia glutinosa.

Orchids were, as usual, arranged on one side of a long tent, behind the Pelargoniums, and had a good effect. In collections of 25 plants Mr. Mylam, gr. to S. Rucker, Esq., was first. His plants consisted of Aerides quinquevulnera, insufficiently advanced in bloom; a large A. odoratum, and A. maculosum, Cymbidium pendulum, Maxillaria tenuifolia, the large flowered Phalænopsis, Cycnoches ventricosum and Egertonianum, but not on the same plant, as sometimes happens; Epidendrum alatum, vitellinum, and verrucosum; the charming Saccolabium Blumei and S. guttatum, Lælia majalis, with two flowers; a pretty well-flowered Sobralia macrantha, Odontoglossum Karwinskii, Vanda Batemanni, Oncidium Lawrenceanum, the curious Cirrhæa fusco-lutea, Angulоa uniflora, with some 13 ivory white blossoms all open at once; Lycaste tetragona, the bearded Lady's Slipper, and Brassia Lawrenceanum. Mr. Williams, gr. to C. B. Warner, Esq., of Hoddesdon, was second. This group comprised two fine plants of Aerides odoratum, and its purple variety; also A. maculosum, affine, and roseum; Dendrobium moschatum, densiflorum, and secundum; Oncidium pulvinatum, Epidendrum verrucosum, Saccolabium guttatum, Brassia Wrayæ and Lanceanum, the bearded Lady's Slipper, Broughtonia sanguinea, the larger flowered Butterfly plant, and a well bloomed Barkeria spectabilis, a plant that few manage well.

In collections of 15 Orchids the first prize was awarded to Mr. Blake, gr. to J. H. Schröder, Esq., for Galeandra Baueri, Oncidium pulvinatum, Phalænopsis grandiflora, a large Aerides odoratum, Calanthe masuca, with three spikes of purplish lilac flowers; Cattleya Mossiæ, Vanda teres, the rare white blossomed Burlingtonia venusta, Angræcum caudatum, Dendrobium chrysanthum, a pale variety of Acineta Humboldti, Trichopilia tortilis, and Vanda tricolor.—In Messrs. Rollisson's group of 15 we remarked a variety of Stanhopea maculata, also S. tigrina, Cattleya Mossiæ, and the beautiful C. Harrisoniæ, the curious long green-tailed Dendrochilum filiforme, Oncidium Lanceanum and pulvinatum, the large-flowered variety of Phalænopsis, Broughtonia sanguinea, Aerides quinquevulnera, a finely blossomed specimen of Miltonia spectabilis, Calanthe veratrifolia, the scarce yellow-flowered Peristeria cerina, and Burlingtonia venusta.

Collections of 10 Orchids were contributed by Mr. Barnes, gr. to H. Hanbury, Esq., and Mr. Dobson, gr. to Mr. Beck.—Mr. Barnes sent Oncidium pulvinatum, Aerides affine and odoratum, Stanhopea tigrina, Angræcum caudatum, Brassia Wrayæ, the large flowered Phalænopsis, Barkeria melanocaulon, Saccolabium Blumei, and a good Oncidium Lanceanum.—Mr. Beck's plants consisted of the larger variety of Oncidium amphatum, O. luridum, and Harrisoniæ, Dendrobium secundum, finely coloured; Cattleya Mossiæ, Epidendrum vitellinum, calochilum, and phœniceum; Aerides odoratum, and Galeandra Baueri.—Mr. Mylam sent a handsome Cypripedium, apparently a variety of C. barbatum; Mr. Loddiges Saccolabium Blumei, and Aerides suavissimum.—Mr. Barnes had the rose-coloured Phalænopsis.

Cape Heaths, in collections of 15.—Mr. Smith, gr. to J. Quilter, Esq., of Norwood, was first with good plants of ventricosa grandiflora and v. magnifica, the large variety of jubata, Shannoni, a large plant of tricolor, retorta major, large and fine; metulæflora, a large Cavendishii, tricolor elegans, t. rosea, and t. Leeana, Massoni, ampullacea, Bergiana, a pretty Heath covered with small round purple bells, and a variety of obbata.—Mr. Rucker's collection was placed second. It consisted of obbata (Veitch's), a charming kind; the larger variety of tricolor, t. splendens, t. speciosa, and t. Dunbariana, Cavendishii, ventricosa Bothwelliana, Parmentieri rosea, inflata, retorta major, eximia, and Vernoni.—Among Nurserymen the first prize was awarded to Mr. Epps, in whose group were good examples of Wilsonii, tricolor Leeana, t. superba, t. Jacksoni, Shannoni, and Cavendishii; second, to Messrs. Rollisson, for metulæflora bicolor, a variety of ferruginea, mutabilis, two varieties of ampullacea, Savileana, a small flowered profuse blooming Heath, jubata multiflora, and viridiflora. A collection of 12 was also furnished by Messrs. Pamplin.—In six plants the first prize was awarded to Mr. Williams, gr. to Miss Traill, for Lee's tricolor, ventricosa superba, Shannoni, Cavendishii, jasminiflora alba, and Clusiana; second, Mr. May, gr. to E. Goodhart, Esq., for tricolor elegans, viridiflora, jasminiflora alba, princeps, and Cavendishii. One or two other collections were produced, but they were inferior to those we have just mentioned.

Among Single Specimens the best were large and beautiful plants of Stephanotis floribunda from Mr. May, gr. to Mrs. Lawrence, and Leschenaultia formosa from Mr. Williams, gr. to Miss Traill. Mr. Dennett had also a nice Kalosanthes coccinea; Mr. Kinghorn Leschenaultia arcuata, a singular looking species, and there were one or two other good plants shown under this head.

In New Plants the first prize was given to a very fine specimen of Ixora javanica from Mrs. Lawrence's garden at Ealing Park, and equal prizes to Ipomœa limbata, a pretty species, purple margined with white, from Messrs. Rollisson; Begonia cinnabarina, from Messrs. Henderson; Hemiandra pungens; a lilac flowered greenhouse plant from Mr. Henderson, St. John's Wood, and Magnolia fragrantissima and Thyrsacanthus bracteolatus from Messrs. Rollisson.

Pelargoniums, as we have already stated, were plentiful, and in good condition. Twelve new varieties, Amateurs, equal prizes to Mr. Cock and Mr. Stains. The former had Princess, Pictum, Centurion, Paragon, Avenger, Salamander, Victory, Pearl, Lalla Rookh, Firebrand, Mars, and Rosamond. Mr. Stains sent Clarinda, Gipsy Bride, Constance, Armada, Princess, Forget-me-Not, Ariel, Lamartine, Orion, Bertha, Victory, and Painted Lady; 2d, to Mr. Robinson, for Paragon, Senator, Rowena, Black Prince, Forget-me-Not, Zenobia, Titus, Medus, Salamander, Rosetta, Cassandra, and Mars. Nurserymen: 1st, to Mr. Dobson, gr. to Mr. Beck, for Hilax, Mont Blanc, Diana, Promise, Cassandra, Seedling, Painter, Vanguard, Exhibitor, Sarah, Rosalind, and Cuyp; 2d, to Mr. Gaines, for Negress, Star, Duchess of Cleveland, Nobilissimum, Salamander, Mars, Sylvia, Grandiflorum, and Field Marshal; 3d, to Mr. Bragg, Slough, for Star, Magnet, Orion, Ondine, Conspicuum, Lady Somerville, Norah, Marian, Alderman, Azure, Ariel, and Lord Gough. Six varieties: 1st, to Mr. Parker, gr. to J. H. Oughton, Esq., for Ackbar, Dorcas, Centurion, Forget-me-Not, Emperor, and Pearl. "Fancies:" 1st, to Mr. Robinson, for Madam Miellez, Ibrahim Pacha, Queen superb, Anais, Defiance, and Reine de Francais; 2d, to Mr. Stains, for Fairy Queen, Bouquet tout fait, Queen superb, Kate, Medusa, Reine de Francais. Mr. Gaines had Wintonia, Lady St. Germains, Queen superb, Orestes, Virgil, and Hero of Surrey. "Capes:" 1st, to Mr. Stains, for Ardens major, bicolor, quinquevulnerum, Blandfordianum, bipinnatifidum, Ardens, and bicolor roseum; 2d, to Mr. Parker, for fulgidum, glaucum, Blandfordianum, erectum, tetragonum, flexuosum, glaucifolium, and reniforme. A collection of Cape Pelargoniums was also produced by Mr. Henderson, of St. John's-wood.

Calceolarias: The best came from Messrs. Henderson, of Pine-apple-place. They consisted of Falconridge, Nell Gwynne, Laura, elegans, Black Agnes, and Catherine Seaton.

Cut Roses were exhibited in large quantities; they filled one side of a long tent. Collections of 100 each were sent by Messrs. Lane, Paul, and Francis, and boxes of 50 by Messrs. Barnes, Terry, Parsons, and Rowland. In general, they maintained their condition well throughout the day, and proved one of the most important features of the show. Some new Roses were produced; but these we expect to see again, and under more advantageous circumstances.

Among Fuchsias, Gloxinias, and Verbenas we did not remark much novelty; among the latter we, however, observed a very large blue variety called Mrs. Mills, from Mr. Turner, of Slough; and good examples of well-known flowers were not wanting in the other classes.

Pinks were numerous and large, but dull in colour, it being late in the season for them. The 1st prize was awarded to Mr. C. Turner, Royal Nursery, Slough, for Whipper-in (Smith), Great Britain (Ward), Diana (Smith), George Glenny (Bragg), Lola Montes (Costar), Narborough Buck (Maclean), Criterion (Maclean), Sappho (Turner), Queen of England (Hale), Huntsman (Smith), Dr. Daubeny (Kirtland), and Lord Valentia (Kirtland); 2d, to Mr. Bragg, of Slough. Certificates of Merit to J. Edwards, Esq., Holloway, and Mr. Keynes, of Salisbury.

Picotees.—1st prize to Mr. C. Turner, for Mary (Dodwell), Constance (May), Marris's Seedling Mary (Parkinson), Sylph (Headley), Heroine (Yonell), Ne Plus Ultra (Matthews), Juno (Matthews), General Jackson (Burroughes), Beauty (Shaw), Prince Albert (Crask), and Duchess of Sutherland (Burroughes); 2d, to Mr. Newhall, Woolwich.

Carnations.—1st, to Mr. Willmer, Sunbury; 2d, to Mr. Newhall, Woolwich.

Pansies were shown, and two prizes awarded, but in July there is neither beauty nor interest attached to them.

Seedling Florists' Flowers.—Pinks: Sappho (12 blooms), shown by Mr. Turner, was very evenly laced, smooth on the edges, good size, and, we should say, a constant variety, from the number of blooms which have been shown of it. Huntsman, by the same grower, very smooth stout petal, laced with rosy purple; both had Certificates.—Picotees: Dodwell's Mary, light red edge; large fine variety, of good substance. Fellowes's Prince Arthur, medium purple edge, good white, full flower, without bars or spots of any kind.—In Carnations there was a very good rose flake called May's Romeo. There was a large display of seedling fancy Pelargoniums of various degrees of merit, but great sameness pervaded the majority of them. The judges did not risk an opinion by selecting any for Certificates. A pretty light seedling Fuchsia, named Bank's Expansion, possessed fair properties, being of good habit, stout, and having the colours strongly contrasted.

The Fruit consisted of 36 Pine-apples, more than 50 dishes of Grapes, upwards of 40 ditto of Peaches and Nectarines, and several exhibitions of Melons, Strawberries, and other fruits. A miscellaneous collection was produced by Mr. Fleming, gr. to the Duke of Sutherland, at Trentham. It contained a good Providence Pine-apple, Noblesse Peaches, May Duke Cherries, a dish of Grapes, and another of Figs. The best six Pine-apples were furnished by Mr. Bray, gr. to E. Lousada, Esq., and a similar group was contributed by Mr. M'Ewen, gr. to the Duke of Norfolk, at Arundel. Mr. Jackson, gr. to H. Beaufoy, Esq., sent a Trinidad Pine, a perfect pyramid upwards of a foot in height. A Providence, weighing 7 lbs. 8 oz., was contributed by Mr. Fleming. Ripley Queens, beautifully swelled and ripened, were exhibited by Mrs. Bailey, of Belgrave-square, and good fruit of the same variety of Pine-apple were produced by Mr. Drummond and Mr. Spencer. Grapes: Muscats were generally unripe; but there were some good Black Hamburghs, and one or two excellent bunches of West's St. Peter's. The best three dishes came from Mr. Smith, Dulwich; these were Black Hamburghs, Black Prince, and Muscadine. The best dishes of "12 lbs." came from Mr. Henderson, gr. to Sir George Beaumont, Bart., and Mr. Venibles, gr. to G. Solomon, Esq., Peckham Rye, the sort in both cases being Black Hamburgh. The best single dish of three bunches came from Mr. Holmes, gr. to E. Garrod, Esq., Putney Heath. The best dish of Muscat of Alexandria was communicated by Mr. M'Intosh; the next best by Mr. Kemp, gr. to Mrs. Grillion, East Acton; and Mr. Turnbull took a third prize with a dish of good Cannon Hall Muscats. For White Frontignans, the first prize was won by Mr. Moffat; Mr. Taylor and Mr. Bain took second prizes for some well-grown White Muscadines. Mr. Henderson was awarded a first prize for excellent Red Frontignans. Peaches and Nectarines: For the best four dishes, the first prize was won by Mr. Turnbull; the second by Mr. Parker, gr. to J. H. Oughton, Esq., and Mr. Foggo, gr. to the Marquis of Abercorn, Stanmore Priory (equal); third prizes were taken by Mr. Munro, gr. to Lord Clarendon, and Mr. Slowe. Mr. M'Intosh was first for the best two dishes. Cherries: Mr. Snow, gr. to Earl de Grey, had some beautiful Guignes, for which the first prize was awarded. Strawberries: In this class the successful competitors were Mr. Lydiard (1st), market gardener, Bath; and Mr. Kimberly, Coventry. Melons: The first prize, for a green-fleshed variety, was taken by Mr. Barnes, gr. to H. Hanbury, Esq.; Mr. Spencer, and Mr. Watson, gr. to Mrs. Tradwell, Norwood, were equal second; while a certificate of merit was awarded to Mr. Gerrie, gr. to Sir John Cathcart, Bart., and also to Mr. Monro, gr. to Mrs. Oddie, Colney Hatch. The best scarlet-fleshed sort was produced by Mr. Weir, gr. to J. Hodgson, Esq. Of Tropical Fruits, Mr. Ivison, gr. to the Duchess Dowager of Northumberland, Syon House, sent specimens of Vanilla, Carica Papaya, Miristica moschata, Xanthochymus pictorius, and Physalis peruvianus. Mr. Williams, gr. to J. Lenhouse, Esq., Maryport, sent some large fruit of Stephanotis floribunda, and Mr. Bray had a collection of Citrons.

Slough Pink Show, *July* 1.—At this meeting flowers were not abundant; the best examples were Whipper-in, Narborough Buck, Diana, Lola Montez (fine), Harriett, Alfred Morison, Criterion, Goliah, and a seedling by Turner named "Sappho." Some Pansies were exhibited by Mr. Hunt, but they were somewhat out of character.

Reviews.

Moore's Handbook to the Botanic Garden of the Royal Dublin Society, Glasnevin (Dublin, 12mo), is a useful account of this important institution, by its present curator. We scarcely need say that the Garden of Glasnevin is one of the most worth seeing of all the objects to be examined by the visitor to Dublin.

The Finchley Manual of Industry. No. II. Gardening (18mo, London).—The plan of this little book is better than its execution. Cottagers' children are to be taught practical knowledge, instead of the useless stuff with which it is the custom to cram country lads. Nothing can be better in principle. They are to be taught by the system of question and answer. The plan is still good. The matter taught must be plain, simple, and of daily application. Still quite right. But the information, however plain and simple, must be strictly true; otherwise teaching does more harm than good, and here we complain of the author of the "Finchley Manual." Surely, he can hardly mean that such a paragraph as this is fit for children (of any age): "*Q.* What is a tuber? *A.* A sort of round swelled *root*, or knob, like one of the *roots* of a Potato, &c.; and plants producing such *roots* are termed tuberous.—*Q.* How many tubers, or *under-ground stems*, are reckoned, &c. *A.* Omitting the Salsafy, the Scorzonera, and the Skirret, which are now only cultivated on the Continent and in gentlemen's gardens, their number is nine, and they are mostly mentioned as roots: the Potato, Turnip, Carrot, Parsnip, Beet, Radish, Jerusalem Artichoke, Horseradish, and Hamburgh Parsley." We must really protest against this sort of teaching (!) The child is first told that a tuber is a "sort of root," which it is not; then he is informed that it is an "under-ground stem," which is true; and, finally, he is taught that 12 common esculents are tubers, which is false, almost all of them being true roots. To what advantage confusion like this is expected to lead we must confess our inability to comprehend.

Frazer's Hand-book for Ireland (2d edition, Dublin), will be found to be a useful road book to tourists, for whom it is chiefly intended, and gazetteer for those whose pursuits lead them to inquire into Irish localities without visiting them. In the Appendix is a short memorandum by Dr. Mackay, concerning Irish botany; but we would suggest to the intelligent editor of the work that he would do well, in a future edition, to make natural history a conspicuous feature, and to introduce it into the body of his book. Many a tourist would be glad to know what rare plants, insects, &c., are to be found in the place he passes through, and what are its mineral and geological features.

The *late Professor Kunth's Enumeratio Plantarum* has reached a fifth volume. It contains an account of *Asparagineæ, Smilacineæ, Lapagerieæ, Roxburghiaceæ, Herreriеæ, Ophiopogoneæ, Aspidistreæ, Dioscorineæ, Taccaceæ*, and *Amaryllideæ*; a set of names which we recommend to the consideration of those gentlemen who think that technical natural history can be made acceptable to the mass of the community. The volume contains 908 pages.

Garden Memoranda.

Royal Botanic Gardens, Kew.—The object of greatest attraction here at present is the Victoria Regia, which has been in flower for more than a fortnight past, and it promises to keep on blooming for some time yet to come. When we saw it, about 6 o'clock on Monday last, one blossom bud was just beginning to open, and there was another beside it in a less forward condition. A low span roofed stove, stated to have been formerly an Orchid house, has been converted into a tropical aquarium, for the accommodation of the Victoria, and some other stove aquatics. The centre of a large square slate tank is occupied by this splendid inhabitant of the waters; and round the sides and ends are red, blue, and white Water-Lilies, Euryale ferox, the slender Grass-like Vallisneria spiralis, and examples in flower of that beautiful water plant of the East Indies, Nelumbium speciosum. The leaves of the Victoria are small, the largest measuring only about 3½ feet in diameter, and they all want the finely turned-up rim, and healthy rich green colour of the magnificent foliage of the plants at Syon or Chatsworth. The tank in which it grows is supplied, we believe, with Thames water, which keeps flowing continuously into it from a small pipe near its side, and passing off by a waste pipe in another quarter. Before the Thames water was led on, the plant did not thrive; and its not blossoming sooner here than it has done is attributed, in the "Guide to the Gardens," to the water in which it was at first placed being unsuitable for its healthy development. One of the Coccolobas (C. macrophylla) is in flower in the large Palm-stove, and is really very handsome. The spike of flowers is upwards of 2 feet in length, bright crimson, and, when looked at against the massive foliage of the rich tropical vegetation which the house everywhere contains, has a striking effect. The height of the plant and flower-spike together could not be less than from 10 to 12 feet.

Calendar of Operations.

(For the ensuing week.)

PLANT DEPARTMENT.

Discontinue stopping the shoots of Vincas, Euphorbias, Poinsettias, Gesneras, Eranthemums, and other plants of similar habits, which are designed for autumn or winter flowering; and attend duly to potting, watering, and regulating the heat and moisture. Light and air are indispensable for the ripening of the shoots of

these, and of other plants grown for the same purpose. Amongst these, one of the most useful is the Linum trigynum, which produces large clear yellow flowers in great abundance during the winter. As the tender kinds of greenhouse plants complete their growth, they may be set by themselves in houses or frames, of which the sashes can be easily put on or removed. In such a situation they can be freely exposed to the sun and air, but at the same time may be covered when the weather is excessively wet. In staging the plants, they should be so arranged that they shall shade only the pots of those which are behind them. The hardier kinds of greenhouse plants may be set in the open air, without any kind of shading. It is a great mistake to place established plants behind a north wall, during any portion of the summer, as if they were taking their season of repose; but, on the other hand, it is essential that the pots be protected from the sun. When the plants are necessarily put out of doors during this season, they should be plunged in beds of sifted coal-ashes; but take care to place them far enough apart to ensure a free circulation of air amongst them. The training of conservatory climbers should be regularly attend to, avoiding looseness or negligence, but still leaving them to hang in graceful festoons from the roof. Maintain the plants in a healthy vigorous state by occasional waterings with liquid manure, as it is important by every possible means to provide an extensive in-doors display of floral beauty for the late autumn months, in some measure to compensate for the sudden prostration which will then take place in the open garden. Use the syringe more sparingly, except in very fine weather, and at all times apply it early enough in the day to allow the superabundant moisture to pass off before night. Propagate choice Calceolarias, Cinerarias, &c., by cuttings or offsets from the old plants, taking care that they are free from the green-fly or other insects. Make another sowing of Chinese Primulas to flower in small pots.

FORCING DEPARTMENT.

PINERIES.—Having selected, to meet the demand in winter and early spring, those plants which are now showing or flowering, and those which shortly promise to follow their example, a portion of the strongest and best rooted of those remaining should be picked out to succeed them; these should be potted immediately if they require it, and grown on steadily, without any check; any of the smaller plants which are in immediate need of potting, should also be attended to. Keep up an uninterrupted succession, by planting a few suckers occasionally in a brisk bottom-heat. Where the planting out system is practised, there is no difficulty in keeping up the succession if all vacancies are filled up as they occur with the best plants selected from among the succession. VINERIES.—As the Black Hamburgh Grape is so liable to shrivel after it is ripened, and as it is thereby deteriorated in quality, it is advisable to shade them during very hot sunshine. Where the crops are swelling let the state of the borders be frequently examined, especially of those which are covered with tarpauling or other material. If the soil is dry let the surface be carefully loosened with a fork, and watered with liquid manure. Examine the bunches of swelling crops, thin crowded clusters, and remove any small berries, which will only spoil the sample if they are allowed to remain. PEACH HOUSES.—Admit a free circulation of air through all the houses during fine weather; but where the fruit is just ripening, ventilating during the night and in damp weather should be effected by means of the front, keeping the top sashes closed to prevent damp cold dews from setting on the fruit. The foliage in the early houses should be kept in a healthy state as long as possible by syringing, and guarding against insect depredators.

FLOWER GARDEN AND SHRUBBERIES.

Remove suckers from Rose trees, and stop all gross shoots on the summer flowering kinds. Employ mulching as a means of protecting the soil from evaporation during summer, and especially round standard Roses and other choice shrubs, whose leaves afford little or no shade. Leaf-mould, thoroughly rotted dung, or short Grass, are well adapted as materials for this purpose, particularly the two former, as the soluble ingredients contained therein will be washed downwards in showery weather. After finishing the propagation of Pinks and Carnations, by pipings and layers, proceed with other hardy herbaceous plants, as Phloxes, Pansies, Wallflowers, Antirrhinums, Pentstemons, &c., all which will strike under handlights with the greatest freedom; or even without such assistance, if a shady situation is chosen, and watering is carefully attended to. It is of the first importance to propagate these plants as soon as possible, as time is thereby gained to allow of their being pricked out into nursery beds, where they soon become thoroughly established, and are enabled to endure the winter with very slight protection. The old Linum flavum makes a good yellow bed, continues in flower all the summer, and is perfectly hardy; it will strike freely if the cuttings are taken before the wood gets too hard. Sow Brompton and Queen Stocks for spring flowering, and Intermediate Stocks for autumn. A sowing may also be made, for late autumn flowering, of some of the hardier annuals, which come very quickly into a flowering state. Very much may be done towards stimulating the growth of weakly plants, and assisting the flowering of healthier ones by frequent waterings of liquid manure. It is an expeditious and immediately effective mode of increasing the fertility of the soil. Perhaps the flower-garden does not possess more beautiful ornaments during early summer than the Ayrshire and Evergreen Roses, worked high on standards, with their branches allowed to hang down as Nature dictates. This will be a hint to those who are budding Roses, to select some of the tallest stocks for this purpose; or, if none of their stocks are tall enough for this season's work, some of the strongest should be left unbudded, so that by pruning and liberal treatment, sufficiently high stems may be secured against the proper time next year.

FLORISTS' FLOWERS.

PINKS.—These may be piped, or struck from cuttings, as soon as possible. Some florists layer the larger shoots, but these make by no means so handsome plants as by the former method. We know some people who are unsuccessful in what is really a very simple operation. The best plan is to make an excavation a foot deep, in a shady situation; in this place a bass mat, which should be larger than the bed, that it may turn up at the ends and sides; this will prevent the worms getting amongst the compost and loosening the cuttings. The excavation may then be filled up, level with the surrounding surface, with some well-prepared vegetable soil and river sand; it will then be advisable to give it a soak of water, when it will be ready for the pipings. TULIPS.—The sooner these bulbs are out of the ground the better, when the foliage has assumed a yellow tint; the skin of the bulb will be brighter, and we have often found that bulbs, which had been left in the ground till the skin was black, were the succeeding season coarse and out of character. AURICULAS.—Do not lose sight of these favourites; take care that they are properly watered and kept free from green-fly. It ought not to be "out of sight out of mind." RANUNCULUSES.—Get them up as the foliage withers. DAHLIAS.—Thin, disbud, tie out, and entrap earwigs.

KITCHEN GARDEN.

If Asparagus beds are plentifully supplied now, and during the next month, with liquid manure from the farm-yard, or soap-suds from the laundry tank, with common salt added, it will effect wonders in the way of improving the size and quantity of next year's crop. Asparagus seedlings should be thinned; and the ground kept in a loose state about the young plants. Water these also with rich water, with salt added. It is wonderful how rapidly these will advance now, if well attended to. Sow Early York Cabbages for transplanting thick, to draw as Coleworts for autumn use; taking care to adopt effectual means of protecting the seeds from the depredations of birds. Sow also a bed of parsley, for late autumn and early winter use, upon ground which has received a rich dressing of soot and well-rotted manure. Let no pains be spared to obtain a good stock of material for Mushroom beds, to succeed the open fields in supplying this delicacy. Horse droppings are to be preferred for this purpose; but if a sufficient quantity of these is not procurable, the excrements of sheep or deer may be mixed up with them. Until as much is collected as will make up a bed of the required size, let them be spread very thinly on the floor of a dry airy shed, and turned once a day, to prevent fermentation from taking place.

HARDY FRUIT GARDEN.

The young shoots of fruit trees grafted in spring should be securely tied, as they are very liable to split off in windy weather. In doing so, commence at once to train them to whatever shape you have decided on adopting; and fix this year's shoots in the manner best adapted to form the foundation of the future tree. For Pear trees, the shape now most popular is the pyramidal, or, more properly speaking, the conical; and for Apples the cylindrical. To produce the latter shape, the young shoots must be trained outwards horizontally, forming radii of a circle of the required diameter; upon the outside of this, upright stakes should be fixed, 9 inches asunder, to support the perpendicular branches; these will be gradually allowed to proceed upwards, until they have arrived at a convenient height for training and fruit-gathering, when further progress upwards must be prevented. Care must be taken, in the course of their growth, that a proper number of side spurs is produced, so that the perpendicular stems may form wreaths when in flower and fruit. A few side shoots should be allowed to grow long enough to connect the perpendicular shoots one with another, so that the trees may in a short space of time become self-supporting; as the branches will, in a few years, have become sufficiently fixed to keep their proper position without the assistance of stakes, which will of course be then removed. To produce pyramidal Pear trees, only one main shoot must be permitted to proceed, which will form the main stem of the tree; the growth of side shoots, especially of those towards the lower part of the tree, should be assisted and regulated by judicious stopping of any shoots which are progressing too rapidly for their neighbours.

State of the Weather near London, for the week ending July 4, 1850, as observed at the Horticultural Garden, Chiswick.

June and July.	Moon's Age.	Barometer. Max.	Barometer. Min.	Temperature. Of the Air. Max.	Min.	Mean	Of the Earth. 1 foot deep.	2 feet deep.	Wind.	Rain.
Friday.. 28	18	29.819	29.631	69	53	61.0	63	62	E.	.01
Satur... 29	19	29.858	29.738	66	43	54.5	62½	61½	S.W.	.31
Sunday . 30	20	29.947	29.963	71	55	63.0	61	61	S.W.	.00
Monday 1	21	29.881	29.808	70	46	58.0	62	61	S.W.	.00
Tues. .. 2	22	29.913	29.851	71	52	61 5	61	61	S.W	.00
Wed. .. 3	23	29.915	29.751	73	53	63.0	61½	61	S.W.	.25
Thurs.... 4	24	29.913	29.753	68	44	56.0	61	61	S.W.	.33
Average....		29.892	29.785	69.7	49.4	59.5	61.5	61.2		.90

June 28—Hazy with slight rain; cloudy and fine; overcast; lightning.
— 29—Cloudy; very fine; clear and cold at night.
— 30—Fine; cloudy; overcast.
July 1—Cloudy; clear and very fine at night.
— 2—Fine; cloudy; clear.
— 3—Rain; cloudy and boisterous; overcast; rain.
— 4—Constant heavy rain; quite clear, cold at night.
Mean temperature of the week 3 deg. below the average.

State of the Weather at Chiswick during the last 24 years, for the ensuing week, ending July 13, 1850.

July.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds. N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 7	73.8	53.6	63.7	9	0.45 in.	—	—	1	3	1	5	8	4	2
Mon. 8	74.2	51.7	62 9	13	0.46	—	—	3	1	1	10	6	3	
Tues 9	73.4	51.1	62 3	7	0.57	3	1	—	—	2	7	7	4	
Wed. 10	74.8	52.2	63.5	6	0.36	1	1	1	1	3	11	3	3	
Thurs. 11	75.0	52.2	63 6	6	0.71	3	—	3	—	4	5	5	4	
Friday 12	74.7	51.8	63 3	10	1.10	—	2	2	—	3	6	6	5	
Satur. 13	75.0	51.7	63.4	9	0.60	—	2	2	—	3	8	8	1	

The highest temperature during the above period occurred on the 12th and 13th, 1847—therm. 90 deg.; and the lowest on the 9th, 1839—therm. 40 deg.

Notices to Correspondents.

TO OUR CORRESPONDENTS.—May we beg it to be understood that *we cannot answer inquiries privately through the post.* We are ready to give reasonable information through our columns, but we cannot consent to the labour of writing letters.

ASPARAGUS BEDS: *J W.* There is no reason why low annual vegetables, which have not deep roots, should not be grown among Asparagus—*provided* the beds are well manured after such vegetable crops are removed.

BACK NUMBERS: Full price will be given for No. 46, 1848.

BOOKS: *W L.* We are unacquainted with the book. It is not likely, however, to answer your purpose. Moore's "Agricultural Grasses" would be much better.

CAMELLIAS: *P T O.* If the rat has eaten the stems of the Camellias down to the graft, then there is nothing left but the stock, and all that you can do is to regraft, or throw the plants away.

DAHLIAS: *Anon.* It is a common practice to thin their shoots, when they appear to be rather too crowded.‡

EXHIBITIONS: *Manchester.* Hoya bella should be shown among "stove plants," and Lilium speciosum among "Ornamental plants." There is, however, an awkward ambiguity in the prize lists, as to the meaning of "ornamental" and "herbaceous" plants.

GARDENERS' BENEVOLENT INSTITUTION: We have received a letter signed W. A. Addison, 4, Navarino-grove, Dalston, which regard for the great objects which it endeavours to injure, prevents our printing.

GERANIUMS: *A Florist.* You will never flower the Prickly Geranium in a Peach-house. You must put it in the full sun all the summer, then rest it till winter, and afterwards force it gently in a bright light house. If you do not succeed the first year you may the second.

GREENHOUSES: *Plumbago.* We cannot undertake, as we have often stated, to answer legal questions.‡

INGA PULCHERRIMA: *Beta.* See p. 639 of our volume for 1844.‡

INSECTS: *Ravenswood.* The grubs sent are the larvæ of the common daddy-long-legs. Examine the roots of Pinks and Carnations as soon as they appear to flag, and also destroy all the winged insects you can. The little ones were entirely destroyed, being sent loose; from your description they are the common American blight (Aphis lanigera). Wash the parts affected with gas-tar water, or daub the patches over with clay and soapsuds. *W.—A R.* The caterpillars found on the Beech are not those of any species of moth, but of a saw-fly (Tenthredo), which we will endeavour to rear. *W.—G H.* The animals sent are threadworms (Gordius aquaticus). They are in no wise injurious to vegetation. *W.*

MONSTERS: *G H.* The viviparous Clover is common; the roots will probably retain the property if transplanted.

MOTHS: *Beta* has been told that bitter Apple (powdered Colocynth), is an excellent preventive against the inroads of moths. Is this a fact?

NAMES OF PLANTS: *H K.* 1, Nephrolepis exaltata, Schott; 2, Stenochlæna scandens, Smith; 3, Polypodium trichodes, Reinw. *S.—Amicus.* 1, Some kind of Caragana; 2, Spiræa chamædrifolia? 3, S. ariæfolia? 4, S. tomentosa; 5, S. alpina? 6, S. betulæfolia? 7, S. paniculata? 9, Andromeda calyculata. It is not possible to name accurately, if at all, such plants as these without flowers.—*Rougham.* Some unpublished Trichopilia, and Osmunda regalis; not only a native of England and Europe generally, but of the tropics. *S. — A H.* We will make inquiries, and report further. — *A A A.* Canadian Poplar. The Rose is very curious, but spoiled by bad packing.—*J B.* It is the variety of Lilium bulbiferum called Lilium umbellatum in the "Botanical Magazine," t. 1018.—*Diss.* Cratægus torminalis. —*J W G.* Tamus communis.—*Truro.* Poa rigida.—*N B.* 1, Teucrium fruticans; 2, a Helianthemum not determinable by such a fragment; 7, apparently a morsel of a leaf of Melianthus major. — *H B.* Bifrenaria racemosa. — *H H.* Nephrolepis exaltata, Schott. *S.—H B.* 2, Pteris crenata; 4, Nephrodium molle. *S.—J B.* 1, Adiantum æthiopicum; 2, 3, and 8, Asplenium fragrans; 4, Pteris longifolia; 5, Nephrolepis exaltata; 6, Phymatodes Billardierii; 7, Pteris serrulata; 9, Cassebeera hastata; 10, Lycopodium denticulatum. *S.—C B.* Hieracium pilosella.

PELARGONIUMS: *G P.* Statiuskii, Statiuskii, and Statiaskii, are all names given to one variety of fancy Pelargonium. It is some proper name, with the right mode of spelling which we are unacquainted.‡

POTTING: *W.* As a general rule in potting, there should be about 1 inch of crocks for drainage, then one-third rough soil, one-third finer, and the upper moderately fine for a finish. If the drainage consists of some material that will yield food to the plants, as bones, for instance, so much the better.‡

ROSE LEAVES: *A Subscriber.* They are attacked by the common Erisyphe. The mischief is now *done*; nothing seems to stop the progress of such mildews so well as flowers of sulphur applied upon their first appearance. Did we make that promise? Then we will surely keep it.

TOOLS: *R Sawyer.* We cannot do the work of advertisers.

TREE PÆONIES: *A Country Gardener.* The buds were probably killed by frost, especially if they were shone upon in a frozen state. Cover your Anemones with 2 or 3 inches of leaf-mould and cow-dung mixed. Do it just before they begin to grow again.

VINES: *X Y Z.* Your Vine leaves appear as if they had imbibed some poisonous matter from the roots, for the stalks are brown and half rotten—which would not be the case if they had been merely scorched. They may also have perished in consequence of having absorbed some deleterious matter.—*Young Vine Grower.* Luxuriant growth and a damp atmosphere have caused the small green excrescences, which have alarmed you, to appear on your Vine leaves. They will do no harm.‡

WALKS: *M B.* If you use salt water strong enough it will kill weeds on gravel walks; but after a time other weeds will come and grow faster than the first.

SEEDLING FLOWERS.

PELARGONIUMS: *Dorking,* and *M, Chester.* Both much spoiled by carriage; but apparently inferior to kinds already in cultivation.*

PETUNIAS: *J G.* All very handsome, and well worth cultivating.*

VERBENAS: *R W.* Pretty; but deficient in shape.*

*** As usual, many communications have been received too late, and others are unavoidably detained till the necessary inquiries can be made. We must also beg for the indulgence of those numerous correspondents, the insertion of whose interesting contributions is still delayed.

PERUVIAN GUANO.—As Agents of the Peruvian Government for the importation and sale of this valuable MANURE, we think it right, for the protection of consumers and respectable dealers, to apprise them that the adulteration of the article is still extensively practised, and to recommend them to apply either to ourselves, to our agents, Messrs. GIBBS, BRIGHT, and Co., of Liverpool and Bristol, or to dealers of established character, in whose honesty and fair dealing they can place implicit confidence. ANTONY GIBBS and SONS.

CORN MANURE FOR WHEAT, BARLEY, OATS, BEANS, &c., &c.

THE LONDON MANURE COMPANY most confidently recommend the above, as they are daily receiving very satisfactory accounts from parties who used it with great success last season. It will be found fully equal to and much cheaper than Peruvian Guano, and is not so liable to produce so large a growth of straw. Price Seven Guineas per ton, 3 cwt. per acre. They also beg to offer their Concentrated Urate, Superphosphate Lime, Nitrate of Soda, Sulphate and Phosphate of Ammonia, Fishery and other Salt, Gypsum, Sulphuric Acid, and genuine Peruvian Guano. To insure this free from adulteration, all purchasers can receive it direct from the Warehouses of the Importer.
Bridge-street, Blackfriars. EDWARD PURSER, Secretary.
Country Dealers and Agents supplied.

MANURES.—The following Manures are manufactured at Mr. LAWES's Factory, Deptford Creek:

Corn and Grass Manure, per ton	...	£10	0 0
Clover Manure, do.	...	11	0 0
Turnip Manure, do.	...	7	0 0
Superphosphate of Lime	...	7	0 0
Sulphuric Acid and Coprolites	...	5	0 0

Office, 69, King William-street, City, London.
N.B. Peruvian Guano, guaranteed to contain 16 per cent. of Ammonia, 9*l.* 15*s.* per ton; and for 5 tons or more, 9*l.* 10*s.* per ton, in dock. Sulphate of Ammonia, &c.

BY HER MAJESTY'S ROYAL LETTERS PATENT.

PATENT HOTHOUSE WORKS, KING'S ROAD, CHELSEA.
EDENCH invites the attention of Gentlemen about to erect Hothouses, &c., to the vast superiority in every respect possessed by his PATENT HOUSES, which he will warrant superior in every respect to any others. Good Glass from 16 to 21 oz. per foot, 1 foot wide, 3 feet long, furnished, and the Houses, when completed charged, from 1*s.* 3*d.* to 1*s.* 6*d.* per superficial foot, according to size and quantity; on one principle the roof is formed without wood or putty, and on another principle with wood rafters, and the glass put in with putty. Patent Sashes, requiring no paint, from 7*d.* to 9*d.* per foot. HEATING BY HOT WATER.

AGRICULTURAL EDUCATION.—
THE COLLEGE, MAIDSTONE.
Visitor—His Grace the Archbishop of Canterbury.
President—The Earl of Romney.
Head Master—DAVID WALKER, Esq., M.A., F.G.S., &c.
At this Institution youths are instructed in the general branches of science bearing on Agriculture, in addition to the routine of a commercial and mathematical education.
The religious education is superintended by a resident Clergyman. Terms inclusive, 34*l.* a year.

The Agricultural Gazette.
SATURDAY, JULY 6, 1850.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

WEDNESDAY, July	10	Agricultural Society of England.
THURSDAY, —	11	Agricultural Imp. Society of Ireland.
WEDNESDAY, —	17	Agricultural Society of England.
THURSDAY, —	18	Agricultural Imp. Society of Ireland.

THERE is no crop over which the farmer has so little control as the CLOVER, and there is none of more importance to him, whether we consider its intrinsic value or its usefulness in preparing the land for the following crops.

Why should the farmer have more difficulty in growing a crop of Clover than he experiences with any other? What is there peculiar about it? Why should good manuring and liberal farming give a better chance for a good crop of corn than for a crop of Clover? These and similar questions are much more easily asked than answered. Our attention has been directed to this subject by a paper in the last Number of the "Journal of Agriculture," and also by observing in our wanderings over the country, that the quantity of broad Clover amongst the hay is this year so much less than might have been expected from appearances in the spring. We wish to direct the attention of our readers to the matter, in hopes that some light may be thrown on this important subject.

In the paper above referred to, the writer attributes the failure of the Clover crop to two parasitical plants, which, like the Mistletoe on the Oak, derive their nourishment not from the land by roots of their own, but from the plants on which they grow. The first of these parasitical plants, the Broom-rape (*Orobanche minor*) is described as being quite a pest in some parts of the Continent. The other, one of the species of the Dodder, is common in England. It is said to be "dangerous to the fields of Peas, Beans, or Clover. It is difficult to guard against it, on account of the rapidity of its vegetation, and the facility with which it passes from one plant to another." There is a drawing of this singular plant, as growing upon a Clover plant, in the "Annals of Natural History," vol. xvi., 1845, and it is described as being common in Norfolk and the adjoining counties. It is quite possible, as the Dodder is very minute, that the farmer may have overlooked this singular enemy to his Clover.

According to the authorities mentioned by the writer from whom we have made the above quotations, there seems to be little doubt that these parasitical plants are one of the causes of the failure of the Clover. It is somewhat singular that deep ploughing, which every farmer knows is one of the ways to ensure a Clover crop, has been found by experiment to be a good method of destroying the seeds of these parasites. Another means for securing a crop of Clover has been found by experience to be the cultivation of Beans or Peas instead of Clover, so that the latter may be grown only once in eight years instead of once in four or five years, as is usually the practice. This plan has been found from long experience to be a great safeguard, but why it should be so, we are quite at a loss to say. It appears that the Broom-rape and the Dodder attack the Bean as readily as the Clover, so that the good resulting from changing the land with Beans, seems to point to some as yet undetected source of the mischief.

We have seen nearly every kind of manure tried on Clover, but with only partial success; even gypsum, from which so much was expected, is most capricious and uncertain in its action. Except that, as everyone must have observed, liberal manuring gives a slightly increased chance in favour of a Clover crop, we are sorry to say that the farmer in this case derives but poor comfort from his best friend, the dung-heap. The case of the Clover crop has this year been peculiarly puzzling; there never was a better general prospect up to May, and during the cold weather of that month it quite disappeared. That the frost must have destroyed it in many cases there is no doubt, but why is one portion of the same field without Clover and other portions covered?

There would seem to be three causes of the failure of the broad Clover. The first is the parasitical plants above alluded to—their cure seems to be deep ploughing. The second is frosty weather in the spring. What the third is we are at a loss to say, except that changing the land with Beans or Peas seems to be a cure, or at least a palliation. There can be no doubt but that when the land is in good heart, it will be best prepared to help the plant over any temporary evil it may suffer from the cause. But there is also another point on this subject to which we would direct attention. We have more than once advised our readers to be careful with whom they deal in purchasing guano; this advice is, if possible, of more importance in purchasing Clover seed. Chemical analysis may detect an adulteration in the one instance, but in the other the purchaser has nothing to depend on except his own slender judgment and the honesty of the person from whom he purchases his Clover seed. We do not allude to those men who, without a blush, will put into the farmer's hand *doctored* over-year seed, which they know very well will never vegetate. The increasing intercourse with the Continent has introduced into our market great quantities of German seed, which nothing but an experienced eye can distinguish from English seed, and yet, except in warm sheltered situations, it will not stand an average winter in England. The use of this seed we believe to be another cause of the failure of broad Clover. We would recommend the use either of English seed or what is known in the market as Upland Dutch, the latter being much more hardy, and consequently more capable of getting over our winters than the German Clover seed.

We shall be glad to hear if any of our readers can detect either of the two parasitical plants we have named on their Clover, Bean, or Pea crop. It is but a poor compliment to the skill and research of the present century to have to acknowledge that we hardly know anything as to the cause of the failure of the broad Clover. And yet, if we could make anything like an approximation to the cost of the Clover seed (to say nothing about the crop) which is annually sown to no purpose, the question would appear in its proper importance.

ROYAL AGRICULTURAL COLLEGE.

LIST OF PRIZEMEN at General Sessional Examination, June, 1850.

AGRICULTURE, 1st, Vincent Rice, London; 2d, Robert Holland, Mobberley, Cheshire.

CHEMISTRY, 1st, Thomas R. Luzmore, Liverpool; 2d, Edward W. Bell, Gillingham, Dorset.

NATURAL HISTORY, 1st, Robert Holland, Mobberley, Cheshire; 2d, Edward W. Bell, Gillingham, Dorset.

VETERINARY PRACTICE, 1st, Vincent Rice, London; 2d, John B. Herbert, Ross.

MATHEMATICS, &c., 1st, James M. Walters, Bognor; 2d, George B. Pennell, Exeter.

SURVEYING AND ENGINEERING, 1st, Thomas R. Luzmore, Liverpool; 2d, W. Cowen, Blaydon, Newcastle.

Cirencester, July 1.

HIGH FARMING IN NORFOLK.

THE farm of Mr. Hudson, at Castleacre, is between 1400 and 1500 acres in extent, held in two adjoining occupations of nearly equal size. About 1200 acres are regularly under crop, and somewhat over 200 acres in pasture. The four-course rotation is followed throughout, there being annually 300 acres in Wheat, 300 acres in Barley, 300 acres in Turnips, &c., and 300 acres in Clover, and Trefoil and white Clover alternately. No Rye-grass is sown with the Clovers, as, being a cereal, it is considered injurious to the following Wheat crop. The principle adopted here is to manure for every crop. Thus, for the Wheat eight three-horse loads of dung are laid upon the Clover after it is mown. This promotes a rapid growth of Clover, which is ploughed in for the Wheat crop. Salt is thrown over it in spring to strengthen the straw. Turnips are manured partly with dung and partly with artificial manures, 25*s.* an acre being expended for this purpose in guano and Lawes' superphosphate. A large proportion of the Turnips are consumed on the ground by sheep, which are also cake-fed, and the soil is thus prepared for Barley. The land is covered with clay marl once in a lease of 21 years. In the feeding of stock 10 tons a week of oil-cake are consumed during the winter, in addition to the green crops and herbage of the farm, Mr. Hudson never using less than 200 tons of cake in a year, and sometimes considerably more. Each bullock gets 10 lbs. of cake a day, besides roots, and each fatting sheep on an average ¾lb., beginning with ½lb. and ending with 1 lb. daily. The cattle are fed in open courts with sheds, well littered with straw. Thirty-six work-horses and 16 working bullocks are required for the operations of the farm. The bullocks work in pairs, two in a plough, the same as the horses, and walk quite as quickly, and in either plough or harness, get over as much ground as the horses. Each ploughman drives his own pair. The farm horses are fed on sprouted Barley, 12 lbs. each daily, besides fodder. With this feeding, on this light land, where the furrow seldom reaches 6 inches in depth, the horses are maintained in good healthy condition. A small dairy of Devon cows is kept, the produce of which is reared and fed. The ewe flock is Southdown, the fat hoggets now going on to the London market. The sheep are at present fed on Rye, sown after Wheat for spring feed, and now affording a full bite. Mr. Hudson does not sow Tares, as he considers the Tare very exhausting to the land. The whole harvest work of the farm is done by 32 mowers, each of whom is attended by one woman to gather, and one to bind up the sheaf. In carrying the crop the stacks are always made in the field where they grew, and carted home to the barn as required during winter and spring. The only kind of Wheat sown is Spalding's Red, which is found by much the most prolific hitherto tried in West Norfolk.

Twenty-seven years ago the stock annually kept on this farm was 400 sheep and 30 bullocks; it now averages 2500 sheep and 150 bullocks. The Wheat and Barley crops then did not exceed 22½ bushels an acre; that average is now nearly doubled. Every crop is drilled and the land kept perfectly clean. The roads and fences are all maintained in the best order, and the beauty and regularity of all the crops now growing on the farm sufficiently attest the enterprise and skill of the farmer.

The question of how far the four-course system of husbandry continues applicable to the present circumstances of agriculture we heard frequently discussed by the most intelligent and experienced farmers in West Norfolk. We found but one opinion on the point, and that was, that covenants were necessary to bind bad farmers, not good ones; and that with our facilities for obtaining artificial manures and food, a strict adherence to the four-course system was no longer either necessary or expedient. Accordingly in every case we met with, where a man farmed his own property, or was not restricted by rigorous covenants, the four-course was departed from. On this point we were favoured with some valuable information by Mr. Blyth, of Sussex farm, Burnham, whose style of cultivation and the high condition of whose land may challenge comparison with any in the county. For a number of years back he has been growing more and more Wheat, diminishing his Barley, and taking an additional corn crop in the course. His system now is as follows:—(1) Clover, Trefoil, or Peas, (2) Wheat, (3) Oats, (4) Turnips, (5) Wheat or Barley. He manures for every crop where he thinks it requires it. On land where the Turnips are fed off before Christmas the crop of Barley was never found so good by six or eight bushels an acre as on that which fed off later, and on that portion he always sows Wheat.

		Bushels an acre.
Average Wheat crop for seven years ending	1839 ...	25
Ditto	1846 ...	29
Ditto for two years	1848 ...	36
Average Oat crop for seven years ending	1839 ...	54
Ditto ditto	1846 ...	57
Ditto for two years	1848 ...	68
Average Barley crop for seven years ending	1839 ...	31
Ditto ditto	1846 ...	33
Ditto for three years	1849 ...	45

It will be observed that in each case the increase of average has been greatest since 1846, and this may be in part accounted for by the use of artificial manures, as a direct application to every crop, having since that year become matter of system, and also from the very rapid strides which our agriculture has made within the last four years in the hands of all who had the means, and who were not hampered by unwise restrictions from following the obvious course of improvement. It is further important to find that these increasing averages of Wheat crops have taken place simultaneously with more frequent calls on the land, there having been on this farm for the first period of seven years an annual average of 214 acres in Wheat; for the second seven years 268 acres in Wheat; for the last two years 340 acres in Wheat. *Times Commissioner.*

LAND DRAINAGE REPORTS.

PLACE AND DATE.	Extent Drained.	Cost per acre.	Soil.	Direction of Drain.	Depth of Drain.	Space Apart.	Size of tiles.	Cost of digging.	Cost of tiles.	Materials used.	Before Draining.	After Draining.
	A. R. P.	£ s. d.			Inches.	Feet.		Per Perch.	Per 1000 feet			
Streatham, Staffordshire, 1844 ...	15 1 32	4 5 0	Strong loam, resting on clay	Right down the slope	22	33	...	3d.	...	Tiles.	In a poverty-stricken state	Answered all expectation: better crops of better sort.
,,	9 0 32	3 14 1	Ditto	Ditto	22	36	...	Ditto	...	...	...	Great improvement.
1845	6 2 8	3 18 2½	Ditto	Ditto	22	...	...	...	...	...	...	7 per cent. gladly paid on outlay.
,,	16 2 36	5 7 1½	Ditto	Ditto	30	18	...	6d.	Tiles 14s.6d.			
,,	14 3 6	3 3 3	Ditto	Ditto	27	36	...	9d. to 10d.	Soles 12s.4d.			
Marley Hall, Ledbury, 1842 ..	130 0 0	2 10 0	Strong loam, marly subsoil	Across slope	30	30	...	...	...	...	Soaking even in summer.	Not perfectly drained: but 50 tons more hay.
1843	130 0 0	3 0 0	Ditto	Redrained down hill	36 to 48	30	...	...	35s	Tiles.	Poorest land in the parish.	Now effectual.
Grove, East Retford, 1832	...	...	Hard schistous clay subsoil	...	30	...	...	...	...	Tiles.	...	Disappearance of Sedges and Mosses.
Castle Malgwyn, Pembroke ...	200 0 0	5 10 0	Retentive clay	Down the slope	30	18	...	...	...	Broken 2-inch size	Sour pasturage.	30 to 40 bsh. per acre of Wheat.
1841	...	...	...	...	...	...	...	...	...	...	...	30 to 35 bsh. ,, Beans.
1842	...	...	...	...	...	...	...	...	...	...	...	20 to 25 tons of Turnips.
1843	...	...	...	...	...	...	...	...	...	...	...	2½ to 3 tons of Hay.
Baldoon, Wigtown, 1842 to 1846 ...	450 0 0	{6 0 0 {7 0 0	Chiefly alluvial clay	Greatest fall ...	27 36	15 20	2 or 3 inch tiles, and soles	...	70s. to 80s. per acre.	Tiles.	...	Uniformity of crop; Easier husbandry; Substitution of drill for broadcast husbandry.
Perswick, Devonshire, 1846 ...	2 0 0	...	Subsoil clay and stones	Down the slope	48	21	Tiles and soles	...	...	18 inches of stones over tiles	...	Drainage a partial failure.
Mid-west of Scotland	73 0 0	97 10 0	Retentive clay	...	30	15	Pipes 2 to 3-inch bore	3½d.	14s.6d.to20s.	Stones, 12 ins., broken to 3 ins. size	...	Increase of 2l. per acre gross produce.
Northamptonshire, 1846	33 0 0	4 11 7	Heavy clay, with veins of sand	...	48	36	1½ to 3 inches	Labour. 3l.9s. p.acre.	15s. to 37s.	Pipe tiles.	...	Tiles made on the estate drawn by the tenants, who pay 5l. per cent. for the work, as additional rent. Mr. Parkes' system, formerly condemned, is now approved in the neighbourhood.
,,	61 0 0	3 15 5	Clay of various consistences	...	48	36	Ditto	2l. 10s. ,,	Ditto	Ditto		
,,	16 0 0	4 4 2	Strong clay	...	48	30 to 33	Ditto	2l. 19s. ,,	Ditto	Ditto		
,,	16 0 0	4 15 7	Hard clay	...	48	39	Ditto	3l. 15s. ,,	Ditto	Ditto		
,,	20 0 0	4 13 11	Weak clay	...	48	30	Ditto	3l.8s.9d. ,,	Ditto	Ditto		
,,	46 0 0	4 16 1	Stubborn clay	...	48	36	Ditto	3l. 12s. ,,	Ditto	Ditto		
,,	13 0 0	5 3 4	Clay and gravel	...	48	33 to 36	Ditto	3l. ,,	Ditto	Ditto		
,,	12 0 0	4 4 8	Poor white clay	...	48	36	Ditto	3l. ,,	Ditto	Ditto		
Horncastle, 1843 ...	34 0 0	...	Chiefly sandy loam	...	40	33	Tiles and soles	1½d.per yard	...	Tiles and soles	Rushes and coarse pasture not worth 5s. p. acre to rent	1844—Oats 48 bushels. 1845—Turnips 18 sheep per acre for 20 weeks. 1846—Oats 30 bushels.
,,	12 0 0	...	Sandy soil	...	40	45	...	1½d.per yard				
Rainton, Thirsk ...	130 0 0	...	Blowing sand	...	36 to 60	60 to 70	Large horseshoe tiles	...	...	Tiles, &c.	...	Great improvement;—land easier to work, and crops better.
1834	42 0 0	...	Clay	...	30 to 36	28	Small tiles	4l. p. acre	...	...	...	.....
,,	78 0 0	...	Loam	...	36	24 to 27	...					
Spalding Fen, 1845, &c.	500 0 0	...	Peat, clay subsoil	...	40	30 to 40	Pipe tiles	1s. per chain	23s.	Tiles.	...	Work the land with two pair of horses less.
Leighton Buzzard ...	111 0 0	4 14 0	Clay and gravel loam	...	30	18 to 33	Common tile and sole	24s. per acre	...	Tiles.	...	Grass much better; the shallow draining will need redraining; the deepest drained is the most efficient. 4 qrs. of Beans per acre; 6 qrs. of Barley p. acre.
1843 to 1847 ...	12 0 0	7 5 0	Clay	...	30	16½	Ditto	35s. ,,				
,,	16 0 0	3 9 0	Red loam	...	36	20 to 30	Pipes, 1½-inch	34s. ,,	...	...	2 qrs. of Beans per acre	
,,	4 0 0	3 5 4	Loam	...	48	36	Tiles and soles	43s. 4d. ,,	...	...	3 qrs of Wheat per acre.	
Field Dalling, Norfolk	18 0 0	...	Dry stony clay	Across the slope	30	42	...	5d. p. 7 yds.	1d. p. 7 yds.	Bushes	Rushes and coarse Grass	Not much improved.
,,	Drained again	...	Do.	Down the slope	60	60	...	2s. p. 7 yds.	8d. p. 7 yds.	Tiles	...	Now perfectly dry, and worth 30 per cent. more to rent.
,,	10 0 0	...	Loam	Across the slope	30	42	...	6d. p. 7 yds.	8d. p. 7 yds.	...	Turnip loam, but wet	Little effect.
,,	Drained again	...	...	Down the slope	60	60	...	2s. p. 7 yds.	8d. p. 7 yds.	...	...	Paid expense of redraining the first year.
Handley, Cheshire, 1843 to 1847 ...	50 0 0	...	Stiff clay	...	30	18	Horseshoe	9d. p. rod of 8 yards	32s.	Tiles and stones over them	...	Can plough earlier in season.
,,	35 0 0	...	...	...	Do.	Do.	Smaller tiles	...	...	Tiles without stones	...	34 tons of Turnips per acre
,,	35 0 0	4 15 0	...	...	Do.	Do.	...	...	14s. to 17s.	1½ in. pipes	...	.....
Barnet, 1842 ...	...	3 4 0	Gravelly subsoil	...	24 to 27	30	...	3d. per pole	29s.	...	Worthless pasture	Good pasture.
,,	...	5 6 6	Clay subsoil	Down the slope	36	18	...	3d. per pole	29s.	Tiles and soles	30 bushels of Wheat, soil difficult to cultivate	45 bshls. Wheat—one of the best arable fields on the estate.
,,	...	2 13 2	Diluvial soil	...	36 to 60	60	...	8d. per pole	33s.	...	...	"Deep drainage on strong clays wrong in principle."
Ratho, W. Lothian	400 0 0	...	Various	...	48 to 60	Here & there	...	...	Stones	...	...	Still running, though very old; but almost useless.
1835 to 1842 ...	Drained again	...	...	...	20	18 to 36	12 in. of stones	4d. p. 6 yds.	8d. p. 6 yds.	Broken stones	Average condition, in 18 feet ridges	Land laid flat; increased produce of Wheat, 1-9th; Turnips ½; Pastures, ½; and Potatoes, ⅔
Kilmux, Leven, Fife	200 0 0	...	Clay	Across the slope	36	72	...	...	...	...	[low required	Fallow still needed.
	200 0 0	...	Soft loam	...	...	...	...	...	...	...	Summer fal-	No summer fallow.
1827 to 1847 ..	Drained again	6 8 0	...	Down the slope	30 to 36	16½	14 in. of stones	2l. 2s. 8d. per acre	...	Broken stones	Few cattle kept	60 to 70 cattle, and 300 to 400 sheep.
Anonymous, 1845-6	100 0 0	...	Clay deposit	Down the slope	30 to 36	24 to 49	1 to 2 inch	1l. to 2l. per acre	...	Pipes	...	More stock kept later, and poached the land less.
Rathillet, Fife, 1841-42	103 0 0	7 7 6	Alluvial & other	Down the slope	30	36	14 ins. of stones	2l.15s. p.acre	...	Broken stones	Much of the pasture land worthless	Worth 25s. more per acre to rent, or 17 per cent. on outlay.
,,	15 0 0	...	...	...	36	54	...	...	...	...	...	The best drained.
Tyr Arllwyd, Swansea, 1847	35 0 0	10 11 0	Light mould, stony	...	51	33	1½ to 3-in. pipes	11½d. per rod	...	Pipes	Worth 50l. a year	Now worth 70l.
Martley, Worcestershire, 1844... ...	4 0 0	...	Clay	Across the slope	24	...	...	...	...	...	...	Imperfect.
,,	8 0 0	...	...	Down the slope	36	24	1½-inch pipes	...	...	Pipes	...	Land works well, and crops are promising.
Richmond, Yorksh., 1837 to 1847 ...	Several hundred acres	8 0 0	Clay upon limestone	Down the slope	28	21	Tile and sole in one	8d. per rod	20s.	Broken stones, with culvert	...	Tenant willingly pays 5l. per cent. on outlay.
,,	Do.	6 17 0	Do.	Do.	36	18 to 21	...	...	...	...	...	.....
Hafodunos, Abergele, 1844	6 0 0	6 10 0	Various—hill and valley	...	30	21	12 inches deep of stones	...	...	Broken stones	...	Very greatly improved.
,,	5 2 34	7 0 0	...	...	30	21	...	...	...	...	Gorse& rushes	Good Turnip land; now in pasture.
,,	19 3 33	8 0 0	...	...	30	21	...	...	...	...	...	Good land.
,,	23 2 3	7 15 0	1000 feet high	...	30	21	...	...	...	...	High land	24 tons Swedes per acre.
,,	14 0 0	7 15 0	Hill land	...	30	16	...	...	...	...	Grass& rushes	Good Oats, Turnips, and pasture.
Stewarthall, Carse of Stirling, 1847 ...	...	...	Strong loam	...	33	16	...	Plough takes first 16 inches	...	Wedgedrain	...	A permanent improvement.
West Perth, 1820 ...	...	2 10 0	Stiff clay	...	36	...	...	...	...	Wedgedrain	Clay	2½ bolls per acre more of Wheat

LAND DRAINAGE REPORTS—*continued.*

Place and Date.	Extent Drained.	Cost per acre.	Soil.	Direction of Drain	Depth of Drain.	Space Apart.	Size of tiles.	Cost of digging.	Cost of tiles.	Materials used.	Before Draining.	After Draining.
	A. R. P.	£ s. d.				Feet.		Per Perch.	Per 1000 feet			
Claines, Worcestershire, 1843, &c. ...	75 0 0	5 10 0	Strong loam on gravel	Down the slope	30 to 36	16½	...	¾d. per yard	28s.	Tile and sole	Ridged 3½ yds. wide; Wheat, Beans, and Tares; and naked fallow.	Flat; Swedish Turnips, Mangold Wurzel. The produce increased 20 per cent.
Wooler, Northumberland	250 0 0	...	Clay, and various	...	30	18 to 24	3 inches by 3½	3½d. per rod	22s.; 6s. for soles	Tile and sole	Rushy in furrows, clay land wet; and naked fallows.	Turnip land workable in 12 hours after rain. The Harvest 10 days earlier, and 33 per cent. better.
Parbold Hall, Wigan	29 0 0	5 0 0	Open stony marl	Greatest slope	36	...	18 ins. of stones	1d. per yard	...	Broken stones	...	Very greatly benefited.
1845-7	26 0 0	...	...	...	...	...	2½ inches	...	24s.	Tiles	...	.....
Ardingley, Sussex...	100 0 0	3 15 0	Weald clay	Greatest slope	48	30 to 50	...	2l. 15s. p. acre	...	...	Greatly needed draining	Eight or ten bushels of Wheat per acre increased.
Belfast, 1844 ...	15 0 0	...	Good quality	Down the slope	30	18	...	2½d. p. 7 yards	Stones and tiles	...	Wretchedly in want of draining	The deepest drained is driest and best.
1845...	17 0 0	...	...	...	42	30	...	6d. p. 7 yards	Tiles			
Downham Market, Norfolk	50 0 0	...	Gravel & coarse sand	Land nearly flat	36	60	...	¾d. to 1d. per yard	Tile and sole	...	Rushes and water	Perfectly drained; promising Oats.

THIN SEEDING *v.* CATTLE FEEDING.

"Audi alteram partem."

I HAVE always the greatest possible pleasure in meeting on paper, or in person, my philosophic and most intelligent friend, the Rev. G. Wilkins. His erudition, his wit, his keen and varied powers of observation and comparison, combined with much good feeling and an immense exuberance of animal spirits, render him at all times a most exciting, amusing, and instructive companion. I should always be extra cautious of differing from my friend, but especially so when I remember that because he once exposed the folly of destroying moles, he was held up to the ridicule and censure of practical but unreflecting men, until, by accident, one of them opened a mole's stomach and found it crammed with wireworms.

Let us, however, return to the charge, and consider the two points—thin sowing and cattle treatment. I entirely agree in principle with my friend that 1½ peck of Wheat is an ample seeding under peculiar circumstances. I remember seeing in Mr. Hudson's garden, at Newby, two years ago, a piece of Wheat estimated at 12 quarters per acre from merely (I believe) 3 quarts of seed. The ears appeared to be 7 inches long, and the straws like reeds.

The success of very thin sowing is dependent on a great many "ifs." If your land is in a warm, dry, early, southern or eastern district; if you sow early; if your cultivation is garden-like in depth, manure, and cleanliness; if every grain is carefully inserted and covered beyond the ken of birds, if you have no attack of wireworm and slug, if your land is not so light that the roots of your Wheat get frozen in winter, if it is drained and the seed does not swell and burst in a wet season, if each grain is perfect and unbroken, and if your general harvest time is the third or fourth week in July; if all these "ifs" can be satisfactorily answered, there is no doubt about the propriety and advantage of very thin seeding.

I know a striking instance of this, in the case of Mr. Piper, of Colne, in Essex, who every year grows Wheat on the same land, never ploughs it, but hoes it perfectly clean, and applies soot. He dibbles 1½ peck per acre, and averages, I think 5½ to 6 quarters per acre per annum. He farms profitably. When I saw this crop five years ago, it was far too thick, with an enormous quantity of straw. Mr. Piper was here yesterday, and told me his Wheat was promising again to be an extraordinary crop. If I ever do find fault with my reverend friend, it is on account of his exuberance of statement, a sort of florid exaggeration, which is not permissible or desirable in the stern business of agriculture. For instance he says Mr. Mechi is now the thickest seeder he knows, inferentially implying that no other farmer in this kingdom sows so much as six pecks! Alas, I wish it were true, but we all of us know (and I think our friend Wilkins must too), that double that quantity is very extensively sown. Even our talented and cannie friends "over the border," scatter broadcast with liberal miscalculation their three bushels of seed Wheat, and proportionate quantities of spring corn (strange that the absence of drills should still be the weak point of our North British agriculturists). I do therefore entreat your readers to make a liberal deduction for "the poet's eye in a fine phrenzy rolling." I must also reproach my friend for suppression, as well as exaggeration. He forgot I suppose that in the sluggish autumn of 1848, he, in common with many thick seeders, lost his Wheat plant by those slimy devourers, proving that we cannot always be sure of our crop.

When my reverend friend says "that I meant to flag my Wheat," he should in candour have added "if it required it." Those were my words, but my Wheat, though very high and heavy, does not require flagging, and is not too thick. I am quite sure than six pecks per acre is the utmost quantity we dare sow. On naturally rich soils, such as my friend Wilkins's, or where an extra supply of manure is used, four pecks or even less are an ample supply. I merely sow that quantity which from experiment I have found best adapted to the poor plastic clays and barren sands of Tiptree Heath. Those who travel through the rich vegetable fen lands, must be grieved to see the ruinous effects of thick sowing. I remember in passing to Norwich, I saw the Wheat crops twisted, matted, and laid, as though a troop of wild horses had madly frolicked in them.

The desideratum is to have a full standing crop, free from weeds, and not so dense as to exclude air and light—the absence of these causes the stem to be unhealthy and spongy, instead of having that beautiful coating of pure glass which the Almighty has so wisely destined to keep the plant erect and protect the circulation of its fluids. If I used 5 cwt. of guano, instead of 2 cwt., on my Wheats, I should certainly diminish my seed by 2 to 3 pecks. When I dibble, I never exceed a bushel—the seed being properly deposited. The result of my experiments in seeding is that 1 bushel of Wheat always produces on my land more than 2 bushels; but that 6 pecks produce the best result, therefore I adopt that which pays best. Mazagan Beans, and white Peas, both produced 2 quarters more per acre last year by thick than by thin sowing.

Last year I grew 58 bushels of Beans and 48 of Peas per acre, and this year the promise is abundant. I have no objection to break a lance with friend W. either in Beans, Potatoes, Peas, or Wheat (I have no Barley), although his land is naturally far superior to mine; and I have no objection to fatten pigs against him on bare boards, backing the latter against any other system he may pursue. It is a mistake to suppose thin sowing does not produce a great weight of straw. Now, as to my animals, I do consider our clerical friend very unfeeling to so shock the nerves of your refined and humane readers by his horrifying description of the living dungeons. Poor animals! They must certainly realise Dante's expression—

"Lasciate ogni speranza voi chi c'entrati."

But how stands the fact? The animals are perfectly clean and healthy, without effluvia, and when not feeding, lying in every possible easeful position. The pestiferous exhalations exist only in my friend's brain; how they got there without having previously affected his olfactory nerves is to me a mystery. Several visitors (one having many bullocks) expressed their astonishment at Mr. Wilkins' statement, on comparing it with the fact.

I am daily more and more strengthened in my conviction that feeding on open boarded floors will be a great boon to agriculture—enabling us to keep more stock, to take our manure at once to the land, without a second cartage, or making and turning over the dung-heaps. My restless young pigs fatten quicker, being constrained to repose by the inconvenience of rapid movements on open lattice work. In conclusion, I shall say, as my friend does, "Come and see, and judge for yourselves." I don't at all approve of our rev. friend's principle of unalterability. The temper of the age is comparison, experiment, and improvement.

I annex an extract from a note just received from a very worthy clergyman, who is also a good agriculturist and a magistrate of our country.

In conclusion, I like my friend Wilkins all the better for his letter. The provocation of discussion tends to the elucidation of truth. I entirely agree in his general views of the unsatisfactory and mediocre condition of British agriculture. I shall always be ashamed (agriculturally) of my native country until I see it using its vast resources in men and money for feeding and employing the people. Travel where you will, landlord and tenant neglect alike offend the eye. We might as well intersect our gardens in every direction with worthless and scrubby trees and fences, as to permit or encourage such monstrosities in our fields, I wish I could say national gardens. *J. J. Mechi, Tiptree-hall, Kelvedon, Essex, June 27.*

EXTRACT.—"I have read Mr. Wilkins' attack on your system of cattle, sheep, and pig feeding. I must have seen it about the same time as he did, and I can only say that I entirely dissent from all his vituperations. He must not only have seen with other eyes, but have smelt with other noses. My bailiff, who accompanied me, can testify, if my own opinion wants confirmation, that nothing could be sweeter, cleaner, more comfortable, or apparently more thriving, than all the animals which we saw. As to Mr. Wilkins' unqualified disapprobation of box-feeding, I should like to show him my cattle and pigs. They are littered with straw cut into 5-inch lengths; they have not been cleaned out for some months, and yet I will leave it to a jury of ladies to pronounce whether a visit to them could offend the most fastidious eye or nose. Mr. Wilkins speaks of his crops of Wheat and Barley. I shall be happy to show a field of each, 10 acres, against him for a wager, which should be the payment of the expenses of any respectable person who should decide between us."

Home Correspondence.

Rancid Butter.—I should feel extremely obliged by your giving me any information in your power on the following subject. For the last three weeks, my cows have been making most horribly rancid butter. They are fed entirely on Grass, which they get for themselves on upland pastures. Three weeks ago the butter when fresh made was rancid, but now it is to all appearances perfectly good when it comes from the churn, and remains so for perhaps a day or a day and a half, and then it becomes quite unfit to eat. I fancied at first that it was owing to the land bearing a great number of Buttercups, but other people, whose fields are covered with Buttercups, make excellent butter. I am told there is a plant which flowers once in three years, that will make butter rancid if the cows unfortunately eat it; how far this may be true I cannot say. I have looked over my fields and can find no flower in them different from the flowers in other people's fields. In fact, I am quite at a loss to account for the fact. I have used saltpetre in the milk, but that does not appear to have any effect. If you could give me any clue by which I could discover "my enemy," I should be indeed most grateful. *W. G. D.* [It is possible the error may be in the management of the dairy. Is perfect cleanliness insured, and is the buttermilk properly removed? *W. C. S.*]

Mr. Mechi's Farming.—

Rebuke a wise man and he will love thee. Give instruction to a wise man, and he will be yet wiser.—*The Proverbs of Solomon.*

No man has done the farming interest more service than my esteemed friend Mr. Mechi; landlords, tenants, and labourers, owe him a deep debt of gratitude. At the commencement of his agricultural career, he boldly, wisely, and heedlessly of the clamour raised against him, struck at the root of many long-cherished, absurd practices and prejudices. With a very few other worthies, my friend Mechi taught agriculturists to think and inquire into some of the principles of their operations; he showed that it was no proof of wisdom or excellence to pursue a plan merely because it had been in operation for hundreds of years; but that the antiquity of a practice, as applied to European farming operations, rather than its being a proof of its excellence, is an index of its absurdity. Until lately, all the answer you could obtain from farmers, as to why they pursued this plan or rejected that, was merely because all other farmers acted exactly as they did. As a body they gave no other reason than this for many practices, for which indeed no sound reason could by any possibility be found. But my friend struck at the root of this evil, and in spite of the clamour raised against him by his practice and admirable publications, clearly demonstrated the absurdity of it. To give two examples of this: prior to his coming into Essex, farmers drained their lands, as they tell us; that is, they made drains just sufficient in numbers and just deep enough to drain away all the fertilising rain-water off their lands, and with it the best part of the manures they put on them. Landlords likewise gloried in hedge-row timber, in old worthless pollards, and frequently in wide and deep ditches where there was not often a single drop of water. All these abominations they gloried in, but my friend Mr. Mechi taught them to inquire why they did this or refused to do that; he showed them the utter worthlessness of shallow draining, and on his own farm demolished every hedge and grubbed up every worthless tree, proving, by precept and example, that age did not improve what at all times had been of no value whatever, but just the reverse. So far, therefore, my friend Mechi's services to his country were invaluable, and if any man ever deserved the general thanks of the community he has; but here, as I showed in my last letter, I reluctantly withhold further praise. My friend at the time referred to was also a strenuous and eloquent advocate of thin-seeding; but this, as soon as he had

assisted in convincing the world of its necessity, he all at once abandoned and became equally as strong an advocate of returning to the old ruinous system of wasting as much corn on a single acre of land as would seed at least half a dozen; and this is my friend's present practice. As I have shown on three farms in my parish, 90 bushels of seed Wheat shall produce this year, on the same quantity of land, a greater produce of corn, and a greater weight of straw than 135 bushels shall on my friend's farm at Tiptree Hall. And as to my friend's cattle feeding, his plan is too monstrous to require a comment; it has not even novelty to recommend it, for old King Augeas, full 3000 years since, tried it upon 3000 head of oxen, until it became such an intolerable nuisance to his subjects that he was obliged to submit to a river being let into his cattle-boxes to wash out of them the accumulated filth they contained. I quite agree with my friend in condemning manure heaps; and I have endeavoured, as far as I have been able, to prevail upon farmers to discontinue the practice of making them; but wasteful as they are, they are infinitely more philosophical than my friend's muck dungeons. The proper place is to sink a large tank in the centre of a well sheltered farm-yard, and so to make it that liquid manure-carts and dung-carts may easily be filled from it, whence the manure may be conveyed to the fields and at once ploughed into the ground. Nor is there a profit, taking one year with another, under any management, from the keeping such quantities of disgusting pigs. Once, perhaps, in every seven or ten years, when corn has been cheap and meal dear, pig breeding and keeping have been profitable; but at all other times they have been, beyond a limited number, a very losing concern. I have known several men who have done well by farming, but none of them were feeders of pigs. Beyond a certain limited number, butchers, bakers, shop-keepers, and village tradesmen of all kinds, and even labourers, will breed and fatten pigs cheaper than farmers can; and they always do breed and fatten them whenever a profit is to be made by them. But it is very different with oxen and sheep; in these the farmers have the advantage over all competitors; let my friend, therefore, if he would set a good example, keep more sheep and oxen; let him also pull down all his present ill-made cattle-houses, and fill up all his "living cattle graves," and at once erect new buildings round a long square, and sink a tank in the centre of it, capable of holding all his manure, and over this also erect a light shed to protect the manures from the rains and sun. Should my friend do this, he will have something to exhibit worthy of imitation, and he would be imitated by very many persons; but an improving age will turn with disgust from cattle confined for months together either in or over cesspools full of their own stinking excrements. *Geo. Wilkins.*

The Rule of Thumb.—Your Leading Article of June 22 contains sentiments which, for very many years, I have advocated. I have now on my table a copy of the first edition of Sir Humphry Davy's "Agricultural Chemistry," and which has been one of my text-books for all I send to the press, whether on animal or vegetable physiology. With this book, and some others of the same kind for my guide, I have written with a degree of confidence not pleasing to some persons, who, I fear, trust too much to their own judgments, or those of their grandfathers. But I never advocate or condemn farming operations until I have repeatedly put them to the test myself. It is quite true that ultimately farmers' clubs must effect some good; but it is astonishing to hear the ignorance which at present is frequently taken for wisdom at them; and I have known the greatest amounts of ignorance receive universal shouts of applause, whilst sentiments founded upon true science have been hooted down and treated with contempt. You refer to the good old "rule of thumb," permit me to give another rule, "the scowl of brow." Some years since a favourite cow of mine got to a heap of Potatoes, and eat so many that she was poisoned by them. I sent for an honest old doctor, who came and brought a drench with him; and as soon as he saw the patient he ordered a quart of ale to mix the drench in. I asked him what the ale and drench were to do for the cow, when he replied that he always gave a "drunch," and that the ale would warm her inside. I then went into my house and brought out a book in my hand, when upon seeing which the doctor exclaimed, "Hang all book doctors, I do all mine by scowl o' brow." I, upon that learned exclamation, asked what was the price of the drench, and of the journey; got the answer, paid the money, sent the doctor away, and threw his physic on the dunghill. The cow was very ill, and the doctor declared she would die; but I doctored her from my book, which was a chemical one only, and the patient recovered. The doctor had a large practice among farmers, and was considered quite a Galen by them. Some few years since, also, I took a book to my gardener to explain to him Mr. Cuthill's excellent plan for the cultivation of Asparagus, when my man, like the doctor, rebelled also against the book. "Suppose," said he, "you wanted a pair of shoes, could a man make them by looking at a book? He had been a gardener all his life, and, if he could not understand his business without a book to teach him, he would give it up, that he would." Another example I will give, and of a more serious nature. Many years since, when curate of a parish, the typhus fever raged very much in it. In one cottage three children had died, and others appeared to be dying. On my visit to the house I was joined by an individual who united in his own practice the three professions of farmer, doctor, and itinerant preacher. He was well known to the family, and well received. He placed on a table a bottle, and asked if the patients had taken what he had brought before, when the reply was that they had. I took upon myself to examine the liquid of the bottle, and found it was brandy, pure brandy. This led to an altercation between my rival and myself, he strongly recommending his medicine, and I as strongly interdicting its use; nor did I succeed without exerting some force if not violence. The sick and dead occupied a single chamber, with but one very small window in it, and the weather was very hot, it being, I remember, in the time of harvest; I found the apartment insufferably hot and offensive, and to relieve it as far as possible, I took upon myself another responsibility. I took a pole and with it pushed a hole through the thatched roof, and by means of it and the little window which I opened I let in pure and let out impure air, and then galloped off to the parish surgeon. I rejoice to be enabled to state that the hand of death was stayed, and that the sufferers recovered. I relate this little history also to exhibit a sample of the dreadful effects of ignorance, and a lack of that knowledge which is attainable by all, from the studying of books. Of course I need not add that the man with his brandy bottle, the cultivator of the earth, and doctor either could not or did not read a book. *Geo. Wilkins.*

Guano Frauds.—The *Gardeners' Chronicle* states, the loss sustained by the agricultural interest in consequence of the fraudulent practices of the "rogues in guano," to amount to upwards of a million of money,—a serious tax; it may be almost said self-imposed, because farmers will not take the precaution either to deal with honest men who may charge somewhat higher for a genuine article, or pay for having a doubtful cargo analysed, which amongst a number would be but a trifling expense; indeed less than nothing when compared to a scanty crop coming up under favour of sand, loam, and rubbish, at 9*l.* per ton; producing a satisfactory income to Messrs. A. and B., the manufacturers of the trash, but bringing ruin upon the hard working farmer. The case is so serious that the names of the parties dealing in the spurious article should be exposed; it is false delicacy to allow them to escape. The second item to be placed to the debtor side of the farmer's account will be the waste of town manure, as well as the careless manner of saving that produced at home. Town sewage, now poisoning rivers and flowing in masses to the sea, may be safely valued at a million and a half thrown away. The third item—imperfect tillage and the luxuriant growth of weeds, may be set down, together with the additional wear and tear occasioned by bad roads, at another half million, making a total of upwards of three millions, which, with common care and attention, might find its way into the pockets of the landowners, tenants, and labourers, who would circulate the cash amongst the great manufacturing towns. I believe I have not over-estimated the disadvantage resulting from negligence on the part of those connected with the land; and supposing the statement to be correct, a question naturally follows. Would it not be consistent with the interests of the cultivators of the soil to attempt to remedy the evils which are within their power? *Falcon.*

Cumberland One-horse Cart.—The discussion about Cumberland one-horse carts seems at last, after a year's rolling, to have rumbled itself to rest. The admission, on almost all sides, that light carts are best has, I hope, done some good to the cart-horses. Mr. Mechi and other practical farmers have stated that they employ even lighter carts than those of the Cumberland hills; and, with some few exceptions, the impression of your correspondents seems to be that a cart to carry (with side-boards) a ton of coal or lime, and weighing from 6 cwt. to 7 cwt., that is to say, the common Cumberland one-horse cart might be advantageously adopted pretty generally by the farmers of England, and that the ton-weight waggons, and even the 9 cwt. and 10 cwt. prize carts, might be profitably dispensed with. I trust Messrs. Ransome and May will this year have specimens of their carts to show at the Royal Agricultural Meeting, and I hope the cartwrights and others, who have abused me for introducing the subject, will examine them carefully. *L.*

Societies.

ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

PROFESSOR WAY, Consulting-Chemist to the Society, delivered a lecture before the members, at their House in Hanover-square, on Wednesday, the 19th June, "On Variations in the Chemical Composition of Water, as affecting its Agricultural Uses," his Grace the Duke of RICHMOND, K.G., Trustee, being in the chair. Among the members present were, the Earls of Lonsdale and Chichester, Lord Bridport, Hon. R. H. Clive, M.P., Sir Thomas Dyke Acland, Bart., M.P., Sir M. W. Ridley, Bart., Sir Charles Lemon, Bart., M.P., Sir John V. B. Johnstone, Bart., M.P., Sir Montague Cholmeley, Bart., Mr. Barugh Almack, Mr. Raymond Barker, Mr. Burke, Mr. Decimus Burton, Dr. Calvert, Mr. Carden, Rev. Thomas Cator, Mr. W. G. Cavendish, M.P., Colonel Challoner, Mr. W. Clavering, Mr. Capel Cure, Mr. S. Druce, Mr. Dunne, Mr. Dyer, Mr. Feilden, Mr. Fuller, M.P., Mr. Brandreth Gibbs, Mr. Harding, Mr. Fisher Hobbs, Colonel MacDouall, Mr. Marshall, M.P., Mr. Maw, Mr. C. E. Overman, Mr. Parkins, Mr. Pendarves, M.P., Mr. Puller, Mr. Pusey, M.P., Mr. Thomas Rowlandson, Prof. Sewell, Mr. Shaw (London), Mr. Sillifant, Prof. Simonds, Mr. Slaney, M.P., Mr. Augustus Smith, Mr. Wilson (Stowlangtoft), and Mr. Wrightson.

LECTURE ON WATER.

Professor WAY commenced his lecture by stating, that he intended on that occasion to call the attention of the members to three important heads of inquiry connected with water; more with a view to elicit from them practical illustrations founded on their individual experience, than to offer to them anything particularly novel or established. These heads of inquiry were the following; namely—1. On Water for Steam and other Boilers: the means of ascertaining its comparative suitableness for that purpose, and of counteracting its tendency to incrustation. 2. On Water for Irrigation: its chemical impregnation, and the theory of its action. 3. On the influence of Water, obtained under different circumstances, on the health of Cattle, Horses, and other live-stock on a farm. He remarked, that as the first head of inquiry related to the mechanical and chemical agency of inert matter, its details came within the range of analytical investigation, and he would be enabled to speak with much confidence on the facts he had to bring together under it; but as the other two heads included a reference to local circumstances, and to the influence of the vital operations of vegetation and animal physiology respectively, in the production of results, what he had to say on these points would be much less decisive, and advanced more for the purpose of seeking than for giving information.

I. *Water for Steam Boilers.*—The water from the clouds reached the earth almost pure in a chemical sense, as a homogeneous liquid, composed of the elements oxygen and hydrogen. It was distilled from the sea and land, and from the leaves of vegetables in a state of purity, and formed clouds; from which it again fell at intervals to the earth through the atmosphere, bringing with it only very minute traces, varying according to circumstances, and frequently inappreciable by the chemist, of carbonic acid gas, ammonia, nitric acid, and the effluvia arising from animal perspiration and the decomposition of animal matter. On reaching the land, however, its solvent power immediately came into operation, and it became impregnated more or less with the soluble substances with which it came in contact; common salt and gypsum were always dissolved by it, while lime and other substances were taken up by it when there happened to be an excess of carbonic acid gas present. In order to illustrate this fact, the Professor exhibited to the members a simple and striking experiment. Three glass vessels were connected together by means of bent glass tubes; the first vessel contained fragments of marble (as a pure variety of native carbonate of lime); the second, distilled water; and the third and last, a clear solution of quick-lime in pure water (or lime-water). On adding dilute muriatic acid gradually to the marble in the first vessel, carbonic acid gas was disengaged in great abundance, which passing along the tubing into the middle vessel, was there washed and freed from impurity by its passage through the distilled water, and then proceeded, by means of a connecting glass tube, to the lower part of the inner surface, where it continued to bubble throughout the clear lime-water. After a few moments the lime-water became turbid. The Professor remarked that this effect resulted from the conversion of the lime into insoluble carbonate of lime (or chalk), by its combination with a first proportion of the carbonic acid gas passed through it. In a few moments afterwards, however, the liquid regained its original transparent appearance. This change, he explained, arose from the further supply of the same acid gas, constituting the insoluble carbonate of lime a soluble super-carbonate of that earth; the liquid, in fact, being then a solution, not of lime in water, as it was originally, but a solution of bi-carbonate of lime, or of chalk rendered soluble by excess of carbonic acid. To prove that this was the case, the Professor took the flask containing this solution, and having placed it over a spirit-lamp, caused ebullition to take place. After boiling for a short time, the liquid again became turbid, from the circumstance of the heat expelling the excess of carbonic acid, and again reducing the carbonate of lime to the state of insoluble chalk. He then proceeded to show how this experiment illustrated the change which was found to take place in the waters of limestone districts, which were naturally charged with carbonate as well as the sulphate of lime; and also how it happened that, while water, rendered hard by sulphate of lime only, did no injury to steam-boilers, as that salt was not deposited on raising the water to a boiling temperature; hard water, on the contrary, holding a large amount of carbonate of lime dissolved in it by carbonic acid, did the greatest injury to them, by gradually depositing, on being boiled, such carbonate of lime at the bottom of the steam-boilers, until it amounted to a hard calcareous incrustation. Water was always rendered hard by holding in solution either the carbonate or the sulphate of lime; and, accordingly, when obtained from wells in the chalk, oolitic, and limestone districts throughout the kingdom, was always hard; becoming turbid when boiled, and depositing its carbonate of lime on that part of the internal surface of the boiler nearest to the fire. As a familiar instance, he named the fur or crust in tea-kettles, in districts where such water was used; but in the case of steam-boilers, this deposit was one of the greatest evils that could be imagined. The hard calcareous incrustation in immediate contact with the iron plating of the boiler, amounting in a few weeks to no less than from two to three inches in thickness. Prof. Way explained how the injury arose in this case;

namely, from the effect which the adhering crust had in preventing the transmission of the heat, received by the boiler from the fire, to the body of water within the boiler. He cited many curious instances of the cooling effect of this free transmission of heat on substances under other circumstances most fragile and combustible; and the contrary effect when the transmission of such heat was obstructed, as in the case of calcareous incrustation, when the heat was arrested by the solid slow-conducting body, and the temperature raised above that of boiling water. He stated that however odd it might sound to make the statement, it was no less true, that water might be boiled in an orange-peel, in an egg-shell, or in a vessel made of thin wood, or even of common writing-paper; the heat applied to the external surface being rapidly transmitted to the water, and the heat carried off in the steam generated, while the material employed for the boiler suffered no injurious effect from such application of heat. He related a singular instance of this kind, in the case of a person at Liverpool, who had frequently had his cotton-mill burnt down. The party in question imagined, that if he had a large reservoir for water placed at the top of his factory, constructed of wood instead of metal, the wood, in case of fire, would be immediately burnt to ashes, and the water would consequently be set at liberty and extinguish the fire. The fire unfortunately did break out again, as it was feared it would, but the wood, instead of being charred or burnt, remained entire, and, being encircled by the flames, the water continued to boil in its wooden reservoir as long as any remained. The furring of a boiler preventing this transmission of heat, and thus causing injury to the substance of the boiler, was the reason why, in some districts, where the water was charged with bi-carbonate of lime, the boilers were found to wear out sooner than in others; and why the railway companies had been led either to seek for soft water, or to soften the hard water they had been in the habit of using, by the addition of some substance that would prevent its furring their boilers. The London and South-Western Railway Company had used the substance known in commerce as sal-ammoniac, with great success; by dissolving one ounce of it in 90 gallons of water, in tanks kept specially for the purpose. This substance was the neutral salt, so long familiar to chemists as the muriate of ammonia, being a compound of muriatic acid and ammonia. Its action in removing the hardness of water arising from bi-carbonate of lime was explained by Professor Way in the following manner. When muriate of ammonia and carbonate of lime are brought together in solution, a double decomposition ensues, each of the four combining substances changes its relative position, and two new salts are the result: namely, carbonate of ammonia, which is volatile, and accordingly makes its escape into the atmosphere; and muriate of lime, one of the most deliquescent salts with which chemists are acquainted, and which consequently remains in the water in a state of complete and almost permanent solubility. It might, he remarked, be said, that the ammonia of the sal-ammoniac carried off the carbonic acid, while the muriatic acid dissolved the lime, thus liberating the water from the chemical conditions under which its hardness was occasioned. Professor Clark, of the University of Aberdeen, had, however, proposed a plan for softening water rendered hard by carbonate of lime, which Professor Way considered much better than the one just described, and which might be adapted to the uses of agriculturists. This plan consisted in adding to such water a certain quantity of quicklime, which would unite with the excess of carbonic acid, and become converted into carbonate of lime, at the same time that it would reduce by such abstraction the bi-carbonate also to a state of carbonate, and both being insoluble, they would, of course, fall as precipitates to the bottom of the vessel, or other enclosure in which the water was contained, leaving the water entirely free from the bi-carbonate of lime to which its hardness had in a great measure been owing. He then proceeded to describe Professor Clark's system of soap-tests, for ascertaining the relative degrees of hardness possessed by certain waters. He remarked that hard water, as was well known, curdled soap, which would not produce a lather until such hardness had been overcome. Professor Clark had recommended a solution of white curd-soap in spirit of wine of a certain strength to be employed in his testing. This solution would at once produce a lather with soft water, but not with hard water until a certain quantity of the solution had been added to it for the purpose of counteracting the hardness: when lather of a proper firmness had been gained, the amount of standard solution employed to produce the effect indicated the degrees of hardness of any particular water; thus a standard of comparison was established, by which the choice as to different sources from which it would be most advantageous to procure water could be satisfactorily determined. Prof. Way then performed an experiment with this soap-test, on spring-water from the chalk at Croydon, in comparison with water from the Thames; the former indicating a hardness of about 18°, and the latter of about 15°. The operation consisted simply in adding to the water, from a graduated pipette or suction tube, successive measures of the solution, until the water when shaken up maintained a lather on its surface for five minutes. The number of measures then indicated the quality of the water, two soap measures being equal to one degree of hardness. The process, he described, as easy, exact, and simple; and one which might be practised by any gentleman who was interested in such subjects, without spoiling either his furniture or carpets. It would also indicate the hardness resulting from the presence of sulphate of lime, as well as that from the bi-carbonate; though, as he had previously remarked, water hardened by sulphate of lime offered no objection for use in steam-boilers, as the sulphate by boiling did not become deposited, as was the case with the carbonate; in an economical and domestic sense, however, water rendered hard by either of those salts of lime was objectionable. Professor Way then observed, that Professor Clark, in recommending quick-lime to soften water containing the bi-carbonate, advised such quantities of lime to be added as a preliminary trial by the soap-test process should indicate as being requisite. Such water would, by this process, be rendered soft for domestic purposes, and for steam and other boilers. The only difficulty consisted in tanks being required for the due subsidence of the chalk thus brought into an insoluble state in the water; but that was an obstacle which would no doubt be surmounted; for when it was considered how great the benefit of this plan would be found, not only in ordinary families but in union-houses and prisons; that it was estimated that in London alone 600,000*l.* every year was expended in the purchase of soap, one half of which was wasted in the hardness of the water; and how important a point it was in the processes of bleaching, dyeing, and other staple manufactures carried on at Bolton, Manchester, Bradford, and other places, to have a soft water in which lime was absent; it would, he thought, be well worth the while of all parties interested in so important a question to make arrangements for the depositing tanks required. The Professor concluded this part of his subject by throwing out hints by which soft water might perhaps be artificially obtained on a large scale and at little cost where it did not occur naturally. He remarked that water was found by experience to become softened by passing through the soil; water only, however, which was rendered hard by the bi-carbonate of lime. Thames water filtered through clay made permeable by the admixture of sand, was found to become as soft as by Prof. Clark's process. Drainage water through regularly permeable stiff soils was more suitable for steam-engines than spring-water. But whether water thrown over the land would by that means become soft, he was not prepared to say. When, however, it was considered that one acre of land received every year on an average 500,000 gallons of pure rain-water, sufficient for the wants of 35 people during that period, it might be a question whether poor sandy land or bad moorland might not be covered with flat tiles for the purpose of collecting the rain-water, which might be conveyed in earthen pipes to the places required for its use. He merely offered this suggestion for the consideration of parties more conversant than himself with the practical bearings of such an undertaking.

II. *Water for Irrigation.*—Professor Way remarked that, for the purpose of irrigating, he thought that water should be hard, and not soft as for other purposes: that it should contain the sulphates and carbonates of potash, soda, and magnesia, including organic matter, as all these were substances that would be taken up and retained by the land. If this view of the subject were the correct one, it would follow that the water in granite districts would, from its softer nature, not be so useful in irrigation as that in other districts where lime and other earthy substances were dissolved by the water passing through them. On a former occasion Sir John Johnstone had named to the Council the failure of some irrigation of his from the supposed circumstance of the absence of mineral and earthy matter in the water, from the water being in fact too pure for the purpose. Sir John Johnstone being thus appealed to, replied, that, in the water to which Professor Way had alluded, there was no trace of lime whatever. The irrigation had been laid out by the late Dr. W. Smith on a thin moorland sandstone rock; there was no lime whatever. Professor Way then proceeded to say, that, in Derbyshire, and at Bala Lake, in Wales, the water was exceedingly soft and pure, but considered as unfit for irrigation. He felt no doubt that irrigation would become much more general than it had been; and the subject was more interesting at the present time on account of the Society's ensuing country meeting being about to be held in Devonshire, where irrigating operations had been so successfully carried out. He should, on that occasion, select specimens of the different waters, under different circumstances, for the purpose of analysis, in order that he might report, as requested by the chemical committee of the Society, the result of his inquiries on that interesting branch of his researches. It had been found, by ascertaining from analysis the nutriment required by the Hop-plant, that only those soils that contained phosphate of lime and potash, would be suitable for the cultivation of that plant; namely, such soils as those on the green sandstone of Sussex, Kent, and Surrey; and that what theory had thus prescribed as the condition, practice had actually proved to be the most advantageous in fact, the cultivation of Hops having been most successfully carried out on the soils in question. He thought it would also be found, analogically, that successful irrigation would probably be found to be confined to certain districts; namely, to the limestone principally. He thought it might be a question how far the influence of that operation was due to the temperature of the water, or its chemical composition, or to both; he himself considered the chemical nature of the water to be the most essential; at the same time, he was free to confess that we had all to learn upon this subject, and he trusted that an inspection of the Devonshire meadows would lead to further inquiries on the important questions connected with this subject.

III. *Water for Cattle.*—The Professor commenced this third head of his lecture by remarking that he believed it was a generally observed fact, that cattle liked the water of ponds, while they disliked that of limestone springs; that they preferred to quench their thirst in a green offensive collection of stagnant water, rather than in a running spring. In Bedfordshire he had seen cattle much relish a bad water filled with confervæ and animalculæ; which, however, was the only water to which they happened to have access. Farmers generally supposed that the cattle were fond of such water, on account of the green vegetable matter it contained; and a distinguished professor had explained the fact by supposing such water to be "meat and drink" for the cattle. It was certain they did not like hard water; and it gave a staring coat to horses when they were obliged to drink it; and when it was considered that water in chalk districts contained from 60 to 70 grains of carbonate of lime in the gallon, while London water (which was hard compared with others) contained only from 15 to 16 grains, it would be obvious how much difference would be found to exist in different waters. He regarded a good supply of water essential to health; and thought it a point of great importance to ascertain the kinds of water most suitable to the animal economy under different local circumstances. Prof. Way concluded his lecture by expressing a hope that the members present would communicate to the meeting such cases of the practical effects of hard water on the health of cattle, as it had been his object, in the remarks he had then made, to elicit from them.

Royal Patriotic Society for the Improvement of the Highland Small Tenantry.—Mr. Bond, the secretary, lately delivered the following address, on behalf of this useful institution, at a meeting in the Isle of Skye, when a branch society was formed. He said, previously to the Potato failure, an urgent necessity was felt to exist for ameliorating the condition of the humbler classes; and encouraged by the successful efforts of a kindred institution in the south, the Patriotic Society was established. Its principles and plans had been maturely weighed, and were supported and confirmed by unquestionable facts. The eleemosynary support of the Highland population was as impracticable as it was inexpedient. The great principle, therefore, of the institution was, so to aid industry as to render it the instrument of its own elevation. He then adverted to the examples afforded by China and Holland in supporting a far larger population than in Britain, through the adoption of provident and economic industry, explaining the system of stall-feeding, spade husbandry, green cropping and liquid manuring, whereby the possessors of small farms, having but trifling if any advantages over the Highland crofters, are enabled to raise a great amount of dairy produce, and largely supply the British market, and, as the fruits of their exertions, possessed comforts far beyond those which the people here had ever thought within their reach. Having demonstrated the applicability of such an improved system of husbandry to the Hebrides, by adverting to its already successful adoption and progress in Gairloch, where the soil was inferior to the general quality of land possessed by crofters here, he stated that it was the object of the Patriotic Society, by means of personal as well as printed instruction, and by the example of model crofts, to disseminate and to extend an improved system of husbandry among the crofters which, humanly speaking, must result in the securing of a much greater amount of food than had hitherto been obtained. The munificent contributions for the relief of destitution, made shortly after the institution of the society, had forestalled it of funds, and although it had done what it could to originate permanent improvements, its means had been inadequate to the field it should occupy. The Queen and her Royal Consort, however, had early favoured the society with their support; and he was glad also to state, that the committee of the Perthshire Ladies' Highland Relief Association, approving of the plans of industrial economy advocated by the Patriotic Society, had honoured him, as its humble representative, by deputing him to select a number of the more hopeful crofters for instruction and aid, and for whom leases would be obtained; he had also made arrangements for establishing model spade farms in connection with the existing country schools. Mr. Bond then explained the satisfactory results of such schools, which had been established in various parts of England, and had been found to benefit the teachers, the pupils, and their subsequent employers. He regretted the destitution that still prevailed with increased intensity in most Highland districts, and which would be overwhelming should the Potato fail again this year also. He trusted that, under the blessing of a merciful Providence, it would not fail; but he again urged upon crofters, that, humanly speaking, the only way for them to escape from the calamity of famine, was by their cultivating every available patch of land in their possession, and raising Turnips, Carrots, Parsnips, Cabbages, and similar articles of food. If they economically saved and applied the liquid as well as solid fertilising substances about their dwellings to their crops, they would insure much greater returns than they had ever before received. He was glad that the Perth committee had advanced loans of seed corn to many crofters in Skye, and only regretted that the supply was not co-extensive with the want of seed corn throughout the

Highlands, and he called upon the recipients to strive manfully in the battle of industry they had to wage, the quantity and the quality of the soil generally possessed by them being capable, under such a system as he had individually, publicly, and by the medium of printed directions, urged upon them—of raising food for themselves and families, and of paying a fair rent for their land.

Review.

Report of the Agriculture of the County of Lancaster, &c. &c. By William Rothwell, Winwick, Land Agent, &c. Groombridge and Sons.

THE author of this pamphlet ought not to have prefaced it by a charge of unfairness against the authorities in Hanover-square. It appears that this essay was intended to compete for the prize offered by the English Agricultural Society, for the best statement of Lancashire agriculture, but was placed beyond the pale of competition by its non-arrival at their office within the time specified. The writer may depend upon it that the English Agricultural Society and the judges they may appoint have but one object in view in the discharge of their duty; and that is, to give an honest judgment, within the limits assigned by their published rules.

It is perhaps unfortunate on his own account that he did not succeed in completing his task before the day after which no further essays could be received, though on the relative merits of this and the prize essay we will not give an opinion. At all events we and other readers have this advantage, arising out of the accident which hindered him—that *two* excellent additions to our agricultural library have thus been made; for certainly Mr. Rothwell's statement has the merit of ample detail and description of successful farming; it is just the sort of work for those who prefer statements of fact to statements of argument; and we find that we have marked nearly 20 passages descriptive of farms and farm practice as proper for extract. Some of them we shall from time to time lay before our readers. Meanwhile we hope that the work itself will be widely read; it contains the views of a "practical" and an intelligent man of long experience in farming.

Calendar of Operations.

JULY.

EAST LINCOLNSHIRE FARM, *July* 1.—We have now completed Turnip drilling, having had a favourable time for it throughout. Those first drilled have had the benefit of some nice warm showers, and look a good healthy green, with no fly to be seen as yet; but we are beginning to want more rain for those last sown, as well as for the Grass, of which none will be ready to cut before the next fortnight. Some farmers in the neighbourhood have this year ridged their Swedes and other Turnips; the only objection to this is their being more exposed in case of a dry season, especially if the land lies high; but on low marshy land they may be generally set in ridge with advantage. Another reason for Turnip ridging is of course for the sake of covering in the dung; but as we manure in the winter, the Turnips are drilled on the flat, at 18 inches apart. Our wool is just disposed of at 25*s.* a tod. The number of sheep clipped this summer was 700; of these we are selling off the wethers fat (shearlings), having been kept through the winter on cakes with their Turnips—the oilcake being continued after their removal to Grass (from ½ lb. to ¾ lb. each sheep). The farm horses now have a load of Grass led for them daily, which is cut up with their chaff. We have about 30 calves, which are beginning to improve as summer advances. They were assisted in their rearing with Linseed soup, which is found to answer very well. Our last year's Wheat is now all sold, the last making 42*s.* per qr.—weight, 14 stones a sack. From this it may be judged whether our average is not more than 26 bushels per acre, as stated by the commissioners—36 bushels would be a fairer estimate. *H. E.*

Notices to Correspondents.

AMERICAN CHURN: *Messrs. Key and Mitchell.* It is, we submit, best for all parties to let the discussion take its course, without any interference on the part of those who may be interested in the sale of the invention. "*Experting*" did nothing but what was right, when he stated his experience of the subject—and we cordially back his request for the experience of others—begging him and them at the same time to give it in substantive figures, expressing time and quantity, rather than in mere adjectives expressive of quality and speed. Of course we derive from this evidence irrespectively of what it tells; and those who have found the churn to answer their expectations will be as gladly heard as others; but it is better for these statements to come direct from those who have purchased and used the machine. Those who are interested in its sale will surely be the first to acknowledge this.

A COUGH: *J W G S.* It may be serious or not, according to the seat of irritation, and the amount of disease producing it. We would recommend a seton to be inserted in the skin covering the throat. *W. C. S.*

DRAINAGE: *T J Pointing.* Probably Smith of Deanston's pamphlet, which may be had of Messrs. Drummond, Stirling; and the contribution of Mr. Parkes to the "Journal of the English Agricultural Society" in their 4th and 7th volumes, will give the opposite theories on this subject as fully as you will anywhere find them developed.

GRATES: *Rus.* Will our correspondent signing himself "ANON." in the *Agricultural Gazette* of June 1st, have the goodness to describe the merits "of the cheap and useful grates" which he recommends, and state where made.

OSIERS: *L.* See p. 69 in our Vol. for 1845, and p. 46, 1849. Will any one give us his experience on the management of Osiers Also on the cultivation of Rushes.

SEWAGE WATER: *M B.* We shall be glad to publish an account of your methods and of your experience. The analysis would be costly. If you are a member of the English Agricultural Society you had better apply to Prof. Way on the subject.

SMALL FARM: *Mechanic.* The rotation suggested seems proper enough, so far as the preservation of fertility in the land is concerned; but it will not give you sufficient summer food to enable you to keep an equally numerous stock all the year round. You require more land in Cabbages; instead of "Turnips and Swedes," you might advantageously have No. 5 in Cabbages followed by transplanted Swedes.

STEAM NAVIGATION: *L.* There was an account in a Marseilles newspaper some months ago, of a screw steam-vessel entering that harbour without any funnel or other unpicturesque appendage, so that she really seemed "to walk the waters like a thing of life." For river and lake navigation a handsome barge instead of the present funnelled and paddle-boxed vehicle would be very desirable. Perhaps some of our readers may know something more of the invention, and will tell us whether (by gun-cotton or other cleanly propulsion), it still continues to "go a-head."

TO CROP 10 OR 11 ACRES: *W D C.* The following table will probably give the requisite information.

Crop.	When sown or transplanted.	Acres.	Produce	Tons weight of produce for consumption in each month.											
				Jan	Feb	Mar	Ap.	My.	Jun	Jly.	Aug	Spt.	Oct.	Nov	Dc.
1 Kohl Rabi: after Beans and Parsnips	Sown in April	1	5 tops	...	...	...	...	...	...	...	...	...	5	...	...
2 Carrots (Belgian)	Sown in April	1	20 bulbs	4	4	4	...	...	...	...	...	...	...	4	4
3 Early Peas	Sown in February	1	20 roots	2	2	...	...	...	...	...	...	...	2	2	2
Followed by Rape.	Transplanted in July and Aug.														
4 Vetches	Succession, first in Nov. and on till May, and half of it	15		3	3	3	...	...	3	5	18	...	2	2	2
Followed by Rape	Trans-plkd. in June after Vetches	1													
5 Cabbages	Half of the land transplanted in Autumn after Vetches, and again all of it in the April of the 5th year	18		3	3	...	...	2	4	...	4	4	...	...	...
6 Barley, sown with Italian Rye-grass.	The autumn of the 6th year	2		...	...	...	...	...	...	...	...	1	1	...	...
The other half in Autumn, with Rye		2		...	...	...	...	...	2	2	...	1	1	...	...
7 Rye		3		...	...	...	4	...	...	...	...	...	...	...	...
Italian Rye-grass, followed by		3		...	...	...	...	...	...	...	...	...	...	...	...
Turnips and Rape	Sown in July Transplanted June	15		4	2	...	...	8	...	6	...	...	...	3	3
8 Mangold Wurzel	Sown in April	22		...	...	3	7	...	4	...	5	5	3	...	...
Early Horn Carrot	Sown in March	5		...	...	...	8	...	...	...	...	...	...	...	...
9 Beans & Parsnips	Sown in October and November.	10		...	2	2	...	1	...	...	...	...	...	...	...
Lucerne		1		...	...	...	3	2	3	1	1	2	1	...	3
Total Produce		...		16	16	16	16	16	16	17	17	17	16	16	16

TRANSMUTATION OF SPECIES: *N T.* It certainly has been asserted, as you say; or rather it has been asserted that a particular sort of grain, sown and cut down, and not allowed to produce its seed till after repeated cuttings, will ultimately yield otherwise than "after its kind." But there seems little reason to doubt that the idea is mistaken.

Markets.

COVENT GARDEN, JULY 6.

Vegetables are abundantly supplied. Strawberries and Hothouse Grapes are both plentiful, and the same may be said of Pine-apples. The supply of Peaches and Nectarines is still well kept up. Ripe Gooseberries fetch from 4*s.* to 6*s.* per half sieve. Walnuts and Chestnuts are abundant; Oranges and Lemons though scarce are sufficient for the demand. Young Carrots and Turnips may be had at from 3*d.* to 6*d.* a bunch. Potatoes fetch from 1*d.* to 2*d.* per lb. Lettuces and other salading are sufficient for the demand, and so are Mushrooms. French Beans are plentiful. Cut Flowers consist of Heaths, Pelargoniums, Cinerarias, Lily of the Valley, Pinks, Carnations, Rhododendrons, Ranunculuses, and Roses.

FRUITS.

Pine-apples, per lb., 5*s* to 8*s*	Lemons, per doz., 1*s* to 2*s*
Grapes, hothouse, p. lb., 2*s* to 6*s*	Oranges, per doz., 9*d* to 1*s* 6*d*
Peaches, per doz., 6*s* to 18*s*	— per 100, 5*s* to 12*s*
Nectarines, per doz., 6*s* to 18*s*	Almonds, per peck, 6*s*
Strawberries, p. punn., 6*s* to 1*s* 6*d*	— sweet, per lb., 2*s* to 3*s*
Cherries, per lb., 6*d* to 1*s* 6*d*	Walnuts, p. 100, 1*s* 6*d* to 2*s*
Melons, each, 4*s* to 6*s*	— p. bush., 16*s* to 24*s*
Gooseberries, green, per half sieve, 1*s* 6*d* to 2*s* 6*d*	Nuts, Barcelona, per bush., 20*s* to 22*s*
Currants, p. half sieve, 4*s* to 6*s*	— Brazil, p. bsh., 12*s* to 16*s*
Raspberries, p. pottle, 6*d* to 8*d*	Kent Cobs, 90*s* to 100*s* p. 100 lbs

VEGETABLES.

French Beans, per 100, 1*s* to 2*s*	Onions, p. bunch, 2*d* to 6*d*
Asparagus, p. bund., 9*d* to 4*s*	— Spanish, p. doz., 1*s* 6*d* to 4*s*
Rhubarb, p. bundle, 2*d* to 4*d*	Shallots, per lb., 6*d* to 8*d*
Cabbages, per doz., 6*d* to 1*s*	Garlic, per lb., 4*d* to 8*d*
Cauliflowers, p. doz., 2*s* to 4*s*	Artichokes, per doz., 2*s* to 4*s*
Peas, per sieve, 1*s* 6*d* to 4*s*	Vegetable Marrows, per doz., 1*s* to 2*s*
Beans, per sieve, 1*s* 6*d* to 2*s*	Lettuce, Cab., p. sc., 2*d* to 1*s*
Greens, per doz., 1*s* to 1*s* 6*d*	— Cos, per score, 6*d* to 1*s*
Sorrel, p. hf. sieve, 6*d* to 9*d*	Radishes, p. 12 hands, 9*d* to 1*s*
Potatoes, per ton, 100*s* to 200*s*	Small Salads, p. punn, 2*d* to 3*d*
— per cwt., 10*s* to 12*s*	Mushrooms, p. pot., 9*d* to 2*s*
— per bush., 4*s* to 6*s*	Fennel, per bunch, 2*d* to 3*d*
Turnips, per doz. bun., 3*s* to 6*s*	Savory, per bunch, 2*d* to 3*d*
Red Beet, per doz., 1*s* to 2*s*	Thyme, per bunch, 2*d* to 3*d*
Cucumbers, each, 1*d* to 2*d*	Parsley, p. doz. bun., 1*s* to 2*s*
Leeks, per bunch, 2*d*	— Roots, p. bdle., 9*d* to 1*s*
Celery, p. bundle, 1*s* to 1*s* 6*d*	Marjoram, per bunch, 8*d* to 9*d*
Carrots, per doz., 4*s*, to 6*s*	Mint, green, per bunch, 2*d*
Spinach p. sieve, 1*s* 6*d* to 2*s*	Watercress, p. 12 bunch., 6*d* to 9*d*
Horse Radish, p. bdl., 1*s* to 4*s*	

COAL MARKET.—FRIDAY, July 5.

Hollywell, 14*s.*; Carr's Hartley, 13*s.* 6*d.*; Wallsend Braddyll's Hetton, 15*s.*; Wallsend Haswell, 15*s.* 9*d.*; Wallsend Tees, 15*s.* 6*d.*—Ships at market, 65.

HAY.—Per Load of 36 Trusses.

SMITHFIELD, July 4.

Prime Meadow Hay	70*s* to 75*s*		Clover	70*s* to 80*s*	
Inferior ditto... ...	60	65	New Clover	60	70
Rowen	54	60	Straw	24	28
New Hay	55	70		J. COOPER.	

CUMBERLAND MARKET, July 4.

Prime Meadow Hay	72*s* to 77*s*		Inferior	65*s* to 72*s*	
Inferior ditto... ...	55	65	New Clover	—	—
New Hay	50	70	Straw	27	30
Old Clover	78	84		JOSHUA BAKER.	

HOPS.—FRIDAY, July 5.

Messrs. PATTENDEN and SMITH report that the market is very quiet. Duty estimated at 175,000*l.*

POTATOES.—SOUTHWARK, July 1.

The Committee report that the market is so over supplied with old Potatoes from the Continent, that any price is taken sooner than allow them to rot in the stores. English are quite finished. As this will be the last report of the season, we take the opportunity to say we have every reason to hope the coming crop of Potatoes will be more abundant than it has been since the first appearance of the disease. The ground planted in the United Kingdom is greater than it ever was before, and at present nothing can look more healthy than the plant does. The present price of Rhenish whites is 20*s.* to 30*s.*

SMITHFIELD, MONDAY, July 1.

The number of Beasts is smaller; trade is brisk at a small advance on the best qualities. There is a considerable falling off in the supply of Sheep, and consequently prices have improved. We have more inquiry for choice Lambs. Calves are still plentiful, and make low prices. From Holland and Germany there are 393 Beasts, 2220 Sheep, and 177 Calves; from Scotland, 100 Beasts; from Norfolk and Suffolk, 1700; and 600 from the midland counties.

Per st. of 8 lbs.—*s* *d* *s* *d*	Per st. of 8 lbs.—*s* *d* *s* *d*
Best Scots, Herefords, &c. ... 3 4 to 3 6	Best Long-wools ... ... to ...
Best Short-horns 3 0 — 3 4	Ditto Shorn ... 3 4 — 3 8
2d quality Beasts 2 6 — 2 10	Ewes & 2d quality ... — ...
Best Downs and Half-breds ... ... — ...	Ditto Shorn ... 2 10 — 3 2
Ditto Shorn ... 3 10 — 4 0	Lambs ... ... 4 6 — 5 0
	Calves ... ... 2 6 — 3 4
	Pigs ... ... 2 8 — 3 4

Beasts, 3409; Sheep and Lambs, 29,900; Calves, 246; Pigs, 295.

FRIDAY, July 5.

We have a fair supply of Beasts, and the demand is not large; it is therefore difficult to realise Monday's quotations. The number of sheep is large; trade is slow, but there is very little alteration in price. Good Lambs are scarce, and readily disposed of at rather more money; all kinds meet with a more ready sale. There are not quite so many Calves as of late; on the average trade is better for them. From Germany and Holland there are 100 Beasts, 770 Sheep, and 179 Calves; from Scotland, 100 Beasts; and 102 Milch Cows from the home counties.

Best Scots, Herefords, &c. ... 3 4 to 3 6	Best Long-wools ... ... to ...
Best Short-horns 3 0 — 3 2	Ditto Shorn ... 3 4 — 3 6
2d quality Beasts 2 6 — 2 10	Ewes & 2d quality ... — ...
Best Downs and Half-breds ... ... — ...	Ditto Shorn ... 2 10 — 3 2
Ditto Shorn ... 3 8 — 4 0	Lambs ... ... 4 8 — 5 2
	Calves ... ... 2 10 — 3 6
	Pigs ... ... 2 6 — 3 4

MARK LANE.

MONDAY, JULY 1.—The arrivals of foreign Wheat last week were very large; a great deal of it is in unsaleable condition, and scarcely a cargo in perfect order. The supply of English by land carriage samples to this day's market was even less than last week, and realised fully the prices of this day se'nnight, red in some instances commanding a trifling advance. Fine dry foreign met a retail inquiry at former prices, but very little progress could be made in other descriptions.—Spring corn of all sorts maintains our quotations, excepting the out of conditioned parcels of Oats and Barley: these are less saleable.

BRITISH PER IMPERIAL QUARTER.	*s.* *s.*		*s.* *s.*
Wheat, Essex, Kent, & Suffolk ...White	40—44	Red	37—39
— — fine selected runs ...ditto	44—47	Red	39—41
— — Talavera	46—52		
— Norfolk, Lincoln, & York ...White	40—42	Red	36—39
— Foreign	33—51		
Barley, grind. & distil., 19*s* to 22*s*...Chev.	23—27	Malting	22—25
— Foreign,....Grinding and distilling	15—20	Malting	19—22
Oats, Essex and Suffolk	15—18		
— Scotch and Lincolnshire ...Potato	18—21	Feed ...	15—19
— Irish .....Potato	14—18	Feed ...	12—16
— Foreign .....Poland and Brew	14—18	Feed ...	12—16
Rye	19—21	Foreign	18—20
Rye-meal, foreign .....per ton	5*l.*—6*l.*		
Beans, Mazagan .....21*s* to 23*s*.....Tick	24—26	Harrow	24—26
— Pigeon .....25*s* — 28*s* ...Winds	—	Longpod	—
— Foreign ..... Small	24—34	Egyptian	19—21
Peas, white, Essex and Kent.....Boilers	26—26	Suffolk	24—28
— Maple .....24*s* to 27*s*.....Grey	22—24	Foreign	19—28
Maize .....White	26—30	Yellow...	25—30
Flour, best marks, delivered ...per sack	33—37		
— Suffolk .....ditto	27—33	Norfolk	27—33
— Foreign .....per barrel	20—23	Per sack	28—33

ARRIVALS IN THE PORT OF LONDON LAST WEEK.

FRIDAY, JULY 5.—The arrivals of Wheat from abroad this week consist of 10,640 qrs., but the supplies of all other grain, both English and Foreign, are small. The attendance at market this morning was not large; nevertheless, there were several country buyers from a distance, and a more general inclination was evinced to purchase Wheat than of late, particularly on speculation, but the firmness of holders, who for the most part insisted on an advance in price, caused the amount of business to be comparatively limited. A few cargoes of floating Polish Odessa have changed hands, at 35*s.* to 36*s.* per qr., cost, freight, and insurance. Spring corn of all kinds fully maintains our quotations. There is a better demand for Flour at rather higher prices.—The nominal value of floating cargoes of Galatz Maize is 28*s.* per qr., including freight and insurance.

ARRIVALS THIS WEEK.

	Wheat. Qrs.	Barley. Qrs.	Oats. Qrs.	Flour.
English ...	1380	60	280	980 sacks
Irish	—	—	—	
Foreign ...	10640	3380	7240	— brls.

IMPERIAL AVERAGES.	WHEAT.	BARLEY.	OATS.	RYE.	BEANS.	PEAS.
May 25.....	40*s* 7*d*	22*s* 10*d*	16*s* 3*d*	22*s* 4*d*	26*s* 4*d*	25*s* 6*d*
June 1	40 2	23 0	15 11	22 0	26 11	26 2
— 8.....	49 8	22 4	16 7	23 7	27 0	26 8
— 15.....	39 11	21 9	16 11	22 8	26 10	27 3
— 22.....	40 5	22 8	16 10	22 6	26 7	26 9
— 29.....	40 9	21 6	16 5	21 6	26 11	26 11
Aggreg. Aver.	40 3	22 4	16 6	22 5	26 9	26 6
Duties on Foreign Grain	1 0	1 0	1 0	1 0	1 0	1 0

PRICES.	MAY 25.	JUNE 1.	JUNE 8.	JUNE 15.	JUNE 22.	JUNE 29.
40*s* 9*d*	...	...	...	...	...	
40 7		...	...	...	...	...
40 5	...	...	...	...		...
40 2	...		...	...	...	...
39 11	...	...	...		...	...
39 8	...	...		...	...	...

LIVERPOOL, FRIDAY, JUNE 28.—Of English and Irish produce the receipts into this place since Monday last are altogether trivial; from the American States, however, we have to note 10,344 qrs. of Indian Corn, with 4414 barrels of Flour, and from Europe, including Egypt, 5309 qrs. of Wheat, with 3493 sacks of Flour from France. We have to report a heavy sale for all descriptions of Wheat. Barley, Malt, Beans, and Peas barely sustained our last currency.—TUESDAY, JULY 2.—The grain trade has been steady during the week. There was a fair extent of Wheat sold this morning, dealers paying much the same rates as on this day week. Nor was there any change in the value of any other article, except a decline of 1*s.* per qr. on Indian Corn. Prices: Wheat, English, red, per 70 lbs., 5*s.* 6*d.* to 5*s.* 10*d.*; white, 5*s.* 9*d.* to 6*s.* Barley, Scotch and Irish, per 60 lbs., 2*s.* 9*d.* to 3*s.* Malt, English, per qr., pale, 48*s.* to 52*s.* Oats, English and Scotch, per 45 lbs., 2*s.* 8*d.* to 2*s.* 10*d.* Beans, English, per qr., 27*s.* to 31*s.* Peas, do. do., 25*s.* 6*d.* to 26*s.* 6*d.*

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Honorary Member of the Royal Agricultural Society of England, Professor of Chemistry to the Horticultural Society of London, Lecturer on Chemistry in the Honorable East India Company's Military Seminary at d discombe, &c., &c.

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"In preparing a Second Edition of this little book, the opportunity has been taken of correcting several errors which the First Edition contained. The whole has been carefully revised, and such additions have throughout been made, as the advanced state of knowledge rendered necessary. In particular, the Tables of Analyses have been greatly extended, by the addition of the latest and most complete Analyses of almost all those plants which are cultivated as crops, as well as of the principal substances employed as manure."

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Acetic acid
Acid, acetic
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Acid, malic
Acid, muriatic
Acid, nitric
Acid, oxalic
Acid, phosphoric
Acid, pyroligneous
Acid, silicic
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Acids
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Action of plants on the air
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Adulteration of guano
Affinity, chemical
After-damp in mines
Air
Air contains carbonic acid
Air contains water
Air, inflammable
Air necessary to life
Air, its composition
Air resists compression
Alabaster
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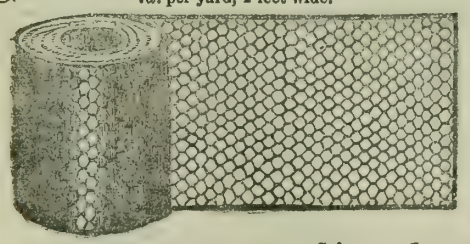
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ROWLAND'S MACASSAR OIL.—The unprecedented success of this discovery in restoring, preserving, and beautifying the Human Hair, is too well known and appreciated to need comment. For Children it is especially recommended as forming the basis of a Beautiful Head of Hair, and rendering the use of the fine comb unnecessary. Price 3*s.* 6*d.*—7*s.*—Family Bottles (equal to 4 small), 10*s.* 6*d.*, and double that size, 21*s.* per bottle.

*** Each bottle of the genuine article has the words ROWLAND'S MACASSAR OIL engraved in two lines on the Wrapper; and on the back of the Wrapper nearly 1500 times, containing 29,028 letters.

Sold by A. ROWLAND and SONS, 20, Hatton Garden, London; and by Chemists and Perfumers.

TOOTHACHE PERMANENTLY CURED by using BRANDE'S ENAMEL for filling decaying Teeth, and rendering them sound and painless. Price 1*s.* Enough for several Teeth. The only substance approved by the medical faculty, as being unattended with pain or danger, and the good effects of which are permanent.

Sold by all Chemists in the United Kingdom. Twenty really authorised Testimonials accompany each box, with full directions for use. Sent free, by return for post, by J. WILLIS, 24, EAST TEMPLE CHAMBERS, WHITEFRIARS, FLEET-STREET, LONDON, in return for 13 penny stamps.

CAUTION.—The great success of this preparation has induced numerous unskilful persons to produce spurious imitations, and to Copy BRANDE'S ENAMEL Advertisements. It is needful, therefore, to guard against such impositions, by seeing that the name of JOHN WILLIS accompanies each packet.

GERMAN SPRING MATTRESSES, permanently elastic, very durable and cheap.

3 feet wide	£2	8	0	4 feet 6 inches wide	£3	3	6
3 feet 6 inches	2	13	0	5 feet	3	10	0
4 feet	2	18	0	5 feet 6 inches	3	18	0

The best, top stuffing all horsehair:

3 feet wide	£3	10	0	4 feet 6 inches wide	£5	0	0
3 feet 6 inches	4	0	0	5 feet	5	10	0
4 feet	4	10	0	5 feet 6 inches	6	0	0

One of these Mattresses, with a French Mattress on it, is a most excellent and soft bed. HEAL AND SON'S List of Bedding, with full particulars of Weight, Sizes, and Prices of every description of Bedding, sent free by post.

HEAL and SON, Bedding Manufacturers, 196, opposite the Chapel, Tottenham-court-road, London.

GREAT WESTERN RAILWAY.—CHEAP PLEASURE EXCURSIONS, on and after Sunday, 30th June, to WINDSOR and Intermediate Stations.—A train every Sunday from Paddington at 9.45, and back from Windsor at 8 o'clock in the evening; and on Mondays a train will leave Paddington at 10.45, and return at 8 o'clock. Fare to Windsor and back, in open carriages, 2*s.* each. Fares as follows:

	Open carriages. (3d class)	2d class.	1st class.
To Ealing and back	0*s.* 6*d.*	1*s.* 0*d.*	1*s.* 6*d.*
To Hanwell or Southall and back	0 9	1 6	2 0
To West Drayton and back ...	1 6	2 0	3 0
To Slough or Windsor and back...	2 0	3 0	4 0
From Intermediate Stations to Slough or Windsor and back...	1 6	2 0	3 0

A compartment of a 1st or 2d class carriage, or a saloon carriage, will be reserved for parties, upon due notice previously given to the superintendent.

YORKSHIRE AGRICULTURAL SOCIETY, open to the United Kingdom. Meeting at Thirsk, Aug. 8. Entry closes 24th July. Prize Sheet, Forms of Entry, &c., may be had free of M. M. MILBURN, Secretary.
Thirsk, Yorkshire.

THE EDINBURGH REVIEW, No. CLXXXV., will be published on WEDNESDAY, July 10th.

CONTENTS:
1. QUETELET on PROBABILITIES.
2. MERIVALE'S HISTORY of ROME under the EMPIRE.
3. CHURCH and STATE EDUCATION.
4. MERIMEE'S HISTORY of PEDRO the CRUEL.
5. BLACKIE'S ÆSCHYLUS.
6. GOETHE'S FESTIVAL.
7. GUIZOT on the ENGLISH REVOLUTION.
8. THE AFRICAN SQUADRON.
9. THE GORHAM CONTROVERSY.

London: LONGMAN and Co. Edinburgh: A. and C. BLACK.

THE LADIES' COMPANION, for July 6, contains:—The Story of a Bouquet. By PAUL BELL.—Readings of Poetry, Old and New. By MARY RUSSELL MITFORD.—Dwarf Plants and Miniature Gardens.—Legends of Life.—The Guardian Spirit.—The Three Ages of Woman. By MARY HOWITT, with an Illustration.—Domestic Music and Fashion. By HENRY F. CHORLEY.—Chapters on Dress: Chapter II. Illustrated.—Household Hints and Receipts. By Miss ACTON.—Amusements.—Parlour-Window Talk, &c. &c.

Published Weekly, price 3*d.*, stamped, 4*d.*, and in Monthly Parts. Parts I. to VI. are now ready.
Office, 11, Bouverie-street, and all Booksellers and Newsmen.

TO TOURISTS.

Price 4*s.* 6*d.* neatly bound in cloth; or cloth extra, gilt edges, 5*s.* 6*d.*,

RUTHERFORD'S BORDER HANDBOOK: being a Guide to the Remarkable Places, Picturesque Scenery, and Antiquities of the Border. Illustrated with numerous Engravings on Steel, and a Map of the District.

"With confidence we recommend the Border Handbook to all who contemplate making the Tour, and those who do not will find it a work of sterling excellence."—*Border Advertiser.*

"Not one object of interest is omitted, and even the far distant reader, from a perusal of its pages, would be filled with a desire to visit those classic mountains, and to witness with his own eyes, those poetic skies, and those ruins of a former day, which it so accurately depicts."—*Kelso Mail.*

"It contains a multitude of information, and is profusely illustrated with engravings that will prove of no slight use to the tourist."—*Durham Chronicle.*

Price 1*s.*, in neat cover, or cloth, gilt, 1*s.* 6*d.* (chiefly extracted from the Border Handbook),

RUTHERFORD'S GUIDE TO MELROSE, ABBOTSFORD, DRYBURGH, KELSO, AND JEDBURGH: their Picturesque Scenery and Antiquities, with a glance at other Remarkable Places on Tweedside. Illustrated with a Vignette and two Engravings on Steel.

In small oblong 4to, price 2*s.*,

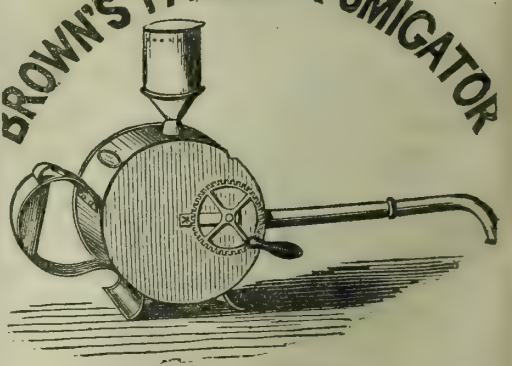
RUTHERFORD'S VIEWS OF BORDER SCENERY: comprising Abbotsford, Melrose, Berwick, Kelso Abbey, Dryburgh, Kelso, Floors Castle, Jedburgh, Kelso from Roxburgh Castle. The above are beautifully Engraved on Steel, and may be had in an envelope, or stitched together in a handsome cover, forming an elegant *bijou* for the drawing-room table.

Price 1*s.*, in neat cloth case for the pocket,

RUTHERFORD'S MAP OF THE BORDER DISTRICT, AND CHART OF THE RAILWAYS.
Kelso: J. and J. H. RUTHERFORD, Market-place.
London: J. NISBET and Co.; LONGMAN and Co.; GROOMBRIDGE and SONS, and sold by all Booksellers.

BY HER MAJESTY'S ROYAL LETTERS PATENT.

BROWN'S PATENT FUMIGATOR



Price 10*s.* and upwards.

A PORTABLE INSTRUMENT FOR FUMIGATING GREENHOUSES, STOVES, AND FRAMES, or Shrubs and Flowers, in the open air, without injuring the most delicate plant; delivering the smoke cool, in a dense mass, and effecting a great saving of Tobacco.

Manufactured and supplied to the Trade by Messrs. BARBER and GROOM, London; and in Brass by Mr. GOGERTY, 72, Fleet-street; and may be had of all Ironmongers, Seedsmen, and Florists.

Printed by WILLIAM BRADBURY, of No. 13, Upper Woburn-place, in the Parish of St. Pancras, and FREDERICK MULLETT EVANS, of No. 7, Church-row, Stoke Newington, both in the County of Middlesex, Printers, at their office in Lombard-street, in the Precinct of Whitefriars, in the City of London; and published by them at the Office, No. 5, Charles-street, in the parish of St. Paul's, Covent-garden, in the said county, where all Advertisements and Communications are to be ADDRESSED TO THE EDITOR.—SATURDAY, JULY 6, 1850.

THE GARDENERS' CHRONICLE
AND
AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 28—1850.] SATURDAY, JULY 13. [PRICE 6*d.*

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ROYAL SOUTH LONDON FLORICULTURAL SOCIETY.—Under the Patronage of her Most Gracious Majesty the QUEEN. The Fourth EXHIBITION for the season will be held at the ROYAL SURREY ZOOLOGICAL GARDENS, on TUESDAY, the 23d July (open to all Exhibitors), when Prizes will be awarded for the following Productions, viz., Miscellaneous, Orchids, and Specimen Plants, Cape Heaths, Fuchsias, Carnations, Picotees, Verbenas, Roses, Cut Flowers, Fruit, and Honey. In addition to the above, the following extra prizes are offered: By J. Coppock, Esq., 5*l.*, for a collection of Miscellaneous Plants; by C. Lichner, Esq., 1*l.*, for Verbenas; by Messrs. J. and J. Fairbairn, 2*l.*, for Cape Heaths; by W. T. Iliff, Esq., for cut Indigenous Plants; by Mr. E. Denyer, of Brixton, 1*l.* 10*s.*, for Roses; by Mr. C. Turner, 3*l.*, and by Mr. N. Norman, 1*l.* 10*s.*, for Carnations and Picotees for class showing. List of Prizes and the Rules for Exhibition may be obtained from JOHN T. NEVILLE, Secretary.

Ebenezer House, Peckham, Surrey.

HANDSWORTH AND LOZELLS HORTICULTURAL SOCIETY.—The following EXTRA PRIZES (open to all England) will be awarded at the Exhibition, on the 6th of August next: 5*l.* for the best 24 Carnations; 5*l.* for the best 24 Picotees; 5*l.* for the best 24 Verbenas, single trusses. 10*s.* Entrance Money will be charged for each collection, for the purpose of forming Second and Third Prizes.

Exhibitors must give notice to the Secretary, on or before the 23d inst., as no entries will be received after that date.

CHAS. JAS. PERRY, Honorary Secretary.

Handsworth, near Birmingham, July 13.

NEW LATE STRAWBERRY, WILMOT'S "PRINCE ARTHUR."

J. WILMOT, in offering this new variety of STRAWBERRY to the Public, is confident that it combines qualities which no other kind at present in cultivation does possess, being of delicious flavour, and coming in after the principal Strawberry season is over. It possesses the property of firmness of texture, so that it may be transmitted to any part of the kingdom without sustaining injury, as it may be kept for several days after being gathered, when fully ripe, without any indication of decay or loss of flavour.

"Prince Arthur" is one of the largest sized Strawberries, and a most abundant bearer; the foliage is small, and never exceeds 6 inches in height; the fruit is consequently fully exposed to the sun. Its dwarf habit requires it to be planted not more than a foot apart. The fruit is perfectly formed, of a rich scarlet, and colouring equally all over the berry. If planted at the distance recommended it will produce double the weight per acre of any other variety.

Strong plants will be ready for sale in September next, at 5*l.* per 100, on prepaid application only, to JOHN WILMOT, Isleworth, Middlesex; Robert Glendinning, Chiswick Nursery; William T. Atwood, Mortlake, Surrey; George Charlwood, Seedsman, Covent-garden; and Messrs. Hurst and M'Mullen, 6, Leadenhall-street, London.—Isleworth, Middlesex, July 13.

CARNATIONS AND PICOTEES.—Grand Trial Exhibitions for Northern *versus* Southern raised varieties. Fifty Prizes—70*l.* value.—Schedules for the above Exhibitions may be had upon application to Mr. John Keynes, Salisbury; Mr. John Holland, Middleton; Mr. W. Bragg, Star Nursery, Slough; Messrs. T. Scholefield and Son, Knowsthorpe, near Leeds; Mr. J. F. Wood, Midland Florist, Nottingham; Mr. C. Turner, Royal Nursery, Slough; Mr. T. Dobson, Worton Cottage, Isleworth; Mr. E. S. Dodwell, Derby; the Office of this Paper; and Mr. J. Edwards, Treasurer, Wace Cottage, Holloway.—The Southern Exhibition will be held at the Royal Nursery, Slough, on Thursday, July 25; the Northern in the County Hall, Derby, on Wednesday, August 7.

Subscriptions received by any of the above-named parties.—Each Exhibition is open to all England.

CARNATIONS AND PICOTEES.—By an error of the Printer (and not discovered until the Schedules had been freely distributed), the line for the division of NORTH from SOUTH is given LYME REGIS (which is in Dorsetshire), instead of LYNN REGIS, Norfolk.

Intending Exhibitors, Raisers, and the general Carnation-loving Public will please to bear in mind, that Condition 1 (see Schedule), should read, "That a line commencing at Pembroke and ending at Lynn Regis, Norfolk, be the line separating North from South."

JOHN EDWARDS.

SELECT CINERARIA SEED, WARRANTED FROM THE BEST NEW SHOW FLOWERS ONLY.

WM. HOPWOOD begs to inform the lovers of Floriculture that he has saved from his choice Collection of 1850 (which took all the first Prizes at the Cheltenham Show), some CINERARIA SEED, of excellent quality, which he begs to offer for sale in packets of 2*s.* 6*d.* and 5*s.* each. If sown soon the Plants will be strong enough to flower early in 1851.—Agents, HURST and M'MULLEN, Seedsmen, 6, Leadenhall-street, London.—Jersey Garden, Hewlett's-road, Cheltenham, July 13.

WOODLANDS NURSERY, MARESFIELD, NEAR UCKFIELD SUSSEX.

WM. WOOD AND SON'S extensive collection of ROSES is now in fine bloom, and will continue during the season. An idea of the extent may be formed when it is stated that Forty thousand Standards may be seen flowering in one bed; also many Thousand Dwarf, Dwarf Standard, and Standard Roses, covering many acres of ground.

Coaches run (each way daily) from Brighton to Tunbridge Wells, one of which passes through Maresfield, and within five minutes' walk of the Nursery.—July 13.

EDWARD DENYER, NURSERYMAN, Loughborough-road, Brixton, within three miles of London, informs his kind patrons in general that his unrivalled Collection of ROSES, reaching to nearly 1000 varieties, are now in bloom and free to the inspection of all visitors, Sundays excepted. Orders taken at this time and executed in November next. Price of Standard Roses, 15*s.* to 20*s.* per dozen. Fruit Trees, &c., &c.

E. D. informs his friends that he has no Seed Shop in London.

KNIGHT AND PERRY, having for so many years devoted unusual attention to the collection of HARDY ORNAMENTAL TREES AND SHRUBS, and having, four years since, purchased a large extent of ground, specially for their growth and increase (and that of Fruit trees), have now the honour to inform their patrons that their efforts have been very successful, and that they are enabled to offer many kinds of particular beauty and utility. As the character of the foliage of those which are deciduous may be best seen at this time, they respectfully INVITE AN INSPECTION of their collection, from which the following are selected from among many suitable for the embellishment of the Park and Pleasure-ground.

ACER PSEUDO-PLATANUS AUREA.—A strong-growing tree, producing variegated leaves as much as 8 inches across.

ACER PLATANUS DISSECTUM.—The very elegant, deeply cut foliage of this fine tree renders it very desirable.

ACER PSEUDO-PLATANUS PURPUREA.—This noble Maple, from its fine shaded purple foliage, will soon be in great request.

CRATÆGUS GRANDIFOLIA.—A very handsome large-leaved kind, well calculated for the park.

FRAXINUS.—Richardii, pallida, pannosa, jaspidea aurea, verticillata.—The Ash is not generally an admired tree, but these five kinds being so very ornamental, may be strongly recommended for park scenery.

ULMUS.—Pulva macrophylla; emarginata, decidedly the handsomest variegated tree we are acquainted with; cucullata, nemoralis, siberica; purpurea—this remarkable Elm, when properly introduced into park scenery will be found an invaluable adjunct to the landscape.—The Elm being so favourite a tree in this country, there is little doubt but that the preceding kinds, all of which are remarkable for their beauty, will be much sought after by planters.

PYRUS.—Sorbus terminalis, prunifolia rosea, malus aurea.—The foliage of these Pyrus is very attractive.

ROBINIA HISPIDA ARBOREA.—This excellent kind far exceeds in beauty the well-known Rose Acacia.

ÆSCULUS CALIFORNICA.—Said by Mr. Hartweg to be one of the most ornamental trees he met with in California.

QUERCUS MIRBECHII.—A very handsome species, for whose introduction we are indebted to the Russians.—Our collection of Oaks is very extensive.

Besides the above, many others equally meritorious might be enumerated; as, however, they invite an inspection of them, they refrain from doing so.

Exotic Nursery, King's-road, Chelsea, near London.

MAYLE'S MODEL FUCHSIAS FOR 1850.—No grower can expect to win a prize at any of the principal exhibitions in town or country without these magnificent reflexed varieties.

Messrs. MAYLE and Co. will send out their SEVEN NEW FUCHSIAS on the 20th June, extra strong plants. From the very high opinions expressed of their merits by Dr. Lindley, Mr. Glenny, &c., they require no further comment from us. They are the things of the season, and must be had by all who wish to keep pace with the times.

No. 4, DIADEM, was shown at Walsall, near Birmingham, with two blooms, May 8th, and was awarded an extra prize. Judges' opinion: "By far the best ever raised."

Also first prize at Wolverhampton, May 25, against some fine older specimen varieties; and first-class certificate awarded at the Birmingham and Midland Society on the 20th.

Those in bloom were exhibited at Chiswick and Regent's-park June shows. The earliest orders will secure the strongest plants. Circulars can be had. Also Mr. Hoyles' superb Geraniums, a few extra strong blooming plants being left.

Stove, Greenhouse, Bedding Plants, &c., including every novelty of the season.—105, New-street, Birmingham.

NEW GLOXINIAS.—ALBA GRANDIFLORA.—A good white Gloxinia has long been a desideratum in this much admired genus, and YOUELL and Co. have the pleasure to announce that they are in possession of the entire stock of the above beautiful variety. The flowers are considerably larger than G. maxima, measuring from 2½ to 3 inches across, of the purest white and wax-like appearance and consistency, forming a lovely contrast with its dark luxuriant foliage. It has been submitted to the Editor of the Gardeners' and Farmers' Journal, and most favourably noticed in that paper of the 13th of October, 1849. Price 10*s.* 6*d.* per plant.

SPECTABILIS.—A very robust variety, possessing the novelty so much prized in Fyfiana, producing erect flowers, which it throws well above the foliage in a compact mass, displaying the beautiful marking of the throat. Colour bright violet on the outside, the inside shaded with deep purple, fading off to a white throat, elegantly spotted. Price 7*s.* 6*d.* per plant.

PULCHERRIMA.—A very nice variety, most profuse bloomer, colour on the outside light blue, inside a rosy purple, curiously speckled with brown. Price 5*s.* per plant.

YOUELL AND CO. are now sending out strong well established plants of the above in pots, or per post free in tin cases. One set over to the Trade when two are ordered. They have also an extensive stock of all the best Gloxinias sent out last year, which they are enabled to supply in fine strong plants, at 12*s.* per dozen.—Royal Nursery, Great Yarmouth.

TO THE ADMIRERS OF THAT SPLENDID AUTUMNAL FLOWER, THE CHRYSANTHEMUM.

YOUELL AND Co. are now prepared to execute orders from their extensive and very select collection of the above, comprising all the new and fine continental varieties, at the following prices:

50	best new sorts	25*s.*
25	ditto	15*s.*
12	ditto	9*s.*

Well established in small pots, or by post free.

NEW DWARF CHINESE OR LILLIPUTIENNE CHRYSANTHEMUMS.

This new and beautiful class are well deserving the attention of cultivators from their exceeding dwarf habit (not attaining more than 1 foot in height). The profusion of flowers with which they are covered, as well as the great variety and distinctness of colour, will render them general favourites. Strong plants for autumn blooming are now ready for sending out at the following prices:

9	fine varieties sent out last year (for the first time) for	9*s.* 0*d.*
13	do. raised by M. Lebois (and sent out for the first time this season), for	30 0

One sent over to the Trade when two are ordered.

The latter are figured in the last December Number of the "Annales de la Societé d'Agriculture et de Botanique de Gand," and are perfect gems, engravings of which may be seen at YOUELL and Co.'s Nursery.

Descriptive Catalogues of the above may be had on application. Printed directions of their successful and easy method of cultivating the Chrysanthemums for exhibition, &c., will be forwarded with all orders.—Royal Nursery, Great Yarmouth.

LARGE SPECIMEN GREEN AND VARIEGATED ORANGE AND LEMON TREES.

MESSRS. PAMPLIN AND SON have for Sale, at their Nurseries, Lea Bridge-road, Leyton; and Woodstreet, Walthamstow, Essex, 10 Plants of the above, from 6 feet to 10 feet high, which may be seen on application.

BAKER'S PHEASANTRY, Beaufort-street, King's-road, Chelsea, by special appointment to her Majesty and H. R. H. Prince Albert.—ORNAMENTAL WATER FOWL, consisting of black and white swans, Egyptian, Canada, China, barnacle, brent, and laughing geese, shieldrakes, pintail, widgeon, summer and winter teal, gadwall, Labrador, shovellers, gold-eyed and dun divers, Carolina ducks, &c., domesticated and pinioned; also Spanish, Cochin China, Malay, Poland, Surrey, and Dorking fowls; white, Japan, pied, and common pea-fowl, and pure China pigs; and at 3, Half-moon-passage, Gracechurch-street.

G. BASSIL, Pheasantry, Hemel Hempstead, Herts, within one mile of the Boxmoor station, on the London and North-Western Railway. Orders now taken for Poults, having a large quantity bred under his own special care.

CUCUMBER AND MELON BOXES AND LIGHTS.

One hundred 1, 2, and 3-light Boxes and Lights of all sizes ready for immediate use. Warranted best materials, packed and sent to all parts of the kingdom; 2-light Boxes and Lights from 1*l.* 4*s.* Garden Lights of every description, Conservatories, Green and Hot-houses, made and fixed in all parts of the kingdom. References given to the Nobility, Gentry, and the Trade, in most of the counties of England. JAS. WATTS, Hothouse Builder, Claremont-place, Old Kent-road, London.

HALLIMAN'S REGISTERED FRUIT PROTECTORS.—This Glass placed over Fruit on the common wall (sooner the better) assists Nature, in our cold climate. The Fruit grows to a larger size, and its richness is increased. All orders J. P. is favoured with will be forwarded, with printed directions for use, at the lowest possible price, for ready money. Flint Glass, 4 inches, for Peaches, 9*s.* per dozen, 3*l.* 10*s.* per 100; 6 inches, for Grapes, 13*s.* per dozen, 5*l.* per 100.

JAMES PHILLIPS and Co. beg to say they have purchased the above Registry of Mr. HALLIMAN, and caution all persons from making or selling the same without their consent. Supplied wholesale and retail at 116, Bishopsgate-street Without.

EDWARD BECK, SLATE WORKS, ISLEWORTH. SLATE CISTERNS, &c.; COLE'S PATENT.

E. BECK informs Horticulturists and the Public generally that Mr. COLE has granted him the use of his Patent for the unexpired term, and he is now able to supply SLATE CISTERNS fastened without iron bolts or the usual oil cement, thereby doing away with the difficulty which has hitherto existed of forwarding such articles by rail or waggon, fixed and ready for use instead of in pieces, as heretofore.

E. B. will be happy to answer any inquiries as to the price of Cisterns, or any other Slate articles manufactured by him, such as Orange Tubs, Plant Boxes, Tanks, Shelves, Garden-path Edging, Hot-water Tank Covers, Flower Boxes for Balconies, Shelves fitted to hold water for Orchidaceous Houses, &c., all of which may be seen in use at Worton Cottage, Isleworth, on application to the Gardener, Sundays excepted.

Estimates given for Work as shown upon Drawings, and in specifications. A large stock of Slate Slabs of all sizes and thicknesses, kept on sale.

N.B.—Dairies fitted either with Shelves or Milk Pans, of very neat appearance.

PIMLICO SLATE WORKS.—Cisterns, Filters, Milk and Salting vessels, Corn and Flour Chests, Sinks, Dairy and Larder Shelves, Malting and other Flooring, Skirting, Refrigerators, Garden Edging, Flower Boxes, Pine pit Linings, Hot-bed Frames, moveable Cattle Sheds, Coping, Drain Stones and Traps, Steps and Risers, Balcony Landings, Roofing Slates, ridge roll and flap; Waste Slate for drains, Sun Dials, Fountains, and all descriptions of plain Slate Work in Town, or direct from Mr. MAGNUS'S Works in North Wales.

ENAMELLED SLATE Chimney-pieces, Billiard Tables, Console and other Table Tops, Mural Tablets, &c., in imitation of marble, surpassing the choicest marbles in beauty and durability, at less than half the cost of the commonest descriptions. Price Lists forwarded on application to Mr. MAGNUS, 39 and 40, Upper Belgrave-place, London.

ROYAL BOTANIC GARDEN, REGENT'S PARK.

EXHIBITION, JULY 3, 1850.

THE JUDGES AWARDED THE PRIZES AS FOLLOWS:

EXTRA GOLD MEDAL.

To Mr. Cole, Gardener to H. Colyer, Esq., Dartford, Kent, for 30 Stove and Greenhouse Plants
To Mr. Mylam, Gardener to S. Rucker, Esq., Wandsworth, for 25 Exotic Orchids

LARGE GOLD MEDAL.

To Mr. May, Gardener to Mrs. Lawrence, Ealing Park, for 30 Stove and Greenhouse Plants

MEDIUM GOLD MEDAL.

To Mr. Green, Gardener to Sir E. Antrobus, Cheam, Surrey, for 20 Stove and Greenhouse Plants
To Mr. Smith, Gardener to W. Quilter, Esq., Norwood, for 15 Cape Heaths
To Mr. Mylam, for 15 Cape Heaths
To Mr. Williams, Gardener to C. B. Warner, Esq., Hoddesdon, Herts, for 25 Exotic Orchids
To Mr. Blake, Gardener to H. Schröder, Esq., Stratford-green, for 15 Exotic Orchids

GOLD MEDAL.

To Mr. Taylor, Gardener to J. Coster, Esq., Streatham, for 20 Stove and Greenhouse Plants
To Mr. Epps, Nurseryman, Maidstone, for 12 Cape Heaths
To Mr. Barnes, Gardener to R. Hanbury, Esq., Poles, Ware, for 10 Exotic Orchids
To Mr. Stains, Amateur, Middlesex-place, New-road, for 12 Pelargoniums
To Mr. Cock, Chiswick, for 12 Pelargoniums
To Mr. Dobson, Gardener to E. Beck, Esq., Worton Cottage, Isleworth, for 12 Pelargoniums
To Mr. Fleming, Gardener to the Duchess of Sutherland, Trentham, for miscellaneous collection of Fruit

LARGE SILVER-GILT MEDAL.

To Mr. Stanly, Gardener to H. Berens, Esq., Sidcup, Kent, for 30 Stove and Greenhouse Plants
To Mr. Williams, Gardener to Miss Traill, Bromley, Kent, for 10 Stove and Greenhouse Plants
To Messrs. Rollisson and Son, Nurserymen, Tooting, Surrey, for 15 Exotic Orchids

LARGE SILVER MEDAL.

To Messrs. Rollisson, for 12 Cape Heaths
To Mr. Robinson, Gardener to J. Simpson, Esq., Pimlico, for 12 Pelargoniums
To Mr. Bragg, Nurseryman, Slough, for 12 Pelargoniums
To Mr. Parker, Gardener to J. H. Oughton, Esq., for 6 Pelargoniums
To Mr. Robinson, Gardener to J. Simpson, Esq., for 6 Fancy Pelargoniums
To Mr. Gaines, Nurseryman, Battersea, for 6 Fancy Pelargoniums
To Mrs. Bailey, 26, Belgrave-square, for Lemon Queen Pine-apple

SILVER-GILT MEDAL.

To Mr. Croxford, Gardener to H. Barnes, Esq., Stamford-hill, for 10 Stove and Greenhouse plants
To Mr. Stains, for 6 Cape Pelargoniums
To Messrs. Pamplin and Son, Lea-bridge-road, for 12 Cape Heaths
To Mr. Williams, Gardener to Miss Traill, Hayes, Bromley, for 6 Cape Heaths
To Mr. Dobson, Gardener to E. Beck, Esq., for 10 Exotic Orchids
To Messrs. Henderson, Nurserymen, Pine-apple-place, for 6 Calceolarias
To Mr. Weir, Gardener to — Hodgson, Esq., The Elms, Hampstead, for 6 Pelargoniums
To Mr. Stains, for 6 Fancy Pelargoniums
To Mr. Henderson, Nurseryman, Wellington-road, St. John's-Wood, for 6 Fancy Pelargoniums
To Mr. Bray, Gardener to E. Lousada, Esq., Peak House, Sidmouth, for a collection of 6 Pine-apples
To Mr. M'Ewen, Gardener to the Duke of Norfolk, Arundel Castle, for the same
To Mr. Jackson, Gardener to — Beaufoy, Esq., South Lambeth, for Trinidad Pine-apples
To Mr. Fleming, Gardener to the Duchess of Sutherland, for Providence ditto
To Mrs. Bailey, 26, Belgrave-square, for Ripley Queen Pine-apple
To Mr. Henderson, Gardener to Sir G. Beaumont, Ashby-de-la-Zouch, for Grapes, 12 lbs.
To Mr. Vennibles, Gardener to — Solomon, Esq., Peckham Rye, for the same
To Mr. Holmes, Gardener to — Garrard, Esq., Colebrook Lodge, Putney Heath, for Black Grapes
To Mr. Mackintosh, Gardener to the Marquis of Exeter, Burghley House, for White Grapes
To Mr. Moffat, Gardener to the Duke of Newcastle, Clumber Park, Worksop, for White Frontignan Grapes
To Mr. Henderson, Gardener to Sir G. Beaumont, for Red Frontignan Grapes
To Mr. Turnbull, Gardener to the Duke of Marlborough, Blenheim, for 4 dishes of Peaches

SILVER MEDAL.

To Mr. Laybank, Gardener to T. Maudslay, Esq., Norwood, for 10 Stove and Greenhouse plants
To Mr. Williams, Gardener to Miss Traill, for Leschenaultia formosa
To Mr. May, Gardener to Mrs. Lawrence, for Stephanotis floribunda
To Mr. Green, Gardener to Sir E. Antrobus, for 6 tall Cacti
To Mr. May, Gardener to Mrs. Lawrence, for Ixora javanica
To Mr. May, Gardener to — Goodheart, Esq., for 6 Cape Heaths
To Mr. Gaines, Nurseryman, for 12 Pelargoniums
To Mr. Ambrose, Nurseryman, King-street, Battersea, for 6 Fancy Pelargoniums
To Mr. Layton, Fulham-road, Hammersmith, for 6 Calceolarias
To Mr. Bray, Gardener to Sir J. Goldsmid, St. John's-lodge, Regent's-park, for 6 Fuchsias
To Messrs. Lane and Son, Nurserymen, Great Berkhampstead, Herts, for 100 Cut Roses
To Mr. Barnes, Gardener to R. Hanbury, Esq., for 50 Cut Roses
To Mr. Bray, Gardener to E. Lousada, Esq., for Black Antigua Pine-apple
To Mr. Turnbull, Gardener to the Duke of Marlborough, for Providence Pine-apple
To Mr. Drummond, Gardener to C. H. Leigh, Esq., Pontypool Park, for 1 Pine Apple (Ripley Queen)
To Mr. Spencer, Gardener to the Marquis of Lansdowne, Bowood, for 1 Pine-apple (Ripley Queen)
To Mr. Munro, Gardener to Mrs. Oddie, Colney House, St. Alban's, for 3 dishes of Grapes
To Mr. C. Mackay, Gardener to the Honourable E. Strutt, Kingston Hall, for 12 lbs. of Grapes
To Mr. C. Chapman, Market Gardener, South Lambeth, for the same
To Mr. Harrison, Oatlands Palace Gardens, Weybridge, for a dish of Black Grapes
To Mr. M'Ewen, Gardener to the Duke of Norfolk, for a dish of Black Grapes
To Mr. Kemp, Gardener to Mrs. Grillion, East Acton, for a dish of White Grapes
To Mr. Davis, Market Gardener, Oak-hill, for the same
To Mr. Taylor, Gardener to E. Coster, Esq., for a dish of White Frontignan Grapes
To Mr. Bain, Gardener to — Barnisconi, Esq., for the same
To Mr. Northcote, Gardener to Miss Wigram, Wanstead, for Vines in pots
To Mr. Foggo, Gardener to the Marquis of Abercorn, Priory, Stanmore, for 4 dishes of Peaches
To Mr. Parker, Gardener to J. H. Oughton, Esq., for the same
To Mr. Mackintosh, Burghley, Stamford, for 2 dishes of Nectarines

SMALL SILVER MEDAL.

To Mr. Malyon, Gardener to T. Brandram, Esq., Lee-grove, Blackheath, for 10 dishes of Nectarines
To Messrs. Pamplin and Son, Nurserymen, for a specimen plant of Allamanda cathartica
To Mr. Dennett, Gardener to W. H. Gilliatt, Esq., Clapton-park, for Kalosanthus coccineus
To Mr. May, Gardener to — Goodheart, Esq., for Chironia glutinosa
To Messrs. Loddiges, Nurserymen, Hackney, for Aerides suavissimum
To Mr. Taylor, Gardener to E. Coster, Esq., for correct Labels in first class
To Mr. Smith, Gardener to J. Anderson, Esq., The Holme, for the same
To Mr. Wood, Nurseryman, Norwood, for 12 Alpines
To Mr. Parker, Gardener to J. H. Oughton, Esq., for 6 Cape Pelargoniums
To Mr. Cole, Gardener to H. Colyer, Esq., for 6 Cape Heaths
To Mr. Williams, Gardener to C. B. Warner, Esq., for 30 British Ferns
To Mr. J. Willmot, Nurseryman, Sunbury, for 12 Carnations
To Mr. Turner, Nurseryman, Slough, for 12 Picotees
To the same, for 12 Pinks
To Mr. S. Treacher, Wycombe, Bucks, for 24 Pansies
To Mr. Gaines, Nurseryman, for 6 Calceolarias
To Mr. Robinson, Gardener to J. Simpson, Esq., for 6 Fuchsias
To Messrs. Paul and Son, Nurserymen, Cheshunt, for 100 Cut Roses
To Mr. Terry, Gardener to Lady Pullen, Herts, for 50 Cut Roses
To Messrs. Lane and Son, Nurserymen, for 12 new Roses
To the same, for 12 single blooms
To Mr. Moffatt, Gardener to the Duke of Newcastle, for a Providence Pine-apple
To Mr. Bray, Gardener to E. Lousada, Esq., for Ripley Queen
To Mr. Fleming, Gardener to the Duchess of Sutherland, for the same
To Mr. Barnes, Gardener to R. Hanbury, Esq., for a Green-fleshed Melon
To Mr. Bennett, Gardener to J. Smith, Esq., Dulwich, for 3 dishes of Grapes
To Mr. Turnbull, Gardener to the Duke of Marlborough, for 12 lbs. of Grapes
To Mr. Henderson, Gardener to Sir G. Beaumont, for a dish of Black Grapes
To Mr. Frost, Gardener to the Right Hon. — Granville, for the same
To Mr. Taylor, Gardener to E. Coster, Esq., for the same
To Mr. Moffat, Gardener to the Duke of Newcastle, for a dish of Muscat Grapes
To Mr. Turnbull, Gardener to the Duke of Marlborough, for the same
To Mr. Cox, Gardener to J. Tradwell, Esq., Leigham-court, for a dish of White Frontignan Grapes
To Mr. Smith, Gardener to A. Anderson, Esq., Norwood, for the same
To Mr. Smith, Gardener to J. Anderson, Esq., Regent's-park, for Vines in pots
To Mr. Slowe, Gardener to R. Baker, Esq., Bayfordbury Park, for 4 dishes of Peaches
To Mr. Munro, Gardener to Mrs. Oddie, for 4 dishes of Peaches
To Mr. Turnbull, for 2 dishes of Nectarines
To Mr. Lydiard, Market Gardener, Bath, for 4 dishes of Strawberries
To Mr. Bray, Gardener to E. Lousada, for Tropical Fruit
To Mr. Ivison, Gardener to the Duchess Dowager of Northumberland, Sion House, for Tropical Fruit
To Mr. Speed, Edmonton, for 10 Stove and Greenhouse Plants

BRONZE MEDAL.

To Mr. Dennett, Gardener to W. H. Gilliat, Esq.
To Mr. Kinghorn, Gardener to Earl Kilmorey, for Leschenaultia arcuata
To Mr. Loddiges, Nurserymen, Hackney, for Saccolabium Blumii
To Messrs. Rollisson and Son, Nurserymen, for Ipomœa limbata
To the same, for Magnolia fragrantissima
To the same, for Thyrsacanthus bracteolatus
To Mr. E. Henderson, Nurseryman, Wellington-road, for Hemiandra pungens
To Messrs. Rollisson and Son, for correct Labels in Class 2d
To Mr. Turner, Nurseryman, Holloway, for 12 Alpines
To Mr. Williams, Gardener to C. B. Warner, Esq., for 12 Exotic Ferns
To Mr. Smith, Gardener to J. Anderson, Esq., for 30 British Ferns
To Mr. Newball Powis, Woolwich, for 12 Carnations
To the same, for 12 Picotees
To Mr. Bragg, Nurseryman, Slough, for 12 Pinks
To Mr. Kimberley, Pinley, Coventry, for 24 Pansies
To Mr. Francis, Nurseryman, Herts, for 100 cut Roses
To Mr. Parson, Gardener to A. George, Esq., Ponder's End, for 50 ditto
To Messrs. Paul and Son, Nurserymen, Cheshunt, for 12 new Roses
To Mr. Barnes, Gardener to R. Hanbury, Esq., Poles, for 12 single blooms
To Mr. Jones, Gardener to Sir J. J. Guest, Dowlais House, Glamorganshire, for a Ripley Queen Pine-apple
To Mr. Spence, Gardener to the Marquis of Lansdowne, for a Green-fleshed Melon
To Mr. Watson, Gardener to Mrs. Tradwell, Norwood, for the same
To Mr. Fleming, Gardener to the Duchess of Sutherland, for a dish of Black Grapes
To Mr. Lushey, Gardener to J. Hill, Esq., the Rookery, Streatham, for ditto
To Mr. Gerrie, Gardener to Sir J. Cathcart, Cooper's-hill, for a dish of Black Grapes
To the same, for a dish of Figs
To Mr. Foggo, Gardener to the Marquis of Abercorn, for 2 dishes of Nectarines
To Mr. Moffatt, Gardener to the Duke of Newcastle, for ditto
To Mr. Parker, Gardener to J. H. Oughton, Esq., for ditto
To Mr. Snow, Gardener to Earl de Grey, Wrest-park, for a dish of Cherries
To Mr. Kimberley, Pinley, Coventry, for 4 dishes of Strawberries
To Mr. Williams, Gardener to C. B. Warner, Esq., for a collection of 9 Lycopodiums
To Mr. Reekie, Gardener to Lady Hunter, for a collection of 14 Nectarines
To Mr. Munro, Gardener to Mrs. Oddie, for a large collection of Peaches and Nectarines
To Mr. Wigan, Clare House, East Malling, for 50 British Plants

CERTIFICATE OF MERIT.

To Mr. Green, Gardener to Sir E. Antrobus, for Rondeletia speciosa
To Mr. Kinghorn, Gardener to Earl Kilmorey, for Tremandra verticillata
To Mr. Glendinning, Nurseryman, Chiswick, for Achimenes Tagwelliana
To Mr. Mylam, Gardener to S. Rucker, Esq., for correct Labels, in Class 1st
To Mr. Blake, Gardener to J. H. Schröder, Esq., for correct Labels, in Class 2d
To Mr. Green, for 6 Cape Heaths
To Mr. Dennett, Gardener to W. H. Gilliatt, Esq., for 6 ditto
To Mr. Taylor, Gardener to Sir E. Coster, for 6 ditto
To Messrs. Rollisson and Son, Nurserymen, for a seedling Heath, "Gemmifera elegans"
To Mr. Willmore, Nurseryman, for 12 Picotees
To Mr. Edwards, Holloway, for 12 Pinks
To Mr. Keynes, Salisbury, for 12 ditto
To Mr. Gerrie, Gardener to Sir J. Cathcart, for a Green-fleshed Melon
To A. Rowland, Esq., Lewisham, for 50 cut Roses
To Mr. Munro, Gardener to Mrs. Oddie, for a Green-fleshed Melon
To Mr. Wier, Gardener to — Hodgson, Esq., for a Scarlet-fleshed ditto
To Mr. Mackintosh, Burghley, Stamford, for a dish of Black Grapes
To Mr. Barnes, Gardener to R. Hanbury, Esq., Poles, for a dish of ditto
To Mr. Hunt, Gardener to — Herbert, Esq., for a dish of Black Grapes
To Mr. Turnbull, Gardener to the Duke of Marlborough, for ditto
To Mr. Hyde, Gardener to H. Yeoman, Esq., Oak-hill, Wanstead, for ditto
To Mr. Davis, Market Gardener, Oak-hill, for ditto
To Mr. Cuthbert, Nurseryman, Wier-hall, Edmonton, for ditto
To Mr. Jackson, Gardener to — Beaufoy, Esq., South Lambeth, for ditto
To Mr. Watson, Gardener to Mrs. Tradwell, Norwood, for Vines in pots
To Mr. Munro, Gardener to the Earl of Clarendon, Grove-park, Watford, for 2 dishes of Nectarines
To Mr. Kemp, Gardener to Mrs. Grillion, East Acton, for a dish of White Cherries
To Mr. Gainsford, Market Gardener, Brentford, for ditto
To Mr. Meyers, Boston-road, Brentford, for ditto
To Mr. Wills, Chichester, for 4 dishes of Strawberries
To Mr. Knevett, Market Gardener, Isleworth, for the same
To Mr. Williams, Gardener to J. P. Lenhouse, Esq., Maryport, for fruit of Stephanotis floribunda
To Mr. Croxford, Gardener to H. Barnes, Esq., for 12 Gloxinias
To Mr. Turner, Nurseryman, Slough, for "Sappho," a seedling Pink
To the same, for "Huntsman," ditto
To Mr. Wood, Nurseryman, Norwood, for 30 variegated plants
To Mr. Hunter, Gardener to N. Clifton, Esq., Islington, for 3 Cucumbers
To Mr. Willmot, Market Gardener, Isleworth, for a dish of Strawberries
To Mr. Smith, Nurseryman, Hornsey-road, for 24 cut Verbenas
To Mr. Munro, Gardener to Mrs. Oddie, for 4 dishes of Strawberries

MESSRS. STANDISH AND NOBLE'S new descriptive CATALOGUE OF SELECT HARDY ORNAMENTAL PLANTS is just published, and may be had for four postage stamps. Besides a Treatise on the cultivation of American Plants, it contains a Plate and Description of the Funebral Cypress, Notices of Cephalotaxis Fortunii, Cryptomeria japonica, Quercus sclerophylla and inversa, Viburnum plicatum and macrocephalum, with many recent introductions from the north of China, quite new to English gardens.

Messrs. S. and N. take this opportunity of stating that they give Designs for Laying out New Grounds and Plans for Improvements; also Estimates for all kinds of Planting, whether ornamental or economic.—Bagshot Nurseries, July 13.

50,000 CAMELLIAS WITH FLOWER BUDS.

JOSEPH BAUMANN, NURSERYMAN, Ghent, Belgium, begs to offer the following CAMELLIAS:

100	Camellias in 100 varieties, 1 foot high	...	...	£7	0	0
100	,, 50 ,,	do.	...	6	0	0
100	,, 100 ,,	from 1 to 2 feet high	...	10	0	0
100	,, 50 ,,	do.	do.	9	0	0
100	,, 100 ,,	from 2 to 3 feet high	...	12	0	0
100	,, 50 ,,	do.	do.	11	0	0
100	,, 100 ,,	from 3 to 4 feet high	...	16	0	0
100	,, 50 ,,	do.	do.	15	0	0

J. B.'s Camellias are of the best cultivation. A liberal discount to the Trade; see J. B.'s Catalogue.

MESSRS. KNIGHT AND PERRY feel themselves called upon to thank their numerous patrons very gratefully for the confidence with which they have recurred to them when in want of Gardeners, and beg respectfully to say that the scrutiny and vigilance they have always employed in selecting good and clever men (to which the almost invariable satisfaction that has so long attended their recommendations is mainly attributable) is, if possible, increased now; and the steps they have taken to arrive correctly at the professional and private character of those they send out as GARDENERS, FORESTERS, BAILIFFS, &c., induce them to undertake unhesitatingly to furnish first-rate men in these capacities whenever called on to do so.

EXOTIC NURSERY, KING'S ROAD, CHELSEA, LONDON.

BECK'S SEEDLING PELARGONIUMS of 1849.
For prepayment only, the first remittance to secure the first selection. Post-office orders are requested to be made payable at Brentford.

ROSA.—A bright rose-coloured flower of great smoothness and good form, a free bloomer, constant, and of excellent habit. Will prove a first-rate variety for all purposes. 30*s.*

MAJOR DOMO.—A very large rose-coloured flower, with dark clouded top petals; some of the blooms here measure 3 inches in circumference; free bloomer, and of strong habit. 21*s.*

SILK MERCER.—A very close compact-growing variety, free bloomer, and very constant; smooth silky flower of first-rate quality, ground colour rose, with deep maroon blotch on the upper petals. 21*s.*

PRINCE ARTHUR.—A medium-sized flower of excellent quality, very constant, and a free bloomer; rosy crimson ground colour, with dark well defined blotch on the upper petals, leaving a bright distinct margin; light centre. 21*s.*

DIANA.—This is very similar to Rosalind, but larger, and is at its best early in the season, whilst the latter variety is not at its best until quite late. 15*s.*

TYRIAN QUEEN.—If the large deep mulberry-coloured top petals of the flower had been matched with as good lower ones, it would have been first-rate; strong robust habit, and a free bloomer; a very distinct and constant variety. 15*s.*

Many other Seedlings might have been selected, such as "Little but Good," and others, but they have exhibited faults which make it necessary to try them another season. Incomparable will not be sent out until 1851. At present it is unequalled.

VARIETIES OF 1848.

CUYP.—A novel claret-coloured flower; soft, silky, cloudy blotch on upper petals, shading off to the margin; very free bloomer and constant. 10*s.* 6*d.*

EMILY.—A very fine large Centurion flower, of first-rate character for the home or exhibition stages, being a very free bloomer; quite constant, and of good habit. 10*s.* 6*d.*

GOVERNOR.—A most profuse bloomer, of a rich glowing purple, stiff in the petals, and well adapted for all purposes. Good habit and foliage. 10*s.* 6*d.*

LOVELINESS.—A striking flower, of excellent quality; a rose-coloured clean distinct crimson spot on the bottom petals gives it a decided and pure white eye, upper petals rich dark spot extending evenly upwards, and abruptly shading off into the edge; habit excellent. 10*s.* 6*d.*

PAINTER.—Novel and striking, from the great amount of colour on the lower as well as on the top petals; very free bloomer, and constant. 10*s.* 6*d.*

PET.—A middle-sized, stiff, smooth flower, of high quality; rich, dense, even-coloured top petals, with a very light and well defined edge, white eye, and pale rose lower petals; moderate bloomer and constant. 10*s.* 6*d.*

ROSALIND.—A large-sized fresh-coloured flower, a glowing crimson upper petal, with dark blotch; a large white centre, and lower petals light rose; free bloomer, constant, and good habit. 10*s.* 6*d.*

Foster's Gipsy Bride and Constance, 10*s.* 6*d.* each.
Foquett's Magnificent, 10*s.* 6*d.*; and Symonds' Field Marshal, 10*s.* 6*d.*

OLDER VARIETIES, AND OTHER RAISERS' FLOWERS.
Twelve of the following varieties, including the box and carriage to London, will be sent out in October, for Two Guineas, well rooted in 3-inch pots, and ready for an immediate shift into a larger size:—Blanche, Centurion, Cassandra, Crusader, Delicatissima, Dorcas, Emilia, Gustavus, Gulielma, Lalla Rookh, Lamartine, Mont Blanc, Meleager, Minna, Ondine, Princess Alonzo, Ruby, Rosamond, Star, and Symmetry.
Any twelve of the above are fit to compete at any exhibition, metropolitan or provincial. J. Dobson has invariably taken the first prizes at the great metropolitan exhibitions with the sorts herein advertised.
Worton Cottage, Isleworth, Middlesex.

"THE FLOWER OF THE DAY" IS
LEE'S NEW VARIEGATED SCARLET GERANIUM.—This fine bedding plant is very vigorous, and the variegation perfectly constant. The foliage is bright green, beautifully margined with silver, with a light horse-shoe, and an occasional pink tinge. The trusses are large, of a light scarlet (the most conspicuous colour), and the general effect it produces is elegant beyond description.
"THE FLOWER OF THE DAY" may be seen in bloom at Lee's Nursery during the present month. On the 1st of August good established plants will be ready for delivery at 10*s.* 6*d.* each, with the usual allowance to the trade when three or more are ordered. Orders will be executed strictly in rotation.—Address, J. and C. Lee, Nursery and Seedsmen, Hammersmith, near London.—July 13.

The Gardeners' Chronicle.
SATURDAY, JULY 13, 1850.

MEETINGS FOR THE ENSUING WEEK.
Wednesday, July 17—Royal Botanic ..... 3*h.* P.M.
Country Shows.—Wednesday, July 17: Stamford Hill Horticultural.—Wednesday, July 17, and Thursday, July 18: Devon and Exeter Botanical and Horticultural.—Thursday, July 18: Birmingham Botanical and Horticultural.

It is a very general opinion amongst those who have paid most attention to the Potato disease both in this country and on the Continent, that two distinct diseases have often co-existed in the same plant or tuber, and doubtless many of the conflicting statements which have been put forth on the subject have derived their origin from this circumstance. Some, for instance, have asserted positively that the disease always commenced in the leaves; others, as undoubtingly, that the under-ground portion of the stem was the first to be attacked. Both opinions were probably right, but a different disease was the subject under investigation. We believe that during the last week a case has occurred to us illustrative of this subject.

Without making any assertion as to the origin of these affections, it may be assumed as a pretty well established fact that the two diseases in question are characterised during some period of their development by the presence of a peculiar parasitic fungus, the true Potato murrain by Botrytis infestans, and the other form of decay by Fusarium Solani; and it was stated by Mr. Berkeley, in his memoir on the Potato murrain in the "Journal of the Horticultural Society," that he believed that a little mould, figured under the name of Dactylium tenuissimum, was the young state of the Fusarium, the Dactylium being very generally present in the same tuft with the Fusarium, both in British and foreign specimens, and the one, notwithstanding the great difference between extreme forms, running by imperceptible gradation into the other. The moisture of the last few days has favoured the development of moulds in a very marked degree, and every plant of Ash-topped Potatoes in our garden exhibits unequivocal marks of disease, in every case accompanied by the little Dactylium. The portion of the stem near the tubers is blotched with brown spots, which enter deeply into the substance, so that not above half the cells are in a condition to carry on the circulation. These spots soon spread to the strings, which are already greatly injured, and from thence to the surface of the tubers, which are brown and discoloured, though the decay is at present merely superficial. Upon the spots, whether on the tubers, strings, or base of the stem, the delicate white mould is distinctly visible, and the same mould is also present on the old sets.

It is to be observed that the affection is entirely distinct in appearance from that of the genuine Potato murrain in its earliest stages, and would at once be pronounced to be so by any of our peasants. We cannot state positively that this is the commencement of the second form of Potato disease to which we have alluded, as our observations have not been carried out to the full development of the affection; all we assert is that a malady, distinct from the Potato murrain, does exist amongst Potatoes, and evidently one of a serious nature, as every malady must be which destroys the tissues on which the perfect development of the plant and tuber mutually depends, and that this disease commences not in the leaves but in the lowest part of the stem. Some months may pass before the affection runs through its course, but we shall watch its progress with interest, in the hope of gaining some positive information on the subject.

A correspondent assuming the strange signature of Doubll Yew has sent us a Monstrous Foxglove, of one of whose flowers the following is a representation, of the natural size. We notice it thus pro-



minently, because the example shows that double Foxgloves, Snapdragons, and such plants, are not so unlikely to be obtained as is generally supposed.

The terminal flowers alone, we are informed, were like this; the lateral flowers are represented as having been in the usual state. But it is by no means improbable that seeds saved from those lateral flowers would produce plants having a still greater tendency to become double; and by repeated sowings it is quite within the bounds of possibility that a race of Foxgloves may be secured with the same property of coming double that we now see in the common Ten-weeks Stock. If that could be accomplished it will, we think, be admitted that, considering the extraordinary size of these flowers, a very striking ornament would be added to the flower garden.

In a merely scientific point of view the structure of the monster in question was sufficient to establish all the main points of morphology. It showed that a flower is a branch; that irregular flowers will occasionally become regular; and that, becoming so, they make up for all the deficiencies and peculiarities of the ordinary structure, by taking on the customary state of regular flowers; that all the parts of a flower are leaves in various states of development; and that the axis of a flower is a growing point, capable of indefinite extension as soon as the forces which determine the production of a flower are disturbed.

What we found was as follows:

Firstly, a calyx consisting of 12 sepals, distinct to the base. Secondly, a corolla as large as the Hebe's Cup Rose, lobed with considerable irregularity; deep rich rose, with the peculiar ocellated spots of Digitalis. Near its base were 12 perfect stamens. Thirdly, another calyx, regular, cup-shaped, with 13 short triangular teeth. Fourthly, within this a second corolla, paler, with purple not ocellated spots, almost hemispherical, very irregularly lobed, in three irregular whorls, with 11 stamens in a more or less monstrous state. Fifthly, in the midst, a lengthened axis covered with numerous leafy, petal-like, or stamen-like lobes, forming a confused tuft. No pistil; but all sorts of transitions from stamens to scales and leaves.

We regret to announce the death of the Rev. William Kirby, M.A., Rector of Barham, Suffolk, at that place, where he had resided 68 years, on Thursday, July 4, in the 91st year of his age.

Mr. Kirby was Honorary President of the Entomological Society of London, President of the Ipswich Museum, and Fellow of the Royal, Linnean, Zoological, and Geological Societies, besides being honorary member of several foreign societies, and has left behind him an imperishable name as one of the first entomologists of this or any age. This title he would have assured to himself had he written no other work than his "Monographia Apum Angliæ," published in 1801, in two volumes, 8vo, in which, from materials almost wholly collected by himself, and the plates of which were mostly etched by his own hand (having taken lessons in the art for this express purpose), he described upwards of 200 of the wild bees of this country, with a largeness and correctness of view as to their family (or as they are now considered, generic) divisions, that excited the warmest admiration of British and foreign entomologists. But when to this great work we add his other entomological labours—his numerous and valuable papers in the "Transactions of the Linnean Society;" the "Introduction to Entomology," written in conjunction with Mr. Spence; the entomological portion of his Bridgewater Treatise "On the History, Habits, and Instincts of Animals;" and his description (occupying a quarto volume), of the Insects of the "Fauna Boreali-Americana" of Sir John Richardson; it will be evident how largely and successfully he has contributed to the extension of his favourite science; and all this without encroaching in the slightest degree on his professional or social duties, for, while ranking so high as an entomologist, he was during his long life a most exemplary and active clergyman, beloved by his parishioners of all ranks, and one of the warmest of friends, and most simple-minded, kind-hearted, and pious of men.

Mr. Wheeler has made a very fair reply to our complaint of the proceedings at the late meeting of the Gardeners' Benevolent Institution. He admits that "votes should in general be given to candidates who have subscribed to its funds," but he thinks Beach an exception to the rule, and he objects to the principle of rendering it compulsory upon subscribers to vote in that manner.

We entertain no doubt that Beach was a very proper person to elect, if merits or sufferings are alone to be considered; but so are we bound to presume were those who failed. Their merits and sufferings probably gave them the same claim upon the funds as his, and their subscriptions gave them a further claim. It is that for which we contend. If the charity were rich we would throw the doors open as wide as possible; but when we see half a dozen candidates for every vacancy, and know that the funds cannot be distributed to a greater extent, then we must refer to the old adage that charity begins at home, and insist upon the prior claim of those now rejected. Surely common prudence tells us that if a charity is to be supported by gardeners, it must be shown that gardeners who support it are likely to gain by it; otherwise we strike away the motives that would naturally actuate them to aid its funds. It is very well to talk of philanthropy, and self-denial, and patriotism; it may be the proud boast of England that she is the country in which those virtues flourish most; and we admit their existence to a wonderful extent; but we submit that self-interest is with the mass of the world paramount to all such feelings, especially where money is in question.

That such is the case among many of those who advocate the present system of election is at least sufficiently plain. There are men among our correspondents who coolly declare that they subscribe in the hope that they may thus be able to secure a pension to some of the persons whom they happen to know. A subscription of a guinea a year is no doubt an economical way of procuring pensions of

15*l.*, by pestering and persecuting good-natured voters, but we doubt extremely whether any charity will be greatly benefited by the assistance of those who act upon such a principle.

Mr. WHEELER seems to hint that the committee are not sufficiently particular in ascertaining all particulars of the character and life of the applicant before they admit him a candidate; but in this we trust that the committee is unassailable. If it were otherwise, they would act with great injustice to the subscribers, who trust implicitly, in most cases, to the statements made in the voting papers. At least we can say that such has been our own case, for we do not remember having had the slightest knowledge of the candidates to whom we have given our votes, except in one instance. At all events, we feel sure that the discussion which has been raised will be productive of good. Mr. WHEELER's objects are the same as our own and as those of the majority of the subscribers; his suggestions deserve the attention of the committee; and we have no doubt the remarks which have been made will be found to tell at the next election.

The death of Mr. ANDREW MURRAY, announced in another column, causes a vacancy in the Curatorship of the Botanic Garden at Cambridge. It is to be presumed that the Trustees, in filling it up, will again have recourse to the system of public examination; and we shall be curious to know who will be the fortunate candidate. We cannot say that we anticipate many English competitors, for it must be owned that English gardeners are upon the whole not more conspicuous for their skill in cultivation than for their unacquaintance with Botany—that is to say with the names and distinctions of plants.

Those of them who are ambitious of securing one of the best prizes in the field of English gardening will now see the importance of attending to the advice we have so often given, that they should neglect no opportunity of making themselves acquainted with that humble kind of botany which consists in knowing the names of the plants they grow. To be ignorant of the names of common plants; not to know common plants when they see them; is, one would think, a deficiency which would by common consent be set down as disgraceful to those on whom it can be proved. Nevertheless the deficiency exists, and will continue to exist until the possession of some reasonable botanical knowledge is made a condition by those who employ gardeners. If it were settled that a man acquainted with the names of plants should be worth 5*l.* a year more than he who knows nothing about the matter, we should soon have our young gardeners at work in earnest to qualify themselves for the higher wages—and that time is quickly coming on.

ON PEAT-EARTH PLANTS.

THE plants that require peat-earth in their culture contribute vastly to the beauty of our gardens; the Rhododendrons alone are beyond all praise; their evergreen foliage and the gay colours of their masses of flower render them ornamental in the highest degree at all seasons of the year.

The other peat-earth plants, from the Azaleas, Kalmias, and Heaths, down to the tiny Sundew (Drosera), on the peaty swamp, are all so exceedingly interesting, and of such easy culture, that we never can have enough of them, and why? Because both noblemen and amateurs are unable, from want of means, to prepare the hills and dells of peat-earth really necessary to grow and flower this section of plants in perfection.

These hair-rooted plants not only require a peaty soil, but from the extremely attenuated character of their feeders, they cannot be successfully cultivated without a great proportion of sand in the compost; nay, the necessity of a sandy medium is so great, that some species which only flower and seed freely when grown in sandy peat, will live long, and even flower in very sandy loam, although all experience goes to the exclusion of common garden-earth from their culture. It is therefore clear that sand is not to be dispensed with in the cultivation of peat-earth plants, and we have only to look at the higher order of Heath growing in pots to see it confirmed.

But this is not all; for we find the first practical men of the day using a larger volume of soil or compost than their forefathers were wont to do in the culture of Heaths; and, moreover, using the greatest precaution as to drainage at the bottom of the pots, and having vegetable fibre intimately incorporated with the compost; and, lastly, but not the least important for our present purpose, a portion of mountain pebbles, frequently flint, and sometimes freestone, of the size of one's "fist," are to be found mixed with the peat soil in the pots and tubs in which the finest specimens of Heath cultivation have been exhibited.

Now, since there can be no doubt as to this being good practice in getting the finest of the tribe of Heath-mould plants to produce their flowers in the greatest profusion, let us turn it to account out of doors; for it is only by thus appealing to ideas already established, that I can hope to convince any one of the extravagant waste of expensive materials which we constantly meet with in the making of peat beds for Heath-mould plants.

The sand and stones used in the late Mr. M'Nab's compost is stated at one-third part of the volume of soil. Now, as reason and experience go to prove that a globular mass of flint, if not perfectly neutral in the soil must be very nearly so, for its surface in proportion to its solid content is the smallest surface possible, and where an infinite number of angular pieces are to be found in the compost of a similar nature, in the form of sand, the mountain pebble is, to say the least of it, a clumsy looking grain of sand when used in the soil as I have stated.

Now, although a clumsy lump of stone, occupying space in a flower-pot, would be anything but desirable if it were neutral or even nearly so, the case would be very different out of doors, and, for the reasons which I am about to state, a clumsy harmless medium becomes very desirable to fill up with; if perfectly neutral, it will do well, but if beneficial as a part of the compost so much the better.

With this view I planted out a quantity of specimen Heaths eight years ago, and in transforming the soil from common garden earth to grow specimens of hardy Heaths, it was necessary to remove the garden soil and replace it with peat, sand, and stones. This was easy enough, and required no further consideration, had it not been for the race with time to gain a given point and save a blank parterre by making it at once into a Heath garden. The compost was put in, but instead of the proportions being sand and stones one part, and peat soil two parts, it was as follows: Very fine peat reduced to powder, one-ninth part; sand, two-ninth parts; and stone (being in abundance on the spot), six-ninths of the whole mass.

Now, let it be observed that this was no novelty or experiment, for the plants were not planted in any untried medium, but in the best peat and sand, and with great depth of this peat bed to run into; and when these specimens, five years after, had to be removed to make room for alterations, it was matter of regret to put a hand to plants doing so well.

Here, then, we have data to calculate the cost of ordinary peat earth beds, as compared with this one. Soil fit for Heaths about London may be taken at 20*s.* a cart-load, but to prevent cavil we shall take it at 10*s.* per cubic yard, consequently every 4 yards of the surface of a peat bed 18 inches deep will cost 1*l.* sterling for the peat. To save this outlay all sorts of expedients are resorted to, such as adding loam to it, old tan, rotted sawdust, old spent hotbed dung, leaf-mould, &c. Now, I tried the experiment of intimately mixing loam and peat in fine powder, and planting Sage plants in the compost, and found that the peat, being a vegetable substance, was very soon gone, and the loam, like the hungry kine, had devoured it; and it is only because peat is generally mixed with loam in lumps, and not intimately incorporated as in the above case, that it remains unchanged, for if inert peat can get loam with its turfy decaying vegetable fibre, and a taste of lime in the form of marl, &c., it will go to build the nearest living vegetable, and remain no longer inert peat; no, nor "leave even a rack behind." To a person unacquainted with plant growing, nothing could be imagined more unreasonable than to try the experiment of growing choice plants in a compost of clean washed stones and clear water, yet all the propagators use it; and go where you may, the same damp silver-sand is the lightest food that is administered to the most delicate subjects. I mention this to calm the fears of those who might jump to the conclusion that my ideas of growing Heaths, &c., on heaps of stones were either new or untried; but this assuredly is not the case, and I know of no point in which the gardener is so far ahead of the agriculturist in "tilling the soil" as on this, for the farmer will "marl—mud—clay—chalk — pare — burn — bone — lime — salt," &c.; but where will you find an instance of the agriculturist taking to a sand-pit for one of the ingredients of "good husbandry?" I have weighted light land with stones for the cultivation of Strawberries, and for the purpose of retaining steep slopes in their proper shape, and have invariably found the character of the light land thus laden wonderfully improved. Scarcely a compost of any kind is made up in horticulture without sand, and seeds are seldom so well started as in a soil made firm, yet friable, with sand; but to return to the preparation of peat beds, the finest turfy peat with white sand and stones ready mixed on the moor, is very good for every purpose, and a very excellent compost, well suited to the parties whose lots are happily cast in its immediate vicinity, still the transit of such dead weights as sand and stones to great distances amounts to the prohibition of the article altogether.

The best peat or heath-mould resembles very rotten leaf-mould, and from this down to black muddy earth there are to be found peats of all grades; still the article in question, when pure, is very light—so light that no ordinary cart could contain one-half of what a horse could draw upon good roads. Now, to the parties who long for peat beds, this is indeed good news; for, by the aid of a few old guano bags, or corn sacks, such a quantity of dry peat soil, minus the sand and stones, could be carried by cart or railway luggage-truck as would delight the amateur's heart without pulling so heavily at his purse-strings as when, in addition to the peat, he used to pay for the wet in it (water), the sand in it (stones), the stones in it (stones again!), and the vegetable fibre in it (straw). Here, then, we have the articles wanted marked out to us by the most successful culture of that type of the tribe — the Heath. The vegetable matter, whether it be called heath-mould, peat, or leaf-mould, must be had; and more than half the cost of this article will, under ordinary circumstances, be saved if this, the most important ingredient can be had by itself.

The stones may very frequently be found upon the spot by digging for them, and separating the article wanted from the materials with which it may be imbedded; ordinary gravel, screened from the finer clayey particles that bind it, will be found an excellent ingredient, and when it is considered that two-thirds of the peat bed may be made up of the material from the nearest gravel pit, things will assume quite a different aspect, and hundreds may enjoy heath-mould plants now that dared not hope for such a luxury when the soil was a guinea a load to grow them in.

The article sand needs no comment, but the vegetable fibre or surface part of the peat turves may generally be manufactured at a tenth part of the cost of carting dry dirt from the moors, as compost, under the name of getting the turf or Grassy part along with it. Now this is dangerous ground to enter upon, and no doubt the sticklers for the "turf" will not yield this point quietly, for of all other practical points this of "the top spit," paring it thin, with the heath and Grass adhering, is considered as the getting the soul along with the substance of the compost in the collecting of either loam or peat.

If the surface be Grassy, the ingredient is neither more nor less than hay more or less dry, and if so, the chaff cutter will furnish you, as it has furnished me, with chopped straw or soiled hay, for the veriest trifle, to any reasonable amount for mixing with soil, and in the case of stunted heath, which, when decomposed, amounts to a very small item in the compost, it is but leaf-mould and wood; and for all practical purposes, if it were really wanted, which it is not where good peat and sand is in abundance, it might be counterfeited by mixing the ingredients of which it is composed, such as sawdust and short Grass, such as the hopper of the mowing machine will supply at a much cheaper rate than the distant moor-land.

Ordinary peat soil is so light that plants have great difficulty in taking to it after planting, and the constant complaint in cultivating American plants is the difficulty of securing a supply of water at one season without saturation or flooding at another; and when we add to this the practical difficulty of getting the wood ripened, without which no plant can flower or fruit well, we shall not fail to appreciate the value of the stones in the building of peat beds, for they give firmness where the soil would otherwise be frothy, and in their crannies hair-rooted plants find that moisture without mud which they delight in, and though firm as a rock upon the surface, the mass of stony peat will remain light and porous, moderating all excesses of heat and cold, and of wet and dryness. *Alexander Forsyth, Saint Mary's Church, Torquay, Devon, June 25.*

DISEASES OF PLANTS.

(*Continued from p. 420.*)

GENUS IV. ERGOT.—This disease, known amongst us by the several names of *Granosprone*, *Frano ghiottore*, *Fame bianca*, *Fame nera*, *Cresta di gallo*, and *Cerrone*, attacks Gramineæ, and especially Rye. Tessier has erred in supposing that Italians admit two sorts of ergot, one of those which he alludes to being a very distinct genus which we call rhachitis, and has been investigated under that name by Roffredi, as will be seen under my next genus. The *ergot* is that disease by which the grains change their form in the ear before the latter issues from the sheath. They become irregularly round, of a greenish colour. As they dry they assume a dull tawny colour, the epidermis becomes rough and brittle, and the seeds themselves have more the appearance of round berries, of different sizes, than of oblong corn grains; they are full of a fibrous, lamellar substance. I have myself seen very little of the Rye ergot, and what I have to say on the disease is chiefly taken from Ginanni's "Treatise on the Diseases of Grain," and from Tessier's work. Two species may be admitted.

First Species. MALIGNANT ERGOT. — The grain, though enlarged, retains the globular form above mentioned, and a violet colour. The interior is of a blueish grey. The flour made from it has a most nauseous smell and an acrid flavour; it gives the bread a dark, blueish hue. This is the grain that produces the *Rafania.**

Second Species. MILD ERGOT. — The external appearance is the same, but the interior of the grain is white, farinous, and without odour. It does not appear to be productive of any mischief if used as flour in bread. Whether these two forms be two different diseases or not would require further investigation; without giving way to flights of imagination, as is too often the case in the inquiry into phenomena, which for the most escape the powers of the naked eye.

On comparing all that has been written by authors, who not unfrequently confound the *rhachitis* with the *ergot*, it seems that the latter disease, although it attacks Rye in preference, is not unknown on other Gramineæ. It is also observed that in some countries, although covered with Rye fields, ergot is quite unknown. It shows itself the most in places with a southern aspect, in light sandy soils, when the spring has been hot and dry, and in autumn-sown or early-sown Rye fields. The first symptom is a shining, viscid liquor, of a sweet flavour, which covers the external as well as the internal surface of the chaff, although this

* The word is unknown to me, but I presume it to be the well known disease resulting from eating ergot Rye.—*Trans.*

liquor is not always present, nor on all the ears. At the time of flowering there are found on the ears a great quantity of minute insects resembling the small flies that swim on vinegar. At other times there are minute worms resembling little eels, of which there may be seven or eight under each scale of the chaff. Tessier has observed the great rapidity of growth of the ergot-grain; if the total length it attains be 12 lines, it will grow two in the course of 24 hours.

Ginanni, having observed that the ergot contains insects whose existence had already been shown by Needham, attributes to them the production of the ergot. Fontana, having followed the development of these insects from the egg to their perfect state, thinks that the deformed grains must be considered as of the nature of gall-nuts; he considers the disease as contagious, and he also attributes it to the insects. But having, on a subsequent occasion, repeated his observations, he did not find insects in every grain, and therefore considered the doctrine as probable only, but not established. Others attribute the disease to the vicissitudes of the seasons, or to the humidity of the soil. But none of the causes which have been assigned can account satisfactorily for the production of this singular disease. The disease being recognised as contagious, it follows that precautions must be taken against it. The first would be to pass the seed corn through a sieve, in order that the ergot grains may, from their size, remain. Steeping is the next thing; and, if humidity of soil promotes it, proper draining must, as in other cases, be resorted to.

VILLA AND SUBURBAN GARDENING.

The importance of having all plants, including fruit trees, properly named, even in small gardens, cannot be too clearly pointed out. A plant may have beautiful foliage and flowers, but without a name it yields comparatively little interest. Every plant has a history of its own, and the first step towards obtaining a knowledge of that history is its name; the next its native country and year of introduction into our gardens. A garden of plants without names is like a library of books without their exterior superscriptions. Numbers are only useful to nurserymen. All garden plants should be properly named. The season of propagation is chiefly when plants are out of bloom, and the want of diligent care in retaining their names too frequently leads to a confused nomenclature. The vast numbers of new plants which are being continually introduced, as well as the host of garden varieties every year brought under the amateur's notice, is quite perplexing to him, unless constant attention to correct labelling is observed. Then, again, with regard to fruits, how much uncertainty would be removed by keeping labels of a permanent kind to every tree. Small gardens cannot, or ought not, to find room for indifferent kinds of fruits, or uncertain bearers, hence the importance and the advantage of knowing every kind we cultivate. How much trouble is thereby avoided! for it frequently happens that the difficulty and expense of obtaining the name of a single fruit are much greater than the attention necessary in keeping the names to the small collection which the limited space of a suburban garden admits.

With respect to the particular kind of label which it is most desirable to employ, there is a good deal of uncertainty. Some persons prefer some of the new kinds now in existence, while others adhere to the old wooden label, which, after all, has not yet been very satisfactorily superseded; whatever kind of material is employed, however, the names should be accurately and distinctly written. *Pharo.*

GUANO.

Gentlemen! take care of your pockets. The manufacture of guano out of loam, which had slackened lately, is revived in full force. To one loam-hole the same waggon has twice repaired on the day when this is written.

Home Correspondence.

Drying Plants for the Herbarium.—I have drawn up the following memorandum respecting the process by which I dry plants for an herbarium, not with any impression of its superiority over other ways; but in the hope that it may suggest some useful idea, which, in more skilful hands than mine, may be turned to good account, by rendering easier the tedious task of the botanical collector; and if, in return, any of your correspondents could point out to me any improvement on this plan, I should feel much obliged. The box in which I place my fresh specimens is about 10 inches deep, 13 long, and 3½ broad, and in shape exactly resembles the leather cases sometimes used as covers to portable *secrétaires*. It is made of tin, covered with light-coloured leather, and strengthened with stiff pasteboard. The mouth of it (13 inches by 3½) is closed by a flap fastened to the front by two buckles; and straps sewn to the sides enable the collector to wear it conveniently, like a game-bag. Heat passes with some difficulty through the sides of this box. I have often carried specimens for a whole day under a broiling sun, without scarcely finding any of them drooping. As fast as I collect the plants, I press them gently down to the bottom of the box, for the double purpose of economising room, and of keeping them from injury by shaking; and in this manner I can stow away a considerable quantity in a small compass. Very few kinds of plants are injured by this treatment. As for Poppies, Glauciums, Roses, Cistuses, and other plants whose petals are very deciduous; and specimens, such as Irises, whose flowers are liable to be bruised and broken, I collect them when the buds are about to expand; and then, by placing their stalks in water when I return home, the flowers bloom in the course of a few hours, and I am able to transfer them quite fresh and uninjured to the drying sheets. If the weather is very sultry, I refresh the plants in the box with a little rinsing of water. The paper I employ in the drying process is of two kinds. One is grey or brown "filtering paper" (I believe it is so called), used by chemists and apothecaries; and the other is the thin white "copying paper," to which merchants transfer copies of their letters. I place the plants between the folds of single sheets of the white paper, alternating with four or five, or more, of the grey. The advantages of the "copying paper" are that, from its being of a different colour to the other, the collector is able to perceive at a glance the sheets containing plants, without the chance of passing any over; being semi-transparent, he can recognise nearly every plant without having to open the sheets; and, being very absorbent, the dampest sheet dries in the course of five minutes. Add to this, the further recommendation of the smoothness of its texture, a desideratum in drying delicate plants. At least once a day I change the damp grey paper, scattering it to dry, over the floor of a room. The white sheets require no changing whatever, and the plants may remain in them undisturbed until dry; except, however, in certain cases, as with some kinds of Poppy, Pæony, and Hyoscyamus, which are apt to ferment and become mouldy, and with some bulbs which adhere to the paper. The flowers of some plants (as some kinds of Iris), curl up the moment the sheet which contains them is opened, and all the care in the world will not restore them to their proper shape. Such plants must therefore not be touched until perfectly dry. I find that sheets of stout pasteboard may be used with advantage for the separation of plants that are nearly dry from those that are not so, and the delicate from the rough and thorny, &c. After submitting the plants for a day or two to considerable pressure, to flatten them effectually, I place them under a moderate weight, which I decrease as they dry. Instead of mounting my plants on half sheets, as is sometimes done, I paste them on the third page of loose whole sheets of stout white paper (the fold of the paper being on the left hand). I make use of a mucilage of gum-arabic and tragacanth, but as it injures the colour of some flowers, it should be employed discreetly. Each sheet contains solely plants of the same genus, and beneath each specimen I inscribe its technical and English names, the place where found, the date, and a number corresponding with one in my register. To facilitate reference, I write on the outside of each sheet, in the extreme left hand upper corner, the genus contained within; and as regular botanical classification involves some difficulty as to the speedy discovery of any particular genus, I find it more convenient to arrange my plants alphabetically; for instance, thus: Aconitum, Adonis, Æthionema, Agrostemma, &c. To look for a plant I merely let the corners of the sheets slip through my fingers, as if I were looking for a word in a dictionary, and I immediately discover what I require. This arrangement does not interfere at all with subsequently classing the collection when quite complete, according to any particular system desired. I preserve my mounted plants between two boards, the whole being kept together by several straps. I alluded above to my register. It is arranged in a tabular form, containing the consecutive number, date when collected, botanical and English names, colour of flower, quality, where found, nature of soil, and remarks. Under the latter head I make memoranda like the following:—"Very fragrant—climbs—parasitical on Wormwood—leaves appear after the flowers—seeds quite ripe on the 20th June—Turkish name, Kardash Kâni—cultivated—roots eaten by the natives—roots contain a red dye," &c. I find it better for travelling not to use screw presses for drying my plants, as the screws are liable to get broken or warped. I place my collection between two boards, bound together with cords; when I arrive at a station I put some heavy weights thereon, and when *en route* I stow my plants among my baggage, to protect them from the heat of the sun. *H. H. C., Erzeroom, May* 1850.

To kill Saw-fly on Roses.—Three years ago this pest destroyed nearly all the foliage of my Roses. Last year, after a great deal of mischief had been committed, I put some white Hellebore powder into a piece of muslin, and dusted the foliage of the trees with it. This proved an efficient remedy. This year it began its ravages much earlier (about a month since). I have again tried the powder with success. In applying it I take the advantage of a still evening, just when the dew begins to fall. *W. U.* [Take care that the white Hellebore powder is not spoiled by keeping.]

Change of Note in the Cuckoo.—The peculiar notes uttered late in the season are not the notes of the old bird, but the first attempts of the young birds preparatory to taking their departure. This will likewise account for the tameness of the bird, as mentioned by your correspondent. *W. H. R., Southampton.*

Are none of the less recently introduced Conifers fit for our Public Parks?—While in our day scarcely a year has passed that our pleasure gardens have not received some new and elegant feature, what, may I be permitted to ask, has been done in our public and other noted parks and forests, to keep pace with the progress that has characterised other branches of horticultural practice It is true that Lord H—— and Mr. C—— have planted everything likely to permanently embellish our landscapes, but these instances are far apart and not easily accessible. A ramble in any of the noble parks within 20 miles of the metropolis would hardly afford an instance; so that the inquiry that was recently and naturally addressed, "are none of your much-talked-of Pines fit for the forest after all?" had its origin in feelings of disappointment at finding trees of the reputed growth of 200 feet still nursed in pleasure gardens. Visit the Great Park at Windsor, pursue the search from one end to the other, "splendid capabilities exist," but there will not be found a single touch from a landscape painter of the modern school; noble evidences of the genius of the old masters are to be found on every side—stately Oaks, wide spreading Beech, noble Elms, all framed with magnificent avenues; but we seek in vain for the delicate refreshing green of such Pines as insignis, now an old friend amongst us. What a fine effect would be gained by a few groups of P. insignis, excelsa, Sabiniana, Lambertiana, and Deodars, and how much the bare and savage grandeur of the forest scene would be relieved by such planting? It cannot now be said that the Pines I have enumerated are rare; in most nurseries of repute they may be obtained by the hundred. I speak of grouping Pines. I am of opinion that to obtain the true effect of each kind, and even to procure their most favourable development, many, if not all of our Pines should be grouped, leaving each tree ample space to attain its full and perfect development; and, for this, positions must be sought in our broad parks. Early collectors and admirers of Coniferæ were compelled to confine themselves to a single plant of each kind, which was duly transferred as soon as obtained to the Pinetum. This system of arrangement was dictated by necessity rather than taste, and the value of such a collection was in every way useful and interesting. Who that has seen the Dropmore collection has not been grateful to the noble lady who at so much trouble and expense formed it, and to the clever gardener whose attention and skill have so much promoted the development of the object of it; but several of these Pines are already shouldering each other for room, and seem to want more breathing space, as will be the case in all Pinetums, unless acres be appropriated instead of roods. It would be ingratitude not to acknowledge the advantages we have derived from these early Pinetums; we are enabled to select the really valuable from the general collection, and suffer no hazard; but our gratitude surely need not lead us to repeat a system which belongs more particularly to a botanic garden—that of planting Conifers apart from all other trees, perhaps in formal rows, at stated distances. No, our gardens are not large enough for our coniferous riches—there is breathing space in our parks and wastes. Plant, I say, abundantly—such, for instance, as Douglas Firs, Picea grandis, the Deodar, Pinus Lambertiana, macrocarpa, Sabiniana, insignis, excelsa, and a score more which need not now be enumerated; but plant them away from the shrubbery, out of the garden, wherever there is breadth and breathing space, where they may be allowed to remain, to give a new and beautiful feature to rugged scenes, to give warmth and perpetual verdure, and better still, according to the estimation of this utilitarian age, fine timber, and thus a good return for present expenditure; our children's children will be grateful for the boon. *W. I.*

Remedies Proposed for the Sting of the Bee.—I have tried all kinds, and the juice of the Onion has been successful with all on whom I have tried it—men, women, and children. The secret consists in taking out the sting and applying the juice at once, rubbing it well in. If you allow a long time to elapse before you apply the remedy, the poison has spread so far into the system that it becomes hopeless to attempt to destroy it by any measures; it is almost certain to take its course. This is an additional reason for using Onions, which are sure to be at hand. *A. L. M., Spinfield.*

Slough Carnation Show.—I have to thank "An old Amateur" for his "hint;" but I am sorry to say that it cannot be acted on on account of Rule 6, which states that "Names, fairly written, must be attached by exhibitors to the flowers; and the judges are restrained from awarding any prize if this regulation be not complied with." *John Edwards, July* 9.

Botanical Nomenclature.—I believe that the article of June 22d on the advantage of rendering natural knowledge into intelligible language, making it, as far as possible, part of the mother tongue, has given the greatest gratification to all who wish to see knowledge flourish and pedantry decay. It is indeed high time that gallipot and nursery Latin should be abolished, and that anything a man knows he should be enabled to communicate in one language at once. The universal language of science for the learned—the vernacular for those who speak their mother tongue—is, as is well put in the article alluded to, no doubt, the right view of the subject. I, among many, rejoice that a decided step has been taken in this direction, at last, by one possessing the means of carrying the matter forward with rapidity and success, and I heartily wish him God speed in this most important effort for bettering the mental condition of Englishmen. *L.*—— I am sorry that I cannot agree in the proposed new Anglicised names for plants. It is all very well for common plants which everybody knows, such as Wallflower, Pink, Daisy, Hollyhock, &c.; but it seems to me that inventing new names for the multitude of exoties which are now introduced is, to say the least,

labour in vain. As plants become common, so will their botanic names also become familiar, as Fuchsia, Azalea, Camellia, Rhododendron, Kalmia have already. A more useful reform would be, I should think, if care was taken by botanists to give names more short and easy to pronounce than many of those given of late years, and eschewing those derived from the Greek, as many of those of Ferns and Orchids now are, such as Anæctochilus in the latter, and Didymochlæna in the former. A friend of mine calls that Fern "Diddle me clean, oh. I can't master such a name." Another very desirable plan would be that of the late Dr. Herbert, requesting that all garden hybrids should be distinguished by the specific name being in the genitive case, and real wild species by the adjective. Thus the new Fuchsias should be called Eppsii, Chandleri, &c., not Eppsiana, Chandleriana, and so on with all other plants. This might be easily done. Why should not the two societies, Horticultural and Botanical, name a committee of nomenclature for new plants? allowing nurserymen to give their own seedlings their own names if they please, but taking care that such name is in the genitive case. Continental botanists would be most thankful for such a plan, to prevent the daily increasing confusion of species, &c. Plants ought to have their names registered, and if shown for a prize under any other name to be disqualified. I throw out this as a hint which I think will be useful. *A Member of the Horticultural and Royal Botanic Societies, Sennicote, near Chichester, July* 4.

——I agree almost word for word with the article signed "Nomenclator," with perhaps this difference, that I would Anglicise the terminations of generic names only in the cases of plants and animals, which are often, as with Orchids, mentioned in conversation. *C.*

——I believe it to be impossible, or at all events a matter attended with the greatest possible inconvenience, to change the present system. It may be a pedantic one, but the error has been committed (if error it be) of giving names unpronounceable except by the highly educated; and it appears to me that the evils of change would be far greater than continuing the Greek and Latin derivations. In the first place, from the peculiarity and difficulty of acquiring the names, they are impressed on the memories of those who have not a knowledge of the dead languages, and they are forcibly impressed also on those who are able to appreciate the aptitude of their application. In the second place the difficulties of giving English names (as translations) are insurmountable; some of these have been exposed by "Nomenclator;" but look at Anglicising "Clitoria ternatea," or even calling Stanhopeas Stanhopes, which name has for years been applied to a particular two-wheeled vehicle. I will say nothing of the hardship of making all who have learned the names under the old system recommence their education by forcing them to learn the new. I dislike pedantry, and if botany and floriculture were in their infancy, I should hope that good honest English names might be given, though this now I consider would tend to separate English botanical science from that of the rest of the world; the use of the dead languages for the names and descriptions of plants makes the discoveries of scientific men of all countries known to the world at large, whereas the use of any one modern language for this purpose would sadly curtail this knowledge. *T. D. H.*

Death of Mr. Murray.—I am sure that you will be sorry to learn that we have lost the excellent curator of our botanic garden, Mr. Andrew Murray. He died on Thursday last, the 4th of July, after a very short illness. Few persons have been so highly respected as he was, and no one can have better deserved respect. From having seen much of him, I had come to regard him as a friend, and was greatly grieved to learn, on my return home, that he was dead. You may recollect that he was chosen by examination from amongst a large number of candidates, in April 1845, and the value of that mode of selection could not have been more strongly shown than in his case, as I am convinced that it would have been impossible to obtain a man better fitted for the office. We can hardly expect as good a man to succeed him. All who have seen what he has done in converting a corn field into a botanical garden containing one of the best collections of hardy trees, shrubs, and herbs in the kingdom (see the catalogue which he has recently drawn up and printed), can and must appreciate his eminence in his professional capacity; but it is only those who have become intimately acquainted with him, as I have done, who know his full value. Thoroughly understanding his business, both in its scientific and practical departments, he was respectful but firm in his well formed opinion towards his superiors, and a good master to those under him. He has left a widow and young family to lament his loss. In a word, all who have had intercourse with him, either private or professional, must feel regret at his death. *Charles C. Babington, St. John's College, Cambridge, July* 8.

Purification of Water.—The poor people in the village of D—, consisting of 30 cottages, depend on a small shallow pool, to which cattle have access for water to drink. It is often, as at present, muddy, green, and odiously fetid. Some of the richer inhabitants are willing to go to the expense of from 20*l.* to 30*l.*, to build a large filter in the pool, if they could ascertain that it is possible, under the circumstances, to make a filter which would purify such foul water. As our pool is over the chalk, the bottom must not be broken. It has occurred to me that the best method would be to build a 9-inch wall, with small holes in it, 4 feet in height, or equalling the depth of water, in a circle about 14 feet in diameter, and in the middle of this to build another circular wall, with holes in it, about 3 feet in diameter, filling up the space between the two walls with oblique layers of sand and gravel or other filtering materials. A pump on the banks of the pool might communicate by a pipe with the central receptacle, 3 feet in diameter; and as soon as a bucket of water was pumped out, an equal amount would, I hope, soon percolate inwards through the oblique layers of sand and gravel. I do not suppose that the consumption is 800 gallons per day. If any one will give the result of their experience in any similar case, it will be doing a real act of charity to all the poor of our small village. The first and main point is whether such foul water, apparently holding organic matter in solution, can be purified; and secondly, under the circumstances described, what would be the best kind of filter. In the plan here suggested the filtering materials would always be waterlogged, and not occasionally aërated, as in common household filters; whether aëration is important I know not. Lastly, how long will a filter continue to act without any care being taken of it? Any annual subscription would be obtained here with difficulty. As the filter, moreover, would have to be built in the middle of the pool, it could be cleaned out at most only once a year, during the driest part of summer. *C. D.* [We insert this letter in the hope that some correspondent may kindly give "C. D." the benefit of his experience. There is an invention called the hydrostatic syphon water purifier, patented by Mr. Alfred Bird, experimental chemist, Birmingham, which, if it acts well, seems likely to suit such a purpose as this.]

Societies.

CALEDONIAN HORTICULTURAL, *June* 6.—The weather being unfavourable, the visitors were not so numerous on this occasion as usual. Ranunculuses: 1st, Mr. Young, Newington Lodge, for Queen Victoria, Prince Albert, Minerva, Dr. Goldsmith, Ramsay, Florida, Earl Grey, Kilgour's Mottled, Vanguard, Apollo, Kilgour's Straw Mottled, and John Knox; 2d, Mr. Mitchell, Kirkcaldy, for Lucifer, Defiance, Mrs. White, Garland, Jupiter, Queen Victoria, Jenny Lind, Rosa, Richard Cobden, Rebecca, Sunrise, and Prince Albert. Pansies: 1st, Mr. Gorrie, Inveresk, for Constellation, Magnificent, Model of Perfection, Cossack, Aurora, Blue Queen, Climax, Potentate, Lord Hardinge, Duke of Norfolk, France Cycolé, Sambo, Supreme, Miss Wedderburn, Lord Nelson, Almanzor, Pliny, Marchioness of Ailsa, Douglas, Brilliant Perfection, Optimus, Elegant, Hunt's Wellington, and Mrs. Bragg; 2d, Mr. King, Inveresk, for Rainbow, Supreme, Optimus, France Cycole, Marchioness of Ailsa, Potentate, Mrs. Bragg, Mrs. Hamilton, Zabdii, Constellation, Almanzor, Pliny, Magic Circle, Orestes, Lady Sale, Climax, Cremlin, Douglas, Alboni, Satirist, Elegant, Cypress, Ne plus ultra, and Aurora. Pelargoniums: 1st, Mr. Cossar, Peebles, for Beck's Cruenta, Arabella, Gustavus, Centurion, Lyne's Chaplet, and Queen Anne; 2d, Mr. Cameron, Trinity Cottage, for Negress, Gulielme, Forget-me-not, Tisiphone, Vixen, and Sir Walter Scott. Ghent Azaleas: 1st, Mr. Sleigh, Lauriston Castle, for pontica grandissima, Ne plus ultra, sulphurea picta, double blush, cruenta, paniculata picta, ignescens major, pontica compacta, alba flavescens, coccinea major, pontica carnea crispa, and calendulacea flammea. Ferns in pots: 1st, Mr. Veitch, Arniston, for Pteris hastata, P. arguta, and P. rotundifolia, Adiantum pubescens, Asplenium viviparum, and Lygodium scandens; 2d, Mr. Thomson, gr. to Dr. Neill, for Adiantum Capillus-Veneris, A. pedatum, Trichomanes brevisetum, Asplenium filix-fœmina monstrosa, A. fontanum, and A. alternifolium. Alpine Plants: 1st, Mr. Veitch, for Linnæa borealis, Astragalus leucophæus, Pyrola minor, Ramonda pyrenaica, Phlox aristata, Cerastium sylvaticum, Anthyllis montana, and Dianthus nitidus; 2d, Mr. Thomson, Canonmills Cottage, for Scilla verna, Myosotis alpestris, Ramonda pyrenaica, Erinus hispanicus, Alyssum olympicum, Erigeron alpinus, Saxifraga Andrewsii, and S. cotyledon. Asparagus: 1st, Mr. Renton, Ayton, for "Gravesend." Early Turnips: Mr. Stewart, Bangholm Cottage, for Dutch white. Early Potatoes: 1st, Mr. King, Inveresk, for Early Snowdrop Kidney; 2d, Mr. Cossar, King's-meadows, for Ash-leaved Kidneys. Peas: 1st, Mr. King, for fine pods of Prince Albert.

WORTON COTTAGE MELTING, *July* 10.—CARNATIONS: Puxley's Mars is a brilliant scarlet flake, with good white; shape and substance good, and quite equal to our best flowers of the same class. May's Antonio is one of the most noble rose flakes we have yet seen; it is well marked, and sufficiently full for all purposes. May's Romeo is a promising bright rose flake, which will be seen better as the season advances. PICOTEES: Matthews' Juno is a delicately marked purple flower of the same colour as Lady Chesterfield, and steady to its character as seen last season. Dodswell's Mary is a light red edge of very good quality; in truth, the flower is Youell's Gem, of double its size. Dodswell's Alfred is a superlatively fine and bold purple-edged flower, having white of the greatest purity; the edging is hardly so heavily laid on as in Wood's Princess Alice, whose colour it much resembles. Parkinson's Mary Ann is a promising red-edged variety. The above were all produced by Mr. Turner, of Slough. The same grower also supplied a bloom of his Pink, "Colcutt's Sappho," in very fine condition. PELARGONIUMS: Mr. Hoyle sent some pips of yearling seedlings, two or three of which exhibited considerable merits particularly Pretty Polly, a purple flower; and Vivianum, a remarkably bright crimson one. FUCHSIAS: A considerable number of seedling blooms, raised by Mr. Banks, of Deal, were placed on the table in fine condition. Several of them displayed much excellence, but we need not describe them more particularly, as we learnt they are to be exhibited on the plants. We cannot help remarking that the appointment of these meetings on a Wednesday has been very unfortunate; for as they are not held when any metropolitan exhibitions take place on the same day, raisers and exhibitors have been deterred from sending their productions, from the consequent uncertainty. Several letters have been received remarking upon this, but for this season we cannot now recommend any alteration.

ENTOMOLOGICAL, *July* 1.—W. SPENCE, Esq., F.R.S., in the chair. The chairman announced that Mr. Janson had been elected curator of the Society in the stead of Mr. F. Smith, and that the prize offered at a former meeting for the best essay on a genus of Tortricidæ, had been awarded to Mr. Logan, of Duddington, for a monograph on the genus Penthina. Specimens of the hitherto rare Zeuzera arundinis were exhibited by Messrs. J. F. Stephens, Bond, and Shepherd, and it was stated by Mr. Bond that the chrysalis of this singular moth is able to ascend and descend the interior of the stem of the reed with as much facility as the larva; when ready to emerge it pushes itself half out of the reed; a habit of which Mr. Westwood mentioned an analogous case recently observed in a species of Cecidomyia, a minute two-winged fly which resides in the same situation. Mr. White also noticed that a gigantic species of Cossus in the British Museum collection, from Australia, possesses similar habits. Mr. S. Stevens exhibited various rare Microlepidoptera recently captured, including Psecadia funerella, Sericoris littoralis, &c.; also part of a hamper made of Willow twigs attacked by vast numbers of Saperda (Gracilia) minuta, many living individuals of which were distributed among the members. Mr. F. Smith noticed the occurrence of great numbers of Leiosoma punctatum, at the roots of Sisymbrium officinale, and exhibited a drawing of some larvæ which he thought might probably be the young state of that weevil; also drawings of a species of Hydrobius, bearing a mass of eggs beneath its abdomen within a gum-like case. Mr. White mentioned that the genus Fluvicola of De Kay, hitherto placed among the Crustacea, was considered by Mr. Haliday to be the larva of some species of the family Hydrophilidæ. He also read a letter from Mrs. Hamilton relative to capture in India of a singular species of long-horned weevil, and also a notice of the zoological attainments of the late Dr. Leach. Mr. Westwood read the commencement of a paper consisting of Observations on the new Strepsipterous Insects brought from Albania by S. S. Saunders, Esq.; and Mr. Stainton read the description of Micropteryx aruncella, a small species of moth. Mr. Westwood brought for distribution a number of specimens of the case-bearing larvæ of Astyages hemerobiella? and also exhibited specimens of the larvæ of Lymexylon navale, which is, at the present time, committing much injury to the Oak planks in Pembroke dock-yard.

Review.

Loudon's Hortus Britannicus. A New Edition. By Mrs. Loudon. 8vo. Longmans.

IN one sense the last catalogue of cultivated plants will always be the best, because it is the most complete, provided due care is taken in preparing it. In this point of view this re-issue of Loudon's well known work will be welcome. It is carefully executed, beautifully printed, and brought up nearly to the present hour.

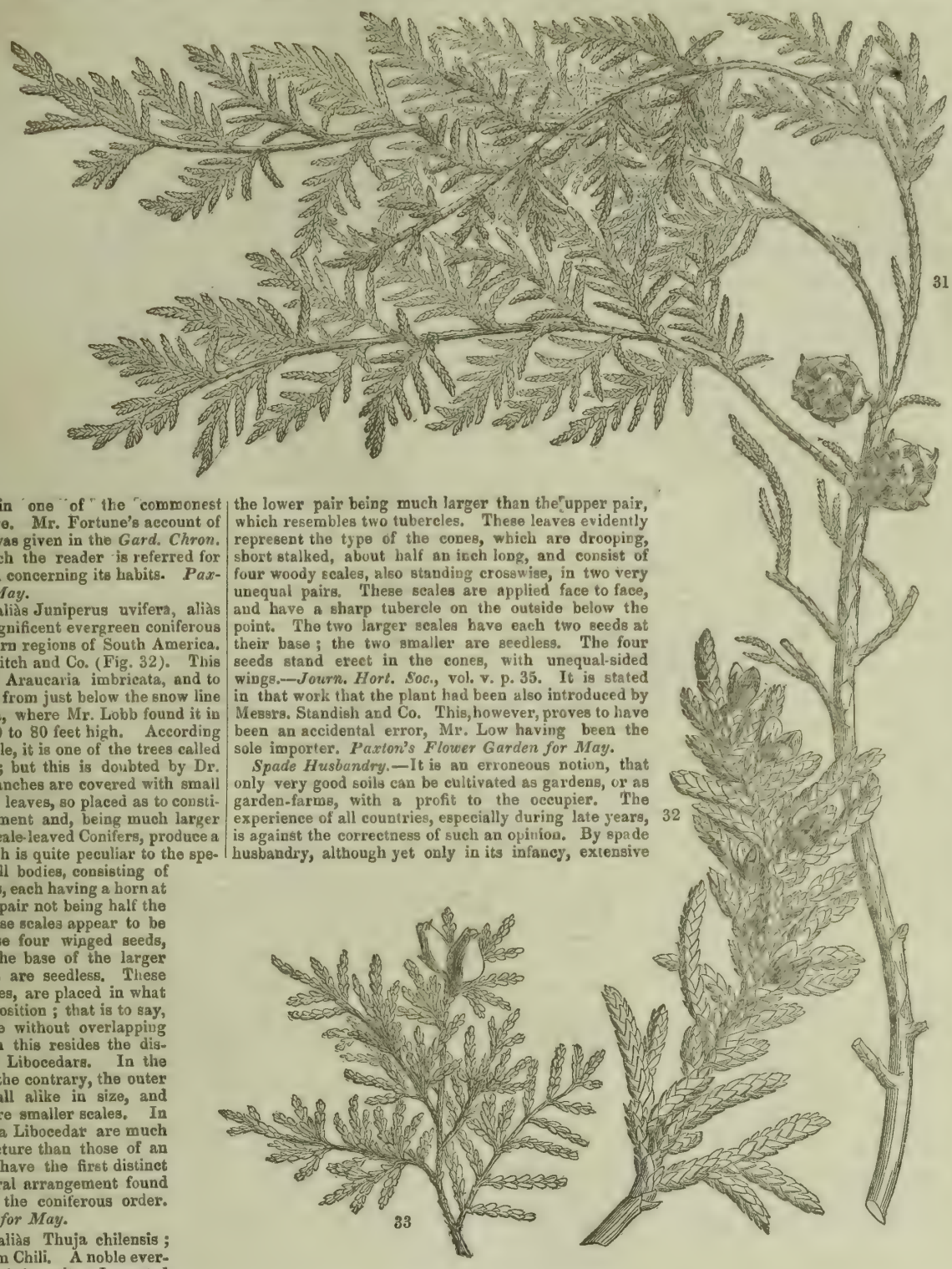
But there are serious faults in its plan, and especially in its classification. The present edition consists of two distinct parts. Firstly, of the old catalogue, arranged on the Linnean system, with a few additional references, and occupying 466 pages. Secondly, of a supplement of more than 200 pages, in which the plants not in the old catalogue are arranged alphabetically. By this unfortunate contrivance the two parts do not coincide; and they can only be compared with trouble and difficulty. The arrangement should have been wholly Linnean or wholly alphabetical; both bad for the purposes of gardeners, and when mixed indescribably inconvenient.

A person who consults such a catalogue wishes to find all the plants that belong to the same natural order collected in the same place. His inquiries necessarily lead him to want such assistance. But in a catalogue of this kind the object is wholly frustrated. If, for example, he wished for a list of Orchids, the old Linnean system would have put them all in Gynandria; but here they must be sought for in a hundred different places. So with Conifers; the Linnean arrangement would have brought them all into Monœcia, or Dicœcia; into two clusters; but here they have to be looked for in as many places as there happens to be genera. Faults of this kind are serious, and render Mrs. Loudon's catalogue very inferior to the last edition of Donn's "Hortus Cantabrigiensis." The greater completeness of the former will, however, we doubt not, give it greater value in the eyes of many.

We would only add a hope that the publishers will issue the supplement in a separate volume from the old stereotyped catalogue. It would be a great convenience to those who possess the latter, and who may not be inclined to buy it twice over.

Miscellaneous.

Cupressus funebris (aliàs Cupressus pendula).—A large weeping evergreen coniferous tree, from Chinese Tartary. Obtained by Mr. Fortune, and introduced by Messrs. Standish and Co., of Bagshot. (Fig. 31.) This is probably the most interesting coniferous plant yet in cultivation, and must in time displace the Weeping Willow. It is perfectly hardy, as was indicated by its native country. It is figured in Lord Macartney's Embassy to China, where it forms a weeping tree in the fore-ground of the view of the "Vale of Tombs," a place situated in the inclement climate of Zhehol. The rude representation of it on Chinese porcelain, having been copied by our manufacturers, have given rise to the "willow-pattern" found in one of the commonest kinds of English table-ware. Mr. Fortune's account of his discovery of the tree was given in the *Gard. Chron.* for April 13 last, to which the reader is referred for more detailed information concerning its habits. *Paxton's Flower Garden for May.*


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Libocedrus tetragona (aliàs Juniperus uvifera, aliàs Thuja tetragona).—A magnificent evergreen coniferous tree, from the cold southern regions of South America. Introduced by Messrs. Veitch and Co. (Fig. 32). This promises to be a rival of Araucaria imbricata, and to be as hardy; for it comes from just below the snow line of the Andes of Patagonia, where Mr. Lobb found it in the state of a tree from 50 to 80 feet high. According to the officers of the Beagle, it is one of the trees called by the Spaniards, Alerçe; but this is doubted by Dr. Hooker. The young branches are covered with small thick dark green scales or leaves, so placed as to constitute a four-sided arrangement and, being much larger than is usual among the scale-leaved Conifers, produce a massive appearance, which is quite peculiar to the species. The cones are small bodies, consisting of two opposite pairs of scales, each having a horn at its back, and the exterior pair not being half the length of the inner. These scales appear to be whitish inside, and inclose four winged seeds, which stand in pairs at the base of the larger scales; the smaller scales are seedless. These scales, of two different sizes, are placed in what botanists call a valvate position; that is to say, they all touch at the edge without overlapping any interior scale; and in this resides the distinctive character of the Libocedars. In the Arbor-vitæs (Thuja), on the contrary, the outer scales of the cones are all alike in size, and always inclose two or more smaller scales. In other words, the cones of a Libocedar are much more simple in their structure than those of an Arbor-vitæ, in which we have the first distinct commencement of the spiral arrangement found in the higher branches of the coniferous order. *Paxton's Flower Garden for May.*

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Libocedrus chilensis aliàs Thuja chilensis; aliàs Thuja andina. From Chili. A noble evergreen, with the habit of an Arbor vitæ. Imported by Messrs. Low and Co. Natural order Conifers. (Fig 33.) A fine evergreen tree. Mr. Bridges says that it is from 65 to 80 feet high; Sir W. Hooker, that it is a tree from 30 to 40 feet high, of great beauty, and well worthy of being introduced into our gardens. Pöppig relates that it resembles the Arbor-vitæ, but is less robust, sometimes branching from the base, and gaining the habit of a Cypress, but in other cases forming a conical head. "The trunk," he adds, "of this last variety is simple as high as the middle, straight, taper, clothed with a rough cracked bark of a brownish ash-colour, knotty, scarcely more than a foot thick, with a yellowish, resinous, hard, strong scented *(olente)* wood." Whether it will bear the climate of England without protection is at present uncertain. The young branches of this tree, when they are visible, are compressed, obovate between the nodes, and bright green, with glaucous furrows; they are, however, for the most part, hidden by the leaves. The latter, which are compressed, blunt, and keeled, are glaucous at the sides, but bright green at the back and edges; they stand in two pairs crosswise, the lower pair being much larger than the upper pair, which resembles two tubercles. These leaves evidently represent the type of the cones, which are drooping, short stalked, about half an inch long, and consist of four woody scales, also standing crosswise, in two very unequal pairs. These scales are applied face to face, and have a sharp tubercle on the outside below the point. The two larger scales have each two seeds at their base; the two smaller are seedless. The four seeds stand erect in the cones, with unequal-sided wings.—*Journ. Hort. Soc.*, vol. v. p. 35. It is stated in that work that the plant had been also introduced by Messrs. Standish and Co. This, however, proves to have been an accidental error, Mr. Low having been the sole importer. *Paxton's Flower Garden for May.*

Spade Husbandry.—It is an erroneous notion, that only very good soils can be cultivated as gardens, or as garden-farms, with a profit to the occupier. The experience of all countries, especially during late years, is against the correctness of such an opinion. By spade husbandry, although yet only in its infancy, extensive districts of blowing-sand have been brought into cultivation in Flanders; whilst in various parts of England it has been equally successful: witness the gardens of the cottagers of the black, hungry sands of Bagshot-heath, the poor chalks of Beachey Head, in Sussex, the deep trembling bogs of Lancashire. By many experienced agriculturists the spade is considered to be the greatest of all fertilisers, not only for gardens but for fields. It is at once less expensive and more productive. The mere moving of the soil produces incalculable benefit. By the spade, and the spade only, some of the poorest, thinnest-skinned lands of Surrey have, by the deep trenching of the cottagers, been made to produce all the common vegetables, such as Potatoes, Cabbages, Peas, Carrots, Beans, &c. The same returns have been effected in the poor hungry heaths which adjoin the South-Western Railway. "No gardener," observed the late Dr. Yellowly, "would think of planting Potatoes, Cabbages, or Carrots, in ploughed land, if he could get it dug; for the difference of produce far more than compensates for the difference of cost. By turning up or loosening the ground 5 or 6 inches deeper than the plough—which does not ordinarily act on more than 3 or 4 inches of soil, there is an opportunity afforded for the descent and diffusion of the roots of plants." Another authority (Mr. Blacker) emphatically remarks that, for many reasons, every small farmer should use the spade. In drill crops, he may thus "put in a quicker succession of his crops, and have one coming forward as the other is ripening. In wet seasons he can dig when he can't plough; and the value of the spade in turning up stiff clay land in autumn, and exposing the soil to frost and snow, is hardly to be imagined. In all such lands the plan should be pursued where no winter crop is put in." Experience has proved that a good digging or forking is more beneficial to the land than two or three ploughings; as the soil is thus more fully pulverised and the land more completely levelled. The fork usually employed is a strong one of three prongs, of 14 inches in depth, and 7½ inches in width. This is found to be more manageable than the spade, and less expensive. For boys and lads, a somewhat lighter fork, upon the same construction, should be procured. According to Dr. Yellowly, when men are employed, "the digging is effected by taking in about 4 inches of earth at a time, pressing perpendicularly, and getting to a proper depth at two thrusts. The earth is not, however, turned out of the trench to a greater depth than 10 inches, though the fork may get down as far as 13 or 14; but that which remains at the bottom in a state of what is called 'crumbs,' answers the purpose equally well with the earth which is thrown out, of forming a permeable medium for the roots of the plants which are to grow in it." *From the Finchley Manuals of Industry, No. II.*

Calendar of Operations.

(For the ensuing week.)

PLANT DEPARTMENT.

Any more of the Indian Azaleas which have completed their growth, and formed their flower-buds, may now have a slight shift if becoming root-bound, according to the advice given some time back. They may be kept cool, so as to avoid a second growth. This treatment will be equally appropriate for any hard-wooded plants in a similar state of maturity. Although water may for some time yet be liberally supplied to plants in general, it is necessary to make many exceptions to the rule, and these will every day become more numerous. Many plants which have matured their growth require a less abundant supply; and to those with bulbous or tuberous roots, which are now ripening their growth, the allowance of this element must be every day more restricted. Plants in flower of Thunbergias, Achimenes, Gloxinias, Geraniums, Fuchsias, &c., the beauty of which it is desirable to preserve as long as possible, should be assisted with occasional waterings of liquid manure; and that the foliage, as well as flowers, may retain their healthy appearance, let the pots, if possible, be plunged, or shaded by surrounding plants, to protect them from the scorching heat of the sun. Pelargoniums of the forcing kinds, which were cut down some time since and are now commencing their growth, should be shaken out of the old soil, and, after having their roots trimmed, should be repotted in sandy soil moderately rich, placed in a close frame, and sparingly watered, till they have made some progress in their new growth. None of the sorts form more beautiful objects, or are better adapted for forcing, than the fancy varieties; and for this purpose a quantity of healthy plants should be expressly prepared.

FORCING DEPARTMENT.

Pineries.—If the heating apparatus of any of these structures is in any way defective, or even doubtful, the natural heat of the season admits of the artificial heat being with the least risk dispensed with, and thus affords the needful opportunity for making the necessary alterations. It is annoying enough to have the state of

things disturbed at any time, but this is not equal to the vexation arising from an old boiler bursting, or a set of pipes or tanks giving way, in the middle of winter; especially when due forethought and careful observation would have prevented the catastrophe. Withhold water from plants which are ripening their fruit; and the soil in which plants in other stages are growing should be frequently examined, to see that the constant syringings do not make it too wet, and thereby endanger the health of the roots. Do not, on the other hand, allow them to suffer from lack of moisture, either about the roots or in the atmosphere; and let them be supplied with a bottom heat of 85°. VINERIES.—The most important thing to be attended to in these houses is to keep the red spider in check; where this has been properly attended to during the last three months, and where syringing was not continued too long, the bloom will be uninjured, and the appearance of the fruit will by this be considerably enhanced; besides which, the plants are in a much better condition to perform the functions necessary for ensuring a good crop next season. Let this be kept in view during the rest of the autumn, as it is still more essential that the foliage of late Vines should be kept in the highest health to the latest period possible. Attend, when necessary, to the watering of inside borders, and of those on the outside which are covered with tarpaulin or other material. A slight mulching of decayed leaves or dung is very useful during summer, in preventing excessive or sudden variation in the state or temperature of the soil, and the cracking of the ground, and consequent injury to the roots in hot, dry weather.

FLOWER GARDEN AND SHRUBBERIES.

Strict attention to neatness should prevail in this department, by rolling, sweeping, mowing, &c., and by tying or pegging down half-hardy plants as they advance in growth. Do not allow any of these to extend themselves outwardly so far as to injure the edgings, whether of Box or turf; and in cleaning the shrub masses, where herbaceous plants or annuals have been planted or sown in vacant places, take care that the latter are not injured by the encroachments of these quick growing plants. Where flowers are planted in the circles of bare soil round specimen fastigiate shrubs, great care should be taken to prevent the lower branches of the latter from sustaining injury. Any annuals or other half hardy plants, whose season of beauty is past, should be immediately removed, and their place supplied from the reserve garden, planting sufficiently near to produce at once a dazzling display. The Roses should be again gone over, and all gross shoots that are not likely to flower this season, the dead flowers, and those which have done flowering, should be cut out. Young strong growths of autumn flowering Roses in masses should be pegged down; and those of the summer flowering kinds, as the Moss, Provins, or Gallica varieties, should be layered; the whole surface of the beds should be forked over, and if a good soaking of liquid manure can be given, its effect will be very apparent in the greater permanency of the colours, and in the lengthened period of blooming. Remove dead flower stalks from bulbous rooted Irises, unless seed is wanted from them; do not however disturb the foliage until it is quite ripe. If any alteration in their arrangement is contemplated, it should be effected as early as possible after that time, as they commence making new roots immediately. White Lilies, which are now in beauty, should be taken up and replanted once in two years, and as in the case of the Iris, this should be done as soon as the old stems are decayed. The beds for either of these plants should be prepared of rich loamy soil, containing a good portion of sand or burned clay, and charred refuse, with a sufficient admixture of soot to destroy all animal life. And in planting, a little sand should be laid above and below the bulbs.

FLORISTS' FLOWERS.

DAHLIAS.— We are now giving ours weak liquid manure, and with a small three-pronged fork we occasionally stir the surface. If the plants are required to produce flowers for exhibition, it will be advisable to remove all buds now, if the variety is at all under-sized, as it will be taxing the energies of the plant to little purpose; but when the variety is large and coarse, they should be left to grow. POLYANTHUSES.—Should the weather prove wet these plants may be parted. Do not use a knife in the operation, the ivory handle of a budding knife will be found a suitable instrument. When planted out, in a shady suitable situation, do not let them lack moisture; and a temporary screen will prove highly beneficial till the plants are established. RANUNCULUSES.—It often happens that amateurs have seedlings, the roots of which are so thin and small as often to be overlooked in the soil. The way we manage to lose none, is to get a fine wire sieve, into which we empty a quantity of the soil containing the seedling roots; we then have a tub of water, in which we place the sieve, moving it about in the water; by this means every particle of soil passes through, leaving the roots behind. It is but little trouble, and many fine sorts are thus saved, for it often happens that the weakest are best.

HARDY FRUIT GARDEN.

One of the most important things to be done at this time is the preparing of ground for new plantations of Strawberries, and planting them as early as possible, that they may produce a crop of fruit the first season. This they will do, and the fruit will be of the finest quality if they are planted this month, and proper care is taken to keep them well watered during dry weather until they are fairly established. Strawberries do best in a rather strong, rich, and deep soil. Where the soil of the garden is naturally light, improve it by adding marl or strong loam with plenty of manure. Rows of Strawberries along the edges of walks look well, and are very convenient, as the fruit can be gathered without treading upon the ground, while the quarters are relieved and made available for crops which it is desirable to place a little further from the eye. The earliest plants produced by this year's runners should be selected, and in separating them from the parent plants, a few inches of the string should be retained to assist in fixing the plant in the ground. If they are planted on quarters, the rows should stand 2 feet apart each way. This will allow room for intermediate rows of Endive, Spinach, or dwarf York Cabbage this autumn, and the plants will require all the room next spring. By allowing plenty of room the fruit is finer, cleaner, and more abundant than when the plants are allowed to crowd one another and entirely shade the surface. The most desirable of the old kinds are Myatt's Eliza for a very early sort, Keens' Seedling and British Queen for general crops, and the Eleanor, which is very fine and comes in later. For preserving, none surpasses the old Grove-end Scarlet and the Roseberry. Of the newer varieties, we have proved the following: Comte de Paris, free bearing and fine in appearance, but rather acid; Princess Royal of France, the same; Hooper's Seedling, much better than Keens' Seedling both in regard to flavour and free bearing; Black Prince, a fine dark colour, early, and a free bearer; but none comes up to Myatt's Eliza for flavour, while it is also very early and a handsome fruit.

KITCHEN GARDEN.

A few days of hot dry weather, at any time during summer, renders it indispensable on the part of good gardeners to supply water artificially to many of their crops; as the check which the plants otherwise receive is very detrimental to their health, especially if they have been recently planted, or are natural inhabitants of marshy ground or the sea shore, such as Celery, Asparagus, or Seakale. When the operation of watering is necessary, take advantage of such opportunities to stimulate the plants with liquid manure, if it is by any means obtainable. Proceed with the planting out of the various autumn and winter crops, selecting the most favourable weather for the purpose, and taking care that the ground has plenty of manure; and if there be any doubt about the quantity already dug being insufficient, let an additional portion of manure and a good sprinkling of soot be forked in as the planting proceeds. Give every attention to all growing crops, so as to insure abundance and quality. Liquid manure will be found very useful now; and this, with stirring the ground deeply with a fork among the growing crops, is the sure way to succeed in realising the best results. Rampion, which is invaluable as a winter substitute for the Radish, should be transplanted from the seed bed into a south border. Care should be taken not to injure the tap root; and before planting, any strong side shoots should be removed, to throw strength into the main one.

State of the Weather near London, for the week ending July 11, 1850, as observed at the Horticultural Garden, Chiswick.

July.	Moon's Age.	Barometer.		Temperature.					Wind.	Rain.
				Of the Air.			Of the Earth.			
		Max.	Min.	Max.	Min.	Mean	1 foot deep.	2 feet deep.		
Friday.. 5	25	30.148	30.052	70	40	55.0	59	60	W.	.00
Satur... 6	26	30.151	29.922	71	53	62.0	59½	60½	S.W.	.09
Sunday . 7	27	30.955	29.658	63	43	53.0	60	60	N.	.34
Monday 8	28	29.040	29.994	68	39	53.5	59	59	W.	.00
Tues. .. 9	●	30.016	29.955	67	41	54 0	59	60	W.	.15
Wed. ..10	1	30.064	30.044	69	43	56.0	59	59	S.W.	.00
Thurs....11	2	30.091	30.068	70	47	58.5	59	59	N.W.	.00
Average....		30.066	29.813	68.3	43.7	56.0	59.2	59.6		.58

July 5—Fine throughout; quite clear at night.
— 6—Fine; cloudy; sultry; rain at night.
— 7—Cloudy; heavy rain; cold and damp at night.
— 8—Fine; very fine; clear and cold at night.
— 9—Cloudy; very fine; showery; cold at night.
— 10—Very clear; fine; densely overcast; cold.
— 11—Very fine; cloudy and fine; overcast; clear.
Mean temperature of the week, 7½ deg. below the average.

State of the Weather at Chiswick during the last 24 years, for the ensuing week, ending July 20, 1850.

July.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds.							
						N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 14	76.6	51.7	64.1	9	1.46 in.	—	1	2	1	3	7	9	1
Mon. 15	74.8	50.5	61.1	11	0.15	1	3	2	1	3	10	4	—
Tues 16	76.0	50.6	63 3	5	0.46	2	3	2	—	2	9	6	—
Wed. 17	76.3	54.3	65.3	7	1.22	1	4	2	—	5	6	4	2
Thurs. 18	73.7	52.0	62.8	11	0.60	—	1	1	—	5	8	7	3
Friday 19	71.9	51.4	61.6	14	0.60	1	1	1	1	6	6	6	2
Satur. 20	71.3	51.1	61.2	15	1.47	1	1	1	—	1	11	8	1

The highest temperature during the above period occurred on the 17th 1834—therm. 94 deg.; and the lowest on the 19th 1832, and 15th, 1848—therm. 41 deg.

Notices to Correspondents.

BACK NUMBERS OF THE GARDENERS' CHRONICLE: The publisher begs to say that the following may be had. Any subscriber who will forward postage stamps equivalent to as many numbers as are required, will have them sent free by post. The volume for 1847, price 30*s.*, and volume for 1848, price 30*s.* 6*d.*, can still be had. The volume for 1849 is now ready, price 30*s.* The volumes of former years are out of print.

1841—1, 8, 13, 14, 15, 16, 17, 18, 20, 22, 23, 24, 26, 27, 28, 29, 30, 31, 32, 34, 45, 46, 47, 48, 51.

1842—4, 6, 8, 11, 16, 18, 20, 31, 32, 42, 45, 50, 51, 52.

1843—13, 16, 17, 18, 20, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 36, 37, 40, 41, 42, 48, 49, 50, 52.

1844—All except 36, 37, 46, 50.

1845—1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 13, 14, 15, 17, 18, 19, 20, 21, 23, 24, 25, 27, 28, 31, 33, 39, 40, 41, 42, 43, 44, 45, 50, 51, 52.

1846—4, 5, 6, 7, 10, 11, 12, 13, 14, 15, 16, 17, 18, 20, 22, 23, 24, 26, 27, 38, 42, 43, 46, 48, 49.

1847—1, 2, 3, 4, 5, 8, 11, 13, 14, 16, 19, 20, 21, 22, 27, 28, 32, 33, 36, 37, 39, 41, 42, 43, 44, 45, 46, 47, 48, 51, 52.

1848—1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 30, 33, 34, 36, 37, 39, 40, 41, 44, 45, 51, 52, 53.

1849—All except 46, 49.

BEES: *A B.* The best thing you can do with the hive containing the old stock, and the other containing the second swarm, is to allow the bees to collect what honey they can till the first bad weather about the middle of August; then destroy them, and take the honey. This is presuming, from your description, that the stock is nearly worn out, and the other is only a cast. It would have been better had the cast been returned to the parent hive in the evening of the day it was thrown off.

BOOKS: *A Constant Reader.* Ask in Paris for Cosson and Germain's "Flore des Environs de Paris." Buy common *papier gris* when you arrive.—*D G O.* The annual treatment of Geraniums and Fuchsias is given in the Calendar to Beck's "Florist," and some good articles on the culture of Lilies have appeared in the same work. ‡

DAMP HOUSE: *Buckhurst.* Tar will not do. Use a coat of Roman cement, or fill the trench with concrete. When walks are raised, the borders and turf will be wet after heavy rain. What then? You need not walk at that time on either turf or borders.

DRYING PLANTS: *E A P.* See an article on this subject in another column of to-day's Paper.‡

GRAPES: *Sub.* The Abee is a tender Grape, and will not succeed with you unless you give it plenty of heat and air. The appearance of the bunch sent would indicate that many of the flowers had not been fertilised; the temperature has probably been too low, and the atmosphere of the house too damp at setting time.‡

INSECTS: *J W G.* The elephant hawk-moth (Chœrocampa elpenor). *W.*—*T C.* 1, Clytus arcuatus; 2, Hoplia argentea (the two hind claws are soldered together, as you will see under a strong lens); 3, Chrysomela staphylea. Stephens' "Manual of British Beetles" will suit you. Be so good as to pin the specimens sent. Those received are smashed. *W.*—*T D H.* We could find no traces of insects in the sand, although we again used a microscope for a considerable time. If small the insects were doubtless killed, and destroyed by friction. Send some separate in spirits or in cotton wool. *W.*—*G P H.* The larva will turn to a lady-bird. The moths are the small ermine (Yponomeuta padella), and the caterpillars on the Turnips are those of the common small white butterfly, as well as we can judge from their very young state. The large caterpillar mentioned is probably the same full grown. *W.*

LAURUSTINUS: *Jeremiah.* When the leaf was young, *and folded up*, a small piece of the edges was injured by some chance.

MORPHOLOGY: *J Q S.* Very curious, but not rare. It has been already figured by us in a different state in our volume for 1849, p. 772.

MULE PINK: *F G H.* No opinion can be formed without seeing much better specimens, and knowing all about its parentage.

NAMES OF FRUITS: *G M.* No. 1 is not the Early Purple Guigne; it appears to be the Black Eagle. No. 2 is correctly named the Black Tartarian. No. 3 is not the true Old Pine or Carolina; the fruit of this excellent sort is conical with a neck, firm, juicy, heavier than that of any other variety known to us, and its foliage is of the darkest green.‖

NAMES OF PLANTS: *C H L.* It is not different from the common Sweet Pea. Many annuals will live through a winter, if they do not flower in the previous year.—*J W.* Stanhopea Devoniensis and guttulata.—*Montrose.* Viburnum Opulus.—*A H.* There is reason to suppose that the plant current under the nursery name of Deutzia sanguinea was stolen from Dr. von Siebold, and that it is a Callicarpa! We know nothing of D. celosioides and Godhokerii, concerning which we can only say *Gare.*—*J R M.* Borage (Borago officinalis), an old and well-known native "herb." Don't you remember the distich,

I Borage, } or, { Ego Borago,
Give courage, } or, { Cor ago.

Anderton. 1, Ophrys apifera; 2, Orchis maculata; 3, Jasione montana; 4 and 5, Lotus corniculatus.—*G R.* Holcus lanatus, Dactylis glomerata, Avena flavescens, Agrostis vulgaris. —*Rosacea.* Why not Geum urbanum, with flowers rather larger than usual, or perhaps G. heterophyllum?—*A Constant Sub, York.* The leaves of the Thorn are attacked by a fungus called Æcidium laceratum, those of the Maple by Æcidium cancellatum. Neither cause nor cure are known.—*H.* Abies Balsamea and A. Picea.— *Cymro.* Scolopendrium officinarum. *S.*

PAXTON'S COTTAGERS' CALENDAR may be had at the Office of this Paper, or of any bookseller, price 3*d.*, or 5*s.* for 25 copies for distribution amongst cottage tenantry.

PEAR TREE: *E F L.* Root prune it now. ‡

POTATOES: *A H.* We cannot say that we see anything surprising in what you have sent.

ROSES: *L L.* Chénédolé is some proper name whose origin and orthography are alike unknown to us. Mulberry trees form an excess of male flowers because the wood is not properly ripened. Root prune yours *now*, and remove all overshadowing trees.

SCREENS: *C H L.* No objection to Lombardy Poplars, if you do not dislike their appearance. No Pines will grow so fast. Pinus Laricio grows fastest. Limes and Sycamores will both make great progress, so will Ash and Elm, only they rob the ground to an inconvenient degree.

STRAWBERRIES: *Barnhill.* We are unacquainted with La Delicieuse. The statements made by interested parties should always be confirmed by those who are not interested.—*Iota.* There are several varieties of the Hautboy. No doubt you have the variety called "the Prolific." We are well acquainted with it.

TREES AND SHRUBS: *X.* There is a very nice list of them just issued by Whitley and Osborn, of Fulham; and we refer you to it.

VINES: *Tinydail.* We are glad to have so good an account of your Vaccovinery; there is a name for you, if you want one. Blussard, B.; Sahibee, W.; Muscadine, W.; Chasselas, W.; Gromier, B.; all for the Vinery; but the two first will be all the better for more heat.—*C A A Lloyd.* Let the roots which spring out of the branches alone; they will do no harm. ‡

MISC.: *G B.* Root-pruning in July or August will no doubt answer for Plums and Cherries, as well as for Apples and Pears. ‡—*A Lady Gardener.* Prune your China Roses in spring. The new Antirrhinums for bedding are hardy like the old ones, and may be left in the beds during the winter.

SEEDLING FLOWERS.

CALCEOLARIAS: *M H.* Numbers nearly all detached from the blooms; 14, fine large rich crimson flower, of good shape; 4, yellow with large spots on the top, forming a blotch of spots, is good and novel; 18, pretty, but too oval; 12, a charming variety, with a pale buff ground, covered with large crimson spots, but rather too flat; some of your other flowers are also promising.*—*W H H.* All finely formed, large, and well marked. The spotted variety with buff ground is the best and most novel. Some of the others are very similar in marking to flowers already in cultivation. The blooms having dropped from the calyx, to which the numbers were attached, we cannot refer to them individually.*—*A Z P.* All richly spotted and beautiful, but none of them free from faults. The best are numbers 25 and 26; 15 is pretty, but it is too small in size and too large in the mouth.*

EPIPHYLLUM: *M P A.* A beautiful variety, in the way of E. speciosum majus.*

PELARGONIUM: *J W.* Pretty; but inferior to many kinds now in cultivation.*

PINKS: *G B S.* Your Pink is a large and not bad flower, but it is nevertheless far from being first-rate. It requires smoothness and regularity in the lacing; the white is good; the centre petals are confused, and of bad shape; there is also too much white outside the lacing. It should be grown from an old root, being too heavy when produced on a young vigorous plant.*

ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

PROGRAMME.

THURSDAY, July 11.—Last day of receiving Implements, Seeds, &c., to be exhibited in the Implement-yard, and arranged by the Stewards for the Judges' inspection.

TUESDAY, 16.—Stock received in the Show-yard from Eight in the morning till Four in the afternoon. At Six o'clock in the afternoon (provided the Judges have completed their trials by that hour) Members of Council and Governors of the Society will have the privilege of admission into the Implement-yard at the same rate as the public next day, namely, at 2*s.* 6*d.*

WEDNESDAY, 17.—The Implement-yard open to the public from Eight in the morning till Six in the evening; admission 2*s.* 6*d.* The Judges to inspect the Live Stock and award the Prizes. At One o'clock (or as soon after as all the Judges shall have delivered in their awards) the public to be admitted into the Cattle-yard, on the payment of 10*s.* each person, at the Special Entrance; Members of Council and Governors being admitted by tickets, to be purchased at the Finance Department of the Society, in the Guildhall. N.B.—Notice will be posted up over such entrance when the Judges have completed their awards. At Six o'clock, Professor Simonds's Lecture in the Athenæum, "On the Structure, Functions, and Diseases of the Liver in Domesticated Animals;" at the conclusion of which the awards of the Judges of Live Stock (with the exception of the awards for Horses) will be read.

THURSDAY, 18.—The Cattle and Implement-yards open to the public from Six o'clock in the morning till Two in the afternoon; admission 2*s.* 6*d.*; and from Two till Six in the evening, at 1*s.* The Dinner of the Society in the Great Pavilion (at the extremity of Queen-street) at Four o'clock. Doors open at half-past Three.

FRIDAY, 19.—The Cattle and Implement-yards open to the public from Six o'clock in the morning till Twelve at noon; admission 1*s.* each person. General Meeting of the Members in the Guildhall at Ten o'clock in the forenoon. At Eleven A.M., Mr. Turner will attend his Catch-meadows at Barton, near Exeter, and explain to the Members their construction; and at Three P.M., Sir Thomas Dyke Acland, Bart., M.P., will receive the Members at his Water-meadows, at Killerton, and make arrangements for their due explanation.

The Cattle and Implement Show-yards are situate at Mount Radford, on the eastern side of the city, between the Heavitree and Topsham turnpike-roads, about three quarters of a mile from the Cathedral.

PRESIDENT.

THE MARQUIS OF DOWNSHIRE.

STEWARDS OF DEPARTMENTS.

Cattle—Mr. HUDSON, of Castleacre, Mr. STOKES, Mr. JONAS.
Implements—Col. CHALLONER, Hon. DUDLEY PELHAM, M.P., Sir MATTHEW WHITE RIDLEY, Bart.
Finance—Col. AUSTEN.
Sale of Tickets—Mr. HENRY WILSON, of Stowlangtoft.
Receipts and Admission to Show-yards—Mr. RAYMOND BARKER.
Pavilion Dinner—Hon. ROBERT HENRY CLIVE, M.P., Sir JOHN V. B. JOHNSTONE, Bart., M.P., and Mr. SHAW, of London.
General Arrangement of Show—Mr. BRANDRETH GIBBS.

By Order of the Council, JAMES HUDSON, Secretary.
London, July 13.

By the Regulations of the Society, all persons admitted into the Show-yards, or other places in the temporary occupation of the Society during the Meeting, shall be subject to the Rules, Orders, and Regulations of the Council.

SALE OF TICKETS AT THE GUILDHALL, EXETER.

I. CATTLE-YARD TICKETS.—To Members of Council and Governors only; for admission into the Cattle-yard on the afternoon and evening of Wednesday, 2*s.* 6*d.* each; sold on Wednesday from 10 A.M. till 6 P.M.

II. LECTURE TICKETS.—To Members or their Friends; for admission to Professor Simonds's Lecture in the Athenæum, distributed gratis on Wednesday from 10 A.M. till 6 P.M.

III. PAVILION DINNER TICKETS, price 10*s.* each (including a pint of wine).—(1.) To Members only; on Wednesday from 10 A.M. till 6 P.M. (2.) To Members or their Friends; on Thursday from 8 A.M. till 3 P.M.

The Tickets for admitting the public into the Show-yards will be sold at the entrance of the Show-yards during the respective periods of the exhibition of Implements and Stock.

Subscriptions due to the Society will be received by the Finance Committee, at the Guildhall.

TO HORTICULTURAL AND FLORICULTURAL SOCIETIES.

BENJAMIN EDGINGTON, Manufacturer to the Horticultural Society, Chiswick, and the Royal Botanic Society, Regent's Park, solicits attention to his stock of Marquees and Tents of every variety, and suitable for all climates. Orders per post duly attended to. Address, BENJAMIN EDGINGTON, 2, Duke-street, Southwark. A Warehouse, 208, Piccadilly.

BY HER MAJESTY'S ROYAL LETTERS PATENT.

PATENT HOTHOUSE WORKS, KING'S ROAD, CHELSEA.

E. DENCH invites the attention of Gentlemen about to erect Hothouses, &c., to the vast superiority in every respect possessed by his PATENT HOUSES, which he will warrant superior in every respect to any others. Good Glass from 16 to 21 oz. per foot, 1 foot wide, 3 feet long, furnished, and the Houses, when completed charged, from 1*s.* 3*d.* to 1*s.* 6*d.* per superficial foot, according to size and quantity; on one principle the roof is formed without wood or putty, and on another principle with wood rafters, and the glass put in with putty. Patent Sashes, requiring no paint, from 7*d.* to 9*d.* per foot. HEATING BY HOT WATER.

STEPHENSON AND Co., 61, Gracechurch-street, London, and 17, New Park-street, Southwark, Inventors and Manufacturers of the Improved CONICAL and DOUBLE CYLINDRICAL BOILERS, respectfully solicit the attention of scientific Horticulturists to their much improved method of applying the Tank System to Pineries, Propagating Houses, &c., by which atmospheric heat as well as bottom-heat is secured to any required degree, without the aid of pipes or flues. S. and Co. have also to state that at the request of numerous friends they are now making their Boilers of Iron, as well as Copper, by which the cost is reduced. These Boilers, which are now so well known, scarcely require description, but to those who have not seen them in operation, prospectuses will be forwarded, as well as reference of the highest authority; or they may be seen at most of the Nobility's seats and principal Nurseries throughout the kingdom.

S. and Co. beg to inform the Trade that at their Manufactory, 17, New Park-street, every article required for the construction of Horticultural Buildings, as well as for heating them, may be obtained upon the most advantageous terms.

Conservatories, &c., of Iron or Wood, erected upon the most ornamental designs. Balconies, Palisading, Field and Garden Fences, Wire-work, &c.

NEW AGRICULTURAL IMPLEMENT.

BROWN'S PATENT FUMIGATOR, manufactured on a scale applicable for agricultural purposes, such as injecting a strong volume of smoke upon growing Turnips and other drilled crops, and thus obstructing the ravages of the fly. Also for fumigating Hops, Wall or Standard Fruit Trees, and driving vermin from their haunts.

Price Ten Shillings to Ten Pounds, according to Size.

Manufactured and supplied to the Trade by Messrs. COTTAM and HALLAM, 76, Oxford-street, London, where the Engine may be seen in operation.

SCIENTIFIC ACADEMY AND AGRICULTURAL TRAINING SCHOOL, Kennington, near London, July 1, 1850.

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The Agricultural Gazette.

SATURDAY, JULY 13, 1850.

MEETINGS FOR THE FOLLOWING WEEK.

TUESDAY, July	16	Meeting of the Agricultural Society of England at Exeter.
WEDNESDAY, —	17	
THURSDAY, —	18	
FRIDAY, —	18	—Agricultural Imp. Society of Ireland.

THE subject of ROAD REFORM is essentially a public one. It has already excited a considerable amount of interest and attention throughout the kingdom, but as yet, unfortunately, little or no practical good has issued from it. The public mind is slow in its progress towards conviction, and still slower in putting into practical operation the suggestions of those who have taken the trouble to think and write *pro bono publico*. Mr. PAGAN, a Scotch lawyer, has not only thought, and thought deeply, on the evils of our present turnpike system, but he has written ably on the subject, and to him the travelling public of Great Britain and Ireland owe the exposition of a simple and business-like plan, by which a large saving may be effected in the management of our roads everywhere throughout the country, while, at the same time, the existing debt will be rapidly liquidated, and the efficiency of the highways will remain unimpaired. The merits of this proposal have already been discussed somewhat fully in our columns, by ourselves and by correspondents, and the desirableness of some such change as Mr. PAGAN recommends, proved by a reference to various parts of England, where the expenses of collecting the road revenue and general management amount to a most startling per centage on the entire income derived from the turnpike traffic. In the cases adduced by Mr. PAGAN to illustrate this disproportion—the counties of Fife and Kinross—*the expenses incurred in collecting the funds and managing the roads amounts to* 44 *per cent. of the whole expenditure of the roads themselves.*

By the proposed reform the expense of management would only amount to 8½ per cent. on the expenditure, so that a direct saving of 35½ per cent. would thus be effected to the public. The total abolition of turnpikes and the substitution of a uniform tax on horses, are the simple means by which it is proposed to carry this saving into effect; and the suggestion is so well-timed and reasonable that the wonder is, not that it should have attracted so large a measure of public attention when first broached, but that the excitement should have subsided without producing some alteration in a system, the evils of which have been so ably exposed, not only by a clever, clear-headed lawyer, thoroughly conversant with all their ramifications, but also by a large portion of the public press, and by every public-spirited individual not interested in the maintenance of the present obnoxious and highly discreditable state of matters.

A minute enumeration of the evils of the present turnpike system is not required to prove the urgent need there exists for a radical change in the mode of collecting the funds levied upon those who travel along our roads, and habitually, or occasionally, make use of them; for however much a change may be deprecated by the timid and the interested, few, we think, will refuse to acknowledge that these evils exist in a variety of Protean shapes excessively annoying to the peaceably disposed traveller. We may therefore diverge a little from the pounds, shillings, and pence path, in which the argument for road reform might easily be brought to a most convincing and triumphant termination, in order to cull a few of those wayside flowers which constitute the traveller's *bouquet* as he journeys along the turnpike roads of many parts of the United Kingdom.

We have first and foremost to notice the existence of a line of barricades, in the shape of toll-bars, pleasantly situated at pretty close intervals across our great public thoroughfares at which the traveller must stand and deliver. Occasionally he may be indulged with a passport, consisting of a morsel of blurred and blotted paper—half ink and half print—which if he is fortunate enough to preserve will carry him through another barricade some hundred yards farther on; but these passports, unlike those of our Continental neighbours, will scarcely carry the wayfarer with safety to his purse and peace of mind from one parish to another, far less from county to county.

Many instances might be adduced by way of illustrating the pleasures of travelling in the free and enlightened countries of England and Scotland; but doubtless most of our readers have had sufficient personal experience of the annoyance which the turnpike system inflicts to render necessary the enumeration of the many perils and vexations that have beset the traveller on a turnpike road, and which will continue to molest him so long as the barricade system continues. REBECCA and her daughters were the offspring of the foolish principle upon which the present oppressive and strife-engendering system of turnpike management is conducted; and had an annual uniform horse rate existed, it is highly improbable that the South Wales riots, with all their bloodshed and heavy expense to the country, would ever have occurred.

Were the turnpike system one in which a rigid economy formed a leading feature, and where the cost of management was at a minimum, and at the same time were equal facility and accommodation everywhere given to the locomotion of horses, live stock, and vehicles of every description, without being subjected to the imposition of different charges under one road trust from those exacted in another, the travelling public might probably submit to be tyrannised over by a class of individuals whom Mr. WELLER, sen., not without reason, concludes to be "misanthropes who revenge themselves on mankind by taking tolls." Instead, however, of economy being a characteristic of our present road system, when we find an expenditure, for merely collecting and managing the funds, of 44 per cent. upon the whole income, as much as the working expenses of many of our railways, we may surely be pardoned for betraying some little irritation and iteration on the subject of road reform.

A TABLE of RATES of DUTY chargeable on COFFEE, TEA, COCOA, FOREIGN and BRITISH SPIRITS, BEER, MALT and WINE respectively, in the United Kingdom in each of the last 15 Years, ending 5th January, 1850.

Years ended 5th Jan.	COFFEE.	TEA.	COCOA.	RUM.	Other Foreign and Colonial Spirits.	BRITISH SPIRITS.	BEER.	MALT.	WINE.	Years ended 5th Jan.
1836	From Sept. 9, 1835: Of British Possessions, 6d. p. lb. Of British Possessions but not certified, 9d. p. lb. From any other place within the limits of the East India Company's Charter, 1s. p. lb Otherwise imported, 1s. 3d.	Bohea, 18d. p. lb. Congou, Twankay, Hyson Shin, Orange, Pekoe and Campoe, 2s. 2d. per lb. All other sorts 3s	Of British Possessions, 2d. p. lb. Foreign, 6d. ,,	9s. per gallon ...	1l. 2s. 6d. per gall.	per gallon. England, 7s. 6d Scotland, 3s. 4d Ireland, 2s. 4d.	Duty repealed, Oct. 10th, 1830.	per barrel. England, from Barley, ... 2s. 7d Scotand, from do.. 2s. 7d. ,, from Bigg, 2s. Ireland, from Barley. 2s. 7d. ,, from Bigg, 2s.	Of the Cape of Good Hope, 2s. 9d. per gallon .. Other sorts, 5s. 6d. per gallon ...	1836
1837	Ditto	All sorts, 2s. 1d. p. lb.	Ditto	Ditto	Ditto	Ditto	Ditto ...	Ditto	Ditto	1837
1838	Ditto	Ditto	Ditto	Ditto	Ditto	Ditto	Ditto ...	Ditto	Ditto	1838
1839	Ditto	Dtito	Ditto	Ditto	Ditto	Ditto	Ditto ...	Ditto	Ditto	1839
1840	Ditto	Ditto	Ditto	Ditto	Ditto	Ditto	Ditto ...	Ditto	Ditto	1840
1841	Do. and 5 p. ct. additional on the above rates .	All sorts, 2s. 2¼d. p. lb.	Of British Possessions, 2d. 1-10th per lb. For. 6d. 3-10ths. per lb.	9s. 4d. per gallon.	1l. 2s. 10d. per gall	England, 7s. 10d. Scotland, 3s. 8d. Ireland, 2s. 8d.	Ditto	Ditto, and 5 per cent., on the above rates	Of the Cape of Good Hope, 2s. 10d. 13 20ths per gallon ... Other sorts, 5s. 9d. 3 10ths per gallon ...	1841
1842	Ditto	Ditto	Ditto	Ditto	Ditto	Ditto	Ditto ...	Ditto	Ditto	1842
1843	Of British Possessions, 4½d. p. lb For., 8d. 2-5ths	Ditto	Of British Possessions, 1d. 1-20th p. lb. For. 4½d. ,,	Ditto	Ditto	England, 7s. 10d Scotland, 3s. 8d. Ireland, 3s. 8d.	Ditto ...	Ditto	Ditto	1843
1844	Ditto ,, ...	Ditto	Ditto	Ditto	Ditto	England, 7s. 10d. Scotland, 3s. 8d Ireland, 2s. 8d.	Ditto ...	Ditto	Ditto	1844
1845	Of British Possessions, 4½d. p lb For., 6d. 3-10ths	Ditto	Of British Possessions, 1d. 1-20th p. lb. For. 2d. 1-10th,,	Ditto	Ditto	Ditto	Ditto ...	Ditto	Ditto	1845
1846	Ditto	Ditto	Ditto	Ditto	Ditto	Ditto	Ditto ...	Ditto	Ditto	1846
1847	Ditto	Ditto	Ditto	8s. 10d. per gallon ...	15s. per gallon.	Ditto	Ditto ...	Ditto	Ditto	1847
1848	itto	Ditto	Ditto	per gallon. England, 8s 7d Scotland, 4s. 5d Ireland, 3s. 5d	Ditto	Ditto	Ditto ...	Ditto	Ditto	1848
1849	Ditto	Ditto	Ditto	England, 8s. 2d. Scotland, 4s. Ireland, 3s.	Ditto	Ditto	Ditto ...	Ditto	Ditto	1849
1850	Ditto	Ditto	Ditto	Ditto	Ditto	Ditto	Ditto ...	Ditto	Of the Cape of Good Hope, 2s. 10d. 13-20ths per gallon ... Unenumerated of any British Possessions, 2s. 9d. per gallon ... Other sorts 5s. 9d. 3-10ths per gallon ...	1850

Inland Revenue Office, Broad-street, February 1850.

AN ACCOUNT of the Quantities of COFFEE, TEA, COCOA, FOREIGN and BRITISH SPIRITS, BEER, MALT, and WINE, respectively, retained for Home Consumption in the United Kingdom in each of the last 15 years, ending Jan. 5, 1850.

Years ended Jan 5.	COFFEE.	TEA.	COCOA.	RUM.	Other Foreign and Colonial Spirits.	BRITISH SPIRITS.	BEER (calculated on the Quantities of Malt and Sugar used by Licensed Brewers, and deducting the Beer exported.)	MALT.	WINE.
	lbs.	lbs.	lbs.	Gallons.	Gallons.	Gallons.	Barrels.	Bushels.	Gallons.
1836	23,295 046	36 574.004	1,084,170	3,416,966	1,348,740	24.710.208	16,330,010	42,892,054	6 420,342
1837	24.947.690	49,142,236	1,130,168	3,324,749	1,292,271	26,745,300	17,018,429	44,387,719	6,809,212
1838	26 346,961 admitted at 5 p. cnt. *ad valorem*	30,625,206	1,416,613	3,184,255	1,240,210	24,493,539	15,988,035	40,551,049	6,391,531
1839	25,765.673	32,351,593	1,601,787	3,135,651	1,232,574	26,486,543	16,039,597	40,505,566	6,990,271
1840	26,789,945 admitted at 5 p. cnt *ad valorem*	35,127,287	1,606,800	2,830,263	1,195,154	25,190,843	15,883,311	39,930,941	7,000,486
1841	28,664 341	32,252.628	2,041,678	2,512,960	1,131,450	21,859,3 7	15.769.434	42 456,862	6,553,922
1842	28,370,857	36,675,667	1,928.847	2.277.970	1,186,104	20,642,533	14,537,266	36,164,448	6,184 960
1843	28,519,646	37,355,911	2,246.569	2,097,747	1,103 268	18,841,890	14,284 646	35,851 3 4	4.815.222
1844	29,979,404	40,293,393	2,547.934	2,103,715	1,058,242	18 864,332	14,122,191	25,693,890	6,068,987
1845	31,352,382	41,363,770	2 589.977	2,198,592	1,044,014	20,608,525	14,624,854	37,187,186	6,838,084
1846	34,293,190	44,193,433	2,579,497	2.469,135	1,080 754	23,122,588	14 925 113	36,545,990	6.736,131
1847	36,754,554	46,740.344	2.951,206	2,683,701	1,561,629	24,106,697	16,283,298	42,097,085	6.740,316
1848	37,441,373	46,314 821	3,079,198	3,328,985	1,574,068	20,639,797	14.515,391	35,367,813	6,053,847
1849	37,077,516	48,734,789	2,919.591	2.986,979	1,648,384	22,202,450	14,555 010	37,546,157	6,136,547
1850	34,431,074	50,024,688	3,233 372	3,044 758	2 224,709	22.962,012	15 243,681	38,235,460	6,247,689

Inland Revenue Office, Broad-street, February 1850.

THE LABOURING CLASSES.

As one of your readers requests information respecting garden allotments, I send the following rules and remarks, which I hope may be generally useful, as they are the result of much observation and experience. The allotments for which these rules were more particularly drawn up, have answered well, though the land was by no means so suitable as desired, being wet, strong, and in very bad condition, and too far from the dwelling places of the labourers. It was, however, well under drained, without any charge to the allotment tenants. It has been let free of assessments, chiefly in portions of a quarter of an acre, and at the rate of 40*s.* per acre on an average, but varying in price according to quality and situation. From being unkind and unproductive land, it has become moderately kind working and very productive soil, producing two, three, or four times as much as it used to produce while in the farmers' hands. Like much land of the same kind in that country, it used to produce only two light crops in three years, being summer fallowed every third year. Now, the best cultivators get one or two good crops every year, and all might do so if they would sow all their crops in rows and hoe them repeatedly. Here the tradesmen have frequently proved to be the best cultivators, probably in consequence of the distance from the habitations being less toilsome to them than to the agricultural labourers, who too often have to walk far to and from their work; besides which, the latter are more disposed to pursue the old practices of the farmers, while the tradesmen try new and better ways. The farmers have very commonly been unfavourable to the allotment system; thinking that the labour bestowed on the garden was so much abstracted from his day's work. But where the quantity has not been more than a fourth, a sixth, or an eighth of an acre, the land dry and light and near to the cottage of the labourer, whose wife and children assisted in its cultivation, and the rent reasonable, the result has almost invariably been satisfactory. Allotments have greatly improved the moral character of the labourers, and alleviated the parishes. *H.*

Rules of the Society for Aiding the Labouring Classes in Thirsk and its Neighbourhood.

I. That a society be now established under the designation of a "Society for aiding the Labouring Classes in Thirsk and its neighbourhood."

II. That the principles on which such society shall be formed shall be the following:

1. That of encouraging and promoting the exercise of foresight, prudence, and industry in the working classes, towards the maintenance of themselves and their families in comfort and respectability.

2. That of avoiding any interruption of the relations and responsibilities which mutually belong to, or exist between the owners and occupiers of property and the working classes.

3. That of discouraging and avoiding all application of the proceedings, so as to make them bear upon any questions which may occupy the attention of Parliament, with a view to legislative enactments.

III. That in accordance with these principles the objects of the society be:

1. To obtain allotments of land in such townships in the neighbourhood as it may be practicable, to be let to the working classes of industrious habits, and to be cultivated solely by the spade.

2. To endeavour to increase the amount of employment in the district, by circulating practical information with reference to spade husbandry and other manual methods of cultivating the soil.

3. And to encourage amongst the poor, by other means, habits of self-support, or dependance on their own exertions.

That local committees be formed in any townships where it may be practicable, or where no allotments of land are already granted to the poor, consisting of the clergyman and two or more members. That the business of such local committees shall be:

1. To endeavour to obtain, from the resident or other landed proprietors, a grant of land for the purpose of allotments; but that unless requested to take the management of such allotments by the landed proprietor, they do in no case take such management upon them without the consent of the general committee.

2. That such local committees shall be the medium of circulating information with reference to spade husbandry, or other similar means of increasing employment in the district.

That the committee of management may, where any landed proprietors decline to grant any land for allotments, or object to do so on account of the trouble occasioned thereby, take any land in such townships as may seem to them desirable, and re-let the same to the labouring classes, under the superintendence of the local committees.

That a meeting be held annually to audit the

accounts, to elect the officers and committee for the following year, and to amend or form rules for the government of the society.

In inviting public attention to the principles and objects of the society, as detailed in the previous resolutions, the committee consider that to those who are acquainted with the beneficial tendency of garden allotments, it may be useful to add the following extracts from a report of a committee of the House of Commons on allotments of land to the labouring poor, presented to the House on the 6th of July, 1843; and which clearly points out several important points to be kept in view in forming such allotments, and forcibly exhibits the value and importance of this means of assisting the industrious labourer. "Your committee have received much evidence about the arrangements and regulations under which the allotment system has been conducted, and have come to the conclusion that the following are those under which it may be most advantageously carried on."

1. "As it is desirable that the profits of the allotment should be viewed by the holder of it in the light of an aid, and not of a substitute for his ordinary income accruing from wages, and that they should not become an inducement to neglect his usual paid labour, the allotment should be of no greater extent than can be cultivated during the leisure moments of the labourer and his family. The exact size which would meet this condition must of course vary according to the nature of the soil, the strength and numbers of the family, and their leisure time; but one quarter of an acre is the size usually adopted, and best suited to the average of cases."

2. "The allotment should also be near the dwelling of its occupier; much of its benefit depends upon the facility afforded to the man, his wife, and his children, of devoting spare moments to the care of their ground, and being able to visit it frequently without fatigue."

3. "Though the land will yield larger profits under this mode of cultivation than under the usual method of tillage, the proprietor who wishes to benefit the poor man, should not exact more rent than he could expect to receive if he let it out to be farmed in the ordinary way."

4. "Tithes, parochial rates, taxes, and other charges, should be included in the rent, and paid by the owner, and not by the occupier, for the purpose of saving trouble in the collection, of preventing the accumulation of arrears, and of guarding the tenant against frequent and sudden demands for payments which he might not be prepared to meet."

"The rules adopted in places where the allotment system has been most successful, have insisted upon spade culture, have forbidden all underletting and working on Sunday, and have required that all causes of forfeiture—viz., non-payment of rent, gross misconduct, or wilful neglect of the land, should be embodied in the agreement signed by the tenant. (*See Rules.*) The rotation of crops has sometimes been enjoined in the rules; but that is a matter which may well be left to the discretion and experience of the cultivator. Under these arrangements, the system of garden allotments has proved an unmixed good. It has increased the produce, and enlarged the general stock of labour to be expended on the soil. It has enabled the labouring man to turn his leisure moments to profitable account, in raising wholesome food for his family, a rood of land frequently producing vegetables enough for six months' consumption. It has also supplied sound industrial training for the children under their parents' eye."

"Many striking instances have been stated to your committee, where the possession of an allotment has been the means of reclaiming the criminal, reforming the dissolute, and of changing the whole moral character and conduct. It appears that the holding of land directly from the landlord raises the position of the working man in his own estimation, and gives him a feeling of independence and self-respect. It gives him a stake in the country, and places him in the class which has something to lose—it gives him something which he may call his own; and as its value depends upon his own exertions, it prompts him to the exercise of self-control, and leads him to look on from the present towards the future. It furnishes him with an interest in life, to stimulate his faculties, to occupy his mind, and to inspire him with hope; and it becomes a powerful inducement to abstain from many of those offences which would lead to the forfeiture of this valued possession. Mr. Martin stated 'that of 3000 heads of families holding allotments in Kent, not one was committed for any offence during the years 1841 and 1842; that in the parish of Hadlow there were 35 commitments in 1835. The allotment system was introduced in 1836, and in the following year, 1837, the committments were reduced to one.' Since that we have had, among the tenants of the Society, about 15 of those who were in prison in 1835, and there has been no cause of complaint against them since we have had them. Since the year 1837, there has been but one commitment from among the holders of allotments."

"It does not appear to your committee that these important benefits are purchased at the expense of any other interest. All the witnesses were unanimous as to the punctuality with which the rents of those allotments which are under proper management are paid, and no more trouble seems to have been involved in collecting these than any other rents; frequently indeed, there is less. Numerous instances have been mentioned where the produce of the allotment has been effectual in keeping men from applying for parochial relief; and it may be safely assumed, that a practice which diminishes the poverty of the labouring class, and promotes their good conduct, cannot but be beneficial to the community at large. It has likewise had a peculiarly good effect upon the relations between the landowner and his cottage tenants; increasing his acquaintance and interest in their circumstances, and exciting in them more thankfulness and respect."

REGULATIONS FOR FIELD GARDEN ALLOTMENTS.

The Committee of the Thirsk Society submit the following rules, as those which may be advantageously adopted.

1. The rent (which shall include repairs of fences, parochial and other charges), to be paid by half-yearly instalments, on the Monday preceding Lady-day and Michaelmas, at 7 o'clock in the evening at

2. No occupier to under-let his allotment.

3. The allotment to be cultivated solely by the spade, to be sufficiently manured, and to be kept strictly clear from weeds.

4. No occupier to trespass upon another's allotment, and any damage done by the children to the crops of others to be made good by the parent.

5. If any occupier be a drunkard, or in the practice of frequenting public houses, or be quarrelsome, or use profane language, and shall persist in such habits (after having been reproved), he shall not be allowed to continue to rent his allotment after the end of the year.

6. If any occupier shall neglect his land, or be proved guilty of dishonesty, or of any other notorious immorality or offence against the laws, or continue after admonition to work in his allotment on a Sunday, or be guilty of a wilful breach of any of these rules, the landlord (or Committee) shall have full power, and without any legal process or other formal proceedings, to re-enter immediately and take possession of the land, with the crops growing thereon. The balance, if any in favour of the tenant, being paid to him.

7. The tenants to keep the path or road adjoining their allotments in good order.

8. Any occupier shall be at liberty to relinquish his allotment, on giving six weeks' notice, and his crops shall be valued to, and paid for by the new tenant.

9. Any disputes that may arise with any of the occupiers, respecting their allotments, to be decided by the landlord (or committee), and his (or their) decision to be final and binding.

Home Correspondence.

Eggs.—The following is a curious fact: A Cochin China hen, purchased from Mr. Nolan, of Dublin, laid several times from the perch after retiring to roost. I saw her do this twice, and early the next day found what I thought was her egg in a nest. To make sure of her eggs, I have locked her alone into a house with no perch, and last Saturday I found in the morning two eggs, one perfect, the other not quite, but almost shell-less—what is called here a flax-egg (I suppose flaccid), but of full size. These two eggs must have been laid within 12 hours of each other. Another hen, purchased from Mr. Nolan, laid 11 eggs in as many days, and weighed before sitting, which she is now doing, 6¾ lbs. I would desire to correct a mistake of Mr. Dixon's, namely that each hen always invariably lays the same shaped eggs. I have not found this to be the case; so much the contrary in some instances as to be quite puzzled in seeking to distinguish the eggs of hens which I thought I knew well. One in particular I put out to a poor woman to keep, with a cock and one other hen, which latter laid white eggs, the former buff. In three successive days the buff eggs were of three different shapes, one day nearly round, the next very obtuse at both ends, the third a handsome oval, nearly the same each end. It was a lone cottage, with no other fowls, so that there could be no mistake. *A. T. C. C.*

Chaff and Turnip Cutter.—On visiting a farm the other day, I saw a great many store cattle feeding upon straw and Vetches, chaffed together, which they devoured with great avidity. It has since struck me, that if we could get a machine which should constitute in itself a chaff and Turnip cutter, whose operations should take effect at one and the same time—the chaff and Turnip slice passing through rollers, to bruise the Turnips, and so moisten and blend them together (something like the operation of a furze-cutter and bruiser), we should be imitating our summer feeding upon which cattle thrive so much, and also use our straw with more economy. *J. Hood, Closglass.*

Cooper's Rye-grass.—In answer to "Enquirer" for Cooper's Rye-grass, there is no such plant. The enquirer probably means Cooper's Rye, a very early, hardy, productive, and excellent variety of Rye, which is cultivated and sold by Mr. Thomas Cooper, Ardleigh, Wick, Colchester, Essex, as well as by many other good Essex farmers and elsewhere. There is no such plant as Rye-grass at all, of any denomination. There is a Grass called Lolium, of which there are several species and many varieties, currently sown in most parts of Great Britain, either by itself or with various Clovers, for hay; as well the plant as its name were introduced into Devonshire and Cornwall, with many other names, tools, and practices, from the nearest parts of France to these coasts. In France it is called Iordie, and in Cornwall and Devon it is called Hever, Ever, or Iver, and also dropping the initial I and v is called Ray, and Ray-grass, through the greater part of England. It is a misnomer to call it Rye-grass. It has no resemblance nor affinity to Rye. It is believed that Mr. Cooper does not profess to sell any variety of Lolium of peculiar earliness or excellence. *W. P. T.*

Drill Husbandry.—In your Paper of June 15th, there are some remarks by Mr. Rawstorne on the drill system of husbandry, and on the small extent to which it is used in the Lothians. There is a very general opinion in this district (East Lothian), that unless where annual weeds are very bad, the crops are greater when sown broadcast than when drilled, and this even when the after culture, on which so much stress is laid by Mr. Rawstorne, is fully carried out. There is no machine in use for effecting this after culture, and hand-hoeing is the only resource. An experienced farmer, who drills a great deal, but hoes only where annual weeds abound, told me lately that he had repeatedly hoed small pieces in fields which were not hoed all over, and that he never knew the crop any the better for it. Mr. Rawstorne says that there was only one drill machine shown at Edinburgh in 1847, viz., Messrs. Garrett's. If Mr. Rawstorne was present at the show he must have forgotten to look at the drills, for there were at least half a dozen, and one amongst them which the judges preferred to Messrs. Garrett's, as they showed by adjudging it the prize. It was made by Messrs. W. and J. Hunter, Samuelston, Haddington, and was preferred on account of its extreme simplicity, being exceedingly light, sowing six drills at a time, and drawn by one horse. The great drawback in the eyes of a Scotchman, to most of the English machines, and to Messrs. Garrett's amongst the rest, is their weight and complication. He thinks that the machines of his own country are in general equally efficient, while they are simpler, lighter, and can be wrought with fewer hands and fewer horses. There is, however, a want of a good and simple (and cheap) horse hoe, and Messrs Garrett's may possibly come into use for want of a better. *A Lothian Farmer, Doddridge by Ford.*

Application of Manure.—It admits of no dispute that the fertility of alluvial soils, better grounds, and of all lowlands, arises from the quantity of materials that have been carried from the higher localities and deposited on the flats, and more chiefly from the very minute reduction of the ingredients, and the intimate relationship in which they are placed to each other. This allows the development of chemical action, which takes place only between the ultimate elements of matter, and at insensible distances. The general fertility of all loamy soils arises from the combination of the elements rather than the quantity or quality in any particular form or existence. Judging from the above natural appearances, I often think that manures should be mixed with the soil in the most minute possible manner, and since a chemical combination of elements exceeds human power to perform, the mechanical mixture must be done as perfectly as possible, in order to supply its place. In this way a farm-yard should be mixed with the soil, by repeated workings of the land by Finlayson's harrow, after the winter ploughing of 7 or 8 inches in depth; and, in order to facilitate this process, the straw for litter should be cut into short length by the knives of the cutting machinery, which will allow the mixing of the straw with the soil along with the solid fæces of the animals. A mass of dung laid in the hollow of drills exerts no influence on the land; any chemical action is wholly between the materials of the dung, as new combinations between bodies are inversely as their masses, or directly as the surfaces they present. The land and the dung are in masses, and thence is only the attraction of adhesion. Intimate contact and minute adherence are essentially necessary for the affinity of composition. The land and dung being mixed in this way, the drills will be very conveniently formed by one furrow of the common plough, moved as deeply as the power of two horses will admit. The soil will be full of moisture, having been wholly wrought by the grubber, and never turned up as by the plough to the exposure of drought. On the quantity of moisture in the land the safety of the Turnip crop altogether depends. *J. D.*

Thick or thin sown Wheat: July 4.—It is only just to the Rev. Mr. Wilkins to say, that about 5 acres of my Wheat are laid this morning by the heavy rains. I think they would not have been if sown with 4 pecks instead of 6. As the other 75 acres are still a standing crop, it becomes a question whether 6 pecks does not advantage me much more than injure me. I should say decidedly so. Still much depends upon a great variety of circumstances, particularly whether a wet or dry summer, also whether a favourable or unfavourable seed time. I presume much of the 5 acres laid will rise again when the rain ceases and a drying time ensues. Most of my Wheats are 5 feet high, some more. One thing is quite certain, the richer our land the greater the necessity for thin sowing. Woe be to those who in addition to thick sowing have a rank undercrop of unhoed weeds. What chance has such land of drying? *J. J. Mechi.*

Tenant right.—Referring to your article in a late *Gazette*, conveying some remarks on the Tenant Compensation Bill lately introduced by Mr. Pusey, I must observe that that gentleman is entitled to the thanks of the tenant farmers for his efforts to obtain for them a legalised "compensation for unexhausted improvements." Admitting the difficulty of legislating on the subject, it is something that public attention has been directed to this important subject. At the same time any enactment will be valueless unless accompanied with a rider or clause that will stultify and make illegal all special covenants and conditions as between landlord and tenant in the taking and letting of land. And perhaps this would be the best way of settling this much vexed question, by enacting the abolition of all covenants and restrictions, and establishing the settlement of dilapidation and improvement, as it now is settled by competent valuers and arbitration. Custom would soon establish a "tenant right" that would do justice to both landlord and tenant, giving the latter such compensation only as the merits of his claim demanded; while the landlord would have the benefit of all proved dilapidations and waste. Believing this plan, if properly carried out, would be the means of encouraging the cultivation of the land, I venture to present you with it. *J. Jephson Rowley, Rowthorne, July* 2.

Societies.

ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

(*Resumed from page* 429.)

DISCUSSION.—"A Water-meadow is the triumph of agricultural art, changing as it does the very seasons; but though our rustic forefathers so long since mastered the result, the mode of the water's action has been left a mystery."—MR. PUSEY, *Journal* x., 462.

Sir JOHN JOHNSTONE inquired of Professor Sewell what results on the subject of water for cattle had become known to him at the Royal Veterinary College. Prof. Sewell believed that cattle generally preferred soft to hard water, and would drink from ponds and ditches rather than from springs. He thought the temperature had something to do with it, for he knew a brewer who had 100 horses, and who for 30 years had allowed them, whenever at home from work, to drink as much as they pleased of the New River water kept at a blood-heat; in consequence of which, the animals were maintained in perfect health and strength, having no spasmodic affections of the bowels, no chills, no staring coats. Colonel Challoner had remarked that horses and cows preferred a pond into which dung-water had run. The Earl of Chichester had observed the same preference given for such water by cattle, but not to the same extent by sheep. Dr. Calvert had noticed that oxen preferred water in troughs to that in the clearest springs. The Duke of Richmond remarked, that water given to race-horses in the stable, had always the chill taken off it. Sir John Johnstone, in reverting to the subject of hardness, referred to the softening of water by boiling, as in the well-known case of water for tea, and inquired whether the whole of the 15 or 16 degrees of hardness occasioned by the carbonate of lime was removed by that action. Prof. Way

stated that the deposition of the carbonate of lime did not take place at once, on the application of heat. Prof. Clark considered 1½ or 2½ hours' boiling to be required to effect that object. The Rev. T. Cator referred to the use of soda in softening water, which Prof. Way observed was adopted on account of its being cheaper than soap. Mr. Raymond Barker alluded to the effect of toasted bread in softening water. He had a few days ago an opportunity of witnessing a confirmation of what had been stated, of the predilection of cattle for impure water, by seeing them turn away from fresh water drawn for them out of a well, and seek the mud-water collected in little pools in the meadow where they were pastured. He believed that cattle were generally indisposed to drink hard pure water.—Mr. Pusey, M.P., then favoured the meeting with his views on the action of water in connection with the beneficial effects attending the irrigation of land. He doubted whether, in the present state of our knowledge, it could be admitted as a general axiom that hard water was good for irrigation, and soft water, on the contrary, prejudicial. In Devonshire, the criterion by which practical workers in water meadows were guided in their judgment of the quality of the water most suitable for their operations, was that of a certain warm, soft, and oily sensation it communicated to the touch, when a portion of it was held and examined in the palm of the hand; the absence of such a quality indicating, in their opinion, a water unsuitable for irrigation. He knew, as a fact, that when lime existed in any water in such excess as to give to it petrifying properties, such water was considered by practical men as decidedly unfit for irrigating purposes. He accordingly much doubted whether hard water was the only water fit for irrigation. He trusted that water-meadows would not be confined to the limestone districts; for in those geological districts of the west of England, where irrigation had been so long and successfully practised, lime was absent, and had therefore to be brought on the land from other districts, as required for the purposes of cultivation; the water being in consequence naturally soft. He considered that water in general become softened by remaining some time in ponds. In the hilly districts of Devonshire, the water of the small streams running down the declivities was found to improve in its irrigating qualities. Again: it had been found that water running over peaty soil was prejudicial to it; but that the same water filtering through such land into the drains was advantageous to it, probably from carrying off the peaty matter; and by such percolation it became soft, and adapted for irrigation. He simply wished to express an opinion formed on the facts which had from time to time come before him on this subject, that it would, in the present state of their knowledge, be unsafe to assume the exclusive use of hard water in irrigation as an essential condition. In his paper on the Devonshire water-meadows, in the Society's Journal, he had only mentioned the prevailing opinion in that part of the country on this subject; he thought they were still ignorant on many important points in connection with the theory and practice of irrigation, and he trusted that the practical inspection of the catch and water-meadows of Sir Thomas Acland and Mr. George Turner, at the Exeter Meeting, and the chemical analyses of the waters to be made by Prof. Way, would tend to a more exact acquaintance with the principles and conditions of irrigation.—The Rev. Thos. Cator considered that the soil itself had much to do with the results of irrigation.—Mr. Almack fully agreed with the opinions expressed both by Mr. Pusey and Prof. Way. He thought that time would prove each of them to be correct in his views, when the particular conditions of each case were duly limited by further experience. He considered snow as the best exemplification of the beneficial action of water containing ammonia, and possessing chemical qualities from other impregnation, in addition to the influence exerted by its peculiar mechanical structure.—Mr. Fisher Hobbs was glad to find from Prof. Way that this subject, of the economical employment of water, was to be pursued by him still further, especially in reference to points connected with agricultural operations. He did not think that animals generally preferred muddy to clear marly water from clean wells, although they might prefer it, after it had been drawn and stood some time, to the same water in its cold fresh state as obtained immediately from the well. The cattle on one of his farms had so great a predilection for the drainage water from sand and gravel, that he was obliged to fence off the mouth of the drain whence the water issued in order to restrain them. He thought farmers ought not to allow the runnings from their farm-yards to get into their ponds. He could fully confirm the views of Mr. Pusey. A curious circumstance had come within his observation in reference to drainage water. He had cut a drain in his land 1 furlong in length and from 8 to 12 feet in depth through sand and gravel, and veins of clay, and which yielded 3 gallons of drainage-water per minute. When the hot weather set in, a most obnoxious odour proceeded from this drain, and there was found, on examination, an accumulation of several cart-loads of a congealed gelatinous-looking substance, of an ochreous colour, and in substance resembling fresh animal liver. On revisiting the place a fortnight ago, the whole mass of corruption had vanished, and only a few insects were to be found in its place.—Mr. Rowlandson made some observations on the soap-test process of Professor Clark. He thought it a very simple and useful test for the hardness of water in all cases excepting when (as in the water of the Dolomitic districts) the bi-carbonate of magnesia was present; whenever the hardness arose from magnesia he believed the soap-test would fail to indicate its degree, or rather, it would give a false indication of its amount; which might mislead, unless other tests were conjoined with the soap-test, for the purpose of guarding against this occurrence. —Professor Way was aware that Professor Clark's test applied only to certain waters; it was useful from its generally applicable and simple mode of employment; at the same time, he agreed with Mr. Rowlandson that, in cases where magnesia was suspected, it would be desirable to employ a collateral test, although the indication of hardness given by the soap-test with magnesian waters would at once, by its unusual amount, show the disturbance occasioned by the presence of some other salt than those of carbonate and sulphate of lime. With regard to the questions affecting the action of water in irrigation, he had only to repeat his diffidence on the subject, although he thought the criterion of hardness by which the Devonshire makers of water-meadows were guided might be fallacious, and that hard water might produce a soft oily feeling to the hand as well as soft water. He had himself formed the opinion that the effects resulting from irrigation were due more to the chemical qualities of the water than to the circumstance of its higher or lower temperature; but he was sensible how ignorant we were on these difficult questions, and he should be most open to conviction, and glad to learn all that he could on the interesting subjects to which he had then had the pleasure of calling the attention of the members.

On the motion of the Earl of Chichester, seconded by the Earl of Lonsdale, the best thanks of the meeting were then voted to Professor Way for his kindness in delivering before the members so interesting a lecture on that occasion.

A Weekly Council was held on Wednesday, the 26th of June; present, the Hon. Robert Henry Clive, M.P., Trustee, in the Chair; Earl of Lonsdale, Earl of Chichester, Lord Loraine, Sir Thos. Dyke Acland, Bart., M.P., Sir John V. B. Johnstone, Bart., M.P., Sir Montague Cholmeley, Bart., Sir Robert Price, Bart., M.P., Sir E. M. Elton, Bart., Mr. T. Raymond Barker, Mr. John R. Barker, Dr. Calvert, Col. Challoner, Mr. Fuller, M.P., Mr. Brandreth Gibbs, Mr. Fisher Hobbs, Mr. D. Lewis, Mr. Miles, M.P., Col. Morris, Mr. C. E. Overman, Mr. Parkins, Mr. Pendarves, M.P., Mr. Thos. Rowlandson, Prof. Sewell, Mr. Shaw (London), Mr. Shelley, Prof. Simonds, Mr. Towneley, Prof. Way, and Mr. Wilson, of Stowlangtoft.

The following new Members were elected:
Gard, Richard Sommers, Rougemont, Exeter
Lidstone, Roger, George-street, Plymouth
Johnson, James, Chatterley Hall Farm, Tunstall, Staffs.
Miles, William, Dix's Field, Exeter
Birmingham, William, Thillerton, Broadclist, Devonshire
Snow, Thomas, Franklyn, Exeter

The names of 13 candidates for election at the next meeting were then read.

Anglo-Merino Wool.—Mr. Rowlandson read to the Council a correspondence he had recently carried on with Mr. Leyland Woods, on the subject of Anglo-Merino Wool for the purposes of dyeing; and submitted to the members a sample of that wool. He stated that it retained all the fineness of the old Southdown with a longer staple, which was susceptible of improvement from carding and fine combing, and was sought after for the manufacture of cachmere and other shawls. Its quality was good, but its colour dirty, an unfavourable circumstance, which prevented the wool from taking that brilliant dye assumed by foreign wools. The great object of his bringing this subject before the Council was, to inquire whether the bad colour of this wool might not be obviated or removed by judicious management of some kind. Unfortunately, the close quality of the Southdown wool did not admit of that perfect washing to which the more open-fleeced wools could be subjected. The sample he exhibited possessed firmness and staple, and would fetch a high price in the market; and it would compete with the finest foreign wools, if by any means it could be properly cleansed for the dyer. An interesting conversation then ensued between the Earl of Chichester, Mr. Shelley, the Hon. Mr. Clive, and Mr. Overman, on the circumstances connected with the growth of this wool, the character and age of the sheep from which it had been obtained, the management of the wool, and its market price compared with other wools.—Mr. Fisher Hobbs agreed with Mr. Rowlandson on the importance of preparing this wool by such detergent means as would increase its quality for the dyer, and its market value as an article for the manufacturer.—Mr. Rowlandson remarked that the fineness of staple of this wool was adapted only for the finer class of goods, which were less in demand; it had every quality for that purpose, excepting purity of colour; and he feared the stain or discolouration, on account of which it thus failed in being perfect, was indelible, and arose from natural causes, not from accidental circumstances.—Mr. Raymond Barker thought that the colour of wool was much influenced by the soil on which the sheep were kept.—Mr. Overman suspected that the application of spirits of tar was the frequent cause of the stains which were the subject of complaint.—Mr. Fisher Hobbs had never found any difficulty in cleansing his wool by washing it twice with soft soap, and once with water. He thought it very desirable that some arrangement should be made by the woolstaplers and flockmasters, by which more inducement might be offered for the production of superior wools.

Turnip-Fly.—Lieut. Brown, R.N., exhibited to the Council his first attempt at adapting his Horticultural Fumigator to agricultural purposes. That little instrument had long been known to horticulturists as a simple, effectual, and portable means, by which volumes of tobacco or other fumes could be thrown in a cool and dense mass on shrubs and flowers, without injury to the most delicate plant; or, by which green-houses, stoves, frames, apiaries, houses, ships, or other enclosed spaces, might be fumigated in the most direct and precise manner. The successful employment of that instrument for those purposes had led Lieut. Brown (who had for many years in earlier life been extensively engaged in practical farming) to attempt its adaptation to field uses, especially to destroy or paralyze the ravages of the Turnip-fly, by fumigating the crop with the empyreumatic smoke, resulting from the slow burning of vegetable field refuse. This instrument was made for him by Messrs. Cottam and Hallen, and exhibited in action in the court-yard of the Society's house to the members. It consisted of a barrow-wheel and shaft-handles, supporting an iron-plate circular chamber, within which revolved (by means of a strap set in motion by such wheel) an axis with radiate fan-plates, at right angles to the plane of revolution of such axis. The chamber had two openings; one at the side, by which the smoke was drawn into it (through an upright cylinder, at the top of which was the combustion box) by the rapid revolution of the fans; and the other in front, by which the smoke was driven out through a pipe or nozzle, moving on a hollow ball-and-socket joint, and directed, like the same part of a garden-engine, on any object at pleasure. Mr. Brown was satisfied with the result of this first attempt, as far as it established, in his opinion, the application of his principle; but he was dissatisfied with it, inasmuch as the mechanical adjustments for generating the fumes, and throwing them out in sufficient quantity, and with the requisite rapidity, were incomplete. He hoped, by the 10th of July, to produce a perfect engine for the inspection of the Council. In the meantime, he remarked, that smoke of any kind was known to have the effect of paralyzing the fly, and arresting its ravages on the Turnip crop, until the young plants could get into rough leaf, and out of danger. The only practical difficulty consisted in the mechanical means of applying it; this, he hoped, would be accomplished when the engine he had the honour to exhibit to the members should be perfected. This barrow-fumigator was wheeled by one man within the drills, at the rate of three miles per hour; it could be set for any width or depth, and employed for any crop.

Cork Meeting.—Mr. Bullen, Secretary to the Royal Agricultural Improvement Society of Ireland, informed the Council, that the country meeting of that Society would this year be held in the city of Cork, in the week succeeding the Exeter Meeting of the Royal Agricultural Society of England; and he invited the attendance of the members and exhibitors who attended the latter meeting, to pass over into Ireland to the Cork Meeting, where a most cordial and grateful reception would be given to them, for such an instance of their sympathy and kind interest in the agriculture of the sister island, placed like that of England under the auspices of a kindred Royal Society.

A Monthly Council was held at the Society's House in Hanover-square, on Wednesday, the 3d of July; present, the Marquis of Downshire, President, in the chair; Lord Camoys, Lord Bridport, Lord Portman, Hon. R. H. Clive, M.P., Sir Matthew White Ridley, Bart., Sir Charles Lemon Bart., M.P., Sir Robert Price, Bart., Colonel Austen, Mr. Raymond Barker, Mr. C. Barnett, Mr. S. Bennett, Mr. Blanshard, Mr. Bramston, M.P., Mr. Brandreth, Mr. Burke, Mr. W. G. Cavendish, M.P., Colonel Challoner, Mr. Garrett, Mr. Brandreth Gibbs, Mr. Fisher Hobbs, Mr. S. Jonas, Mr. Kinder, Mr. Pendarves, M.P., Mr. Pusey, M.P., Prof. Sewell, Mr. Shaw, of London, Mr. Shelley, Prof. Simonds, Mr. W. Simpson, Mr. Stansfield, M.P., Mr. Turner, of Barton, Mr. Jonas Webb, and Prof. Way.

The following new members were elected:—
Morris, Colonel Lewis G. (Vice-President of the New York State Agricultural Society, and Chairman of the Board of Agriculture of the American Institute), Morrisania, near New York
Ffooks, Thomas, Sherborne, Dorset
Hardy, John, jun., 3, Portland-place, London
Snell, Benjamin, Wayton, Devonport
Hurd, Thomas, 2, Blandford-square, London
Roundell, Rev. Henry, Southernhay, Exeter
Bullock, George, East Coker, Somerset
Nunn, James Hardy, Pool-place, Great Yeldham, Essex
Wythis, George, Reigate, Surrey
Amos, Charles Edward, C.E., The Grove, Southwark
Dillett, John, Petticombe, Torrington
Durant, Richard, Sharpham, Devon
Cutler, George Henry, Upton-lodge, Torbay, Devon.

The names of 16 candidates for election at the next meeting were then read.

Finances.—Colonel Challoner, Chairman of the Finance Committee, presented to the Council the Monthly Report on the Accounts and Funds of the Society; from which it appeared, that on the last day of the month of June, then just ended, the current cash-balance in the hands of the bankers was 2435*l*. He explained that this general balance included 660*l*. on the Exeter Subscription Account, and 290*l*. to be invested as life-compositions; leaving a balance of 1485*l*. available for current purposes.—Colonel Challoner then proceeded to inform the Council that the cases of arrears in the county of Middlesex had been gone into, and where proceedings had been taken, the amounts claimed had either been paid into court, or at the office of the Society. In the case of one party, however, who re-

sisted the claim in a court of law, the Society obtained the amount of their demand with full costs. He added, that as soon as the period of the approaching Exeter Meeting was over, the Finance Committee would be prepared to proceed in the same manner with defaulters in other counties. This report was unanimously adopted by the Council.

Lecture-Room.—The report of the House Committee having been read, the consideration of that part of it which had reference to a recommendation by the Committee, that a lecture-room should be erected on the Society's premises, was deferred until the Committee were prepared to submit to the Council a working plan of the room proposed, and an estimate of its cost of erection. The Marquis of Downshire then informed the Council that, as their President at that time, it gave him very great pleasure to testify his respect to the members, and to evince his abiding interest in the welfare of the Society, by making a proposition to the Council which he hoped they would as readily accept, if it should be deemed advantageous to the prosecution of the worthy objects of the Society, as it was most readily and cheerfully offered on his part; namely, to avail themselves, as they should find it convenient, of the principal apartment in his family mansion in Hanover-square, where, by giving a day's notice to his servants, every accommodation would at once be made for any Lecture the Council might at any time decide upon, as calculated to diffuse scientific and practical information on agricultural subjects.—On the motion of Lord Camoys, seconded by Mr. Shelley, this most considerate and handsome offer on the part of the Marquis of Downshire was unanimously accepted by the Council, with an expression of their grateful sense of the kindness which had prompted his lordship to make it to them.

Agricultural Chemistry.—Mr. Pusey, M.P., in submitting to the Council the Report of the Chemical Committee, took that opportunity of expressing his satisfaction at the favourable progress made by Professor Way, in carrying out in his laboratory the various researches connected with important points of agricultural science and practice, recommended by the Committee, and approved by the Council.

Veterinary Inspection. — Mr. Raymond Barker, Chairman of the Veterinary Committee, laid before the Council the Report of that Committee, along with the special reports made to them by Professor Simonds, the Veterinary Inspector of the Society, on the case of cows in Somersetshire, belonging to a tenant of Lord Portman's, and on the outbreak of pleuro-pneumonia among the stock of Mr. Capel Cure, in Essex. These reports were referred to the Journal Committee. Professor Simonds continued to regard pleuro-pneumonia as a purely non-inflammatory disease at its commencement.

Exeter Meeting.—Lord Portman transmitted to the Council the following report from the General Exeter Committee:—

1. The Committee have concluded contracts with Mr. Manning for the execution of the pavilion and show-yards, and for the hire of hurdles.
2. They have concluded a contract with M. Soyer for the supply and furnishing of the pavilion dinner, at the average rate of the contract price at the former country meetings of the Society.
3. They have chosen by lot the stewards of the tables in the pavilion.
4. They have referred the invitations to the high table to a committee, consisting of the president, the past president, and the president-elect.
5. They have made a preliminary arrangement for the toasts and speakers at the pavilion dinner.
6. They have received and published the Secretary's final report, on his communication with the railway companies, on the subject of concessions in favour of the Society's Exibitors at the Exeter Meeting.
7. They have made the usual application to her Majesty's principal Secretary of State for the Home Department for metropolitan police.
8. They have made due arrangements for the various tickets and the official badges required at the Exeter Meeting.
9. They have completed and published the programme of proceedings for the occasion.

This report having been adopted by the Council, a report was received from Mr. Manning, the Society's contractor of works, on the near completion of all the arrangements connected with the erection of the Pavilion and Show-yards.—Mr. Brandreth Gibbs informed the Council that he should proceed to Exeter in a few days from that date, for the purpose of commencing his operations in the Show-yard, and that he should be prepared, as the Honorary Director of the Show, to receive and attend to any instructions the Council might think proper to transmit to him.

Judges.—Lord Portman, Chairman of the Judges' Committee, having transmitted to the Council the list of Judges recommended by them for the Exeter Meeting, in the different departments of Implements and Live Stock, the Council adopted that report, and made the appointment accordingly of the various branches proposed.

Sheep-Shearing.—On the motion of Mr. Shaw of London, seconded by Mr. Jonas, the Council passed the following resolution:—

"That it be an instruction to the judges to see, that according to the terms of the certificate, the sheep exhibited at the country meetings of the Society be fairly and properly shorn; and that the director of the show be requested to take measures that no shearing shall be allowed in the show-yard."

Leicester Sheep.—Mr. Pawlett, of Beeston, addressed a letter to the Council, entering into a detail of the "unfair practices that had been used at some of the shows of the Society, and which he understood would be again attempted at the ensuing Exeter Meeting; a communication he made in the hope that the Council would order special instructions to be given to the judges of Leicester sheep, to examine the different animals shown in those classes, before awarding the prizes, in order to disqualify all those that were not produced agreeably with the printed conditions."

Agricultural Implements. — Colonel Challoner, Chairman of the Implement Committee, presented to the Council the report of that committee, from the various practical details of which, connected with the stewards' department, the following two paragraphs may be selected for publication, on account of the general interest felt on the points to which they refer, namely:

1. The committee have the satisfaction of reporting to the Council, that the improvements made by Mr. Amos, the Consulting Engineer to the Society, in the apparatus for testing the power of machinery, will supersede the necessity of the Society's hiring or purchasing a steam-engine of their own for the trials at their Country Meeting.
2. The committee recommend that the judges, in their awards to implements under the head of "Miscellaneous," bear in mind the requirements of small farmers.

Colonel Challoner assured the Council that Mr. Amos's arrangements were now most perfect. It had been feared that the necessity of the Society's being put to the great expense and inconvenience of having their own steam-engine for their trials of agricultural implements and machinery would prove an imperative one; he, however, had not felt that fear so strongly as others had done; he knew the principle adopted for ascertaining what quantity of power each machine required to do a certain amount of work, to be a sound one; and he had full confidence that the zeal and mechanical science of Mr. Amos would ultimately triumph, as it had done, over every temporary obstacle.—Mr. Turner, of Barton, expressed the satisfaction he felt to find that attention was recommended to the wants of the small farmer, who required for the cultivation of his land only those implements that were simple in their construction and easy to be worked.—Colonel Challoner remarked, that being so well acquainted as he was with the county of Somerset, he well knew how much such implements as those recommended by the committee, and referred to by Mr. Turner, were required by the small holders in the West of England; and he should never rest content with the results obtained by the Society until implements on the best principle, and for every purpose of cultivation under those circumstances, could be made at a moderate expense by any common blacksmith throughout the country.

The President laid before the Council a communication addressed to him by M. Célestin Chilliard, of Paris, on his mode of arresting the progress of the Potato disease. Lord Rossmore conveyed the Council his high sense of the value of the Society's Journal. Mr. Nesbit, of Kennington, presented a copy of his chart of the principal Fossiliferous Deposits in the British Islands, prepared for the use of his pupils. Mr. Layton Cooke presented a copy of his "Referee and Guide to the Valuation of Real Property," dedicated by him to the Society. Mr. Henry Besley presented a copy of his "Hand Book to Exeter, and to the Exeter Meeting." The Council having ordered their usual thanks to the respective authors of these communications and presents, adjourned to the following Wednesday; and notice was given that, on the rising of that meeting, they should adjourn (over the Special Councils to be held at the Guildhall, in Exeter) to their monthly meeting in London, on Wednesday, the 7th of August.

Reviews.

A Word in Season; or, How the Corn-grower may yet grow Rich and his Labourer Happy. Addressed to the Stout British Farmer. Ridgway, Piccadilly. Pp. 16.

We ought before this to have introduced this pamphlet to our readers. It was introduced to us in the following terms by its author:

"Many a desponding farmer has published his balance-sheet, and in nine cases out of ten it is not merely a blank but a blot. Even the sanguine agriculturist, with all his outlay, and with the most sensible and scientific application of the soundest principles of chemistry to his subject, has but little to show at present beyond his fair tilled fields, his comely homestead, and a margin—for profits to come. Is this result of present prices for corn inevitable? I humbly conceive it is not, and I presume, through you, to call the attention of your readers to a plan by which, with Wheat at 40*s.*, the corn-grower's balance-sheet may yet show an abundant remuneration. The plan is given in the accompanying small pamphlet, which, if you feel so disposed, you are liberty to transcribe; containing, as it does, a reply to many questions which I see with great pleasure proposed in your columns. With regard to the accuracy of my statements, I have desired the publisher of the pamphlet, Mr. Ridgway, of Piccadilly, to give my address, if required, in order that they may be tested on the spot."

The plan detailed in this tract resembles that of Jethro Tull, who by wide intervals deeply tilled between his Wheat drills, succeeded in reaping annually a good crop for many successive years off the same land. The following long extract describes the practice on which our author bases the encouragement which he offers to the agricultural reader:

"——— Northamptonshire, November, 1849.

"My Wheat is coming up well; and it is a beautiful sight to see the thin green lines run so evenly and regularly that they seem to blend together in the distance. It is more striking from the broad intervals that separate the narrow lands, and mark out the growing crop into rows of three. Mark these intervals well; because it is upon these I build all my hopes that the corn-grower may yet grow rich and his labourer happy. Look closely, and you will perceive that the three rows of Wheat on each land are a foot apart. Each land, therefore, is two feet wide. Measure, and you will find the interval three feet. Then comes another land of three rows of Wheat; then another interval; and so on all over the acre. I only waited for the coming up of the Wheat in distinct lines, to dig these important intervals. They are just finished, and are the beginning of my labours for the next year's crop of Wheat. And I shall now take you with me, if I can, and show you the whole process of my simple cultivation, from this first digging, till I have cut and threshed and measured the produce. Don't let us leave these diggings, however, till I have shown you how they are done. They are two spits deep; and, after the pan is a little moved, the staple is turned upon it, and the second spit is gently laid uppermost, and in such a form that the frost may be felt right through the whole. Look: you can almost see down to the subsoil. This digging, then, is my first outlay. Half the acre being already in Wheat, I have had only half the acre—bear this in mind—only half the acre to dig and to pay for; and the price of that, at the average rate of 3*l.* the acre, is 1*l.* 10*s.* Well; thus lie these ridged intervals during the winter—higher than the tender Wheat, and so protecting it, and checking the drifting snow. The winter fallow over, I give my spring stirring with the fork, which moves, without damaging, the tender fibres; and I follow up that with the horse hoe, as often as the surface incrustates, and as long as the growing corn will permit. The crop being carried, last of all comes the forking and pulverising, and levelling for seed time. The two forkings and the hoeings *ad libitum*, I value at 20*s.* I pay great attention to what follows—namely, the putting in the seed. For my three rows of Wheat I make channels with a three-wheeled presser, the edges of which are sharper than usual, in order to cut through the land to the depth of 2½ or 3 inches. Boys or men follow, and drop single grains into the channels, about 2 or 3 inches apart; and I keep a sharp look-out that this is done faithfully. The seed thus lying deep on a hard bed, and the land being well drained, I am not afraid of the plants being lifted by the frost; so I cover over the seed, and close up the channels, with the roller.

"Be gracious, Heaven! for now laborious man
Has done his part. Ye fostering breezes, blow!
Ye softening dews, ye tender showers, descend!
And temper all, thou world-reviving sun,
Into the perfect year!"

"The hoe is still kept at work between the rows of the growing Wheat as long as it is safe; and then comes the last scene of all—the sickle and the harvest home. Sum up, then, the outlay for this crop, from first to last.

	£	s.	d.
One double digging	1	10	0
Two single diggings, with fork	1	0	0
Pressing, sowing, hoeing, carrying, threshing, rates and taxes	2	1	0
Two pecks of seed (5*s.*) the bushel	0	2	6
Total	4	13	6

"Such has been the process—such the outlay. The Wheat is now threshed: what is the yield? I have already had Wheat on the same acre of land for three successive years. Of the first year I took no account; but I have accurately measured the produce of the two last years, and the yield has been the same in both cases, namely 4 qrs. and 2 bushels:

	£	s.	d.
Four quarters and two bushels of Wheat, at 40*s.* per quarter	8	10	0
One ton and 12 cwt. of straw (at 2*l.* per ton) ...	3	4	0
Total amount of produce	11	14	0
Deduct outlay	4	13	6
Total amount of profit	£7	0	6

"To myself, as proprietor, then, this acre of Wheat land is worth 7*l.* 0*s.* 6*d.* To a tenant, renting at 40*s.*, or 50*s.*, or 60*s.* it would be worth accordingly. Would a tenant be satisfied with a net profit of 5*l.*, or 4*l.* 10*s.*, or 4*l.* the acre? Would the stout British farmer, who had 100 acres in Wheat, be content with a sheer gain of 400*l.*? Before I leave this summary of outgoings and returns, I must make two remarks. First, it will be seen that I have charged, under one head, the several items of pressing, sowing, &c., down to rates and taxes. I have made as minute a calculation as possible of what is the cost of each item to myself; but, as the amount of these items may vary—and, I believe, does vary in other places—some items being less, and others more than I have calculated, the total amount, on the average, being about the same, I have acted as I have done in this matter in order to avoid useless cavil. Secondly, I use no manure for my Wheat land; and therefore place the straw, as well as the Wheat, to my account of profits. It is beside the question here to speak of the other portions of my farm; but it will be as well just to notice that the same general principles of cultivation are applied throughout; and that by 3 feet intervals and 2 feet ridges, deep ploughing as well as digging, constant pulverisation and abundance of home-made manure, my root crops are enormous, and enable me most willingly, to purchase my own straw at 2*l.* a ton. In a case like this it would be intense folly, approaching to wickedness, to mislead by exaggeration. But I merely state a plain fact when I tell the reader that, with the exception of less than a quarter of Oats for my horses, and a little meal for my pigs—upon the produce of 11¼ acres, nine of which are pasture, I keep six cows and two horses, and fatten for the consumption

of my house as many pigs as I choose. The net profit of these 11¼ acres I reckon at very nearly 100*l.*"

The facts stated seem to claim the test of experiment from the arable farmer—and it is not improbable that he might find a deep soil, by treatment such as is here described, capable of yielding an annual and profitable crop of Wheat for some years, being at the end of that time exchanged for another section of the farm and restored to the ordinary farm management without any material loss of fertility.

Farming Essays (Second Series). By Hewitt Davis, Land Agent. Simpkin, Marshall and Co.

Many of the articles here collected our readers have already seen. They form an excellent continuation of the first series of essays published by Mr. Davis a year or two ago—and will we doubt not extend the reputation of their author, already so high, as an authority on agricultural subjects.

A Series of Tables on Draining, &c. By James Strachan. Oliver and Boyd, Edinburgh: Simpkin and Marshall, London.

Mr. Strachan has already presented the farmer with tables intended to facilitate those calculations in which either his business or his professional transactions involve him. The value to him of the present volume he will be able to estimate from the following statement of its contents:—1. Tables showing the number of roods and of rods of drains in any quantity of land from 1 pole to 100 acres, and from 4 to 35 yards, pp. 9—40. 2. Tables showing the number of tiles, 12, 14, 15, 16, and 18 inches long, required for from ¼ rood or rod, to 20,000 roods or rods, pp. 43—52. 3. Directions for constructing tanks and measuring their contents, p. 55—57.

Notices to Correspondents.

Cake Breaker: *A Scotchman.* There are many efficient cake breakers. See article Bruises, in "Blackie's Cyclopedia." Those in which the pinnacle form of tooth is adopted are the best. Green fodder may be cut up if a little straw at top and bottom be used to let it slide along the feed-box of the cutter.

Haymaking Machines: *C. R.* Our advertising columns give the addresses of makers. Your Turnip-seed will yield a good crop if sown on properly prepared land: its "antecedents" are not likely to affect the result.

Wireworm: *J W.* You should read the Paper, by Mr. Curtis, in Vol. V. of the "English Agricultural Journal," and you will see in what slight measure we are able to contend with this plague. Paring and burning occasionally is a good thing; folding sheep is a good thing; and you might, perhaps, stifle burn instead of paring and burning, which would equally destroy insects, at the same time that it would not dissipate the organic part of the soil so completely. Your course is better than the other for ordinary purposes; you must judge for yourself as to whether, under the circumstances, it may not be advisable occasionally to burn the old lea, before sowing Wheat.

Erratum: For "derive from" in the 10th line of the paragraph about American churn, col. *a*, p. 430, read "desire."

Markets.

COVENT GARDEN, July 13.

Vegetables are abundantly supplied. Strawberries and Hot-house Grapes are both plentiful, and the same may be said of Pine-apples. The supply of Peaches and Nectarines is still well kept up. Ripe Gooseberries fetch from 2s. 6d to 3s. 6d. per half sieve. Walnuts and Chestnuts are abundant; Oranges and Lemons though scarcer are sufficient for the demand. Young Carrots and Turnips may be had at from 3d. to 6d. a bunch. Potatoes fetch from 1d. to 2d. per lb. Lettuces and other salading are sufficient for the demand, and so are Mushrooms. French Beans are plentiful. Cut Flowers consist of Heaths, Pelargoniums, Cinerarias, Lily of the Valley, Pinks, Carnations, Rhododendrons, Ranunculuses, and Roses.

FRUITS.

Pine-apples, per lb., 4s to 6s	Lemons, per doz., 1s to 2s
Grapes, hothouse, p. lb., 2s to 5s	Oranges, per doz., 9d to 1s 6d
Peaches, per doz., 6s to 18s	— per 100, 5s to 12s
Nectarines, per doz., 6s to 18s	Almonds, per peck, 6s
Strawberries, p. punn., 6s to 1s 6d	— sweet, per lb., 2s to 3s
Cherries, per lb., 6d to 1s 6d	Walnuts, p. 100, 1s 6d to 2s
Melons, each, 3s to 5s	— p. bush., 16s to 24s
Gooseberries, green, per half sieve, 1s 6d to 2s 6d	Nuts, Barcelona, per bush., 20s to 22s
Currants, p. half sieve, 3s to 4s	— Brazil, p. bsh., 12s to 16s
Raspberries, p. pottle, 4d to 6d	Kent Cobs, 90s to 100s p. 100 lbs

VEGETABLES.

French Beans, per 100, 1s to 2s	Onions, p. bunch, 2d to 6d
Asparagus, p. bund., 9d to 4s	— Spanish, p. doz., 1s 6d to 4s
Rhubarb, p. bundle, 2d to 4d	Shallots, per lb., 6d to 8d
Cabbages, per doz., 6d to 1s	Garlic, per lb., 4d to 8d
Cauliflowers, p. doz., 2s to 4s	Artichokes, per doz., 2s to 4s
Peas, per sieve, 1s 6d to 4s	Vegetable Marrows, per doz., 1s to 2s
Beans, per sieve, 1s 6d to 2s	Lettuce, Cab., p. sc., 2d to 1s
Greens, per doz., 1s to 1s 6d	— Cos, per score, 6d to 1s
Sorrel, p. hf. sieve, 6d to 9d	Radishes, p. 12 hands, 9d to 1s
Potatoes, per ton, 80s to 150s	Small Salads, p. punn, 2d to 3d
— per cwt., 5s to 8s	Mushrooms, p. pot., 9d to 2s
— per bush., 2s 6d to 4s	Fennel, per bunch, 2d to 3d
Turnips, per doz. bun., 3s to 6s	Savory, per bunch, 2d to 3d
Red Beet, per doz., 1s to 2s	Thyme, per bunch, 2d to 3d
Cucumbers, each, 1d to 2d	Parsley, p. doz. bun., 1s to 2s
Leeks, per bunch, 2d	— Roots, p. bdle., 9d to 1s
Celery, p. bundle, 1s to 1s 6d	Marjoram, per bunch, 8d to 9d
Carrots, per doz., 4s to 6s	Mint, green, per bunch, 2d
Spinach p. sieve, 1s 6d to 2s	Watercress, p. 12 bunch., 6d to 9d
Horse Radish, p. bdl., 1s to 4s	

HOPS.—Friday, July 12.

Messrs. Pattenden and Smith report that there is a steady demand for new and fine yearling Hops, at full as much money as last week.

COAL MARKET.—Friday, July 12.

Wallsend Riddell, 13s. 6d.; Wallsend Haswell, 16s. 3d.; Wallsend Hetton, 16s. 3d.; Wallsend Lambton, 15s.—Ships at market, 85.

HAY.—Per Load of 36 Trusses.

Smithfield, July 11.

Prime Meadow Hay	75s	to 80s	Clover	75s	to 84s
Inferior ditto... ...	65	70	New Clover	60	72
Rowen	—	—	Straw	24	30
New Hay	60	72			

J. Cooper.

The supply very short.

Cumberland Market, July 11.

Prime Meadow Hay	72s	to 77s	Inferior	65s	to 72s
Inferior ditto... ...	55	65	New Clover	—	—
New Hay	50	68	Straw	25	30
Old Clover	78	84			

Joshua Baker.

* From crop 1841, one farmer sold 4500 loads, of 252 lbs. each, from 36 acres, which is better than 14 tons per acre.

SMITHFIELD, Monday, July 8.

The supply of Beasts is but moderate, and the demand is tolerably good; consequently the best qualities are readily disposed of at advanced rates. Our top quotation is exceeded in a few instances for choice Scots. The number of Sheep is larger, and a reduction in price is submitted to on the average. Good Lamb is in demand, at fully late rates. Calves are more in request, and make rather more money. From Holland and Germany there are 560 Beasts, 1780 Sheep, and 205 Calves; from Scotland, 100 Beasts; from Norfolk and Suffolk, 1300; and 700 from the midland counties.

Per st. of 8 lbs.—	s	d	s	d	Per st. of 8 lbs.—	s	d	s	d
Best Scots, Herefords, &c.	3	6	to 3	8	Best Long-wools	...	to	...	
Best Short-horns	3	4	— 3	6	Ditto Shorn	3	4	— 3	6
2d quality Beasts	2	10	— 3	2	Ewes & 2d quality	...	—	...	
Best Downs and Half-breds	...	...	—	...	Ditto Shorn	2	10	— 3	2
Ditto Shorn	3	8	— 4	0	Lambs	...	...	4 8 — 5	2
					Calves	...	...	2 8 — 3	8
					Pigs	...	...	2 8 — 3	8

Beasts, 3328; Sheep and Lambs, 32,520; Calves, 245; Pigs, 295.

Friday, July 12.

We have a fair supply of Beasts, and the demand limited, consequently Monday's rates are barely maintained. With Sheep and Lambs we are well supplied, and lower rates are submitted to, especially for Lambs. Calves are again abundant, and make low prices. From Germany and Holland there are 284 Beasts, 770 Sheep, and 266 Calves; from Scotland, 100 Beasts; and 119 Milch Cows from the home counties.

Best Scots, Herefords, &c.	3	6	to 3	8	Best Long-wools	...	to	...	
Best Short-horns	3	2	— 3	4	Ditto Shorn	3	4	— 3	6
2d quality Beasts	2	8	— 3	0	Ewes & 2d quality	...	—	...	
Best Downs and Half-breds	...	...	—	...	Ditto Shorn	2	8	— 3	0
Ditto Shorn	3	8	— 4	0	Lambs	...	...	4 0 — 5	0
					Calves	...	...	2 6 — 3	6
					Pigs	...	...	2 8 — 3	8

MARK LANE.

Monday, July 8.—The supply of English Wheat to this morning's market was again exceedingly small, and was cleared early at 2s. per qr. advance. Foreign met a fair demand, at an improvement of 1s. to 2s. per qr. upon the prices of this day se'nnight.—Barley is the turn dearer.—Beans and Peas fully support our quotations.—In the value of Oats we observe no alteration.—The top price of Flour is raised to 40s. per sack.—The weather continues unsettled.

British per Imperial Quarter.	s.	s.		s.	s.
Wheat, Essex, Kent, & Suffolk ...White	42	—46	Red	37	—41
— — fine selected runs ...ditto	46	—50	Red	40	—43
— — Talavera	46	—52			
— Norfolk, Lincoln, & York ...White	—		Red	36	—42
— Foreign	33	—51			
Barley, grind. & distil., 19s to 22s...Chev.	23	—27	Malting	22	—25
— Foreign.....Grinding and distilling	15	—21	Malting	20	—23
Oats, Essex and Suffolk	15	—18			
— Scotch and Lincolnshire ...Potato	18	—21	Feed ...	17	—19
— Irish .....Potato	16	—20	Feed ..	13	—17
— Foreign .....Poland and Brew	15	—20	Feed ...	13	—16
Rye	19	—21	Foreign	18	—20
Rye-meal, foreign .....per ton	5*l.*	—6*l.*			
Beans, Mazagan .....22s to 24s.....Tick	24	—26	Harrow	24	—26
— Pigeon .....25s — 28s...Winds	—		Longpod	—	
— Foreign ..... Small	24	—34	Egyptian	19	—21
Peas, white, Essex and Kent.....Boilers	23	—26	Suffolk	24	—28
— Maple .....24s to 27s.....Grey	22	—24	Foreign	21	—28
Maize .....White	26	—30	Yellow...	25	—30
Flour, best marks, delivered ...per sack	36	—40			
— Suffolk .....ditto	28	—36	Norfolk	28	—36
— Foreign .....per barrel	21	—24	Per sack	29	—33

Arrivals in the Port of London last week.

	Wheat.	Barley.	Malt	Oats.	Beans.	Peas
Flour, 7469 sks — 1903 bls	Qrs.	Qrs.	Qrs	Qrs.	Qrs.	Qrs.
English	1562	62	500	233	226	40
Irish	—	—	64	—	—	—
Foreign	12625	3385	—	8778	3980	854

Friday, July 12.—The arrivals of English corn this week have been small, those of foreign moderate, with the exception of 14,810 qrs. of Wheat. There was a fair attendance at market this morning, but the disposition to purchase Wheat was checked by the firmness of holders. The sales effected were at a slight enhancement upon Monday's prices.—Barley, Beans, and Peas fully support our quotations.—Oats are a free sale at former prices.—There has been a good sale for foreign Flour during the week, at an advance of 2s. to 3s. per sack.—The prices of floating cargoes of Maize are nominally the same.—The cold and showery weather which prevailed early in the week has been succeeded by a somewhat warmer but gloomy atmosphere. Harvest is expected to be general in about three weeks or a month. Throughout the kingdom Wheat has been in improved demand, at an advance varying from 1s. to 3s. per qr. The accounts received this morning lead us to anticipate a considerable deficit in the ear in some important districts.

Arrivals this week.

	Wheat. Qrs.	Barley. Qrs.	Oats. Qrs.	Flour.
English ...	1990	50	580	3140 sacks
Irish	—	—	—	
Foreign ...	14810	10040	18110	— brls.

Imperial Averages.	Wheat.	Barley.	Oats.	Rye.	Beans.	Peas.
June 1.....	40*s* 2*d*	23*s* 0*d*	15*s* 11*d*	22*s* 0*d*	26*s* 11*d*	26*s* 2*d*
— 8.....	49 8	22 4	16 7	23 7	27 0	26 8
— 15.....	39 11	21 9	16 11	22 8	26 10	27 3
— 22.....	40 5	22 8	16 10	22 6	26 7	26 9
— 29.....	40 9	21 6	16 5	21 6	26 11	26 11
July 6.....	40 11	21 9	17 0	23 2	26 10	28 4
Aggreg. Aver.	40 4	22 2	16 7	22 7	26 10	27 0
Duties on Foreign Grain	1 0	1 0	1 0	1 0	1 0	1 0

Prices.	June 1.	June 8.	June 15.	June 22.	June 29.	July 6.
40s 11*d*	...	...	...	...	...	
40 9	...	...	...	...		...
40 5	...	...	...		...	...
40 2	...	...	...	...	...	...
39 11	...	...	...	...	...	...
39 8	...		...	...	...	...

Liverpool, Friday, June 5.—Although the markets in the north of Europe were said to be scantily supplied with Wheat, the arrivals of foreign into this port, within the last 10 days, exceed 40,000 qrs. At our market to-day transactions were considerable, and with a free sale for investment all descriptions of English, Irish, and foreign realised fully 1d. per 70 lbs. over the rates of Tuesday last. Flour also met an improved inquiry, and States, Canadian, including French and Irish, maintained previous quotations. Oats and Oatmeal, upon a very limited retail demand, merely sustained late prices. In addition to the rains previously noticed, frequent showers have fallen, which are beneficial to the growing crops.——Tuesday, July 9.—The grain trade during the week has had an improved appearance. There was a healthy demand for Wheat this morning, at an advance of 2d. to 3d. per bushel on the rates of this day week. Grinding Barley improved 2d. per bushel, and grinding Peas 1s. per qr. Oats, Oatmeal, and Beans were held for full prices, and were scarcely so easy to buy. We have to note an advance of from 6d. to 1s. per qr. on Indian Corn. Prices: Wheat, English, red, per 70 lbs., 6s. 0d. to 6s. 6d.; white, 6s. 3d. to 6s. 9d. Barley, Scotch and Irish, per 60 lbs., 2s. 9d. to 3s. Malt, English, per qr., pale, 48s. to 52s. Oats, English and Scotch, per 45 lbs., 2s. 8d. to 2s. 10d. Beans, English, per qr., 27s. to 31s. Peas, do. do., 25s. 6d. to 26s. 6d.

Wanted, a Steam Plough.—The Advertiser has a small Engine, without Boiler, of 8-horse power.—Prices and particulars to be sent to the Editor of this Paper, who will forward them.

Already published, all strongly bound in dark-coloured Cloth.

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	s.	d.
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Infant Treatment under Two Years of Age ...	1	3
Infant Education from Two to Six Years of Age ...	2	0
English Section.		
First Book of Reading	0	1½
Second Book of Reading	0	3
Simple Lessons in Reading	0	10
Rudiments of Knowledge	0	10
Moral Class-Book	1	6
Introduction to Composition	0	6
Introduction to Grammar	1	3
Grammar, Two Parts, each	1	6
Etymology	2	0
Elocution	2	6
History of the English Language and Literature ...	2	6
Arithmetical and Mathematical.		
Introduction to Arithmetic	1	0
Arithmetic, Advanced Treatise	2	0
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Plane Geometry	2	6
Key to Plane Geometry	2	0
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Key to Practical Mathematics	3	6
Mathematical Tables	3	6
Scientific.		
Introduction to the Sciences	1	0
Laws of Matter and Motion	0	10
Mechanics	0	10
Hydrostatics, Hydraulics, and Pneumatics	0	10
Acoustics	1	0
Optics	1	0
Astronomy	1	0
Electricity	1	0
Meteorology	1	0
Chemistry	2	6
Animal Physiology	1	6
Zoology	4	0
Vegetable Physiology	1	6
Geology	2	6
Historical.		
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History of Rome	2	6
History of the British Empire	2	6
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Writing—Plain, Current-hand, and Ornamental; in 15 prepared Copy-books (post size) each	0	6½
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C. Sallustii Crispi Catilina et Jugurtha	2	0
Q. Curtius Rufus, de Gestis Alexandri Magni	3	6
P. Virgilii Maronis Carmina	4	6
M. Tullii Ciceronis Orationes Selectæ	3	6
T. Livii Historiarum Libri I. II. XXI. XXII.	4	0
Latin-English and English-Latin Dictionary. (Nearly Ready.)		

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"The labour and experience of a life devoted to the science of Horticulture."—*Vide Author's Preface.*

With an Appendix, describing a new and economical method of producing uniform Bottom-heat from Hot Water in Tanks, upon the most simple plan, with explanatory Diagrams, and Reference to Buildings now in successful operation; by which means, the "King of all Fruits," the Pine, and other tropical fruits and flowers, may be cultivated at less than half the expense of the old system.

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ORCHIDS AND PITCHER PLANTS.

MR. J. C. STEVENS is instructed to include in his sale on TUESDAY next, a small importation of ORCHIDS from Spanish Main, South America, which has arrived in the best possible state, and consists of magnificent plants of Cattleya, probably Mossiæ and labiata, and some exceedingly fine specimens of Oncidium pupilio, well deserving the attention of growers; also two cases of Nepenthes of several species, just received from the East.—To be viewed on Monday, and Catalogues had.

SPECIMEN HEATHS, AND OTHER GREENHOUSE PLANTS—THE COLLECTION OF MR. W. J. EPPS, OF MAIDSTONE.

MR. J. C. STEVENS is favoured with instructions to sell by Auction, at his Great Room, 38, King-street, Covent-garden, on TUESDAY, July 16, at 12 for 1 o'clock, the above collection of ERICAS, which is admitted to be one of the finest in the kingdom. It numbers 80 specimens, all of which are in the best possible health, dwarf, bushy, and young grown plants, and which have received the highest awards both at the Chiswick and Royal Botanic Exhibitions. All the leading and best varieties will be found included, such as aristata major, ampullacea, splendens, Massoni, Hartnellii, ferruginea, propendens, tricolor retorta, metulæflora, &c. Also magnificent specimens of Ixora coccinea, Allamanda Schottii, Epacris miniata grandiflora, Stephanotis, Azalea, Boronia, &c., many of which, as well as of the Heaths, will be in fine perfection to exhibit through July, August, and September.—May be viewed on Saturday (some of the plants at the Chiswick Exhibition, and the remainder at the auction room), and on Monday, and Catalogues had.

BETWEEN TUNBRIDGE AND TUNBRIDGE WELLS, A SINGULARLY DESIRABLE MANSION, PARK, AND DOMAIN, IN ALL 800 ACRES IN A RING FENCE.

MESSRS. DAVIS AND VIGERS are directed by the Mortgagees, having the consent of the Assignees of Mr. Benj. Smith, deceased, to sell by Auction, at the Mart, on WEDNESDAY, July 17, at 1 o'clock, in two lots, the distinguished FREEHOLD ESTATE, known as the Great Lodge, or Colebrook Park Estate, situate in a remarkably healthy, picturesque, and favourite part of the beautiful county of Kent, beside the high road from Tunbridge to Hastings, four miles from Tunbridge and two from the Wells, and only about two hours distant from London. It comprises a very superior Residence, newly and expensively finished and decorated in the modern Tudor style, affording very handsome and most convenient family accommodation; comprising, on the first floor, six best chambers, seven secondary ditto, two Nurseries and Study; and on the ground floor, Dining Room, Library, two Drawing-rooms, and Conservatory communicating *en suite*, and by a Vestibule with an Inner Hall and Gentleman's-room, School-room, and most complete Domestic Offices. The principal rooms open on to an inclosed Terrace, laid out with Flower beds and an ever-playing Fountain, and adjoining are Gardens and Pleasure-grounds, and a beautiful Lake of five acres, containing trout and other fish. The House stands in a Park of 300 acres, and is approached in three directions by some miles of private roads, having lodges at the entrances. The remainder of the estate consists of profitable Woods and Plantations, and two Farms, with 14 acres of Hop Ground and Homesteads, four Labourers' Cottages, Keeper's Lodge, &c., in all 798 acres, 2 roods, and 19 perches of land. It is all freehold, and free of great tithe and land-tax. The whole is in hand, and in beautiful order, and the sale of the handsome Furniture will immediately follow the sale of the estate. The property may be viewed by orders from the Solicitors and Auctioneers. Particulars and Conditions of Sale will shortly be ready, and may be had at the Rose and Crown Hotel, Tunbridge; the Castle, Tunbridge Wells; of Messrs. Chantler and Crundwell, Land Agents, Southborough; and in London of the Solicitors, Messrs. Druce and Sons, Billiter-square; Messrs. Crowder and Maynard, Coleman-street; at the Mart; and of the Auctioneers, 3, Frederick's-place, Old Jewry, London.

NEAR TO TUNBRIDGE WELLS, KENT—50 Acres of picturesque Land, beside a good road from the Wells, and only 1½ mile from the Railway Station.

MESSRS. DAVIS AND VIGERS are directed by the Mortgagees, having the consent of the Assignees of Mr. Benjamin Smith, deceased, to Sell by Auction, at the Mart, London, on WEDNESDAY, July 17, at 1 o'clock, in one lot, a very eligible PARCEL of LAND, offering great attraction for residentiary buildings, and with a prospect of becoming valuable for a considerable building speculation, comprising 50a. 0r. 33p., of which 43a. 0r. 17p. are woodland, and 7a. 0r. 16p. are arable. The whole is freehold, and nearly free from tithe and land tax. The distance from Tunbridge admits of frequent and easy daily communication by railway with London and the south of England. Particulars and conditions of sale may be had at the Rose and Crown Hotel, Tunbridge; the Castle, Tunbridge-wells; of Messrs. Chantler and Crundwell, Land Agents, Southborough; of Messrs. Druce and Son, Billiter-square; of Messrs. Crowder and Maynard, Coleman-street; of W. Whitmore, Esq., Basinghall-street; at the Mart; and auctioneers' offices, 3, Frederick's-place, Old Jewry, London.

GREAT LODGE, KENT, FOUR MILES FROM TUNBRIDGE AND THREE FROM TUNBRIDGE WELLS.
ELEGANT FURNITURE, BOOKS, PLATE, LINEN, CHINA AND GLASS, AND ARTICLES OF TASTE, GREENHOUSE PLANTS, &c.

MESSRS. DAVIS AND VIGERS have been favoured with instructions from the Assignees of Mr. Benjamin Smith to sell by Auction, on the Premises, on MONDAY, July 22, and five following days, the entire FURNITURE and APPOINTMENTS of the above Mansion, the greater portion of which has been recently supplied by an eminent London upholsterer, designed with much good taste, combined with solidity and superiority in the manufacture, as follows:

On MONDAY, July 22, the Kitchen Utensils and Fittings of Domestic Offices, Furniture of Eight Bed-rooms, and the Nurseries.

On TUESDAY, two principal and three other Bed-rooms, Housekeeper's Room and Stores, Butler's Pantry, &c.

On WEDNESDAY, Entrance Hall, Study, Library (in antique oak), the costly Suites of the Drawing-rooms, Candelabra, Parisian Clocks, and a Pipe of Cider.

On THURSDAY, the Services of China, Glass, Plate, Plated Articles, Furniture of Dining-room, Fittings of Laundry, Stables, three sets of double Carriage Harness, &c.

On FRIDAY, the rare Collection of Exotic and other Plants, 30 Orange Trees, Boat, Iron Hurdles, Garden Tools, &c.

On SATURDAY, the Library of Books and Wardrobe of Linen.

The Sale to commence at 12 o'clock for 1 each day. To be viewed privately by order, on the 17th and 18th, and on the two days antecedent to the sale, on the production of a Catalogue, which may be had at 1*s.* 6*d.* each, to admit a party, at Mr. Nash's Library, Parade, Tunbrige Wells; of Mr. Gay, on the premises; and of the Auctioneers, 3, Frederick's-place, Old Jewry, London.

TO BE LET, at moderate rents, in Carmarthenshire, two genteel Residences—Dyffryn House, with three acres of Grass Land, and Careg Cenen, with from 300 to 500 acres of Arable and Grass Land, if required. Both places are within a drive of Swansea, to which the South Wales Railway is now open. For particulars, with a lithograph of Dyffryn House, apply to T. W. LAWFORD, Tirydail, Llandilo; or Messrs. ROWLAND, HACON, and ROWLAND, 38, Threadneedle-street, London.

FARMING STOCK.
GREAT LODGE FARMS, NEAR TUNBRIDGE, KENT.

MESSRS DAVIS AND VIGERS are favoured with instructions from the Assignees of Mr. Benj. Smith, bankrupt, to sell by Auction, at the Home Farm, as above, on MONDAY, July 29, and following day, at 12 o'clock, the whole of the LIVE AND DEAD STOCK, with the Implements, &c., ample for farming of 800 acres of Land, including 12 Horses, 6 Cows, 2 Calves, 4 Steers, 5 Heifers, 4 Sows, 12 Pigs, young Boar, Poultry, &c., about 400 tons of Meadow Hay in 14 stacks, Wheat, Beans, Peas, Straw, &c., modern Corn-drill, Haymaking Machine, Carts, Waggons, Ploughs, Harrows, and 600 Iron Hurdles, 10,000 Hop Poles, a quantity of Faggots and Cord Wood, and other valuable property.—To be viewed the day before the sale. Catalogues to be had on the Premises; at the Inns, Tunbridge and Tunbridge-wells; and Auctioneers' Offices, 3, Frederick's-place, Old Jewry, London.

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MR. HURLEY, FARM AGENT and VALUER, is favoured with the Letting of a picturesque FARM, situate in Buckinghamshire, 16 miles from London, near the Great Western Railway, and close to a principal Corn Market, consisting of a first-class Residence, suited for a Gentleman, with Lawns and Carriage Drive to the door, good Homesteads, &c., and 53 acres of rich Land—46 Arable, 7 Lawn and Meadow—in excellent cultivation. A Lease of about 14 years can be had. Rent 110*l*, Tithe free. Also 8½ acres of rich Meadow and Arable Land, detached, with Garden, Orchard, and a Cottage, may be had therewith. Rent for the whole, 128*l*. Stock and Implements at a valuation.—Apply at the Agent's Offices, 62, Nelson-square, Blackfriars, London.

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TO BE LET, two miles from London Bridge, a Market Garden Ground, of about 20 acres, in excellent cultivation, plentifully supplied with water and every convenience for carrying on the business.—For particulars, apply to Mr. SAMUEL BRANDON, Paradise-row, Rotherhithe.

TO BE SOLD, on very advantageous terms, a Retail SEED BUSINESS in a good Market Town, with or without a small Nursery.—Address by letter to S. B., Crosby-hall Coffee-house, Bishopsgate-street, London.

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TO BE SOLD, in one of the finest parts of Berkshire, a small compact Farm of about 80 acres, with House and Buildings thereon. It is near several railway stations, and within less than two hours' ride of London, per the Great Western Railway.—For further particulars, apply to Messrs. LAWRENCE, Solicitors, Cirencester.

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GLASS FOR CONSERVATORIES.

JAMES PHILLIPS AND Co. have the pleasure to hand their New List of Prices of GLASS for Cash.

CUT TO SIZE.

16 oz.	from 2*d*.	to 3½*d*.	per foot.	
21	,, 3½	,, 5	,,	
26	,, 3½	,, 7½	,,	
32	,, 4	,, 9½	,,	

SHEET SQUARES.
In boxes of 100 feet.

	s.	*d*.
Under ... ... 6 by 4	...12	6
6 by 4 and under 7 by 5	...16	6
7 by 5 ,, 8 by 6	...18	6
8 by 6 ,, 10 by 8	...20	6

100 feet and 200 feet cases of large Sheet Glass, for cutting up, at 2½*d*. per foot. British Plate Glass, from 1*s*. 2*d*. to 2*s*. per foot, according to size.

HARTLEY'S PATENT ROUGH PLATE, packed in boxes of 50 feet each:

6 by 4 and 6½ by 4½	...	10*s*.	6*d*.
8 by 6 ,, 8½ by 6½	...	13	6
7 by 5 and 7½ by 5½	...	12*s*.	0
9 by 7 ,, 10 by 8	...	15	0

MILK PANS.

12 in. diameter	...	2*s*.	0*d*.
14 ,, ...	...	2	6
16 ,, ...	...	3	0
18 ,, ...	...	3	6
20 ,, ...	...	4	0
22 ,, ...	...	4	6
24 ,, ...	...	5	0
26 ,, ...	...	6	0

CREAM POTS, from 2*s*. each.

PRESERVE JARS.

3 inches diameter	...	0*s*.	3*d*
4 ,, ,, ...	...	0	5
5 ,, ,, ...	...	0	7
6 ,, ,, ...	...	0	9
7 ,, ,, ...	...	1	0
8 ,, ,, ...	...	1	3
9 ,, ,, ...	...	1	6

PROPAGATING GLASSES.

2 in. diameter	...	0*s*.	2*d*.
3 ,, ...	...	0	3
4 ,, ...	...	0	4
5 ,, ...	...	0	6
6 ,, ...	...	0	8
7 ,, ...	...	0	10
8 ,, ...	...	1	0
9 ,, ...	...	1	2
10 ,, ...	...	1	4
11 ,, ...	...	1	6

BEE GLASSES, same sizes.

CUCUMBER TUBES.

12 inches long	...	1*s*.	0*d*.
14 ,, ...	...	1	2
16 ,, ...	...	1	4
18 ,, ...	...	1	6
20 ,, ...	...	1	8
22 ,, ...	...	1	10
24 ,, ...	...	2	0

Glass Shades; Tiles and Slates of any size; Wasp Traps, 3*s*. 6*d*. per dozen; Lamp Shades; Rough Plate Glass of every thickness. Lactometers, for trying the quality of milk, 4 tubes, 7*s*. 6*d*.; 6 do., 10*s*. Glass Stands for Pianoforte, and every article in the trade.
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CROWN, SHEET, AND ROUGH PLATE GLASS FOR HOTHOUSES, CONSERVATORIES, &c.

The Improved Patent Rough Plate, made by Messrs. Hartley and Co., can be supplied from this Warehouse, of every size and substance, at the same prices as at the works.
100 and 200 feet cases of large Sheet Glass, from 2½*d*. per foot. Small ditto, 10*s*. 6*d*. per 100 feet, packed in boxes ready for immediate delivery. Curators of Botanical Societies, Florists, Railway Agents, and others requiring large quantities, will, on sending dimensions, receive estimates at the lowest prices.
GLASS MILK PANS, CREAM POTS, Lactometers, Bee Glasses, Fish Globes, and all kinds of Dairy Glass, Propagating Glasses, Hyacinth Dishes, Cucumber Tubes, and every other description of Garden Glasses.
PATENT GLASS PENS, self supplying, never blot, never soil the ruler, and will write continuously for 12 hours.
Also, Glass Rulers, Glass Inks for office-stands, desks, &c. Stationers and Schools supplied. Wholesale Warehouse for Ornamental Shades, Lamp Shades, Gas Glasses, Genuine White Lead, Paints, Colours, and Pumps for Farm purposes.
Our Catalogue of 18 folios is the most complete ever published. No Gardener or Farm Bailiff should be without one. May be had Gratis on sending two postage stamps to Messrs. COGAN and Co., 48, Leicester-square, London.

FOR WATERING GARDENS, BREWERS' USE, &c.
FLEXIBLE INDIA-RUBBER HOSE PIPES.

JAMES LYNE HANCOCK, Sole Licensee and Manufacturer of the PATENT VULCANISED INDIA-RUBBER PIPES and TUBING.
These Pipes are well adapted for Watering Gardens, conveying Liquid Manure, racking Beer and Cider, Gas Fittings, Chemical and all purposes where a perfectly sound WATERPROOF and FLEXIBLE PIPE is required.
Hot Liquors or Acids do not injure them. No oil or dressing is required in using them. They do not leak from remaining out of use, are permanently Flexible in all Temperatures, and are therefore particularly suitable for Fire Engines; and, from their not leaking, are found exceedingly useful in conveying hot or cold water to baths in dwelling houses and such like purposes.
A LIGHT VULCANISED INDIA-RUBBER HOSE is now manufactured for conducting Water and Fluids, at the following prices per foot:

Size.	¼ in.	⅜ in.	½ in.	¾ in.	1 in.	1½ in.	2 in.	2½ in.	3 in.
1 ply ...	0*s*. 5*d*.	0*s*. 6*d*.	0*s*. 8*d*.	0*s* 10*d*.	1*s*. 0*d*.	1*s*. 2*d*.	1*s*. 4*d*.	1*s*. 6*d*.	
2 ply ...	0 8	0 9	1 0	1 2	1 5	1 8	2 0	2 3	
3 ply ...	0 11	1 0	1 3	1 6	1 10	2 2	2 9	3 3	

N.B. Vulcanised India-Rubber Garden Hose fitted with roses, jets, and branches, complete, with union joints ready to attach to pumps or water cisterns.
All orders or letters addressed to J. L. HANCOCK, at the Manufactory (and Warehouse), Goswell-mews, Goswell-road, London, will meet with immediate attention.

THE CONICAL BOILERS INVENTED BY JOHN ROGERS, Esq., are supplied and fixed by JOHN SHEWEN, ironmonger, Sevenoaks. Also all kinds of Hot Water Apparatus. For Churches and Public Buildings, Mr. SHEWEN should be consulted, his Warm Air Apparatus being safer, more efficient, and more durable than any other.

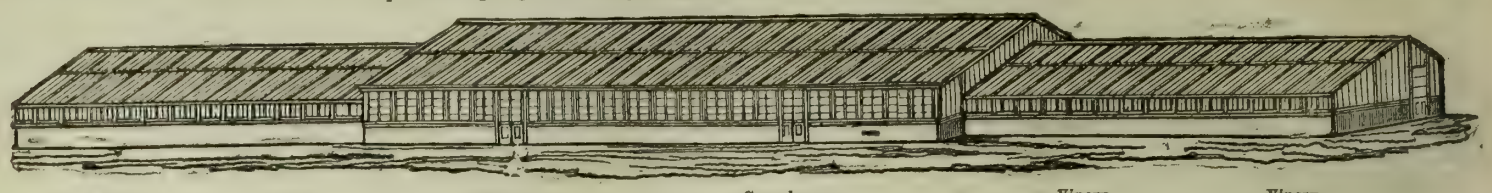
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The works of Messrs. PERRY being situated in the heart of the first iron district, they are enabled to execute all orders with the greatest facility, and on the most moderate terms. Drawings made and estimates prepared, if required. The showrooms contain an immense variety of every description of Iron and Wire-work, and are the largest in London. An Illustrated Catalogue of Bedsteads, with dimensions and prices, sent on application, post-free.

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DANVERS STREET, CHELSEA,

Respectfully solicit the attention of the Nobility and Gentry to their superior manner of Erecting and Heating every description of Building connected with Horticulture. They have much pleasure in giving the following testimonial referring to the range of houses shown below.



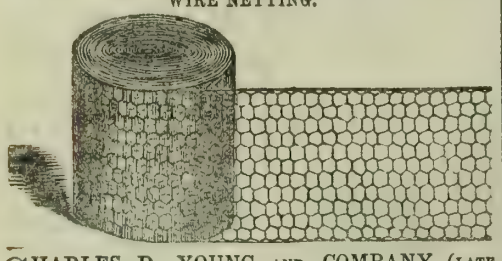
Peach House, 30 by 16 feet. | Vinery, 30 by 16 feet. | Stove, 45 by 20 ft. | Greenhouse, 45 by 20 ft. | Vinery, 30 by 16 ft. | Vinery, 30 by 16 ft.

[ERECTED FOR JOHN SHAW LEIGH, ESQ., LUTON HOO.]

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(Signed.) "JAMES FRASER, Gardener, Luton Hoo Park."

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MANUFACTURERS OF IRON AND WIRE WORK, &c.,
22, PARLIAMENT STREET, WESTMINSTER, LONDON;
48, NORTH BRIDGE, EDINBURGH;
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1, CASTLE BUILDINGS, DERBY SQUARE, LIVERPOOL;

beg respectfully to call the attention of Landed Proprietors and others to their strong Wire-Net Fence, for excluding Hares and Rabbits from Gardens, young Plantations, Nurseries, &c.

This Net was exhibited at the Show of the Highland and Agricultural Society of Scotland, held lately at Inverness, where its Efficiency, Great Strength, and Exceeding Cheapness attracted general attention, and had awarded from the Judges the Society's Silver Medals, with high commendations.

The immense damage done by Hares and Rabbits in Gardens and Young Plantations is often so great, that in the course of a year or two it will amount to more than the entire cost of protecting them with this Net. It is so durable, that when Plantations are sufficiently advanced to be independent of its protection, it can be removed to other exposed situations with the greatest facility, by any labourer. As a Fence against Hares and Rabbits, it is of itself quite sufficient, having only to be unrolled and attached, with small wire sent for that purpose, to wooden stakes driven into the ground, about every six or seven feet apart. It is, besides, peculiarly adapted for rendering Hedges, Paling, or other existing Fences, *completely impervious* to such vermin; and by being cut up into small pieces of three or more feet, as required, it forms a most efficient guard, at little expense, for individual Plants and Shrubs.

PRICES.—18 ins. high, 9*d.*; 24 ins., 1*s.*; 30 ins., 1*s.* 3*d.*; and 36 ins., 1*s.* 6*d.* per lineal yard.

Or a web of 100 yards, 18 ins. wide, will cost	..	£3 15	0
Do. of 100 yards, 24 ins. wide	.. ..	5 0	0
Do. of 100 yards, 30 ins. wide	.. ..	6 5	0
Do. of 100 yards, 36 ins. wide	.. ..	7 10	0

If more or less than a web is required, it would be charged at the same rate per yard.

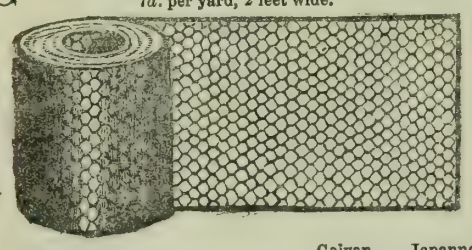
This Netting is also admirably adapted for Pheasantries and Poultry-yards, and is charged at the same rate. As carriage has, in many instances, been an obstacle to parties at a distance requiring this Net, C. D. Y. and Co. have made arrangements by which they will undertake to deliver it at any of the principal ports of Scotland, England, and Ireland, for One Halfpenny per lineal yard.

C. D. YOUNG and Co. cannot give a better idea of the great strength of their Premium Wire Netting than by stating that the weight of one yard of their 24-inch at 1*s.* is equal to 2¼ yards of another article in the market, the same width, at 9*d.* per yard. Samples for inspection sent free of expense.

C. D. YOUNG & Co. manufacture every description of IRON and WIRE WORK required for this and foreign countries.

Workmen sent to all parts of Scotland, England, and Ireland.

GALVANISED WIRE GAME NETTING.—7*d.* per yard, 2 feet wide.



	Galvanised.	Japanned Iron.
2-inch mesh, light, 24-inch wide ...	7*d.* per yd.	5*d.* per yd.
2-inch ,, strong ,, ...	9 ,,	6½ ,,
2-inch ,, extra strong ,, ...	12 ,,	9 ,,
1⅝-inch ,, light ,, ...	8 ,,	6 ,,
1⅝-inch ,, strong ,, ...	10 ,,	8 ,,
1⅝-inch ,, extra strong ,, ...	14 ,,	11 ,,

All the above can be made any width at proportionate prices. If the upper half is a coarse mesh, it will reduce the price one-fourth. Galvanised sparrow-proof netting for pheasantries, 3*d.* per square foot. Patterns forwarded post-free.

Manufactured by BARNARD and BISHOP, Market-place, Norwich, and delivered free of expense in London, Peterborough, Hull, or Newcastle.

BARNARD AND BISHOP beg to inform those friends who are likely to visit Exeter during the forthcoming Royal Agricultural Show, that the Number of their Stand is 69, where samples of their various kinds of NETTING may be seen.

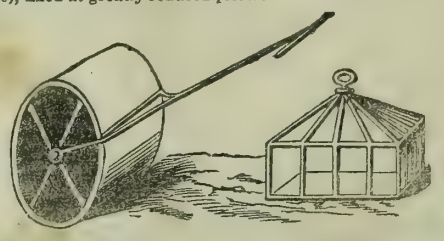
NEWS, NEWS, NEWS.—The best, cheapest, and largest Newspaper in the World.—LLOYD'S WEEKLY LONDON NEWSPAPER contains 60 large columns of the latest intelligence from all parts of the Globe, price only Threepence, postage free. Send Three Postage Stamps to E. LLOYD, 12, Salisbury-square, London, and receive one copy as a sample.

COTTAM & HALLEN, ENGINEERS, IRON FOUNDERS, &c., No. 2, WINSLEY-STREET, OXFORD-STREET, LONDON.



COTTAM and HALLEN having had experience in the erection of HOTHOUSES and CONSERVATORIES (made of Iron or of Iron and Wood combined), and from many improvements they have made during that time, can with confidence undertake to erect such buildings with economy and dispatch.

HOT WATER APPARATUS for heating the above and other buildings (of which they have constructed upwards of 3000), fixed at greatly reduced prices.



COTTAM and HALLEN have on show, at their repository, No. 2, Winsley-street, Oxford-street, a great variety of the following articles, for GARDENS, &c., at Greatly REDUCED PRICES, viz.:

Garden Rollers,	Hand-glass Frames,
Garden Engines,	Flower Stakes,
Garden Syringes,	Flower-bordering,
Watering Pots,	Flower Stands,
Garden Vases,	Garden Arches,
Mowing Machines,	Garden Chairs.

Every description of Work, both plain and Ornamental, in wrought and cast iron, for Gardens, &c. &c.

HORTICULTURAL TOOLS and AGRICULTURAL IMPLEMENTS of all kinds.

STRONG IRON HURDLES, strained Wire Fencing, &c.

Show Rooms at the MANUFACTORY, 2, Winsley-street, and 76, Oxford-street, three doors West of the Princess's Theatre.

BROWN'S PATENT FUMIGATOR for Horticultural or Agricultural purposes, in various sizes, from Ten Shillings to Ten Pounds.

DR. S. NEWINGTON'S HAND-DRILL HOES AND CULTIVATORS, to the frames of which are fitted Coulters for earthing up Potatoes and drawing out furrows for seeds. The chisel-pointed tines have moveable hoeing shares fitted to them, which can be removed when the tines are only required for stirring. These shares, which are made of any required width, hoe from 2 to 4 inches below the surface, according to the soil; on the shares being removed, the tines stir from 5 to 6 inches deep, a lad being enabled to hoe 2 acres of Turnips, &c., daily, cutting off every weed, and setting out the plants, reducing the price of labour from 4*s.* to 8*d.* an acre, or being able to hoe the crop six times, and much more effectually, for the same money now paid for hand-hoeing. Messrs. DUFAUR and Co. will exhibit, at the Royal Agricultural Show at Exeter, the following implements invented by Dr. NEWINGTON: A Drop Drill for horse power; the same for hand power; an implement to supersede broadcasting seed by hand for horse power; the same by hand power; an implement for broadcasting artificial manures or depositing it in rows by horse power; the same by hand power; a horse Dibble; a hand wheel Dibble; a subsoil Plough; a Scarifier or Cultivator; a paring Plough; a single horse Plough; hand drill Hoe and Cultivators, with various other fittings; a strike Plough.—Apply to Messrs. DUFAUR and Co., 21, Red Lion-square, London, who are the sole manufacturers and vendors of Dr. NEWINGTON'S inventions.

HYDRAULIC ENGINES, WATER RAMS, &c., on Improved Principles; Engines worked by Steam or Hydraulic power, to raise from 1 gallon to 1000 per minute to a height of 500 feet, and from a depth of 900 feet. Douche, Vapour, Hot-air, and all other kinds of Baths. Buildings, Conservatories, &c., heated by Steam, Air, or Water. Boring, Sinking, and Collecting of Water, &c. Towns supplied.

Direct to JOHN LEGG, Cheltenham.

PURE WATER raised to any height from a small stream, where a fall can be obtained, by FREEMAN ROE and HANSON'S IMPROVED RAM; less waste, by two-thirds, than those ordinarily in use. Portable Steam Engines for Agricultural purposes, Threshing Machines, Deep-well Pumps, Water-wheels, Baths, Hot-water Apparatus, and Fountains. Towns supplied with Gas or Water. Drawings and Estimates made.—FREEMAN ROE and HANSON, Hydraulic and Gas Engineers; Office, 70, Strand, London.

INDESTRUCTIBLE AND NOISELESS FLOOR CLOTH, for Churches, Public Offices, Damp Floors, &c.—WALTER and GOUGH, Patentees and sole Manufacturers, Patent Kamptulicon Works, Greenwich-road, near London.

HORTICULTULAL BUILDING AND HEATING BY HOT WATER.
WARRANTED BEST MATERIALS AND WORKMANSHIP AT THE LOWEST POSSIBLE PRICES.



J. WEEKS AND CO., King's-road, Chelsea, Horticultural Architects, Hothouse Builders, and Hot-water Apparatus Manufacturers. The Nobility and Gentry about to erect Horticultural buildings, or fix Hot-water Apparatus, will find at our Hothouse Works, King's-road, Chelsea, an extensive variety of Hothouses, Greenhouses, Conservatories, Pits, &c., erected, and in full operation, combining all modern improvements, so that a lady or gentleman can select the description of House best adapted for every required purpose.

THE HOT-WATER APPARATUSES (which are efficient and economical), are particularly worthy of attention, and are erected in all the Houses, Pits, &c., for both Top and Bottom Heat, and in constant operation in the Stoves.

The splendid collection of Stove and Greenhouse Plants are in the highest state of cultivation, and for sale at very low prices. Also a fine collection of strong Grape Vines in pots from eyes, all the best sorts.

Plans, Models, and Estimates of Horticultural Buildings; also Catalogues of Plants, Vines, Seeds, &c., forwarded on application.—J. WEEKS and Co., King's-road, Chelsea, London.

THE LATE HEAVY RAIN having spoiled more than half the Strawberries grown on the old plan, the Advertiser begs to notice that the season for planting upon his system is close at hand, and suggests to those who are desirous of saving their Fruit in a clean and good state in future, that they purchase his STRAWBERRY TILES and have them put down as recommended in his pamphlet, when a crop may be depended upon of the best and cleanest description; but without the gardener can place the Tiles with the plants, inequalities of space will arise from error, which partly neutralises their effect, therefore no time should be lost. A pamphlet, with all particulars, can be had by sending three postage stamps, addressed to Mr. JOHN ROBERTS, 34, Eastcheap, London.

EMIGRATION TO AUSTRALIA.—New Line of Packets from Liverpool:

PETREL, 1200 tons, to sail on the 10th of September.
CONDOR, 1500 ,, ,, 10th of November.

A 1, new Ships, coppered and copper-fastened.—For Freight or Passage apply to the owners, GIBBS, BRIGHT, and Co., 1, North John-street, Liverpool.

STOVE GRATES.—PIERCE'S UNIVERSAL FIRE-LUMP GRATE, formed in one entire piece, requires no fixing, will burn either wood, coals, coke, or peat, producing a bright cheerful fire without waste from ashes or cinders. Price 22*s.* 6*d.* and 25*s.* Also, his Cottage Grates, formed in one mass of the finest fireclay, having strong iron bars and bottom, good hobs, and trivet.—Price 11*s.* 6*d.*—May be seen at PIERCE'S Pyro-Pneumatic Stove Grate Manufactory, 5, Jermyn-street, Regent-street, London.

BEAUTIFUL WHISKERS, HAIR, SKIN, AND TEETH.—Twenty Recipes indispensable to all:—For the best liquid hair dye extant; remedies for freckles, sun-burns, pock-marks, ringworm, and all other disfigurements; superfluous, weak, or grey hair, baldness, &c.; pomade and bandoline, for producing, beautifying, and curling the hair; amandine, for beautifying the hands, lips, and complexion; tooth powder, for purifying the teeth and breath; white enamel, for filling decayed teeth; liquid glue and cement, for broken china, glass, &c.; a certain cure for soft or hard corns, bunions, &c.; and a choice selection of French perfumery, all medically attested, will be sent free, on receipt of 25 postage stamps.—Address, Miss ROSALIE COUPELLE, Ely-place, Holborn-hill, London.

"The hair dye alone is worth 10 times the cost of all."—Miss Hill, Plaistow.

OLD FEATHER BEDS RE-DRESSED, AND PURIFIED BY STEAM WITH PATENT MACHINERY.—This new process of dressing not only removes all impurities, but by expanding the feathers the bulk is greatly increased, and consequently the bed rendered much fuller and softer.—Charge for dressing, 3*d.* per lb. Old and Mothy Mattresses effectually cured and removed, fetched and returned, carriage free, within five miles.—HEAL and SON'S List of Bedding, containing full particulars of weights, sizes, and prices, sent free by post on application to their factory, 196 (opposite the chapel), Tottenham-court-road, London.

THE HIPPOPOTAMUS presented by H. H. the Viceroy of Egypt to the Zoological Society of London, is exhibited daily from One to Six o'clock, at their Gardens in the Regent's Park. The Band of the First Life Guards will perform, by permission of Colonel Hall, every Saturday, at Four o'clock. Admission One Shilling, on Mondays Sixpence.

Printed by WILLIAM BRADBURY, of No. 13, Upper Woburn-place, in the Parish of St. Pancras, and FREDERICK MULLETT EVANS, of No. 7, Church-row, Stoke Newington, both in the County of Middlesex, Printers, at their office in Lombard-street, in the Precinct of Whitefriars, in the City of London; and published by them at the Office, No. 5, Charles-street, in the parish of St. Paul's, Covent-garden, in the said county, where all Advertisements and Communications are to be ADDRESSED TO THE EDITOR.—SATURDAY, JULY 13, 1850.

THE GARDENERS' CHRONICLE AND AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 29—1850.] SATURDAY, JULY 20. [PRICE 6*d.*

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SHAKSPEARE AND EARLY DWARF WARWICKSHIRE CABBAGE.

J. BUTCHER informs his friends and the public he is now sending out the above valuable sorts of Cabbage; for earliness and flavour they are first-rate. May be obtained in papers, 1*s.* each, of Mr. FREDERICK WARNER, Seed-merchant, 28, Cornhill, London; and J. BUTCHER, Nurseryman, Stratford-on-Avon.

SUTTON'S EARLY SIX WEEKS TURNIP is the best stubble Turnip, and may be sown any time in August with certainty of success.

A field of these Turnips, grown from Messrs. SUTTON'S *Seed by* E. W. MOORE, *Steward to* Earl RADNOR, *on poor soil at Coleshill, gained* Mr. PUSEY'S 20*l. prize, at the Farringdon Agricultural Show, in December*, 1849.

Messrs. SUTTON have the pleasure of announcing that they have just harvested a fine crop of the above valuable TURNIP SEED, which they are now delivering, price 10*d.* per pound, 5*s.* per gallon, or 36*s.* per bushel.

Carriage free to any Station of the Great Western, South-Western, or South-Eastern Railways.

Address, JOHN SUTTON and SONS, Reading, Berkshire.

CARNATIONS AND PICOTEES.

CHARLES TURNER begs to inform the admirers of the above beautiful flowers, that his extensive collection is now in fine bloom, and will continue to the end of the month. The Annual Exhibition will take place in the Grounds of the Nursery, on Thursday, July 25.

Royal Nursery, Slough, July 20.

TO THE ADMIRERS OF THAT SPLENDID AUTUMNAL FLOWER, THE CHRYSANTHEMUM.

YOUELL AND Co. are now prepared to execute orders from their extensive and very select collection of the above, comprising all the new and fine continental varieties, at the following prices:

50	best new sorts	25*s.*
25	ditto	15*s.*
12	ditto	9*s.*

Well established in small pots, or by post free.

NEW DWARF CHINESE OR LILLIPUTIENNE CHRYSANTHEMUMS.

This new and beautiful class are well deserving the attention of cultivators from their exceeding dwarf habit (not attaining more than 1 foot in height). The profusion of flowers with which they are covered, as well as the great variety and distinctness of colour, will render them general favourites. Strong plants for autumn blooming are now ready for sending out at the following prices:

9	fine varieties sent out last year (for the first time) for	9*s.* 0*d.*
13	do. raised by M. Lebois (and sent out for the first time this season), for	30 0

One sent over to the Trade when two are ordered.

The latter are figured in the last December Number of the "Annales de la Societé d'Agriculture et de Botanique de Gand," and are perfect gems, engravings of which may be seen at YOUELL and Co.'s Nursery.

Descriptive Catalogues of the above may be had on application. Printed directions of their successful and easy method of cultivating the Chrysanthemums for exhibition, &c., will be forwarded with all orders.—Royal Nursery, Great Yarmouth.

NEW LATE STRAWBERRY, WILMOT'S "PRINCE ARTHUR."

J. WILMOT, in offering this new variety of STRAWBERRY to the Public, is confident that it combines qualities which no other kind at present in cultivation does possess, being of delicious flavour, and coming in after the principal Strawberry season is over. It possesses the property of firmness of texture, so that it may be transmitted to any part of the kingdom without sustaining injury, as it may be kept for several days after being gathered, when fully ripe, without any indication of decay or loss of flavour.

"Prince Arthur" is one of the largest sized Strawberries, and a most abundant bearer; the foliage is small, and never exceeds 6 inches in height; the fruit is consequently fully exposed to the sun. Its dwarf habit requires it to be planted not more than a foot apart. The fruit is perfectly formed, of a rich scarlet, and colouring equally all over the berry. If planted at the distance recommended it will produce double the weight per acre of any other variety.

Strong plants will be ready for sale in September next, at 5*l.* per 100, on prepaid application only, to JOHN WILMOT, Isleworth, Middlesex; Robert Glendinning, Chiswick Nursery; William T. Atwood, Mortlake, Surrey; George Charlwood, Seedsman, Covent-garden; and Messrs. Hurst and M'Mullen, 6, Leadenhall-street, London.—Isleworth, Middlesex, July 20.

STATUES, VASES, FOUNTAINS, GARDEN ORNAMENTS, Coats of Arms, and Architectural Embellishments in Imperishable Stone, by VAUGHAN AND CO., 60, Stones-end Borough, London. T. J. CROGGON, late of COADE'S, Superintendent.

HOYLE'S SEEDLING PELARGONIUMS FOR 1850.

CHARLES TURNER will send out, early in the Autumn, strong established plants of the following distinct varieties raised by G. W. Hoyle, Esq. Ajax gained the 4*l.* and Ocellatum the 3*l.* prizes at the Great Seedling Pelargonium Show, Surrey Gardens, in June last, being two of the four prizes awarded on that occasion. Early orders will ensure first selection.

AJAX.—A noble dark variety, smooth, and of fine substance, lower petals rosy purple, top petals very dark purple, with even narrow margin of vivid crimson; very free bloomer; has been justly styled "The leading flower of the season." Price 1*l.* 11*s.* 6*d.*

OCELLATUM.—A great novelty, lower petals bright pink, with a distinct and constant spot of deep crimson; top petals deep crimson spot, shaded off with bright rose, white eye, free bloomer, and good grower. Price 1*l.* 11*s.* 6*d.*

MAY QUEEN.—A large, distinct, and pleasing variety. Orange-rose top petals, crimson blotch, shaded off with orange, the five petals have a delicate margin of pale pink; lower petals vivid rose; large well-defined white eye, very free bloomer, will be a great favourite on the home stage. Price 1*l.* 11*s.* 6*d.*

NECTAR CUP.—Rose, top petals rich orange-rose, with narrow pink margin, clear white eye, fine substance, good habit. Price 1*l.* 1*s.*

FLAVIA.—Orange-scarlet, the brightest in this class that has been offered, and makes a fine display on the stage, rather crumpled on the edge, and lower petals too long. Price 1*l.* 1*s.*

GENERALISSIMO.—Large and very attractive; lower petals salmon, with spots of a deeper colour, white centre; top petals very dark, rich, and velvety, shaded with lively orange, occasionally crumpled on the edge. Price 1*l.* 1*s.*

RUBIOLA.—Fine crimson scarlet of beautiful texture, dark spot on the top petals, rather deficient in breadth of petals. Price 1*l.* 1*s.*

CORINNE.—Light purple, very smooth and free bloomer, dark top petals. Price 15*s.*

ISIS.—A neat smooth flower, of good quality, very free bloomer, rose with white eye, and dark blotch on top petals. Price 15*s.*

CARDINAL.—Fine rich orange crimson, black blotch on top petals, very smooth, not a strong grower. Price 15*s.*

HEARTSEASE.—Scarlet rose, large fine shape and substance; but being inconstant, purchasers of the above will have a plant without charge.

Price 8*l.* 10*s.* for the set.

VARIETIES SENT OUT IN 1849.

CHRISTABEL (Hoyle).—Lower petals delicate pink, tinged with orange, rich blotch on top petals. Price 7*s.* 6*d.*

CUYP (Beck).—Claret, dark block on upper petals shaded off to the margin. Price 10*s.* 6*d.*

CONSTANCE (Foster).—Light bottom, with rich dark top petals, narrow margin of light. Price 10*s.* 6*d.*

EMILY (Beck).—Large bold flower, crimson, with dark blotch on upper petals. Price 10*s.* 6*d.*

FIELD MARSHAL (Symonds). — Crimson purple, dark spot on upper petals. Price 7*s.* 6*d.*

GIPSY BRIDE (Foster). — Rosy crimson, top petals dark blotch, with even narrow margin of crimson. Price 10*s.* 6*d.*

LOVELINESS (Beck).—Lilac-rose coloured bottom petals, dark rich top, white eye. Price 10*s.* 6*d.*

MAGNIFICENT (Foquett).—Large rich bright crimson, dark spot on top petals, free bloomer. Price 10*s.* 6*d.*

NANDEE (Hoyle).—Pink, upper petals very dark, white eye. Price 7*s.* 6*d.*

NONSUCH (Hoyle). — Deep lilac rose, upper petals dark blotch, lower petals novel crimson spot and feather. Price 10*s.* 6*d.*

PRINCE OF ORANGE (Hoyle).—Orange scarlet, spot on top petals. Price 10*s.* 6*d.*

ROSALIND (Beck).—Fresh-coloured rose, blotch on upper petals, white eye. Price 10*s.* 6*d.*

Or the 12 for 4*l.*

The following 12 varieties for 3*l.*—Alderman, Crispins, Conspicuum, Governor, Lord Gough, Lord Stanley, Narcissus, Painter, Pet, Pride of the Isles, Roweana, Satisfaction; or 10 of the above, with the choice of Magnificent, Gipsy Bride, or Constance.

Older varieties: 12 of the following for 2 guineas.—Alonzo, Ariel, Armada improved, Blanche, Belle of the Village, Brilliant, Cassandra, Centurion, Crusader, Cupid, Delicatissima, Gulielma, Lalla Rookh, Lamartine, Mont Blanc, Norah, Ondine, Rosamond, Star, Symmetry, Virgin Queen, Victory; or 10 with choice of Conspicuum, Narcissus, Pride of the Isles, or Rowena; or 9 with choice of Magnificent, Gipsy Bride, or Constance.

Also a fine selection of Fancy varieties at 12*s.*, 18*s.*, and 30*s.* per dozen, own selection. Catalogues may be had on application.—Royal Nursery, Slough.

MR. NORMAN respectfully begs to invite inspection of his superb Collection of CARNATIONS and PICOTEES, which are now in full bloom, and will, he thinks, repay the trouble of a visit. Two minutes' walk from the Arsenal Station—Trains every half hour from London-bridge.

Bull Fields, Woolwich, July 20.

VICTORIA REGIA.—A model of this gigantic and beautiful flower, its natural size, may be seen at the Studio of Messrs. MINTON, 36, Soho-square, representing this plant in all its beauteous stages, and copied by the kind permission of her Grace the Duchess Dowager of Northumberland. May be viewed, by cards only, on Tuesday, 23d inst., and following Thursdays, Saturdays, and Tuesdays, until further notice, between the hours of 2 and 6 o'clock.—Cards of admission may be had of Messrs. Colnaghi, Pall-mall; Ebers, Hookham, Mitchell, and Chappel, Bond-st.; and Same's, St. James's-street.

CUCUMBER AND MELON BOXES AND LIGHTS.

One hundred 1, 2, and 3-light Boxes and Lights of all sizes ready for immediate use. Warranted best materials, packed and sent to all parts of the kingdom; 2-light Boxes and Lights from 1*l.* 4*s.* Garden Lights of every description, Conservatories, Green and Hot-houses, made and fixed in all parts of the kingdom. References given to the Nobility, Gentry, and the Trade, in most of the counties of England. JAS. WATTS, Hothouse Builder, Claremont-place, Old Kent-road, London.

BECK'S SEEDLING PELARGONIUMS of 1849.

For prepayment only, the first remittance to secure the first selection. Post-office orders are requested to be made payable at Brentford.

ROSA.—A bright rose-coloured flower of great smoothness and good form, a free bloomer, constant, and of excellent habit. Will prove a first-rate variety for all purposes. 30*s.*

MAJOR DOMO.—A very large rose-coloured flower, with dark clouded top petals; some of the blooms here measure 3 inches in circumference; free bloomer, and of strong habit. 21*s.*

SILK MERCER.—A very close compact-growing variety, free bloomer, and very constant; smooth silky flower of first-rate quality, ground colour rose, with deep maroon blotch on the upper petals. 21*s.*

PRINCE ARTHUR.—A medium-sized flower of excellent quality, very constant, and a free bloomer; rosy crimson ground colour, with dark well defined blotch on the upper petals, leaving a bright distinct margin; light centre. 21*s.*

DIANA.—This is very similar to Rosalind, but larger, and is at its best early in the season, whilst the latter variety is not at its best until quite late. 15*s.*

TYRIAN QUEEN.—If the large deep mulberry-coloured top petals of the flower had been matched with as good lower ones, it would have been first-rate; strong robust habit, and a free bloomer; a very distinct and constant variety. 15*s.*

Many other Seedlings might have been selected, such as "Little but Good," and others, but they have exhibited faults which make it necessary to try them another season. Incomparable will not be sent out until 1851. At present it is unequalled.

VARIETIES OF 1848.

CUYP.—A novel claret-coloured flower; soft, silky, cloudy blotch on upper petals, shading off to the margin; very free bloomer and constant. 10*s.* 6*d.*

EMILY.—A very fine large Centurion flower, of first-rate character for the home or exhibition stages, being a very free bloomer; quite constant, and of good habit. 10*s.* 6*d.*

GOVERNOR.—A most profuse bloomer, of a rich glowing purple, stiff in the petals, and well adapted for all purposes. Good habit and foliage. 10*s.* 6*d.*

LOVELINESS.—A striking flower, of excellent quality; a rose-coloured clean distinct crimson spot on the bottom petals gives it a decided and pure white eye, upper petals rich dark spot extending evenly upwards, and abruptly shading off into the edge; habit excellent. 10*s.* 6*d.*

PAINTER.—Novel and striking, from the great amount of colour on the lower as well as on the top petals; very free bloomer, and constant. 10*s.* 6*d.*

PET.—A middle-sized, stiff, smooth flower, of high quality; rich, dense, even-coloured top petals, with a very light and well defined edge, white eye, and pale rose lower petals; moderate bloomer and constant. 10*s.* 6*d.*

ROSALIND.—A large-sized fresh-coloured flower, a glowing crimson upper petal, with dark blotch; a large white centre, and lower petals light rose; free bloomer, constant, and good habit. 10*s.* 6*d.*

Foster's Gipsy Bride and Constance, 10*s.* 6*d.* each.

Foquett's Magnificent, 10*s.* 6*d.*; and Symonds' Field Marshal, 10*s.* 6*d.*

OLDER VARIETIES, AND OTHER RAISERS' FLOWERS

Twelve of the following varieties, including the box and carriage to London, will be sent out in October, for Two Guineas, well rooted in 3-inch pots, and ready for an immediate shift into a larger size:—Blanche, Centurion, Cassandra, Crusader, Delicatissima, Dorcas, Emilia, Gustavus, Gulielma, Lalla Rookh, Lamartine, Mont Blanc, Meleager, Minna, Ondine, Princess, Alonzo, Ruby, Rosamond, Star, and Symmetry.

Any twelve of the above are fit to compete at any exhibition, metropolitan or provincial. J. Dobson has invariably taken the first prizes at the great metropolitan exhibitions with the sorts herein advertised.

N.B.—Catalogues can be had on application.

Worton Cottage, Isleworth, Middlesex.

GREENHOUSES.

HENRY FREEMAN, HOTHOUSE BUILDER and HOT WATER APPARATUS MANUFACTURER, Triangle, Hackney, London, begs to solicit the attention of the gentry to his low prices for cash. Good substantial-built Greenhouses, fixed complete, 42 feet long, 13 feet wide, 90*l.*; 21 feet long, 13 feet wide, 50*l.*; 12½ feet long, 10 feet wide, 30*l.* A large assortment of Conservatories, Hothouses, Pits, Melon and Cucumber boxes, Iron hand-lights, Summer-houses, Seats, &c. Estimates in the above line, either in wood or iron.

GLASS FOR CONSERVATORIES, HORTICULTURAL PURPOSES, &c.



T. MILLINGTON'S SHEET GLASS, which is of the best description, varying from 16 to 32 ounces, at from 2*d.* per foot and upwards; 100 feet and 200 feet cases of large Sheet Glass, for cutting up, at 2½*d.* per foot. British Plate Glass, from 1*s.* 2*d.* to 2*s.* per foot, according to size. Patent Rough Plate Glass, from ¼ to 1 inch in thickness, from 4*d.* per foot upwards. Glass Slates and Tiles. Milk Pans from 12 to 24 inches diameter, from 2*s.* to 5*s.* each. Cucumber Tubes, from 12 to 24 inches long, at 1*d.* per inch. Lactometers, 7*s.* 6*d.* each. Wasp Traps.—Lists may be had, on application at the Warehouse, 87, Bishopsgate-street Without, same side as the Eastern Counties Railway.

HORTICULTURAL SOCIETY OF LONDON.

EXHIBITION AT THE GARDEN, JULY 13, 1850.

AWARD OF THE JUDGES.

THE LARGE GOLD MEDAL.

1 To Mr. Cole, Gardener to H. Colyer, Esq., of Dartford, for a collection of 20 Stove and Greenhouse Plants
2 To Mr. Mylam, Gardener to S. Rucker, Esq., jun., F.H.S., for 20 species of Exotic Orchids

THE GOLD KNIGHTIAN MEDAL.

1 To Mr. May, Gardener to Mrs. Lawrence, F.H.S., for a collection of 20 Stove and Greenhouse Plants
2 To Mr. Green, Gardener to Sir E. Antrobus, Bart., F.H.S., for a collection of 15 Stove and Greenhouse Plants
3 To Mr. Williams, Gardener to C. B. Warner, Esq., F.H.S., for 20 species of Exotic Orchids.

THE GOLD BANKSIAN MEDAL.

1 To Messrs. Frazer, of Lea-bridge-road, Essex, for a collection of 20 Stove and Greenhouse Plants
2 To Mr. Carson, Gardener to W. G. Farmer, Esq., F.H.S., for a collection of 15 Stove and Greenhouse Plants
3 To Mr. Croxford, Gardener to H. H. Barnes, Esq., of Stamford-hill, for a collection of 10 Stove and Greenhouse Plants
4 To Messrs. Rollisson, of Tooting, for 15 species of Exotic Orchids
5 To Mr. Blake, Gardener to J. H. Schröder, Esq., F.H.S., for 10 species of the same
6 To Mr. Smith, Gardener to W. Quilter, Esq., of Norwood, for 10 varieties of Cape Heath
7 To Mr. Epps, F.H.S., for the same.

THE LARGE SILVER-GILT MEDAL.

1 To Mr. Taylor, Gardener to J. Coster, Esq., of Streatham, for a collection of 15 Stove and Greenhouse Plants
2 To Mr. Speed, Edmonton, for a collection of 10 Stove and Greenhouse Plants
3 To Mr. Bruce, Gardener to Boyd Miller, Esq., Tooting, for a collection of 6 Stove and Greenhouse Plants
4 To Mr. Dobson, Gardener to Mr. Beck, F.H.S., for 15 species of Exotic Orchids
5 To Mr. Carson, for 10 species of the same
6 To Mr. Green, for 6 species of the same
7 To Mr. Mylam, for 10 varieties of Cape Heath
8 To Messrs. Rollisson, for the same
9 To Mr. Smith, for the same, in 11-inch pots
10 To Messrs. Rollisson, for the same
11 To Mr. Stains, of Middlesex-place, New-road, for a collection of New Pelargoniums, in 8-inch pots
12 To Mr. Dobson, for the same
13 To Mr. Parker, Gardener to J. H. Oughton, Esq., Roehampton, for a collection of old Pelargoniums, in 11-inch pots
14 To Mr. Stains, for a collection of Fancy Pelergoniums, in 8-inch pots
15 To Messrs. Veitch, for Ixora salicifolia
16 To Mr. Kinghorn, Gardener to the Earl of Kilmorey, F.H.S., for Phalænopsis grandiflora

THE CERTIFICATE OF EXCELLENCE.

1 To Mr. Watson, Gardener to Mrs. Tredwell, Lower Norwood, for a collection of 10 Stove and Greenhouse Plants
2 To Mr. Kinghorn, for a collection of 6 Stove and Greenhouse Plants
3 To Mr. Franklin, Gardener to Mrs. Lawrence, F.H.S., for 10 species of Exotic Orchids
4 To Mr. Gerrie, Gardener to Sir J. Cathcart, Bart., F.H.S., for the same
5 To Messrs. Lane and Lon, Great Berkhampstead, for a collection of Roses, in 50 varieties
6 To Mr. Cole, for 10 varieties of Cape Heath
7 To Messrs. Fairbairn, of Clapham, for the same
8 To Mr. Cole, for 10 varieties of the same, in 11-inch pots
9 To Mr. Epps, F.H.S., for the same
10 To Mr. Cock, F.H.S., for a collection of new Pelargoniums, in 8-inch pots
11 To Mr. Bragg, Slough, for the same
12 To Mr. Stains, Middlesex-place, New-road, for a collection of old Pelargoniums, in 11-inch pots
13 To Mr. Gaines, F.H.S., for the same
14 To the same, for a collection of Fancy Pelargoniums, in 8-inch pots
15 To Mr. Dobson, for a collection of Achimenes
16 To Mr. Green, for a collection of Helichrysums
17 To Messrs. Veitch, for Rhododendron javanicum
18 To Messrs. Frazer, Lea-bridge-road, Essex, for Kalosanthes coccinea
19 To Mr. Smith, Gardener to S. Ricardo, Esq., for three specimens of Black Hamburgh Grapes growing in pots

LARGE SILVER MEDAL.

1 To Mr. Woolley, Gardener to H. B. Ker, Esq., Cheshunt, for 6 species of Exotic Orchids
2 To Messrs. Paul, Cheshunt, for a collection of Roses, in 50 varieties
3 To A. Rowland, Esq., F.H.S., for the same, in 25 varieties
4 To Messrs. Fairbairn, Clapham, for 10 varieties of Cape Heath, in 11-inch pots
5 To Mr. Robinson, Gardener to J. Simpson, Esq., Thames Bank, Pimlico, for a collection of new Pelargoniums, in 8-inch pots
6 To Mr. Gaines, F.H.S., for the same
7 To Mr. Ambrose, Battersea, for a collection of Fancy Pelargoniums, in 8-inch pots
8 To Mr. Stains, Middlesex-place, New-road, for 6 distinct species of Pelargonium, exhibiting superior cultivation
9 To Mr. Franklin, for a collection of Fuchsias
10 To Mr. Knott, Gardener to the Rev. C. Pritchard, F.H.S., for a collection of Achimenes
11 To Mr. Stanly, Gardener to H. Berens, Esq., F.H.S., for a collection of Helichrysums
12 To Mr. Glendinning, F.H.S., for a collection of new hardy Evergreens, in pots
13 To the same, for a collection of Statices
14 To Mr. May, for Stephanotis floribunda
15 To Mr. Green, for Lisianthus Russellianus
16 To Mr. Williams, for a collection of Hothouse Ferns
17 To Mr. Jones, Gardener to Sir J. J. Guest, Bart., F.H.S., for a Queen Pine-apple, weighing 5 lbs. 9½ oz.
18 To Mr. Spencer, Gardener to the Marquis of Lansdowne, F.H.S., for a Providence Pine-apple, weighing 9 lbs. 13½ oz.
19 To Mr. Holmes, Gardener to S. Garrard, Esq., Putney-heath, for Black Hamburgh Grapes
20 To Mr. Harrison, Oatlands Palace Gardens, Weybridge, for the same
21 To Mr. Williams, for White Muscadine Grapes
22 To W. Death, Esq., Nettleswell, Harlow, for Muscat Grapes
23 To Mr. Henderson, Gardener to Sir George Beaumont, Bart., F.H.S., for Grizzly Frontignan Grapes
24 To Mr. Gadd, Beechworth, for White Frontignan Grapes
25 To Mr. Chapman, South Lambeth, for Sweetwater Grapes

THE SILVER KNIGHTIAN MEDAL.

1 To Mr. Stanly, for a collection of 10 Stove and Greenhouse Plants
2 To Mr. Francis, Hertford, for a collection of Roses, in 50 varieties
3 To Mr. Slowe, Gardener to W. R. Baker, Esq., F.H.S., for the same, in 25 varieties
4 To Mr. Stanly, for 6 distinct species of Pelargonium, exhibiting superior cultivation
5 To Mr. Salter, F.H.S., for a collection of Fuchsias
6 To Mr. Ivison, Gardener to the Duchess Dowager of Northumberland, F.H.S., for a collection of Achimenes
7 To Mr. Cole, for a collection of Helichrysums
8 To Messrs. Lane, for a new species of Acineta
9 To Mr. Woolley, Gardener to H. B. Ker, Esq., for a collection of Hothouse Ferns
10 To Mr. Wood, Norwood, for a collection of Alpine Plants
11 To Mr. Dennett, Gardener to W. Gillett, Esq., Clapham Park, for Erica Parmentieri rosea
12 To Mr. May, Gardener to Mrs. Lawrence, F.H.S., for Ixora javanica
13 To Mr. Drummond, Gardener to C. H. Leigh, Esq., F.H.S., for a Queen Pine-apple, weighing 5 lbs. 14 oz.
14 To Mr. Wilmot, F.H.S., for the same, weighing 3 lbs. 5 oz.
15 To Mr. Fleming, Gardener to the Duke of Sutherland, F.H.S., for a Providence Pine-apple, weighing 3 lbs. 6 oz.
16 To Mr. Smith, Gardener to S. Ricardo, Esq., for the Heaviest Bunch of Grapes (Syrian), weighing 3 lbs. 10 oz.
17 To Mr. Fleming, for the Second Heaviest Bunch of Grapes (Black Hamburgh), weighing 3 lbs. 8 oz.
18 To Mr. Heywood, Gardener to G. R. S. Goodman, Esq., Roundhay, near Leeds, for Black Hamburgh Grapes
19 To Mr. Davis, of Oak Hill, East Barnet, for the same
20 To some person unknown, for White Muscadine Grapes
21 To Mr. Wilmot, F.H.S., for Sweetwater Grapes
22 To Mr. Taylor, Gardener to J. Coster, Esq., of Streatham, for Muscat Grapes
23 To Mr. Munro, Gardener to Mrs. Oddie, St. Albans, for White Frontignan Grapes
24 To Mr. Ingram, Gardener to her Majesty at Frogmore, for Violette Hâtive Peaches
25 To Mr. Turnbull, Gardener to the Duke of Marlborough, at Blenheim, for Elruge Nectarines
26 To Mr. Davis, Oak Hill, for the same
27 To Mr. Davis, Gardener to J. Dixon, Esq., Astle Park, Chelford, Knutsford, for the Heaviest Melon (Green-fleshed Cabul), weighing 9 lbs. 10 oz.
28 To Mr. Gadd, Betchworth, for the same, in the Market Gardeners' Class (Cantilupe), weighing 4 lbs. 5 oz.
29 To Mr. Barnes, Gardener to R. Hanbury, Esq., F.H.S., for the best flavoured Melon (Bromham Hall)
30 To Mr. Gadd, for the best flavoured Melon (Beechwood) in the Market Gardeners' Class

THE SILVER BANKSIAN MEDAL.

1 To Messrs. Pamplin, Lea-bridge-road, Essex, for a collection of 10 Stove and Greenhouse Plants
2 To Mr. Gerrie, for the same
3 To Messrs. Spriggins and Co., St. Albans, for a collection of Roses, in 50 varieties
4 To Mr. Tivey, Gardener to T. Wigelin, Esq., Golding, Herts, for the same, in 25 varieties
5 To Mr. Gregory, F.H.S., for a collection of Fuchsias
6 To Mr. Young, Gardener to C. Barron, Esq., Denmark Hill, Camberwell, for a collection of Helichrysums
7 To Mr. Newhall, Woolwich, for Carnations
8 To Mr. Norman, ditto, for the same
9 To Mr. Edwards, F.H.S., for Picotees
10 To Mr. Norman, for the same
11 To Mr. Smith, Hornsey-road, for a collection of Verbenas
12 To Mr. Gadd, Gardener to T. J. Lenox, Esq., Hammersmith, for a collection of Petunias
13 To Mr. Ivison, Gardener to the Duchess Dowager of Northumberland, F.H.S., for Cattleya Mossiæ alba
14 To Mr. O'Brien, Gardener to G. Read, Esq., Burnham, Somerset, for a collection of Hothouse Ferns
15 To Mr. Turner, Holloway, for a collection of Alpine Plants
16 To Mr. Ivison, for Curcuma Roscoeana
17 To Mr. May, Gardener to Mrs. Lawrence, F.H.S., for Sollya linearis
18 To Mr. Epps, F.H.S., for Erica ferruginea
19 To Mr. Higgs, Gardener to J. H. Barchard, Esq., F.H.S., for a Moscow Queen Pine-apple, weighing 4 lbs. 12½ oz.
20 To Mr. Brewin, Gardener to R. Gunter, Esq., F.H.S., for a Providence Pine-apple, weighing 8 lbs. 8 oz.
21 To Mr. Henderson, Gardener to Sir G. Beaumont, Bart., F.H.S., for Black Hamburgh Grapes
22 To Mr. Corney, Edmonton, for the same
23 To Mr. Smith, Gardener to A. Anderson, Esq., Streatham, for White Muscadine Grapes
24 To Mr. Fleming, for Muscat Grapes
25 To Mr. Snow, Gardener to Earl de Grey, for Violette Hâtive Peaches
26 To Mr. Parker, for Nectarines
27 To Mr. Snow, for Black Tartarian Cherries
28 To Mr. Meyers, jun., Brentford, for Black Circassian Cherries
29 To Mr. Snow, for Elton Cherries
30 To Mr. Elliott, Gardener to J. B. Boothby, Esq., F.H.S., for British Queen Strawberries
31 To Mr. Lydiard, of Batheaston, Bath, for British Queen and other Strawberries
32 To Mr. Elliott, for the second best flavoured Melon, "Bromham Hall."
33 To Mr. Smith, Gardener to S. Ricardo, Esq., for Fastolff Raspberries
34 To Mr. Ivison, for Fruit of Nutmeg and Papaw.

THE CERTIFICATE OF MERIT.

1 To Mr. J. J. Foster, Edgeware-road, for a collection of Roses, in 50 varieties
2 To Mr. J. Ayre, Gardener to A Currie, Esq., F.H.S., for the same, in 25 varieties
3 To Mr. Edwards, F.H.S., for Carnations
4 To Mr. Ellis, Woolwich, for the same
5 To Mr. Ward, Woolwich, for the same
6 To Mr. Wilmer, Sunbury, for the same
7 To Mr. Bragg, Slough, for the same
8 To Mr. Newhall, Woolwich, for Picotees
9 To Mr. Ellis, for the same
10 To Mr. Ward, for the same
11 To Mr. Bragg, for the same
12 To Mr. Wooder, Tulse-hill, Brixton, for a collection of Antirrhinums
13 To Mr. Spencer, Gardener to the Marquis of Lansdowne, F.H.S., for Peaches
14 To Mr. Fleming, for Elruge Nectarines
15 To Mr. Whiting, Gardener to H. T. Hope, Esq., for Black Circassian Cherries
16 To Mr. Gainsford, Brentford, for the same
17 To Mr. Kemp, Gardener to Mrs. Grillion, East Acton, for Bigarreau Cherries
18 To Mr. Ingram, Gardener to the Marquis of Salisbury, F.H.S., for British Queen Strawberries
19 To Mr. Beach, Hounslow, for the same
20 To Mr. Ball, Gardener to H. Rogers, Esq., Stagenhoe Park, Welwyn, for the third best-flavoured Melon (Napoleon green-fleshed).
21 To the Rev. Mr. Peck, Houghton Rectory, Huntingdon, for Shaddocks

N.B.—West's St. Peter's Grapes ought to have been shown in No. 2 E, and not in No. 4 E. There were some very fine exhibitions of Muscat and Cannon-hall Grapes, of which no notice could be taken in consequence of their extremely unripe condition.—In the only specimen of Peaches in pots exhibited, the fruit was very unripe.—An exhibition of 25 varieties of Roses, by Mr. Terry, Gardener to Lady Puller, Youngsbury, Herts, was disqualified on account of its containing the same Rose under two different names.—Only one collection of Conifers was shown; partly unnamed, and of little interest.—Achimenes Tugwelliana should not have been exhibited in the class of new plants. Luxembourgia speciosa has been shown in the Garden in former years.

GLASS WATER PIPES.

MESSRS. COATHUPES AND CO., GLASS MANUFACTURERS, Bristol and Nailsea, Somerset, continue to supply GLASS PIPES for the conveyance of water, &c., in lengths of from 3 to 7 feet, and from ½-inch to 4-inch bores; they provide also the necessary joints, which enable them to stand very considerable pressure.



PEACH AND GRAPE GLASSES.—These Glasses, placed over Fruit on the common wall, assist Nature in our cold climate. The Fruit grows to a larger size, and its richness is increased.

JAMES PHILLIPS AND CO. beg to say they have purchased the above Registry of Mr. HALLIMAN, and caution all persons from making or selling the same without their consent.

FERNS.—J. P. and Co. have succeeded in making a very neat style of Shade, with glass bottom (or stand), expressly for the growth of Ferns, which will be found much more ornamental than any previously made for the same description of plant. Prices and every information to be had of JAMES PHILLIPS and Co., 116, Bishopsgate-street Without, London.

GLASS FOR CONSERVATORIES, &c.

HETLEY AND Co. supply 16-oz. Sheet Glass of British Manufacture, at prices varying from 2d. to 3d. per square foot, for the usual sizes required, many thousand feet of which are kept ready packed for immediate delivery. Lists of Prices and estimates forwarded on application, for PATENT ROUGH PLATE, THICK CROWN GLASS, GLASS TILES and SLATES, WATER-PIPES, PROPAGATING GLASSES, GLASS MILK PANS, PATENT PLATE-GLASS, ORNAMENTAL WINDOW GLASS, and GLASS SHADES, to JAMES HETLEY and Co., 35, Soho-square, London.

See the *Gardeners' Chronicle* first Saturday in each month.

HORTICULTULAL BUILDING AND HEATING BY HOT WATER.

WARRANTED BEST MATERIALS AND WORKMANSHIP AT THE LOWEST POSSIBLE PRICES.



J. WEEKS AND CO., King's-road, Chelsea, Horticultural Architects, Hothouse Builders, and Hot-water Apparatus Manufacturers. The Nobility and Gentry about to erect Horticultural buildings, or fix Hot-water Apparatus, will find at our Hothouse Works, King's-road, Chelsea, an extensive variety of Hothouses, Greenhouses, Conservatories, Pits, &c., erected, and in full operation, combining all modern improvements, so that a lady or gentleman can select the description of House best adapted for every required purpose.

THE HOT-WATER APPARATUSES (which are efficient and economical), are particularly worthy of attention, and are erected in all the Houses, Pits, &c., for both Top and Bottom Heat, and in constant operation in the Stoves.

The splendid collection of Stove and Greenhouse Plants are in the highest state of cultivation, and for sale at very low prices. Also a fine collection of strong Grape Vines in pots from eyes, all the best sorts.

Plans, Models, and Estimates of Horticultural Buildings; also Catalogues of Plants, Vines, Seeds, &c., forwarded on application.—J. WEEKS and Co., King's-road, Chelsea, London.

CROWN, SHEET, AND ROUGH PLATE GLASS FOR HOTHOUSES, CONSERVATORIES, &c.

The Improved Patent Rough Plate, made by Messrs. Hartley and Co., can be supplied from this Warehouse, of every size and substance, at the same prices as at the works.

100 and 200 feet cases of large Sheet Glass, from 2½d. per foot. Small ditto, 10s. 6d. per 100 feet, packed in boxes ready for immediate delivery. Curators of Botanical Societies, Florists, Railway Agents, and others requiring large quantities, will, on sending dimensions, receive estimates at the lowest prices.

GLASS MILK PANS, CREAM POTS, Lactometers, Bee Glasses, Fish Globes, and all kinds of Dairy Glass, Propagating Glasses, Hyacinth Dishes, Cucumber Tubes, and every other description of Garden Glasses.

PATENT GLASS PENS, self supplying, never blot, never soil the ruler, and will write continuously for 12 hours.

Also, Glass Rulers, Glass Inks for office-stands, desks, &c. Stationers and Schools supplied. Wholesale Warehouse for Ornamental Shades, Lamp Shades, Gas Glasses, Genuine White Lead, Paints, Colours, and Pumps for Farm purposes.

Our Catalogue of 18 folios is the most complete ever published. No Gardener or Farm Bailiff should be without one. May be had Gratis on sending two postage stamps to Messrs. COGAN and Co., 48, Leicester-square, London.

BY HER MAJESTY'S ROYAL LETTERS PATENT.

PATENT HOTHOUSE WORKS, KING'S ROAD, CHELSEA.

E. DENCH invites the attention of Gentlemen about to erect Hothouses, &c., to the vast superiority in every respect possessed by his PATENT HOUSES, which he will warrant superior in every respect to any others. Good Glass from 16 to 21 oz. per foot, 1 foot wide, 3 feet long, furnished, and the Houses, when completed charged, from 1s. 3d. to 1s. 6d. per superficial foot, according to size and quantity; on one principle the roof is formed without wood or putty, and on another principle with wood rafters, and the glass put in with putty. Patent Sashes, requiring no paint, from 7d. to 9d. per foot. HEATING BY HOT WATER.

EDWARD DENYER, NURSERYMAN, Loughborough-road, Brixton, within three miles of London, informs his kind patrons in general that his unrivalled Collection of ROSES, reaching to nearly 1000 varieties, are now in bloom and free to the inspection of all visitors, Sundays excepted. Orders taken at this time and executed in November next. Price of Standard Roses, 15s. to 20s. per dozen. Fruit Trees, &c., &c.

E. D. informs his friends that he has no Seed Shop in London.

MESSRS. STANDISH AND NOBLE'S new descriptive CATALOGUE OF SELECT HARDY ORNAMENTAL PLANTS is just published, and may be had for four postage stamps. Besides a Treatise on the cultivation of American Plants, it contains a Plate and Description of the Funebral Cypress, Notices of Cephalotaxis Fortunii, Cryptomeria japonica, Quercus sclerophylla and inversa, Viburnum plicatum and macrocephalum, with many recent introductions from the north of China, quite new to English gardens.

Messrs. S. and N. take this opportunity of stating that they give Designs for Laying out New Grounds and Plans for Improvements; also Estimates for all kinds of Planting, whether ornamental or economic.—Bagshot Nurseries, July 20.

MESSRS. KNIGHT AND PERRY feel themselves called upon to thank their numerous patrons very gratefully for the confidence with which they have recurred to them when in want of Gardeners, and beg respectfully to say that the scrutiny and vigilance they have always employed in selecting good and clever men (to which the almost invariable satisfaction that has so long attended their recommendations is mainly attributable) is, if possible, increased now; and the steps they have taken to arrive correctly at the professional and private character of those they send out as GARDENERS, FORESTERS, BAILIFFS, &c., induce them to undertake unhesitatingly to furnish first-rate men in these capacities whenever called on to do so.

EXOTIC NURSERY, KING'S ROAD, CHELSEA, LONDON.

"THE FLOWER OF THE DAY" IS LEE'S NEW VARIEGATED SCARLET GERANIUM.—This fine bedding plant is very vigorous, and the variegation perfectly constant. The foliage is bright green, beautifully margined with silver, with a light horse-shoe, and an occasional pink tinge. The trusses are large, of a light scarlet (the most conspicuous colour), and the general effect it produces is elegant beyond description.

"THE FLOWER OF THE DAY" may be seen in bloom at LEE'S Nursery during the present month. On the 1st of August good established plants will be ready for delivery at 10s. 6d. each, with the usual allowance to the trade when three or more are ordered. Orders will be executed strictly in rotation.—Address, J. and C. LEE, Nursery and Seedsmen, Hammersmith, near London.—July 20.

50,000 CAMELLIAS WITH FLOWER BUDS.

JOSEPH BAUMANN, NURSERYMAN, Ghent, Belgium, begs to offer the following CAMELLIAS:

100	Camellias in 100 varieties,	1 foot high	...	...	£7	0 0
100	,, 50 ,,	do.	...	...	6	6 0
100	,, 100 ,,	from 1 to 2 feet high	...	10	0	0
100	,, 50 ,,	do.	do.	...	9	0 0
100	,, 100 ,,	from 2 to 3 feet high	...	12	0	0
100	,, 50 ,,	do.	do.	...	11	0 0
100	,, 100 ,,	from 3 to 4 feet high	...	16	0	0
100	,, 50 ,,	do.	do.	...	15	0 0

J. B.'s Camellias are of the best cultivation. A liberal discount to the Trade; see J. B.'s Catalogue.

STRAWBERRIES AND CELERY.—The season for Planting being close at hand, the Advertiser begs to remind those who are desirous of having clean Fruit, and in the greatest perfection, that no time should be lost in procuring Strawberry Tiles to place down when the plants are set, as without them the gardener cannot place them so exact as he otherwise could; consequently, the same advantages cannot be obtained. The satisfactory testimonials received from persons who tried the Celery Sockets last season warrants the Advertiser in hoping that they will be in use in every garden where a good and clean article is valued. Particulars can be had by inclosing three postage stamps to Mr. JOHN ROBERTS, 34, Eastcheap, London.

The Gardeners' Chronicle.

SATURDAY, JULY 20, 1850.

MEETINGS FOR THE ENSUING WEEK.

TUESDAY, July 23—Royal South London.....1 P.M.
WEDNESDAY, — 24—Royal Botanic ..... 3½P.M.
COUNTRY SHOWS.—Wednesday, July 24: Royal Berkshire Horticultural.—Thursday, July 25: Bath Horticultural, and Oxfordshire Horticultural.

FROM the moment when it was announced, upon the authority of the architects consulted by the Royal Commissioners, that the GREAT EXHIBITION in 1851 was to be smothered, at an incalculable expense, beneath a hideous dish-cover of fabulous dimensions, we feared that PRINCE ALBERT'S patriotic and magnificent design was practically at an end. But now that common sense and good taste have stepped in, and, consigning the monster to the Museum of the Institute of British Architects, have finally decided upon a most beautiful and original conception, of which Englishmen may well be proud, we no longer doubt that the great ends of the Exhibition will be accomplished. Mr. PAXTON'S building is planned with a perfect knowledge of what such a structure requires; and we hasten at once to remove from the public mind some of the false notions about it which a few correspondents of the daily press have endeavoured to promulgate.

That the structure is of marvellous beauty is not denied; it is even admitted that it realises the visions of Eastern fable. And yet the designs which have been published of it give no idea of what it will be found to be. But the beauty being admitted, that beauty is said to be accompanied by manifold faults. "The roof is flat," says one; "and therefore rain will come through;" but it happens that the roof is the reverse of flat; men might as well say that the roof of an ELIZABETHAN house is flat because it has flat ceilings. "You cannot ventilate such a place," says another; forgetting, or probably not knowing, that one-third of the area of the whole surface is capable of being opened. "The sun will roast exhibition and exhibitors," says another; as if the good people could be roasted through a canvas screen. "You will be drowned by the condensed vapour of your own breath," cries a third; "hogsheads of human perspiration will rain upon the devoted heads of those who enter the fated building;" forgetting the inconsistency of such an assertion with the pretended heat of the roof, condensation, we need not say, being only able to take place if the roof be cold. "Flat or not, the roof will let the water through," asserts a fourth; and yet if he had only as much patience as is required to look at a plan, and comprehend it, he would see that no building was ever designed in which the admission of water was more skilfully provided against. The last body of croakers maintains that "the building will tumble down—that no such structure can stand heavy gales, or bear heavily loaded floors." The same class of alarmists, doubtless, asserted that the tubes at the Menai would collapse; and, if they had had to judge of King's College, Cambridge, would have equally asserted that its roof would not stand till the scaffolding was down. The answer to these forebodings is, the result. The roof of King's College, Cambridge, has stood for centuries; and Mr. PAXTON'S roof would stand as long, although different in every possible respect.

For ourselves, we believe that the application of the principle which the genius and perseverance of Mr. PAXTON has now applied will have a large application in gardening; and that the mode of constructing hothouses will undergo an entire change in consequence of it. This we shall shortly endeavour to show, as soon as the plans of a most ingenious garden-structure upon the same principle shall have been made ready for publication.

In the meanwhile, now that the exhibition may be regarded as a certain event, we would draw the attention of those who are interested in garden operations to some objects which, in an improved state, might well form subjects of competition. In the first place, flower pots for sitting-rooms and other in-door use are much wanted, provided they can be made of beautiful forms, good materials, and at a cheap rate. Then, again, objects for decorating flower gardens, such as vases, obelisks, terms, &c., made of some very cheap material capable of bearing the winter; at present we have plenty of good patterns in this class, but their price puts them beyond the means of the middle classes. Another material that would prove highly useful would be cheap earthenware edging to flower beds and walks; what we now have is too dear, or too ill made, and from want of dovetails or some such contrivance, the pieces are troublesome to fix and very difficult to keep in true lines unless set in concrete, which is objectionable in the places where such edging is used.

Tools and implements form another class of objects in which ingenious men might make many great improvements. We have already patent scythe blades and patent spades, which are decided advances upon the ruder construction of those implements; but we believe many other tools are capable of great improvement, and we are not sanguine enough to believe that even scythes and spades have reached final perfection.

Good garden labels, and good materials for writing on them, are probably what would be prized above everything else. At present we cannot say that we have anything of the kind upon which much praise can be bestowed. The zinc ink is good, but the grey ground on which it is necessarily traced spoils it. Earthenware labels are brittle, and will not bear ink. Very nice ground plate glass labels are made in the glass works of St. Helens, but nothing has yet been found that is fit to mark them with.

In short there is an endless variety of garden objects to which ingenious men might advantageously turn their attention in anticipation of the great Exhibition of 1851; and we dare say that the public will soon begin to communicate suggestions, and make known wants, in the hope that such hints may be taken up by some of the clever and ingenious persons who abound in all the nations who intend to take part in the Exhibition. To foreigners such hints would be particularly valuable, because they would tell them what the objects are of which English purchasers are most in want.

THE most brilliant season in the annals of English Horticulture was brought to a close last Saturday by the third EXHIBITION IN THE GARDEN OF THE HORTICULTURAL SOCIETY, on which occasion there was such an assemblage of beautiful plants as no man ever saw before in the month of July. The last exhibition in the season has always hitherto been found much inferior to its predecessors; plants get out of condition; the races which decorate May and June fade and perish in July; gardeners have less leisure, and zeal begins to flag. This must have been severely felt elsewhere, if we are to judge from the complaints that have reached us of shabbily filled tables, and poor uninteresting specimens. It was not however so at Chiswick, for which it is evident that gardeners had reserved with care what they wisely withheld from other places. We say wisely, because a judicious man will always prefer to submit his produce to the inspection of those who can best appreciate its merit—and reward it. We suspect it has been discovered that the favourable opinion of the residents in the rich quarters of the West of London is of infinitely more consequence to gardeners than that of the respectable inhabitants of the northern and eastern suburbs.

The skill exhibited in cultivation was in many respects most remarkable, and in some respects highly instructive. We would particularly refer to some Cape Heaths (*E. metulæflora bicolor* and *Parmentieri rosea*), from Mr. EPPS, in which the effect of the unconfined air upon colour was most conspicuous. When compared with other specimens, the tints bore the same relation to each other as those of a sailor, fresh from a cruise, and a Manchester weaver, just released from the factory. Nothing could more conclusively confirm what we have so often insisted upon, that the greatest health attainable in plants is to be secured by the freest exposure to air. Colour is only a sign of health. Ill coloured flowers and fruit never come from plants in perfect condition. The want of ample air was no doubt the cause of the paleness of the fine Turmerics (*Curcuma cordata* and *Roscoeana*), from Syon, in which the intense violet and scarlet colours natural to the flower-leaves were scarcely observable.

A few novelties among Orchids mingled with crowds of well known favourites. Mrs. LAWRENCE produced the curved Angrec (*Angræcum arcuatum*), from the Cape of Good Hope, and a pale variety of the Insleay Odontoglot (*Odontoglossum Insleayi**), from which the brilliant colour of the spots was almost discharged. There was also a new Acinete, very near BARKER'S, from Mr. SKINNER, and a white Moss Cattleya from Mr. IVISON.

Among other races, the Victoria Water Lily, from Syon, in the form of a beautiful flower, and two magnificent leaves, each 5 feet 10 inches in diameter, was pre-eminent. The Java and saffron-coloured Ixoras (*I. javanica* and *crocata*) from Mrs. LAWRENCE were among the most brilliant bushes. A plant of the showy Medinil (*M. speciosa*) from Mr. FARMER'S gardener, was ripening its beautiful fruit, a result which Mr. CARSON has we believe been the first to obtain. The elegant Pleroma, with its broad round flowers of Tyrian purple, was produced by Mr. GREEN, in proof that some at least of the Melastomads will retain their splendid petals long enough to render them objects of much value.

Of the newer plants the most remarkable was the Willow-leaved Ixora (*I. salicifolia*) from Messrs. VEITCH, a charming stove plant with rich orange-coloured flowers. Less new and far inferior in colour, but most remarkable for the fantastic form of its flower, was the arched Leschenaultia (*L. arcuata*) from Lord KILMOREY'S garden. A large plant of the Emperor FRANCIS' Echites (*E. Franciscea*) from Mr. COLYER'S collection showed that no gardening skill can make an ugly plant handsome.

The fruit was abundant, and in many cases very fine; but the unripe state of some of the Grapes enabled inferior specimens to beat them. The most remarkable exhibition among this kind of fruit was a bunch of Black Hamburgh Grapes, *perfectly coloured*, from Mr. WILMOT, of Isleworth, which formed part of a crop now ripe *upon Vines that were loaded with ripe fruit last February!*

The beauty of the grounds of Chiswick-house, thrown open to the meeting by the noble President of the Horticultural Society, and a delicious day, enabled 7970 visitors to pass an afternoon in great enjoyment.

We are authorised to state that the regulations for the exhibitions of next year will be speedily taken into consideration; and to invite, as usual, suggestions for their improvement, where that may be practicable.

WE have before us the Catalogue† of the great sale of which, a week or two since, we announced the approach. The LATE KING OF HOLLAND'S PLANTS will be sold by auction, at the Hague, on Thursday, the 22d of August, and eight following days.

It is evident from this Catalogue, which by the way is a model for the imitation of others, that his Majesty gardened in a truly regal manner. Magnificent specimens of vegetation; plants capable of delighting the eye by their masses of flowers, or the sense of smell by their perfume, seem to have been the great objects of his care. Here we have beautiful Palm trees, noble Cycads and Plantains, crowds of Japanese Lilies, with forests of Oleanders, Camellias, Chinese Azaleas, Indian Rhododendrons, and Orange trees.

Although we must necessarily refer the reader to

* This is no doubt an Odontoglot, and not an Oncid.

† This may be had of BAILLIERE, 219, Regent-street, London.

the Catalogue itself for the particulars of this remarkable sale, we must spare room to mention a few of the lots. Lot 33 is a Black Cane (*Calamus niger*) 4 yards high, described as a magnificent specimen with several stems; 48 to 62 are Palmettos (*Chamærops humilis*), varying in height from 1 to 4 yards, said to be of admirable beauty, and in some cases without rivals; there are also many more lots of the same kind; 124 to 127 are specimens of the Bourbon Latania, from 2 to 3 yards high; 172, *Cycas Rumphii*, a very rare species in great beauty; 201, the Altenstein Zamia, 2½ yards high; 412, *Strelitzia augusta*, 5 yards high; 435, a Cinnamon tree, 5½ yards high; 1104, the bell-shaped Rhododendron (*R. campanulatum*), 2 yards high and 3 yards wide; 1231, &c., plants of Camellias, 3 and 4 yards high and 2 yards wide; 2056, &c., Orange trees; are chiefly small specimens, none of them appear to exceed 9 feet, and the majority are from 3 to 4 feet.

MUSA CAVENDISHII IN THE POLYNESIAN ISLANDS.

More than 10 years ago the late Rev. John Williams paid a short visit to Chatsworth, in order that he might, if possible, ascertain the most successful method of packing and exporting plants and seeds to great distances, and also at what periods or stages of growth it was most advisable to have them removed for that purpose; for as that gentleman was about to be entrusted with a mission to the Polynesian Islands he was exceedingly anxious to take something over with him, which, on its arrival in those parts, might prove permanently beneficial to the inhabitants. His Grace the Duke of Devonshire having most kindly given permission to supply from the gardens at Chatsworth anything which might be deemed suitable for the purpose, Mr. Williams consulted me as to the kinds of plants I would recommend. I suggested that it would doubtless prove one of the greatest blessings to the inhabitants of those far distant and little known lands, if the Chinese Banana (Musa Cavendishii) could be safely transplanted and established there, as from its dwarf growth it might be cultivated to any extent, and in almost any situation where the taller growing kinds could not exist, on account of the violent tornadoes which at various times sweep down nearly every lofty species growing there; also an immense number of plants might be grown on a very limited surface of ground, and consequently the production of healthful and nutritive food would in a few years become abundant, and thus with a very moderate attention, the overplus might by exportation prove beneficial to the inhabitants; and, lastly, encouragement would be given to cultivation, which would in a few years pave he way for the introduction of many other of the useful arts of civilised life.

Subsequently Mr. Williams sent to Chatsworth his son, who remained here for a month making observations and taking such instructions as he thought would prove serviceable to him. On his departure, two cases of plants were prepared to be taken out with him, in accordance with his Grace's wishes; one of these packages was filled entirely with young plants of the Musa Cavendishii, and the other contained several other plants which were thought likely to prove of real utility. More than 10 years have rolled away since this transaction took place, and from that time to the present little has been known or heard of the affair, beyond the arrival of the plants at their destination, and the melancholy close of Mr. Williams's merciful mission.

After the lapse of so long a time, when the circumstance had become partly obliterated from the mind by more recent matters, it was with no small satisfaction that I read in the *Samoan Chronicle* (which has been kindly sent me from those islands), the following interesting account of the spread and great utility of this Musa, originating from the stock then introduced—a statement fully according with my anticipations, and serving to show that the cultivation of this plant has been carried out in a most praiseworthy manner.

The great success which has attended this experiment, promising, as it does, to be of so much ultimate importance, will encourage all persons who may have opportunities of rendering such assistance to do so; it has stimulated me to further exertion in this way, whenever such may appear necessary.

The *Samoan Chronicle* says: "He who introduces but a single plant into a country may be considered a public benefactor. We look with interest on the magnificent Orange and Tamarind trees which still stand at Point Venus, on Tahiti, planted by Bligh; and on the Shaddock tree, which, till lately, stood at Huahine, planted by the hand of Cook. But the most humble native teacher who now conveys to other islands the Orange, the Lime, the Banana, Sweet Potato, Pine, Custard and Papan Apples, &c., is no less worthy of the thanks of our country than the greatest of our navigators. It is interesting to observe, that, when these worthy agents of our Missionary Society bring on board the mission ship their little odds and ends of property to embark on their mission of mercy to other islands, they have almost invariably a box of plants, or a parcel of roots and seeds.

"It must not be thought that the islands of the Pacific are now the solitary abodes they once were. They are visited by hundred of whalers and traders; and, consequently, it is of the greatest benefit in preserving the health of their crews to be able to get fresh supplies of vegetables and fruits. At the same time it confers a benefit on the natives, by giving in exchange for their produce our hardware, cutlery, and cottons. The benefit is even more extended in opening up markets for our home manufacturers.

"In after years it will be interesting to know who first conveyed to the several islands many of the finest tropical productions. Even now, short as the period is, it would be difficult to ascertain who first introduced many of them.

"Of all the foreign plants which have been introduced into Samoa, none have been more extensively propagated and valued than a species of Banana, previously unknown in the South Seas, although in Samoa alone upwards of 50 different species of the Musa are found. From the excellency of its fruit and its great weight, together with the adaptation of its lowness to resist violent gales, it promises to take the precedence of every other variety usually cultivated. Some notice of its history, therefore, is worthy of record.

"When our late lamented missionary, Mr. Williams, returned from England in the 'Camden,' in 1838, his Grace, the Duke of Devonshire, kindly supplied him with some cases of plants, in one of which was one designated 'Chinese Banana' (most probably the Musa Cavendishii, the origin of which is said to be the Isle of France). Mr. Williams not having a settled place of residence for some time after he landed, the cases were left under my care. Little vitality seemed to remain; but anxious to preserve, if possible, some of them, I had them carefully transplanted into my garden. This Chinese Banana was the only one which survived. In about twelve months it produced a bunch weighing nearly 100 lbs. From this single plant have sprung the thousands to be seen everywhere in Samoa; and they are fast spreading in other groups east and west. It is surprising to see in the short space of 10 years a plant so extensively propagated. But when we calculate, by geometrical progression, what a plant, which will average but 6 suckers a year, will eventually produce, the result is amazing.

"The value of the Banana in these seas can scarcely be estimated. What Baron Humboldt says of it in Mexico may be quoted here and applied to Samoa. He doubts whether there is any other plant on the globe which in so small a space of ground can produce so great a mass of nutriment. Eight or nine months after the sucker has been inserted in the earth, the Banana begins to form its clusters, and the fruit may be gathered in less than a year. A spot of 1076 square feet may contain at least from 30 to 40 plants, which in the space of a year, at a very moderate calculation, will yield more than 4410 lbs. avoirdupois of nutritive substance. The produce of the Banana is to that of Wheat as 133 to 1, and to that of Potatoes as 44 to 1." *W. Mills.*

DISEASES OF PLANTS.

(*Continued from p.* 436.)

Genus V.; *one species.* Rhachitis.—There are plants, especially Gramineæ, and, above all, Wheat, which, from the vigorous state of their early growth, gradually turn yellow, the leaves twist and curl, and the knots of the stem acquire an extraordinary size; the Wheat then ceases to grow, and remains often scarcely 18 inches in height, instead of above 40, which it ought to have. This deformity giving it at first sight some resemblance to that which is called rhachitis in animals, I have given the same name to the disease in Cerealia. The seeds are changed into a monstrous excrescence. It differs from ergot in that the latter has not the general deformities of the rhachitis. I have occasionally seen other plants similarly stunted, with excrescences on the stalk, but I cannot say whether or not they belong to the same category as the cerelia afflicted with rhachitis.

Roffredi is of opinion that the ergot does not contain a single one of the little worms which others have pretended to have seen, but only their eggs. He found the diseased grains full of filaments of extreme tenuity, branched and intertwined, upon which he found a number of little globular and oval bodies. On sowing bad seeds with good, several of the plants appeared rhachitic. The bad seeds contain eggs of the little worms, which, he believes, as they are hatched, attach themselves to the roots, crawl up the stems, and then fix themselves in the ear, causing each grain to be converted into a gall. The disturbance of the sap occasioned by the worms in their ascent causes the rhachitis. If these observations of Roffredi were fully confirmed, and that the constant presence and bite of the little worms were proved, the disease should be classed among lacerations. But as the co-existence of these insects with the rhachitis is not generally recognised, and as some deny that there are any in the ergot, I have preferred placing both diseases in the present class. Roffredi has proved that rhachitis as well as ergot is contagious, and the careful separation of the diseased grains from the seed corn, is therefore, in this case, also a necessary precaution.

Genus VI.; *one species.* Asphyxia.—*Asphyxia* in animals is defined to be a continued failure of the animal and vital powers. Something of the kind may be observed, although rarely, in plants caused by the state of the atmosphere. Thus a long continued dry air, independently of the action of heat, will kill plants by depriving them of the nutriment they derive from a humid atmosphere. A plant placed in an atmosphere deprived of carbonic acid gas will die, so also in a vacuum; and the experiments of many physicists show that seeds will not germinate in gas azote, and that adult plants perish in it. We may conclude that a plant suffers in proportion as the air is deprived of oxygen, and languishes. How that happens we do not exactly comprehend. From want of sufficient knowledge of the internal mechanism of plants, we do not know what is precisely the effect produced on them by vitiated air. In general the disease is, however, accidental, and produced artificially, so as not to admit of much calculation. It is however certain, that plants closed up hermetically, although light be given to them, perish if the air be not renewed. The Sensitive Plant, placed in gas azote, loses its sensitive properties, and perishes by dying. All plants placed in nitrous gas languish and die.

Genus VII.; *one species.* Rot.—I designate by this name a disease which I have only seen on the bulbs of the Hyacinth. It commences externally, and generally at the crown of the roots the scales become soft and resolve into a glutinous paste. It gives out a most fœtid odour, though different from that of ulcers. The disease is contagious. Although the symptoms are external, I have reason to believe that they only indicate the last stage of the disease. For I have sometimes observed the outer scale intact, whilst the internal substance has been quite rotten. This malady affects bulbs more when out of the earth than at any other time. I have been quite unable to guess at its origin.

Genus VIII.; *one species.* Contagion.—It is well known that there are some plants which will languish and die from vegetating in the vicinity of others which exhale some matter injurious to them. How this happens, whether it be that the matter exuded penetrates, in the form of a humour, among the smaller fibrous roots, corrodes their sides, or chokes their suckers, remains unknown. The one and the other may both take place. In the meantime we see that Wheat suffers from the vicinity of the Erigeron acre, *L.*, Oats from the Serratula arvensis, *L.*, Flax from the Euphorbia peplus, *L.*, and Carrots from the Inula. If it be said that this is owing to a diversity of growth, one planting having a more vigorous vegetation, robbing the other of its food, I would beg attention to another phenomenon. How comes it that, when certain kinds of trees have perished, leaving but a few fragments remaining, no other trees of the same kind can be replanted successfully, unless the soil be first raised and burnt? Possibly this may be caused by the nature of the soil, which having been hurtful to the former trees, will also be to those which succeed them. Finally, we see that sound fruits placed amongst rotten ones will contract the disease, even if still adhering to the tree on which they grew. The same thing happens to bulbs of Onions, Hyacinths, &c., among which a rotten one placed in contact with a sound one will communicate to it the disease.

VILLA AND SUBURBAN GARDENING.

The object to be kept in view in arranging and planting a small garden is unquestionably variety. Attempting too much in any one particular branch leaves others either neglected or curtailed. It is true that every one has his own peculiar tastes and prejudices, and these necessarily interfere with the proper arrangement and division of the different parts of a garden; but it must be allowed that variety is the soul of gardening, and not less so in small than in large places. The peculiar taste of the proprietor should therefore, in some measure, be rendered subservient to the amount of pleasure which his family and friends are to reap from a proper distribution of subjects. When in flower a garden of Roses alone is admitted to be beautiful. Few will be found to detract from the loveliness of the Rose, but it would indeed be a morbid taste that could see no beauty in the rest of the vegetable kingdom. I apprehend, therefore, that the majority of those who delight in gardens—and who does not?—would prefer a continued succession of bloom in all seasons, so as to keep the eye always delighted, and the mind ever gratified. The business of the villa gardener then must be to consider well every step he takes; and every plant he commits to the soil should have been previously well weighed, and every point relating to its ultimate growth and effect maturely considered. The amateur is too apt to plant without forethought, and many of the objects he has looked forward to admire, are killed or smothered by others of more rapid and luxuriant growth. He should therefore know something of the dimensions plants are likely to attain. His little space requires great economy in the distribution of the subjects he cultivates, and much judgment in the selection of them; and therefore, instead of attempting to produce quantities of one kind of plant, to the exclusion of others, it would be wise and more satisfactory to limit the numbers of any particular kind, and thereby afford space for greater variety. He ought especially to avoid the too abundant introduction of rude growing plants; but, on the other hand, he need not confine himself to too small plants; these would produce a monotonous effect. A knowledge of the size which plants are likely to attain, together with the hints I have thrown out, may enable him to distribute his subjects so as to economise his ground, and, consequently, to produce a greater variety on the same space. *Pharo.*

Home Correspondence.

Purification of Water.—"C. D." has made inquiry relative to the purification of muddy pool water. I

understand by "pool," a village pond. It appears that cattle have access to it. The two points suggested by "C. D." are—can such water be filtered? and what would be the best kind of filter? Undoubtedly such water can be filtered, even through a common earthen filter. It has been done in all parts of the country. The other inquiry is more serious. First of all the pond should be fenced in with posts and rails, and thus prevent cattle and probably carts either going into it or passing through it; then a tank should be made in the deepest part of the pond that would hold about 3000 gallons of filtered water. Near the top of the tank let there be built in the brick-work a slab filtering stone—Ransome and May's patent stone would answer—or any good filtering stone; and then a similar stone at the top of the tank about the same size. The water would thus be made remarkably pure. The filter would want no cleansing; the accumulations on the upper stone might be removed in an hour once in six months; and, while there is water in the pond to filter, there would be a tank of excellent water. As to the pond being on the chalk, that is of no consequence; a tank properly made would do much less injury, as to the chances of leakage, than digging fonndations for the walls of the circular filter as suggested by your correspondent. Layers of quick-lime and clay would effectually plug the water from escaping, either where posts have been driven in or where damage may be done by the construction of a tank. The expense of tank, stones, fence, and pump, would be within 35*l*. The pump on the margin of the pond could be connected with the water in the tank, and a trough placed low down, under the mouth of the pump, for cattle to drink out of. Thus, every end would be accomplished, and the benevolence of "C. D." richly compensated. *A Friend to Pure Water.*

The Potato Disease has made its appearance in this locality. It was first noticed on the 8th inst.; since then it has progressed up the stalk from the set. The tubers are almost covered with small white spots, apparently some fungus, more particularly that portion to which the haulm is attached. *George Summers, Stoke Wake, near Blandford, Dorset.*——The disease has began to show itself in this part of the country (Renfrewshire, N.B.) much about the same time and in the same manner as it did last year, namely, the portion of the young stems nearest the old sets begin to get discoloured with a brown-like rust, which spreads upwards to the surface of the ground, showing that this kind of disease arises from the old set being affected before it is planted. I noticed disease about three weeks ago on the young stems of some Potatoes placed in a Pansy-bed as traps for wireworm; the soil of the bed was fresh loam, with about one-third charred loam, and free from all manures. The Potatoes were to all appearance quite sound when inserted, although they were picked from amongst a quantity of diseased ones. I neglected to examine my traps till they had made growths 2 inches above ground. When pulled up, six out of ten were found to be more or less diseased. Since then I have examined several gardens and fields of Potatoes (which are very numerous in this part of the country this season), and in all cases where the seed has been selected from amongst diseased Potatoes, the evil is showing itself below the ground. Should the present fine dry weather continue, it may not increase much for some time, but the first dull wet weather will, I fear, tell the farmers a mournful tale of their beautiful Potato fields. *A. B., Paisley, July* 16.

Puzzle.—There is a tree which if spelled with every letter erroneously or correctly, the pronunciation offers to view its true name. Required, the same in English. If unanswered in the next Numbers, a definition will appear within a month. *H. S.*

Loudon's Hortus Britannicus.—In your review of the new edition of this book, you mention the alphabetical arrangement of the Supplement as though it had been introduced by me. This was not the case, as it was first adopted in the additional Supplement published in 1832, and the arrangement was followed in the Supplement of 1839, and in the supplementary lists. When, therefore, Messrs. Longman applied to me to amalgamate all the five supplements into one, and to add the new plants, I naturally followed the arrangement of the previous supplements, particularly as I was told that form was generally liked by gardeners. *J. W. Loudon, Bayswater, July* 16.

Names of Roses.—One of your correspondents inquires into the origin of the name of a Rose commonly called in this country "Chénédolé." I fully enter into what I suppose to be his feelings, that, as an admirer of the beautiful varieties of the Rose, he is anxious to learn what he can of the tastes and pursuits of those who, by producing them, have so much added to our enjoyment. The names of the Roses are, in many instances, plainly suggestive of this sort of information. Thus, it is impossible to suppose that the cultivators who produced the Roses named "Duchesse d'Angoulême," and "Duchesse de Praslin," respectively, were not endowed with sentiments and feelings which led them strongly to commiserate the sufferings and the sorrows of those great personages, when they associated the names with objects of their own so delicate, so beautiful, and so fleeting. The Rose whose name is, when properly spelt, "Chênedollé," was most probably the production of a cultivator of Normandy, a country not surpassed by any other in the richest varieties of the Rose. Doubtless this person participated in the general admiration of the great poet of the same district, and was willing to testify his respect by giving the name of the bard to his own most beautiful production; thus enriching the poet's chaplet with a garland peculiarly his own. Charles Pioult Chênedollé was a very distinguished poet of France—he was born at Vire in Normandy, in 1769. He left France on the outbreak of the Revolution, resided for several years in Belgium and Holland, and returned to his own country when Buonaparte removed the interdict from the refugees. His great poem is entitled "Le Genie de l'Homme." He also translated the "Odes of Horace," and left in manuscript an epic poem called "Titus, or Jerusalem Destroyed." In the reign of Louis XVIII. he was decorated with the cross of the Legion of Honour, and was appointed Professor of Belles Lettres in the Lyceum at Caen. He died at his own château at Coisel, near Caen, Dec. 2, 1833. Your readers may refer to the "Biographie Universelle" for further particulars. That work is the source of my information. P.S. I shall be glad to know if any of your correspondents can inform me of the origin and meaning of the names "Phaericus," "Armosa," "Vitellina," "Devigne," "Ohl." *M. C.* [Devigne may be a misprint for Sevigné.]

Cuthill's Black Prince Strawberry.—It may be interesting to know that, notwithstanding spring frosts and easterly winds, I gathered from plants of the Black Prince, grown in the open air, a few fruit on the 1st and 2d of last month, and on the 5th I surprised some visitors by a small dish of them. They grew close to a south-east wall, without tiles; but if they had had the advantage of those contrivances, advertised by Mr. Roberts, I expect they would have been much earlier. It would be very desirable that, in his forthcoming publication, Mr. Cuthill should give directions how to make the later portion of the crop of this (his favourite) Strawberry swell to an average size. *John Abell, Limerick, July* 16.

Summer Pruning the Vine.—Am I to infer from Mr. Lovell's article that he condemns "summer pruning" *in toto*? if so, he may, with as much propriety, condemn any pruning whatever. He has criticised with undue severity the instructions in the Calendar as regards the Peach, and made observations altogether impracticable relative to the Vine. No man, I should imagine, ever stopped a Vine shoot for the sake of a good stock of laterals. I admit that they are produced; but he who grants them an existence long enough to become "spindley," should be classed with the gardener who leaves his wall trees neither summer nor winter pruned, nailed, or tied, until April. That the leaf of a lateral performs its offices differently from other leaves is very questionable; but the fallacy of attempting to grow Vines in fruit-bearing perfection without "stopping," is too obvious to require comment. *W. Toogood, Southampton.*

Instinct of Birds.—A goldfinch had been reared, by the young family of the groom to Sir Augustus Warren, Bart., of Warren's-court, to be exceedingly tame, and was a most beautiful singing bird; the eldest son of the family came to see his father and mother from Macroom, where he keeps an extensive cloth shop, and was so attracted by the beauty of the little songster that he, with great difficulty, prevailed on the young children to part with it. He accordingly took it away late in the evening, the cage being covered with a cloth, and carried him safely to Macroom, where he received every attention, but all in vain; no feeding, no coaxing, nothing could induce him to sing a note; he evidently was pining for his young companions. This went on for some time, the little bird every day getting worse, when, fortunately for all, one day his door was left open, and in a very short time afterwards the young family near Warren's-court were made happy by their little favourite's appearance, perched on the dinner-table, and showing by every testimony in his power the happiness and delight he experienced on seeing his old friends. It was mutual. He is now in perfect health, sings as before, and certainly will not be parted again. Now, Warren's-court (a bird's flight) is six miles from Macroom, the cage was covered up, it was night when he was conveyed away; and was not his coming home wonderful? *J. B. Warren, Warrenstown.*

The Cuckoo.—I beg to inform "W. H. B.," that I have remarked the peculiar note of the cuckoo, mentioned by "Este," for these last three seasons early in May; and this season more than usual. Now I think this is much too early for the young cuckoo to cheer us with his song. *J. L. M., Tonbridge Wells.*

The Building for the Exhibition of 1851.—Would it not be possible to convert this into a "winter garden," instead of removing it, as suggested, and intended by the commissioners? Glass is cheap enough; and I think such a thing would be an acquisition to the "lungs" of London. *J. L. M., Tonbridge Wells.*

Phyteuma orbiculare is now in flower in my garden, making the third season in which it has bloomed since I removed it from a bank on the Sanderstead road, about two miles south of Croydon, in Aug. 1847. The weather was then extremely dry. I raised it as well as I could with a trowel, and by care and moderate watering I kept it alive. I however lost sight of it for the season, but it came up again in 1848. The plant has gained strength ever since. Its close herbage occupies about the space of a dessert plate, from which rise 17 fine heads of bloom, on stems at least as many inches high; three (making 20), have been gathered. Sanderstead Down, and some of the neighbouring banks, abound with tiny specimens of Phyteuma. We have also on Duppa's-hill a tolerable sprinkling of Jasione. *John Towers, Croydon.*

Wasps.—On the 4th of June last, J. Strutt, Esq., of Budge-hill, Belper, offered to give a penny for every wasp which might be caught on or about his grounds, and brought to his steward, from that day to the 14th of the same month. When the day arrived, it was found that the steward had received no less than 1094 wasps. This has proved very effectual, not more than two or three wasps having been seen about the ground for several weeks past. *Q. R., Belper, July* 16.

Bees.—One of your correspondents asks if a deficiency of drones has been observed this season in the stocks of bees? I have suffered from too large a supply. A well-peopled hive threw me a swarm early in June. I put a glass upon the old stock, to prevent a second swarm coming off, but was surprised to find that not a single bee ascended into the glass, although there was a piece of clean white comb in it ready for them. After three weeks had elapsed, I noticed that the glass became damp, and finally water ran down the sides. At this season such a state of things is unusual, and as I further noticed but few bees going in and out, I resolved upon an examination. The hive was weighty, and contained a swarm of last year; therefore I knew that age had nothing to do with the case. I intoxicated the bees with the magic fungus, and great was my surprise to find that the hive was peopled with drones, the average number of workers, as far as I could count them, being one-fourth. The hive contained honey in abundance, the usual allowance of bee-bread; but the brood cells were almost entirely filled with drones. Now this hive could not have lived through the winter, if it even lingered to its commencement. The bees could have neither destroyed the drones nor fed them; the drones, I presume (according to authorities), could not have fed themselves; all would have died, and the mortality of the hive would have been attributed to the death of the queen, or any cause but the right one. I need not say I picked out all the working bees and added them to another hive, and interred the queen and the drones whilst in their inebriated state. If I might venture to advise your correspondent, I would suggest that he should catch some drones from the mouth of one of his hives that shows a plentiful sprinkling, and put them in a glass till the evening; then add them to his swarm, which will receive them readily and cannot thrive without them. *A. L. M., Spinfield.*

Societies.

Horticultural, *July* 13: Garden Exhibition.—If any one portion of this in all respects excellent July exhibition can be said to have attracted more attention than another, it was the fruit, of which there was an extensive and grand display. Pine-apples, though not remarkable for very great weights, were numerous and handsome. Black Grapes were generally well coloured and quite ripe, but as much cannot be said of white Grapes; for notwithstanding the intimation made in the schedule, that "all fruit must be sufficiently ripe for market, and well coloured," &c.; nearly the whole of the Muscats were far from being ripe. Indeed so extremely unripe were some exhibitions of this Grape, that no notice could be taken of them by the judges, although in other respects they were very fine and worthy of a prize. To this censure, however, there were one or two splendid exceptions, whose merits will be pointed out presently. Peaches and Nectarines were well swelled, and, in general, finely coloured; and there were some beautiful dishes of Strawberries and black Cherries. Among Melons the Bromham Hall had the superiority, as far as flavour is concerned. This is the second year in which it has gained the first prize for the best flavoured Melon.

Among Pine-apples, Mr. Jones, gr. to Sir J. J. Guest, Bart., had a Queen finely formed, but perhaps hardly ripe enough, weighing 5 lbs. 9½ oz. Mr. Drummond, gr. to C. H. Leigh, Esq., of Pontypool-park, a Ripley Queen, 5 lbs. 14 oz.; Mr. Higgs, gr. to J. H. Burchard, Esq., of Putney Heath, a Moscow Queen, 4 lbs. 12½ oz.; and Mr. Wilmot, of Isleworth, an old Queen, 3 lbs. 5 oz. These were all beautiful fruits, and were rewarded in the order in which they stand. Other Queens consisted of 12 fruit, weighing respectively 5 lbs. 10 oz., 5 lbs. 8½ oz., 5 lbs. 4 oz., 5 lbs. 0½ oz., 5 lbs., 4 lbs. 13½ oz., 4 lbs. 12½ oz., 4 lbs. 12 oz., 5 lbs. 10½ oz., 4 lbs. 5½ oz., and 4 lbs. 4½ oz., from Mr. Drummond; five fruit, the heaviest 4 lbs. 14 oz., and the lightest 4 lbs. 2½ oz., from Mr. Jones; and a fruit, 2 lbs. 13 oz., from Mr. Henderson, gr. to Sir G. Beaumont, Bart., who had also an Antigua Queen, weighing 3 lbs. 10½ oz. The best Providence, a noble fruit, was furnished by Mr. Spencer, gr. to the Marquis of Lansdowne, at Bowood; it weighed 9 lbs. 13½ oz. The next best was a cockscomb-crowned fruit from Mr. Fleming, gr. to the Duke of Sutherland, at Trentham, weighing 8 lbs. 6 oz.; and Mr. Brewin, gr. to R. Gunter, Esq., of Brompton, had a large crowned fruit, weighing 8 lbs. 8 oz.

Grapes.—Among private growers, the best Black Hamburghs were contributed by Mr. Holmes, gr. to S. Garrard, Esq., of Putney-heath; the second best by Mr. Haywood, gr. to G. R. G. Goodman, Esq., of Roundhay, near Leeds; and the third best by Mr. Henderson, gr. to Sir G. Beaumont, Bart. Among Market Gardeners, Mr. Harrison, of Oatlands Palace, Weybridge, was first; Mr. Davis, of Oak-hill, second; and Mr. Corney, of Edmonton, third. These were all good exhibitions of this kind of Grape, well ripened and coloured. Other Black Hamburghs were furnished by Mr. Taylor, gr. to J. Coster, Esq., of Streatham; Mr. Gerrie, gr. to Sir J.

Cathcart, Bart.; Mr. Barnes, gr. to T. C. Whitmore, Esq.; Mr. Munro, gr. to Mrs. Oddie; Mr. Mitchell, gr. to H. J. Charlton, Esq.; Mr. Smith, gr. to S. Ricardo, Esq.; Mr. Foggo, gr. to the Marquis of Abercorn; Mr. Meyers, of Brentford (badly coloured); Mr. Mitchell, of Brighton; Mr. Chapman, of South Lambeth; and a seedling called Richmond Villa Black Hamburgh, from Mr. Judson, of Brighton. Fair examples of Black Prince were communicated by Mr. Lushy, gr. to J. Hill, Esq.; Mr. Monro, gr. to the Earl of Clarendon; and Mr. M'Walter, gr. to Col. Challoner. Exhibitions of West's St. Peter's came from Mr. Rust, gr. to J. Maclaren, Esq., and Mr. Turnbull, gr. to the Duke of Marlborough; but they were wrongly entered, and were, on that account, disqualified. A variety of Hamburgh called Mill Hill was shown by Mr. Wilmot. By far the best Muscat Grapes exhibited came from Mr. Woodham Death, of Nettleswell, Harlow. These were magnificent bunches, well filled with large berries, perfectly ripe, and well coloured. The next in point of merit were furnished by Mr. Taylor, gr. to J. Coster; and three somewhat small but quite ripe bunches came from Mr. Fleming, gr. to the Duke of Sutherland, at Trentham. Good fruit of the same kind of Grape, but not fully ripened, was produced by Mr. Barnes, gr. to T. C. Whitmore, Esq.; Mr. Henderson, gr. to Sir G. Beaumont, Bart.; Mr. Rust, gr. to J. Maclaren, Esq.; Mr. Thomson, gr. to Mrs. Byng, of Wrotham Park; Mr. Boyd, gr. to Viscount Dillon; Mr. Monro, gr. to the Earl of Clarendon; Mr. W'Walter, gr. to Colonel Challoner; and Mr. Kemp, gr. to Mrs. Grillion. The best white Muscadines were shown by Mr. Williams, gr. to C. B. Warner, Esq. The second best by Mr. Robertson, gr. to Lady Emily Foley, Stoke Edith Park, Ledbury. Mr. Smith, gr. to A. Anderson, Esq., had the third best dish. Good Sweetwaters came from Mr. Chapman, of Vauxhall, and Mr. Wilmot, who had also a variety of Grape called Ackbar-khan. Mr. Henderson, gr. to Sir G. Beaumont, Bart, exhibited beautiful specimens of Grizzly Frontignan; and Mr. Munro, gr. to Mrs. Oddie, and Mr. Gadd, of Betchworth Castle, of White Frontignan. Black Frontignans are rarely seen so black as those which were furnished by Mr. Watson, gr. to Mrs. Tredwell, of Norwood; Syrian by Mr. Munro, gr. to Mrs. Oddie, and Sweetwater by Mr. Riddell, gr. to T. Ashby, Esq. The heaviest single bunch of Grapes consisted of a Syrian, 3 lbs. 10 oz., from Mr. Smith, gr. to S. Ricardo, Esq., of Sunninghill; this, it may be remarked, was no great weight for this kind of Grape, for a bunch of it, grown by Speechley, at Welbeck, in the last century, weighed 19½ lbs. An equal award was made to a beautiful bunch of Black Hamburgh, weighing 3 lbs. 8 oz., from Mr. Fleming, gr. to the Duke of Sutherland at Trentham. Mr. Henderson, gr. to Sir G. Beaumont, had a bunch of Black Hamburgh weighing 3 lbs. 1 oz.; Mr. Thomson, gr. to Mrs. Byng, one of White Muscat, 3 lbs.; Mr. Slowe, gr. to W. R. Baker, Esq., one of Black Hamburgh, 2 lbs. 9½ oz., but not sufficiently well coloured; Mr. Monks, gr. to J. M. Fountain, Esq., one of Syrian (?), 2 lbs. 8 oz.; Mr. Haywood, gr. to G. R. Goodman, Esq., one of Black Hamburgh, 2 lbs. 13 oz.; and finally one of Black Hamburgh was sent by Mr. Wilmot, being part of a second crop obtained from the same Vines since Christmas. Grapes in pots, bearing large bunches, composed of finely swelled and well coloured berries, were exhibited by Mr. Smith, gr. to S. Ricardo, Esq., of Titness Park, Sunning-hill. We observed that they had been grown according to the coiling system; and certainly they were the best exhibition of Vines in pots we have seen for many years.

PEACHES.—Mr. Ingram, gr. to her Majesty at Frogmore, sent excellent specimens of Bellegarde *alias* Violette Hâtive; Mr. Snow, gr. to the Earl de Grey, nearly as good samples of the same variety; and Mr. Spencer, gr. to the Marquis of Lansdowne, Royal George and Noblesse, beautifully swelled and coloured. The latter varieties were also produced by Mr. Drummond, of Pontypool Park. Royal George came from Mr. Davis, gr. to J. Dixon, Esq.; Mr. Munro, gr. to Mrs. Oddie; Mr. Henderson, gr. to Sir G. Beaumont, Bart.; and Mr. Foggo, gr. to the Marquis of Abercorn. Mr. Parker, gr. to J. H. Oughton, Esq, had finely coloured fruit of Bellegarde *alias* Galland; and the same sort was exhibited by Mr. Monro, gr. to the Earl of Clarendon; Mr. Turnbull, gr. to the Duke of Marlborough, sent Early Purple; Mr. Cox, gr. to J. Taylor, Esq., Bellegarde; Mr. M'Walter, gr. to Col. Challoner, Bellegarde; Mr. Fleming, gr. to the Duke of Sutherland, at Trentham, Noblesse; Mr. Slowe, gr. to W. R. Baker, Esq., Bellegarde; and Mr. Davis, of Oak-hill, Noblesse. Of Peaches in pots only one specimen was exhibited, and the crop on that, though fair, was very unripe; in fact the variety, the old Newington, a clingstone, is unworthy of such care. It was sent by Mr. Munro, gr. to Mrs. Oddie.

NECTARINES.—Beautiful examples of Elruge were produced by Mr. Turnbull, gr. to the Duke of Marlborough, at Blenheim; and Mr. Parker, gr. to J. H. Oughton, Esq., had finely swelled and well coloured dishes of Violette Hâtive, Elruge, and Tawney; Mr. Davis, of Oak-hill, sent Elruge, and the same variety was shown by Mr. Fleming, gr. to the Duke of Sutherland. Mr. Henderson, gr. to Sir George Beaumont, Bart., had Violette Hâtive; Mr. Munro, gr. to Mrs. Oddie, Red Roman; Mr. Cox, gr. to J. Taylor, Esq., Pitmaston Orange; and Mr. M'Walter, Elruge.

FIGS.—Brown Turkey were exhibited by Mr. Gerrie, gr. to Sir J. Cathcart, Bart.; and Marseilles by Mr. Foggo, gr. to the Marquis of Abercorn.

MELONS.—The first prize for the best flavoured Melon was awarded to Mr. Barnes, gr. to R. Hanbury, Esq., for a well ripened Bromham-hall; second to Mr. Elliott, gr. to J. B. Boothby, Esq., for another fruit of the same variety; and third to Mr. Balls, gr. to H. Rogers, Esq., for Napoleon green-fleshed. Mr. Gadd, of Betchworth Castle, obtained the first prize in the Market Gardeners' class, for a Beechwood. Among the other kinds shown for fine flavour were the Trentham Hybrid, Sweet Ispahan, Improved Green-fleshed, Duncan's ditto, Drummond's Scarlet, Golden Perfection, Weir's Prolific, Egyptian Green-fleshed, Bailey's ditto, and some others. The heaviest Melon was a green-fleshed Cabul, 9 lbs. 10 oz., from Mr. Davis, gr. to J. Dixon, Esq.; and the next heaviest a Cantilupe, 4 lbs. 5 oz., from Mr. Gadd, of Betchworth Castle, Dorking.

CHERRIES.—Black Tartarians were exhibited by Mr. Snow, gr. to Earl de Grey; and black Circassian by Mr. Whiting, gr. to H. T. Hope, Esq., of the Deepdene. In the Market Gardeners' class the same variety was communicated by Mr. Meyers, of Brentford, and Mr. Gainsford, of the same place. Elton and Bigarreau were shown by Mr. Snow and Mr. Kemp, gr. to Mrs. Grillion, and the latter variety by Messrs. Smith, Whiting, and Meyers. Mr. Busby, gr. to S. Crawley, Esq., had Black Eagle, and Mr. Meyers Mayduke.

STRAWBERRIES.—British Queens, beautifully ripened, were contributed by Mr. Elliott, gr. to J. B. Boothby, Esq, and Mr. Ingram, gr. to the Marquis of Salisbury, at Hatfield. In the Market Gardeners' class, Mr. Lydiard, of Bath, had very fine examples of British Queen, Mammoth, and Eleanor; and British Queen and Albert's Queen, were produced in good condition by Mr. Beach, of Hounslow, who also showed Keens' Seedling and Turner's Pine.—British Queens were exhibited by Mr. Monro, gr. to the Earl of Clarendon; Mr. Rust, gr. to J. Maclaren, Esq.; and Mr. Slowe, gr. to W. R. Baker, Esq.—Mr. Munro, gr. to Mrs. Oddie, had Eleanor and Bicton, the latter a white variety; Mr. Kitley, of Bath, Kitley's Goliah; Mr. Wilmot, a sort called Prince Arthur; Mr. Busby, Comte de Paris, a fine looking kind, but too acid except in very bright summers; and Mr. Valentine, of Wimbledon, Eleanor.

Miscellaneous fruit consisted of Fastolff Raspberries, from Mr. Smith, gr. to S. Ricardo, Esq.; Black Currants (a seedling), from Mr. Lydiard, of Bath; Raspberries (seedling), from the same grower; and Shaddocks, from the Rev. Mr. Peck, of Houghton Rectory, Huntingdon.

Of Tropical fruits, Mr. Ivison, gr. to the Duchess Dowager of Northumberland, at Syon, contributed Nutmeg, Papaw, and Vanilla; the latter in a green state.

There were three collections of 20 STOVE and GREENHOUSE PLANTS: one from Mr. Cole, gr. to H. Colyer, Esq., of Dartford, who was first; another from Mrs. Lawrence, of Ealing Park, second; and the third from Messrs. Frazer, of Lea-bridge. The first group contained three large Allamandas, well cultivated and beautifully flowered; a charmingly blossomed Dipladenia crassinoda; Clerodendron Kæmpferi, bearing a fine spike of scarlet flowers; Crowea saligna; examples of the white and rose-coloured Vincas; beautiful plants of Ixora coccinea and crocata; Aphelexis macrantha purpurea, a splendid specimen still in fine condition, although it has been in bloom nearly all the season; three well cultivated Cape Heaths; a beautifully grown Leschenaultia formosa; Æchmea fulgens, past its best; Cyrtoceras reflexum, Dipladenia splendens, a good plant of the showy Kalosanthes coccinea, and a small Aphelexis. At the back of Mrs. Lawrence's group stood a large and handsome Stephanotis floribunda; and on either side of it a huge Allamanda. Supporting these were Pimelea decussata, Clerodendron paniculatum, with an immense panicle of flowers; the pale yellow Allamanda grandiflora, Ixora coccinea, a capital specimen; a large Phænocoma proliferum, insufficiently flowered; a large bush of the blue flowered Sollya linearis; four varieties of Cape Heath; the yellow blossomed Tristania neriifolia, nearly 5 feet high, and as much through; the same beautiful Ixora javanica noticed on a former occasion, still in good flower; also I. crocata, Franciscea augusta, an Everlasting, the yellow flowered Relhania speciosa, not a very effective exhibition plant; and the sweet smelling Sphenotoma gracilis.—In Messrs. Frazer's group were Franciscea augusta, the white blossomed Rynchospermum jasminoides, Clerodendron fallax, Crowea saligna, Tristania neriifolia, the red Ixora, Stephanotis floribunda, Sollya linearis, a variety of the showy genus Kalosanthes, a nice little Roella ciliata, the red flowered Leschenaultia, three or four Cape Heaths, a white Vinca, and a good plant of the beautiful Dipladenia crassinoda.

The best exhibition of 15 STOVE and GREENHOUSE PLANTS was produced by Mr. Green, gr. to Sir E. Antrobus, Bart. It contained a large Rondeletia speciosa, Allamanda cathartica and grandiflora, an indifferent Epacris miniata, Stephanotis floribunda, beautifully grown and flowered; the chocolate blossomed Echites atropurpurea, Kalosanthes miniata, a lovely Lisianthus Russellianus, Ixora coccinea and crocata; the handsome Pleroma elegans, a comparatively new hardy greenhouse plant, with purple blossoms, nearly as large as those of an Allamanda; a very fine Leschenaultia formosa, Dipladenia crassinoda with highly coloured flowers, and two Cape Heaths.—The next group in point of merit was contributed by Mr. Carson, gr. to W. F. G. Farmer, Esq., of Cheam. It consisted of large plants of Allamanda Schottii, A. cathartica, and Stephanotis floribunda; Scutellaria ventenati, a round bush of Polygala oppositifolia, a tolerably good Æschynanthus Lobbii, Roella ciliata, Dipladenia crassinoda, the showy Rondeletia, Leschenaultia formosa, Pimelea pubescens, the useful Franciscea augusta, a pretty well flowered Lemonia spectabilis, Kalosanthes miniata, and the showy Medinil—the latter both in flower and fruit.—Mr. Taylor, gr. to J. Coster, Esq., of Streatham, had a group in which there were Hoya carnosa, Ixora coccinea, a fine bush of the beautiful Cape Heath metulæflora bicolor, a well flowered Allamanda cathartica, Rondeletia speciosa, Phænocoma proliferum, a small Roella ciliata, Pimelea decussata, the Hoya-like Cyrtoceras reflexum, Aphelexis humilis, a small plant of the Oleander-leaved Tristania, two Cape Heaths, Sphenotoma gracilis, and a well flowered Kalosanthes coccinea.

Seven collections of 10 STOVE and GREENHOUSE PLANTS were produced. The best came from Mr. Croxford, gr. to H. H. Barnes, Esq., of Stamford-hill; it comprised well cultivated examples of Allamanda cathartica, Crowea saligna, Sollya linearis, two varieties of Kalosanthes, Phænocoma proliferum, the showy Clerodendron fallax, an Everlasting, a small Ixora coccinea, and Leschenaultia splendens.—The next group was furnished by Mr. Speed, of Edmonton; it consisted of the white and rosy-flowered Vincas, the comparatively new white-blossomed climbing plant Schubertia graveolens, Allamanda cathartica, the charming Dipladenia crassinoda, Tremandra verticillata, Struthiola ovata, a nice Chironia glutinosa, a beautiful Kalosanthes miniata, and a Cape Heath.—Mr. Watson, gr. to Mrs. Tredwell, of Norwood, sent Ixora coccinea, Stephanotis floribunda, Clerodendron fallax, an Allamanda, two Cape Heaths, a well grown but indifferently bloomed Plumbago Larpentæ; Gloriosa superba, Leschenaultia splendens, and a Begonia.—Mr. Stanly, gr. to H. Berens, Esq., produced plants of Kalosanthes coccinea, Ixora crocata, Phymatanthus tricolor, the very useful Franciscea acuminata, Clerodendron Kæmpferi, Cyrtoceras reflexum, Euphorbia splendens, Leschenaultia formosa, and Gloriosa superba.—Mr. Pamplin, of Lea-bridge-road, exhibited a beautiful Allamanda cathartica, two varieties of Kalosanthes, the rosy flowered Vinca, two Cape Heaths, Cyrtoceras reflexum, two species of Franciscea, and Pimelea hispida.—From Mr. Gerrie, gr. to Sir J. Cathcart, Bart., came a large and fine Stephanotis floribunda, two species of Allamanda, Clerodendron fallax, Sollya linearis, two Cape Heaths, Epacris miniata, and a plant of the rosy flowered Vinca.

Collections of 6 STOVE and GREENHOUSE PLANTS were communicated by Mr. Bruce, gr. to B. Miller, Esq., and Mr. Kinghorn, gr. to the Earl of Kilmorey. The former had the beautiful two-coloured variety of Erica metulæflora; an Everlasting; the showy Rondeletia, Astelma eximium, Stephanotis floribunda, and the scarlet Ixora. Mr. Kinghorn sent Erica metulæflora bicolor, almost without colour; Allamanda cathartica, an Everlasting, Leschenaultia formosa and arcuata, and the beautiful Tremandra verticillata.

HELICHRYSUMS were exhibited by Messrs. Green, Stanly, Cole, and Young. The varieties consisted of Aphelexis sesamoides, s. purpurea, s. superba, s. rosea, humilis, macrantha purpurea, spectabilis, and its large flowered variety.

ORCHIDS.—Of these universal favourites there was a large and fine display. In collections of 20 species, Mr. Mylam, gr. to S. Rucker, Esq., was first, and Mr. Williams, gr. to C. B. Warner, Esq., second. Mr. Mylam sent the red variety of Saccolabium guttatum, with three charming racemes of flowers; Lycaste tetragona, quite a mass of blossoms; Oncidium Lanceanum; Epidendrum verrucosum, having a strong spike of flowers; the delicate white Aganisia pulchella, a small plant of Miltonia spectabilis, the yellow flowered Cattleya citrina, a beautiful example of Phalænopsis grandiflora, the curious green-flowered Cycnoches chlorochilon, Aerides maculosum and quinquevulnera, the latter not sufficiently in flower; Odontoglossum hastilabium, bearing a fine spike of blossoms; a large Sobralia macrantha, the singular looking Coryanthes maculata, the chocolate coloured Paphinia cristata; the Blume Saccolabe, the Bearded Lady's Slipper (Cypripedium barbatum), with some dozen flowers on it; Cœlogyne speciosa; and last, but not least, the beautiful Vanda Batemanni, with a strong spike of flowers, which were, however, not nearly all open.—Mr. Williams produced four species of the charming genus Aerides; Epidendrum varicosum and radiatum, the latter bearing 12 flower spikes; the three-coloured Vanda (V. tricolor); Oncidium pulvinatum, and the large flowered variety of O. papilio; Miltonia spectabilis, the Bearded Lady's Slipper, Brassia Wrayæ, the curious Cycnoches ventricosum, Phalænopsis grandiflora, Barkeria spectabilis, Saccolabium guttatum, Broughtonia sanguinea, Dendrobium densiflorum, and one or two other plants.

Collections of 15 ORCHIDS were shown by Messrs. Rollisson, of Tooting, and Mr. Dobson, gr. to Mr. Beck, of Isleworth. The former had a lovely Cattleya crispa, with nine spikes of flowers; Stanhopea tigrina, finely blossomed; a very fine Miltonia spectabilis, with some three dozen flowers; Stanhopea Wardii, and the charming S. Devoniensis; the white variety of Sobralia liliastrum, Phalænopsis grandiflora, the rare Aerides quinquevulnera, Coryanthes macrantha, the violet variety of Oncidium Lanceanum, Calanthe furcata, with 11 flower spikes; Cattleya Mossiæ, Odontoglossum citrosmum, well coloured; the green tailed Dendrochilum filiforme; and Huntleya violacea, with four flowers

resembling as many violet coloured bivalved shells. Mr. Dobson's plants consisted of the fine Oncidium ampliatum majus, which has been so often exhibited this season, and which is still in good flower; O. luridum and O. papilio, Epidendrum vitellinum, cochleatum, phœniceum and crassifolium, the latter beautifully flowered; a variety of Cattleya Mossiæ, Oncidium Harrisonii, with five flower spikes; Aerides odoratum, the odd-looking Promenæa stapelioides, Zygopetalum rostratum, Galeandra Baueri, the curious Cirrhæa tristis, and an Epidendrum in the way of phœniceum.

Groups of 10 ORCHIDS were furnished by Mr. Blake, gr. to J. H. Schröder, Esq.; Mr. Carson, gr. to W. F. G. Farmer, Esq.; and Mr. Franklin, gr. to Mrs. Lawrence.—Mr. Schröder had a large Aerides odoratum, A. quinquevulnera, the charming Dendrobium chrysanthum, the rather scarce Calanthe Masuca, the large flowered Phalænopsis, a beautifully cultivated twisted Trichopil (T. tortilis), Bauer's Galeandra, Angræcum caudatum, Oncidium Lanceanum, and Vanda tricolor.—Mr. Carson produced a very large Sobralia macrantha, with five flowers; Aerides odoratum, roseum, and quinquevulnera; Zygopetalum rostratum, the Bearded Lady's Slipper (Cypripedium barbatum), Cœlogyne speciosa, with 10 curious brown and buff flowers; the best variety of Odontoglossum grande, Cycnoches Loddigesii, and a plant of Dendrobium chrysanthum.—Mrs. Lawrence's plants contained Brassia Wrayæ, Calanthe veratrifolia, Odontoglossum hastilabium, and another kind like grande, without the brown colour; the yellow blossomed Cattleya citrina, Angræcum caudatum, the beautiful yellow flowered Anguloa Clowesii, with three blossoms; a small Saccolabium Blumei, an Epidendrum, and a white flowered Angræcum.

Collections of 6 ORCHIDS were produced by Messrs. Green, Gerrie, Woolley, and O'Brien.—Mr. Green sent a tall Aerides odoratum, Epidendrum cinnabarinum and crassifolium, Stanhopea saccata; Oncidium Papilio and a beautiful Oncidium Lanceanum. Mr. Gerrie showed a finely bloomed Stanhopea oculata; Oncidium pulvinatum, a mass of yellow flowers; a small, but well coloured Odontoglossum citrosmum; the long-tailed Brassia (B. caudata) with nine flower spikes; Oncidium Wentworthianum and a tall Dendrobium aduncum. Mr. Woolley produced Cattleya Forbesii with six flower spikes; the white-lipped Oncidium (O. leucochilum;) Aerides odoratum; Cymbidium aloefolium, well flowered; Epidendrum cochleatum; and a nice Oncidium pulvinatum. Mr. O'Brien contributed a small Phaius albus; the purplish-lilac Calanthe Masuca; Dendrobium formosum; a small Miltonia spectabilis; Maxillaria Brocklehurstiana; and Oncidium cornigerum. Mr. Kinghorn exhibited as a single specimen a well-flowered plant of Phalænopsis grandiflora.

CAPE HEATHS were numerous, and in capital condition. Collections of 10 were shown by Mr. Smith, gr. to W. Quilter, Esq., of Norwood; Mr. Mylam, gr. to S. Rucker, Esq.; and Mr. Cole, gr. to H. Colyer, Esq. Mr. Smith had large and fine plants of obbata umbellata, a variety of tricolor, metulæflora, Bergiana covered with small round purple blossoms; infundibuliformis, Irbyana, Lee's tricolor, tricolor elegans, Massoni, and the larger variety of retorta.—Mr. Rucker's plants, which were little inferior to the above, consisted of inflata, retorta major, Savileana, Parmentieri rosea, Veitch's variety of obbata, a very large flowered Heath; Cavendishii, infundibuliformis, Irbyana, Vernoni, and eximia.—Mr. Cole sent the larger variety of retorta, Savileana, Shannoni, tricolor, Parmentieri, the red variety of ampullacea, jasminiflora alba, flammea, the charming metulæflora bicolor, and ampullacea elegans.—In the Nurserymen's Class, Mr. Epps, of Maidstone, showed admirable plants of tricolor superba, t. Jacksoni, Parmentieri rosea, Shannoni, the two-coloured variety of metulæflora, inflata alba, the larger flowered retorta, Lee's tricolor, and eximia.—Messrs Rollisson had obbata umbellata, jubata multiflora and superba; ferruginea, a fine specimen; ampullacea tincta, reflexa, the rosy variety of Parmentieri, Aldersoni, mutabilis, and Irbyana.—Messrs. Fairbairn produced Irbyana, infundibuliformis, viridiflora, Cavendishii, the larger variety of retorta, tricolor elegans, eximia, depressa, juliana, and Shannoni.—The plants in 11-inch pots, though small compared with the others, were beautifully grown and flowered. In this class Mr. Smith, gr. to W. Quilter, Esq., showed Easoniana, a variety of princeps, ventricosa perspicua, tricolor Wilsoni, t. Dunbariana, t. superba, and t. impressa; Parmentieri rosea, the odd-looking sanguinolenta, and Savileana major.—Mr. Cole produced Irbyana, Savileana, tricolor rubra, t. Leeana, jasminiflora alba, Shannoni, ampullacea, ferruginea, and Parmentieri rosea.—The first prize in the Nurserymen's Class was awarded to Messrs. Rollisson for neat plants of Lee's tricolor, ampullacea, Candolleana, juliana, Evansiana, jasminiflora, obbata umbellata, miniata, Cavendishii, and ferruginea. 2d to Mr. Epps, for tricolor Dunbariana, t. Wilsoni, obbata, Savileana, gemmifera, ampullacea vittata, the large flowered varieties of retorta and ampullacea, Cavendishii, and perspicua rosea.—Messrs. Fairbairn showed the larger variety of Mason's Heath, gemmifera, ampullacea major, eximia, Mr. Holford's tricolor, t. elegans, t. Dunbariana, Shannoni, the large variety of Savileana, and Jacksoni.—Among the varieties furnished by Messrs. Pamplin and Mr. O'Brien, gr. to G. Read, Esq., were ventricosa superba and hirsuta; juliana, jasminiflora alba, Parmentieri rosea, Irbyana, rubens, Cavendishii, tricolor elegans, the ever-blooming mutabilis, retorta major, Coventryana, depressa, eximia, and Sprengelii.

ROSES (cut) were shown in abundance, and though their freshness and beauty were much impaired by the heat of the day, they formed an attractive portion of the exhibition. Prizes were awarded for 50 varieties to Messrs. Lane, Paul, Francis, Spriggins, and Foster; and for 25 varieties to A. Rowland, Esq., of Lewisham; Mr. Slowe, gr. to W. R. Baker, Esq.; Mr. Tivey, gr. to T. Wigelin, Esq.; and Mr. Ayre, gr. to A. Currie, Esq. An exhibition from Mr. Terry, gr. to Lady Puller, of Youngsbury, Herts, was disqualified, on account of its containing the same Rose under two different names. Among Messrs. Lane's varieties we remarked excellent blooms of the following—*Gallica:* Ohl, shaded lake; Pharericus, large crimson. *Alba:* Madame Audiot, creamy white, blush centre. *Hybrid Provins:* General Jacqueminot, large shaded lake. *Hybrid Bourbon:* Chênedollé, brilliant crimson; Comtesse Molé, delicate rosy pink; Coupe d'Hebe, and Paul Ricant. *Damask:* Madame Zoutman, creamy white. *Hybrid Perpetual:* Armandine, pink; Chateaubriand, large delicate pink; Comte de Montalivet, rosy crimson; Duchesse de Galliera, shaded pink; Duchesse de Praslin, blush, with pink centre; Duchess of Sutherland, Madame Trudeaux, carmine; Sidonie, large pink; and the brilliant Standard of Marengo. Among Bourbons, the most conspicuous was the well-known Rose, Dupetit Thouars. The same nurserymen had also beautiful exhibitions of Géant des Batailles, the most brilliant of all Roses, Queen, and Baronne Prevost; and Messrs. Curtis and Co., of Bristol, sent charming boxes of Devoniensis and Géant des Batailles. The 12 best Roses exhibited by Messrs. Paul were—*Damask:* Madame Hardy. *Alba:* Felicité Parmentier. *Hybrid Perpetual:* Julie de Krudner, Duchess of Sutherland, Baronne Prevost, La Reine, Sidonie, Pius IX., Gen. Negrier, and Duchesse de Montpensier. *Hybrid China:* Gen. Jacqueminot and Lamoriciere.

SINGLE SPECIMENS.—The best consisted of the charming orange-blossomed Rhododendron javanicum, from Messrs. Veitch; Kalosanthes coccinea, from Messrs. Frazer; huge plants of Stephanotis floribunda and of Sollya linearis, and a beautiful Ixora javanica, from Mr. May, gr. to Mrs. Lawrence; a magnificent example of Lisianthus Russéllianus from Mr. Green, gr. to Sir E. Antrobus, Bart.; Erica Parmentieri rosea from Mr. Dennett, gr. to W. Gillet, Esq.; E. ferruginea, from Mr. Epps; Curcuma Roscoeana, cordata, and Pleroma elegans, from Mr. Ivison, gr. to the Duchess Dowager of Northumberland; plants of Kalosanthes from Mr. Cole and Messrs. Frazer; and Stephanotis floribunda from Mr. Bruce.

NEW PLANTS.—Those to which prizes were awarded were Ixora salicifolia, from Messrs. Veitch; an Acineta, from Messrs. Lane; and Cattleya Mossiæ alba, from Mr. Ivison, gr. to the Duchess Dowager of Northumberland. A nice plant of the yellow-flowered Luxembourgia speciosa was produced by Messrs. Rollisson; but on account of its having been shown in the garden in former years it was unnoticed by the judges. Achimenes Tugwelliana, from Mr. Glendinning, was misplaced in this class. Other plants, shown as new, were Echites Franciscea, white with a rosy centre, from Mr. Cole; Thyrsacanthus bracteolatus; a small yellow-flowered plant called Achyranthes, to which it bore the same resemblance that Monmouth does to Macedon; and a variety of Cattleya crispa, from Messrs. Rollisson; a Lycaste, from Mr. Carson; a Cattleya, from Santa Martha; and two leaves, each measuring nearly 6 feet across, and a flower of Victoria Regia, from Mr. Ivison; and Griffonia Liboniana, from Mr. Salter, of Hammersmith.

MISCELLANEOUS SUBJECTS comprised a collection of Verbenas from Mr. Smith, of Hornsey; Petunias from Mr. Gadd, gr. to T. J. Lenox, Esq.; Antirrhinums from Mr. Wooler, of Tulse-hill; and Alpines from Mr. Wood, of Norwood, and Mr. Turner, of Holloway.

HOTHOUSE FERNS.—Collections were shown by Messrs. Williams, Woolley, and O'Brien. The following are among the best that were exhibited: Adiantum cuneatum, trapeziforme, macrophyllum, pubescens, and formosum; Pteris vespertilionis; Blechnum brasiliense, Aspidium augesens, and Polypodium effusum.

ACHIMENES were produced in quantity, and the plants were generally well grown. The first prize for them was awarded to Mr. Dobson; the second to Mr. Knott, gr. to the Rev. Mr. Pritchard; and the third to Mr. Ivison. The sorts were not different from those usually cultivated.

Mr. Glendinning had a small group of Statices, among which we remarked arborea, frutescens, mucronata, sinuata, puberula, and Fortuni.

NEW CONIFERS.—Only one collection was shown, and that was partly unnamed and of little interest.

NEW HARDY EVERGREENS consisted of Ceanothus papillosus, cuneatus, dentatus, rigidus, and integerrimus; Berberis Leschenaultii, Myrica californica, Laurus regalis, the Californian Evergreen Plum (Cerasus ilicifolia), Rhamnus californicus, and an Arbutus like Procera, from Mr. Glendinning.

PELARGONIUMS were much finer than they are usually seen in July. Messrs. Stains' and Parker's plants were in first-rate condition, and covered with large fresh flowers. The Fancies were not so gay as we have seen them earlier in the season. Plants in 11 inch pots. Mr. Parker had Rosetta, Pearl, Emperor, Louisa, Rosy Circle, and Armada. Mr. Stains, Armada, Centurion, Lamartine, Armada superb, Gulielma, and Pearl. Nurserymen: Mr. Gaines sent Meleager, Negress, Chieftain, Lord Warden, Oriflame, and Rosy Circle. Six plants in 8 inch pots: Mr. Stains produced Constance, Brilliant (Topping), Narcissus, Ariel, Conspicuum, and Pearl. Mr. Cock, Centurion, Sundown, Star, Meleager, Ondine, and Sikh. Mr. Robinson, Mars, Cassandra, Senata, Paragon, Ariel, Rowena. Nurserymen: Mr. Beck had Governor, Painter, Cuyp, Vanguard, Loveliness, and Star. Mr. Bragg, Ondine, Conspicuum, Alderman, Azure, Voltigeur, and Countess of Sefton. Mr. Gaines, Aspasia, Star, Mars, Flying Dutchman, Excelsa, and Marchioness of Stafford.

FANCY PELARGONIUMS.—Mr. Stains sent Hero of Surrey, Reine des Français, Magnifica, Queen Superb, Boquet tout fait, and Fairy Queen. Mr. Gaines, Wintonia, Orestes, Fairy Queen, Reine des Français, Alboni, and Hero of Surrey. Mr. Ambrose, Juno, Pilot, Enchantress, Magnet, Standard, and Pride of Surrey.

CAPE PELARGONIUMS.—Mr. Stains showed Tripinnatifidum, Sæpeflorens, Blandfordianum, Ardens, Quinquevulnerum, and Ardens major. Mr. Stanley, Tricolor, Lobatum, Ardens, Blandfordianum, and Elatum Bicolor.

FUCHSIAS.—Some were shown, but we cannot say that they were very creditable specimens of cultivation. They were of all sizes—some very tall, others very short—some trained like parasols, others to single stems, and some had few sticks, while others had almost more sticks than branches. Under such circumstances it will be easily imagined that they did not make a very effective display. The best came from Mrs. Lawrence's garden at Ealing-park; a second group from Mr. Salter, of Hammersmith; and a third from Mr. Gregory, of Cirencester.

CARNATIONS AND PICOTEES.—Blooms of these were tolerably numerous, but they were small and inferior. Messrs. Edwards, Newhall, and Ellis, were the only amateurs, and Messrs. Ward, Norman, Willmer, and Bragg, the nurserymen that exhibited. The following are a few of the best kinds shown. Scarlet Bizarres: True Briton, Admiral Curzon, Regular, Prince Albert. Crimson Bizarres: Edgar, Prince Albert, Count Pauline, Sir J. Reynolds, Georgiana. Purple Flakes: Earl Spencer, Squire Trow, Queen of Purples, Beauty of Woodhouse, Majestic. Scarlet Flakes: Queen Victoria, Pet, Orlando, Dido, Ulysses. Rose Flakes: Lorenzo, Flora's Garland, Margaret Evans, Gen. Moore, Ariel, Prince Arthur. PICOTEES.—Rose and Scarlet Edge: Venus, Mrs. Barnard, Heroine, Rosalind. Purple Edge: Beauty, Duke of Newcastle, Portia, Amethyst, Constance, Enchantress. Red Edge: Mary Ann (Parkinson), Isabella, Miss Burdett Coutts, Emma.

SEEDLING FLORISTS' FLOWERS.—Of Pelargoniums scarcely any were shown, with the exception of a few fancy varieties sent by Mr. Ambrose, the best of which were Eclipse, Monarch, Baudoin, and Crimson King. Carnations: May's Romeo and Antonio, both rose flakes, are large fine flowers, with good white, and well marked; they are also smooth on the edges; Puxley's Mars is a promising scarlet flake. Picotees: Dodwell's Mary, red edge; Alfred, purple; Matthews' Juno, ditto, were shown in good order, being large, with good distinct edges, and much superior to any of the same class in the stands for competition.—Mr. G. Smith sent his Fuchsia Sedonia, a showy kind, having a full-sized purple corolla, with sepals well reflexed; the size and colour of the tube are deficient and bad; there is also a want of substance. Banks' Expansion, noticed before by us, was shown in admirable condition; the purity and stoutness of this flower, combined with the freeness of bloom, makes it very desirable. There were a few Verbenas, some Petunias, with various unimportant seedlings of a miscellaneous kind. Messrs. Lee had their variegated Scarlet Geranium "Flower of the Day," which would please those who are fond of variegated plants.

Reviews.

The Tourists' Flora; a Descriptive Catalogue of the Flowering Plants and Ferns of the British Islands, France, Germany, Switzerland, Italy, and the Italian Islands. By Jos. Wood. 8vo. London, Reeve. Pp. 504.

WE are so often asked what botanical book it is most convenient for a traveller to select as his companion in a continental tour, that we hail with pleasure an English work which we can recommend instead of Koch or Reichenbach. Mr. Wood is a well-known pains-taking botanist, observing facts carefully, and putting them together with good faith and originality; but deficient in the power of generalising, and prone to over-estimate the value of those superficial peculiarities by which some modern botanists think species are to be distinguished. We are, however, bound to say that there is small evidence of this tendency in the work before us, in which we find little to criticise and much to praise.

The author introduces the subject with a discussion concerning the precise meaning to be attached to certain adjectives used in a technical sense, and in doing this he will probably have offered his readers a kind of aid that is by no means unwelcome; and then follows a carefully constructed table of genera, arranged upon the Linnean system, for the use of the wading botanists who dare not venture into deep water. The bulk of the book consists of the genera and species arranged according to the Natural System.

The work forms a handsome octavo volume, is beautifully printed on good paper, and is completed by a very full and careful index.

Review.

We are glad to find that the Supplement to the new edition of *Loudon's Hortus Britannicus* is to be issued separately, as well as in conjunction with the reprint of the old Catalogue. This makes the new work applicable to all of the first edition that remains in the hands of the public, and will, we have no doubt, be welcome news to great numbers of gardeners.

Miscellaneous.

Mr. Epps's Heaths.—Upwards of 70 of Mr. Epps's best specimens were sold by Mr. Stevens, on Tuesday last. The following will give some idea of the kind of prices they fetched:—Parmentieri rosea, 10*l.* 10*s.*; Cavendishii, 8*l.* 10*s.*; aristata major, 7*l.* 10*s.*; metulæflora bicolor, 7*l.*; retorta major, 6*l.*; ferruginea, 6*l.* 10*s.*; Jackson's Tricolor, No. 2, 5*l.*; splendens, 5*l.* 10*s.*; Clowesiana, 4*l.* 10*s.*; Shannoni, 4*l.*; halicacaba, ditto; Templeana, 3*l.* 3*s.*; delecta, 3*l.* 10*s.*; propendens, 4*l.*; fastigiata lutescens, 3*l.* 3*s.*; ventricosa coccinea minor, 4*l.* 10*s.*; perspicua nana, 3*l.* 15*s.*; inflata alba, 3*l.*; ampullacea elegans, 2*l.* 12*s.* 6*d.*; eximia, ditto; Savileana major, 2*l.* 6*s.*; Ewerana, ditto; other lots realised from 15*s.* to 2*l.*

Calendar of Operations.

(For the ensuing week.)

PLANT DEPARTMENT.

Do not allow any of the transient summer beauties to remain in the flower-houses longer than they are ornamental; and those which have been grown as annuals, to serve merely for a season, should be thrown away when they cease to be useful; for, if kept beyond a certain stage, they only engender filth and harbour insects. That portion of the Gloxinias, Achimenes, and other bulbs, requiring a season of rest, which are now becoming shabby in appearance, should be placed in a close frame, where they can be ripened off by gradually diminishing the quantity of water. It is seldom necessary to extend this care to the whole of the stock, as a few of the best pots of each kind will furnish enough to work from next year. Take care that these plants are correctly labelled before their foliage is destroyed; and mention on the label the date when put to rest, that they may be excited in the same rotation next year. By going over the stock in this manner, more room will be gained for those plants which are being grown for autumn and winter. These should enjoy a rather freer admission of air during the day, that they may be gradually inured to a cooler temperature than that in which they have been growing for the last three months. The same course of treatment must be pursued with stove plants in general, especially with those which have completed a growth for next year's flowering; these may be placed on the spare shelves of a greenhouse, from which the plants have been removed. In this situation they must have abundance of air, except when the weather is cold or windy. Greenhouse plants require similar attention in everything except temperature, which should be kept as low as possible, unless for plants which it is desirable to bring quickly into flower. On fine afternoons syringe overhead with a fine rose all plants which are under artificial covering. In fine warm nights it will be of great benefit to remove the glass or other covering, that the plants may be refreshed by the evening dew; and also during warm gentle summer showers. Some of the earliest specimens of the Lilium lancifolium and varieties will soon be coming into flower. Place them in a situation in the conservatory, where the sun's rays will not act too powerfully upon them. Supply them with sufficient water, and occasionally with liquid manure, that their flowers may be prolonged, and enhanced in brilliancy; and also that their foliage may be preserved.

FORCING DEPARTMENT.

PINERIES.—Give every encouragement to those plants which are now showing and swelling, by means of a moist high day temperature and good bottom-heat, and by shading during very warm weather. If the quantity of fruit which has already made its appearance is inadequate to meet your probable requirements during winter, water may for a short time be withheld from a portion of the plants which are fittest for fruiting. On the other hand carefully avoid any check to those which it is desirable to keep on in a growing state. VINERIES.—In the late Vineries the Grapes which are required to hang till the new year should be well thinned, and the shoulders tied out, so as to ensure a free circulation of air amongst the berries, that their skin and footstalks may be better matured, and less liable to decay during winter. The potting of Strawberries for forcing should be proceeded with as soon as the young plants have made sufficient roots to allow of their being transferred to the pots with nice little balls of soil, which will adhere to them if taken carefully up with a curved trowel. We prefer this plan to laying them in small pots, as it saves time and pots, and succeeds perfectly. The soil for forcing Strawberries should be of rather a strong loamy nature, and have some well rotted cow or horse-dung added to it. Take pains to make the drainage very perfect, as it is necessary to give a considerable quantity of water during their growth through the autumn, and when they are being forced next season; and if the drainage is defective, the health of the plants must suffer. Some gardeners do not pot their plants till September, but we prefer doing it as early as we can, placing them at once into the size of pot in which we intend them to fruit, or putting them into 4 or 5-inch pots, and shifting them, in a fortnight or three weeks, into 7-inch pots. A portion of the healthiest plants of those which were forced last season should be immediately shaken out of the old soil, soaked in water, repotted in rather larger pots, and set on beds of coal-ashes in an open situation. During summer the runners must be regularly moved, and the growth of the plants encouraged by occasional waterings of liquid manure. As habit becomes a second nature to plants, these Strawberries will complete their growth much earlier than those raised from the present year's runners, and, if carefully attended to with regard to water, they will be better prepared for an early excitement.

FLOWER GARDEN AND SHRUBBERIES.

Those who can spare time for budding Roses will, of course, be busy with that operation, selecting moist weather for the purpose. Very interesting specimens for the flower garden may be created by budding some of the choicer Perpetuals, Bourbons, and other autumn-flowering varieties, upon the strong young shoots of the climbing species, which have formed such attractive objects during the last few weeks. By allowing a portion of the spurs of the original variety to remain, a pleasing succession of bloom will be obtained from early summer to late autumn. The propagation of hardy plants should now be energetically proceeded with. After the smaller matters, such as Phloxes, Antirrhinums, Pentstemons, &c., are completed, cuttings should be taken of all the choice kinds of Roses which it is desirable to increase; and if this is done immediately they will have time to form fine plants before winter. They will strike pretty freely in a close frame on the north side of a wall, or even in a shady border without a frame. If in frames, pull off the sashes every evening, that they may be refreshed by the night dews. We never yet saw a pleasure ground or flower garden which contained a superabundance of Roses; but we would direct particular attention to the early-flowering climbing Roses, than which nothing can be more beautiful when they are tastefully arranged. In selecting the varieties for extensive cultivation, those should be chosen which, in addition to their beauty, are found most able to endure the severity of the winter unchecked, and which are least liable to be affected with mildew during summer, as varieties differ very much in both these points, and many are found to succeed much better in some localities than in others.

FLORISTS' FLOWERS.

CARNATIONS AND PICOTEES will now claim almost undivided attention; the blooming season in the south will be at its height next week, whilst a week later may be quoted for the midland and northern counties. As the blooms expand, great care must be taken that they open regularly, and that the ties are daily examined; they should be carded, and the petals evenly placed as they unfold themselves. A liberal supply of soft water must be given, so that they may experience no check from drought. Now will be a good time to attend to the fecundation of the seed-vessels; the pointals, or horns (as they are vulgarly called), are the organs to be operated upon; the anthers containing the farina generally lie low down amongst the petals; these, when the farina appears, owing to their bursting, may be extracted with a very delicate pair of tweezers, and carefully applied to the pointals or stigmas. It will soon be ascertained whether this interesting operation has been successfully performed, as, in such a case, the petals collapse. The only thing to be attended to afterwards, is to protect them from excessive rain. RANUNCULUSES should be out of the ground forthwith. PINKS.—The pipings first struck may be planted out. The latter crop will require shading, watering, &c. Gather AURICULA and POLYANTHUS seed, as the capsules turn brown; and take care the plants do not suffer from the hot weather. DAHLIAS.—Mulch and water abundantly, &c.

HARDY FRUIT GARDEN.

Suckers should be carefully removed from fruit trees of every description; it is not sufficient merely to cut them off level with the surface of soil, as such a mode of treatment only causes them to throw up a progeny ten times more numerous. To do the thing properly, the soil should be bared away, the suckers traced back to their origin, and carefully removed with the point of a sharp knife. If any of the stone-fruit trees on the walls are of inferior varieties, they may, if kind and healthy, be budded with other and better sorts, and especially with such as are found better adapted to the peculiarities of soil and situation. The same advice applies to Apples and Pears on walls or otherwise. In all cases strong healthy shoots should be selected upon which to perform the operation. Any young stocks which are sufficiently large for the purpose should be budded immediately, and, if they fail, the stocks can be cut down in spring and grafted.

KITCHEN GARDEN.

As soon as any crop is removed, let the ground be trenched, that an air of neatness may reign over every part of the garden, that insects may be disturbed and destroyed, and that the soil may derive the advantages resulting from the action of the atmosphere. If it does not interfere with the methodical rotation of crops, let the ground be immediately planted or sown; and in such cases the two operations should proceed simultaneously, and thus prevent unnecessary treading upon the ground. Give the Celery crops one or two good waterings with liquid manure. Only those rows or beds which are intended for early use should be earthed up at present. With regard to the main crops, this operation should be postponed until the plants have attained full size, when it may be finished off at once. We find in this a considerable saving of time, and the Celery does not rot in winter. When we were in the habit of earthing the winter crops early in autumn, we frequently lost entire trenches by its rotting during winter; but since we have made it our practice to defer the operation until the end of September or beginning of October, we have lost none, and the quality is as good as we could desire it. We find the same practice equally good with regard to Cardoons.

State of the Weather near London, for the week ending July 18, 1850, as observed at the Horticultural Garden, Chiswick.

July.	Moon's Age.	Barometer. Max.	Barometer. Min.	Temperature. Of the Air. Max.	Of the Air. Min.	Of the Air. Mean	Of the Earth. 1 foot deep.	Of the Earth. 2 feet deep.	Wind.	Rain.
Friday.. 12	3	30.108	30.025	68	48	58.0	59	59	E.	.00
Satur... 13	4	30.026	30.015	75	59	62.0	63	59½	E.	.00
Sunday . 14	5	30.053	30.008	74	54	64.0	62	60	S.E.	.00
Monday 15	6	29.974	29.926	85	60	72.5	62	61	E.	.01
Tues. .. 16	7	29.920	29.888	89	57	73.0	64	61	S.W.	.04
Wed. ..17	8	29.865	29.849	80	54	67.0	65	62	N.	.34
Thurs....18	9	29.991	29.921	76	59	67.5	65	63	S.W.	.37
Average....		29.991	29.947	78.1	54.4	66.3	62.8	60.8		.76

July 12—Foggy; dusky; overcast.
— 13—Overcast; fine; very fine throughout.
— 14—Overcast; fine; overcast.
— 15—Very fine; sultry; clear; lightning at night.
— 16—Very fine; hot and sultry; heavy thunder shower, 7 P.M.; cloudy.
— 17—Slight haze; very fine; rain.
— 18—Very heavy rain commenced half-past 6 A.M.; sultry; thunder, lightning, and rain in afternoon.
Mean temperature of the week, ½ deg. below the average.

State of the Weather at Chiswick during the last 24 years, for the ensuing week, ending July 27, 1850.

July.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds. N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 21	71.9	51.4	61.7	10	0.54 in.	2	1	1	—	3	8	4	3
Mon. 22	71.5	52.5	62.0	18	1.37	2	3	1	1	2	9	4	1
Tues 23	71.8	52.5	62.2	10	0.40	1	3	3	—	2	5	5	5
Wed. 24	72.3	52.1	62.2	7	1.16	—	7	3	1	2	6	3	2
Thurs. 25	73.8	51.0	62.4	7	0.22	2	1	—	1	6	7	4	1
Friday 26	73.5	52.0	62.8	10	0.70	2	1	3	2	3	7	4	2
Satur. 27	75.0	51.5	63.3	8	0.56	1	3	3	1	2	6	5	3

The highest temperature during the above period occurred on the 25th 1844—therm. 92 deg.; and the lowest on the 24th, 1838—therm. 40 deg.

Notices to Correspondents.

ARAUCARIA IMBRICATA: *J S.* Turn your seedlings out of the box they are now in, pot them singly in small pots, in yellow fibry loam, and winter them in a cold frame. Keep them rather close for a few days after they have been potted, until they have become a little established in the pots. They may be planted out in the open ground next spring.‡

BOOKS: *Discipula.* There neither is nor can be such a book as you want. The price is insufficient to remunerate a publisher. The cheapest and best book is Baxter's "British Flowering Plants." Your bookseller had better ascertain for you the price of coloured and uncoloured copies.

DELPHINIUMS: *W.* They will succeed in almost any soil; but a rich friable loam, and a situation open to the sun, suit them best. They are improved by adding thoroughly rotten manure freely to the soil in which they grow. Your light soil is possibly too poor for them. The sorts you mention may be taken up and divided in spring just when they begin to grow.‡

GLASS: *C.* The largest squares are the best, provided you secure abundant ventilation to compensate for that which is cut off by the loss of the open laps between small squares. As to price, you had better consult the glazier who supplies you.

LICHENS: *Limerick* asks if there is any wash that would take off small white and brown spots of Lichen, that disfigure chisselled limestone gate piers, so as to restore them to their natural colour. We have no doubt that a solution of corrosive sublimate would do it; but we cannot tell what more it might do.

MILDEW: *T H W.* The only remedy for it is sulphur, applied *the moment the mildew appears.*‡

NAMES OF PLANTS: *M.* Mimulus cardinalis.—*A C.* Epidendrum latilabrum.‡

PEAR TREES: *J K.* We should be inclined to suspect your tree of overflowering; for if you shelter it from cold, and it still drops its blossoms, there must be some deficient supply of food. Suppose you thin your fruit next year as soon as they have cast their petals.

PEAS: *J K.* We believe the best way of preserving green Peas is the following, mentioned in our vol. for 1849, p. 376.

POTATOES: *Limerick.* All the experiments upon stopping the disease, by removal of the stems, are so inconclusive that we know not what to advise. We believe the best way is to cut the stems down carefully, *as soon as the flowers begin to fade*, to cast over the rows three or four inches of earth, and to roll the land well.

ROSES: *Inquirer.* Both the flowers and foliage of the Rose are taken into account in determining the species. The Noisette is a garden hybrid. It is distinguished from others by the large clusters of flowers it produces throughout summer and autumn, and by its long shoots clothed with shining leaves. Nearly all sorts of Roses may be raised, without heat, from cuttings made between August and October. Noisette Fellenberg is a good crimson autumnal Rose, well suited for a wall.‡

ROSE LEAVES: *W M.* They are devoured by caterpillars of some sort. The mischief seems to have been done some weeks since. You must first discover your enemy, and then set about destroying him.

SASH BARS: *A P.* See advertisement, p. 322.‡

TAR: *Diss.* If you use this in your Cucumber boxes, it must be good Stockholm tar, and not coal or gas tar, the smell of which kills delicate plants.

THRIPS: *J J.* It has been stated that thrips may be killed by the use of tobacco-water to which a little sulphur has been added; or by a decoction of Elder leaves; or the infested plants, when wet, may be dusted over with flowers of sulphur, which should be allowed to remain on for three or four days, when it may be washed off. Perhaps the most certain, however, of all remedies is the odour from bruised Laurel leaves.‡

VINES: *J F.* Your Vine leaves appear as if they had imbibed some poisonous matter from the roots. The decay beginning at the bottom of the house, and progressing slowly but gradually upwards, would serve to strengthen this opinion. We can hardly imagine them to have been scorched.‡

SEEDLING FLOWERS.

ACHIMENES: *W H.* Too much dried up when received for us to offer any opinion of its merits.*

CALCEOLARIAS: *M H.* They fully maintain the character given your first lot.*

DOUBLE PANSY: *A Dods.* Pretty, and, being a profuse bloomer, may be worth cultivating.*

FUCHSIAS: *R W.* Not worth growing.*

GLOXINIAS: *T J.* They do not appear to be any improvement on kinds possessing nearly the same colours already in cultivation.*

PANSIES: *M H.* The dark variety is a promising flower, and should be grown again. The yellow-ground flower may be discarded at once, there being now so many very superior flowers in that class.*

CORN MANURE FOR WHEAT, BARLEY, OATS, BEANS, &c., &c.

THE LONDON MANURE COMPANY most confidently recommend the above, as they are daily receiving very satisfactory accounts from parties who used it with great success last season. It will be found fully equal to and much cheaper than Peruvian Guano, and is not so liable to produce so large a growth of straw. Price Seven Guineas per ton, 3 cwt. per acre. They also beg to offer their Concentrated Urate, Superphosphate Lime, Nitrate of Soda, Sulphate and Phosphate of Ammonia, Fishery and other Salt, Gypsum, Sulphuric Acid, and genuine Peruvian Guano. To insure this free from adulteration, all purchasers can receive it direct from the Warehouses of the Importer.

Bridge-street, Blackfriars. EDWARD PURSER, Secretary.
Country Dealers and Agents supplied.

MANURES.—The following Manures are manufactured at Mr. LAWES's Factory, Deptford Creek:

Corn and Grass Manure, per ton	£10 0 0
Clover Manure, do.	11 0 0
Turnip Manure, do.	7 0 0
Superphosphate of Lime	7 0 0
Sulphuric Acid and Coprolites	5 0 0

Office, 69, King William-street, City, London.

N.B. Peruvian Guano, guaranteed to contain 16 per cent. of Ammonia, 9*l.* 15*s.* per ton; and for 5 tons or more, 9*l.* 10*s.* per ton, in dock. Sulphate of Ammonia, &c.

PERUVIAN GUANO.—As Agents of the Peruvian Government for the importation and sale of this valuable MANURE, we think it right, for the protection of consumers and respectable dealers, to apprise them that the adulteration of the article is still extensively practised, and to recommend them to apply either to ourselves, to our agents, Messrs. GIBBS, BRIGHT, and Co., of Liverpool and Bristol, or to dealers of established character, in whose honesty and fair dealing they can place implicit confidence. ANTONY GIBBS and SONS.

MAGNUS'S ENAMELLED SLATE is handsomer and more durable than the choicest Marbles, is less than half the cost of the commonest, and is PATRONISED by her MAJESTY and PRINCE ALBERT, the Nobility, Clergy, Architects of Eminence, Engineers, Builders, Railway Contractors, and the Public generally. It is suitable for Chimney-pieces, Pier-table tops, Vases, Ink-trays, and ornaments of various descriptions, Billiard-tables, Baths, Wash-stand, and Dressing-table Trays, Door Furniture, Candelabra, Columns, Monuments, Head Stones, Mural Tablets, Pilasters, Plinths, Fonts, Grand Staircases, Balusters, &c., and is made to represent not only the marbles in ordinary use but all the more costly descriptions, as Porphyry, Rose Granite, Broccatella, Brescia, Lapis Lazuli, Malachite, and Florentine Mosaics, and has obtained the Medal from the Society of Arts. Bored Chimney-pieces, from 25*s.* upwards. Price lists sent on application to Mr. MAGNUS, PIMLICO SLATE WORKS, 39 and 40, Upper Belgrave-place, London.

*** Roofing and Plain Slate work, of all descriptions, at low prices.

LIGHT, CHEAP, AND DURABLE ROOFING.

CROGGON'S PATENT ASPHALTE ROOFING FELT is perfectly impervious to rain, snow, and frost, and has been tested by a long and extensive experience in all climates. Saves half the timber required for slates; can be laid on with great facility by farm servants, or unpractised persons. Price 1*d.* per square foot.

CROGGON'S PATENT NON-CONDUCTING FELT, for Steam Boilers and Pipes, saves 25 per cent. of fuel.

Samples and Testimonials sent by post, on application to CROGGON and Co., 2, Dowgate-hill, London.

The Agricultural Gazette.
SATURDAY, JULY 20, 1850.

MEETING FOR THE FOLLOWING WEEK.
THURSDAY, July 25—Agricultural Imp. Society of Ireland.

A GREAT amount of hard writing, and still harder speaking, has been recently bandied about, respecting bad management both on the part of landowner and tenant. Much of what has been said has undoubtedly been richly deserved, but we are rather surprised to observe that there is a class of men who, though acting a very important part in connexion with our landed interest, have not hitherto received the slightest attention from the pens of those who so freely bestow their wisdom upon both tenant and landowner. We mean the land agent.

The first and almost sole idea which occupied the mind of our landowners, seems to have been, that it was not possible to mismanage their estates. We repeat, what we have more than once urged, that landed property is not a source from whence income can be derived at will, but that it is the material of a business which, like every other business, yields returns exactly proportioned to the labour and attention bestowed upon it. The English landowner cannot turn his back on his estate for 30 or 40 years together without the certain prospect of ultimate suffering. But our office to assert this is a thankless one, so long as the general drift of the education bestowed upon our aristocracy fills their minds with the idea that it is beneath their dignity to attend to the management of their estates.

A gentleman meeting a friend expressed some surprise that he could support such an establishment by his small estate. "Oh!" said his friend, "did you not know that I had a situation—*I am my own steward.*" Let every landowner then be to the utmost possible extent his own steward; and if from the want of business habits he is unable to attend to the details, let him at least show an interest in his property by visits, not like angels' "few and far between." As tenant farmers ourselves, we can answer for the pleasure and encouragement the owner's presence gives to the industrious tenant, and the spur it gives to the indolent. For reasons which they themselves deem sufficient, it has, however, become the custom of our landowners to delegate the entire management of their estates. The first objection we make against the prevailing system refers to the terms of this contract, the usual scale of remuneration being a per centage upon the revenue, thus giving the agent a premium not upon the value of the property, but upon the amount which can by any means whatever be squeezed out of it. Nor is this all; under such a system (and it is a very prevalent one), can we wonder that there is so much land undrained, and so many ruinous buildings.

Our second objection to the general system refers to the person to whom estates are entrusted, namely, a lawyer, who from his profession can have had no opportunity of making himself thoroughly acquainted with the value of land; and as he derives a profit from every legal transaction connected with the estate, what a fruitful source of litigation, seizures, confusion, and miseries of every kind!

Nor do we object alone to the system of paying by a per centage, and to the lawyer land-agent, but we also express surprise at other individuals to whom the landlords occasionally delegate the cares of ownership; we have heard of domestic chaplains, and even of worn-out butlers who have been raised to this responsible office. An advertisement which lately appeared for a person to manage a small estate, specified as the *ne plus ultra* of other accomplishments, that the applicant must be a member of the church of England. Another advertisement from a person seeking a situation as a manager of an estate, laid great emphasis on his sole recommendation—*he was in reduced circumstances.* That he hoped such a recommendation would have weight speaks clearly enough as to the men to whom such situations are given.

But there is in other cases a still more serious mistake committed. It is by no means uncommon to entrust estates to the care of a general agent, or one who, by having a great number on hand, can take each one at a lower price than a person could afford to devote the whole of his time to it for. We know of an estate worth 2000*l.* per annum, which by this system cost the owner only 50*l.* per annum for management, or 2½ per cent.! No doubt he chuckles at the cheapness; and yet the agent will certainly get not less than 10*l.* per day for the time he bestows upon it. A person of very moderate skill, by devoting proper time and pains to the management of this estate, could easily add 300*l.* to its annual value, whereas, under the present system, the rent roll is diminishing, the land undrained, and buildings deplorable. Landowners have yet to learn that cheap labour is in this case, as in every other, most certainly the dearest.

To manage landed property in the most efficient manner requires a rare combination of business tact and judgment, on the part of the agent, with perfect confidence on the part of the owner. We have been told of a gentleman who prefaced his instructions to his agents with the following sentence—"In the first place, remember the land is mine and not yours." Such language is plainly significant of the style of men he must have been addressing, and of the system upon which his estates must have been managed.

It is so obviously the interest of a landowner to give every encouragement and security to his tenant, that had we not often seen the very opposite opinion acted upon, we must have apologised for alluding to such a self-evident fact. To those landowners who are content to act upon the short-sighted plan of yearly lettings and no lease, an agent has a very simple path to follow. But to those who really desire that their estates should be to themselves and their descendants a source of steady and improving income, the agent assumes at once his proper position between landowner and tenant; protecting the former from injury and the latter from oppression in case of unforeseen variations in the market. But if the cases are rare where the agent combines sound business habits with a thorough knowledge of the value of land, they are unfortunately still rarer, where the landowner having found such an agent, allows him to exercise his abilities.

Such is the keen competition for land that landowners need be under no fear of getting the full value of their property—what they require most of all is to be guided by their own or their agents' estimate of its value, and not by the *promises to pay* which they will receive if the land be let by public auction—a most foolish practice; and when we consider that the owner has at least a life interest in the estate, and the bidders at such an auction only a yearly one—which party is the most likely to suffer by over cropping to make up an extravagant rent?

That the landowners themselves are the parties most to blame for much of the mismanagement that exists must be admitted, but at the same time we cannot overlook the very important part which is filled by the land agent—to whose ignorance, arising from his previous position, or from his present profession as a lawyer—superadded to such miserable pay as we have above alluded to, very much of the present state of agriculture must undoubtedly be traced.

As an example of the way in which estates ought to be managed, we will mention the system pursued upon one of the largest in the north of England. At the head of it is a gentleman so thoroughly versed in business, as to be capable of transacting it with any of the numberless interests connected with princely estate. He is assisted by men who are required to give their undivided attention, and are paid accordingly. When any tenant feels himself aggrieved by his rent — instead of the farm being offered to public competition—two valuers are appointed, and at whatever price they fix, the tenant has the first offer of the farm. So well has this plan worked that in every case the offer has been accepted, and what will we believe be without a parallel, there has not even this year been one farm offered to the public.

THE citizens of Exeter certainly have most successfully exerted themselves to do honour to the meeting of the Agricultural Society during the past week. Never was a city so decked out with flags and Laurel boughs before. The streets from end to end are covered with gay colours, and from side to side almost everywhere traversed by green arches ornamented with appropriate mottos. The weather has been all that could be desired; and, accordingly, the place has been very full of visitors. The Show neither of cattle nor implements has been so large as we have known it: but this has been advantageous rather than otherwise; for both at Norwich and at York it was unwieldily large. For a detailed report of the Exhibition, we must refer to another page.

PRINCIPLES OF CATTLE INSURANCE.

IT is somewhat cheering to see publicly announced so many thousands of pounds, as the directors of our insurance companies tell us they have paid for dead cattle, more especially as they also inform us that these sums would have been lost—entirely lost—to the farmers, but for these insurance companies. This sounds all very fine, but the question occurs, from what source does the money so paid arise? Are the directors of these companies so patriotic as to put their hands in their own pockets? This could scarcely be expected. In my opinion it just amounts to this: those farmers who insure their stock are pleased to constitute the directors of the insurance companies their bankers, &c., and in return, the directors, in accordance with certain conditions, pay back the farmers part of their own money. Premising this to be the case, let us examine whether this system is likely to be a profitable investment for the farmers' cash.

The average amount of premium payable for the different classes of animals insured, including districts where pleuro-pneumonia has visited (and where has it not been?), is rather above four per cent., that is, for 100*l.* insured he pays 80*s.*; but as the insurance company agrees to pay only three-fourths of the sum so insured—say 75*l.*, which is *bona fide* the sum really insured — then the premium is rather above 5¼ per cent. There are also a few items which bear heavily on the insured: there is, first, 10 per cent. to be deducted from the insurance money on all young stock that die of quarter-ill; also on all stock that die of pleuro-pneumonia; and again salvage claimed by the company—a sum, I should suppose, ranging from 10*s.*, the minimum for young stock, to perhaps 30*s.*, the maximum for grown beasts (20*s.* being the minimum for them). For the sake of illustration, suppose a farmer insures 20 stirks, from 6 to 18 months old, and averaging 5*l.* sterling value—say 100*l.*; for this he pays 5*l.* premium. I shall also suppose that two of the said stirks die of quarter-ill during the current year of insurance (nine-tenths of the stirks that die do so of the above disease). And here I would beg to state, that having had 30 years' experience among cattle, I consider the proportion of deaths here allowed as being too large; what with setoning, plenty of Turnips, and exercise, &c., not many young beasts die. However, admitting that 10 per cent. die, let us see the farmer's balance sheet at the close of the year of insurance, &c.:

Balance-sheet, Insurance of 20 *Stirks, &c.*

Premium paid ...	£5	0	0	By three-fourths of value insured ...	£7	10	0
Loss of cattle, two stirks	10	0	0	Deduct salvage, 12*s.*6*d.* each,	£1	5	0
One year's interest of premium ...	0	5	0	Deduct 10 per cent, &c. ...	1	0	0—2 5 0
Value lost, &c. ...	15	5	0				
Money paid by insurance company	5	5	0	Money paid by insurance company	5	5	0
				Net balance &c. ...	10	0	0
Net balance lost to the farmer ...	£10	0	0		£15	5	0

So much for the insurance of young stock; and sure I am the case would be still less favourable for insurance as regards full grown animals. In ordinary circumstances, I do not think that 5 per cent. of these die annually. In the case of pleuro-pneumonia, or any such diseases that sweep away a number of cattle, individuals may profit; but, as a matter of course, the insurance companies will endeavour to avoid these diseases as much as possible, their maxim also being, "Where extra risk to charge an extra rate."

So far as known to the public, no kind of sound basis exists for the proper calculation of tables applicable to

the insurance of cattle, &c. The principles by which the insurance of human lives is conducted will never work fairly and equably if applied to cattle. There is this important and essential difference: that as regards human life, there is an absolute certainty that all must die, and in all cases it is desirable that death should be a natural process. To effect this object every exertion, and almost any sacrifice, will be made: this never-failing law is the foundation on which all insurance calculations are made. The period at which human life will terminate being a contingent circumstance, but of the utmost importance, the probabilities connecting it with insurance are deduced from statistics furnished by the most careful and prolonged observations, the philosophy of which is generally termed the doctrine of chances.

As regards cattle, the two essential elements here adverted to are wanting: 1st. Although it is the fact that a few cattle will die a natural death, it is not necessary that any should do so. The peculiar position cattle occupy in connection with our social economy accounts for this; every part of the carcase being valuable after death—and this value depending in a great measure on the circumstance of the animal not having died a natural death—it becomes the aim and interest of the owner to put the animal as quickly as possible into that state in which the carcase is found to be most useful, and having done so, to deprive it of existence. This being the fact in ordinary circumstances, there must, of necessity, be few natural deaths among black cattle; and I believe, that in the neighbourhood of large towns very few are allowed to die, most being sent to the butcher as soon as they give evidence of decay or disease. Horses would require the application of principles in themselves essentially different from those applied to the circumstances of cattle; the carcase of the horse being comparatively of little value, he will, in general, be allowed to die a natural death. It is granted that many horses are destroyed; but this rarely takes place so long as the value of the labour which can be extracted from the animal exceeds in any considerable degree the value of keep and the expenses necessary for conducting his operations. It may therefore be said of horses, that previous to destruction, they were dead to any useful purpose. I may mention, however, that insurance companies do not hold themselves bound to pay for animals wilfully destroyed, notwithstanding they may be useless. This regulation requires revision. A horse, by accident, may get his leg broken—still this horse would not die, and therefore the owner loses the insurance; or he can be so affected by disease of any peculiar character as to render him useless, yet if he does not actually die there is no payment made. Again: an animal may be labouring under an incurable disease, but if he survive the 366th day from the date of insurance, the owner is the loser. It is probable that should the farmer wish to renew his policy for another year, these diseased animals would be excluded from the new schedule; so that after the owner has paid the premium almost up to the hour of death, all is lost. Again: there would require to be a very wide difference in the amount of premium charged on horses employed at farm-work and those used by carriers, stage-coach proprietors, &c., the latter employments being much more destructive of animal life than the former.

Insurance companies ought to confine their operations to one, two, or at most three adjoining counties, having all their affairs conducted by a local administration. After having properly organised a society, their first act should be to put themselves in possession of the most correct statistics of the rates of mortality among cattle and horses that circumstances will admit. For this purpose I would engage the co-operation of schoolmasters of parishes, and resident factors on estates, &c.; this agency to be co-extensive with the area of the company's operations. Each of the agents so employed to be furnished with a number of schedules properly constructed, so as each farmer in the respective localities might record for each of the five preceding years, the number of cattle, sheep, and horses kept—the number of deaths in the different classes of animals—the diseases supposed or real of which the animals died, with the ages at which death took place—and the breeds of cattle and horses—the nature of work the horses were employed about—also the breeds of sheep, with the nature of their walk, &c. Owners' names to be concealed if requested. Reports to be given in by a fixed date, and a small salary allowed the agents for their services. I am very far from expecting that returns procured on the above plan would be correct, as regards the mortality of cattle; still they would be a near approximation to the truth, and from them tables could at once be constructed, indicating rates of premium which, being computed and deduced from statistical facts, must be intrinsically valuable and suited for practical purposes. I am also of opinion that the mutual plan of insurance is best adapted for the lower animals. It would tend to keep up the interest of the community in the Society's operations, and by adopting the system of division of profits, there would still be, as it were, a link connecting the one year with the other. The amount of money overpaid by any member could be returned to the individual members, or carried forward as part payment of premiums for the year following. I have thus endeavoured to show the evils of the present insurances, and suggest plans for the future. The cause is worthy the attention of the public, and I trust some of your numerous readers will take up the subject in earnest. I shall close with a few remarks on the principles of insurance in general, and their adaptation to cattle in particular.

To the most superficial observer it is evident that insurance companies are intended to stand in the same relation to the working of our social economy that a balance-wheel does to the working of machinery. There are only two ways in which a balance-wheel is useful to machinery—first, where the motive power does not exert a uniform degree of force; second, where the work to be done does not present a uniform degree of resistance. In machines where the motive power constantly maintains the same degree of force, and where the resistance to be overcome is of the same character, the balance is useless—it is injurious; a balance therefore is not a generator of force—it merely accumulates; and the amount of accumulated force cannot in any case exceed that spent by the motive power in its accumulation, but must in all cases be minus the friction connected with the balance. Insurances are accumulations of power (of a certain kind) fitted to meet and overcome any undue or uncommon pressure on society in general on some of its relative parts, such as the destruction of property or life by fire, water, or tempest—the demise of the head or support of a family—the approach of old age and consequent helplessness, or the visits of sickness, &c. Still all these circumstances are different from the ordinary routine of business, and are fit subjects for insurance. It must, however, be borne in mind that all insurances are like the balance, subject to loss of power by friction (expenses of management); therefore the selection of subjects for insurance requires discrimination. There are only two circumstances in which cattle insurance can be beneficial: the first is where epidemical diseases make their appearance, and threaten to sweep away whole herds at once, thereby becoming absolutely ruinous to individuals; and the second is where poor cottagers, having only one or two cows, come to lose them. Under these circumstances the cases are ruinous, and insurances would be decidedly beneficial. But, with the above exceptions, the deaths of cattle are so few in number, and so uniform in occurrence, that they cannot be viewed as ruinous visitations, but rather as the ordinary tear and wear of farming.

I have already stated it as my opinion, that cattle in this country are not very subject to epidemical attacks; and where these do appear they are much more mild in character, and therefore not so fatal, as they are among our continental or our English neighbours. Most, if not all, of the fatal epidemics that have visited Britain have had their origin in the damp marshy countries of the continent; and I have no doubt but that the system of draining now so vigorously pursued in this country, by improving the climate and the pasture, will have the effect of lessening the amount of disease among cattle in a very great degree. Moreover, most of the cattle insurance companies having had their origin since the appearance of the late and present epidemics in England, the premiums are necessarily high—they may be said to have been calculated on the war establishment principle. It remains to be seen what the peace establishment principles are. *A Practical Farmer, in the Scottish Farmer.*

Home Correspondence.

Appearance of Crops.—Having just travelled through the part of the country named in the enclosed note, though by railway the view is not satisfactory, I send my notes, which you are at liberty to use if you think fit.

	Wheat.	Barley.	Peas and Beans.	Grass.	Potatoes.
Totness to Exeter ...	Good, late.	Good, late.	—	Good.	V. good.
Taunton	Do.	Do.	V. good.	Do.	Good.
Gloucester ...	Do.	Do.	Moderate.	Moderate.	Do.
Tewkesbury	Do.	Do.	Do.	Do.	Moderate.
Worcester ...	Do.	Moderate.	Do.	Do.	
Droitwich	Moderate, bad.	Do.	Do.		
Birmingham	Good.	Good.	Good.	Do.	Moderate.
Blisworth ...	V. good.	Do.	Do.	Do.	Do.
Thrapston ...	V. good.	Do.	V. good.	Do.	Do.

But little Wheat or Barley in ear from Totness to Birmingham; from Blisworth to Thrapston Wheat in ear and crops very good. Land apparently not very well farmed S.W. of Birmingham; much draining required in many places. Between Bristol and Birmingham, four horses stirring the fallows, land apparently lightly stocked by sheep and cattle; much land in preparation for Turnips, but not many Turnips yet safe; hedges high and crooked, and in many places smothered with timber; very few corn stacks, indeed. Potatoes North of Gloucester injured by frost. *R. L. O.*

Rural Institutes.—The very favourable notice my pamphlet on the Establishment of Adult Schools in Agricultural Districts received in your Paper induces me to forward to you the enclosed prospectus. The object, if not entirely similar, is kindred in its nature, that of introducing a higher standard of knowledge in country districts. Your valuable paper will form a leading feature in our institute, and will be most useful and attractive, as we have a village horticultural society, to which nearly all the farmers belong. But why do I request you to insert this prospectus? Because, besides the actual usefulness of the institute, I anticipate that much good will emanate from the project. Our farmers will meet together on friendly terms—I hope not to grumble at the times, but to compare experience and to devise methods for improved practice in the several departments of rural economy. Nor do I anticipate in this movement less advantage to myself. Though my heart is always with my kind brothers, the farmers, I regret that personally I am but little amongst them. The curate of two large and straggling parishes (in one of which are 17 miles of road), cannot see his respected friends so often as he could wish, nor, as he would fain believe, they wish to see him. But here he hopefully looks forward to the constant interchange of friendly commerce, perhaps not seldom having for its theme the welfare of themselves and others. The next object we should all have at heart, after doing good in our own locality, is that of extending similar benefit to others. For this reason I advocate my plan in your widely circulated paper. But it may be objected chapels are not to be found in every parish. Indeed I most sincerely hope not. A room, however, sufficiently large for the purpose, if not to be hired, can be run up at a very trifling expense by every enterprising country squire who has the interest of his tenantry at heart. "PROSPECTUS.—An opportunity having occurred of hiring the Methodist chapel (at ——), it is proposed to open it as a reading-room, and to supply it with agricultural and local papers and magazines. It is thought that this plan will be the means of promoting much moral good, and of affording instruction and amusement to those who have a little leisure time at their command. It is anticipated also that the farmers will derive much advantage, by obtaining the latest and most authentic intelligence as to the state of the markets, and the best and most recent records of agricultural improvements. It is proposed to take in the following publications:—The Norfolk Chronicle, the Gardeners' Chronicle and Agricultural Gazette, Bell's Weekly Messenger, the Mark Lane Express, the Illustrated London News, the Farmers' Monthly Magazine, and Half Hours with the best Authors. To the above list will be added other papers or magazines, as the funds will admit. Terms, 2*s.* 6*d.* per quarter, paid in advance. The institution will be opened from 9 o'clock in the morning till dusk, commencing on the Monday after old Midsummer-day, the 7th July, at 1 o'clock." *A Country Curate.*

Garden Farm.—It would be very interesting to know the plan which our friend "the Country Curate," has been led to adopt with respect to his garden farm, after the numerous and diversified counsel tendered to him through the medium of your Paper. If he will be kind enough to afford us that information, and after the harvest has been gathered give us the actual results of his first attempt, he would greatly oblige one of his advisers. *T. P. H.*

Societies.

ANNUAL MEETING OF THE ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

EXETER, *July* 17.—There is a very obvious diminution in the number of implements exhibited, when the present show is compared with those of York and Norwich. The 146 exhibitors at the former meeting, and the 145 of the latter, are here reduced to 118; and the average number of implements also, exhibited by each, is not so great. And this difference, it must be confessed, is greatly to the advantage of the Exeter meeting. For as it is, there are upwards of 40 ploughs in the yard, a dozen subsoil pulverisers, 30 drilling machines, 8 manure distributors, more than a dozen steam-engines, two dozen threshing machines, 20 corn-dressing machines, 50 grinding-mills and corn-crushers, two dozen chaff-cutters, 14 Turnip-cutters, 7 oilcake breakers, 29 carts and waggons, 11 draining-tile machines, and numerous sets of draining tools, 19 sets of harrows, two dozen cultivators or scarifiers, two dozen horse-hoes, besides numbers of horse rakes, horse seed dibblers, cider mills, hand drills, liquid manure distributors, haymaking machines, Gorse bruisers, stoves and steaming apparatus—not to speak of Barley hummellers, barrows, Bean splitters, bedsteads, cheese presses, churns, clod crushers, farm railways, fencing, fire engines, forks, garden chairs, gates, hand dibbles, harness, horse power, hurdles, mangles, models, pumps, rick stands, rollers, sack-holders, seeds, spades, straw shakers, troughs, vegetable washers, watering machines, weighing machines, wheels, whipple-trees, and 60 or 70 "other articles" not capable of being classified among the preceding. And visitors have thus no lack of materials from which to select either their purchases, if they are making a business transaction of their visit, or their models of excellence, if they are merely desirous of knowing the present state of agricultural mechanics. And in either case they are much the better for the absence of that overwhelming number of articles which, at Norwich, helped to confuse them.

The prizes offered by the Society take in the whole range of agricultural machines; implements of cultivation previous to the seed-time, as ploughs and harrows, and cultivators, paring ploughs, and pulverisers, and manure distributors; implements for depositing the seed, as drills and dibbles for corn and smaller seeds; implements of cultivation during the growth of the crop, as horse hoes for wide or narrow intervals; machines employed in harvesting the crop, as carts and waggons; and in preparing it for food or for market, as threshing and winnowing machines, cider mills, Gorse bruisers, and Turnip cutters, corn crushers and cake breakers—all are patronised. For steam-engines, not included in this list, two prizes, 50*l.* and 25*l.*, are offered; and the machines which compete for these prizes are perhaps the most remarkable feature

of the whole exhibition. The following is the award of the judges of implements :

AWARD OF THE JUDGES OF IMPLEMENTS.

Kind of Implement.	Prize. £	No. of Stand.	No. of Article.	Name of Exhibitor.
For the Plough best adapted for general purposes ...	7	68	1	William Ball, Kettering, Northampton
For the Plough best adapted for deep ploughing ...	7	10	4	John Howard and Son, Bedford
For the best—				
One-way or Turn-wrest Plough	5	87	1	Henry Lowcock, Collumpton, Devon
Paring Plough	5	78	1	Thos. Glover, Thrassington, Leicester
Subsoil Pulverizer	5	10	8	J. Howard and Son, Bedford
Drill for general purposes ...	10	76	2	R. Garrett and Son, Saxmundham, Suff.
Pair-horse Steerage Corn and Turnip-drill	10	8	2	R. Hornsby and Son, Grantham, Lincolnsh.
Drill for small occupations...	5	76	10	R. Garrett and Son
Turnip-drill on the flat ...	10	8	3	R. Hornsby and Son
Turnip-drill on the ridge ...	10	8	4	Ditto
Drop-drill for depositing seed and manure	10	76	5	R. Garrett and Son
Manure distributor	5	34	13	Holmes and Son, Norwich
Portable Steam Engine, applicable fo Threshing or other agricultural purposes	50	8	9	R. Hornsby and Son
For the second best ditto ...	25	5	3	Clayton, Shuttleworth and Co., Lincoln
Portable Threshing Machine applicable to horse or steam power*	20			
Corn-dressing Machine ...	10	8	8	R. Hornsby and Son
Grinding-mill for breaking agricultural produce into fine meal*	10			
Linseed and Corn Crusher ...	5	64	5	W. P. Stanley, Peterborough
Chaff Cutter	10	72	1	J. Cornes, Barbridge, Nantwich
Turnip Cutter	5	25	2	B. Samuelson, Banbury, Oxon
Oilcake Breaker for every variety of cake	5	92	3	W. N. Nicholson, Newark-on-Trent, Notts
One-horse Cart for general purposes	10	18	17	W. Busby, Bedale, Yorkshire
Light Waggon for general purposes	10	4	26	W. Crosskill, Beverley, Yorkshire
Machine for making draining tiles or pipes	20	9	1	H. Clayton, Park-pl., Dorset-sq., London
Set of Tools for general draining	3	89	42	Mapleback and Lowe, Birmingham
Heavy Harrow	5	28	3	Williams and Taylor, Bedford
Light Harrow	5	10	20	J. Howard and Son
Cultivator, Grubber, and Scarifier	10	62	5	Smith and Co., Stamford
Pair-horse Scarifier ...	5	71	1	E. H. Bentall, Maldon, Essex
Horse-hoe on the flat ...	10	76	14	R. Garrett and Son
Horse-hoe on the ridge ...	5	18	6	W. Busby
Horse-rake	5	10	26	J. Howard and Son
Horse Seed-dibbler, or Seed depositor not being a Drill	10	...	...	Prize withheld
Cider Mill*	10			
Barrow Hand-drill, to work with cups	3	76	13	R. Garrett and Son
Liquid Manure distributor ...	10	59	1	T. R. and J. Reeves, Westbury, Wilts
Haymaking Machine ...	5	62	1	Smith and Co., Stamford
Gorse Bruiser*	5			
Cottage Stove or Range for burning coals	5	92	7	W. N. Nicholson
For the best and most economical Steaming Apparatus for general purposes ...	5	64	2	W. P. Stanley
For Improvement to the Steerage, and adoption of Vulcanized India rubber pipes in place of tin conductors for seed ...	Silver Medal.	8	2	R. Hornsby and Son
For Draining Plough and Windlass, and Pipe-making machine ...	Silver Medal.	75	1, 2, 3, 4	J. Fowler, jn., Melksham, Wilts
For Expansion Movement in Horse-hoe	Silver Medal.	84	5	Edward Hill and Co., Dudley
For a Double Cistern Patent Agricultural Fire-Engine	Silver Medal.	58	3	R. Read, Regent Circus, Piccadilly
For a New Patent Cottage Stove	Silver Medal.	92	15	W. N. Nicholson
For a Patent Churn ...	Silver Medal.	25	17	B. Samuelson
For a Permanent and Portable Farm Railway	Silver Medal.	4	61, 62, 63	W. Crosskill

* Trials not completed at time of going to press.

Highly Commended.—General Purpose Drill, Stand No. 8, Article 1, Messrs. Hornsby and Son ; Liquid Manure Drop Drill, Stand, No. 59, Article 2, Messrs. Reeves ; Plough for General Purposes, Stand No. 18, Article 3, Mr. W. Busby ; Uley Cultivator, Stand No. 4, Article 50, Mr. W. Crosskill ; Clod Crusher, Stand No. 4, Article 4, Mr. W. Crosskill ; Steam Engine, Stand No. 76, Article 22, Messrs. Garrett and Son.

Commended.—Small Dibbling Drill, Stand No. 18, Article 18, Mr. W. Busby ; Horse-hoe for small occupations, Stand No. 61, Article 2, Mr. W. Smith ; Hand Manure Distributor, Stand No. 73, Article 7, Messrs. Dufaur and Co., 21, Red Lion-square, London ; Plough for Deep Ploughing, Stand No. 81, Article 4, Messrs. W. Hensman and Son, Woburn, Beds ; Subsoil Pulveriser, Stand No. 80, Article 4, Messrs. R. Gray and Son, Reddington, near Glasgow ; Horse-hoe on Ridge, Stand No. 76, Article 6, Messrs. Garrett and Son ; Norwegian Harrow, Stand No. 4, Article 51, Mr. W. Crosskill ; Potato Plough, Stand No. 35, Article 3, Mr. John Milward, Newton Abbott, Devon ; Gutter Plough, Stand No. 91, Article 4, Mr. Thomas Moore, Newton St. Cyres, Exeter ; Wrought-iron Skim, Stand No. 84, Article 2, Messrs. Edward Hill and Co. ; Tile Machine, Stand No. 17, Article 2, Mr. John Whitehead, Preston, Lancashire ; Winnowing Machine, Stand No. 81, Article 10, Messrs. W. Hensman and Son ; Chaff Machine, Stand No. 62, Article 6, Messrs. Smith, Stamford ; Steam Engine, Stand No. 12, Article 1, Messrs. Deane, Dray, and Deane, Birmingham ; Steam Engine, Stand No. 39, Article 43, Messrs. Barrett, Exall, and Andrews, Reading.

B. T. Brandreth Gibbs, Hon. Director of the Show.

Judges of Implements—Mr. C. J. Carr, Mr. Wm. Lister, Mr. Thos. Scott, Mr. Chas. Paget, Mr. Owen Wallis, Mr. W. Owen, Mr. John Overell, Mr. I. H. Nalder, Mr. Thos. Hawkins, Mr. Outhwaite. Consultin Engineers—Messrs. Easton and Amos.

With all these commendations and awards, we have not noticed much novelty in the yard. Probably the only important instance which can prefer any such claim is the drainage apparatus invented and exhibited by Mr. Fowler, of Melksham, where a common mole plough is employed to draw in after it a chain of wooden pipes, socketed into one another, and connected for the time being by a rope passing through 40 or 50 of them, and fastening on to the plough. In using this instrument a series of pits are dug in the intended course of the drains ; the plough commences operations at the first, being furnished with a ropeful of tubes long enough to last till it arrives at the second pit, when the rope is detached, pulled through the tubes, and employed again between the second and third pits, with a fresh set strung upon it. In the case of soft ground, where the tunnels made by the mole plough would soon fill up, this method of rendering them permanent seems likely to be useful. Mr. Fowler's implements include—(1.) A portable saw mill, for manufacturing square blocks of wood from the refuse material which is usually split into firewood, such as the crooked branches and butts of trees, pollards, and other useless timber ; it is cut up by means of two circular saws, working on the same bed, driven by a portable farm engine, by strap on a pulley 6 inches wide, 14 inches diameter, the fly-wheel being 6 feet, the saw travelling at speeds varying from 700 to 1400 revolutions per minute. It requires with the next article for boring the pipes not less than 10-horse power. Price 70*l.* (2.) Two lathes on one bed ; invented by the exhibitor, and manufactured by William Eyres, of Melksham. These lathes are for manufacturing the blocks of wood cut out by the saw mill into pipes, and making a spigot-and-fauset joint to the same ; also for boring the holes in the sides necessary to admit the water. The poppets are mounted on an inclined bed, and the tool travelling ; the piece of wood is fixed on a sliding bench, which is forced down against the tool. The lathes are driven by a strap 2 inches wide, and require about half a horse-power, at speeds varying from 400 to 700 revolutions per minute. Price 12*l.* (3.) A draining plough ; invented by the exhibitor, and manufactured by Stratton and Co., of Bristol. A mole or plug plough, for making a hole in the soil at depths varying from 2 feet to 4 feet, and at the same time drawing into the hole thus made any draining materials, such as earthen or wooden pipes, straw ropes, &c., &c. ; with apparatus attached for raising or sinking the plough, so as to lay a level drain under an uneven surface. Price 8*l.* 10*s.* (4.) A windlass, for drawing the above. This windlass is drawn forward by horses walking in a circular course, a rope being twisted round a drum, which forms part of the windlass ; the rope is fastened at each end, and the friction causes the windlass to travel forward with the plough or implement attached to it. The horses, by this means, are prevented from constantly treading on the same spot, as they describe circles from different centres at each revolution. The size of the drum varies from 14 inches to 3 feet ; length of levers, 12 feet 6 inches. Price 5*l.* 10*s.*

Of course this mode of draining is liable to all the difficulties to which the ordinary mode of using the mole plough is obnoxious. The even incline of the tunnel, which is almost essential to its efficiency as a drain, can be obtained only by a corresponding even incline of the surface over which the framework of the plough slides ; and, accordingly, this machine is fitted for use only on lands of tolerably regular surface ; and that the texture of the land below the surface be also sufficiently uniform seems also necessary. A stony subsoil would spoil its applicability.

There is another article exhibited which also seems to deserve particular notice, and that is, a portable farm railway, exhibited by Mr. Crosskill, of Beverley. The rails, manufactured in parts or lengths, are 15 feet long by 2 feet 11 inches wide, and 2 feet 6 inches gauge ; the ends fit into iron sockets : the wood rails are made of the best red deal, strongly put together, and edged with iron, and made to carry 15 cwt. loads. The portable railway is very serviceable for taking off Turnips, and is much better and cheaper than carts going upon the wet land, and doing considerable damage. With 100 yards of rail a quarter of an acre may soon be cleared, the Turnips being gathered up six yards on each side of the rail. Two active boys will move it 100 yards further on, and replace it in less than ten minutes. The following is an estimate of the cost of a portable farm railway to carry 15 cwt. loads :—

	£	s.	d.
100 yards, or 20 lengths of rail, at 2*s.* 6*d.* per yard ...	12	10	
1 truck, with side tippers, to tip on either side... ...	5	0	
1 truck, with end tippers, to tip at one end	5	0	
1 turn-table	5	0	
Extras.—2 sets of points, with cross double rails, each 15 feet long	5	0	
2 sets of double rails, to join the double lines, each 15 feet long	3	0	
6 turning curves, to join a double line, or change the course, each 10 feet long	3	0	
	£38	10	

A stronger set was exhibited, calculated for the carriage of 40 cwt. loads ; and though we do not suppose that portable railways will be brought into much use in ordinary farm management, yet lines so far portable as to be capable of easy removal once a year, are not uncommonly employed in the carriage of corn from rickyard to barn ; being removed during harvest time, when access to the yard is required for the ordinary carriage of the farm ; and these schemes of Mr. Crosskill's seem well adapted to this end.

A walk round the yard will not, excepting the above instances, display much novelty. The same machines appear as were shown last year. There is, however, improvement to be noticed in details. Thus, in the first stand, Mr. Phillips, of Bristol, has adopted a sort of circular grate to Gardner's Turnip cutter, which hinders the last piece of the Turnip from coming out uncut, as it was previously liable to do.—In Stand 3, Messrs. Stratton and Hughes, of Bristol, exhibited a plain-sided one-horse cart, with 2½-inch wheels, iron stocks, and iron axles. In this cart, strength and simplicity of structure are combined, and the use of mortices, projections, and carving is avoided. The body is of the full size of 5 feet by 3 feet 6 inches, and contains about a cubic yard when filled level with the top, and when heaped will contain a yard and a half or more, or other light material. It is believed that this cart possesses the following advantages over all others hitherto introduced. A larger capacity of body with the same weight and strength of material—the body nearer to the ground, having regard to the height of the wheels—diminished draught to the horse when travelling—ease and convenience in filling and emptying. This cart has wooden wheels, of the best and most durable description, manufactured by the exhibitors' newly-erected wheel-making machinery. Price, with 2½-inch wheels, 11*l.* ; with wing boards, 15*s.* extra ; with head and tail ladders, 20*s.* extra ; with single hay frame, 30*s.* extra ; and with double hay frame, 45*s.* extra. There was, undoubtedly, a close competition between this cart and that of Mr. Busby, which gained the premium. Mr. Stratton also exhibited his well known cylindrical liquid manure cart. The body of this cart consists of a wooden barrel, containing 100 gallons, and the chief improvement consists in the substitution of circular wrought-iron ends, strengthened with angle iron, instead of the wooden octagonal ends originally used, and in the adoption of small-sized boards, ploughed, tongued, and fitted together with the greatest nicety, to prevent any chance of springing or breakage at the joints. These cylinder carts have been honoured by the prizes of numerous local societies, and by the high commendations of the judges of implements, in their report at the York meeting of the Royal Agricultural Society. They are exceedingly light and easy of draught, the 100-gallon cart weighing less than 5 cwt. Price 14*l.* 10*s.* —At Stand 4, Mr. Crosskill, of Beverley, exhibited the railways already referred to. He also showed a number of his clod crushers and Norwegian harrows. He received the prize for his waggon, which is made light and strong, to carry as bulky and heavy a load as two horses will draw anywhere, about 3 tons weight ; it is fitted with a simple yet most complete double break, which is acted upon by a hand wheel in front of the waggon, so that a man, when ready to descend a steep hill, may, by turning this hand-wheel while walking beside the horses, place the double break upon both wheels almost instantly, and most effectively. Fitted with a pole and single pair of shafts. Fore wheels 3 feet 6 inches high, and 4 feet 10 inches hind wheels ; with 2½ inch flat tires. Price 29*l.* Without the double break, 26*l.* ; ditto with the double break, 3*l.* extra.

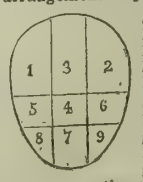
It is a significant mark of this show that so few waggons and so many carts are exhibited ; only 15 of the former to 51 of the latter. Mr. Crosskill's Norwegian harrow, with its rowels on round axles, received the commendations of the judges.

At Stand 5, Messrs. Clayton and Co., of Lincoln, exhibited four portable steam engines, to one of which the second prize offered in this class was awarded. It had a prize of 25*l.* at the Norwich meeting also. It has a tubular boiler of plates 5-16 inch thick, and tube plates ⅛ inch thick, quality best Butterley-made plates, excepting the fire-box and tube plates, which are Lowmoor ; the cylinder is 8½ inches in diameter, and 12 inches stroke ; the crank shaft is made of Lowmoor wrought iron, 2¾ inches in diameter, and makes 115 revolutions per minute ; diameter of fly-wheel, which serves as a driving-pulley, is 5 feet, and weighs 5 cwt. It will occupy about 45 minutes and consumes 50 lbs. of coals to raise steam to a pressure of 45 lbs. upon the square inch ; consumption of coals per hour, 70 lbs. This engine is fitted with improved governor, and the boiler is covered with hair felt, cased over with wood. Price 217*l.* —Stand 6 exhibited specimens and models of Messrs. M'Neill's patent roofing felt.—At Stand 7, Mr. Harding, of Market Drayton, showed the whipple-trees and cultivator which he has for many years exhibited ; the latter a very clumsy contrivance, which has been long superseded.—At 8, Messrs. Hornsby, of Grantham, the most successful exhibitors of the meeting, held their stand. An exceedingly neat mode of steerage for the drill coulters was shown, toothed wheels and rack-work being substituted for the ordinary crank-work which has been hitherto employed for that purpose. Messrs. Hornsby have received 90*l.* worth of prizes, and a silver medal, at this meeting. Their steam engine is pronounced the best in the yard. The prize of 50*l.* was awarded for this engine at York, 1848. This improved portable steam-engine is simple in its construction, fitted with governors, and easy to manage, with tubular boiler, fire-box and smoke box complete, also registered water-heating apparatus. It is particularly well adapted for threshing and other agricultural purposes ; also pumping, circular sawing, pile driving, &c. Thickness of boiler plates as follows : fire-box various, ¼ in., ⅜ in., 7-16ths, and ⅝ in. ; the horizontal part, 5-16ths ; the quality, best charcoal plates. The diameter of cylinder 10 inches ; length of stroke of the piston, 14 inches ; the number of revolutions of crank shaft per minute, 110 ; the crank shaft, 3 inches diameter, of wrought

iron; journals $2\frac{7}{8}$ and $2\frac{3}{4}$ in.; the diameter of fly-wheel, 6 feet; weight of same 7 cwt., which acts as driving pulley. The probable time it will require to generate the steam to 45 lbs. pressure is about 45 minutes; the quantity of fuel it will consume in getting up the steam about 46 lbs.; the consumption of fuel for every hour it is in full work, about 9 lbs. of coal per horse-power. Price 175*l.*—At 9, Mr. Clayton exhibited his double action tile machine, which received the prize for the best in its class. This machine is constructed for hand-working, entirely made of iron, mounted on large carriage-wheels, and very simple of use: it is fitted with two 18-inch cylinders, attached by swing brackets (so that there is no stoppage for filling) and strong wrought-iron shafts, with the cogwork cut out of the solid. This machine, combining both the "vertical and horizontal plans" of working in the one machine, renders that desirable and practical convertibility in its application according to the kind or shaped tiles required to be made, or the nature of the clay, and which in use has proved an important advantage, by having in one machine every facility that is required to make all kinds and shapes, with the greatest extent of scope yet extant, thus rendering this double-action machine complete in itself (without extra mouth-pieces, &c.), and perfectly applicable to the entire manufacture of the tile-yard. The machine, fitted with two 18-inch cylinders attached to the machine by swing brackets, fitted for working vertically (exclusive of dies, gratings, or other fittings), price 25*l.* Horse-shoe tile dies, &c., each 10*s.*; pipe dies, 18*s.*—Messrs. Howard, of Bedford, at Stand 10, exhibited a number of ploughs, receiving prizes for their two-wheeled large implement for deep ploughing, and their Read's subsoil plough, which seems altogether to have supplanted the Deanston swing implement.—Messrs. Williams, of Bedford, divided with Messrs. Howard, of the same town, the prizes for harrows.—The steam-engine exhibited by Messrs. Dean, of Swan-lane, Thames-street, London, was commended by the Judges. Mr. Busby, of Bedale, Yorkshire, has again received the prize for the best horse-hoe; and his one-horse cart was also rewarded by the premium. This cart is constructed without slot, nails, or mortice. The body is made of plain sides bolted together; the form, position, and finish of this body are adapted for farming work. The loose shelvings are soon taken off or put on the cart when required. The wheels are made with oak [raves, 4 feet 6 inches high, tire 4 inches by $\frac{5}{8}$. Price 11*l.*; with harvest shelvings, 2*l.* extra.—At Stand 25, Mr. Samuelson, successor to Mr. Gardner, of Banbury, justly received the prize for the best Turnip cutter. This implement obtained a prize of 5*l.* at the Norwich meeting, 1849. It cuts pieces of $\frac{3}{4}$ inch by $\frac{5}{8}$ for sheep or calves if the fly wheel is turned in one direction, and slices of $5\frac{1}{2}$ inch by $\frac{5}{8}$ for beasts if turned in the opposite direction. Price 5*l.* 10*s.* He also received the silver medal for Anthony's American churn, which has already been noticed in this journal.—At Stand 34, Mr. Holmes, of Norwich, exhibited a broad-cast manure distributor, for guano, nitrate of soda, salt, soot, and any other manure for top-dressing. The deliverers or "cups" are quite flat, and having rappers or cleaners fixed on the spindle, the manure is kept from adhering to them when in a moist state, but when used for dry manure they can be easily removed; it has also moving boards at the front of the box, to pull up or let down, to throw the manure more directly on to the stirrers; the slides can be easily adjusted, up or down, by a lever at the end, by which the manure can be regulated down to the deliverers; the different quantities are varied by gear wheels, and also regulated by the position of the slides; it is fitted with worm and wheel to regulate the box, which is necessary in going up or down hill. It will deposit regularly from 2 to 20 bushels per acre. Price in Norwich, 13*l.* 13*s.* On this point we may refer to two other similar machines, one exhibited by Dr. Newington, which received a silver medal, and another by Mr. Smyth, of Yoxford, the former of which has an oscillating apparatus for shaking the manure out regularly through a longitudinal slit in the bottom of the box, and the other employs a movement similar in effect (though, as it is produced by the continuous one-way revolution of a spiral—not oscillating) for delivering the manure into the cup-box, from which it is thrust out to the ground in the ordinary way.—Mr. Milward, at Stand 35, exhibited a Potato digger, resembling one of which we had long ago received drawings from Colonel le Couteur, of Jersey. This implement contains a beam and handles similar to the common plough, there being a share and the front part of a turn-wrest for, first to raise a furrow about upright, and behind that there are four forks working with a rotary motion, separating the furrow and throwing it abroad. This implement is adapted to ploughing eddishes and bringing the roots to the surface. Price 6*l.* 10*s.* It received the commendation of the judges.—The steam engine exhibited by Messrs. Barrett and Exall, of Reading, was commended by the judges. The liquid manure distributor invented by Mr. Chandler, of Stockton, Wilts, again received the prize in its class. It was exhibited by Messrs. Reeves, of Bratton, near Westbury. This implement was exhibited last year at Norwich, and obtained the prize for liquid manure distributor; it was then combined with a liquid drill, price 30*l.*, but is now, at the suggestion of Colonel Challoner, made as a liquid manure cart, to hold $2\frac{1}{2}$ hogsheads, and will distribute from the smallest quantity to 40 hogsheads per acre; from its construction, the liquid being thrown out by means of a succession of buckets, straws, leaves, and sediment, that is often found in liquid manure, cannot impede its working, as is the case where the liquid has to run through holes. Price 16*l.* A very simple steerage horse hoe was exhibited by Mr. Smith, of Kettering, Northampton. It draws with shafts; the wheels may be expanded or contracted, so as to be kept between the rows of all plants, the steerage of the implement being quite independent of the horse, so that the man may guide it to the greatest nicety. This horse hoe is adapted for hoeing Wheat, Barley, Peas, Beans, Mangold Wurzel, or Turnips, at any given width that may be required. Price, with eight hoes, 4*l.* 10*s.*; with 12 hoes, 5*l.* 10*s.* Remarkably cheap.—Messrs. Smith, of Stamford, received the prize for their hay-maker, and for their heavy scarifier, which is a very powerful instrument, but too heavy.—Mr. Stanley, of Peterborough, exhibited his steaming apparatus, which was rewarded both at York and at Norwich, and again at Exeter,—and his roller mill, which also carried off the prize. It consists of a pair of smooth narrow wheels, one large and the other small. Mr. Ball's, of Bedford, iron plough was deemed the best for light work. The best broadshare for skimming the surface of the land, was exhibited by Mr. Bentall, of Maldon, Essex, who received a prize of 5*l.* for it. The principle of the machine depends on the long projecting point, which takes hold of the land in advance of the cutting edge of the paring teeth. Mr. Cornes, of Barbridge, near Nantwich, who occupied the next stand, again exhibited his three-knifed chaff cutter, which again received the Society's premium. This machine gained a prize of 10*l.* at the Royal Agricultural Society's meeting at Shrewsbury in 1845, at Newcastle-upon-Tyne in 1846, at Northampton in 1847, at York the Society's silver medal in 1848, and at Norwich the prize of 10*l.* in 1849. It is 12 inches in the mouth, $3\frac{1}{2}$ inches thick; it is applicable to hand, horse, water, or steam-power, and makes five different lengths of chaff—one length of 4 inches, for litter. It is fitted up with the safety registered rollers, which regulate the hay or straw before entering the front rollers, whereby the danger of the feeders getting their hands entangled in the hay or straw is entirely avoided, when the machine is driven by steam or horse-power at a great velocity. This implement is much used in cutting green food for cattle. Weight of fly-wheel, 1 cwt.; diameter, 3 feet 4 inches; driven at 180 revolutions per minute. Price, delivered at Barbridge, 14*l.*; if fitted up to cut Gorse, 1*l.* extra.—At Stand 73, Dr. Newington exhibited his ingenious machines, made by Messrs. Dufaur & Co., of 21, Red Lion-square, London. They included several forms of his seed dibbler—both for hand and horse labour, the latter an exceedingly ingenious adaptation of the former to horse-power; a horse cultivator, a subsoil plough, and pulveriser; the manure distributor alluded to, a drop drill for hand and for horse power, and a hand cultivator. Near this was Mr. Fowler's Stand, whose ingenious apparatus for draining by means of the mole plough we have already described.—At Stand 76, Messrs. Garrett, of Saxmundham, exhibited their drills, horse hoes, threshing machines and steam-engines, for all of which they are so highly distinguished. They received the prizes for the drill for general purposes. Prizes were awarded to this drill at Liverpool in 1841, 10*l.*; at Derby in 1843, 30*l.*; at Southampton in 1844, 20*l.* and a medal; and at Northampton in 1847, 15*l.* This drill is suited to all the requirements of a farm, being enabled to deposit corn or seeds with compost, guano, well rotted farm-yard dung, or other manure, either in a moist or dry state, at any intervals apart. The most recent improvements in its construction consists—1st, in the application of a screw at one end of the box, worked by a pair of mitre wheels and crank handle from behind the drill, by means of which the position of the box may be altered as required to suit the slope of side hills, thereby preventing the inconvenience oftentimes resulting from the manure and seed being drifted to one side and overfilling one end, while the other is comparatively empty; 2dly, in the application of two slides to the two departments of the manure box (instead of the patent slide all in one, hitherto used), which are regulated from behind the drill, and possesses the advantage of allowing the quantity of manure to be altered as required in one department without affecting the manure in the other; 3dly, in making the slides which cover the opening of the corn box, through which the seed is delivered to the cups, to affix to an iron bar, which extends the width of the box, and being acted on by a lever from behind, allows the whole of the slides to be raised or lowered at once, to admit larger or smaller quantities of seed to the cups as required. Price 35*l.* 12*s.* 6*d.* Premiums were also awarded to them for their drop drill—their seven-row box corn drill, their hand seed drill, and their horse hoe. Their steam-engine was highly commended. The first prize of 50*l.* was given for this engine at the Norwich meeting in 1849. This engine, at the pressure of steam limited by the rules of the [Society, will work up to six horse power, and is adapted for driving agricultural machinery, such as threshing, dressing, grinding, and cutting machines; pumping water, sawing, and other stationary work on a farm, and being very simple in construction the management may readily be understood by any intelligent farm labourer. It is mounted on four strong carriage wheels, and the whole weighing only 50 cwt. renders it easy of conveyance from place to place, and only a fair load for two horses. It is made with a tubular boiler; the thickness of the fire box is $\frac{3}{8}$ and $\frac{1}{2}$ inch, smoke box 5-16ths and $\frac{1}{4}$ inch, shell 5-16ths inch, and quality best Staffordshire iron; the diameter of cylinder $7\frac{1}{2}$ inches; length of stroke 12 inches; the crank shaft makes 100 to 120 revolutions per minute, and is $2\frac{3}{4}$ inches diameter, forged from best faggoted iron; the diameter of fly wheel is $61\frac{1}{2}$ inches, and weight $4\frac{1}{2}$ cwt., the same answering for the driving pulley. It will take 40 minutes, and consume 30 lbs. of coal, to raise the steam to a pressure of 45 lbs. per square inch, and the consumption of fuel, when working at six horse power, $6\frac{1}{2}$ lbs. per horse per hour. Price 205*l.*—At 84, Messrs. Hill, of Dudley, exhibited their wrought iron horse-hoe, and received for it a silver medal. A small Norwegian harrow works behind the hoes, which not only has the effect of steadying the implement when at work, but is also very effective in bringing weeds, &c. to the surface. Price 2*l.* 10*s.*—Mr. Lowcock, of Collumpton, at 87, carried off the prize for the best turnwrest plough; the plough does not turn at the ends, but the ploughman having completed his furrow to the right, passing on the furrow side of the plough, turns over the handles from one end of the beam to the other, where they are re-adjusted by a spring-catch affixed to them, which, dropping into a mortice at the beam head, renders them immoveable. Whilst performing this simple operation, the horses turn round on the land side of the plough, thus preventing the ploughed land from being trodden; and by the act of turning, the draught chain, to which they are attached, slides on a rod to the other end of the plough. As soon as the horses commence drawing, the left-hand share and coulter drop into their work; the double fly, which forms part of the mould plate, each way coming in contact with the newly-cut furrows, instantly turns round, and assumes its correct position, when the implement proceeds without further adjustment, cutting out and turning over its furrow to the left.—At 92, Mr. Nicholson, of Newark-upon-Trent, received a prize of 5*l.* for the best oil-cake bruiser; and another prize of 5*l.* for the best cottage range. This article had a prize of 5*l.* awarded to it at the York Show. A compact and convenient-looking range, similar in outline to those usually made, with the following important improvements: viz.—1st, a fire-brick lining to the fire part; 2d, an improved form of fire, allowing a greater radiation of heat with less fuel; 3d, a new form of range, holding the fuel till all is consumed, and sliding in grooves, so that the remains of a fire can be cleaned out in an instant, whilst the top bar is conveniently contrived to fall both ways; 4th, improvement in the fitting and position of the door of oven, the boiler cover, the flues, and general fitting. Prices:—for 3 ft. 4 in. opening, 2*l.* 2*s.*; smaller, for 3 ft. 2 in. opening, 1*l.* 15*s.*; larger, for 3 ft. 8 in. opening, 2*l.* 10*s.* Mr. Nicholson also received the silver medal for a cottage stove.

The above are the chief points in the exhibition requiring notice. We cannot conclude without referring to the admirably arranged catalogue, the merit of which is due to Mr. Gibbs, who has long held the position of honorary director of the Show. If the different exhibitors were to confine themselves strictly to a description of their machines, without offering any opinion on their merits, leaving those to be found out by the visitors, it would, perhaps, be an improvement. Not that this is a rule generally departed from, but the exceptions to it might be advantageously avoided altogether. The fuller in point of description that they are, of course so much the better for the reader. And we can hardly imagine a more perfect library on the subject of agricultural mechanics, than a series of those annual volumes would, under these circumstances, ultimately prove.

WEDNESDAY, *July* 17.—PROFESSOR SIMONDS'S LECTURE ON THE DISEASES, &C. OF THE LIVER.—A whole city brilliant with flags and gaudy banners, triumphant with garlands and arches, and resounding with festivities,—this exhibits many minor indications of the growing success attending the Society's annual gathering. But not the least among the signs of prosperity is the fact that the Athenæum Lecture Room was filled on Wednesday with attentive listeners whilst Professor Simonds delivered his lecture on the Structure, Functions, and Diseases of the Liver in domesticated animals. Let us hope that the attendance was a *bona fide* indication of a desire among the farmers to hear from the lips of scientific men explanations of facts observed in common farm practice, and suggestions for remedying diseases commonly thought incurable; and let us hope that the announcement of the awards at the close was not the principal attraction. Doors were opened at half-past 5, and the President, the Marquis of Downshire, having taken the Chair, the learned lecturer proceeded somewhat as follows: The liver is one of the most important of the internal organs, as it separates injurious matter from the blood. Food entering into the stomach is digested; it then passes into the intestinal canal, where it is mixed with the bile and pancreatic juice; and it is by the combined action of these fluids upon the chymous mass that its change into nutriment is effected. As to the anatomy of the liver: It is one of the largest organs, and is denominated a *gland*, because it separates fluid from the blood. In one important respect, however, it differs from all other glands, viz., in separating the fluid from impure or venous blood. The liver of animals differs in size without reference to their bulk, that of herbivorous animals being generally the smallest. The human frame has several large cavities, each containing important parts of the viscera; thus, the heart is in the chest—the stomach, &c., in the abdomen, which is divided from the chest by a membrane termed the diaphragm. Anatomists divide the abdomen into regions, by means of two transverse lines drawn from the inferior rib to its opposite, and from hip to hip; and also by two vertical lines. The whole arrangement may be figured thus, and the spaces are named as follows: 1, right hypochondriac region; 2, left do.; 3, epigastric; 4, umbilical; 5, right lumbar; 6, left do.; 7, hypogastric; 8, right iliac; 9, left iliac. The hypochondriac regions are so named because they lie beneath the cartilage of the ribs. The umbilical, because it contains the navel. The epigastric, because it is above the stomach. The hypogastric, because it is under the stomach. The liver is situated in the middle one of the three great regions, termed upper, middle, and lower; sometimes stretching up into the epigastric region. It is



divided into lobes. In horses it consists of a right and left lobe, with a *lobus cistatus*, or notched lobed, in the centre. In the ox and sheep, the notches are absent, and there are three lobes—right, left, and middle. In some animals there is an appendage called the gall bladder; but the horse has none. Its absence is not confined to any particular tribe, as it is found in some of the deer tribe, and not in others. This receives secretion from the liver; but is not necessary to the life of animals, as horses and some other species do without. The liver being a secreting gland, and receiving much impure blood, has veins from nearly all the organs entering into it. The anterior and posterior mesenteric veins (from the large and small intestines), and the splenetic, pancreatic, and gastric veins (from the spleen, pancreas, and stomach), combine to form the vena portæ, which conveys the blood into the middle lobe of the liver. Thus, there is a constant conveyance into this organ of matters in the blood which are not essential to the general well-being, but only to the heat of the animal. The vena portæ comports itself like an artery, *i.e.*, it splits up into a number of veins so minute as to be named capillaries, which traverse the liver in every part; and it is in these that secretion takes place. The liver is also excretory. For in fœtal life in some animals it receives the whole of the blood before it passes into the fœtus. The veins pass through the portal canal, which is lined with cellular tissue. The veins, biliary ducts, and arteries lie in a triple form thus: ° ° ° with cellular tissue upon them; an arrangement which the lecturer very aptly illustrated by a reference to three drain-pipes in a trench bedded down with straw. The various vessels split up into lobules, the veins and ducts being named intra-lobular, inter-lobular, &c, according as they are within or between the lobules. So much for the anatomy.—The blood is purified by the bile which is secreted in the biliary ducts, the latter liquid exerting an influence upon the ligneous and starchy portions of the food, converting them into sugar; and this being soluble is suitable for nourishing the system. Within a few months past, experiments have been undertaken in this and other countries to ascertain what is the precise action of the pancreas and liver; and it has been found that although the pancreas chiefly is engaged in forming sugar, yet the liver also does the same; and thus it has been shown, in opposition to Liebig and others, that an animal is capable of generating a chemical principle, viz., sugar. The bile cells contain fat, and the liver has much sugar, from which fat is derived, there being a new light thrown upon the formation of fat in animals by this modern theory. Bile not only acts upon the food, but is also excrementitious. The colouring matter of the bile is found in the intestinal canal; and if there be too much here, the effect is diarrhœa. Having briefly touched upon the physiology, we now come to the diseases of the liver. This organ, like all others, is liable to derangement and structural changes. Its functions are very soon deranged, especially by placing the animal in a high temperature. Hence, in tropical climates liver diseases abound, and animals are peculiarly subject to such maladies during the summer. Now, there is one disease of the liver called jaundice, which depends often on functional derangement, sometimes upon structural changes, or obstruction; in fact there are three or four causes for it. This shows the necessity of consulting some individual who has made such things his study, and who is able to detect each of these causes. Whereas, to the unpractised, the effects of all these may appear alike. If the character of the secretions depend upon the purity of the blood, and if this again depend on the nature of the food, then, as is the food, so will be the bile; and from the wrong quality of the food, &c., the bile may become thickened, may run together; and thus we have calculi both in the ducts and in the gall bladder. Here then comes the question, if an animal is affected in this manner, is it from gall-stones or not? If so, there may be little danger; but if the calculus be in the biliary duct great harm will result, for in the former case there is no obstruction to the flow of the bile; in the latter there is. This is of more importance in the sheep than in the ox; for in the former the pancreatic duct joins with the biliary duct before entering the intestinal canal. A calculus in the biliary duct hinders the passage of that which forms nutriment; and, as when the liver secretes too much bile it runs into the membranes, &c., of the body, the calculus sends it in the same direction. It likewise affects the urinary secretions; but when gall-stones cause jaundice, there is no diarrhœa, and the urine is not rendered brown. A practiced man, therefore, would distinguish, by these and other symptoms, between the different sources of the disease. Now, as to treatment: If the cause is inflammation, get rid of the constipation in the bowels by aperient medicine, and there may be also an application of counter-irritants to the side. A gall-stone requires a different mode of treatment. We must get rid of the mechanical obstruction—we must excite the ducts to throw off more bile, so as to drive it away. These remarks lay the foundation for a few observations upon the rot in sheep. No disease has received so much attention; and it is most important to the farmer that we should enquire into its nature. Rot depends in a great measure upon the quality and kind of food with which sheep are fed, some pastures being notorious for it, others entirely free. As a broad principle it may be stated that when there is an excess of moisture, the food is prejudicial to the animal. This malady is not peculiar to this country but prevails over Europe and Asia, and in Egypt after the Nile waters have subsided; showing that the cause is not in the soil, nor in the temperature, since it occurs upon any soil and with any temperature. Perhaps there is more than one cause. Is there any particular period of the year during which it is most prevalent? We should say that it is from this time to the autumn. If a large quantity of rain were now to fall, there would be a luxuriant herbage, but that would be deficient in nutriment, and a great amount of moisture would be taken into the system of the animals which ate it. We have said that in the first stages of the disease there is a considerable accumulation of fat. Now, sheep put on to water-meadows at this season are almost sure to have the rot; and as this directly induces fatness, sheep have been fed in this way for the market. [The Marquis of Downshire here communicated a statement to the effect that the way to fatten sheep was to flood the meadows they were on with water 2 inches deep, and keep it there.] The bile next loses its properties of supplying nutrifying matter. The blood consequently becomes impure all over the system, for the same reason that pure water is never obtained from a poisoned fountain. We must now advert to those parasites of the liver called flukes, which in the gall ducts produce the effect of a structural change. Some think that these oviporous animals are the origin of rot. The feculent matter of rotten sheep contains millions of ova of the flukes, and just as an egg will keep for any length of time until heat is applied and the chick hatched, so these ova, while on the pastures undergo no change; but in their natural habitat, the body of the animal, they quickly develope themselves. Wheat, in the same way, has been locked up in mummies for thousands of years, and then being sown produced plants. Youatt, in his work on sheep, treating of the anatomy of the fluke, describes organs which do not exist. What he calls the "eye," is a sucking disc by which the animal adheres to the liver. Flukes are bisexile or hermaphrodites. They have another disc at one extremity of the body, by some supposed a mouth; but if not, their nutriment (viz. bile), must be imbibed by the whole surface of the body. When placed dead in warm water they will swell very much, which seems to indicate a considerable absorbing power. In conclusion, as to the principles that should guide us in the treatment of rotting sheep. Two years ago seven or eight sheep, each showing the rot in its advanced stages, were put in a shed and supplied with dry and nutritious food; two were cured, the liver being still affected, but so little that they might have lived for years. Rot is a disease analogous to dropsy. It arises from impure blood, that blood being rendered nutritious by the water it contains, and the water penetrates into the cellular tissue, between the jaws, &c. This has led writers into "sections" of this disease; but "water-rot" and "fluke rot" are only less or more advanced stages of one disease. If flukes exist we must strike at the root, get rid of the animalcules, and we must do this by bringing about a healthy condition of the animal, since no medicine will act directly upon the flukes. Many persons advocate the use of salt, it being a stimulant to the digestive organs. Some people keep it in troughs for their sheep to help themselves to; and it is certainly an excellent preventive. We know that it matters not how moist salt marshes are, for rot will not attack flocks there. But can we not do better? Salt has an injurious effect upon the stomach. We should throw tonics into the system. Mineral tonics are the best, and sulphate of iron gives the greatest tone. We have said that the kidneys now do what the liver ought to have done, and we should therefore stimulate them to greater action. We do not mean to recommend the exhibition of ordinary diuretic agents, because they produce debility; but the spirit of nitric ether, which is a good medicine. We ought, then, to husband the animal's powers by placing him in a proper situation, dry, &c.; supply him with nutritious and dry food; we should mix it with salt, and we should administer small quantities of sulphate of iron and nitric ether. We have no doubt that the farmer, by attention to these points, would often have to rejoice that he had not sent his sheep to the knacker, but to the butcher.

Mr. Brandreth having proposed a vote of thanks to the learned and lucid lecturer, the Marquis of Downshire thanked Professor Simonds on behalf of the meeting. Mr. Gibbs then read the awards of the judges of stock. Much interest was evinced during the lecture, the cheers rising highest whenever a fact was stated such as the flockmasters present knew to be correct.

THURSDAY, *July* 18.—The doors of the cattle yard were opened at 6 o'clock this morning, and those who wished to have a satisfactory examination of the animals soon after entered. The sheds soon became inconveniently crowded, though not, we think, to such an extent as on previous occasions. The following is the list of prizes awarded for cattle, sheep, and pigs:

SHORT-HORNS.

Judges.—Messrs. WILLIAM COX, WILLIAM SMITH, WILLIAM BARTHOLOMEW.

Class I. Bulls calved previously to the 1st of January, 1848.—1st prize, 40*l.* to Mr. Henry Ambler, of Watkinson Hall, near Halifax; 2d, 20*l.* to Mr. John F. P. Phillips, of Broomborough, near Totnes.

Class II. Bulls calved since the 1st of January, 1848, and more than one year old.—1st prize, 20*l.* to Mr. Richard Booth, of Warlaby, near Northallerton; 2d, 10*l.* to Mr. Charles Towneley, of Towneley Park, near Burnley.

Class III. Cows in milk or in calf.—1st prize, 20*l.* to Mr. Richard Booth, of Warlaby, near Northallerton; 2d, 10*l.* to the same.

Class IV. In-calf heifers, not exceeding three years old.—1st prize, 20*l.* to Mr. Benjamin Wilson, of Brawith, near Thirsk; 2d, 10*l.* to Mr. John M. Hopper, of Newham Grange, Middlesborough-on-Tees.

Class V. Yearling heifers.—1st prize, 10*l.* to Mr. Charles Towneley, of Towneley Park, near Burnley; 2d, 5*l.* to the same.

HEREFORDS.

Judges.—Messrs. HENRY CHAMBERLAIN, JOHN THOMAS, HENRY TRETHEWY.

Class I. Bulls calved previously to the 1st of January, 1848.—1st prize, 40*l.* to Mr. John Monkhouse, of the Stow, Hereford; 2d, 20*l.* to Mr. John Walker, of Westfield House, Holmer, Hereford.

Class II. Bulls calved since the 1st of January, 1848, and more than one year old.—1st prize, 20*l.* to Mr. W. Perry, of Cholstrey, near Leominster; 2d, 10*l.* to Mr. James Walker, of Northleach, Gloucester.

Class III. Cows in milk or in calf.—1st prize, 20*l.* to Mr. J. N. Carpenter, of Eardisland, near Leominster.; 2d, 10*l.* No animal exhibited.

Class IV. In-calf heifers, not exceeding three years old.—1st prize, 20*l.* to the Right Hon. Lord Berwick, of Cronkhill, near Shrewsbury; 2d, 10*l.* to Mr. George Pitt, of Wellington, near Hereford.

Class V. Yearling heifers.—1st prize, 10*l.*, to the Right Hon. Lord Berwick, of Cronkhill, near Shrewsbury.

DEVONS.

Judges.—Messrs. EMANUEL PESTER, THOMAS TOWNSEND, and T. HARTSHORNE.

Class I. Bulls calved previously to the 1st of January, 1848.—1st prize, 40*l.*, to Mr. George Turner, of Barton, near Exeter; 2d, 20*l.*, to Mr. John Passmore, of Bishopsnympton, near Southmolton.

Class II. Bulls calved since the 1st January, 1848, and more than one year old.—1st prize, 20*l.*, to Mr. James Quartly, of Molland, near Southmolton; 2d, 10*l.*, to Mr. John Quartly, of Champson, Molland, near Southmolton.

Class III. Cows in milk or in calf.—1st prize, 20*l.*, to Mr. James Quartly, of Molland, near Southmolton; 2d, 10*l.*, to the same.

Class IV. In-calf Heifers, not exceeding three years old.—1st prize, 20*l.*, to Mr. James Quartly, of Molland, near Southmolton; 2d, 10*l.*, to Mr. W. M. Gibbs, of Bishop's-Lydeard, near Taunton.

Class V. Yearling Heifers.—1st prize, 10*l.*, to Mr. John Quartly, of Champson, Molland, near Southmolton; 2d, 5*l.*, to Mr. James Quartly, of Molland, near Southmolton.

CATTLE OF ANY BREED.

Not qualified to compete as Short-horns, Herefords, or Devons. (Cross-bred excluded.)

Judges.—Messrs. HENRY CHAMBERLAIN, JOHN THOMAS, and HENRY TRETHEWY.

Class I. Bulls calved previously to the 1st January, 1848.—1st prize, 20*l.*, to Mr. Richard H. Chapman, of Upton, near Atherstone; 2d, 10*l.*, to Mr. James Gorringe, of Tilton Farm, Selmeston, near Lewes.

Class II. Bulls calved since the 1st January, 1848, and more than one year old.—The prize of 10*l.* No animal exhibited.

Class III. Cows in milk or in calf.—1st prize, 10*l.*, to Mr. James Gorringe, of Tilton Farm, Selmeston, near Lewes; 2d, 5*l.*, to Mr. N. Le Beir, of the Castel Parish, near St. Peter's Port, Guernsey.

Class IV. In-calf Heifers, not exceeding three years old.—The prize of 10*l.*, to Mr. Thomas Beards, of Stowe, near Buckingham.

Class V. Yearling Heifers.—The prize of 5*l.*, to Mr. Thomas Beards, of Stowe, near Buckingham.

HORSES.

Judges.—Messrs W. C. SPOONER, W. F. KARKEEK, and CHARLES BOWMAN.

Class I. Stallions for agricultural purposes, of any age.—1st prize, 30*l.*, to Mr. Thomas Beale Brown, of Hampden, near Andoversford, Gloucester; 2d, 15*l.*, to Mr. N. G. Barthropp, of Cretingham Rookery, near Woodbridge, Suffolk.

Class II. Two years old Stallions for agricultural purposes.—1st prize, 20*l.*, to Mr. F. T. Bryan, of Knossington, near Oakham; 2d, 10*l.*, to Mr. David Wright, of Hepworth, near Ixworth, Suffolk.

Class III. Roadster Stallions.—The prize of 15*l.* to Mr. Charles Poulton, of 7, Sidney-terrace, Reading.

Class IV. Mares and Foals for agricultural purposes.—1st prize, 20*l.*, to Mr. John Ward, of East Mersea, near Colchester; 2d, 10*l.*, to Mr. N. G. Barthropp, of Cretingham Rookery, near Woodbridge, Suffolk.

Class V. Two years old Fillies.—1st prize, 15*l.*, to Mr. N. G. Barthropp, of Cretingham Rookery, near Woodbridge, Suffolk; 2d, 10*l.*, to Mr. William Fisher Hobbs, of Boxtead Lodge, near Colchester.

LEICESTER SHEEP.

Judges.—Messrs. WILLIAM TOBB, VALENTINE BARFORD, and JOHN HALL.

Class I. Shearling Rams.—1st prize, 30*l.*, to Mr. William Abraham, of Barnetby-le-Wold, near Brigg, Lincoln; 2d, 15*l.*, to Mr. William Sanday, of Holme Pierrepoint, Nottingham.

Class II. Rams of any other age.—1st prize, 30*l.*, to Mr. William Abraham, of Barnetby-le-Wold, near Brigg, Lincoln; 2d, 15*l.*, to Mr. William Sanday, of Holme Pierrepoint, Nottingham.

Class III. Pens of five Shearling Ewes of the same Flock.—1st prize, 20*l.*, to Mr. William Abraham, of Barnetby-le-Wold, near Brigg, Lincoln; 2d, 10*l.*, to Mr. William Sanday, of Holme Pierrepoint, Nottingham.

SOUTHDOWN, OR OTHER SHORT-WOOLLED SHEEP.

Judges.—Messrs. ROBERT OVERMAN, EDWARD TRUMPER, and L. P. MATON.

Class I. Shearling Rams.—1st prize, 30*l.*, to Mr. William Sainsbury, of West Lavington, near Devizes; 2d, 15*l.*, to the same.

Class II. Rams of any other age.—1st prize, 30*l.*, to Mr. William Rigden, of Hove, near Brighton; 2d, 15*l.*, to Mr. William Sainsbury, of West Lavington, near Devizes.

Class III. Pens of 5 Shearling Ewes of the same Flock.—1st prize, 20*l.*, to Mr. William Rigden, of Hove, near Brighton; 2d, 10*l.*, to his Grace the Duke of Richmond, of Goodwood, Chichester.

LONG-WOOLLED SHEEP.

Not qualified to compete as Leicesters.

Judges.—Messrs. ROBERT BEMAN, WM. GILLETT, and EDWARD CLARKE.

Class I. Shearling Rams.—1st prize, 20*l.*, to Mr. George Hewer, of Ley Gore, near Northleach; 2d, 10*l.*, to Mr. William Garne, of Aldesworth, near Northleach.

Class II. Rams of any other age.—1st prize, 20*l.*, to Mr. William Garne, of Aldsworth, near Northleach; 2d, 10*l.*, to Mr. William Lane, of Eashington, near Northleach.

Class III. Pens of 5 Shearling Ewes of the same Flock.—1st prize, 10*l.*, to Mr. Charles Large, of Broadwell, near Lechlade, Gloucester; 2d, 5*l.*, to the same.

PIGS.

Judges.—Messrs. JOHN CLAYDEN, JOHN HANNAM, and WILLIAM BULLEN.

Class I. Boars of a large breed.—1st prize, 15*l.*, to Mr. Moses Cartwright, of Stanton-hill, near Burton-on-Trent; 2d, 5*l.*, to Mr. John H. Ley, of Trehill, near Exeter.

Class II. Boars of a small breed.—1st prize, 15*l.*, to Mr. John Bartlett, of Lifton, near Launceston; 2d, 5*l.*, to John Radmore, of Thorverton, near Collumpton.

Class III. Breeding Sows of a large breed.—The prize of 10*l.* to Mr. George Tuley, of Ecley Head, near Keighly, Yorkshire.

Class IV. Breeding Sows of a small breed.—The prize of 10*l.* to Mr. Wm. Northey, of Lifton, near Launceston.

*** The judges consider the competition in Class IV. for Sows of a small breed to be almost unprecedented.

Class V. Pen of Breeding Sow Pigs of a large breed.—The prize of 10*l.* to Mr. Moses Cartwright, of Stanton-hill, near Burton-on-Trent.

Class VI. Breeding Sow Pigs of a small breed.—The prize of 10*l.* to Mr. George Turner, of Barton, near Exeter.

LOCAL PRIZES.—SOUTH-HAMS CATTLE.

Judges.—Messrs. EMANUEL PESTER, THOMAS TOWNSEND, and T. HARTSHORNE.

Class I. Bulls calved previously to the 1st January, 1848.—1st prize, 20*l.*, to Mr. Philip Loye, jun., of Stokenham, near Kingsbridge, Devon; 2d, 10*l.*, to Mr. Nicholas Pitts, of South Allington, near Kingsbridge.

Class II. Bulls calved since the 1st January, 1848.—1st prize, 10*l.*, no animal exhibited; 2d, 5*l.*, ditto.

Class III. Cows in calf or in milk, having produced a living calf within the previous 12 months.—1st prize, 15*l.*, to Mr. R. H. Watson, of Dorseley Farm, near Totnes; 2d, 5*l.*, to the same.

Class IV. In-calf Heifers, not more than three years old.—1st prize, 15*l.*, no animal exhibited; 2d, 5*l.*, ditto.

Class V. Yearling Heifers.—1st prize, 10*l.*, not sufficient merit; 2d, 5*l.*, ditto.

COMMENDATIONS.

SHORT-HORNS.—Class 3, Generally commended. Class 4, The Judges highly commend Lord Feversham's Heifer, Mr. Kirkham's Heifer, Mr. R. Stratton's Heifer, Mr. Towneley's Heifer, Mr. B. Wilson's Heifer. The Class generally commended.

HEREFORDS.—Class 1. Commended Mr. W. O. Bigg's Bull. Class 2. Generally commended. Class 4. Commended Mr. Craddock's Heifer; commended Mr. George Pitts' Heifer.

DEVONS.—Class 1. Highly commended Mr. Thomas Miller's Bull. Class 2. Very highly commended Mr. T. B. Morle's Bull. The class generally commended. Class 3. Very highly commended Mr. James Quartly's Cow. Class 4. Very highly commended Mr. J. K. Farthing's Cow and Mr. James Quartly's Heifer. Class 5. Generally very highly commended.

HORSES.—Class 1. Highly commended Mr. H. Matthews' Stallion; commended Mr. Thomas Renton's Stallion, Messrs. S. and R. Spencer's Stallion, and Mr. W. Sherley's Stallion. Class 2. Commended Mr. N. G. Barthropp's Stallion. Class 3. Highly commended Mr. W. Gile's Stallion; commended Mr. Job White's Stallion. Class 4. Commended The Right Hon. Lord St. John's Mare and Foal; highly commended Mr. Edmund Wilcox's Mare and Foal. Class 5. Commended Mr. N. G. Barthropp's Filly; highly commended Mr. W. Fisher Hobbs' Filly. The Class generally commended.

LEICESTERS.—Class 3. Commended Mr. Wm. Sanday's Pen of Ewes.

SOUTH-DOWNS.—Class 1. Commended Mr. Wm. Sainsbury's Ram. Class 2. Commended Mr. Wm. Sainsbury's Ram. Class 3. Commended Mr. Shelley's Pen of Ewes.

LONG WOOLS.—Class 1. Highly commended Mr. Geo. Hewer's Ram; commended Mr. Charles Large's Ram. Class 2. Commended Mr. William Garne's Ram; highly commended Mr. William Lane's Ram.

PIGS.—Class 1. Commended Mr. R. Kinneir's Boar; highly commended Mr. Mark Stainsby's Boar. Class 2. Commended Mr. J. T. Davy's Boar; commended Mr. John Hole's Boar. Class 2. Commended Mr. Jas. Hardwick's Boar and Mr. Wm. Fisher Hobbs' Boars; highly commended Mr. H. L. Maw's Boar, Mr. John Savery's Boar, and Mr. Joseph Tuley's Boar. Class 3. Highly commended Mr. Moses Cartwright's Sows; commended Mr. J. A. Thomas' Sow. Class 4. Commended Mr. Wm. Balls' Sow; highly commended Mr. Richard Bartlett's Sow; commended Mr. Frederick Barlow's Sow, Mr. J. T. Davy's Sow, and Mr. Richard Mogridge's Sow; highly commended Mr. John Moon's Sow and Mr. J. F. P. Philips' Sow; commended the Right Hon. the Earl of Radnor's Sow; highly commended Mr. John Savery's Sow, Mr. Mark Stainsby's Sow, Mr. John Wippell's Sow, and Mr. Joseph Tuley's Sow. Class 5. Commended Mr. Joseph Tuley's Three Breeding Sows; highly commended Mr. G. D. Trotter's pen of Breeding Sows. Class 6. Commended Mr. W. M. Barber's three Breeding Sows; highly commended Mr. John Catherall's three Breeding Sow Pig; commended Mr. W. Fisher Hobbs' three Breeding Sow Pigs.

EXTRA STOCK.—Highly commended Mr. Chas. Towneley's Heifer, Mr. G. Coombe's pen of Ewes, and Mr. Mark Stainsby's pen of Pigs.

B. T. BRANDRETH GIBBS, Honorary Director of the Show.

The exhibition of cattle was, as might have been expected, remarkable chiefly for the show of Devon stock, which, in most of the classes, was very highly and justly commended by the Judges. But on this department of the show, and on the exhibition of horses, we are bound to postpone our report. The following remarks refer to the show of sheep.

The total number of SHEEP exhibited is less than last year, the principal deficit being in the Leicester, which the considerable increase in the number of Southdowns does not counterbalance. Leicesters, Class 1, shearling rams, the prize of 30*l.* has been awarded to No. 290, a 16 months old ram, belonging to Mr. William Abraham, of Barnetby-le-Wold, near Brigg, Lincolnshire. This sheep is remarkably wide, possessing a full breast, good plates, small head, and very firm handling. The neck is short, with plenty of mutton upon it. There is a fair quantity of good curly wool. The prize of 15*l.* was awarded to No. 309, a 16 months old ram, belonging to Mr. W. Sanday, of Holme Pierrepoint, near Nottingham. The frame is small, but the back is straight, the ribs springing wide from the chine, the neck thick and short, the breast wide and deep, the head very fine, bone thin; the rump and loin are good; meat firm, and wool good both in quality and quantity. No. 292, a Leicester from Devonshire; has a deficient fore-quarter, long thin scrag, and a rather coarse head. No. 298, from the same county, is long and high-standing, but has no depth of carcass, and thins off too much towards the rump. No. 299, belonging to the same owner, is far from being a good animal, the fore-quarter being narrow and confined, and the neck thin and tapering. Among Mr. Pawlett's sheep we noticed 304, which has a good straight back, a wide and full rump, chine and plate well filled out; it is, altogether, a very symmetrical animal, possessing fine bone and excellent quality. No. 310 is larger than the second prize sheep, but has a narrower chine, the mutton is firm and good; 317 and 318, from Yorkshire, are small sheep, having no especial points of beauty.—Class II. Rams of any age. The prize of 30*l.* was given to No. 323, Mr. Abraham's ram, aged 28 months. He has great size, very firm meat, amazing breadth of carcass, a full deep wide breast and fore-quarter, fine offal, and a good countenance; being altogether a paragon of excellence, but certainly in very good condition; 330, a sheep from Yorkshire, is a good-rumped, full-plated animal, round and full like an egg, but not fine enough in quality, the handling not being so good as that of the prize sheep. This and other animals were well fed, and it is certain that "breeding often goes in at the mouth;" perhaps with the animals less fat we have a better opportunity of seeing their defective points. The prize of 15*l.* was given to 342, Mr. Sanday's sheep, 28 months old. It has a good back, very wide deep plates, and an exceedingly good breast. It is very compact, but not overloaded with fat. The mutton is firm, the fleece a curly thick-set staple. Perhaps its defect is a high loin; 333, Mr. Hobbs' ram, 40 months old, is good in most points, and very compact; 337, Mr. Pawlett's ram is wide, good, straight, of fine quality, and firm handling; 343, Mr. Sanday's 28 months old, has a splendid handling, being also good in shape all over; the neck is not separated from the shoulder, but completes the oval form that a Leicester should possess; it has a pretty head and fine offal; perhaps a falling off in the plate and breast may have hindered it from taking the second prize.—Class III. Shearling Ewes. The prize of 20*l.* was awarded to Mr. Abraham's pen, No. 355, large, wide, heavy, beautifully compact ewes, some of them complete patterns of the Leicester breed; one or two a little failing in the flank; they have fine delicate heads and ears, but the wool is rather too close, like that of Southdown. The prize of 10*l.* was given to No. 364, Mr. Sanday's ewes, pretty little sheep, with small heads and fine bone, a fair quantity of wool; the handling of some rather loose. No. 363, the property of the same breeder, were commended, and deservedly so, having good form, good rumps, good backs, fine offal, and good curly wool. One of the best pens was 365, belonging to Mr. Simpson, of Yorkshire. These ewes are very large and well-proportioned, resembling in form and dimensions some of the shearling rams; they have good fleeces, but perhaps their main deficiency is in the rump. The ewes shown out of Devonshire were generally straight, tall, big, the necks too long and lean, the fleece light, and the handling loose. —Southdowns, and other short-woolled sheep, Class I. Here we were particularly struck with the appearance of No. 407, Mr. James Webb's ram, 17 months old; it was straight, round, beautifully filled out in every part, having a broad back from the neck to the rump, a fine head, excellent handling, and very fine wool. The prize of 30*l.* was assigned to 394, Mr. W. Sainsbury's ram, of Wiltshire; it is of beautiful shape, straight, round, with a good rump, but it has not so wide a chine, so good a neck, or so regular a shape as the sheep just mentioned. The prize of 15*l.* was awarded to No. 393, Mr. Sainsbury's ram, a beautiful animal, but not equal to some others in the class. No. 395, belonging to the same breeder, was commended, being of good form and quality. One of Mr. Webb's sheep (No. 405) is remarkably heavy and wide, somewhat resembling a Leicester with a Down fleece. The mutton is of good quality—the chine, breast, rump, loin, leg,—all excellent; altogether it is an astonishing animal for 17 months of age. No. 376, a sheep from Berkshire, is coarse and badly shaped, cutting a very poor figure beside its neighbours. Mr. Webb's generally exhibited great compactness of form, good backs, shoulders, necks, and legs, having wide fore-quarters, and wool of fine quality. No. 387, from Devonshire, is about half the width it ought to be, being very lank, and having no breadth or depth of chest, and yet thick clumsy bone.—Class II. Rams of any other age. The prize of 30*l.* was given to No. 432, Mr. W. Rigden's ram, of Sussex; it is 52 months old, having a fine wide deep chest, rib springing well from the chine, excellent rump, and good legs,—beautiful mutton and fine offal; perhaps it is a little too low in the middle of the back. The prize of 15*l.* was awarded to No. 436, Mr. Sainsbury's ram, aged 20 months: it has a very good rump and thick neck, very superior in many points; 438, Mr. Sainsbury's ram, is commended; 435, Mr. Shelley's ram, 40 months old, is a good animal, having a remarkably good neck, *i.e.* scarcely any at all. The chine, however, is deficient; 430, another sheep from Devonshire, is a poor animal,—it has a long thin neck, a narrow sunk chine, an uneven back, and a low rump, and it carries but little meat. The Messrs. Ellman of Sussex exhibited some thick-necked, wide-shouldered, good-rumped sheep, with good backs and sufficient wool.—Class III. Shearling ewes. The prize of 20*l.* was awarded to 446, the ewes of Mr. Rigden, Sussex. They are almost perfect animals, being of wonderful breadth behind the shoulder, and having good rumps, necks, heads, and backs. The prize of 30*l.* was obtained by his Grace the Duke of Richmond, for five beautiful ewes, long, wide, well filled out, of good quality both in meat and wool. No. 447, Mr. Shelley's ewes, commended, were equal to either of the prize lots in beauty of form, handling, and wool, but there were one or two deficiencies in the necks. — Long-wools, Class I. In these classes the judgment becomes bewildered, each sheep being a giant of its species, and each one a study for breeders. We must, however, defer any further remarks until next week.

Notices to Correspondents.

ABORTION IN THE WHEAT EAR: *J C.* We cannot explain it. But the case in question is by no means so serious as it sometimes is. We have seen acres wholly dead before being ripe; and sometimes ears with only their upper part thus destroyed. In your case only occasional florets seem to have perished. Wet and stormy weather during the period of flowering may have hindered the fertilisation of the seed.

GUERNSEY COW: *Thos. Tordiffe.* Your veterinary attendant should have discovered the mystery by means of a *post mortem* examination. In the absence of any detail of the symptoms before, or the appearance after death, it would be rash to give an opinion, but we do not think the symptoms of choaking a fortnight before had much to do with the death. *W. C. S.*

HAMS: *A B* asks if any of our correspondents can give him any information on the use of pyroligneous acid in the preparation of bacon and hams? Is salting by the ordinary process necessary when the acid is used? or will the acid alone effect the preservation of the meat? And if salting be necessary, should the application of salt precede that of the acid? Is it safe to keep bacon in an open rack uncovered or unprotected from flies throughout the summer?

WEED: *S.* We do not know how to advise for its destruction. We have had it so abundantly in some of our fields that the only remedy appeared to be to plough them up. Fork up the patches, and tramp in the Grass again.—*R H G.* It is the Clover Dodder which is sometimes the cause of mischief in patches through the Clover field, though not of what is commonly understood by the Clover failure. You will find a full history of the plant in past volumes of the *Gardeners' Chronicle.*

Markets.

COVENT GARDEN, JULY 20.

Vegetables are abundantly supplied; Hothouse Grapes and Pine-apples plentiful. Strawberries are scarcer. The supply of Peaches and Nectarines is well kept up. Ripe Gooseberries fetch from 2s. 6d to 3s. 6d. per half sieve. Walnuts and Chestnuts are abundant; Oranges and Lemons though scarcer are sufficient for the demand. Young Carrots and Turnips may be had at from 3d. to 6d. a bunch. Potatoes fetch from 1d. to 2d. per lb. Lettuces and other salading are sufficient for the demand, and so are Mushrooms. French Beans are plentiful. Cut Flowers consist of Heaths, Pelargoniums, Cinerarias, Lily of the Valley, Pinks, Carnations, Rhododendrons, Ranunculuses, and Roses.

FRUITS.

Pine-apples, per lb., 4s to 6s	Lemons, per doz., 1s to 2s
Grapes, hothouse, p. lb., 2s to 5s	Oranges, per doz., 9d to 1s 6d
Peaches, per doz., 6s to 18s	— per 100, 5s to 12s
Nectarines, per doz., 6s to 18s	Almonds, per peck, 6s
Strawberries, p. punn., 6s to 1s 6d	— sweet, per lb., 2s to 3s
Cherries, per lb., 6d to 1s 6d	Walnuts, p. 100, 1s 6d to 2s
Melons, each, 3s to 5s	— p. bush., 16s to 24s
Gooseberries, green, per half sieve, 1s 6d to 2s 6d	Nuts, Barcelona, per bush., 20s to 22s
Currants, p. half sieve, 3s to 4s	— Brazil, p. bsh., 12s to 16s
Raspberries, p. pottle, 4d to 6d	Kent Cobs, 90s to 100s p. 100 lbs

VEGETABLES.

French Beans, per 100, 1s to 2s	Onions, p. bunch, 2d to 6d
Asparagus, p. bund., 9d to 4s	— Spanish, p. doz., 1s 6d to 4s
Rhubarb, p. bundle, 2d to 4d	Shallots, per lb., 6d to 8d
Cabbages, per doz., 6d to 1s	Garlic, per lb., 4d to 8d
Cauliflowers, p. doz., 2s to 4s	Artichokes, per doz., 2s to 4s
Peas, per sieve, 1s 6d to 4s	Vegetable Marrows, per doz., 1s to 2s
Beans, per sieve, 1s 6d to 2s	Lettuce, Cab., p. sc., 2d to 1s
Greens, per doz., 1s to 1s 6d	— Cos, per score, 6d to 1s
Sorrel, p. hf. sieve, 6d to 9d	Radishes, p. 12 hands, 9d to 1s
Potatoes, per ton, 80s to 150s	Small Salads, p. punn, 2d to 3d
— per cwt., 5s to 8s	Mushrooms, p. pot., 9d to 2s
— per bush., 2s 6d to 4s	Fennel, per bunch, 2d to 3d
Turnips, per doz. bun., 3s to 6s	Savory, per bunch, 2d to 3d
Red Beet, per doz., 1s to 2s	Thyme, per bunch, 2d to 3d
Cucumbers, each, 1d to 2d	Parsley, p. doz. bun., 1s to 2s
Leeks, per bunch, 2d	— Roots, p. bdle., 9d to 1s
Celery, p. bundle, 1s to 1s 6d	Marjoram, per bunch, 8d to 9d
Carrots, per doz., 4s to 6s	Mint, green, per bunch, 2d
Spinach p. sieve, 1s 6d to 2s	Watercress, p. 12 bunch., 6d to 9d
Horse Radish, p. bdl., 1s to 4s	

HAY.—SMITHFIELD, July 18.

Prime Meadow Hay	75s	to 80s	Clover	70s	to 84s
Inferior ditto... ...	65	70	New Clover	65	72
Rowen	—	—	Straw	24	30
New Hay	60	75		J. COOPER.	

CUMBERLAND MARKET, July 18.

Prime Meadow Hay	70s	to 77s	Inferior	60s	to 70s
Inferior ditto... ...	60	65	New Clover	—	—
New Hay	50	68	Straw	26	30
Old Clover	78	84		JOSHUA BAKER.	

COAL MARKET.—FRIDAY, July 19.

Carr's Hartley, 14s.; Wallsend Riddell, 13s. 9d.; Wallsend Haswell, 16s. 6d.; Wallsend Hetton, 16s. 9d.; Wallsend Lambton, 15s. 9d.; Wallsend Tees, 16s. 3d.—Ships at market, 66.

SMITHFIELD, MONDAY, July 15.

We have to-day a large supply of Beasts, and the quality is good. Trade is exceedingly dull, and a reduction of fully 2d. per 8 lbs. is submitted to. The number of Sheep and Lambs is also larger; the demand is small, and consequently prices are lower. Calves are plentiful, and about 4d. per 8 lbs. lower than on Friday. From Holland and Germany there are 628 Beasts, 2290 Sheep, 232 Calves, and 10 Pigs; from Spain, 10 Beasts; from Scotland, 200; and 900 from the midland counties.

Per st. of 8 lbs.—s d	s d	Per st. of 8 lbs.—s d	s d
Best Scots, Herefords, &c. ... 3 4	to 3 6	Best Long-wools ...	to ...
Best Short-horns 3 2	— 3 4	Ditto Shorn ... 3 2	— 3 4
2d quality Beasts 2 8	— 3 0	Ewes & 2d quality ...	— ...
Best Downs and Half-breds	— ...	Ditto Shorn ... 2 8	— 3 0
Ditto Shorn ... 3 8	— 3 10	Lambs	4 0 — 4 5
		Calves	2 4 — 3 2
		Pigs	2 8 — 3 6

FRIDAY, July 19.

The number of Beasts is not large; it, however, exceeds the demand. Trade is exceedingly dull, and Monday's rates are with difficulty maintained. We have a good supply of Sheep and Lambs; the choicest qualities are sold at fully Monday's quotations, but second-rate are lower. There are a great many middling Calves on offer; trade is very bad for them; choicest descriptions make rather more money. Foreign supply consists of 177 Beasts, 540 Sheep, and 196 Calves. There are 113 Milch Cows from the home counties.

Per st. of 8 lbs.—s d	s d	Per st. of 8 lbs.—s d	s d
Best Scots, Herefords, &c. ... 3 4	to 3 6	Best Long-wools ...	to ...
Best Short-horns 3 2	— 3 4	Ditto Shorn ... 3 2	— 3 4
2d quality Beasts 2 8	— 3 0	Ewes & 2d quality ...	— ...
Best Downs and Half-breds	— ...	Ditto Shorn ... 2 8	— 3 0
Ditto Shorn ... 3 8	— 3 10	Lambs	4 0 — 5 0
		Calves	2 4 — 3 4
		Pigs	2 8 — 3 6

HOPS.—FRIDAY, July 19.

—Messrs. PATTENDEN and SMITH report that the demand for new Hops and fine yearlings continues steady at late prices. The accounts from the plantations state that the bine for the most part is progressing favourably. Duty 180,000*l.*

MARK LANE.

MONDAY, JULY 15.—The supply of English Wheat to this morning's market by land carriage samples was small, and the weather being fine, and buyers only inclined to purchase at a decline of 1s. to 2s. per qr. upon the prices of this day se'nnight, it remained unsold at a late hour. Business in foreign was confined to the most retail purchases of necessitous buyers; the quotations may be considered nominally unaltered.—Barley is a slow sale at the terms of last week.—In Beans and Peas there is little doing, and prices are nominally the same. —We observe no alteration in the Oat trade.

BRITISH PER IMPERIAL QUARTER.	s. s.		s. s.
Wheat, Essex, Kent, & Suffolk ...White	42—46	Red	37—41
— — fine selected runs ...ditto	46—50	Red	40—43
— — Talavera	46—52		
— Norfolk, Lincoln, & York ...White	—	Red	36—42
— Foreign	36—51		
Barley, grind. & distil., 19s to 22s...Chev.	23—27	Malting	22—25
— Foreign.....Grinding and distilling	15—21	Malting	20—23
Oats, Essex and Suffolk	15—18		
— Scotch and Lincolnshire ...Potato	18—21	Feed ...	17—19
— Irish .....Potato	16—20	Feed ...	13—17
— Foreign .....Poland and Brew	15—20	Feed ...	13—16
Rye	19—21	Foreign	18—20
Rye-meal, foreign .....per ton	5*l.*—6*l.*		
Beans, Mazagan .....22s to 24s.....Tick	24—26	Harrow	24—26
— Pigeon .....25s — 28s ...Winds	—	Longpod	—
— Foreign ..... Small	24—34	Egyptian	19—21
Peas, white, Essex and Kent.....Boilers	23—26	Suffolk	24—28
— Maple .....24s to 27s.....Grey	22—24	Foreign	21—28
Maize .....White	26—30	Yellow...	25—30
Flour, best marks, delivered ...per sack	36—40		
— Suffolk .....ditto	31—36	Norfolk	31—36
— Foreign .....per barrel	21—24	Per sack	31—34

FRIDAY, JULY 19.—The arrivals of all kinds of grain from abroad since Monday are good, those of English small. The attendance at market was tolerable, and a fair inquiry was experienced for Wheat of all kinds, and the English left over from Monday was cleared at the full prices of that day se'nnight. Foreign remains unaltered.—Barley, Beans, and Peas maintain our quotations.—Oats of all descriptions are selling at 6d. to 1s. less money.—Flour is in rather better demand, at improved rates.—In Indian Corn there has been very little doing, and prices are nominal, Galatz 27*s.* 6d.—The weather at the beginning of the week was fine and forcing, but since then has been wet, and accompanied in some districts with heavy thunder storms. The trade throughout the kingdom has been less buoyant, and in a few of the principal markets prices for Wheat have receded fully 1s. per qr.—Spring corn has more or less participated in the backward movement. At Konigsberg and Dantzic the markets were much excited, and irregular prices have been paid, on the whole exceeding the late advance in Mark-lane.

ARRIVALS THIS WEEK.

	Wheat. Qrs.	Barley. Qrs.	Oats. Qrs.	Flour.
English ...	1520	40	950	2010 sacks
Irish	—	—	—	
Foreign ...	16930	8850	31840	— brls.

IMPERIAL AVERAGES.	WHEAT.	BARLEY.	OATS.	RYE.	BEANS.	PEAS.
June 8.....	39*s* 8*d*	22*s* 4*d*	16*s* 7*d*	23*s* 7*d*	27*s* 0*d*	26*s* 8*d*
— 15	39 11	21 9	16 11	22 8	26 10	27 3
— 22.....	40 5	22 8	16 10	22 6	26 7	26 9
— 29.....	40 9	21 6	16 5	21 6	26 11	26 11
July 6.....	40 11	21 9	17 0	23 2	26 10	28 4
— 13.....	41 3	21 5	16 11	23 3	27 2	26 6
Aggreg. Aver.	40 6	21 11	16 9	22 10	26 11	27 1
Duties on Foreign Grain	1 0	1 0	1 0	1 0	1 0	1 0

PRICES.	JUNE 8.	JUNE 15.	JUNE 22.	JUNE 29.	JULY 6.	JULY 13.
41*s* 3*d*	...	...	...	...	...	
40 11	...	...	...	...		...
40 9	...	...	...		...	...
40 5	...	...		...	...	...
39 11	...		...	...	...	...
39 8		...	...	...	...	...

LIVERPOOL, FRIDAY, JULY 12.—We had a firm and steady trade in corn since Tuesday, with a little improvement in the weather. At this morning's market the business in Wheat and Flour was to a moderate extent, at very full prices, holders showing much confidence. A good many Oats were sold, and prices were 1d. per bushel higher. Barley, Beans, and Peas supported late rates. There were some buyers of Indian Corn at market, who would have operated if holders would have conceded a little in price, but they were firm for late prices, and the actual business was only limited.—TUESDAY, JULY 16.—The imports of grain, meal, and flour this week are upon a moderate scale. The attendance at our Corn Exchange this morning was shy, and the business small. Wheat was 1d. to 2d. per bushel lower than last Tuesday, but there appeared as much difficulty in making purchases as in effecting sales at the decline. No change in Barley, Beans, or Peas. Good Oats being scarce, fully supported late rates. We have to note a decline of from 6d. to 1s. per qr. on Indian Corn. Prices: Wheat, English, red, per 70 lbs., 6s. 0d. to 6s. 6d.; white, 6s. 2d. to 6s. 8d. Barley, Scotch and Irish, per 60 lbs., 2s. 9d. to 3s. Malt, English, per qr., pale, 48s. to 52s. Oats, English and Scotch, per 45 lbs., 2s. 8d. to 2s. 10d. Beans, English, per qr., 27s. to 31s. Peas, do. do., 26s. to 29s.

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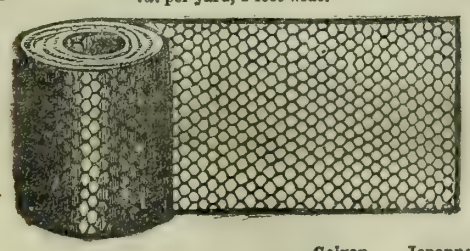
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TO NOBLEMEN, GENTLEMEN, NURSERYMEN, MARKET-GARDENERS, AND PUBLIC COMPANIES, ENGAGED IN PLANTING.

MESSRS. PROTHEROE AND MORRIS are favoured with instructions to submit to an unreserved Sale, by Auction, on the premises, Brentford Nursery, Middlesex, about the second week in October (by order of the executors of the late Mr. J. Ronalds), the whole of the valuable NURSERY STOCK, riding over about 30 acres, consisting of a large and rich assortment of Standard and Dwarf Maiden, Trained and Untrained Fruit trees, of every description; Ornamental trees, Deciduous and American Shrubs; fine Evergreens, &c. Further particulars in future advertisements.

American Nursery, Leytonstone, July, 1850.

ESSEX.—TO NURSERYMEN, HORTICULTURISTS, FLORISTS, AND MARKET GARDENERS.

TO BE LET, with immediate possession, the singularly desirable Estate known as GLAZENWOOD, for many years occupied by Mr. CURTIS, and situate near to the towns of Braintree and Coggeshall, and within 2½ miles of a Railway Station. It comprises a Villa Residence, a commodious Messuage, large Conservatory, Counting-house, Barn, Fruit-rooms, Stable, and other convenient Buildings, with about 45 acres of superior Land, of which 10 acres, or thereabouts, form the celebrated American Gardens, and Nursery Grounds; the remainder is chiefly planted with the choicest Fruit-trees; and the whole abounds with choice Stock in every variety, for which these grounds have for so many years been so justly celebrated. —For rent and other particulars, apply to Messrs. BEAUMONT and THOMPSON, 19, Lincoln's-inn-Fields, London; or to Messrs. COOK and SONS, Land Agents and Auctioneers, Stratford St. Mary, Suffolk.

TO BE LET, at moderate rents, in Carmarthenshire, two genteel Residences—Dyffryn House, with three acres of Grass Land, and Careg Cenen, with from 300 to 500 acres of Arable and Grass Land, if required. Both places are within a drive of Swansea, to which the South Wales Railway is now open. For particulars, with a lithograph of Dyffryn House apply to T. W. LAWFORD, Tirydail, Llandilo; or Messrs. ROWLAND, HACON, and ROWLAND, 38, Threadneedle-street, London

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FARM ON THE LINCOLNSHIRE WOLDS.

TO BE LET, and entered upon at Lady-day next, at South Thoresby, near Alford, a good FARM-HOUSE and Offices, with 300 Acres of Land, for the last 18 years in the occupation of Mr. JOHN HICKSON, deceased; together with about 14 Acres more adjoining. Lime of superior quality can be had from an extensive kiln on the spot. The Rail station is about one mile distant.—For particulars, and to view this very desirable Farm, apply to THOMAS KEAL, Thoresby.

READINGS OF POETRY, OLD AND NEW, BY MISS MITFORD.

THE LADIES' COMPANION, for July 20, contains, in addition to the above:—The Story of a Bouquet. By PAUL BELL.—Words for Music. No. II.—Legends of Life. By Mrs. T. K. Hervey.—Mademoiselle Rachel.—Review.—On the Appreciation of Truth in Art.—Hair Work. Second Article.—Amusements.—Parlour-Window Talk, &c. &c., with Illustrations.

Published Weekly, price 3*d.*, stamped 4*d.*, and in Monthly Parts. Parts I. to VI. are now ready.

Office, 11, Bouverie-street, and all Booksellers and Newsmen.

THE LONDON AND WESTMINSTER BANK issues CIRCULAR NOTES for 10*l.* each for the use of travellers and residents on the Continent. These Notes are payable at every important place in Europe, and thus enable a traveller to vary his route without inconvenience; no expense is incurred, and when cashed no charge is made for commission. They may be obtained at the head office of the London and Westminster Bank in Lothbury; or at its branches, viz., 1, St. James's-square; 214, High Holborn; 3, Wellington-street, Borough; 87, High-street, Whitechapel; and 4, Stratford-place, Oxford-street. J. W. GILBART, General Manager.

BEAUTIFUL BOUQUETS OF FLOWERS may be preserved perfectly Fresh and Blooming, for several days, in GLASSES adapted for Gentlemen's button-holes, any part of a Lady's dress, the Hand, or for plaiting into the Hair; and are forwarded, post free, to any part of the Kingdom, in a box containing one dozen, assorted, on receipt of postage stamps, value 2*s.* 6*d.*, by JACKSON and TOWNSON, 89, Bishopsgate-street Within, London.

CANTERBURY SETTLEMENT. — NOTICE is HEREBY GIVEN, that the TERMS of PURCHASE under which LAND may be BOUGHT in the Canterbury Settlement, with the privileges secured to the first body of Colonists, on or before the 29th of August, the day on which the first Four Ships, chartered by the Association, will sail from the East India Docks, may be obtained on application to the Secretary.

By order of the Committee,
H. F. ALSTON, Secretary.

Canterbury Association, 20, Cockspur-street,
July 20, 1850.

INTERESTING FACT.—The following singular and authentic case of restoration of the human hair is worthy of observation, more particularly as it relates to an article of high and universal repute during the last half century. "Mr. A. Hermann, of Queen-street, Soho, had been quite bald for some time past, and had tried various preparations for the recovery of his hair, but without any beneficial result. He was then induced to try the effects of 'Rowland's Macassar Oil,' and after daily applying it for about two months, he, much to his gratification, had his hair quite restored, and now possesses a beautiful head of hair. This fact speaks too strongly for itself to require comment."—*Bell's Weekly Messenger.*

ROWLAND'S MACASSAR OIL.—The unprecedented success of this discovery in restoring, preserving, and beautifying the Human Hair, is too well known and appreciated to need comment. For Children it is especially recommended as forming the basis of a Beautiful Head of Hair, and rendering the use of the fine-comb unnecessary. Price 3*s.* 6*d.*—7*s.*—Family Bottles (equal to 4 small), 10*s.* 6*d.*, and double that size, 21*s.* per bottle.

*** Each bottle of the genuine article has the words ROWLAND'S MACASSAR OIL engraved in two lines on the Wrapper; and on the back of the Wrapper nearly 1500 times, containing 29,028 letters.

Sold by A. ROWLAND and SONS, 20, Hatton Garden, London; and by Chemists and Perfumers.

CHEAP EXCURSIONS TO WINDSOR AND BACK FOR 2*s.*, intermediate stations in proportion.—GREAT WESTERN RAILWAY.—A train from Paddington every Sunday morning at 9.45 A.M., returning from Windsor at 8 P.M.; On Mondays a train from Paddington at 10.45, returning at 8. To Slough or Windsor and back, 2*s.*, 3*s.*, and 4*s.*; to West Drayton and back, 1*s.* 6*d.*, 2*s.*, and 3*s.*; to Hanwell or Southall and back, 9*d.*, 1*s.* 6*d.*, and 2*s.*; to Ealing and back, 6*d.*, 1*s.*, and 1*s.* 6*d.* From intermediate stations to Slough or Windsor and back, 1*s.* 6*d.*, 2*s.*, and 3*s.* The third class are open carriages. A compartment of a first or second class carriage, or a saloon carriage, will be reserved for parties on due notice previously given to the superintendent.

Printed by WILLIAM BRADBURY, of No. 13, Upper Woburn-place, in the Parish of St. Pancras, and FREDERICK MULLETT EVANS, of No. 7, Church-row, Stoke Newington, both in the County of Middlesex, Printers, at their office in Lombard-street, in the Precinct of Whitefriars, in the City of London; and published by them at the Office, No. 5, Charles-street, in the parish of St. Paul's, Covent-garden, in the said county, where all Advertisements and Communications are to be ADDRESSED TO THE EDITOR.—SATURDAY, JULY 20, 1850.

THE GARDENERS' CHRONICLE
AND
AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 30—1850.] SATURDAY, JULY 27. [PRICE 6*d.*

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THIRSK FLORAL AND HORTICULTURAL EXHIBITION. Open to all England. Under the distinguished patronage of the following Nobility and Gentry of the neighbourhood.

PATRONESSES.

The Duchess of Leeds
The Lady Frankland Russell
The Countess of Zetland
The Countess of Tyrconnell
The Lady Feversham
The Lady Greenock
The Lady Gallway
Mrs. Bayntun
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Mrs. Duncombe, Sigston
Mrs. Lumley Hodgson, Highthorne
Mrs. Hutton
Mrs. Lawson, Aldborough
Mrs. J. Maister
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T. H. Horsfall, Esq.
Jno. Hutton, Esq., Sowber Hill

The above will be held at Thirsk, in the county of York, on the 7th and 8th days of August next, being the days of the Yorkshire Agricultural Society's Meeting, when prizes not exceeding 50*l.* will be offered for Flowers, Fruits, Vegetables, Cottage Garden Produce, &c. Schedules and further information may be had on application to the Secretary's Office, Thirsk.—N.B. All articles admitted for exhibition free of charge.

Thirsk, July 27. ROBERT HICK, Secretary.

TO THE LOVERS OF FERNS.

WILLIAM MASTERS, Exotic Nursery, Canterbury, has to offer a fine Collection of well-grown Plants of this interesting family, at 42*s.* per dozen, where the selection is left to himself.—Canterbury, July 27.

NEW SEEDLING STRAWBERRY—MYATT'S "SURPRISE."—This is a variety raised from the British Queen, which it resembles, though of a more robust habit, and a very free bearer, producing a greater abundance of those large angular-shaped Strawberries than any other variety, and finishing off the last fruit of a good size. Strong plants will be ready the beginning of August, price 50*s.* per 100.

Manor Farm, Deptford, July 27.

CONIFERÆ, CONIFERÆ, CONIFERÆ!
MILFORD NURSERY, NEAR GODALMING, SURREY.

WILLIAM YOUNG begs the attention of Noblemen, Gentlemen, and Planters in general to inspect his extensive collection of CONIFEROUS PLANTS, consisting of Araucarias, Deodaras, Douglasii, and all the leading kinds, from 1 foot to 10 and 15 feet high, with Cryptomeria japonica, bearing perfect cones. Likewise to the admirers of Yuccas, having now in flower and in full bloom, Yucca gloriosa, accuminata, glauca, recurva, &c., throwing flower stems 10 feet high, with from 300 to 500 flowers on each as large as a good sized Tulip.

Milford Nursery is one square piece of ground, about 30 acres, on a particular dry and healthy soil, filled with the most choice kinds of Ornamental Trees, Shrubs, and Forest Trees of every description; Ash, Birch, Chestnut, Hazel, Willow; Scotch, Larch, Silver, and Spruce Firs; and other hardy Forest Trees, being planted for sale by the 100,000, whence they transplant equal to, if not better, than any other nursery in England.

Milford Nursery is two miles from the Godalming Station of the South-Western Railway, where conveyances are always in attendance.

SEEDLING PELARGONIUM—"PRINCE ARTHUR."

A. PONTEY begs to announce that he will send out, on Monday, the 14th October, at 1 guinea each, or four plants for 3 guineas, his seedling Pelargonium, for which the highest prize, the Silver Medal, was awarded at the Exhibition of the Royal Devon and Cornwall Horticultural Society on the 16th May; also a certificate of merit was awarded at the Devon and Exeter Exhibition, on the 24th May, and a certificate of merit at Torquay Exhibition on the 6th June.

The Splendid Pelargonium is thus described in the "Floricultural Cabinet," July:—"Upper petals large, dark clouded blotch shaded off to flesh colour, lower ones flesh colour, centre white; petals of firm substance."

Mr. Glenny's opinion of its habits and the peculiarity of its white throat, which he affirms is "purer than that of any one of the present varieties," has been given in the Country Gentleman, weekly garden newspaper.—July 27.

ROYAL BOTANIC SOCIETY of LONDON.—The Days appointed for the EXHIBITIONS in the Gardens of this Society NEXT YEAR, are as follows: GENERAL EXHIBITIONS—Wednesdays, May 14; June 11, and July 2.
AMERICAN PLANTS—Saturdays, May 31; and June 7.
By order of the Council. J. DE C. SOWERBY, Secretary.

GERANIUMS. — Twelve of the following Show Flowers for 21*s.*, in plants adapted for stock, or 2*s.* 6*d.* each:—Crusader, Brilliant, Purity, Cassandra, W. Gilbert, Rosamond, Belle of the Village, Virgin Queen, Negress, Peral, Salamander, Painted Lady, Forget-me-not, Aurora, and Lucretia.—SAMUEL WALTERS, Hilperton, near Trowbridge, Wilts.

FIRST-RATE NEW FUCHSIAS AND VERBENAS OF 1850.

WM. RUMLEY AND SONS have to offer 12 of the following superb new FUCHSIAS for 18*s.*, 6 for 10*s.*; or 2*s.* 6*d.* each, true to name, free by post, viz.: Beauty of Hertford, Mrs. W. Taylor, Inaccessible, Kossuth, Acteon, Corinium, Confidence, Grand Master, Pearl of England, Rosamond, General Changarnier, Don Giovanni, Globosa alba grandiflora, Multiplex, Gladiator, Striata, Prince of Orange, Yorkshire Eclipse, Beauty of Richmond, Distinctus, &c.

VERBENAS.—Twelve of the following superb new varieties for 10*s.* 6*d.*, or 6 for 6*s.*; viz.: Laura, Letitia, Masterpiece, Monitor, Wonderful, Magnificent, Desdemona, Anais, Phaeton, Beaute de Rivage, Reine, Hortense, Perriers, Cypariese, Belle Etoile, Calliope, &c.—Fuchsia spectabilis, strong plants, 1*s.* 6*d.* each. Cantua bicolor, 1*s.* each. Browallia Jamesoni, 1*s.* each. The above will be forwarded immediately, in fine strong plants, on receipt of a Post-office order, payable at Richmond.—Gilling, Richmond, Yorkshire.

MAYLE'S MODEL FUCHSIAS FOR 1850.—No grower can expect to win a prize at any of the principal exhibitions in town or country without these magnificent reflexed varieties.

Messrs. MAYLE and Co. will send out their SEVEN NEW FUCHSIAS on the 20th June, extra strong plants. From the very high opinions expressed of their merits by Dr. Lindley, Mr. Glenny, &c., they require no further comment from us. They are the things of the season, and must be had by all who wish to keep pace with the times.

No. 1, DIADEM, was shown at Walsall, near Birmingham, with two blooms, May 8th, and was awarded an extra prize. Judges' opinion: "By far the best ever raised."

Also first prize at Wolverhampton, May 25, against some fine older specimen varieties; and first-class certificate awarded at the Birmingham and Midland Society on the 20th.

Those in bloom were exhibited at Chiswick and Regent's-park June Shows. The earliest orders will secure the strongest plants. Circulars can be had. Also Mr. Hoyle's superb Geraniums, a few extra strong blooming plants being left.

Stove, Greenhouse, Bedding Plants, &c., including every novelty of the season.—105, New-street, Birmingham.

NEW AND FIRST-RATE VERBENAS, FUCHSIAS, PETUNIAS, &c.

GEORGE SMITH begs to draw the attention of the Public to his unrivalled Collection of the above. His VERBENAS have been shown and prizes awarded them at the Royal Botanic Gardens, Regent's-park; the Horticultural Society, Chiswick; the Central Society of Florists; the Royal South London Floricultural Society. Strong Plants of all the foreign and English new varieties are now ready, viz.:—Smith's Calliope, Desdemona, Masterpiece, Monitor, Young's Laura, Letitia, Barker's Mass, Rosa Alba, Gem, Village Maid, Rosy Morn, St. Katherine, Salter's Infant de Versailles, Souvenir de Marie, Electra, Perry's Wonderful, Woodcock's Magnificent, Turner's Mrs. Mills, Chauviere's Adele, Anais, Cyparisse, Gloire de Paris, Niobe, Pauline, Perrier, Reine Horteuse, Silene, Miellez, Brind d'Amour, Figaro, Follette, Jeanne d'Arc, Massena, Nigricans, Dufoy's Admiration, Boule de Neige, Anacreon, Buffon, Daubenton, Satyr, Romulus, Boudinot's Bajeaus, Celestina, Fanny, Justine, and Madame de Gournay; 12 for 12*s.*, or 24 for 21*s.*

FUCHSIAS.—Smith's Kossuth, Orion, Queen of May, Turner's Sir J. Falstaff, Kendall's Dr. Grosse, Novelty, Glasscock's Mrs. W. Taylor, Beauty of Stortford, Gregory's Cerinium, Actæon, Rumley's Beauty of Richmond, Yorkshire Eclipse, Distinctus, Storey's Mirabilis Unique, Multiplex, Duplex, Ignea, Striata, Miellez, Duchesse de Bordeaux, Elisa Miellez, General Changarnier, General Oudinot, President Porcher, and Dubas's Nonpareil; 21*s.* per doz.

PETUNIAS.—Young's Picta, Letitia, Youngii, Smith's North London Miellez Angele, Triumph, Beauté Parfait, and Ne Plus Ultra. The fine new Lantana delicatissima; Heliotropium corymbosum, 1*s.* 6*d.* each; Cuphea atropurpurea and Donkelarii, 1*s.*

Plants can be sent by post or rail. Extra plants for long carriage. Post-office orders made payable at Islington.

Tollington Nursery, Hornsey-road, Islington, London.

STRAWBERRIES AND CELERY.—The season for Planting being close at hand, the Advertiser begs to remind those who are desirous of having clean Fruit, and in the greatest perfection, that no time should be lost in procuring Strawberry Tiles to place down when the plants are set, as without them the gardener cannot place them so exact as he otherwise could; consequently, the same advantages cannot be obtained. The satisfactory testimonials received from persons who tried the Celery Sockets last season warrants the Advertiser in hoping that they will be in use in every garden where a good and clean article is valued. Particulars can be had by inclosing three postage stamps to Mr. JOHN ROBERTS, 34, Eastcheap, London.

GREENHOUSE AND CONSERVATORY BUILDING ESTABLISHMENT, HOT-WATER APPARATUS MANUFACTORY, KENSALL-GREEN, HARROW-ROAD, LONDON.

JOHN TAYLOR begs most respectfully to call the attention of the Nobility, Gentry, and Gardeners, to the very superior manner in which he erects all kinds of Greenhouses, Conservatories, Forcing Pits, &c., and all other buildings for Horticultural purposes, combining all the most modern improvements with elegance and utility. His manner of heating Horticultural Buildings, Churches, Chapels, Public Buildings, Entrance Halls, &c., has received the greatest approbation from the Nobility and Gentry by whom he has been extensively engaged.

TO THE ADMIRERS OF THAT SPLENDID AUTUMNAL FLOWER, THE CHRYSANTHEMUM.

YOUELL AND Co. are now prepared to execute orders from their extensive and very select collection of the above, comprising all the new and fine continental varieties, at the following prices:

50 best new sorts ..... 25*s.*
25 ditto ..... 15*s.*
12 ditto ..... 9*s.*

Well established in small pots, or by post free.

NEW DWARF CHINESE OR LILLIPUTIENNE CHRYSANTHEMUMS.

This new and beautiful class are well deserving the attention of cultivators from their exceeding dwarf habit (not attaining more than 1 foot in height). The profusion of flowers with which they are covered, as well as the great variety and distinctness of colour, will render them general favourites. Strong plants for autumn blooming are now ready for sending out at the following prices:

9 fine varieties sent out last year (for the first time) for 9*s.* 0*d.*
13 do. raised by M. Lebois (and sent out for the first time this season), for..... 30 0

One sent over to the Trade when two are ordered.

The latter are figured in the last December Number of the "Annales de la Societé d'Agriculture et de Botanique de Gand," and are perfect gems, engravings of which may be seen at YOUELL and Co.'s Nursery.

Descriptive Catalogues of the above may be had on application. Printed directions of their successful and easy method of cultivating the Chrysanthemums for exhibition, &c., will be forwarded with all orders.

ANEMONE SEED,

Saved from selected sorts, is now being harvested by YOUELL and Co. in the finest condition, and can be forwarded, per post free, at 2*s.* 6*d.* and 5*s.* per packet, sufficient to sow a bed of 12 and 24 yards. If sown at the present time it will afford a fine display through the autumn and winter months.

Royal Nursery, Great Yarmouth.

HOYLE'S SEEDLING PELARGONIUMS FOR 1850.

CHARLES TURNER will send out, early in the Autumn, strong established plants of the following distinct varieties raised by G. W. Hoyle, Esq. Ajax gained the 4*l.* and Ocellatum the 3*l.* prizes at the Great Seedling Pelargonium Show, Surrey Gardens, in June last, being two of the four prizes awarded on that occasion. Early orders will ensure first selection.

AJAX.—A noble dark variety, smooth, and of fine substance, lower petals rosy purple, top petals very dark purple, with even narrow margin of vivid crimson; very free bloomer; has been justly styled "The leading flower of the season." Price 1*l.* 11*s.* 6*d.*

OCELLATUM.—A great novelty, lower petals bright pink, with a distinct and constant spot of deep crimson; top petals deep crimson spot, shaded off with bright rose, white eye, free bloomer, and good grower. Price 1*l.* 11*s.* 6*d.*

MAY QUEEN.—A large, distinct, and pleasing variety. Orange-rose top petals, crimson blotch, shaded off with orange, the five petals have a delicate margin of pale pink; lower petals vivid rose; large well-defined white eye, very free bloomer, will be a great favourite on the home stage. Price 1*l.* 11*s.* 6*d.*

NECTAR CUP.—Rose, top petals rich orange-rose, with narrow pink margin, clear white eye, fine substance, good habit. Price 1*l.* 1*s.*

FLAVIA.—Orange-scarlet, the brightest in this class that has been offered, and makes a fine display on the stage, rather crumpled on the edge, and lower petals too long. Price 1*l.* 1*s.*

GENERALISSIMO.—Large and very attractive; lower petals salmon, with spots of a deeper colour, white centre; top petals very dark, rich, and velvety, shaded with lively orange, occasionally crumpled on the edge. Price 1*l.* 1*s.*

RUBIOLA.—Fine crimson scarlet of beautiful texture, dark spot on the top petals, rather deficient in breadth of petals. Price 1*l.* 1*s.*

CORINNE.—Light purple, very smooth and free bloomer, dark top petals. Price 15*s.*

ISIS.—A neat smooth flower, of good quality, very free bloomer, rose with white eye, and dark blotch on top petals. Price 15*s.*

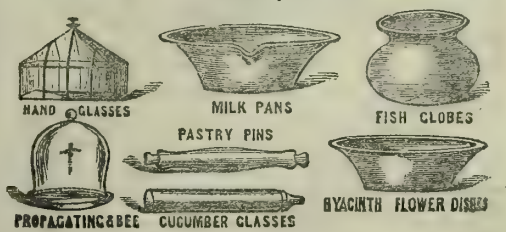
CARDINAL.—Fine rich orange crimson, black blotch on top petals, very smooth, not a strong grower. Price 15*s.*

HEARTSEASE.—Scarlet rose, large fine shape and substance; but being inconstant, purchasers of the above will have a plant without charge.

Price 8*l.* 10*s.* for the set.

Royal Nursery, Slough.

GLASS FOR CONSERVATORIES, HORTICULTURAL PURPOSES, &c.



T. MILLINGTON'S SHEET GLASS, which is of the best description, varying from 16 to 32 ounces, at from 2*d.* per foot and upwards; 100 feet and 200 feet cases of large Sheet Glass, for cutting up, at 2½*d.* per foot. British Plate Glass, from 1*s.* 2*d.* to 2*s.* per foot, according to size. Patent Rough Plate Glass, from ⅜ to 1 inch in thickness, from 4*d.* per foot upwards. Glass Slates and Tiles. Milk Pans from 12 to 24 inches diameter, from 2*s.* to 5*s.* each. Cucumber Tubes, from 12 to 24 inches long, at 1*d.* per inch. Lactometers, 7*s.* 6*d.* each. Wasp Traps.—Lists may be had, on application at the Warehouse, 87, Bishopsgate-street Without, same side as the Eastern Counties Railway.

HARTLEY'S PATENT ROUGH PLATE GLASS.

JAMES PHILLIPS AND CO., 116, Bishopsgate-street Without, beg to hand their list of Prices of the above description of GLASS. Cut to order in panes of

8 by 6	and under	10 by 8	at 4½d. per foot.
10 by 8	,,	14 by 10	at 5d. ,,
14 by 10	,,	1½ foot, or sizes not exceeding 20 inches long	at 5½d. ,,
1½ foot	,,	3 feet, or sizes not exceeding 30 inches long ...	at 6d. ,,

PACKED IN BOXES of 50 feet each.

6 by 4 and 6½ by 4½...10s. 6d. 8 by 6 and 8½ by 6½...13s. 6d.
7 by 5 and 7½ by 5½...12s. 0d. 9 by 7 and 10 by 8 ...15s. 0d.

We do not pledge ourselves to execute large orders for small squares at the above prices, but only as far as they turn up in cutting. Should any quantity of small squares be required, a special contract is necessary.

MILK PANS 2s. to 6s. each, Metal Hand-frames, Tiles, and Slates; Propagating and Bee Glasses from 2d. each; Cucumber Tubes, 1d. per inch; Peach Glasses, 10d. each; Wasp Traps 3s. 6d. per dozen; Pastry Slabs, Hyacinth Glasses and Dishes, Shades for Ornaments, Fish Globes, Plate and Window Glass of every description, and Lamp Shades. Lactometers for trying the quality of Milk, 4 tubes, 7s. 6d; 6 tubes, 10s. Self-registering Thermometers for Greenhouses, Horticultural Glass, &c.

From the *Gardeners' Chronicle*, December 8, 1849:

"As for the article substituted for Rough Plate, and which is actually in the market for the purpose of imposing upon gardeners, it is wholly unfit for any horticultural purpose. The best samples of it which we have yet seen is sold by Mr. JAMES PHILLIPS, 116, BISHOPSGATE STREET, LONDON."

CROWN, SHEET, AND ROUGH PLATE GLASS FOR HOTHOUSES, CONSERVATORIES, &c.

The Improved Patent Rough Plate, made by Messrs. Hartley and Co., can be supplied from this Warehouse, of every size and substance, at the same prices as at the works.

100 and 200 feet cases of large Sheet Glass, from 2½d. per foot. Small ditto, 10s. 6d. per 100 feet, packed in boxes ready for immediate delivery. Curators of Botanical Societies, Florists, Railway Agents, and others requiring large quantities, will, on sending dimensions, receive estimates at the lowest prices.

GLASS MILK PANS, CREAM POTS, Lactometers, Bee Glasses, Fish Globes, and all kinds of Dairy Glass, Propagating Glasses, Hyacinth Dishes, Cucumber Tubes, and every other description of Garden Glasses.

PATENT GLASS PENS, self supplying, never blot, never soil the ruler, and will write continuously for 12 hours.

Also, Glass Rulers, Glass Inks for office-stands, desks, &c. Stationers and Schools supplied. Wholesale Warehouse for Ornamental Shades, Lamp Shades, Gas Glasses, Genuine White Lead, Paints, Colours, and Pumps for Farm purposes.

Our Catalogue of 18 folios is the most complete ever published. No Gardener or Farm Bailiff should be without one. May be had Gratis on sending two postage stamps to Messrs. COGAN and Co., 48, Leicester-square, London.

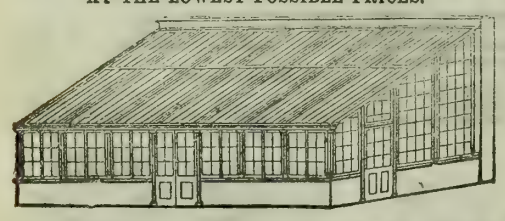
DEANE'S WARRANTED GARDEN TOOLS.—Horticulturists, and all interested in Gardening pursuits, are invited to examine G. and J. DEANE'S extensive Stock of GARDENING AND PRUNING IMPLEMENTS, best London made Garden Engines and Syringes, Coalbrookdale Garden Seats and Chairs.

Averuncators	Garden Scrapers	Pick Axes
Axes	Grape Gatherers and Scissors	Potato Forks
Bagging Hooks	Gravel Rakes and Sieves	Pruning Bills
Bills	Greenhouse Doors and Frames	,, Knives, various
Borders, various patterns	Hammers	,, Saws
Botanical Boxes	Hand-glass Frames	,, Scissors
Cases of Pruning Instruments	Hay Knives	,, Shears [riety.
Chaff Engines	Hoes of every pattern	Rakes in great va-
Chaff Knives	Horticultural Hammers and Hatchets	Reaping Hooks
Daisy Rakes	Hotbed Handles	Scythes
Dibbles	Ladies' Set of Tools	Scythe Stones
Dock Spuds	Labels, various patterns, in zinc, porcelain, &c.	Shears, various
Draining Tools	Lines and Reels	Sickles
Edging Irons and Shears	Marking Ink	Sickle Saws
Flower Scissors	Mattocks	Spades and Shovels
,, Stands in Wires and Iron	Menographs	Spuds
Fumigators	Metallic Wire	Switch Hooks
Galvanic Bordersand Plant Protectors	Milton Hatchets	Thistle Hooks
Garden Chairs and Seats	Mole Traps	Transplanting Tools
,, Loops	Mowing Machine	Trowels
,, Rollers		Turfing Irons
		Wall Nails
		Watering Pots
		Weed Extractorsand Hooks
		Wheelbarrows
		Youths' Set of Tools

G. and J. DEANE are Sole Agents for LINGHAM'S PERMANENT LABELS, samples of which, with the Illustrated List of Horticultural Tools, can be sent, post paid, to any part of the United Kingdom.—DEANE'S Horticultural Tool Warehouse, opening to the Monument, 46, King William-st., London-bridge.

ANTHONY'S PATENT AMERICAN CHURN.—The Silver Medal was awarded to this Implement at the Royal Agricultural Society's Show at Exeter, 1850; Stand No. 25.—Apply to KEY and MITCHELL, Depôt for Patent and other new and useful inventions, 97, Newgate-street, City.

HORTICULTULAL BUILDING AND HEATING BY HOT WATER.
WARRANTED BEST MATERIALS AND WORKMANSHIP AT THE LOWEST POSSIBLE PRICES.



J. WEEKS AND CO., King's-road, Chelsea, Horticultural Architects, Hothouse Builders, and Hot-water Apparatus Manufacturers. The Nobility and Gentry about to erect Horticultural buildings, or fix Hot-water Apparatus, will find at our Hothouse Works, King's-road, Chelsea, an extensive variety of Hothouses, Greenhouses, Conservatories, Pits, &c., erected, and in full operation, combining all modern improvements, so that a lady or gentleman can select the description of House best adapted for every required purpose.

THE HOT-WATER APPARATUSES (which are efficient and economical), are particularly worthy of attention, and are erected in all the Houses, Pits, &c., for both Top and Bottom Heat, and in constant operation in the Stoves.

The splendid collection of Stove and Greenhouse Plants are in the highest state of cultivation, and for sale at very low prices. Also a fine collection of strong Grape Vines in pots from eyes, all the best sorts.

Plans, Models, and Estimates of Horticultural Buildings; also Catalogues of Plants, Vines, Seeds, &c., forwarded on application.—J. WEEKS and Co., King's-road, Chelsea, London.

GLASS FOR CONSERVATORIES, &c.

HETLEY AND Co. supply 16-oz. Sheet Glass of British Manufacture, at prices varying from 2d. to 3d. per square foot, for the useful sizes required, many thousand feet of which are kept ready packed for immediate delivery. Lists of Prices and estimates forwarded on application, for PATENT ROUGH PLATE, THICK CROWN GLASS, GLASS TILES and SLATES, WATER-PIPES, PROPAGATING GLASSES, GLASS MILK PANS, PATENT PLATE-GLASS, ORNAMENTAL WINDOW GLASS, and GLASS SHADES, to JAMES HETLEY and Co., 35, Soho-square, London.

See the *Gardeners' Chronicle* first Saturday in each month.

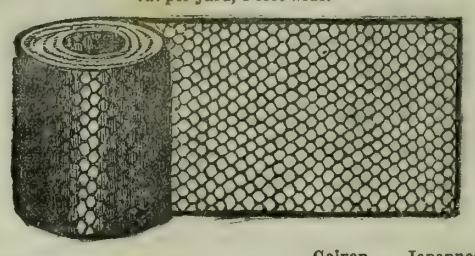
GREENHOUSE TO BE SOLD CHEAP, 20 feet long, 13 feet high, and 11 feet wide, with a 4-light Cucumber Pit and 2-light Frame.—Apply at Mr. CORNER'S, Fountain Cottage, Camberwell-grove, London.

IRON AND WIRE FENCING,
AND METALLIC BEDSTEADS.

THOMAS PERRY AND SONS,
252, OXFORD-STREET (NEAR HYDE PARK),
And Highfields Foundry and Wrought-iron Works, Bilston, Staffordshire, Manufacturers of all descriptions of
PLAIN AND ORNAMENTAL IRON AND WIRE FENCING,
Park Entrance, Carriage and Field Gates, Wickets, &c.;
Deer, Sheep, and other Hurdles;
Hare and Rabbit-proof Wire Fencing;
Iron Bedstead Makers to the Board of Ordnance;
And Government Contractors.

The works of Messrs. PERRY being situated in the heart of the first iron district, they are enabled to execute all orders with the greatest facility, and on the most moderate terms. Drawings made and estimates prepared, if required. The showrooms contain an immense variety of every description of Iron and Wire-work, and are the largest in London. An Illustrated Catalogue of Bedsteads, with dimensions and prices, sent on application, post-free.

GALVANISED WIRE GAME NETTING.—7d. per yard, 2 feet wide.

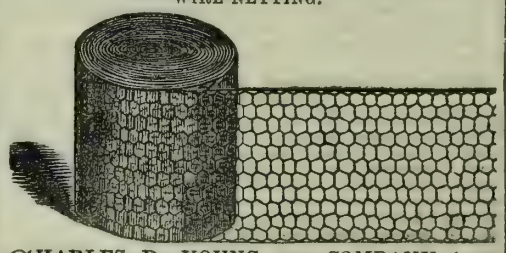


	Galvanised.	Japanned Iron.
2-inch mesh, light, 24-inch wide ...	7d. per yd.	5d. per yd.
2-inch ,, strong ,, ...	9 ,,	6½ ,,
2-inch ,, extra strong ,, ...	12 ,,	9 ,,
1⅝-inch ,, light ,, ...	8 ,,	6 ,,
1⅝-inch ,, strong ,, ...	10 ,,	8 ,,
1⅝-inch ,, extra strong ,, ...	14 ,,	11 ,,

All the above can be made any width at proportionate prices. If the upper half is a coarse mesh, it will reduce the price one-fourth. Galvanised sparrow-proof netting for pheasantries, 3d. per square foot. Patterns forwarded post-free.

Manufactured by BARNARD and BISHOP, Market-place, Norwich, and delivered free of expense in London, Peterborough, Hull, or Newcastle.

STRONG PREMIUM HARE AND RABBIT PROOF WIRE NETTING.



CHARLES D. YOUNG AND COMPANY (LATE W. AND C. YOUNG),
MANUFACTURERS OF IRON AND WIRE WORK, &c.,
22, PARLIAMENT STREET, WESTMINSTER, LONDON;
48, NORTH BRIDGE, EDINBURGH;
32, ST. ENOCH SQUARE, GLASGOW;
1, CASTLE BUILDINGS, DERBY SQUARE, LIVERPOOL;
beg respectfully to call the attention of Landed Proprietors and others to their strong Wire-Net Fence, for excluding Hares and Rabbits from Gardens, young Plantations, Nurseries, &c.

This Net was exhibited at the Show of the Highland and Agricultural Society of Scotland, held lately at Inverness, where its Efficiency, Great Strength, and Exceeding Cheapness attracted general attention, and had awarded from the Judges the Society's Silver Medals, with high commendations.

The immense damage done by Hares and Rabbits in Gardens and Young Plantations is often so great, that in the course of a year or two it will amount to more than the entire cost of protecting them with this Net. It is so durable, that when Plantations are sufficiently advanced to be independent of its protection, it can be removed to other exposed situations with the greatest facility, by any labourer. As a Fence against Hares and Rabbits, it is of itself quite sufficient, having only to be unrolled and attached, with small wire sent for that purpose, to wooden stakes driven into the ground, about every six or seven feet apart. It is, besides, peculiarly adapted for rendering Hedges, Paling, or other existing Fences, *completely impervious* to such vermin; and by being cut up into small pieces of three or more feet, as required, it forms a most efficient guard, at little expense, for individual Plants and Shrubs.

PRICES.—18 ins. high, 9d.; 24 ins., 1s.; 30 ins., 1s. 3d.; and 36 ins., 1s. 6d. per lineal yard.

Or a web of 100 yards, 18 ins. wide, will cost ..	£3 15 0
Do. of 100 yards, 24 ins. wide	5 0 0
Do. of 100 yards, 30 ins. wide	6 5 0
Do. of 100 yards, 36 ins. wide	7 10 0

If more or less than a web is required, it would be charged at the same rate per yard.

This Netting is also admirably adapted for Pheasantries and Poultry-yards, and is charged at the same rate. As carriage has, in many instances, been an obstacle to parties at a distance requiring this Net, C. D. Y. and Co. have made arrangements by which they will undertake to deliver it at any of the principal ports of Scotland, England, and Ireland, for One Halfpenny per lineal yard.

C. D. YOUNG and Co. cannot give a better idea of the great strength of their Premium Wire Netting than by stating that the weight of one yard of their 24-inch at 1s. is equal to 2½ yards of another article in the market, the same width, at 9d. per yard. Samples for inspection sent free of expense.

C. D. YOUNG & Co. manufacture every description of IRON and WIRE WORK required for this and foreign countries.

Workmen sent to all parts of Scotland, England, and Ireland.

GRAPE VINES IN POTS FOR FORCING.

J. WEEKS AND CO., King's-road, Chelsea, beg to call attention to their splendid collection of Grape Vines, all struck from eyes, now two and three years old, the finest Plants that have ever been offered for Sale, consisting of 60 varieties, all of the best sorts, warranted true.

THE HAMBURGHS AND MUSCADINES being the best for early forcing in pots, this is the best time for Gardeners to have them, so as to get the eyes ripe and prominent. This Nursery is well worthy of a visit, as all modern Horticultural improvements are in full operation.

J. WEEKS and Co., King's-road, Chelsea.

FOR WATERING GARDENS, BREWERS' USE, &c.
FLEXIBLE INDIA-RUBBER HOSE PIPES.

JAMES LYNE HANCOCK, Sole Licensee and Manufacturer of the PATENT VULCANISED INDIA-RUBBER PIPES and TUBING.

These Pipes are well adapted for Watering Gardens, conveying Liquid Manure, racking Beer and Cider, Gas Fittings, Chemical and all purposes where a perfectly sound WATER-PROOF and FLEXIBLE PIPE is required.

Hot Liquors or Acids do not injure them. No oil or dressing is required in using them. They do not leak from remaining out of use, are permanently Flexible in all Temperatures, and are therefore particularly suitable for Fire Engines; and, from their not leaking, are found exceedingly useful in conveying hot or cold water to baths in dwelling houses and such like purposes.

A LIGHT VULCANISED INDIA-RUBBER HOSE is now manufactured for conducting Water and Fluids, at the following prices per foot:

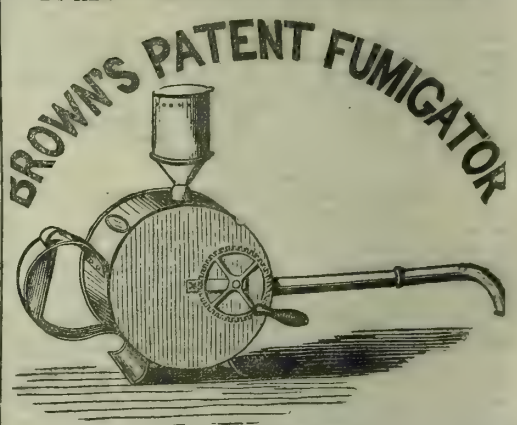
Size.	¼ in.	⅜ in.	½ in.	1 in.	1½ in.	2 in.	2½ in.	3 in.
1 ply ...	0s. 5d.	0s. 6d.	0s. 8d.	0s 10d.	1s. 0d.	1s. 2d.	1s. 4d.	1s. 6d.
2 ply ...	0 8	0 9	1 0	1 2	1 5	1 8	2 0	2 3
3 ply ...	0 11	1 0	1 3	1 6	1 10	2 2	2 9	3 3

N.B. Vulcanised India-Rubber Garden Hose fitted with roses, jets, and branches, complete, with union joints ready to attach to pumps or water cisterns.

All orders or letters addressed to J. L. HANCOCK, at the Manufactory (and Warehouse), Goswell-mews, Goswell-road, London, will meet with immediate attention.

THE HIPPOPOTAMUS presented by H. H. the Viceroy of Egypt to the Zoological Society of London, is exhibited daily from One to Six o'clock, at their Gardens in the Regent's Park. The Band of the First Life Guards will perform, by permission of Colonel Hall, every Saturday, at Four o'clock. Admission One Shilling, on Mondays Sixpence.

BY HER MAJESTY'S ROYAL LETTERS PATENT.



Price 10s. and upwards.

A PORTABLE INSTRUMENT FOR FUMIGATING GREENHOUSES, STOVES, AND FRAMES, or Shrubs and Flowers, in the open air, without injuring the most delicate plant; delivering the smoke cool, in a dense mass, and effecting a great saving of Tobacco.

Manufactured and supplied to the Trade by Messrs. BARBER and GROOM, London; and in Brass by Mr. GOGERTY, 72, Fleet-street; and may be had of all Ironmongers, Seedsmen, and Florists.

TO BE DISPOSED OF, A NURSERY AND SEED BUSINESS, situated in a large provincial Town, doing a good and profitable trade, and which, with a little exertion, may be greatly increased. A better opportunity to a person wishing to prosecute a Business of this description is seldom to be met with. The business has been established for about 14 years. The Seed Shop is in a first-rate locality and well adapted for the Trade; the Stock in this department is at present very small, and generally of the most choice description. About 5 acres of Nursery, in lease, to run five years, and which may be renewed, at a moderate rent, is well stocked with Forest and Fruit Trees, Shrubs, and Plants. The Dwelling-house is comfortably situated, about two miles in the country, with about an acre of ground, which, with Greenhouses, &c., and offices, belongs to the Advertiser, and may be either let or sold. The whole will be given at a valuation, to be made by parties mutually chosen.—Application to be made by letter, post-paid, addressed D., to be left at 28, Edgeware-road, London.

ESSEX.—TO NURSERYMEN, HORTICULTURISTS, FLORISTS, AND MARKET GARDENERS.

TO BE LET, with immediate possession, the singularly desirable Estate known as GLAZENWOOD, for many years occupied by Mr. CURTIS, and situate near to the towns of Braintree and Coggeshall, and within 2½ miles of a Railway Station. It comprises a Villa Residence, a commodious Messuage, large Conservatory, Counting-house, Barn, Fruit-rooms, Stable, and other convenient Buildings, with about 45 acres of superior Land, of which 10 acres, or thereabouts, form the celebrated American Gardens and Nursery Grounds; the remainder is chiefly planted with the choicest Fruit-trees; and the whole abounds with choice Stock in every variety, for which these grounds have for so many years been so justly celebrated.—For rent and other particulars, apply to Messrs. BEAUMONT and THOMPSON, 19, Lincoln's-inn-Fields, London; or to Messrs. COOK and SONS, Land Agents and Auctioneers, Stratford St. Mary, Suffolk.

ASHBY'S INDIA EXPORT PALE ALE.—London Stores, under the South-Western Railway Terminus, Waterloo-road. India Pale Ale, 21s., 18 gallons; 10s. 6d., 9 gallons; Family Ale, 16s., 18 gallons.—CHAS. ASHBY and Co. invite the particular attention of private Families and Clubs to their PALE ALE, as brewed by them for the COLONIAL MARKETS for the past 20 years. Supplied in small casks direct from the Brewery, Staines, and the London Stores, or from their agents—Messrs. W. Hancock, 80, Connaught-terrace, Hyde-park; Chidell and Stewart, 40, Lime-street, City; W. H. Chaplin, 11, Sebbon's-buildings, Upper-street, Islington; J. Shenton, Greenwich; W. Ferguson, Reading; Thos. Berry, Brighton and Lewes; A. J. Richardson and Co., Portsea and Southsea; J. Skidmore, Rickmansworth; Cookey, Brothers, Southampton.

MESSRS. STANDISH AND NOBLE'S new descriptive CATALOGUE OF SELECT HARDY ORNAMENTAL PLANTS is just published, and may be had for four postage stamps. Besides a Treatise on the cultivation of American Plants, it contains a Plate and Description of the Funebral Cypress, Notices of Cephalotaxis Fortunii, Cryptomeria japonica, Quercus sclerophylla and inversa, Viburnum plicatum and macrocephalum, with many recent introductions from the north of China, quite new to English gardens.

Messrs. S. and N. take this opportunity of stating that they give Designs for Laying out New Grounds and Plans for Improvements; also Estimates for all kinds of Planting, whether ornamental or economic.—Bagshot Nurseries, July 27.

MESSRS. KNIGHT AND PERRY feel themselves called upon to thank their numerous patrons very gratefully for the confidence with which they have recurred to them when in want of Gardeners, and beg respectfully to say that the scrutiny and vigilance they have always employed in selecting good and clever men (to which the almost invariable satisfaction that has so long attended their recommendations is mainly attributable) is, if possible, increased now; and the steps they have taken to arrive correctly at the professional and private character of those they send out as GARDENERS, FORESTERS, BAILIFFS, &c., induce them to undertake unhesitatingly to furnish first-rate men in these capacities whenever called on to do so.
EXOTIC NURSERY, KING'S ROAD, CHELSEA, LONDON.

NEW LATE STRAWBERRY,
WILMOT'S "PRINCE ARTHUR."

J. WILMOT, in offering this new variety of STRAWBERRY to the Public, is confident that it combines qualities which no other kind at present in cultivation does possess, being of delicious flavour, and coming in after the principal Strawberry season is over. It possesses the property of firmness of texture, so that it may be transmitted to any part of the kingdom without sustaining injury, as it may be kept for several days after being gathered, when fully ripe, without any indication of decay or loss of flavour.

"Prince Arthur" is one of the largest sized Strawberries, and a most abundant bearer; the foliage is small, and never exceeds 6 inches in height; the fruit is consequently fully exposed to the sun. Its dwarf habit requires it to be planted not more than a foot apart. The fruit is perfectly formed, of a rich scarlet, and colouring equally all over the berry. If planted at the distance recommended it will produce double the weight per acre of any other variety.

Strong plants will be ready for sale in September next, at 5*l.* per 100, on prepaid application only, to JOHN WILMOT, Isleworth, Middlesex; Robert Glendinning, Chiswick Nursery; William T. Atwood, Mortlake, Surrey; George Charlwood, Seedsman, Covent-garden; and Messrs. Hurst and M'Mullen, 6, Leadenhall-street, London.—Isleworth, Middlesex, July 27.

BECK'S SEEDLING PELARGONIUMS of 1849. For prepayment only, the first remittance to secure the first selection. Post-office orders are requested to be made payable at Brentford.

ROSA.—A bright rose-coloured flower of great smoothness and good form, a free bloomer, constant, and of excellent habit. Will prove a first-rate variety for all purposes. 30*s.*

MAJOR DOMO.—A very large rose-coloured flower, with dark clouded top petals; some of the blooms here measure 3 inches in circumference; free bloomer, and of strong habit. 21*s.*

SILK MERCER.—A very close compact-growing variety, free bloomer, and very constant; smooth silky flower of first-rate quality, ground colour rose, with deep maroon blotch on the upper petals. 21*s.*

PRINCE ARTHUR.—A medium-sized flower of excellent quality, very constant, and a free bloomer; rosy crimson ground colour, with dark well defined blotch on the upper petals, leaving a bright distinct margin; light centre. 21*s.*

DIANA.—This is very similar to Rosalind, but larger, and is at its best early in the season, whilst the latter variety is not at its best until quite late. 15*s.*

TYRIAN QUEEN.—If the large deep mulberry-coloured top petals of the flower had been matched with as good lower ones, it would have been first-rate; strong robust habit, and a free bloomer; a very distinct and constant variety. 15*s.*

Many other Seedlings might have been selected, such as "Little but Good," and others, but they have exhibited faults which make it necessary to try them another season. Incomparable will not be sent out until 1851. At present it is unequalled.

VARIETIES OF 1848.

CUYP.—A novel claret-coloured flower; soft, silky, cloudy blotch on upper petals, shading off to the margin; very free bloomer and constant. 10*s.* 6*d.*

EMILY.—A very fine large Centurion flower, of first-rate character for the home or exhibition stages, being a very free bloomer; quite constant, and of good habit. 10*s.* 6*d.*

GOVERNOR.—A must profuse bloomer, of a rich glowing purple, stiff in the petals, and well adapted for all purposes. Good habit and foliage. 10*s.* 6*d.*

LOVELINESS.—A striking flower, of excellent quality; a rose-coloured clean distinct crimson spot on the bottom petals gives it a decided and pure white eye, upper petals rich dark spot extending evenly upwards, and abruptly shading off into the edge; habit excellent. 10*s.* 6*d.*

PAINTER.—Novel and striking, from the great amount of colour on the lower as well as on the top petals; very free bloomer, and constant. 10*s.* 6*d.*

PET.—A middle-sized, stiff, smooth flower, of high quality; rich, dense, even-coloured top petals, with a very light and well defined edge, white eye, and pale rose lower petals; moderate bloomer and constant. 10*s.* 6*d.*

ROSALIND.—A large-sized fresh-coloured flower, a glowing crimson upper petal, with dark blotch; a large white centre, and lower petals light rose; free bloomer, constant, and good habit. 10*s.* 6*d.*

Foster's Gipsy Bride and Constance, 10*s.* 6*d.* each.
Foquett's Magnificent, 10*s.* 6*d.*; and Symonds' Field Marshal, 10*s.* 6*d.*

OLDER VARIETIES, AND OTHER RAISERS' FLOWERS

Twelve of the following varieties, including the box and carriage to London, will be sent out in October, for Two Guineas, well rooted in 3-inch pots, and ready for an immediate shift into a larger size:—Blanche, Centurion, Cassandra, Crusader, Delicatissima, Dorcas, Emilia, Gustavus, Gulielma, Lalla Rookh, Lamartine, Mont Blanc, Meleager, Minna, Ondine, Princess, Alonzo, Ruby, Rosamond, Star, and Symmetry.

Any twelve of the above are fit to compete at any exhibition, metropolitan or provincial. J. Dobson has invariably taken the first prizes at the great metropolitan exhibitions with the sorts herein advertised.

N.B.—Catalogues can be had on application.
Worton Cottage, Isleworth, Middlesex.

HOTHOUSES AND CONSERVATORIES made and fixed complete in all parts of the Kingdom, at a considerable reduction. One, two, and three-light Cucumber and Melon Boxes and Lights of all sizes, kept ready for use, packed, and sent to all parts of the Kingdom; warranted best material. Garden-lights of every description, at JAMES WATTS', Hothouse Builder, Claremont-place, Old Kent-road. Reference may be had to the Nobility, Gentry, and the Trade, in most of the counties in England.

EDWARD BECK, SLATE WORKS, ISLEWORTH.
SLATE CISTERNS, &c.; COLE'S PATENT.

E. BECK informs Horticulturists and the Public generally that Mr. COLE has granted him the use of his Patent for the unexpired term, and he is now able to supply SLATE CISTERNS fastened without iron bolts or the usual oil cement, thereby doing away with the difficulty which has hitherto existed of forwarding such articles by rail or waggon, fixed and ready for use instead of in pieces, as heretofore.

E. B. will be happy to answer any inquiries as to the price of Cisterns, or any other Slate articles manufactured by him, such as Orange Tubs, Plant Boxes, Tanks, Shelves, Garden-path Edging, Hot-water Tank Covers, Flower Boxes for Balconies, Shelves fitted to hold water for Orchidaceous Houses, &c., all of which may be seen in use at Worton Cottage, Isleworth, on application to the Gardener, Sundays excepted.

Estimates given for Work as shown upon Drawings, and in specifications. A large stock of Slate Slabs of all sizes and thicknesses, kept on sale.

N.B.—Dairies fitted either with Shelves or Milk Pans, of very neat appearance.

PIMLICO SLATE WORKS. — Cisterns, Filters, Milk and Salting vessels, Corn and Flour Chests, Sinks, Dairy and Larder Shelves, Malting and other Flooring, Skirting, Refrigerators, Garden Edging, Flower Boxes, Pine pit Linings, Hot-bed Frames, moveable Cattle Sheds, Coping, Drain Stones and Traps, Steps and Risers, Balcony Landings, Roofing Slates, ridge roll and flap; Waste Slate for drains, Sun Dials, Fountains, and all descriptions of plain Slate Work in Town, or direct from Mr. MAGNUS'S Works in North Wales.

ENAMELLED SLATE Chimney-pieces, Billiard Tables, Console and other Table Tops, Mural Tablets, &c., in imitation of marble, surpassing the choicest marbles in beauty and durability, at less than half the cost of the commonest descriptions. Price Lists forwarded on application to Mr. MAGNUS, 39 and 40, Upper Belgrave-place, London.

BAKER'S PHEASANTRY, Beaufort-street, King's-road, Chelsea, by special appointment to her Majesty and H. R. H. Prince Albert.—ORNAMENTAL WATER FOWL, consisting of black and white swans, Egyptian, Canada, China, barnacle, brent, and laughing geese, shieldrakes, pintail, widgeon, summer and winter teal, gadwall, Labrador, shovellers, gold-eyed and dun divers, Carolina ducks, &c., domesticated and pinioned; also Spanish, Cochin China, Malay, Poland, Surrey, and Dorking fowls; white, Japan, pied, and common pea-fowl, and pure China pigs; and at 3, Half-moon-passage, Gracechurch-street.

STATUES, VASES, FOUNTAINS, GARDEN ORNAMENTS, Coats of Arms, and Architectural Embellishments in Imperishable Stone, by VAUGHAN AND CO., 60, Stones-end Borough, London. T. J. CROGGON, late of COADE'S, Superintendent.

The Gardeners' Chronicle.
SATURDAY, JULY 27, 1850.

MEETINGS FOR THE ENSUING WEEK.

WEDNESDAY, July 31—Royal Botanic ..... 3*h* P.M.
COUNTRY SHOWS.—Wednesday, July 31: Glasgow and West of Scotland Horticultural, Derby Midland Horticultural, and Jersey Horticultural.—Friday, Aug. 2: Darlington Horticultural.

WHEN we drew attention, a few weeks since, to the state of BOTANICAL NOMENCLATURE, we suggested that our readers should favour us with their opinions upon the propriety of making some changes in it. We did so, not from entertaining the least doubt as to what the right course is, but for the sake of eliciting such expressions of opinion as would put us in possession of the views of those who are alone interested in the question. So far as mere technical science is concerned, the language of botany is good enough; for botanists understand it. The real question at issue is, whether it is adapted to familiar use? and, if not, whether it cannot be so adapted without any violent interference with usage or scientific convenience? Very few men are or can be professed botanists; multitudes wish for such an acquaintance with botany as an important and highly interesting branch of science demands of the well informed; and there is a very large class of persons whose pursuits compel them to talk in the language peculiar to it. But this language is entirely foreign to English ears and English taste—uncouth, inelegant, and even barbarous. To remedy this, and to place it in such a condition that it may be an object of attraction to the educated multitude, as well as to a few studious philosophers, has for many years been the aim of ourselves and others. Nor has our motive been even limited thus narrowly; on the contrary, we believe that it and other branches of natural history may be made a valuable part of a villager's education; but, if that is to happen, natural history must wear an English dress. If it be of no importance to any one beyond the unlearned that plants should have English names, it is to THEM; and for them, at least, the battle is worth fighting.

Some perception of this necessity has evidently been felt, though unconsciously, even by those among whom are to be found the most uncompromising opponents of an English terminology. *Dicotyledones*, *Exogenæ*, *Cryptogamæ*, have already settled down as Dicotyledons, Exogens, and Cryptogams; just as *Mollusca*, *Pachydermata*, and *Mammalia* have become Mollusks, Pachyderms, and Mammals. Men now talk of Conifers instead of *Coniferæ*, and of Orchids instead of *Orchidaceæ* or *Orchideæ*. It is clear, therefore, that the current of opinion is setting steadily in a better direction; and there is no reason why it should move so slowly.

The view of this question taken by "Nomenclator," p. 421, will probably prove to be the most generally acceptable. In the main he agrees with ourselves; but he pushes his fear of translated names much further. Conceding, as we fully do, that to translate into English the technical names of genera is upon the whole inexpedient as a rule, and to be avoided where possible, we cannot admit that the objection to it rests upon any other ground than that of inconvenience. English compound names are as fit for scientific purposes as Greek and Latin ones; but they cannot form part of that universal language which the convenience of science requires; and therefore they are inadmissible when foreigners have to be communicated with; and moreover, as we have already stated, they entail upon men of science the necessity of remembering two names instead of one, which is inconvenient when some hundred thousand such names have to be recollected. These are weighty reasons, and we admit their force: but we recognise no other reason. "Nomenclator's" translation of MOTH-FACE is surely as agreeable a name as *Phalænopsis*; although MOTH-ORCHIS would have been better; and we see little force in Mr. OWEN's objections, if resting upon no better ground than a bungling *mis*-translation of *Dendrodus* into SHRUB-TOOTH. We may laugh at the absurdity, just as we should at translating *Oncidium cæcum* into BLIND HOOKEY, as a facetious friend suggests; but such follies can form no part of a serious argument. We repeat, then, that we give up the translation of scientific *proper* names, because of the inconvenience, and for no other reason.

That is, however, no reason why we should not employ pure English names wherever we can without incurring that inconvenience; and we decline to acknowledge the propriety of calling a *Quercus* or a *Fagus* by any other name than those of Oak and Beech. *Bellis* must be Daisy, *Delphinium* Larkspur, *Aconitum* Monkshood, *Ranunculus* Crowfoot, *Juglans* Walnut, *Carya* Hickory, and *Taraxacum* Dandelion, as long as the English tongue endures; and foreigners must learn the meaning of such words just as they learn the meaning of other words. It is quite as reasonable for us to say to a foreigner, "you, for *our* convenience, must learn that Willow is the English for *Salix*," as for him to say that we must know *Salix* to be the Latin of Willow for *his* convenience. And since Prof. OWEN's authority has been introduced into the question, we must add that we claim him for a good witness on our own side. Let any one turn over the pages of his beautiful work on fossil reptiles, and see how sedulously he shuns the hard words of technical science wherever he can. He talks of the Gavial, the African Constrictor, Tiger-boa, Sea-snake, and common Snake, and not of *Gavialis Dixoni*, *Python regius*, *Python tigris*, *Hydrophis bicolor*, or *Coluber natrix*. Every one must, we think, desire that he had carried this further—substituting snakestone for ophiolite, and so on.

We remark that one of our correspondents is alarmed lest his Crocuses should degenerate into Crokes, and therefore he would compel people to go on for ever breaking their teeth against the angles of our Græco-Latin compounds. But his fears are groundless; Crocus is a name not likely to be disturbed; and if it were, the change would not be more disastrous than that of Hyacinthuses into Hyacinths. In spite therefore of this warning, we venture to recommend that on all possible occasions the technical proper names of science be adapted to our own tongue, where familiar names do not exist. It will be found an important means of diffusing a taste for natural history, and need not shock the sensibilities of the most tight-laced stickler for scientific formalism. Calycanths are as good as Calycanth*uses*, Hyacinths as Hyacinth*uses*, Perymenes as Perymen*iums*, and Glossocards as Glossocard*ias*.

But while we recommend the abandonment of translations of technical proper names, we must insist upon what is the greatest point of all, the translation, wherever possible, of the adjectives used in the binomial system, and of all adjective terms whatsoever, for which English equivalents can be found. This is however opening a new and perfectly distinct question, for which we must crave a second hearing.

As we have already said, we do not at present see any such symptoms of an approaching POTATO ROT as would justify serious apprehensions. Loss there will be, of course; but we hope to no such extent as will deserve the name of a national calamity. The rumours in the daily papers are certainly to be listened to with caution; yet they are too numerous to be disregarded, especially when connected with the certain knowledge which we do possess of the blight having reappeared.

From the neighbourhood of Paignton a correspondent writes—"I regret to inform you that the Potato disease is rapidly increasing in this neighbourhood; as yet, mine, comprising about 2 acres, are uninfected, but as soon as it appears I have given instructions to have all the stalks pulled up, and the roots earthed up. The year before last I adopted this plan, with alternate rows, as an experiment. When the roots

were taken up two-thirds of the pulled were saved, whilst of the un-pulled two-thirds were rotten." Another from Launceston writes—"The Potato blight appeared in this neighbourhood on the 21st inst., the leaves on isolated patches of the late sorts being blotched and withered, though I cannot discover any disease in the tuber. It is curious that the leaves of an Apple tree and the flower of a Cabbage plant are completely withered in the line of blight which has passed over my Potatoes. The disease cannot be attributed to damp, as the ground is completely parched, and much in want of rain. In the evening, when the dew has fallen, the smell of the Potato blight is very strong in passing near fields where that crop is grown." A third, from Whiteford, sends up decaying tubers, with the melancholy intelligence that in all the low and wet places the disease is making alarming progress. We mentioned, a few weeks since, that mischief was showing itself near Kenmare, and elsewhere in Ireland, and we are now able to add that it has appeared in Westmeath, where much alarm is felt.

We do not, however, believe that as yet the injury is serious, and we have much confidence in the effect of early planting and dry ground. Nevertheless it is to be feared that if the autumn be wet, as is probable, the cultivators of the Potato on a large scale will have once more to sorrow over their folly.

ON THE VINES OF HUNGARY.

From the "Ampélographie Universelle ou Traité des Cépages;" by the Comte Odart; 1849.

In treating of the varieties of Vines cultivated in the kingdom of Hungary, it is proposed to notice, in the first place, those in the vineyards of Hegy-Allya, words signifying the "Foot of the Mountains," the wine from which is sold under the name of Tokay. But the Tokay mountain forms but one of a chain, and produces only a small portion of the wine called Tokay. Those of Mada and Tarczal, where the two best vineyards belonging to the Emperor are situated, not only equal Tokay as regards produce, but they even exceed it. It is erroneous to suppose that the Tokay wine is high-priced on account of its rarity, or that the vineyards which produce it are not larger than that of the Schloss Vougeot, or the small vineyard of Constance. On the contrary, they extend over 60 square miles of surface, or an area of 38,000 acres, and include about the third of the superficies of 34 mountains, situated in the district of Zemplén. Tokay is the first of this chain.

There is, however, a considerable difference in the wines produced even on Tokay itself. Those Vines which grow at an intermediate station on the sides of the mountains affords the best wine. The quality of the produce of the imperial Vines on Mount Tarczal is so excellent that it has received the name of *Mezes-male* or Honey-comb; and this is owing to situation and to the proper combination of the different kinds of Grapes. Tokay is situated in lat. 48°10′.

The Hungarian author Szirmai, of Zirma, enumerates 30 kinds of Vines, and says he knows 60 that are cultivated in the district of Zemplén. I shall, however, notice those only which appeared to me worthy of being introduced to France on account of the influence which they have on the quality of the wine, in the part of the mountains called Hegy-Allya.

The Furmint, to which they sometimes prefix the words *Nagy-Szemü*, large-berried, deserves to be regarded as the principal variety. Furmint is the name by which it is best known in the Hegy-Allya. It bears also that of *Szigethy-Szoello* in the district of Weszprim; of *Zapfner* in the vineyards of Rust and Oedenburg; and the *Mosler Traube* in Styria. The name of Furmint, according to the Hungarian author above cited, comes from *foro minucii*; but the academic society of Debreczin derives it from the region Formiæ, resting doubtless on the passage of Horace: "Mea nec Falernæ temperant vites, neque *Formiani* pocula colles."

This valuable Grape was brought to France in the beginning of the present century by M. Villerase, and cultivated successfully in the vineyards of Béziers; and about the same time, or soon after, it was sent by Gen. Maureilhan into the department of L'Herault. Its cultivation spread rapidly in many localities in the south of France.

Shoots strong, short-jointed, and generally erect, the lower part grey, the upper of a rufous yellow, streaked with brown. Leaves generally entire, sometimes slightly three-lobed, broader across than from base to apex, deep green on the upper side, very downy on the under, with prominent veins. Bunches of medium length, more cylindric than conical. Berries somewhat loose, and very unequal, many being abortive, 6—7-tenths of an inch in diameter. At maturity they are full of a very sweet juice: but the flavour is not such as to render them worthy of esteem for dessert; and I have never seen them employed as such in any part of Hungary. Some berries ripen towards the end of August in the Hérault and Gard, and the whole of the bunches are ripe in the beginning of October; but at the foot of the Hungarian mountains they are only gathered in the end of October, or first week of November. Many of the berries become half dry, somewhat like Raisins, on the plant. M. Baumes ascribes this to the punctures of wasps and bees, for which this variety of Grape has a great attraction. The proportion of these half-dried berries, *trockenbeeren* of the Germans, is from one-fourth to one-third in the canton of St. Gilles, Gard; but it was much less in the vintages where I have assisted in the Hegy-Allya.

There is a variety of Furmint, but it is not so much esteemed as that sort, because none of its berries dry like Raisins. It is called the Madarkas-Furmint, or *Bird Furmint*. It is also known under the name of *Holy-Agos*. The birds, more especially the thrushes, are very fond of this Grape, the berries of which have a honied sweetness.

Fehér-Gohér, or Fejér-Gojer; both are pronounced *Faïr-goïr*, and signifies (Fair-early) *early white*. This is cultivated for an early vintage. Its bunches are long, with oval berries, thinly disposed; they are much better to eat than those of the Furmint.

Hars Levelu, *Lime-tree-leaved*.—The bunches are very long, almost cylindrical, furnished with round berries, the juice of which is very sweet. The wood of this variety is easily recognised in winter by its smooth, red epidermis.

Belafant bears considerable resemblance to the preceding in the general appearance of the bunches. The berries are very round, yellow, thinly set, and so transparent that at their complete maturity one might count the seeds. The shoots are vigorous; leaves entire, thick, very broad, downy beneath, but less so than those of the Furmint.

Fejér Szoello, *White Grape*.—This is cultivated to a considerable extent, perhaps too much so in the Hegy-Allya. It is very fertile, and although the berries do not dry, yet the juice is turned to account for mixing with that of other kinds. It is easily recognised among others by its abundant bloom, the berries appearing as if they had been thickly powdered over. It is prudent to eat this with reserve, for it is very relaxing; it is, however, no great privation to refrain, as its quality as a table fruit is only indifferent. I suspect it is not good for wine, for the common wines are generally bad, and this variety being in greater quantity than all the others, probably a large share of deleterious influence is attributable to it.

Narankas, *Leany-Szoello Nagy-Szemu*, and *Kisseb-Szemu Leany-Szoello*; that is to say, *Raisin des filles à gros grains, et à petit grains*.—These are also very commonly to be met with among the Vines in Hungary. They are vigorous, and produce handsome bunches, with oval berries. The variety with small berries have these of a more yellow colour than those of the Nagy-Szemu. They form but a very small proportion of the Vines cultivated in this region.

Barat-Tzin Szoello. *Raisin couleur de Robe de Moine*. It is also the *Klein Roth Szirifandl* of Rust; and the *Rother Tokayer* of the Rhine districts.—Bunch small; berries round, grizzly, or of a colour between grey and red. Although it is called the Rother Tokayer, red Tokay, I believe it is but little cultivated in the vineyards on that mountain. It is more abundant in those of Rust, in the district of Oedenburgh.

Muscataly, in some districts *Fejér-Denka*.—[This is allowed by various good authors to be the same as the white Frontignan; but the Comte Odart thought it less vigorous than that sort. Berries smaller and not so close. All this, however, may have been owing to the condition of the plant.]

The Muscat wines of Hegy-Allya are very different from those of the south of France. They are highly perfumed, containing much spirit, but they are very dry. The best use that can be made of the Muscataly Grapes is to put a small quantity of them along with the vintage of other varieties, to the wine of which they communicate an agreeable bouquet. There is a red variety of Muscat very common in the vineyards of Magyarath, under the name of

Voros-Denka, *Red Muscat*. It produces an esteemed wine, but not having brought the plants from Hungary, I cannot say whether it is exactly the same as the Muscat rouge. [The latter is the red Frontignan of the English gardens.]

There are some inferior varieties occasionally to be met with, which ought to be extirpated, because of their unfavourable influence on the produce of the sorts already mentioned. Among those which I have observed, I may mention the six following sorts: Peytres Selymes Szoello, the Peter Silien Traube of the Germans, the Parsley-leaved of the English, and the little esteemed Ciotat or Raisin d'Autriche of the French; the Fejér-Gerset; the Kiraly Edes, or Doux Royal; the Sar Dovany; the Demjeny; the Rosas-Szoello, or rose-coloured Grape.

Besides the vineyards of the Hegy-Allya, there are others which have considerable reputation, not only in Hungary but also in Germany. For example, in the district of Bihar they make a white wine, which we find on the best tables of Pesth and Vienna under the name of Bakator, from a wine so called, and which has also the name of *Alfoldy* in the country beyond the Theiss. Berries ovate, frequently elliptic or oblong, yellowish-white, very fleshy, but juicy notwithstanding.

Granat Tzin Bakator is of a granite red, as its name implies. The leaves are much cut, downy beneath. Bunch not large; berries loose, round; their red colour changes to violet at complete maturity; too late for the climate of France.

The district of Komorn, where the remarkable vineyard of Neszmély is situated, near the right bank of the Danube, affords some valuable varieties, at the head of which we ought to place the

Sar-Fejér Szoello.—This does not probably exist in the vineyards of Tokay, because it ripens fully a month earlier than those generally cultivated there; but it is very common, and much esteemed, in the Vineyards situated near the Balaton Lake, in those of Schomlan, Gyon-Gyos, and more especially in those of Neszmély in the district of Komorn. It resembles the Burgundy White Cluster, but the berries are somewhat oblong, and smaller than those of the sort just named.

Hamvas-Szoello, Ash-grey, *Grau-Tokayer* of some Alsaciens. Resembles the Grey Burgundy.

Budai Fejér, at Neszmély; *Weiss Honigler Traube*; *Bela Orkugla Ranka*, early round white; *Fruh Weiss Magdalenen*, of many German vineyards.—Grown in a good soil the wine of this variety is said to rival that of the Muscat, as regards its bouquet and aromatic flavour.

Szold Szoello, green Grape; *Szemendrianer Magyarka*, in the Banat; *Welika Szelena* or *Szelenika*, in Sirmia.—Its berries are very large, oval, of a green colour. The juice is abundant and sweet, but of only moderate flavour. It ripens late, yet it is esteemed, because it resists the autumn rains.

When we have named the *Bela Slakamenka*, the *Bela Kadarkas*, the *Modu* or *Juh Farka*, which is the *Langstaengler* of the Germans, we think the best white wine Grapes have been enumerated.

Black Grapes employed for the Fabrication of Red Wines.—When in Hungary, I preferred the red to the white wines, both as regards the *vins ordinaire* and *vins de liqueur*. They are not, however, equal to our best French wines. The common wines of Hungary are very heating; they will bear no comparison with our Burgundies. I shall only notice one red *vin de liqueur*, the most distinguished of all, although unknown in France. It is a wine produced by the vineyards adjoining a small town called Menes (pronounced Menesch). It is less spirituous than the old Tokay, but richer in bouquet and juice. They make it also in Sirmia, and in the vineyards of Erlaw and Gysrak. As the same varieties of Grapes serve for the fabrication of both the luscious and common red wines, I shall confine myself to the notice of a few of those the most generally esteemed.

The Kadarkas, to which they often prefix *Cerna* or *Fekete*, the former being the Sclavonian and the latter the Hungarian term for black. It is the *Edel Ungarische Traube* of the Germans; and the *Raisin Noir de Scutari* of some. This is the only variety of black Grape which affords dry or raisined berries, *trockenbeeren*, in Germany. In addition to this valuable property, it has others which concur in rendering it worthy of being placed in the first rank. It communicates a fine colour and an agreeable aroma to the wine made from it. The plants grow rapidly and produce the third year; and this natural productiveness is long maintained. In short, if this Vine, from its precocity, is liable to be slightly affected by the late spring frosts, yet its flowers are hardy, and it fails not to yield a crop. The bunches are large, long, cylindrical, rather loose; berries middle-sized, black, ripening early in Hungary. Its leaves are of a deep green above, for the most part entire, but some have the lobes well marked; the undersides are cottony. The vintage of the Kadarkas Grape forms three-fourths of the composition of the Menes wine. The vineyard is situated on the lower part of the promontory of a branch of the Carpathian chain, in the district of Arad. The soil is argillaceous, of a brownish red colour, and mixed with gravel. In some instances the clay is yellowish, and then it contains less gravel.

Torok Goher. *Nagy Szemu Fekete*, *Frühe Turkische*.—The first and third of these are the Hungarian and German words for "early Turkish;" the other signifies "large-berried black." Next to the Kadarkas, this is the most esteemed in the principal vineyards for red wine in Hungary, especially those of Gyon-Gyos. Its leaves are broader, rounder in the outline, and more obtusely dentate, than those of the Kadarkas. The young shoots are reddish brown; bunch conical, loose, shouldered, and not so long as the preceding variety, but the berries are much larger, of a round form, with very succulent and rather coarse flesh.

Purcin, Upper Hungary; *Fekete Vilagos*, in the district of Szalader; *Kleine Schwaze*, of Ofen.—The bunches have generally small cylindrical shoulders; the berries are small, round, and black; the juice is vinous, and of good colour when the Grapes are well ripened, which is the case every year, although rather late. It is much esteemed in the red-wine vineyards.

Czerna Okrugla Ranka, Black Round Early.—This is the same as the *Auvernat Noir*, the *Pinot*, or *Noirien* of Burgundy. This is cultivated more especially in the vineyards of Sirmia and in the Banat. The red wines of the duchy of Sirmia were reckoned the best in Hungary till the middle of the seventeenth century, when their reputation came to be gradually ceded to the wine of Tokay.

Blauer Auguster (*Blue August*). Bunches loose; berries oval, of a bluish black, with long, slender red pedicels.

I have not mentioned the Vines with the produce of which some proprietors compose a detestable imitation of Champagne, the only point of resemblance being that of a sparkling, of short duration. I had some of it both at Pesth and Vienna, and the taste was horrible. The wine was evidently a fabrication by chemical processes. If the Hungarians wish to make sparkling wines at all comparable with genuine Champagne, they must renounce the proceedings of the chemist, and plant the Black Burgundy Grape (*Morillon noir*, or *Pinot*), not entirely at the foot of their mountains, but on the lower parts, and I doubt not that by admitting *no white*

Grape, and with the assistance of a cooper from Rheims, they would insure a degree of success incomparably greater than that resulting from the almost ridiculous attempts which they have hitherto made. [We should suppose many British colonists would profit by this remark.]

DISEASES OF PLANTS.

(*Concluded from p.* 452.)

Genus IX.; *one species.* Mulberry Murrain.—This disease, which in the last 30 years of the last century carried off so many Mulberry trees in Italy, has been designated by so many different names, that I have preferred giving it the general one of *Mulberry murrain*, laying aside those of *Falchetto, Chancre, Mosca, Salvanello, Dropsy, Moria, Seccherella*, &c. Much has been written upon it, and there is not a cultivator or proprietor who is not well instructed on the points necessary for him to know. But with all that, is it at all decided yet what the disease was? Had it any characters to distinguish it from all the diseases enumerated in this Essay, or is it only the last stage of some one of them? As far as my observation goes, many doubts hang over the question. Without staying to endeavour to solve them, I shall proceed to give the characters of the disease, and the method of cure; premising that its ravages were not confined to the Mulberry grounds beyond the Po, but extended also on this side, and as much on the hills and mountains as in the plains.

The trees attacked commence by turning yellow and sickly. Some young shoots at the top curl up and fall off, especially those turned towards the south and the west. This happens in the months of April, May, and June. "If the affected branch be cut, there will be found between the bark and the woody tissue a black line, which runs down to the main branches, and thence through the trunk to its base. In Mulberry trees along ponds it will always descend into the roots, some of which, corresponding with the black line, will be found to be rotten and decomposed." This disease, during which the trees gradually lose their leaves and branches, is more rapidly fatal and more general in old trees than in young ones; it spares, or only attacks tardily, healthy subjects in their age of vigour. Very young plants are also subject to it much more than when full grown. Amongst other symptoms there is also often a raising of the bark.

Some have been of opinion that over repletion was the cause of the disease, and on that account Cattaneo proposed cauteries; others, with Goffi, would remove the rich soil and substitute a dry barren one; whilst others, again, would attribute the malady to a deficiency of nutriment. The annual stripping of the leaves, especially when repeated a second time, bad cultivation, a bad selection of trees, and especially the vicissitudes of seasons (to which last cause I myself incline, observing the effects of spring frosts on the young shoots), have been severally brought forward as giving rise to the disease. Its real origin has not however yet been ascertained. The reader may refer to what the Abbé Bettolini has written on the subject, in his Memoir inserted in the 20th vol. of the "Opuscoli sulle Scienze e sulle Arti" of Milan, and before him by Dr. Moro, in a paper contained in the 17th vol. of the same collection.

The following are the remedies to be tried for this disease, besides the general preventives derived from good cultivation. The first thing is to ascertain how far the black line descends, and to cut out to the pith all that portion of substance which is tinged with black or brown. The wound should then be filled up with a mixture of cow-dung and clay. This operation should be performed at the end of summer or in the commencement of spring. I prefer this method to all the aspersions with different mixtures which have been proposed, and bear more or less the stamp of quackery. The second course proposed is to cut off the branches or stem as far as the canker appears, or even below it, and to graft the stump in spring. In choosing the grafts, care must be taken to select vigorous ones, and from trees free from the disease. I believe that this or some analogous disease has at various times attacked the Mulberries in Italy. I will leave to those who have more experience to decide the question, whether, as Alberti, Bettoni, and the greater number of authors maintain, wherever a Mulberry tree has died, whatever be the cause of death, no other Mulberry tree will grow, or whether Bettolini is right in denying it. It is true that cultivators in whom one cannot refuse placing some reliance, and all practical men with whom I have spoken on the subject, join in affirming the point.

From the few observations consigned in the present essay, it will be seen how useful may be the study of diseases of plants, founded, however, chiefly on actual observation. I will, therefore, now conclude, by imploring natural philosophers to devote themselves to the subject, not disdaining to call to their assistance practical agriculturists, who, amidst their numerous prejudices, are likely nevertheless to contribute facts which may lead us to ascertain useful truths. The amateur of rural matters who glances over these pages, will often see reason to be convinced of the necessity of preventing evils which though ascribed to climate and meteoric influence, are often the necessary consequence of our ignorance, obstinacy, and idleness.

VILLA AND SUBURBAN GARDENING.

That long-neglected, but in their way really beautiful tribe of plants, called Alpines, deserves the attention of the amateur botanist. The study they afford is extremely interesting and instructive. Gaudy flowers may catch the vulgar eye, but a more refined taste will find in these lowly inhabitants of the hill-side an endless fund of pleasure. Than these no class of plants is so peculiarly eligible for small gardens; they occupy so very little space; a vast number of them may be shown to advantage on rockwork; some few, however, require and deserve to be protected from the winter; not that frost kills them, but they are apt to damp off on account of the humidity of our atmosphere. The native habitats of great numbers of them are on elevated masses of rock, where no stagnation of moisture can exist; they are sometimes found rooted into the crevices of huge blocks of stone, and apparently existing upon the moisture they derive from them; others, as on the Alps, for instance, are covered, and consequently protected from the severity of winter, for six months in the year, by a snowy mantle. These circumstances, therefore, increase the difficulty of keeping alive many of the rare species when transplanted on our rockworks or consigned to the pot in our humid and variable climate.

In order to preserve these interesting plants in health, it is necessary to plant them in poor and dry soil, perfectly drained; the latter item is absolutely necessary with all that are difficult to keep. Numbers of them are found in places where the sun's rays scarcely ever reach; analogous situations must therefore be selected, for such kinds. In preparing rockwork for them, instead of piling up a heap of rich mould, on which fragments of stone are to be placed, I would suggest the propriety of using brick rubbish, or the refuse of old buildings, materials which will allow the rains readily to escape, thus securing a dry and healthy foundation for them. Some prefer cultivating them in pots; and for their proper and better management a pit, with a north aspect, is provided for them, and a very interesting part of the garden it constitutes; for at all seasons some of the kinds are to be found in flower. In potting, great care must be paid to the kind of soil employed with those which are difficult to cultivate. Under such circumstances the drainage may occupy three-parts of the pot; the surface, in all cases, should be covered with a thin layer of coarse sand. It must not be inferred, from what I have said, that gardening skill cannot be brought to bear upon Alpines. The contrary is the fact; for with care and attention no tribe of plants will prove of greater beauty or yield more interest; the cultivator must not, however, apply strong and powerful stimulants; he must rather attend to the nature and habits of the plants individually, and by such careful supervision select proper situations for their growth, and increase the richness of the soil only as sound judgment may warrant, and the case will admit. *Pharo.*

Home Correspondence.

Summer Pruning.—I observe in page 421 an article by Mr. Lovell, avowedly on the summer pruning of the Vine, but really on that of the Peach, and I am of opinion that his remarks should not be allowed to pass unnoticed. He criticises unadvisedly some sensible and practical directions given in your Calendar of Operations for June 22. I hope, however, to show the writer of the Calendar that his directions are clear and intelligible, and duly appreciated by some, however much misapprehended by others. I am further induced to express my coincidence with the ideas of the Calendar writer, as I have seen the system practised successfully by parties whose names would at once stamp it as deserving attention; besides which, my own practical experience has convinced me of its correctness. I must first briefly point out the inapplicability of the Vine and its management, as a general rule, for that of all other fruit trees, and particularly the Peach and Nectarines. This will be seen by considering what is the object aimed at in Vine cultivation, with a view to obtain the desired fertility. Is it not that the wood be of the strongest and most luxuriant growth that can be ripened by sun and air? And as the heaviest bunches and largest berries are produced upon such shoots, it is important that the plant be stimulated by artificial means at root, and that the branches be weakened by stopping as little as possible. Now let us turn to the Peach, and note the difference. It is well known that this fruit and its congeners grow much too gross, even in ordinary soils, without being stimulated; and the moderately weak shoots produce fruit in the greatest abundance. Thus, when compared with the Vine, the case is just *vice versa*, and the course of treatment pursued must differ accordingly. In the management of the Peach, so as to secure fertility, a healthy, moderate growth must be secured, and everything like grossness must be carefully checked, by pinching the shoots at top, and by pruning the roots at bottom. A tree which has grown immoderately strong, during the previous year, should be moderately pruned at the roots in autumn, so as to induce a less exuberant growth in spring, taking care of course not to prune too hard. But winter pruning, though useful to a certain extent, is rarely sufficient; in many soils and situations the roots re-establish themselves so quickly as to make the tree grow too luxuriantly during summer, and to continue growing too late in autumn. These are facts well known, and those who have not found a remedy may thank the writer of the Calendar, and the writer of the Leading Article in your Number for July 6th, for bringing the methods of stopping and summer root pruning before their notice; and those who are already aware of the excellences of these practices, will do well to add their testimony in support of them. To return to the Peach: when the winter root pruning has been omitted, or has not been severe enough to prevent the production of shoots in spring, too strong to be fruitful, it is an excellent practice to stop the strongest of these shoots as soon as they have made five or six leaves, in order that a second series of shoots may be produced, less strong than the first ones; and that by thus equalising the flow of sap, all the shoots on the same tree may be brought more on a par one with another. When the habit of the tree is very gross, it is necessary to repeat the process more than once, with a view to produce healthy bearing wood. With our short summers and wet autumns, it becomes absolutely necessary, in very many situations, to stop the shoots after they have attained to a certain length, in order that the wood may be thoroughly ripened, and the energies of the tree directed to the formation of blossom-buds. And here, also, I must express my coincidence with the practice recommended June 22, of leaving a lateral at the point to secure an escape for the superabundant sap. But when the trees are very luxuriant they are liable, when stopped in summer, to expand too many of their buds in the production of laterals, and to prevent this it is an excellent practice to prune the roots simultaneously with the last-mentioned stopping of the shoots. *Lumbricus, Salop.* [We perfectly agree with the writer of this letter. The Calendar is right, as it always is in matters of practice.]——Permit me to say that Mr. Toogood's letter has occasioned me regret on two points; first, because he was angry when he wrote it; and secondly, because he failed to understand the principles, or rather the application of principles, alluded to in my former communication. He has wholly misinterpreted my views, and has drawn inferences such as I never dreamt of. My object was to elicit the views of practical men as to the connection between the head and root of a plant under certain stated conditions. He will understand that it is a physiological question bearing directly upon practical horticulture. If he has watched the horticultural press during the last few seasons he will not be at a loss to discover why I introduced the question. Mr. Toogood is somewhat singular in his mode of drawing inferences, in the present instance they are directly opposed to what was intended. But possibly the construction of my sentences led to the confusion. I must beg to add that I am an advocate for summer pruning as far as practicable, that I—but I need not say more. *George Lovell.*

Botanical Nomenclature.—It would certainly be a great advantage to persons who are fond of horticulture, if the names of plants could be simplified. Many who have not had opportunities of keeping up their Latin and Greek, are sadly puzzled to comprehend the curious compounds of both languages used in christening the ornaments of our gardens and conservatories. To accuse a man of pedantry because he wishes to retain the present system of botanic freemasonry—or to call his neighbour misty in intellect, because he is an advocate for attempting to render plant names more intelligible, and easier to be remembered—are equally absurd. If it could be done without deranging a whole system, I should certainly give my vote for an alteration in the nomenclature of the plant tribe; yet there are so many difficulties to contend with, it will be almost an impossibility to accomplish any satisfactory change. Was botany confined to a certain district inhabited by individuals speaking the same language, by common consent, particular terms might be substituted for others without causing any great inconvenience; but where the science is universal a tongue must be used which is pretty generally known to all nations professing civilisation. The error seems to be in concocting the most excruciating names, partly from the Latin dictionary, and partly from the Greek lexicon; this is what makes modest men afraid of taking up a delightful study, as they do not wish to become ridiculous by uttering half a dozen false quantities in as many minutes. When even men of education are astounded at the length and breadth of plant language, what must be the case with the usual class of respectable gardeners, men who have some difficulty in compassing their mother tongue? *Falcon.*

Cocoa-nut Sugar.—Ceylon newspapers mention a new source of sugar, as likely to be of importance to that colony. The sugar is obtained by cutting off the Cocoa-nut flower stem, attaching a vessel to it, and evaporating the liquid; it flows over in quantities so great as to be almost incredible, and I have seen samples of the sugar equal to anything ever obtained from the sugar-cane, and produced in such abundance from a tree as to promise immense returns yearly to the owner of it. Would you kindly state your opinion as to the chances of a tree so bled, living in health for any length of time. A Cocoa-nut tree comes to full bearing in seven years, and will continue in vigour for 70 to 100 years in Ceylon, producing from 100 to 300 nuts yearly. I should imagine a tree so tapped would live but a very few years. *J. Mackenzie, M.D., Inverness.* [We do not think that Cocoa-nut trees thus *drained* of their blood, will long remain in health. They will, however, endure tapping in moderation.]

Effect of last Winter on the common Laurel.—In one of the gentlemen's pleasure-grounds where I have attended lately, it was painful to observe the manner in which the common Laurel had suffered from the late severe winter. Those under trees and most sheltered were entirely denuded; and, after inquiring of all the gardeners in the locality, I am unable to learn why they

should have suffered beyond those in open exposures, unless the following is a parallel case, taken from the second volume of White's "Natural History of Selborne," page 90 :—"It was in such an aspect that the snow on the author's evergreens was melted every day, and frozen intensely every night, so that the Laurestines, Bays, Laurels, and Arbutuses, looked in three or four days as if they had been burnt in the fire ; while a neighbour's plantation of the same kind, in a high cold situation, where the snow was never melted at all, remained uninjured. From hence I would infer that it is the repeated melting and freezing of the snow that is so fatal to vegetation, rather than the severity of the cold ; therefore it highly behoves every planter, who wishes to escape the cruel mortification of losing in a few days the labour and hope of years, to bestir himself on such emergencies ; and, if his plantations are small, to avail himself of mats, cloths, Pea-haulm, straw, reeds, or any such covering, for a short time ; or, if his shrubberies are extensive, to see that his people go about with prongs and forks, and carefully dislodge the snow from the boughs, since the naked foliage will shift much better for itself than where the snow is partly melted and frozen again." Should any of your readers be able to give a different version of the case, so as to clear up the difficulty, it will be a great boon to landscape gardening. *W. Thorold, Thorpe Bower, near Norwich, July* 20.

House for Succulents.—I have in course of erection a small greenhouse, 12 feet long by about 8 feet wide, intended for the growing of Cacti generally, and also other succulents. Now it has occurred to me that, if all the plants were to be planted out into an ornamental kind of rockwork, it would look much more pleasing, as well as perhaps be better for the plants; but against this there appears to be two objections,—1st, would there not be a greater quantity of insects collected together? and if so, would they not be more difficult to exterminate? and 2d, as to heating. For more reasons than one I could only have it heated with a brick stove placed inside (door to furnace also inside), and a flue from the fire-place along the back of the house. I thought of having over the flue a wood or slate or tile covering, 6 inches or more from the flue each way, and from this three openings into the house hid in the rockwork to convey the heated air into the house from the aperture around the flue; the question then comes whether the earth would not have too great a bottom-heat, and the air of the house too low a temperature (of course the air-drains and flue would be hid altogether by the earth and rockwork). The idea first suggested itself to me from observing a few of the Cacti planted out into a sort of pit in the Cactus house at Kew in a kind of semi natural state, which I think can or might be greatly improved on in private establishments where the responsibility attendant upon failure could only rest with the possessor. *A Subscriber, July* 23. [We should plant the Cacti out in the manner you propose, with no fear of the result, unless from the want of sufficient heat in winter in the front of the house. Insects may be troublesome ; but if the plants are clean when planted out, there is no reason why they should become foul afterwards.]

The Effect of the Steam-kiln on the larvæ of the Limexylon navale in the Italian Oak timber, has been very satisfactory—they are all destroyed, even in the centre of the wood, and have the appearance of short pieces of catgut. The thickness of the wood was 10 inches. *T. S. P., Pembroke Dockyard.*

Purification of Water.—Will "A Friend to Pure Water" add to his kindness, by informing me whether he has ever seen his plan tried? For I could get subscriptions far more readily, if I could assert, from experience, that the plan would succeed. I at first thought of a tank under the pond, as now proposed, but gave it up, for fear of causing the pond to leak ; in this district there is an universal belief that it is most dangerous to meddle with the bottom of ponds over the chalk. Has the writer ever known any instance of a filter permanently under water acting efficiently? Several considerations make me believe that, as far as organic matter is concerned, the aeration of the filtering materials is an important element in their purifying action. There are three other points on which I am anxious for information : is not some contrivance necessary for the escape of the air when the tank is first filled? Why would not a tank holding only 500 or 600 gallons do as well as one holding the proposed 3000 gallons? Do I understand rightly that it is proposed that one filtering stone should be placed directly over another, both being let into the dome of the tank; and, if so, what interspace should there be between the two stones? I trust that "A Friend to Pure Water," or any one else who has experience in this matter, will not think the number of my questions unreasonable, in consideration of the public benefit it would be to the numerous villages situated like ours, and the probability that subscriptions might be procured elsewhere to erect such a filter, if success were certain. *C. D.*

Answers to the Puzzle.—The Yew tree—U. *J. C. L.* ——Ivy. *G. T.*

Water Melons.—The Water-melon might be successfully cultivated in this country ; it is so at St. Petersburgh, where the summer is shorter and colder than in England. The Water-melon is a very handsome fruit, may be eaten in considerable quantity without danger, and is particularly agreeable in sultry weather. Indeed, many years ago it was brought to perfection in an English garden, though much less care had been bestowed upon it than is usually taken for the Melon. There are two distinct varieties of the Water-melon ; the one of these, having white or mottled seeds, is quite insipid, juiceless, and fit only for mixing with other fruits in the composition of *cotignac*, the use made of it in the south of France. The seeds of the other variety are uniformly black, and this it is which is cultivated for the table ; is juicy, of pleasant flavour, and particularly grateful in hot weather. Cotignac, strictly speaking, is the Quince preserved in the inspissated juice of the Grape ; but the Quince being a high-priced fruit, its place is often in great part supplied by Apples, Water-melons, or any other fruit that happens to abound in the Grape season. It seems probable that some such composition as Cotignac was the preserve allowed by the Romans to their agricultural slaves in addition to bread for their winter fare. The Water-melon requires great depth of soil ; 2 feet of good rich garden mould was the usual depth of beds for it at St. Petersburgh. *B.*

Exhibition of 1851 : *Garden Pots.*—A hint for the improvement of garden pots may be taken from some that are manufactured in the neighbourhood of Montpellier. Those of small sizes in ordinary use there nowise differ from the common garden pots of this country, but large ones for Orange trees are always glazed ; so, likewise, are small ones, where extraordinary neatness and cleanliness are desired. Sometimes the glaze is of various colours, or in imitation of marbles, but usually of a bright but rather dark grass green ; this colour seemed to harmonise better than any other with the generality of plants, whether in flower or in leaf only. The price of good unglazed garden pots being about the same at Montpellier as near London, green glazed ones were furnished at about the double of that price. Orange trees : these are usually planted, not in tubs, but in pots, some of which are made up to as much as 2 feet diameter, and when of great size are charged 6*s.*, 8*s.*, or 10*s.* a pot, or even more ; they wear well, not being liable to crack, or for the glaze to scale off. The shape of large pots is always that of some antique vase, and of more or less graceful form according to the taste of the potter ; 8, 10, and 12-inch pots are frequently vase-shaped, so also are some few of small size, for such plants as the Chinese Primrose, and these are very ornamental. One nurseryman at Montpellier had some garden pots made without any bottom, but strengthened by an external bottom rim, the same as at top. He employed them for rearing till in flower Anemones, Ranunculus, and annuals, to be afterwards transferred to China vases for the decoration of drawing-rooms. In the nursery a flat tile supplied the place of a bottom to the pot. Similar bottomless pots were also useful as protection to plants when first bedded out in spring, as also for shading annuals sown in the open ground. The same nurseryman had a useful tool for taking up plants for transplantation ; it was a kind of trowel, but forming a complete cylinder. This tool he pressed perpendicularly into the ground surrounding the plant to be removed, gave the cylinder more or less of a quick turn, and brought up the plant without derangement of the mould surrounding its roots. *B.*

Quantity of Rain Measured in Pembroke Dockyard from January to June inclusive.—

1850.	Gauge 42 ft. 6 in. above the ground.	Gauge 5 feet from the ground.	Thermometer. Max.	Min.
January	2.083	1.964	51 —	21
February	2.146	1.414	53 —	33
March	.667	.813	58 —	22
Melted Snow	.044	.065		
April	3.261	3.070	58 —	34
May	1.586	1.515	68 —	33
June	.755	.661	80 —	43
	10.542	9.502		

Mean of the two, 10.022 inches.

T. S. P., July 19.

Mural Gardening : Hardy Plants for a Wall.—

Cheiranthus fruticulosus	Diplotaxis tenuifolia
Sedum Telephium	Arabis saxatilis
Sempervivum tectorum	Asplenium Ruta-muraria
Antirrhinum majus	Linaria repens
Asperula odorata	Hieracium Pilosella
Disandra prostrata	Vinca minor
Lysimachia nummularia	Saxifraga nivalis
Plumbago Larpentæ	,, oppositifolia
Mimulus moschatus	Sedum Sieboldii

J. R.

Cape Amaryllids.—In the *Chronicle* of July 28, 1849, I observed a communication from Mr. Beaton on the crossing of certain kinds of these plants. I formerly had a great fancy for Amaryllids, but I have lost the greater part of my interest in them since the death of Dean Herbert, as I now know no person having a like interest to whom I can communicate my results. I have tried several of the experiments which your correspondent wishes to try, and perhaps he may like to know the success I met with. I do not think the fleshy-seeded Amaryllidaceæ are generally good subjects for the labours of the hybridist, because he must stop (in general) with the first cross, the mules being almost always barren. I also believe that certain Crinums are capable of bearing seed without true impregnation, and few things are more disgusting than to wait seven or eight years, and then to find out that you have only raised a pure plant. I am quite convinced that in many instances when I applied the pollen of Hæmanthus, Amaryllis, Nerine, Ammorchari, and Brunsvigia to the stigmas of a certain plant of Crinum pedunculatum that there was no other plant of Crinum in flower for several miles, and that I extracted all the anthers for several days before the expansion of the flower, yet of the hundreds of seeds I obtained, none produced anything but pure C. pedunculatum. I obtained abundance of seed from Cyrtanthus obliquus by Vallota purpurea, but could never make it vegetate. I could never obtain seed in the reverse manner. I imagine that the raising, in England, of crosses between the Amaryllises is about as unpromising a task as any experimentalist could undertake. In Herbert's "Amaryllidaceæ," p. 278, mention is made of some seedlings raised from Amaryllis blanda by A. Josephiniana. In 1843 Mr. Herbert had the kindness to give me one of these bulbs, which was then, he told me, 20 years old, and was not so big as a goose's egg. It would not, in all probability, have flowered in England in 20 years more ; in a more suitable climate, such as that of my present residence, it would probably have flowered in four years, but it was destroyed by accident. I never saw A. blanda in flower, and now only possess two seedling bulbs, given to me by Mr. Herbert, which are expected to flower this season. (If I get any pollen I will send some to Mr. Beaton to impregnate Belladonna with.) If it should flower, I will repeat Mr. Herbert's experiment, and also raise crosses between it and Belladonna. I raised, in Feb. 1841, a vast number of seedlings from Belladonna, by Josephinæ, and by Brunsvigia multiflora. Belladonna bears many more seeds when impregnated by either of these plants than when naturally impregnated, but the seeds are much smaller. These seedlings flowered for the first time in March 1847, and are extremely beautiful. Their colour is generally like that of Passiflora Kermesina, but it varies in different specimens, and many are blotched with white—from 20 to 40 on a scape. The shape varies greatly, the crosses by B. multiflora being generally wider in the segments than the others, and of a better figure, shorter and more ringent. The germen does not seem to contain any ovules, and the anthers are without pollen. Leaves varying in width from 1 to 4 inches, but always glaucous. I could never keep the seedlings alive which I raised from Josephinæ, by Belladonna, and the one is produced very sparingly. In 1847 I saw a pot containing about 300 seeds of B. multiflora, by Belladonna, but not more than 20 of them germinated, the germen being in the others entirely deficient ; the after history of these is lost to me, but I believe that the bulbs are still living. I also raised (as I thought) in 1841, some seedlings from Belladonna, by Hæmanthus coccineus, and at the present moment I have one anomalous looking plant, expected to flower this season, which may be one of these. I believe that crosses may be easily obtained, in the proper climates, between any of the plants of the genus Amaryllis, and the false (as I consider them), genera Brunsvigia, Buphane, and Ammocharis. I believe that I have raised crosses on Belladonna by all of them. I am more doubtful about Nerine, although I do not see any positive characters distinguishing it from Brunsvigia. What has most surprised me in trying to cross these plants, is that I could never get a cross between Lycoris and Nerine, although they are so very much alike in almost everything except the stigma. *J. C. B., New South Wales.*

Crops in the North of Scotland.—Potatoes are quite free from disease in this locality. All crops are of average quality ; but Grass is sadly burned up. Peruvian Barley is almost fit to cut. *J. Mackenzie, M.D., Inverness.*

Vitality of Pollen.—I think Mr. Beaton is rather too sanguine about the possibility of preserving pollen for any great length of time. I have tried great numbers of experiments on the subject, and the result I have obtained is that hardly any pollen of Exogens retains its vitality after having become thoroughly dry. The pollen of Endogens appears to retain its powers of fertilisation for a considerable time, yet I have never succeeded in preserving the pollen of Amaryllis or Crinum from one season to another, even when kept so perfectly dry as not to have been in the least mouldy ; I have found these two genera to retain their vitality for more than three months. I have never found dry pollen of Iridaceæ efficacious, with the single exception of Gladiolus roseus, by pollen of which, two months old, I have procured one on G. blandus. The pollen of Lilies cannot be kept at all, it *will* mould. It would take up too much of your space to name all the genera of Exogens on which I have experimented, but the only case in which I met with doubtful success (the plants died) was in the genus Melianthus. I never had an opportunity of trying any experiments with Rhododendron, and it is very possible that the peculiar condition of its pollen may render it an exception to the general rule. The best method I have found of preserving pollen is to place the anthers in paper, and the papers in a little tin box, with a closely fitting lid, along with a piece of flannel which should be thoroughly dried before the fire every time the box is opened. *J. C. B.*

Societies.

CALEDONIAN HORTICULTURAL, *July* 6.—At this, the extra summer competition, the following prizes were awarded. Fuchsias (dark and light) : 1st, Mr. Walker, gr. to J. Mood, Esq., for Dr. Jephson and Lord Sandon ; 2d, Mr. Gordon, gr. to Captain Williams, for Scarletina reflexa and Elizabeth. Orchids : 1st, Mr. Thomson, gr. to Dr. Neill, for Cyrtochilum maculatum and Aerides crispum. Pelargoniums : 1st, Mr. Cameron, gr. to S. Hay, Esq., for Forget-me-Not, King of Saxony, Negress, Sir Walter Scott, Centurion, and Nestor. Fancies : ditto, Queen Victoria, Maid of Anjou, and

Mazeppa Superb. Scarlets: ditto, Tom Thumb and Queen Victoria. Dwarf Lobelias: 1st, Mr. Pender, gr. to D. Anderson, Esq., for L. Erinus compacta and alba. Pinks: 1st, Mr. Henderson, gr. to C. K. Sivewright, Esq., for Harriet, Goliah, Whipper-in, Twyford Rival, Morning Star, Lady Mildmay, Lord John Russell, Diana, Jenny Lind, Laura, Robison, and Double X.; 2d, Mr. White, gr. to J. Russell, Esq., for Lady Teazle, Queen Victoria, Oxoniensis, Lord Brougham, Whipper-in, Prince Albert, Pilot, Criterion, Laura, Henry Steers, Mary Ann, and Alfred Morrison. Highest flavoured Strawberry, of recent introduction: 1st, Mr. Lauder, for Malcolm's Aberdeenshire. Cherries: 1st, Mr. King, for Mayduke; 2d, Mr. Thomson, gr. to Captain Falconer, for the same variety. Messrs. J. Dickson and Sons' prize for Moss, Provins, French, Perpetual, China, and Bourbon Roses, was awarded to Mr. Sleigh, gr. to the Lord Advocate, for *Moss*, Common, Louise Collet, Princess Royal, and Laneii; *Provins*, Duchess of Kent, Devigne, La Sylphide, and Common; *French*, Grandissima, Belle Rosine, Surpassetout, and Julie d'Etanges; *Perpetual*, Comte de Montalivet, Duchess of Sutherland, Géant de Batailles, and Comtesse Duchatel; *Hybrid China*, Victor Hugo, Chênedollé, Henri Barbet, and General Jacqueminot; *Bourbons*, Jaune Abricote, Madame Rousseil, Dupetit Thouars, and Bougere. Messrs. Dicksons and Co. exhibited a collection of Exotic plants, including many of the newest and finest Pelargoniums, with Chœnostoma polyanthum, &c.; also boxes of Pelargonium blooms, Pansies, Pinks, and Roses. Messrs. Dickson and Sons likewise sent a collection of Greenhouse Plants, with Gloxinia carminata splendens, and 80 varieties of cut Roses. Messrs. P. Lawson and Son showed Roses, and a collection of plants, including well flowered Balsams. There was also a display of Roses from Mr. Handasyde, and a stand of Pansies, in which were blooms of his seedling variety, Duke of Perth. Mr. Kelly sent Verbenas, Fuchsias, and Petunias; and Mr. Stark, Cantua bicolor, in flower, and other greenhouse plants, Alpines, &c. From Messrs. Downie and Laird came Dielytra spectabilis, Fuchsia Sir John Falstaff, Phloxes and Pinks; and from Mr. Methven, fancy and other Pelargoniums, Adamia versicolor, with blooms of Roses; from Messrs. Ballantyne and Son, Roses with Pansies and Sweet Williams; from Mr. Mackintosh, Roses; and from Mr. Spary, blooms of his new double Pansy. Dr. Neill sent specimens of Onciuium pulvinatum, Francoa ramosa, and Alpines, including a double flowered variety of Sagina procumbens, the smallest double flowered plant known. Professor Dunbar produced Heaths; I. Anderson, Esq., Pentstemon heterophyllum; S. Hay, Esq., Pelargoniums, and Kalosanthes coccinea; Miss Hope, a double flowered Pelargonium; J. Edmond, Esq., Seedling Pinks, and berries of a new and large fruited variety of Red Currant; Mr. W. Cuthbertson, Roses; Mr. W. Ferguson, Roses and Ranunculuses; Mr. Reid, Ranunculuses; — Roughead, Esq., cut flowers; Mr. Aitken, Antirrhinums; J. Mood, Esq, Fuchsias; Mr. W. M'Auslane, Roses, Antirrhinums, and Stocks; Mr. Nicoll, Pelargoniums, Roses, and Ranunculuses; Mr. Forrester, Antirrhinums; Mr. Todd, Scotch Roses; and W. Pattison, Esq., Pansies and Calceolarias. Among plants from the Society's Garden was a Veronica salicifolia, 3 feet in height, 8 feet 9 inches in circumference, and bearing 520 spikes of flowers.

Botanical of London, *July* 5.—J. H. Wilson, Esq., in the chair. J. P. Norman, Esq., and T. Dutton, Esq., were elected members. Mr. Maw exhibited specimens of Lilium pyrenaicum, discovered by him between South Molton and Mollond, Devonshire, in June last. Dr. Hassall read a paper, "On the Colouration of the Water of the Serpentine." In this communication it was shown that the periodical and vivid green colouration of the water of the Serpentine is due to the presence of a minute plant belonging to the tribe of Algæ, of which the writer gave a detailed and critical description, and which he named Corriophytum Thompsoni. The development of this plant takes place early in the spring, out of sight, and at the bottom of the water, and it is only on the approach of the warm weather of summer that it diffuses itself through the water, deeply colouring it, and that part of it rises to the surface, forming a scum or pellicle of a bright æruginous or coppery green colour. The whole of the water of the Serpentine is not usually coloured at one time, but different portions of it at different times, according to the strength and direction of the wind, which drives the plant before it. At one time it is found collected at the Hyde-park extremity; at another it is present in the Kensington division, sometimes on the north and at others on the south shore; the remaining parts of the Serpentine being entirely free from the plant. This variable distribution which, unexplained, would be apt to occasion surprise, accounts for the fact that the observer may sometimes visit the Serpentine and not see a trace of the plant in question, and hence he might be led to form an erroneous conclusion as to the condition of the water. Considered in a sanitary point of view, Dr. Hassall is of opinion that the plant when actually introduced into the system, as when swallowed in bathing, would not be productive of effects injurious to health, but regards it as a test of impurity, and as an evidence of the very bad condition in which the water of the Serpentine now undoubtedly is. Dr. Hassall concluded the communication by observing that the colouration of large pieces of water by means of Confervæ is by no means unfrequent, and cited, as a remarkable instance of it, the Red Sea, which owes its name and colour to the presence of a minute plant diffused through the water, of a blood-red colour.

Royal South London Floricultural, *July* 23.—This Society held its fourth exhibition for the season in the Surrey Zoological Gardens, on Tuesday last. The afternoon was unfavourable, and there was but a thin attendance. The Show itself was a good one. Stove and Greenhouse Plants were plentifully contributed by Messrs. Cole, Frazer, Bruce, Pamplin, Stanly, and Young. Cape Heaths by Messrs. Rollisson, Fairbairn, Frazer, Cole, Bruce and Dennett. Fuchsias by Messrs. Shuckford, Harding, Frazer, and others. Cut Roses by Messrs. Paul and Francis; and there was some good fruit. Carnations and Picotees were good, and shown in great numbers. The competition in some of the classes was spirited, requiring very close scrutiny on the part of the judges to distinguish the winning stands. The following is a list of the awards. Picotees, Amateurs, 12 blooms: 1st, M. May, Esq., for Cleopatra (May), Ophelia (May), Isabella (Wildman), Prince Albert (Marris), Ernestine (Turner), Prince of Wales (Marris), Juliet (May), Portia (May), Viola (May), King James (Headley), Mrs. Barnard (Barnard), Bianca (May); 2d, C. Lockner, Esq., for Goliah, Lady H. Moore, Mrs. Trahar, Gem, Hon. E. Annesley, Queen Victoria, Mrs. Barnard, Isabella, Juliet, Venus, Amy, and Formosa; 3d, Mr. Reeves, for Fanny, Augusta, Queen Victoria, Mrs. Bevan, Princess Royal, Enchantress, Lord Douro, Isabella, Regina (Cox), Cornelius, Mrs. Barnard, and President; 4th, J. Edwards, Esq., for Lord Hardinge, Mrs. Bevan, Prince Albert, Princess Royal, Lady Alice Peel, Miss Edwards, Duke of Newcastle, Mrs. Barnard, King James, Regina, Enchantress, and Venus; 5th, Mr. Ellis, for Princess Augusta of Cambridge, Princess Royal, Privateer, Gem, Duchess of Cambridge, Regina, Beauty (Burroughes), Jenny Lind, Juliet, Delicata, King James, and President. Nurserymen: 1st, Mr. C. Turner, for Prince of Wales (Marris), Prince Albert (Marris), Gem (Youell), Lorina (Burroughes), Cleopatra (May), Goliah, Mrs. Barnard (Barnard), Princess Royal (Willmer), Venus (Headley), Queen Victoria (Green), Juliet (May), and Mary (Dodwell); 2d, Mr. Norman, for Mrs. Norman, James II., Mrs. B. Norman, Lord Nelson, Delicata, Duke of Newcastle, Mrs. Barnard, Venus, Lady Dacre, Prince of Wales, King of Purples, and Gem; 3d, Mr. Ward, for Mrs. Bevan, Princess Royal, Prince Albert, Duchess of Bedford, L'Elegante, Juliet, Gem, Lorina, Mrs. Barnard, Venus, Regina, and Delicata; 4th, Mr. Bragg, for Gem, Sebastian, Lady Dacre, Prince of Wales, Hon. E. Annesley, Smilax, Queen Victoria (Green), Lady Alice Peel, Mrs. Barnard, Juliet, Enchantress, and Venus; 5th, Mr. Keynes, and an extra prize was awarded to Mr. Willmer. Carnations, Amateurs, 12 blooms: 1st, Mr. Reeves, for Princess Royal, Rainbow, Brutus, Prince Albert, Grenadier, Flora's Garland, Defiance (Sharp), Paul Pry, Wm. Cobbett, Mary Ann, Georgiana, and Conquering Hero; 2d, M. May, Esq., for Bardolph (May), Coriolanus (May), Antonio (May), Somerset May), Duncan (May), Lorenzo (May), Beauty of Woodhouse (Mansley), Falconbridge (May), Queen Victoria (Simpson), Romeo (May), Bolingbroke (May), and Justice Shallow (May); 3d, Mr. Edwards, for Prince Albert (Hale), Hotspur, Rainbow, Lady of the Lake, Solander, Harriet, Sarah Payne, Beauty of Woodhouse, Lydia, True Briton, Flora's Garland, and Admiral Curzon; 4th, Mr. Ellis, for Ariel, William the Fourth, Flora's Garland, Chance, Georgiana, Squire Meynell, Prince Albert, Hero of Middlesex, Lord Pollington, Beauty of Brighouse, Lady Gardner, and Harriet; 5th, Mr. Newhall, for Prince Albert, Flora's Garland, Lord Byron, Georgiana, Dido, Beauty of Woodhouse, Pauline, Lovely Ann, Princess, Regular, and Beauty of Brighouse. Nurserymen: 1st, Mr. C. Turner, for Admiral Curzon (Easom), Flora's Garland (Brooks), Princess Royal (Puxley), Brutus (Colcutt), Antonio (May), Duncan (May), Bardolph (May), Justice Shallow (May), Beauty of Woodhouse (Mansley), Perfection (Puxley), Ariel (May), and Queen (Puxley). An equal 1st prize was awarded to Mr. Ward, for Princess Royal, Prince Albert, Lord Rancliffe, Flora's Garland, Georgiana, Lady Gardner, Squire Meynell, Vivid, Admiral Curzon, Sir Harry Smith, Squire Trow and Queen of Roses; 2d, Mr. Norman, for Dido, Rainbow, Queen Victoria, True Briton, Queen, Duke of Sutherland, Squire Meynell, Flora's Garland, Vivid, Count Pauline, Admiral Curzon, and Harriet; 3d, Mr. Bragg, for Brutus, Lady of the Lake, Duke of York, Prince Arthur, Flora's Garland, Lord Rancliffe, Beauty of Woodhouse, Ariel, Mrs. Barnard, Splendid, Count Pauline, and Sarah Payne; 4th, Mr. Keynes; 5th, Mr. Willmer. Class showing Specimen Blooms: 20 prizes out of the 22 offered were awarded to Mr. Turner, of Slough; Mr. Ward and Mr. Norman having each one. We shall content ourselves with naming the successful flowers. Some of the blooms in this class were very fine specimens, particularly May's Justice Shallow, in Carnations, a scarlet flake of the finest quality, having petals of great substance, very smooth on the edges, and full size. Carnations.—Scarlet Bizarre: 1st Puxley's Howard; 2d, Puxley's Emperor. Crimson Bizarre: 1st, Lord Milton. Pink Bizarre: 1st, Henry Kirke White; 2d, Twyford Perfection. Purple Flake: 1st, Puxley's Perfection. Scarlet Flake: 1st, May's Justice Shallow; 2d, May's Seedling. Rose Flake: 1st, Flora's Garland; 2d, May's Romeo. Picotees.—Heavy Rose: 1st, Headley's Venus; 2d, Marris's Victoria Regina. Light Rose: 1st, Mrs. Barnard; 2d, Marris's Countess Howe. Heavy Purple: 1st, Dodwell's Mary; 2d, May's Viola. Light Purple: 1st, Lorina; 2d, Prince Albert (Marris). Heavy Red: 1st, Mrs. Norman (Norman); 2d, Marris's Prince of Wales. Seedlings.—Mr. Norman received a Certificate for Mrs. Norman, heavy red Picotee; the edging in which is broad and laid on very solid and firmly, white good, petal of fine substance and shape; not only the best of its class, but one of the best Picotees in cultivation. A Certificate was awarded to Mr. Bragg's Duke of Wellington, scarlet bizarre, but for what reason we could not discover, for there are at least a score far superior flowers in this class already. A Certificate was also awarded to his Princess Alice, a small neat yellow Picotee.

Reviews.

The Botanical Text-book. By Asa Gray, M.D. 8vo. New York, Putnam. Pp. 520, with many hundred woodcuts. This work having reached its fourth edition must be considered a fair exposition of the views entertained in the United States respecting the science of which it treats. It differs in little from similar works published in Europe, and will be found useful to students on either side the Atlantic. It more especially merits praise on this account that it eschews hard words and pedantic terms, but is clothed in a dress as much English as such books are likely to be or very well can be. Criticism of such works is not called for in this place; or we should have offered some objections to the author's views on certain debateable points, especially as regards the speculation bearing the absurd name of *dédoublement* or unlining, on which we shall now only observe that we think Dr. Asa Gray does not show his usually sound judgment, especially when he accepts as facts some sufficiently apocryphal assertions.

Miscellaneous.

Destruction of Wasps.—The annual sport among the youths of Traquair came to a close on Saturday, the 1st of June. They have bagged less game, and also less money, than usual this year. Let us take a retrospective view of the havoc that has been made among wasps for the last seven years, which will show how anxious the Earl of Traquair is to get rid of this destructive pest in his neighbourhood:—In 1844 there were destroyed 244 dozen; in 1845, 1573 dozen, weight 4 lbs. 9½ oz.; in 1846, not a wasp to be found; in 1847, 4 dozen only, weight 4 oz.; in 1848, there were destroyed 1273½ dozen, weight 4 lbs. 7 oz.; in 1849, 865½ dozen, weight 2 lbs. 8 oz.; in 1850, 528½ dozen, weight 1 lb. 11½ oz. Total, 4459½ doz., weight 13 lbs. 8 oz. during the last seven years, or rather five years, as in 1846-47, only four dozens were taken; these dozens will make the number of wasps to be 53,514—a good round number certainly in a circuit of three miles. Now, if all, or even one-half, of the proprietors in the country would use the same means to exterminate these insects, a wasp would soon be as rare a sight as a red deer on the hills around us.—*Edinburgh Evening Courant.*

Preservation of Green Kidney Beans.—The following is the process employed by M. Gehen de Montigny, for the preservation of green Kidney Beans. In fine weather gather the pods, before the seeds are too visible, take the threads off, plunge the pods in boiling water, and take them out again immediately; let them cool, put them in a tub in layers 5 inches deep, alternating with Vine leaves, which must begin and end the series; on the top of the last layer of Vine-leaves put a stone, heavy enough to keep the whole well pressed. Then pour in some salt water until the top is covered; replace the water as it evaporates. The Beans can thus be preserved quite fresh. *Flore des Serres.*

On the Use of Coffee in Arabia and Abyssinia. By M. A. d'Abbadie.—Great nutritive qualities have been attributed to coffee by M. de Gasparin, in his memoir, on the mode of living pursued by Belgian miners; and he quotes, in support of his opinion, the experience of the French soldiers in Algiers, and of the Arab nations. Without pretending to dispute the accuracy of M. de Gasparin's conclusions, I may be allowed to state that the experience of the Arab tribes is not entirely in his favour. It is well known that the Wahabis, who dissent from Islamism, scrupulously abstain from coffee; and although I have lived with many of this sect, I never found that they were less temperate or less capable of fatigue than their coffee-drinking countrymen. If a proof more convincing than the above is sought, it will be found in Abyssinia, where the Mussulmans, who drink coffee several times a day, support a fast with less ease than the Christians. This has been many times observed by my brother, M. Arnauld d'Abbadie, who commanded soldiers of both religions in the wars of Gojjam. In the disastrous retreats across desert countries, the Mussulmans always suffered more than the Christians. The latter, who think it a crime to drink coffee, will follow the army on foot, heavily laden, for three successive days without any other refreshment than a little earth soaked in cold water. These same soldiers will fight during Lent without other nourishment than a quarter of a pound of unsifted flour, which is often baked in ashes, and without leaven. This flour is less nutritious than that of Wheat, and the single meal is often at sunset, after a fatiguing day's march, and a 24 hours' fast. The Abyssinians are both less strong and less temperate than the Gallas. The latter, the whole object of whose existence seems to be continual warfare, often pass several days in succession in the deserts which separate them from their enemies. The Gallas then fast for an incredible length of time, which the traveller Bruce explains by their use of coffee boiled with its shell in butter, and seasoned with salt. It is true that the Gallas do use this substance, which will keep a long time, and which I have often tasted with pleasure, but they do not look upon it as an aliment. Before undertaking their military expeditions, they lay in an extra stock of strength by a very substantial and varied repast, taken in absolute rest, in huts at a distance from their women. They then start with a few Chick-peas, which they eat raw, and which they soon finish, fast if necessary for several days together, and afterwards fight with such vigour that their enemies never mention it without some expression of astonishment. It is well known that in Abyssinia, raw meat, whether fat or lean, does not possess the nutritive qualities which have been ascribed to it by M. Magendie in European meat. Whilst staying with the army of Agame, I heard the soldiers, who daily killed some hundreds of oxen, complain that they were losing their strength from exclusively eating raw meat. One of my porters gave up his situation and refused the extra pay which I offered him, because he said that he was losing his strength from the want of bread and the constant eating of raw flesh. This fact is admitted as true by all Abyssinians, notwithstanding their great liking for uncooked meat. An Abyssinian epicure would despise a meal which did not, partly at least, consist of a good raw lump of cow's flesh, still warm with animal heat and seasoned with pepper. On the other hand, my brother is satisfied, both by observation and by experiment, that, in the same countries, meat dried in the sun restores one's strength much better than raw meat, though not so well as corn. *Comptes Rendus.*

Calendar of Operations.

(For the ensuing week.)

PLANT DEPARTMENT.

Pelargoniums which have done blooming should be cut down, and the old plants set in an open place till

they have begun to break, when they should be shaken out and repotted in smaller sized pots. Cuttings should be taken of the best varieties, as they will strike now, in the open ground, with greater freedom than they will at any time during the year, if coddled up by bottom heat and so forth; besides which, the plants they produce are healthier, more robust, and form handsome specimens in a shorter space of time. Proceed by loosening the soil of a south border, and by mixing a little sand with it if required; after which insert the cuttings 3 inches apart, fastening them well with the thumb and fore finger. If very dry weather occur, it will be necessary to water them occasionally; but, if possible, defer this till their bases are cicatrised over. As soon as they have made a few fresh leaves, they can be taken up, potted into 3 and 4-inch pots, and placed for a few days in a close frame; after which they may be gradually exposed to the sun and air. The watering of Chrysanthemums which are being prepared for early winter flowering should be carefully attended to, or they will lose their lower leaves, by which the appearance of the plant will be spoiled, and the production of useless suckers encouraged. Old plants which were planted out for the purpose of layering, should now have the points of the shoots pegged down; after this preliminary operation, the points will re-erect themselves, and in a week's time they may be layered in small pots, plunged immediately under the bent portion of the shoot. Attend to the repotting of the established plants, as often as they require it Nothing is so bad as to allow the roots to become cramped in the pots.

FORCING DEPARTMENT.

VINERIES.—Early Vines which have completed their growth, ripened their leaves, and are showing an evident desire to go to rest, should have as much air as possible, lest the summer heat should induce them to start again into growth. The side, front, and back upright ventilator should always remain open; and when a sufficient amount of ventilation is not attainable by these means, the lower ends of the sashes should be propped up, so as to ensure a free circulation of air through the house. In very wet weather also this plan is preferable to that of sliding down the top sashes, as it is not less essential to keep the soil dry than it is to keep the atmosphere cool, during the season of rest. To this end the outside border should from this time be covered with a tarpauling or some other contrivance during rainy weather. PEACH-HOUSES, APRICOTS, and CHERRIES.—Let no exertion be spared that will contribute to keep the foliage healthy and clean as long as possible, by maintaining a cool moist atmosphere. Take care that the soil of the borders inside the house does not get too dry, or this will cause the plants to shed their leaves prematurely; and, on the other hand, do not allow it to get too wet, or the half-ripened buds will burst. Where the fruit is not yet gathered, a somewhat drier atmosphere should be preserved on its account. FIGS.—Where these are now ripening, the house must be kept somewhat drier, but at the same time the state of the soil must be carefully watched, lest it gets too dry and cause the swelling fruit to drop off. Beware of red spider, which is particularly apt to establish itself at such a crisis, when the swelling fruits are making large demands upon the energies of the plants, and are thereby checking in some measure their vigorous growth. This is an evil which must be carefully guarded against.

FLOWER GARDEN AND SHRUBBERIES.

At this season there is always an abundance of work requiring immediate attention, which can only be done by concentrating all available force upon it, and proceeding with it in a progressive manner; taking care, by vigilant superintendence, that each portion is finished before another is commenced. Numberless plants are demanding additional staking and tying, to preserve them from breaking down. Many beds and patches of early flowering annuals are now past their prime, and should be removed, filling their places with the gayest things that can be selected from the reserve garden. These matters should not be neglected even for a day, as a garden should at all times, if possible, present a scene of progressive beauty; to which end every effort should be made to conceal or alter anything which would give it a declining or fading appearance. Advantage should be taken of favourable weather to do many jobs in the reserve garden, such as thinning and transplanting young annuals, biennials, and perennials, and various shrubs which stand too close in their seedling beds. The propagation of half-hardy plants for next season should be commenced as soon as that of the hardier species mentioned in former weeks' Calendars is completed. The propagation of many plants, of which a great quantity is required, is sometimes rendered difficult by their tendency to produce nothing but flowering shoots; by closely cutting in a few of the plants, this difficulty will be obviated, as they will thereby be induced to throw out strong young shoots, which strike with the greatest facility. This hint applies to Lobelias, Petunias, Delphinium grandiflorum, and many other plants of a similar character. While the shoots of these are preparing, operations may at once commence with scarlet Pelargoniums, which should he propagated early, to allow them time to become established and hardened before winter. They are easily propagated in any situation from a slight bottom heat to the front of a south wall. The latter method is of course the best at this season, as they never fail to strike, and there is no trouble with them until ready for potting. About London, some thousands of Geranium cuttings are struck in the open ground without protection.

State of the Weather near London, for the week ending July 25, 1850, as observed at the Horticultural Garden, Chiswick.

July.	Moon's Age.	Barometer.		Temperature. Of the Air.			Temperature. Of the Earth.		Wind.	Rain.
		Max.	Min.	Max.	Min.	Mean	1 foot deep.	2 feet deep.		
Friday.. 19	10	29.941	29.921	67	54	60.5	64	63	W.	.02
Satur... 20	11	29.943	29.933	66	56	61.0	64	62½	E.	.00
Sunday . 21	12	29.946	29.938	78	50	64.0	63½	62	S.E.	.00
Monday 22	13	29.943	29.911	85	60	72.5	63	62	S.	.00
Tues. .. 23	14	29.901	29.809	88	55	71 5	65	63	S.E.	.15
Wed. ..24	15	29.926	29.909	76	49	62.5	65	63	S.	.15
Thurs....25	16	29.813	29.628	65	50	57.5	65	63½	S.	.10
Average....		29.916	29.864	75.0	53.4	64.2	64.2	62.4		.42

July 19—Rain; overcast at night.
— 20—Overcast throughout.
— 21—Fine; cloudy; clear at night.
— 22—Very fine; hot and sultry; clear.
— 23—Very fine; hot close atmosphere; rain in afternoon.
— 24—Cloudy; very fine; cloudy.
— 25—Rain: heavy showers; clear, with cold air at night.
Mean temperature of the week, 2½ deg. above the average.

State of the Weather at Chiswick during the last 24 years, for the ensuing week, ending August 3, 1850.

July and August.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds. N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 28	77.2	53.8	65.5	10	0.32 in.	1	1	2	2	1	8	6	3
Mon. 29	75.7	51.4	63.5	11	0.31	1	1	4	1	2	8	4	3
Tues 30	73.5	51.1	62.3	13	0.88	3	2	3	1	1	7	6	1
Wed. 31	74.4	50.1	62.3	9	0.66	2	3	2	—	3	6	6	2
Thurs. 1	75.6	51.0	63.3	10	1.23	1	2	4	2	3	6	6	—
Friday 2	75.1	53.8	64.4	13	0.65	1	3	2	—	7	6	3	2
Satur. 3	73.8	51.6	67.7	14	1.03	3	3	1	1	2	9	4	1

The highest temperature during the above period occurred on the 1st Aug., 1846—therm. 92 deg.; and the lowest on the 29th, 1828 and 1845; 1st Aug., 1842; and 3d, 1848—therm. 43 deg.

Notices to Correspondents.

ANTS: *Sub.* See p. 293 of the current year's volume.‡

BOOKS: *H W.* We could not give advice on the subject. Authors and publishers should judge and act for themselves.—*Erzeroum.* We fear that the Crocuses have all died; the corms were very weak. We will send you a book in which your plants will be noticed when there is anything to say about them. Probably the two best books for you are Bieberstein's "Flora Taurico-caucasica," and Ledebour's "Flora Rossica," or Grisebach's "Flora Rumelica."—*A H.* "Roberts on the Vine," with the exception of putting carrion into borders.‡

CHARLOCK: *β.* The flowers are attacked by white rust (Uredo candida), of which an account has been given by the Rev. Mr. Berkeley, in the "Journal of the Horticultural Society," vol. iii. p. 266. The following cut represents a plant attacked by it.



COPING: *A Gardener.* We never recommend tradesmen.‡

CUCUMBERS: *J P.* They are affected by the same mildew which attacks the Vine. Sulphur will kill it if *it is applied the moment the fungus appears.* All depends on that.‡

DEODAR: *F M S.* You are a little too early in your removal of it, but will probably succeed. If it flags, shade it by throwing wet mats over it. Do not water it; but syringe it if necessary. In a fortnight it will be nearly safe, in such weather as this.

FIRS: *C.* Your specimen has all the appearance of having been killed by cold, when very young and tender. Much unsuspected damage was done by the frost on the 3d of May. The brick-ground is probably innocent, unless indeed *very* sulphury coals were used when the leaves were soft. Whether your trees will recover will be apparent in three weeks from this time.

GRAPES: *An old Subscriber.* Mildew is very abundant—rather an awkward fact for the Potato crop. If you use flowers of sulphur early enough and often enough, dusting it upon the patches as soon as they are discoverable, you will stop the egg-mildew of the Vine. If the preventive is neglected the mischief becomes irreparable.— *G T.* Excess of moisture *somewhere* is the cause; it may be in the soil, or the air, or in both. If you have not full circulation of air, that at once explains the mischief. Figs have nothing to do with it.

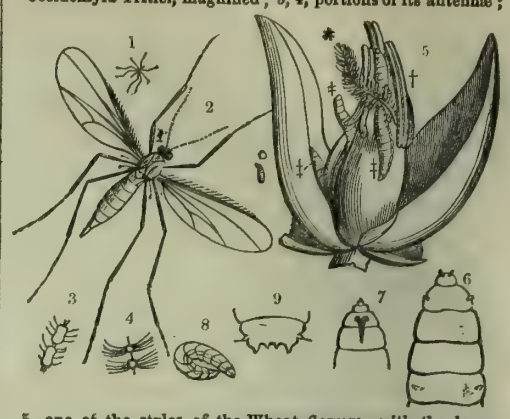
GREENHOUSES: *W W.* What your house ails is to be drier in winter. It is certain that the spot in Pelargoniums is caused by damp and cold, combined. You must either make your house drier, or else warmer. This will be easier, we imagine, than pulling it down and altering its aspect, which will do no good.

HEATING: *Mrs F.* The woodcut of the cheap heating contrivance, or little portable greenhouse, given at p. 408, was borrowed from our volume for 1841, p. 796, where it is stated to have been tried and to have succeeded. We have had no experience of its working ourselves; but we see no reason why it should not answer under proper management.‡

HERBACEOUS PLANTS: *An old Subscriber.* Plant of Cheadle, Mackie of Norwich, Masters of Canterbury, Backhouse of [illegible], Whitley and Osborn of Fulham.*

HOUSE BUG: *A C* will thank some one to give him a recipe for the removal of the unsightly bunches and harassing itching occasioned by the bite of the common house bug. [We say destroy the bugs.]

INSECTS: *T C.* You will find a description and figure of the orange larva of the Wheat ear, and of its perfect state, in our volume for 1847, p. 604, (figs 1 and 2, the perfect insect, Cecidomyia Tritici, magnified; 3, 4, portions of its antennæ;



5, one of the styles of the Wheat flowers, with the larvæ magnified; 6, 7, 8, 9, details of the larva.) Your Θυσανδερος does not belong to the Thysanoura, but is the larva of a small beetle Megatoma undatum. *W.—H R B.* The maggots are the larvæ of the Wheat midge, mentioned in the preceding reply. *W.—W T.* The small Elephant Hawk moth (Chærocampa Porcellus); the extraneous matter attached to the eye is the pollen masses of an Ophrys. Eggs are not always green, each species has its own colour; the green colour of the eggs sent is owing to the little green larva within, seen through their transparent shells. *W.—J G N.* We are sorry to say that the ears of Wheat from the neighbourhood of Great Yarmouth are seriously injured by the Wheat midge; no remedy for which can now be adopted, but when gathered the use of the midge sieves ought to be more generally adopted. *W.—A W F C.* The caterpillars found on the Poplar are those of the common puss moth Cerura Vinula. *W.—J. D.* The minute insects found in the crevices of the bark of the standard Roses are a minute species of mite, but the young buds were doubtless eaten off by a weevil Otiorhynchus sulcatus, and not by these insects. *W.*

MEALY BUG: *Constant Reader.* If once it obtains a footing, it is difficult to get rid of mealy bug. Kyle's liquid is stated to kill it without injuring the plants.‡

MELONS: *Offa.* It is a dangerous experiment.

MOWING MACHINE: *R G K.* That used at Trentham and at Kew is, we believe, Shanks', and is drawn by a horse.‡

NAMES OF PLANTS: *J R.* It is really a Bougainvillea, and probably spectabilis. —*W D H.* Apparently Maxillaria variabilis.—*Erzeroum.* 369, Coronilla varia; 454, Colutea. You will get a good many answers in the course of the autumn, when we have leisure to examine difficult points.—*Rougham.* Oncidium triquetrum. —*J G.* Scleroderma vulgare.—*L N R.* 1, Phyteuma orbiculare; 2, Asperugo procumbens; 3, Acinos vulgaris; 4, Lamium amplexicaule.—*New Zealand.* If you have that curious Rubus in flower, we would beg of you to send us a better specimen. —*M D.* Celastrus scandens, Berberis aquifolium, Quercus pedunculata, apparently. —*H T.* Ipomœa phœnicea.—*J H N.* Crinum longifolium.—*Oldham.* A little ugly white Fox-glove.—*J P.* 1, Amelanchier Botryapium; 2, Kalosanthes coccinea; 3, Bartonia aurea; 4, Commelina tuberosa; 5, Cacalia coccinea.—*Field Mouse.* 1, Teucrium Scorodonia; 2, Melampyrum pratense.—*Offa.* 1, Siphocampylus bicolor; 2, Nierembergia gracilis; 3, Diplacus puniceus; 4, Campanula garganica. We entreat you to send plants for names in a state fit for examination. You have no idea of the waste of time caused by questions concerning withered fragments scarcely more fit for determination than if they were fossils.

NEW HOLLAND: *H H.* Good European seeds are always prized at Sidney—by good, we mean of a fine quality. They do not care much for rareties. Pack the seeds in loose canvas bags, and hang them from a nail in the cabin. As to what you may purchase at Sydney, we believe that there is little which can *not* be bought. Quality is the point; not sort.

PEAR TREES: *M F.* Probably the first crop was killed by frost, and the tree is attempting to renew the effort at fructifying. Such things are not very rare. If it bears a heavy crop of fruit, the tendency will probably disappear.

PICQUOTAISE: *M P.* The plant brought to France by M. Picquot from North America, and cultivated in the gardens of Versailles and the Horticultural Society of Paris, *as a substitute for the Potato,* has been introduced into this country. It is stated to be more nutritious than the Potato; but is in reality worthless, and as unfit for cultivation as the Apios tuberosa, or Saa-ga-ban itself. It has been grown in the Garden of the Horticultural Society of London.

PRICKLY GERANIUM: *A Florist.* Let it be pot bound, and give it no more water than is necessary to keep it alive.

RAIN-WATER: *Birkhurst.* Large lumps of charcoal thrown into the water-butts (not dust charcoal) will much improve its quality.

RHODANTHE: *L B S.* Your case is incomprehensible. There is nothing wrong in your management, unless you allow the roots to become too dry. Is there no grub at the roots?

ROOT-PRUNING: *J Abell.* Your Pear trees (which are 3 or 4 inches in diameter, a few inches from the ground, and growing luxuriantly) should have a trench opened round them about 4½ feet from the stem, and as deep as the roots go. Cut all very strong roots, which are going down into the subsoil, with a strong chisel; and, in filling in the trench, add some fresh turfy loam. Let the ground round the tree be thoroughly watered a few hours before the trench is opened; this will soften the soil, and very much facilitate the operation.‡

SEEDS: *Constant Reader.* You cannot raise Orchids from seed.

MISC: *Iota.* We do not recollect a white variety of the common Mallow; but we should fully expect such a thing to exist.

SEEDLING FLOWERS.

PELARGONIUMS: *T K.* A pretty light variety, of medium size, with pretty well formed upper petals; but the under ones are too long and pointed.*—*H W B.* Will you kindly send us another bloom? The last was not received in good condition.*

ROSES; *E H.* Very fragrant, but, being bruised to pieces when received, this is all that can be said of it.*

PERUVIAN GUANO.—As Agents of the Peruvian Government for the importation and sale of this valuable MANURE, we think it right, for the protection of consumers and respectable dealers, to apprise them that the adulteration of the article is still extensively practised, and to recommend them to apply either to ourselves, to our agents, Messrs. GIBBS, BRIGHT, and Co., of Liverpool and Bristol, or to dealers of established character, in whose honesty and fair dealing they can place implicit confidence. ANTONY GIBBS and SONS.

MANURES.—The following Manures are manufactured at Mr. LAWES's Factory, Deptford Creek:

Corn and Grass Manure, per ton	£10	0	0
Clover Manure, do.	11	0	0
Turnip Manure, do.	7	0	0
Superphosphate of Lime	7	0	0
Sulphuric Acid and Coprolites	5	0	0

Office, 69, King William-street, City, London.

N.B. Peruvian Guano, guaranteed to contain 16 per cent. of Ammonia, 9*l.* 15*s.* per ton; and for 5 tons or more, 9*l.* 10*s.* per ton, in dock. Sulphate of Ammonia, &c.

CORN MANURE FOR WHEAT, BARLEY, OATS, BEANS, &c. &c.

THE LONDON MANURE COMPANY most confidently recommend the above, as tney are daily receiving very satisfactory accounts from parties who used it with great success last season. It will be found fully equal to and much cheaper than Peruvian Guano, and is not so liable to produce so large a growth of straw. Price Seven Guineas per ton, 3 cwt. per acre. They also beg to offer their Concentrated Urate, Superphosphate Lime, Nitrate of Soda, Sulphate and Phosphate of Ammonia, Fishery and other Salt, Gypsum, Sulphuric Acid, and genuine Peruvian Guano. To insure this free from adulteration, all purchasers can receive it direct from the Warehouses of the Importer.

Bridge-street, Blackfriars. EDWARD PURSER, Secretary.
Country Dealers and Agents supplied.

BY HER MAJESTY'S ROYAL LETTERS PATENT.

PATENT HOTHOUSE WORKS, KING'S ROAD, CHELSEA.

E. DENCH invites the attention of Gentlemen about to erect Hothouses, &c., to the vast superiority in every respect possessed by his PATENT HOUSES, which he will warrant superior in every respect to any others. Good Glass from 16 to 21 oz. per foot, 1 foot wide, 3 feet long, furnished, and the Houses, when completed charged, from 1*s.* 3*d.* to 1*s.* 6*d.* per superficial foot, according to size and quantity; on one principle the roof is formed without wood or putty, and on another principle with wood rafters, and the glass put in with putty. Patent Sashes, requiring no paint, from 7*d.* to 9*d.* per foot. HEATING BY HOT WATER.

STEPHENSON AND Co., 61, Gracechurch-street, London, and 17, New Park-street, Southwark, Inventors and Manufacturers of the Improved CONICAL and DOUBLE CYLINDRICAL BOILERS, respectfully solicit the attention of scientific Horticulturists to their much improved method of applying the Tank System to Pineries, Propagating Houses, &c., by which atmospheric heat as well as bottom-heat is secured to any required degree, without the aid of pipes or flues. S. and Co. have also to state that at the request of numerous friends they are now making their Boilers of Iron, as well as Copper, by which the cost is reduced. These Boilers, which are now so well known, scarcely require description, but to those who have not seen them in operation, prospectuses will be forwarded, as well as reference of the highest authority; or they may be seen at most of the Nobility's seats and principal Nurseries throughout the kingdom.

S. and Co. beg to inform the Trade that at their Manufactory, 17, New Park-street, every article required for the construction of Horticultural Buildings, as well as for heating them, may be obtained upon the most advantageous terms.

Conservatories, &c., of Iron or Wood, erected upon the most ornamental designs. Balconies, Palisading, Field and Garden Fences, Wire-work, &c.

THE CONICAL BOILERS INVENTED BY JOHN ROGERS, Esq., are supplied and fixed by JOHN SHEWEN, ironmonger, Sevenoaks. Also all kinds of Hot Water Apparatus. For Churches and Public Buildings, Mr. SHEWEN should be consulted, his Warm Air Apparatus being safer, more efficient, and more durable than any other.

SCIENTIFIC ACADEMY AND AGRICULTURAL TRAINING SCHOOL, Kennington, near London, July 20, 1850.

MESSRS. NESBIT take the liberty of directing the attention of Parents to the advantages offered by their Establishment, in the education of youth intended for the Arts, Manufactures, or Agriculture. Though the power, influence, and wealth of England, depend, in a great measure, upon the proper application of scientific knowledge to the working of her minerals and soils; yet, in the education of her youth, Science has hitherto been almost wholly neglected. It is, however, evident that a young man, who, in addition to the common education, possesses a sound knowledge of Analytical Chemistry, Mineralogy, and other kindred subjects, will be the best prepared to engage with success in any technical branch of business for which he may be designed.

In their system of instruction, Messrs. NESBIT give a prominent position to the physical sciences; and experience has proved that instead of retarding the pursuit of the ordinary studies, they materially assist in their acquirement.

The pupils have repeatedly been examined by some of the first Professors in the Metropolis, who have expressed themselves highly gratified with their general knowledge, and with their attainments in physical science.

Terms and other particulars may be known on application.
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MESSRS. NESBIT'S CHEMICAL AND AGRICULTURAL SCHOOL, 38, Kennington-lane, London.—A sound practical knowledge of Analytical and Agricultural Chemistry, Geology, Surveying, Levelling, Railway Engineering, &c., may be obtained in Messrs. NESBIT'S Academy, in addition to a good modern education.

Mr. NESBIT'S works on Arithmetic, Mensuration, Gauging, Land Surveying, English Parsing, &c., are published by LONGMAN and Co., and may be had of all Booksellers.

TO NOBLEMEN and GENTLEMEN who require a plentiful and CONSTANT SUPPLY of PURE WATER to their Country Mansions.

Messrs. EASTON and AMOS beg to offer their improved PATENT HYDRAULIC RAM, which is perfectly self-acting, and without manual labour is capable of lifting water to 30 times the height of the waterfall by which it is worked.

THIS MACHINE CAN BE APPLIED WHEREVER A FALL OF WATER OF A FEW FEET CAN BE OBTAINED; and its cheapness and durability, with the fact that upwards of 500 of them erected in England and other countries by Messrs. EASTON and AMOS have now been at work many years, afford ample proof of its great value and efficiency.

Estimates of the expense of the Machine, Pipes for the conveyance of Water, Tanks, and Reservoirs, may be had on application to Messrs. EASTON and AMOS, CONSULTING ENGINEERS to the ROYAL AGRICULTURAL SOCIETY, at their office in Orange-street, Trafalgar-square, or at the Works in the Grove, Southwark, London.

PURE WATER raised to any height from a small stream, where a fall can be obtained, by FREEMAN ROE and HANSON'S IMPROVED RAM; less waste, by two-thirds, than those ordinarily in use. Portable Steam Engines for Agricultural purposes, Threshing Machines, Deep-well Pumps, Water-wheels, Baths, Hot-water Apparatus, and Fountains. Towns supplied with Gas or Water. Drawings and Estimates made.—FREEMAN ROE and HANSON, Hydraulic and Gas Engineers; Office, 70, Strand, London.

DR. S. NEWINGTON'S HAND-DRILL HOES AND CULTIVATORS, to the frames of which are fitted Coulters for earthing up Potatoes and drawing out furrows for seeds. The chisel-pointed tines have moveable hoeing shares fitted to them, which can be removed when the tines are only required for stirring. These shares, which are made of any required width, hoe from 2 to 4 inches below the surface, according to the soil; on the shares being removed, the tines stir from 5 to 6 inches deep, a lad being enabled to hoe 2 acres of Turnips, &c., daily, cutting off every weed, and setting out the plants, reducing the price of labour from 4*s.* to 8*d.* an acre, or being able to hoe the crop six times, and much more effectually, for the same money now paid for hand-hoeing. Messrs. DUFAUR and Co. will exhibit, at the Royal Agricultural Show at Exeter, the following implements invented by Dr. NEWINGTON: A Drop Drill for horse power; the same for hand power; an implement to supersede broadcasting seed by hand for horse power; the same by hand power; an implement for broadcasting artificial manures or depositing it in rows by horse power; the same by hand power; a horse Dibble; a hand wheel Dibble; a subsoil Plough; a Scarifier or Cultivator; a paring Plough; a single horse Plough; hand drill Hoe and Cultivators, with various other fittings; a strike Plough.—Apply to Messrs. DUFAUR and Co., 21, Red Lion-square, London, who are the sole manufacturers and vendors of Dr. NEWINGTON'S inventions.

REAPING SCYTHES.—A GREAT SAVING in STRAW AND LABOUR is effected by the use of DRUMMONDS' IMPROVED REAPING SCYTHE, in cutting down all sorts of corn crops. The demand for these scythes is yearly increasing, and they continue to give every satisfaction. May be had from the subscribers at 10*s.* 6*d.*, or 9*s.* 6*d.* each, when three or more are taken, and forwarded carriage paid to Liverpool, Hull, Newcastle, and to all the stations along the lines of the Caledonian and North British Railways.

W. DRUMMOND & SONS, Agricultural Museum, Stirling, N.B.

N.B.—Orders from unknown correspondents will not be attended to unless accompanied by a remittance.

The Agricultural Gazette.

SATURDAY, JULY 27, 1850.

MEETING FOR THE FOLLOWING WEEK.
THURSDAY, Aug. 1—Agricultural Imp. Society of Ireland.

"THE PRINCIPLE ADOPTED HERE IS TO MANURE FOR EVERY CROP." (*Times Commissioners on the farm of Mr. Hudson, Castleacre.*) It has long been our opinion that the introduction of artificial manures would ultimately work a complete change in the practice of farming, and when the principles on which they should be prepared become thoroughly understood, and honest manufacturers have been secured, we look forward most confidently to the universal adoption of Mr. HUDSON'S plan of "MANURING FOR EVERY CROP."

The usual system of manuring once in four or five years must evidently be a very wasteful practice, as, long before the last crop of the rotation requires its assistance, much of the soluble and most valuable portion of the manure must be washed out.

Until the discovery of artificial manures, the farmer had, however, no alternative but to follow out the old system, as it is obvious that farm-yard manure cannot be carted on to every crop; besides, the expense and labour involved in moving such large quantities of manure (if it could even be procured) was also an insurmountable barrier to the application of either farm-yard manure or compost to the land at shorter intervals of time than four or five years.

The plan adopted by Mr. HUDSON and many other farmers in Norfolk is to apply the farm-yard manure along with a portion of prepared bones to the Turnip crop—the other crops also, in most cases, receiving a top-dressing; or, when fed off by sheep or cattle, a quantity of Linseed cake is always consumed along with it. Such a style of farming leaves little to be desired, and certainly contrasts most strongly with the system of two white crops and a bare fallow, on which we commented a few weeks ago.

Can it be possible that those landowners, who persist in letting their land from year to year, will still shut their eyes to the contrast afforded by Mr. HUDSON'S farm and their own miserable estates? Mr. HUDSON'S farm is, we see by the report of the *Times* Commissioners, covered over with clay marl once in a lease of 21 years. Here we see a tenant farmer effecting an improvement on another person's property, and for the repayment of his outlay, waiting patiently during the lapse of a 21 years' lease. Does such a thing ever occur on a yearly holding? Suppose Mr. HUDSON'S farm were let from year to year, would his farm then be covered over with clay marl? We think not. Who would then be the sufferer, the owner or the tenant?

We direct particular attention to this marling—its close and inevitable connection with a lease—and also to the necessary consequence, high farming, by the application of manure to every crop. It is because we believe that this high farming cannot exist without a lease, any more than a lease without its invariable concomitant high farming, that we direct attention to their connection in the case of Mr. HUDSON. To those of our readers who are not so fortunately situated, in respect of a lease, our remarks have no application.

For the reasons already named, it is obviously impossible that the principle of applying manure to every crop can be carried out with the ordinary resources of the farm; and for the full development of this system artificial manures are evidently the only available means within our reach.

The result of past experience has been to establish most clearly the value of these manures for the growth of Turnips; but their application to the Cereals (though undoubtedly useful), has not been quite so successful. Whilst many thousands of acres of the former have been grown with artificial manures alone, we dare not depend upon them exclusively for a crop of Wheat or Oats. In the present state of our knowledge, it would be difficult to assign a reason for this result of our own observation and practice on a Wheat soil, and we would be glad to hear from Mr. HUDSON, or any of his neighbours, if they have been more fortunate. We by no means assert that artificial manures are useless to corn crops. Only the complete success which has attended their use in the case of Turnips makes us desire a similar result for the Cereals. Whether this will be brought about by improvements in the mode of preparation, or greater skill in the application of these valuable manures, time alone can decide.

In the meantime, we are glad to be able to report, on the result of a series of experiments, that artificial manures are likely to prove very valuable for the Clover crop. Should our anticipations prove correct in this instance, it will be a great boon on strong soils, where Clover has hitherto been the only or principal green crop.

The substance which, amidst a host of others at present thrust on the farmer's notice, we find most useful to our Clover crops, is bone dissolved in acid. We were hardly prepared to find that Turnips and Clover would both be benefited by the same manure. Attention was first drawn to superphosphate, as a Clover manure, by observing that that crop was always better, where it had been used for Turnips. We observe in one of last week's country reports in the *Mark Lane Express*, a similar result has been noticed. Such, then, is the present amount of our knowledge in the use and application of artificial manures, and we would recommend our readers to try their application next spring on the Clover. It will be long and many a day before Mr. HUDSON'S plan will be universally adopted; but after so much has been done with Turnips, if we can be the means of extending the principle to the Clover crop, a very important step will be gained.

IT is a somewhat singular fact that the farmers, as a body, are almost, if not altogether, apathetic in the cause of ROAD REFORM, if we except a few who are avowedly averse to any alteration of the present system, because they fortunately happen to be situated in the vicinity of a statute-labour road connected with a market-town. In these cases the farmer has the free run of such roads by only paying the statute-labour assessment, which, in Scotland, varies from 3*d.* to 7*d.* per imperial acre, according as the debt and cost of management are small or great. Many farmers—much the larger proportion—on the other hand, are so situated in the midst of a network of turnpike-roads, as to be totally disabled from sending horse or cart to market without being caught in one or other of the meshes at which toll is exigible, while, at the same time, they are compelled to pay for maintaining the statute-labour roads, which they rarely have occasion to use. In the former case the farmer pays only for the roads he requires, while, in the latter, he has to pay both for those he uses and those he does not use. If it be assumed—and this view seems greatly in vogue with those who oppose Mr. PAGAN'S plan of road reform—that those who wear the roads should mend them, how comes it that a farmer, encircled with toll-bars, is assessed also for repairing the statute-labour roads? these roads being maintained by a fund raised, without distinction, by an annual acreage charge on land. The same objections may, no doubt, be urged against a uniform horse-tax, as carriers and post-jobbers, although causing more destruction to public roads than farmers, would, nevertheless get quit for the same annual payment. But, in this case, the apparent injustice would be more than counterbalanced by a greater boon, viz., perfect liberty to travel at all times and in all directions without let or hindrance, or additional expense. A uniform rate on horses, in lieu of turnpikes and statute-labour assessments, offers freedom of locomotion to all classes, whatever be the mode of conveyance, and always admits of the shortest route being taken between any two points; whereas, under the present system, long *detours* are made by both and low, cadger and country gentleman, for the special purpose of evading

the toll-bar; thus rendering travelling more tedious, diminishing the turnpike revenue, and causing a greater, and necessarily more destructive, traffic on those very roads where toll is not exacted, and which, as before stated, are maintained by an annual rate per acre on occupiers of land. So far as our experience goes, this annual charge has never been viewed by farmers with the same hostility as the continual driblets exacted for the use of the turnpike roads; thus indirectly proving Mr. PAGAN's case, that an annual payment for the use of all roads would be far less obnoxious than the present system, with its heterogeneous compound of tolls and statute-labour assessments.

The following statement is designed to give a view of the comparative cost of supporting public roads in the case of two farms of 252 imperial acres each,—the first supposed to be so surrounded and hemmed in by toll-bars as to render it necessary for the occupier to pass through one or other of them with all the produce sent to market, and also in bringing back guano and other light manures, coals, &c. The second, situated in a district where the statute-labour roads suffice for the transit of all marketable produce to the place at which it is to be delivered. For the sake of perfect equality in the comparison, these farms are supposed to be cropped one-half in grain, and the other in Grass and green crops; or as follows: 42 acres of Wheat, 42 acres of Turnips, 42 acres of Barley, 42 acres of Grass, 42 acres of Oats, and 42 acres of Potatoes and Beans, or other leguminous crops. On the first of these farms the following quantities of agricultural produce will be sent to market, and pass through one toll-bar.

147 quarters of Wheat at 1*d.*	£0	12*s.*	3*d.*
189 quarters of Barley at ¾*d.*	0	12	7
168 quarters of Oats at ¾*d.*	0	9	5
80 tons of Potatoes at 6*d.*	2	0	0
18 tons of coals at 6*d.*	0	9	0
Gig tolls, say 52 days, at 9*d.*	1	19	0
Miscellaneous	1	0	0
Total for tolls	£7	2	3
Add statute-labour assessment, say 36*s.* (as in Fifeshire) per 63 statute acres	7	4	0
Total cost for maintaining public roads	£14	6	3
The other farm, situated in a statute-labour district, would pay only	7	4	0
Difference	£7	2	3

In the one case the charge for the use of the public roads amounts to 1*s.* 2*d.* per acre, while in the other it is only 7*d.* In ordinary cases, however, access to market by a statute-labour road can generally be obtained for part of the produce of a farm, which will so far lessen the expense; but, on the other hand, there are many instances where more than one toll-bar has to be passed through in going to market, and sooner or later this heavy impost will fall upon the land and come to be included in the rent, for all public burdens upon occupiers of land ultimately rest upon the shoulders of the landlords. The difficulty in the meantime is to get those who escape the toll-bars nearly scot free to agree to a reform which would undoubtedly saddle them with an additional expense for maintaining public roads. Let us contrast Mr. PAGAN's plan with the present turnpike and statute-labour system, in order to see how the result will affect the two cases assumed above—8 work horses and 1 saddle horse being supposed equal to the wants of a farm of 252 imperial acres.

1st Case.	£	*s.*	*d.*
Present system	14	6	3
Proposed plan, 9 horses 27*s.* 6*d.* per annum	12	7	6
Saving to the farmer during the currency of his lease	1	18	9
2d Case.			
Present system	7	6	0
Proposed plan	12	7	6
Additional expenses to the farmer during the currency of his lease	5	2	6
Turnpike expenses	£3	11	1½
Statute labour assessment	7	4	0
	10	15	1½
Mr. PAGAN's plan	12	7	6
Additional expense to the farmer during the currency of his lease	£1	12	4½

For this additional sum he is made free of the roads, and is saved the annoyance of turnpike keepers, loss of time in weighing loads, and the no small danger of backing horses with heavy loads upon a slippery cast-metal steelyard, merely that the toll-man may have it in his power to exact the uttermost farthing. It must be remembered, however, that in Mr. PAGAN's plan, as applicable to the locality (Fifeshire), the road system of which forms the ground-work of Mr. P.'s remarks, complete provision is made for redeeming a heavy road debt in 30 years, and for which purpose a sum of 5*s.* 6*d.* per horse is set apart. At the end of 30 years the rate per horse would be reduced to 22*s.*, so that then the comparison of the three assumed cases will stand thus:

1st Case.	£	*s.*	*d.*
Present system	£14	6	3
Charge 30 years hence, 9 horses, at 22*s.*	9	18	0
Saving	4	8	3
2d Case.			
Present system	7	4	0
30 years hence	9	18	0
Increase	2	14	0
3d, or average Case.			
Present system	10	15	1½
30 years hence	9	18	0
Saving	£0	17	1½

So far as the farmer is concerned these cases will have adjusted themselves long before this period arrives, as soon, in fact, as present leases expire, and new ones are entered upon.

Instead of the foregoing statements being purposely overdrawn, in order to exhibit Mr. PAGAN's plan in a more favourable light than it is entitled to, they are, we believe, much below the truth, for it will be observed that only 20*s.* is charged for miscellaneous articles passing through a turnpike; now wherever town manure, lime, or draining materials are required in large quantities the expense for tolls comes to be very high, and will far exceed the sum stated in the most extreme of the above mentioned cases. In Mr. PAGAN's work on "Road Reform," it is stated that Major ANDERSON, the convenor of the Fife road trustees' committee, called for returns from a number of the leading agriculturists in the different districts of the county, of their statute-labour and tolls and number of horses, and received returns from 29 individuals having among them 364 horses, and paying yearly of statute-labour and tolls, according to their computation, 690*l.* 0*s.* 6*d.*, equal to 1*l.* 17*s.* 10*d.* per horse. At 27*s.* 6*d.* per horse these parties, in the gross, would save 186*l.* 4*s.*, or about 27 per cent. Going into the individual cases, we find 22 of them paying more than that rate and seven of them less, viz.: 22 having 286 horses, 603*l.* 16*s.* 1*d.*, or 2*l.* 2*s.* 2*d.* per horse; and seven, having 78 horses, 86*l.* 4*s.* 5*d.*, or 1*l.* 2*s.* 1*d.* per horse.

If this statement be in any degree an approximation to the *average* cost to the farmers of Fife for the use of the public roads in that county, it proves that for one that would lose by the introduction of a uniform horse rate of 27*s.* 6*d.* per annum three would be gainers to a much greater amount; and that ultimately all would be more or less benefited.

However much the circumstances of the different road trusts throughout the country may vary as regards debt or other purely local incidents, the principle upon which a uniform horse rate is based admits of expansion or contraction to meet every supposable case. It is in fact the only one which by lopping off all useless appendages, in the shape of toll-keepers' profits, toll-houses, steelyards, litigation, &c., offers a simple and efficient means of removing debt, and ultimately cheapening and facilitating travelling throughout the country. This prospective view of the subject will probably not be so convincing to the minds of many as a more immediate saving to the pocket would have been; still, our duty does not end with taking care of our own interests; and truly our present road system, with its heavy debt in not a few cases, and its cumbrous machinery everywhere, is but a poor heritage to transmit from father to son. The *laissez faire* principle will not avail us much longer, for railways are revolutionising the traffic of the country everywhere, and well-known thoroughfares are fast being converted into green lanes, in consequence of the centres of traffic removing themselves to the various railway termini. No doubt the expense of maintaining these obsolete highways will be greatly lessened, but the toll-bars remain, the keepers must live, and it need not be matter of surprise, if by-and-bye the receipts on some deserted highway scarcely suffice to support these solitary Cerberi, far less to pay surveyors' salaries and interest on debt. *J.*

ON CONVERTING A MOORY HILL-SIDE INTO CATCH-MEADOW.

AT Lady-day, 1816, I began to farm 300 acres of land on Brendon-hill, the property of the Earl of Carnarvon, the elevation of which is 1000 feet above the sea; about 200 acres were then covered with Heath, 60 with Fern, and the remainder with peat and moss. Not having hay to give my horses, I began to turn my attention to procure some. The first course I took was to take the level from all the springs, and then to ascertain how many acres I had under that level that I could carry the water over, and when I found how much land I could irrigate, I began to cultivate my intended meadow, which was done by paring and burning, and, after spreading the ashes, to break up and work the land to the depth of from 12 to 15 inches with Finlayson's harrow, by stirring the subsoil, but not to bring it to the surface; after working many times over in this way, I got the surface as even as I thought necessary; it was then manured with 60 bushels of lime an acre, and sown with Turnips, which were fed off on the land. After the Turnips the land was again worked with the harrow, rolled, and made fine, and in April was sown with Grass seed, harrowed in and rolled. The Grass came up well, and was stocked on the 1st of July following with seven sheep to the acre, which it kept in good condition until the 1st of November, when it was again rolled, and the water gutters made to take the water that was drained from the springs above. I set out the watering gutters by the level, giving them 1 inch fall in every 10 feet. They were cut 9 inches wide and 3 inches deep. If the land has a gentle slope, the gutters may be put 60 feet from each other; but if it be very steep, and there is a good flow of water, they may be put 70 or 80 feet apart. When I find the water sink too fast into the land, I spread fine earth or road-scrapings over the surface, in order to fill it up, that the water may pass over to the next catch-gutter. In this way I made my first 14 acres, which took five years to complete. In the same manner I have, from time to time, drained all the wet land on the farm, and have now 30 acres of meadow, which yield a crop of hay from 1 to 1½ ton per acre annually.

Where it is possible to carry water over dry land, it is best to do so; but the bog itself can be converted into water meadow. I have lately drained a deep peat bog by cutting drains in some parts of it to the depth of 7 feet. This bog was 10 acres; one half of which is now watered. The way I manage to prevent the flooding water from getting down into the drains is as follows: I first fill the bottom with flat stones, set on their edge, one foot; then a foot of stones broken small; on them a 3-inch turf, with the Grass downwards, and well trodden in; on this turf I lay on puddle, which I bring within six inches of the surface. When this is done, I pare and burn, manure, and manage the peat in the same manner as I do the other land.

The water gutters should be cut with the under edge sloping outwards, in order to let the water flow more freely over the land, and be less liable to be trodden in by cattle or horses passing over them. The water should never be suffered to remain in one place over the Grass more than two or three days at a time without being changed, nor be turned upon the land in order to remain there during frost; but should the frost set in while the water is on, by no means alter it until the frost is gone; for if the surface is exposed, and the frost continues, it will, most likely, lift the land and kill the Grass. After the hay is made, I never stock the after Grass with anything but sheep, or cattle under two years old, feeding it down as close as possible by the 1st of November. I then clean the gutters and roll the land, in order to begin watering as soon as the springs begin to break in the autumn. November, February, and March are the best months for watering.

All the land on this farm was valued under an Inclosure Act, in 1804, by the surveyor, at 2*s.* an acre. What I have converted to meadow would now let for 25*s.*, and is still improving. The soil on this farm is part peat and bog, and brown loam, resting on gravel, and a soft, slaty rock. The Fern grows in the brown loam, which, on our moors, is by far the best land for water meadows.

The sides of the mountains in the north of England and Wales might be converted to catch-meadows in the same way that I have done mine, provided the water is of good quality, and the land can be made porous to let the water filter gently down. I have never found turning water over old pasture do much good, as the Grass that comes up is coarse and thin, and the hay, if mown, is not of good quality. If, therefore, old pasture is intended for meadow, it will answer best to break it up first, work it clean, manure it well, and seed it down with those Grass seeds that are most congenial for water meadows.

The first year's Expenses, per acre.			
Paring and burning	£1	0	0
Spreading ashes	0	1	6
Working land with Finlayson's harrow, 4 horses	1	5	0
Harrowing and rolling	0	5	0
Sixty bushels of lime, and carriage	2	5	0
Slaking and spreading lime	0	3	0
Turnip seed	0	2	0
Drill and harrowing in seed	0	3	0
Hoeing Turnips	0	5	0
	£5	9	3
Value of Turnips	3	3	0
First year's outlay	£2	6	3
Second Year.			
Cultivating after Turnips	0	10	0
One bushel of Rye-grass seed	0	5	0
12 lbs. of red and White Clover, at 10*d.* per lb	0	10	0
6 lbs. of Rib-grass seed, at 4*d.* per lb.	0	2	0
Sowing and harrowing in Grass seeds	0	2	6
Making water gutters	0	10	0
Two years' rent of land	0	15	0
	£5	1	0

Brought forward ...	£5	1	0
To keep of seven sheep from 1st July to 1st Nov., 16 weeks, at 8s. each	2	16	0
	£2	5	0
After Grass	0	5	0
Total expense of converting a waste mountain-side into water meadow	£2	0	0

The reason I did not plough the land after the ashes were spread, was that I wished to keep the vegetable matter that was on or near the surface, from getting down to mix with the subsoil. JOHN ROALES.

Note.—I have known Mr. Roales's farm for many years. It stands alone on the summit of the wild Exmoor range of mountain land. If any one asserted that, for a trifling outlay, he could enable heath-covered steeps to rival in produce and value the old grazing grounds of Northamptonshire, he would be regarded as a dreamer. But if any owner of moors will visit West Somerset or North Devon he will ascertain the literal truth of the statement, as I did five years ago. All that is required is a streamlet trickling down the mountain side, or a torrent descending rapidly along the bottom of the glen. The profit of underdraining old arable land appears trifling, when compared with the profit of thus forming catch-meadows, which, according to Mr. Roales, is more than one pound interest for two pounds invested. The two pages of this prize report, which state no more than Mr. Roales has himself done, contain a talisman, by which a mantle of luxuriant verdure might be spread over the mountain moors of Wales and Scotland, of Kerry and Connemara. If the plain means of improvement and employment are still neglected, it will be impossible not to tax the owners of these needless deserts with supineness; and difficult to deny that they hold in their hands more of this country's surface than they are able to manage for their own good or for the good of the community. *P. Pusey, in the Journal of the English Agricultural Society.*

Home Correspondence.

On English and Scotch Farming.—Having read and heard a great many contradictory statements on English and Scotch farming, and being practically acquainted with the system adopted in the leading counties of Scotland, I resolved to make a tour through England, to ascertain personally the difference in management, and to bring home what I considered any improvement; for as yet I never traversed any county or district but what I found something useful to be adopted, yet often have I conversed with persons who held that the farming in their district was superior to any elsewhere to be found. The reason why such persons hold that idea is obvious—they have never seen any other systems but their own—their own system is the best and worst they ever witnessed. I left Aberdeen on the 13th ult., sailed from thence per steamboat to Newcastle, after which I took my tour through the midland counties, but must say that I did not admire the state of agriculture in many of them. My objections are as follows. Fields too small, and surrounded by zig-zag hedges and trees. Ploughing very indifferently performed, not exceeding 4 inches deep; and in many places I observed three and four horses all in one plough not abreast, but in a row, with only the above-named depth of furrows. Very deficient in Turnip culture, the drills too narrow (where they do drill, but many of them sow on the flat). A great deal of their dung is left exposed on the surface. In short, Turnip husbandry is yet in its infancy with them generally; but on moving towards the metropolis, I found things in a different state, most especially in Hertford; there I spent some time, where information was to be found. The first place I had the pleasure of examining was the home farm of Cassiobury (proprietor Earl of Essex). This farm is under the management of Mr. Swanston; the appearance of all the crops was beautiful. The Turnips were laid down on the Scotch system; in short, the general management of the farm and stock gives praise to Mr. S., as one who thoroughly understands his business. The next farm I scrutinised was Sandingburgh, rented by John Kinder, Esq., from Lord Spencer, bailiff Mr. Hutcheon. The crops on this farm were altogether startling, being a thin gravelly soil, incumbent on chalk. On passing over the farm, I was led to ask what artificial manure was used, for I firmly asserted that such crops could not be raised on this soil without the aid of extraneous manures. To this Mr. H., replied, and I shall use his own words, "I have farmed Sandingburgh for nearly 20 years; all the artificial manure I have used has been small—some few cwt. of bones, and some of Lawes' manure for the Turnip crop (from the latter I derived no benefit). I have occasionally used some nitrate of soda as a top dressing, but not to any extent. I endeavour to preserve the manure of the farm, both solid and liquid; whether I do justice to the soil or not, the crop will tell." Had this account been given by any other person but the manager, I would have doubted its accuracy, for the crops were all good, most especially two fields of Wheat, in extent about 50 acres; the Wheat was then coming into ear, the average length exceeded 4 feet. After examining the crops, I was shown the herd of cattle, consisting mostly of short-horns, equalled by few and surpassed by none in England—symmetry, breeding, milk, and feeding properties, are all combined, which speaks volumes in favour of Mr. Hutcheon's skill as a breeder, being all descended from his own herd, and none of them ever were purchased at unwarrantable prices; and while he keeps up the breeding stock, he does not lose sight of feeding for the butcher; his bullocks he feeds off at two years old, at an average weight of 800 lbs., fed on the produce of the farm (given raw), with a little oilcake to finish off with. When a lot is sold, their stalls are filled in succession from the herd; if any are purchased it is in calves, which are purchased at 15*s.* or 20*s.*, and sold by two years at as many pounds, rather contradicting Mr. Mechi's statement, "that bullocks are ungrateful fellows." Part of his green crops are consumed by sheep on the land, which no doubt assists in keeping up the fertility of the soil; and on passing the dung yard, I observed a number of pigs. Remarking how he kept so many of these, to that Mr. H. replied, "Pigs have given me annually a profit of 200*l.*, so I keep them." *H., Aberdeenshire, July 7.*

Cumberland Carts.—We perceive that your correspondent "L.," is a great admirer of the Cumberland cart, and that he earnestly hopes Messrs. Ransome and May will exhibit specimens of this wonderful cart at the Exeter meeting of the present year. We know not whether Messrs. Ransome and May have any such intention, but we know, to our cost, that we have one of these celebrated carts on our premises, which has never been used, and which we shall be exceedingly happy to dispose of to "L.," or to any other gentleman, at much less price than it cost us to obtain it from its native hills. Fired by the glowing descriptions of "L." and other writers in the *Agricultural Gazette*, and also interested by the account given of these carts by Messrs. Ransome and May, we ordered one from a well known Cumberland maker, the price being 12*l.*, cash paid to him for it, besides an expensive freight to Bristol. We will say nothing of the merits of the article, but we shall be only too happy to sell it to "L." or any of his friends for 12*l.*, and for the future, at any rate, we shall be much more cautious in placing reliance on the descriptions of carts given by other persons. *Stratton, Hughes, and Co., Bristol.* [The price charged for this Cumberland cart, at the place of its nativity, being 12*l.*, we will build "L." or any of his friends any number of these carts, made in a very superior manner as to materials, but precisely pattern, as to shape and dimensions, for 11*l.* each cart. *S., H., and Co.*]

A Scotch Ewe was lost under the following circumstances. Appearing perfectly healthy, she was soon afterwards found dead. On *post mortem* inspection, the liver was perfectly sound, the lungs healthy, the bowels much distended with air, particularly the small intestines, which contained nothing else, and about six hours after death presented a sort of transparent appearance, and were of a greenish yellow colour. Although she was half fat, there was but little fat on the intestines. I find nearly all my neighbours have lost sheep more or less under similar circumstances, and the popular opinion is that they are poisoned by some herb or by something they get. I shall be obliged if any of your readers can give me any information on the subject. *Henry Chaytor, Croft, Darlington.*

Mr. Mechi's Pigs.—I never hunt in a pack, or I would reply to my esteemed friend Mr. Mechi's letter at some length; but as I find that he has castigators in another quarter, I merely state, that although I acknowledge I expressed myself in my article referring to him, published June 15th, as strongly as I could; yet I cannot retract a single remark I made referring to him. My friend's pigs were exactly in the state I described them to be in, notwithstanding the denial of my statements by his reverend correspondent. I am unwilling to repeat what I stated, but were I to appeal to my friend himself, and his numerous work-people, my friend would not deny, and his workpeople could not refute the veracity of my statements; I add, also, that although I made my statements on my own responsibility alone, Mr. Mechi has had many other visitors besides his reverend correspondent, and I have proofs in my possession from several of them, that they had witnessed with pain all that I described. I have also received several letters from well-wishers to my friend Mr. Mechi, but strangers to me, thanking me very courteously for the article which my reverend friend condemns. But my rev. opponent challenges me to a contest as to whether his or my crops are greater. Now I call to his recollection that my Barley is the third crop of Barley in succession in the same field, and that the seed for the present crop was only just half a bushel; and that for neither of the former crops did I exceed three pecks an acre, though my produce was eight quarters within a bushel. He will likewise call to mind that my Wheat crop is on the same land which is in part Wheat for the fourth time, and a part for the fifth time, in five years. He also ought to remember that the whole field was seeded with less than 1½ peck of seed Wheat per acre. If, therefore, I had failed in either or both these crops, a generous opponent would have lamented rather than have exulted over it. But I have not failed; and to show that I have not, I more than accept my reverend brother's challenge for a trial. But I must inform him and the public that I have had for many months a nominal wager, for a pair of gloves only, respecting my crop, the conditions of which, committed to writing, are held by an honourable baronet, who saw a part of my Wheat drilled with my drill; and he also will see it, or some one else in his behalf, measured and weighed, and I hope reaped also; and therefore I cannot alter the conditions of this wager. But if my reverend opponent, my friend Mr. Mechi's correspondent, will also enter the list against me, and on the same conditions, to prove to him that I do not fear the contest with him, I will lose my wager with him if I do not beat him by EIGHT bushels an acre. But the respective crops shall be reaped, threshed, measured, and weighed in the presence of umpires; and to show further that I am ready for the contest, my reverend opponent may choose three umpires for my one, or six for my two, or twelve for my four. And to show him further that I am not vainly boasting, I am sure of exceeding six quarters or 48 bushels an acre; and I think also I shall have seven quarters or 56 bushels an acre, and from a peck and a half of seed only, or 149 times the seed I used, though the general average of the produce of England does not exceed 11-fold, or 11 times more than the seed used. *Geo. Wilkins.*

Societies.

ANNUAL MEETING OF THE ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

(*Resumed from page* 462.)

THE SHOW OF PIGS on this occasion was a very satisfactory one, both in point of numbers and quality, there being 114 entries and 152 animals exhibited, comprising the best specimens of the several fashionable breeds—the Yorkshire, Cumberland, Tamworth, Leicester, Berkshire, and Essex, with their sub-varieties of large and small breeds. Owing to the variety of breeds of pigs which come into competition with each other, a peculiar degree of interest attaches to this part of the annual exhibition of the Society. In most other classes the competition is confined to animals of some particular breed. To be devoid of the characteristics of that breed, however rare may be the merits of animals in all other points, is fatal to its chance of success. The best Leicester would be no-where if entered out of his own class in a mediocre lot of long-wools, and a superb short-horn would be cast, if placed alongside an ordinary Devon, in a class professedly of the Devon breed.

In pigs, however, the Cumberland, Yorkshire, Tamworth, and Berkshire compete for the large breed, and the Essex, Yorkshire, Leicester, and Berkshire, are antagonists upon equal footing for the honours of the small breed; and the animals that approach the nearest the ideal standard of excellence in the several points of symmetry, quality, and size, receive the honour due to merit, from whatever stock these excellences may have been derived. If we refer to previous meetings we shall find that these honours are far from hereditary, and have been conferred upon the scions of each and every one of the houses that give their names to families.

It might seem difficult to an ordinary observer to do justice in this "war of the races," to the claims of animals possesed of such distinct characteristics as the several breeds are, but this is imaginary. The test of form and quality in all breeds is uniform. There is but one formation that indicates the highest order of fattening power—but one that bespeaks milking qualities—"quality" is distinguishable, whatever the colour of the skin. The form therefore that exhibits the nearest approach to that which bespeaks excellence, and which, by shape and touch, offers the most indications of quality, is the one which, whatever may be its local habitation or name, receives the prize.

On the present occasion it will be seen that the Yorkshire and Leicester breeds have been the most successful; the prizes for large boars and sows having been awarded to the Yorkshire and Cumberland white pig. While, for small breed, the whole of the prizes have been obtained by the black Leicesters; and it is worthy of notice that the first prize small boar, the first prize small sow, and one highly commended, are all from one village (Lifton, Devon), and two of them the property of one person, Mr. Richard Bartlett. While the highly commended animals of this class are all of the "Yorkshire lot;" Nos. 525 and 574, by Mr. Tuley; 569, Mr. Stainsby, Leeds; 568, bred by Mr. Atkinson, Leeds; 519, Mr. Savery's, Exeter, bred by Mr. Forster, Woodhouse, Leeds.

The Tamworth pigs obtained a prize for large breed. Competition was small in this class, and the animal had rare merit in size and milking qualities, as evidenced by a beautiful litter of pigs. The Tamworth pig does not, however, possess the proper form for fattening, but has the thin long head, light neck and shoulders that bespeak them good wet nurses. They have size too, and, for so large a pig, the merit of uniformity and good quality of skin and hair. Against the Yorkshire and Cumberland pig, possessing quality and size in an equal degree, and greater width of head and shoulder, they can never prevail where competition is at all extensive.

With the exception of the prize for three young sows, the Essex blood was unsuccessful. A few commendations were awarded to them in the small breed classes. The Berkshires were also still more unsuccessful. The Essex pigs have fine quality, exhibit signs of pure breeding both in hair, bone, and figure; but cannot equal either the Leicester or Yorkshire Short-ear in width of shoulder, levelness of back, or breadth and shortness of face. The superiority of the Leicesters and Yorkshires in length and width of body, evenness of form, and shape of head, was very visible on this occasion. The Berkshires are much too coarse in bone and hair for the small breeds, and have not sufficient size for the large; yet amongst them are very many symmetrical animals.

We have scarcely time to notice singly the animals that struck us most. The class of large boars was not numerous, 11 being exhibited. The prize boar, belonging to Mr. Moses Cartwright, of Burton-on-Trent, of the Cumberland or Yorkshire breed, is of beautiful symmetry—perfect back and loins, good head, but is scarcely up to our idea in size, nor equal to boars of the same breed that have won on other occasions. His girth is 69 inches, age 1 year 7 months. The second prize, belonging to Mr. Ley, of Trehill, Exeter, was bred by Lord Wenlock, York; and is a fine old pig, showing, however, marks of age. Mr. Stainsby's young boar (487), highly commended, is a prime animal, both in blood and looks, with the exception of his hind legs, that have gone too much under him.

In the boars of a small breed (494), Mr. Lifton's 9 months old Leicester, girths 57 inches, and measures 52 from ear to tail. The head of this animal is perfection, his ham is equally correct. Nothing can much surpass the outline of his form. His width of loin and rump are extraordinary. The second prize, Mr. Radmore, Thorveston, Devon, a Leicester (517), 10 months, is larger than the winner, girth 60 inches, length 57, but he is not so even in form nor so rich in quality. This pig's back is good as possible, his face is longer than that of the other pig, and his hind quarter droops. This gives too much curvature to the back. In this class are several other first-class animals. No. 525, 1 year 3 months, Mr. Tuley's (Keighley) is one of the

finest animals in the yard. His sides and top, from ear to tail, are perfectly straight—nothing equal to them in the yard. He has, however, a slight deficiency in quality to the touch; his head is scarcely correct, and is not quite fine enough to compete for small breed with the full blood Leicester. His girth is 60 inches and length 57 inches. Mr. Maws (Tetley Crowle, Lincoln) boar (510) is an astonishing animal. He has too much hair for a competition of this sort, and is rather too round in the back and strong in the bone; otherwise, so far as regards plumpness of form, and perfect evenness of outline, he excels everything in the yard. Rotundity is his characteristic, to a higher degree than any other animal. His girth is 69 inches, and length 57, being 12 inches more in girth than the prize animal, and same girth as first prize *large* breed. Mr. Savery's boar (518) is deficient in his forerib, to an extent that disqualifies him altogether in a competition of this sort. Two boars of Mr. Fisher Hobbs', Nos. 510 and 511 are commended. No. 508 is a neat pig, but small and light in the fore-quarter, and the head is not broad enough.

The large bred sows are not first-rate. Mr. Tuley's prize sow (536), although much before her competitors, is but a moderate substitute for the noble animal with which he took the same prize last year at Norwich.

Sows of the small breed were an extraordinary class; 38 were exhibited. The judges report that the competition was almost unprecedented. It is a pity that in such a class there was only one prize. The fortunate animal in this class, belonging to Mr. Northey, Lifton, Devon, is 1 year and 5 months old, and girths 63 inches. She has great length; head and shoulders, sides and hams, are superb. From front or behind she is the best-looking pig we have ever seen; her back, however, is, if anything, weak, which arises from her being longer than some animals of this class by an inch or two. The immense circle formed by her head, cheeks, and shoulder, and that by her hind quarters, are alike unequalled in the yard. Mr. Stainsby's sow (569) highly commended, is a model, and in our opinion stands next the winner. Mr. Tuley's, 574, is very large and handsome, but scarcely fine enough in bone for this class; she girths 66 inches, and is highly commended. Mr. Bartlett, of Lifton, owner of first prize, small boar, has also a splendid sow in this class, No. 545; she is highly commended, and deserves it, as she runs close upon those mentioned before her. A small Essex (559), 9 months, belonging to Mr. Moon, of Lapford, was almost as broad as long, wonderfully fat, fine quality, but too short in the side for breeding purposes; her girth was 58 inches. The young sow, 563, belonging to Mr. Savery, of Silverton, Exeter, and bred by Mr. J. R. W. Atkinson, Leeds, has one of the best natural forms in the yard. It was not at all fed up, and will one day make a splendid sow, if her hind legs do not get crooked. The several other sows that were commended were principally of the Essex breed; amongst which Mr. Hobbs had (557) a neat 7 months old sow; and Mr. Phillips, Totness, had a very fine Yorkshire sow, aged 10 months (565). This animal was lame.

The breeding sow pigs of large breed were not very noticeable. The first prize Tamworth pigs (576) are wonderfully large for the age stated in the entry (7 months 1 week), but have all the failings of the breed, and are lean and long in the fore quarter. The second premium, Mr. Trollers, of Durham, had two good pigs, and one very coarse animal. Mr. Tuley's pigs, 22 weeks old, are too small to show against the above, but are animals of a much higher quality.

Breeding sows of a small breed were an excellent class. Mr. Turner's (1st prize) animals are well entitled to it. Mr. Catherall's, of Mold, Flint (583), 33 weeks and 2 days white Yorkshire small breed have great beauty, and the highest possible quality. There is one in the lot scarcely equal to the other two, and they have less size than the winners. Mr. Fisher Hobbs' 30 weeks old (586) were commended, and are very pretty animals. They are, however, well beat by Mr. Turner's.

In Extra Stock, Mr. Stainsby's (Leeds) three sow pigs, large breed, 9 months, were entitled to the highest commendation; had they been eligible for the premium for three sow pigs, they would no doubt have out-distanced the Tamworth sisters.

SHEEP. — We continue our report of this part f the Exhibition from last week. In Longwools, the prize of 20*l.* was given to 458, a 16 months old ram, bred by Mr. Hewer, of Ley Gore, Gloucestershire. This animal is of immense size, has a very good fore-quarter, a wonderful cushion, very fat back, and a good curly fleece. The prize of 10*l.* was awarded to 453, same age, bred by Mr. Garne, of Adsworth, Gloucestershire. This sheep is nearly perfect in form; he has an extraordinarily forward, full, and deep breast, great depth of carcase, broad chine and plates, a beautiful back, and wool good though not very plentiful. 459 was highly commended, belonging to Mr. Hewer. It is remarkable for width, has a thick scrag, full plates, good rump, and a back free from the usual defect of Cotswold sheep, viz., a high point immediately in front of the loin. 463, Mr. Large's sheep, was commended; it has great breadth, amazing width of chine and plates, beautiful back, curly staple, but a falling off in the rump. We noticed also 449, a sheep of Mr. Cother's, of Woodstock, Oxon, a well made animal, with a close thick-set fleece. 455, Mr. Garne's sheep, very high-standing, with good rump, firm handling, but with a neck too long, and ribs not out-springing enough to carry off a prize. 456, Mr. Handy's ram, of Sevenhampton, Gloucestershire, a very pretty sheep, but too small, and rather narrow towards the rump.

Class II. RAMS OF ANY OTHER AGE.—Though we may be astonished at the immense bulk attained by sheep in 16 months from their birth, it is in this class that the greatest size is beheld. Mr. Garne's ram, 467, 40 months old, which obtained the prize of 20*l.*, is very big, and beautiful in every point, having an especially good neck. The prize of 10*l.* was awarded to 471, bred by Mr. Lane, of Eastington, Gloucestershire. It is 52 months old, a most extraordinary animal, of immense frame, very broad, full, and deep chest, colossal neck, great overhanging cushion; weighing probably 80 lbs. per qr., yet having a very small head and marvellously thin bone. 473. A 52 months old ram, bred by the same gentleman, was highly commended. It is a magnificent ram, having a wide carcase, full plates, thick scrag, heavy overhanging rump, and light offal; being broad enough to be worthy of a prize, though hardly fine enough in quality to take it. 466. Mr. Garne's sheep 40 months old was commended. A very long and wide sheep, with an excellent back and good fore-quarter.

Class III. SHEARLING EWES.—The prize of 10*l.* was awarded to 476, Mr. Large's pen of ewes (Broadwell, Oxon). They are superior ewes, with beautiful quality of mutton; in shape exceedingly good, being wide, round, deep, large, with plenty of good wool. The prize of 5*l.* was obtained by 477, Mr. Large's ewes, beautiful animals, but little inferior to the first lot; they have good wool, but are not altogether so good in quality as their more successful companions. 478. Ewes bred by Mr. Wippell, of Brenton Barton, near Exeter, have good backs, covered with a thickset staple of wool; but loins and chines hardly wide enough to win.

In EXTRA STOCK we observed No. 604, a pen of five Exmoor ewes, from four to seven years old, excellent animals of their class, but such as do not show well beside the straight-backed, compact, Leicester, and long-woolled sheep. 605. A pen of five horned ewes, four years and four months old, bred by Mr. Coombe, of Creech, Somerset, were highly commended, being of great size and very superior quality.

We have thus noticed some of the chief attractions of the sheep show, and though we have spoken dogmatically as to the character of the animals, we wish it to be understood that our remarks are intended to express only our own opinion. In conclusion, the exhibition was super-excellent, especially in the Southdown classes; whilst the Leicester and Longwools displayed a marked improvement upon last year. *C.*

In our report of Sheep last year we endeavoured to show, by means of tabular statements, what were the general results at which we had arrived, after watching the progress of the Society in the department of sheep-breeding. From a comparison, exhibiting the annual increase in the number of animals exhibited, we inferred that first-class sheep were more numerous in the kingdom than formerly. And we expressed our belief that the "model animals" were each year better in form and quality than the last; since not only had the great victors at the exhibitions been constantly improving their stock, but other breeders of new renown were frequently stepping in to deprive them of their honours. This point was illustrated by a comparative list of the prizemen in 1847-8-9. And by another table of measurements we showed that the prize animals of 1849 were of larger size than those of 1848, indicating the progress of breeders in the task of augmenting the frame without losing the quality of the sheep. We intend here to convey information upon other points of interest in the same concise manner; our first table setting forth the respective numbers of sheep exhibited in the years 1847-50.

	NORTHAMPTON, 1847.	YORK, 1848.	NORWICH, 1849.	EXETER, 1850.
LEICESTERS	73 Rams, 12 pens of Ewes	118 Rams (14 being also for the local prize). 16 pens of Ewes (5 also for local prizes).	88 Rams, 14 pens of Ewes	Class I.—Shearling Rams 33 ,, II.—Rams of any age 32 Rams...65 ,, III.—Shearling Ewes pens...14
SOUTHDOWNS	60 Rams, 11 pens of Ewes	42 Rams, 4 pens of Ewes	62 Rams, 17 pens of Ewes	Class I.—Shearling Rams 43 ,, II.—Rams of any age 30 Rams 73 ,, III.—Shearling Ewes pens 7
LONG WOOLS	26 Rams, 3 pens of Ewes	32 Rams, 6 of them also for the local prizes. 5 pens of Ewes, 2 of them for local prizes.	24 Rams, 5 pens of Ewes	Class I.—Shearling Rams 15 ,, II.—Rams of any age 12 Rams 27 ,,III. Shearlg. Ewes pens 3
Relative Totals ...	159 Rams, 26 pens of Ewes	192 Rams, or without the "local" ones, 172 25 pens of Ewes, or without the local ones, 18	174 Rams, 41 pens of Ewes	165 Rams 24 pens of Ewes

The next is a synopsis of the names and counties of the prizemen for the last few years, showing that the Leicesters of the northern counties occasionally excel those of the midland districts; that the Southdowns of the southern counties share honours with those of the eastern counties, and that the Cotswold district is all-powerful in longwools.

	NEWCASTLE, 1846.	NORTHAMPTON, 1847.	YORK, 1848.	NORWICH, 1849.	EXETER, 1850.
LEICESTERS.					
Judges ...	Stone, Leicestershire. Ashdown, Shropshire. Wright, Derbyshire.	Wright, Derbyshire. Harris, Berkshire. Milward.		Stone, Leicestershire. Bartholomew, Lincoln. Allison.	W. Torr, Lincolnshire. Barford. Hall.
Class I. ...	Turner, Devonshire. Smith, Rutland.	Pawlett, Beds. Pawlett, Beds.	Borton, Yorkshire. Harvey, Norfolk.	Abraham, Lincolnsh. Sanday, Notts.	Abraham, Lincolnsh. Sanday, Notts.
Class II. ...	Burgess, Notts. Pawlett, Beds.	Smith, Rutland.	Borton, Yorkshire. Hobbs, Essex.	Sanday, Notts. Hobbs, Essex.	Abraham, Lincolnsh. Sanday, Notts.
Class III. ..	Angas, Yorkshire.	Sanday, Notts. Smith, Rutland.	Sanday, Notts. Sanday, Notts.	Simpson, Yorkshire. Sanday, Notts.	Abraham, Lincolnsh. Sanday, Notts.
SOUTH-DOWNS.					
Judges ...	Overman, Norfolk. Pope, Dorset. Trumper, Oxfordshire.	Trumper, Oxon. Ladds, Huntingdonsh. Etheridge.		Pope, Dorset. Trumper, Oxon. Boys, Kent.	R. Overman, Norfolk. Trumper, Oxon. Maton.
Class I. ...	Webb, Cambridgesh. Webb, Cambridgesh.	Webb, Cambridgesh. Webb, Cambridgesh.	Webb, Cambridgesh. Shelley, Sussex.	Webb, Cambridgesh. Webb, Cambridgesh.	Sainsbury, Wilts. Sainsbury, Wilts.
Class II....	Webb, Cambridgesh. Duke of Richmond, Sussex.	Harris, Berkshire. Harris, Berkshire.	Sainsbury, Wilts. Drake, Hampshire.	Hobbs, Essex. Shelley, Sussex.	Rigden, Sussex. Sainsbury, Wilts.
Class III.	Duke of Richmond, Sussex. Barnard, Essex.	Duke of Manchester, Hunts. Barclay, Surrey.	Duke of Richmond, Sussex. Shelley, Sussex.	Shelley, Sussex. Overman, Norfolk.	Rigden, Sussex. Duke of Richmond, [Sussex.
LONGWOOLS.					
Judges ...	Bateman, Oxon. Stokes, Derbyshire. Clarke, Lincolnshire.	Woodward, Clarke, Lincolnshire. Beman, Gloucestersh.	Cox. Beman, Gloucestersh Clarke, Lincolnshire.	Beman, Gloucestersh. Bateman, Oxon. Clarke, Lincolnshire.	Beman, Gloucestersh. Gillett. E. Clarke, Lincolnsh.
Class I. ...	Large, Oxfordshire. Handy, Gloucestersh.	Large, Oxon. Faulkner, Oxon.	Hewer, Gloucestersh Hewer, Gloucestersh	Large, Oxon. Garne, Gloucestersh.	Hewer, Gloucestersh. Garne, Gloucestersh.
Class II....	Handy, Gloucestersh. Large, Oxon.	Large, Oxon. Hardy, Gloucestersh.	Garne, Gloucestersh Handy, Gloucestersh	Large, Oxon. Garne, Gloucestersh.	Garne, Gloucestersh. Lane, Gloucestersh.
Class III. ...	Smith, Oxon.	Large, Oxon. Large, Oxon.	Large, Oxon. Simpson, Yorkshire	Large, Oxon. Large, Oxon.	Large, Oxon. Large, Oxon.

The next list shows the fluctuation in the number of exhibitors, and it will be seen what a large number of breeders avail themselves of the proximity of the country meeting to their farms. The exhibition of his best animals in the great competition-ground of the Society cannot but prove advantageous to the breeder, whether he be successful or not; the character of his breed being there made known to the public, and the comparative merits of his favourites tested in juxta-position with the *elite* animals of the kingdom. From the following Table it appears that this benefit is obtained by many breeders who would not have enjoyed the opportunity of receiving it unless the show-yard had been placed within a comparatively short distance of their dwellings. This is one of the abundant benefits resulting from the visits of the Society to different localities of the kingdom. The first four lines show the number of exhibitors in each of the counties where the meeting has been held, from which may be seen the extent of the benefit above-mentioned, and the relative spirit with which the breeders of the several counties have seconded at succeeding meetings their initiatory exposition at their county town.

Number of Exhibitors residing in each county sending Sheep to the respective Shows in 1847 to 1850.

Northampton, 1847.		York, 1848.		Norwich, 1849.		Exeter, 1850.	
Counties.	Exhibitors	Counties.	Exhibitors	Counties.	Exhibitors	Counties.	Exhibitors
Northamptonshire	9	Northamptonshire	0	Northamptonshire	2	Northamptonshire	0
Yorkshire	1	Yorkshire	16	Yorkshire	3	Yorkshire	4
Norfolk	2	Norfolk	1	Norfolk	15	Norfolk	0
Devonshire	0	Devonshire	1	Devonshire	1	Devonshire	9
Leicestershire	3	Worcestershire	1	Worcester	1	Worcestershire	1
Rutland	1	.....		Suffolk	1	Suffolk	1
Warwickshire	3	.....		Cumberland	1	.....	
Derbyshire	1	.....		.....		Isle of Wight	1
Nottinghamshire	2	Nottinghamshire	3	Nottinghamshire	4	Nottinghamshire	1
Bedfordshire	2	Bedfordshire	2	Bedfordshire	1	Bedfordshire	1
Northumberland	1	Northumberland	1	.....		Dorsetshire	1
Gloucestershire	1	Gloucestershire	3	Gloucestershire	3	Gloucestershire	4
Oxfordshire	3	Oxfordshire	2	.....		Oxon	2
Wiltshire	1	Wiltshire	1	Wiltshire	1	Wiltshire	2
Shropshire	1	.....		.....		.....	
Berkshire	3	Berkshire	2	.....		Berkshire	2
Sussex	3	Sussex	2	Sussex	5	Sussex	6
Surrey	1	Surrey	2	.....		.....	
Kent	1	Hampshire	1	Hampshire	1	Hampshire	1
Essex	1	Essex	1	Essex	2	Essex	2
Huntingdonshire	1	.....		Cambridgeshire	1	Cambridgeshire	1
Cambridgeshire	1	North Wales	1	.....		.....	
Lincolnshire	2	Lincolnshire	2	Lincolnshire	2	Lincolnshire	1
Scotland	1	Scotland	3	.....		Scotland	1
Total—Counties, &c. ...23	45	Total—Counties, &c ...18	45	Total—Counties, &c ...16	35	Total—Counties, &c. ...19	41

Horses.—Bearing in mind the fact that Devonshire is not distinguished for its breed of horses, and that very few of the heavy kind are reared within its limits, the show of horses was not only very respectable, but surpassed our expectations; for although the class for agricultural stallions of any age, as well as that for 2-year-olds were both inferior to these classes at Norwich, York, and Northampton, yet on the other hand the classes for mares and foals, as well as that for 2-year-old fillies, we believe surpassed those of any former show. In Class I. we noticed a dark chesnut 5-year-old horse of the Suffolk breed, No. 234, to which the first prize was deservedly awarded. This animal exhibits considerable substance, powerful quarters, with good shoulders and fore-legs, conjoined with symmetry and action. We understand this animal was shown at Norwich in the class for dray-horses, and not being a horse of this character, failed in obtaining a prize which perhaps he might otherwise have secured. The second prize horse, No. 233, also a Suffolk, was superior to the former as respects the back and loins, which were perfect, but inferior in other respects. This horse we find obtained the second prize at York. Closely rivalling these horses was No. 246, a roan horse of great size, strength, symmetry, and activity, and which well merited the high commendation he received. Probably his great weight, and a little coarseness about the legs, debarred him from receiving a prize. In this class we also noticed a very fine brown stallion, No. 253; an active and very useful young grey horse, No. 251, as well as an exceedingly compact and active black horse, whose merits almost made us forgive his white and hairy legs, so peculiar to his breed.

In the class for two years, we find the prize animal is No. 255, the first in the class, and, if we do not greatly mistake, this fine young horse is not only Number 1 as regards the class to which he belongs, but also as respects the show of horses altogether. Size, strength, and symmetry are here admirably united; the fore legs flat and clean, and the feet good, with remarkably good action. This horse, we are pleased to find, is by the prize horse at the Northampton meeting, one of the finest (then) four years old horses we ever remember seeing. The second prize in this class was taken by a Suffolk, a very handsome animal.

The class for Roadster Stallions, though inferior to that at the York meeting, was superior to this class at several other shows. The prize was awarded to No. 267, a handsome compact grey horse, displaying considerable breeding, and with superior action. This horse we understand has carried the Queen's huntsman five successive seasons. A fine three years old horse, No. 267, is highly commended in this class, and a handsome dark brown stallion, No. 271, possessing great substance, is also well worthy of commendation.

We now come to the other sex, being Class IV., for Mares and Foals for agricultural purposes; and here, as well as in the next class, the Suffolks reign supreme, taking both first and second prizes; and here we may well pause for a moment, to inquire how it is that the Suffolks are so successful in obtaining prizes at these shows,—a question which we feel no difficulty in answering, inasmuch as the class we are now noticing affords a striking proof of the justness of the explanation we have to offer; viz., that it is by the most rigid attention to the excellence of their mares, that the Suffolk breeders are enabled to rear such very superior horses as they succeed in producing. Any man, by the payment of the requisite fee, can avail himself of a first-rate horse, but it requires 50 or 100 times the amount of such fee to procure a mare equal to such horse, in all respects; (100*l.* was the price asked for No. 282, the mare to which the first prize was awarded, and 50*l.* for the foal.) There is no peculiar virtue in the colour of the Suffolks; indeed, we would prefer a dark-bay or brown; but it is that animals of this peculiar colour have received very great attention, and in consequence have been considerably improved. With respect to the prize mare, it would be difficult, indeed, to point out any fault she possesses. Size, strength, symmetry, and activity are here admirably united. No. 272 is also a very superior animal, and is closely rivalled by No. 279, a fine brown mare, with a capital foal by her side. Nos. 277 and 280 are also very good animals. Class V., for two years old Fillies, displayed some capital animals (mostly Suffolks), the prize being given to No. 284, a very perfect filly; and the second prize to No. 286, a very symmetrical animal, though somewhat deficient below the knee. Between the last-mentioned and No. 287 the competition must have been very great, whilst No. 283 was also deservedly commended. One improvement we noticed in the horses exhibited at this show, which is, that they were not so immoderately loaded with fat as at Norwich, and some former shows. *W. C. S.*

Upwards of 1000 guests sat down to a dinner provided by M. Soyer, and, as might have been therefore expected, far superior to the dinners which have generally been provided on these occasions. The Marquis of Downshire presided; the place, as vice-chairman, of the Duke of Richmond, who was unfortunately absent, being supplied by the Earl of Chichester. The speeches of their excellencies, Mr. Lawrence and Mr. Rives, ambassadors from the United States of America to England and France respectively, were much applauded. Probably the ablest and most useful address, however, upon the occasion was that of Lord Wodehouse, who, in advocating the toast of "the labourer," entered into the subjects of emigration and education as bearing upon pauperism. Towards the end of the meeting considerable confusion prevailed, and the length of the speeches delayed the proceedings till after dark.

Reviews.

Ireland's Only Safety, the Improvement of its Waste Lands. By Law. Rawstorne, Esq. Pp. 24. Longman, Brown, Green, and Longmans.

The author here argues for the enlargement of the area of cultivation up to the extent of the population, and against lowering the amount of the population down to the capacity of the soil. Emigration, as it has hitherto proceeded, is depriving the country of its best men—of those who, having capital, and knowing how to apply it, are precisely the men whom Ireland wants. And the remedies Mr. Rawstorne would propose for the pauperism which seems about to swallow up the Irish common people altogether, are Government interference for the reclamation of waste lands, and the application of the labour-rate in a modified form for the support of labouring poor. The evils which are generally supposed to attend the adoption of the latter part of this plan he believes might be avoided:

"When Captain Cragie, in the Orkneys, in the first year of the famine, began to give unlimited work to the indigent people, he found large bodies of them flocking together from all quarters to get a share of the Government money. The fisheries were deserted, all the common employments stopped. The following year he instituted a destitution rate, and the plan worked admirably. If this would do so in one instance, why may it not act equally well in another; and is there any other reason for not giving it a trial in Ireland, except that the extent of the calamity would require some additional restrictions? That a labour-rate in a workhouse must necessarily act injuriously, can never be allowed, nor will it be likely to be asserted by any except by those who have seen it tried under some peculiar disadvantages. The Union of Chorlton-cum-Medlock, close to Manchester, consists of a manufacturing population exceeding 80,000 persons. When the writer of this visited it many years ago, he found in the house very few except some old and infirm paupers. A piece of moss land had been taken from Sir Thos. De Trafford, on which the able-bodied were set to work at reduced wages. The effect of this was that every man looked out for work for himself elsewhere, and did not trouble the town longer than he could possibly help."

The following are some of the details of the author's plan: "Let land be attached to every workhouse in Ireland, not less than 200 acres to each, and as much more as circumstances will allow. * * * The governor of the workhouse should have nothing to do with the work in progress on the land; but under the guardians should only select and supply such a number of labourers as might at any time be required. The advantage of a measure like this would be twofold; it would lower rates, and raise wages. In any legislation these should be the first things aimed at. Past legislation has rather taken a line in an opposite direction. By the ill-working of the Poor-law the rates have been swelled out so as to reach, in some cases, nearly the amount of rent."

Caird's High Farming Harrowed. By Cato the Censor. Reprinted from "Blackwood's Magazine."

We have been favoured with a copy of this reprint. The article was written by one who, whether he possesses it or not, at any rate exhibits plenty of the self-sufficiency and vanity which it seems to have been the main object of his criticism to prove against Mr. Caird. The "harrowing" has indeed quite as effectually exhibited the faults of the implement as the quality of the soil whose surface it has endeavoured to remove; and it may be doubted whether the machine in question was a *bonâ fide* agricultural implement at all, and not, rather, a contrivance like the teazel-frame of our woollen manufacture, which, however well fitted for scratching and scarifying the matters coming within the scope of its ordinary operation, is entirely at fault when set to deal with an *agricultural* subject. The principles for which Mr. Caird has manfully contended will survive the sarcasm here directed against its advocate; and the frequent possibility of farming profitably under low prices, where energy and intelligence are at hand to take every advantage of circumstances, is a truth nowhere better or more usefully illustrated than in the pages which "Cato the Censor" has here unsuccessfully attempted to laugh to scorn.

Miscellaneous.

Cattle Insurance.—Mr. Samuel Cary Richards lately made the following judicious remarks on the subject of Cattle Insurance at the Yeovil Agricultural Meeting. "This was a question of great importance to farmers and to landowners; it had already attracted much notice, but not by any means to the extent it deserved. All descriptions of live stock were now insured, as would be seen by a notice advertised in the *Yeovil Times* and other respectable newspapers; and to such an extent had this kind of insurance already been carried, in the office referred to, that the average, for the last three years, had been upwards of 50,000*l.* per week—the startling sum of 2,500,000*l.* per annum; and, to show its value to the farmer, it would be only necessary to state that the Insurance Company had paid, during the last year, for losses of stock, no less a sum than 70,000*l.* It appeared that there were, in England, Scotland, and Ireland 2,250,000 horses, of the total value of 67,000,000*l.*, of which more than 1,500,000 were used in agriculture, and that their value was 45,000,000*l.* The number of black cattle in the kingdom was about 14,000,000 to 15,000,000, of the value of 216,000,000*l.*; the number of sheep 50,000,000, whose value was estimated at 67,000,000*l.*; and the extent of capital invested in swine was still more extraordinary, when they reflected how little it was thought upon, or taken into account. The number of pigs, of all ages, breeding and rearing, was calculated to be upwards of 1,000,000, which, taking one-third at 2*l.* each, and the remainder at 10*s.* each, gave a value of 18,870,000*l.*, as the capital invested in pigs alone, making the total amount of capital in the above species of agricultural stock 346,270,000*l.* If to this was added the annual value of the crops, the capital in the hands of the farmers in the shape of live stock, and the produce of the earth could not, at a moderate computation, be estimated at less than 600 millions of pounds! He thought it was unnecessary for him to say another word upon the importance of insuring stock."

The Highland Society's Exhibition at Glasgow.—Now that the booking of the cattle and implements is fully completed, we learn that the demonstration will even exceed that at Glasgow in 1844, which was the largest the Society has ever yet had. It will exceed it in point of number, and in quality will very greatly surpass it. On that occasion the Society exhibited fat stock, crosses, and animals of all sorts; it now restricts itself to breeding-stock of the pure races, and of specified and proper ages. The number of cattle is about equal to that of 1844, but for the reasons above stated, the exhibition will be better. It will also be less exclusively local and Ayrshire, the proportions of the different breeds being better divided. For instance, there are more than 100 short-horns, embracing the best blood among the bulls of England. This is chiefly caused, we presume, by the sweepstakes for short-horn bulls, the plate for which is worth 70 guineas. The show of sheep will be enormous; swine very good; poultry large; horses 170. In butter there are some 240 entries, besides cheese. The show of implements will exceed anything yet seen in Scotland; some 500 articles have been entered. On the evening of the first day of the show, namely, Wednesday, the 31st instant, Dr. Anderson, the able chemist of the Society, will lecture on an agricultural-chemical subject in the Merchants'-hall. On Thursday is the great dinner, which is to be provided by Messrs. M'Lerie and Co., at 8*s.* a head—his Grace the Duke of Roxburgh in the chair, and the Duke of Argyll croupier. On Friday morning, the last day of the show, there will be a public breakfast and *conversacione*. All the arrangements appear to be made in the best possible manner, and promise a "glorious three days" to all who are interested in agri-

cultural subjects. We may remark, in conclusion, that the head quarters for the committee and judges is the "New Queen's Hotel," George-square.—*From the Glasgow Reformer's Gazette, July* 6.

Haymaking.—The best farmers put it through the following process. Suppose the weather fine, all the Grass cut before noon, and in the afternoon of the preceding day, is very well shaked out by hand (not with a pitchfork) so that scarcely two straws together lie in the same direction. That part which was shaked out before 10 o'clock is turned over before dinner, and the remainder immediately after dinner. The whole is turned over again before 4 o'clock. Then before 7 o'clock (before any dew falls) the whole is made into foot coils with the rake and foot. After the dew is off next morning it is well shaked out again, with the hand, into plots; the intervals narrow, or wide, according to the weight of the crop. Then turned over before dinner, shaked out again after dinner, turned over again by 4 o'clock, then made into wind-rows of five or seven turnings each, and put into cocks of about 1 cwt. each. Next day shaked out and turned before dinner, and after dinner turned over again, being then made into large wind-rows, and carted to barn or stack; or, made into big cocks of 5 or 6 cwt. each, to be carted the first opportunity. Care is taken to cock up every night before the dew falls, which is of considerable importance in making good hay. Neither should the sun be allowed to burn one part by its lying undisturbed half or a whole day. By this mode hay is made in one or two days less time than by a more careless manner of making. In showery weather the farmer has to be exceedingly watchful to see that it is always put into cock before rain. In other parts of the country far less care is taken in haymaking, but I am quite satisfied to the loss of the farmer. Very frequently allowing it to lie in the swarth a whole day, and sometimes in showery weather several days; and the same also when spread out. A saving of wages seems to be the principal object of the farmer more than making good hay. No importance is attached to its being wet with dew in the night, or scorched with sun in the day; and very little importance to its being wet with rain, when after the process is advanced. What would a housewife think of having her tea watered, and perhaps remaining in a damp or wet state for a day or two, and then dried before being put into the tea-pot for use? It should be borne in mind that dew, when the Grass is made into hay, will do the same damage as rain. I have seen hay cut from two adjoining meadows, but belonging to different farmers; the natural qualities of the Grass the same in both, and both cut on the same day; yet, from management alone, I calculated the difference in value when carted at 50*s.* per acre. *Rothwell's Ag. of Lancashire.*

Mr. Mechi's Farm.—As my farming operations are now public property, I invite inspection of my growing crops, in justification and verification of the opinion I expressed years since, that the poor and other lands of this kingdom, if properly drained, cultivated, and manured, would amply and superabundantly feed and employ our population, independently of any foreign supplies. The question of individual profit will be tested by the annual publication of my accounts. *J. J. Mechi, Tiptree-hall, near Kelvedon, Essex, July* 1.

Calendar of Operations.

JULY.

LAMMERMUIR SHEEP FARM, *July* 9.—The past fortnight has been a busy one with our shepherds—sheep shearing having been general in our district. Ours was completed yesterday. The practice here is for neighbours to assist each other, and to have the days previously arranged, to avoid confusion. Some three or four days before being shorn, the sheep are washed by swimming them three or four times through a deep pool from 15 to 20 yards broad; and that they may be thoroughly wet over the back, the rock or pier from which they leap should be at least 3 feet above the water. This may appear a somewhat primitive mode of doing the work, but having compared sheep thus treated with others which had been "hand washed," we find their wool as clean as it can possibly be made by any process of washing performed while on the animals' backs, while the time occupied is one-third shorter, with infinitely less labour to man and beast. As we endeavour to finish the shearing of each lot the same day it is begun, that the sheep may be as little disturbed as possible, and allowing from 50 to 60 sheep per day to each man, we make a point of having a sufficient number of hands provided. The sheep are either laid upon stools or a piece of clean turf; in the former case, the animal's legs are tied with a worsted cord, to prevent cutting, and the shears run along the side. We prefer this method. Whenever the fleece is removed, the "buist" or mark, expressive of the owner's initials, is stamped on the sheep, a kettle of warm pitch being kept close at hand for this purpose. The wool is carried to a building, where it is carefully examined, and all extraneous matter removed, and then rolled up. The thinning of Turnips has occupied all our hands for three weeks past. We expect to finish in a few days. They are now all ready, and, in general, growing satisfactorily. Oats are looking well, and coming into ear. Hay will be a light crop; we purpose beginning the cutting of the sown Grass next week. *A Lammermuir Sheep Farmer.*

Notices to Correspondents.

CLOVER: *X Y Z.* We should suppose the affair to have arisen accidentally. The Hop Trefoil has a seed somewhat like that of the red Clover. Your loss is just the difference between the crop you have and that which you probably would have had, calculated in tons of hay, at so much per ton.

CYCLOPEDIA OF AGRICULTURE: *A B.* Seven parts have appeared. Apply to Messrs. Blackie, Glasgow.

EXTRAORDINARY CASE OF A COW: In the first stage of disease the animal was deadly cold and trembling all over, with a stoppage in the bowels, and very much swollen. In about two hours after she was in the greatest agony, with her tongue out of her mouth to a great length, moaning and groaning, and very restless—All very unusual for a bullock. All medical treatment was quite useless. In 24 hours she died, and when opened one lung had perished and completely gone, and in the cavity of the chest was found a large quantity of blood and the rotten parts of the lung. The other lung and the bowels appeared to be in a perfect healthy state. [The case is certainly extraordinary and unusual. We imagine there must have been previous disease of the lung. *W. C. S.*]

INFLAMMATION OF THE BOWELS IN PIGS: *D A M.* Pigs may be bled from a vein inside the arm; they will also bleed with tolerable freedom if a portion of the tail is cut off. The disease in your case may probably be traced to some errors in feeding. Bleeding and oily laxatives, followed by doses of calomel and opium, and tartarised antimony in doses of 2 grains each for young pigs, and more for older ones. Young pigs might also be put in a tub of warm water with advantage. *W. C. S.*

LIME-WATER FOR BOILERS: *Const. Sub.* See p. 163, *Gard. Chron.* 1846. Put some muriate of ammonia into the water—about 1 lb. to 1000 gallons. It will hinder the deposit of lime, by converting the insoluble carbonate of lime into the soluble muriate.

OVERHANGING HEDGES: *J F.* The distance to which your property extends on the outside of your fence varies in different districts. We understand it to be 4 feet in our neighbourhood; and we imagine that we have no right to allow our hedgerow timber to overhang that limit. These are matters, however, on which a legal opinion is necessary, and that we cannot give.

PERIOD OF HARVEST: *Gallicus* asks, would it not be interesting if your correspondents in various parts of the country would inform you of the date of the first cutting of Wheat in their neighbourhoods, soil, and course of cultivation, and manure?

SKIN DISEASE IN A COW: *W D C.* Common mercurial ointment, diluted two-thirds by lard, will form the best application to the skin of your first case. In the second case we imagine the teeth may be out of order, and require examination. If this is not found to be the case, give a dose of salts with half an ounce of pimento, as the digestive organs may be out of order. *W. C. S.*

SOUTHDOWN SHEEP: *A Young Farmer* would be much obliged to any of our correspondents who would give him the result of his experience in fattening southdown sheep, and a calculation of the expense. [See vol. vii., p. 294, English Agricultural Society's Journal.]

THISTLES: *Enquirer.* Certainly. Continue pulling and they will disappear. About lime kilns—hereafter.

TRANSMUTATION OF GRAIN: *W B.* The Grass you have sent is the Phleum pratense (common Catstail Grass), plentiful everywhere in pastures, meadows, fields, waste ground, &c. It belongs to a genus as distinct from Triticum as Felis from Canis, and we should as soon expect to find a bitch producing a litter of kittens as a grain of Wheat giving rise to one of these Catstails. We every now and then see speculations about one kind of grain changing into another, and wonderful theories propounded in consequence by those who trust the parties that put forth these statements; but for our own part we do not believe there is a single trustworthy statement on record that ought to incline us to believe anything of the sort. Botanists have not yet ascertained the laws which limit the variations in form to which given species may be subject, and thus probably multiply species beyond all increase from Nature; but this is a very different question from that which supposes a change from one well marked genus into another, or even a species of one tribe into a species of another tribe. We can only suppose, in the present case, that your field was full of the seeds of Catstail, or your Wheat seed foul with them. *J. S. H.*

*** Communications reaching town after Wednesday cannot be answered the same week.

Markets.

SMITHFIELD, MONDAY, July 22.

The number of Beasts is large, but there is a considerable deficiency in weight. In consequence the best qualities are making rather more money; still, on the average, trade is dull. The supply of Sheep is neither so good nor so large as of late: the prices are better, more especially for Long-wools. There is more inquiry for good Lambs, which, being scarce, are dearer. We have an abundant supply of Calves; they are lower than we have known for a very long period. From Holland and Germany there are 810 Beasts, 2930 Sheep, 372 Calves, and 70 Pigs; from Scotland, 200 Beasts; from Norfolk and Suffolk, 1000; and 1000 from the midland counties.

Per st. of 8 lbs.—s	d	s	d	Per st. of 8 lbs.—s	d	s	d
Best Scots, Here-				Best Long-wools	to	...	
fords, &c. ... 3	4 to 3	8		Ditto Shorn ... 3	6 — 3	8	
Best Short-horns 3	2 — 3	6		Ewes & 2d quality ...	—	...	
2d quality Beasts 2	8 — 3	0		Ditto Shorn ... 3	0 — 3	4	
Best Downs and				Lambs 4	0 — 4	10	
Half-breds	—	...		Calves 2	0 — 3	0	
Ditto Shorn ... 3	10 — 4	0		Pigs 3	0 — 4	0	

Beasts, 3719; Sheep and Lambs, 28,350; Calves, 584; Pigs, 253.

FRIDAY, July 26.

The number of Beasts is not large, and the weather being cool trade is brisk; however, except in a few cases, we cannot quote higher rates than on Monday. The supply of Sheep and Lambs is considerably shorter; our prices for the former have advanced fully 2d. per 8 lbs.; and there is also a better demand for the latter, at a little more money. Calves again are plentiful, but the weather being favourable, they are disposed of pretty freely, at an advance of 4d. per 8 lbs. From Germany and Holland there are 263 Beasts, 740 Sheep, 284 Calves, and 30 Pigs; from Scotland, 100 Beasts; 250 from the North and Midland, and 94 Milch Cows from the home counties.

Best Scots, Here-				Best Long-wools	to	...	
fords, &c. ... 3	6 to 3	8		Ditto Shorn ... 3	6 — 3	10	
Best Short-horns 3	4 — 3	6		Ewes & 2d quality ...	—	...	
2d quality Beasts 2	8 — 3	2		Ditto Shorn ... 3	0 — 3	6	
Best Downs and				Lambs 4	4 — 4	10	
Half-breds	—	...		Calves 2	4 — 3	4	
Ditto Shorn ... 4	0 — 4	2		Pigs 3	0 — 4	0	

Beasts, 934; Sheep and Lambs, 11,420; Calves, 666; Pigs, 265.

HOPS.—FRIDAY, July 26.

Messrs. PATTENDEN and SMITH report that the market continues firm for all new and fine coloured yearlings, with an unusually short supply. The reports from the plantations have up to this time continued to come favourable, with the exception of some complaints of mould, which, with a continuance of wet, is thought may do serious damage, the Hops being still in a very backward state. The duty is considered to be fairly estimated at about 180,000*l.*

HAY.—Per Load of 36 Trusses.

SMITHFIELD, July 25.

Prime Meadow Hay	70s to 75s		Clover	70s to 84s	
Inferior ditto... ...	63	66	New Clover	—	—
Rowen	—	—	Straw	24	30
New Hay	65	70		J. COOPER.	

CUMBERLAND MARKET, July 25.

Prime Meadow Hay	72s to 77s		Inferior	65s to 72s	
Inferior ditto... ...	50	68	New Clover	—	—
New Hay	50	68	Straw	26	30
Old Clover	78	84		JOSHUA BARER.	

WHITECHAPEL, July 25.

Fine Old Hay ...	70s to 75s		New Clover	65s to 75s	
Inferior ditto ...	60	65	Inferior ditto... ...	65	75
New Hay	55	65	Straw	24	28
Old Clover	80	84			

COAL MARKET.—FRIDAY, July 26.

Carr's Hartley, 14s.; Wallsend Haswell, 16s. 3d.; Wallsend Hetton, 16s, 3d. Wallsend Tees, 16s. 3d.—Ships at market, 85.

COVENT GARDEN, July 27.

Vegetables are abundantly supplied; Hothouse Grapes and Pine-apples plentiful. The supply of Peaches and Nectarines is well kept up. Ripe Gooseberries fetch from 2s. 6d to 3s. 6d. per half sieve. Oranges and Lemons though scarcer are sufficient for the demand. Carrots and Turnips may be had at from 3d. to 6d. per bunch. Potatoes fetch from 1d. to 2d. per lb. Lettuces and other salading are sufficient for the demand, and so are Mushrooms. French Beans are plentiful. Cut Flowers consist of Heaths, Pelargoniums, Cinerarias, Lily of the Valley, Pinks, Carnations, Rhododendrons, Ranunculuses, and Roses.

FRUITS.

Pine-apples, per lb., 4s to 6s	Lemons, per doz., 1s to 3s
Grapes, hothouse, p. lb., 2s to 5s	Oranges, per doz., 2s to 3s
Peaches, per doz., 4s to 15s	— per 100, 8s to 24s
Nectarines, per doz., 4s to 15s	Almonds, per peck, 6s
Strawberries, p. punn., 6s to 1s 6d	— sweet, per lb., 2s to 3s
Cherries, per lb., 6d to 1s 6d	Walnuts, p. 100, 1s 6d to 2s
Melons, each, 3s to 5s	— p. bush., 16s to 24s
Gooseberries, per half sieve, 1s 6d to 2s 6d	Nuts, Barcelona, per bush., 20s to 22s
Currants, p. half sieve, 3s to 4s	— Brazil, p. bsh., 12s
Raspberries, p. pottle, 4d to 6d	Kent Cobs, 90s to 100s p. 100 lbs.

VEGETABLES.

French Beans, p. sieve, 3s to 4s	Shallots, per lb., 6d to 8d
Cabbages, per doz., 6d to 1s	Garlic, per lb., 4d to 8d
Cauliflowers, p. doz., 2s to 4s	Artichokes, per doz., 2s to 4s
Peas, per sieve, 2s to 4s	Vegetable Marrows, per doz., 1s to 2s
Beans, per sieve, 1s 6d to 2s	Lettuce, Cab., p. sc., 2d to 1s
Sorrel, p. hf. sieve, 6d to 9d	— Cos, p. score, 6d to 1s 6d
Potatoes, per ton, 70s to 100s	Radishes, p. 12 hands, 9d to 1s
— per cwt., 4s to 7s	Small Salads, p. punn, 2d to 3d
— per bush., 1s 6d to 3s 6d	Mushrooms, p. pot., 9d to 2s
Turnips, per doz. bun., 3s to 5s	Fennel, per bunch, 2d to 3d
Red Beet, per doz., 1s to 2s	Savory, per bunch, 2d to 3d
Cucumbers, each, 1d to 9d	Thyme, per bunch, 2d to 3d
Leeks, per bunch, 2d to 3d	Parsley, p. doz. bun., 1s to 2s
Celery, p. bundle, 1s to 1s 6d	— Roots, p. bdle., 9d to 1s
Carrots, per doz., 4s to 6s	Marjoram, per bunch, 8d to 9d
Spinach, p. sieve, 2s 6d	Mint, green, per bunch, 2d
Horse Radish, p. bdl., 1s to 4s	Watercress, p. 12 bunch., 6d to 9d
Onions, p. bunch, 2d to 6d	
— Spanish, p. doz., 1s 6d to 4s	

ENGLISH TIMBER AND BARK.—JULY 27.

	Round Timber. Per Load.	Plank. Per Foot Cube.	Inch Board. Per Foot Superf.
Oak.....	£5 0 0 to £7 0 0	3*s.* 0*d.* to 5*s.* 0*d.*	0*s.* 4½*d.* to 0*s.* 6*d.*
Ash	4 10 0 — 6 10 0	2 6 — 4 0	0 3 — 0 4
Elm	2 10 0 — 3 10 0	1 6 — 2 0	0 2 — 0 3½
Beech ...	2 5 0 — 3 0 0	1 6 — 2 0	0 2 — 0 2½
Lime ...	3 5 0 — 4 5 0	2 0 — 2 6	0 3½ — 0 4½

Bark appears in larger supply than was generally anticipated, and some large parcels are now in the market. There seems a general disinclination on the part of tanners to buy largely at present prices, which is from 13*l.* to 15*l.* per load of 45 cwt.

MARK LANE.

MONDAY, JULY 22.—The supply of Wheat by land carriage samples from Essex this morning was larger than of late, but less from Kent; the improvement of Friday was not maintained, and the bulk was disposed of on about the same terms as this day se'nnight; some samples remained unsold towards the close. Business in foreign was exceedingly limited, at our quotations.—Secondary qualities of Barley are 1*s.* per qr. lower; in others we observe no alteration.—Beans and Peas remain as last week.—Oats are a dull sale at a decline of 1*s.* per qr.—The accounts received to-day from Ireland respecting the Potatoes speak very badly of the crop.

FRIDAY, JULY 26.—The arrivals of grain, both English and foreign, this week, have been moderate. Part of the English Wheat left over from Monday remains unsold, but foreign is very firmly held, and in a few instances slightly enhanced rates have been obtained.—In Barley, Beans, and Peas, no alteration has occurred.—The Oat trade remains the same as on Monday.—Indian Corn afloat is held at 28*s.*, cost, freight, and incurance.—There is more inclination to purchase Flour at old prices, but holders ask rather more money.

ARRIVALS THIS WEEK.

	Wheat. Qrs.	Barley. Qrs.	Oats. Qrs.	Flour.
English ...	2150	140	2280	2790 sacks
Irish	—	—	—	
Foreign ...	9350	3260	6310	— brls.

Imperial Averages.	Wheat.	Barley.	Oats.	Rye.	Beans.	Peas.
June 15.....	39*s* 11*d*	21*s* 9*d*	16*s* 11*d*	22*s* 8*d*	26*s* 10*d*	27*s* 3*d*
— 22	40 5	22 8	16 10	22 6	26 7	26 9
— 29.....	40 9	21 6	16 5	21 6	26 11	26 11
July 6.....	40 11	21 9	17 0	23 2	26 10	28 4
— 13.....	41 3	21 5	16 11	23 3	27 2	26 6
— 20.....	42 4	22 3	17 9	22 7	27 5	27 11
Aggreg. Aver.	40 11	21 11	17 0	22 7	27 0	27 3
Duties on Foreign Grain	1 0	1 0	1 0	1 0	1 0	1 0

Fluctuations in the last six weeks' Corn Averages.

Prices.	June 15.	June 22.	June 29.	July 6.	July 13.	July 20.
42*s* 4*d*	...	...	...	...	...	
41 3	...	..	...	...		...
40 11	...	...	...		...	...
40 9	...	...		...	...	...
40 5	...		...	...	...	...
39 11		...	...	...	...	...

SEEDS.—July 22.

Canary, per qr.....72s to 78s		Coriander, per cwt. ...18s— 22s	
Caraway, per cwt. ...30 — 32		Mustard, white, p. bush. 7 — 8	
Hempseed, per qr. ...34 — 35		— brown, do. .....10 — 13	
Linseed, foreign, do. 37 — 45		Rape, per last .....32*l.*—34*l.*	
Clover, red, per cwt....24 — 46		Cakes, Linseed, p. 1000...8*l.* 15s	
— — foreign, do.— —		— — foreign, p. ton 6*l.* 15s	
— white, do. ... 36 — 48		— Rape, foreign, do. 3*l.* 17s	
— — foreign, do.— —		Tares, per bush.... 3s 0d—5s 6d	

LIVERPOOL, FRIDAY, JULY 19.—Exclusive of a further supply of Wheat from the North, Odessa, and Egypt, and 600 sacks of French Flour, the arrivals into this port since Monday last have been insignificant. All good descriptions of British and foreign Wheats experienced a limited demand to-day from home and country millers, and the best qualities of both red and white nearly maintained late prices. States and Canadian Flour, including French and Irish, met a fair inquiry. Barley and Malt dull of sale; Beans stationary; Peas rather dearer. Oats in slow request on the terms last noted. Oatmeal a shade lower in value. Indian Corn was somewhat depressed in value, but improved subsequently.——TUESDAY, JULY 23.—The imports of British grain and flour are still small, but from abroad we have had considerable arrivals since Tuesday last. The trade here during the week has been dull. We had a fair attendance of town and country millers this morning, and Wheat declined 1d. per bushel and 6d. per sack. Oats are ½d. per bushel dearer. Grinding Barley was 1d. to 2d. per bushel, and Beans, Peas, and Indian Corn each fully 6d. per qr. higher. The present prices are: Wheat, English, red, per 70lbs., 5*s.* 10d. to 6*s.* 4d.; white, 6*s.* 1d. to 6*s.* 7d. Barley, Scotch and Irish, per 60 lbs., 2*s.* 9d. to 3*s.* Malt, English, per qr., pale, 48*s.* to 52*s.* Oats, English and Scotch, per 45 lbs., 2*s.* 8d. to 2*s.* 10d. Beans, English, per qr., 27*s.* to 31*s.* Peas, do. do., 26*s.* to 29*s.*

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"The whole plan of the work is, in fact, to point out *distinctions*: and the fewest possible words are employed with this view. In many instances the distinctions may not be absolute, but they are sufficient for ordinary purposes. Those who wish to become better acquainted with Botany will, of course, make the 'VEGETABLE KINGDOM' of the author the subject of ulterior study. For the convenience of those who may desire to do so, references are made to that work throughout all the following pages."

SPECIMEN OF THE ILLUSTRATIONS.

PENICILLIUM. *Link.* Microscopic. Cobweb-like or mothery flocculent masses, producing simple globose *spores* disposed in patches about the pencil-shaped ends of septate fertile threads.

1. P. *glaucum* Greville.—(THE VINEGAR PLANT.)

Mycelium forming a close tough crust-like or leathery web; branches somewhat entangled and bifid; spores verdigris-green.

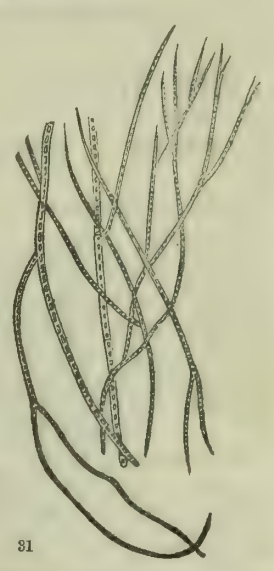
Habitat. On decaying bodies, and in fluids in a state of acetification.

Quality. Assists in the decomposition of decaying matter, and augments rapidly the acetous fermentation of saccharine fluids. A bit placed in sugar and water soon changes it to vinegar.

MYCODERMA. It is probable that the flocculent substance which forms in various infusions when they become "mothery," and which bears this name, is only the mycelium of Mucor, Penicillium, and other Fungals of a similar nature. The accompanying cuts, from a paper of Mr. Berkeley's, illustrate this. Fig. 29 is a view of the mycelium of Mucor subtilissimus as found in water, with one ball of the reproductive bodies formed when the mycelium reached the air; 30 is Penicillium candidum in the same state, the greater part of which had been formed in water; but a couple of branches reaching the air produced the true fructification of this genus of Fungals.







Their identity with some of the Mycoderms, figured by Dr. Pereira in the Pharmaceutical Journal, is sufficiently evident; as will be seen by a cut (fig. 31) of the "Vegetation in empyreumatic succinate of ammonia," borrowed from the *Pharm. Journal*, vol. vii. f. 8, p. 341.

NARTHEX. *Falconer. Umbels* compound. *Involucres* 0. *Calyx* obsolete. *Fruit* thin, compressed at the back, with a dilated border. *Ridges* 3 only, dorsal. *Vittæ* 1 to each dorsal furrow, and 2 to the laterals. *Albumen* thin, flat.

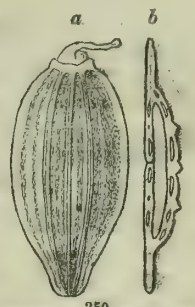
1. N. *Asafœtida* Falconer. *Ferula Asafœtida* Linnæus.—(ASAFŒTIDA.) Fig. 350.

Radical leaves 3-parted; segments bipinnatifid, with oblong-lanceolate, obtuse, decurrent lobes.

Habitat. Laristan, Affghanistan, the Punjaub. *Quality.* Gum-resin fetid, stimulating, antispasmodic.

Uses. In spasms and convulsions, chronic catarrh, flatulent colic, uterine obstructions.

N. B. This is the genuine Asafœtida plant, but probably the substance is also yielded by even species of Ferula. It has been conjectured to have produced the Silphium or Laser of the ancients, but on unsatisfactory evidence. See Thapsia, p. 256.



350.

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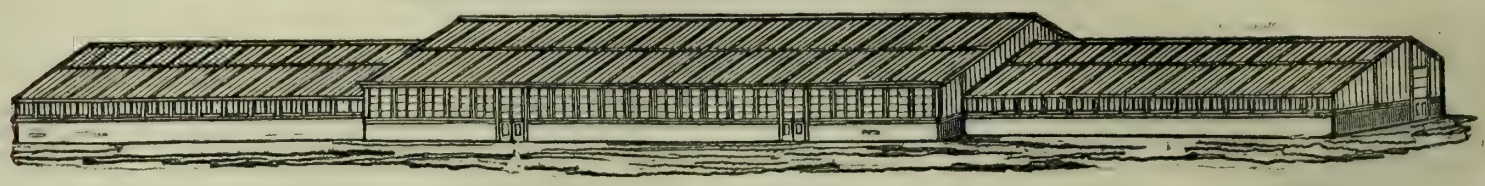
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TO NOBLEMEN, GENTLEMEN, NURSERYMEN, MARKET-GARDENERS, AND PUBLIC COMPANIES, ENGAGED IN PLANTING.

MESSRS. PROTHEROE AND MORRIS are favoured with instructions to submit to an unreserved Sale, by Auction, on the premises, Brentford Nursery, Middlesex, about the second week in October (by order of the executors of the late Mr. J. Ronalds), the whole of the valuable NURSERY STOCK, riding over about 30 acres, consisting of a large and rich assortment of Standard and Dwarf Maiden, Trained and Untrained Fruit trees, of every description; Ornamental trees, Deciduous and American Shrubs; fine Evergreens, &c. Further particulars in future advertisements.

American Nursery, Leytonstone, July, 1850.

HARDY AND OTHER CONIFERÆ.

MR. J. C. STEVENS will sell by Auction, at his Great Room, 38, King-street, Covent-garden, on MONDAY, 5th August, at 12 for 1 o'clock, a fine collection of CONIFERS, in pots, comprising many rare and beautiful species, such as Abies gigantea, Picea grandis, Pinus Wincheseriana, Taxus japonicus, Juniperus thuriferæ, &c.; also some extraordinarily fine plants of Araucaria imbricata, 3 feet high, the rare Araucaria glauca, Cunninghamii, excelsa, &c. —May be viewed on Saturday, morning of sale, and Catalogues had.

THE FINEST COLLECTION OF SPECIMEN AND OTHER HEATHS THAT HAS EVER BEEN OFFERED TO PUBLIC SALE.

MR. J. C. STEVENS is favoured with instructions from SIGISMUND RUCKER, jun., Esq., who is giving up Heath growing, to submit to unreserved sale by Auction, at his Great Room, 38, King-street, Covent-garden, on FRIDAY, the 9th of August, at 12 for 1 o'clock, the whole of his magnificent Collection of ERICAS, consisting of about 200 Plants, about 100 of which are Exhibition Specimens, and many of them unrivalled both as to form and size. This collection, which is generally admitted to be the finest in the kingdom, will be found to combine all the most rare species, with the popular and well known sorts.—May be viewed on the day prior and morning of sale, and Catalogues had of Mr. J. C. STEVENS, 38, King-street, Covent-garden, London.

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N.B. State the size of farm required, and in what locality preferred.

FARM ON THE LINCOLNSHIRE WOLDS.

TO BE LET, and entered upon at Lady-day next, at South Thoresby, near Alford, a good FARM HOUSE, and Offices, with Three Hundred Acres of Land in capital condition; for the last 18 years in the occupation of Mr. Matthew Hickson, deceased. Also 14 acres adjoining, which, if desired, might be broken up. Lime of superior quality can be had from an extensive kiln on the spot. The Tenant will have an exclusive right to the Game; Railroad direct to London; and the Humber and Railroad Station about one mile distant.—For particulars, and to view this desirable farm, apply to THOMAS KEAL, Thoresby.

Printed by WILLIAM BRADBURY, of No. 13, Upper Woburn-place, in the Parish of St. Pancras, and FREDERICK MULLETT EVANS, of No. 7, Church-row, Stoke Newington, both in the County of Middlesex, Printers, at their office in Lombard-street, in the Precinct of Whitefriars, in the City of London; and published by them at the Office, No. 5, Charles-street, in the parish of St. Paul's, Covent-garden, in the said county, where all Advertisements and Communications are to be ADDRESSED TO THE EDITOR.—SATURDAY, JULY 27, 1850.

THE GARDENERS' CHRONICLE
AND
AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 31—1850.] SATURDAY, AUGUST 3. [PRICE 6*d.*

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HANDSWORTH AND LOZELLS HORTICULTURAL SOCIETY.

THE THIRD EXHIBITION this Season will be held in the Grounds of Hockley Abbey, on Tuesday next, August 6th. The celebrated Bands of the 48th regiment and the Fourth Royal Irish Dragoon Guards will attend. Admission, One Shilling.

All Specimens for Exhibition must be on the ground before a quarter to 10, A. M. CHAS. JAS. PERRY, Hon. Sec.

N.B. Hockley Abbey is about two miles from the Birmingham Railway Stations.

Handsworth, near Birmingham, Aug. 3.

SEEDS SUITABLE FOR PRESENT SOWING, all of the best quality, and confidently recommended:

	s. d.		s. d.
Cabbage, Early Nonpariel or Incomparable, p. oz.	0 6	Stock, Autumnal or Intermediate, Imported, six beautiful vars., the collection	1 6
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Lettuce, Shilling's Hampshire Brown Cos, p. paper	0 6	Cineraria, from the choicest flowers, saved by one of the best growers, per paper	1 0
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Onion, large Tripoli, p. oz.	0 9	Primula sinensis fimbriata, various colours, per paper	0 6
,, Deptford, per oz.	0 6	Pansy, very choice, saved by the best growers, per paper	1 0
,, white Lisbon, p. oz.	0 6		
Cauliflower, London-saved, very fine, per paper	0 6		
Parsley, very double, beautifully curled, p. oz.	0 6		
Spinach, winter, new gigantic, per quart	1 0		
Turnip, early Snowball, per lb.	1 0		
Stock, Buck's Scarlet Intermediate, per paper	0 6		

The above, with every other description of Seeds, may be had of WILLIAM DENYER, Seedsman and Florist, 82, Gracechurch-street (near the Spread Eagle), London.

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AJAX.—A noble dark variety, smooth, and of fine substance, lower petals rosy purple, top petals very dark purple, with even narrow margin of vivid crimson; very free bloomer; has been justly styled "The leading flower of the season." Price 1*l.* 11*s.* 6*d.*

OCELLATUM.—A great novelty, lower petals bright pink, with a distinct and constant spot of deep crimson; top petals deep crimson spot, shaded off with bright rose, white eye, free bloomer, and good grower. Price 1*l.* 11*s.* 6*d.*

MAY QUEEN.—A large, distinct, and pleasing variety. Orange-rose top petals, crimson blotch, shaded off with orange, the five petals have a delicate margin of pale pink; lower petals vivid rose; large well-defined white eye, very free bloomer, will be a great favourite on the home stage. Price 1*l.* 11*s.* 6*d.*

NECTAR CUP.—Rose, top petals rich orange-rose, with narrow pink margin, clear white eye, fine substance, good habit. Price 1*l.* 1*s.*

FLAVIA.—Orange-scarlet, the brightest in this class that has been offered, and makes a fine display on the stage, rather crumpled on the edge, and lower petals too long. Price 1*l.* 1*s.*

GENERALISSIMO.—Large and very attractive; lower petals salmon, with spots of a deeper colour, white centre; top petals very dark, rich, and velvety, shaded with lively orange, occasionally crumpled on the edge. Price 1*l.* 1*s.*

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CORINNE.—Light purple, very smooth and free bloomer, dark top petals. Price 15*s.*

ISIS.—A neat smooth flower, of good quality, very free bloomer, rose with white eye, and dark blotch on top petals. Price 15*s.*

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HEARTSEASE.—Scarlet rose, large fine shape and substance; but being inconstant, purchasers of the above will have a plant without charge.

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Royal Nursery, Slough.

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THE HAMBURGHS AND MUSCADINES being the best for early forcing in pots, this is the best time for Gardeners to have them, so as to get the eyes ripe and prominent. This Nursery is well worthy of a visit, as all modern Horticultural improvements are in full operation.

J. WEEKS and Co., King's-road, Chelsea.

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N.B. All Goods, not less than 1l. value, are delivered, free of carriage, to any station of the Great Western, South-Western, or South-Eastern Railways, or to any office in London.

TO THE ADMIRERS OF THAT SPLENDID AUTUMNAL FLOWER, THE CHRYSANTHEMUM.

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50 best new sorts ..... 25*s.*
25 ditto ..... 15*s.*
12 ditto ..... 9*s.*

Well established in small pots, or by post free.

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13 do. raised by M. Lebois (and sent out for the first time this season), for 30 0

One sent over to the Trade when two are ordered.

The latter are figured in the last December Number of the "Annales de la Societé d'Agriculture et de Botanique de Gand," and are perfect gems, engravings of which may be seen at YOUELL and Co.'s Nursery.

Descriptive Catalogues of the above may be had on application. Printed directions of their successful and easy method of cultivating the Chrysanthemums for exhibition, &c., will be forwarded with all orders.

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Royal Nursery, Great Yarmouth.

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Dielytra spectabile, a first-rate hardy herbaceous plant, from the north of China, 1*l.* per doz., 7*l.* 10*s.* per 100. A considerable reduction when a large quantity is taken.
Fuchsia spectabile at the same price.
N.B. The above are strong bushy plants.
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,, Smithii, 1*s.* 6*d.* each, 15*s.* per dozen.
Cantua pyrifolia, 2*s.* each, 20*s.* per dozen.
Heliotropium corymbosum (best of all), 1*s.* 6*d.* each, 12*s.* p. doz.
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All the new continental and other Verbenas. Antirrhinums, Petunias, &c., are now in bloom, and can be had at very reduced prices. Catalogues on application.

NEW CHRYSANTHEMUMS.—12 best new varieties of last season, fine plants, well established in 5-inch pots, for flowering this autumn, 15*s.*

60	very fine varieties, including the above	...	...	£2 0 0
40	ditto	ditto	ditto	... ... 1 10 0
25	ditto	ditto	12 superb varieties	... 0 9 0

All well established in 48-size pots.

Catalogues sent pre-paid on receipt of four postage stamps. Goods delivered free to London.

BASS and BROWN, Seed and Horticultural Establishment, Sudbury, Suffolk.

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12	Bourbon Roses, ditto for planting in beds	10	6
12	Banksian and Multiflora Climbing Roses, in sorts	9	0
12	Newest Chrysanthemums, distinct varieties	8	0
25	Ditto ditto ditto	12	0
12	New Dwarf Lilliputian Chrysanthemums, ditto	10	0
12	Fine Perennial Phloxes, Belgian varieties	8	0
12	Gloxinias, very superior sorts, named	8	0
12	Achimenes, ditto, blooming plants	8	0
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12	Azalea Indicas, splendid varieties	25	0
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24	Ericas, choice varieties, one of a sort	18	0
50	Select Greenhouse Plants, one of a sort, by name	45	0
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	Geraniums, very best sorts, at reduced prices.		
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All New Plants supplied as figured in the various periodicals.

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J. AND C. LEE beg to announce that they are now sending out their beautiful new Variegated SCARLET GERANIUM "THE FLOWER OF THE DAY." It is of extremely free habit, and constant variegation. Price 10*s.* 6*d.*; discount to the Trade when three are taken. May be had of the principal Nursery and Seedsmen.

Nursery, Hammersmith, August 1.

G. BASSILL, Pheasantry, Hemel Hempstead, Herts, within one mile of the Boxmoor station, on the London and North-Western Railway. Orders now taken for Poults, having a large quantity bred under his own special care.

AYLESBURY DUCKS (White).—The Advertiser has for sale a limited number of the above, in fine healthy Birds, of this season; the breed is warranted pure and of the largest known, weighing, when fattened, 8 lbs. to 10 lbs. each. Price, including package, 8*s.* 6*d.* per couple.—Orders, accompanied by post-office orders or reference, addressed to ISAAC BRUNNING, North End, Great Yarmouth, will receive prompt attention.

MAGNUS'S ENAMELLED SLATE is handsomer and more durable than the choicest Marbles, is less than half the cost of the commonest, and is PATRONISED by her MAJESTY and PRINCE ALBERT, the Nobility, Clergy, Architects of Eminence, Engineers, Builders, Railway Contractors, and the Public generally. It is suitable for Chimney-pieces, Pier-table tops, Vases, Ink-trays, and ornaments of various descriptions, Billiard-tables, Baths, Wash-stand, and Dressing-table Trays, Door Furniture, Candelabra, Columns, Monuments, Head Stones, Mural Tablets, Pilasters, Plinths, Fonts, Grand Staircases, Balusters, &c., and is made to represent not only the marbles in ordinary use but all the more costly descriptions, as Porphyry, Rose Granite, Broccatella, Brescia, Lapis Lazuli, Malachite, and Florentine Mosaics, and has obtained the Medal from the Society of Arts. Bored Chimney-pieces, from 25*s.* upwards. Price lists sent on application to Mr. MAGNUS, PIMLICO SLATE WORKS, 39 and 40, Upper Belgrave-place, London.

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12 by 8	15 10 0	10 0 0	18 6 0	11 15 0	
15 — 10	22 10 0	14 5 0	25 10 0	16 9 0	
18 — 12	28 10 0	18 0 0	32 14 0	20 12 6	
21 — 12	32 10 0	20 0 0	37 8 0	23 2 0	
24 — 13	44 0 0	25 12 6	49 12 0	29 2 0	
27 — 14	51 4 0	29 17 0	58 5 0	33 15 0	
30 — 15	61 17 0	36 2 0	69 14 0	40 9 0	
35 — 16	73 4 0	42 14 0	82 7 0	47 15 0	
40 — 17	85 7 0	49 15 9	95 17 0	55 12 0	
45 — 17	93 15 0	54 13 9	105 10 0	61 12 0	
50 — 18	108 10 0	63 6 0	121 13 0	70 19 0	
55 — 18	115 16 0	67 11 0	130 4 0	75 19 0	
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Estimates for erecting and heating the above, on application. Lists of prices for Sash-doors, &c., post-free on application.

J. LEWIS, Horticultural Works, Stamford-hill, Middlesex.

HORTICULTULAL BUILDING AND HEATING BY HOT WATER.
WARRANTED BEST MATERIALS AND WORKMANSHIP AT THE LOWEST POSSIBLE PRICES.



J. WEEKS AND CO., King's-road, Chelsea, Horticultural Architects, Hothouse Builders, and Hot-water Apparatus Manufacturers. The Nobility and Gentry about to erect Horticultural buildings, or fix Hot-water Apparatus, will find at our Hothouse Works, King's-road, Chelsea, an extensive variety of Hothouses, Greenhouses, Conservatories, Pits, &c., erected, and in full operation, combining all modern improvements, so that a lady or gentleman can select the description of House best adapted for every required purpose.

THE HOT-WATER APPARATUSES (which are efficient and economical), are particularly worthy of attention, and are erected in all the Houses, Pits, &c., for both Top and Bottom Heat, and in constant operation in the Stoves.

The splendid collection of Stove and Greenhouse Plants are in the highest state of cultivation, and for sale at very low prices. Also a fine collection of strong Grape Vines in pots from eyes, all the best sorts.

Plans, Models, and Estimates of Horticultural Buildings; also Catalogues of Plants, Vines, Seeds, &c., forwarded on application.—J. WEEKS and Co., King's-road, Chelsea, London.

CUCUMBER AND MELON BOXES AND LIGHTS.

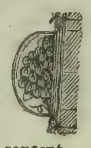
One hundred 1, 2, and 3-light Boxes and Lights of all sizes ready for immediate use. Warranted best materials, packed and sent to all parts of the kingdom; 2-light Boxes and Lights from 1*l.* 4*s.* Garden Lights of every description, Conservatories, Green and Hot-houses, made and fixed in all parts of the kingdom. References given to the Nobility, Gentry, and the Trade, in most of the counties of England. JAS. WATTS, Hothouse Builder, Claremont-place, Old Kent-road, London.

GLASSES FOR WALL-FRUIT.

HALLIMAN'S FRUIT PROTECTOR, Registered March 22, 1850.



PEACH AND GRAPE GLASSES. — These Glasses, placed over Fruit on the the common wall, assist Nature in our cold climate. The Fruit grows to a larger size, and its richness is increased.



JAMES PHILLIPS & CO. beg to say they have purchased the above Registry of Mr. HALLIMAN, and caution all persons from making or selling the same without their consent.

FERNS.

J. PHILLIPS and Co. have succeeded in making a very neat style of Shade, with glass bottom (or stand), expressly for the growth of Ferns, which will be found much more ornamental than any previously made for the same description of plant. Prices and every information to be had of JAMES PHILLIPS and Co., 116, Bishopsgate-street Without, London.

MONTGOMERY'S RAFTERS AND SASH BARS, FOR GREENHOUSES, SKY-LIGHTS, &c.

Prices of Sash Bars, Rafters, &c., including Waste, per 100 ft.

7 in. by 2½	...	...	£2 1 0	3 in. by 3	...	...	£1 2 6
6 „ 2½	...	...	1 17 0	2 „ 1⅝	...	...	0 13 0
1¾ „ 1	...	...	0 10 0	3 „ 1¼	...	...	0 14 6
2 „ 1	...	...	0 11 0	1⅝ „ 1	...	...	0 9 0
2½ „ 1½	...	...	0 14 0	2½ „ 1½	...	...	0 16 6
3½ „ 2	...	...	1 2 0				

JAMES PHILLIPS AND CO., beg to inform the Nobility and Gentry they are appointed agents for the sale of the above by Mr. MONTGOMERY, and trust to be favoured with their orders. Lists and every information may be had at the Horticultural Glass Warehouse, 116, Bishopsgate-street Without.

CROWN, SHEET, AND ROUGH PLATE GLASS FOR HOTHOUSES, CONSERVATORIES, &c.

The Improved Patent Rough Plate, made by Messrs. Hartley and Co., can be supplied from this Warehouse, of every size and substance, at the same prices as at the works.

100 and 200 feet cases of large Sheet Glass, from 2½*d.* per foot. Small ditto, 10*s.* 6*d.* per 100 feet, packed in boxes ready for immediate delivery. Curators of Botanical Societies, Florists, Railway Agents, and others requiring large quantities, will, on sending dimensions, receive estimates at the lowest prices.

GLASS MILK PANS, CREAM POTS, Lactometers, Bee Glasses, Fish Globes, and all kinds of Dairy Glass, Propagating Glasses, Hyacinth Dishes, Cucumber Tubes, and every other description of Garden Glasses.

PATENT GLASS PENS, self supplying, never blot, never soil the ruler, and will write continuously for 12 hours.

Also, Glass Rulers, Glass Inks for office-stands, desks, &c. Stationers and Schools supplied. Wholesale Warehouse for Ornamental Shades, Lamp Shades, Gas Glasses, Genuine White Lead, Paints, Colours, and Pumps for Farm purposes.

Our Catalogue of 18 folios is the most complete ever published. No Gardener or Farm Bailiff should be without one. May be had Gratis on sending two postage stamps to Messrs. COGAN and Co., 48, Leicester-square, London.

GLASS FOR CONSERVATORIES, HORTICULTURAL PURPOSES, &c.



T. MILLINGTON'S SHEET GLASS, which is of the best description, varying from 16 to 32 ounces, at from 2*d.* per foot and upwards; 100 feet and 200 feet cases of large Sheet Glass, for cutting up, at 2½*d.* per foot. British Plate Glass, from 1*s.* 2*d.* to 2*s.* per foot, according to size. Patent Rough Plate Glass, from ⅛ to 1 inch in thickness, from 4*d.* per foot upwards. Glass Slates and Tiles. Milk Pans from 12 to 24 inches diameter, from 2*s.* to 5*s.* each Cucumber Tubes, from 12 to 24 inches long, at 1*d.* per inch. Lactometers, 7*s.* 6*d.* each. Wasp Traps.—Lists may be had, on application at the Warehouse, 87, Bishopsgate-street Without, same side as the Eastern Counties Railway.

GLASS FOR CONSERVATORIES.

JAMES PHILLIPS AND Co. have the pleasure to hand their New List of Prices of GLASS for Cash.

CUT TO SIZE.

16 oz. from 2*d.* to 3½*d.* per foot.
21 „ 3½ „ 5 „
26 „ 3½ „ 7¼ „
32 „ 4 „ 9½ „

SHEET SQUARES.

In boxes of 100 feet.

	s.	*d.*
Under ... ... 6 by 4	...12	6
6 by 4 and under 7 by 5	...16	6
7 by 5 „ 8 by 6	...18	6
8 by 6 „ 10 by 8	...20	6

100 feet and 200 feet cases of large Sheet Glass, for cutting up, at 2½*d.* per foot. British Plate Glass, from 1*s.* 2*d.* to 2*s.* per foot, according to size.

HARTLEY'S PATENT ROUGH PLATE, packed in boxes of 50 feet each:

6 by 4 and 6½ by 4½ ... 10*s.* 6*d.*
8 by 6 „ 8½ by 6½ ... 13 6
7 by 5 and 7½ by 5½ ... 12*s.* 0*d.*
9 by 7 „ 10 by 8 ... 15 0

MILK PANS.

12 in. diameter	...	2*s.* 0*d.*
14 „	...	2 6
16 „	...	3 0
18 „	...	3 6
20 „	...	4 0
22 „	...	4 6
24 „	...	5 0
26 „	...	6 0

CREAM POTS, from 2*s.* each.

PROPAGATING GLASSES.

2 in. diameter	...	0*s.* 2*d.*
3 „	...	0 3
4 „	...	0 4
5 „	...	0 6
6 „	...	0 8
7 „	...	0 10
8 „	...	1 0
9 „	...	1 2
10 „	...	1 4
11 „	...	1 6

BEE GLASSES, same sizes.

PRESERVE JARS.

3 inches diameter	...	0*s.* 3*d.*
4 „ „	...	0 5
5 „ „	...	0 7
6 „ „	...	0 9
7 „ „	...	1 0
8 „ „	...	1 3
9 „ „	...	1 6

CUCUMBER TUBES.

12 inches long	...	1*s.* 0*d.*
14 „	...	1 2
16 „	...	1 4
18 „	...	1 6
20 „	...	1 8
22 „	...	1 10
24 „	...	2 0

Glass Shades; Tiles and Slates of any size; Wasp Traps, 3*s.* 6*d.* per dozen; Lamp Shades; Rough Plate Glass of every thickness. Lactometers, for trying the quality of milk, 4 tubes, 7*s.* 6*d.*; 6 do., 10*s.* Glass Stands for Pianoforte, and every article in the trade.

JAMES PHILLIPS AND Co., 116, BISHOPSGATE-STREET WITHOUT, LONDON.

GLASS FOR CONSERVATORIES, GREENHOUSES, PIT FRAMES, &c.

HETLEY AND CO. are supplying 16-oz. Sheet Glass, of British Manufacture, packed in boxes containing 100 square feet each, at the following REDUCED PRICES for cash, A reduction made on 1000 feet.

Sizes. Inches.			Inches.			Per foot.	Per 100 feet.
			Under 6	by 4	at	1½*d.* is £0	12 6
From 6	„ 4		„ 7	„ 5	„	2*d.* „ 0	16 8
7	„ 5		„ 8	„ 6	„	2½*d.* „ 0	18 9
8	„ 6		„ 10	„ 8	„	2½*d.* „ 1	0 10
10	„ 8		„ 12	„ 9	„	2¾*d.* „ 1	2 11

Larger sizes, not exceeding 40 inches long.

16 oz. from 3*d.* to 3½*d.* per square foot, according to size.
21 oz. „ 3½*d.* 5*d.* „ „ „
26 oz. „ 3½*d.* 7½*d.* „ „ „

PATENT ROUGH PLATE, THICK CROWN GLASS, and PATENT PLATE GLASS for Horticultural purposes, at reduced prices, by the 100 square feet.

GLASS TILES AND SLATES made to any size or pattern, either in Sheet or Rough Plate Glass.

Propagating Glasses, Bee-hive Glasses, Cucumber Tubes, Glass Milk Pans, Glass Water Pipes, and various other articles not hitherto manufactured in glass.

PATENT PLATE GLASS.—The present extremely moderate price of this superior article should cause it to supersede all other inferior window glass in a gentleman's residence. No alteration connected with the sash is required.

GLASS SHADES, as ornamental to, and for the preservation of every description of goods susceptible of injury by exposure. Prices, since the removal of the Excise duty, reduced one-half. List of Prices and Estimates forwarded on application to JAMES HETLEY and Co., 35, Soho-square, London.

GLASS WATER PIPES.

MESSRS. COATHUPES AND Co., GLASS MANUFACTURERS, Bristol and Nailsea, Somerset, continue to supply GLASS PIPES for the conveyance of water, &c., in lengths of from 3 to 7 feet, and from ½-inch to 4-inch bores; they provide also the necessary joints, which enable them to stand very considerable pressure.

STATUES, VASES, FOUNTAINS, GARDEN ORNAMENTS, Coats of Arms, and Architectural Embellishments in Imperishable Stone, by VAUGHAN AND CO., 60, Stones-end Borough, London. T. J. CROGGON, late of COADE'S, Superintendent.

GERMAN SPRING MATTRESSES, permanently elastic, very durable and cheap.

3 feet wide	£2 8 0		4 feet 6 inches wide	£3 3 0	
3 feet 6 inches	2 13 0		5 feet	3 10 0	
4 feet	2 18 0		5 feet 6 inches	3 18 0	

The best, top stuffing all horsehair:

3 feet wide	£3 10 0		4 feet 6 inches wide	£5 0 0	
3 feet 6 inches	4 0 0		5 feet	5 10 0	
4 feet	4 10 0		5 feet 6 inches	6 0 0	

One of these Mattresses, with a French Mattress on it, is a most excellent and soft bed. HEAL AND SON'S List of Bedding, with full particulars of Weight, Sizes, and Prices of every description of Bedding, sent free by post.

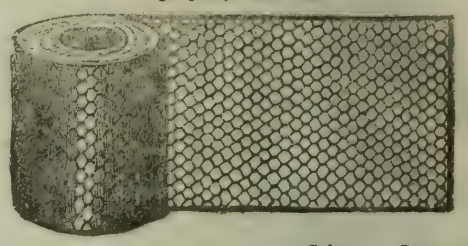
HEAL and SON, Bedding Manufacturers, 196, opposite the Chapel, Tottenham-court-road, London.

CARSON'S ORIGINAL ANTI-CORROSION PAINT, especially patronised by the British and other Governments, the Hon. East India Company, the principal Dock Companies, most public bodies, and by the Nobility, Gentry, and Clergy, for out-door work at their country seats, The Anti-Corrosion is particularly recommended as the most durable out-door Paint ever invented, for the preservation of every description of Iron, Wood, Stone, Brick, Compo, Cement, &c., work, as has been proved by the practical test of upwards of 60 years, and by the numerous (between 500 and 600) testimonials in its favour, and which, from the rank and station in society of those who have given them, have never yet been equalled by anything of the kind hitherto brought before the public notice.

Lists of Colours and Prices, together with a Copy of the Testimonials, will be sent on application to WALTER CARSON, No. 9, Great Winchester-street, Old Broad-street, Royal Exchange.

No Agents.—All orders are particularly requested to be sent direct.

GALVANISED WIRE GAME NETTING.— 7*d.* per yard, 2 feet wide.



		Galvanised.	Japanned Iron.
2-inch mesh, light, 24-inch wide	...	7*d.* per yd.	5*d.* per yd.
2-inch „ strong „	...	9 „	6½ „
2-inch „ extra strong „	...	12 „	9 „
1½-inch „ light „	...	8 „	6 „
1½-inch „ strong „	...	10 „	8 „
1½-inch „ extra strong „	...	14 „	11 „

All the above can be made any width at proportionate prices. If the upper half is a coarse mesh, it will reduce the price one-fourth. Galvanised sparrow-proof netting for pheasantries, 3*d.* per square foot. Patterns forwarded post-free.

Manufactured by BARNARD and BISHOP, Market-place, Norwich, and delivered free of expense in London, Peterborough, Hull, or Newcastle.

IRON AND WIRE FENCING, AND METALLIC BEDSTEADS.

THOMAS PERRY AND SONS, 252, OXFORD-STREET (NEAR HYDE PARK), And Highfields Foundry and Wrought-iron Works, Bilston, Staffordshire, Manufacturers of all descriptions of PLAIN AND ORNAMENTAL IRON AND WIRE FENCING, Park Entrance, Carriage and Field Gates, Wickets, &c.; Deer, Sheep, and other Hurdles; Hare and Rabbit-proof Wire Fencing; Iron Bedstead Makers to the Board of Ordnance; And Government Contractors.

The works of Messrs. PERRY being situated in the heart of the first iron district, they are enabled to execute all orders with the greatest facility, and on the most moderate terms. Drawings made and estimates prepared, if required. The showrooms contain an immense variety of every description of Iron and Wire-work, and are the largest in London. An Illustrated Catalogue of Bedsteads, with dimensions and prices, sent on application, post-free.



EVANS AND BROWN'S THOROUGH ENGLISH PASSENGER AGENCY and Office of the Potters' Emigration Society, 119, Waterloo-road, nearly opposite the Clarence Dock-gate, Liverpool. The ships of the subscribers depart every week, and passage might be arranged to any part of the American Continent. Provisions in accordance with the Act.

*** The 6th of every month is set apart for English passengers. One pound perhead deposit-money should be forwarded to secure berths. Prospectuses of the Potters's Emigration Society might be obtained on application.

119, Waterloo-road, Liverpool.

TO EMIGRANTS BOUND FOR NEW ORLEANS.

Messrs. EVANS and BROWN beg to state that they will have a fine first-class ship on the berth for NEW ORLEANS for the 1st of September. For a select and cheap passage parties should send in their names and ages, without deposit money, as early as possible.—Address, 119, Waterloo-road, Liverpool Also:—

TO EMIGRANTS BOUND FOR QUEBEC.

Messrs. EVANS and BROWN also beg to state, that they will have a fast-sailing, first-class ship on the berth for QUEBEC, on the 14th of August. Parties desiring a cheap and select passage, should forward their names and ages, without deposits, as early as possible. Address as above.

EMIGRATION TO AUSTRALIA.—New Line of Packets from Liverpool:

PETREL, 1200 tons, to sail on the 10th of October.
CONDOR, 1500 „ „ 10th of December.

A 1, new Ships, coppered and copper-fastened.—For Freight or Passage apply to the owners, GIBBS, BRIGHT, and Co., 1, North John-street, Liverpool.

ASHBY'S INDIA EXPORT PALE ALE.— London Stores, under the South-Western Railway Terminus, Waterloo-road. India Pale Ale, 21*s.*, 18 gallons; 10*s.* 6*d.*, 9 gallons; Family Ale, 16*s.*, 18 gallons.—CHAS. ASHBY and Co. invite the particular attention of private Families and Clubs to their PALE ALE, as brewed by them for the COLONIAL MARKETS for the past 20 years. Supplied in small casks direct from the Brewery, Staines, and the London Stores, or from their agents—Messrs. W. Hancock, 80, Connaught-terrace, Hyde-park; Chidell and Stewart, 40, Lime-street, City; W. H. Chaplin, 11, Sebbon's-buildings, Upper-street, Islington; J. Shenton, Greenwich; W. Ferguson, Reading; Thos. Berry, Brighton and Lewes; A. J. Richardson and Co., Portsea and Southsea; J. Skidmore, Rickmansworth; Cooksey, Brothers, Southampton.

TOOTHACHE PERMANENTLY CURED by using BRANDE'S ENAMEL for filling decaying Teeth, and rendering them sound and painless. Price 1*s.* Enough for several Teeth. The only substance approved by the medical faculty, as being unattended with pain or danger, and the good effects of which are permanent.

Sold by all Chemists in the United Kingdom. Twenty really authorised Testimonials accompany each box, with full directions for use. Sent free, by return for post, by J. WILLIS, 24, EAST TEMPLE CHAMBERS, WHITEFRIARS, FLEET-STREET, LONDON, in return for 13 penny stamps.

CAUTION.—The great success of this preparation has induced numerous unskilful persons to produce spurious imitations, and to Copy BRANDE'S ENAMEL Advertisements. It is needful, therefore, to guard against such impositions, by seeing that the name of JOHN WILLIS accompanies each packet.

MESSRS. STANDISH AND NOBLE'S new descriptive CATALOGUE OF SELECT HARDY ORNAMENTAL PLANTS is just published, and may be had for four postage stamps. Besides a Treatise on the cultivation of American Plants, it contains a Plate and Description of the Funebral Cypress, Notices of Cephalotaxis Fortunii, Cryptomeria japonica, Quercus sclerophylla and inversa, Viburnum plicatum and macrocephalum, with many recent introductions from the north of China, quite new to English gardens.

Messrs. S. and N. take this opportunity of stating that they give Designs for Laying out New Grounds and Plans for Improvements; also Estimates for all kinds of Planting, whether ornamental or economic.—Bagshot Nurseries, Aug. 3.

NEW LATE STRAWBERRY, WILMOT'S "PRINCE ARTHUR."

J. WILMOT, in offering this new variety of STRAWBERRY to the Public, is confident that it combines qualities which no other kind at present in cultivation does possess, being of delicious flavour, and coming in after the principal Strawberry season is over. It possesses the property of firmness of texture, so that it may be transmitted to any part of the kingdom without sustaining injury, as it may be kept for several days after being gathered, when fully ripe, without any indication of decay or loss of flavour.

"Prince Arthur" is one of the largest sized Strawberries, and a most abundant bearer; the foliage is small, and never exceeds 6 inches in height; the fruit is consequently fully exposed to the sun. Its dwarf habit requires it to be planted not more than a foot apart. The fruit is perfectly formed, of a rich scarlet, and colouring equally all over the berry. If planted at the distance recommended it will produce double the weight per acre of any other variety.

Strong plants will be ready for sale in September next, at 5*l.* per 100, on prepaid application only, to JOHN WILMOT, Isleworth, Middlesex; Robert Glendinning, Chiswick Nursery; William T. Atwood, Mortlake, Surrey; George Charlwood, Seedsman, Covent-garden; and Messrs. Hurst and M'Mullen, 6, Leadenhall-street, London.—Isleworth, Middlesex, Aug. 3.

TO THE LOVERS OF FERNS.

WILLIAM MASTERS, Exotic Nursery, Canterbury, has to offer a fine Collection of well-grown Plants of this interesting family, at 42*s.* per dozen, where the selection is left to himself.—Canterbury, Aug. 3.

SEEDLING PELARGONIUM—"PRINCE ARTHUR."

A. PONTEY begs to announce that he will send out, on Monday, the 14th October, at 1 guinea each, or four plants for 3 guineas, his seedling Pelargonium, for which the highest prize, the Silver Medal, was awarded at the Exhibition of the Royal Devon and Cornwall Horticultural Society on the 16th May; also a certificate of merit was awarded at the Devon and Exeter Exhibition, on the 24th May, and a certificate of merit at Torquay Exhibition on the 6th June.

The Splendid Pelargonium is thus described in the "Floricultural Cabinet," July:—"Upper petals large, dark clouded blotch shaded off to flesh colour, lower ones flesh colour, centre white; petals of firm substance."

Mr. Glenny's opinion of its habits and the peculiarity of its white throat, which he affirms is "purer than that of any one of the present varieties," has been given in the Country Gentleman, weekly garden newspaper.—Aug. 3.

NEW AND FIRST-RATE VERBENAS, FUCHSIAS, PETUNIAS, &c.

GEORGE SMITH begs to draw the attention of the Public to his unrivalled Collection of the above. His VERBENAS have been shown and prizes awarded them at the Royal Botanic Gardens, Regent's-park; the Horticultural Society, Chiswick; the Central Society of Florists; the Royal South London Floricultural Society. Strong Plants of all the foreign and English new varieties are now ready, viz.:—Smith's Calliope, Desdemona, Masterpiece, Monitor, Young's Laura, Letitia, Barker's Mass, Rosa Alba, Gem, Village Maid, Rosy Morn, St. Katherine, Salter's Infant de Versailles, Souvenir de Marie, Electra, Perry's Wonderful, Woodcock's Magnificent, Turner's Mrs. Mills, Chauviere's Adele, Anais, Cyparisse, Gloire de Paris, Niobe, Pauline, Perrier, Reine Hortense, Silene, Miellez, Brind d'Amour, Figaro, Follette, Jeanne d'Arc, Massena, Nigricans, Dufoy's Admiration, Boule de Neige, Anacreon, Buffon, Daubenton, Satyr, Romulus, Boudinot's Bajeans, Celestina, Fanny, Justine, and Madame de Gournay; 12 for 12*s.*, or 24 for 21*s.*

FUCHSIAS.—Smith's Kossuth, Orion, Queen of May, Turner's Sir J. Falstaff, Kendall's Dr. Grosse, Novelty, Glasscock's Mrs. W. Taylor, Beauty of Stortford, Gregory's Cerinium, Actæon, Rumley's Beauty of Richmond, Yorkshire Eclipse, Distinctus, Storey's Mirabilis Unique, Multiplex, Duplex, Ignea, Striata, Miellez, Duchesse de Bordeaux, Elisa Miellez, General Changarnier, General Oudinot, President Porcher, and Dubas's Nonpareil; 21*s.* per doz.

PETUNIAS.—Young's Picta, Letitia, Youngii, Smith's North London Miellez Angele, Triumph, Beauté Parfait, and Ne Plus Ultra. The fine new Lantana delicatissima; Heliotropium corymbosum, 1*s.* 6*d.* each; Cuphea atropurpurea and Donkelarii, 1*s.*

Plants can be sent by post or rail. Extra plants for long carriage. Post-office orders made payable at Islington.

Tollington Nursery, Hornsey-road, Islington, London.

GREENHOUSE AND CONSERVATORY BUILDING ESTABLISHMENT, HOT-WATER APPARATUS MANUFACTORY, KENSALL-GREEN, HARROW-ROAD, LONDON.

JOHN TAYLOR begs most respectfully to call the attention of the Nobility, Gentry, and Gardeners, to the very superior manner in which he erects all kinds of Greenhouses, Conservatories, Forcing Pits, &c., and all other buildings for Horticultural purposes, combining all the most modern improvements with elegance and utility. His manner of heating Horticultural Buildings, Churches, Chapels, Public Buildings, Entrance Halls, &c., has received the greatest approbation from the Nobility and Gentry by whom he has been extensively engaged.

The Gardeners' Chronicle.

SATURDAY, AUGUST 3, 1850.

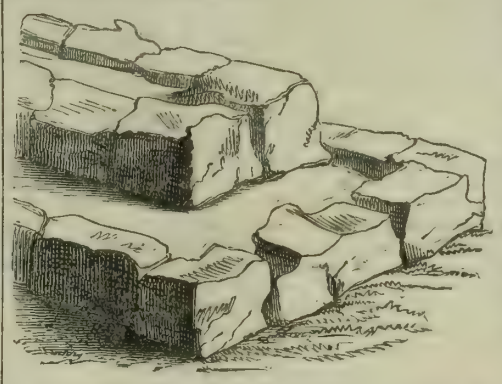
MEETINGS FOR THE ENSUING WEEK.

TUESDAY, Aug. 6—Horticultural .....3 P.M.

COUNTRY SHOWS.—Tuesday, Aug. 6: Handsworth and Lozells Floral and Horticultural.—Wednesday Aug. 7, and Thursday, Aug. 8: Thirsk Floral and Horticultural.

THE repeal of the brick duty will doubtless lead to the extensive employment in gardens of those half vitrified masses of clay found upon opening kilns, and near London called burrs. Such fragments occur of various sizes and forms, and are the best of all materials for constructing what is commonly called rockwork, but which had better be named burr-work, and which, if properly managed, produces one of the most useful as well as beautiful features in garden scenery. We have already mentioned this on former occasions; to-day we desire to point out how this burr-work may be advantageously applied to the CULTIVATION OF STRAWBERRIES.

In the month of April, 1849, a parallelogram about 6 feet wide was enclosed by a line of burrs resting on the surface of the ground, and about a foot deep. Along the middle of the parallelogram was placed a double line of rude open wall, composed of broken bricks and old stones, to the height of the outer burrs. The whole was filled with rich earth, chiefly cow-dung, up to within 3 or 4 inches of the top. A double line of burrs was then made to cap the double line of wall in the middle, a space of about 6 inches being left between the two lines of burrs. This space was filled with rich earth, consisting of decayed leaves, burnt clay, wood ashes, rotten Grass, and dung; and the same material was employed to top-dress the first formed part of the structure, intervening between the outer line of burrs and the middle lines. The rough open wall above spoken of was provided in order to carry those lines without their settling. When prepared the bed had this appearance.



Two terraces were in fact contrived, of which the upper was single, and the other lower and double. The runners planted on these terraces grew vigourously, and soon covered the ground. In the present summer they came into bearing, and in July were in the following state, loaded with magnificent fruit of the highest excellence attainable by the sorts (British Queens and KEENS' Seedling). A common measurement of the former was from $3\frac{3}{4}$ to $4\frac{1}{2}$ inches in circumference.



In addition to all other advantages, the bed possessed the following; it was thoroughly drained, in consequence of the whole mass of materials being above the ground-level, and the joints between the burrs being open. But although thoroughly drained it was perfectly damp; because the burrs would not allow evaporation to take place except to a moderate extent. It was warm and dry on the surface, in consequence of the heat absorbed by so large a mass of brickwork. Its dryness guarded it from slugs, abounding in the neighbourhood; for they would have nothing to say to the warm dry burrs up which they would have had to crawl in order to reach the fruit. The fruit itself, in huge clusters, was kept quite clean, for it rested on the burrs, having a natural tendency to fall outwards.

We think a plan like this far preferable to Mr. ROBERTS's tiles, or to any contrivance for growing Strawberries on the level ground. In the first place it is cheap, instead of dear; then it looks well, instead of being ugly; thirdly, it harbours no vermin; and moreover it allows rain-water to soak easily into the whole mass of rich materials of which the bed consists. Such beds make a capital enclosure for kitchen gardens: and once made cost nothing further. If the soil is exhausted nothing is easier than to pull the plants out, clear away the impaired materials, and replace them by new soil. If the object is to water the bed, it is only necessary to pour it into holes in the upper terrace, whence it will rapidly diffuse itself through the whole mass. We think too that the entire absence of any weight which can press down the earth in which the Strawberry roots branch, is an important element in success. The burrs rest on the solid ground, or upon rough walls, and the soil among them lies as lightly as if it were in a wheelbarrow. In fact, nothing can compress it, except its own natural weight.

We venture to believe that Strawberry beds of this kind will soon be considered an indispensable part of all gardens in which the best cultivation is combined with the smallest expense.

WHEN one looks through modern BOOKS ON NATURAL HISTORY with unprejudiced eyes, it would appear that the great object of some authors was to mystify their readers. There is not a common thought or thing that is spoken of in common English. A hole is a foramen, a stalk a caudicula or a funiculus, a shield an apothecium; and minute anatomy is called histiology. If we go on in this manner, science will have to take rank with quackery, entomologists will sink to the level of chiropodists, and botanists may yield precedence to thermotherialists and homœopathists.

To avoid these consequences, natural history must address itself more to the feelings and habits of the community. English naturalists must write English, and not indulge in a jargon that can only be paralleled on the stage of a mountebank. Little things dressed up in big words are like the ass in the lion's skin; as soon as they are found out, they become objects of contempt. Let us suppose that a man sets about studying certain modern works which we could point out; that he has mastered endless technicalities, at the expense of much time and trouble; and that having done so, he finds the latter needless, denoting nothing but what his mother tongue would have denoted quite as well; we are afraid that, in such a case, disgust would get the better of zeal, and that he would be apt to apply to the science and its expounder an epithet of two syllables, which we have no doubt that the ingenuity of our readers will readily suggest.

But we shall be assured that our case is stated in terms stronger and more general than the facts will justify; and that the technicalities of which we complain are necessary, if natural history is to have any precision. Undoubtedly, if this be so, we shall have received a conclusive answer; for no means by which precision can be secured will admit of being neglected, and the inconvenience of adopting these means is nothing in comparison with the advantages to be derived from them. But is this so? Do men, by assigning special and strange names to every trifling modification of structure, attain the end proposed? Is it possible, by means of words, however cunningly devised, to give precision to things which have little precision in their nature? To our mind such exactness as is attainable in natural history is, in the majority of cases, to be secured by plain English as well as by crabbed barbarisms. We believe "the curvature of a stem" to be an expression as worthy of adoption as the grand word *Stelechorrhiphysia*.

An example or two will illustrate our meaning better than general allusions. In a work just hot from the press, and a good work too, we read that some mollusks are "*zoophagous;* and these further *evidence* their *resiliancy* from the *phytivorous* families by the character of their egg-repositories. It is true these cannot well be reduced to any of M. L.'s classes, but they are *concamerated nidi* of a peculiar character." We are not sure that we ourselves understand the learned author's meaning; but nevertheless we may venture to assert that the words in italics are wholly unnecessary, and that the sentence if put thus would have been more intelligible, without the loss of such precision as it can pretend to. "Some mollusks feed on other animals, and these further show their distinction from the families which feed on plants, by the character of their egg repositories (qu. nests). It is true these cannot well be reduced to any of M. L.'s classes; but they are chambered nests of a peculiar character." We see no merit in such words as zoophagous, resiliancy, phytivorous, and concamerated nidi.

Our next illustration exemplifies the style of a popular work on Botany, professing to give English descriptions of plants. "A *glabrous* shrub. Branches *terete*. Leaves *distichous*, on short *petioles*, almost *coriaceous*, *obtuse* at the base, *rugose*, *dentate*, with a prominent *costa*. Flowers *secund*. Calyx with *subulate* segments, *saccate* at the base. Corolla *infundibuliform*, *plicate*, *calcarate*, irregular, *ciliated*, with the segments *caudate*. Stamens *exserted*, *heteromorphous*, the *anterior barbate*, the intermediate *arcuate* and *sericeous*, the *posterior complanate*, *clavate*, *fimbriated*, with *setaceous* processes," and so on. If the reader still doubts whether

technicality may not after all be the soul of science, as some will have it, let us beg him to compare the foregoing jargon with the following translation of it into plain English. "A smooth shrub. Branches taper. Leaves in two rows on short stalks, almost leathery, blunt at the base, wrinkled, toothed, with a prominent midrib. Flowers all turned to one side. Calyx with awl-shaped segments, bagged at the base. Corolla funnel-shaped, plaited, spurred, irregular, fringed, with the segments extended into tails. Stamens projecting, of different forms; those in front bearded, in the middle curved and silky, at the back flattened, club-shaped, fringed with bristly processes."

Let us intreat the lovers of hard words to explain in what consisted the necessity of introducing into this description such words as terete, distichous, coriaceous, rugose, dentate, costa, saccate, subulate, arcuate, barbate, complanate, heteromorphous, and so forth. These words are, in truth, Latin and Greek, and it is as absurd for English writers to employ them in translations as it would be for English people to talk Latin and Greek in conversation.

With such examples as the foregoing, we think it not unreasonable to assert that some most important branches of science are swamped by a technical jargon, uncalled for by any exigency, and alike repulsive to good taste and common sense. That a perseverance in its use is fatal to the progress of natural history, we hold to be indisputable, and we earnestly hope that in future those English writers who undertake the task of public instruction, will endeavour to put their ideas into a language to which reason offers no objection, and by which the little educated may profit, as well as the highly educated; for thus alone will it be possible to bring natural science within the reach of all classes.

A CORRESPONDENT having expressed his regret that the number of visitors should have been so small at the late JULY EXHIBITION OF THE HORTICULTURAL SOCIETY, and the same notion having been entertained by others frequenting these London meetings, it seems worth while to show what foundation there is for such ideas. The truth is easily ascertained by the examination of official statements; for the Horticultural Society has never felt it expedient to make a mystery of a matter in which the public is as much interested as anybody.

The following shows the numbers present in July ever since the first establishment of the exhibitions, in the year 1833:

1833	1200	1842	3500
1834	3076	1843	7568
1835	5612	1844	4062
1836	6088	1845	5963
1837	6463	1846	6083
1838	6546	1847	6827
1839	5781	1848	14,084
1840	5072	1849	7338
1841	7194	1850	7970

So that, in reality, the July meeting this year was the largest ever known, with the exception of 1848, when the enormous number of 14,084 persons attended, in consequence of the previous June meeting having been such a day of pouring rain, that only 870 persons, instead of 10,000, passed the gates. That great exhibition did not therefore, at the most, represent beyond 5000 visitors for July.

Let us hope that this short statement of *facts* may serve to show how dangerous, in figures, it is to trust to *fancies*.

VILLA AND SUBURBAN GARDENING.

FEW plants of recent introduction are more handsome or attractive than the Japan Lilies. They come into bloom at a time when the great majority of our New Holland plants are over, and when an actual paucity of flowering plants exists, wherewith to decorate the conservatory and greenhouse, and what really can be more suitable? They produce a gorgeous display either in-doors or out; and as they are quite hardy they may be liberally planted in the open border, and thus constitute one of our best autumnal flower-garden plants.

Their propagation is simple and certain. The bulbs may be separated, and each scale will eventually form a new bulb. This separation should be effected when the flower stems are withered; the scales should be stuck into pans of silver sand, and placed in a cold frame or pit. After remaining one season in this position, they should be planted in a prepared bed of peat soil, and a little silver sand intermixed with it; thus treated the bulbs will soon grow large enough to flower.

The cultivation of them in pots is by no means difficult. I shall detail the practice I have pursued with success for some years. Immediately when the bulbs go to rest in the autumn is the proper time to repot them. By no means destroy the old roots, but carefully place them amongst the fresh soil. If large examples for particular display are required, large pots may be employed, and half a dozen large flowering bulbs placed in each pot. The soil I use is rough peat. The pots should be well drained, and the crown of the bulb just covered with the soil; when potted they should be placed in a cold pit or frame, in order to prevent the soil from freezing, although frost will not injure the bulb. Where room under glass is an object in winter, they may be plunged in the open air in coal ashes, in a manner similar to potted Hyacinths. I have at this time a large number coming into flower, which have never been under glass until within these few days; they have sustained no injury from exposure, and they present every appearance of making a grand display. There is scarcely any plant which is so much benefited by liquid manure as the Lily, more especially before expanding its flowers. If used in a clear state, and considerably diluted, this water alone may be applied for at least a month before it comes into flower.

If the object should be out-door cultivation entirely, I should recommend them to be planted in beds; their effect is exceedingly grand. Excavate the soil 18 inches deep, and fill in the bottom a foot deep with very coarse peat, intermixed with one-fifth of decayed manure or leaf mould. The remaining 6 inches may be entirely peat. If the bulbs are large enough to bloom, plant them 12 inches apart every way, and if beds of each kind are brought into contact with one another, the effect will be magnificent.

The following are the kinds I cultivate: Lilium lancifolium album, L. punctatum, and L. speciosum. The old Japonicum is also well worth growing. *Pharo.*

CARNATIONS AND PICOTEES.

A CURSORY view of the Carnation and Picotee returns recently published by you having created in my mind a strong assurance that instead of the "diversity of opinion" so repeatedly urged as existing amongst Carnation and Picotee growers of the north and south respectively, a singular unanimity prevailed; I pursued the subject, and hand you the following brief digest as the result. I must premise that the returns for the Carnations were obtained from 8 northern and 14 southern cultivators; those for the Picotees, from the same number of northerns, and 15 southerns.

DIGEST OF CARNATION RETURNS.

Where raised.	Varieties.	Raiser.	Returned by Northern.	Returned by Southern.	Total Votes.
	SCARLET BIZARRES.				
N	Admiral Curzon	Easom	8	11	19
S	Lord Rancliffe	Holliday	5	8	13
S	Splendid	Martin	2	6	8
	CRIMSON BIZARRES.				
S	Count Pauline	Holmes	...	4	4
N	Lord Milton	Ely	8	9	17
N	Rainbow	Cartwright	2	3	5
S	Thomas Hewlett	Holliday	4	6	10
	PINK BIZARRES.				
S	Prince Albert	Puxley	6	11	17
S	Sarah Payne	Ward	7	14	21
	PURPLE FLAKES.				
N	Beauty of Woodhouse	Mansley	5	11	16
S	Earl Spencer	Barringer	2	2	4
N	Lord Byron	Taylor	4	...	4
S	Queen of Purples	Holliday	...	4	4
N	Squire Meynell	Brabbin	2	4	6
	SCARLET FLAKES.				
S	Bishop of Gloucester	Brown	...	5	5
S	Firebrand	Hardwick	4	3	7
N	King of Scarlets	Ely	3	9	12
N	Queen Victoria	Simpson	2	5	7
	ROSE FLAKES.				
S	Ariel	May	2	5	7
S	Flora's Garland	Brooks	5	11	16
S	Lorenzo	May	3	5	8
N	Lovely Ann	Ely	3	4	7
			77	140	217
	Add for non-returns in pink bizarres by Mr. Slater, who remarked, "I do not know the colour."		2	...	...
			79	140	217

North, 79, divided by 8 = 9.875; South, 140, divided by 14 = 10.
9 Northern varieties obtaining 37 North, 56 South; Total, 93 votes. Average, 10.33.
13 Southern varieties obtaining 40 North, 84 South; Total, 124 votes. Average, 9.54.

DIGEST OF PICOTEE RETURNS.

Where raised.	Varieties.	Raiser.	Returned by Northern.	Returned by Southern.	Total Votes.
	HEAVY RED.				
S	Isabella	Wildman	2	3	5
S	King James	Headley	2	12	14
N	Prince of Wales	Marris	6	6	12
S	Sebastian	May	2	3	5
	LIGHT RED.				
S	Duchess of Sutherland	Burroughes	5	8	13
S	Gem	Youell	8	12	20
	HEAVY PURPLE.				
S	Constance	May	...	3	3
S	Jessica	May	...	5	5
N	Prince Albert	Marris	6	5	11
S	Portia	May	5	5	10
	LIGHT PURPLE.				
S	Amy	Burroughes	...	3	3
S	Delicata	Holliday	1	3	4
S	Juliet	May	4	12	16
S	Lorina	Burroughes	4	3	7
S	Regina	Cox	...	5	5
	HEAVY ROSE.				
S	Princess Royal	Willmer	4	13	17
S	Queen Victoria	Green	4	7	11
S	Venus	Headley	6	10	16
	LIGHT ROSE.				
S	Lady Dacre	Garratt	3	11	14
S	Mrs. Barnard	Barnard	8	15	23
			70	144	214

North, 70, divided by 8 = 8.75; South, 144, divided by 15 = 9.6.
2 Northern varieties obtaining 12 North, 11 South; Total, 23 votes. Average 11.50.
18 Southern varieties obtaining 58 North, 133 South; Total, 191 votes. Average 10.61.

In the foregoing digest I have dealt only with those varieties which have obtained a number of nominations, equalling, or in excess of, the mean average of their respective classes, as it will be apparent any obtaining a lesser number of votes are exceptional cases, and not such as afford base for argument.

In Carnations it will be observed that 22 varieties are included, and for these the number of northern nominations are 79, whilst the southern nominations are 140, which totals being divided by 8 and 14 respectively, the number of nominations give a result of 9.875 for the north, and 10 for the south. In Picotees, again, the 20 varieties have a total of 214 votes, comprising 70 northern and 144 southern nominations, which divided by 8 and 15, the number of nominations, give a result of 8.75 for the north, and 9.6 for the south. Can anything more indisputably prove the extraordinary unanimity prevailing? and therefore the falsity of the assertion—the "taste of the north does not assimilate to that of the south." Would returns from Rose growers, cultivators of Fuchsias, Calceolarias, Camellias, or Pelargoniums, exhibit a more striking unanimity? Individually, I have ever believed that the "same faith" existed in the northern and southern districts, and I am now more than ever satisfied that before the touchstone of these returns, and the trial exhibitions, these asserted differences will vanish, and

"Like the baseless fabric of a vision,
Leave not a wrack behind."

One other point and then farewell. We are constantly reminded that the northerns have a distaste for a "full flower"—the northerns prefer "colour and purity" to "fulness and size." I was exceedingly struck with these oft repeated remarks when analysing the Picotee list, a reference to which will at once show your readers that "Marris' Prince Albert," heavy purple, one of the largest and fullest of Picotees grown, is returned by six of the northern cultivators, or three-fourths of the whole number, whilst only five, or one-third of the southerns, record their votes for it. Again, "Headley's King James," heavy red, a flower pre-eminently distinguished for colour, but small, is returned by two, only, of the northerns, or one-fourth of the whole, whilst of the southern nominations it commands 12, or four-fifths of the whole number. Verily, after this, how long shall these "differences" exist?

P.S. In the original return, "Wilson's William IV." (S. F.), is described as a southern variety. From information which has since reached me, I find that it was raised at York in 1839, and that it is, consequently, of northern origin. "Holliday's Thomas Hewlett" (C. B.), by a misprint, is described as northern raised. It should be south. *J. Edwards, Holloway.*

THE BAROMETER.

A CORRESPONDENT writes as follows: "Be good enough to inform me what is the variation of the barometer in consequence of elevation, *cæteris paribus*;" and as the instrument is one which is of almost universal use, it seems desirable to answer the question in such a manner as to obviate the necessity of replying to other enquiries that are likely to succeed it. In order to do this satisfactorily, we must go into some details respecting this instrument, the principle of which, simple as it is, seems not to be sufficiently understood. This is evident from the preference generally given to wheel barometers, with their complicated action, instead of being contented with good upright ones, the action of which is direct, simple, and incomparably more faithful than that of the others can possibly be. Many even confound the principle of the barometer with that of the thermometer. It is true the indications of both are usually taken from the greater or less extension of a fluid in a glass tube; but the thermometer acts by the expansion of the fluid by heat; the barometer derives its action from the pressure of the air. Its name implies this, the term barometer being derived from βαρος μετρον; *baros*, weight, and *metron*, measure. From this its use will be recollected; it indicates the weight of the air by the measure of a column of mercury.

Great care and nicety are required in constructing a first-rate barometer; but the principle on which the construction depends is simple, and may be thus explained: Take a glass tube, about 34 inches in length, of uniform bore, and open at one end; fill it with pure mercury; then closing the open end with the finger, invert the tube in a basin or cistern containing mercury; withdraw the finger from the end of the tube thus plunged; fix the tube upright; attach a scale to it, the mensuration of which commences at the level of the surface of the mercury in the cistern; and the result will be a barometer in immediate action.

The tube, of 34 inches in length, will not remain filled to the top with mercury after being inverted. The mercury will fall to some point between 28 and 31 inches; for, near the level of the sea, it has never certainly been known to stand higher than 31 inches, nor lower than 28 in this country, as far as I am aware. We shall suppose that the length of the column is 30 inches, reckoning from the surface of the mercury in the cistern. The space above this and the top of the tube is then void of mercury, air, or any other ponderable substance; in short it is a vacuum, called the Torricellian vacuum, from Torricelli, who invented the barometer in the beginning of the 17th century. It is evident that as much mercury as was contained in this space must have been discharged into the cistern.

From what has been stated, it will be readily acknowledged that the barometer is by no means a com-

plicated instrument. It consists essentially of three parts. 1st. A cistern, containing mercury; 2d. A tube, open at one end, filled with mercury, and inverted in the cistern; 3d. A scale to show the height of the column of mercury in the tube above the surface of the mercury in the cistern. Its mode of action will be best considered by keeping these essentials in view, dispensing with all the usual casings and ornaments.

We have supposed the mercury to stand in the tube void of air at the height of 30 inches; but the height of the column varies almost continually. We shall now endeavour to explain the cause of its elevation, and the reason of its varying, as it is familiarly known to do, without any visible cause.

The air has weight; even when dry it has been found that 100 cubic inches of it weigh a little more than 31 grains, 31.0117 grains, the temperature being 62°. Now, the mercury in the cistern is exposed to the pressure of the air; but there is no air pressing on the mercury in the tube, for, as previously stated, the subsiding of the mercury when the tube was inverted left a vacuum. To this difference of circumstances, namely, the pressure of the air on the mercury in the cistern, and the absence of its pressure on that in the tube, must therefore be ascribed the difference of levels of the respective portions of the same substance. If a hole were drilled in the tube above the mercury, the air would rush in, fill the vacuum, and press as much upon the surface of the mercury in the tube as the external air presses on the surface of the mercury in the cistern. Both portions, that in the tube and that in the cistern, would then be precisely under the same circumstances as regards atmospheric pressure; and both their surfaces would stand exactly at the same level, unless the tube were narrow, in which case the mercury in its base would stand a little lower, in consequence of what is called capillary action.

The cistern may be of any shape; we shall suppose it is perfectly cylindrical, with an outlet at the side, near the bottom, communicating with the lower end of the tube, which we shall also suppose to be bent and tightly fitted into the outlet. Then let a piston be made to fit the cistern, and let it be loaded so as to press with a weight on the square inch equal to 30 cubic inches of mercury, or 14 lbs. 12 oz. 124 grains, for this is the weight of 30 cubic inches of mercury at the temperature of 32°. This weight will be found sufficient to squeeze down the mercury in the cistern and force it up the tube, supposed to be open at top, to the height of 30 inches, and no higher. The pressure of the atmosphere has no share in producing this effect, which is entirely owing to the pressure of the piston on the contents of the cistern; for although the latter bears at the same time the weight of the superincumbent portion of the atmosphere, yet this is completely neutralised by the same amount of atmospheric pressure on the mercury in the open tube. The condition may be thus stated, A being equal to the supposed atmospheric pressure; B equal to a weight of 14 lbs. 12 oz. 124 grains:

EXPERIMENT 1.

Cistern.		*Tube.*
A = Atmospheric pressure	Balancing	A = Atmospheric pressure.
B = Pressure of loaded piston = 14 lbs. 12 oz. 124 grs. to the square inch...	Balancing	Column of 30 inches of mercury = 14 lbs. 12 oz. 124 grs. to the square inch.

If we now double the above pressure by the piston, the tube still open at the top, the balance will be thus constituted:

EXPERIMENT 2.

Cistern.		*Tube.*
A = Atmospheric pressure	Balancing	A = Atmospheric pressure.
B+B = Pressure of loaded piston = 29 lbs. 8 oz. 248 grs. to the square inch	Balancing	Column of 60 inches of mercury = 29 lbs. 8 oz. 248 grs.

Instead of the mercury being thus forced up to the height of 60 inches by metallic weights, let the top of the tube be closed and a vacuum formed in its interior; load the piston, as in experiment 1, and we shall have:

EXPERIMENT 3.

Cistern.		*Tube.*
A = Atmospheric pressure	Balancing	No atmospheric pressure, but column of 30 ins. of mercury.
B = Pressure of loaded piston = 14 lbs. 12 oz. 124 grs. ...	Balancing	Additional 30 inches of column; total, 60 ins. = 29 lbs. 8 oz. 248 grs.

Let A represent the pressure of the atmosphere; and B that of 14 lbs. 12 oz. 124 grs. imposed on the surface of the mercury in the cistern, by means of a loaded piston, as in the preceding experiments. Then,

(1) B = 30 inches of mercury.
(2) B + B = 30 + 30 = 60 inches of mercury.
(3) A + B = 60; and by transposing B, this equation gives
(4) A = 60 − B; by No. 1 B is equal 30, therefore
(5) A = 30 inches of mercury, and also equal to B; so that we may employ either A or B, as in the preceding experiments, with the same effect.

This, we are aware, is not the most concise mode of obtaining the result; but we have adopted it as being plain enough for any one to understand. It shows that whether the column of mercury is 30 or 60 inches in length, it must have an exact counterpoise. If therefore the length of the column be found to have varied, the pressure on the cistern must also have varied; if nothing pressed upon the surface of the mercury in the cistern but air, then the weight of the air must have varied, in proportion to the increased or diminished length of column. If the latter fall from 30 to 29 inches, or one-thirtieth, then its counterpoise, the atmosphere, must be one-thirtieth lighter. Instead of pressing with a weight of 14 lbs. 12 oz. 124 grains on every square inch, its pressure will then be 14 lbs. 4 oz. 182 grains, nearly half a pound less on every square inch; or 637 lbs. 15½ oz. less on every square yard; upwards of 882217 tons on a square mile of the ocean; estimating the specific gravity of sea-water at 1.028, and under this diminished pressure, which frequently occurs, such part of the ocean will rise 13¾ inches above the level it would maintain with a universal pressure equal to 30 inches of mercury.

The fluid usually employed for barometers, constructed on the principle of the Torricellian vacuum, is mercury, because it is the heaviest of all known substances retaining fluidity at ordinary temperatures, and therefore most convenient, on account of its requiring a shorter length of tube to contain a certain weight; and it is also preferable in other respects—for instance it is liable to very little waste from evaporation; and it may be rendered almost free from air and moisture, a condition very desirable, for otherwise their subsequent extrication would render the vacuum to some extent imperfect. Other fluids may, however, be employed on the same principle, provided the tube is made long enough to contain as much of them as will balance the weight of the atmosphere. Accordingly, a water barometer was constructed, and placed in the apartments of the Royal Society, Somerset House; and Luke Howard had one in which linseed oil was the substance employed, because not so readily frozen as water. At the temperature of 60° water is 13.568 times, or a little more than 13½ times lighter than mercury. Therefore when a column of 30 inches of mercury is sufficient to balance the atmosphere, a column of water not less than 33 feet 11$\frac{4}{10}$ inches in height would be required to do the same thing. If a space of 3 inches comprise the extreme range of the fluctuations of a mercurial barometer, the corresponding range in a water barometer would be 40$\frac{2}{4}$ inches. The tube of the water barometer at Somerset House was made of glass by Messrs. Pellatt and Co., at the Falcon glass-house. It was 40 feet long, 1 inch in diameter at the lower end, and tapered to $\frac{8}{10}$ of an inch at the upper end, the extremity being drawn out into a fine tube ready for sealing with the blowpipe; and a small stop-cock was fitted to it. The cistern of this barometer was a small copper steam-boiler, 18 inches long, 11 wide, and 10 deep. It was nearly filled with distilled water. Heat being applied, and steam generated to the extent of the pressure of one atmosphere, the water was forced up the tube, yet open at top, to the height at which it would have stood in the Torricellian vacuum, if such could have been conveniently formed by filling the tube with water, and then inverting it in the cistern. A little more steam pressure would of course be sufficient to force the water to the top of the tube—the height of 40 feet. The tapering extremity was then hermetically closed. The tube was lodged in a wooden case, and secured upright at each convolution of a winding staircase. The water in the cistern was covered to the depth of half an inch with pure castor oil, to prevent evaporation and contact with the air. Ultimately this covering proved insufficient, and Professor Daniell recommended a stratum of oil 4 or 5 inches in depth. Probably, a thin sheet of copper might have been adapted to float on the surface of the oil with advantage. We know, by experience, that the evaporation from the cylinder of a rain-gauge is inappreciable during weeks of dry weather when a copper float fits the cylinder, so as to leave only room to move easily up and down. Instead of a glass tube, Luke Howard employed a lead pipe, bent at the lower end, on the principle of the syphon barometer, so that when the air was light, and the column in the vacuum consequently lowered, the water rose in the open lower end, bent upwards; and the contrary when the air was heavy. A float, with index-rod in this open end, indicated the rise and fall. Changes of temperature, occasioning considerable variations by expansion and contraction in the capacity of the pipe, and alterations in the specific gravity of the fluid, greatly interfered with the indications. Supposing the weight of the atmosphere is balanced by 34 feet of water at 40°; if that identical quantity of water were heated to 60°, it would stand at the height of about 34 feet 2 inches; thus showing a difference of 2 inches, even although no difference may have taken place in the weight of the atmosphere. It must, however, be recollected that the capacity of a leaden pipe will be increased by the expansion resulting from an increase of temperature of 20°, or from 40° to 60°; and this circumstance will counteract the amount of expansion in the column of water nearly $\frac{4}{10}$ of an inch.

In order that the pressure of the atmosphere may be fairly estimated, several corrections are also necessary to be applied to the indications of mercurial barometers. These corrections should be made for *capacity*, *capillary action*, and *temperature*. The correction for capacity depends on the relative capacities of the tube and cistern; the greater the difference between these, the less the amount of correction; and whatever it may be it should always be marked on the instrument. It is now marked by the best makers, and so is likewise the *neutral point*, that is, the point at which the mercury stood when the scale was fixed, and its mensuration commenced from the then level of the surface of the mercury in the cistern. On the event of a fall of 1 inch of the mercury in the tube, that in the cistern will have been augmented by the quantity which must have passed from the tube into the cistern, and its surface will be raised above the zero of the scale in proportion to the relative capacities of the tube and cistern. If the capacity of the cistern is 50 times that of the tube, then the above depression of 1 inch in the tube will raise the mercury in the cistern $\frac{1}{50}$ of an inch, and the instrument would be in such case marked, *Capacity*, $\frac{1}{50}$. In applying the correction, it is is evident that $\frac{1}{50}$ of an inch must be subtracted from the observed height; for if the scale were moveable, as some are, and its commencement adjusted to the now raised level of the mercury in the cistern, the mark, 29 inches, would be $\frac{1}{50}$ of an inch higher than the top of the column. Therefore, it is necessary to divide the difference between the observed height and the neutral point by the capacity, and *subtract* the quotient from the observed height when the latter is below the neutral point; but it must be *added* to the observed height when this is above the neutral point. If the cistern be made large, the omission of this correction will not materially affect the general mean of observations, more especially if the neutral point is fixed at or near the mean height at which the barometer stands in the locality where the instrument is intended to be placed, say 30 inches for places near the level of the sea. In standard barometers the correction for capacity should not exceed $\frac{1}{100}$; in other words, the area of the cistern should be 100 times that of the transverse internal section of the tube, exclusive of the surface occupied by the said section and the glass including it. If the internal diameter of the tube is half an inch, the cistern, in order to be 100 times its capacity, must have a diameter of 5 inches; and to allow for the space occupied by the tube, probably about 0.025 inch more, according to the thickness of the glass. The cistern might be of much smaller dimensions without increasing the amount of correction, provided the diameter of the tube were diminished in proportion. Their capacities would still be as 1 to 100 if the cistern were little more than 2 inches in diameter, and the tube $\frac{2}{10}$ of an inch; but then, in consequence of narrowing the tube, the correction for capillary action would be increased.

Capillary action has the greatest effect in narrow tubes; but it is necessary to observe that its action is quite the reverse as regards mercury and water. If a tube is placed in a basin of mercury, the surface of the portion in the tube is found to be lower than that in the basin; but if a similar tube is placed in a basin of water, the reverse occurs; the water in the tube rises above the level of that outside the tube. The effect, therefore, of capillary action on mercury in barometer glass tubes is to depress the column; the correction has, therefore, to be added. In wide tubes the amount of depression is but little. In a tube of half an inch in diameter, it is only 0.007 inch; but in one of a tenth of an inch, it is 0.142 inch. It is, however, considerably less in boiled tubes.

The correction for temperature is the most important, for in hot weather it may amount to the tenth of an inch, or more. According to the experiments of Dulong and Petit, mercury dilates, for every degree of Fahrenheit's thermometer, $\frac{1}{5550}$ of the bulk which it occupied at 32°. All barometers should therefore be furnished with a thermometer, dipping into the cistern, for the purpose of indicating the temperature of the mercury, in order that it may be rendered possible to reduce the observation to some standard temperature; 32° of Fahrenheit's scale, the freezing point of water, and the zero of the centigrade and Reaumur's scales, is the universally adopted temperature to which the mercury is reduced. If a barometer stand at 30 inches, and the temperature of the mercury is 60°, and if at the same time another barometer is placed outside exposed to a temperature of 32°, it will stand 0.085 inch below the other in which the same weight of mercury was expanded in bulk by the excess of 28° of heat. Suppose two barometers were equally correct, and consequently working uniformly under the same circumstances, and that they are standing at 30 inches in a situation which rendered the mercury in each of the temperature of 32°. Remove one to a place where the mercury would acquire the temperature of 66°; presuming the atmospheric pressure has not varied in the mean time, it will be found that the expansion from increase of temperature will be about one-tenth of an inch; and the column in this barometer will stand at 30.100, whilst its fellow continues at 30.000. To-day the atmosphere exerts a certain pressure; to-morrow it may exert precisely the same; but if to-morrow should be warmer than to-day, the barometer will rise and thus lead to the supposition that the air has become heavier; and it is only when the correction for temperature shall have been made that we can come to know that the pressure continues the same. When the temperature of the mercury is above 32°, the correction requires to be *subtracted*; if below 32°, the correction must be *added*.

The best table for correction for temperature is considered to be the one calculated by Professor Schumacher. It is published in a "Report to the Royal Society, of the Committee of Physics, including Meteorology, on the objects of Scientific Enquiry in those Sciences." Taylor, Red Lion-court, Fleet-street. 8vo. 1*s*. This report contains likewise many useful observations and instructions for making meteorological observations, &c. By the tables it contains, all necessary corrections can be made for capacity, capillary action, and temperature. The two former might be generally dispensed with if the cistern were made as much as 5 inches in diameter, and the capacity of the tube $\frac{1}{200}$; for although this arrangement would increase the amount of capillary action, yet as this action

is constant for the same tube, it could be ascertained and allowed for by the maker in the adjustment of the scale.

Frequent reference being made to the observations which have been carried on in the Garden of the Horticultural Society since 1826, it may be proper, whilst on this subject, to state some particulars respecting the Society's barometer, especially as the observations are all corrected, and will consequently exhibit a lower average than others uncorrected, with which they may be compared. The internal diameter of the tube is 0.45 inch, and the capacity $\frac{1}{100}$. The correction is therefore readily made by adding or subtracting one hundredth of the difference which the mercury has risen above, or fallen below the neutral point. The next correction is 0.009 inch, which is constantly added to the observed height, on account of capillary action. The cistern is lined with iron. The tube dips 1.1 inch below the surface of the mercury, and a small thermometer is inserted in it to mark its temperature. The proper correction is always applied for the varying temperature of the mercury, and the entry in the register is the actual pressure of the atmosphere at the station, as it would be measured by a column of mercury of the temperature of 32° Fahrenheit. The position of the barometer is nearly 14 feet above the mean level of high water in the Thames at Chiswick. The observations are taken three times a day, namely at 8 A.M., 1 P.M., and between 9 and 10 P.M., and each observation has the three above-mentioned corrections applied. The barometer thus situated, the average height of the mercurial column, deduced from 20,000 corrected observations, was 29.930.‖

ON MILDEW ON GRAPES.

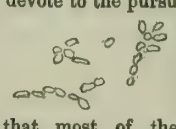
My Grape-house is about 46 feet long by 18 wide, divided with a glass partition and door, and heated by a Polmaise stove, the smoke from the fire of which passes by a flue through the whole extent of the house. In that portion farthest distant from the stove my greenhouse plants are kept, in the other portion plants are wintered until forcing commences in February. The Vines are now in their third year of fruiting, and the crop succeeded well in 1849 in that portion devoted to forcing; in the other portion the Grapes were mildewed, and partially destroyed, those bunches nearest the stem of the Vine being worse.

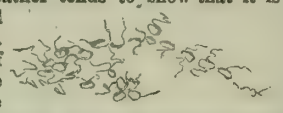
This year the Grapes showed symptoms of mildew first in the greenhouse department, immediately after the Grapes had been thinned; in a short period they became mildewed also in that portion devoted to forcing, and although the fruit had become coloured, it is now nearly destroyed from the effects of the mildew. Everything I could devise as a remedy has been unsuccessful. I first syringed with lime-water, which I fancied had succeeded; but no, the mildew again spread. We then syringed with pure water, and introduced bruised Laurel leaves on the flues, watered profusely, and shut down every sash for 14 hours; portions were syringed with weak tobacco water, other portions with salt and water—the latter destroyed the Grapes, but did no injury to the leaves. The crop is notwithstanding quite spoiled; and in another house, at a short distance therefrom, the disease is also committing its ravages. What is to be done? You mention that "sulphur is only known to effect a cure;" if so, how is it to be applied? Any application will be adopted if a shadow of chance remains of obtaining a remedy. [Dust the sulphur on the white spots the moment they are observable.]

As the knowledge of a disease is half its cure, I have been paying the utmost attention to the progress of the mildew. The attack last year succeeded a week of cold and wet, after previous clear and sunshiny weather—this season was remarkable for its changes of temperature. The disease was first apparent on the 10th of June, the weather then excessively dry, but the nights had been cold; it, in spite of our applications, went on increasing until the Grapes were covered with a white mealy substance, and the wood and leaves also became affected. The first appearance takes place upon the upper surface of the leaf—first a small spot, then a larger, with little hairy substances, like mould or decaying vegetable matter; but that upon the Grapes is a fine floury substance, which, upon moving the bunches, immediately detaches itself. About a week ago I commenced a series of microscopic investigations. This minute substance, when subjected to a highly magnifying power, appears of the form of birds' eggs; or, perhaps, resembles the small oval gelatine capsules sold by chemists, being, like them, transparent. These small substances adhere together by a filament, and have much the appearance of the eggs of snakes—some being strung together continuously, others in clusters. I left a portion of these upon a glass for further examination, as I could not tell then whether they were animal or vegetable. Upon a subsequent examination I found that they had assumed an altered form, the small capsule-looking substances had thrown out filaments similar to those formed in Mushroom spawn by which they were connected, and were evidently diminishing, at the same time throwing out fibres not very unlike the bulbs of Potatoes or Artichokes, adhering similar to the small fibrous roots common to those plants. This convinces me that mildew is a parasitic plant, produced under particular atmospheric circumstances, analogous to that which affects Wheat, producing seeds in abundance, and thus contaminating every branch and every bunch of Grapes in or near the Vinery where it commenced, and extending to the climbing Roses on the outside with equal virulence of character.*

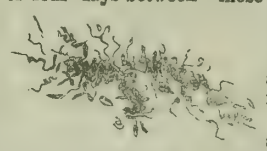
The immediate cause of mildew upon Peas, Cabbages, &c., is the absence of sufficient moisture in the soil, with increased humidity of the atmosphere, especially if the weather is hot and dry by day, succeeded by heavy autumnal dews, and a low temperature at night. If a dry and bright atmosphere in July be succeeded by damp close weather by day, with cold nights, Wheat is liable to be affected; this is supposed to arise from the ordinary vegetation of the plant being arrested, and an undue absorption of moisture by the leaves from the atmosphere taking place, which moisture is carried downwards by the same vessels by which under ordinary circumstances it ascends; this produces disease in the plant, and parasitical plants generally are observed to follow under such circumstances of diseased function.

I shall not enter upon the subject of spontaneous production, although I feel inclined, from some observations I have made, to admit such hypothesis, especially in producing plants of this character; of this I am convinced, that under certain combinations of decaying vegetable matter certain plants of a parasitic character will follow. So with animals in an unhealthy state, parasitic insects abound on them, increasing in numbers and magnitude as the diseased animal becomes more and more reduced. The decaying branch of an Oak tree becomes partially covered with different species of fungus, increasing as the decay advances, until the whole mass is enveloped and absorbed by the new plants. Whatever these minute organised bodies may be, whether seeds of vegetables or eggs of insects, or combining to a certain extent the specific character of both, I am unable to decide, or how they are transmitted to plants on succeeding seasons, I must leave to the investigation of others who have more time than myself to devote to the pursuit; still it is a subject exceedingly worthy of our attention, and especially as regards this in particular affecting the Vine. Last year a few houses in this vicinity only were attacked; lately I have ascertained that most of the houses in the district are becoming affected, which rather tends to show that it is originated or conveyed by atmospheric influence.

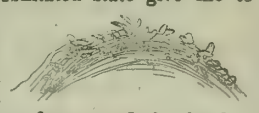




I send a sketch of the appearance of these small vessels, in the first, second, and third stages, being made at intervals of four days between—those still upon the Grapes remaining unchanged. I also send a sketch of the edge or disc of the Grape, as it appeared when magnified.



If, as some author asserts, the sap of wood (in an unseasoned state), after remaining dormant many years, will in its debilitated state give life to a species of fungus, then probably we might, by analogy, arrive at something conclusive in this instance. The whole genus Boletus is found to spring from wood in its last stage of decay, and therefore we may infer that the appearance of the white mildew on Vines is secondary, or symptomatic of previously existing disease of the Vine itself. *Robert Baker, Writtle.*



Home Correspondence.

The Espalier Plan of growing Gooseberries.—Being desirous of growing Gooseberries in the greatest possible perfection as regards flavour, and having observed in every work I have seen, without exception, that the espalier form is recommended for the purpose, I was induced last year to try it. Living in Kent, on an arid and gravelly soil, I made a bed of loam, leaf-mould, and garden soil, and planted the trees against an espalier iron rail facing the S.E., and open to the sun on that side, but shaded by trees after 3 P.M. Until the fruit changed colour, the trees were carefully watered both above and below, and also mulched with short Grass. Notwithstanding all this care, before Midsummer many of the leaves turned brown, apparently from the force of the sun, and have since fallen off. The fruit has partly split, and the remainder not over good. Now, the question I wish to ask is, Do you personally happen to know any instance in the dry southern counties where the Gooseberry has succeeded perfectly as an espalier? [No.] It appears to me, *à priori*, that the espalier would be the worst possible form for the Gooseberry. The fruit being borne on the under side of the branch seems to show that it is incapable of bearing the solar rays. We know that even Grapes, natives of hot countries, cannot endure them. Now, the leaves of the Gooseberry are so small that it is obvious they are insufficient to shelter the fruit if the tree is trained as an espalier, and if the crop is expected from young wood. The case may possibly be different where old wood covered with a multitude of confused projecting snags is employed. It is evident that Mr. Loudon adopted the latter plan, for he says "keep the branches a foot apart, and spur them in." Being plagued with birds, I shall be sorry to give up my espaliers, as they are so easily netted. *G. S., Bromley.*

* If Mr. Baker will refer to our volume for 1847, p. 779, he will find a much more exact account of this parasite under the name of Oidium Tuckeri, the Egg Mildew.

The Cuckoo.—I am much gratified by the notice taken of the cuckoo note. I have lived nearly 40 years in this district, and have been very attentive to birds, yet I have never observed the three notes before. Labouring people are not much to be depended upon for accurate information; but no one, so far as I can make out, has heard this note before. May it not be an individual peculiarity? The song of young birds is deficient in volume and extent. I had hoped that Mr. Doubleday, or some other good natural historian, would have noticed the statement. *Este, Welling, July 24.*

Summer Pruning.—When I penned the article on summer pruning the Vine, I did so with the intention of eliciting from competent authorities opinions as to the real connexion existing between the branches and the roots of a plant, under certain stated conditions; and "Lumbricus" misinterprets my motives when he attributes to me the concealed intention of criticising the practical directions of the Calendar, merely choosing the Vine as a cloak to my real motive. Nothing could have been further from my desire. However ill I might have expressed myself in the article in question, and whatever grounds there might appear for the conclusions at which "Lumbricus" arrives, I confess they were unknown to me (because I had not intended them), till the appearance of Mr. Toogood's and the last named correspondent's letters. I had hoped that the closing sentence of that article sufficiently explained my object—the attainment of truth. I had chosen the Vine as an illustrative example of a practice said to be based on certain physiological principles, which principles and practice I have been—after giving the subject much consideration—unable to harmonise. The passage in the Calendar seemed to me to refer to a similar practice based on precisely the same principles, and I alluded to it as a secondary example of what I considered an incongruity between a principle and a practice founded from it. It cannot be denied that it is a fashion in current garden literature (and a most excellent practice when rightly applied it is), to ascribe a principle as the basis of every garden operation. We lay down a certain practice, and then look about for a principle as a foundation for it. No one will deny but that the principle should be correctly established. My argument was (or at least I intended it to be so), that the practice of allowing Vines at certain seasons of their growth to produce laterals did not augment root action, as is by some said to be effected; but that, on the contrary, the practice weakened the whole fabric of the plant. And the principle is applicable to the greater portion of the vegetable kingdom. With the production of fruitfulness directly my argument did not apply, but merely to the connection existing, under artificial treatment, between the branch and the root. The philosophy of summer pruning in general gardening is as yet only in its infancy. Very much remains to be correctly established. Everything in the well being of a tree depends on a good system of summer pruning, and future gardeners in general, like a few in the present day, will reduce winter pruning to a sinecure in their routine. Neither Mr. Toogood nor "Lumbricus" have alluded to the question, or at least but very imperfectly, which it was my intention to raise when penning the article on the Vine. Of course I never dreamed of attempting to establish the same routine of treatment for the Peach as for the Vine! although "Lumbricus" would infer that I did so. *George Lovell.*

The Potato Disease has attacked the gardens situated in the villages under the chalk hills which form the southern boundary of the vale of Blackmoor, in Dorsetshire. I enclose a specimen of the haulm, but this, I am sorry to say, is an imperfect measure of the progress of the disease. The tubers are most seriously affected, and are rotting very fast. *D. C. L.*—— The Potato disease has made its appearance in its worst form in Wilts and Somerset, especially near Bath, and the plants smell badly. In many instances the haulm is quite black. The tubers are safe as yet, but this cannot long continue. *R. Glendinning.*——The disease is showing itself in certain localities in Essex. I have had a piece, about 5 poles in extent, much struck with it, and have had them immediately cleared off the ground. I have heard of it in other places in a much greater extent. The disease first showed itself where cinder-ashes had been used. *Wm. Fisk.* —— Early dwarf Potatoes are uninfected here as yet, but during the past week symptoms of disease have been appearing in late kinds. Rumours from other localities report cases to be more rife, but the public should bear in mind that "as long as the stalks and leaves continue healthy-looking, so are the tubers." Thousands of tons of premature growth are unnecessarily glutting our markets, thus a sad sacrifice of food and land is the consequence, a circumstance much to be deplored, as it opens up a medium for thousands of tons to be imported to this country, as was the case last year. Statistics clearly proved that this injudicious practice reduced the home produce of Potatoes so as to leave no more than ample sufficiencies for seed, without taking into account the loss of land. *Hardy and Son, Maldon, Essex.*——I beg to send you nine Potatoes, the produce of one root; the variety is Egyptian Kidney. It comes in as a second crop, Ash-leaves being the first. The latter were quite free from disease; but, in the sample sent, two of the crop are in a sad state; and even those which I have had washed, in my opinion, indicate the coming failure. A second root was taken up, and three of the tubers proved bad; the failure of the two roots making about 25 per cent. diseased. The weight of produce of one root was 1 lb. 3 oz.; the

second (now sent) is 1¼ lb. My Shaws, intended for a later crop, present no unhealthy appearance as yet. *John Edwards, Wace Cottage, Holloway.*——Disease is very prevalent in this city and neighbourhood, and also in the districts more remote. Since the 17th July the weather has been unsettled, with thunder and sultry heat. Previously the Potato plant was flourishing most luxuriantly, but within the last week or so the desolation has been spreading rapidly, without regard to soil or situation, *i.e.* in our flat country and on the hills, in the loam, and in the sand. In some of our gardens the crop has already been taken up, although not in a sufficiently ripe state. It is, I confess, much to be feared that the disease will in this year be much more serious than it was in the last (so sudden has been the attack, and so general is its prevalence), considering that it has commenced rather earlier than usual. *W. Watkins, Chichester, Aug.* 1.——Disease is coming on here with terrible rapidity and suddenness. Plants that one day are apparently perfect in haulm and leaves, the next are half destroyed. The tubers do not seem to be as yet much affected. *E. S. Dixon, Cringleford, Norwich, Aug.* 1.

July Frosts and the Potato Disease. Some persons in this neighbourhood persist in ascribing the black appearance of the Potato leaves to frost. Many farmers and gardeners speak of severe frosts as frequently occurring. I wish to know whether there is any instance on record of the thermometer in the south of England being as low as 32° in the month of July. *D. C. L., Blandford.* [We know of no such instance.]

The Kaisha Apricot.—A description of this Apricot is given in the Horticultural Society's Journal, for July, 1849. I believe you are aware that Mr. Warmington has transferred the stock of it to us, together with the whole of his collection of Syrian fruits, received from the late Mr. Barker of Suædia. The tree which fruited with Mr. Warmington, of the Kaisha Apricot, received an injury in the removal, but it has this year produced five or six fruit, two of which we send for your opinion. The first fruit ripened on a west wall on the 15th of July, and there is only one small fruit left. They are not so large, we expect, as those sent by Mr. Warmington, but the tree is weak. We should like to have sent up some fruit to one of the Society's Exhibitions, but the late grand agricultural meeting, &c., prevented it. We consider that under good cultivation this Apricot will prove a valuable early kind. *James Veitch and Son, Exeter.* [The fruit sent was the Kaisha, described in the Journal of the Horticultural Society, and by far the earliest Apricot of good quality in this country.]

The Puzzle.—The answers given July 27, are clever; but not correct. For the guidance of querists next week, I will mention that the name of the tree consists of six letters, and two syllables. *H. S.*

Bug Bites.—"A. C." asks for something to allay the itching of bug bites, and is told to kill the bugs. Good. But how is a poor traveller who gets to an inn late at night to do this? Whether bugs bite all, but that some persons are not susceptible of their poison, or whether they daintily avoid those who boast "bugs never touch me," I do not know; but as their bites always produce great inflammation upon me, and I have a remedy which with me is perfectly effectual, I have pleasure in making it known. Immediately upon being bitten, go to the wash-stand and rub the part with soap dipped in water, and let the application dry on the skin. This never fails with me, but the pain of the bite always wakes me, and the application is therefore quickly applied; possibly it may not be so effectual upon those who do not discover the infliction until some hours afterwards. Probably any alkaline solution might have the same effect, but soap is rarely absent in this country, and its action with me is so complete as to leave not a trace of the effect of the bite. Sleeping with a light, or the means of procuring one, rarely fails in slaying the enemy. Common mercurial ointment should be put into the mortices of bedsteads infested with these odious vermin. *C. M., Ipswich.* [Spirits of turpentine sprinkled on the linen of a suspected bed will drive the bugs away.]

Summer Pruning.—I fully understand Mr. Lovell's article to be a "physiological query," but the application of a principle to grow Vines without stopping is far beyond my comprehension. I was not aware of the views Mr. L. intended to be taken of his remarks, but feel it impossible to draw other inferences. That a just gradation between root and branch is the primary and most essential point towards successful cultivation, there can be no doubt; but how that gradation is to be obtained and preserved without stopping, I shall feel greatly obliged if Mr. L. can communicate. Do we not increase and stimulate a luxuriant growth by every means zeal and ingenuity can suggest, and can the luxuriance thus obtained be monopolised by any other means so beneficially as a judicious system of stopping? Mr. L. admits himself to be the advocate of a practice, the principle of which he deprecates; and I trust for the information of all it may influence, he will give us a line explanatory of the subject, and the system to be pursued. *W. Toogood, Southampton.*

Societies.

GRAND TRIAL EXHIBITIONS (open to all England).—NORTHERN v. SOUTHERN-RAISED CARNATIONS AND PICOTEES.—The exhibition for the southern division was held at the Royal Nursery, Slough, on July 25th. This exhibition, which was instituted for the purpose of testing the merits of northern and southern-raised Carnations and Picotees, has excited considerable interest amongst the growers of these flowers for some time past, and a fine display was the result. Nearly 30 stands were put up for competition, independently of a large number of blooms for class showing. From the following awards it will be seen that southern-raised flowers gained the day, both in Carnations and Picotees. Northern-raised Carnations, 6 blooms: 1st, Mr. Turner, Slough, for Admiral Curzon, Princess (Taylor), Premier (Millwood), Cradley Pet, Splendour, and Lord Milton; 2d, Mr. Barringer, Bedford, for Paul Pry, King of Scarlets, Admiral Curzon, Lord Milton, Premier, and Lovely Ann; 3d, Mr. Dodwell, Derby, for Premier, Admiral Curzon, Seedling, Beauty of Woodhouse, Squire Trow, and Pyracanthus; 4th, Mr. Bragg, Slough, for Defiance, Squire Trow, Henry Kirke White, Paul Pry, King of Scarlets, and Beauty of Woodhouse; 5th, Mr. Willmer, Sunbury, for King of Scarlets, Victory, True Briton, Squire Meynell, Rainbow, and Queen of England. Southern Carnations: 1st, Mr. Turner, for Duncan (May), Justice Shallow (May), Princess Royal (Puxley), Howard (Puxley), Owen Glendower (May), and Lorenzo (May); 2d, Mr. Bragg, for Flora's Garland, Hero of Middlesex, Prince Albert, Prince Arthur, Sarah Payne, and Conquering Hero; 3d, Mr. Keynes, Salisbury, for Prince Albert (Hale), Sarah Payne, Flora's Garland, Prince of Wales (Puxley), Lord Rancliffe, and Prince Albert (Puxley); 4th, Morgan May, Esq., Sonning, for Timon (May), Percy (May), Falconbridge (May), Bardolph (May), Bolinbroke (May), and Prince Albert (Puxley); 5th, Mr. Edwards, Holloway, for Sarah Payne, Harriet, Prince Albert (Hale), Julia, Flora's Garland, and Lydia. Southern Picotees: 1st, Mr. Turner, for Princess Royal (Willmer), Gem (Youell), Ophelia (May), Mrs. Barnard (Barnard), Queen Victoria (Green), and Cressida (May); 2d, Mr. Lockner, Paddington, for Princess Royal, Lady Harriet Moore (Turner), Lorina, Queen Victoria (Green), Mrs. Barnard, and Amy; 3d, Mr. May, for Cleopatra, Juliet, Ophelia, Viola, Princess Royal, and Beatrice; 4th, Mr. Bragg, for Gem, Venus, Princess Royal, Portia, Lady Alice Peel, and Jenny Lind; 5th, Mr. Keynes, for Lady Harriet Moore, Isabella (Wildman), Juliet (May), Princess Royal (Willmer), Useful (Sealey), and Mrs. Barnard. Northern Picotees: 1st, Mr. Dodwell, for Mary (Dodwell), Miss Rosa (Merryweather), Prince of Wales (Marris), Alfred (Dodwell), Prince Albert (Marris), and Seedling 26 (Dodwell); 2d, Mr. Turner, for Prince Albert (Marris), Unexpected (Marris), Prince of Wales (Marris), Duke of Rutland (Hollyoake), Alfred (Dodwell), and Mary (Dodwell); 3d, Mr. Keynes, for Proconsul, Emma, Prince Albert, Lady Sale, Lord John Russell, and Privateer; 4th, Mr. Willmer, for Mr. Green, Prince of Wales, Field Marshal, Fair Ellen, Emperor, and Emily. The premier prizes between the first stands of northern and southern flowers had to be decided after the other award. Mr. Turner's stands of southern-raised flowers gained the premier prizes, both in Carnations and Picotees. Class showing Carnations—Scarlet Bizarres: 1st, Mr. Turner, for Emperor (Puxley); 2d, Do., for Admiral Curzon; 3d, Mr. Keynes, for Prince Albert (Hale); 4th, Mr. Turner, for Bardolph (May). Crimson Bizarres: 1st, Mr. Turner, for Lord Milton; 2d, Mr. Young, Twyford, for Seedling; 3d, Do., for Seedling; 4th, Mr. Turner, for Lord Milton. Pink Bizarres: 1st, Mr. Turner, for Henry Kirke White (Taylor); 2d, Mr. May, for Falconbridge (May); 3d, Mr. Turner, for Falconbridge (May); 4th, Mr. Keynes, for Twyford Perfection. Scarlet Flakes: 1st, Mr. Turner, for Jutice Shallow (May); 2d, Mr. Keynes, for Wm. IV.; 3d, Mr. Turner, for Justice Shallow (May); 4th, Mr. Edwards, for Lydia. Purple Flakes: 1st, Mr. Adams, for Premier (Millwood); 2d, Mr. Turner, for Perfection (Puxley); 3d, Do., for Great Northern (Ely); 4th, Mr. Adams, for Lord Byron. Pink Flakes: 1st, Mr. Willmer, for Flora's Garland; 2d, Mr. Adams, for Prince Arthur; 3d, Mr. Willmer, for Rosetta; 4th, Mr. Turner, for Ariel (May). Picotees—Heavy Red Edge: 1st, Mr. Adams, for Prince of Wales (Marris); 2d, Mr. Dodwell, for Prince of Wales (Marris); 3d, Do, for Prince of Wales (Marris); 4th, Mr. Turner, for King James (Headley). Light Red Edge: 1st, Mr. Dodwell for Mary (Dodwell); 2d, Do., for Mary (Dodwell); 3d, Rev. A. Matthews, for Cassandra; 4th, Mr. Turner, for Gem (Youell). Light Purple: 1st, Mr. Turner, for Prince Albert; 2d, Mr. Bragg, for Juliet; 3d, Rev. A. Matthews, for Purity; 4th, Do., for Circe. Heavy Purple: 1st, Mr. Turner, for Alfred (Dodwell); 2d, Do., for Viola (May); 3d, Do., for Seedling (May); 4th, Mr. May, for Viola. Light Rose: 1st, Mr. Turner, for Mrs. Barnard; 2d, Do., for Mrs. Barnard; 3d, Do., for Mrs. Barnard; 4th, Do., for Countess How (Hollyoake). Heavy Rose: 1st, Mr. Turner, for Queen Victoria (Green); 2d, Do., for Venus (Headley); 3d, Do., for Venus (Headley); 4th, Do., for Unexpected (Marris). The next meeting takes place at Derby on the 7th August. We intend giving a few remarks on the new flowers in our next.

Reviews.

Cholera and its Cures; an Historical Sketch. By J. S. Bushnan, M.D. 8vo. Orr and Co., London. Pp. 169.

DR. BUSHNAN says that the only successful mode of treating cholera is the saline method of Dr. Stevens; ridicules all others, giving a list of them 16 pages long; and charges Sir David Barry and Mr. Wakefield, of Coldbath-fields prison, with having, for interested purposes, made a "determined effort" to mislead the public, by evasion, suppression, misrepresentation, and falsehood. We cannot examine the charges made by Dr. Bushnan, we merely point out to the profession their existence.

Chemistry in connection with Agriculture. By H. N. Noad. 8vo. Baldwin, London. Pp. 116.

These lectures, delivered at the Literary and Scientific Institution of Colchester, are "printed nearly in the form in which they were given, at the request of the farmers who attended them." We think the Essex farmers showed their good sense in this, and we trust that other farmers will imitate their example by reading them. They contain much useful practical matter, explained in a clear unpretending style.

Miscellaneous.

Luminous Plants.—Vague ideas of their existence in India and the neighbouring countries float about now as in the days of the old Hindoos and Greeks; they are in some cases, perhaps, founded on facts, in others on electric appearances. In the Journal of the Agricultural Society of Bengal, No. 153, p. 688, we read that in Affghanistan "to the north of Nahoo, is a mountain called Sufed Koh, in which the natives believe gold and silver to exist, and in which they say in the spring is a bush which at night from a distance appears on fire, but on approaching it, the delusion vanishes." Baron Hügel (p. 143) was told that the Auk river in Kashmeer, when swollen with rain, brings down from Tibet pieces of timber which "shine in the dark as long as they continue moist." Our officers at Peshawur might, perhaps, find out some particulars of the Sufed Koh vegetable luminary; the account, if a fiction, is at all events an old one, and seems identical with that given by Pliny (XXI. 36) of the "Nyctegretum" of the text, which is this: "Nyctegretum inter pauca miratus est Democritus, coloris hysgini, folio spinæ, nec a terra se attolentem, præcipuam in Gedrosia narrat. Ervi *post æquinoctium vernum* radicitus, siccarique ad lunam triginta diebus, ita lucere noctibus. Magos Parthorumque reges uti hac herba ad vota auscipienda. Eamdem vocari chenomychon quoniam anseres a primo conspectu ejus expavescant (!) ab aliis nyctalopa, quoniam *e longinquo* noctibus fulgeat." The rootstock of a plant from the Ooraghum jungles, at the foot of the Madura hills, near Trichoor, supposed to be an Orchid or Marica, was exhibited in April, 1845, at a meeting of the Royal As. Society, possessing "the peculiar property of regaining its phosphorescent appearance when a dried fragment is subjected to moisture, gleaming in the dark with all the vividness of the glow-worm or the electric *Scolopendra*, after having been moistened with a wet cloth applied to its surface for an hour or two; and it does not seems to lose the property by use, becoming lustreless when dry, and lighting up again whenever moistened." The *Gardeners' Chronicle* (Dr. Lindley) states "that a small slice of the dried root being wrapped in a wet cloth, and allowed to remain about an hour, shines in the dark like a piece of phosphorus, or perhaps somewhat paler, more like dead fish or rotten wood." It is stated to have been long familiar to the Brahmans under the name of Jyotismati, erroneously referred in the Lexicons to Cardiospermum, perhaps on account of the white crescent on its black seed. The discovery of the Coromandel plant was made by a Tuhseeldar, compelled by rain to take shelter at night under a mass of rock, where he was astonished to see a blaze of phosphoric light over all the Grass in the vicinity. Sanscrit authorities refer the Jyotismati to the Himalaya; and on enquiry at Almorah, I found there was a luminous plant well known there by that name, and "Jwalia-mat;" implying the possession of light or fire. It turned out to be Anthistiria anathera, of which perhaps one root in a hundred is luminous by night during the rainy season. Other Grasses, Andropogon contortus, Iwaruncusa, &c., are reported to possess the same property; and both Hindoos and Moslems are persuaded of the existence of a plant called Sunee (the Sanscrit Sunjeevun); extolled for its power of revealing the wonders of fairy-land; and eagerly sought by fukeers and serpents. In 1845, the people of Simlah were open-mouthed with a rumour that the mountains near Syree were illuminated nightly by this magical herb. But it is probably Dictamnus which has occasioned many of these reports; it abounds near Gungotree and Jumnotree, and supposing it to exhibit the same phenomena as its European congener, the fame of a bush burning but not consumed would be bruited afar by the pilgrims among a people ever ready to deify any peculiar manifestation of fire. Professor Henslow explains the inflammable atmosphere generated on a calm still evening about Dictamnus fraxinella by the evaporation of a volatile oil; and states that, "If a candle be brought near it, this plant is enveloped by a transient flame without sustaining any injury from the experiment." The Rughoovuns alludes to fire latent in the Sumee, supposed to be Prosopis spicigera, the Jhund of northern India; but the reference may be to fire obtained by friction. *Major Madden, in the Journal of the Agricultural and Horticultural Society of India.*

Calendar of Operations.

(For the ensuing week.)

PLANT DEPARTMENT.

LET shading be used less frequently, and for a shorter number of hours as the season advances. The heat of the solar ray is rarely too powerful now, even if it were the growing season; and as the plants ought now to be ripening their growth, they have need of not only all the daylight, but even moderate sunshine. In the case of Orchids this is especially necessary, that the roots, leaves, and pseudo-bulbs may be thoroughly matured. Those which are already in this state, or nearly so, should be removed forthwith to a cool house. Great care should be taken not to excite such plants into a new growth at this time, as it is much too late to get them properly matured, and the unseasonable draught upon the stored energies of the plants will materially interfere with their next production of flowers. Dendrobiums of the D. nobile character, which are sufficiently advanced in growth should also be removed to a cooler house, where they should be supplied with a moderate temperature, abundance of air, and scarcely any water, till their stems are ripened and their flower buds formed. Those Orchids which are in a growing state should be placed in the most favourable positions, and encouraged by a high temperature, so long as the strength of daylight will admit of such a course.

FORCING DEPARTMENT.

PINERIES.—Maintain a high moist temperature, with abundance of ventilation, to Pines which are now swelling their fruits; and a rather drier atmosphere around those which are in flower. In all the stages except that last mentioned, use the syringe freely, in very fine weather, when there is a certainty of the moisture evaporating by the heat of the sun; but, on dull days, depend almost entirely upon the evaporating troughs, and be careful to admit air, to prevent too great a condensation of moisture. If the syringe is used in excess during this month, it is liable to render the soil too wet for the healthy development of the plants. Take care that the bottom-heat does not get too strong for plants which have been recently potted or planted. VINERIES.—When the late crops have done stoning, the borders, both inside and out, should have a good soaking of liquid manure, to assist the swelling of the fruit. Do not

allow the process to go on too sluggishly, if they are of kinds adapted and intended for late keeping. Muscats ripened with the aid of the summer sun, by the end of August, are infinitely superior, both in appearance, flavour, and keeping, to those which are dawdled on through the next two months. The Vines in a more forward stage, on which the Grapes are just beginning to ripen, should be gradually inured to a freer admission of air; and if it be desired to keep for any length of time those which are quite ripe, they should have the advantage of a slight shading during very hot or scorching weather.

FLOWER GARDEN AND SHRUBBERIES.

Cuttings of Roses should be taken immediately and planted in a close cold frame in a north aspect for three weeks or a month, until they are cicatrised at the base; they should then be taken carefully up, potted in thumb pots, and plunged in a close warm frame with a gentle bottom heat. So treated, they will make nice plants in a very short time, and if kept under slight protection during winter, will fill their pots with roots, and be ready for planting out in April or May. Pink pipings, if put in at the time we recommended, will now be ready for transplanting; and in doing this not a moment should be lost, as they have need of all the rest of the season to establish themselves in such a manner as to prevent the frost injuring them. If the situations ultimately intended for them are vacant, they should be planted in them at once, as they thereby flower much finer; but if these places are occupied for the present by something else, the young Pinks should be planted 4 inches apart, on reserve beds in an open situation, the soil of which should consist principally of light loam, to which has been added some charcoal dust or charred refuse; a little dung mixed with road drift and soot should be added. The rotten manure from an old Mushroom bed answers very well for this purpose, as it encourages a mass of fibres, and produces a healthy but over-gross development of top. Some time ago we promised to remind our readers about making memoranda of the most suitable arrangement for half-hardy plants next season; we are just now doing so ourselves, and we take this opportunity of redeeming our pledge. As an easy method of reducing the thing more completely to a system, a rough plan should be made of the arrangement of the beds, which should be numbered, and referred to an accompanying list of the names of the plants, with which it is designed to fill them next year, and the quantity required for each bed. By compiling a summary from this list, accurate information is at once obtained of the quantity of plants which must be propagated immediately by cuttings, and both by these and seeds in spring. By this simple means, redundancy and deficiencies are avoided, disappointment is prevented on the one hand, and waste of labour on the other. Whilst the half-hardy plants are in their greatest beauty, a tasteful eye will easily discover the weak and improvable points, and, by observing the more satisfactory parts, will readily perceive the most desirable future arrangement.

FLORISTS' FLOWERS.

Plant out the second crop of Pink pipings, taking care to examine the beds rather late in the evening; worms may then be caught, and every Pink grower knows how often they make great confusion amongst his stock, by loosening the pipings, and very often drawing them together in heaps. Take care that Dahlias have abundance of water, keeping the roots well mulched with rotten manure. Let the lateral shoots be sedulously attended to, by tying them out. Encourage the weakest seedlings, for it very frequently happens that they are the best, and generally bloom the very last of the collection. Carnations and Picotees are fast getting out of bloom; proceed rapidly with layering; use leaden pegs to fasten the layers down; these are preferable to Fern or Braken ones. Amongst stars that have come under our observation this season are Bunn's Lord Lewisham (S.B.), May's Ophelia, light purple Picotee; Robinson's Elizabeth, splendid heavy-edged red; Marris's Jeannette and Mrs. Hemans, rose Picotees. Whilst such flowers as these reward the pains-taking florist, every one who grows Carnations and Picotees ought to emulate them, by carefully crossing, saving, and sowing the seed. Auriculas, Polyanthuses, and Pansies must all have their share of attention, keeping them clean and free from insects; the former is often pestered with green fly; this may readily be removed with a soft brush—perhaps as easy and effectual a way as any.

FRUIT GARDEN.

Strawberries.—In places where the work is kept in a forward state, it may be presumed that by this time a sufficiency has been potted for forcing, and that all the new plantations have been properly prepared and planted. As the fruit is all gathered, the old exhausted beds may be at once destroyed—preserving the younger, one or two year old beds, to afford the main supply next season; and it should be an object of especial attention to cultivate these plants in such a manner that they shall produce an abundant crop. As no more runners are required, those which remain should be cleared away, but taking care not to injure the leaves of the plants. Their growth during the remainder of the season should be encouraged by forking some very rich well rotted manure into the ground about the plants. It is a point of the first importance to preserve the old foliage uninjured; as upon it depends the perfect elaboration of the sap for the production of next year's crop.

KITCHEN GARDEN.

No time should be lost in sowing the main crops of winter Spinach in good rich ground, deeply trenched; and, if the soil is of a heavy nature, the operations should proceed simultaneously, as the soil is thereby left in a loose, uncompressed state. Avoid thick sowing in all cases; the rows should stand about 16 inches apart, to allow a free passage between the rows for forking, cleaning, and gathering the crop. At the first gathering every other plant should be drawn out entirely; thus giving additional space to those plants which are to produce the late winter and spring supply. Some strong, well-curled plants should be selected from the spring sowing of Parsley, carefully lifted with large balls, and planted at the foot of a south wall. A quantity planted in boxes proves very useful during a long continuance of severe weather in winter, as they can be placed in a cool Peach-house, or similar situation. Let the early kinds of Potatoes be got up as soon as the tops are ripe enough; and let particular pains be taken to pick out all the tubers, as those left in the ground are very annoying in future years. Let the produce be sorted, and if of an approved kind, let all the small and moderate sized tubers be carefully preserved in dry sand or charcoal dust. Be at a little trouble also to test the different varieties, and do not allow your number of sorts to exceed half a dozen, selecting those only which are most liked on table, free croppers, early in coming to perfection, and least liable to be affected with disease. Many of the medicinal and pot herbs, commonly cultivated in gardens, will require gathering this month; the proper time is just when they are in full flower. They should be cut quite clean on a fine warm day, tied in small bunches, and hung up in an airy room till they are perfectly dry; after which they should be put into tin canisters, glass bottles, or paper bags, to preserve them from dust. Either of the former contrivances are preferable to the latter, as they guard the herbs against damp, and prevent the escape of their delicate aroma; along with which their virtues are in a great measure evaporated. Continue, as time and space occur, to plant Cauliflowers for late autumn use, and Broccoli, Savoys, Brussels Sprouts, &c., for winter. Make a small sowing of Flanders Spinach, to succeed the last sowing of round or summer Spinach; also a sowing of York and Vanack Cabbage for winter and early spring use. A sowing of Onions should now be made, rather thick, for spring use. Pull Shallots, and lay them on a gravel walk or dry ground for a few days before removing them to the store room. Onions also will require attention when ready. Plant out some York Cabbages for early winter use, 6 inches apart and a foot between the rows; this will give room enough for the best dwarf kinds, as every other one can be removed while young, and thus leave room for the rest to grow larger.

State of the Weather near London, for the week ending Aug. 1, 1850, as observed at the Horticultural Garden, Chiswick.

July and August.	Moon's Age.	Barometer. Max.	Barometer. Min.	Temperature. Of the Air. Max.	Min.	Mean	Of the Earth. 1 foot deep.	2 feet deep.	Wind.	Rain.
Friday.. 26	17	29.716	29.666	69	54	61.5	62	63	W.	.06
Satur... 27	18	29.807	29.729	63	54	58.5	62	62	W.	.26
Sunday . 28	19	29.989	29.904	65	54	59.5	60½	61½	N.	.01
Monday 29	20	30.109	30.066	72	53	62.0	60	61	N.E.	.00
Tues. .. 30	21	30.197	30.150	74	54	64.0	61	61	N.E.	.00
Wed. ..31	22	30.144	30.106	78	62	70.0	62	61	W.	.01
Thurs.... 1	)	30.171	30.119	70	57	63.5	63	62	E.	.00
Average....		30.019	29.963	70.1	55.3	62.7	61.5	61.6		.3₄

July 26—Fine, but windy; cloudy; sultry; slight rain.
— 27—Rain; showery; cloudy.
— 28—Rain; slight shower; cloudy at night.
— 29—Cloudy; very fine; quite clear.
— 30—Cloudy and mild; clear at night.
— 31—Fine; slight haze; overcast.
Aug. 1—Uniformly overcast; hazy; densely overcast.
Mean temperature of the week, 1 deg. below the average.

State of the Weather at Chiswick during the last 24 years, for the ensuing week, ending August 10, 1850.

August.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds. N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 4	75.3	52.3	63.8	13	0.85 in.	1	2	1	3	3	9	4	1
Mon. 5	73.8	53.3	63.5	12	0.43	1	2	3	2	3	8	3	3
Tues 6	72.7	52.3	62.5	9	0.58	1	4	1	1	3	6	3	2
Wed. 7	74.5	50.7	62.6	8	0.57	1	2	2	1	4	14	2	1
Thurs. 8	75.3	49.6	62.4	9	0.40	2	3	2	1	4	9	4	1
Friday 9	76.1	51.5	63.8	8	1.06	1	3	1	1	5	9	5	1
Satur. 10	75.4	53.0	64.2	11	0.36	1	1	2	1	2	12	5	1

The highest temperature during the above period occurred on the 10th, 1842—therm. 93 deg.; and the lowest on the 6th, 1833—therm. 36 deg.

Notices to Correspondents.

To our Correspondents.—May we beg it to be understood that *we cannot answer inquiries privately through the post.* We are ready to give reasonable information through our columns, but we cannot consent to the labour of writing letters.

Bees: *Juvenis.* You may remove above a third of the combs of the stock in the ceiling of your verandah, and if you use thick worsted gloves in the place of leather ones, you will not lose those bees, by the loss of their stings, that may attack you. Being in a difficult situation, it would add much to your comfort in the operation by having an assistant with one of Brown's patent fumigators, who might give them a puff or two of tobacco smoke occasionally while you are taking the comb. *Y.—A Young Beginner.* Raise the hive about half an inch on three or four wedges until the temperature becomes lower. *Y.*

Clerodendrons: *T B M.* At least 50 kinds are known in gardens, and we cannot occupy space with such lists. You should consult Mrs. Loudon's "Hortus Britannicus," just published.

Cotton Seed: *C.* This is not procurable in England. You must send to New Orleans for it; Madras and Bourbon would supply Natal settlers, if they have any ready communication with those places. As to Tobacco, the finest American is prepared from the Nicotiana Tabacum, sold in every seed shop. The excellence of Tobacco does not depend upon the sort, but upon the preparation of it, and the climate in which it grows. Plantains may be had at Madeira, and Date Palms will grow from the stones of the newly arrived fruit; so that no difficulty need be experienced as regards them.

Fern: *W H F C.* You cannot raise Fern from seeds. The only way is to dig up the roots in November and plant them immediately. Those of the common Brake, which you probably mean, lie very deep, and are troublesome to get at; the black underground branches which people take for roots are subterranean stems, which will not grow

Fern House: *R J G.* Nothing will grow in the atmosphere you describe, if kept in it permanently. You should grow the front plants elsewhere, and only bring them in occasionally. Æschynanths, Hoyas, Dendrobium pulchellum, some Aerides and Vandas would like it well enough for a month or two at a time—but not for more—if they are to flower.

Fruits: *Sub.* The following are six of the best sorts of Melons: Bromham-hall Green-fleshed, Trentham Hybrid, Beechwood, Benares, Egyptian Green-fleshed, and the Pine-apple Melon, the latter though small is of excellent flavour. The best sort of pale yellow or white Raspberry is the Yellow Antwerp. The white Filbert, if you will confine yourself to one; but perhaps you can add the red Filbert and the Cosford nut. The latter has such a thin shell that people find it does not obdurately protect the kernel, even in the absence of any but enamelled crackers.‖

Grapes: *Hertfordiensis.* Excess of moisture *somewhere* is the cause; it may be in the soil, or in the air, or in both. If you have not full circulation of air, that at once explains the mischief.‡

Heating: *Palmata.* We do not at all understand your meaning. This however is certain, that your pipes are full of air, that your expansion cistern is too small, and that pipes should not drop, but *rise*, from the boiler to the other end.

Ice-houses: *Sub.* Many plans have been given in our earlier volumes, as will be seen by referring to the list of woodcuts published with each volume.‡

Insects: *Stuck in the Mud.* 1, Porthesia chrysorrhea (the gold tail moth); 2, Chrysomela Polygoni; 3, Males of a species of pimpla, a genus of parasitic Ichneumon-flies, the larvæ of which were reared within the bodies of some of the Yponomeuta caterpillars, as is the habit of the Ichneumonidæ; 4, Microgaster glomeratus, another parasitic Ichneumon; 5, we suppose these are also the cocoons of some Ichneumon; 6, Ophioglossum. *W.—Mary.* The grubs sent are the young larvæ of the common cockchaffer, which are injurious to Grass and other plants. The Pea pods and Pear leaves have not been attacked by insects. *W.—C R.* The grubs on the Pear leaves are the slimy larvæ of the black-winged saw fly (Selandria æthiops). When full-grown they descend into the earth to undergo their changes. Powder the leaves with lime, or wash them repeatedly with lime water. *W.—Bergamot.* The Pear leaves sent are blistered by the very minute larvæ of a little moth (Argyromiges scitella, or Clerckella of some authors) which feed *within* and not upon the surface of the leaves. The leaves affected should be picked off and burnt. *W.*

Mildew: *J S.* The Potato-leaf was bruised and unexaminable. We could discover nothing on the Vine leaf; the other leaves are affected by the Grape or Egg Mildew (Oidium Tuckeri).‡

Music: *Hannah.* We make a point of not answering any questions which do not relate to natural history or rural œconomy. As to music we could not distinguish a "Reveillé" from a waltz; and have no information whatever about it.

Names of Plants: *Erzeroum.* 152, Scorzonera; 35, Scorzonera tuberosa; 101, S. stenocephela, *Boissier;* 291, Asterothrix asperrima.—*P Mackenzie.* Luzula pilosa.—*S P S.* Smyrnium Olusatrum.—*G T.* Its proper name is Nonesuch or Black Medic (Medicago lupulina).—*J G.* Astrantia major.—*Young Gardener.* Some Rush in a monstrous state. Its name cannot be ascertained unless you can find it in its natural condition. It may be a state of the Toad Rush.—*Spero, Aberdeen.* No doubt it is the Testudinaria elephantipes, a plant of the order of Yams. It is a greenhouse climber.—*J H.* The kind of abnormal development exhibited by your specimen is of frequent occurrence amongst Ferns. The curled (?) forms of Scolopendrium officinarum are familiar examples, but why a solitary plant of a species occasionally shows it we cannot explain. When we speak of Ferns we do not confine our views to the 40 or 50 species natives of Britain, but we form our opinions from our knowledge of the Ferns of the world, of which there are about 2000 species. *S.*

Palm Trees: *Sub.* They will succeed in a large conservatory, planted out in the bed, which is all fresh soil, an excellent mixture of peat, leaf-mould, and sandy loam, and where the conservatory is lofty and warm.‡

Pansies: *P M.* A Pansy is considered a seedling until it is "sent out." But whether or not a two-year-old seedling will be allowed to compete with yearlings depends on the rules of the show. The practice at the leading London exhibitions is this, "That there shall not be less than three blooms of each variety, without reference to age, so long as they are not out." There are, however, many objections to showing yearlings.*

Peas: *J and E Allen.* Your Pea is a long, nearly straight-podded green marrow, containing 7—8 Peas. It resembles a sort called Ne plus ultra.‖—*Inquirer.* Hairs's Mammoth.‖—*Hardy and Son.* Appears to possess the properties of Knight's Tall Green Marrow.‖—*J M.* Your Pea which grows in the form of a shrub with thick stems, that need no support, is the American Crown Pea, described in the Transactions of the Horticultural Society many years ago.‡

Pomegranate: *G S.* Prune the roots now. Let the shoots alone, or only stop the strongest.

Potatoes: *J F.* We cannot offer any opinion upon seedlings.‡

Pot Pourri: *G B.* Put into a large China jar the following ingredients, in layers, with salt strewed between the layers; 2 pecks of Roses, part in buds and part blown, Violets, Orange-flowers, Jasmine, and anything sweet, a handful each; Orris-root, sliced, Benjamin and Storac, 2 oz. of each; ½ oz. of musk, ½ lb. of Angelica-root, sliced, a quart of the red parts of Clove, Gillyflowers, two handfuls of Lavender-flowers, half a handful of Rosemary flowers, Bay and Laurel leaves, half a handful each; also of knotted Marjoram, and Balm of Gilead. Cover them quite close; when the lid is removed the perfume is very fine. When the above has been in the jar some weeks, it is advisable to empty it entirely; stir it well with the hand, and return it into the jar again.‡

Puzzle: *E F G.* You have missed the point altogether.

Raspberries: *Sub.* Now that the fruit is gathered, you may give them more air and sun between the rows or stools, by removing the shoots on which this year's fruit was produced, and leaving none but young canes.‡

Strawberries: *Anon.* Very like the Comte de Paris.‖—*J M.* Cuthill's Black Prince for an early, and Elton for a late crop.‡

Tar: *Juvenis, Cork.* Gas tar will not hurt your wood, quite the contrary; but its smell is very likely to kill any plants that are in frames coated with it.

Turf-soil: *Sub.* Baking in an oven, or saturating with boiling water will kill the grubs in it.‡

Water Melon: *G B.* Grow it like other Melons.

Misc: *R S.* It is too late to prune Azaleas now, it should have been done immediately after they had flowered. The same remark applies to Epacrises and Heaths. Fuchsias may be pruned in spring. You will find some account of mildew in another column. Your Camellias will be best out of doors for some time yet. See that they do not suffer from drought.‡

SEEDLING FLOWERS.

Calceolaria: *T R P.* Quite shrivelled up when received.*

Double Sweet William: *B G.* Not in an examinable state when received.*

Petunias: *C C G.* Pretty, but no improvement on kinds already in cultivation.*

Picotee: *W D.* Too rough in the edges to please florists now-a-days.*

*** As usual, many communications have been received too late, and others are unavoidably detained till the necessary inquiries can be made. We must also beg for the indulgence of those numerous correspondents, the insertion of whose interesting contributions is still delayed.

PERUVIAN GUANO.—As Agents of the Peruvian Government for the importation and sale of this valuable MANURE, we think it right, for the protection of consumers and respectable dealers, to apprise them that the adulteration of the article is still extensively practised, and to recommend them to apply either to ourselves, to our agents, Messrs. GIBBS, BRIGHT, and Co., of Liverpool and Bristol, or to dealers of established character, in whose honesty and fair dealing they can place implicit confidence. ANTONY GIBBS and SONS.

MANURES.—The following Manures are manufactured at Mr. LAWES's Factory, Deptford Creek:

Corn and Grass Manure, per ton	...	...	£10 0 0
Clover Manure, do.	...	...	11 0 0
Turnip Manure, do.	...	...	7 0 0
Superphosphate of Lime	...	...	7 0 0
Sulphuric Acid and Coprolites	...	...	5 0 0

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N.B. Peruvian Guano, guaranteed to contain 16 per cent. of Ammonia, 9*l.* 15*s.* per ton; and for 5 tons or more, 9*l.* 10*s.* per ton, in dock. Sulphate of Ammonia, &c.

CORN MANURE FOR WHEAT, BARLEY, OATS, BEANS, &c. &c.

THE LONDON MANURE COMPANY most confidently recommend the above, as tney are daily receiving very satisfactory accounts from parties who used it with great success last season. It will be found fully equal to and much cheaper than Peruvian Guano, and is not so liable to produce so large a growth of straw. Price Seven Guineas per ton, 3 cwt. per acre. They also beg to offer their Concentrated Urate, Superphosphate Lime, Nitrate of Soda, Sulphate and Phosphate of Ammonia, Fishery and other Salt, Gypsum, Sulphuric Acid, and genuine Peruvian Guano. To insure this free from adulteration, all purchasers can receive it direct from the Warehouses of the Importer.

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1 ply ...	0*s.* 5*d.*	0*s.* 6*d*	0*s.* 8*d.*	0*s* 10*d.*	1*s.* 0*d.*	1*s.* 2*d.*	1*s.* 4*d.*	1*s.* 6*d.*
2 ply ...	0 8	0 9	1 0	1 2	1 5	1 8	2 0	2 3
3 ply ...	0 11	1 0	1 3	1 6	1 10	2 2	2 9	3 3

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BY HER MAJESTY'S ROYAL LETTERS PATENT.

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STEPHENSON AND Co., 61, Gracechurch-street, London, and 17, New Park-street, Southwark, Inventors and Manufacturers of the Improved CONICAL and DOUBLE CYLINDRICAL BOILERS, respectfully solicit the attention of scientific Horticulturists to their much improved method of applying the Tank System to Pineries, Propagating Houses, &c., by which atmospheric heat as well as bottom-heat is secured to any required degree, without the aid of pipes or flues. S. and Co. have also to state that at the request of numerous friends they are now making their Boilers of Iron, as well as Copper, by which the cost is reduced. These Boilers, which are now so well known, scarcely require description, but to those who have not seen them in operation, prospectuses will be forwarded, as well as reference of the highest authority; or they may be seen at most of the Nobility's seats and principal Nurseries throughout the kingdom.

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The Agricultural Gazette.

SATURDAY, AUGUST 3, 1850.

MEETINGS FOR THE FOLLOWING WEEK.

WEDNESDAY, Aug. 7—Agricultural Society of England.
THURSDAY, — 8—Agricultural Imp. Society of Ireland.

WE have great pleasure in pointing out an instance, in a recent number of the "Journal of Agriculture," of the benefits to be derived from FARMERS' CLUBS. Farmers, as a body of men, are proverbially unwilling to express their opinions in public; and though possessed of a fund of knowledge, valuable both to the community and themselves, it has only been by means of social agricultural societies and farmers' clubs that much of this information has been gathered together, and rendered available. In this instance we allude to a report, drawn up and published by a committee of the Annandale Farmers' Club, on the "Manures most Suitable for the Turnip Crop." For the purpose of preparing the report, the committee inspected about 80 crops of Turnips, grown on 34 farms. The report gives the time of sowing in most instances, the distance between the drills, the distance between the Turnips, weight of crop per acre, and manure (whether farm-yard, guano, bones, or superphosphate). Upon this last point the information contained in the report is very important. It is found that, wherever a portion of artificial manure is used along with farm-yard manure, the crop is better than where a larger quantity of the latter is used alone. The committee found that as much as 35*s.* per acre, expended in purchased manures, along with about 15 loads of dung, is what *ought* to be applied over the whole green crop of the farm.

The middle of the month of May is found for that part of Scotland to be the very best possible time for sowing Swedes, and the committee recommend that a portion of white Turnips be sown at the same time, the latter being especially valuable on many farms, for giving to cattle at the end of September and beginning of October. The average width of drill is about 28 inches, and the distance between the Turnips about 7 inches, though one very successful grower recommends 14 inches.

We do not see that any inquiry has been made by the committee as to the comparative merits of drilled or broadcast Turnips. This seems to be a subject quite settled in favour of the former in the mind of the Scotch farmers; and one motive for noticing this report is to direct attention to the common plan of growing Turnips in many of the southern counties. We remember to have noticed in Hampshire, a few years ago, that drilled Turnips were quite the exception to the rule. The plan there adopted is also to apply the farm-yard manure upon the Clover lea for Wheat, the Turnips immediately following getting little or nothing except bones or guano—and what would have been still more striking to the eye of a Scotch farmer, nearly the whole of them were sown broadcast. Caution must be used in finding fault with the practice of any district, but before we can be satisfied that a plan, opposed to the custom of the best Turnip growing portion of the kingdom, is the best adapted to that district, very clear and cogent reasons must be assigned. If no other advantage could be pointed out than the greater facility for horse-hoeing afforded by the drilled, over the broadcast Turnips, it alone would satisfy our minds of the superior advantage of the north country system. So perfectly satisfied are our northern brethren on this point, that during a recent visit through the north of England, and the south of Scotland, we did not observe one field of Turnips sown broadcast. If it be an advantage to have the Turnips on the level surface in the southern counties, as it has been asserted, this can be easily managed by drilling the Turnip seed upon the flat, numerous drill-machines for this purpose being now in existence.

Such reports and examinations as that which has led to these remarks, would not only be the means of determining the best method for cultivating Turnips in particular districts, but many anomalies attending a more limited series of experiments on a single farm would also be cleared up. Let any one examine the experiments quoted in the first edition of JOHNSTON'S "Agricultural Chemistry," and he will be at once satisfied that since that time agricultural chemistry has made very striking progress. But still there is a great deal to be done. As a proof of the advantage which an examination over a wide district presents over a more limited opportunity for investigation, we quote the following results of two series of experiments undertaken to ascertain the best manures for the Turnip crop,—precisely the object sought by the Annandale Farmers' Club.

	Experiment No. 1.		Experiment No. 2.
1, Farm-yard manure	Good crop	...	The worst.
2, Farm-yard manure, with guano	Good crop	...	Better than farm-yard manure alone, but still poor.
3, Farm-yard manure with bone-dust	Very fair	...	The worst result of the series.
4, Bone dust	Not tried	...	Very good.
5, Peruvian guano ...	Fair ...	...	Very good.
6, Prepared bone-manure	Ditto ...	...	The best crop of the series.

(*From the report of the Derwent and Shotley Bridge Agric. Society.*)

It is obviously impossible to extract the slightest benefit from such a series of contradictory results as these. Neither does the report of the experiments furnish us with any clue to their elucidation. Unlike the examination conducted by the Annandale Farmers' Club, such a series of experiments only raises difficulties; it settles none.

Without undervaluing individual exertions, the example we have quoted is well worthy of imitation. There are now few districts without a farmers' club, and we see no method by which these local societies can more effectually aid the improvement of agriculture in their own neighbourhoods than by undertaking an inspection similar to that carried out by the Annandale club.

Turnips are the best crops on which to attempt such comparisons. Good management and skilful manuring are more on a par in the case of Turnips than in grain crops; besides they are now the basis of good farming, a good crop of Turnips being a certain proof of good general management.

WE have it in our power to state that a company has been formed to carry into operation the "GENERAL LAND DRAINAGE AND IMPROVEMENT ACT" of last session. It is well supported by the leading agriculturists of the day, and several influential capitalists and contractors are among its members. The company contemplate the erection of farm homesteads, the under-draining of land, the execution of works for the sewerage of towns, with a view to the conservation of the sewage for agriculture; the enclosing of open and uncultivated land, which they have the power of purchasing, disentailing, and reselling; the irrigating and warping of land, and other works of improvement which the lack of capital or the limited interests of tenants for life now prevent, but which this company may carry out and charge the inheritance with the cost, by dividing the amount into instalments, repayable in the case of buildings within 31 *years*, and in the case of land improvements within 50 *years*.

ON HARVESTING WHEAT.

THERE are still many and various opinions regarding the best method of cutting and harvesting Wheat. With a view to invite a discussion, so as to elicit the truth, we would give our own experience of the matter. There are first the various methods of reaping—high up the corn, to have as little straw as possible; reaping low, to have it almost all; "bagging," to cut up everything close to the ground (weeds not excepted, though there be any); and mowing, which also aims at making clean and quick work of everything. Then comes the difference of expense of the various methods of cutting down. For a considerable distance on all sides of us the relative prices for reaping, bagging, or mowing, have run thus: 10*s.* an acre for reaping or bagging low, 8*s.* for reaping high, and 7*s.* 6*d.* per acre for mowing. Mowing is therefore, in the first instance, cheaper than any other system. Then comes the carting of the corn. For all ordinary cases, which have come under our notice, one man could pitch from 10 to 12 acres of Wheat sheaves in a day, if reaped high, and from 5 to 6 acres only, if cut low. In connection with the one man pitching there is generally a leader and three or four men stacking, not to mention boys driving or leading. The common wages of a harvest man is 3*s.* a day. Upon the presumption, then, that the above statement is correct, 6 acres of mown Wheat will cost as much for carriage as 12 acres of reaped; or, reckoning it in money, six men at 3*s.* a day = 18*s.*, while 12 acres of reaped could be carried at the same cost, leaving a difference

in favour of the reaped Wheat of 3*s.* per acre. Next comes the thatching, which, if all the corn and straw is stacked together at harvest, requires immediate covering when wages are double that of other times. A stack of corn—of mown corn, of six acres—has in general about 1000 square feet of thatching upon it, at a cost of 10*s.* for laying on; a stack of reaped Wheat (presuming all along that the reaped is about half the bulk of the mowed) would cost but 10*s.*, while it contained double the number of acres. On the score of thatching, then, there is 5*s.* per acre in favour of the reaped. If the haulm or stubble requires thatching, it may be done at half the rate of harvest wages; so that, although in amount of quantity there would be as much thatching of corn and stubble separately, yet the cost would be relatively the same as above per acre.

But the chief advantage of reaped Wheat over mown lies in the threshing, whether by hand or by machinery. We lately saw a steam-engine of eight horse power threshing mown Wheat with straw of about 7 feet long. It was all the engine could do, to draw in half a sheaf at a time from one man feeding. Another time the engine was threshing reaped Wheat with short straw, when two men were fully employed to feed the machine, which was going easily, without any strain upon the engine or machinery. In the case of the mown Wheat, 30 quarters per day, of 10 hours, was with difficulty threshed; on the other hand, 8 quarters per hour was the rate of speed with the short sheaves, which was more than double as fast. The cost of threshing the reaped Wheat, including fire, labour, and interest of engine and machinery, was only 8*d.* per quarter. The cost of threshing the long Wheat was about 20*d.* per quarter. Allowing an average crop of Wheat at 4 qrs. per acre, we have then a saving in threshing reaped Wheat of 4*s.* per acre. I remarked to the bailiff on the farm where the threshing was going on, "What do you think of mown Wheat, now?" He said, "God bless ye, the engine can scarcely draw it through, and I thought we never should have carted the corn from the field at harvest; we wanted as many men carrying nearly as cutting down."

In threshing with a locomotive engine here lately, the advantage in threshing Wheat with little straw was very apparent over the long sheaves. By water and by flail we have ever found it the same, and after abandoning the old-fashioned plan of reaping, and turning to mowing and bagging, we cannot but be reconverted that reaping Wheat in all ordinary circumstances is more economical than mowing. But, moreover, in addition to what has been said about the relative cost of the two plans, there is another expense in taking in to thresh of double on long sheaves per acre as short; there is also a deal of straw to be removed in general a long way from the barn, to where it is required; whereas, if the premises are not very concentrated, a stack of stubble may be taken from the field and set upon the spot at once for daily use. A common objection by the advocates of mowing Wheat against reaping is, that the ground has to be gone twice over. This is, however, a very trivial objection, as the difference of expense of the two plans before the corn is stacked is more than sufficient to cut down the stubble and cart it home immediately after harvest. The advocates of mowing say—and say truly—that mown Wheat will always be ready a day or two sooner for carting than reaped Wheat after rain; but on the other hand, the reaped corn sustains the least injury by sprouting in the bottom of the sheaf. Corn merchants can immediately detect mown Wheat by soft kernels and pieces of dirt, &c., mixed with the sample, so that there is really a disadvantage in mown Wheat on that score. Very often may be seen half the sheaves of a mown field lying on their sides in a storm of wind and rain, when short, compact, reaped sheaves stand erect free from danger. Where there are weeds—especially many—mowing is quite out of the question, as the seeds are carried home and re-carried to the land again with the manure. If there are a few Thistles and Docks, &c., they can be left after the sickle, pulled up, and burned.

There must of course, as in every other case, a deal depend upon circumstances which is the best method of the two—reaping or mowing. We would say, then, short clean corn would be more economically mowed than reaped, if good mowers are to be found. But that reaping is to be preferred for all long thick crops, whether clean or not. We put the saving of carriage of reaped Wheat in harvest against stubble cutting and carriage after harvest; in all cases we wish to be understood that the stubble should be cut either in part during wet days in harvest, or immediately after it. The first item to the credit of reaped Wheat, then, is 5*s.* per acre for thatching. The next would be the extra cost of taking the corn into a barn, which would be in times of common wages 1*s.* 6*d.* per acre. The next item is 4*s.* per acre on the score of threshing, even with the most approved machinery; and where the straw has to be carted from the barn to scattered premises, there ought to be a charge there. We shall, however, just add the thatching, taking in, and threshing together, which amounts to 5*s.* 11*d.* per acre in favour of reaping. We have heard it contended, by-the-bye, that you get all the corn by mowing and raking; that appears correct by looking at the ground just raked between the shocks, but we never yet saw great, long, unwieldy sheaves but littered very much at the time of carrying, and left more for the gleaners than ordinarily reaped Wheat. There can, however, be no decided rule in every case as regards the two plans, and many persons might do well to consider their individual cases before adopting new plans, or clinging obstinately to old ones. We have heard so much on the matter of the above, that we have been led on to a greater length than was at first intended; at the same time, we would very much like some of those scythians to show us some reason why the old school in this respect is not better than the new. *R. V., Leighton Buzzard.*

MANURING FOR EVERY CROP.

With reference to your leading article, at page 473, I pass by the remarks upon the necessity for long leases given to tenants of sufficient capital, energy, and skill; they are self-evident, and of course commend themselves to every unprejudiced person's unqualified approbation. But your observations upon artificial manures are so intimately connected with my own practical farming, that I cannot refrain from addressing you a few lines; and chiefly because the arable land under my cultivation has received nothing but artificial manures during the last 30 years at least, and probably for a much longer period. My arable farm is therefore a remarkable instance, possibly an unique one, of very ordinary land in its natural state, producing heavy crops, and every year increasing in fertility, without the aid of a cart-load of dung, during the memory of man.

Like Mr. Hudson I manure for every crop; and although I have not a long lease, yet I have the still greater advantage of farming my own land, and therefore do just what I please. My land is of every description, from a very stiff clay to a light gravelly sand. It runs from the plastic clay above the chalk to the lower green sand below it.

I might, perhaps, be asked, what I do with my farm-yard dung, as I make such large quantities every year? It is always applied to my Hop-grounds, each of which receives a heavy dressing once in three years, and the two succeeding years it is manured with various other substances. And I may here add, by the way, that my experimental Hop-grounds already indicate that my practice has hitherto been correct. But to return to my common farming operations; for many years, and till the introduction of guano, and the use of ammoniacal salts, I was compelled to employ rags, shoddy, hair, rape-cake, bones, &c., for my Wheat and Turnip crops. These are slowly decomposing manures, and as a consequence I was dependent entirely upon the seasons for success. But now the case is wholly different; for, thanks to the introduction of guano and the discovery of an easy process of making superphosphate of lime, the crops, under Providence, are in great measure subject to our own control, and we can ensure a heavy crop of Turnips, or of the cereals; that is, provided the latter will stand up. You may, perhaps, tell me that my farm is situated under peculiarly favourable circumstances. But it is not so: for although our best Hop-land is probably the finest soil in the kingdom, our parish would successfully compete in producing the very worst arable land in its natural state. My own arable land, too, is of a very ordinary description.

As regards the Turnip crop, I think my success is complete; for I usually grow as many as the ground can hold, and it is not an uncommon thing to have Swedes weighing 15 to 20 lbs. each. Here I sow 3 cwt. per acre of Peruvian guano broadcast, and drill with the seed 4 or 5 cwt. of my home-made superphosphate. The phosphate, I need not remind you, I dig in abundance, so also might many others if they chose, and generally pull off half my Swedes, the remainder being fed off by sheep—that is, on my light soils, and the sheep have an allowance of 1 lb. of oilcake each per diem, with hay or Pea-haulm. This process ensures a good subsequent crop of Barley or Oats, if the heavy summer showers do not lay them flat. Yet I invariably obtain as good or better crops if I pull all my Swedes, and manure my corn with ammoniacal preparations.

I may here incidentally remark that I marl my ground whenever I think such an interchange of soil is required, and that I plough all my land very deeply, with an occasional sub-soiling. To this I attribute much of my success in growing large crops on what had hitherto been considered poor ground. But I have been chiefly induced to write to you on this subject from the doubts which you throw upon the applicability of the "artificial manuring principle" to the cereals. I should have thought that Mr. Lawes' invaluable experiments had decided this question. For in his experimental Wheat field, after four years' exhaustion of the soil by various crops without any manure, we see plots dependent entirely upon the application of ammonia which produce seven crops of Wheat in succession averaging nearly 40 bushels per acre. What more satisfactory evidence of the applicability of the artificial manuring system to the cereal crops can we require?

My own experience will only tend to corroborate these "landmarks" of agriculture in a small degree; yet when I tell you that my Wheat crop last year averaged about 44 bushels per acre upon very middling land; that I obtained 64 bushels of Barley after pulling off all my Turnips; and that my Oat crop averaged nearly 100 bushels per acre. I think I may assert that the artificial manuring system is not to be despised. And I may also here remark, that on a field of the upper chalk proverbially poor, and where I was told I could not grow a crop of Wheat, by the application of 1½ cwt. of the sulphate of ammonia, and 2 cwt. of Peruvian guano mixed with my ground up fossil phosphates, I grew last year upwards of 7 qrs. of Wheat per acre. This year my Wheat and Barley are nearly all laid by the heavy rains; but I have a field of Oats of 20 acres upon a very poor soil, which had they not been laid by the rains, I feel persuaded would have averaged a crop of full 14 or 15 qrs. per acre.

I shall not be accused of vanity when I say that my crops are superior to any in this parish, with the exception of one neighbour, who avowedly follows in my steps. What we now want is a cheap source of ammonia. Cannot you stir up the agricultural chemists, so that they may obtain for us the ammoniacal salts of a cheaper rate than we buy them in guano? But if this cannot be effected, the farmers of England have abundant cause to be thankful for the introduction of guano; and they may rest assured that guano without protection is infinitely better than protection without guano. *J. M. Paine, Farnham.*

THE KIRKLEAVINGTON HERD OF SHORT-HORN CATTLE.

The sale of this celebrated herd took place on Thursday, May 9, 1850, in presence of a company, which, at the lowest estimate, could not be less than 5000 persons, including nearly every breeder of short-horn cattle of note in the United Kingdom, as also breeders from the continent of Europe, and from the United States of America. It may with confidence be maintained that on no similar occasion has so great an interest been excited amongst the breeders of this variety of the ox, so justly the pride of our country, as on that referred to above: and well, indeed, did the herd deserve the far extended fame which attracted such a mighty gathering on the occasion of its dispersion, to be the *nuclei* of new, or to enrich collections already in being, in our sea-girt isles, in Europe, and in the great western quarter of our planet, beyond the Atlantic ocean.

To criticise in print a herd whilst it remains the property of the breeder is obviously an improper intermeddling with private property, by which no good purpose can be answered, but which may be productive of controversy, liable to excite vexation. When, however, a herd is dispersed, as on the occasion under consideration, the reason for withholding an opinion of its merits, and of those of the several animals of which it is comprised, ceases: in fact, an event in the annals of rural affairs of such interest and importance as the sale of the Kirkleavington herd, not only demands a more permanent record than the ordinary notice in the columns of a newspaper, but now that the cattle in question no longer form a distinct herd, a monument of the incident becomes useful; and no repository for such can be so fitting as the pages of the "Farmer's Magazine."

The herd in question, comprising 48 cows, heifers, and heifer-calves, and 20 bulls and bull calves, late the property of Thomas Bates, Esq., formerly of Halton Castle, afterwards of Ridley Hall, both in Northumberland, and lastly of Kirkleavington, near Yarm, in Yorkshire, displayed an eminence in every point of excellence, which has been very rarely attained.* In a combination of those qualities which constitute excellence, in the short-horn variety of cattle, it may be asserted with confidence, that the Kirkleavington herd at the time of its dispersion was unequalled by any other in existence. Magnificent size, straight and broad back, arched and well spread ribs, wide bosom, snug shoulder, clean neck, light feet, small head, prominent and bright but placid eye, were features of usefulness and beauty which distinguished this herd in the very highest degree; whilst the hide is sufficiently thick to indicate an excellent constitution, its elasticity when felt between the fingers and thumb, and its floating under the hand upon the cellular texture beneath, together with the soft and furry texture of the coat, evinced in an extraordinary degree throughout the herd excellent quality of flesh, and disposition to rapid taking-on fat. In the 68 head of cattle, not one could be characterised as inferior or even as mediocre—all ranking as first-class animals; and when an idea of inferiority arose, it was only in reference to a comparison with some of this splendid herd, which, from their most extraordinary excellence, may demand special notice.

The herd consisted of six families:—The Duchess, the Oxford, the Waterloo, the Cambridge Rose, the Wild Eyes, and the Foggathorpe, which are here enumerated in succession according to the prices which each realised at the sale; a synopsis of the pedigrees, prices, and purchasers, being subjoined, to which it will be sufficient to refer for such particulars.

Of the Duchess family, which originated with Young Duchess, a two-years old heifer, got by Comet, dam by Favourite, and purchased by Mr. Bates at Mr. Charles Colling's sale in 1810 for 183 guineas, were four cows, three heifers, one heifer calf, four bulls, and two bull-calves; the first of which that demands especial notice is the Fourth Duke of York. This animal, now the property of Earl Ducie, is the *beau ideal* of bovine excellence.† His magnificent size, and perfection in every point of excellence, entitle him to be considered as the brightest gem of the herd; and if not the very best bull in existence, he certainly cannot be surpassed. Grand Duke, Duchess 54th, and Duchesses 55th, 59th, 61st, 62d, and 64th, all of the same family, are the finest imaginable specimens of the short-horn tribe. Next in order is the Oxford family, consisting of four

* A memoir of Mr. Bates was published in the "Farmer's Magazine" for January, 1850, with a portrait of that gentleman.

† As a proof of this remark, and what may be expected from his produce, we beg to observe that the only three calves got by him realised the sum of 379*l.* 1*s.*, or 126*l.* 7*s.* each. [*Ed. Far. Mag.*]

cows, two heifers, four heifer calves, and three bulls, of which Oxford 6th, Oxford 11th, and Second Duke of Oxford, are all animals of extraordinary excellence. The Waterloo and Cambridge Rose families were less numerous than the two preceding. The whole of the animals composing them possessed great excellence, although inferior to those previously noticed. The Wild Eyes, the most extensive family in the herd, consisting of 25 head, in which were nine cows, seven heifers, two heifer calves, four bulls, and three bull calves; and of which Balco, a remarkably fine yearling bull, and two three-year-old heifers, Wild Eyes 22d and 23d, were prominent lots in the sale. The only remaining family now to be mentioned is the Foggathorpe, descended from a cow of that name, bought by Mr. Bates, for which he gave 100 guineas when she was of so advanced an age as not to be likely to breed. This family comprised two cows, one heifer calf, and four bulls; of which Ebor, a yearling, sold for 90 guineas.

The sale of this extraordinary herd realised a total amount of 4558*l.* 1*s.*; and, great as this sum may seem, it is not in any degree extravagant to suppose that had the identical animals been in existence in 1839, and put up for sale after Mr. Bates's unparalleled triumph as a breeder of short-horns at the show of the Royal Agricultural Society of England at Oxford, in obtaining four principal prizes with the only four animals entered by him on that occasion, the 68 head of cattle would then have realised double the sum they did on the 9th inst. In support of this opinion the writer can state upon undoubted authority, that so great was the estimation in which the premium animals referred to were held, that an offer of 400 guineas each for the premium cow and heifers was refused; and that for the bull, Duke of Northumberland, Mr. Bates might have had almost any sum he might have asked; but he considered the animal valuable above all price. When the circumstances of the great yearly increase and diffusion of short-horns of the very first class in every part of the kingdom for many years past, and the crushing influence which free-trade policy must have on the price of cattle, are considered, the proceeds of Mr. Bates's herd fully corroborates the writer's opinion of its being the most excellent ever submitted for sale by auction.

In conclusion it may be observed that the arrangements of this great sale reflect the highest credit on Mr. Chrisp, who represented the owner of the stock; and that the perfect knowledge of the subject, the great professional ability, and the gentlemanly demeanour of Mr. Strafford as auctioneer were universally the theme of the highest praise; and that gentleman may be assured that he has won the admiration of those short-horn breeders of the northern part of the kingdom who had not previously an opportunity of becoming acquainted with his professional qualifications. *Newcastle-upon-Tyne, May* 16, 1850.

SUMMARY OF THE SALE OF THE KIRKLEAVINGTON HERD OF SHORT-HORN CATTLE, HELD MAY 9, 1850.

FAMILIES.	Cows.			Heifers.			Heifer Calves.			Bulls.			Bull Calves.			Total.			Average per head.		
	No.	£	s.	d.	No.	£	s.	d.	No.	£	s.	d.	No.	£	s.	d.	No.	£	s.	d.	£	s.	d.
Duchess	4	332	7	0	3	441	0	0	1	162	15	0	4	625	16	0	2	75	12	0	14	1627	10	0	116	5	0
Oxford	4	288	15	0	2	95	11	0	4	303	9	0	3	206	17	0	0	.....			13	894	12	0	68	16	4
Waterloo	2	101	17	0	3	180	12	0	1	74	11	0	0	.....			0	.....			6	357	0	0	59	10	0
Cambridge	1	47	5	0	1	73	10	0	1	26	5	0	0	.....			0	.....			3	147	0	0	49	0	0
Wild Eyes	9	328	13	0	7	430	10	0	2	64	1	0	4	254	2	0	3	126	0	0	25	1203	6	0	48	2	7
Foggathorpe	2	74	11	0	0	.....			1	31	10	0	4	222	12	0	0	.....			7	328	13	0	46	19	0
Total	22	1163	8	0	16	1221	3	0	10	662	11	0	15	1309	7	0	5	201	12	0	68	4558	1	0	67	0	7
Average		52	17	7½		76	6	5½		66	5	1		87	5	9½		40	6	5							

From the Farmers' Magazine of June, 1850.

MANAGEMENT OF AN ALLOTMENT.

THE following is an outline of the way in which an allotment may be cultivated to the best advantage. Rotation for a cottage allotment of half a statute acre, on a brown loamy soil:

12 rods—Early Potatoes, with 2½ tons of dung. Swedish Turnips the same year planted.
12 rods—Mangold Wurzel the second year.
12 rods—Beans, Peas, Vetches third year. Turnips, Rape, Kale and Broccoli, may follow the same year.
12 rods—Late Potatoes fourth year, with 2½ tons of dung.
12 rods—Cabbages, fifth year, planted 15 inches asunder every way. Every alternate row with early varieties. The other row, every alternate plant early and late Cabbage.
12 rods—Wheat sixth year.
8 rods—For seed beds and other plants.

80 poles.

THE SAME ROTATION MORE SIMPLE:—1st, one third of the land Potatoes. One half early ones, and one half late, with 4½ tons of dung. 2d, Mangold Wurzel and Cabbage, one half of each. 3d, half Beans, Peas, Vetches, Rape, Broccoli, &c., and half Wheat. Swedish Turnips would be second crops after early Potatoes. Rape, &c., would come after Beans, Peas, and Vetches. Upon peaty and moss soils, I would exclude the Wheat and Vetches, and more Potatoes might be introduced, as those soils are more suitable for Potatoes than for Wheat. In the autumn of every year, the Wheat and Vetches should be sown, 12 rods of the former, and 4 of the latter. The remainder of the land to be dug over deep, in the autumn and winter, as the crops are removed, in order to prepare the land for next year's crops, and to receive the benefit of frost, &c., in winter.

The 12 rods for early Potatoes I should recommend to be trenched in the autumn, 15 inches deep. By following this rule, the whole allotment will be trenched every six years. In the first open weather in February sow the Beans and Peas in rows, covering the seed 6 inches deep with soil, leaving it in a ridge. When the seed has sprouted about half way through, or less, rake 3 inches of the soil off the ridges; the crop will soon be above ground, and quite clear from weeds. When the crop is about 4 or 6 inches above ground, hoe a little soil to each side of the rows, and then delve the soil up in the intervals between each row of Beans and Peas. Then plant a row of late or Savoy Cabbages in each interval. These will come forward as a crop after the Beans and Peas are removed. Late Potatoes, or Turnips, might be planted at intervals, but they would require dung. Keep all these crops clear of weeds by hoeing and weeding; and when the Beans and Peas are all gathered, remove the stalks or hulls to the dung-heap, and dig the ground over. This will give air, and accelerate the growth of the Cabbage, &c.

In the first dry weather in March, plant the early Potatoes, giving 2½ tons of dung to the 12 rods. Keep them clean, and as the crop is gathered ready for the market, or use, plant Swedish Turnips, or sow yellow ones. Swedes are far superior for pigs. In this month, make a seed bed; sow Swedish Turnips, Rape, Kale, and Broccoli, for transplanting. When these are above ground, weed the plants out to 3 inches asunder; they will then become strong, if kept clean by hoeing with a 2-inch hoe, and by weeding.

In the first dry weather in April, plant the late Potatoes for winter use, in rows, giving the 12 rods 2½ tons of dung. Keep this crop clean by digging, hoeing, and weeding. Towards the latter end of this month, or the beginning of May, sow the Mangold Wurzel, in rows, 27 inches asunder. Thin out the plants 10 or 12 inches asunder in the row, when they are in the fourth leaf, and dig the intervals once a month during the summer.

In June the winter Vetches will be cut, and as the crop is removed, dig the land, and plant Kale, Rape, Broccoli, late Potatoes, or Swedish Turnips; or sow common ones, for second crops. Keep them clean by hoeing and weeding. In the autumn, when the late Potatoes are got up and stored, dig the ground, and plant Cabbages in the following manner. First, plant late ones, in rows, 30 inches asunder, and the plants 30 inches asunder in the rows. Then plant an early York between each of these, in the same row. Then plant a row of early Yorks, Nailors, or Sugar-loaves, between every row of the above, at 15 inches asunder in the row. This will leave the plants 15 inches asunder every way upon the ground, and one fourth of the plants will be late ones. In the first dry weather in spring, hoe well between the plants; and fill up with fresh plants all those places where the plants are dead.

As the early varieties become ready for cutting, remove them; dig the ground, and hoe the soil up to the plants of the late Cabbages, which will then soon cover the ground. If any of the late ones should fail through disease, or any other circumstance, remove them, and plant a Swedish Turnip, or Kale, &c., in the place thereof. The late Cabbages may be taken up in November and stored for use, when the Wheat crop may be sown upon the land after it has been dug. To store Cabbages place them in a dry room or shed, or airy place out of doors; lay them in layers the wrong side down. If out of doors, bring the heap to a ridge, and cover them with a little straw.

In order to collect and raise dung, let a few yards square of land be selected in some convenient corner of the garden for the dung-heap. Let the ground be made a little hollow and the bottom well beaten, first covered with clay, if it could be procured. To this place lead all the refuse of the garden, such as Potato tops and Pea stalks, the faded leaves of Cabbages, Mangold Wurzel, &c., &c.; the stumps of Cabbages, Kale, Broccoli, &c.; dressings of copse, scourings of ditches, Ragweed, Docks, Thistles, Fern, &c., from waste land and road sides; bearing in mind that these are all cut before their seed be ripe, the best time being when they are in flower: serge or coarse Grass and rushes, from the margins of pits, ponds, ditches, and brooks. To all these, mix any dung which may be purchased or collected from the roads, or from the occupier's pig cote; the ashes from the cottage, and the sweepings of the cottage and yard, the night-soil, the urine from the cottage and pig cote, soap-suds and washings of the cottage. Let all these be laid together in regular layers as collected. A few cart-loads of bogsoil, or tanner's spent bark, might be added every year. The latter can be bought for 6*d.* per two-horse load. For the proper management of pigs, litter should be given them; and that not sparingly. This will add considerably both to the dung-heap and to the comfort of the animal; both of which should be constantly kept in view, or neither will the animal, the dung-heap, nor the cottager thrive. *Rothwell's Agriculture of Lancashire.*

Home Correspondence.

Failure of Clover.—Clover being introduced into the agriculture of this country as long ago as the 16th century, we may well think "it is but a poor compliment to the skill and research of the present century to have to acknowledge that we hardly know anything as to the cause of the failure of the broad Clover." Although I could never detect any parasitical plants on Clover, yet I have no reason to doubt the effect is sometimes caused by parasites, as I have never examined it by a very powerful lens. Most farmers assign causes for the failure of their Clover crop, to enumerate which would excite ridicule rather than elicit truth. "A Farmer" says, "From my own observation I am inclined to ascribe the failure of Clover partly to insects." (*Farmers' Magazine*). Undoubtedly insects are partly the cause of its failure, but in my opinion there is a mystery to be solved which is as yet unseen. If we look at the question in a chemical point of view, we should be not unapt to attribute it to a deficiency of pabulum, or to its being in an unfit state to be assimilated by the plant. This, I have no doubt, is often the cause of the failure of Clover. The Norfolk rotation being the prevailing one in this country still serves to strengthen my views; for how often do we see superphosphate, bones, or some other artificial manure, that contains only three or four ingredients, applied to the Turnip, and thought to be sufficient for the Barley and Clover following. Surely in these enlightened days my brother farmers ought not to be surprised at the failure of their crop under such absurd treatment; but the advantage of introducing the Bean into the four course rotation, so that Clover will come only once in eight years, instead of four, is a clear proof our present knowledge in chemistry is not equal to the task of giving a decided answer to this important inquiry, for these plants belong to one natural order; and chemical analysis shows us they are (as nearly as possible) alike in composition. The manures recommended to be applied as a top dressing have been many, but none has found so many advocates as gypsum, or sulphate of lime; but even this is now found to be of little use in the case of Clover-sick land. To wet clays, or high exposed fields, "in a cold dry, or a cold wet, spring, it will be of little use; but its effects will be great if the months of April and May are damp and warm" (*Schwerz's Precepts*), and the land to which it is applied is not really Clover-sick, or already contain a sufficiency of this valuable salt. Clover we know to be a deep-rooted plant, and should give it every facility for acquiring its natural habit of growth. Our present culture is not deep enough. At the depth of 6 inches we generally find a glazed surface to the substrata through which no plant can penetrate with that ease which will ensure its successful growth. Another cause—and perhaps a more formidable one than either of the foregoing—is the looseness of the soil. Clover delights in a soil of close texture, in giving which, the farmer will not only preserve it more safely from frosts, but will ensure a more invigorated growth. As to the seed being "doctored," my advice is, buy of a person on whom you can depend, for it is impossible for the most practised eye to detect the fraud of the experienced. Sulphur, indigo, logwood, copperas, and verdigris are all used in this nefarious practice. Was the seed improved in colour only by being thus "doctored," the loss would not be serious; but its vegetative powers are often destroyed, and the failure of the crop is the consequence. To those who choose to buy a low-priced sample rather than go to a respectable seedsman, I would offer the remark of Tusser:

"But ill shall he speed,
That soweth ill seed."

Was not the crop a very precarious one in this country, and a great exhauster of the soil, I should advise the growth of our own seed. Undoubtedly these reasons are the cause of the greater part of the Clover seeds being imported into this country. "It is particularly important to obtain favourable weather for sowing, so that not only the grain may germinate, but likewise the young plants may not be in danger of perishing from drought, or the attacks of aphides." (*Von Thaer.*) I have more than once seen the failure of this crop caused by feeding it late in autumn. This should never be practised in high lands, more especially when of a loose texture; for when fed off in that season of the year every plant that has its crown attacked will assuredly die, and others will meet a similar fate by their roots being exposed to the inclemency of our severe winters. *G. Summers, Stoke Wake, Dorset.*

Law Agents and Land Agents.—I am a lawyer, and one also entrusted by landlords with the management of their estates. I have been a subscriber to your Paper for some years, and have experienced much pleasure and advantage in the perusal of it. I have, however, frequently observed with pain the repeated attacks you have made upon the admixture of the solicitors' and the land agents' business; but never more so than in reading your Leading Article in your Paper of the 20th inst. You there observe, "a lawyer, who from his profession can have had no opportunity of making himself thoroughly acquainted with the value of land; and as he derives a profit from every legal transaction connected with the estate, what a fruitful source of litigation, seizures, confusion, and miseries of every kind!" My experience of law agents and land agents enables me to say that this charge is both illiberal and unfounded. As far as I am concerned myself, although I am entitled to be paid for legal business connected with the estate, independent of my salaries, I can say that for the last

14 years, with the exception of one single case, the landlords have not been asked by me for one single farthing for legal expenses, nor with that exception (and which was for the purpose of protecting a valuable right to the estate), have I ever been paid anything. I do not, however, judge from my own case; I know members of both classes, and I know that, on the whole, the interests of the landlord are as efficiently protected by the one party as the other; and not only the landlord's interest, but that which is of equal importance, the tenant's also. So far from a country solicitor not knowing anything of the value of land, it is the very main-spring of his existence. It is a subject that is brought daily under his most serious and anxious consideration, in the negotiation of purchases, and more especially the loans of money on landed securities. I agree with you, that a good and honest tenant is delighted by the periodical visits of his landlord; but I have known many delighted, too, not from a praiseworthy motive, but with the view of obtaining, or, at least, asking for grants to which he is not entitled, which he has not been able to obtain from the agent, and it has frequently resulted in the landlord's (otherwise liberally inclined) visiting his estates with an impression of disgust rather than of pleasure. My experience of both parties has also shown me, that the education of the lawyer has, for the most part (there are, of course, honourable exceptions), better fitted him for placing the landlord in that position in which he ought to stand with a tenant. One word more with regard to lawyers and litigation; I can tell you that the class of men (lawyers) who are entrusted with land agencies, are men who care very little about litigation. I can assure you, that the profit attending them, if honestly conducted, is, in many cases, barely mechanic's wages. On the other hand, I have known landlords involved in very serious litigation by the "go-a-head" qualities of a land agent. I have been induced to write hastily these observations, not so much with a view of setting up the lawyer above the land agent, as in the hope of satisfying you that there are two sides to a question, and that we must not expect to find perfection in any class of men. *N. P.*

Potato Crops in Ireland.—In my last letter I endeavoured to give your readers some idea of the extent of land planted with Potatoes in the barony from which I write this (the barony of Costello, county Mayo), and of the condition of the crops at the time of writing. In the latter I merely hinted at my fears of the existence of disease, though I well knew since the first week in May last that the disease existed, but to what extent it would or may hereafter prove mischievous, neither I nor any one else can tell. I would have said more on the subject then, but feared I should be set down as an alarmist, like others, who may be supposed interested in spreading such reports. I am no alarmist, and if I feel any interest at all in the matter it would be in suppressing such reports, lest their circulation should raise the price of provisions on the poor; lest such reports should influence the circulation of money from our banks; but, above all, lest they should exercise an injurious effect on the sales of property now under the hammer of the encumbered estates commissioners. I have been blamed, both last year and the year before, for being the first to publish the report of the disease, though reported in such a manner as to defy contradiction; and I may be blamed now for telling your readers that no matter how attempts may be made to disguise the fact, my belief is, that there is not a Potato field in all Ireland where the disease does not exist in some shape, and in every stage of the plant's growth. In some cases it is visible below the surface of the land, attacking the underground stem near the parent tuber, presenting not only a rusty but a rotten appearance, easily indicated by the sickly appearance of the plant above ground. In others the disease is visible by the pale appearance of the last formed young shoots at the extreme or highest points, followed by a shrivelling stunted appearance in the leaves, eaten through, as it were, first by fungus and finally by insects. In some of the most luxuriant-looking crops the black canker appears in the main stems or side shoots, and in others in the footstalks of the leaves, and this is the case in the principal counties of three provinces—Leinster, Munster, and Connaught, where I have been ever since I last wrote to you. My business was reporting on estates offered for sale, for the benefit of parties about to purchase; and here let me again caution such of your English readers as may be disposed either to become purchasers of property in Ireland, or become tenants on any of the many fine farms to let, against being influenced by what Professor Skilling said in his report, that "tillage will not pay here now." Tillage will pay and is paying wherever the proper relation between landlord and tenant is fully understood and exercised by landlords and tenants possessing adequate capital and skill for the management of their respective affairs, and my remarks on this head apply to each of the counties of the three provinces alluded to; and the insinuation that "tillage will not pay here now," clearly shows the writer's ignorance of the country, and, of course, also of the proper means of developing its vast resources. So, from the wilds of Connaught, I call on the learned Professor to justify his libel on the country. *Edward Carroll, Friar's-hill, Ballaghadareen.*

Road Reform—In the leading article of the *Agricultural Gazette*, of July 13, it is stated, "we may therefore diverge a little from the pounds, shillings, and pence path in which the argument for road reform might easily be brought to a most convenient and triumphant termination, in order to cull a few of those wayside flowers which constitute the travellers' bouquet, as he journeys along the turnpike roads of many parts of the United Kingdom." As the bouquet may not be completed for some time to come, perhaps a flower or two will not be rejected from one that has gathered many a blossom by the wayside. When turnpike roads are made in some parts of the country, it is no uncommon thing to have a footpath on one side of the road for the use of those who have to travel on foot, and the road is commonly fenced by means of walls or hedges. When a hedge is used for a fence, the Hawthorn is frequently planted, and for some time may be very well attended to, and kept in proper bounds, but a time frequently comes when the hedge is allowed to make improper inroads upon the footpath, so that the foot passenger is obliged to walk in the mud, being forced from walking on the narrow path, by the spreading branches of the boundary fence. The cultivators of the fields on the opposite side often take advantage of such hedges, and cut them in on their side as closely as possible, so that nearly the whole of the hedge is allowed to grow on the public footpath, to the width of 4 or 5 feet. That is surely too much. Now Mr. Editor, if you were to cut in the branches to the size they should be, the surplus would increase the dimensions of your bouquet considerably. The trustees of the public roads may object to your applying the hedge bill, but really there is much need for it in some places, although they should sing.

> "Gentle Hawthorn thrive,
> And, for ever alive,
> May'st thou blossom as now in thy prime,
> By the wind unbroke,
> And the thunder stroke,
> Unspoiled by the axe or time."

P. Mackenzie.

Report of Poor-law Board.—People may grumble at the national debt, and may call it a dead weight, an incubus, or any other hard name they please; but what is it when compared to the money expended in providing for paupers annually? many of whom are able-bodied. The report of the Poor-law Board states that 5,792,963*l.* have been levied for purposes connected with the poor of England and Wales in 1849. What a fearful sum collected from the working ants of the community. Can nothing be done to employ more hands, and reduce this ponderous tax? *Falcon.*

High Farming. — The term high farming is too often used to denote extravagant and experimental tillage; and this misleads those who are anxious to improve their land, but stand in fear of capacious tanks, sheds for manure, and palaces for cattle; in addition to all sorts of ploughs, harrows, drills, horse-hoes, scufflers, &c. To carry on the cultivation of land in the Mechian style requires a large capital, and can only be practised by men who can command supplies of money, and who kindly spend hundreds in order to promote a better system of working the land and feeding stock, without reference to profit. When farming is remunerative, at a fair average rent, it may be said to be approaching a high cast of agriculture. It is, of course, necessary to have fair accommodation on a holding, both for cattle and produce; yet it may be assumed that less expensive buildings, and a greater outlay in labour and manure, would be more profitable to the man who has to live by the produce of his land, than erecting structures more fitted for the habitations of men than animals. It is a reflection on our country to see pigs, cows, and horses luxuriating in cottages, whilst our labourers are, in many instances, vegetating in sties, bundled together in confusion, to which we do not subject our quadrupeds. If it is essential to the health of inferior animals to be dry lodged and well fed, which I contend it is, surely it is not less incumbent upon landlords, masters, &c., to place their dependants upon an equal footing with the lower grades of creation. I would, therefore, divide the expence of brick and mortar more fairly between the parties, giving the biped the preference in food and lodging; and, at the same time, not neglecting his mute companion fellow worker—the horse. It is most praiseworthy in gentlemen who can afford it, to lay out their spare cash in advancing the agricultural interest, thus enabling their neighbours to avoid errors both in expence and tillage; yet it is not wise to hold such persons up to the ordinary farmer as examples to be implicitly followed, as guides to the road to wealth. In farming, the most rigid economy, combined with industry and common sense, will do more to keep the plough going than anything else. *Falcon.*

A Prolific Sow.—We have in our possession a sow that has had, in six successive farrows, the following numerous progeny:—1st, 18; 2d, 18; 3d, 19; 4th, 20; 5th, 17; 6th, 19; making a total of 111 in two years and six months. *George Summers, Stoke Wake, Dorset.*

Poultry.—I hope that Mr. Dixon will allow me to call his attention to a deficiency in a work otherwise very interesting and useful. He has taken very little notice of the best and most economical mode of feeding fowls; and I believe none on the average quantity of grain each might be expected to consume. Many people do not keep them, from not knowing the proper quantity; and feeding them through a servant, they feel that they have no check upon the waste which is often committed, beyond what is necessary being evidently waste; nor do I find anything satisfactory upon this subject in other books. Moubray says (p. 124), in July 1806, a measured peck of good Barley kept in a high style of condition the following stock, confined and having no other provision:—one cock, three hens, three March chickens, six April, and six May do., during eight clear days, and one feed left." This gives $\frac{1}{10}$ of a pint to each fowl per day; or a pint would last each nine days and a half. But the different ages of the fowls allow us to determine very little from this experiment. Again, "A cock and two hens kept by themselves seven clear days in the winter season, consumed a quarter of a peck of the best Barley, having no other food, but as much of this as they chose to eat." This gives $\frac{4}{21}$ of a pint per day, or a pint would last each fowl five days and a quarter. Perhaps this might not much disagree with the former, if we had the means of estimating the difference of eating between chickens and full grown birds. Reaumur, whom I quote at second hand, not having his work by me, says a pint of Barley on the average will last a full grown fowl four days. I can furnish but little information on the subject myself. One year I kept an account of the fowls killed for the table, and found their number to be 105; and their Barley bill came to three guineas. The fowls had nothing else, but were at liberty, and had a considerable range over Grass. Mr. Dixon might add a very useful chapter to his work on poultry, by entering minutely on this subject, with the proper times of feeding and number of meals, and also the best and most economical way of distributing the grain, whether by troughs or scattering on the ground, in which case the sparrows get more than their fair share, eating all the fowls leave. I think it a great deficiency in almost all works on rural economy, that so little precision is used in stating the weight and measures of the articles used. *T.*

Bone Preparation for Manure.—There are three processes now in use for reducing bones to the crumbly or powdery state, fit for manure. 1, grinding, by which the harder parts are not often reduced much within a quarter of an inch in diameter; 2, Mr. Blackhall's steaming process, by which they are rendered tender and porous, and particularly suited for the action of acid, to make the superphosphate; 3, fermentation in heap, with earth, sand, or sawdust, introduced by Mr. Pusey, wherein ammonia being generated, the bone acquires some of the qualities of guano, but is rendered unfit for the action of acid, which the ammonia would neutralise. It becomes, then, an interesting question, which of the three is the most practically effective and generally eligible? Mr. Pusey's has the advantage of requiring no apparatus, and no great skill; so that it may be done by almost any farmer at home; and if the waste of ammonia is duly prevented, will have the effect of a mixture of bone-dust and guano—a result of some value now that guano is so much in demand, and so largely adulterated. Mr. Blackhall's product is the neatest, and as fit for the action of acids in the soil, as of the sulphuric above mentioned. But how it competes, in point of economy, with the old process of grinding? How the fermented bone competes with the superphosphate in fertilising power? and how the three kinds, crushed, steamed, and fermented, compete in cost and effect, without addition of acids? are questions on which light may be thrown by successive reports of the experiments now in progress in England and Scotland, and Ireland likewise; if the experimenters will favour us with such reports from time to time. *J. Prideaux.*

Blighted Wheat.—There are in my neighbourhood several fields of Wheat affected with blight, as the enclosed ear shows. The late sown seems at present to have escaped it. About four or five weeks since, we had several frosty nights, one of which was very severe. The late sown Wheat was not then come into ear, and is now looking remarkably healthy. I have a plot of ground on which is planted Peruvian Barley, and Potatoes; at the one end of the plot the Potatoes were cut off by the frost, at the other end they were not hurt; at the end where the Potatoes were frozen, there the Barley which had, up till that crisis, looked remarkably vigorous and healthy, turned all at once sickly and yellowish looking, and is now looking ready to harvest, whilst at the end where the Potatoes were not frozen, the Barley is green and looking as well as it ever did. I will enclose an ear of early and late sown Wheat, and two ears of my Barley. *W. Griffin.*
[The specimens perfectly illustrate your statement. We should suppose that the injury done by the frost occurred in the case of the early sown, at the period of flowering, and that the operation of fertilisation had thus been imperfectly effected.]

The Crops.—Grass has been good in this neighbourhood, and is nearly all stacked in good order. Wheat is very good, and promises to be a good crop. Oats very good, and like the Wheat crop have plenty of straw. Barley, the little that we have, is tolerably good. Tares have been very stout and good. Seeds are middling—not much Clover. Hops promise to mend, and if nothing happens will be low in price. Now examine the debtor side. Potatoes, I am very sorry to inform you, are going rapidly with the blight, which is appearing just as it did at first in 1845, with the black spots and the rusty dark stalks I first noticed about the 10th; it did not make much progress till yesterday, which being very hot and damp, increased it so much that there was a very visible difference between yesterday morning and this. There is not the same sweet fetid smell as before, and the stalks are rotting and break with a slight touch. It began with my early ones—Oxford and Cockney Kidneys not much affected yet—and now to-day is attacking the Shaws; my haulm is very strong planted—the seed Potatoes (not cut) on little hillocks 3 feet each way; no manure. I had

great prospect of an excellent crop, about half an acre in all. Best in the garden, &c., all are affected. It is beginning in all the neighbouring parishes, and appears, I am very much grieved to inform you, likely to be universal again. *W. Baldock, Rotherfield.*

The Judges at Exeter Royal Agricultural Society's Meeting.—Through the channel of your *Gazette*, will you allow me to make one or two remarks on the decision of the judges at Exeter? A few years ago a first-rate implement called a "broadshare plough," a very proper name, I think, was introduced to the notice of the Royal Agricultural Society, but was not allowed to compete for a prize, because of the name given to it; the appointed officials stating that it did not come within the meaning of certain wording in certain classes. When seen at the meetings of the Society, surprise was expressed that so good an implement was passed over; the answer received was, the reason before stated. You may judge my surprise when I find this very same implement, called by another name, a "two-horse scarifier" (a very unsuitable name), is now awarded a prize. The implement is the same it ever was, and I suppose the wording used in the different classes is the same, and yet by some curious plan a prize is now given. Is this good practice? I also observe that a horse which gains the 1st prize in the 1st class, and a capital horse it is—the *Times* calls it "a splendid animal, distancing all competition," was passed over at Norwich, and, if I mistake not, at York also, without a remark; when at Norwich prizes were awarded to comparative "rips." The *Times* stated, "In the present exhibition (at Exeter) the names of Messrs. Ransome, and other well known implement makers, are absent, because they are dissatisfied with the mode in which the business of the show-yard is conducted." In proof of the implement makers having sufficient reason for being dissatisfied, and the injury sustained by the public through the mismanagement of the officials appointed by the Council of the Royal Agricultural Society, I may state that one of the exhibitors, a well known first-rate maker, complains that seven minutes was all the time bestowed to look over his extensive stand, containing 30 distinct varieties of implements. A subsoil plough, known as "Read's patent subsoil plough," was not taken out for trial. A Linseed and Oat-crusher was not examined or tried, because the appointed judge said he knew it could not compete. Draining tools, to which the prize was awarded, are stated to have been erroneously entered (as I am credibly informed), being made by another manufacturer than the exhibitor. I think it quite right the public should make their remarks on the proceedings of the Council of the Royal Agricultural Society, and give them the opportunity of explaining their apparent misdoings. *Scrutator.*

Fences. — Since the days of Shakespeare many changes have taken place in our country. There have been horticultural improvements and agricultural improvements, but still there are many rough spots. If the author of Henry V. was to revisit our country, he would still see places where "nothing teems but hateful Docks, rough Thistles, Kecksies, Burs, losing both beauty and utility, and our hedges, defective in their nature, grow to wildness." The Whitethorn or Hawthorn is the plant commonly used for Thorn hedges. This plant has been described as branching out into innumerable ramifications, and, armed in all directions with strong thorns, may be so managed, as in a state of a hedge, to present a barrier impenetrable to any kind of cattle, and not without difficulty to be passed even by such disorderly persons as might wish improperly to intrude upon the rights of others. Fitted by Nature to assume a close and compact texture, which it possesses most fully during the expansion of its leaves, but retains, too, in a considerable degree after these have fallen off, it is not without the advantage of breaking the force of stormy winds, and mitigating the severity of the weather in favour of the vegetable and animal life which it is appointed to inclose. It is so hardy and patient of direction as easily to admit of being trained in the manner that may be desired; and unless there be some defect here, it will retain in that state of culture much of its native elegance and beauty. We have read much about the high and broad hedges of England, which are allowed to grow at large without let or hindrance in all the elegance and beauty of Nature; but we lately met with one in Stirlingshire which would match with some of those in the south. The fence is a mixture of Thorn and Holly, and has been planted many years ago, for it is now about 20 feet high and 12 feet broad. In its younger days a stone wall and the deep bed of a brook were between it and the cart-road; but its branches in places have reached the roadside, and kept from crossing it by means of the cart-wheels bruising its extremities. In many parts of the country the hot sun of summer has drunk up the streamlets dry, but beneath the thick branches of Thorn and Holly is heard unseen the gurgling sound of water. I tried now and then to get a peep through the thick enclosure, to observe what was growing within such a high and broad fence, and could see large tufts of Rushes and healthy-looking Sedge and Horse-tail and Thistles that would have pleased Burns to look upon, for he tells us that

> The rough Burr-thistle spreading wide
> Among the bearded bear;
> I turned the weeder-clips aside,
> And spared the symbol dear.

But as it is a disputed point among antiquarians what plant the Scotch Thistle is, some genuine patriots, in order to have the true one, allow all to grow. So any one, desirous of making a collection of such plants, could find some beautiful specimens without having far to travel for them. Such enormous hedges, protecting the pests of the farm, cannot be viewed in the light of an advanced state of agriculture, and they would not be permitted on a farm not far distant from them that has been let the other day within a little of 4*l.* per acre. *P. M.*

Societies.

HIGHLAND AND AGRICULTURAL: GLASGOW, *July* 31. — The great gathering of this Society commenced on Tuesday, on a large space of meadow ground called Glasgow-green, situated on the right bank of the river Clyde. The show yard occupied about 20 acres of the lower or south-eastern part of the green, which was railed off for the purpose. The implements of husbandry were nearly all placed at their respective stands by afternoon, when the judges began their inspection. This occupied the greater part of the following day, Wednesday. Towards 3 or 4 o'clock the premium and commendation tickets were affixed to those articles considered by the judges to be most meritorious. Compared with the Society's show at Edinburgh two years ago, the present is decidedly superior, so far as the number of implements exhibited is concerned, and in many instances there are gratifying proofs of the progress which mechanical invention has been making during that time. It was thought by many that the discontinuance of the annual exhibitions of stock and implements for a longer period, proposed two years ago, would damage the future "gatherings" of the Society, by allowing emulation to flag; but so far as yet appears, the effect seems to be quite the other way. The following will give a general idea of the magnitude and practical utility of the Glasgow show. In Section 1 to Section 7 of implements we have 18 entries of two-horse ploughs for general purposes, 16 ploughs for lea or seed furrow, 13 double mould-board ploughs for forming drills, 4 heavy subsoil ploughs for moor and stony land, requiring the power of three or more horses to each; 10 light subsoil ploughs, capable of being worked by two horses each; 3 ploughs for filling in or returning the earth upon drains, and 3 ribbins or drill paring ploughs, for preparing a drilled bed for grain sown broadcast—in all 67 entries of ploughs of various descriptions, but some of the implements entered have not been exhibited. There are 14 two-horse grubbers exhibited, of various constructions; 17 one-horse grubbers for green crops, 4 Norwegian harrows, several land rollers, and 10 sets of harrows. Several of these implements, such as the ploughs, harrows, rollers, and pulverisers, were tried on the farm of Polmaclie on Wednesday morning. The ground was a stiff clay, and well adapted for exhibiting the comparative merits of implements adapted for such land, so far as such imperfect trials will admit of a proper comparison being made. A great many spectators attended the trial, thus showing the interest taken in the practical working of farm implements, and could such trials be better arranged there is no doubt that they would form the most useful and attractive exhibitions that the meetings of our large agricultural societies could afford. As it is at present, it is doubtful if they be of much benefit, unless so far as satisfying the judges may be concerned.

In Section 28 there were nine chaff-cutters, the most approved of which were those exhibited by Richmond and Chandler, Salford, Manchester, and to one of which the premium was awarded. The action of the pinnacle-shaped toothed rollers was greatly admired for the accuracy and rapidity with which the stuff to be cut—whether matted or straight—was drawn in unassisted, and held while the cutting knives were doing their work. The cutting part consists of a disc, with convex knives, working at a right angle to the material to be cut. This chaff cutter, from its construction, is neither liable to choke with thick feeding, nor does it require much attention on the part of the person who feeds—all that is necessary being to keep the hopper well filled with material; and, provided the power be adequate, the thicker it is fed the better it cuts. A very simple and ingenious machine was exhibited in this section by Mr. William Lorimer, Crosshill, Maybole, and named by him the Canadian chaff cutter. It consists of two rollers, the lower one being a simple cylinder of wood, while the upper is of iron, on the periphery of which is fixed a number of parallel knives, about 1 inch apart at their extreme edges, and about the same in depth. This roller touches but does not press on the lower one, and the straw or hay to be cut being laid on the feeding board, the two rollers working inwards pull it in, and cut it at the same time in 1-inch lengths, with great rapidity and speed. Said by the exhibitor to cut 1500 feet of straw per hour into 1-inch lengths, with one person driving. This implement was ridiculously dear for the material and workmanship of which it was composed, the price being 6*l.* —Sections 29 and 30 contained 11 Turnip cutters for sheep or cattle. Gardiner's double action cylinder cutter, exhibited by Richmond and Chandler, was considered best for sheep—although it cuts for cattle also by reversing the motion; and James Kirkwood, Tranent, East Lothian, exhibited a Turnip cutter which got the premium for slicing Turnips for cattle. Gardiner's machine is too well known to require description. Kirkwood's is on the old disc principle with the knives on the side, and can be made to cut either for cattle or sheep, and either to work by dragging it behind a cart, or by hand, merely by allowing it to stand on two legs behind—the front being supported by a wheel, raising the two side wheels from the ground and using them to give momentum. The principal improvement in this machine consists in the hopper being supplied with a small spiked roller at bottom, which catches the Turnips, prevents them from rolling round, and holds them till cut. The machine is of iron partly cast and partly malleable. —Sections 31 and 32 consisted of Linseed bruisers for hand or power, and Oat and Bean bruisers of the same description. Of the former there were six implements exhibited, and 12 of the latter. Messrs. Richmond and Chandler's second-sized spirally-grooved roller machine was considered the best, and obtained the premium for bruising Linseed, and as its construction and mode of working are explained fully in the report of the English Society's show, it is unnecessary to repeat it here. A. and W. Smith and Co., Woodside Works, Paisley, obtained the premium for the best Oat and Bean bruiser. It consists of a single fluted roller working against a fluted breastwork, which being moveable by screw work, can be adjusted to cut or bruise grain to any required size. The feed is delivered from a board in the hopper having a quick vibrating motion, and the quantity is regulated by giving it more or less inclination.—In Section 33 we have two cylindrical Potato or root washers, with Archimedian screw inside, which retain and wash their contents when turned in one direction, and pitch them out into a spout when turned the opposite way. This machine was originally invented by S. Carr, Germany.—In Section 34 there were four different kinds of apparatus for steam purposes. The prize was awarded to A. and W. Smith, Paisley, for an apparatus consisting of a circular boiler, with fireplace and flue running through the centre. The length of the boiler is 4 feet, and the diameter 3 feet, and holds about 80 gallons of water, when filled to the proper level. The boiler is fitted with safety valve, steam cock, and the water is fed into the boiler from a pipe, the top of which is about 7 feet above the water line. The supply of water is regulated by the float in the boiler, which communicates with a valve at the top of the pipe by means of a horizontal lever, which becomes depressed at the one end, when the float sinks in the boiler, and at the same time opens the water-valve at the other or raised end, and allows it to flow into the boiler, until the rising of the boiler-float shuts it again. This self-acting feeding apparatus is said to be very accurate in its working, and not liable to get out of order. The steam part consists of two sheet-iron tubs, placed on either side of the boiler, having false perforated bottoms about two inches from the true bottom. The steam is admitted under the false bottom, but sufficiently high to allow room for the steam condensing. The lid of the steaming tubs is of wood, which lies loose in the top, and the inventor of the machine affirms that roots are sooner and better cooked when there is a considerable escape of steam at top than when perfectly steam tight. The chamber below the false bottom contains the condensed steam, and also whatever matter (whether noxious or otherwise) that may have been extracted from the cooked food by the action of the steam. It takes 20 minutes to raise steam, and 20 more to cook completely the contents of both tubs.—Sections 36 and 37 consisted of one-horse farm carts and light spring carts; 12 of the former and only one of the latter. The workmanship of the whole of the farm carts was highly creditable to the makers, showing that this is a class of farm implements congenial to the wants of Scottish agriculture. The prize was awarded to Robert Grey and Sons for a double lock and elevator tilt cart. The elevator consists of two bars of iron about a foot apart, fixed to the bottom of the cart, 8 or 9 inches behind the front sheath. These two bars are pierced with holes at convenient distances, for the purpose of tilting the cart to different elevations, and catching on a bar of iron underneath, so that the strain is entirely removed from the front sheath, while, at the same time, in consequence of the tilting apparatus having two bearings instead of one, as is usually the case, the jolting motion peculiar to tilt carts having only one bearing in the centre, is completely done away with. The body of the cart when not tilted is retained in its place by a horizontal spring fixed to the shafts, which catches at both sides when the body is pulled smartly down. This spring is thrown out of the catch by pulling a handle at the near side of the cart. Robert Buchanan Forbes exhibited a remarkably well finished tilt cart in this section, with a self acting tilting apparatus, which worked remarkably well as exhibited in the yard, but which there is reason to fear would be very liable to derangement in the various dirty purposes to which a farm cart is applied. This cart had another serious fault in the tilting apparatus, viz., a piece of iron projecting nearly a foot underneath the front bearer, and upon which a restive horse would be very liable to get his legs cut, either when kicking, or on soft land, when the cart began to sink. There were only four tilt carts exhibited in this section, the others having the body fast, and none of them possessed that simplicity in the tilting apparatus which is so essential to an implement applied to so many purposes. A proper farm cart must, however, necessarily be capable of being tilted, without disengaging the horses; and hence the reason why in this case the prize was awarded to a cart which probably possessed no superior claims to merit over the others, than that of having a tilting apparatus. Those carts were most commended which exposed fewest tenons to view, or to the action of the atmosphere, such being the parts at which a shaft or a sheath soonest gives way. Alexander Reid, Bollingshaw, Stewarton, exhibited a very ingenious tilt cart for hilly land, which became heavier on the horse's back when going up hill, and lighter when going down. The axle is crank-shaped at the ends (like those of the large "floats" used for heavy goods in large towns), and being bent downwards about a foot, serves to place the centre of the cart very low. The shafts of the cart and the body are placed upon different centres, so that while the whole cart when locked becomes heavier when raised, the body when unlocked tilts with the same ease as any other cart. The hay or harvest carts exhibited were of good construction, and the premium was awarded to Mr. Law, of Shettleston, for a cart with wheels 4 inches broad at the tire and very little dished. Mr. Forbes exhibited a harvest cart furnished with a powerful lever for shifting the load either backwards or forwards as might be required.—In Sections 43 and 44 were exhibited a variety of portable threshing machines, on the Scotch principle, all being furnished with rollers and beater drums. The beaters of some of the drums, however, consisted of a double row of pikes for stripping out the grain, instead of beating it out. This appears to be a useful application of the principle of Atkinson's patent peg drum, the power required to work these drums being nearly one-third less than that of the common beaters, while the straw is less broken also. There are no pegs in the drum concave of these mills, as is the case with Atkinson's patent. The question of beater *versus* peg drums is still unsettled, but there is no doubt of the fact that the peg drums with rollers are coming more and more into use, while the peg drum on Atkinson's patent is falling out of favour entirely. Mr. William Lorimer, Crosshill, Maybole, exhibited a very strong and complete four-horse threshing machine, for which he obtained the premium. The rollers are 4 feet wide, and can be thrown in or out of gearing, or they can be made to go fast or slow, by merely turning a handle within reach of the feeder. The drum is on the peg principle, so far as the substitution of pegs for beaters is concerned, but there are none in the drum concave. This machine is furnished with riddles, elevators, and fanners, by which the grain is delivered into the sack ready for market. The drum and shakers are placed close to the ground, while the fanners are placed above them, the grain and chaff being carried up by elevators. The whole height of the machine is 12½ feet, and its price is 65*l.* Several entries for threshing mills on the English principle were made, but none appeared in the yard, with the exception of Mr. Crosskill's, Beverley. In this machine the drum is a skeleton, with narrow beaters revolving at a great velocity at a distance of three-eighths of an inch from fluted breast-work, against which the grain is beaten. The straw is thrown out upon an inclined shaker, the spars of which, armed with pikes, work through each other, and carry the straw with a jerking motion up an inclined plane, and delivers it at the highest point. The show of hand-winnowing machines was very inferior, there scarcely being a good one in the whole yard. Mr. Law, of Shettleston, obtained the prize for a machine of a very simple construction, without either shuffle-board or riddles. Mr. John Wightman, Comber, Ireland, exhibited a very ingenious double blast machine, which was highly commended by the judges. Of drill sowing machines for grain, there are only a very few, and so far as this may be taken as an indication of the progress of drilling corn crops in Scotland, it appears that none has been made since the Edinburgh meeting two years ago. There are a considerable number and variety of implements for sowing Turnips in drills, such a thing as sowing Turnips broadcast scarcely being believed by the Scotch farmers. There are four machines in the yard for making pipes and drain tiles from clay; two for making pipes and tiles from peat moss, and one for separating stones and other extraneous matter from clay, and bringing it into a fit state for the manufacture of drain tiles. The interest in this department seems to have abated to a considerable extent, for although there are 18 machines entered for exhibition, only seven have made their appearance in the yards. In addition to the above, the show yard contains a large assortment of miscellaneous and extra articles which it is of little interest to enumerate. The exhibition of dairy produce is very large and of first rate quality, as was anticipated from the locality of the show being so near Ayrshire and other dairy counties in the west of Scotland. Next week a complete list of all the premiums will be given.

Aug. 1.—The show of cattle, sheep, horses, &c., commenced to-day, and while we write, the judges are inspecting the stock in their several departments, and the whole awards will be published in the evening, but too late for this week's *Gazette*. The public dinner of the Society will take place to-night in the City Hall, and Friday will conclude the show.

Miscellaneous.

The Diseases of Animals.—From the result of the labours of one or two eminent veterinary surgeons, we have collected several important statistical facts with regard to the nature of the diseases with which horses and cattle are commonly visited. Thus Mr. Perceval has given the following table (Farmer's Mag., vol. 22, p. 110), showing the ages at which horses appear most disposed to certain diseases.

Diseases.	Patients under five years old.	In their fifth year	Above 5, and under 10.	Above 10, and under 20.	Twenty and upward.	Total.
Of the lungs	170	50	20	50	10	300
Of the bowels	10	20	40	70	20	160
Of the brain	4	2	5	14	2	27
Of the eyes	30	10	70	35	5	150
Total	214	82	135	169	37	637

Of the 637 cases brought under medical treatment, 134 had a fatal termination. The deaths, therefore, were at the rate of 21·03 per cent. In 300 pulmonary cases, 77 died, or 26·66 per cent. The nature of the mortal diseases of cows, during a certain portion of the year, may be pretty well estimated from the following little table of the causes of the death of 118 cows in the six months from May 3 to Nov. 3, 1844, dispersed through the various English grazing districts, whose lives had been insured by one of the metropolitan cattle insurance societies. The returns were in this case made by various veterinary surgeons. Of these 118 cows there died of

Pleuro-pneumonia	72	Inflammation of liver	1
Accidents	9	Inflammation of bowels	1
Blackwater	1	Loin fallen	2
Colds or inflammation	2	Milk fever	3
Constipation of the bowels	2	Poisoned	1
Constipation of the manifolds	2	Rheumatic fever	1
Decay	3	Water on the brain	2
Diarrhœa	1	Paralysed stomach	2
Hoven	3	Shute	1
Hoose	1	Quinsey	1
Inflammation (undefined)	1	Cancer	1
		Doubtful	3

The reader will note that of these cases 72, or more than 7-12ths of the above deaths, arose from pleuro-pneumonia, a disease, at least in its present leading symptoms, of but recent occurrence.—*Bell's Weekly Messenger.*

Calendar of Operations.

JULY.

Bedfordshire Farm, *July* 30.—Hay-making and Turnip sowing having been concluded for some time, the labour of the farm is chiefly connected with the hand and horse-hoeing of the green crops, threshing and dressing corn, and finishing off odd jobs in preparation for harvest. We have already cut and carried some Peas, and will either sow Turnips, Mustard, or Trifolium upon the ground for a second crop. The Pea crops are light here, and are so generally around us; they have been much injured by hosts of insects while blossoming. Our winter Beans are pretty good; if anything too much straw, and too few pods. The spring Beans are inferior. Potatoes are now growing away vigorously, without any sign of complaint. Indeed a good breadth around us has been already dug and disposed of in the London markets. The Turnip crops have gone on very indifferently until the late rains. We have had occasion to sow twice in several fields, and filled up more or less over the entire crop. Where the rows were very defective, a one-row hand machine was used to fill up: in other cases seed was dibbled in at the ordinary intervals Turnips are allowed to stand at when set out. There is now a good chance of having a full crop, from the appearance of the braird in the original blanks. The Mangold Wurzels have thriven admirably, and never promised better for a heavy crop. With ordinary weather, the reaping of Wheat will be pretty general here in less than a fortnight. Some of the crops are very much laid and twisted by heavy storms of rain, and there are many pieces of a very blighted appearance. *R. V.*

Notices to Correspondents.

Boarded Flooring: *An Improver.* We have no personal acquaintance with the subject; and therefore applied to one who has had ample experience. In reply, he stated his intention to describe the thing fully: but we must wait his leisure.

Books: *A Subscriber.* We believe the book on the value of land is published at No. 7, John-street, Adelphi.

Cow Parsnip: *Scotia.* We have to beg pardon for the delay of this answer. We can find hardly anything on the agricultural use of the plant: and have no personal experience of it. You will, we imagine, have to find out the degree and manner of its usefulness yourself. Its rapid growth, one would suppose, to confer succulence sufficient to adapt it as food. See a further description at page 454 of the *Gardeners' Chronicle*, 1848.

Exeter Meeting: *R N.* Mr. Hare is not to publish an illustrated catalogue of the Exeter Implement Show.

Essay on the Wireworm: *Arator.* The prize has not yet been awarded, we believe.

Farm Accounts: *An Old Subscriber.* We should advocate the plan recommended in Mr. Morton's article in the "Cyclopedia." It is the one we adopt on a farm of about 300 acres.

Heather: *G Lee.* Heather is used as litter, and will partly rot in the dung-heap. Can any one give us their experience on this point?

Manuring: *Inquirer.* The constant use of quick-lime in compost with the earth of headlands—for use broadcast over Grass-land, cannot balance the loss which such lands, as ordinarily treated, sustain. Probably the best way to ascertain if Grass-lands require lime is to try a small portion for a year or two, before the general dressing is intended.

Manure Heap: *J B.* We have to apologise for the delay of an answer to this and some other questions, which arrived during the Exeter week. One ton of gypsum to from 80 to 100 tons of farm-yard dung, assisted by the layer above and below the ditch mud, will, one would think, suffice to retain any products of fermentation. Supposing your dung to contain 9 or 10 cwt. of ammonia in every 100 tons, nearly 2 tons of gypsum would be needed to furnish sulphuric acid enough to unite with all the volatile alkali; but a great deal will be retained by the vegetable earth of the ditches, and a great deal will be latent in the dung until the manure shall have been perfectly rotted, after being ploughed into the land.

Mason Work: *Inquirer.* We cannot give specifications; that must be the work of your architect.

Milk: *Birkhurst.* 10 to 14 quarts of milk will give 1 lb. of butter. How much you obtain depends upon your consumption of milk.

Mr. Fowler's Drain Plough: It appears that justice was hardly done to Mr. Fowler's Drainage Apparatus by our reporter at Exeter. The machine by which his row of pipes is laid underground differs from the ordinary mole-plough in possessing an apparatus which enables the driver to sink or to raise the "mole," as the machine proceeds; so that so far as his judgment is a sufficient guide, the unevenness of the surface may be corrected, so as to have no influence on the even path of the tunneller below. Mr. Fowler informs us that he is about to construct a machine which shall of itself correct the inequalities of the surface movement, so as to destroy the undulation which would by it be impressed upon the position of the tube of pipes.

Poultry: *A Subscriber.* The complaint from which the chickens suffer, is a fatal scourge which is not easily subdued. It may arise from the spot on which they are reared having been over-bred for several years past. As no circumstances are stated, we can only suggest to give them plenty of dry food in regular supply, to keep them within doors during showery weather, to white-wash the fowl-house, and to attend generally to cleanliness and ventilation. This latter point is not sufficiently looked after in fowl-keeping. The writer of this has just lost some valuable birds from their having been thoughtlessly shut up at night in a close house, wherein a crop of Potato-onions had been laid to dry; so that the poor creatures were actually stifled to death.—*Epsilon.* Feed the bantam cock liberally with dry food, as bread crumbs, Wheat, and rice not too much boiled; administer one or two doses of calomel and colocynth pills in the same quantity as for an adult man or woman.

Rape: *Inquirer.* Sow any time from May till July, and you will have a crop ready at any time from August till November. Sow about 5 lbs. broadcast, or 3 lbs. in rows 12 to 15 inches apart, on the flat. We never knew White Mustard used for soiling cattle.

Straw-cutter: *A Scotchman.* Try Cornes', of Barbridge, near Nantwich, Cheshire. That is the advice of the judges of the English Agricultural Society. Or if you want one to cut for only a few mouths, try the Guillotine cutter, by Ward and Co., of Stourbridge. Rye-grass must be enclosed between top and bottom layers of straw in the feed-box to cut well. There are many cake-breakers: Messrs. Ransome, of Ipswich; Hornsby, of Grantham; Wedlake, of Romford; and others, make them.

Tank: *Constant Reader.* The odour may, in a great measure, be stopped, by adding gypsum. If oil of vitriol is to be had cheap, add it from time to time, whenever the addition causes effervescence.

*** Communications reaching town after Wednesday, cannot be answered till the following week.

Markets.

COVENT GARDEN, Aug. 3.

Vegetables are abundantly supplied; Hothouse Grapes and Pine-apples plentiful. The supply of Peaches and Nectarines is well kept up. Ripe Gooseberries fetch from 2s. 6d to 3s. 6d. per half sieve. Oranges and Lemons though scarce are sufficient for the demand. Carrots and Turnips may be had at from 3d. to 6d. per bunch. Potatoes are plentiful and cheap. Lettuces and other salading are sufficient for the demand, and so are Mushrooms. French Beans are scarcer. Cut Flowers consist of Heaths, Pelargoniums, Lily of the Valley, Carnations, Picotees, and Roses.

FRUITS.

Pine-apples, per lb., 4s to 6s	Lemons, per doz., 1s to 3s
Grapes, hothouse, p. lb., 2s to 5s	Oranges, per doz., 2s to 3s
Peaches, per doz., 4s to 15s	— per 100, 8s to 24s
Nectarines, per doz., 4s to 15s	Almonds, per peck, 6s
Apricots, per doz., 1s 6d to 5s	— sweet, per lb., 2s to 3s
Cherries, per lb., 6d to 1s 6d	Walnuts, p. 100, 1s 6d to 2s
Melons, each, 3s to 5s	— p. bush., 16s to 24s
Gooseberries, per half sieve, 1s 6d to 2s 6d	Nuts, Barcelona, per bush., 20s to 22s
Currants, p. half sieve, 3s to 4s	— Brazil, p. bsh., 12s
Raspberries, p. pottle, 4d to 6d	

VEGETABLES.

French Beans, p. sieve, 3s to 4s	Shallots, per lb., 6d to 8d
Cabbages, per doz., 6d to 1s	Garlic, per lb., 4d to 8d
Cauliflowers, p. doz., 2s to 4s	Artichokes, per doz., 2s to 4s
Peas, per sieve, 2s to 4s	Vegetable Marrows, per doz., 1s to 2s
Beans, per sieve, 1s 6d to 2s	Lettuce, Cab., p. sc., 2d to 1s
Sorrel, p. hf. sieve, 6d to 9d	— Cos, p. score, 6d to 1s 6d
Potatoes, per ton, 50s to 80s	Radishes, p. 12 hands, 9d to 1s
— per cwt., 2s 6d to 4s	Small Salads, p. punn, 2d to 3d
— per bush., 1s 6d to 3s	Mushrooms, p. pot., 9d to 2s
Turnips, per doz. bun., 3s to 5s	Fennel, per bunch, 2d to 3d
Red Beet, per doz., 1s to 2s	Savory, per bunch, 2d to 3d
Cucumbers, each, 1d to 9d	Thyme, per bunch, 2d to 3d
Leeks, per bunch, 2d to 3d	Parsley, p. doz. bun., 1s to 2s
Celery, p. bundle, 1s to 1s 6d	— Roots, p. bdle., 9d to 1s
Carrots, per doz., 4s to 6s	Marjoram, per bunch, 8d to 9d
Spinach, p. sieve, 2s 6d	Mint, green, per bunch, 2d
Horse Radish, p. bdl., 1s to 4s	Watercress, p. 12 bunch., 6d to 9d
Onions, p. bunch, 2d to 6d	
— Spanish, p. doz., 1s 6d to 4s	

SMITHFIELD, Monday, July 29.

The supply of Beasts is small, and the average quality inferior; consequently there is a considerable advance on the choicest descriptions. The number of Sheep is also less; we have a brisk sale, at rather more money. Lamb is in request, at fully Friday's quotations, but higher rates cannot be quoted. Calves are not so plentiful as of late; they are more readily disposed of, at an advance of about 2d. per 8 lbs. From Holland and Germany there are 601 Beasts, 2520 Sheep, and 204 Calves; from Scotland, 200 Beasts; from Norfolk and Suffolk, 500; and 1700 from the north and midland counties.

Per st. of 8 lbs.—s d	s d	Per st. of 8 lbs.—s d	s d
Best Scots, Herefords, &c.	3 10 to 4 0	Best Long-wools	to
Best Short-horns	3 6 — 3 8	Ditto Shorn	3 6 — 3 8
2d quality Beasts	2 10 — 3 4	Ewes & 2d quality	— —
Best Downs and Half-breds	— —	Ditto Shorn	3 0 — 3 4
Ditto Shorn	4 0 — 4 2	Lambs	4 4 — 4 10
		Calves	2 8 — 3 6
		Pigs	3 0 — 4 0

Beasts, 3259; Sheep and Lambs, 28,160; Calves, 309; Pigs, 242.

Friday, Aug. 2.

The number of Beasts exceeds the demand; a reduction of about 2d. per 8 lbs. is submitted to. We have a larger supply of Sheep and Lambs, but the quality is not very good; on the average prices are lower. Trade is exceedingly bad for Calves, owing to a large supply and close weather. From Germany and Holland there are 244 Beasts, 1200 Sheep, and 315 Calves; from Scotland, 150 Beasts; 250 from the Midland, and 92 Milch Cows from the home counties.

Per st. of 8 lbs.—s d	s d	Per st. of 8 lbs.—s d	s d
Best Scots, Herefords, &c.	3 8 to 3 10	Best Long-wools	to
Best Short-horns	3 6 — 3 8	Ditto Shorn	3 4 — 3 6
2d quality Beasts	2 8 — 3 2	Ewes & 2d quality	— —
Best Downs and Half-breds	— —	Ditto Shorn	2 8 — 3 0
Ditto Shorn	3 10 — 4 8	Lambs	4 4 — 4 10
		Calves	2 4 — 3 0
		Pigs	3 0 — 4 0

Beasts, 884; Sheep and Lambs, 15,650; Calves, 660; Pigs, 190.

HOPS.—Friday, Aug. 2.

Messrs. Pattenden and Smith report that the accounts from the plantations (with very few exceptions), continue to come favourable. The market and duty remain the same as last week.

HAY.—Per Load of 36 Trusses.

Smithfield, Aug. 1.

Prime Meadow Hay	70s to 75s		Clover	70s to 84s	
Inferior ditto	60	66	New Clover	60	70
Rowen	—	—	Straw	24	28
New Hay	60	70		J. Cooper.	

Very little doing.

Cumberland Market, Aug. 1.

Prime Meadow Hay	70s to 74s		Inferior	60s to 72s	
Inferior ditto	50	65	New Clover	60	72
New Hay	45	68	Straw	26	30
Old Clover	78	84		Joshua Baker.	

Whitechapel, Aug. 1.

Fine Old Hay	68s to 72s		New Clover	65s to 72s	
Inferior ditto	—	—	Inferior ditto	—	—
New Hay	55	65	Straw	24	28
Old Clover	75	84			

COAL MARKET.—Friday, Aug. 2.

Holywell, 13s. 6d.; Eden Main, 14s. 6d.; Hasting's Hartley, 14s. 3d.; Tanfield Moor, 13s.; Wallsend Stewarts, 16s.—Ships at market, 51.

MARK LANE.

Monday, July 29.—The supply of Wheat from Kent this morning was again small, but good from Essex. Factors at opening of the market held for an advance, which, owing to the day proving fine, was not complied with, and the great bulk remained unsold towards the close. In foreign, business was unimportant and confined to the most necessitous buyers, on the terms of Friday last, being about 1s. per qr. advance on the rates of this day week.—Barley is a more free sale, and 6d. per qr. dearer.—There is no alteration in Beans.—Peas meet an improved inquiry.—Oats are rather a better sale and the turn higher.—Rape-seed is offered at 28*l.* without finding buyers.

British per Imperial Quarter.	s. s.		s. s.
Wheat, Essex, Kent, & Suffolk ... White	42—46	Red	37—41
— — fine selected runs ... ditto	46—5	Red	40—43
— — Talavera	46—52		
— Norfolk, Lincoln, & York... White	—	Red	36—42
— Foreign	35—52		
Barley, grind. & distil., 19s to 22s... Chev.	23—27	Malting	22—25
— Foreign... Grinding and distilling	15—21	Malting	20—23
Oats, Essex and Suffolk	15—18		
— Scotch and Lincolnshire ... Potato	18—21	Feed	17—19
— Irish ... Potato	16—20	Feed	13—17
— Foreign ... Poland and Brew	15—20	Feed	13—16
Rye	19—21	Foreign	18—20
Rye-meal, foreign ... per ton	5*l.*—6*l.*		
Beans, Mazagan ... 22s to 24s ... Tick	24—2c	Harrow	24—26
— Pigeon ... 25s — 28s ... Winds	—	Longpod	— —
— Foreign ... Small	24—34	Egyptian	19—21
Peas, white, Essex and Kent ... Boilers	23—26	Suffolk	24—28
— Maple ... 24s to 27s ... Grey	22—24	Foreign	21—28
Maize ... White	26—30	Yellow	25—30
Flour, best marks, delivered ... per sack	36—40		
— Suffolk ... ditto	31—36	Norfolk	31—36
— Foreign ... per barrel	21—24	Per sack	31—34

Arrivals in the Port of London last Week.

Flour, 12849 sks	Wheat.	Barley.	Malt.	Oats.	Beans.	Peas.
— — brls	Qrs.	Qrs.	Qrs.	Qrs.	Qrs.	Qrs.
English	2638	149	3722	2292	425	166
Irish	—	—	—	—	—	—
Foreign	15793	3265	—	8341	122	319

Friday, Aug. 2.—The supply of English corn this week has been moderate, but the arrivals from the Continent of Wheat, Barley, and Oats are considerable. To-day's market was thinly attended, and but a limited business transacted in all descriptions of grain; we observe no alteration in the value of Wheat, Barley, Beans, or Peas.—The Oat trade is heavy at Monday's prices.—There is rather more demand for Flour at full prices.—The value of Indian Corn is nominally unaltered. Since the heavy rain which was general on Saturday, the weather has been on the whole dry, but the atmosphere cloudy and heavy, and the crops consequently maturing slowly. Accounts of the Potato disease from Ireland have been less important this week, but increase from various parts of Great Britain and the Continent; at present, however, we do not think them of sufficient consequence to cause alarm.

Arrivals this week.

	Wheat. Qrs.	Barley. Qrs.	Oats. Qrs.	Flour.
English	1910	80	440	2850 sacks
Irish	—	—	—	
Foreign	18510	9580	34650	— brls.

Imperial Averages.	Wheat.	Barley.	Oats.	Rye.	Beans.	Peas.
June 22	40s 5d	22s 8d	16s 10d	22s 6d	26s 7d	26s 9d
— 29	40 9	21 6	16 5	21 6	26 11	26 11
July 6	40 11	21 9	17 0	23 2	26 10	28 4
— 13	41 3	21 5	16 11	23 3	27 2	26 6
— 20	42 4	22 3	17 9	22 7	27 5	27 11
— 27	43 6	22 3	18 1	24 9	27 4	27 8
Aggreg. Aver.	41 6	22 0	17 2	23 0	27 1	27 4
Duties on Foreign Grain	1 0	1 0	1 0	1 0	1 0	1 0

Fluctuations in the last six weeks' Corn Averages.

Prices.	June 22.	June 29.	July 6.	July 13.	July 20.	July 27.
43s 6d	...	...	...	...	...	
42 4	...	...	...	...		...
41 3	...	...	...		...	...
40 11	...	...		...	...	...
40 9	...		...	...	...	...
40 5		...	...	...	...	...

SEEDS.—July 29.

Canary, per qr.	62s to 68s	Coriander, per cwt.	18s — 22s
Caraway, per cwt.	29 — 33	Mustard, white, p. bush.	7 — 8
Hempseed, per qr.	34 — 35	— brown, do.	10 — 13
Linseed, foreign, do.	37 — 45	Rape, per last	27*l.*—28*l.*
Clover, red, per cwt.	24 — 46	Cakes, Linseed, p. 1000	8*l.* 15s
— — foreign, do.	— —	— — foreign, p. ton	6*l.* 15s
— white, do.	36 — 48	— Rape, foreign, do.	3*l.* 17s
— — foreign, do.	— —	Tares, per bush.	3s 0d—4s 0d

Liverpool, Friday, July 26.—Exclusive of a good supply of Malt, we have received little produce, either coastwise or from Ireland, since Monday last; but have to report a moderate quantity of Indian Corn and Flour from the United States, a further good arrival of Wheat, with several cargoes of other grain from Europe, and nearly 4000 sacks of French Flour. Wheat has advanced in some of the English counties, 1s. to 2s. per qr. Flour was in fair demand. Barley was the turn dearer. Malt stationary. Beans commanded more attention, and Egyptians improved 3d. to 6d. per qr. Peas advanced 1s. per qr. Oats were held on rather higher terms; Oatmeal met very little notice, and hardly sustained late prices. Indian Corn was disposed of with less facility, and advanced 2s. per qr. ——Tuesday, July 30.—With a return of fine weather the market this morning ruled dull for the leading articles. About one-half of the advance on Wheat, Flour, and Indian Corn made on Friday (viz. 2d. per bushel, 1s. per sack, and 2s. per qr.), was considered to be lost, and the sales in retail. Spring corn, on the contrary, in good demand. Oats brought full prices. Grinding Barley was 1d. per bushel, Peas, 1s., and Beans 6d. per qr. dearer than last Tuesday. The following are the present prices: Wheat, English, red, per 70lbs., 5s. 11d. to 6s. 5d.; white, 6s. 2d. to 6s. 8d. Barley, Scotch and Irish, per 60 lbs., 2s. 9d. to 3s. Malt, English, per qr., pale, 48s. to 52s. Oats, English and Scotch, per 45 lbs., 2s. 8d. to 2s. 10d. Beans, English, per qr., 28s. to 32s. Peas, do. do., 27s. to 30s.

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Exeter meeting	508 *a*	Schools, adult	505 *b*
Exhibition of 1851, effect of, on gardening	499 *b*	Slugs, medical uses of	502 *c*
Farming, high, risks of	507 *c*	Soil and the air	505 *c*
— English and Scotch	508 *b*	Toads and their skins	500 *b*
		Veronica speciosa, var. Kermesina	500 *c*
		Well, public	508 *a*
		Worton cottage meeting	502 *b*

HORTICULTURAL SOCIETY OF LONDON.—EXHIBITIONS AT THE GARDEN IN 1851.

Notice is hereby given that the Exhibitions of Flowers and Fruit will take place in the Society's Garden on the following SATURDAYS in the year 1851, namely, May 3, June 7, and July 19.

THE GREAT WEST OF ENGLAND DAHLIA EXHIBITION, Open to all England, will be held at Wilton Park, Salisbury, on Wednesday, the 28th of August next. Full particulars may be had on application to
Aug. 10. JOHN KEYNES, Hon. Sec., Salisbury.

A GRAND DAHLIA EXHIBITION, Open to all England, will be held on Tuesday, August 20, 1850, at Cremorne Gardens, when Two Silver Cups, of the value of Five Guineas each, will be awarded, together with 50 money prizes. Schedules, and other particulars, may be had upon application to JOSEPH ROBINSON, Superintendent of the arrangements, 5, Kempe's-row, Pimlico, London.

MESSRS. VEITCH AND SON'S CATALOGUES OF NEW AND RARE PLANTS, STOVE AND GREENHOUSE PLANTS, GERANIUMS, AMERICAN PLANTS, &c., &c., are now ready, and can be had, on pre-paid application, by enclosing two postage stamps.—Exeter, August 10.

MAYLE'S MODEL FUCHSIAS FOR 1850.

MESSRS. MAYLE AND CO. inform the Nobility, Gentry, and the Trade, that these seven unrivalled new reflexed Fuchsias are ready for delivery, and have proved themselves the most superb varieties ever raised. Circulars can be had upon application. See Mr. GLENNY'S opinion in the "Country Gentleman," August 5, page 491.

"HEBE is one of the pale varieties, white, with scarlet corolla, the sepals reflexing very gracefully, and forming a striking feature.

"STANDARD OF PERFECTION is scarlet, with a purple corolla. Sepals reflexing very beautifully.

"Had these come out as a pair, at the full price charged for the lot, nobody would have grumbled."

HEBE was awarded a first-class Certificate at the Birmingham and Midland Society, July 16.

105, New-street, Birmingham.

MUSHROOM SPAWN FOR SALE.

WILLIAM FREEMAN returns his grateful thanks to the trade for the liberal support he has received for the last 28 years, and he begs to inform them that he has the largest quantity and of the finest quality now on sale, which is well worthy of their attention. Samples will be sent to any part of the kingdom, if required.—For particulars and terms, address to WILLIAM FREEMAN, Kensal New Town, Paddington.

N.B. No one need apply but the Trade. Country orders immediately executed.

NEW SEEDLING STRAWBERRY—MYATT'S "SURPRISE."—This is a variety raised from the British Queen, which it resembles, though of a more robust habit, and a very free bearer, producing a greater abundance of those large angular-shaped Strawberries than any other variety, and finishing off the last fruit of a good size. Strong plants will be ready the beginning of August, price 50*s.* per 100.

Strong plants are now ready, price 50*s.* per 100. Also Myatt's Eleanor, 5*s.* British Queen, Globe, Mammoth, Comte de Paris, Hooper's Seedling, Black Prince, Keen's Seedling, Swanston's Seedling, Elton Pine, 3*s.* 6*d.* Fertilised Hautbois, 5*s.*

Manor Farm, Deptford.

IXORA SALICIFOLIA (TRUE), WILLOW-LEAF IXORA.

MESSRS. VEITCH AND SON are now prepared to send out strong plants of the above beautiful and distinct IXORA, received by them from Java through Mr. Thos. Lobb. It is a lovely free-blooming species, flowering in a very young state, and at the Chiswick Exhibition in July last received the first prize for new and rare plants, the Silver Gilt Medal. It is figured and described in Curtis's "Botanical Magazine" for July last.

Strong well established plants 21*s.* each; one over to the Trade on three.—Exeter, Aug. 10.

G. BASSILL, Pheasantry, Hemel Hempstead, Herts, within one mile of the Boxmoor station, on the London and North-Western Railway. Orders now taken for Poults, having a large quantity bred under his own special care.

PINE-APPLE PLANTS.—Thirty-six Pine Plants in Fruit, with fine suckers on them; 67 fine Succession Plants, eight Stools with good suckers on them, also 12 Crowns. The above all in the very best health, belonging to a gentleman near Camberwell.—Apply to JAMES CUTHILL, Florist, Camberwell, near London.

HUGH LOW AND CO. have just published their GENERAL CATALOGUE OF PLANTS, which can be had free on application.—Clapton Nursery, London. Aug. 10.

SEEDS SUITABLE FOR PRESENT SOWING, all of the best quality, and confidently recommended:

	s.	*d.*
Cabbage, Early Nonpariel or Incomparable, p. oz.	0	6
Barnes' early Cabbage, do.	0	6
Lettuce, Black-seeded Bath Cos, per paper	0	6
Lettuce, Shilling's Hampshire Brown Cos, p. paper	0	6
Hardy green Cabbage Lettuce, per oz.	0	6
Onion, large Tripoli, p. oz.	0	6
,, Deptford, per oz.	0	6
,, white Lisbon, p. oz.	0	6
Cauliflower, London-saved, very fine, per paper	0	6
Parsley, very double, beautifully curled, p. oz.	0	6
Spinach, winter, new gigantic, per quart	1	0
Turnip, early Snowball, per lb.	1	0
Stock, Buck's Scarlet Intermediate, per paper	0	6
Stock, Autumnal or Intermediate, Imported, six beautiful vars., the collection	1	6
Anemone, saved from a beautiful collection, per paper	0	6
Antirrhinum, from the best show flowers, do.	0	6
Cineraria, from the choicest flowers, saved by one of the best growers, per paper	1	0
Calceolaria, saved by an amateur from the best show flowers, per paper	1	0
Primula sinensis fimbriata, various colours, per paper	0	6
Pansy, very choice, saved by the best growers, per paper	1	0

The above, with every other description of Seeds, may be had of WILLIAM DENYER, Seedsman and Florist, 82, Gracechurch-street (near the Spread Eagle), London.

CHOICE FLOWER SEEDS for present and autumn sowing, free by post, with directions for sowing, treatment, &c. Descriptive Catalogues sent on application. The following, saved from large collections of new and choice varieties, each, per packet.

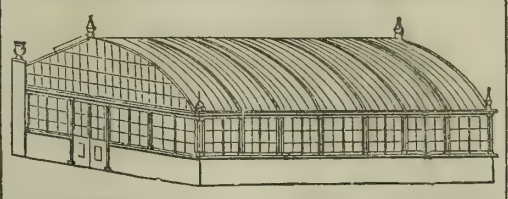
	s.	*d.*
Alstrœmeria, Chilian	4	0
Anemone ..... 4*d.* to	1	0
,, new semi-dbl., 6*d.* to	1	0
Antirrhinum	0	6
Auricula	1	0
Calceolaria	1	0
Campanula, 6 varieties, 4*d.* to	0	6
Cineraria	1	0
Delphinium	0	4
Dianthus	0	4
Fuchsia	1	0
Geranium, 1*s.* 6*d.* and	2	6
,, scarlets	0	6
Gladiolus, hybrid varieties	0	6
Gladiolus, from superior named flowers	2	6
Gloxinia	0	6
Heliotrope	0	6
Hollyhock	0	6
,, 30 vars., separate	5	0
,, 20 ditto	3	6
,, 12 ditto	2	6
Iris, English	0	6
,, Spanish	0	6
Mimulus	0	6
Pansy	1	0
Pæonia, herbaceous	0	6
Pentstemons, 6 varieties, 4*d.* to	0	6
Potentilla, from a collection of splendid hybrids	2	6
Petunia	1	0
Polyanthus	0	6
Ranunculus	2	6
Sweet William	0	4
Verbena, ... 1*s.* 6*d.* and	2	6
Wallflower	0	4
,, German, double, 6*d.* and	1	0
Stocks, Emperor, 3 German varieties, separate	1	0
Chænostoma polyantha	0	4
Fuchsia corymbiflora alba, hybridised	1	6
Lychnis fulgens	0	6
Lobelia erinus grandiflora	0	6
Silene Schafta	0	4
Streptocarpus Rexii	0	6
Sutherlandia frutescens	0	6
Veronica speciosa	1	0
,, rosea	1	6

For many other varieties, see Catalogue, sent on application.
20 Choice Greenhouse Perennials, 10*s.* 6*d.*; 12 for 7*s.* 6*d.*
20 Choice Hardy ditto 7*s.* 6*d.*; 12 for 5*s.*
20 Showy Hardy Annuals for spring flowering, 4*s.*
Remittances requested from unknown correspondents. Post office orders to be made payable to
BASS and BROWN, or to STEPHEN BROWN,
Seed and Horticultural Establishment, Sudbury, Suffolk.

ANTHONY'S PATENT AMERICAN CHURN.—The Silver Medal was awarded to this Implement, at the Royal Agricultural Society's Show at Exeter, 1850, Stand No. 25. Apply to KEY and MITCHELL, Depôt for Patented and other New and Useful Inventions, 97, Newgate-street, London.

HORTICULTULAL BUILDING AND HEATING BY HOT WATER.

WARRANTED BEST MATERIALS AND WORKMANSHIP AT THE LOWEST POSSIBLE PRICES.



J. WEEKS AND CO., King's-road, Chelsea, Horticultural Architects, Hothouse Builders, and Hot-water Apparatus Manufacturers. The Nobility and Gentry about to erect Horticultural buildings, or fix Hot-water Apparatus, will find at our Hothouse Works, King's-road, Chelsea, an extensive variety of Hothouses, Greenhouses, Conservatories, Pits, &c., erected, and in full operation, combining all modern improvements, so that a lady or gentleman can select the description of House best adapted for every required purpose.

THE HOT-WATER APPARATUSES (which are efficient and economical), are particularly worthy of attention, and are erected in all the Houses, Pits, &c., for both Top and Bottom Heat, and in constant operation in the Stoves.

The splendid collection of Stove and Greenhouse Plants are in the highest state of cultivation, and for sale at very low prices. Also a fine collection of strong Grape Vines in pots from eyes, all the best sorts.

Plans, Models, and Estimates of Horticultural Buildings; also Catalogues of Plants, Vines, Seeds, &c., forwarded on application.—J. WEEKS and Co., King's-road, Chelsea, London.

GRAPE VINES IN POTS FOR FORCING.

J. WEEKS AND CO., King's-road, Chelsea, beg to call attention to their splendid collection of Grape Vines, all struck from eyes, now two and three years old, the finest Plants that have ever been offered for Sale, consisting of 60 varieties, all of the best sorts, warranted true.

THE HAMBURGHS AND MUSCADINES being the best for early forcing in pots, this is the best time for Gardeners to have them, so as to get the eyes ripe and prominent. This Nursery is well worthy of a visit, as all modern Horticultural improvements are in full operation.

J. WEEKS and Co., King's-road, Chelsea.

GREENHOUSE AND CONSERVATORY BUILDING ESTABLISHMENT, HOT-WATER APPARATUS MANUFACTORY, KENSALL-GREEN, HARROW-ROAD, LONDON.

JOHN TAYLOR begs most respectfully to call the attention of the Nobility, Gentry, and Gardeners, to the very superior manner in which he erects all kinds of Greenhouses, Conservatories, Forcing Pits, &c., and all other buildings for Horticultural purposes, combining all the most modern improvements with elegance and utility. His manner of heating Horticultural Buildings, Churches, Chapels, Public Buildings, Entrance Halls, &c., has received the greatest approbation from the Nobility and Gentry by whom he has been extensively engaged.

STEELE'S PREPARATION, for preventing Weeds, Moss, &c., from growing on Parades, Garden-walks, and Roads. Sold in 5-gallon bottles, at 1*s.* 6*d.* per gallon.

Also, PEAT, BOG-EARTH, and LOAM, in bags not less than 5 cwt., at 9*d.* per cwt.

Orders, enclosing Post-office orders made payable to JONATHAN STEELE, Post-office, Dockhead, immediately forwarded to any part of the country.

Factory, Plough-road, Rotherhithe.

GLASSES FOR WALL-FRUIT.

HALLIMAN'S FRUIT PROTECTOR, Registered March 22, 1850.



PEACH AND GRAPE GLASSES.—These Glasses, placed over Fruit on the the common wall, assist Nature in our cold climate. The Fruit grows to a larger size, and its richness is increased.



JAMES PHILLIPS & CO. beg to say they have purchased the above Registry of Mr. HALLIMAN, and caution all persons from making or selling the same without their consent.

FERNS.

J. PHILLIPS and Co. have succeeded in making a very neat style of Shade, with glass bottom (or stand), expressly for the growth of Ferns, which will be found much more ornamental than any previously made for the same description of plant. Prices and every information to be had of JAMES PHILLIPS and Co., 116, Bishopsgate-street Without, London.

MITCHELL'S MINERAL BLACK PAINT.—This antiseptic Paint is intended for Park Fencing, and for all farming purposes; it is particularly adapted, by its prevention of dry rot in timber and repellance of damp, for Barns, Stables, Outhouses, Weather Boarding, Hop-poles; also for Carts, Waggons, &c., particularly the Wheels, and for Iron Hurdles, Iron Railings, and all Wood or Iron Work in exposed situations. For Brick Walls it is highly serviceable as a preventive of damp, and also for Walls intended for Fruit Trees, as, besides preserving the Wall, it increases the heat in all situations exposed to the sun, and prevents the harbouring of insects. It is also an excellent covering for Canvas, or Cart Tilts, Roofing, &c. Sold in casks containing from 1 cwt. to any quantity, at 17*s.* 6*d.* per cwt., quite ready for use, by

JAMES PHILLIPS and Co. (the sole agents), 116, Bishopsgate-street, Without, London.

HARTLEY'S PATENT ROUGH PLATE GLASS.

JAMES PHILLIPS AND CO., 116, Bishopsgate-street Without, beg to hand their list of Prices of the above description of GLASS. Cut to order in panes of

8 by 6	and under	10 by 8	at 4½*d.* per foot.
10 by 8	,,	14 by 10	at 5*d.* ,,
14 by 10	,,	1½ foot, or sizes not exceeding 20 inches long	at 5½*d.* ,,
1½ foot	,,	3 feet, or sizes not exceeding 30 inches long ...	at 6*d.* ,,

PACKED IN BOXES of 50 feet each.

6 by 4 and 6½ by 4½...10*s.* 6*d.* 8 by 6 and 8½ by 6½...13*s.* 6*d.*
7 by 5 and 7½ by 5½...12*s.* 0*d.* 9 by 7 and 10 by 8 ...15*s.* 0*d.*

We do not pledge ourselves to execute large orders for small squares at the above prices, but only as far as they turn up in cutting. Should any quantity of small squares be required, a special contract is necessary.

MILK PANS 2*s.* to 6*s.* each, Metal Hand-frames, Tiles, and Slates; Propagating and Bee Glasses from 2*d.* each; Cucumber Tubes, 1*d.* per inch; Peach Glasses, 10*d.* each; Wasp Traps 3*s.* 6*d.* per dozen; Pastry Slabs, Hyacinth Glasses and Dishes, Shades for Ornaments, Fish Globes, Plate and Window Glass of every description, and Lamp Shades. Lactometers for trying the quality of Milk, 4 tubes, 7*s.* 6*d*; 6 tubes, 10*s.* Self-registering Thermometers for Greenhouses, Horticultural Glass, &c.

From the *Gardeners' Chronicle*, December 8, 1849:

"As for the article substituted for Rough Plate, and which is actually in the market for the purpose of imposing upon gardeners, it is wholly unfit for any horticultural purpose. The best samples of it which we have yet seen is sold by Mr. JAMES PHILLIPS, 116, BISHOPSGATE STREET, LONDON."

GLASS FOR CONSERVATORIES, &c.

HETLEY AND Co. supply 16-oz. Sheet Glass of British Manufacture, at prices varying from 2*d.* to 3*d.* per square foot, for the usual sizes required, many thousand feet of which are kept ready packed for immediate delivery. Lists of Prices and estimates forwarded on application, for PATENT ROUGH PLATE, THICK CROWN GLASS, GLASS TILES and SLATES, WATER-PIPES, PROPAGATING GLASSES, GLASS MILK PANS, PATENT PLATE-GLASS, ORNAMENTAL WINDOW GLASS, and GLASS SHADES, to JAMES HETLEY and Co., 35, Soho-square, London.

See the *Gardeners' Chronicle* first Saturday in each month.

A LIST OF NEWLY INTRODUCED PLANTS, now off red for the first time, by JAMES VEITCH AND SON, NURSERYMEN, &c., Exeter.

Escallonia macrantha.	Hoya coriacea.
Ixora salicifolia (true).	Dipteracanthus spectabilis.
Dipladenia urophylla.	Oxalis elegans.

Calceolaria grandis.

Prices, and printed descriptions of the above, can be had on prepaid application.—Exeter, August 10.

GLASS FOR CONSERVATORIES, HORTICULTURAL PURPOSES, &c.



T. MILLINGTON'S SHEET GLASS, which is of the best description, varying from 16 to 32 ounces, at from 2d. per foot and upwards; 100 feet and 200 feet cases of large Sheet Glass, for cutting up, at 2¼d. per foot. British Plate Glass, from 1s. 2d. to 2s. per foot, according to size. Patent Rough Plate Glass, from ⅛ to 1 inch in thickness, from 4d. per foot upwards. Glass Slates and Tiles. Milk Pans from 12 to 24 inches diameter, from 2s. to 5s. each Cucumber Tubes, from 12 to 24 inches long, at 1d. per inch. Lactometers, 7s. 6d. each. Wasp Traps.—Lists may be had, on application at the Warehouse, 87, Bishopsgate-street Without, same side as the Eastern Counties Railway.

CROWN, SHEET, AND ROUGH PLATE GLASS FOR HOTHOUSES, CONSERVATORIES, &c.

The Improved Patent Rough Plate, made by Messrs. Hartley and Co., can be supplied from this Warehouse, of every size and substance, at the same prices as at the works.

100 and 200 feet cases of large Sheet Glass, from 2¼d. per foot. Small ditto, 10s. 6d. per 100 feet, packed in boxes ready for immediate delivery. Curators of Botanical Societies, Florists, Railway Agents, and others requiring large quantities, will, on sending dimensions, receive estimates at the lowest prices.

GLASS MILK PANS, CREAM POTS, Lactometers, Bee Glasses, Fish Globes, and all kinds of Dairy Glass, Propagating Glasses, Hyacinth Dishes, Cucumber Tubes, and every other description of Garden Glasses.

PATENT GLASS PENS, self supplying, never blot, never soil the ruler, and will write continuously for 12 hours.

Also, Glass Rulers, Glass Inks for office-stands, desks, &c. Stationers and Schools supplied. Wholesale Warehouse for Ornamental Shades, Lamp Shades, Gas Glasses, Genuine White Lead, Paints, Colours, and Pumps for Farm purposes.

Our Catalogue of 18 folios is the most complete ever published. No Gardener or Farm Bailiff should be without one. May be had Gratis on sending two postage stamps to Messrs. COGAN and Co., 48, Leicester-square, London.

EDWARD BECK, SLATE WORKS, ISLEWORTH. SLATE CISTERNS, &c.; COLE'S PATENT.

E. BECK informs Horticulturists and the Public generally that Mr. COLE has granted him the use of his Patent for the unexpired term, and he is now able to supply SLATE CISTERNS fastened without iron bolts or the usual oil cement, thereby doing away with the difficulty which has hitherto existed of forwarding such articles by rail or waggon, fixed and ready for use instead of in pieces, as heretofore.

E. B. will be happy to answer any inquiries as to the price of Cisterns, or any other Slate articles manufactured by him, such as Orange Tubs, Plant Boxes, Tanks, Shelves, Garden-path Edging, Hot-water Tank Covers, Flower Boxes for Balconies, Shelves fitted to hold water for Orchidaceous Houses, &c., all of which may be seen in use at Worton Cottage, Isleworth, on application to the Gardener, Sundays excepted.

Estimates given for Work as shown upon Drawings, and in specifications. A large stock of Slate Slabs of all sizes and thicknesses, kept on sale.

N.B.—Dairies fitted either with Shelves or Milk Pans, of very neat appearance.

PIMLICO SLATE WORKS. — Cisterns, Filters, Milk and Salting vessels, Corn and Flour Chests, Sinks, Dairy and Larder Shelves, Malting and other Flooring, Skirting, Refrigerators, Garden Edging, Flower Boxes, Pine pit Linings, Hot-bed Frames, moveable Cattle Sheds, Coping, Drain Stones and Traps, Steps and Risers, Balcony Landings, Roofing Slates, ridge roll and flap; Waste Slate for drains, Sun Dials, Fountains, and all descriptions of plain Slate Work in Town, or direct from Mr. MAGNUS'S Works in North Wales.

ENAMELLED SLATE Chimney-pieces, Billiard Tables, Console and other Table Tops, Mural Tablets, &c., in imitation of marble, surpassing the choicest marbles in beauty and durability, at less than half the cost of the commonest descriptions. Price Lists forwarded on application to Mr. MAGNUS, 39 and 40, Upper Belgrave-place, London.

CUCUMBER AND MELON BOXES AND LIGHTS.

One hundred 1, 2, and 3-light Boxes and Lights of all sizes ready for immediate use. Warranted best materials, packed and sent to all parts of the kingdom; 2-light Boxes and Lights from 1l. 4s. Garden Lights of every description, Conservatories, Green and Hot-houses, made and fixed in all parts of the kingdom. References given to the Nobility, Gentry, and the Trade, in most of the counties of England. JAS. WATTS, Hothouse Builder, Claremont-place, Old Kent-road, London.

PATENT WHITE OF ZINC PAINT, as manufactured by J. B. VAUGHAN, surpasses any hitherto made in purity, covering, and drying properties, and is both healthy and disinfecting, so that houses may be occupied without danger whilst painting; it does not change colour even when exposed to the foulest gases. It reflects light to an amazing degree, is unaffected by sea water, sea air, or bilge water; it does not blister, is most suitable for metals, perfectly galvanising iron, while, at the same time, it is economical, covering one-third more surface, and more easily used than the ordinary poisonous pigment made from white-lead.

Colour Works and Steam-mills, 56, Stones-end, and Montague-street, Southwark, London.

DR. S. NEWINGTON'S AGRICULTURAL INVENTIONS.—An Illustrated Catalogue, together with a Lecture on the Seeding of Grain, and the after cultivation of the crops, sent gratis, on application to Messrs. DUFAUR and Co., 21, Red-lion-square, London.

OLD FEATHER BEDS RE-DRESSED, AND PURIFIED BY STEAM WITH PATENT MACHINERY. —This new process of dressing not only removes all impurities, but by expanding the feathers the bulk is greatly increased, and consequently the bed rendered much fuller and softer.—Charge for dressing, 3d. per lb. Old and Mothy Mattresses effectually cured and removed, fetched and returned, carriage free, within five miles.—HEAL and SON'S List of Bedding, containing full particulars of weights, sizes, and prices, sent free by post on application to their factory, 196 (opposite the chapel), Tottenham-court-road, London.

TENDERS OF LANDS FOR PURPOSES OF THE METROPOLITAN INTERMENTS ACT, 1850.—THE GENERAL BOARD OF HEALTH, in accordance with the provisions of the 8th section of the Metropolitan Interments Act, 1850, hereby give Public Notice, that they are desirous of receiving Tenders from persons willing to sell Lands for the purpose of establishing Cemeteries within a distance of not less than 6, or more than 20, miles from St. Paul's Cathedral. The extent of such Lands should not be less than 100, or more than 500, acres. They should be of easy access, and the soil should be dry, or capable of being made so by drainage. Other particulars, which will determine the eligibility of sites, may be seen on reference to the recent Report of the General Board of Health on Extra-mural Sepulture. The Tenders should contain the fullest particulars as to the precise locality and nature of the Land, the facilities of access thereto, the tenure on which it is held, the nature of the estate and title of the holder, and the terms on which it is offered for sale. No Tender will be received after a period of six weeks from the 8th of August, 1850. The Tender must be under seal, addressed to the Secretary of the General Board of Health, Gwydyr House, Whitehall, and marked "Tender for Cemetery Lands."

EMIGRATION TO AUSTRALIA.—New Line of Packets from Liverpool. Fine Goods 25s. per ton.

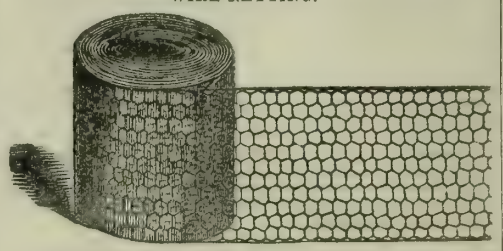
PETREL	...	1200 tons ...	to Sail 10th Oct.
CONDOR	...	1500 ,, ...	,, 10th Dec.

A 1, new Ships, coppered and copper-fastened. For freight or passage apply to the owners,

GIBBS, BRIGHT and Co., Liverpool.

EMIGRATION TO CANTERBURY.—Notice is hereby given, that ASSISTED PASSAGES TO PORT LYTTLETON, in the Canterbury Settlement, will be granted to a limited number of the working classes in the ships Sir George Seymour, Cressy, Charlotte Jane, and Randolph, to sail on the 29th August, being Gardeners, Shepherds, Farm Servants, and Country Mechanics. The Emigrants must be under 40 years of age, of the highest character for sobriety, steadiness, and respectability, as certified by the clergyman of their parish.—Full particulars, with forms of application, may be obtained from JAMES EDWARD FITZGERALD, Superintendent of Emigration, Office of the Canterbury Association, Cockspur-street, London.

STRONG PREMIUM HARE AND RABBIT PROOF WIRE NETTING.



CHARLES D. YOUNG AND COMPANY (LATE W. AND C. YOUNG),
MANUFACTURERS OF IRON AND WIRE WORK, &c.,
22, PARLIAMENT STREET, WESTMINSTER, LONDON;
48, NORTH BRIDGE, EDINBURGH;
32, ST. ENOCH SQUARE, GLASGOW;
1, CASTLE BUILDINGS, DERBY SQUARE, LIVERPOOL;

beg respectfully to call the attention of Landed Proprietors and others to their strong Wire-Net Fence, for excluding Hares and Rabbits from Gardens, young Plantations, Nurseries, &c.

This Net was exhibited at the Show of the Highland and Agricultural Society of Scotland, held lately at Inverness, where its Efficiency, Great Strength, and Exceeding Cheapness attracted general attention, and had awarded from the Judges the Society's Silver Medals, with high commendations.

The immense damage done by Hares and Rabbits in Gardens and Young Plantations is often so great, that in the course of a year or two it will amount to more than the entire cost of protecting them with this Net. It is so durable, that when Plantations are sufficiently advanced to be independent of its protection, it can be removed to other exposed situations with the greatest facility, by any labourer. As a Fence against Hares and Rabbits, it is of itself quite sufficient, having only to be unrolled and attached, with small wire sent for that purpose, to wooden stakes driven into the ground, about every six or seven feet apart. It is, besides, peculiarly adapted for rendering Hedges, Paling, or other existing Fences, *completely impervious* to such vermin; and by being cut up into small pieces of three or more feet, as required, it forms a most efficient guard, at little expense, for individual Plants and Shrubs.

PRICES.—18 ins. high, 9d.; 24 ins., 1s.; 30 ins., 1s. 3d.; and 36 ins., 1s. 6d. per lineal yard.

Or a web of 100 yards, 18 ins. wide, will cost	..	£3 15 0
Do. of 100 yards, 24 ins. wide	.. ..	5 0 0
Do. of 100 yards, 30 ins. wide	.. ..	6 5 0
Do. of 100 yards, 36 ins. wide	.. ..	7 10 0

If more or less than a web is required, it would be charged at the same rate per yard.

This Netting is also admirably adapted for Pheasantries and Poultry-yards, and is charged at the same rate. As carriage has, in many instances, been an obstacle to parties at a distance requiring this Net, C. D. Y. and Co. have made arrangements by which they will undertake to deliver it at any of the principal ports of Scotland, England, and Ireland, for One Halfpenny per lineal yard.

C. D. YOUNG and Co. cannot give a better idea of the great strength of their Premium Wire Netting than by stating that the weight of one yard of their 24-inch at 1s. is equal to 2½ yards of another article in the market, the same width, at 9d. per yard. Samples for inspection sent free of expense.

C. D. YOUNG & Co. manufacture every description of IRON and WIRE WORK required for this and foreign countries.

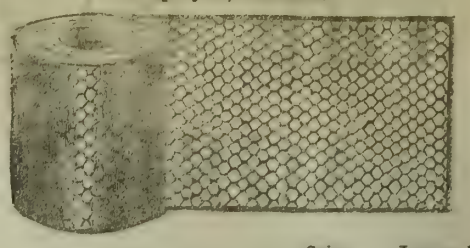
Workmen sent to all parts of Scotland, England, and Ireland.

ALLSOPP'S EAST INDIA PALE AND OTHER BURTON ALES.—In consequence of a very inferior article being now too frequently sold under the name of these favourite Ales, the public are respectfully requested to apply at the respective stores, where a list of bottlers will be furnished, from whom these ales may be obtained genuine, and where also they may be had in casks of 18 gallons and upwards, either singly or in any quantity. Apply to Messrs. SAMUEL ALLSOPP and SONS, The Brewery, Burton-on-Trent, or their Stores, at 61, King William-street, City; Cork-street, Liverpool; High-street, Birmingham; and the Exchange, Manchester.

THE HIPPOPOTAMUS presented by H. H. the Viceroy of Egypt to the Zoological Society of London, is exhibited daily from One to Six o'clock, at their Gardens in the Regent's Park. The Band of the First Life Guards will perform, by permission of Colonel Hall, every Saturday, at Four o'clock. Admission One Shilling, on Mondays Sixpence.

NEWS, NEWS, NEWS.—The best, cheapest, and largest Newspaper in the World.—LLOYD'S WEEKLY LONDON NEWSPAPER contains 60 large columns of the latest intelligence from all parts of the Globe, price only Threepence, postage free. Send Three Postage Stamps to E. LLOYD, 12, Salisbury-square, London, and receive one copy as a sample.

GALVANISED WIRE GAME NETTING.—7d. per yard, 2 feet wide.



	Galvanised.	Japanned Iron.
2-inch mesh, light, 24-inch wide ...	7d. per yd.	5d. per yd.
2-inch ,, strong ,, ...	9 ,,	6½ ,,
2-inch ,, extra strong ,, ...	12 ,,	9 ,,
1½-inch ,, light ,, ...	8 ,,	6 ,,
1½-inch ,, strong ,, ...	10 ,,	8 ,,
1½-inch ,, extra strong ,, ...	14 ,,	11 ,,

All the above can be made any width at proportionate prices. If the upper half is a coarse mesh, it will reduce the price one-fourth. Galvanised sparrow-proof netting for pheasantries, 3d. per square foot. Patterns forwarded post-free.

Manufactured by BARNARD and BISHOP, Market-place, Norwich, and delivered free of expense in London, Peterborough, Hull, or Newcastle.

THE TEETH.—How often do we find the human face divine disfigured by neglecting the chiefest of its ornaments, and the breath made disagreeable to companions by non-attention to the Teeth! Though perfect in their structure and composition, to keep them in a pure and healthy state requires some little trouble; and if those who are blessed with well-formed Teeth knew how soon decay steals into the mouth, making unsightly what otherwise are delightful to admire, and designated unhealthiness by the impurity of the breath, they would spare no expense to chase away these fatal blemishes. But although most ladies are careful, and even particular in these delicate matters, yet few are sufficiently aware of the imperative necessity of avoiding all noxious or mineral substances of an acrid nature, and of which the greater part of the cheap Tooth Powders of the present day are composed. It is highly satisfactory to point out Messrs. Rowlands' Odonto, or Pearl Dentrifice, as a preparation free from all injurious elements, and eminently calculated to embellish and preserve the dental structure, to impart a grateful fragrance to the breath, and to embellish and perpetuate the graces of the mouth.—*Ladies' Gazette of Fashion.*

ROWLAND'S ODONTO

Is a white powder compounded of the choicest and most *recherché* ingredients of the oriental herbal, of inestimable value in preserving and beautifying the Teeth, strengthening the Gums, and in rendering the breath sweet and pure. Price 2s. 9d. per box.—Sold by A. ROWLAND and SONS, 20, Hatton-garden, London, and by Chemists and Perfumers.

METCALFE AND Co.'s NEW PATTERN TOOTH-BRUSH and SMYRNA SPONGES.—The Tooth-Brush has the important advantage of searching thoroughly into the divisions of the teeth, and cleaning them in the most extraordinary manner, and is famous for the hairs not coming loose.—1s. An Improved Clothes-Brush, that cleans in a third part of the usual time, and incapable of injuring the finest nap. Penetrating Hair-Brushes, with the durable unbleached Russian bristles, which do not soften like common hair. Flesh-Brushes of improved, graduated, and powerful friction. Velvet-Brushes, which act in the most surprising and successful manner. The genuine Smyrna Sponge, with its preserved valuable properties of absorption, vitality, and durability, by means of direct importations, dispensing with all intermediate parties' profits and destructive bleaching, and securing the luxury of a genuine Smyrna Sponge. Only at METCALFE, BINGLEY, and Co.'s Sole Establishment, 130 B, Oxford-street, one door from Holles-street.

METCALFE'S ALKALINE TOOTH POWDER, 2s. per box.

CAUTION.—Beware of the words "From METCALFE'S," adopted by some houses.

THE SUMMER RIDE OR PROMENADE.—The peculiar virtues of C. and A. OLDRIDGE'S BALM OF COLUMBIA completely remove the difficulty experienced by Ladies in preserving their ringlets after exercise; its use so invigorates the hair, that tresses, previously the straightest and most destitute of curl, rapidly acquire a vigour which maintains in permanent ringlets the head-dress of the most persevering votary of the ball-room, the ride, or the promenade. After the Minerals and Vegetables of the Old World have been compounded in all imaginable ways in fruitless attempts to discover so important a desideratum, we are indebted to the Western Hemisphere for furnishing the basis of

OLDRIDGE'S BALM OF COLUMBIA,

the efficacy of which in preserving, strengthening, and renewing the hair has become a matter of notoriety among all civilised nations. Its restorative virtues are indeed a proverb, and the most satisfactory attestations to its infallibility in reproducing hair upon persons otherwise hopelessly bald, have been published from time to time by the Proprietors, 13, Wellington-street North, Strand, a few doors above the Lyceum Theatre on the opposite side.

3s. 6d., 6s., and 11s. per Bottle; no other prices are genuine. When you ask for "Oldridge's Balm," never let the shopkeepers persuade you to buy any other article as a substitute.

ASHBY'S INDIA EXPORT PALE ALE. — London Stores, under the South-Western Railway Terminus, Waterloo-road. India Pale Ale, 21s., 18 gallons; 10s. 6d., 9 gallons; Family Ale, 16s., 18 gallons.—CHAS. ASHBY and Co. invite the particular attention of private Families and Clubs to their PALE ALE, as brewed by them for the COLONIAL MARKETS for the past 20 years. Supplied in small casks direct from the Brewery, Staines, and the London Stores, or from their agents—Messrs. W. Hancock, 80, Connaught-terrace, Hyde-park; Chidell and Stewart, 40, Lime-street, City; W. H. Chaplin, 11, Sebbon's-buildings, Upper-street, Islington; J. Shenton, Greenwich; W. Ferguson, Reading; Thos. Berry, Brighton and Lewes; A. J. Richardson and Co., Portsea and Southsea; J. Skidmore, Rickmansworth; Cooksey, Brothers, Southampton.

TOOTHACHE PERMANENTLY CURED by using BRANDE'S ENAMEL for filling decaying Teeth, and rendering them sound and painless. Price 1s. Enough for several Teeth. The only substance approved by the medical faculty, as being unattended with pain or danger, and the good effects of which are permanent.

Sold by all Chemists in the United Kingdom. Twenty really authorised Testimonials accompany each box, with full directions for use. Sent free, by return for post, by J. WILLIS, 24, EAST TEMPLE CHAMBERS, WHITEFRIARS, FLEET-STREET, LONDON, in return for 13 penny stamps.

CAUTION.—The great success of this preparation has induced numerous unskilful persons to produce spurious imitations, and to Copy BRANDE'S ENAMEL Advertisements. It is needful, therefore, to guard against such impositions, by seeing that the name of JOHN WILLIS accompanies each packet.

SUPERB DOUBLE HOLLYHOCKS.

WILLIAM CHATER begs respectfully to inform the public that his unequalled collection of this magnificent flower is now in bloom, consisting of many thousand spikes of flowers. Free to the inspection of all visitors, whether purchasers or not, on any day excepting Sundays.

Saffron Walden, Aug. 10.

MESSRS. STANDISH AND NOBLE'S new descriptive CATALOGUE OF SELECT HARDY ORNAMENTAL PLANTS is just published, and may be had for four postage stamps. Besides a Treatise on the cultivation of American Plants, it contains a Plate and Description of the Funebral Cypress, Notices of Cephalotaxis Fortunii, Cryptomeria japonica, Quercus sclerophylla and inversa, Viburnum plicatum and macrocephalum, with many recent introductions from the north of China, quite new to English gardens.

Messrs. S. and N. take this opportunity of stating that they give Designs for Laying out New Grounds and Plans for Improvements; also Estimates for all kinds of Planting, whether ornamental or economic.—Bagshot Nurseries, Aug. 10.

NEW LATE STRAWBERRY,
WILMOT'S "PRINCE ARTHUR."

J. WILMOT, in offering this new variety of STRAWBERRY to the Public, is confident that it combines qualities which no other kind at present in cultivation does possess, being of delicious flavour, and coming in after the principal Strawberry season is over. It possesses the property of firmness of texture, so that it may be transmitted to any part of the kingdom without sustaining injury, as it may be kept for several days after being gathered, when fully ripe, without any indication of decay or loss of flavour.

"Prince Arthur" is one of the largest sized Strawberries, and a most abundant bearer; the foliage is small, and never exceeds 6 inches in height; the fruit is consequently fully exposed to the sun. Its dwarf habit requires it to be planted not more than a foot apart. The fruit is perfectly formed, of a rich scarlet, and colouring equally all over the berry. If planted at the distance recommended it will produce double the weight per acre of any other variety.

Strong plants will be ready for sale in September next, at 5*l.* per 100, on prepaid application only, to JOHN WILMOT, Isleworth, Middlesex; Robert Glendinning, Chiswick Nursery; William T. Atwood, Mortlake, Surrey; George Charlwood, Seedsman, Covent-garden; and Messrs. Hurst and M'Mullen, 6, Leadenhall-street, London.—Isleworth, Middlesex, Aug. 10.

HOYLE'S SEEDLING PELARGONIUMS FOR 1850.

CHARLES TURNER will send out, early in the Autumn, strong established plants of the following distinct varieties raised by G. W. Hoyle, Esq. Ajax gained the 4*l.* and Ocellatum the 3*l.* prizes at the Great Seedling Pelargonium Show, Surrey Gardens, in June last, being two of the four prizes awarded on that occasion. Early orders will ensure first selection.

AJAX.—A noble dark variety, smooth, and of fine substance, lower petals rosy purple, top petals very dark purple, with even narrow margin of vivid crimson; very free bloomer; has been justly styled "The leading flower of the season." Price 1*l.* 11*s.* 6*d.*

OCELLATUM.—A great novelty, lower petals bright pink, with a distinct and constant spot of deep crimson; top petals deep crimson spot, shaded off with bright rose, white eye, free bloomer, and good grower. Price 1*l.* 1*s.* 6*d.*

MAY QUEEN.—A large, distinct, and pleasing variety. Orange-rose top petals, crimson blotch, shaded off with orange, the five petals have a delicate margin of pale pink; lower petals vivid rose; large well-defined white eye, very free bloomer, will be a great favourite on the home stage. Price 1*l.* 1*s.* 6*d.*

NECTAR CUP.—Rose, top petals rich orange-rose, with narrow pink margin, clear white eye, fine substance, good habit. Price 1*l.* 1*s.*

FLAVIA.—Orange-scarlet, the brightest in this class that has been offered, and makes a fine display on the stage, rather crumpled on the edge, and lower petals too long. Price 1*l.* 1*s.*

GENERALISSIMO.—Large and very attractive; lower petals salmon, with spots of a deeper colour, white centre; top petals very dark, rich, and velvety, shaded with lively orange, occasionally crumpled on the edge. Price 1*l.* 1*s.*

RUBIOLA.—Fine crimson scarlet of beautiful texture, dark spot on the top petals, rather deficient in breadth of petals. Price 1*l.* 1*s.*

CORINNE.—Light purple, very smooth and free bloomer, dark top petals. Price 15*s.*

ISIS.—A neat smooth flower, of good quality, very free bloomer, rose with white eye, and dark blotch on top petals. Price 15*s.*

CARDINAL.—Fine rich orange crimson, black blotch on top petals, very smooth, not a strong grower. Price 15*s.*

HEARTSEASE.—Scarlet rose, large fine shape and substance; but being inconstant, purchasers of the above will have a plant without charge.

Price 8*l.* 10*s.* for the set.

Royal Nursery, Slough.

SEEDLING PELARGONIUM—"PRINCE ARTHUR."

A. PONTEY begs to announce that he will send out, on Monday, the 14th October, at 1 guinea each, or four plants for 3 guineas, his seedling Pelargonium, for which the highest prize, the Silver Medal, was awarded at the Exhibition of the Royal Devon and Cornwall Horticultural Society on the 16th May; also a certificate of merit was awarded at the Devon and Exeter Exhibition, on the 24th May, and a certificate of merit at Torquay Exhibition on the 6th June.

The Splendid Pelargonium is thus described in the "Floricultural Cabinet," July:—"Upper petals large, dark clouded blotch shaded off to flesh colour, lower ones flesh colour, centre white; petals of firm substance."

Mr. Glenny's opinion of its habits and the peculiarity of its white throat, which he affirms is "purer than that of any one of the present varieties," has been given in the Country Gentleman, weekly garden newspaper.—Aug. 10.

WILLIAM YOUNG begs the attention of Noblemen, Gentlemen, and Planters in general to inspect his extensive collection of CONIFEROUS PLANTS, consisting of Araucarias, Deodars, Douglasii, and all the leading kinds, from 1 foot to 10 and 15 feet high, with Cryptomeria japonica, bearing perfect cones.

Milford Nursery is one square piece of ground, about 30 acres, on a particular dry and healthy soil, filled with the most choice kinds of Ornamental Trees, Shrubs, and Forest Trees of every description; Ash, Birch, Chestnut, Hazel, Willow; Scotch, Larch, Silver, and Spruce Firs; and other hardy Forest Trees, being planted for sale by the 100,000, whence they transplant equal to, if not better, than any other nursery in England.

Milford Nursery is two miles from the Godalming Station of the South-Western Railway, where conveyances are always in attendance.

BAKER'S PHEASANTRY, Beaufort-street, King's-road, Chelsea, by special appointment to her Majesty and H. R. H. Prince Albert.—ORNAMENTAL WATER FOWL, consisting of black and white swans, Egyptian, Canada, China, barnacle, brent, and laughing geese, shieldrakes, pintail, widgeon, summer and winter teal, gadwall, Labrador, shovellers, gold-eyed and dun divers, Carolina ducks, &c., domesticated and pinioned; also Spanish, Cochin China, Malay, Poland, Surrey, and Dorking fowls; white, Japan, pied, and common pea-fowl, and pure China pigs; and at 9, Half-moon-passage, Gracechurch-street.

"THE FLOWER OF THE DAY."

J. AND C. LEE beg to announce that they are now sending out their beautiful new Variegated SCARLET GERANIUM "THE FLOWER OF THE DAY." It is of extremely free habit, and constant variegation. Price 10*s.* 6*d.*; discount to the Trade when three are taken. May be had of the principal Nursery and Seedsmen.

Nursery, Hammersmith, August 10.

The Gardeners' Chronicle.

SATURDAY, AUGUST 10, 1850.

MEETING FOR THE ENSUING WEEK.

COUNTRY SHOW.—Thursday, August 15: Birmingham Botanical and Horticultural.

A GARDEN is an excellent school for patience. Disappointment is often the end of the labour and hope of years; and, as in more important matters, frequently takes place exactly where it is most keenly felt. There are few cases, however, where honey may not be gathered from the lion's carcase, if it be looked for; the misfortune is that so few people look for it, or when it is found, profit by their experience.

A few days since, just after the late storms, a beautiful standard Rosa Brunoniana, which was an especial favourite, was observed to fail all at once. It had borne a profusion of blossoms, which were indeed scarcely over, and had made new shoots 3 feet in length, looking as flourishing as any species could well look in a thin and rather arid soil. There was no appearance of disease or decay about the stock; the junction of the bud and wood was singularly healthy, and new wood was in progress, vigorous and abundant. There were many voices in favour of its sudden destruction being due to lightning, a cause to which many a dead branch or tree is ascribed without a shadow of reason. It was remarked by a little boy who was standing near, that when this and another tree received from the same quarter were planted, a thin white pellicle of fungus was observed about the base of the stock, and that a notice of the appearance was made at the time and forwarded to the intelligent cultivator who had supplied the trees, as possibly suggestive of some disease with which his stocks might be affected. The tree was accordingly dug up, and the evil was at once sufficiently visible. The bark was much thicker at the base than usual, soft, and much decayed, and split into plates by interposed layers of white byssus-like spawn, which had at length destroyed all connection between the stem and root; and probably in consequence of the marked transition from dry to very moist weather, had completed its task with great rapidity, so as to make the failure at last appear absolutely sudden.

Occurrences of this description are not unfrequent amongst standard Roses, so much so that many persons object to grow any which are not raised from cuttings or layers. The evil we believe in most cases arises from the use of stocks procured from the woods and hedges. The roots in this case are seldom in a healthy condition from the first, and they are very liable to injury in removal; and even when they seem for a time to flourish vigorously they not unfrequently fail, even before they are budded. The decay of standard Roses sometimes undoubtedly arises from imperfect union between the stock and bud, or from the extensive decay of the upper part of the stock, which acts injuriously upon the young wood thrown out by the bud; but more generally, we believe, it is due to the bad condition of the roots or the base of the stem from which they spring. The wiser course seems therefore to be, not to trust to ready-grown stocks, but to raise them in the garden, for which great facility is offered by the rapid growth of the Rosa Manettii; and it is some consolation to the cultivators of these most lovely flowers, that a large portion of the Roses which are now raised to such a marvellous extent are worked on nursery stocks.

Another grand point is to procure the plants at once from the growers. Rose trees are seldom healthy where they have made two or more journeys, and have perhaps been transplanted more than once after their first removval. At least, our experience is strongly in favour of those which have not passed through any intermediate hands.

THE effect of the coming EXHIBITION OF ALL NATIONS has begun to be felt even in the horticultural world. We have reason to know that clever persons are already devising improvements in the manufactured articles employed in gardens; enquiries are making about portable houses, glass cases, window gardens, ventilating mechanism, border-edgings, garden sculpture, and a crowd of things which are or would be in great demand. Gardens near London are undergoing alterations likely to increase their attractiveness, and even societies are bestirring themselves in earnest to meet the wants of the crowds of strangers that may be expected to throng the metropolis.

Acting in this spirit the Horticultural Society has just reduced the admission fee of members from six guineas to two guineas, in order that no money impediment may be offered to those who wish to join it. Its Council has also decided that for next year the number of privileged tickets (at a low price) which each Fellow may procure shall be increased from 24 to 48, the effect of which is to give a bonus of 3*l.* 12*s.* per annum to each Fellow who may require tickets for himself or others; and we have reason to know that it is in contemplation to grant further privileges of substantial value to the Fellows. It is decided too that, as the exhibition in Hyde Park will be opened on the 1st of May, the first meeting of this great society, at Chiswick, shall take place on the succeeding Saturday, so that English gardeners may have the best and earliest opportunity of showing the crowds of foreigners who will then be in London, what can be done by English industry, skill, and wealth. This is perhaps the best time in May for out-door meetings; the earliest days of that month being usually the finest until the end is approached. In fact we find, upon looking to the weather registers, that in 25 years five days only have been wet, while 16 have been beautifully fine.

We observe too that notice of agricultural produce to be sent to the exhibition in Hyde Park, has already been given in foreign journals. *La Presse*, of Aug. 2, speaks of some marvellous Wheat obtained by the Messrs. DUSSEAU, by steeping the seed corn in some new preparation, which Wheat is destined for the purpose. The magnificence of this corn, both in straw and ear, is represented as having excited universal admiration; and it is expected "to do the greatest honour to French Agriculture."

THE spread of scientific information on the subjects of Botany and Floriculture may be regarded as a characteristic of the age, and is a pleasing token of advancing civilisation. During the last 20 years floral literature has certainly increased in more than arithmetical ratio, and has more than kept pace with the extending population of Great Britain. More books relating to gardening are now published, and the information conveyed is more rational and solid, relating more to first principles than to mere empiricism. Knowledge of this kind is further simplified and spread abroad by public lectures, and also by horticultural societies; for although the exhibition of well-grown plants has in itself not much to do with the *rationale* of their production, enquiry must be excited by such means, and at such public gatherings it may be presumed scientific questions are often illustrated and discussed. A demand is created for the results of a more perfect art, which can only be met by the application of an increased acquaintance with science.

But while there is just cause for congratulation *relatively*, it will be found that the real amount of philosophy among unprofessional gardeners is very small, a fact which may be easily verified by a little personal enquiry, as well as by an inspection of the actual condition of the gardens of the masses of society. In the great majority of cases the commonest scientific principles are totally unknown, and, as the result of this, an amount of labour sufficient to make a plot of ground both useful and ornamental is almost thrown away. "In the suburbs of London," writes a correspondent, "where I now reside, I am both amused and vexed by the abortive efforts of my neighbours in cultivating their gardens. Some are continually watering until the soil has a surface as smooth and hard as a slate; others altogether neglect the aptitudes of their plants for sunshine and shade; and a third class, like little children, are always putting in slips of things which never grow by such a procedure. All this is the more provoking, because the occupants often are really generous of their time and money, labouring much with their own hands, and purchasing freely of itinerant vendors various plants in season. How much good 'PAXTON'S Cottagers' Calendar' would do such people!" From the same source we learn that in a town of 8000 inhabitants, which boasts of a Horticultural Society, not one copy of any Gardening newspaper is taken in, and none of the members of the said Society cultivate any acquaintance with science. We have no doubt that in most of the instances in which tolerable success attends gardening exertions, it is to be attributed to long practice, which has gradually and painfully secured the results of a more correct information.

As we have not the ear or the eye of those who are so much behind in floricultural knowledge, it may be thought our observations are out of place, like the public reproofs of a preacher for non-attendance, which assail the wrong persons, the offenders being absent. But our design is practical, for we wish to remind our readers that, like the radiation of heat, knowledge must pass from those who have it to those who have it not, if its genial influence is ever to be generally diffused. That

more happiness would be the result of such a circulation of scientific principles cannot be doubted, for if men will labour with pleasure in spite of the failures which attend their ignorance, how much more gratified would they be if their exertions were regulated by sound knowledge?

HOW TO MISMANAGE A GARDEN.

Chapter I.—In this age of admirable gardening it is to be feared that the art of mismanagement may be altogether lost sight of. That event, if it should ever come to pass, would be attended with such serious inconvenience to a large body of ingenious persons that it seems desirable to place on record the main features of mismanagement before they shall have wholly faded from the memory of man.

It cannot be denied that half the pleasure of active life consists in the variety of incident which attends it; nor will any one dispute the maxim that those results are most highly prized which are most difficult of attainment. Obstacles are the charm of enterprise, just as contradiction is the life of argument. It is admitted on all hands that what is won easily is not worth winning, just as what is done easily is not worth doing. The gambler who never loses finds his gaming dull work; and nobody would care to be a scholar if learning came as easily as eating. The fondness of the world for riddles and puzzles of all sorts arises wholly out of the difficulty of explaining them; and in like manner the rage that once existed for writing what were called Witches' prayers, which equally made sense, whether read backwards or forwards, excepting that they cursed one way and blessed the other, was entirely excited by the extreme difficulty of the task.

In the same way much of the charm of gardening consists in its difficulty; we value the results quite as much on account of the trouble they have cost us, as for themselves when we have gained them. This is shown every day in the value attached to seedlings. A man sows a seed; raises the young plant through all the dangerous periods of its existence; pots and repots it, nurses it with warmth in winter, and feeds it with the nicest manure in summer; spends years in watching it; at last obtains a flower or a fruit; and is charmed at so satisfactory an issue to his experiment. Not that the result has any real value; for he probably could buy something twice as good, for sixpence, in the nearest nursery. But no interest belongs to buying a plant for sixpence; it is an operation without difficulty or trouble; on the other hand, the seedling was obtained with care and pains, and by overcoming difficulties; and these things stamped it with value in the mind of its possessor.

For such reasons it seems advisable to point out in what manner the facility and certainty with which gardening is carried on by some of our horticultural luminaries may be most conveniently diminished. Our pleasure will be gone, if to hire a man and a piece of ground is to be the same thing as to have beds full of flowers, and houses full of fruit, and a kitchen-garden crammed with eatables. It must be owned that things are looking that way. If people mind what is said by the writer of the "Calendar" in the *Gardeners' Chronicle* it must be so; and to that a true lover of gardening cannot do otherwise than object. If our gardens are to be no trouble, if our gardening is to involve neither risk nor uncertainty, then the market will supply men's wants, and the happy amateur will sink into the misery of what some call *ennui*, but which may be better designated as nothing-to-do.

There are books without end telling, or professing to tell, how to manage well; we have "Theories," and "Hand-books," and "Guides," and "Manuals," and "Encyclopædias," all aiming at perfection. But there is not, in the whole of gardening literature, one single work that ventures to point out the usual modes of managing ill; such an omission cannot but be regretted by all votaries of the pursuit of success under difficulties; and it is to be hoped that in the course of the following dissertation, this defect will be remedied; in addition to which it will be found to contain a full explanation of the famous case of the golden sleeper, whose history is thus reported in the *Spectator*:—"I believe you will think it a very extraordinary circumstance for a man to gain his livelihood by sleeping, and that rest should procure a man sustenance as well as industry. Yet so it is, that Nicholas got last year enough to support himself for a twelvemonth. I am likewise informed that he has this year had a very comfortable nap. The poets value themselves very much for sleeping on Parnassus, but I never heard they got a groat by it. On the contrary, our friend Nicholas gets more by sleeping than he could by working, and may be more properly said, than ever Homer was, to have had golden dreams. Juvenal, indeed, mentions a drowsy husband who raised an estate by snoring; but then he is represented to have slept what the common people call a dog's sleep; or, if his sleep was real, his wife was awake, and about her business."

But this is not the only reason why mismanagement deserves a special study. What will become of the shoals of men who understand nothing else, if the good old customs on which it is founded are to be abolished? Are they, too, to be deprived of protection? The thought is monstrous. Victims enough are said to have been sacrificed in the march of modern innovation; thousands of poor stragglers are mentioned as having dropped out of the line, and perished by the road-side, only because they had not strength and courage enough to keep up with the stoutest of the throng. It will never do for gardeners to be treated thus. They must be protected, and their mismanagement must be protected also, or they will be left to starve, while the enemies of mismanagement, those horticultural free-traders, grow fat in their places. They must be protected for their own sakes; they must be protected for the sake of the peace and comfort of their employers. It will be shocking if the vexation and annoyances which often attend the possession of a garden should disappear; for as has been just shown, those vexations and annoyances are the very foundation of pleasure and comfort. Therefore it is that the writer of these notes, himself experienced in all such matters, proposes to point out, in many succeeding chapters, the most approved principles on which the greatest possible amount of mismanagement may be attained by all classes of the gardening community.

TOADS AND THEIR SKINS.

Referring to the accounts given by Prof. Henslow, in pp. 373 and 422, of the mode in which toads shed and afterwards dispose of their skins, I wish to add my mite of experience. A few years ago, it may be 10, wishing to ascertain for myself whether toads were indeed venomous—and if so, where; and whether they spit, and if so, how—I collected about 25, and kept them in a shallow wooden tub, lined at the bottom with thick sods of Grass. At this time toads were to me the most disgusting of animals, and I dared not handle one for the world.

It was not long before I satisfied myself that they could not spit; and that, in regard to venom, they had, at least, no power of ejecting any from any quarter, as I had been led to suppose; for I remember a gardener once telling me that in moulding up a trench of Celery, a toad hopped away and voided something upon his hand, which inflamed it very severely. I found, indeed, that in damp weather they would, if disturbed or handled, void a clear fluid *ab ano;* but I can vouch, both by touch and taste, frequently repeated, that the ejaculated fluid was as tasteless and harmless as distilled water. Neither could I ever discover that the toad at any season of the year could put forth any secretion from the glands about his head and eyes. A little pressure will force out from those parts a kind of cheesy-creamy matter, which is acrid; and I remember my brother once squeezing the glands rather severely with a pair of pliers, when a small quantity spirted into his eye, and produced a very severe smarting which lasted some time. Probably it is this acrid substance which causes the pike to reject a toad, and which produces that maddening effect on cats which I have heard and believe takes place when they happen to seize one.

I had not kept my toads long before I grew attached to them. They were no longer the loathsome creatures I at first thought them, although still confoundedly ugly; and I grew to handle and fondle them with the greatest confidence and affection. They got to know me, and instead of shrinking into their little "forms" on my approach, as they had been accustomed to do, they would take the insects which were thrown to them without regarding my presence. I may here observe that I never saw a toad take dead food, nor seize anything that was not in motion. So long as a beetle or earwig was content to be still it was safe; but as soon as ever he stirred he was a dead man. Although, generally, a toad will lie in his hole, and seize only such insects as approach near enough to come within reach of his unerring tongue, yet if they have been on "short commons" for a few days, they will condescend to come out a step or two at sight of their game; and it is curious to see a toad stretching out of his den with foot uplifted and eyes right, for once putting on a sagacious, wide-awake look, in order to nail some unwary truant of a beetle, or "old sow." Whenever he strikes his prey the toad makes a noise like the smacking of lips, which, for ought I know, may have led people to suppose he occasionally indulges in the vulgar habit of spitting.

But in describing some of the habits of the "loathed Paddocks," as Spenser calls them, I had well nigh forgotten the particular point about which I intended to write. I kept my 25 toads for nearly two years, and during that time I saw the process of skin-shedding and skin-swallowing at least 50 times. The process is very much as Prof. Henslow describes it. First, a splitting down the back, which is soon perceived by an unusual brightness of colour and moistness; then, after sundry and divers contortions, the skin gets drawn down to the legs, which the toad "peels" very cleverly. I have seen them put a hind leg under the arm, and then withdraw it while the arm is held close to the side, by which means the stocking is gradually slipped off. I have then seen them with their feet "coax" the skin along the abdomen, up towards the mouth, and the operation mostly, but not always, ended in a gradual sucking down of the cast-off cuticle. It always struck me that the swallowing down of the cuticle depended on the fact, that the mucuous lining of the mouth was continuous with the outer skin, and that, consequently, when it reached the lips, it was only natural for it to roll inwards to the gape, and that, once in the toad's mouth, down it went. I have also noticed that the toad is very quiet and mopish for a day or two before losing his skin, and (for a toad) unusually brisk and lively after he has got rid of it. In the hot weather I think the operation would occur as often as once in six weeks; but, as I had so many toads in one place, I do not wish any reliance to be placed on this impression of mine. I once saw a large toad strike at and take a very young toadling, and ultimately swallow it; but it was evidently a practice he had not been much used to, as the feet of the hind legs projected out of his mouth for several hours. Neither do I think this solitary instance of what a toad in confinement and on short commons may do, should be made use of as any proof that the toad in a state of liberty and nature would be guilty of any such criminal practices.

The consequence of the want of teeth in the toad was often shown when large worms were given them, which would often creep out of their mouths in spite of the most determined efforts to gobble them. This I never noticed in a frog, who always "made sure of his man" when once he got fairly hold of him. This passing allusion to the frog induces me to add that I also once kept a menagerie of these creatures, which, when compared with toads, both in their slimness and agility, reminded me forcibly of nimble Frenchmen. (Why should Frenchmen be called *crapauds?*) I have often seen two frogs at the same moment seize hold of the opposite ends of a large worm, and swallow each a half until their mouths met; then they would pull and tug against each other with might and main, and at last stand up on their hind legs and wrestle in the most grotesque and ridiculous way imaginable, until at last one of them dragged the poor unhappy worm clean out of the other's stomach; and then, after such a bout, I have seen, *mirabile dictu*, the defeated frog hop up to the other as he was greedily gulping the abstracted moiety of the writhing worm, and snap at him in the ribs with his mouth, *comme un chien*. I used to keep my frogs under a hand-glass, with a moveable top, and I have occasionally turned in two or three of the common white butterfly, which the frogs would jump at and capture from the top of the glass.

There is one other curious fact connected with the natural history of the frog, which is germane to the subject of this communication—frogs shed and swallow their skins like the toad. I never saw the operation; but being once desirous of ascertaining upon what food wild frogs fed, I caught and killed one, and, in turning the stomach inside out under water, I observed, amongst a lot of small snails and insects, a curious filmy body which I could not at first make out; but after shaking it in the water I found, to my astonishment, a bit of it fingered, like a lady's glove, and soon after I discovered the strange thing was neither more nor less than the entire skin of a frog. May I not say of the frog, and if so, is not the inference irresistible, that frogs do shed and swallow their skins like the toads? *William Marshall, Ely.*

Home Correspondence.

Veronica speciosa, var. Kermesima.—I send you a specimen of a very pretty seedling variety of the well known Veronica speciosa, which I think merits the name I have given it. It is perfectly distinct from the parent plant, and the colour is brilliant in the full sunshine. It is growing in my shrubbery border, where, with many others, it has survived the last inclement winter, which it passed uninjured. The recent introduction to the floricultural public, by the Messrs. Henderson, of a hybrid between V. speciosa and Lindleyana, induces me to think that a still more distinct race might be originated between V. speciosa and V. decussata, which blooms freely in this neighbourhood, where it is known as the Botany Bay Myrtle. I have, however, been seeking in vain for a stray flower or two with which to make the experiment, the blooming season being towards the end of May, so that speciosa must be brought on in heat to effect the union. My research led me to measure one plant that came under my notice, and I found it exactly 16 feet in circumference. It is growing in the narrow strip of garden in front of a cottage occupied by a boatman in the Preventive Service, very near the edge of a cliff, but sheltered by the house from the tempestuous south-west gales, which are our chief enemy, and which in the romantic little hamlet of Hope blow with tremendous violence. *A Devonian.* [The variety sent with this was charming, a decided rose-colour having mingled with the violet.]

Polmaised Grapes free from Mildew.—In your last Number there is a woeful account of damage done to Vines by mildew, where some modification of Polmaise heating has been used. It is not so here, where I built a Grapery in the autumn of 1848, 38 feet long and 14 feet wide inside; roof sashes glazed with Hartley's patent rough plate glass, and heated by a modification of Polmaise, by which I obtained a centre pit 24 feet long and 5 feet 6 inches wide inside measure, resting

on the smoke flues, and covering (except at each end) the hot air passages. On April 26th, 1849, I planted nine Vines, then about the size of goose quills—two of Chasselas Musqué, two of Josling's St. Alban's, and five of Black Hamburgh, one to each light. I commenced forcing on 15th March last, and cut well ripened Grapes on the 13th July, when Mr. Knight, of Chelsea, was here and expressed his surprize at the produce, the growth and healthiness of the Vines. I suffered each Vine to bear only 6 bunches, and I caused more than 100 bunches to be taken off before blooming. There now hang about 40 bunches of dead ripe fruit. Besides Grapes I had a splendid early crop of French Beans in the pit, and now most luxuriant and healthy Cucumbers, and hope to have Asparagus in the winter. *John Cox, Clinton House, Weybridge.*

Bursting of the Fruit of Melons.—I grow Melons in a wooden frame in the old-fashioned way, the heat being kept up by repeated linings. The earth is turfy loam about 2 feet deep; I water just sufficient to prevent the plants from flagging under the heat of the sun. The crop this season is fine, but just as the fruit begins to change colour it bursts and rots. To all appearance it is sound, but when you touch it you find it as thin as paper, and in a regular ferment inside, the pulp being in a liquid gruel. The plants are quite healthy. Air is given every day; in short, nothing exceeds the healthy appearance of the plants. What can be the matter? *Zero, Hatfield, Essex.* [We hear of other cases like this. The cause of the fermentation is unknown, but is probably connected with over-watering or unskilful watering.]

The Cuckoo.—I have heard the altered note of the cuckoo, mentioned by your correspondents, frequently I think during the last three or four years. The bird sometimes calls merely "cuck," at other times, "cuck-cuck, cuck-oo." I certainly do not remember to have noticed it before the last three or four years, though I think it very probable that it has been heard and not considered remarkable both by myself and others. The most probable explanation to me appears to be that the bird is disturbed at the moment it commences its call, so as either to be frightened out of its second notes, and thus either leave off or begin again. I certainly heard this double note this year, the first week the bird arrived in this country. Of course the young cuckoo of the year does not call the year of its birth at all; it hardly leaves the nest before its parents are gone. I have this year heard the cuckoo several times very close, say 10 yards, when I have been in the woods, and have heard what I do not see noticed in books, viz., that after the call-note there ensues a loud guttural sound, which appears as though the bird were drawing in air into some receptacle in the throat. Should this inhalation be necessary for the utterance of the perfect sound, then we can easily imagine that a deficient inspiration would cause a defect in the note. *C. R. Bree, Stowmarket.*——I have noticed all the variations of note mentioned by your correspondent every season for the last 50 years. The first 46 years of my life were spent near Bury, where the country is hilly. The last 16 years I have lived here, where the country is low and flat. My occupations lead me, every season, into various parts, both of this county and Cheshire. Now, I find that the cuckoo sings more frequently, longer in the season, and the birds are more numerous, and have a greater variation in their notes, in a hilly district than in a low flat one. It is the same with the skylark. With the blackbird it is just the contrary, in every respect. The thrush (Turdus musicus) sings longer, more frequently, and is more musical in a hilly district, but they are more numerous in a flat one. This bird never leaves here in the winter season. From hilly districts it emigrates in that season. I have heard the cuckoo and the lark sing at midnight in June, in the glens, amongst the hills, north of Bury. *W. Rothwell, Winwick.*——Ten or eleven years ago a cuckoo was heard in this neighbourhood, whose note at the first coming and during the season was "cuck-coo-oo." It was heard by many, and noticed for its peculiarity; the next spring the same note was heard in the same locality, and probably from the same bird. Having removed from this place, I heard no more of it till I returned again; and, in the spring of 1849, I heard the same note again, in the same locality. This spring it has not been heard, from whence I conclude the bird is dead. *Lusor, Bristol.*

Scientific Nomenclature.—I have read with interest your articles on the folly of introducing into all science a foreign nomenclature, taken too from the dead languages. I am an M.A. in the University of Oxford, but I am not acquainted with a single science, because whenever I attempted to learn from the most elementary book I found the terms were conveyed in a language which would require a Greek lexicon and a Latin dictionary, as of old, to translate. Let us have an encyclopedia of all the sciences written in English. Let me learn from your pages where I can teach myself and my children botany and the other sciences in English. Let us have English, the common spoken language, as far as we can. But I have a greater progress in knowledge to propose, the adoption of a universal language, which should do away with a variety of terms for things, and make signification complete to all. The academies of Europe, the Royal Society of England, and the universities should meet for the purpose. Once formed, Government should patronise, commerce should adopt, schools should teach the new language. All books of all languages should be translated into it. All new books would be written in it. Money, measures, weights, characters, and short-hand writing should also be common. It was the idea of Turgot and Condorcet. *A Subscriber, Oxon.*

The Night-blowing Cereus.—Some short time since I witnessed, in the gardens of the Earl of Poulett, at Hinton St. George, a sight which may interest and surprise your readers, viz., 21 blossoms out at once on the Night-blowing Cereus, a number, I should think, unheard of before. Six more blossoms have, at intervals, been out since. Considerable credit is of course due to Mr. Newson, the Earl's gardener, who, from his civility to parties who were kindly permitted to see the plant, I have no doubt would give any information in his power with respect to its culture or habits. *Clericus.*

Answers to the Puzzle.—Is "Anona" the name of the tree? *Amelia Cumming, Cambridge.* — Perhaps Acacia. *Wm. Brownlees, Hemel Hempstead Nursery.* —Is Coffee the name of the tree—thus, Kaw-phy. *J. G.*

Profit of Uniting Bees.—Mine have gone on increasing for the last few years, until I am now compelled to do something with them, having upwards of 30 hives. I have two on White's plan, and this is the first year they have not swarmed; the side boxes are well filled with honey, but contain some brood. I have also two on Saul's principle, both of which have swarmed, and without having given any intimation of their intention to do so. This is a serious objection, and applies to White's also. Unless they are well watched, the swarms are frequently lost. My remaining stock are all in common straw hives, and I prefer them for every reason but that of being compelled to destroy the bees to obtain the honey. I have united a few hives, but imagine the greater part leave the hive again, or are killed by the other bees. I found them no stronger in the spring, neither did they swarm earlier. Is it therefore better to use the match than unite? *Ignoramus.* [The uniting of stocks is all very well as a curious experiment, and to show your mastery of bees, but it is rarely profitable. It is different in the case of second swarms; then the best course is to cause them to return to the parent hive, by throwing them out on a cloth and removing the queen early in the evening of the day on which it swarmed. There is a description of a straw hive, at page 264, of No. 17 of this year's volume, which would suit your views. It would be better to select as many of the best stocks in the common straw hives, the third week in this month, as you wish to have swarms next year, the swarms of which should be hived into hives similar to that described. In selecting, the very light or over-heavy stocks should be those destroyed for their honey. *Y.*]

Potato Disease.—Many of the plants of both early and late Potatoes are very much diseased. The leaves and stems assume a blackened rotten appearance. The tubers themselves are in many instances already affected. *E. C. Nunn, Secretary to the Diss Farmers' Club.*——The disease is making rapid progress in all directions in this neighbourhood. Within these last few days, large patches of the haulm have become quite black, and the tubers are more or less affected; it appears to be equally virulent on dry sandy soil as in the more damp localities. *W. Mountford, The Gardens, Marden-park, Godstone, Surrey, Aug. 5.*——The Potatoes in this neighbourhood (Winchester) and many miles round are in appearance truly miserable—not a green leaf to be seen; a large quantity of the tubers is infected, particularly those which are near the surface. I first, about three weeks ago, saw the appearance of disease in three rows, about 20 yards long, which were planted last September without manure. I never saw it spread with such rapidity before. My Potatoes being full grown I will take them up very carefully, lay them in beds on the ground where I dig them, 3 feet wide and 18 inches high, bringing them to a sharp ridge at the top; cover them with mats at night and on wet or damp days, until they are well dried, but not greened over, nor suffered to lay until they become strong or hot tasted. I will then store them away into a dry close room, where they kept well last year the whole winter—I might say until Potatoes came again. *Subscriber.*——The late Potatoes are magnificent in growth and blossom; but disease has slightly appeared in the early sorts. *A Devonian.*——The Potato disease has made its appearance here (north of Bristol) rather severely, and seems rapidly on the increase; where it has attacked the tubers, they are soft and rotten. A small plot of Axbridge Kidneys was attacked on Friday last with the grey spot in the haulm. I took up some plants and found the tubers quite sound. I immediately had the stalks cut close to the ground, and the earth drawn over. The Potatoes were not fully grown, and I expect will not increase in bulk; but I anticipate they will acquire more firmness, so as to fit them for storing for winter use; when the rows were earthed up, they received a good dressing of salt. *Lusor.*——The disease has reappeared in almost every parish in this quarter of the county, with more or less severity, in proportion as the sets were planted early or late; and I cannot learn that any description of Potato is free from it. Even the Forty-fold, which has hitherto been a fortunate exception, now shares in the general infection. The symptoms first appeared about 10 days ago in the usual manner, that of dark spots on the outer surface of the leaves, the inner appearing mildewy, and within a very short time the haulm became decayed. My Potatoes, the Forty-fold, being planted early, in February, I had hoped were secure; but not so. Immediately on detecting the plague-spots, I cut off all the haulm close to the ground, in order to dry the ridges, which, in consequence of the late heavy rains, were saturated with moisture, and when the earth appeared dry enough, I took the tubers up, as they were perfectly ripe. Out of a dozen sacks, I cannot find a single defective tuber. I am told that I have made a great mistake, and shall suffer for it. Is such your opinion? *H. S. Templer, Cuxham Rectory, Totsworth, Oxon, Aug. 6.* [No; not if the tubers are really ripe.]——The week before last the sky was heavy with clouds charged with electric matter. There was one very heavy shower of rain, and some heavy hailstones mixed with it. There were several peals of thunder occasionally heard, but no regular thunder-storm. The Potatoes immediately began to be affected, in patches here and there through the fields. The plague has not as yet gone to any extent; but, though not so rapid in its effects as in former years, it is as general immediately around me. *Cavan, Ireland, August 5.*—Since I wrote to you last week, the disease has been rapidly increasing in its virulence, and the worst fears with regard to the crop must be entertained. Many persons think that it will be more fatal this year than in any preceding one. People are digging them up, and sending them to the market, where they are sold at 2*d.* per gallon. This will occasion a scarcity hereafter. *W. Watkins, Chichester.*

Societies.

HORTICULTURAL, *Aug. 6.*—Dr. JACKSON in the chair. It was resolved upon ballot that in future the admission fee shall be two guineas instead of six guineas. Among subjects of exhibition, that which excited the most interest was a collection of Hollyhocks in spikes and single blooms from Mr. Chater, of Saffron Walden. The kinds consisted of Attraction, light ground, beautifully veined; Atrosanguinea, dark crimson; Black Prince, one of the darkest of Hollyhocks; Coccinea, bright red; delicata, French white; formosa, claret; Magnum bonum, maroon; Model of Perfection, white; Napoleon, red and buff; purpurea elegans, purple; Queen, blush; rosea grandiflora, pink; improved varieties of rosea alba, Snowball, and Wellington; sulphurea perfecta, sulphur; Comet, ruby red; pulchella, exquisitely formed rose; Mr. C. Baron, delicate salmon; Elegans, blush; and Commander-in-chief; the latter with a flowering spike at least 3 feet in length. The same grower also produced some nice seedlings not yet "sent out," among which was a kind named Walden Gem, certainly an improvement on Comet in point of colour. A Banksian Medal was awarded.—A collection of 24 varieties of Hollyhocks in the shape of single blooms—a bad way of showing them—was also contributed by Mr. Bragg, of Slough.—Mr. Franklin, gr. to Mrs. Lawrence, of Ealing Park, sent an exhibition of Orchids, for which a Banksian Medal was awarded. It consisted of examples of Angræcum caudatum, Cattleya crispa, Oncidium incurvum, Burlingtonia candida, Dendrobium formosum, Aerides quinquevulnera, Miltonia spectabilis, Anguloa uniflora, a species of the genus Eulophia, and one or two other plants. —A Certificate of Merit was awarded to Mr. May, also of Ealing-park, for a well-managed example of Ixora coccinea. — Mr. Spencer, gr. to the Marquis of Lansdowne, at Bowood, sent a long conical Enville-shaped Pine-apple, named Black Prince, a red coloured kind, about which little at present is known. It weighed 11 lbs. 11 oz.; but Mr. Spencer stated that, under better cultivation, this kind of Pine-apple might be expected to produce fruit much heavier than the one sent, which was the production of a small plant, and but imperfectly swelled. It was not cut up, and therefore no opinion of its quality could be formed. A Banksian Medal was awarded it.—Mr. Jones, gr. to Sir J. Guest, Bart., sent five beautifully ripened Ripley Queen Pines with small crowns, the heaviest 6 lbs. 4 oz., and the lightest 5 lbs. ½ oz.; and along with them an ill-formed cockscomb-crowned Providence, weighing 11 lbs. 11 oz. A Knightian Medal was awarded for the Ripley Queens.—H. Judson, Esq., of Brighton, communicated some handsome specimens of his "Richmond Villa Black Hamburgh" Grape, which has been exhibited before; and Mr. Ferguson, of Stowe, fine looking Peaches and Nectarines, for which a Banksian Medal was awarded. They had been ripened without the aid of fire-heat.—A fruit of the much-esteemed Bromham-hall Melon was sent by the raiser, Mr. Bundy, gr. to Lord Dynevor. It weighed 2 lbs. 11 oz. —Mr. Fry, gr. to Mrs. Deal, Lee, Kent, showed a useful contrivance for sulphuring trees, plants, &c. It is on the same principle as Brown's fumigator, and looks not unlike a small-sized fumigator placed on the top of a larger-sized one. It is stated to answer perfectly.—The Society's garden supplied a fine specimen of Aerides quinquevulnera, grown on the cool system; two Oncids, an Epidendrum, Spathoglottis Fortuni, a pretty species nearly always in flower, and one which everybody having a greenhouse can grow; three varieties of Achimenes, Bæckea patula, Æchmea fulgens, the two-spined Arduina, an old-fashioned stove plant, but which succeeds perfectly in a greenhouse; Pelargonium tetragonum, the Cape Ornithogalum conicum, and one or two other plants. The same establishment also furnished fruit of Wilmot's Black Hamburgh Grape, a Bromham-hall Melon, which on being cut up proved excellent; and the following vegetables, Haricot d'Alger, a French Bean possessing no tough lining or other stringiness, and on that account much esteemed on the Continent. It is so tender that it can be eaten three-fourths grown. Its colour (yellowish green), however, may perhaps render it unsuitable to English tastes. Other vegetables consisted of two kinds of Cabbage—

one, the Pomeranian (Chou de poméranie), a firm, long, conical kind, distributed for these two or three years past by the Society to Fellows; the other, a less-known sort, like the Pomeranian in shape, but shorter, and possessing a glaucous hue, like that of Broccoli. Both are handsomely-formed Cabbages, stated to possess excellent qualities, and deserve a trial n every garden.

Entomological, *Aug.* 5.—The President in the chair. The minutes of the last meeting having been read, and some routine business transacted, the President read a letter addressed to him by W. Spence, Esq., F.R.S., on the great loss which science in general, and the Entomological Society in particular, had sustained by the death of the honorary President, the late Rev. W. Kirby, in which the writer touched upon the virtues and scientific acquirements of the deceased, in a spirit which an intimate acquaintance for half a century, and the closest scientific connection, could alone have inspired. On the motion of Mr. Westwood, seconded by Mr. J. F. Stephens, Mr. Spence was requested to allow his letter to be printed in the Transactions of the Society, with a request that he would extend the same so as to include a complete biographical and bibliographical notice of the late honorary President, and would also allow the portrait in his possession to be engraved for the Society's Transactions. As a further mark of respect, no scientific business was transacted, and the Society immediately adjourned. In addition to the various works noticed in our article announcing the decease of Mr. Kirby (June 15, p. 435), we may add (in order to complete the bibliographical list of his labours), his papers on the Hessian fly, and on some remarkable species of Centrotus, in Loudon's "Magazine of Natural History," numerous papers, chiefly on exotic Coleoptera, in the "Zoological Journal," his address to the Zoological Society soon after its establishment, two papers on the tarsi of Coleopterous insects, in the "Philosophical Magazine," and a notice of insects devouring Asbestos, in the same periodical. Mr. Kirby's entomological collections, containing many very rare insects, and the types of all his published species (except those of the Fauna Boreali-Americana, which are in the British Museum collection), were presented by him many years ago to the Entomological Society, with a proviso of their becoming the property of the Linnean Society, in case the former should cease to exist. *J. O. W.*

Botanical, of Edinburgh, *July* 11.—The President in the Chair. Dr. Cleghorn directed attention to the culture of Cotton in Mysore. He read extracts from a letter of Capt. Onslow in reference to the culture of American Cotton at Cuddoor. In spite of an unfavourable season the experiment had proved satisfactory. The seeds were supplied from Dr. Wight's government plantation, at Coimbatore. "The natives pay in kind, and the produce is bought, if they like to sell at the market rates." Dr. C. had given some attention to the momentous question of Indian Cotton culture when traversing the Peninsula in the execution of duty, and felt no difficulty in expressing his opinion that in the extensive Cotton tracts above the Ghats, large quantities of Cotton might be supplied of an improved quality. In the present state of ignorance and poverty amongst the Ryots, it is manifestly unreasonable to expect rapid progress in the agriculture of Hindostan. The aiming at new improvements are so many deviations from the practice of their ancestors, whose footsteps they follow with the utmost devotion and reverence—hence progress must be slow, but it is not imperceptible. The face of the country is much improved in the districts longest under our rule, and where good roads exist, the next essential for developing the Cotton trade is the presence of enterprising inland traders. Dr. C. mentioned that he had examined and compared all the species of Gossypium in the Herbarium of the Botanical Society (comprising the collections of Hamilton Buchanan and Lady Dalhousie, with contributions from Wight, Campbell, &c.), and also those in the Herbarium of Professor Balfour, with a view to expiscate the specific characters by which to discriminate them from one another; he considered the entire series remarkable, as showing the striking differences which soil, climate, and culture produce in species, and which may appear in nature, giving rise to a multiplication of species. The whole group of so-called species seems referable to G. herbaceum, L., G. arboreum, L., G. barbadense, L., and G. acuminatum, Rox. Dr. C. looked anxiously for the work of Dr. Royle, our chief authority, which is expected to contain the fullest information on the entire subject of Indian Cotton and its culture. Dr. C. stated that the approaching Exhibition in 1851 was exciting much interest in India—committees having been formed in the different districts for collecting and forwarding native produce. A notice was read from Mr. Syme on the occurrence of Eleocharis uniglumis, near Blackness Castle, Linlithgowshire. A paper was read on the effects of insects on plants, by Mr. Hardy, Penmanshiel. In this paper Mr. Hardy alluded particularly to the effects produced by Vibrio graminis, a new species, V. Tritici, Cecidomyia salicina, and Rhyncholophus haustor. Dr. Balfour exhibited specimens of Vibrio in Poa pratensis under the microscope. Dr. Balfour gave an account of a botanical trip to Aberdeen. Dr. Cleghorn exhibited a jacket of the Grass-cloth of commerce, manufactured from the fibres of the Bœhmeria nivea of botanists, the Urtica tenacissima of Roxburgh (Fl. Indica, vol. iii., p. 590). The plant is cultivated in Sumatra, where Marsden says, "The shoots are cut down, dried, and beaten, after which the rind is stripped off;" the fibres so obtained are of very great strength and fineness. In Penang it is likewise cultivated; the Malay name in that island is Rami. Specimens sent to the Agricultural and Horticultural Society from Dr. M'Gowan, of Ningpo, were found by Dr. Falconer to correspond exactly with those grown in the Botanic Garden of Calcutta, where it had been introduced from Sumatra in the days of Roxburgh, with a view to obtaining its valuable fibres. Dr. C. stated that the weight of the jacket was five ounces, and that it cost three rupees. The fabric is coming into increasing consumption in S. India, being imported from Singapore and China in narrow webs. It is much esteemed for light clothing during the hottest weather. Dr. Balfour exhibited a series of fibres of the same nature, fine and coarse, from different species of Hemp Nettle. Dr. Balfour read a letter from Dr. Campbell of Demerara, accompanying some seeds of Victoria regia. Dr. C. says, "I enclose in this a dozen seeds of Victoria regia, brought from the Essequibo a few days ago by an itinerant collector, who seems to know their value, as he charges a dollar (*4s. 2d.*) a dozen for them. I am afraid they will not germinate after their voyage across the Atlantic; but this you must bear in mind, if you intend to try the experiment, that the plant will not live in an atmosphere within the influence of the sea breeze, nor grow in soil or water where there is the least saline principle existing. Such at least is the result of experiments tried here. I visited the locality of the plant in the Essequibo, above 100 miles from the sea, in 1846, and it appeared to me a small lagoon, rather than a lake, over which the river flows in the rainy season. It is surrounded on all sides with a dense 'bush' (natural forest), through which we had great difficulty in dragging a small corial (wood-skin boat) in which we embarked on the lagoon, which is a most gloomy spot, the favourite resort of Caymans, where the sun can scarcely penetrate even at noon, and with an atmosphere oppressively damp and hot. So far as I could judge by sounding and examining the stems of the plant, it appears to grow at a depth of 12 or 14 feet, in an oozy, slimy, muddy sort of compound, with which I presume sand must be mixed, for higher up the river there are immense tracts of loose sand in the bed of the river, which must be swept along with the torrent every rainy season." A number of interesting native and exotic plants was exhibited from the Botanic Garden, including a fine set of British Ferns. Mr. G. Lawson showed a specimen of Lathyrus Lissolia, from the Den of Mains, near Dundee, where he believed it was first found last year by some local botanists. Mr. L. thought it probable that the plant was only naturalised; but it was interesting to notice its occurrence so far north, as Mr. Watson in the "Cybele Britannica," vol i., p. 323, gave its northern limit in Derbyshire, doubting its existence at "the glass houses at Dent's Hole, Newcastle, where it grew in the time of Lawson." Mr. C. Murchison exhibited under the microscope a peculiar fungus—Achorion Schœnleini of Bennett, occurring in the crusts of Favus in a patient in the Royal Infirmary.

Meeting at Worton Cottage, *July* 31.—Picotees: Seedling 27, a light-edged rose, must be considered too thin; Alfred, heavy-edged purple; this bloom has been handed to the artist for figuring, we need say no more for its first-rate qualities. There can be no doubt that this variety will be found at the head of its class, and will form a fitting comparison to the heavy-edged red of Mr. Norman, named Mrs. Norman, a flower which is also in Mr. Andrews' hands. Mr. Edwards produced a nice collection of Carnations and Picotees, and a promising Dahlia, yellow with white tip.

August 7.—Eschscholtzia: "J. E., Cheltenham." A desirable flower, worthy of cultivation, being a creamy white; it will form a pleasing contrast when bedded with the old yellow variety. Fuchsias: "W. H. Story." Your Prince Arthur is an extraordinary flower, and if it is a free bloomer will be found in all collections, whether on the stage or at exhibitions. The tube and sepals crimson; the latter reflex well, showing to great advantage a most unusually full dark purple corolla, something similar to a large double Violet. The four blooms now sent are very superior to the one received on July 17, which by no means fairly represented this singular production.—10-40. If this flower reflexes well it will display to advantage the beautiful bluish violet corolla, well contrasting with the scarlet tube and sepals. Carnation: "R. J. K." We wish your flower had been at the great trial exhibition at Derby, where all our best judges of Carnations and Picotees are gone this day. Perhaps you will send another flower, for to us it appears very good.

Reviews.

An Introduction to Conchology; or Elements of the Natural History of Molluscous Animals. By G. Johnston, M.D. 8vo, pp. 614, with numerous woodcuts. Van Voorst.

The utility of this volume is indisputable. It fills a void that all English students of natural history must have felt to be extremely inconvenient. Dr. Johnston's practical acquaintance with mollusks, and the diligence with which his researches are known to have been conducted, are a guarantee that whatever he writes will have sterling value. His book, then, is a good one, and deserving a place among the many useful publications which we owe to the enterprise of Mr. Van Voorst.

But it has a serious fault. We are told that it was suggested by a perusal of Kirby and Spence's "Introduction to Entomology," but the author has been unfortunate in his imitation of that admirable book. The charm of "Kirby and Spence" consists not alone in its varied learning, its skilful selection of facts, and the happy manner in which they are brought before the reader, but in the pure and simple English in which it is written. It was as welcome to the most unlearned student as to the professed entomologist, and as intelligible. Not a term of science was *needlessly* paraded; but the pure technicalities, and many there must of necessity be in all sciences, were assigned a separate place, where they might be studied without interference with the popular narrative. Latin terms, like arenacolous, saxicavous, pedunculated, hydrophanous, pulmoniferous, branchiferous, and the like, were put into English, and so made intelligible to the commonest apprehension. We are the more surprised to find these pedantries in Dr. Johnston's pages, because he in many instances shows a great anxiety to avoid them. It is, therefore, to be hoped that in the next edition of his work he will strike them out with a relentless hand.

As a fair example of the style of the volume we select the two following extracts:

Medical Uses of Slugs, &c.—"Discarded from the service of the physician, a few Mollusca have found a resting-place in the 'Materia Medica' of the common people, who inherit to the full their wise ancestors' faith in their virtues, which are enhanced by some superstitious traditions and observances. Slugs and snails were anciently, and are to this day, a popular remedy in consumptive complaints. They are sometimes made into a mucilaginous broth, sometimes swallowed in a raw state, and sometimes the shell is pricked through with a large pin to enable the patient to suck the oozing liquor. You may see considerable quantities of of Helix pomatia and aspersa sold in Covent-garden market for this purpose; and still greater quantities are sold in all the large continental cities. In the Isle of Bourbon, the Navicella elliptica is commonly used to make a soup for the sick; and in the same and adjacent islands the animal of Melania amurula, which is very bitter, passes for an excellent remedy in the dropsy. The 'piedra de las ojos,' which are merely worn fragments of shells, are considered in some parts of South America as the most extraordinary production of their coasts, being, in the philosophy of the natives, both a stone and an animal. These fragments are from one to four lines in diameter, with a plain and a convex surface, and when excited by Lemon juice move in proportion as the carbonic acid is disengaged. Placed in the eye, the pretended animal turns on itself, and expels every other foreign substance that may have been accidentally introduced. At the salt works of Araya, and at the village of Maniquares, they were offered to Humboldt and his fellow traveller by hundreds, and the natives were not only earnest to show them the experiment of the Lemon juice, but wished to put sand into their eyes that they might themselves try the efficacy of the remedy. The same custom and superstition is said to prevail in Guernsey; and in the olden time did prevail in the Highlands of Scotland. The Rev. John Frazer, writing of the year 1702, says: 'Snail-stones are much commended for the eyes; and I'm confident their cooling vertue is prevalent against pains bred by a hott cause: their origine is thus, some excrementitious parts avoided by these creatures, condensed by the circumjacent air, and turned to a round figure by the frequent turning; but this is observable, that some of them, speciallye snaile-stones, has the exact figure of the snail.' But what are all these to the use which the pretty maidens of merry England and of Ireland apply the snail in a May morning, when, in the meanders of the slime-tracked creature they decypher—may neither eye nor fate deceive them!—the initial of the one-loved name!

'Last May-day fair I searched to find a snail,
That might my secret lover's name reveal.
Upon a Gooseberry bush a snail I found,
For always snails near sweetest fruit abound.
I seized the vermin, home I quickly sped,
And on the hearth the milk-white embers spread.
Slow crawl'd the snail; and, if I right can spell,
In the soft ashes mark'd a curious L.
Oh! may this wondrous omen lucky prove!
For L is found in Lubberkin and Love.' Gay.

"And, in my younger days, I remember the country school-boy, while strolling, with satchel on his back, from his hamlet to the neighbouring village, would stay to solicit, by doggerel rhymes, the black slug (Arion ater), to protrude its horns; and, having seized them according to the prescribed rules, would go on his way with a gayer heart and elevated hopes."

Gigantic Size of some Mollusks.—"That the cephalopods have size and strength enough for the truculent deeds ascribed to them may be admitted, but the will and the necessary agility is wanting. Mr. Pennant, in reference to the Octupus vulgaris, says, 'A friend of mine, long resident among the Indian isles, and a diligent observer of nature, informed me that the natives affirm that some have been seen two fathoms broad over their centre, and each arm nine fathoms long.' 'The natives of the Polynesian Islands, who dive for shell fish,' I can tell you, on the authority of Mr. Owen, 'have a well-founded dread and abhorrence' of the Onychoteuthis; and, considering its size and formidable armature, one cannot feel surprised that their fears should have exaggerated its destructive attributes. The celebrated diver, Pescecola, whom the Emperor Frederic II. employed to descend into the Straits of Messina, saw there, with horror, enormous cuttle-fish

attached to the rocks, the arms of which, being several yards long, were more than sufficient to strangle a man. Mrs. Graham speaks of having seen a species the arms of which were 18 feet in length; and Sander-Rang met at sea with a kind of Octopus, with short arms, as big as a wine cask; hence this excellent naturalist is induced almost to believe that the stories of the kraken, and other gigantic cephalopods, are only a little exaggerated and emblazoned."

As usual in the books published by Mr. Van Voorst, this volume abounds in beautiful woodcuts.

Garden Memoranda.

Messrs. Knight and Perry's Nursery, King's Road, Chelsea.—Entering by a long greenhouse, now gay with Balsams and the usual summer occupants of such structures, the visitor suddenly finds himself in a lofty conservatory, furnished in the centre with a fountain, and containing some fine old specimen plants in tubs, as well as some of the rarer New Holland introductions. Greenhouse and bedding plants, including all the new French Verbenas, are arranged in groups in front of this conservatory in an open area surrounded by houses, and placed so as to form clumps of various figures intersected by walks. The surface on which they stand is made of coal ashes, and in order to break the uniformity which would otherwise prevail, standard sweet Bays, with round compact handsome heads and clean straight stems, are introduced amongst them. These are in tubs, and if they were placed by the sides of terrace walks, or in other suitable situations, might easily be mistaken for Orange trees. Dwarf Rhododendrons, and other evergreen shrubs, form a boundary to this miniature garden, which has altogether a very ornamental appearance. In a greenhouse containing the better kinds of American and Italian Camellias, selected when in flower, we noticed a Malva with a bluish lilac flower, nearly as handsome as that of an Ipomœa. It was raised from imported seed. In another greenhouse contiguous to this one was a white "Camellia Balsam," with large regularly formed flowers quite 2 inches across. These Camellia Balsams are larger than the common Balsam; they are of various colours, and are stated to be of continental origin. Messrs. Knight and Perry had them from M. Vilmorin, of Paris. A plant of the new Passion-flower (P. Belottii) occupied a rafter of this house, which also contained a fine specimen of the extremely handsome New Zealand tree Fern (Dicksonia squarrosa), and a supposed new Barbacenia, with brilliant deep crimson flowers, larger and more beautiful than those of B. sanguinea. Clerodendron splendens was in flower on the rafters of the Orchid house, and on the roof of another stove the universal favourite Stephanotis floribunda has this season produced bushels of its snowy, sweet-scented blossoms. Poinciana Gillesii has bloomed here against a south-west wall. Its clusters of yellow flowers, with long red stamens, are very handsome. About the centre of the nursery is a nice little stove aquarium, in which was the Victoria Regia, growing admirably and nearly filling the tank. Associated with it were the white, red, and blue Water-Lilies, Nelumbiums, and other aquatics all in robust health, more especially the Nelumbiums, some of whose leaves measure 30 inches across. Nymphæa rubra and dentata are flowering beautifully. Conifers, of which Messrs. Knight and Perry have an extensive collection, are arranged on either side of the main walk, in company with different kinds of Oaks and other ornamental and useful trees. The borders are filled with herbaceous plants, which we are glad to find coming more into fashion than they have been. Amongst them we remarked some of the newer kinds of Potentillas and Larkspurs. Dielytra spectabilis has proved perfectly hardy here. The walls are covered with nicely trained young Peach, Apricot, and other fruit trees, all numbered on leaden labels to correspond with the numbers of the Horticultural Society's Catalogue, while the synonyms are represented by the letters of the alphabet. Under this system a confused nomenclature can hardly take place, and the plan is worthy of more general adoption.

Miscellaneous.

Death of Delile.—We observe in the French journals the announcement of the decease of M. Raffeneau Delile, a celebrated botanist, who accompanied the scientific expedition of Bonaparté into Egypt, and afterwards published an account of the plants observed on that occasion. Neither date nor place are mentioned in connection with this event.

American Mode of Preventing Potato Rot.—Heat in a moist atmosphere increased the destruction, and samples which had been cooled, and thereby partly protected, readily passed through all the changes when again exposed to warm and humid air. After using several substances by direct contact with diseased parts of Potatoes, I soon found that the mixture of sulphurous acid, nitrogen and common air, such as exists when sulphur is burnt in closed vessels, would prevent the further progress of the disease, in tubers already affected, and when exposed in contact with tubers, passing through all stages of the disease, no further change in the prepared ones was induced. The trials were varied, and the uniformity of the results has led me to conclude, that the fumes of burning sulphur, flowing in contact with Potatoes partly diseased, will arrest the further progress of the disease and prevent decay. It is proper that this conclusion should be received as an expression of fact, under the circumstances of experiments on a small scale, and with no more than two varieties of Potatoes; but I confidently expect that the importance of the application will be seen in the largest exhibition of its effects. The practical use of the sulphurous acid gas is very simple, and not expensive. Crude sulphur inflamed in a shallow cast-iron vessel, or an earthen pot, furnishes the fumes which may be led by wooden pipes to the lower part of bins filled with the roots, until the unoccupied space is filled with them. As the fumes cool they become heavier than air, and will then enter every interstice. By placing the pot of burning sulphur in an empty barrel, and inverting over it a barrel filled with Potatoes, having a light rack in place of a head, the fumes will slowly rise within and impregnate the mass; the barrel and contents being then removed, and the head replaced, the exposure may be considered as ample. Where the quantity is large, it would be more economical to leave a space vacant below the loose floor on which they repose, and introduce these fumes until every part of the heap of Potatoes has received a share. It should be remembered that this application will injure, if not destroy the vegetating power of the tubers, and that although this result may be highly desirable for all that are preserved for food, those intended for seed should not be so treated. *Dr. Hayes, in Hovey's Magazine of Horticulture.*

Hardy Herbaceous Plants.—The system of filling a whole bed with plants of one sort, which is now so much practised, has had the effect of withdrawing attention, in a great measure, from this very interesting class of flowers; and yet upon these the beauty of our flower-gardens mainly depended only a few years ago. Some of the kinds which bloom first in spring have already been noticed, and we shall now mention a few other desirable species, with the view of recalling them to recollection. It may be premised that the plants in the following list are unsuitable for planting in masses; their proper place is in those beds of mixed flowers which are still occasionally seen bordering the principal walks, or placed here and there in conspicuous situations, in some pleasure-grounds. One advantage attached to this class of plants is, the small amount of skill or of labour required in their cultivation. Once planted in suitable soil, that is, common garden-ground, moderately enriched with manure, many of them will grow and bloom for years, with little care beyond the thinning and tying of the stems, and an occasional reduction of size when the root-stock has become over-grown. But there are some species which demand a little more attention in return for the gratification they give us, and one of these is Lychnis fulgens, the roots of which frequently perish when exposed to wet and cold during winter; it is therefore necessary to raise young plants from seed every spring, when this species is treated as an ordinary herbaceous plant; but its splendid scarlet colour entitles it to be cultivated in pots, in the same way as the better-known L. coronata. In height it seldom exceeds 1½ or 2 feet, and as it does produce numerous flower-stems, a better effect would be obtained by setting three or four plants in a patch. The doubled-flowered variety of the common scarlet Lychnis (L. chalcedonica) is now seldom seen, although very handsome; so likewise is the double clammy Lychnis (L. viscaria), and the double Cuckoo-flower (L. Flosculi). The genus Delphinium (Larkspur) contains many showy species, among which azureum (light blue), mesoleucum (dark blue, with white centre), and elatum (dark blue), are suitable for the middle of large clumps or the back part of borders, as they all grow 5 to 6 feet high. Of the shorter species, grandiflorum is one of the handsomest, and when propagated from seed several varieties may be obtained, varying in colour between dark blue and white; and occasionally a plant having double blossoms will appear among the seedlings. The beautiful double kind commonly known as grandiflorum appears to belong to a different species. Another taller-growing double sort is called Barlowii, and this also is very handsome. All these are usually in bloom about Midsummer. Several of the herbaceous Ranunculuses have varieties with double flowers, which are very desirable things. One with bright yellow button-like blossoms is probably a variety of Ranunculus acris; this grows about 2 feet high, and is in the height of its beauty in June. Another having very pretty white flowers is rather dwarfer in habit; this by some botanists is referred to R. aconitifolius. Allied to these is Caltha palustris, a marsh-plant with large yellow flowers, of which a double variety, very suitable for moist places, is sometimes seen in gardens. The common Columbine is well known, and some of its varieties are equal in beauty to many flowers of far greater pretensions; but all are eclipsed by the handsome blue and white Aquilegia glandulosa, a species which ought to be in every flower-garden. As a spurious sort is sometimes substituted, it may be as well to intimate that the true kind has been advertised in the *Gardeners' Chronicle*. In the genus Campanula there are so many fine things that it is difficult to make a selection. Among the most desirable, however, will be found Persicifolia, of which there are double and single varieties, both with white and with blue flowers; the double white Throatwort (C. trachilium), and the double white glomerata, all of which grow from 2 to 3 feet high. Taller kinds are grandis (blue), lactiflora (milky white), and pyramidalis (both white and blue varieties); and of very dwarf sorts there are pulla (dark blue), pumila (both blue and white), garganica (blue), and fragilis (blue). A biennial species called the Canterbury Bell (C. medium) is also very ornamental. Seeds of this sown about Midsummer will furnish flowering plants for the following season, and amongst them there will probably be different shades of blue as well as white flowers. C. nobilis will be grown as a novelty rather than for effect, its large pendulous purplish flowers being too dull to be showy. Wahlenbergia (formerly Campanula) grandiflora is a beautiful thing, but very scarce; and Symphiandra pendula, another campanulaceous plant, with white blossoms and a dwarf, drooping habit, deserves cultivation. Pentstemons are all pretty, but unfortunately the best of them are the most tender. Scouleri, venustus, glandulosus, ovatus, and speciosus, have handsome blue flowers, especially the latter, which however, is so delicate, that, to have it in perfection, seedling plants should be grown in pots through the winter, and turned out in spring; treated thus, it makes a splendid bed. Campanulatus and atropurpureus differ chiefly in the colour of their dull purple flowers, the latter being the darkest. Digitalis is more robust, growing upwards of 3 feet high in good soil, and has white flowers. Hesperis matronalis (the Rocket) has two double varieties, one with white, and the other with purple flowers, which ought to be cultivated extensively, especially the white one. Being short-lived plants, a young stock must be kept up by putting in cuttings about Midsummer, after the bloom is over. Hedysarum coronarium (the French Honeysuckle) is one of the most showy of Papilionaceous plants, its deep-red flowers being produced in profusion in June and July. It is a biennial; therefore seed must be sown every year. Catananche cærulea and C. bicolor, the first blue, and the second blue and white, are showy things, their scaly flowers bearing some resemblance to those of the Everlastings. These should be raised from seeds every spring, and treated as biennials. The common Everlasting Pea (Lathyrus latifolius), as well as its white variety, are very ornamental towards the end of summer, when carelessly trained upon a few rough sticks; so likewise is L. grandiflorus. Ononis rotundifolia is an exceedingly pretty thing, with its pale Rose-coloured flowers and low bushy habit; and yet it is seldom seen, probably because it is short-lived, and therefore requires to be frequently renewed from seed. Liatris spicata, scariosa, and elegans produce their spikes of bluish flowers towards the end of summer and beginning of autumn, and are singular as well as pretty. Dictamnus fraxinella is a good old plant now neglected, perhaps because its flowers are not gaudy; and yet there is sufficient character about the plant to make it very interesting. This species is red; and there is another with white flowers, which apppears to differ from it in little but colour. Of the perennial Lupins, polyphyllus is undoubtedly the handsomest, including, however, its white variety. Grandifolius has flowers of a singular dark dull blue, and ornatus is pale blue. By preventing the growth of seed-pods, the flowering season of these plants may be much prolonged. The Aster, in some form or other, is seen in most gardens, especially the tall late-flowering kinds commonly called Michaelmas Daisies; there are, however, several species of lower growth, which ought never to be excluded from herbaceous beds; and of these amellus, spectabilis, sibiricus, and alpinus, have large showy blue flowers; while the smaller blossoms of hyssopifolius and elegans are produced in such profusion that they equal the best in effect. Numberless others, equally fine, might be added to the above list, if space permitted; these, however, will serve to form the nucleus of a good selection. *J. B. Whiting, in Beck's Florist and Garden Miscellany.*

Monstrous Flowers of Pelargoniums.—The following extract from a paper read by Mr. Sowerby at the Conversazione Meeting of the Royal Botanic Society, in the Regent's Park, describes an interesting case of monstrosity. After pointing out the distinguishing characters of the genera Geranium and Pelargonium, Mr. Sowerby proceeded to say, "The gardener, as in this case, when he finds nothing but external beauty to recommend a plant, endeavours, by selecting the most perfect, and then cultivating it highly, to increase in the succeeding both the beauty of colour and of form; and as the beauty of form depends on the same elements as that of colour, that is, as before explained, upon the indication of perfect adaptation to the end, or the resemblance of that indication, so a full round form is especially aimed at by the cultivator of flowers, and the Pelargonium fancier endeavours to obtain five broad and equal petals, to form a round flower, with the upper two deeply and brilliantly coloured, to produce a contrast to the three lower and light-coloured ones; but with all his care the flowers do not come constant, and now and then one will play the truant, and sport as he calls it, and this commonly happens among the most petted or highest cultivated varieties. When the dark colour disappears from the upper petals altogether, and the petals become equal in size and form, it will be observed that the characteristic tubular nectary also disappears. The want of the nectary or honey tube is also accompanied by a regular arrangement of five anther-bearing and five abortive filaments. The white varieties are less liable to this change than those with rose or salmon-coloured petals, and it is also rare among the new fancy varieties; frequently it occurs in the central flower of the truss. In some flowers the nectary is also shortened, and in others a small spot will remain on one petal when the nectary is absent. In the fancy variety called Yeatmannianum grandiflorum, which has spots on all the petals, the spots become equal, the two large spots being reduced. An additional petal also accompanies the change in a few cases. One plant of the

Beauty of Clapham, a rose-coloured variety, has almost every flower changed more or less. Thus it appears that cultivation makes one species of plant appear to run into another, and may destroy a remarkable generic character, consisting of the presence of an important organ in the flower, &c. Thus the gardener seems by over-cultivation to reduce his flower to a lower standard, but I do not think this is exactly the case; for though he may apparently reduce a Cape Pelargonium to a European Geranium in the eye of a botanist, or partly so, still he would have a more truly beautiful flower if he could obtain a full truss of beautiful large rose-coloured or pink flowers; we would recommend a trial of the seed from these sporting flowers." *Magazine of Natural History.*

Vegetation of Bhotan.—On the rocky dry eminences Pinus longifolia grew, and on the flats the beautiful Cycas pectinata, with a stem about 10 feet high, and a tuft of foliage like that of C. revoluta. Many Scitamineæ, but especially Curcuma, were springing up, and the character of the vegetation was altogether that of the Terai. The contrast of the tropical Cycas and Scotch-looking Pine was most wonderful. Much of the forest had been burnt, and we traversed great blackened patches, where the heat was terrific, and increased by the prostrate and still-burning trunks of great trees, which smoulder for months, and leave a heap of white ashes. The larger timber, being hollow in the centre, a current of air is produced, that eats away all the circumference, the sides fall in over the burning centre, and all is consumed. You are often startled, when walking in the forest, by the hot blast proceeding from such trunks, which are approached without suspicion of their being other than cold dead trunks. *Dr. Hooker, in Hooker's Journal of Botany.*

Artificial Production of Diamonds.—The Paris correspondent of the *Atlas* makes the following announcement:—"The scientific world has been in a state of commotion for some time, in consequence of the publication of the discovery of the long-sought-for secret of the fusion and crystallisation of carbon. The Sorbonne has been crowded for the last few days to behold the result of this discovery in the shape of a tolerably-sized diamond of great lustre, which M. Despretz, the happy discoverer, submits to the examination of every chemist or *savant* who chooses to visit him. He declares that so long ago as last autumn he had succeeded in producing the diamond, but in such minute particles as to be visible only through the microscope, and fearful of raising irony and suspicion, he had kept the secret, until, by dint of repeated experiments and great labour, he had completed the one he now offers to public view. Four solar lenses of immense power, aided by the tremendous galvanic pile of the Sorbonne, have been the means of producing the result now before us. M. Despretz holds himself ready to display the experiment whenever it may be required. The diamond produced is of the quality known in the East as the black diamond, one single specimen of which was sold by Prince Rostoff to the late Duke of York for the enormous sum of 12,000*l.*!" *Chemical Gazette.*

Calendar of Operations.

(For the ensuing week.)

PLANT DEPARTMENT.

As in spring a progressive increase of heat and moisture, to keep pace with the advancing season, was the course pursued, so now an opposite or retrogressive one must be adopted. The healthy state of plants during their winter or season of rest, and the amount of accumulated energy for a new year's growth, depends very much on their management during the autumn. They must be gradually hardened by exposing them to an increased circulation of air and lower temperature, admitting all the light possible. We have frequently urged the necessity of thoroughly watering plants when they need it, in preference to giving a little and often, according to the too common practice. Let it be the rule, then, only to give water when it is required, and then to give plenty. These remarks apply more particularly to hard-wooded plants, which, to ripen their growth, require a longer season than those of a more herbaceous character, which will continue to grow and flower some time longer. Remember the value of liquid manure for plants which are flowering freely, and others which it is desirable to invigorate to the utmost. We have scarcely a more beautiful or more elegant plant for conservatory decoration in April and May than the Schizanthus; for this purpose the seeds should now be sown, and at the same time the different species of Lisianthus for next autumn's display. Neapolitan and tree Violets should now be lifted, and potted in 4 or 5-inch pots for winter flowering. As this is a flower which everybody loves, nothing can be more acceptable at that comparatively flowerless season.

FORCING DEPARTMENT.

PEACH-HOUSES.—As soon as the crop is entirely removed, any of the trees which exhibit too gross a tendency in their tops should be partially root pruned by forking down at a safe distance of from 2 to 3 feet, according to the age of the tree, and shortening some of the strongest roots. Any tree which is very gross should be carefully undermined, to ascertain if any roots have descended into the subsoil. If such is found to be the case, they should, of course, be cut away; and to prevent a recurrence of the same, the tree should be lifted out entirely, and the bottom of the border made impervious by means of concrete. The trees should be frequently examined, to prevent the establishment of scale, red spider, or other insects. It is sometimes difficult to eradicate these pests entirely, but perseverance will do much. MELONS.—Keep up a good bottom heat, or shanking and canker will be a natural consequence. We are very careful that the proper temperature is maintained, and by this means disease is avoided amongst the latest crops. Keep the plants sufficiently thin, to allow the air to circulate freely amongst the leaves, and to act upon the surface of the soil. Thin the weak shoots, and let all the fruits be properly supported upon some hard dry substance.

FLOWER GARDEN AND SHRUBBERIES.

The roots of the Iris, Narcissus, Lilies, and other spring-flowering bulbs, with few exceptions, succeed best if not taken up too often; and, except for the purpose of dividing them to increase the stock, or to plant them in a new situation, they had better remain undisturbed. When any are taken up for the above purposes, they should be replanted again as soon as possible, as they remain a very short time in a dormant state before they begin to form new roots, that they may firmly establish themselves before winter. These are all deep-rooting plants, and require that the beds should be deeply trenched. The manure should be placed in the bottom of the trench, to encourage the downward progress of the roots, and thereby make them more independent during the scorching months of June and July. The Tiger-Lily is very ornamental at this season; it is very showy when planted in straight lines, or amongst the promiscuous masses of large clumps. In the axils of the leaves, if the plants are now examined, small bulbs will be found, which should be carefully collected and planted, about an inch asunder, in boxes of light soil. Many annuals and perennials have now ripened their seed, which should be gathered immediately in fine dry weather, and spread out in a cool airy shed.

FLORISTS' FLOWERS.

Take the first opportunity of making a bed to put out Pansies for the winter and spring stock; let it be tolerably rich, and after a thorough examination for wireworms, plant it. Should the weather prove hot and dry, hoop it over, and cover with mats or calico, watering them as they require it. After they have taken root, the covering may be removed the first wet day. AURICULAS will now begin to require a little more attention; stout offsets, which have stood two, three, or four round the side of a pot, may be repotted singly in properly prepared compost. Attend to watering in dry weather, and keep down the aphis, as before recommended. CARNATIONS AND PICOTEES.—Layer as fast as possible; it is not advisable to propagate run flowers, though there are often selfs of various colours in beds of seedlings, which it is advisable to save for border flowers. As the petals wither, feel the pods, and if they give evidence of swelling for seed pull out the petals, as they often contract damp, and destroy the capsule. Thin Dahlias that require it, and carefully remove all "cross-eyed" or semi-double flowers.

FRUIT GARDEN.

It will be well to examine the state of the soil about the roots of Peaches, Apricots, and Figs, on the open walls, and especially of those which carry a crop of fruit; in many cases the ground will be found very dry, particularly where overhanging copings are in use; and unless watered the trees will soon show evidence of the neglect, by casting some of their fruit, or by their diminutive size and absence of flavour. Let the earlier varieties of Pears and Apples be carefully gathered as they ripen. Means must now be taken to preserve the wall fruit from the ravages of wasps, flies, &c., either by covering the fruit with some material to exclude these pests, or by entrapping the latter with something more attractive and more come-at-able than the tough-skinned fruit. The latter mode of dealing with the enemy is preferable, as by covering the fruit with any opaque material it is screened from the sun, and thus deteriorated both in appearance and quality.

KITCHEN GARDEN.

If our advice relative to the making of new Strawberry-beds very early in the season has been attended to, a portion of the old ones may be destroyed. Such ground, having been several years almost undisturbed, should be deeply trenched, dunged according to its requirements, and planted or sown with some useful winter or spring crop. Tripoli Onions for future transplanting should now be sown, and Endive for a late crop. Continue to make successional sowings of Cos Lettuce, and make the first sowing of Hammersmith Cabbage Lettuce to transplant into warm borders for late autumn use. The last sowing of early Stone and white Globe Turnips should be made this week. A considerable share of attention should now be directed towards securing an adequate supply of salads and other small matters for winter use. Chicory is one invaluable plant of which there should be no scarcity; and as it will do in spare nooks or corners, there need not be any difficulty made about want of room.

State of the Weather near London, for the week ending Aug. 8, 1850, as observed at the Horticultural Garden, Chiswick.

August.	Moon's Age.	Barometer.		Temperature. Of the Air.			Of the Earth.		Wind.	Rain.
		Max.	Min.	Max.	Min.	Mean	1 foot deep.	2 feet deep.		
Friday.. 2	24	30.096	30.028	69	55	62.0	63	62	S.W.	.00
Satur... 3	25	30.046	29.980	72	53	66.0	63	62	E	.00
Sunday . 4	26	29.941	29.812	77	52	64.5	63	62	S.W.	.00
Monday 5	27	29.750	29.659	82	56	69.0	64	62½	S.W.	.02
Tues. .. 6	28	29.733	29.722	74	49	61 5	65	63	N.E.	.00
Wed. .. 7	●	29.871	29.863	77	58	67.5	65	63½	S.W.	.08
Thurs.... 8	1	29.733	29.659	75	51	63.0	65	63½	S.W.	.02
Average....		29.881	29.817	76.1	53.4	64.8	64	62.6		.12

Aug. 2—Densely overcast; slight haze; clear at night.
— 3—Uniformly overcast; fine; clear.
— 4—Fine; bright sunshine occasionally; cloudy.
— 5—Very fine; cloudy.
— 6—Very fine; cloudy.
— 7—Very fine; cloudy; rain at night.
— 8—Overcast; cloudy; showery; lightning at night.

Mean temperature of the week, 2 deg. above the average.

State of the Weather at Chiswick during the last 24 years, for the ensuing week, ending August 17, 1850.

August.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds. N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 11	75.0	51.8	63.4	12	0.34 in.	1	—	2	—	3	11	6	1
Mon. 12	74.9	51.5	63.2	10	0.21	2	1	1	—	4	7	5	4
Tues 13	72.5	50.4	61.4	11	1.14	—	2	2	2	3	10	2	3
Wed. 14	72.0	50.9	61.4	7	0.61	—	5	5	1	2	6	4	1
Thurs. 15	73.0	51.1	62.1	11	0.61	1	3	4	1	3	5	2	5
Friday 16	73.2	52.1	62 6	9	0.58	—	1	2	1	3	7	7	3
Satur. 17	73.3	51.4	62.3	13	0.54	2	1	1	1	4	5	6	2

The highest temperature during the above period occurred on the 11th, 1835, and 15th, 1842—therm. 92 deg.; and the lowest on the 13th, 1839—therm. 32 deg.

Notices to Correspondents.

ANTS: *D S.* See p. 293 of the current year's volume.‡

BERBERIS AQUIFOLIUM: *Sub.* The berries make a good preserve in the shape of a jam.‡

CESSPOOL MUD: *Sub.* Mix it with leaves, lawn sweepings, weeds, and such rubbish, and leave it in a heap till autumn.

ELM: *W F P.* We see no merit in it; it is an ugly variety of an ugly form of Elm. Do not propagate it. The idle fancy for such trifling things is gone off, now that selections have taken the place of collections.

ILLEGIBLE WRITING: *A Constant Reader* would be greatly obliged to any one who can give her a method of restoring writing on parchment labels. Did she ever try the experiment of steeping the labels in a weak solution of sulphate of iron?

INSECTS: *Sub, Bucks.* If you will favour us with some of the insects to which your letter refers, we may then be able to assist you.‡—*R M.* The insects upon the Oats are a species of plant louse (Aphis Avenæ) which will doubtless be dispersed by the change of the weather. Are they found at the roots as well as on the stems or grains, or are there not two different kinds? *W.*—*C R.* See the last answer, and please to inform us what parts of the plants are attacked. *W.*—*J W.* The larvæ sent have the cuticle on one side gnawed off by the larvæ or slimy grubs of the saw-fly (Selandria Æthiops); lime, and lime-water are the best remedies for their destruction. *W.*—*A M S.* The larger fly is a species of Stomoxys, which had seized a small Tachena to suck it for food. *W.*

MELONS: *W H.* Your description applies to the Cabul Melons. Do not you know that Peshawur and Jellalabad are towns on the line of march to the city of Cabul?

NAMES OF PLANTS: *J S W, Great Marlow.* A charming thing, but no novelty. The name of Amaryllis natalensis is merely a nursery name. The plant is the old and well known Crinum revolutum.—*E M.* 1, Sempervivum villosum; 2, Sedum dasyphyllum.—*Ignoramus.* They are the eggs of an insect.—*H G L.* Stanhopea graveolens, Oncidium sanguineum, and some uninteresting Oxalis, which cannot be ascertained from such a fragment.—*H R J. A*, Veratrum nigrum; *B*, Asclepias syriaca; *C*, Astrantia major; *D*, Funkia cærulea; *E*, Monarda didyma.—*J P.* 8, Rudbeckia digitata; 7, indeterminable; 5, Eutoca viscida; 10, Nemophila punctata; 9, Campanula Loreyi; 1, Zinnia elegans; 2, Phlox Drummondi; 3, Verbascum, perhaps phœniceum; 4, Godetia purpurea; 6, Linaria triphylla. Wretched specimens in a wretched mess; they should have been laid flat between paper, not twisted up. Would it not have been better to have taken care of the names by which these common things were received?—*F D H.* Calosanthes is a name given by Dr. Blume to the Bignonia indica of Linnæus. The seed you have sent belongs to it.—*E M.* Apparently a fragment of Sedum album.—*F L.* Agrostis alba and Triticum junceum. —*W P.* Sedum glaucum, and Gnaphalium germanicum.—*E S.* Spiræa ariæfolia.—*D W P.* 1, Anemidictyon phyllitidis; 2, Pteris tremula; 3, Adiantum trapeziforme; 4, Goniophlebium meniscifolium; 5, Lastrea chrysoloba; 6, Adiantum cuneatum; 7, Pteris serrulata; 8, Adiantum pubescens; 9, Athyrium sp.? bad specimen sent; 10, Diplazium Shepherdii; 11, Pteris crenata; 12, Cassebeera pedata. *S.*—*C Rae.* Vanda tricolor and Aspasia lunata.

ONION DISEASE: *W W.* We will reply to this inquiry hereafter.

PEACH TREES: *W H.* Nothing but personal examination of the ground can explain the difference in the health of the trees. The curl is caused by cold acting on soft tissue, and is aggravated by the aphis which follows it. Yews and Ivy *cannot* produce it. Syringe, syringe, syringe, and you will get rid of the aphids.

PLANTATIONS: *H R M.* You must not expect flowers under trees, except in a limited degree. Plant Lilies of the Valley, Primroses, Cowslips, and wild Hyacinths, with plants of Periwinkle, Privet, and the larger Tutsan (Hypericum calycinum). As bushes, without flowers, you may have Cherry Laurels, Phillyreas, Hollies, Alaternus, Yews, and Ivy. We cannot undertake to name plants not in flower.

POTATOES: *Titus, H R S.* We believe the best course to pursue, where they are undoubtedly blighted, is to mow the stems down, to put 3 or 4 inches of earth over the ground, and to roll it down with a very heavy roller.

ROOT PRUNING: *J G.* See p. 472, col. c.

ROSES: *Anon.* China Roses that become naked at bottom may be pruned as follows, presuming there are five shoots: Shorten two to within 6 or 8 inches from their base, leaving the others to grow during the season. When the young shoots from those shortened have made some progress, *i. e.*, next or the following season, the remaining base shoots should be cut down; they may be shortened now, but March is the best season for it.‡

STRAWBERRIES: *Anon.* Early kinds: Cuthill's Black Prince, and Keens' Seedling. Late kinds: British Queen, Myatt's Eliza, and Egbert.‡

VINES: *Vitis.* We cannot discover anything amiss with the leaves. The spots you speak of are not visible.

VINERIES: *J C.* It matters little at what angle the roof is constructed, provided it is steep enough to prevent drip. You should consult some professional man, who will supply working plans. You need not use tanners' bark for Pines, provided you have plenty of leaves and nice loose loamy earth. "Verbena" cuttings, treated like Geranium cuttings, never fail, if the wood is ripe enough. Let the pipes go round the house, but mind that the bottom inside is thoroughly drained, so that no water can collect near the surface.

MISC.: *L L.* You may moderately thin the head of your Mulberry tree now. Keens' Seedling Strawberry will answer your purpose better than Alice Maude. Permit all the shoots of Asparagus to run up after you have done cutting; but they should not be allowed to seed.‡—*A Young Gardener.* No leaves were in your letter.

SEEDLING FLOWERS.

CALCEOLARIAS: *T R P.* Prettily marked, but too much indented in the edge, and not sufficiently smooth.*—*M H.* 30 is much the best. 29, a good small flower, but too large in the throat. Your other blooms have also this fault, and they are all more or less deficient in shape.*

FUCHSIAS: *Cavaniensis.* All greatly inferior to the finer kinds now in cultivation.*

WHITE ESCHSCHOLTZIA: *C B.* See our account, in another page, of the meeting at Worton Cottage.*

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Corn and Grass Manure, per ton	...	...	£10 0 0
Clover Manure, do.	...	...	11 0 0
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Country Dealers and Agents supplied.

BY HER MAJESTY'S ROYAL LETTERS PATENT.

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1 ply ...	0*s.* 5*d.*	0*s.* 6*d.*	0*s.* 8*d.*	0*s* 10*d.*	1*s.* 0*d.*	1*s.* 2*d.*	1*s.* 4*d.*	1*s.* 6*d.*
2 ply ...	0 8	0 9	1 0	1 2	1 5	1 8	2 0	2 3
3 ply ...	0 11	1 0	1 3	1 6	1 10	2 2	2 9	3 3

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The Agricultural Gazette.

SATURDAY, AUGUST 10, 1850.

MEETINGS FOR THE FOLLOWING WEEK.

WEDNESDAY,	Aug. 14	—Agricultural Society of England.
THURSDAY,	— 15	—Agricultural Imp. Society of Ireland.
THURSDAY,	— 22	—Agricultural Imp. Society of Ireland.

"A LETTER to the Lord Bishop of NORWICH on the establishment of ADULT SCHOOLS IN AGRICULTURAL DISTRICTS,"* has lately been published by "A Country Curate" who has already written on the subject in our columns (page 458). He speaks of the improvement in the diocese of Norwich, as regards the education of the common people, during the life of Bishop STANLEY. "School-houses have sprung up in all quarters, and the instruction afforded at them is now, generally speaking, of a superior character:" and he thinks that, "without being too sanguine, he may hope the time is not far distant when, in every parish where it is possible, we shall see not only a National School, but that school conducted by an efficient teacher."

But even supposing excellent schools and efficient teachers everywhere to exist, he doubts, and so do we, whether they alone, as ordinarily conducted, will suffice in agricultural districts to convey the requisite education to the labouring classes. How long does the education of the boy in a country district really last? "Considering the many interruptions he meets with, by being taken from school at certain seasons for petty agricultural employments, the time consumed in regaining what he has forgotten on these occasions—the early period at which he leaves school entirely, that he may add his mite, however small, to the family income—his time of education is indeed sadly limited. He leaves school with little of learning but the letter; his acquirements are little more than mechanical, and, in consequence of his youth, they have as yet had but little influence either upon his understanding or his heart." And the consequence is that, on leaving school, as he grows up to manhood, his leisure is being occupied and his mind being formed on the model presented by his associates—the idle and disreputable, of whom every parish has its share.

Now the author of this letter proposes to his brother clergymen a plan for combating this evil. He suggests the adoption of evening schools for adults during the winter season; and the experience of his first six months leads him confidently to assert their ability to meet the case: so that he speaks of the common opinion as "a popular fallacy"—that the education of the *young* is our only hope; or as the Rev. RICHARD DAWES expresses it—"that no great improvement can be effected in the manners of the people but by the education of the *rising generation*."

Now having had several years' experience of an evening school, conducted just as this gentleman recommends — and knowing something of several others of similar character, conducted, some of them by young farmers, others by dissenting ministers, of whose valuable labours our author exhibits a characteristic tendency to speak disparagingly—and others in connection with the established church, we willingly join him in praise and recommendation of the system, but at the same time without denouncing it as a popular fallacy that the existence of an educated people must depend almost wholly upon attention to the education of *children*.

We have seen reading and writing and arithmetic learned, at these evening schools, by adults to whom they, or at least the last two, have afterwards been useful; but for implanting the tendencies of a well-educated mind—the desire for information, and the taste for reading—which is possible and easy if you commence with the young, we cannot speak of them with the confidence with which "A Country Curate's" experience seems to have inspired him. Certainly, a single winter cannot, except very rarely, be long enough, nor its 100 hours' instruction sufficient, to effect a change in perhaps a 20-years' habit of indifference, or thought, or action. And therefore we hope that no imperfect remedy, such as that recommended in this letter, useful as it may be, will, in the least, tend to displace the attention which ought to be bent upon the education of the young, as presenting the only probability of our ultimate escape from those evils of ignorance, crime, and pauperism, which now press so heavily upon the agricultural and all the other interests of this country.

Nevertheless, we earnestly hope the example which this gentleman has set us will be generally followed; not as substitutes for, but as additions to, the most perfect system of education that can be offered to children. Evening schools for adults, if they can be made interesting as well as useful, will be beneficial, by diminishing the influence of mischievous sources of pleasure, as well as by the direct ability and information they may confer. And our own experience will attest that they can be carried out with little labour, and less expense, wherever two or three can be induced to join and share the former, being able at the same time to offer amongst them schooling of a quality which, by the fees it will command, shall defray the latter. In one locality with which we are acquainted, a perfectly successful attempt was made during the last winter to open a reading-room, furnished with books and newspapers, in connection with the school; and the subscriptions to the reading-room, the school fees, and the receipts from attendants at the five or six lectures on various interesting subjects delivered during the winter, proved very nearly sufficient to defray the expenses of the whole establishment. That good was done in that locality by the mere substitution of *useful* pleasures for those of the beer-house, during a certain number of winter evenings, cannot be denied; and, without doubt, real permanent benefit will ultimately be experienced by any who may persevere in their attendance as scholars. For these reasons we would be glad to know that the "Letter on Adult Schools," by "A Country Curate," was widely read, and its plans very generally adopted. The recommendation of the author will apply to any properly-qualified person, as well as clergymen; and if we could induce any one to attempt the establishment of some such scheme in his locality during the ensuing season, we should be glad to supply him with all the details of the particular case to which we have alluded. We are sure that the pages of the *Agricultural Gazette* cannot be more appropriately occupied than in discussing questions connected with the condition of the labouring classes in rural districts; or in advocating those plans for improving it which commence in the only right way, with influences brought to bear upon the *mind*.

* LONGMAN'S.

THE SOIL AND THE AIR.

A VILLAGE LECTURE.

MANY here may be unable to feel a professional interest in the subject of this lecture. The soil and the air, in connexion with agriculture, have no immediate bearing upon their daily pursuits; and whether the influences which thus affect the practice of the farmers be capable of satisfactory explanation or not, the practice and the profit of their own individual occupations will remain precisely as they hitherto have been—undisturbed by those particular truths which our subject includes. The subject, however, I am persuaded, is not the less appropriate on that account for general consideration. It is one of general interest, not only because the air we all breathe and the soil we all tread cannot but in some measure affect us all alike, but because the usefulness of knowledge on this, as on every other subject, is not measurable by the *£. s. d.* scale, which would confine it to those cases exclusively where a money result depends upon the possession of it. There is a usefulness besides that which immediate profit measures; and though the agriculturist should not, and others could not, earn the more because they know the more of the air and the soil in connection with the art of cultivation, yet such knowledge is beneficial to all as an addition to mental if not to material wealth—as food for the mind, which, like the body, can live only by appropriate nourishment — as matter for pleasurable thought, from which, as from all other topics, we may usefully draw the unfailing inference regarding the wisdom, skill, and power and goodness which creation everywhere exhibits.

But if the soil and the air, in connection with agriculture, may reasonably claim the attention of all, it seems to force itself upon that of the farmer, and it is to that aspect of the subject, almost exclusively, in which it appears to him, that I have now to ask your attention. It certainly must have sometimes occurred to those who cultivate the ground and superintend the growth of crops, to ask where these crops all come from. Do you think that they come out of the land—from the soil on which they grow? Let us just consider this question in detail. Take the case of a forest of trees. Did all that wood come out of the soil? Suppose a man to plant an acorn in a piece of clay land and watch its growth. He sees the shoot and the young tree in-

creasing in size, and if he should live long enough he would ultimately see the old tree with its trunk, its branches, and its twigs, containing perhaps 40 or 50 tons weight of wood—a result of the life which was resident in that little acorn. Where did it get that wood? The roots of the Oak grow downwards in the land to a great depth—do they find its woody matter there? They also spread on the surface to some extent, but do you think that there is enough of the woody charcoally matter there to furnish the material of that great tree? It was a poor clay when the acorn was planted, and no one has been near the place since to supply the growing plant with the matter it wanted: we may suppose the tree to have stood in a forest near which no dung-cart ever went, so that no supply of food for the plant could have reached it beyond what existed when the seed was planted, and then the soil was very poor, and contained none of the material which has since appeared in the stem, and leaves, and branches of that great tree. How did they obtain it? The thing certainly appears difficult of explanation.

Take the case, too, of any of our common crops—of our Grass lands, for instance. Let us imagine the case of a dairy farm of 100 acres: we may suppose it to be able to maintain a herd of 30 cows. What will such a farm produce in a year? Suppose it to be good land, able to keep a stock of good sort: perhaps I shall not be far wrong if I put the produce of a cow at something like 3½ cwt. of cheese, and 30 or 40 lbs. of whey butter every year; and, beside this, there may be some bacon made from the waste of the dairy. Well, then, a farm of 30 dairy cows will yield nearly 5 tons of cheese and 8 cwt. of butter in the year, beside this bacon. That quantity of butter and cheese are exported annually from that extent of Grass land. Now, where did that butter and cheese come from? Has it been made out of the substance of the cows? They are as heavy now as they were. It has not been made at the expense of the cows—any more, indeed, than the Wheat or the Barley which come from the threshing machine is made at the expense of the machine. The cows are merely the machines by which the cheese is made out of the food they eat, and just as the Wheat is in the rick that is being threshed, so the cheese resides in the Grass that is being eaten. Well, then, where does the Grass get it? From the soil, do you think? Just consider; take a hundred years—what has been added to the soil of that farm during that period? Hardly anything; the farmer may perhaps have bought some bran and some meal every season for the pigs; but then he has sold the bacon made by his purchases, so that the farm has lost as much as it has gained in that respect. He has bought no manure. It will not do to say the farm continues to yield the Grass because of the manure that is added—for none has been added—to the farm—none has been brought on to the farm. Manure has no doubt been added to the fields, but none has been imported from without the farm, and yet 5 tons of cheese have been exported every year; and how has that great draught upon the farm been maintained without loss? The manure that is applied to the field helps the Grass greatly; but it cannot supply the cheese I speak of; for you must acknowledge that the manure is just what remains of the Grass after the cows have taken the butter and the cheese out of it, so that every year the land is robbed of so much cheese—that is, if the cheese be in the soil. But can you believe that it is? Can you believe that every year the soil of this farm is the poorer by 5 tons of cheese than it was? Why, how long has it stood this waste? If we suppose that it has been yielding at that rate during 1000 years, there must have been 5000 tons of cheese in the soil of that farm—50 tons of cheese in every acre of it at the beginning—and if anything the farm is more fertile now than it was then—fuller of cheese no doubt than ever; so that, for all we know, there must be thousands upon thousands of tons of cheese in it still. Ah! but that explanation cannot stand; we cannot believe that the wood of our trees or the cheese or the butter of our dairy farms come out of the soil. Where do they come from then? Now, before attempting to answer this question, let us take the case of an arable farm. Suppose I take our own at —— for an instance. It contains about 270 acres of land—off 120 or 130 acres of it every year we cut a crop of Wheat, which may average from 32 to 36 bushels of Wheat per acre; and besides these 4500 or 4600 bushels of Wheat, we sell annually probably 10 or 11 tons weight of beef, mutton, and bacon; that is, the animals we sell off are, on the whole, heavier by that weight than they were when brought on. We buy some 100 or 200 bags of meal and Linseed as food for the live stock every year, so that *that* much is added to the soil every year, and that may account for 500 or 600 of the bushels of Wheat we sell off; but where do we get the other 4000, and where does all that beef and mutton that we sell come from? It will not do to say that it comes from the manure; for set a watch upon the entrance gate of the farm, and count what goes in and what comes out of it in a year: hardly any manure goes in, and you will find there are 4000 bushels of grain go off the farm in a year, and you will find that 10 or 11 tons weight of meat go off the farm more than comes on to it in the year. Where does all that food come from? The question is, whether or not it can be supposed to come from the soil. During the past 10 years we must have sent off the farm 30,000 or 40,000 bushels of Wheat and 100 tons of meat. I take our own case as it is, the only one I am perfectly acquainted with; but any cultivator of the soil will, if he looks back a few years, have to acknowledge the same remarkable truths in the case of his own farm. Do you think that all that bread and beef came out of the land? Why, the land is richer and better after all that has been taken out of it than it was before; and if it be kept in cultivation for years to come, it may yield hundreds of thousands of bushels of Wheat yet; they are not there now, most certainly—where will they come from? Neither the wood of our trees, nor the dairy produce of our Grass lands, nor the grain and meat of our arable lands can be supposed to come from the soil. If all the Wheat, and Oats, and Rye, and Barley, and Beans and Peas, and bacon and butter, and beef and cheese, and mutton, and so on, that England has produced, since it was first cultivated, were piled upon the land now it would be more than a foot deep over the whole island. Deeper than the soil itself is, on the average, over the country. And should things remain as they are for another 1000 years the land will have yielded another such lot, *i. e.* more food in point of bulk and of weight than the soil itself actually *is*. Where has it—where will it all come from? That is the question. Now for the answer.

A plant is made up of roots, and a stem which carries leaves. It does not live in the soil only—the greater part of it lives in the air. Almost the whole of the plant above ground is covered with pores, little holes in its skin through which it absorbs, sucks in food. Only the *extremities* of the roots have these pores by which they can absorb nourishment. No doubt the roots do take in water from the soil, and along with it they will take in whatever the water has dissolved in it. But then if you examine this water you will find very little of the matter of wood, or of cheese, or of corn, or of meat, dissolved in it. The water which comes from our drains, and which is such as the roots of plants suck up, is indeed apparently clear and quite pure, very good water to drink, but none of us would get fat upon it if that were all we had to live upon. Neither, you may depend upon it, will a tree or a plant get stouter and grow if that be all that it has to live upon. The soil contains quite as much vegetable matter at the end of a rotation of crops as it does at the beginning; it contains a great deal *more* vegetable matter after a forest of trees has been grown out of it than it did when the acorns were planted; therefore all this matter could not have been got out of the land—the water could not have dissolved all this matter out of the earth and furnished it to the roots of plants, so that they might suck it up and flourish upon it. No! the great bulk of every plant that grows enters it—not by the roots from the earth, but by the leaves from the air. It is the air and the sunshine and the rain-water, not the mineral matter of the soil, that make our trees to shoot, our Turnips to swell, and our Wheat and grain crop to ripen their seed.

But before entering upon the argument by which I have to prove this, I may as well just refer to the idea which some people may have that a plant changes the matter of the soil on which it feeds into its own substance. It cannot do this; it cannot make one thing into another. It must have the right things given to it, or it cannot grow; too much of one thing will not make up for the absence of another. Unless a mason be provided with the wood and the bricks and the mortar, he cannot build the house; and neither can a plant build its own structure up unless it be provided with the right things in the right quantity. The mason might have abundance of bricks; but if he had that alone he could not proceed; he could not make everything he wanted out of an abundance of only one of them. And just so with plants; you must not think that they can make the wood, or the seed, or the leaves, or the root, out of the earth of the soil. They have no power to make one thing into another; they can only make wood out of the matter of wood; leaves out of the matter of leaves; seed out of the matter of seed. It is quite consistent with what is known to say that when the world was created only 60 or 70 different kinds of particles or atoms, and a certain number of each sort, were called into being; and that though they were put together in so many different forms, and though as time passes some of these substances thus formed are continually being taken to pieces, as it were, and decomposed, and others are being built up of the pieces, yet the world is made of just the same number of each kind of particles or atoms; the same number of pieces of each kind now, as it was 6000 years ago. It is consistent, I say, with what is known, to suppose that not one particle has been created since—not one since been converted into another. Each is as it was when originally called into being, and though not in the same place now, nor united with the same companions now as it was then, yet it is the same particle possessed of the same shape, size, and weight, and endowed with the same properties. Now, these particles are perfectly distinguishable and recognisable, but I cannot go through the process just now by which the individuality and proper distinct character and existence of each is proved, and therefore you must be content to believe me when I say that the soil contains comparatively few of those particles which go to make the bulk of a tree, or the substance of butter, of cheese, of Wheat, or of meat—that it positively contains more of them every year under good farming, notwithstanding that butter and cheese, and Wheat and meat, are every year being sent off it to market, and that as neither a plant, nor anything else can change one thing into another, the matter of wood, or of one different agricultural product not being in the soil in sufficient quantity, it cannot come out of the soil in sufficient quantity to form the building material of the trees and plants that grow upon the land. The great bulk of each came not from the soil but the air.

You will see, by-and-bye, notwithstanding that it is quite consistent with this statement, that the farmer should cultivate and manure the land to make his plants grow; for, though the soil does not provide the plant with much of its substance, yet it provides something which is necessary to it and without which the plant could not live. If the ploughing and harrowing and manuring were of no use to the crop, of course no one would go to any expense in cultivation. If the air provided all the food that plants need, people would not labour at their gardens, they would just sow their seed, and then pray for the wind to blow and the rain to fall, and the sun to shine, till the crop was ripe; then indeed, they might have to wake up for harvest time. But it has been so arranged that plants require our labour both at seed-time and harvest, and all the season through, in order that they may yield their utmost; and thus employment, as well as food, is provided for man.

Now let us return to the case of one tree. We have proved that its substance did not come from the soil; for the matter of wood is not in the soil in quantity enough, and the plant cannot change one thing into another — and as the air is the only other thing that the plant has access to, the inference is that it must get its substance thence. Well, but you will say, "If the wood is not in the soil it certainly is not in the air. There is nothing solid or substantial in air like the matter of wood must be." I think I can prove to you that there is something like the matter of wood in the air, nevertheless. Suppose that you cut down that tree, which you say could not have come out of the air, and set fire to it, and leave it for a little while—on your return you find that it has gone—that it has burned up; where has it gone to? If it never was in the air before, it is in the air now, for certain; and the clear air into which it has been converted will go to furnish the matter of wood to other trees which are still growing. The tree did not all disappear, however. It left some ashes behind it. Well! the ashes of the tree are what it got from the soil, and they are thus returned to it; and whatever of the tree will burn or rot away back into the air, just goes to the place from whence it originally came. Plants make their growth by food from the mineral kingdom, which includes the air; and animals by food from the vegetable kingdom; but there is constantly this compensating process going on, that every plant and every animal that lives, eventually dies, and each gives back to the sources from whence it was obtained the matter of which it is made. I suppose that all the plants on the surface of the globe now, if weighed, would not be heavier or lighter than the vegetable covering in which the earth was clothed 5000 years ago; and I dare say that the quantity of animal matter now in life is not greater or less than the quantity which lived in any other year since the world was fully peopled. The plants take food from the earth and the air, and grow and feed animals, and these die and return to the dust, furnishing the earthy part back to the soil from whence it came, and the combustible part back to the air from which it came. You can imagine a farm which should be a little world by itself—large enough to maintain a family—it should provide the materials for their cottage and food for themselves; and Wheat enough should grow upon it, and sheep and cattle, and Flax and Grass should flourish there—so that woollen cloth and linen and beef and mutton and bread might all be made from it; and thus this family need never leave this bit of land, and it would, as I said, be a little world by itself. Now the soil furnishes its portion, *i. e.*, their ashes, to the Grass on which the cows feed—and to the stems of the Flax and to the wool of the sheep and to the food of the people; but there is no fear of its being ultimately impoverished by this—for it gets it all back again very soon, for the cattle are killed and the men die—and the plants wither and the ashes of all are returned to the land whence they came—and the fuel is burned and the dungheap rots away in the ground, and thus all the part which was obtained from the air is returned also to it. There is no difficulty now in conceiving of such a farm as this yielding so many tons of cheese or so many bushels of Wheat every year without suffering. We know that this did not all come out of the soil, so as for us to be obliged to believe that there are hundreds of tons of cheese or of wood or of Wheat all in the soil now to furnish future crops; and we know that it did not *all* come from the air, so as for us to be obliged to believe that there is the matter of all the crops that shall be harvested, and all the timber that shall be cut to the end of time, now existing in the air ready to be used year by year as time passes. What we now know is this—that every year the soil contributes what may be called the mineral part of our crops—their ashes, in fact, if they were burned — and little else; and the air contributes almost all of the woody part of them — what would disappear if they were burned; and each in the course of a very few years receives back again to itself whatever each had given, ready to be used over again to make new crops and new produce—new food to feed another race of men. In the case of the farm that yielded the 5 tons of cheese every year—it does not lose 5 tons of the cheesy part of the soil annually, the soil has no cheesy part to lose—all that it loses is just such a quantity of earth as the ashes of these 5 tons of cheese would amount to if they were burned. What quantity

of ashes would be left by 5 tons of cheese if they were burned? a very few lbs.—and that is all the farm loses every year. Certainly it is not the common sand of the soil that exists in the cheese, but it is a part of the earth of the soil that is sent off with the cheese, nevertheless; a very small portion, however, and one which the soil could lose every year for a very long time indeed without being any the worse for it. I burned a 10 lb. Mangold Wurzel the other day, and here are all that remained of it; these ashes weigh about an ounce, all the rest of this root comes from the air, and it has all gone back to the air from which it came.

(To be continued.)

POULTRY MISCELLANIES.

For the sake of easy reference, numbers will be attached to a few miscellaneous facts and speculations on the subject of domesticated birds, which may from time to time be given in these columns.

1. "G. R. P." inquires "if there is any mode by which one can ascertain out of a brood of cygnets which are the males and which the females." In reply, let the birds be drafted off two at a time, taking as the first pair the very largest and the very smallest individuals of the brood; then the largest and the smallest that remain, as the next pair, and so on; these will probably be males and females, especially if the point that the males have the thickest neck coincides with this difference of size. But the individuals of a brood of cygnets do not vary so much as those of a brood of goslings or ducks, and it will often be difficult to decide on the evidence of these points alone. Contrive, then, to see the birds, close at hand, in the water, having the eye as nearly as may be on the level of the water and the swimming brood of cygnets. Those that swim deepest will be females, those that float most buoyantly will be males; the cause being that the females are furnished with a smaller proportionate bulk of lungs.

There is a mode of ascertaining the sex of living birds which is held as a great secret by some traders; it is effected by an examination, a description of which would be more *apropos* in a work on comparative anatomy than in the pages of this periodical. Those who can read Latin will find a clue to the mystery in Aldrovandi's "Ornithologia," tom. ii., p. 200-1; but the above-mentioned tests will be sufficient for an observant eye, particularly if an experienced swan-herd can be called into consultation. In looking over a full-grown brood, he will soon pronounce which are young cobs and which are pens.

2. Is a medical case, which shall be stated, as it is a very common one. "A Constant Reader" has a Spanish cock and hen, which are affected in a manner that causes a slight discharge from the nostrils, and compels them to make a noise as if sneezing, and resembling the word "pip." They are kept in a house which is perhaps rather small, but which he has taken every precaution to render dry and keep clean. They have the run of a good-sized yard, with access to a dust heap, &c. They are at present but slightly affected, and therefore their owner is the more anxious to find out a sure and speedy remedy, which we are sorry not to be able to suggest; for every poultry keeper will recognise in the symptoms described one of his greatest plagues and pests. The disease often proceeds to a fatal termination, but in its early stages at least is curable. Hot, dry, settled weather is the most efficacious remedy. All sloppy food should be prohibited to such patients, and they must have little or no water to drink; their diet should consist of Barley-meal—stiff, mixed with water or milk, Wheat instead of Barley as grain, and all the green food they choose in the shape of shred Cabbage leaves and Onion tops; Rice also boiled not too much, and sprinkled over with Barley-meal or fine pollard, is good. As soon as the birds are subjected to remedial treatment, a dose of jalap, or a calomel and colocynth pill, may be administered to each with advantage; but the drug which we have found productive of most evident benefit to sick fowls, is the plant Rue (we ought to add that Wormwood enjoys a similar reputation): it seems to act upon their constitutions in febrile cases in a similar way to what Peruvian bark, and its extract quinine, does on the human subject. It may be administered either by being chopped and mixed with their Barley-meal, or given in the shape of pills by means of some tenacious substance, or a decoction of it may be exhibited as the sole and only drink accessible to the patients. Their housing, too, must be attended to. A place may be clean and dry, like that of our "Constant Reader's," and yet be whistled through by cold draughts of air, enough by themselves to produce the disease. Frequent white-washing, caution against overcrowding, and the *daily eye of the master or mistress*, or of both, will be great safeguards against this, which may be called the protean malady of fowls; but, after all, we shall still find ourselves unable utterly to baffle the influence of an unfavourable season.

3. Henry C—— is in despair about muscovy ducks. He cannot succeed well in rearing them. After the young ones are hatched, they live from a few hours to two or three days, when they turn their heads under their breasts, and shut their eyes, and depart this life. Sometimes they eat, and sometimes they get (qy. take? or *can* get?) nothing at all. His Mrs. Duck is expected to enjoy the honours of maternity at an early period, and therefore he will be thankful to receive a little information as soon as possible.

The first hint which ought to be given is, that musk ducks are natives of the hottest regions of South America. The old birds may be what is called acclimated in Great Britain, but the newly hatched ducklings certainly are not. The term acclimation is, according to our notions, founded on a mistaken expectation, and made to convey to the mind a principle respecting the constitution of organised beings, both sentient and non-sentient, which is not borne out by the mass of facts. It supposes that, by time and perseverance, certain created things can be made to thrive, as well as if they were at home, in localities and climates greatly different from those which are native to them, and for the occupation of which they were not originally designed or adapted. The adaptation takes place through the lapse of years, aided by care and forethought—*à force des soins* would be the language of the French school of progressive natural historians. After a few generations a sort of compromise is supposed to take place between the unsuitable, ungenial climate on the one hand, and the tender greenhouse constitution on the other. Things shake together, and the foreigners are acclimated. Now, we hesitate to accept this popular theory, believing it to be founded on defective observations, and conducive to unsuccessful practice. We take the fact of the "acclimation" of any organic being to mean no more than that it is now bearing just such a measure of change as it was originally constituted capable of bearing, not that it has acquired any new powers of endurance.

Many of our settlements in valuable but unhealthy countries are occupied by successions of men, who are just as much "acclimated" by their residence in Calcutta or Sierra Leone as eels are really "used" to their skinning; or the circumstances, not the organic beings, change. A colony settles in a marshy region. Half the immigrants die. The other half recover from their ague fits, or linger under them; and, while so lingering and surviving, drain the marsh for their grandchildren to occupy in health, who, however, are said then to be "acclimated." We have seen the people who live in the Pontine marshes—of course we did not see those whom the malaria had killed—and they were "acclimated," that is, they were just not killed; they bore the pest for the present, but it had not become as natural to them as pure air and water from the rock. The tender annuals introduced into England 300 years ago are not less tender now than they were then. We cannot yet grow Kidney Beans in the open air during December and January; nor can Wheat be profitably cultivated above a certain latitude in Scotland, nor Maize and the Vine in France; nor the Citron family, nor the Olive, nor Rice, spices and cotton, beyond the bounds of their respective regions. If acclimation were a process really going on, the Oak on the mountain would creep up to the zone of Firs, the Firs ascend above the line of perpetual snow, and the rare Rush or Primrose, to which "alpine" is applied as its most apt epithet, would be found gradually sliding down to the temperature of the tropics. But history has no such facts to record. Some animals, birds, and plants are capable of *bearing* a great range of climate, others can bear very little. It is right and necessary to test such capability of change in the things that were created for our use; but if we find that they do not endure it, and try to make them do so, *à force des soins*, we shall probably only kill the poor blackamoor whom we want to wash white, and learn the vanity of waging war against Nature. So we return to the starting point, namely, that adult turkeys, guinea-fowl, and musk ducks live in the climate of Britain with comfort, nay pleasure to themselves, for great part of the year, but the younglings of those creatures require to have our climate and its circumstances acclimated to them.

Therefore treatment like that bestowed on farm-yard ducklings will not do for little Muscovies. They must be kept very warm and dry and snug. Their nurse, whether duck or hen, must be cooped in a sheltered, sunshiny nook. There must be no water to tempt them to dabble; for, remember, that in Brazil their first bath would probably be of a temperature that would grow the Victoria regia. They must have as much care and frequent attention as little turkey chicks. For food, bread crumbs, chopped egg, and boiled rice in abundance. If the boy cannot dig up a few nice little red worms four or five times a day, let them have raw beef minced fine, as for the chicks of golden and silver pheasants. Forget that they are ducklings, and treat them as the young of tender gallinaceous birds. Proceeding thus, a farmer of our acquaintance annually rears them with success. He has lately killed some fatted musk drakes, over-year's birds, it is true, which when dressed ready for the spit, weighed 8 lbs. each. We may now guess why so many more of them are reared in France, the South of Europe, and the United States of America, than in England. First-rate birds for the table, like those just quoted, deserve a little trouble, though it is not the fashion of the present day to bestow much upon them. Willughby tells us (p. 381) respecting "*The Guiny-Duck*: Anais Libyc, *Aldrov. and Bellon, which we take to be the same with the Muscovy and Cairo Duck*," that "A few years agone a certain kind of *Ducks* began to be kept in *France*, of a middle size, between a *Goose* and *Duck*, having a broken voice, as if it had distempered or ulcerated lungs. Now there is so great a plenty of them in our country, that they are everywhere kept in cities and publicly exposed to sale: For at great entertainments and Marriage Feasts they are sought for and desired." And so they would be now, if some dinner-giver of eminence and reputed taste would patronise them for a single London season, and immortalise his own name by a Canard de Moscovie, a la ——; one ought not to award the title prematurely. Willughby adds, "If it were not very chargeable [expensive? or troublesome?] many more of them would be kept than are. [Their usual price in Hungerford-market is now 10*s.* the pair, which will repay a few 'charges,' and it will rise if we can bring them more into fashion.] For if you give them but meat enough they will lay many eggs, and in a short time hatch a great many Ducklings. Their flesh is neither better nor worse than that of a tame *Goose* or *Duck*." We can dine, without murmuring, off either, properly accompanied.

The variety observable in musk ducks is a matter hardly yet explained, and deserving a little attention. Being natives of S. America, all the sorts were quite unknown in Europe till a certain date, which we may call recent. But in tracing back the history of the bird, we find that these varieties were a long time since as numerous as they now are, being quite puzzling to the naturalists of former days, till we contract the interval between the discovery of America and the recorded existence of various musk ducks to so narrow a space of time that it is impossible to suppose that these great variations could be produced by the effects of domestication, during that short interval—a supposition which becomes the more improbable when we reflect that the number and extent of those variations do not go on increasing. Willughby, whose Ornithology bears on the title-page the date of 1678, sums up respecting the Guiny Duck: "*This seems to me to be the very same Bird with Aldrovand's Cairo Duck, for most of all the marks do agree, as will appear to him who will take the pains to compare the descriptions; and also the same with our Muscovy Duck. For* Scaliger's *Indian Duck, which* Aldrovand *makes the same with his* Libyc, *is the same with our Muscovy Duck, or we are very much deceived. So that I strongly suspect our Muscovy Duck, the Guinny Duck of* Bellonius, *and* Aldrovand's Cairo Duck, *yea, and* Gesner's *Indian Duck, too, to be all one and the same bird, more or less accurately described. Perchance also the Birds themselves may differ one from another in those tuberous eminences and naked skin about the Bill, and upon the Bill between the Nosthrils.* * * * *Nor is the diversity of colours a sufficient argument to the contrary; for that they (as we have often said) in tame birds of the same kind vary infinitely.*" But Joannes Caius, the founder of Caius College, Cambridge, in his Libellus, or little book, on the rarer animals and plants, published more than a hundred years before Willughby's Ornithology, seems puzzled by some of the varieties of the musk duck. These varieties, then, were not probably self-generated in the old world, but imported from the new by Spanish and other adventurers. If they arose, hundreds or thousands of years ago, in South America, from a single uniform type of musk duck, it would be most interesting could we know under what circumstances of domestication by extinct nations of men, in cities that have long been swept away, the breaking of the breed first took place. One variety of musk dusk is coloured with a curious dingy brown. Now, domestic ducks, of a nearly similar hue, have this season been unexpectedly produced in our own poultry-yard. Thus, a perfectly black East Indian duck, associated with a perfectly white call drake, and with no other male. During the spring both birds were stolen by some vagabonds. The few eggs obtained from this union were set under a hen, and produced four ducklings, two speckled black and white, as might be expected, and two of the dingy brown colour, interspersed with a few white feathers. As we have suspected the slate-coloured fowls to have arisen from some dilution, with a white cross of black, *i. e.*, very dark purple or slate-coloured birds; so, in ducks, light or dingy brown may be the effect of diluting, with white, black, *i. e.*, very dark brown or brown-green families. The couple of brown common ducks look like a pair, in which case we propose keeping them another season to watch how their offspring will turn out.

A trustworthy account of the parentage and produce of mongrels is much required to assist in determining the limitation of the variations of species, a mere guess at which will be of such immense service to the speculative zoologist. *D.*

Home Correspondence.

The Risks of High Farming.—I have witnessed within these few years, in my own neighbourhood, so great a revolution in the culture of land, and such prodigious crops in expectancy arising from high farming, that when the seasons are favourable for harvesting, I might subscribe to all that is said—that, to look for great crops, the farm should be worked as a garden. Not three weeks ago I saw a large farm promising the cultivator of it a full realisation of all his hopes, and in truth, even to an inexperienced eye, the picture was magnificent; but such is not the case at present, its proud head is fallen with the heavy rains, and the sloven's on the other side the hedge sprinkled with its weeds (where high farming could not be followed for want of capital), may turn out the more profitable husbandry. A medium line in farming, perhaps, as in all other things, is best. Better to lay your plans for 30 bushels of Wheat per acre rather than 40, and then a day's rain will rather enliven than depress your expectancies of a good harvest home. But supposing it to be all truth, that high farming is the only, or rather the best, way to meet the imports of foreign grain and high taxation, where are the landlords or tenants of substance to be found to follow such courses? If it was as clear as that 2 and 2 make 4, that by right draining, subsoiling, and scientific knowledge of manure,

and plenty of it, that produce might be quadrupled, still to bring the country into universal garden culture is but an Utopian dream. "Progress" is a good horse, but a curb is necessary to prevent his running away with his rider. *Lt. H., July* 31.

Exeter Agricultural Meeting and Dinner.—The meeting at Exeter seems to have satisfied its promoters. As strangers, we say there is much to mend. For a show on so large a scale as the Royal Agricultural Society of England, it ought to be fixed at some central point. When fixed in a corner of England, as at Exeter, the show becomes of a local character—the subjects for exhibition become limited. Strangers find all things new; but where is the novelty of the show to those who may annually attend? In stock, for instance, you had what we expected to find, viz., some fine specimens of the Devon breed. In horses, no show at all. But many say, why waste your time looking at the beasts of the field? Turn your attention to the implements; see what is new; discover fresh traces of mechanical art and skill, and tell us what new things England has done towards a cheaper and better method of tilling the ground. Implements were once all complexity—all cost—monstrous, cumbrous articles. They are not yet done with. Many implements called new are only old acquaintances in a new garb; but they are admitted as new to the exhibition. Some of the ploughs, with mould-boards of unusual length, laid the furrow slice in an admirable manner. Much business was done in the sale of implements. The dinner was unusually satisfactory. Soyer did his part well, in a part the British farmer never fails when the viands are such as he can do justice to. At other meetings the dinners have been very indifferent. The speeches would have been better if Mr. Lister had had his say, and what he would have said is easy to divine. Many landlords want education, and where the landlords know their business they are the best and kindest of men. How wrong to say a gentleman wants instruction; but to say a tenant is ignorant is quite right. Pretty times these, forsooth. Who shall stay instruction, and who shall withhold knowledge? Does the Society deny its own usefulness? We should have been too glad to have heard from one from the further hemisphere the words he would have uttered; we mean Colonel Morris, of New York. But the rules of the Society silenced him, though the meeting called upon him by name. Mr. Rives, of Virginia, we would also gladly have heard. Virginia! so associated with our own great countryman Raleigh, so wise, so learned. The axe and the veto of a chairman can cut short instruction. However, in excuse it may be supposed the American guests might argue the question of free trade, and so put the meeting in hot water. At these meetings much information is obtained from men who attend from various counties. It is to be hoped Devonshire will improve after this visit of the Society. Cream and Apples are very good things, but good farming far better. *X. Y. Z., Hants.*

Public Well.—The poor around me are very badly off for water of any kind. I cannot afford to dig or bore a well for them, even if I had not to sink 130 feet, the probable depth through our clay. Can you suggest to me some cheap method of procuring them a good supply of wholesome water? (by drainage and filtration, or otherwise?) I find that the stone earthenware pipes are not made larger than 18 inches diameter; had they been 3 feet, they might have been available to line the well. And what could a pump be bought for? and what sort of pump? And what rules should the people be bound by, if any? *J. E. G.*

Clover Failure.—On seeing your article in the *Agricultural Gazette*, on the failure of the Clover, I was induced to seek for the cause. Upon examination I find the Clover very much eaten with a small black-headed maggot, which destroys the heart of the plant. The stems are also pierced with many holes, apparently by some insect depositing its eggs. This is not local; for I have examined many Clover fields, some more than 40 miles from where I reside, which are precisely the same. It is not confined to this time of year or this particular year. I have found it at all seasons in the absence of frost. I had the whole of three or four acres destroyed early one spring. Some Trefoil sown and growing with the Clover was not injured. In the second cut or after crop many patches of the same field were destroyed where it had not been injured first. In the following spring, early (February and March), a neighbour of mine had a field of 12 acres quite destroyed. There was a uniform and good plant after harvest, and all the early part of the winter, which became so bad by late in March as to be fit only to plough up and sow with Peas. The crowns were eaten out by this maggot; it began in spring and finally spread all over the field. I am not sure, but think I sent you some notice of it at the time; if I did not I intended it. About the same time I saw an article by Mr. Lawes on the same insect, and I think he said it belonged to the Tipula family, this maggot being their larva. I feel assured the Dodder is not the cause of the failure; I have seen it only in the second cut or late in the summer; nor the Broom-rape, but some insect. I can bear testimony as to the good effects of bones dissolved in acid as a good dressing for Clover, having this year quite a double crop where it was applied, as compared with some missed on purpose in the same field, only a rod wide, as an experiment. I have found the Cow-grass succeed much better than Clover of late years, especially on poor land; it has this disadvantage, it is later, and does not produce a second crop, unless cut very early the first time. The Potatoes are very badly diseased here, I think they were never worse. Wheat will be only a middling crop, blighted, and very much down where heavy; looks like a deficient yield. Barley good but very much laid. Oats pretty good. Turnips promise well. The hay crop short. We have commenced cutting winter Beans to-day; they are a light crop. Peas that were sown early are a fair crop, on early land; but those sown late, on late land, are very bad. Mangold Wurzel very bad. We also began cutting Wheat to-day. The weather is showery, and not at all settled at present. *James Eames, Beck Farm, Beaulieu, Hants.*

English and Scotch Farming (see p. 475).—Before leaving Sandinburgh I made myself perfectly acquainted with the various systems adopted on that farm, for we have very few instances where all the branches of farming are so scientifically carried on, and that too without any ostentation or view to applause. It has been the desire of the manager to make the best of his master's property, by adhering to principles he found most conducive to that end; for while he has devoted so much attention to the breeding department, the other branches connected with the farm have not been lost sight of. After leaving Hertfordshire I passed through Middlesex, in order to see haymaking at head-quarters; the weather being fine, the process was going on with vigour, which I had great pleasure in witnessing, and was quite ashamed of the ignorance which prevails in the north in that department. Before drawing to a conclusion, I shall state my opinion on the comparative merits of English and Scotch farming. In England the systems of farming and modes of management are very different. In some districts it is very deficient, while in others good farming is to be found. And, to their praise be it said, the proprietors (or their managers for them) generally set a good example before their tenantry; but the latter are rather tardy in the progressive movement. However, in Scotland, it is quite the reverse; here the tenantry live at rack-rent, with very few resident proprietors, and those we have occupy only the mansion-house, and perhaps a few acres adjoining, which are kept in permanent pasture, consequently the tenant farmers have the way to find for themselves, and to them is due all the praise of Scotch farming. In conclusion, I wish it to be understood that it is not my intention to applaud one party and despise the other, as is too often done by writers on agriculture. My observations are drawn from facts that have come under my notice. I am likewise aware that the Scotch farmers consider themselves superior to their southern brethren, and in some branches they are so; yet, in some respects, they ought to borrow a leaf from the Englishman's book, as in haymaking, cattle-feeding, &c. And I trust our northern worthies will soon see the error of their ways in these respects; but I am afraid that the great barrier to all improvements has too much hold—that is, self-conceit. *H., Aberdeenshire.*

Clover Dodder.—A correspondent says, some eight or nine years ago I walked into my neighbour's field while he was cutting his second crop of Clover, and called his attention to the "Orobanche," which was most abundant therein. He had not observed it; and but for me would not have recognised anything unusual. This summer the field is in Clover again. After last harvest the plant was a full one. During winter and spring it went off sadly; so much so that the occupier, not the old tenant, ploughed up a part of the field. He and others could not account for the failure: they gave no heed to my suggestion, that the last time the field was in Clover it was poisoned with "Orobanche." "None had been seen since that time," &c.; and it could not possibly be that the present failure was due to such a cause. To-day I looked over the hedge; and there is my old friend in full vigour. Now then comes the philosopher's turn. Tell us where the poison has been laid up all this time, &c. The field seems to be ruined for Clover. [So far as I know anything of the natural history of the Orobanche minor, and the manner in which our occasional Clover failures occur, I am not disposed to consider the former to be in relation to the latter. No doubt the Orobanche does great injury where it abounds, but the Clover failures occur often where Orobanche is not found. I am not at all surprised that the Orobanche should re-appear in any field where it has once shown itself, for I think it extremely likely (don't suppose I mean to say it is a proved fact) that its seeds may remain dormant until they meet afresh with the roots of Clover or such other plants as they are capable of attacking. But—query 1st—Had your neighbour thoroughly cleaned his seed by sifting out the Orobanche? Query 2d,—Is the Clover "going off" this year? I mean since the winter and spring failure. Did you remember to try the experiment I have so often asked for—of leaving a stetch of Barley without Clover? Unless we begin at the beginning, I fear we shall always be in doubt of the real cause of Clover failure, and consequently a long while in detecting an adequate remedy. *J. S. H.*]

Notes on No. 30 Agricultural Gazette.—Leases, &c., (p. 473): "It is because we believe that this high farming cannot exist without a lease, any more than a lease without its invariable concomitant high farming, that we direct attention to their connection," &c. The former part of this proposition should be strenuously urged, especially in these difficult times. Without long or renewable leases, in all cases attended with a covenant for the repayment of all un-worn out improvements, we cannot expect any prudent man to incur the expense of real high farming. But the latter part of the proposition must be received with caution. Some landowners and agents, who wish to promote high farming, would grant leases, but their old tenants, whom they are unwilling to remove, are unfit to be trusted with them. Some years ago I was requested to accompany two other farmers to inspect and report the condition of a farm that was let on lease. The tenant paid his rent, but was ruining the farm, and though he had virtually broken through the spirit of the agreement, he had not so flagrantly violated its letter as to make ejectment clearly legal. We therefore unanimously agreed to advise the owner to get rid of the tenant on the best terms that could be agreed upon. I mention this fact because several similar cases have occurred, and it is to be hoped that qualified agents may devise some plan by which, under lease, the rights of both landlord and tenant may be made sure. I say qualified agents, because I quite concur in a recent remark of yours that properly qualified land-agents and landowners are wanting as well as superior tenants. And I will add my own opinion that if the former had been more plentiful, the latter would not have been so scarce.—"Manure for every crop:" This I nearly accomplished many years back, and sometimes got too much straw, on a poor run-out farm; and after the few first years, almost without purchasing any kind of manure, except such as could be bought by labour on the farm. That was effected by carefully collecting and preserving anything capable of making manure, and especially preserving the liquid manure, which was chiefly converted into compost by absorption with dry earth and ashes, and which was thus made drillable with the seed. Let the farmer free himself from the imposition of the manure manufacturer by manufacturing his own manure. I cannot think that farm rightly managed that does not maintain itself, unless the manure-making produce be sold off; in which case, of course, extraneous manure must be brought back. This self-supporting system is exemplified by Mr. Hutchinson at Sandinburgh (*vide* page 475), and it has been proved practicable in numerous other instances; but the gaseous virtues of manure, as well as the liquid, are most sadly wasted, instead of being, as they ought to be, preserved with miser-like care. Farmers too commonly seem to have no idea of the immense loss they sustain by suffering their middens to "waste their fragrance on the desert air." Suppose the tea-dealer were to expose his tea to sun and air, wet and wind, what would the women say of it? Methinks he would soon lose their custom, and this is only a parallel case.—"Catch-meadow," (page 474): This paper presents a promissory note to the owners of moory mountains and other lands where streams abound. Will they still refuse to accept it? I have often wondered that such sources of wealth should be so sadly neglected. *An Old Farmer.*

The Exeter Show of Pigs.—I see you say in your description of the pigs exhibited at Exeter, "The Berkshires are much too coarse in bone and hair for the small breeds, and have not sufficient size for the large." I am not very fond of public scribbling, but I cannot allow you and your readers to rest under this impression, without expressing my dissent. I believe it will be generally allowed that the pure Berkshire (it is too much he practice to call all black and white pigs Berkshire) are as fine in the bone and hair as any breed of the same size, and I feel confident will produce a greater weight of bacon at an early age than most other breeds. I have myself had them killed, weighing upwards of 20 score at 10 months old. I conceive that early maturity is of the first importance in all descriptions of stock, and should be particularly encouraged by all agricultural societies, and it was with this view I selected my pigs at Exeter, where I sent a sow eight months old, within two or three weeks of farrowing; of course she was much smaller than those four or five times her age, and was little noticed by general observers, but I understood she was pronounced a very superior animal by those who took the trouble to investigate the circumstances. Had I thought it necessary a sow should be a certain weight to gain a premium, I could have sent one equal to any there; but if I had been successful I should not have taken great credit to myself in gaining a prize for a sow three or four years old, which ought to have been converted into bacon years before. If a person looks alone to the bacon market for his return, I think he should not allow a sow to have more than one litter, and that before she is 12 months old; and if she is then fattened she will be nearly as valuable per score as young stores, which should be brought out at 8 or 9 months old; but if she is allowed to continue breeding, her bacon would be less valuable in proportion to the time she is kept on. I candidly confess I do not carry out this plan myself, as I am a breeder of pigs for sale to breeders, and sometimes have a greater demand than I can supply under this system, and am consequently compelled to keep on sows longer than I should otherwise do. I hope nothing I have said here will be attributed to dissatisfaction at the decision of the judges. I am perfectly satisfied—indeed no man should show at such exhibitions who cannot be defeated with temper. I always think the judges have a most arduous and unthankful duty to perform, and I am sure, so far as I have seen, always give their best attention to arrive at a right decision; and we the exhibitors, I hope, feel sufficiently thankful for the trouble they must have, although we may now and then feel a little disappointed. *Edward Bowly, Siddington House, near Cirencester, Aug.* 1.

Scotch and English Farming.—Being at all times desirous, like your Aberdeen correspondent, of learning

something in every country, and from every source, I feel the more stimulated, in these times of agricultural transition and distress, to pick up whatever conduces to make farming profitable. I am the more encouraged, from the liberal nature of your correspondent's introductory remarks, to hope for some detailed information regarding the stock and crops he witnessed at Sandinburgh. He says the crops were startling, and had been produced without the aid of artificial manures—save a few cwts. of bones, &c. I would therefore first beg to learn from "H.," what course of farming or cropping is pursued to obtain such a desired result. Next, I would like to learn how calves bought in at 15*s.* and 20*s.* respectively are made to be worth as many pounds in the course of a year or two's feeding? I should feel grateful to be informed how such stock is obtained, fed and treated; and what market, whether at home or in London, such animals are disposed of? We have been very far behind realising any such prices for two-year-old cattle, on an average, although well fed during the whole time from being calved till they came to the hands of the butcher. In the next place, we are most particularly desirous to learn the pig secret of a profit of 200*l.* a year. How that is obtained? What number of pigs are kept at Sandinburgh? How are they fed and otherwise treated? We have come so far short of anything like 200*l.* a year profit on keeping a very large herd of pigs, that we will venture to hire a special train for the northern luminary, to come and enlighten us upon the why and wherefore such a most desirable profit can be netted by pig feeding. If all your Aberdeen correspondent has stated of the farming of Hertfordshire be correct, England surely cannot be so very far behind Scotland, as regards its agriculture, as "H." and many other flying visitors would make us understand. We have at present no time to dive farther into "H.'s" budget, but shall have very many more enquiries to make, if he gives a full explanation to the statements in a late *Gazette*. *Investigator.*

The Potato Disease.—In the month of March last I sent you some account of my experiments in Potato planting, with a view to preventing the disease that has affected this root more or less since 1845. I then stated that the only Potatoes I had last year free from disease were those managed on the plan suggested by Mr. Martin, of Dundee, which consists in laying down the tops and covering them with earth to within 6 inches of the end. This should be done at the third moulding up, when the tubers are about half-grown, unless blight should appear on the leaves before this, in which case the operation should be immediately carried out—Mr. Martin's theory being based upon the supposition that the stems of the plant are in the first instance made unhealthy by atmospheric causes, and that then the sickness descends by degrees to the roots, and finally the tubers become diseased. Possibly this operation of covering up the stems may for a time check their growth, and thus prevent them acting as feeders to the tubers, thus leaving them to gain their whole growth from the soil and the gases contained below, instead of feeding on the deleterious atmospheric agents that from some peculiarity of the season may be blighting the stems above ground. I am sorry to say that such appears to be the character of the present season. The almost incessant rain and absence of sun for the last 10 days, has produced upon the leaves and stalks of the Potato plant, all the old fungus and black spots and blight, indicative of the coming disease of the tubers, and this to an extent far beyond any year since 1845. On a close examination of 150 acres of my own growth, and many fields besides of my neighbours, I cannot find a single plant that is not infested with the Aphis vastator and other green flies, that are always found accompanying a diseased state of foliage. These insects seem to have appeared all within the last week; they are to be found in greatest abundance on the lower stalks nearest the ground, which are becoming quite yellow and dead, and in some fields are to be seen patches 4 or 5 yards square of plants, altogether withered and mouldy. Should this damp weather continue many days longer, I fear the worst results to the whole crop, and I would now urge upon all, whose crops may be in a similar condition to my own, to try this "laying down" plan, at any rate upon a portion of them. The tops require first pressing down gently but firmly, with a short pole, held with both hands in the middle. A boy will thus press down as fast as three men can cover up with hoes, leaving about 6 inches exposed. The tops are laid all in one direction, and this should be towards the north, where the drills run east and west, as the bank of earth is thus most exposed to the sun. I have not yet been able to get a plough made that will perform this work with the precision required, but if the plan is found to answer, some ingenious mechanic will soon be found to produce an efficient implement of the kind. I may add that the cost of laying down upon our light soils is about 3*s.* per acre, an insignificant sum compared with the probable advantage, so that none need be deterred from making the experiment, owing to the expense. And yet I have observed that farmers in general are exceedingly averse to trying any new suggestion, however rational it may seem, that entails upon them even the slightest increased expense. Surely this deficiency of enterprise and spirit of enquiry, must be regarded as a great defect amongst the large mass of farmers. Even the most pertinacious stickler for his order must admit that there is amongst the farmers, as a body, a most lamentable absence of these requisities for that intelligent and scientific pursuit of agriculture which is demanded by the necessities of the "times," and in accordance with the present spirit of the age, and which can alone befit them for the pursuit of such enquiries as may lead to the solution of the mystery that now envelops the Potato disease. Their almost entire ignorance hitherto, of physical science, and nearly all the branches of natural history, has been shown by the crude and all but useless essays on "Turnip-fly," "wire-worm," and "blight," that have from time to time filled the pages of some of our agricultural publications. And it has mainly been by scientific men, altogether unconnected with agriculture, bringing to our aid those enlightened habits of observation gained by study and education, that we have been enabled at length to arrive at any just conclusions on these subjects. Surely it is a disgrace to the British farmer of the present day to be dependent on foreign aid in those matters so intimately connected with his own business, and so constantly thrust before his attention, that the only wonder would seem to be, how he can avoid the accession of knowledge upon such questions. But however just in general the charge may be of defective education amongst the main body of the farmers, still that can hardly be urged as the cause of the world's remaining till now in ignorance of the Potato disease. For we have had essays upon it from all quarters, by all "sorts and conditions of men," from Mr. Alfred Smee, with his science, down to the stupid practical bigot, who, with a laudable pertinacity, persisted in tracing it, like all other ills, to free-trade! and that still more remarkable individual, whose impious fanaticism could see nothing in it but a mark of the divine displeasure, at our toleration of the Catholics, and the threatened admission of the Jews into Parliament. And yet no decided light has been thrown upon the subject, opinions remaining as various and uncertain as ever. I have all along felt this to be a humiliating fact, for I cannot but believe that intelligent and patient observation should reveal the source of the injury, and reward the enquirer with some decided views as to the future fate of the Potato plant. I have no sympathy whatever with those half fanatic reasoners who strive to hide their ignorance of the operations of Nature under the assumed guise of religious "resignation to the mysterious workings of Providence," who say that doubtless some wise social end is to be answered by the total annihilation of the Potato plant, and assume that probably the Creator is gradually destroying, by direct agency, this root out of the land, without the intervention of any of those intermediate agents, such as blight, fungus, or insect working in the ordinary course of nature. And moreover, that it is presumptuous in us to attempt to ascertain the causes of such mysterious providential visitations. Now, there is nothing, in either the physical or moral history of man, that justifies us in coming to any such conclusions, for in both physical and moral disease we are taught by nature and revelation to fathom their sources and search out the remedies. And in both do we find that there is no evil which is not met by a suitable antagonistic healing agent. In the physical constitution of man, we see that beautiful law the "vis medicatrix naturæ," that, if unobstructed, speedily restores any injured part to its natural health again, and so likewise, in the intellectual and moral constitution, that which at first sight might seem an evil is often the agent of highest good. The *rationale* of the whole being embodied in three short words "perfect through suffering." Why then should we not carry out the same reasoning into the natural world? And thus we should look to that which is probably the true source of the Potato disease, viz., some unnatural condition into which our mode of cultivation has forced it. I hope that these suggestions may be received in the spirit in which they are intended. *John Fryer, jun.*

Foreign Correspondence.

Launceston, Van Diemen's Land, *Feb.* 3, 1850.—I have observed frequent discussions as to the qualities of guano imported from various countries into Great Britain, and hope you will not be displeased at receiving from Van Diemen's Land a communication having reference to guano, lately introduced there, having been obtained from a cavern on an island in Bass's Straits.

The persons who discovered this cavern say that it is occupied by innumerable sea birds, and that the guano contained in it is completely sheltered from the weather, and that no rain can have fallen upon it. About 20 tons have been brought to Launceston, and bought by various parties at 5*l.* per ton. Amongst others, I purchased 4 tons, and having dried and pulverised it, and mixed it with an equal quantity of wood-ashes, I have within the last month sown it at the rate of 3 cwt. to the acre, upon land since sown broadcast with Yellow Aberdeen and Red Tankard Turnips. Being very desirous to ascertain the value of this guano, as compared with that in use in England, and believing that you will, in a measure, feel interested respecting it, I have herewith forwarded you a small quantity of the guano as it arrived in Launceston, together with the remains of some birds I took out of that which I dried and pulverised, which abounded in similar remains—bones (apparently of albatrosses, penguins, and other large birds) and partially decomposed feathers.

If you can kindly submit this guano to be analysed by some competent person, and communicate to me the results, either by letter or through the columns of your Journal, stating at the same time its value per ton, having reference to that of the guano most approved of in England, you will confer not only a favour, but a benefit upon the agriculturists of this colony, which will, I am sure, be duly appreciated by them.

In order that you may see that the communications in your Journal are not only read, but in some degree acted upon in this distant colony, I herewith forward you a *Launceston Examiner*, of July 1, 1848, containing a letter from me, describing, in compliance with the request of the Launceston Horticultural Society, the method I had adopted in transplanting Swede Turnips (taken, as you will perceive is acknowledged, from your columns), and stating the results. I may add that the next (last) year I put in 10 acres in a similar way, and had an excellent crop, one small field, containing about 1½ acre, yielding 30 tons to the acre, as I found by carefully weighing an average rod, in order to ascertain how long I could continue to feed two oxen that I was desirous to keep on until Christmas. This season I I have put in 20 acres, and have now about 13 or 14 acres promising an abundant crop; the remaining 7 acres were totally destroyed by grubs, which lived altogether upon the plants, there being no weeds in the field. *Theodore Bartley.* [We regret to say that we have not received either the guano or the Launceston paper.]

Societies.

AGRICULTURAL IMPROVEMENT SOCIETY OF IRELAND.

Cork, *July* 23.—This Society held its great annual show at Cork, on this and following days, in the spacious Corn-market. The weather, with the exception of a few passing showers, was particularly favourable, and the attendance numerous. The following is the prize list:—

CLASS A.—SHORT-HORNED.

Judges—Mr. J. Booth, Mr. Wm. Torr, and Mr. H. Smith; Stewards—Lord Viscount Monck, and Thomas Ball, Esq.

Section I. For the best Bull calved in 1845—48, 30 sovs., to Hon. A. F. Nugent, Pallas, Tynagh, for Bamboo, calved Jan., 1847; the best bull in Sections I., II., and III., and the best of all the prize bulls exhibited at the show; 10 sovs. to James Douglas, Athelstaneford, Drem, East Lothian, for Hutton.

Section II. For the best Bull calved in 1848, 20 sovs., to W. Coppinger, Barry's Court, for Rollo; 5 sovs. to Harvey Combe, Cobham Park, Cobham, Surrey, for Logic.

Section III. For the best Bull calved after the 1st of January, 1842, 10 sovs., to Richard Welstead, Ballywalter, Castletownroche, for Peacock; 5 sovs. to Richard Chaloner, Kingsfort, Moynalty, for Duke of Leinster.

Section IV. For the best Cow in calf, or that has had a calf in the year 1850, 15 sovs., John J. Turner, Newtownvilla, Kilcullen, for Primrose; 5 sovs., to Hon. A. F. Nugent, Pallas, Tynagh, for Bandbox.

Section V. For the best Heifer, in calf or in milk, calved in the year 1847, 10 sovs., to Hon. A. F. Nugent, Pallas, Tynagh, for Maid of Killerby; 5 sovs. to H. Stanley M'Clintock, Newbury, Kilcullen, for Lily of the Valley.

Section VI. For the best Heifer, in calf or in milk, calved in the year 1848, 10 sovs., Benjamin Wilson, Brawith, Thirsk, Yorkshire, for the Lady of Brawith. This Heifer also received the Agricultural Challenge Cup, value 100 sovs., as being the best animal in the Neat Cattle Classes; and the gold medal as the best of all the prize cows or heifers exhibited at the show. The owner also received the medal as the breeder of the best prize animal; 5 sovs. to Benjamin Wilson, Brawith, Thirsk, Yorkshire, for Castanette.

Section VII. For the best Heifer calved after the 1st of January, 1849, 10 sovs., to Thomas Barnes, jun., Westland, Moynalty, for Primrose; 5 sovs., to Hon. A. F. Nugent, Pallas, Tynagh, for Baby.

CLASS B. — LONG-HORNED, DEVONS, HEREFORDS, AYRSHIRES, POLLED ANGUS, AND GALLOWAYS. Or any other distinct Breed not qualified to compete as Short-horns.

Section I. For the best Bull calved in 1845—48, 15 sovs., to Lady Carbery, Castlefreke, Rosscarbery, for a Devon bull, Sir Thomas; 5 sovs., to Thomas George Stoney, Kyle Park, Borrisokane, for his Hereford bull, Ireton.

Section II. For the best Bull calved in the year 1848, 10 sovs., to the Earl of Charlemont, for his Devon bull, Young Shamrock; 5 sovs., to the Earl of Charlemont, Marino, Clontarf, for his Devon bull Volunteer.

Section III. For the best Bull calved after January 1, 1849, 10 sovs., to the Earl of Charlemont, for his Devon bull Albert; 5 sovs., to N. W. Roche, M.D., Carrickabrick, Fermoy, for his Ayrshire bull Rory.

For the best Bull in the above sections, The Medal. The Earl of Charlemont, for his Devon Bull, Young Shamrock.

Section IV. For the best Cow in calf, or that has had a calf in the year 1850, 10 sovs., to the Earl of Charlemont; 5 sovs., to John M'Auliffe, Rathminsky, Cork, for his Ayrshire Cow, Dearie.

Section VI. For the best Heifer in calf, or in milk, calved in the year 1848, 10 sovs., to Lady Carbery, for a Devon Heifer, Daisy; 5 sovs., to the same for a Devon Heifer.

Section VII. For the best Heifer calved after January 1, 1849, 5 sovs., to the Earl of Charlemont, for his Devon Heifer, Primrose; 3 sovs., to Thomas Kemmis, Killeen, Portarlington, for his Jersey Heifer.

CLASS C.—WEST HIGHLANDS, KERRIES, OR ANY OTHER MOUNTAIN BREED.

Section I. For the best Bull calved after the 1st of January, 1844, 5 sovs., to William Owen, Blessington, for his West Highland Bull, Young Donald.

Section II. For the best Cow in calf, or that has had a calf in the year 1850, 3 sovs., to Thomas J. Fitzgerald, Thornbull, Cork, for his Kerry Cow.

Section III. For the best lot of two Heifers, 3 sovs. to the Knight of Kerry, Valencia, for his two yearling Kerry Heifers.

CLASS E.—HORSES.

Section I. For the best Cart Stallion, over three years old, and foaled since the 1st of January, 1843, 30 sovs., to John Woolsey, Milesdown, Castlebellingham, for his Clydesdale horse, No Mistake; 10 sovs., to the Earl of Shannon, Castlemartyr, for his Clydesdale Draught Stallion, Clyde.

Section II. For the best Cart Stallion, foaled since the 1st of January, 1847, 20 sovs., to William Owen, Blessinton, for his Draught Stallion, Kilwarlin.

Section III. For the best thorough-bred Stallion, the Medal. Captain Francis Price, Abergavenny, Monmouthshire, for his thorough-bred Stallion, Retriever.

Section IV. For the best Cart Mare, in foal, or with a foal at her foot, or having reared a foal in the year 1849, 10 sovs., to Joseph Nash, Monard, Cork, for his Draught Mare; 5 sovs, to St. John Jeffreyes, Blarney Castle, Cork, for his Cart Mare.

Section V. For the best Cart Filly, not exceeding three years old; 5 sovs., to Thomas Ball, Malahide, for his filly, Jessy.

SHEEP.

CLASS F.—LEICESTERS.

Section I. The best Shearling Ram, 10 sovs., to James Douglas, Athelstaneford, Drem, East Lothian; 5 sovs., Sylvester Rait, Rathmoyle, Edenderry.

Section II. The best Two-shear Ram, 10 sovs., to John Gregory Watkins, Woodfield, Worcester.
Section III. The best Ram of any other age, 5 sovs., to John Gregory Watkins, Woodfield, Worcester.
Section IV. The best pen of five Shearling Ewes, 5 sovs., to Roger Hudson, Kilmore, Tallagh (objected to).
Section V. The best pen of five Ewe Lambs, 3 sovs., to Robert Briscoe, Glandalane, Fermoy.

CLASS G.—ANY OTHER LONG-WOOLLED SHEEP.
Not qualified to compete as Leicesters.

Section I. The best Shearling Ram, 8 sovs., to Sylvester Rait, Rathmoyle, Edenderry; 4 sovs., to the same.
Section II. The best Two-shear Ram, 8 sovs., to G. Thunder, Kingston Lodge, Navan.
Section III. For the best Ram of any other age, 4 sovs., to Sylvester Rait, Rathmoyle, Edenderry.
Section IV. For the best pen of five Shearling Ewes, 3 sovs., to Stephen Wilson, Bookfield, Ballytore.
Section V. The best pen of five Ewe Lambs, 2 sovs., to James Morrogh, Kilworth.

CLASS H.—SOUTHDOWNS.

Section I. The best Shearling Ram, 8 sovs., to John Woolsey, Milesdown, Castlebellingham.
Section II. The best Ram of any other age, 4 sovs., to William Owen, Blesinton.
Section III. The best pen of five Shearling Ewes, 3 sovs., to James Hanning, Cloyne.

CLASS I.—CHEVIOTS.

Section I. The best Shearling Ram, 8 sovs., to Colonel La Touche, Luggela, Newtownmountkennedy.
Section II. The best Ram of any age, 4 sovs., to Colonel La Touche, Luggela.
Section III. The best pen of five Shearling Ewes, 3 sovs., to Col. La Touche, Luggela; the best in the above classes, the Medal, to John Gregory Watkins, Woodfield, Worcester; the breeder of the best Ram in the above classes, the Medal—to Gregory Watkins, Esq.

CLASS K.—SWINE.

Section I. The best Boar of the large breed, 5 sovs., to Edward Croaker, Ballitore House, Ballitore; the second best ditto, 3 sovs., to John Lichfield, Ballymaloe, Castle, Cloyne.
Section II. The best Boar of the small breed, 5 sovs., to Henry Lister Maw, Tetley, Crowle; the second best ditto, 3 sovs., to Alex. W. Lawe, Glanmire, Cork.
Section III. For the best Breeding Sow of the large breed, 4 sovs., to H. Stanley M'Clintock, Newbury, Kilcullen; 2 sovs. to Moses Cartwright, Staunton-hill, Brenton-on-Trent, Staffordshire.
Section IV. For the best Breeding Sow of the small breed, 4 sovs., to James Splaine, Gurrane, Bandon; 2 sovs. to Robert W. Goold Adams, Jamesbrook-hall, Middleton.
Section V. For the best lot of three Pigs of the same litter, not more than nine months old, 3 sovs., to Richard Barter, M.D., St. Anne's-hill, Blarney; 2 sovs. to Charles C. Coote, Mount-coote, Kilmallock.

CLASS L.—EXTRA STOCK.

Bulls: Thomas Connolly, M.P., Castledown, Celbridge, for his short-horned Bull Planet, 2*l*.
Cows: The Earl of Bantry, Glengariffe Lodge, Bantry, for his Cow and Calf, 2*l*.
Sheep: Wm. Owen, Blesinton, for a pen of three fat ewes, 2*l*.
Swine: Major Bush, Glencairn, Lismore, for a Boar and Sow, small breed, 2*l*.

CLASS M.—POULTRY.

Section I. Fowl.—The best Cock and Hen, or two Pullets, 2 sovs., Henry Barry, Barry's Lodge, Carrigtwohill; 1 sov. to Mrs. Warburton, Kill, Naas.
Section III. Geese: The best couple of Geese, 2 sovs., to James Perry, Glasheen, Cork; 1 sov., to Joseph Nash, Monard, Cork.
Section IV. Ducks: The best Drake and two Ducks, 2 sovs., to James Perry, Glasheen, Cork; 1 sov., to William Coppinger, Barry's-court.
Extra.—34, to Thos. O'Grady, Brynllithrig, St. Asaph, Flintshire, for a lot of Ducks, 10s.

CLASS N.—DAIRY PRODUCE—BUTTER.

To the owners of dairies, who shall make and produce the best quality of butter for the London and foreign markets, made on their own farms during the season of 1850, not being less than one firkin, of 70lbs. weight, on the following terms:

Section I. For the English or London market. 1st prize, 5 sovs., to Nathaniel C. Martin, Buttrestown, Glanmire; 2d. 3 sovs., to Richard Barter, M.D., St. Anne's Hill, Blarney; 3d, 2 sovs., to William R. Meade, Ballymartle, Kinsale.
Section II. For the Foreign market. 1st prize, 5 sovs, to John M'Auliffe, Rahmineky, Cork; 2d, 3 sovs., to Thomas Forrest, Clogheen, Blarney; 3d, 2 sovs., to John M'Auliffe, Rahminsky, Cork. For the best of all prize butter exhibited at the show, the medal No. 22, to Nathaniel C. Martin, Buttrestown, Glanmire.

Miscellaneous.

Agricultural Produce in Lancashire.—The following scale may be considered as the general rate of produce in this county, comparing the average produce of the county, per acre, with that of the best cultivated farms; the variations of the latter being according to the quality of soil and the seasons.

	Average of the County.	Best Cultivated Farms.
Wheat,	24 bushels,	from 36 to 48 bush.
Barley,	36 ,,	,, 55 ,, 65 ,,
Oats,	40 ,,	,, 70 ,, 80 ,,
Beans,	30 ,,	,, 40 ,, 50 ,,
*Potatoes,	6 tons,	,, 10 ,, 12 tons.
Turnips,	18 ,,	,, 26 ,, 36 ,,
Clover, two cuttings,	2½ ,,	,, 3½ ,, 4 ,,
Meadow hay, one ditto	1½ ,,	,, 2 ,, 3 ,,

The produce of cheese from a well-fed dairy stock, properly taken care of in other respects, will be double that from a stock under indifferent management and ill fed. This is supposing the dairy-maids to be equal in their management; but the value of the produce would be still less in proportion, when a bad dairy-maid is coupled with a badly fed, ill managed stock. The cheese made in the neighbourhood of Leigh has been considered the best in the county; but I consider the best dairies in North Lancashire are quite equal, if not superior, to the best "Leigh cheese." The highest produce I am aware of, for a whole dairy, is 4 cwt. per cow in the season. The general average will be about 3 cwt. per cow. The highest produce for one month (the first month at Grass in the spring), was from a dairy of six cows; 30 days' produce of which was 720 lbs. The value varies more in proportion from a cow, supposing full milk cheese is made. *Rothwell's Agriculture.*

* From crop 1841, one farmer sold 4500 loads, of 252 lbs. from 36 acres, which is better than 14 tons per acre.

Calendar of Operations.

AUGUST.

Lammermuir Sheep Farm.—During the past month the thermometer has been high, and the quantity of rain limited, though quite sufficient, except on very burning soils, to keep the pastures abundant. Indeed the present summer, so far as it has gone, has been very favourable for grazing farms, and sheep are looking well, notwithstanding the late and severe spring. Since the fleeces were removed, the principal work of the shepherds has been—keeping a sharp look out for maggots, which, from the warm weather, have been unusually troublesome of late. When the skin is unbroken, perhaps the best, and certainly the simplest, application is a handful of dry earth rubbed into the part affected, after carefully removing every maggot, and if possible the wool should never be removed, as it greatly disfigures lambs, especially if it is intended to show them in a market. The dust acts by quickly absorbing all moisture, and thus preventing the flies from depositing fresh eggs, while it also puts a stop to the operations of any larvæ which may have been missed. Our wool has been sold at about 25 per cent. above last year's price, and, judging from the appearance of the fleeces, we expect the clip to weigh well. The Cheviot lambs will be weaned on the 9th, and the best wedder lot exposed at the great lamb fair held at Melrose on the 13th. Our hands are busy ploughing, horse and hand-hoeing Turnips, and hay-making. All the Turnips are now pared with the small one-horse plough, and the half are horse and hand-hoed. The latter operations would have been finished ere this but for the hay-making. As the Clover hay is now all in ricks, we hope to get a few days to finish the Turnip work before regularly commencing the meadow hay. Turnips are growing admirably. Indeed, throughout Berwickshire generally, we have seldom seen this crop so forward at this date. There is an old saying, that if Turnips are meeting in the drills (30 inches) on the 5th of August, they will be a heavy crop. This year there will be few fields which are not in this condition. Grain crops all promise well, and harvest in the lowlands will begin in about ten days. *A Lammermuir Farmer.*

Notices to Correspondents.

Books: *B T W.* Low's "Elements of Agriculture" or Stephen's "Book of the Farm." The "Cyclopedia of Agriculture," by Messrs. Blackie, is not yet completed.
Caraway: *Attentive Reader.* Sow 1 gallon of seed in shallow drills 3 feet apart between the rows of Wheat early in spring. The land must be in good heart.
Horse-hoe: *Ignoramus.* The best horse-hoe for corn in drills is that manufactured by Garrett, of Saxmundham, Suffolk. It also answers for green crops sown on the flat. It cuts according to its width—which must be that of the drill by which the crop was sown.
Mildew: *A and A B Gregory* Your Wheat being "always more or less affected" would be liable to a severer a tack than usual this year on account of the late period of harvest and the very rainy weather of July. The attacks of mildew seem most frequent in cases of luxuriant and protracted growth—the germs of the disease seem present everywhere, ready to take advantage of the circumstances favourable to its development.—*Canfordiensis.* The mildew from which your Wheat is suffering is occasioned by the growth of a parasitic fungus—Puccinia graminis.
Moles: *J E G.* It is believed that they kill the wireworm. We do not suppose that Mustard kills or drives away the wireworm. It *may* have that effect on the fly from whose eggs the worm is hatched..
Potatoes: *Attentive Reader.* The names may be merely local—we should set Ashleaf Kidneys, Scotch Whites, Prolifics, and Axbridge Kidneys. None of them late Potatoes—but the last keeping well in spring.
Rusted Wheat: *Rev. F E.* You must wait till the Wheat is tolerably ripe—and then cut it down. If very badly injured it will be of use for little but chicken corn. Its fitness for seed depends on its present state of ripeness. That you must ascertain by trial in the garden, before use in the field.
Stable Dung: *Minimum.* Your most effectual way to rot it thoroughly will be by keeping the heap constantly damp throughout, and turning it once a month. To add sulphuric acid would not facilitate the putrefaction; that would probably be retarded by it. Sulphuric acid diluted with 10 or 12 times its weight of water, and in the proportion of 1 of sulphuric acid to about 150 or 200 of dung, is a good thing to add to the latter, in the case of putrefaction, as it will fix the volatile products of fermentation.
Tank: *J E G.* If you were to pitch in a few hundred weights of freshly burned charcoal dust, it might purify the water.
*** Communications reaching town after Wednesday cannot be answered the same week.

Markets.

COVENT GARDEN, Aug. 10.

Vegetables are abundantly supplied; Hothouse Grapes and Pine-apples plentiful. The supply of Peaches and Nectarines is well kept up. Ripe Gooseberries fetch from 2s. 6d to 3s. 6d. per half sieve. Oranges and Lemons though scarce are sufficient for the demand. West Indian Pine-apples are plentiful, and of tolerably good quality. Carrots and Turnips may be had at from 3d. to 6d. a bunch. Potatoes are plentiful and cheap. Lettuces and other salading are sufficient for the demand, and so are Mushrooms. French Beans are scarcer. Cut Flowers consist of Heaths, Pelargoniums, Lily of the Valley, Carnations, Picotees, and Roses.

FRUITS.

Pine-apples, per lb., 4s to 6s
Grapes, hothouse, p. lb., 2s to 5s
Peaches, per doz., 4s to 15s
Nectarines, per doz., 4s to 15s
Apricots, per doz., 1s 6d to 5s
Cherries, per lb., 1s to 1s 6d
Melons, each, 3s to 5s
Gooseberries, per half sieve, 1s 6d to 2s 6d
Currants, p. half sieve, 3s to 4s
Raspberries, p. pottle, 4d to 6d
Lemons, per doz., 1s to 3s
Oranges, per doz., 2s to 3s
— per 100, 8s to 24s
Almonds, per peck, 6s
— sweet, per lb., 2s to 3s
Walnuts, p. 100, 1s 6d to 2s
— p. bush., 16s to 24s
Nuts, Barcelona, per bush., 20s to 22s
— Brazil, p. bsh., 12s

VEGETABLES.

French Beans, p. sieve, 3s to 4s
Cabbages, per doz., 6d to 1s
Cauliflowers, p. doz., 2s to 4s
Peas, per sieve, 2s to 4s
Beans, per sieve, 1s 6d to 2s
Sorrel, p. hf. sieve, 6d to 9d
Potatoes, per ton, 50s to 80s
— per cwt., 2s 6d to 4s
— per bush., 1s 6d to 3s
Turnips, per doz. bun., 3s to 5s
Red Beet, per doz., 1s to 2s
Cucumbers, each, 1d to 9d
Leeks, per bunch, 2d to 3d
Celery, p. bundle, 1s to 1s 6d
Carrots, per doz., 4s to 6s
Spinach, p. sieve, 2s 6d
Horse Radish, p. bdl., 1s to 4s
Onions, p. bunch, 2d to 6d
— Spanish, p. doz., 1s 6d to 4s
Shallots, per lb., 6d to 8d
Garlic, per lb., 4d to 8d
Artichokes, per doz., 2s to 4s
Vegetable Marrows, per doz., 1s to 2s
Lettuce, Cab., p. sc., 2d to 1s
— Cos, p. score, 6d to 1s 6d
Radishes, p. 12 bands, 9d to 1s
Small Salads, p. punn, 2d to 3d
Mushrooms, p. pot., 9d to 2s
Fennel, per bunch, 2d to 3d
Savory, per bunch, 2d to 3d
Thyme, per bunch, 2d to 3d
Parsley, p. doz. bun., 1s to 2s
— Roots, p. bdle., 9d to 1s
Marjoram, per bunch, 3d to 9d
Mint, green, per bunch, 2d
Watercress, p. 12 bunch., 6d to 9d

SMITHFIELD, Monday, Aug. 5.

The supply of both Beasts and Sheep is considerably larger than on Monday last, consequently we have a reduction in price, on the former of nearly 4d. and the latter about 2d. per 8 lbs. Good Lamb is in request at fully late rates. Calves are not so plentiful, but it is difficult to make more money. From Holland and Germany there are 642 Beasts, 2970 Sheep, and 116 Calves; from Scotland, 200 Beasts; from Norfolk and Suffolk, 500; and 1500 from the northern and midland counties.

Per st. of 8 lbs.—s d s d	Per st. of 8 lbs.—s d s d
Best Scots, Herefords, &c. ... 3 6 to 3 8	Best Long-wools ... ... to ...
Best Short-horns 3 4 — 3 6	Ditto Shorn ... 3 4 — 3 6
2d quality Beasts 2 8 — 3 2	Ewes & 2d quality ... — ...
Best Downs and Half-breds ... ... — ...	Ditto Shorn ... 2 8 — 3 0
Ditto Shorn ... 3 8 — 4 0	Lambs ... ... 4 0 — 4 8
	Calves ... ... 2 6 — 3 6
	Pigs ... ... 2 8 — 3 8

Beasts, 3587; Sheep and Lambs, 30,900; Calves, 264; Pigs, 210.

Friday, Aug. 9.

We have a large supply of Beasts; however, the dead markets being clear, and the weather favourable, trade is better. Prices have advanced about 2d. per 8 lbs. The number of Sheep and Lambs is also considerable; the former make more than on Monday, but the latter cannot be quoted higher. Although the supply of Calves is again large they are pretty freely disposed of, at an advance of about 2d. per 8 lbs.

Per st. of 8 lbs.—s d s d	Per st. of 8 lbs.—s d s d
Best Scots, Herefords, &c. ... 3 8 to 3 10	Best Long-wools ... ... to ...
Best Short-horns 3 6 — 3 8	Ditto Shorn ... 3 6 — 3 10
2d quality Beasts 2 8 — 3 4	Ewes & 2d quality ... — ...
Best Downs and Half-breds ... ... — ...	Ditto Shorn ... 3 0 — 3 4
Ditto Shorn ... 4 0 — 4 2	Lambs ... ... 4 0 — 4 8
	Calves ... ... 2 8 — 3 8
	Pigs ... ... 3 0 — 4 0

Beasts, 1202; Sheep and Lambs, 14,310; Calves, 635; Pigs, 220.

HOPS.—Friday, Aug. 9.

Messrs. Pattenden and Smith report that there is a good hand-to-mouth trade for both new and fine yearling Hops, at full as much money as last week.

COAL MARKET.—Friday, Aug. 9.

Holywell, 14s.; Wallsend Haswell, 15s. 9d.; Wallsend Hetton, 15s. 6d.; Wallsend Lambton, 15s. 3d.; Wallsend Tees, 15s. 6d.—Ships at market, 123.

HAY.—Per Load of 36 Trusses.

Smithfield, Aug. 8.

Prime Meadow Hay	70s to 75s	Clover	70s to 84s
Inferior ditto... ...	60 66	New Clover	68 72
Rowen	— —	Straw	24 28
New Hay	60 72		J. Cooper.

Cumberland Market, Aug. 8.

Prime Meadow Hay	70s to 75s	Inferior	58s to 70s
Inferior ditto... ...	45 65	New Clover	68 70
New Hay	45 65	Straw	26 30
Old Clover	78 84		Joshua Baker.

Whitechapel, Aug. 8.

Fine Old Hay ...	70s to 75s	New Clover	65s to 72s
Inferior ditto ...	— —	Inferior ditto... ...	— —
New Hay	58 65	Straw	25 28
Old Clover	75 84		

MARK LANE.

Monday, Aug. 5.—The supply of English Wheat by land carriage samples this morning was smaller than this day se'nnight, and disposed of on the terms of last week. Foreign met but a limited inquiry, and prices may be considered nominally unaltered.—There was a fair demand for Barley, Peas, and Beans, at former rates.—Oats are held firmly for late prices, but the sale is slow.

British per Imperial Quarter.	s. s.		s. s.
Wheat, Essex, Kent, & Suffolk ...White	42—46	Red	37—41
— — fine selected runs ...ditto	46—5	Red	40—43
— — Talavera	46—52		
— Norfolk, Lincoln, & York...White	—	Red	36—42
— Foreign	35—52		
Barley, grind. & distil., 19s to 22s...Chev.	23—27	Malting	22—25
— Foreign....Grinding and distilling	15—21	Malting	20—23
Oats, Essex and Suffolk	15—18		
— Scotch and Lincolnshire ...Potato	18—21	Feed ...	17—19
— Irish .....Potato	16—20	Feed ...	13—17
— Foreign.....Poland and Brew	15—20	Feed ...	13—16
Rye	19—21	Foreign	18—20
Rye-meal, foreign.....per ton	5l.—6l.		
Beans, Mazagan .....22s to 24s.....Tick	24—2o	Harrow	24—26
— Pigeon .....25s — 28s...Winds	—	Longpod	—
— Foreign ..... Small	24—34	Egyptian	19—21
Peas, white, Essex and Kent.....Boilers	23—26	Suffolk...	24—28
— Maple.... .24s to 27s .....Grey	22—24	Foreign	21—28
Maize ..... White	26—30	Yellow...	25—30
Flour, best marks, delivered... per sack	36—40		
— Suffolk ..... ditto	31—36	Norfolk	31—36
— Foreign .....per barrel	21—24	Per sack	31—34

Arrivals in the Port of London last Week.

	Wheat.	Barley.	Malt.	Oats.	Beans.	Peas.
Flour, 12662 sks — 3812 brls	Qrs.	Qrs.	Qrs.	Qrs.	Qrs.	Qrs.
English	3245	110	4840	441	486	159
Irish.....	—	—	38	—	—	—
Foreign	22139	12753	—	43145	1165	837

Friday, Aug. 9.—The arrivals of English grain continue moderate, those of foreign large. This morning was again fine, and the market thinly attended; the business transacted in Wheat was to a most limited extent at late rates; a sample or two of new were shown, quality not fine, and being for future delivery, were not disposed of.—Barley was in fair demand, and fully supported our quotations.—Beans and Peas are quite as dear.—Oats meet a fair inquiry at former prices.—There has been but little passing in Flour, and it continues without alteration in value.—In floating cargoes of Indian Corn we have heard of no business, and prices remain unaltered.—Since the 2d inst. very heavy rains have fallen in various parts of the country, from whence, particularly this morning, the accounts complain greatly of the defect in the Wheat ear, mildew, rust, &c. A disease in the Potato, destroying the haulm, and in many instances causing decay to the roots, appears to be steadily progressing both in England and Ireland, and we hear of some complaints from Scotland, but whether it be the same as that of 1845 appears doubtful.

Arrivals this week.

	Wheat. Qrs.	Barley. Qrs.	Oats. Qrs.	Flour.
English ...	1960	10	60	1880 sacks
Irish	—	—	—	— brls.
Foreign ...	20840	7670	2502	

Imperial Averages.	Wheat.	Barley.	Oats.	Rye.	Beans.	Peas.
June 29.....	40s 9d	21s 6d	16s 5d	21s 6d	26s 11d	26s 11d
July 6.....	40 11	21 9	17 0	23 2	26 10	28 4
— 13.....	41 3	21 5	16 11	23 3	27 2	26 6
— 20.....	42 4	22 3	17 9	22 7	27 5	27 11
— 27.....	43 6	22 3	18 1	24 9	27 4	27 8
Aug. 3.....	43 7	22 4	18 1	22 2	27 6	27 6
Aggreg. Aver.	42 1	21 11	17 4	22 11	27 3	27 4
Duties on Foreign Grain	1 0	1 0	1 0	1 0	1 0	1 0

Fluctuations in the last six weeks' Corn Averages.

Prices.	June 29.	July 6.	July 15.	July 20.	July 27.	Aug. 3.
43s 7d	...	...	...	...	...	
43 6	...	...	...	...		...
42 4	...	...	...		...	...
41 3	...	...		...	...	...
40 11	...		...	...	...	...
40 9		...	...	...	...	...

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In presenting PORTRAITS of several of the HONORARY MEMBERS of the IPSWICH MUSEUM to the friends of its supporters, a brief explanation should be added of the motives which led to their publication. This Institution was established, in December 1847, mainly with the object of contributing towards the free instruction of the Working Classes in the science of Natural History, by providing for them a good Museum, Library, Lectures, and Classes. The object was no sooner known than the most cordial and generous offers of co-operation were made by many eminent naturalists, whose promises have been amply fulfilled, as opportunities have been afforded them.

Under a grateful sense of their disinterested kindness, I have been induced to present to our Members the Portraits of Gentlemen to whom we feel largely indebted for the prosperity which has attended the progress of the IPSWICH MUSEUM, at the same time I have hoped to confer upon them the only tribute of gratitude which it was in my power to offer, for the services and assistance they have rendered us—either by their interesting Lectures, or by their valuable donations to the Museum and Library. It was originally intended to have confined the issue of these Prints to the Members of the Museum, but so many applications for copies have been made by the friends of those whose Portraits have been taken, that I have obtained permission to issue a *limited* number of large India Proofs at 10*s.* 6*d.* each. They have accordingly been reserved for this purpose, and an early applications requested. Any profit that may arise from the disposal of these will be devoted exclusively to the funds of the Institution.

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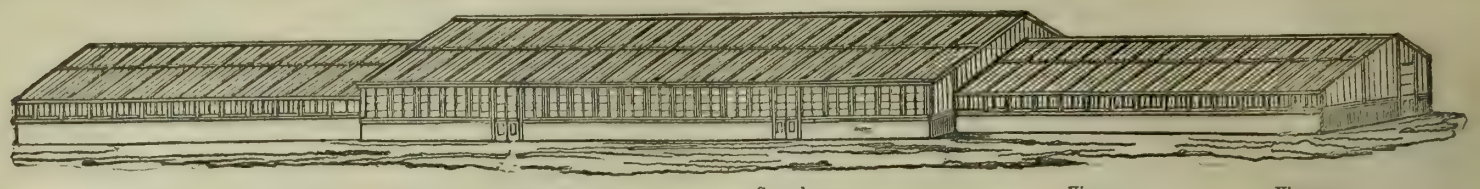
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FLORAL NOVELTY. — PANSY COMPACTUM, or DOUBLE PANSY, named and described by Mr. G. Glenny, to whom specimens were sent. From the habit and growth of this superb Pansy, with a profusion of flowers standing out upon long foot-stalks, it is rendered eminently attractive, and will doubtless form a standing ornament to the Flower Garden. N.B.—Strong plants will be sent out the first week in October, at 5*s.* each, or seven for 30*s.* Orders taken by A. Dods, Rose-hill Nursery, Brighton, who will execute them in rotation on receiving remittances from unknown correspondents.—Brighton, Aug 10.

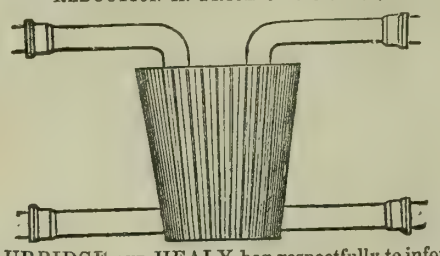
PELARGONIUM, "FOQUETTS MAGNIFICENT."

CHARLES DIMMOCK, Florist, Ryde, Isle of Wight, having obtained a stock of the above from the raiser, will send out Plants, well-established, in 3-inch pots, in the first week of October next, at 7*s.* 6*d.* a plant, or 30*s.* for six, to the trade.

This flower has proved one of the most desirable of its class in cultivation, being a free bloomer, extraordinary trusser (some of the trusses had nine pips), very constant and strong habit, the shape, colour, size, and substance is first-rate.—Terms: cash, and priority of payment, will ensure priority of selection.

Nurseries, 113, High-street Ryde, Isle of Wight, Aug. 10.

REDUCTION IN PRICE OF BOILERS.



BURBIDGE and HEALY beg respectfully to inform their Friends, in consequence of the present reduced price of iron, they are enabled to make a considerable reduction in the price of their Boilers. The price will be, now:

10 in. will warm	50 ft. 4 in. pipe	... £1	15 0
12 in. do.	75 ft. 4 in. do.	... 2	5 0
14 in. do.	100 ft. 4 in. do.	... 2	15 0
16 in. do.	150 ft. 4 in. do.	... 3	10 0
18 in. do.	250 ft. 4 in. do.	... 4	10 0
21 in. do.	350 ft. 4 in. do.	... 5	10 0
24 in. do.	450 ft. 4 in. do.	... 7	0 0
	New Pattern Boilers.		
25 in. will warm	600 ft. 4 in. pipe	... 11	10 0
30 in. do.	800 ft. 4 in. do.	... 15	15 0
36 in. do.	1500 ft. 4 in. do.	... 25	0 0

All Boilers with double arms, up to 18 in., 5*s.* extra; to 24 in., 10*s.* extra; all above the same price.

130, Fleet-street, London, Aug. 10.

THIRD SEPTENNIAL BONUS.

CROWN LIFE ASSURANCE COMPANY, 33, NEW BRIDGE STREET, BLACKFRIARS, LONDON.

Directors.

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Standing Counsel—Charles Ellis, Esq.
Solicitors—Messrs. Hale, Boys, and Austen.
Bankers—Bank of England. Actuary—J. M. Rainbow, Esq.

On a THIRD SEPTENNIAL INVESTIGATION into the affairs of this Company, to the 25th March, 1846, a Bonus, amounting on the average to 31 per cent. on the Premiums paid for the preceding Seven Years, was assigned to all Policies of at least Three Years' standing, and effected for the whole duration of life.

To similar Policies the following Bonuses were declared at former Divisions, viz.:—

FIRST DIVISION, IN 1832.

On the average, upwards of 26 p. cent. on the Premiums paid.

SECOND DIVISION, IN 1839.

On the average, 33 per cent. on the Premiums paid for the preceding Seven Years.

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3. The Assurance or Premium Fund is not subject to any charge for Interest to Proprietors.

4. Permission to pass to Continental Ports between Brest and the Elbe inclusive.

5. Parties (including Officers of the Army, Navy, East India Company, and Merchant Service,) may be assured to reside in or proceed to all parts of the World, at Premiums calculated on real data.

6. Claims to be paid within three months.

7. The Assured may dispose of their Policies to the Company.

8. No charge but for Policy Stamps.

The Prospectus, Tables of Rates, &c. to be had at the Office in London, or of the Company's Agents.

T. G. Conyers, Secretary.

CHOICE CALCEOLARIA, PANSY SEED, &c.

JAMES CHARTRES, Seedsman, 74, King William-street, City, London, has to offer a quantity of each of the above much esteemed Flower Seeds, saved by the first growers of the day, and which he can confidently recommend, each per packet, 2*s.* 6*d.* and 5*s.*—August 10.

LETTERS OF MRS. SCOTT AND MRS. MONTAGU.

THE LADIES' COMPANION, for August 10, contains the first of a Series of the above Letters, discovered in the Collection of the late Sir Egerton Brydges.—Also, Miss Mitford's Readings of Poetry, Old and New, No. 3.—Chapters on Dress.—Corsets.—Old World Ladies, No. 1.—A Day and Night among the High Alps, with Illustrations, &c.

Published Weekly, price 3*d.*; stamped, 4*d.*; and in Monthly Parts. Parts I. to VII. may be had of all Booksellers.

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London: Longman, Brown, Green, and Longmans.

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By Charles Theomartyr Stafford.

*** This volume is a literal translation of a German work of great celebrity, carefully revised by a Clergyman of the Church of England; with the addition of a few interesting extracts and anecdotes.

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THE GARDENERS' CHRONICLE
AND
AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 33—1850.] SATURDAY, AUGUST 17. [PRICE 6*d.*

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THE GREAT WEST OF ENGLAND DAHLIA EXHIBITION, Open to all England, will be held at Wilton Park, Salisbury, on Wednesday, the 28th of August next. Full particulars may be had on application to

Aug. 17. JOHN KEYNES, Hon. Sec., Salisbury.

DAHLIAS.—At the next Show of the NEWBURY HORTICULTURAL SOCIETY, to be held in the grounds adjoining the Railway Station, on Friday, Sept. 6, 1850, the following Prizes will be competed for, open to all England.

THE GIFT OF THE SOCIETY, for 24 dissimilar blooms, 3 Prizes, best 5*l*, 2d 3*l*., 3d 2*l*.

THE GIFT OF MR. C. TURNER, Royal Nursery, Slough, for 6 dissimilar blooms, from varieties sent out by him at any time, 2 Prizes, 1st 2*l*., 2d 1*l*.

THE GIFT OF MR. J. KEYNES, Florist, Salisbury, for 6 dissimilar blooms, from new varieties sent out by him this season; 3 Prizes, 1st 1*l*., 2d 15*s*., 3d 10*s*.

No Entrance Fee. Exhibitors to provide their own stands. Flowers to be ready for the Judges by half-past 10 precisely. Persons intending to compete must give notice to Mr. F. S. Adnams, Northbrook-street, Newbury, on or before Tuesday, Sept. 3d. Certificates will be given for Seedlings.

This Advertisement will not be repeated.

F. S. ADNAMS, G. H. BECKHUSON, Honorary Secretaries, Newbury, Aug. 17.

TROWBRIDGE GRAND HORTICULTURAL AND FLORAL EXHIBITION (the first held in this town), under the patronage of the High Sheriff and Members of the County, open to all England, will be held on WEDNESDAY, 28th August. First prize for 24 Dahlias, 5*l*.; and other prizes equally liberal. First prize for 9 Greenhouse Plants, 5*l*.; and 50 other prizes for Plants, Fruits, &c. Money Prizes and Horticultural Design Certificates for Seedling Dahlias and New Plants will be given. Entrance Money to show in all classes, 7*s*. 6*d*.—Schedules may be obtained of Mr. J. G. FOLEY, Honorary Secretary, The Parade, Trowbridge.

EXTRA PRIZES FOR DAHLIAS.—Open to all England.

THE HALSTEAD AND NORTH ESSEX FLORAL AND HORTICULTURAL SOCIETY have determined to offer the following prizes for Dahlias, at their next Show, to be held at Halstead, Essex, on the 3d of September next, namely, For the best 12 Dissimilar Blooms, 2*l*.; second best, 1*l*.—Entrance Fee, 2*s*. 6*d*., to be paid on entering for the prizes.

Halstead, August 17. G. P. ARDEN, Hon. Sec.

ROSES. — NURSERYMEN, to whose business ROSES would be a desirable addition, may hear of a party having a large select collection of Plants, principally saleable in autumn, 1851, who wishes to negotiate for a partnership to manage that department; could also undertake the books, correspondence, &c. The western side, between Slough and London, preferred.—Address, Z. A., Post-office, Hambrook, near Bristol.

TO STRAWBERRY GROWERS.

WILLIAM HUSSEY has to offer, in fine strong plants, the under-named STRAWBERRIES, at per 100.

Black Prince	4*s*. 0*d*.	Elton Pine	2*s*. 0*d*.
British Queen	2 0	Keens' Seedling	2 0
Comte de Paris	2 6	Princess Alice Maud	2 0
Eleanor	3 6		

Fine Hambro' Vines, from eyes, very strong, 2*s*. 6*d*. and 3*s*. 6*d*. Horticultural Gardens, Norwich, Aug. 17.

RENÉ LANGELIER, of the Clarendon Nursery, St. Helier, Jersey, takes the liberty of informing Amateurs of PEARS that his very extensive collection is now in full bearing, and embraces the present opportunity of soliciting their inspection of the different sorts now on the trees; many of the summer kind may be tasted. Communication from all parts of England daily, viâ London, Brighton, Southampton, Weymouth, Torquay, and Plymouth. R. L. is confident that amateurs of Pears will be gratified by an inspection.

CALCEOLARIA SEED.

JOHN CATTELL has now ready to send out, in packets at 2*s*. 6*d*. each, Seed of the above, of the present year's saving, from a collection of first-rate sorts, carefully impregnated, and warranted to give a good variety of sorts fitting to adorn the Greenhouse or Conservatory. Directions for the culture of the same will be sent with each packet.

Also GERANIUM SEEDS, saved from Florist's and Fancy varieties, separate, of the new kinds, as sent out last year, 2*s* 6*d*. per packet; each packet will contain 18 seeds, or they may be had half of each for the same price, at the purchaser's option. The present is a good time for sowing all the above.

Remittances to accompany orders from unknown correspondents. Bulbs of Tropæolum brachycerus and Tricolorum grandiflorum, worth the attention of the trade.

Westerham, Kent, Aug. 17.

ANTHONY'S PATENT AMERICAN CHURN.—The Silver Medal was awarded to this implement at the Royal Agricultural Society's Show at Exeter, 1850, Stand No. 25. Ten prizes have also been awarded by the judges of the Highland Society's Cattle Show, held at Glasgow on the 1st, 2d, and 3d August, 1850.—Apply to KEY and MITCHELL, at the Depôt for Patented and other new and useful Inventions, 97, Newgate-street, London.

DICKINSON'S NEW ITALIAN RYE-GRASS SEED is now ready for delivery, price 7*s*. per bushel. No. 7, Curzon-street, May Fair, London.

TO FLORISTS AND AMATEURS.

ESTABLISHMENT FOR THE INTRODUCTION OF NEW PLANTS, LUXEMBURG.

The undersigned, Agents to the above Establishment, are prepared to receive and transmit orders for the following new plants, lately introduced by J. LINDEN, of Luxemburg, deliverable on and after the 1st of September next.

FUCHSIA VENUSTA, H. B. K.—Strong plants, 1*l*. One of the most splendid species introduced, and far superior to Fuchsia serratifolia, of a similar habit, but differing therefrom by very large flowers; calyx of a lively vermilion orange, and large extended petals of a coral red. Native of the cold regions of New Grenada. This remarkable plant carried away the first prize at all the principal shows in Belgium, and is represented in the "Flore des Serres" for December, 1849.

FUCHSIA NIGRICANS, LINDEN.—Strong plants, 8*s*. Handsome species, an abundant flowerer, with dark purple petals.

ALLOPHLECTUS CONGESTUS, DECAISNE.—Strong plants, 12*s*. See description in Catalogue, to be had as under.

BOMARIA EDULIS.—Strong plants, 12*s*. A charming climber, lance-shaped leaves, light green above, dark red, spotted with yellow. This beautiful specimen carried away a medal at the great exhibition at Ghent.

BEFARIA ÆSTUANS	...	... £1 4*s*.
,, DENSA	...	... 1 0
,, TRICOLOR	...	... 1 8

BETHAM AND BLACKITH, AGENTS FOR FLORISTS, Custom House and General Agents, Cox and Hammond's Quays, Lower Thames-street, London, Aug. 17.

PELARGONIUM, "FOQUETT'S MAGNIFICENT."

CHARLES DIMMOCK, FLORIST, Ryde, Isle of Wight, having obtained a stock of the above from the raiser, will send out Plants, well-established, in 3-inch pots, in the first week in October next, at 7*s*. 6*d*. per plant, or 30*s*. for six, to the trade.

This flower has proved one of the most desirable of its class in cultivation, being a free bloomer, extraordinary trusser (some of the trusses had nine pips), very constant, and strong habit, the shape, colour, size, and substance is first-rate.—Terms: cash, and priority of payment will ensure priority of selection.

Nurseries, 113, High-street, Ryde, Isle of Wight, Aug. 17.

TO THE ADMIRERS OF THAT SPLENDID AUTUMNAL FLOWER, THE CHRYSANTHEMUM.

YOUELL AND Co. are now prepared to execute orders from their extensive and very select collection of the above, comprising all the new and fine continental varieties, at the following prices:

50	best new sorts	25*s*.
25	ditto	15*s*.
12	ditto	9*s*.

Well established in small pots, or by post free.

NEW DWARF CHINESE OR LILLIPUTIENNE CHRYSANTHEMUMS.

This new and beautiful class are well deserving the attention of cultivators from their exceeding dwarf habit (not attaining more than 1 foot in height). The profusion of flowers with which they are covered, as well as the great variety and distinctness of colour, will render them general favourites. Strong plants for autumn blooming are now ready for sending out at the following prices:

9	fine varieties sent out last year (for the first time) for	9*s*. 0*d*.
13	do. raised by M. Lebois (and sent out for the first time this season), for	30 0

One sent over to the Trade when two are ordered.

The latter are figured in the last December Number of the "Annales de la Societé d'Agriculture et de Botanique de Gand," and are perfect gems, engravings of which may be seen at YOUELL and Co.'s Nursery.

Descriptive Catalogues of the above may be had on application. Printed directions of their successful and easy method of cultivating the Chrysanthemums for exhibition, &c., will be forwarded with all orders.

ANEMONE SEED,

Saved from selected sorts, is now being harvested by YOUELL and Co. in the finest condition, and can be forwarded, per post free, at 2*s*. 6*d*. and 5*s*. per packet, sufficient to sow a bed of 12 and 24 yards. If sown at the present time it will afford a fine display through the autumn and winter months.

Royal Nursery, Great Yarmouth.

KITLEY'S GOLIAH STRAWBERRY. — The merits of this Strawberry are now so well known, as being hardy, large, fine in colour, a most excellent flavour, and forces well, that all parties who have seen it growing, or tasted the fruit, have expressed their entire satisfaction with it. This is the fifth season it has fruited in the same bed, and the plants are now perfectly healthy, and likely to continue much longer in bearing; the fruit this season have been as large and more abundant than from younger plants.

From the *Gardeners' Chronicle*.—"STRAWBERRIES: *J K*. Your Seedling Strawberry, Goliah, judging from its size and appearence, is worthy of cultivation."

From the *Gardeners' and Farmer's Journal*.—"STRAWBERRIES. *J. K., Lyncombe Vale*.—We have great pleasure in bearing testimony to the exquisite flavour of your Seedling Strawberry, 'Goliah.' In our opinion, it combines the piquant flavour of the Strawberry with the richness of the Pine, the delicious aroma of which it partakes in equal proportion to taste. Apart from the Queen of Fruits, we certainly do not remember anything in this way that conveyed to our senses so delicious a treat as the noble fruit to be known to the world as 'KITLEY'S GOLIAH STRAWBERRY.'"

Strong well-rooted plants are now ready at 3*s*. 6*d*. per dozen, or 1*l*. per 100, on prepaid application only to JAMES KITLEY, Bath; Messrs. Low and Co., Clapton Nursery; Mr. J. G. Waite, Seedsman, 181, High Holborn, London; Messrs. Garraway, Mayes, and Co., Bristol; Messrs. Lucombe, Pince, and Co., Exeter; and Messrs. W. E. Rendle and Co., Plymouth.

Lyncombe Vale Nursery, Bath, Aug. 17.

CHRYSANTHEMUMS.

CHANDLER AND SONS, NURSERYMEN, Vauxhall, London, are now sending out fine Plants of all the best sorts of CHRYSANTHEMUMS, for autumn flowering, at 12*s*. per dozen, package included. It is requested that a Post-office order may accompany all orders from unknown correspondents.

CHOICE CALCEOLARIA SEED.

J. HENCHMAN begs to announce that his choice CALCEOLARIA SEED, saved from superb varieties, is now ready, at 2*s*. 6*d*. per packet. The attention of the trade is also invited to his stock of above 10,000 strong Seedling CEDRUS DEODARA, which he offers on very advantageous terms.—Edmonton, Middlesex, Aug. 17.

DANIEL BUTLER has purchased the Stock of SEEDLING CINERARIAS of Mr. J. Pond (a successful Amateur), of Devonshire Cottage, Bath, saved from the best sorts in cultivation with great care; all Show Flowers, viz., Madam Cerito, Sir Charles Napier, Bridesmaid, Lilac Perfection, Climax, Blue Beard, Dazel Rosea, Fairy, Lord Gough, Queen of May, and Beauty of Newington. The plants will be all had from Devonshire Cottage by D. B. as they are sent out, all true from the sorts named above. This will present an opportunity of possessing a first-rate collection at a very low price, viz., 4*s*. per doz. A deduction where a large quantity is taken.

N.B. A remittance expected from unknown correspondents.

Widcombe Nursery, Bath, Aug 17.

NEW PLANTS AT REDUCED PRICES.—A List of GERANIUMS, FUCHSIAS, VERBENAS, PETUNIAS, CHRYSANTHEMUMS, and other Plants, at very reduced prices, is now ready, and will be sent on application, prepaid. The following selections now sending out.

FUCHSIAS.—Story's, Mayle's, Smith's, and Rumley's, new varieties of 1850, 12 for 20*s*.; or 20 for 30*s*.

VERBENAS.—Smith's, Barker's, Chauviere's, and other new varieties of 1850, 12 for 12*s*.; or 20 for 18*s*.

PETUNIAS.—12 new varieties of 1850 for 15*s*.

NEW CHRYSANTHEMUMS.—12 best new varieties of last season, fine plants, well established in 5-inch pots, for flowering this autumn, 15*s*.

60	very fine varieties, including the above	...	£2 0 0
40	ditto ditto ditto	...	1 10 0
25	ditto 17*s*. 6*d*. 12 superb varieties	...	0 9 0

All well established in 48-size pots.

Catalogues sent pre-paid on receipt of four postage stamps. Goods delivered free to London.

BASS and BROWN, Seed and Horticultural Establishment, Sudbury, Suffolk.

NEW SEEDLING STRAWBERRY—MYATT'S "SURPRISE."—This is a variety raised from the British Queen, which it resembles, though of a more robust habit, and a very free bearer, producing a greater abundance of those large angular-shaped Strawberries than any other variety, and finishing off the last fruit of a good size, price 50*s*. per 100.

Strong plants are now ready, price 50*s*. per 100. Also Myatt's Eleanor, 5*s*. British Queen, Globe, Mammoth, Comte de Paris, Hooper's Seedling, Keens' Seedling, Swanston's Seedling, Elton Pine, 3*s*. 6*d*. Fertilised Hautbois, 5*s*. Cuthill's Black Prince, 10*s*. 6*d*. per 100.—Manor Farm, Deptford.

ROBERT HALL, FLORIST, Alkrington, Middleton, near Manchester, Lancashire, begs to call the attention of Gentlemen, Amateurs, and Florists, to his choice Collection of AURICULAS, ALPINES, POLYANTHUSES, PRIMROSES, CARNATIONS, PICOTEES, and PINKS, Catalogues of which may be had on application, enclosing a postage stamp.

LANCASHIRE SHOW GOOSEBERRIES.—R. H. feels much pleasure in reminding those gentlemen who have hitherto favoured him with their orders, that his plants are this season in their usual fine, strong, and healthy condition.

Alkrington, Aug. 17.

THOM'S SEEDLING STRAWBERRY.

ROBERT THOM, MARKET GARDENER, Cornhill Gardens, Aberdeen, is now ready to supply Plants of the above Strawberry at 1*l*. 1*s*. per 100; 25 plants, sent post free, 7*s*. 6*d*. Usual discount to the trade.

"We have seen the beds of THOM'S Seedling now in fruit at Cornhill Gardens, and have no hesitation in saying that they entirely surpass anything of the kind we have ever seen in the course of a not very limited experience, and our opinion has been more than confirmed by the eulogiums of more competent judges."—*Aberdeen Herald*

"THOM'S Seedling.—These favourite Strawberries are now to be seen in great perfection at Cornhill Gardens, in the opinion of skilful horticulturists and judges they are now established as one of the most prolific varieties, and are of rare flavour, large size, and handsome shape. Our unbiassed verdict is, that they are worthy of all praise."—*Aberdeen Journal*.

ROBERT THOM wisely proved his Seedling by a large and varied experience before announcing it for sale, and it is now admitted by all who have tried the plant that it is decidedly one of the most prolific, the most hardy, and the most delicious in point of flavour of any Strawberry that has yet appeared in the north."—*Aberdeen Gazette*.

Agents: Messrs. Hurst and M'Mullen, Seedsmen, Leadenhall-street, London; Mr. John Scott, Seedsman, Chester road, Manchester; and Mr. John M'Lane, Florist, Camera-square, Chelsea.—Orders addressed to R. THOM, Cornhill, Aberdeen, will be punctually attended to.

Cornhill Gardens, Aberdeen, August 17, 1850.

GRAPE VINES IN POTS FOR FORCING.

J. WEEKS AND CO., King's-road, Chelsea, beg to call attention to their splendid collection of Grape Vines, all struck from eyes, now two and three years old, the finest Plants that have ever been offered for Sale, consisting of 60 varieties, all of the best sorts, warranted true.

THE HAMBURGHS AND MUSCADINES being the best for early forcing in pots, this is the best time for Gardeners to have them, so as to get the eyes ripe and prominent. This Nursery is well worthy of a visit, as all modern Horticultural improvements are in full operation.

J. WEEKS and Co., King's-road, Chelsea.

MITCHELL'S MINERAL BLACK PAINT.—This antiseptic Paint is intended for Park Fencing, and for all farming purposes; it is particularly adapted, by its prevention of dry rot in timber and repellance of damp, for Barns, Stables, Outhouses, Weather Boarding, Hop-poles; also for Carts, Waggons, &c., particularly the Wheels, and for Iron Hurdles, Iron Railings, and all Wood or Iron Work in exposed situations. For Brick Walls it is highly serviceable as a preventive of damp, and also for Walls intended for Fruit Trees, as, besides preserving the Wall, it increases the heat in all situations exposed to the sun, and prevents the harbouring of insects. It is also an excellent covering for Canvas, or Cart Tilts, Roofing, &c. Sold in casks containing from 1 cwt. to any quantity, at 17*s.* 6*d.* per cwt., quite ready for use, by

JAMES PHILLIPS and Co. (the sole agents), 116, Bishopsgate-street, Without, London.

GLASS FOR CONSERVATORIES.

JAMES PHILLIPS AND Co. have the pleasure to hand their New List of Prices of GLASS for Cash.

CUT TO SIZE.

16 oz.	from 2*d.*	to 3½*d.*	per foot.	
21	,, 3½	,, 5	,,	
26	,, 3½	,, 7½	,,	
32	,, 4	,, 9½	,,	

SHEET SQUARES.

In boxes of 100 feet.	*s.*	*d.*
Under ... ... 6 by 4	12	6
6 by 4 and under 7 by 5	16	6
7 by 5 ,, 8 by 6	18	6
8 by 6 ,, 10 by 8	20	6

100 feet and 200 feet cases of large Sheet Glass, for cutting up, at 2½*d.* per foot. British Plate Glass, from 1*s.* 2*d.* to 2*s.* per foot, according to size.

HARTLEY'S PATENT ROUGH PLATE, packed in boxes of 50 feet each:

6 by 4 and 6½ by 4½	...	10*s.*	6*d.*
8 by 6 ,, 8½ by 6½	...	13	6
7 by 5 and 7½ by 5½	...	12*s.*	0*d.*
9 by 7 ,, 10 by 8	...	15	0

MILK PANS.

12 in. diameter	...	2*s.*	0*d.*
14 ,, ...	...	2	6
16 ,, ...	...	3	0
18 ,, ...	...	3	6
20 ,, ...	...	4	0
22 ,, ...	...	4	6
24 ,, ...	...	5	0
26 ,, ...	...	6	0

CREAM POTS, from 2*s.* each.

PROPAGATING GLASSES.

2 in. diameter	...	0*s.*	2*d.*
3 ,, ...	...	0	3
4 ,, ...	...	0	4
5 ,, ...	...	0	6
6 ,, ...	...	0	8
7 ,, ...	...	0	10
8 ,, ...	...	1	0
9 ,, ...	...	1	2
10 ,, ...	...	1	4
11 ,, ...	...	1	6

BEE GLASSES, same sizes.

PRESERVE JARS.

3 inches diameter	...	0*s.*	3*d*
4 ,, ,, ...	...	0	5
5 ,, ,, ...	...	0	7
6 ,, ,, ...	...	0	9
7 ,, ,, ...	...	1	0
8 ,, ,, ...	...	1	3
9 ,, ,, ...	...	1	6

CUCUMBER TUBES.

12 inches long	...	1*s.*	0*d.*
14 ,, ...	...	1	2
16 ,, ...	...	1	4
18 ,, ...	...	1	6
20 ,, ...	...	1	8
22 ,, ...	...	1	10
24 ,, ...	...	2	0

Glass Shades; Tiles and Slates of any size; Wasp Traps, 3*s.* 6*d.* per dozen; Lamp Shades; Rough Plate Glass of every thickness. Lactometers, for trying the quality of milk, 4 tubes, 7*s.* 6*d.*; 6 do., 10*s.* Glass Stands for Pianoforte, and every article in the trade.

JAMES PHILLIPS AND Co., 116, BISHOPSGATE-STREET WITHOUT, LONDON.

GLASS WATER PIPES.

MESSRS. COATHUPES AND Co., GLASS MANUFACTURERS, Bristol and Nailsea, Somerset, continue to supply GLASS PIPES for the conveyance of water, &c., in lengths of from 3 to 7 feet, and from ½-inch to 4-inch bores; they provide also the necessary joints, which enable them to stand very considerable pressure.

GLASS FOR CONSERVATORIES, &c.

HETLEY AND Co. supply 16-oz. Sheet Glass of British Manufacture, at prices varying from 2*d.* to 3*d.* per square foot, for the usual sizes required, many thousand feet of which are kept ready packed for immediate delivery. Lists of Prices and estimates forwarded on application, for PATENT ROUGH PLATE, THICK CROWN GLASS, GLASS TILES and SLATES, WATER-PIPES, PROPAGATING GLASSES, GLASS MILK PANS, PATENT PLATE-GLASS, ORNAMENTAL WINDOW GLASS, and GLASS SHADES, to JAMES HETLEY and Co., 35, Soho-square, London.

See the *Gardeners' Chronicle* first Saturday in each month.

CROWN, SHEET, AND ROUGH PLATE GLASS FOR HOTHOUSES, CONSERVATORIES, &c.

The Improved Patent Rough Plate, made by Messrs. Hartley and Co., can be supplied from this Warehouse, of every size and substance, at the same prices as at the works.

100 and 200 feet cases of large Sheet Glass, from 2½*d.* per foot. Small ditto, 10*s.* 6*d.* per 100 feet, packed in boxes ready for immediate delivery. Curators of Botanical Societies, Florists, Railway Agents, and others requiring large quantities, will, on sending dimensions, receive estimates at the lowest prices.

GLASS MILK PANS, CREAM POTS, Lactometers, Bee Glasses, Fish Globes, and all kinds of Dairy Glass, Propagating Glasses, Hyacinth Dishes, Cucumber Tubes, and every other description of Garden Glasses.

PATENT GLASS PENS, self supplying, never blot, never soil the ruler, and will write continuously for 12 hours.

Also, Glass Rulers, Glass Inks for office-stands, desks, &c. Stationers and Schools supplied. Wholesale Warehouse for Ornamental Shades, Lamp Shades, Gas Glasses, Genuine White Lead, Paints, Colours, and Pumps for Farm purposes.

Our Catalogue of 18 folios is the most complete ever published. No Gardener or Farm Bailiff should be without one. May be had Gratis on sending two postage stamps to Messrs. COGAN and Co., 48, Leicester-square, London.

THE HIPPOPOTAMUS presented by H. H. the Viceroy of Egypt to the Zoological Society of London, is exhibited daily from One to Six o'clock, at their Gardens in the Regent's Park. The Band of the First Life Guards will perform, by permission of Colonel Hall, every Saturday, at Four o'clock. Admission One Shilling, on Mondays Sixpence.

BURBIDGE AND HEALY'S COOKING APPARATUS, combining Sylvester's Patents.—This cooking apparatus possesses greater general advantages than any yet submitted to the public, both as regards strength of material and workmanship; in fact, the laws of heat are so applied as to produce the greatest effect with the least consumption of fuel, without destruction to the apparatus. B. and H. can safely recommend it, from experience, as unquestionably superior to anything of the kind hitherto made. May be seen in daily use at the Craven Hotel, Craven-street, Strand; Stevens' Hotel, Bond-street; Greenwich Hospital; University College Hospital; and is in use by upwards of 200 private families, and at the Manufactory, 130, Fleet-street, London. A prospectus can be forwarded upon application, detailing particulars and price.

IMPORTANT TO GARDENERS, &c.

R. RESTELL'S METALLIC FLEXIBLE GARDEN PEGS, PROPS, AND HOLDERS, will effect great saving in the Gardener's time, and last for years, giving an appearance of neatness and uniformity, and from their composition will not cause the slightest injury to the most delicate plants. Price 2*s.* per lb. The number varying according to weight. In the first 10 sizes, from 150 to the lb. Warranted not to corrode.—To be had of the principal Seedsmen and dealers in Horticultural Implements; and, wholesale, at the Manufactory of the Patent Metallic Ornamental Labels, 35, High-street, Croydon, Surrey.

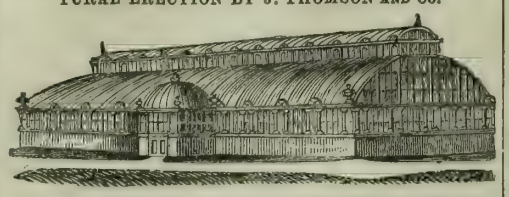
(ADVERTISEMENT.)—London, 34, Eastcheap, 8th August, 1850. Sir,—My attention has been directed to your new method of cultivating Strawberries, set forth in the *Gardeners' Chronicle* of the 3d inst., the merits of which remain to be proved. Of this I do not complain; but I have great reason to state that you have no right to comment on my method of culture in the manner you have done, by the indirect insinuations therein made use of, which would lead many persons to suppose my method was expensive, the plan ugly, and that vermin were harboured by it; the very reverse being the case, which I am prepared to prove, from the number of testimonials I have received from those who have tried my plan. I can show my method is cheaper, will produce a greater quantity of clean fruit on an equal surface of soil, and be much more ornamental than any plan you can suggest, even with your favourite *burrs* (provided my directions are carried out as given in my pamphlet), and I consider you should show your plan to be equal to mine at least, prior to finding any fault with it, or making the indirect allusions you have done. The only conclusions which my friends have formed for your motives in writing as you have done is, that yourself or some of your friends have a large stock of *burrs* to dispose of, and seek this means to effect that end.

I rely on your sense of justice to me that you will insert this letter in your next Paper, and am,

Sir, Your Obedient Servant,

JOHN ROBERTS.

DESIGNS FOR EVERY DESCRIPTION OF HORTICULTURAL ERECTION BY J. THOMSON AND Co.



EVERY KIND OF HORTICULTURAL STRUCTURE Designed, Erected, and Heated by Hot Water, common Flues and other modes, on the most economical and improved modern principles. Testimonials and references from Noblemen and Gentlemen who have kindly patronised, for more than 15 years past, J. THOMSON AND Co.'s modern and simple mode of Constructing, Building, Warming, and Ventilating Garden Structures.



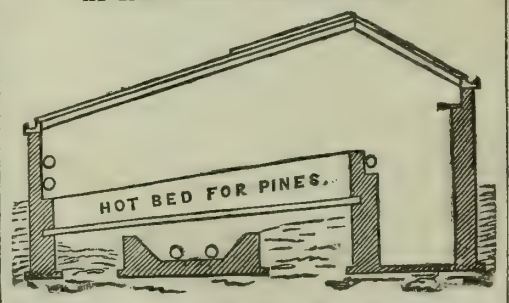
J. THOMSON having had full 25 years' experience as a practical Horticulturist, Landscape Gardener, and Garden Architect, in her Majesty's Royal Gardens at Windsor, Kew, and other places, most respectfully solicits the favours and patronage of Noblemen and Gentlemen about to form new, or to alter and embellish their present Parks, Gardens, &c.

Plans and Estimates for remodelling Parks and Gardens, or for Building and Heating Hothouses, and other Garden improvements, furnished on application to J. THOMSON and Co., Hothouse Builders, &c., King-st., Hammersmith, near London.

*** Melon and Cucumber Boxes and Lights, Rustic Summerhouses, Chairs, Vases, and similar Garden Ornaments made on the shortest notice.

HORTICULTURAL BUILDING AND HEATING BY HOT WATER.

WARRANTED BEST MATERIALS AND WORKMANSHIP AT THE LOWEST POSSIBLE PRICES.



J. WEEKS AND CO., King's-road, Chelsea, Horticultural Architects, Hothouse Builders, and Hot-water Apparatus Manufacturers. The Nobility and Gentry about to erect Horticultural buildings, or fix Hot-water Apparatus, will find at our Hothouse Works, King's-road, Chelsea, an extensive variety of Hothouses, Greenhouses, Conservatories, Pits, &c., erected, and in full operation, combining all modern improvements, so that a lady or gentleman can select the description of House best adapted for every required purpose.

THE HOT-WATER APPARATUSES (which are efficient and economical), are particularly worthy of attention, and are erected in all the Houses, Pits, &c., for both Top and Bottom Heat, and in constant operation in the Stoves.

The splendid collection of Stove and Greenhouse Plants are in the highest state of cultivation, and for sale at very low prices. Also a fine collection of strong Grape Vines in pots from eyes, all the best sorts.

Plans, Models, and Estimates of Horticultural Buildings; also Catalogues of Plants, Vines, Seeds, &c., forwarded on application.—J. WEEKS and Co., King's-road, Chelsea, London.



ONE HUNDRED AND FIFTY Gallons per day of the Purest Water can be obtained with BIRD'S HYDROSTATIC SYPHON WATER PURIFIER, for purifying rain, river, tank, pond, or pump Water. This Scientific Instrument is only 4 inches in diameter, and 7 inches high; it is dropped into the vessel containing the water, and the pipe hung down outside, as indicated in the annexed drawing. It requires no fixing, and is set in action in two minutes.

Invented, made, and sold, by ALFRED BIRD, Experimental Chemist, Birmingham; and sold by all chemists and ironmongers in the kingdom; also sold wholesale and retail at Deane's, Ironmongers, London-bridge, London. Retail price 25*s* each. Orders, containing a remittance, sent to any part of the kingdom. Packing-case 1*s.* extra.

CHEAP AND DURABLE ROOFING.

BY HER MAJESTY'S ROYAL LETTERS PATENT.

F. M'NEILL AND Co., of Lamb's-buildings, Bunhill-row, London, the Manufacturers and only Patentees of THE ASPHALTED FELT FOR ROOFING Houses, Farm Buildings, Shedding, Workshops, and for Garden purposes, to protect Plants from Frost.

At the Great National Agricultural Shows, it is this Felt which has been exhibited and obtained TWO SILVER MEDA PRIZES, and is the Felt SOLELY patronised and adopted by

HER MAJESTY'S WOODS AND FORESTS,
HONOURABLE BOARD OF ORDNANCE,
HONOURABLE EAST INDIA COMPANY,
HONOURABLE COMMISSIONERS OF CUSTOMS,
HER MAJESTY'S ESTATE, ISLE OF WIGHT,
ROYAL BOTANIC GARDENS, REGENT'S PARK,

And on the Estates of the Dukes of Sutherland, Norfolk, Rutland, Newcastle, Northumberland, Buccleuch (at Richmond), the late Earl Spencer, and most of the Nobility and Gentry, and at the ROYAL AGRICULTURAL SOCIETY'S HOUSE, Hanover-square.

It is half the price of any other description of Roofing, and effects a great saving of Timber in the construction of Roofs. Made to any length by 32 inches wide.

PRICE ONE PENNY PER SQUARE FOOT.

*** Samples, with Directions for its Use, and Testimonials of seven years' experience, with references to Noblemen, Gentlemen, Architects, and Builders, sent free to any part of the town or country, and orders by post executed.

☞ The Public is cautioned that the only Works in London or Great Britain where the above Roofing is made, are

F. M'NEILL AND CO.'S

Patent Felt Manufactory, Lamb's-buildings, Bunhill-row, London, where roofs covered with the Felt may be seen.

The new Vice-Chancellor's Courts, at the entrance to Westminster Hall, were roofed with F. M'NEILL and Co.'s Felt about two years since, under the Surveyorship of Chas. Barry, Esq., R.A. Her Majesty's Commissioners of Woods and Forests are so satisfied with the result that they have ordered the Committee Rooms at the Houses of Parliament to be roofed with their Felt. Quantity altogether used, 24,000 feet.

NOTE.—Consumers sending direct to the Factory can be supplied in lengths best suited to their Roofs, so that they pay for no more than they require.

Every information afforded on the construction of Roofs, or any proposed particular application of the Felt.

METCALFE'S ALKALINE TOOTH-POWDER will be found to be the best that has yet been produced; it contains no acids, nor anything that can injure the finest enamel; it thoroughly removes the tartar and all impurities, produces that beautiful white appearance so much to be desired, and its fragrant perfume tends to sweeten and purify the breath. M. and Co., from the many years they have been celebrated as Tooth-Brush Makers, have had opportunities (that occur to few) of testing the relative merits of those powders that have been brought before the public. They have now succeeded in procuring the receipt from which the above Powder is prepared, and confidently recommend its universal adoption. Wholesale and retail at METCALFE, BINGLEY, and Co.'s, Brush-Makers to H.R.H. Prince Albert, 2*s.* per box. Caution.—The genuine Powder will have the Royal Arms, combined with those of H.R.H. Prince Albert, on the lid of the box, and the signature and address of the firm, thus: "METCALFE, BINGLEY, and Co., 130 B, Oxford-street, London."

ALLSOPP'S EAST INDIA PALE AND OTHER BURTON ALES.—In consequence of a very inferior article being now too frequently sold under the name of these favourite Ales, the public are respectfully requested to apply at the respective stores, where a list of bottlers will be furnished, from whom these ales may be obtained genuine, and where also they may be had in casks of 18 gallons and upwards, either singly or in any quantity. Apply to Messrs. SAMUEL ALLSOPP and SONS, The Brewery, Burton-on-Trent, or their Stores, at 61, King William-street, City; Cork-street, Liverpool; High-street, Birmingham; and the Exchange, Manchester.

TOOTHACHE PERMANENTLY CURED by using BRANDE'S ENAMEL for filling decaying Teeth, and rendering them sound and painless. Price 1*s.* Enough for several Teeth. The only substance approved by the medical faculty, as being unattended with pain or danger, and the good effects of which are permanent.

Sold by all Chemists in the United Kingdom. Twenty really authorised Testimonials accompany each box, with full directions for use. Sent free, by return for post, by J. WILLIS, 24, EAST TEMPLE CHAMBERS, WHITEFRIARS, FLEET-STREET, LONDON, in return for 13 penny stamps.

CAUTION.—The great success of this preparation has induced numerous unskilful persons to produce spurious imitations, and to Copy BRANDE'S ENAMEL Advertisements. It is needful, therefore, to guard against such impositions, by seeing that the name of JOHN WILLIS accompanies each packet.

INTERESTING FACT.—The following singular and authentic case of restoration of the human hair is worthy of observation, more particularly as it relates to an article of high and universal repute during the last half century. "Mr. A. Hermann, of Queen-street, Soho, had been quite bald for some time past, and had tried various preparations for the recovery of his hair, but without any beneficial result. He was then induced to try the effects of 'Rowland's Macassar Oil,' and after daily applying it for about two months, he, much to his gratification, had his hair quite restored, and now possesses a beautiful head of hair. This fact speaks too strongly for itself to require comment."—*Bell's Weekly Messenger.*

ROWLAND'S MACASSAR OIL.—The unprecedented success of this discovery in restoring, preserving, and beautifying the Human Hair, is too well known and appreciated to need comment. For Children it is especially recommended as forming the basis of a Beautiful Head of Hair, and rendering the use of the fine-comb unnecessary. Price 3*s.* 6*d.*—7*s.*—Family Bottles (equal to 4 small), 10*s.* 6*d.*, and double that size, 21*s.* per bottle.

*** Each bottle of the genuine article has the words ROWLAND'S MACASSAR OIL engraved in two lines on the Wrapper; and on the back of the Wrapper nearly 1500 times, containing 29,028 letters.

Sold by A. ROWLAND and SONS, 20, Hatton Garden, London; and by Chemists and Perfumers.

GERMAN SPRING MATTRESSES, permanently elastic, very durable and cheap.

3 feet wide	£2	8	0	4 feet 6 inches wide	£3	3	0
3 feet 6 inches	2	13	0	5 feet	3	10	0
4 feet	2	18	0	5 feet 6 inches	3	18	0

The best, top stuffing all horsehair:

3 feet wide	£3	10	0	4 feet 6 inches wide	£5	0	0
3 feet 6 inches	4	0	0	5 feet	5	10	0
4 feet	4	10	0	5 feet 6 inches	6	0	0

One of these Mattresses, with a French Mattress on it, is a most excellent and soft bed. HEAL AND SON'S List of Bedding, with full particulars of Weight, Sizes, and Prices of every description of Bedding, sent free by post.

HEAL and SON, Bedding Manufacturers, 196, opposite the Chapel, Tottenham-court-road, London.

HUGH LOW AND CO. have just published their GENERAL CATALOGUE OF PLANTS, which can be had free on application.—Clapton Nursery, London, Aug. 17.

FLORAL NOVELTY. — PANSY COMPACTUM, or DOUBLE PANSY, named and described by Mr. G. GLENNY, to whom specimens were sent. From the habit and growth of this superb Pansy, with a profusion of flowers standing out upon long foot-stalks, it is rendered eminently attractive, and will doubtless form a standing ornament to the Flower Garden. N.B.—Strong plants will be sent out the first week in October, at 5s. each, or seven for 30s. Orders taken by A. DODS, Rose-hill Nursery, Brighton, who will execute them in rotation on receiving remittances from unknown correspondents.—Brighton, Aug. 17.

CHOICE CALCEOLARIA, PANSY SEED, &c.

JAMES CHARTRES, Seedsman, 74, King William-street, City, London, has to offer a quantity of each of the above much esteemed Flower Seeds, saved by the first growers of the day, and which he can confidently recommend, each per packet, 2s. 6d. and 5s.—August 17.

MAYLE'S MODEL FUCHSIAS FOR 1850.

MESSRS. MAYLE AND CO. inform the Nobility, Gentry, and the Trade, that these seven unrivalled new reflexed Fuchsias are ready for delivery, and have proved themselves the most superb varieties ever raised. Circulars can be had upon application. See Mr. GLENNY'S opinion in the "Country Gentleman," August 5, page 491.

"HEBE is one of the pale varieties, white, with scarlet corolla, the sepals reflexing very gracefully, and forming a striking feature.

"STANDARD OF PERFECTION is scarlet, with a purple corolla. Sepals reflexing very beautifully.

"Had these come out as a pair, at the full price charged for the lot, nobody would have grumbled."

HEBE was awarded a first-class Certificate at the Birmingham and Midland Society, July 16.

105, New-street, Birmingham.

SEEDLING PELARGONIUM—"PRINCE ARTHUR."

A. PONTEY begs to announce that he will send out on Monday, the 14th October, at 1 guinea each, or four plants for 3 guineas, his seedling Pelargonium, for which the highest prize, the Silver Medal, was awarded at the Exhibition of the Royal Devon and Cornwall Horticultural Society on the 16th May; also a certificate of merit was awarded at the Devon and Exeter Exhibition, on the 24th May, and a certificate of merit at Torquay Exhibition on the 6th June.

The Splendid Pelargonium is thus described in the "Floricultural Cabinet," July:—"Upper petals large, dark clouded blotch shaded off to flesh colour, lower ones flesh colour, centre white; petals of firm substance."

Mr. Glenny's opinion of its habits and the peculiarity of its white throat, which he affirms is "purer than that of any one of the present varieties," has been given in the Country Gentleman, weekly garden newspaper.—Aug. 17.

MESSRS. STANDISH AND NOBLE'S new descriptive CATALOGUE OF SELECT HARDY ORNAMENTAL PLANTS is just published, and may be had for four postage stamps. Besides a Treatise on the cultivation of American Plants, it contains a Plate and Description of the Funebral Cypress, Notices of Cephalotaxis Fortunii, Cryptomeria japonica, Quercus sclerophylla and inversa, Viburnum plicatum and macrocephalum, with many recent introductions from the north of China, quite new to English gardens.

Messrs. S. and N. take this opportunity of stating that they give Designs for Laying out New Grounds and Plans for Improvements; also Estimates for all kinds of Planting, whether ornamental or economic.—Bagshot Nurseries, Aug. 17.

NEW LATE STRAWBERRY,
WILMOT'S "PRINCE ARTHUR."

J. WILMOT, in offering this new variety of STRAWBERRY to the Public, is confident that it combines qualities which no other kind at present in cultivation does possess, being of delicious flavour, and coming in after the principal Strawberry season is over. It possesses the property of firmness of texture, so that it may be transmitted to any part of the kingdom without sustaining injury, as it may be kept for several days after being gathered, when fully ripe, without any indication of decay or loss of flavour.

"Prince Arthur" is one of the largest sized Strawberries, and a most abundant bearer; the foliage is small, and never exceeds 6 inches in height; the fruit is consequently fully exposed to the sun. Its dwarf habit requires it to be planted not more than a foot apart. The fruit is perfectly formed, of a rich scarlet, and colouring equally all over the berry. If planted at the distance recommended it will produce double the weight per acre of any other variety.

Strong plants will be ready for sale in September next, at 5l. per 100, on prepaid application only, to JOHN WILMOT, Isleworth, Middlesex; Robert Glendinning, Chiswick Nursery; William T. Atwood, Mortlake, Surrey; George Charlwood, Seedsman, Covent-garden; and Messrs. Hurst and M'Mullen, 6, Leadenhall-street, London.—Isleworth, Middlesex, Aug. 17.

MAGNUS'S ENAMELLED SLATE is handsomer and more durable than the choicest Marbles, is less than half the cost of the commonest, and is PATRONISED by her MAJESTY and PRINCE ALBERT, the Nobility, Clergy, Architects of Eminence, Engineers, Builders, Railway Contractors, and the Public generally. It is suitable for Chimney-pieces, Pier-table tops, Vases, Ink-trays, and ornaments of various descriptions, Billiard-tables, Baths, Wash-stand, and Dressing-table Trays, Door Furniture, Candelabra, Columns, Monuments, Head Stones, Mural Tablets, Pilasters, Plinths, Fonts, Grand Staircases, Balusters, &c., and is made to represent not only the marbles in ordinary use but all the more costly descriptions, as Porphyry, Rose Granite, Broccatella, Brescia, Lapis Lazuli, Malachite, and Florentine Mosaics, and has obtained the Medal from the Society of Arts. Bored Chimney-pieces, from 25s. upwards. Price lists sent on application to Mr. MAGNUS, PIMLICO SLATE WORKS, 39 and 40, Upper Belgrave-place, London.

*** Roofing and Plain Slate work, of all descriptions, at low prices.

GREENHOUSE AND CONSERVATORY BUILDING ESTABLISHMENT, HOT-WATER APPARATUS MANUFACTORY, KENSALL-GREEN, HARROW-ROAD, LONDON.

JOHN TAYLOR begs most respectfully to call the attention of the Nobility, Gentry, and Gardeners, to the very superior manner in which he erects all kinds of Greenhouses, Conservatories, Forcing Pits, &c., and all other buildings for Horticultural purposes, combining all the most modern improvements with elegance and utility. His manner of heating Horticultural Buildings, Churches, Chapels, Public Buildings, Entrance Halls, &c., has received the greatest approbation from the Nobility and Gentry by whom he has been extensively engaged.

HOTHOUSES AND CONSERVATORIES made and fixed complete in all parts of the Kingdom, at a considerable reduction. One, two, and three-light Cucumber and Melon Boxes and Lights of all sizes, kept ready for use, packed, and sent to all parts of the Kingdom; warranted best material. Garden-lights of every description, at JAMES WATTS', Hothouse Builder, Claremont-place, Old Kent-road. Reference may be had to the Nobility, Gentry, and the Trade, in most of the counties in England.

TO BRICKMAKERS.

WANTED, about 150 loads of good BURRS, fit for Garden purposes, delivered within 5 miles of Hyde-park-corner.—Apply by letter, post paid, to W. B., at the Office of this Paper.

TO MOWERS, GARDENERS, AND OTHERS.

TO LET, by private contract, the MOWING, SWEEPING, ROLLING, and EDGING of about 12 acres of KEPT GROUND, in the neighbourhood of London, partly Gravel Walks and partly Grass. The Ground must be kept in perfect order all the year round. The Contractor to find Scythes, Brooms, &c., but not a Roller. Payment to be made weekly, and the Contract to be determined by one week's notice on either side.—Apply by letter, post-paid, to A. D., care of Mr. Duncan, 10, Tokenhouse-yard, London, marked in the corner of the envelope, *Tender for Mowing*.

The Gardeners' Chronicle.
SATURDAY, AUGUST 17, 1850.

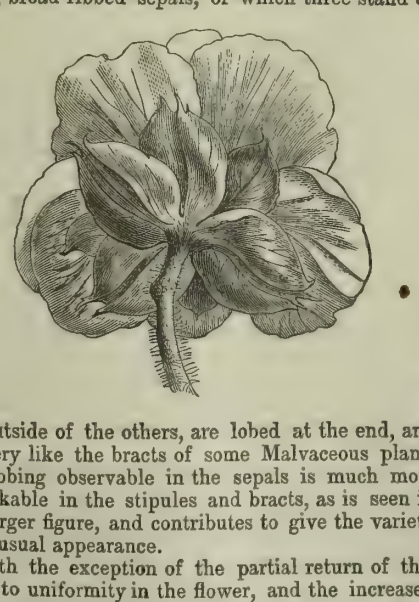
WE dare say our readers have never heard of a GERANIUM called the WILLMORE SURPRIZE, said to have been raised accidentally between a Pelargonium and a Hollyhock! If not they will find its acquaintance worth making, for it is a great curiosity, and very handsome, if employed as a bedding-out plant. The annexed cut gives as faithful a



representation of the plant as can be obtained without the colour, which is of a uniform rich crimson, not unlike that of "ROLLISSON'S Unique."

It was found by Mrs. WILLMORE, of Birmingham, growing in a bed near some Hollyhocks, and was supposed to be an accidental mule between those plants and some unknown Pelargonium—an idea that may be supposed to have arisen partly from the peculiar form of the flowers, and partly from an apparent resemblance between the calyx of the plant and the involucre of the Hollyhock.

It is in reality a semi-double Pelargonium, with the irregularity characteristic of that genus exchanged for something very like the regularity of a common Hedge Geranium. Each flower consists of from seven to nine rather convex petals, uneven at the edge, and spreading nearly equally round the common centre. There are from 15 to 17 stamens, many with perfect anthers. The stigmas, apparently also perfect, vary in number from 9 to 12. The calyx, which is very remarkable, consists of about eight hairy, broad-ribbed sepals, of which three stand on



the outside of the others, are lobed at the end, and are very like the bracts of some Malvaceous plant. The lobing observable in the sepals is much more remarkable in the stipules and bracts, as is seen in our larger figure, and contributes to give the variety an unusual appearance.

With the exception of the partial return of this plant to uniformity in the flower, and the increased number of its parts, there is, in reality, nothing to distinguish it from a true Pelargonium. Even the burrow at the base of the calyx is there. As for the stamens and pistil they appear so perfect, that the plant may be expected to seed; in which case there is a hope of the tendency to become double being increased. Should this be so, it will be a matter of high gardening interest, because we may in that case look for a race of double Geraniums, the bloom of which will be much more permanent than that of the single sorts now in cultivation for bedding out.

IT is now sufficiently evident, both from our private correspondence and public reports, that the POTATO CROP will again fail extensively, not only in Great Britain, but in Ireland. Every post brings fresh intelligence of the advance of the disease, in its old virulent form; and those who, in spite of all remonstrances, have again staked their all upon the plant must prepare to abide the consequences. We learn, however, with much satisfaction, that in the opinion of the best-informed persons in Ireland, the destruction of the crop will not be nearly so great as it was in 1845 and 1846. Early planting seems to have done its work; its beneficial effects are obvious; and it is computed that two-thirds of the whole crop, which is a very large one, will be this year saved in Ireland.

The advance of the disease has, however, already led in that country to the renewal of application for Government assistance in aid of the Practical Instructors, who were some time since appointed by Lord CLARENDON, to improve the people in the art of cultivation. It is represented that these gentlemen have proved of the greatest service in Ireland; that they constitute in themselves an admirable machinery; and that the success of their system is a matter in which all parties cordially concur. We have no doubt that these praises are well deserved, that the advice of the Instructors has proved most beneficial to those who have taken it, and that the country is still in need of all the local directions which their skill may enable them to promulgate. What we do not see is the ground upon which the United Kingdom is once more called upon to support these gentlemen. The value which they have been ascertained to possess is ill appreciated, if those who benefit by it will not pay for it. Nor do we believe that Ireland will withhold her support if she finds it to her real advantage to give *it*. We believe that country to be in a state of rapid improvement, and to be advancing fast to the condition of Great Britain herself. The middle classes, who possess money, energy, and skill, are replacing those great nominal proprietors whose misfortunes, disputes, and embarrassments have brought the country to what it is. The sale of encumbered estates is working wonders; capital is replacing poverty; resident owners and occupiers are stepping into the place of absentee landlords; and self reliance is thrusting out of the land that hopeless dependance upon Government which must of necessity be the ruin of any country. It is upon this altering and fast improving state of affairs that Practical Instructors should rely, and not upon the public funds. It may have been right to furnish the means with which to start them; but if they cannot now stand by the opinions they have won they never will so stand, and should not be supported otherwise.

Among other opinions which the present season has confirmed is the very curious and important one that diseased Potatoes may be safely and advantageously used for seed. Several cases of sound Potatoes having been obtained from rotting sets, were mentioned in our volume for 1846; instances were even mentioned where the crop thus raised was better and more abundant than where sound Potatoes had been carefully planted; and this year a similar, but more conclusive, case has occurred. Mr. BENJAMIN SMITH, of Wokingham, has produced before us proof that while disease largely exists there in fields where sound sets were employed,

there is no disease at present where diseased sets were purposely selected for trial. The following are instances:

1. Very much diseased sets of Ash-leaved Kidneys were planted on the 18th March, in drills 5 inches deep. These were taken up sound and ripe on the 2d of August *without disease.*

2. Very rotten late Potatoes were planted Nov. 1849, 6½ inches deep, covered first by 2 inches of earth, then by a layer of half decayed weeds, and lastly by earth; taken up in the beginning of August *without disease.*

3. Very bad sets planted in March, as before; taken up in the beginning of August, *without disease.* In this case each set produced about seven sound Potatoes.

4. Sound sets of Ash-leaved Kidneys and others, a mixed lot, were planted in February as before. Taken up in August, were found to be *much diseased.*

In all the neighbourhod the disease has spread much, except where the rotting sets were used.

Abraham Lewis, Blacksmith, also of Wokingham, having seen a statement concerning the value of diseased sets, published by Mr. Smith in the *Reading Mercury*, in July or August 1849, planted some land in February last with Ash-leaved Kidneys "so diseased that they appeared like dead Walnuts." His crop was dug on the 8th of August, and *proved* not only *sound*, but *abundant* and of extraordinary beauty. Some of these Potatoes, seen by us, were probably finer than any to be found in the market.

It is the opinion of Mr. Smith that diseased sets are much better for planting than sound ones. The former soon rot when the live part has begun to grow; the latter are apt to remain hard, fleshy, and brittle, even when the new crop is ripe, and he thinks that in the former case there is an effort of Nature to throw off the disease.

It is possible that the morbid matter which causes disease may disappear in the general decay of the tuber in the one case, and may remain unchanged in the other, prepared to seize upon the haulm as soon as it is ready to receive its influence. At least no better explanation of this curious fact presents itself to us at present: but the fact itself is certainly, in practice, very valuable. And we trust that our readers will take advantage of the present autumn to institute such a series of experiments with autumn planted diseased and sound Potatoes as will determine conclusively the true value of the results formerly obtained by our correspondents, and now made known by Mr. Smith.

A notice from a correspondent at Hatfield was inserted in our Paper, of the 10th of August, respecting a disease prevalent amongst Melons. We had previously received an intimation of the same, or a similar malady, from a quarter on which we could rely, and have only delayed noticing the communication from the hope of obtaining some further information, or having the opportunity of inspecting one of the diseased fruit. The letter, it should be observed, of which we make an extract, is dated July 26.

"Six weeks ago some Melons which were growing in a hot-water stove, were attacked in a peculiar manner, whole branches drooping and becoming putrid in 12 hours. One plant only being much affected, the gardener tore it up, and the affection, at least in the same form, has vanished. Three days ago, however, the same peculiar smell was perceptible in the house, and the gardener was told to be on the watch. I did not then detect any manifest symptoms of the disease except the smell. Last night, on my return from a short absence, I was told that one of the Melons was ripe, and that it had ripened very suddenly. It had then no appearance of disease, but when examined the next morning it showed symptoms like those of the leaf, and on cutting out the affected part, the whole inside of the Melon came out, giving, with its seeds, upwards of a pint of fluid, already very offensive in smell. In the interior I observed reddish brown lines, looking like the small veins in a sloughing sore, which immediately recalled the appearance of the cellular tissue of diseased Potatoes. On examination, the red lines proved to be spiral vessels, the discoloured matter being due not to the spiral vessels themselves, but to their contents. The Melons, it should be observed, were grown in *pure* loam without any dung, and they have been all along very luxuriant."

The Hatfield Melons were grown in turfy loam about 2 feet deep; and we have ourselves had Melons grown in pure sandy loam, which exhibited up to a certain point the same appearances. The plants were extremely luxuriant, and after a time single branches decayed suddenly, threatening the complete destruction of the Vines; the leaves, meanwhile, decaying in large round brown spots, which were covered on the under side with *Trichothecium roseum*. The disease made its appearance during the wet, cloudy weather at the beginning of June, and it was quite evident that during a temporary absence too much water had been supplied. When, however, the plants had been well thinned, and water entirely withheld, the decay was rapidly arrested, and the only peculiarity observed since has been the extraordinary rapidity with which the fruit ripened; a Melon of 2½ lbs. had been quite green and scentless in the morning, whereas in the evening it was yellow and evidently ripe, the day not being particularly warm, and the sun mostly obscured, with a heavy rain at noon. It was expected that the Melon would decay, but as no change took place after 36 hours it was examined and proved perfectly sound, but poor in point of flavour. It is possible that in the other cases more water was given than such luxuriant plants could bear. In our own case it is quite certain that nothing but the total abstinence system would have proved efficacious.

Some varieties are doubtless more susceptible than others. One kind alone, in our case, the old Canteloupe, suffered to any extent, in company with three others which were equally luxuriant, and in which possibly a single day might have made the difference, as the leaves of the green Cabul were already spotted. Bauhin mentions, in his history, that a netted Melon, resembling very much the Beechwood, was cultivated in his day with great difficulty, from its decaying wherever it was touched with rain.

Certain it is that the stems of most Melons are peculiarly susceptible of decay, which we have observed generally to commence from some withered leaf-stalk, and to be aided in its progress by the growth of fungi, though we believe by no means originating from them, and when the fluids of so delicate and touchy a plant have once become stagnant, there is no great cause for wonder if decay takes place during any stage of growth. A few isolated cells, in which the balance of vegetation has been disturbed, are quite sufficient to set up a rapid disease at any moment. Premature ripeness is almost always indicative of disease, and much more such rapid changes as those just noticed; and we believe that very generally where disease is set up in vegetable tissues, there is a deposit either in the cellular or vascular cavities of granular matter, like that observed so universally in diseased Potatoes, and which has been recorded in many other cases, as also in the spiral vessels of our correspondent's fruit.

HOW TO MISMANAGE A GARDEN.

Chapter II.—The noble art of mismanagement is not to be lightly acquired. It demands skill and patience, no less than good management; and although some are more celebrated for it than others, yet in all cases it will be found that it is the result of perseverance in certain fundamental principles. Such principles are not, however, always self-evident; some skilful professors of the art conceal their method so admirably that it is only by the result that their greatness becomes visible; and in this they strictly observe the precept of the first masters of antiquity, who declared that the height of art consists in concealing art.

One of the most important of these principles is never to do to-day what can possibly be put off till some other day. This may indeed seem contrary to the maxim which school-boys are taught to copy—that procrastination is the thief of time; but in the first place such rules, which are merely the expression of dull common sense, are not to be held binding upon geniuses, and in the next place this particular maxim supposes that time is valuable. It cannot be said that a thing is stolen which, because of its worthlessness or abundance, is regarded as free to all men's use. When a man stoops down to drink from a river, he cannot be said to steal the water, because it is valueless and is common property. So, in like manner, time cannot be said to be stolen, if it is worthless and cast away by its owner. Now, it is to be observed that nothing is more valueless to an accomplished mismanager than this very article of time; he has plenty of it, and to spare; it is of such small importance that it glides away before he has discovered that he possessed it; and therefore procrastination cannot be truly said to steal it.

It may be assumed, then, that putting off is a cardinal virtue in the life of a mismanager; in fact, it will have to be used as the centre stone of the triumphal arch which must one day be raised to the memory of some worthy of the class, more celebrated than any who yet have lived. It has its inconveniences, to be sure; but there is no unmixed good in this world. Mismanagers, of no small pretensions, sometimes lose places by not looking after them soon enough: some troublesome, active fellow stepping in before them. Cases have occurred of situations being forfeited, because the gardener put off having his flues cleaned till it was necessary to use them; and then they took fire. It has even been known to happen that an impatient master, not properly appreciating the value of procrastination, has suddenly dismissed his gardener for no other reason than because his crops were always sown too late. But these are horticultural martyrdoms; and the victims have the comfort and consolation of knowing that they are sufferers in a great cause.

On the other hand, consider the advantages of putting off; consider the saving of time, the pleasure of idleness, the charm of letting things alone; and above all, the chances that by not doing a thing at once it may not be necessary to do it at all. If things are done the moment they are ordered, a master has no time to reconsider his plans; and a man has no chance of escape from their execution. Thus the advantages of putting off are by no means confined to the gardener; but his master has equal profit in the system. His master indeed has especial sources of enjoyment; if he allows his grounds to be overrun with weeds, because he puts off from day to day the orders for their removal, he has at last the satisfaction of seeing two men employed where one would have been enough, and he has the still higher pleasure of recollecting that he must continue to pay two men instead of one for many a long week after. To persons of a charitable turn this is peculiarly agreeable; and upon the uncharitable, it is a visitation for which they ought to be grateful.

A great amateur used to boast that he had found the way to keep his "man" on the alert; by always deferring his orders till the time had passed to execute them well. It was true that he never had green Peas till they were hawked about the streets, that his Cucumbers generally came in in August, and that his Celery was no bigger than Asparagus; but then he had, as has been just observed, the inestimable comfort of knowing that his "man" was in perpetual waiting, and had no time to waste upon himself. So, in like manner, the descendants of Alexander Morgen, commonly called Slack Sandy, boast to this day of the sums he saved the laird of Inchquarity. The laird's garden was in a bad climate, and in sour soppy land; and when Sandy took to it he found that fruit was never borne there; so he always let alone as long as he could the pruning, and the tying, and the digging, and the nailing, and training, and draining; "for where 's the use," said Sandy, "of taking all that trouble for nothing. We never have had any fruit, and we never shall have any; and to do anything to the trees is nonsense." His arguments and his practice, between them, so convinced the laird that in due time the garden was given up, and Sandy lost his place; but it was always a comfort to him to think upon how much he had saved his master—and himself.

In short the advantages of putting off are such as hardly require illustration by argument. It is evident that no mismanagement will be perfect without it; and that the first business of those who desire to shine in so great an art will be to take every opportunity of putting it conspicuously in practice, the more especially since it is one of those qualities which are sure to be universally appreciated.

BRITISH ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE.

Twentieth Meeting, held at Edinburgh, August, 1850.—It is now 16 years ago since the Association held its meeting at Edinburgh, for the first time. A glance at the proceedings of that meeting, as compared with the present, will show what rapid advances have been made in science during the last 16 years. Nearly every department of human enquiry has its list of important discoveries to show, as indications of the rapid advances it is making; and it is to the honour of the British Association, that it may claim many of these discoveries as its own. With regard to some departments of science, this is more especially the case than with others, and we must confess that for botany it has done little or nothing. We think it is a matter for enquiry amongst botanists, and the council of the Association, to ascertain how this is. It may be that the botanists have not done their duty to the Association, or it may be that the authorities in the Association have not sufficiently consulted the wants and wishes of botanists in their arrangements. We cannot but think they are open to this charge, when we find that of 25 names upon the council, not a single botanist is to be found. We would also observe that some other departments of science are quite disproportionately represented. We think that in a scientific council, where not one botanist is found, geology is far too strongly represented for the interests of the Association, by the number eight. The meeting at Edinburgh, from all we can hear, appears to have been pre-eminently a successful one; and although the numbers were not quite so large as at Birmingham the preceding year, the receipt of money was much larger. Amongst the reports called for, and committees formed, interesting to our readers, we may mention the following. 1. A report on the history and advance of our know-

ledge of vegetable physiology, since the last report to the Association given by Dr. Lindley; from Dr. Lindley, Mr. A. Henfrey, and Dr. Lankester. 2. Committee for superintending the publication of tabular forms, in reference to the periodical phenomena of animals and plants. 3. Continuation of Committee to report on the vitality of seeds. 4. That a committee consisting of Mr. R. Hunt, Dr. G. Wilson, and Dr. Gladstone, be requested to investigate the influence of the solar radiations on chemical combinations, electrical phenomena, and the vital powers of plants growing under different atmospheric conditions. 5. That a committee be named by the Council for the purpose of waiting upon Government to request that some means be taken to insure to the sciences of natural history effective representation in the trusteeship of the British Museum. 6. Dr. H. Cleghorn, Professor Royle, Messrs. R. Baird Smith, and R. Strackey, were requested to draw up a report on the probable effects, in an economical and physical point of view, of the destruction of tropical forests. 7. That the committee on the influence of carbonic acid on the growth of Ferns, be requested to continue their investigations.

The next meeting of the Association, in 1851, is to be held at Ipswich, in Suffolk. No time was appointed, but we have heard it stated that it is likely to take place in June. In the name of natural history we must however protest against the meeting being held in this month. At this time none of the professors in the various medical schools of Edinburgh, Dublin, the Queen's Colleges in Ireland, or the metropolis, can leave their respective posts; and to all so early a season must prove a source of great inconvenience, as it has done on previous occasions when held so early in the year. Amongst the botanists present at Edinburgh we observed Dr. Greville, George Bentham, Esq., Prof. Allman, Prof. Balfour, Dr. Cleghorn, W. Gourlie, Esq., Prof. Walker-Arnott, Dr. Patrick Neill, Prof. Parlatore, Prof. E. Forbes, Prof. Dickie, Prof. Daubeny, Dr. Lankester, J. E. Winterbottom, Esq., Dr. Mackay, Joshua Clark, Esq., Dr. George Johnston, and John Ball, Esq. We shall proceed, as we have done on previous occasions, to lay before our readers a report of the proceedings in so far as they relate to the subjects of systematic botany and vegetable physiology.

VILLA AND SUBURBAN GARDENING.

The Strawberry has long held a high position amongst what are designated small fruits. It may be eaten with impunity even by invalids—a fact which can scarcely be stated of any other fruit. Its culture for the London market constitutes an important branch of gardening, some growers possessing as many as 25 acres of Strawberries. This fruit cannot be imported with the same success as other fruits; hence the supply almost exclusively depends upon the home grower. A few hints as to the mode of culture pursued by large cultivators of Strawberries may therefore be instructive to the amateur.

The first point is to select new ground; worn out soil, and even common garden ground, is unsuitable for Strawberries. Land of rather a stiff texture, which may have been in pasture many years, well broken up and pulverised, with a good dressing of manure from the London stables, in a half decomposed state, is always considered a fair basis for profitable calculation. A market gardener never plants without thorough preparation; no expense is spared in getting everything in the best condition. It is by doing the soil justice, in the fullest sense of the word, that he can safely calculate upon a profitable return. Early autumn planting is generally preferred. The plants get perfectly established before winter, and are not liable to be thrust out of the ground by frost. The distance between the rows is from 2 feet to 2½ feet, according to the kinds, and the plants stand at from 1 foot to 1½ foot asunder in the rows. During their growth, the runners are kept constantly trimmed back, and the soil frequently stirred. Of course no weeds are ever allowed to appear; nothing can be more unprofitable in any garden than the growth of weeds. The first season after planting, a light crop of good fruit is generally produced; but the great crop is that of the following season, and it is to this crop the market gardener looks as a means of return. He frequently takes two crops from the same plants, but he rarely or ever exceeds this, as young plantations are always more productive.

Before the fruit begins to ripen, the space between the rows is covered with a thin layer of dry Grass or short straw, and this is done for two reasons: first, to protect the fruit from being splashed with the soil during heavy rains; and, second, in order to retain moisture in the soil. Strawberry crops suffer to a great extent in dry weather, and to water them when cultivated on a large scale is to pay for the fruit before it is gathered. Not so, however, with the amateur; with a little trouble, he may always provide against such an occurrence, by employing his leisure evenings in supplying them with water, and if liquid manure was given two or three times, just as the fruit is swelling, the crop would be greatly benefited. *Pharo.*

STORM GLASS.

This instrument consists of a glass tube, sealed at one end, and furnished with a brass cap at the other end, through which the air is admitted by a very small aperture. The tube is nearly filled with the following solution:

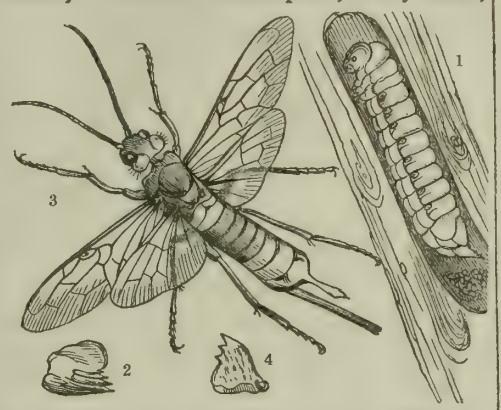
Camphor, ℥iss.; nitrate of potash, gr. xxxviij.; muriate of ammonia, gr. xxxviij.; water, ℥ix.; and rectified spirit, ℥xj. Dissolve with heat. At the ordinary temperature of the atmosphere, plumose crystals are formed.

On the approach of stormy weather these crystals are often observed to occupy only the bottom of the tube, where they appear to be compressed into a compact mass; while, on the other hand, during the fine weather, they assume their plumose character, and extend a considerable way up the glass. These results depend upon the condition of the air, but they are not considered to afford any indication that can be relied upon of the approaching state of the weather. When exposed to a very low temperature, the compound camphor-liniment bottle affords the same appearance and indication as these storm-glasses. *Pharmaceutical Journal.*

ENTOMOLOGY.

Sirex gigas.

At the beginning of the month of August of last year we received from a correspondent, Mr. T. Lamb, of Hurstbourne Park, Hants, several specimens of this fine hymenopterous insect, generally regarded as of very rare occurrence in this country, which had been captured singly, but frequently, at a spot where some sawyers were at work, and our correspondent had observed that the specimens with a screw-like apparatus at the extremity of the body (being the females) thrust this instrument with great force into Fir planks, when they were consequently easily taken, but the borer was inserted so firmly that it was difficult to withdraw it without injury to the insect. About the middle of the month Mr. Lamb informed us that he had succeeded in finding the Sirex gigas in the larva state, specimens of which he sent us in their burrows in Fir wood, accompanied by several specimens in the winged state, newly hatched, of the other British species, Sirex juvencus,



together with others not then emerged. Mr. Lamb's observations, however, on the injurious effects of this insect, are at variance with the general opinion on the subject, since he states that they did not appear to be in the least injurious to Fir timber, as he had in no case found them in sound wood or trees, but only in Spruce Fir, which was dead before it was cut down. Hence he conceives that the disease or death of trees may have been attributed erroneously by entomologists to the attacks of this insect. Such he believes at least to be the case with S. juvencus, considering the habits of S. gigas to be similar. Reserving, however, the history of Sirex juvencus for a future article, we may add that about the same period last year the Zoological Society received various pieces of wood attacked by this insect, from which the perfect insects were appearing in immense quantities, a short notice of which, together with a beautiful coloured plate, representing the insect in all its stages, has been published in the "Illustrated Proceedings" of the Society for last year; and about a month since living specimens were forwarded to the British Museum from Bayswater, where it had been found in considerable numbers. A correspondent of the "Gardeners' Journal" of the present year, mentions the occurrence of the insect in 1848 at Totteridge, Herts, where it was observed emerging from Fir timber grown on Enfield Chase, which was in some places quite honey-combed with them. The writer adds, that he subsequently observed the female inserting her eggs into a large stem of American Arbor-vitæ, which had been cut down only a few days previously. "After walking along the rough bark a little way and beating it with her antennæ, or rather feeling it by a number of slight blows, she seemed all at once to find a place suitable for her purpose, on which she immediately disengaged her ovipositor from a sheath in which she usually carries it, and having firmly fixed the strong sharp claws of her six legs in the rough bark, she brought the point of her instrument to the place selected, and this she managed, notwithstanding its great length, by raising up her abdomen by means of her very long hind legs, with one of which she guided the ovipositor and steadied it till it was inserted a little way; after which, having placed the leg at the proper distance, and it had become perfectly steady and quiet, no part of her body moved but the boring apparatus." She at first took about four minutes to sink a hole, inserting the ovipositor to its full length, more than half an inch.

These proceedings of the female Sirex so exactly correspond with those of the female of Ichneumon manifestator, described by Mr. Marsham in the Linnean Transactions, as to afford some slight support to the idea expressed by the Count de Saint Fargeau, that the Sirices are parasitic insects, depositing their eggs in timber already attacked by other liguivorous larvæ, and that they are not themselves destructive to timber. The great length of the ovipositor at first also seems to favour the same opinion, enabling the insect to reach the victim of its progeny at a greater or less depth in the wood; but this circumstance is contradicted by the fact that the ovipositor of other truly wood feeding insects is capable of very great elongation, as is the case with the female wood leopard moth, the Cerambycidæ, &c. Moreover the history of the Siricidæ has been so repeatedly observed in the great Fir forests of Germany, that had it been a parasite, and not a xylophagous insect, the insects upon which it subsists parasitically would certainly have been discovered long ago. No one worthy of confidence has ever obtained a Sirex from the body of any coleopterous or lepidopterous insect on which it might have subsisted as a parasite, which is sufficient to disprove the assertion of internal parasitism, whilst the larvæ of the Sirex have been observed of all sizes without there being any other insect on which they could feed; and we have at this moment before us a small piece of Fir wood containing a male Sirex juvencus in the perfect state, and two larvæ, not half-grown, without any other insect being present. This is sufficient to disprove the assumed case of external parasitism. Besides, the structure of the mouth of the larvæ of the Sirex is eminently formed for feeding upon wood.

Our figure 1 represents the larva full grown in its burrow in the wood; and figure 2, one of its mandibles with four sharp teeth, and a large molar flat plate well fitted for gnawing wood; figure 3 represents the female Sirex gigas of the natural size, and figure 4 one of its mandibles. *J. O. W.*

Home Correspondence.

Garden Gossip.—I have at last bloomed the magnificent Beaumontia grandiflora, which exceeds all the expectation I had formed of its beauty, and I must unite with Mr. Beaton in recommending it to every one who can plant it in the well-drained border of a good conservatory. The flowers of my plant are much larger than the figure in Paxton's "Magazine of Botany," and one bunch produced as many as eight; and when the purity of their snowy hue is considered, their huge size, and their fragrance, the plant may well be styled the finest known conservatory climber. Has Mr. Beaton nothing new to recommend in this class of plants? Franciscea grandiflora has this summer bloomed tolerably well in my conservatory, and would have done better had more care been bestowed upon it; it is certainly worth the attention of those who do not possess a stove; and perhaps the still finer .F. hydrangæformis would succeed equally well in the same temperature. The complaint of your correspondent in the eastern counties makes me notice a few things that have passed through the last severe winter (severe even for South Devon), uninjured. In the first place I would name a tree quite 30 feet high of Acacia dealbata, which has not even had a leaflet touched by the frost, but has been loaded with flowers. Two varieties of Eucalyptus are rapidly assuming the character of trees, and have induced me to plant others. Euonymus japonicus, with its varieties, is perfectly hardy, and stands the south-west gales in the border of an exposed terrace, where even the common Laurel and Laurustine shrink before their violence; this quality renders the shrub valuable for grounds near the sea, as the colour of its evergreen foliage is peculiarly good. In the class of hardy shrubs I must notice Philadelphus grandiflora, which is beautiful in the extreme, when loaded with its large showy flowers, after almost every other blossom of its congeners has passed away. Nothing however in early spring can vie with Weigela rosea, which undoubtedly is of pre-eminent beauty; a plant in my garden, growing against a south wall, is now between 7 and 8 feet high, and 10 wide, which has literally been a mass of flowers. I am now watching its capsules of seed with much interest, which, though small, seem likely to ripen, and thus, I hope, enable me to transmit this beautiful shrub to a friend in South Australia. Limonia Laureola seems likely to succeed well with me, a plant having stood the winter here without injury; it has made good shoots this spring, and the foliage is a deep glossy green, indicative of health and vigour; it is, however, growing in a very sheltered nook, where it only receives the beams of the early morning sun. Is it not an unusual thing for the Portulacas to come up from self-sown seeds? In my garden I have many plants now flowering strongly from seeds that fell into the ground last autumn, thus saving much trouble and labour. My varieties of Gladioli have bloomed abundantly, though the foliage was all cut off by the frost in the winter; Amaryllis vittata has flowered strongly at the foot of a south wall, and Iris susiana has been fine here and in neighbouring gardens. A border of Ixia crocata has been a blaze of beauty. In a pond, the ivory blossoms of Calla æthiopica have been unusually abundant, though the leaves were destroyed in the winter by frosts that did not, however, congeal the water the plants were growing in. Though not so numerous as usual, from the injury the young wood sustained in April, 1849, my hybrid Rhododendrons were very fine; and the size and vigour of my plants clearly prove the correctness of the statement of Messrs. Standish and Noble, that these fine shrubs do not require heath-mould to insure their success. Mine are growing in beds from 2 to 3 feet deep, of strong

alluvial soil (which almost every valley affords), apparently half loam and bog, mixed with decayed vegetable matter and leaves; and finer plants cannot be seen. *A Devonian.*

Mistletoe.—In your volume for 1847, page 816, are remarks by Prof. Henslow on the rarity of Mistletoe upon Oaks, and in No. 41 of "Notes and Queries" I observe other citations from Dr. Giles and Dr. Daubeny on the subject, which induce me to communicate to you that I have a luxuriant bunch of it now growing on an Oak of about 70 years' growth. The tree is about half a mile west of my residence, and it may interest the antiquarian botanist to add, that it stands on the earthen mound of the site of Badamscourt, once a moated mansion of the Herberts or Ap-Adams of Beachley and Llanllowell. At the request of a member of my family I add the following observations:—In Loudon's "Arboretum," ii., 1025, is given an experiment to be proved, "Whether a plant of Mistletoe would keep alive the tree on which it grows after that tree was prevented from producing either leaves or shoots?" In relation to this subject, a specimen of Mistletoe is sent you, which grew on a standard scarlet Thorn in my garden here. The head of the Thorn was above the Mistletoe, and died, as was supposed, from the Mistletoe withdrawing the juices of the tree. The whole of the head of the Thorn was then cut off, leaving the Mistletoe, which was below, still growing luxuriantly. It, however, also died in the course of the following summer, and is now sent, as above mentioned, with part of the Thorn attached to it. *Geo. Ormerod, Ledbury Park, Chepstow.* [Many thanks. There was no reason to suppose, as Mr. L. did, that the Mistletoe would keep a plant alive.]

Hardiness of Cupressus Uhdeana.—Upon looking over the valuable "Catalogue of Coniferous Plants" published in the last Part of the Journal of the Horticultural Society, I observe that the above Cypress (received here from the Society's Garden as "Cupressus sp. Mexico") is ranked among the tender kinds, or at any rate it has not the sign of hardiness affixed to it. I find it quite hardy here, growing freely in a situation where Cupressus thurifera has been killed, and Juniperus bermudiana, and J. flaccida considerably punished. I fear, however, that the same cannot be said of some of the Pinuses recently introduced by the Society. Last winter, plants in pots of Wincesteriana, Grenvillei, filifolia, and Gordoniana, stood along with various other sorts in a place where they were considerably sheltered, although not perfectly protected from the weather. Gordoniana was quite killed, and the others lost all their old leaves, and still continue in a weakly state. Now, as we know that filifolia cannot endure our winters when unprotected, and as Wincesteriana and Grenvillei suffer quite as much as that species, it is to be presumed that they are not hardy enough to be of any use in this climate. *J. B. Whiting, the Deepdene, Dorking.*

Cambridge Botanic Garden.—Parties who are likely to apply for the vacant curatorship to the Cambridge Botanic Garden may like to know the determination at which the trustees have arrived. In an interview with the Vice-Chancellor last week, he informed me that he had no doubt they would proceed to the choice of a curator so soon as they had returned to Cambridge after the long vacation, which ends early in October. He also authorised me to say that they would require of candidates a statement of the following particulars:—1. Name, age, condition in life (married or single). 2. Periods during which they had been in the service of their several employers, with the names and addresses of these. 3. Testimonials to their efficiency as general cultivators; to their respectability and good morals; and to their presumed qualifications for conducting a botanic garden which is left to their own control. As the responsibility attached to this office will be great, candidates will not object to the strictness of any inquiry it may be thought fit to institute into their qualifications; and though I cannot pretend to offer an opinion with respect to their practical knowledge, the trustees will probably wish me to make some little inquiry into the extent of their botanical attainments. It will be expected that they should have a general knowledge of the classification of plants, and possess some capacity for identifying at least the genus or order to which they belong. *J. S. Henslow.*

Eggs of the Dog-Flea.—It is much to be feared, although Dickens has kept us in the dark on the subject, that in the deranged state of affairs in David Copperfield's establishment poor little Dora allowed Jip's pagoda to be sadly neglected. In fact we are afraid that many wiser people than that delightful young couple do not pay sufficient attention, at the present season of the year, to the sleeping quarters of their pet spaniels and poodles. Mine are washed regularly on Saturday with soft soap and hot water, besides being allowed to go into the Thames, and the passage in which one of their beds is nightly placed is also well scoured with soap and water on the same day. On Monday morning last, however, on removing an old black coat which serves one of them for his bed, I observed a vast number of minute white bodies exactly like grains of very fine sand rolling about on the coat, and which I immediately recognised to be the eggs of the common dog-flea. There must have been thousands of them. They are pure white, oval, or rather of equal size at each end, and quite dry and hard, so that they roll about with the greatest ease. On shaking the coat, and carefully sweeping the floor beneath it, I found as many more eggs, besides a great number of the newly-hatched larvæ, so that had I not made this discovery we should have been swarming with fleas in a week or two's time. If, therefore, with all my care they were able to get such a head, what must poor Jip's state have been? *J. O. W.*

Puzzle.—The name of the tree is Coffee, as explained by your correspondent "J. G." *H.* [We can give no more insertion to this sort of matter.]

Araucaria imbricata.—In 1842 I planted an Araucaria in a damp situation, where it seemed to thrive till 1848, when it became yellow at one of the joints in its leader, where it exuded a resinous liquor. This continued for a year. I then transplanted it into a much drier situation, where, however, it is not doing better, with the exception of having grown freely; it is now 4 feet 10 inches high. The disease is at 3 feet from the ground, and extends upwards to the next joint. The tree is almost bare between the two joints; and although the laterals are of a fine green colour, similar resinous excrescences are showing themselves in several places. Can you assign a cause, and prescribe a remedy for the evil? *J. H.* [No.]

Ceci or Chick Peas.—I beg to enclose a few pods of "Ceci," grown in the open air in my garden. The seeds were sown in the common soil without manure in the month of February, and the plants were exposed to the severe frosts of last spring. The yield is very remunerative (better than Peas.) Abroad they eat them cooked in several ways. What is the Latin name for them, and what do you call them in English? "Ceci" is the Italian name, and the dictionary says "Vetches." Chemistry finds them more nourishing than ony other kind of legumes known, even more so than the "Arabian Lentils" (sold under the name of "Revalenta Arabica"). *J. W. Hopkins, Woodfield, Ashton-on-Mersey.* [Revalenta is "moonshine." Ceci are Chick Peas; the seed of Cicer arietinum. They are wholesome, and form the best quality of that soup which the French call *purée*.]

Mealy Bug.—I cannot discover where Kyle's liquid for destroying mealy bug is to be had. I have applied for it at several places in London as well as here (Bristol), but I cannot get it. I have thrown away a great many plants on account of this pest, and what large plants I particularly wished to keep I have had cut down, placed out of doors, and I am going to shake them well out of the pots and repot them. If I can get the liquid I shall wash them well with it, and afterwards put them in a small house by themselves, to see if it cures them. Since the plants have been out in the air they appear quite clean, not a vestige of the bug is to be seen. Will not the heavy rain cleanse them? I have had the houses well white-limed and painted. If any of your readers can suggest anything else which might be done I shall be thankful. *A Constant Reader.*

The Cuckoo.—As your correspondents seem to have composed lines of their own upon this bird, and are also in error as to the change of note, permit me to correct them. The old song is,

"In April, come I will;
In May, I prepare to stay;
In June, I change my tune;
In July, I prepare to fly;
In August, go I must."

This bird does change his tune, *i. e.*, the old ones. I have myself noticed this, and it is confirmed by many naturalists. To say it is the young offspring making attempts to cry "cuckoo," is not correct. I have been lately observing these birds. A young cuckoo often visits my fields attended by two chaffinches, its adopted parents; they bring it flies and insects, and it stoops to receive the food as they come in turn to feed it. When they go a short distance in search of more, it will fly towards them, alight upon the ground, and wait for a supply. The diminutive parents in charge are most noisy, and flutter about and around their big child when a stranger approaches. The young cuckoo is perfectly mute. The old birds this year did not change their note so soon as they usually do some seasons. Two years ago cuckoos were so exceedingly numerous in these parts as to be a nuisance. Indeed it was all day, cuckoo! cuckoo! His first visit, however, we hail with delight. *X. Y. Z., Hants.*

Hartshorn the best cure for the Sting of a Bee or Wasp.—Some are at a loss how to assuage the pain of a sting. The above is a very antiphlogistic remedy. Mr. T. Falconer, of Lincoln's Inn, when exploring the untrodden plains of Texas and New Mexico, told me he was sitting at dinner by a stranger who was suddenly stung by a scorpion; some hartshorn was instantly applied, and no fatal effects ensued, the sting being generally mortal. I have been stung by bees upon the head and face, but by the use of hartshorn I have been at once relieved, and little or no swelling of the parts takes place. *Q. R.*

The Potato Disease.—About two weeks ago we had a dense fog from the south-west, coming direct over the ocean (or British Channel to be more explicit). It was driven along in clouds by a strong wind from the south-west. The next day patches and spots appeared upon the leaves of the Potatoes. The following day whole stems were dried up and withered, as if they were "charred." The decay of the haulms was accompanied by a most offensive stench. The spot first attacked was about 4 feet square; daily the space increased; and now the disease extends the whole length and breadth of the crop. Early and late sorts are equally attacked, whereas hitherto the latter only suffered. Some are not attacked even now, but this arises from situations being sheltered from these blasts. Another such fog or wind—for I have seen it occur—will attack those which escaped in the first instance. Some say at a certain growth, or stage of maturity, the disease is self-developed. Not so. It attacks plants of all sorts, ages and sizes, and the only remedy is to dig them all up at once, or cut the haulm off even with the ground, till such time as they can be pitted. *X. Y. Z., Hants.*——The disease threatens to be severe in this neighbourhood (Cheltenham). It has attacked my crops. When the haulm is shrivelled, I have the tubers dug up immediately; those tainted are boiled with salt for the pigs, and those that are sound are spread in a cool shed to dry. I feel convinced that when a patch of Potatoes is blasted with the unknown distemper, it is worse than folly to leave them in the ground. There is no remedy to prevent great loss, but putting the Potatoes on animals' carcases, and thus sending them to market as meat instead of vegetables. Next year men must turn their attention to other roots, or they deserve to starve; we have now had five years' warning of "Potato failure." *Falcon.*——When the fatal malady appears, the only way to save the crop is to pull up the haulm and press the mould with a little additional covering on the tubers. Cutting the tops off is of no use, as it leaves part of the diseased haulm to communicate with the tubers. From three years' experience, I have arrived at the conclusion that the disease proceeds from the set, and not from atmospheric causes, except so far as cold, wet, and dull weather contribute to the more rapid destruction of the plants. Such being my opinion, in the spring of 1847 I got ready a small quantity of prepared cuttings, and planted them out about the end of the first week in May, and, although a small crop, I lost none. Last year I tried it on a larger scale, and found my plan equally successful. This year I have about 4 acres (half an acre being in our own grounds). I have been closely watching them, and I am happy to say there is as yet no appearance of disease. I also planted, on the 16th of March, six rows, about 100 yards long, of tubers, the produce of last year's cuttings (Early White-blossomed Kidney), and now they are nearly ready to take up, and still look healthy. I shall not take up any of those I have practised upon before the end of next month, and shall be happy to show them to any one who may wish to view my experiments any morning, except Sunday, from 10 to 12 o'clock. *J. S.*, 18, *Cumberland-place, St. Mary's, Newington, Surrey.*——All crops of Potatoes are diseased, therefore divest them of their stalks or haulm, "with a view of preventing total destruction to the tubers." A more efficacious mode than cutting may consist in "taking a coil of coarse rope, dipped in tar, and stretching it, set it on fire, and draw it slowly over them." *Hardy and Son, Maldon.*

Measurement of a Pear Tree.—A Ne Plus Meuris Pear tree at this place has been planted 12 years, it measures 25 feet in breadth and 12 feet in height. I have taken 800 Pears off it, and left a full crop on. *David Burton, Gardener to Lady Montagu, at Dittonpark, Bucks.*

Societies.

Trial Exhibition: Northern v. Southern raised Carnations and Picotees, *August* 7.—The exhibition for the northern division was held in Derby, in connexion with the Midland Horticultural Society, and as far as the Carnations and Picotees were concerned, it proved pre-eminently satisfactory. Middlesex, Surrey, Bucks, Bedford, Oxford, Nottingham, Leicester, Warwick, Stafford, Lincoln, Lancashire, Wilts, and Yorkshire were duly represented both by flowers and delegates. Thirty-six stands of sixes, 15 boxes of twelves, and upwards of 1000 single specimens were systematically arranged, and entirely filled the large table in the centre of the County Hall. The awards were as follows—Northern Carnations (in sixes): 1st, Mr. Dodwell, for Princess, Admiral Curzon, Seedling 31, Seedling 47, Seedling 32, Premier; 2d, Mr. Haines, for Black Diamond (Haines), Hamlet, Lady Ely, Squire Meynell, William IV. (Wilson), Lord Lewisham; 3d, Mr. Turner, for Miss Rushin, Lord Lewisham, Seedling (Hollyoake), Admiral Curzon, Seedling (Marris), Lord Byron; 4th, Mr. Buswell, for Lord Byron, Admiral Curzon, Ocean Queen, King of Scarlets, Bellerophon, Lord Milton; 5th, Mr. Bayley, for Seedling (Dodwell), Lord Milton, True Briton, Admiral Curzon, Squire Meynell, Seedling (Dodwell). Southern Carnations: 1st, Mr. Turner, for Flora's Garland, Emperor (Puxley), Poins (May), Jenny Lind (Puxley), Tybalt (May), Ariel (May); 2d, Mr. Haines, for May's Hotspur, Flora's Garland, Apollo, Ariel, Excellent, Venus (Willmer); 3d, Mr. Dodwell, for Firebrand, President, Apollo, Lord Rancliffe, Ariel, Prince Albert; 4th, Mr. Edwards, for Queen, Mary Ann, Ariel, Lord Rancliffe, Hero of Middlesex, Flora's Garland; 5th, Mr. Bragg, for Ariel, Flora's Garland, Prince Albert, Sarah, Payne, Prince de Nassau, Princess Royal. Northern Picotees: 1st, Mr. Turner, for Victoria Regina (Marris), Alfred (Dodwell), Countess Howe (Marris), Duke of Rutland (Hollyoake), Grace Darling (Marris), Alice (Dodwell); 2d, Mr. Dodwell, for Alfred (Dodwell), Princess Royal (Marris), Prince of Wales (Marris), Fanny (Dodwell), Miss Rosa (Merrywether), Duke of Rutland (Hollyoake); 3d, Mr. Bayley, for Seedling (Dodwell), Prince of Wales' Seedling (Dodwell), Iphigenia (Marris), Seedling (Dodwell), Seedling (Dodwell); 4th, Mr. Haines, for Prince of Wales, Prince Albert (Marris), Miss Rosa, Seedling (Hudson), Seedling (Haines), Pro consul; 5th, Mr. Merrywether, for Miss Rosa, Mrs. Wood (Merrywether), Lady Franklin (Merrywether), Lady Sale (Ely), Seedling 35. Southern Picotees: 1st, Mr. Turner, for Mrs. Barnard, Juliet (May), Cleopatra (May), Green's Queen, Viola (May), Lorina (Burroughes); 2d, Mr. Merrywether, for President, Delicata (Holliday), Jessica (May), Princess Royal (Willmer), Mrs. Barnard, Green's Queen; 3, Mr. Dodwell, for Green's Queen, Juliet, Mrs. Barnard, Lorina, Venus (Headley), Gem (Youell); 4th, Mr. Bragg, for Gem, Lady Harriett Moore, Princess Royal, Juliet, Venus, Jenny Lind; 5th, Mr. Bayley, for Isabella, Mrs. Barnard, Juliet, Lorina, Venus, Princess Alice (Wood). Single Blooms in Classes—Scarlet Bizarres: 1st, Admiral Curzon, Mr. Buswell; 2d do., Mr. Haines; 3d, do., Messrs. Scholefield; 4th, Seedling. Crimson Bizarres: 1st, Jenny Lind, Mr. Turner; 2d, do. do.; 3d, do. do.; 4th, Black Diamond, Mr. Haines. Pink Bizarres: 1st, Prince Albert, Mr. Bragg. (The paucity of blooms in this class prevented any further award.) Purple Flakes: 1st, Squire Meynell, Mr. Buswell; 2d, Lord Byron, do.; 3d, Premier, Mr. Barringer; 4th, Squire Meynell, Mr. Haines. Scarlet Flakes: 1st, Duke of Devonshire, Mr. Barringer; 2d, do. do.; 3d, do. do.; 4th, do. do. Rose Flakes: 1st, Lady Ely, Mr. Haines: 2d, do. do.; 3d, Princess Royal, Mr. Turner; 4th, Flora's Garland, Mr. Haines. Heavy Red-edged Picotees: 1st, Picnic, Mr. Harrison; 2d, Isabella, Mr. Haines; 3d, Picnic, Mr. Harrison; 4th, King James, Messrs.

Scholefield. Light Red: 1st, Seedling, 70, Mr. Dodwell; 2d, Paymaster, Mr. Harrison; 3d, Gem, Mr. Buswell; 4th, do., Mr. Barringer. Heavy Purple: 1st 2d, 3d, Alfred, Mr. Dodwell. Light Purple: 1st, Leader, Mr. Barringer; 2d, Leader, do.; 3d, Juliet, Mr. Turner; 4th, do., Mr. Dodwell. Heavy Rose: 1st, Green's Queen, Mr. Turner; 2d, do., Mr. Dodwell; 3d, Venus, Mr. Turner; 4th, Victoria Regina, do. Light Rose: 1st, Mrs. Barnard, Mr. Dodwell; 2d, do., do.; 3d, do., do. The Premier Prizes were awarded to Mr. Turner, of the Royal Nursery, Slough, for his stand of Southern Carnations, six magnificent specimens; and to his stand of Northern Picotees, also displaying the highest skill in cultivation, combined with the rarest quality. First-class Certificates were awarded to Mr. Turner, for Fuxley's Jenny Lind, C. B., decidedly the finest of its class; to Mr. Barringer, for his seedling scarlet flake, Duke of Devonshire; to Mr. Wood, for Robinson's Elizabeth (heavy red Picotee), a flower of fine properties, well margined with bright red, and extra fine in the white or ground colour; and to Mr. Dodwell, for Alfred (heavy purple), a variety which has obtained a number of awards altogether unprecedented. An immense number of seedlings was produced. Those especially calling for notice were Marris' Grace Darling, Countess Howe, Victoria Regina, and Hollyoake's Duke of Rutland (exhibited by Mr. Turner), all of first-class quality, and such as will hereafter be seen in every leading stand. Harrison's Picnic, as shown, was too small to make a first-class flower; high cultivation may, however, remedy this.

Garden Memoranda.

Messrs. Loddiges' Nursery, Hackney.—In consequence of their lease having nearly expired, and their not intending to renew it, Messrs. Loddiges will have to give up the greater part of the ground now occupied by them, and remove the stock and contents of the glass houses to their own property close beside the old nursery. In furtherance of this object they have already built on their freehold ground a span-roofed house for the accommodation of Orchids, and it is intended to add others on either side of it, as may be required. This house is 70 feet long, nearly 20 feet wide, and about 8½ feet high. The roof is supported at 5 feet from the ground on brick walls, and is constructed with Montgomery's 2½-inch sash bars, without rafters. It is glazed with Hartley's patent rough plate glass, in panes 14 inches by 10 inches; and is fixed and immoveable in every part. Ventilation is effected by two openings in the brick-work, each 2 feet wide by 8 inches high, and a ventilator over the door in the one end, and two similar openings in the brick-work in the other end. This is considered by Messrs. Loddiges to be sufficient for Orchids, which, however, have been found not to succeed without shading, even under the rough plate glass. No blistering or scorching has been perceived; and, although the plants have not been long in the house, their liberal production of young roots sufficiently indicates that they like their new situation. The heating is accomplished by means of hot water, in 420 feet of 4-inch iron piping issuing from two of Mr. Shewen's small-sized boilers. This may be considered a large heating power, and so it is; but both boilers are not likely to be required except on occasions of very severe weather. The plants are arranged in a bed in the centre of the house, and on slate shelves round the sides. Among them was a fine specimen of Lælia superbiens, purchased at one of Mr. Stevens's sales, beginning to throw up flower-stems. Oncidium Lanceanum and its large flowered variety were in bloom in this house, as were also the sweet smelling Aerides quinquevulnera, the larger variety of Dendrobium longicornu, and some other Dendrobes. In the other houses few things were in flower, except here and there the beautiful Dendrobium chrysanthum, which blossoms regularly twice a year; the pretty little D. aduncum, Sobralia sessilis, and some Saccolabes and varieties of Aerides quinquevulnera.

Miscellaneous.

Sale of Cape Heaths.—Upwards of 200 plants, for the most part large and admirably cultivated, the property of S. Rucker, Esq., of Wandsworth, who has given up Heath growing, were sold by Mr. Stevens, on the 9th inst. The prices they fetched were as follows:—Obbata, 11*l.*; tortiliflora, from 5*l.* to 10*l.*; Elegans stricta, 8*l.*; Hartnelli, 7*l.*; the variety of Hartnelli called virens, 5*l.*; metulæflora, 7*l.*; Cavendishii, ditto; vasæflora, 6*l.* 10*s.*; the larger variety of aristata, 5*l.*; inflata, 5*l.* 5*s.*; ampullacea rubra, 4*l.* 4*s.*; the two-coloured variety of metulæflora, 4*l.*; tricolor rubra, 3*l.* 15*s.*; t. Rollissoni superba, 3*l.*; suaveolens, ditto; obbata umbellata (a very large-flowered Heath), 2*l.* 4*s.*; splendens, 2*l.* 8*s.*; Massoni, 3*l.* 3*s.*; Parmentieri rosea, 2*l.* 12*s.* 6*d.*; ferruginea, 2*l.* 2*s.*; and mirabilis, 2*l.* 15*s.* Other lots ranged between 1*l.* and 2*l.* per lot.

The Hydrostatic Syphon Water Purifier.—This machine delivers (per day) a stream of from 150 to 200 gallons. The instrument is externally white metal, 4 inches in diameter, and 7 inches high. To set it in action it only requires to be dropped into the water, and the pipe hung down outside. It purifies rain, river, tank, pond, or pump water, however dirty, the water retaining all the atmospheric air, on which the freshness of the taste depends. It is especially adapted for ships on long voyages, and cases where a never-failing supply of good water is desired. It is said that if put into a bucket, the bucket being kept constantly full, and suspended about 6 feet from the deck, it will supply water of the greatest purity for a ship's company of 300 men.

Propagation of Plants by Cuttings.—This is one of those manipulations in gardening which require more than an ordinary degree of skill in its execution, and from the exceedingly varied success of different individuals, one would suppose that something more than mere practice is necessary to ensure complete and unvarying success. This fact is more apparent when we consider the numerous casualties by which cuttings are affected, and our imperfect knowledge of the laws that govern the mysterious organisation of vegetable life. This diversity of success may partly arise from the different notions which different persons have of the same thing; and it may frequently be traced to an unwarrantable reliance which some persons place upon certain points of practice, having, in reality, no relation to the demonstrable theorem upon which the subject in question rests. Everyone acquainted with the art of propagation is aware that, under certain conditions, cuttings will grow and make shoots without forming rootlets; while under others, the same cuttings will produce rootlets without manifesting the slightest elongation of its external buds. Again, under certain circumstances, the leaves of some kinds of cuttings will turn yellow and decay, while under others, the same kind of cuttings will remain green and healthy for months together, even without forming roots. The effect produced upon one subject is precisely the same upon all subjects of a similar nature, placed in the same conditions, proving that the art of propagation is not (as it is in the hands of many) the mere consequence of an unguidable operation, successful or otherwise, as chance may direct, but that it is founded upon principles which cannot be violated with impunity, if we wish for satisfactory results. From these observations it is obvious that some more is requisite than merely to know how to make a cutting and prepare the place for its reception; and although these matters also require some attention, it appears to me that they are the least important parts of the process; and from the want of a proper recognition of the other parts, many of the failures that occur may be attributed. It is therefore my intention to treat upon some of those points which are necessary to ensure success in this interesting and important branch of horticulture. Conflicting opinions have been given upon the influence of leaves in enabling the cutting to emit roots. Some very successful propagators maintain that the more leaves left upon a cutting the more rapidly will roots be emitted; and in particular cases this is partly true. It is no less true, however, that cuttings entirely divested of leaves, will also produce roots abundantly, and that too, under conditions seemingly less favourable than in the former case. These considerations involve a highly important question in vegetable physiology, and one that has not, so far as I am aware, received that amount of attention which it deserves. Something like the following argument has been adduced by various propagators, in favour of their system of retaining the leaves, even to the base of the cutting, when practicable;—that there is no suspension of vital energy, as the leaves continue to perform their proper functions, and thus prepare, at the very time it is most required, a supply of organisable matter, which is immediately expended upon the formation of rootlets; and that this suspension will be regulated by the number of leaves, and their distance from the base of the cutting; the assimilated matter for the production of fibres being secreted rapidly or otherwise, according to the quantity and quality of the leaves left. From this we are led to infer that the matter of which the rootlets are formed, is the result of and dependent upon the assimilating powers of the leaves. Hence, according to this train of reasoning, we can arrive at no other conclusions than the following:—The more leaves left upon a cutting, the sooner will it root, and when leaves and other means of assimilation are absent (as is frequently the case), roots will not be formed at all. We know, however, that both these inferences are erroneous, and more especially with regard to the latter, from the fact that roots are produced in abundance without the aid of leaves, and this certainly could not be the case, if the nodules that are formed previous to the emission of roots, were produced by any safe elaborating process. Although we allow that the young bark of some plants does, under certain conditions, perform the same functions as the leaves, it is only an exception to a general rule, and can have little effect either for good or evil on the subject in question. We cannot therefore regard the above argument as giving a satisfactory explanation of any superiority possessed, or advantage to be gained, by retaining leaves on cuttings. Leaves are not absolutely necessary for the formation of roots. Instances have come under my own observation of bulbs doubling their size and filling a large space with roots, when covered with 4 or 5 inches of soil, without producing a single leaf; and every gardener is aware of the beneficial effects resulting from the application of a genial warmth (bottom heat) to the roots of plants, which is neither more nor less than getting the roots, as it were, a stage in advance of the foliage. On the same principle, unhealthy plants, as Camellias, Oranges, &c., are resuscitated by keeping the roots warm and the tops cool, to ensure a healthy and vigorous action of root, previous to exciting the stem and branches; and this is often done after the plants are entirely divested of leaves. There are others who do not ascribe so much influence to the leaves, but assert that the rootlets are produced from the stored-up sap existing in the cutting at the time it is planted. Acting upon this supposition, they are careful in keeping the soil moist, and covering the whole closely with a glass, preventing communication with the external air, in order to avoid mechanical evaporation. This may seem plausible enough, but if we insert a deciduous cutting into moist earth, we will find, in the course of a few weeks, a mass of newly formed tissue at the lower end. Has this been produced solely from the stored-up sap? All the sap that existed in the cutting could not have formed such a mass of matter as we frequently find accumulated at the base of very small cuttings. In this, as in the case of bulbs, it is evident that the roots are not formed exclusively from the stored-up sap. Further,—to show the futility of the opinion, that the emission of roots is dependent upon elaborated sap, let us look to the conditions under which a cutting with leaves,—supposed to be under good management,—is usually placed. We find it closely covered with a bell glass, and shaded from light, and instead of giving it the benefit of a little fresh air occasionally, the water required to moisten the soil is applied outside the glass, and the latter will not be removed for weeks together. The fact of roots being formed under these conditions is a convincing proof that it is not through the agency of leaves, as will be seen from the following extract:—"It is from the continued assimilation of the elementary constituents of plants, that new products result for the formation of woody fibre, and all solid matter of a similar composition. This assimilating process is principally carried on in the leaves, or occasionally in the young green bark. To enable the leaves to perform their functions, they must be exposed to light and air, especially to air in motion, for without these be allowed to act upon them they cannot exercise their power of assimilation." We see from the above, that leaves confined under a bell glass and shaded from light, cannot perform their functions, and of course cannot benefit the cuttings, nor remain long in a healthy state, consequently they ought to be exposed to as much light and air as their altered conditions will permit, and bell glasses dispensed with as far as possible, as their use is only substituting a greater evil to counteract a lesser. Scientific research has failed to discover the true nature of the chemical changes and transformations that are constantly being produced in the interior of plants. The vital principle seems to guide and direct the various combinations that the simple elements which they absorb, undergoes within their vessels. But the process by which the elaborated sap is converted into cellular tissue, or any other form of vegetable structure, or the mode in which water and carbonic acid are changed into gum or sugar, is, and may for ever remain a profound mystery. From the view I have taken of the subject in question, I am led to the conclusion, that the callosity formed on the base of a cutting, is produced by the aqueous matter which it absorbs from the soil, mingling with the stored-up sap, and undergoing a change in the interior of the shoot, analogous, probably, to that carried on in the germination of a seed.* Judging from the external appearance of this accumulated matter, some such combination appears likely, as it is apparently a mass of imperfectly organised woody fibre. As it extends, it takes the appearance and performs the functions of a spongiole, and gradually becomes converted into true woody fibre, as the cutting increases in growth. It is not to be inferred from the above that the whole of the leaves ought always to be removed from cuttings; this, in the majority of cases, would be positively injurious; but I think it sufficiently clear, that the leaves perform no active part in the first formation of roots; consequently they ought not to be excited into growth, but placed in the lowest average temperature consistent with the nature of the plant, while the soil in which they are inserted should approach the highest range of temperature the roots will endure; to stimulate into activity the processes carried on in the vessels beneath the surface of the soil. And the more completely the upward growth of the cutting is retarded until rootlets are formed, the greater chance has the cutting to thrive. The great stimulants of vegetable life are heat, air, light, and moisture; and in the management of cuttings, these agents require to be regulated with the greatest nicety and precision. The more leaves upon a cutting, or the softer its texture, the more care is necessary, as it is the more liable to suffer, either from excess or deficiency of any one of these agents. For instance—if the cutting is subjected to a high temperature, it will cause an immediate expansion of its buds, and elongation of stem and leaves. Or, if under the influence of an arid atmosphere, the dry air will quickly act upon the moist leaves, exhaust the sap, and render them flaccid. The same result will follow if light be admitted in excess, as it will paralyse the energies of the cutting by a too rapid decomposition of carbonic acid. Again, if the soil be kept too dry, there will be no accumulation of matter at the base of the cutting, the dry soil absorbing it as fast as produced. On the other hand, if water be administered too copiously, the total destruction of the cutting will rapidly ensue; if decomposition once commences, it soon communicates its qualities to the whole. In this, as in many other horticultural operations, no definite rule can be prescribed, to be equally applicable in every case. Hence, the many contradictory directions often given upon the same subject, which may be either right or wrong, just according to circumstances. There are various methods of modifying the extreme influence of the agents employed in the economy of vegetation. While cuttings are forming roots, the presence of light may be modified by keeping them a sufficient distance from the glass, or by inserting them into a large pot only half filled with soil. A humid atmosphere is easily maintained by the evaporation of

* Diastase is always present in the germination of seeds. The Willow contains a large quantity of starch among its woody fibre, and cuttings of it emit roots freely. May not diastase be formed at the base of the cutting, to transform the starch and render it soluble and fitted for facilitating the emission of roots? And may we not form an idea of the facility with which cuttings strike root, by the amount of starch contained in their structure?

water; and to prevent saturation in the soil, the pots ought to be well drained. By inverting a small pot inside a larger one, a chamber is formed, which allows a salutary access of air and heat to the base of the cutting; at the same time affording a ready egress for superfluous moisture. It may appear difficult to secure at all times the exact conditions required; nevertheless they should be aimed at, and the nearer they are attained, the sooner will the cutting form roots. It is only from a happy combination of all the essential points that we are to expect constant success; and the latter will follow in an exact ratio as the harmony of the elements of growth are secured. *W. Saunders, in Hovey's Magazine of Horticulture.*

Calendar of Operations.

(For the ensuing week.)

PLANT DEPARTMENT.

The propagation of greenhouse Pelargoniums should have a due share of attention at this season. The large kinds may be cut down according to the usual practice, and cuttings selected from the shoots so cut off; but with the fancy varieties a different course must be pursued; most of these produce such a profusion of flowers, that, if left to their ordinary course, it is impossible to obtain any proper shoots for cuttings. By picking off the flowers as they appear, and encouraging the growth of the plants by rich soil and liquid manure, the extreme points will make cuttings, and the young side shoots will produce cuttings in abundance.

FORCING DEPARTMENT.

Pineries.—Unless the fruits in progress are supported in some way, they are very liable to lean to one side, by which they are always disfigured, and not unfrequently are entirely broken off. This of course must be prevented, by staking and tying in a perpendicular form, before they become too heavy. Vineries.—Where ripe Grapes are hanging a gentle fire should be used in damp weather, to dry the atmosphere, taking care to accompany it with a due proportion of air, to allow the evaporation to escape. Moisture must be carefully avoided, or some of the thin-skinned varieties will be liable to crack; this is an additional reason for covering the outside borders with a tar cloth, to throw off excessive rain. It is readily drawn or rolled off during fine weather. Keep these houses clear of everything calculated to generate damp, especially plants in pots, which frequently require to be watered or syringed; the kinds which generally occupy such places may be very well accommodated in the open air for the next month or six weeks.

FLOWER GARDEN AND SHRUBBERIES.

Everything in this department should wear an appearance of order and perfect neatness, and this state of things can be effected and maintained only by a systematic perseverance in going regularly and frequently over the whole. Considerable attention is necessary to keep the half-hardy plants and annuals in order, especially in cutting back any Box or other evergreen edging by which they are bounded; at the same time, tall or straggling growths of plants in masses should be shortened. If this is done with taste the beds may be made regular and uniform, without being formal. At planting out season, for the sake of immediate effect, the beds are generally filled rather thickly; in consequence of which a careful thinning may be useful, especially where over-crowded plants are liable to be injured at the bottom, as is the case in low, damp places. Great pains have been taken within the last few years to improve the Hollyhock, and it is now becoming a general favourite. It is admirably adapted for the larger clumps, and especially the light-coloured varieties, for planting along the edges of the evergreen masses, to relieve their monotonous appearance. As no reliance can be placed on the plants which are raised from seeds, they should be proved as to colour and quality, before they are planted permanently. The select varieties are easily propagated by eyes from the strong parts of this year's wood. In selecting them, care should be taken to choose those which have an incipient leaf-bud at the base of the leaf, and to reject those which are developing flower-buds only. The cuttings should be prepared by splitting and cutting the stems up into lengths, leaving about 2 inches below the bud, and paring away the pithy part; they should then be planted about 1 inch deep in a frame of very sandy soil, and carefully shaded; if they can have the advantage of a little bottom-heat, so much the better. It is only necessary to mention further that the operation should be performed as soon as the good and bad varieties are distinguishable.

FLORISTS' FLOWERS.

Carnations and Picotees.—The early pipings will now be sufficiently well rooted to pot off. They may be placed two in each pint pot, or if the amateur has plenty of room for wintering, one in each will be better. The plan of piping these flowers is not so frequently adopted as it ought to be; when done early, and carefully attended to, they root almost as well as Pinks, besides having the advantage of making stiff handsome plants. Those which have been layered must be regularly watered, to ensure their well rooting. Examine the pods; those which show for seed must have the petals extracted, the others may be cut off. Seedling plants may be pricked out on well prepared beds for next year.—Do not forget to look over Ranunculus roots to see whether they are all right; it must be remembered that if they contract mouldiness it is fatal to them, and collections are sooner lost than gained. Tulip growers are on the *qui vive;* the great exhibitions in the north are having their effect on the fancy. We would advise those who wish to infuse a little new blood into their collections to inquire now, or they may be forestalled. The first convenient opportunity, clean the bulbs from their dry skins and roots; discard those which would not pass the ordeal of fair criticism during blooming time, and fill the vacancies as soon as possible. Pansies at this time of the year require a considerable quantity of water; continue to shade young plants in hot weather. Mark late blooming seedlings, if they have any symptoms of novelty, to try again, as they will possibly very much improve in the spring.

KITCHEN GARDEN.

Cleaning the borders, clipping the edgings of Box and Thrift, and weeding and repairing the gravel walks, is now the principal work in hand. If the Cardoon is much in request, and the probable supply deficient, a very good substitute may be produced by cutting the old flower-stems of the Artichoke down, thinning the young suckers, and afterwards binding and earthing them in the same manner as real Cardoons. If the ground is good, the strong suckers will be ready for binding with hay ropes and earthing up by the middle of October, and they will be ready for use at Christmas. The earthing up should be done at one operation, for the same reasons as were given in support of similar practices with regard to Celery. Sow some Radish seeds of sorts once every three weeks until the end of September, when a supply will be obtained through the winter. The two last sowings should be made upon a warm south border, along with a small bed of American and Normandy Cress, to stand the winter. Occasional sowings of Corn Salad should also be made.

State of the Weather near London, for the week ending Aug. 15, 1850, as observed at the Horticultural Garden, Chiswick.

August.	Moon's Age.	Barometer.		Temperature.					Wind.	Rain.
				Of the Air.			Of the Earth.			
		Max.	Min.	Max.	Min.	Mean	1 foot deep.	2 feet deep.		
Friday.. 9	1	29.740	29.700	71	51	61.0	64½	63½	S.W.	.00
Satur.. 10	2	29.875	29.838	75	58	66.5	65	63	S.W.	.02
Sunday . 11	3	29.823	29.722	74	50	62.0	64	63	S.W.	.04
Monday 12	4	29.821	29.753	71	46	58.5	63	63	S E.	.10
Tues. .. 13	5	29.901	29.855	75	47	61 0	62	62	N.W.	.00
Wed. ..14	6	30.014	29.994	72	55	63.5	62	62	N E.	.00
Thurs....15	7	30.011	29.9o1	70	52	61.0	62	62	N.	.01
Average....		29.883	29.823	72.5	51.3	61.9	62 9	62.6		.27

Aug. 9—Fine; cloudy and fine; cloudy.
— 10—Fine; slight rain at night.
— 11—Fine throughout; quite clear at night.
— 12—Rainbow at 6 A.M.; thunder in afternoon; clear.
— 13—Hazy clouds; very fine; clear; lightning at night.
— 14—Cloudy; very fine; clear and fine.
— 15—Rain; cloudy; very fine.
Mean temperature of the week. 1 deg. below the average.

State of the Weather at Chiswick during the last 24 years, for the ensuing week, ending August 24, 1850.

August.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds.							
						N.	N.E.	E.	S E.	S.	S.W.	W.	N.W.
Sunday 18	73.7	52.9	63.3	12	0.33 in.	1	5	3	1	3	5	5	1
Mon. 19	72.9	51.3	62.1	12	0.42	1	2	2	1	1	7	7	3
Tues 20	72.7	51.8	62.3	9	0.33	1	1	1	—	5	4	10	2
Wed. 21	72.5	50.5	61.5	9	0.63	2	2	—	1	4	7	6	2
Thurs. 22	70.3	51.7	61.0	11	0.58	1	2	1	—	4	8	7	1
Friday 23	71.3	48.9	60 1	13	0.95	1	2	—	—	3	7	9	2
Satur. 24	70.9	48.2	59.6	10	0.23	1	6	—	—	4	4	6	3

The highest temperature during the above period occurred on the 20th, 1826, and 21st, 1835—therm. 83 deg.; and the lowest on the 20th, 1839—therm. 37 deg.

Notices to Correspondents.

Bees: *E H.* In the form of touch-paper, but the fungus is better and much less injurious to the bees. *Y.—J B.* Payne's. *Y.*

Berberis Aquifolium: *A R.* Preserve the berries like Raspberry jam. They are harmless.

Carbonate of Ammonia: *J B.* You may use it as you propose, but with no greater advantage than in the common way. There is no fixed proportion between the carbonate and water. Make it very weak.

Compost, &c. &c. &c.: *A Country Curate.* Mix your materials and leave them in a heap for a couple of months, or till they are rotten. Add wood-ashes, soot, &c., *ad libitum,* and drench the whole from time to time with chamber-lye if you can. Such stuff is good for everything. Cut your Laurustinus when you like; now is as good a time as any. Remove Wistaria in winter; it propagates freely by layers. You can do nothing with the Couch Grass except fork it out. It does not answer to cut down and regraft old Cherry trees; they gum to death. If you graft it at all, only head back to branches as thick as the forefinger.

Cucumbers: *A M Sheppard.* It may do for shows, but it is unfit for table use. We found it spongy, watery, full of seeds, and with a long narrow neck. All faults of the worst sort.

Eriostemons: *A Young Gardener.* The leaves are attacked by "spot," a disease found to be connected with too much wet. Either they are over-watered, or not half ventilated, or the pots are water-logged, or they are overshaded; you only can judge of the manner in which over-watering takes place.

Fuchsia spectabilis: *H.* See pp. 71 and 103 of the current year's volume.‡

Insects: *Lady C L.* The insect of which you have sent us a drawing is the caterpillar of the puss moth (Cerura Venula), probably so named from its resemblance to a tiny kitten, as suggested by you. *W.—Bucks.* The insects on the Larch twigs appear to be Cherines Laricis, but they were all dead and shrivelled up before reaching us. *W.—Sub.* The blotches on the Rose leaves do not appear to have been caused by insects. The holes in the leaves are gnawed by the larvæ of the antler saw-fly. *W.—F C.* It is not necessary to examine the mouths of all insects in order to ascertain their names, since variations in its different parts is almost always accompanied by external characteristic differences. Your insects are: 1, Allantus viridis; 2, A. scalaris; 3, A. Ribis, male; 4, A. Ribis, female; 5, A. cinctus, female; 6, A. cinctus, male; 7, A. parietum, female. *W.—Ravenswood.* The animal like a stick found on a Rose bush is the looper-caterpillar of the swallow-tail moth (Ourapteryx sambucaria). *W.—W R.* Your caterpillar and other insects, with their numbers, were a mass of broken scraps at the bottom of the box. The former, although shrivelled, appears to be that of the drinker moth (Odonestis potatoria). The black beetle was Copris lunaris; the striped beetle, Clytus arietis; the short-winged beetle, Creophilus maxillosus; and the larger moth, Hepialus fuscus. We know no hawk moth caterpillar with white lines arranged diamond-wise. The Lanti africanus fermentus must have been a joke. *W.—F A P.* The leaves of the blush Roses are attacked by the larvæ of a minute two-winged fly (Cecidomyia sp.). We have never before observed such a case, and will endeavour to rear the insects. Can you send us some more leaves in a damp state? *W.—T S P.* The Istrian Oak timber from Pembroke dock-yard is attacked by the wood-boring beetle (Apate capucina). We should be glad of a bit of the wood showing the burrows, and especially if it contains the larva. *W.—Chirurgiais.* The pods of the Lathyrus pratensis and Vicia sativa are infested with the larva of a Bruchus, which shall receive our attention, and which will form one of our entomological articles. *W.—T D H.* The insects are a minute species of spring-tails (Podura), as we supposed. We do not consider them to be injurious to growing vegetables. *W.*

Leaves: *J Trotter.* Either we have answered your enquiry, or the leaves in question have never reached us. We answer *all* enquiries that have anything to do with the business of this Paper.

Manure: *Juvenis.* If you have the convenience, by all means make your compost heap under cover. You may mix guano or bones with the materials you mention with advantage.‡

Mushroom Spawn: *Agarious.* If it filled a bushel it was a bushel full; if it did not it was not; that is all we can say. We cannot cube the pieces of spawn and compare them with the cubic contents of a bushel. If you are curious enough you may do that for yourself.

Names of Plants: *Jane Anne.* Lastrea Thelypteris. *S.—W H M.* 1, Gymnogramma chrysophylla; 2, Adiantum trapeziforme; 3, 4, and 5, Pteris longifolia; 6, Platyloma flexuosa; 7, Davallia canariensis; 8, Diplazium striatum; 9, Davallia pyxidata; 10, Cassebeera hastata; 11, Doodia caudata; 12, Cassebeera hastata; 13, Didymochlæna truncatula; 14 and 19, Pteris tremula; 15, Nephrodium molle; 16, Platyloma flexuosa; 17, Blechnum occidentale; 18, Nephrodium molle; 20, Lastrea hirta (?) 21, Platycerium alcicorne. We advise you to get some books on Ferns and study them, for learning them in this off-hand way is not commendable, as any names will answer your purpose as well as the correct names. *S.—A Somerville.* Eriophorum polystachyum—the Cotton Grass. It has no affinity to the Cotton plant.—*W R.* All Lilies will occasionally produce bulbs on the stem. Some of them, tigrinum, for instance, always do.—*Erzeroum.* 277, Crepis pinnatifida; 344, Xeranthemum inapertum; 343, Hieracium, perhaps collinum.—*R S.* Selago fasciculata, a common old-fashioned greenhouse shrub. We never saw it used for beds, and should fear that its colour is too pale.—*A Beginner.* Pteris longifolia. If the wood of your Peach-tree is ripe, scrub off the scale with a brush and hot water.—*Adelaide.* 1, Rhodochiton volubile; 2, Aristolochia, near ciliosa—specimen insufficient for determination.—*Coniston.* 1, Allium vineale; 2, Allium ursinum; 3, Coriander.—*R E.* 1, Stanhopea Wardii; 2, S. graveolens; 3, 3, Lycaste plana, a bad variety.—*P P.* Les Orchidées ne sont pas encore arrivées, 15 Aout.—*A Young Gardener.* It does not seem different from Juncus acutiflorus, but it is too young for exact determination. It should be in fruit.—*Ruby.* Leycesteria formosa.

Native Countries of Conifers: *Pinetum.* Thuja aurea, Gardens; Thuja Wareana, North America; Cupressus Uhdeana, Mexico; Cupressus majestica, unknown to us; Juniperus repandens, ditto; Pinus Russelliana, Mexico; Cephalotaxus Fortuni, China. Pinus Mughus and Pinus Pumilio are identical.

Nymphæa: *A H* is assured that a double-flowering variety of the English Water-Lily, of which the blossoms assume a conical form, is cultivated at Navestock, near Romford, in Essex. Do any of our readers know of such a plant, and whether it is procurable?

Pelargonium Monstrosity: *Ravenswood.* It is very curious, but quite harmless. We will very soon give you some account of it, and a woodcut in illustration.

Rose Leaves: *Cymro.* Those of No. 6 are dying, as is usual with the class of Roses to which Great Western belongs. Probably the stock and what it bears are quarrelling. The "red insect" is the fungus called Uredo Rosæ.

Rust in Grapes: *W M.* This arises from the skin of the berries having been killed at some early period. Twenty ways in which it may have been killed could be pointed out—cold currents of air, greasy hands, greasy hair, sulphuring, smoking, &c. &c., may produce the effect. There is no remedy; but prevention demands nothing more than care. Some sorts of Grapes are affected more easily than others.

Strawberries: *Careful Reader.* The Hautbois do not set, because your plants are entirely female. You must obtain males; they are generally far too abundant, and probably exist in the nearest garden of any size. Better still get some Prolific Hautbois in place of your own. If you cannot, and will give us your address, we will put you privately in the right way.—A Mr. *John Roberts* has for some time past been endeavouring to force into notice certain harmless horticultural nicknacks, of which we have the misfortune not to perceive the merit. Some remarks on the Strawberry at p. 483 have produced an explosion of ill humour from this gentleman, in the form of a letter, which he expects us to put among our correspondence. He thinks we must have a large stock of burrs to dispose of (!), or we could not have treated his tiles so ill. We are sorry not to oblige him by complying with his request, but we never knowingly insert puffs, unless among the advertisements. As to the small crotchet which we have unluckily set our heel upon, we can only add, that after trying it fairly, and having seen it tried experimentally, it appears to us to be very dear and very useless.

Tobacco: *Aberhonddie.* To prepare the leaves for smoking, hang them up in an airy shed for a time, to dry; then throw them in a heap to ferment; dry again, press down, and the work is finished.‡

Yellow Jasmine: *A T.* It is readily propagated either by cuttings or layers. Insert the cuttings in silver sand or light sandy soil, and keep them in a close frame for a short time till they strike root. ‡

SEEDLING FLOWERS.

Gloxinias: *X Y Z.* Pretty, but not better than kinds possessing the same colours already in cultivation.*

Hollyhocks in Single Blooms: *W Chater.* Rosea alba, pretty, but superseded by your Rosy Queen, which is a well-formed flower, with a bright yet delicate rosy centre, surrounded by paler outer petals; Spectabilis is a large showy rose, but somewhat coarse; Rosea grandiflora (not very new) is a well-shaped pink, of medium size; Purpurea elegans, distinct in colour, and desirable for the sake of variety; Snowball Superb, an extremely good and well-formed white; Walden Gem, an improvement on the fine variety called Comet, both in colour and shape; Orion, like Walden Gem, but a shade lighter; Pulchella, not new, but one of the prettiest and best shaped Hollyhocks in cultivation; Gem, not sufficiently distinct from Walden Gem.*

Pelargoniums: *Ajax.* Flowers dropped to pieces when received; colours good, shape apparently but middling.*

Picotees: *S A.* Your heavy or medium edged red Picotee is a good second-rate variety. It will be useful, there being so few heavy reds. It is inferior to Marris's Prince of Wales.*

To our Correspondents.—May we beg it to be understood that *we cannot answer inquiries privately through the post.* We are ready to give reasonable information through our columns, but we cannot consent to the labour of writing letters.

*** As usual, many communications have been received too late, and others are unavoidably detained till the necessary inquiries can be made. We must also beg for the indulgence of those numerous correspondents, the insertion of whose interesting contributions is still delayed.

BY HER MAJESTY'S ROYAL LETTERS PATENT.

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Size.	¼ in.	⅜ in.	½ in.	¾ in.	1 in.	1½ in.	2 in.	2½ in.	3 in.
1 ply ...	0s. 5d.	0s. 6d.	0s. 8d.	0s 10d.	1s. 0d.	1s. 2d.	1s. 4d.	1s. 6d.	
2 ply ...	0 8	0 9	1 0	1 2	1 5	1 8	2 0	2 3	
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SCHOOLS OF ENGINEERING AND AGRICULTURE.

THE SESSION for 1850-51 will commence on the 15th of OCTOBER.

Prospectuses, with details of the several Courses of Lectures in connection with these Schools, the Fees payable, &c., may be obtained by application to the Registrar, or to the Professor of Engineering or Agriculture.

Boarding Houses, licensed by the President, have been established in Cork, where Students are received and comfortably provided for on moderate terms, and their religious and moral conduct watched over by the Deans of Residences.

By order of the President,
Aug. 17. FRANCIS ALBANI, Registrar.

The Agricultural Gazette.

SATURDAY, AUGUST 17, 1850.

MEETINGS FOR THE FOLLOWING WEEK.

THURSDAY, Aug. 22—Agricultural Imp. Society of Ireland.
THURSDAY, — 29—Agricultural Imp. Society of Ireland.

We have no doubt that Mr. PETER MATHEWS, of Cirencester, is a good representative of the English farmer, so far as hearty and good-natured energy in things general, and practical skill in things agricultural, are concerned—but we do not believe that he represents the general opinion of practical men on the usefulness of a wider range of knowledge in any business than the possession of mere skill implies. We do not believe that any body of intelligent men can be so blind to the difference between the truth itself and any individual attempt to realise it—between science and the efforts of scientific men—as this gentleman seems to be.

At a meeting in the neighbourhood of the Royal Agricultural College, last week, convened to do honour to himself, Mr. MATHEWS took occasion to criticise the general management of that institution. Now, no one will blame him for this, so long as he is actuated by anxiety for its improvement, not by a desire for its destruction: but instead of pointing out the errors which he believes to have been committed, and urging the necessity for their correction—instead of endeavouring to create a public opinion which should result in the improvement of an institution which might be of such great public value—he has spoken as if the failures, which he seems to have taken pleasure in recording, were the failures of science, and as if the idea of offering scientific education to the farmer were essentially and radically a mistake. "If things were not well done at the college no man of science could be expected to succeed"—and because some things have not been well done, science itself, we are left to infer, is to be found guilty of seeking credit among farmers upon false pretences—an inference which, we must believe, it was intended we should draw, because, amid the applause of the assembly, Mr. MATHEWS, after each particular failure he alleged, exhibited a contrast in the case of the neighbouring farmers, making the remark—"so here also *clay* beats *science*." The general impression, indeed, which this speech seems designed to convey, regarding the agricultural college, is that the institution is altogether impertinent to the real objects and interests of practical agriculture in this country, and that farmers may look at it merely as an impudent attempt to outshine themselves, and exhibit in them that ignorance of their business which the very establishment of such an institution is supposed to charge upon them. And by fostering such ideas as these, and encouraging the prejudice against "science" which undoubtedly exists among a certain class of agriculturists, we believe that Mr. MATHEWS has done just as much harm as his very considerable influence among his brother farmers and the occasion itself would permit. We are glad, however, to find that even in an assembly which seems to have heartily applauded his sentiments on these subjects, they did not go unquestioned, and that Mr. STEINKELLER, a Polish gentleman—a student at the college—rose to defend, not the errors which had been committed there, but, the principle on which the institution was founded, and on which he justly contended such institutions were desirable in every part of the country.

The speech we are discussing referred to two subjects—the pretensions of science in connection with agricultural education, and the management or mismanagement of Cirencester Agricultural College. On the first of these we cannot but imagine that Mr. MATHEWS overshot the mark at which he aimed. He must suppose some sort of education to be desirable for those who would follow his profession; and if so, we cannot believe that he would confine it to the communication of mere skill in farm operations. Surely he would not object to farm-pupils being taught the reasons, as well as the methods, of the operations they see; and unless he does this, he can have no case against a scientific education being offered to agricultural colleges. We submit that it would be a good thing for the progress of agricultural improvement if successful farmers, like Mr. MATHEWS, would refrain from encouraging a contempt for the "science of agriculture." Every one will admit, with them, that good practical farming is the only *result* of any utility to the country; every one knows that their experience (the gain of many years' successful prosecution of their business) is far more trustworthy, and, if people only *knew* it, would be worth far more than the experiments of one, two, or three years' duration, which solitary enthusiasts in the art have recorded for our instruction; every one must admit that the only true theory, or correct science, is that which finds its fulfilment in successful practice. Why, then, is not Mr. MATHEWS content with the undoubted superiority of his position, *as a farmer*, to that occupied by any chemist, or botanist, or amateur, who may desire to make an agricultural experiment? and why, calm in the possession of this undoubted superiority, can he not so far keep his temper, under the efforts at rivalry which some of the latter exhibit, as to avoid sarcastic allusions to the contest between "clay" and "science?" He may depend upon it that, on whichever side success in this contest appears, it is *there* that true science has been exhibited; for it is as the exponent, perhaps in some rare instances as the guide, but never as the rival, of successful farming, that the "science of agriculture" is to be regarded. It is not as a *result* of any material value, but only as means to such a result, that its advocates will defend an acquaintance with the theory of agriculture; and no intelligent practical farmer will join issue on such a plea as that. Whoever Mr. MATHEWS may ridicule, and with whatever success, for their attempts to illustrate or expound this theory, he cannot deny that there *is* a theory which embraces all his experience as a farmer, and the knowledge of which would be useful to an agricultural student; and just as the practice itself is to be taught by a practical farmer, so the theory which explains it is to be learned from the chemist, and geologist, and botanist.

So far, therefore, from laughing, with Mr. MATHEWS, at the scientific professors at the Agricultural College, because of the bad crops which he charges upon them; it is the *practical man*, whoever he may be, who had the management of them, whom, if the accusation be just, we should be disposed to blame. The other gentlemen taught, not farming, but chemistry and botany and natural history, sciences at which farmers may laugh if they please, but each of them, nevertheless, includes a body of *truth*, which, whether they know it or not, materially affects their practice, and an acquaintance with which, notwithstanding Mr. MATHEWS, we therefore recommend them to secure for their successors.

There may be much to blame in the present arrangements of the Royal Agricultural College, as an educational institution, but none of the faults it may exhibit can at all affect the soundness of the doctrine which teaches the advantage of a scientific education for agriculturists; and those who make use of them for the purpose of encouraging distrust of "science" by the farmer, do, in fact, *injure*, however they may please, those who feel it.

CONSTRUCTION AND VENTILATION OF STABLES.

THE advantage of applying to the various departments of the economy of living, the principles as indicated by science, is now fully recognised. Nevertheless, it is matter of some surprise that so little is done in the way of practical efforts to carry out these principles to a beneficial extent. Clearly as many understand the essential requisites to be attended to, for the due preservation of health; still, the manner in which they submit to the dangers and inconveniences resulting from the neglect of these, proves the wonderful apathy which possesses them; and if, with those who have knowledge, this is the case, what efforts can we expect those to make, who are thoroughly ignorant in all points of the subject? Much knowledge has lately been diffused relative to what is termed in the popular language of the day "sanitary reform," and people are now beginning to be alive to the importance of the truth, that the present system of "neglect and filth" is fraught with danger morally and socially to our best interests as a people. Long as we could dilate on this highly important subject, we are not here at liberty to do so; and would not have offered these remarks had they not been in some degree applicable to our subject. If it is true that our domestic structures have been "run up" heretofore, with no regard to the "comfort, cleanliness, and decency" of the inhabitants; it is equally true, that the same indifference as to structural arrangements has been manifested in the building of our stables and cow-houses. Disease has been allowed to run its "weary race," and to cut down unchecked its numerous victims; whereas by attention to healthy arrangements much of its virulence might have been mitigated, and the lives of many valuable animals saved. It is in vain to look for any satisfaction from buildings, however costly these may be, unless all care is taken to carry out the principles, and assist those natural laws, which are sent for wise and benevolent purposes. It is certainly true that in many stables and cow-houses more recently erected,

every attention has been paid to the health of the animals; but such unfortunately is the exception, not the rule; and, while hailing these improvements as steps in the right direction, we are at the same time anxious to see their benefits more widely spread—not confined to the wealthy landowner or farmer; we would wish to prove that they can be as easily and cheaply taken advantage of by the cottager and small farmer or stock keeper. This is in fact the design of our papers; our remarks shall be truly practical, and free, as much as possible, from all unnecessary elaboration. They are chiefly intended for those who are unwilling to procure professional assistance, either in the form of advice, or that derived from expensive books, but who are nevertheless anxious to obtain sound knowledge on the subject. This class we know is a numerous one, and the wants of which are worthy of being supplied, inasmuch as, we feel assured, they will avail themselves of the hints thrown out.

In the consideration of our subject, as indicated in the title, we shall first throw out a few "hints" relative to the laying out and placing of the drains, liquid manure tanks, &c.; thereafter offering our remarks and plans on the important subject of ventilation. In planning buildings adapted for the housing of cows, the first important matter to be attended to is the arrangements for conveying the liquid manure to proper receptacles in which it is to be retained till required for use. It is not necessary for us here to dwell on the importance of this point, supposing that the liquid excrement was of no value to the agriculturist or horticulturist; it is matter of great importance that it should, with a due regard to the animals' health, be at once removed, so as not to vitiate the air to which they are subjected. Before laying the floor it will be necessary to mark out the situation and direction of the drains. To do this properly the following should be considered the position of the stalls, and that of the receptacle to contain the manure. If the stalls are all on one side of the building, it will be necessary to have a drain leading from the front of these direct to the receptacle; if the stalls are on both sides of the house, drains should lead to a central sewer placed in the space between the two rows of stalls, which should be led in its turn direct to the receptacle. The most efficient and cheapest form of drain is that formed by circular earthenware pipes. Those made by Doulton, of St. Helen's, Lancashire, are cheap and most durable. At the bottom of each stall, or along the bottom line of stalls, an open drain should run; this will best catch the liquid manure if laid at least 2 inches below the level of the stall. This can be easiest formed of the common field drain tile, the open side being uppermost, and the circular imbedded in the clay, which should form the bottom of the trench cut for the drain. The joints of the different lengths should be carefully cemented with waterproof cement, so as to allow none of the liquid to permeate through the surrounding soils and thus be lost. The floor of the stalls should be sloping, and paved with flat broad stones, or asphalte would be better. The highest part of the slope should be at the head near the wall, the lowest near the drain; at the lowest part the edge should be nicely rounded, so as to allow the liquid to drop easily into the drain beneath; this may be effected by rounding the stones forming the floor with a chisel: if asphalte is used it will be very easily done. As the upper side of the drain will be left open, solid matter might find access thereto; to prevent this, a strip of perforated wood may be laid over it, or perforated tiles—the apertures will allow the liquid to have free access. It is not essentially necessary that this drain should be covered in, although it will add to the neatness and tidiness of the place—an important feature, by the way, which should not be overlooked. Supposing the receptacle for the manure to be at the end of the house, and that the slates run in a line with the length of it; the open drain should at once communicate with it. To facilitate the removal of the liquid, the drain should have a considerable slope or incline towards the receptacle; in a length of 20 feet this should be 18 inches, or say 1 inch perpendicular for every 18 inches length of pipe. At the point where the stalls terminate, the open drain should communicate with a circular stone-ware pipe, leading direct to the receptacle. If stalls are placed in both sides of the house, as we have before mentioned, the drains running before them should communicate with a central sewer. The open drain being made as above described, should have, at intervals along its length, say at the centre of each stall or place where the animal lies, sloping quickly down towards the central sewer, small circular stone-ware pipes. The joints should be made very tight—all kinds of joints are made ready for use—the "fawcet joint" is the best, and should be rammed up with good firm clay or Roman cement. The central sewer should slope quickly down towards the receptacle. If circular pipes are not used it should be remembered that it is essentially necessary, in order to obtain full satisfaction, that the drains however made should be round at bottom, smooth, having no false or open joints, and made with inclines or slopes towards the receptacle. We would however recommend the circular pipes to be used, they will be cheapest at the end. After the drains are laid the flooring should be attended to; it is of importance to have this smooth and clean. We by no means approve of the flooring generally used, the small round-headed stones are calculated to make the work of keeping the place clean a matter of no small trouble. The interstices between each collect straws and extraneous matter, which it is exceedingly difficult to remove; asphaltum or paved floor being smooth and uniform in surface is easily cleaned and washed. The floor of a well regulated shippen is, or ought to be, as clean as that of the kitchen of a dwelling house. The state of the interior of houses for animals is a test of the owners' good management. As asphalte and paving might be considered too expensive, we here give directions for making a firm floor very cheaply. The thickness of the floor should not be less than 2 feet; at the bottom place a layer of cinders from a smith's fire, the more vitrified they are the better—ram them down with a heavy rammer; the thickness of this should be 6 or 7 inches; above this place a layer of broken stones of a size sufficient to pass through a ring 2 inches in diameter; the thickness of the layer may be 2 or 3 inches. Procure some thin tough clay, in a liquid form, and pour this over the stones, so as to ram between them and bind them close together. Having at hand a supply of tough consistent clay (the blue kind is the best), lay it in lumps over the floor and ram them closely and evenly down; proceed in this way till the proper height is obtained, taking care to ram as hard as possible. To make the surface flat, take a board some 3 feet long and 2 broad, provided with a handle; beat the floor regularly with this, or pass a heavy roller over it. In the course of a few days the whole will become thoroughly hardened. This form of floor can be much improved by making the last layer of the clay rather soft, and imbedding firmly therein flat tiles; these should have sharp projecting knobs on their under side, which will sink in and embrace the clay—a fine hard level floor will thus be obtained.

The reservoirs into which the liquid excrement is to be led should be so constructed that none of the liquid be allowed to escape and permeate through the surrounding soil. The large central or side drain should not be taken at once, but led to a cesspool made at a level some feet below that of the floor of the stables, so that the adit of the drain shall be some 3 or 4 inches above the upper edge. The use of this cesspool is to catch and contain the solid matter, held in solution in the liquid exuvial, such being found to be the least valuable portion of the manure; moreover it is found to clog the valves used in the pipes, and used to deliver it from the tanks when required for use. The cesspool need not be large, and will be best constructed of wood, and carefully lined with gutta percha—a substance remarkably well adapted for such purposes. The joints are easily made water-tight by passing a hot iron carefully over them. A good proportion for the size of the cesspool will be one-tenth of the cubical contents of the tank or reservoir. The pipe leading to the tank should be placed within a few inches of the top, so that all overflow and waste may be prevented. The mode of constructing the tank may be seen in the following brief hints. An excavation is first to be made in the ground of sufficient dimensions; the best form is circular, the proportions being of greater diameter than depth. If the nature of the soil requires it, being loose or sandy, the bottom must be carefully puddled with firm blue clay. The bottom and sides must then be built over with brick, the sides carefully set in waterproof cement. Where a double lining of brick is deemed requisite, they should break joints, that is, the solid part of one brick should cover the joints of one beneath it. On the brick lining consolidating, a layer of waterproof cement should be applied on the outside, so that the whole may be perfectly water-tight. The cement should be mixed thoroughly with one-third part of coarse sharp sea sand. The covering of the tank may be arched, or a flat roof of timber used. Care should be taken to leave a hole provided with a cover to allow of a man to descend into the interior when required, also an aperture for the insertion of the pump barrel or pipe used for withdrawing its contents. Tanks may be made very cheaply by lining the inside of the excavation with tight boarding, and afterwards covering the interior with sheets of gutta percha, as above noticed. A tank thus made will last a long time. A corrugated zinc covering may be adopted in this case. If there is a large quantity of excrement produced, a second tank should be provided into which the overflow from the first may be led. Having thus very briefly drawn attention to the chief requisites to be attended to in stables (and cow houses) in connection with the drains, we shall, in accordance with our arrangement, proceed to the consideration of the important subject of ventilation. *B.*

STEAM POWER AND STEAM PLOUGHS.

I requested permission to make some remark on the past and present proceedings of the steam ploughman, but find it will lead me on to an examination of the present condition of our field mechanics in general.

I believe it is generally admitted that no human practice or calling whatever can be expected to maintain its ground against foreign or domestic rivalry, unless it possesses excellences of the highest order. I do not here more particularly allude to the fine arts, such as painting, poetry, and sculpture, or to the more learned and elaborate sciences, to which we know this rule is applied, than to a practice which depends upon mechanical manipulation as its governing principle; such a practice is agriculture, which may be said to consist in fracturing the soil, indenting, grooving (for seeds), and shaving the surface (for weeds, &c.) by mechanical means. The point upon which this inquiry will turn will be—1st, Whether tillage practice enjoys a mechanical movement of the highest order of excellence, such as we see exhibited when wood, iron, or similar hard material is mechanically operated upon; and, 2d, Whether the machines of tillage can be justly designated or assigned to be "machinery" at all, according to the common acceptation of that word. However, I shall proceed with the particular subject of this letter.

Since agriculture is ordered to stand its ground, dependent on its intrinsic merits alone, and to compete with all nations in conjunction with our other manufactures, I consider it desirable, for reasons hereafter adduced, that the economical agent, steam-power, as the prime mover to tillage and barn mechanism, should be introduced. That agriculture should enjoy the same economical and certain power which these other manufactures possess is not only fair, but absolutely requisite to insure success; my individual opinion being that to steam power, and to it alone, are those manufactures indebted for the maintenance of their position. I have examined them "up and down," right and left, and yet can discern no peculiar attribute capable of enabling them to occupy a position superior to that which farming ought to enjoy. There appears nothing superior in their proceedings which could insure greater stability in foreign competition, over agriculture, other than what they derive from the power—that power being the steam-engine. Withdraw every species of protecting advantage, but leave them *that*, and they hold their ground. Withdraw the steam-engine—give them every other advantage, yet these manufacturers would fall like a stone. If these things be true, it is perfectly legitimate to infer that the self-same agent which supports certain species of our manufactures, in like manner would support and maintain in its integrity another species of mechanical and chemical manufacture, called agriculture.

Thus it appears (unless I be contradicted and set aright by some one of your correspondents) that the possession of steam power is the mainstay to divers extensive British manufactures; and the inference therefrom is, that being acquired, it would perform the same service to another extensive manufacture, called agriculture. The only question remaining refers to the ways and means whereby it can be introduced with economy and effect.

For one, I am glad to see the Royal Agricultural Society has taken up the subject in earnest, and give it as my opinion, formed at the end of nearly four years' constant study of this particular subject, that it is of vital interest to the future welfare and prosperity of agriculture; and I trust that it never will be allowed again to sleep until the means whereby it can be added to our art be found out.

There have been divers attempts made to introduce steam power to field operating; it is termed "a problem of some 40 or 50 years' standing." It has been attempted to be introduced by what is termed "steam ploughing," that is to say, a locomotive steam-engine was made to draw a plough after the existing manner. But these attempts have always ended in failure; let us consider the causes likely to lead to this result.

The customary course of invention has been to make additions to farming mechanism. The first principles of the practice are assumed by the inventive mechanist to be perfectly correct. The idea in his mind is that the fundamental principles for mechanical manipulation in farm practice are settled and established on a sure and proved basis; that it is his duty to invent machines and cause them to "gear on" and adapt themselves to that which he assumes antiquity and long usage have established; forgetting that agriculture was invented in a non-mechanical age; overlooking that it was instituted at a period when the earth was believed by all to be a flat surface, somewhat like a Gloucester cheese; forgetting that the fashioner of the fields, and the forehorse to agricultural tillage machines, is the plough; an implement said to be "as old as Adam;" overlooking that it is not a piece of machinery at all, but simply a wedge, which, instead of being struck into the soil by a mallet, is impelled thereinto by a pair of horses. All these things he appears to overlook, and studies to add those things to the art which would "gear on;" in this he succeeded, and it was to be expected, for they were simply pieces of mechanism; but when he comes to try his hand at the adding a new power to the art, he is staggered and "dumb-founded," as they say, by finding the science of addition is brought to a dead stop; and no wonder, for the power he seeks to add is neither a horse nor an ox, nor an inanimate piece of mechanism, but an independent power, a specimen of still life, except when in action; he observes it will not gear on at all—that mere mechanical invention will not help him through the mystery—and thus his accustomed art is at an end.

Now a good and safe plan for the profitable exercise of the inventive faculties is that of striving to make additions only to those modes of proceeding which may exist in a mechanical practice; by a moderate exertion of ability an invention may be schemed and adapted to gear on with that which already exists; and if this aim be accomplished it is generally successful. The inventor takes care to shape his invention in the mould of the "now and the present," and it gains its position with but little difficulty, for this very good and excellent reason—it comes to its own and its own knows it! This answers well with pieces of mechanism; but when the question is that of the introduction of a new power—that order of art is at an end; a new power requires a new path and a new harness, the shafts no longer fit, and thus there is *prima facie* evidence exhibited to an inquiring mind, that the harness of the horse is unfit for that of the steam-engine.

I do not believe the science of invention is rightly understood by the generality of inventors—perhaps it is not designated a science at all; but considered as a gift or talent. And so it is an innate talent; but this is the very reason why a person who is born with a natural talent should possess or chalk out certain rules and laws for the guidance of his judgment; the imagination or ideality with which a person may be gifted requires not only restraint but government; a fertile imagination is like the light troops to an army—it goes forth to discover the enemy or difficulty, but as soon as it has discovered its office ends; and the battle must then be fought and won by the solid phalanx of the judgment; in other words, as soon as a person, by his assumed gifted imagination has made a discovery—instead of flying to the hammer and chisel, he should sit down, and with those rules before him which he has eliminated from and noted out of the book of a past and proved science, he should well consider the subject, for the purpose of eliciting the conditions upon which a successful issue to the event must depend. This is often to be obtained by discovering what are the distinguishing characteristics of the means he is about to employ.

Now let me show the application of such a rule as this to the important subject about to be brought under the consideration of the readers of the *Agricultural Gazette*. Suppose I wished to add steam power to agricultural mechanical operating? My object would be first to find out what were the characteristic principles of the elements I was about to call into action, because, like the chemist, I should expect known elements to develope their inherent properties.

The inquiry is—Agricultural machinery and the method of applying steam as the motive power thereto. The first characteristic I remark is, that the increased application of machinery calls more human beings into employment; this I note down as the characteristic feature of machinery in general. I next proceed to inquire into the peculiar properties of the power sought to be introduced; in our case this is steam power. What are its distinguishing characteristics? 1st, that it produces a maximum amount of effect by a minimum expenditure of power; 2dly, that it produces a maximum amount of profit by the expenditure of a minimum amount of material; 3dly, that (as a gentleman, who possesses the faculty of conveying a volume of thought in a few words, has said) "it refuses to waste itself;" which expressive metaphor, if I may be allowed to explain it more fully for our mutual instruction, implies that man has acquired a certain knowledge of what this power can accomplish, which (as I said before), is a maximum amount of effect by a minimum expenditure of power; so that when a man sees an operation like this going on, viz., a ponderous locomotive engaged in dragging a plough and a ploughman; his perception is instantly informed that the power is wasting itself as clearly and plainly as though the engine spake. He discerns that the result of this mode of proceeding is the production of a minimum amount of effect by the application of a maximum amount of power, and thence deduces that the power is erroneously applied. The fourth characteristic is, that the peculiar property of steam power is when introduced to double or treble the number of hands called into action by any manufacture, whether it be a cotton or a lucifer match manufacture. Now as this characteristic is of infinite concern, not only to the agriculturist, but to the nation at large, I beg to call your particular attention to it, because it will be clear to all, that if agriculture could but employ double or treble the number of human beings beyond what she now calls into direct action—the question of "no pauperism" is involved. This is a matter that concerns both the agriculturist, the statesman, and the philanthropist.

A cautious inventor having noted down these distinguishing characteristics, would then proceed with the solution of the problem by calling his given inventive faculties into action, for the purpose of producing a mechanical combination, which, being completed, should fulfil all the conditions. If by the exercise of his judgment he perceives these anticipated features gradually developing themselves as he proceeds with his combination of the power with the other means and materials, he is assured that he is on the right track; but if in the course of proceeding he perceives a discrepancy such as this, viz., that although he employs the power so as to produce the greatest amount of effect, yet it has no tendency to call the human hand into profitable employment; he knows directly that he is wrong, and that if he proceeded his machine might flourish for a time, but would then die, because an important characteristic condition was unfulfilled. A prudent inventor never passes a point of difficulty until he shall have fished out the cause and remedied it; it may require the meditation of months, yet he knows full well that the conditions involved being left unfulfilled, his invention would be imperfect, and have but a transient existence.

With these characteristics of machinery in general, and of steam power in particular, inscribed on strips of paper, which we will call "test papers," because they will perform the same office for us that the litmus paper does for the chemist, let us at once proceed to an analytical examination of the present mechanical practices of farming. We shall find the mechanism divided into two parts—that which is in use at the homestead, and that employed in the field. We will suppose it to be a farm of 300 acres of land, and whereon a steam-engine is used.

Let me request the company not only of the agriculturist, but of the machinist, as, in the course of examination, I may interrogate; it being understood that the ultimate aim of the investigation is to find out, and point out, "what is the specific impediment that forbids the banns between the steam-engine and the ploughshare." *C. B., Heacham, Norfolk.*

Home Correspondence.

Feeding Pigs.—Mr. Geo. Wilkins seems to have a Jewish horror of swine—"there is no profit," he says, "from keeping such quantities of disgusting pigs." I like pigs, myself, and never yet saw anything "disgusting" in these animals. This dislike may depend upon how they are managed, and the kind of breed. I will admit that a farmer may keep too many to be profitable; but this, again, depends upon management, whether they are a profit or loss. I have about 40, and soon hope to have 20 more. We have generally found them profitable, and our Wheat crops yearly increase by their agency. To fatten every pig born upon the premises is certainly not a wise system, nor to make baconers of all of them. Porkers of some, a few for bacon, some sold off as shoots a quarter old is the best plan. Selling the prime corn and fattening upon the tailing of Barley, Peas, and Beans is the more economical process. Besides, they are raised by the aid of Swedes, Mangold Wurzel, Tares, and also by a run out upon Clover or Grass, and this I find is a most economical method of keeping them. We reckoned all the pigs fattened this last year when corn was cheap yielded 20*s.* a sack for all corn consumed, when the market price for Barley was 12*s.* to 14*s.* per sack, Beans and Peas 15*s.* per sack. The quantity of valuable manure was very great, but I cannot put a price upon this, as the value is not tangible as to paying rent. The crops raised from this manure surpass all others, whether applied to cereal crops or roots of all kinds. Pray do not abuse our best friends, Mr. Wilkins; the rich and the poor find them equally profitable. *X. Y. Z., Hants.*

Judging of Implements at Glasgow.—As the decisions of judges at public exhibitions are at all times liable to be criticised by the public, I have no hesitation in pointing out what I consider an egregious error on the part of the judges of implements at the Glasgow show. In section 67, for the best apparatus for cutting the ends of drain pipes, there were two competitors; the one to which the premium was awarded had been exhibited two years previously, but it was rejected on account of its being an infringement of an existing patent, which was very proper. Now I want to know upon what grounds the judges gave their decision in its favour this year; if this apparatus was an infringement two years ago, is it not so still? It seems to me that the judges entirely overlooked their instructions, as contained in the schedules issued by the Society for their guidance. It there distinctly states that practical utility would be considered in preference to mechanical ingenuity; and "due weight will in all cases be given to economy, both as regards the price of the implement and the saving of labour effected by it." Keeping these instructions in view, I should be glad to know what practical utility or economy of labour is to be gained by the use of this apparatus? The pipes, after being made by the ordinary machine, are placed upon the shelves until they are somewhat dried; they are then taken to the apparatus, which must be firmly fixed to a table or something similar, where they are cut by it, not in quantities but individually, and only one end at a time; they have then to be replaced on the shelves, so that from the time that they issue forth from the machine used for shaping them until they are ready for the kilns, they are handled not less than five or six times. I am persuaded that one man cannot cut more than 1000 or 1500 per day. Taking these circumstances into consideration, coupled with the quantity that must necessarily be broken during the process, I am of opinion that no practical utility nor economy of labour is to be gained, rather the reverse. I believe that it has been attempted to work it by machinery, but it failed. That it will come into extensive use I do not believe. In making the above remarks for a moment believe. In making the above remarks it must not be supposed that I accord my approbation to the other machine exhibited; by no means—it has its faults, but which admit of easier remedy than the prize one. *One who has whistled at a Tile-machine.*

Law Agents and Land Agents is the heading of a paragraph in the *Agricultural Gazette* of a late week, under the signature of "N. P.," who commences by saying "I am a lawyer, and one also entrusted by landlords with the management of their estates." Its purport is to show that the remarks in your Leader of the 20th ult., condemnatory of the employment of lawyers and incompetent parties as land-agents, are "both illiberal and unfounded." When prices of agricultural produce were such that little skill on the part of tenants, and still less of practical ability in stewards, sufficed for the realisation and collection of rents, the qualifications of either for their respective duties were comparatively of no moment; but under the altered circumstances of the present day the capabilities of both will be regarded as of essential import to the interests of the landowner. As well might the cloth merchant of Leeds hope to compete with his west of England rival without the most approved appliances and skilful superintendence, as the English agriculturist with the foreign corn grower, unless by the application of those improved means which are now at his command. Your correspondent attempts to vindicate what he terms "the admixture of the solicitor's and the land-agent's business" by his own practice and his knowledge of that of others, stating that he himself makes no charge for law, and that his expeperience of both parties has shown him "that the education of the lawyer has for the most part better fitted him for placing the landlord in that position in which he ought to stand with a tenant." Now, I would ask "N. P." whether, defending as he does this admixture of the two professions in his own case, as a solicitor, he is prepared to show that such admixture in my case, as a land-agent, would be tolerated? Probably his knowledge of land and its requirements is about equal to my knowledge of law and its uncertainties. And touching education, although that of the lawyer is what the world calls liberal, the practice of doing everything from precedents tends very materially to limit that diversity of practical acquirements and observation which must be more or less needed in the successful management of estates. Had "N. P." favoured us by particularising what that position is in which a landlord ought to stand with a tenant, we might probably have better understood how the education of the lawyer is preferable. Let it not, however be supposed that I would detract from the qualifications of "N. P." in the slightest degree; on the contrary, I rather desire to afford him an opportunity, by the exercise of his twofold talents, of conferring a very great benefit on the landed and agricultural interest. The covenants and conditions of farm leases and agreements are confessedly most inappropriate to the more approved systems of husbandry now partially adopted, and daily becoming more general. Agreements binding a tenant, as most of them at present do, to cultivate his farm in one rotation of cropping, although it contains different descriptions and qualities of land, are too absurd to be much longer continued. May we then hope to see, in the pages of the *Agricultural Gazette*, draft copies of leases or agreements from the pen of "N. P." which shall be brief and comprehensive, and in all essential respects adapted to the requirements of the times. Let them be suited, for instance, to the most approved modes of cropping on three distinct formations—the magnesian limestone, the red sandstone, and the stronger clay soils of the coal and other districts. This done, an occasional article in your columns on wood and plantations, draining, and subsoiling, fold and artificial manures, surveying, levelling, and setting out of water meadows for irrigation (on which subject, by the way, there is much to be said and done), with the application of town sewage, would, I am sure, afford as much pleasure and advantage to the readers of the *Agricultural Gazette* as "N. P." has himself experienced from its perusal. Allow me, in conclusion, and in confirmation of at least one portion of your article of the 20th ult., to add that I can, of my own knowledge, adduce two instances of estate agency which come within the scope of your "illiberal and unfounded" remarks; the one, where the agent of an extensive and varied estate can neither read nor write; the other where the agent of a large property, capable of great improvement, is a most respectable solicitor, and has repeatedly told me that he knows nothing about land, and that lawyers have no business to be land-agents. *J. H. Charnock.*

The Cow Parsnip (Heracleum sphondylium).—Your correspondent "Scotia," who inquires about the Cow Parsnip, may find a very interesting paper on the subject in the "Journal d'Agriculture Pratique" for March, 1847. It is founded upon a communication addressed by our countryman Mr. Taunton, to M. Vilmorin, an eminent French agriculturist. In some parts of the Continent the value of the Heracleum as green food has long been known. Several varieties of it grow in great abundance in the best pasture land of the Alps, and the Swiss use it largely as food for their cows, highly prizing it for its milk-producing qualities. Should this opinion be well founded, then the size of the plant, when grown in a congenial soil, its abundant and substantial foliage, the rapidity of its reproduction when cut before it has seeded (some say that it will bear as many cuttings as Lucerne), would render it a truly valuable addition to our stall feeding resources. The plant was analysed by Sprengel more than 20 years ago, and was by him strongly recommended as useful fodder for cattle, and as worthy of being cultivated on a large scale. According to his analysis, 100 parts of the green plant contain 10.37 of solid nutritive matter, which in the dried plant would be equal to 72 per cent. *Wallia.*

[We should be very glad to accept the offer you kindly make.]

Societies.

ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

A Weekly Council was held at the Society's House, in Hanover-square, on Wednesday, the 10th of July; present, Mr. Thos. Raymond Barker, V.P., in the chair, Hon. R. H. Clive, M.P., Hon. G. C. Agar, Sir Thos. Dyke Acland, Bt., M.P., Sir Montague Cholmeley, Bt., Sir Robert Price, Bt., M.P., Mr. Baines, Mr. Burke, Mr. Cail, Dr. Calvert, Mr. W. G. Cavendish, M.P., Mr. Clavering, Mr. Layton Cooke, Mr. Dyer, Mr. Miles, M.P., Mr. Milward, Mr. Ralph Neville, Mr. C. E. Overman, Mr. Parkins, Mr. Pendarves, M.P., Mr. Chandos Pole, Mr. P. Pusey, M.P., Prof. Sewell, Mr. Shaw, of London, General Shubrick, Prof. Simonds, and Mr. Spencer Stanhope.

The following new members were elected:

Barker, Edward, Mont-Vue House, Budleigh, Devon
Trench, Henry, Cangort-park, Roscrea, King's County
Pasmore, James, High-street, Exeter

Baker, Rev. Robert, Compton Basset, Wilts
Froom, W. J., North-street, Exeter
Smith, H., Trefusis, Devonport
Abergavenny, Earl of, Birling Manor, Maidstone, Kent
Bragg, William, Moreton-Hampstead, Devon
Fulford, Robert, Exeter
Ponsonby, Hon. C. F. Ashley Cooper, Hatherop Castle, Fairford, Gloucestershire
Southcomb, Rev. Edmund, Rose-Ash, South-Molton, Devon
Brown, John, Tring, Hertfordshire
Camp, James, Ilfracombe, Devon
Bacon, George P., Lewes, Sussex
Peel, William, Trevant-park, Looe, Cornwall
Cornish, Rev. R. P., Countess-Weir, Exeter.

The names of 18 candidates for election at the next meeting were then read.

Exeter Meeting.—The President transmitted a letter addressed to him by the Right Hon. Sir George Grey, her Majesty's principal Secretary of State for the Home Department, granting to the Society the Metropolitan Police Force required for "detective" purposes at the Exeter meeting.—Major Beir offered, on the part of M. Le Mesurier, of Guernsey, to place his bull of the Guernsey breed (to be exhibited at the Exeter meeting) at the disposal of the Society.—Messrs. Lucombe, Pince, and Co., expressed their intention of throwing open to the members their nursery grounds at Exeter during the meeting. These communications were received with the thanks of the Council.

Distribution of Manure.—Mr. John Martin, K. L., of Lindsey House, Chelsea, transmitted to the Council an interesting communication on the relative economy and advantages of the two systems of fluid and dry manure-distribution, which was received with thanks, and referred to the Journal Committee.

Drainage.—Mr. W. Bullock Webster transmitted a communication containing authentic documents connected with questions relating to deep and shallow drainage in strong clays; which was received with thanks, and referred to the Journal Committee.

Guano Adulteration.—Mr. Pusey, M.P., laid before the Council a statement of the increasing extent to which the adulteration of guano was taking place in London and other large towns along the coast. He also read to the Council a list of the unprincipled dealers, who were known to be connected with this nefarious system of plunder on the practical farmers of the country. Mr. Pusey, Mr. Miles, M.P., the Hon. R. H. Clive, and Mr. Parkins, favoured the Council with suggestions for the exposure and suppression of these dishonest practices.

Cottages and Hollow Bricks.—Mr. Roberts, of Connaught-square, presented to the Council a set of Revised Designs for Dwellings in Agricultural Districts, lately published by the Society for Improving the Condition of the Labouring Classes, with a specification and tabular statement of the quantities of materials required in executing six of the designs, best adapted to the ordinary circumstances of labourers. He also submitted to the Council a drawing and specimen of hollow bricks capable of being made with any good tile-machine, in the same manner as ordinary draining tiles, and at about the same cost, in proportion to the clay contained in them. He considered that the great advantages of dryness and warmth to be expected from the employment of hollow bricks, as well as of economy in construction, would render them peculiarly adapted for agricultural buildings, especially for farm-houses and labourers' dwellings, while their cheapness alone would recommend their use for enclosure and fence walls. He thought that all bricks prepared for these purposes should properly "bond" together and form substantial walls, without a medium being afforded for the conveyance of dampness from the exterior to the interior, in consequence of the heading courses and joints being carried through the wall. He considered also that the dimensions of the bricks ought have reference to the convenience of manufacture and cartage, facility for the operations of the workmen, and economy of mortar.—These presents and communications were received with the thanks of the Council.

Presents.—Mr. Willacy favoured the Council with further details of his employment of a hand-railway in his farming operations.—Mr. R. L. Allen, of New York, presented a copy of his "American Farm Book; or, Compendium of American Agriculture." Mr. Davis presented a coloured print of Lord Vernon's oxen and sheep. These presents were received with thanks; and the Council adjourned.

A Special Council was held at the Guildhall, Exeter, on Thursday, the 16th of July: present, the Marquis of Downshire, President, in the chair; Earl of Chichester, Viscount Hill, Hon. R. H. Clive, M.P., Hon. Dudley Pelham, M.P., Hon. H. W. Wilson, Sir Thos. Dyke Acland, Bart., M.P., Sir M. W. Ridley, Bart., Sir Charles Lemon, Bart., M.P., Sir Robert Price, Bart., M.P., Col. Austen, Mr. Raymond Barker, Mr. Bramston, M.P., Mr. Brandreth, Mr. Hamond, Mr. Fisher Hobbs, Mr. Miles, M.P., Mr. Milward, Mr. Shaw, of London, Mr. Sillifant, Mr. C. Hampden Turner, Mr. Turner, of Barton, Mr. Jonas Webb, and Mr. Wilson, of Stowlangtoft. The Right Worshipful the Mayor was introduced to the Council by Sir Thomas Acland; and Mr. Brutton, the Honorary Secretary to the Local Committee, by Mr. Sillifant, the Chairman. The business of this Council was entirely confined to questions connected with the immediate proceedings of the Country Meeting (toasts and speakers at the Pavilion dinner, admission of the representatives of the public press at the earliest hour into the show-yards, admission of the 140 Queen's scholars on Hele's foundation into the show-yards, questions on certificates of entry, and distribution of the duties of police).

The General Meeting of the Society was held in the Council Chamber, of the Guildhall, Exeter, on Friday, the 19th July, the Marquis of Downshire, President, in the chair.

The following resolutions were passed unanimously:

1. Thanks to the Mayor and Corporation of Exeter, for their zealous co-operation and essential aid in promoting the success of the Country Meeting then held in that ancient and loyal city.—Moved by Col. Challoner, of Portnall Park, Surrey; seconded by the Hon. R. H. Clive, of Oakley Park, Salop, M.P.

2. Thanks to Mr. Sillifant, of Combe, the chairman, and to the members of the local committee, for the admirable manner in which they had so kindly attended, by anticipation, to all the wishes and wants of the Society in connexion with the progress and holding of the Exeter meeting.—Moved by Mr. Shaw, of London; seconded by Mr. Fowlie, of Hursley.

3. Thanks to the owners and occupiers of sites of land, for the kind manner in which they had promoted the trials and exhibitions of the Society.—Moved by the Hon. Dudley Pelham, M.P., of St. Lawrence, Isle of Wight; seconded by Sir M. W. Ridley, Bart., of Blagdon, Northumberland.

4. Thanks to the committee of the Devon and Exeter Institution, for the liberal manner in which they had thrown open their museum and reading-room to the members of the Society.—Moved by Mr. C. Hampden Turner, of Rook's-nest, Surrey; seconded by Mr. Brandreth, of Houghton-house, Bedfordshire.

5. Thanks to the railway companies, for their concessions in favour of the exhibitors of the Society.—Moved by Mr. Pendarves, M.P., of Truro, Cornwall; seconded by Mr. John Tanner Davy, of Rose-Ash, Devon.

6. Thanks to Prof. Simonds, for his kindness in delivering a valuable lecture before the members on the occasion of the Exeter meeting.—Moved by Mr. Barugh Almack, of Albion-street, Hyde Park, London; seconded by Mr. W. Barrow Simonds, of St. Cross, Winchester.

7. Thanks to Sir Thomas Dyke Acland, Bart., M.P., of Killerton Park, and Mr. George Turner, of Barton, for the kind and liberal manner in which they had submitted their respective Water and Catch Meadows to the inspection of the members of the Society, and for the interesting explanations they had offered to them of their theory and construction.—Moved by Col. Challoner; seconded by the Hon. R. H. Clive, M.P.

8. Thanks to the Marquis of Downshire for the anxious attention he had given to the interests of the Society, and the able manner in which he had discharged the arduous duties of his office, in presiding over the various sittings connected with the business of the Society during the period of the Exeter meeting.—Moved by Col. Challoner; seconded by the Hon. H. W. Wilson, of Alexton Hall, Leicestershire.

Country Meeting.—The Hon. H. W. Wilson having enquired when it was considered that the Society's meeting terminated, he was informed that the "General Meeting," at which he was then present, and which was held by direction of the Royal Charter, occupied only a short half hour, and terminated on its rising at the expiration of that time; but that the "Country Meeting" of the Society, in its full, practical extent, was considered to engage an entire week—a period always referred to in the arrangements of the Society as the "Week of the Country Meeting."

A Special Council was held in the Council Chamber of the Guildhall, Exeter, on Friday, the 19th of July; present, the Hon. Robert Henry Clive, M.P., Trustee, in the Chair; Marquis of Downshire, Hon. Dudley Pelham, M.P., Hon. H. W. Wilson, Sir M. W. Ridley, Bart., Colonel Challoner, Mr. Shaw of London, Prof. Simonds, and Mr. C. Hampden Turner.

On the motion of the Marquis of Downshire, seconded by Mr. Shaw, of London, it was resolved unanimously, that the best thanks of the Council be conveyed to Mr. Brutton, of the Northernhay, Exeter, for the distinguished zeal and energy with which he had so kindly and efficiently promoted the objects of the Society, in the discharge of his duties as the honorary secretary to the Exeter local committee.

The Council directed a communication to be made to the authorities of Exeter, expressive of their high approbation of the conduct of the police force under the direction of Superintendent Steele; and a similar one to the Commissioners of Metropolitan Police, in reference to the conduct of the force under the direction of Inspector May, of the A division.

Thanks were ordered to Messrs. Tuxford and Sons, of Boston, and to Messrs. Barrett, Exall, and Andrewes, of Reading, for the kind manner in which they had so liberally placed their respective steam-engines at the disposal of the stewards, during the trials in the implement yard at Exeter, for 16 hours on each of the four days on which they had been required.

The Council ordered their thanks to be conveyed to M. Le Mesurier, for the kind intimation expressed to them on his part by Major Beir, that the Society should dispose, in any manner they thought proper, of his Guernsey bull, shown at the Exeter meeting; at the same time, however, stating that their arrangements did not admit of their availing themselves of his liberal offer.

A Monthly Council was held in the Society's House, in Hanover-square, on Wednesday, the 7th of August; present, the Earl of Chichester, V.P., in the chair, Hon. Dudley Pelham, M.P., Hon. H. W. Wilson, Sir Thomas Dyke Acland, Bart., M.P., Mr. Raymond Barker, Mr. Barnett, Mr. S. Bennett, Mr. Burke, Mr. W. G Cavendish, M.P., Colonel Challoner, Mr. Fisher Hobbs, Mr. Hudson, of Castleacre, Mr. Kinder, Prof. Sewell, Mr. Shaw, of London, Mr. Sillifant, Prof. Simonds, Prof. Way, and Mr. Jonas Webb.

The following new members were elected:

Gilbert, John Davies, Trelissick, Truro, Cornwall
Barrow, John Manson, Stoberry, Wells, Somerset
Bolitho, E., Penzance, Cornwall
Booker, Richard Blakemore, Velindra House, Cardiff, Glam.
Lushington, Charles Manners, Mansfield-street, Portland-place
Bolitho, T. S., Penzance, Cornwall
Milward, A., Upton House, Keynsham, Somerset
Case, John Bolton, Poulton-Hey, Bebbington, Birkenhead
Harmer, Fielding, South Cove, Wrentham, Suffolk
Ward, John, East Mersea, Colchester, Essex
Bush, George, Harley-place, Clifton, Bristol
Andover, Viscount, Suffolk House, Cheltenham
Pickering, John, 14, Whitehall-place, London
Yelverton, Hon. Wm. Henry, Whitland Abbey, St. Clears, Carmarthen
Hole, Henry, Ebberley House, Torrington, Devon
Plestow, Charles John Berners, Watlington-hall, Downham, Norfolk
Newman, Richard William, 24, Soho-square, London
Harris, James, Vivum, Barnstaple, Devon.

Finances.—Colonel Challoner, Chairman of the Finance Committee, laid before the Council the report of that committee on the accounts of the Society; from which it appeared that the current cash balance in the hands of the bankers (including 390*l.* received as life compositions, arrears of subscription paid up, and the special balance on the Exeter account), amounted to 3442*l.*—Colonel Challoner also laid on the table, for the information of the members, the quarterly statements of receipt, expenditure, and liabilities of the Society.

Miscellaneous Communications.—Master Goodridge, of Hele's School, Exeter, returned the thanks of himself and his schoolfellows, for the gratification afforded them by the Council in the free admission given them to the showyards of stock and implements at the Exeter meeting. Mr. Amos Bryant transmitted a communication on the cultivation of land. Mr. Graham reported his further researches into the origin and nature of the Potato disease. Mr. Moore, of Coleshill, reported the outbreak of disease among the Earl of Radnor's stock. The principal breeders of long-woolled sheep transmitted a memorial for the restoration of the Society's prizes in that class to their full amount. Prof. Way reported his conclusion of the investigation into the agricultural value of the Trinidad pitch-manure sent to the Society from the Earl of Dundonald, through the Rt. Hon. the Earl Grey. Notices of motion by the Hon. R. H. Clive, Mr. Shelley, Mr. Shaw, Col. Challoner, and Mr. Fisher Hobbs, in reference to questions connected with the Society's next country meeting. Letters from various parties on points connected with the Exeter exhibition. These communications were referred to the several departments to which they had reference.

On the motion of Mr. Raymond Barker, seconded by Mr. Jonas Webb, the usual vacations were granted to the secretary, and to the clerks of the Society, during the ensuing autumn recess. The Council then adjourned to Wednesday, the 6th of November.

Highland Society's Show at Glasgow.—The following is an abstract of the award of premiums:

CATTLE.

Short-horn Breed.—For the best bull of any age, the premium of 20*l.*, to Anthony L. Maynard, Marton-le-Moor, Ripon, York; for the second best, the premium of 15*l.*, to John Brodie, Abbey Mains, Haddington. For the best bull calved after the 1st January, 1848, the premium of 15*l.*, to S. Wiley, Brandsby, York. For the best bull calved after the 1st January, 1849, the premium of 10*l.*, to A. Cruickshank, Sittyton of Stralock, Aberdeen. For the best cow of any age, the premium of 15*l.*, to Richard Booth, Warlaby, Northallerton. For the second best, the premium of 10*l.*, to the same. For the best pair of heifers (in calf), calved after 1st January, 1848, the premium of 10*l.*, to Benjamin Wilson, Brawith, Thirsk. For the best pair of heifers calved after 1st Jan., 1849, the premium of 10*l.*, to James Gulland, Newtown of Wemyss, Kirkaldy.

Ayrshire Breed.—For the best bull of any age, the premium of 20*l.*, to James Andrew Greenwood; for the second best, the premium of 15*l.*, to Alexander W. Buttery, Monkland, Airdrie. For the best bull calved after 1st January, 1848, the premium of 10*l.*, to Robert Paton, Clober-hill. For the best bull calved 1st January, 1849, the premium of 5*l.* to Alex. W. Buttery, Monkland. For the best cow of any age, in milk, the premium of 15*l.*, to William Glasgow, Silverhill, Bothwell. For the best cow of any age (in calf), the premium of 10*l.*, to James Foster King, West Langhaugh. For the best pair of heifers, calved after 1st January, 1848, the premium of 10*l.*, to John Barry, Braidwood Meadow, Carluke. For the best pair of heifers, calved after 1st January, 1849, the premium of 8*l.*, to Nicol Somerville, Windales, Biggar.

Galloway Breed.—For the best bull of any age, the premium of 20*l.*, to Robert Gibbons, Mossband, Cumberland. For the best bull calved after 1st Jan., 1848, the premium of 10*l.*, to James Graham, Meikle Culloch. For the best bull calved after 1st Jan., 1849, the premium of 5*l*, to the same. For the best cow of any age, the premium of 10*l.*, to James Gillespie, Annanbank, Lockerbie. For the best pair of heifers, calved after 1st January, 1848, the premium of 10*l.*, to John Palmer, Hallflat, Carlisle. For the best pair of heifers calved after the 1st Jan., 1849, the premium of 8*l.*, to James Gillespie, Annanbank, Lockerbie. For the best pair of oxen calved after 1st Jan., 1847, the premium of 8*l.*, to Allan Pollok, yr., of Faside.

Polled Angus and Aberdeen Breed.—For the best bull of any age, the premium of 20*l.*, to William Fullarton, Airdovie Mains, Brechin. For the best bull calved after 1st Jan., 1848, the premium of 10*l.*, to Robert Scott, Balwyllo, Montrose. For the best bull calved after 1st Jan., 1849, the premium of 5*l.*, to Hugh Watson Keillor. For the best cow of any age, the premium of 10*l.*, to the same. For the best pair of heifers calved after 1st January, 1848, the premium of 10*l.*, to William M'Combie, Tillyfour. For the best pair of heifers calved after 1st Jan., 1849, the premium of 8*l.*, to Hugh Watson Keillor. For the best pair of oxen calved after 1st Jan., 1847, the premium of 8*l.*, to William M'Combie, Tillyfour.

Highland Breed.—For the best bull of any age, the premium of 20*l.* to Donald M'Donald, of Craigrue, Lochearnhead, Perthshire. For the best bull calved after 1st Jan., 1848, the premium of 10*l.*, to Duncan M'Naughtan, Cashley, Glenlyon. For the best bull calved after 1st Jan., 1849, the premium of 5*l.*, to Messrs. Stewart, Invermeran, Fortingal. For the best cow of any age, the premium of 10*l.*, to Neil Malcolm, of Poltalloch. For the best pair of heifers calved after 1st Jan., 1847, the premium of 10*l.*, to the Marquis of Breadalbane. For the best pair of heifers calved after 1st Jan., 1848, the premium of 8*l.*, to Donald M'Laren, Brae Leny, Callander. For the best pair of oxen calved after 1st Jan., 1846, the premium of 8*l.*, to Neill Malcolm, of Poltalloch.

HORSES.

For Agricultural Purposes.—For the best stallion, the premium of 30*l.*, to Robert Arkley, Philipstoun, Linlithgow. For the second best, the premium of 20*l.* to Andrew Leiper, Yardbent, Strathaven. For the best entire colt foaled after 1st Jan., 1847, the premium of 20*l.*, to Samuel Clark, Manswraes, Kilbarchan. For the best entire colt foaled after 1st Jan., 1848, the premium of 15*l.*, to Charles Philips, Cracrop, Brampton. For the best entire colt foaled after 1st Jan., 1849, the premium of 10*l.*, to John Wilson, jun., of Arden, Airdree. For the best mare, the premium of 15*l.*, to Alexander W. Buttery, Monkland. For the best filly foaled after 1st Jan., 1847, the premium of 10*l.*, to the same. For the best filly foaled after 1st

Jan., 1848, the premium of 8*l.*, to Robert Findlay, of Easterhill, Glasgow. For the best filly foaled after 1st Jan., 1849, the premium of 5*l.*, to David Fleming, Westhorn, Glasgow.

SHEEP.

Leicester Breed.—For the best tup, not exceeding 45 months old, the premium of 10*l.*, to Samuel Wiley, Brandsby, York. For the best pair of Dinmont or shearling tups, the premium of 10*l.*, to Samuel Wiley, Brandsby. For the best pen of five ewes, the premium of 8*l.*, to James Douglas, Athelstaneford, Haddington. For the best pen of five shearling ewes or gimmers, the premium of 5*l.*, to James Mitchell, Little Knox, Castle Douglas.

Cheviot Breed.—For the best tup not exceeding five months old, the premium of 10*l.*, to James Brydon, Moodlaw, Langholm. For the best pair of Dinmont or shearling tups, the premium of 10*l.*, to C. Borthwick, Hopsrig, Langholm. For the best pen of ewes lambed after 1st April, 1848, the premium of 5*l.*, to James Brydon, Moodlaw. For the best pen of five gimmers, lambed after 1st April, 1849, the premium of 5*l.*, to William Paterson, Twiglees, Lockerbie.

Black-faced Breed.—For the best tup not exceeding 45 months old, the premium of 10*l.*, to David Foyer, Knowhead, Lennoxtown, Stirling. For the best pair of Dinmont, or shearling tups, the premium, to the same. For the best pen of five ewes not exceeding eight months old, the premium of 8*l.*, to Malcolm Coburg, High Craigton, Kilpatrick. For the best pen of five young ewes lambed after 1st April, 1848, the premium of 5*l.*, to John Lorne Stewart. For the best pen of five gimmers, lambed after 1st April, 1849, the premium of 5*l.*, to James Brydon, Kinnelhead, Moffat.

Southdown Breed.—For the best tup not exceeding four years old, the premium of 10*l.*, to the Duke of Richmond, Gordon Castle. For the best pair of shearling tups, the premium of 10*l.*, to the same. For the best pen of five ewes, the premium of 8*l.*, to Hugh Watson, Keillor. For the best pen of five shearling ewes, the premium of 5*l.*, to Hugh Watson, Keillor.

SWINE.

For the best boar, large breed, the premium of 5*l.*, to George H. Plummer, Melville, Dalkeith. For the best boar, small breed, the premium of 5*l.*, to Jonathan Brown, Westward, Wigton, Cumberland. For the best sow, large breed, the premium of 4*l.*, to John Jardine, Reucastle, Helensburgh. For the best sow, small breed, the premium of 4*l.*, to Jonathan Brown, Westward, Wigton, Cumberland. For the best pen of three pigs, not exceeding eight months old, the premium of 4*l.*, to Thomas Bowman, Hallhill, Bailliestown, Glasgow.

Yorkshire Agricultural Society—At the Council Dinner of the Society, during its late meeting at Thirsk, the Duke of Leeds, President of the Society, took the chair. — Mr. Outhwaite opened the subject appointed for discussion, viz., "On the best and most economical Management of Live Stock during Winter, including the mode of feeding, housing, and general treatment." He said that what he was about to tell them would be from his own practice, and that which he had seen of other people, and which he had tested himself. The first part of the subject was with respect to horses; he did not mean race horses or hunters, but cart-horses, to work on their own farms. Now, up to the year 1845, his treatment was to give his horses hay and corn, and occasionally in the winter months straw; but in 1844, hay being scarce, he changed that practice. He then commenced cutting chaff. Many condemn the use of chopped straw, because they did not know how to manage it. He himself, like most new beginners, burnt his fingers, for he broke the wind of two horses from not managing the chaff properly. He thought the dust which accumulated in the chaff was highly injurious to horses. There was a great deal of dust about the machine, which he thought ought to be kept separate from the threshing-machine. The dust was bad for the constitution of the animal. Since he had adopted the precaution of keeping his chopping-machine from dust, he had never had any accident. He had always been very cautious in sifting the cut straw which the horses were to eat. Now, last Christmas he recommended to some of the leading makers of these chopping-machines to have a cylinder to sift out the dust after the straw was cut, because it would then be less injurious to the constitution of the horse. But there was another precaution to which he would allude. They were all aware, however clean the corn might be, or however well it might be got, the tail end of the sheaves would accumulate dust. His principle was this—before he got in the stack he cut off about an inch of the tail end of the straw, which was done at a small expense, as a man would do it all in about an hour and a half. With regard to cattle feeding, he had been in the habit of stall feeding a great many—that is, for a small farm on the average of years generally about 50, and sometimes as many as 70. There had been a great deal said about the treatment of these animals with respect to housing. He agreed that comfortable houses were an excellent thing, but it was a mistaken idea that good buildings would do everything for them, and that it was not necessary to pay great attention besides. There was no doubt a great difference of opinion as to how they should be fed. He had tried scientific stall feeding as nearly as possible, three or four tied up by the neck, and also in open sheds; but his opinion was, that with respect to the treatment of any description of animal in the winter season, the great thing was cleanliness and well ventilated houses. With regard to the benefit of ventilation, he had a proof of his own. Some eight or nine years ago it was necessary, by altering some buildings of his, to block up a doorway which gave a thorough draft through a house in which several young beasts were kept. After this door was blocked up there was not a sufficient draft of air, and he found that they did not thrive so well, although in other respects their treatment was the same. Many of them seemed delicate, and they got crooked and deformed, on account of the want of pure air. To remedy this he made a draft again, which answered very well, because since that the animals had done twice as well as before. His opinion was that thorough cleanliness and pure air were good for every description of animals, whether breeding or feeding. It was not merely that they should have a clean bed to lie down upon, but also a clean place to eat their meat from. The company themselves would not like to eat plum pudding from a plate on which they had just had roast beef. His system of stall feeding was to have the beasts tied by the neck, and to let his bullocks be loose. He gave them Turnips in the early part of the season, but the longer they were kept the better treatment they required. What he had been in the habit of doing was to use a great deal of ground corn or cake. For Beans and inferior corn there was not now, as they were aware, a good market, and the probability was that it was better to grind them up, and to turn them into beef and mutton. In 1849 he ground 1432 bushels of corn for cattle and pigs, but he never could prove whether the money laid out in that manner or in cake was the best. (Hear.) They were all aware that the profit was not entirely in the carcase of the animal, but that the manure also was a consideration. In considering the outlay for corn and cake they must not merely look to the overweight they might get and the advantage to the animal itself, but also to the proportion of manure they would obtain and the consequent benefit to the succeeding crops. He commenced with Turnips and cut straw, and gave his animals the last two or three months either cake or corn to the extent of 7 lbs. of Barley or Bean meal, or the same weight of oilcake, by which he derived the advantages he had just stated. He did not know that he could say any more on the subject of feeding cattle. All descriptions of animals required the same treatment; they did not all require corn or oilcake, but good treatment. It was most material, however, that they should pay considerable attention to the selection of animals. They must select such as had a tendency to get fat; some were of such a description that they could not be made fat, do what they would. Well, then, with regard to the treatment of sheep, he was of opinion that they did not shine in this part of the country—he did not mean the country about Thirsk, but in the North Riding. The reason of this was that in small farms, where no regular shepherd was kept, the sheep were not properly attended to. He believed that in January, or before the end of that month, the Turnips ought all to be cut for sheep, and put into troughs for them to feed from. On the wolds, where large sheep flocks were kept, this was the practice. As to hogs, they were aware that before March they began to get bad in their teeth, and to lose, in a short time, their condition they had been getting for months, because they are hungered. When a person had 100 sheep on Turnips it would pay to have one person to wait upon them, so that they might have good meat, particularly in the spring of the year. It was not so convenient to cut Turnips at Christmas as it was afterwards. Many might say that it was an inconvenience to cut Turnips in the time of storm, but that was no reason, because it was possible so to keep them as that they might easily be cut in stormy weather. He recommended them to be cut in every instance after January commenced. Many persons recommended the cutting of Turnips from the commencement, and he did not know but what they were right. —Mr. J. H. Charnock apologised for presenting himself to say anything on such a subject as this, but during the last six months he had seen one of the largest flocks of sheep in this county, and as it appeared to him there was some novelty about the method of treating them, he might be permitted to detail to them the mode of management pursued. The flock consisted of between 600 and 700 sheep, and were kept on magnesian limestone soil of Mr. Monckton Milnes, of Frystone. From the time of being bred they were fed with cake, consisting of an admixture of Rape and Linseed. When weaned they had given them one-third of Rape and two-thirds of Linseed cake, which they eat just as well as they would have done had it been all Linseed. He had himself this year seen 400 lambs weaned, the mothers of which were eating one-half Rape and the other half Linseed. The lambs were immediately put on cake in the proportion of one-third of Rape and two-thirds of Linseed, and not one of these lambs was lost in weaning time. This showed that an admixture of Rape with the Linseed cake appeared to be highly beneficial as regarded the health of the animal, whilst the same proportions of Rape and Linseed cake appeared to have answered just as well, not only as regarded the health but also as regarded the feeding of sheep, as if it had been all Linseed. The price of Rape cake, as they are all aware, was lower than that of Linseed, and therefore the use of it would be advantageous. In the Journal of the Royal Society, Mr. Pusey mentioned the use of Rape and Linseed cake in certain proportions, but this that he had mentioned was an instance of the use of Rape and Linseed cake on a rather large scale, and in the case he alluded to it had been most successfully used. Their secretary, Mr. Milburn, saw the last year's hogs before they went to market, and he could tell them that he did not often see such hogs. Many of them weighed 20 lbs. a quarter, whilst they would average 18 lbs. a quarter. He believed this to be a new feature in the feeding of sheep, and therefore he had taken the liberty of speaking to them upon it.—Mr. D. Milne, of Milne Graden, Berwickshire, in reference to the question of the chairman, as to whether any gentleman present could give an opinion of the mode in which Mr. Mechi feeds his stock during winter time, said he believed Mr. Mechi had published an account lately of the system he adopted. He had not had the advantage of seeing Mr. Mechi, but a few months ago he had the opportunity of visiting the farm of the Rev. Mr. Huxtable, who followed the system pursued by Mr. Mechi, with regard to feeding his stock upon split boards. If his Grace (the chairman) would allow him, he would state what the facts of the system were with regard to the economy of food. Happening to belong to the county of Berwick, in which there was a number of practical farmers who followed the ordinary system of feeding their cattle in sheds, he had the curiosity to compare the two systems together, and he requested some of his friends to weigh the food they gave to their cattle, and he requested Mr. Huxtable to do the same. One of his friends in Berwickkshire had 40 cattle feeding, and for 10 days he weighed 182 lbs. of Turnips daily to each. Mr. Huxtable also made the same experiment, and the result was, that the weight, not of Turnips, but of Mangold Wurzel, which he gave to each of his cattle, which were under cover and on spars, and were two years old, was 62 lbs., just one-third of the weight given by the Berwickshire farmers to each of their cattle fed in the way he had mentioned. Now, if these facts were true (which must be assumed to be the case, from the respectability of the parties who made the experiment), it seemed to bear out in a remarkable manner the principle which had been asserted to lay at the base of the two separate systems. The principle was this, that if they increased the temperature in which the animal was fed, they would be able to dispense with a certain quantity of food, and, moreover, if they used a more nutritious kind of food, and lessened the quantity, they would be able to economise that too.

Prizes of Implements.—The following prizes were awarded on Thursday morning: Plough at 5 inches deep, 1st prize of 5*l.*, to Mr. W. Busby, of Newton-le-Willows, Bedale; 2d, of 2*l.*, Mr. G. Meynell, of Northallerton. Plough at 7 inches deep, 1st, of 5*l.*, to Mr. R. Bincks, of Catterick; 2d, of 2*l.*, Mr. Busby. Plough at 9 inches deep, 1st, of 5*l.* to Mr. Busby; 2d, of 2*l.*, Mr. Binckes. Scarifier or cultivator, 1st, of 5*l.*, Messrs. Smith and Co., Stamford; 2d, of 3*l.*, Mr. W. Crosskill, of Beverley. Seed harrows, 1st, of 4*l.*, to Mr. Kirkwood, of Tranent; 2d, of 2*l.*, to Messrs. Howard and Son, of Bedford. Norwegian harrow, 1st, of 4*l.*, Mr. Crosskill; 2d, of 2*l.*, Mr. H. Kearsley, of Ripon. Subsoil plough, 1st, of 3*l.*, Messrs. Howard and Son; 2d, of 30*s.*, Mr. Kirkwood. Glover's paring plough, prize of 3*l.*, to Mr. John Palmer, Stockton-on-Tees. Lowcock's one-way plough, prize of 2*l.*, to Mr. J. Palmer. Potato-washer, prize of 10*s.*, to Mr. Crosskill. Wheels and axles, prize of 2*l.*, to Mr. Crosskill. Clod-crusher, prize of 2*l.*, to Mr. Crosskill. A mangle, prize of 1*l.*, to Mr. J. Demain, of Markington, Ripley. Turnip-drills, prize of 2*l.*, to Mr. J. Teasdale, Burniston, Bedale. Land-presser, prize of 10*s.*, to Mr. Ragg, Morton-on-Swale, Northallerton. Gardner's Turnip-cutter, prize of 1*l.*, to Mr. Kearsley. Threshing gear, prize of 5*l.*, to Messrs. Barrett, Exall, and Co., Reading. Cheese press, prize of 10*s.*, to Mr. G. Bolton, of Hinton, Catterick. Washing, wringing, and mangling machine, prize of 1*l.*, to Mr. B. Marsden, of Leeds. Whippletrees, prize of 10*s.*, to Messrs. Howard and Son. Sheep dipper, prize of 2*l.*, to Mr. Bigg, Southwark. Haymaker, prize of 3*l*, Messrs. Smith and Co. Safety-to-cutter, a medal, Messrs. Smith and Co. Horse hoe, prize of 1*l.* 10*s.* to Mr. W. Smith, of Kettering. Winnowing machine, prize of 5*l.*, to Mr. W. Smith. Rick stand, a medal, to Messrs. Hill and Co., Dudley. Granary crane and general assortment of hurdles, &c., prize of 3*l.*, to Messrs. Hill and Co. Garrett's horse hoe, prize of 4*l.*, to Mr. J. Palmer. Fire engine or pump, prize of 1*l.* to Messrs. Deane, Dray, and Co., London. Anthony's churn, prize of 10*s*, to Messrs. Deane, Dray, and Co. Cambridge's roller, prize of 1*l.*, to Mr. B. Stead, Gateforth, Selby. Wireworks, medal, Mr. Stephenson, of York. Garrett's drill, medal, Mr. Palmer. Hames and general assortment, prize of 1*l.*, to Mr. Palmer. Cottage ranges, prize of 1*l.*, Mr. Palmer. Draining tools, &c., price of 10*s.*, Mr. Palmer. Turnip cutter, prize of 10*s.*, Mr. Bennett, Liverpool. Steamer, prize of 30*s.*, Messrs. Richmond and Co., Salford, Manchester. Sack holder, prize of 10*s.*, Messrs. Richmond and Co. Hand cutter, prize of 2*l.*, Messrs. Richmond and Co. Collection of dog-carts, prize of 1*l.*, Messrs. Puckering and Houlgate, Beverley. Model of steam-engine, prize of 10*s.*, Mr. Hattersley. A single-horse cart, prize of 2*l.* Mr. Harland, Osbaldwick, York. Horse straw-cutter, prize of 4*l.*, Mr. Busby. Cake-breaker, prize of 1*l.*, Mr. Palmer. Horse-rake, prize of 2*l.*, Messrs. Howard and Son. Ridge scuffler, prize of 1*l.*, Mr. Busby. Ridge scuffler, improvement in expansion, a medal to Messrs. Hill and Co. Threshing machine, prize of 5*l.*, Messrs. R. and F. Grassby, Marton, Hull. Milk bowls, prize of 1*l.*, Messrs. Deane, Dray, and Co. Linseed mill, prize of 2*l.*, Mr. Palmer. Tile machine, prize of 2*l.*, Mr. R. Roger, Stockton-on-Tees. Gateheel, prize of 10*s.*, Mr. Roger. Stench trap, prize of 10*s.*, Mr. Roger. Steam engine, prize of 15*l.*, to Messrs. Clayton and Co., Lincoln, approved by Mr. Bourne.

Flax Improvement Society of Ireland, *July* 31.—In consequence of the successful working of the five establishments where Flax is now steeped on Schenck's hot water system, it was reported that many others were about to be erected. The sub-committee appointed to report on the trial of the strength and quality, for manufacturing purposes, of Flax steeped by this mode, stated that they had not yet received all the information requisite for a complete report; but they considered it of importance to bring forward several points at that meeting, in order to put the public in possession of the facts already ascertained, since considerable anxiety was manifested, by those about to embark in the steeping trade, to learn whether the reports as to the weakness of the Flax, and its difficulty to bleach, were founded on fact. A specimen of 140 lea weft yarn, made from the Flax, and of bleached lawn manufactured from it, were shown by Messrs. S. K. Mulholland and Hinds. The yarn was considered of average strength, and the lawn of good quality and colour. The bleachers stated that it was more easily bleached than if made of Flax steeped in the ordinary manner. Another specimen of boiled yarn, suitable for heavy linens, and made from the Flax, was shown by Messrs. Dunbar, M'Master, and Co, who were about to have it manufactured. It was very strong, and of a good colour. The chairman expressed his opinion in favour of the general merits of the system, founded on experiments carefully conducted by himself. He had tried the steeping at various temperatures, from 98 degrees to 65 degrees, the result of which he would report to the sub-committee. He considered the

strength and yield increased as the temperature was lowered. He was sure that the system, if carefully carried out, was likely to be of great benefit to the country at large. A letter was read from Mr. Marshall, of Leeds, communicating the details of his experiments on some Dutch Flax straw. Part was steeped in the usual manner, in Holland, and the rest of the lot was divided into two portions, one of which was steeped on the patent system, at Cregagh, County Down, and the other also on the patent system, at Patrington, Yorkshire. When each lot was scutched it was hackled, and the Dutch steeped gave 61 lbs. 1 oz. ; the Cregagh, 62 lbs. 4 oz. ; and the Patrington, 64 lbs. per cwt. The value of the first was 55*s.* 10*d.* per cwt. ; of the second, 63*s.* 10*d.* per cwt. ; and of the third, 74*s.* 10*d.* per cwt. The value per acre was, of the first, 9*l.* 8*s.* ; of the second, 10*l.* 14*s.* ; and of the third, 10*l.* 10*s.*, exclusive of the value of the seed. When made into thread the quality of all was good, and differed little in colour, solidity, and finish. Mr. Marshall considered this experiment very favourable to the patent steeping system. He recommended that several trials should be made, this year, at the different Irish steeping concerns, to ascertain the comparative value of the old and new modes, by the Society's agriculturists steeping one-half of a field of Flax in the usual steep-pools, the other half being steeped in the vats, and the result carefully noted in all the subsequent stages. The committee directed that this suggestion should be carried into effect at Newport, Ballina, Drimoleague, and Cregagh.

Miscellaneous.

Observations on the Freezing of the Albumen of Eggs.—The object of this paper is to illustrate a peculiar property of the albumen of the eggs of birds, a property which seems to have its purpose in preserving them from the injurious effects of very low temperatures. Mr. Hunter observed that a fresh egg will resist freezing longer than one which has been previously frozen and thawed ; and he referred this fact to the "vital power" of the egg in the first case, and the destruction of that power by freezing in the second. The author's experiments confirm those of Mr. Hunter, and prove, also, that when fresh eggs are exposed to very low temperatures, and also in the case of eggs which are decayed, or putrid, or the contents of which have been much altered by mechanical force or by electricity, a shorter time is sufficient for the freezing of such eggs, than is necessary for the freezing of those which are uninjured. An examination of the rates at which heat was lost by the several eggs, exposed to temperatures varying from zero to 10° Fahr., showed that fresh eggs, though they resist freezing longer than any others, yet lose heat more quickly ; and that their resistance to freezing is due to the peculiar property of their albumen, the temperature of which may be reduced to 16° Fahr., or much lower without freezing, although its proper freezing-point is at or just below 32°. Other than fresh eggs lose heat comparatively slowly, but freeze as soon as their temperature is reduced to 32° ; fresh eggs lose heat more quickly, but may be reduced to 16° or lower ; then, at the instant of beginning to freeze, their temperature rises to 32°. That this peculiarity of fresh eggs is not due to vital properties, is proved by experiments which show that certain injuries, such as mechanical violence, addition of water, and others, which spoil their powers of resisting freezing, do not prevent eggs from being developed in incubation. By the same and other experiments, which are related, it is made probable that the peculiarity depends on the mechanical properties of the albumen ; for, whatever makes the albumen more liquid than it is naturally in the fresh egg, destroys the power of resisting freezing. The author could find no other substance possessing this property ; and in evidence of its adaptation to the purpose of preserving eggs from the loss of their capacity of development, which they would suffer in being frozen, he relates experiments in which eggs were kept for a considerable time at temperatures ranging from zero to 10° Fahr., yet were afterwards developed in incubation. By the same series of experiments it was shown, that, although freezing renders the effectual development of the germ impossible, yet the intensest cold, if freezing does not take place, has no similar result. *Prof. Paget in the Chemical Gazette.*

Mr. Mechi's Farm.—On Tuesday, the 23d ult., several hundred gentlemen assembled at Tiptree Hall Farm, to pay Mr. Mechi a visit of inspection. They came from every part of the country, and were in all respects fit people for such an occasion. There were large farmers, intelligent land agents, and enterprising liberal proprietors. The Church was worthily represented by the presence of half-a-dozen clergymen, and Messrs. Ransome and May, of Ipswich, and Mr. Croskill, of Beverley, were there to see that the farm implements were what they should be. With a long train of curious and interested agriculturists, Mr. Mechi visited every field on his farm, sometimes skirting along the headlands, sometimes dashing through the centre by the help of a water furrow, and still the concourse poured on their way, and listened to the animated explanations which their enquiries drew forth. Often amidst the tall crops of Wheat, their heads alone visible over the waving mass, were knots formed and rapid discussions carried on, with reference to matters of practical detail. At one moment the virtues of box manure were discussed ; then the expediency of growing Wheat oftener than by the present systems of cropping ; then the merits of thin sowing ; then the efficacy of thorough draining on stiff clay ; then the proper method of securing deep disintegration and a fine tilth. On all these topics the changes of conversation rung ; and, amidst them all, ran an under-current of commentary and calculation on the amount of produce which each field would yield. It was confessed on all hands that the Wheat crops were splendid ones. For the last six years Mr. Mechi has grown Wheat alternately with green crops every second year, and he expects, as the result of the present harvest, a return of 5 quarters to the acre. His show of Beans, Potatoes, Clover, Mangold Wurzel, and Turnips was also very creditable to him. On the second-mentioned crop he took occasion to point out its remunerative character, and the prejudices which existed against it, while, with reference to the last, he dilated, as the result of his experience, on the virtues of superphosphate as a manure. Mr. Mechi has a hearty contempt for the fallowing system which prevails so extensively in Essex, and especially in the district called the Roothings. His idea is, that the land should be deeply stirred, kept thoroughly clean, and be maintained in constant and high cultivation. *Times.*

Notices to Correspondents.

BONE-DUST : *A Subscriber.* We believe that 16 to 20 bushels per acre of rough bone-dust is the quantity Lord Ducie applies.

BONES : *A G.* Mr. Blackhall's steaming process will prepare them for the action of acid, which may be added immediately. We do not know what length or heat of steaming is needed.

BOOKS : *Country Curate.* There is a shilling book on pigs by Mr. Richardson.

CLOVER : *Gallovidian.* It is Cow-grass, we believe.

COUGH : *J H.* A seton near the seat of irritation is more likely to be useful than anything else. *W. C. S.*

DISEASE IN THE TAIL : *A Little Farmer.* A blister applied to the loins will probably be of service. The common blistering ointment may be rubbed in. *W. C. S.*

DRAINING COMPANY : *Vicar.* We understand that it is actually in existence. It will no doubt advertise shortly. Mr. Bailey Denton is, we understand, one of its officers.

FERNS : *A B.* If you always cut it down or pull it up as soon as there is anything strong enough to hold on by, it will ultimately disappear.

REDWATER : *Lifton.* It is a disease of the digestive organs (principally of the liver) and is frequently caused by a sudden change of pasturage. The proper treatment consists in the administration of active purgative medicine, combined with stimulants, and followed by diuretics. *W. C. S.*

STEAMING APPARATUS : *Devizes.* Apply to Richmond and Chandler, Salford.

Markets.

COVENT GARDEN, Aug. 17.

Vegetables are abundantly supplied ; Hothouse Grapes and Pine-apples plentiful. The supply of Peaches and Nectarines is well kept up. Ripe Gooseberries fetch from 2s. 6d to 3s. 6d. per half sieve. Oranges and Lemons though scarcer are sufficient for the demand. West Indian Pine-apples are plentiful, and large quantities of Plums and Pears are received three times a week from the Continent. Filberts are coming in very plentifully, and owing to the large supply of foreign ones in the market, they sell heavily at 30s. to 35s. per 100 lbs. Carrots and Turnips may be had at from 3d. to 6d. a bunch. Potatoes are plentiful and cheap. Lettuces and other salading are sufficient for the demand, and so are Mushrooms. French Beans are scarcer. Cut Flowers consist of Heaths, Pelargoniums, Lily of the Valley, Carnations, Picotees, and Roses.

FRUITS.

Pine-apples, per lb., 4s to 6s	Apples, dessert, p. bush, 4s to 8s
Grapes, hothouse, p. lb., 2s to 5s	— kitchen, do., 1s 6d to 3s 6d
Peaches, per doz., 4s to 15s	Lemons, per doz., 1s to 3s
Nectarines, per doz., 4s to 15s	Oranges, per doz., 2s to 3s
Apricots, per doz., 1s 6d to 5s	— per 100, 8s to 24s
Cherries, per lb., 1s to 1s 6d	Almonds, per peck, 6s
Melons, each, 2s to 4s	— sweet, per lb., 2s to 3s
Gooseberries, per half sieve, 2s 6d to 3s 6d	Walnuts, p. 100, 1s 6d to 2s
Currants, p. half sieve, 3s to 4s	— p. bush., 16s to 24s
Raspberries, p. pottle, 4d to 6d	Nuts, Barcelona, per bush., 20s to 22s
Plums, p. punnet, 1s to 1s 6d	— Brazil, p. bsh., 12s
Green-gages, do., 1s to 2s	

VEGETABLES.

French Beans, p. sieve, 3s to 4s	Shallots, per lb., 6d to 8d
Cabbages, per doz., 6d to 1s	Garlic, per lb., 4d to 8d
Cauliflowers, p. doz., 2s to 4s	Artichokes, p. doz., 2s 6d to 3s
Peas, per sieve, 3s to 6s	Vegetable Marrows, per doz., 6d to 1s
Beans, per sieve, 1s 6d to 2s	Lettuce, Cab., p. sc., 2d to 1s
Sorrel, p. hf. sieve, 6d to 9d	— Cos, p. score, 6d to 1s 6d
Potatoes, per ton, 50s to 80s	Radishes, p. 12 hands, 9d to 1s
— per cwt., 2s 6d to 4s	Small Salads, p. punn, 2d to 3d
— per bush., 1s 6d to 3s	Horse Radish, p. bdl., 1s to 4s
Turnips, per doz. bun., 2s 6d to 3s 6d	Mushrooms, p. pot., 9d to 2s
Red Beet, per doz., 1s to 2s	Fennel, per bunch, 2d to 3d
Cucumbers, p. doz., 1s to 6s	Savory, per bunch, 2d to 3d
Leeks, per bunch, 1d to 2d	Thyme, per bunch, 2d to 3d
Celery, p. bundle, 10d to 1s	Parsley, p. doz. bun., 1s to 2s
Carrots, per doz., 3s to 5s	— Roots, p. bdle., 9d to 1s
Spinach, p. half sieve, 1s 6d to 2s	Marjoram, per bunch, 8d to 9d
Onions, p. bunch, 2d to 6d	Mint, green, per bunch, 2d
— Spanish, p. doz., 1s 6d to 4s	Watercress, p. 12 bunch., 6d to 9d

COAL MARKET.—FRIDAY, Aug. 16.

Holywell, 13s. 6d. ; Eden Main, 13s. 9d. ; Wallsend Haswell, 15s. 6d. ; Wallsend Hetton, 15s. 3d. ; Wallsend Lambton, 15s. ; Wallsend Stewarts, 16s. ; Wallsend Tees, 15s. 3d.—Ships at market, 180.

HAY.—Per Load of 36 Trusses.

SMITHFIELD, Aug. 15.

Prime Meadow Hay	70s to 75s	Clover	70s to 84s
Inferior ditto... ...	55 65	New Clover	60 72
Rowen	— —	Straw	23 28
New Hay	55 72		J. COOPER.

A dull trade.

CUMBERLAND MARKET, Aug. 15.

Prime Meadow Hay	70s to 75s	Inferior	60s to 70s
Inferior ditto... ...	50 65	New Clover	60 70
New Hay	50 65	Straw	26 30
Old Clover	78 84		JOSHUA BAKER.

WHITECHAPEL, Aug. 15.

Fine Old Hay ...	68s to 72s	New Clover	65s to 72s
Inferior ditto ...	— —	Inferior ditto... ...	— —
New Hay	58 65	Straw	24 27
Old Clover	78 84		

SMITHFIELD, MONDAY, Aug. 12.

The supply of Beasts is large, but the average quality inferior ; choice ones are consequently pretty readily sold. The number of Sheep is also large ; the demand is good, and late prices well supported. Trade is slow for Calves at Friday's quotations. From Holland and Germany there are 887 Beasts, 3820 Sheep, 185 Calves, and 44 Pigs ; from Scotland, 200 Beasts ; from Norfolk and Suffolk, 250 ; and 2500 from the northern and midland counties.

Per st. of 8 lbs.—	s	d	s	d
Best Scots, Herefords, &c. ...	3	6 to 3	8	
Best Short-horns	3	4 — 3	6	
2d quality Beasts	2	8 — 3	2	
Best Downs and Half-breds	—	...		
Ditto Shorn ...	4	0 — 4	2	

Per st. of 8 lbs.—	s	d	s	d
Best Long-wools		to	...	
Ditto Shorn ...	3	4 — 3	8	
Ewes & 2d quality ...	—	—	...	
Ditto Shorn ...	3	0 — 3	4	
Lambs	4	0 — 4	8	
Calves	2	8 — 3	8	
Pigs	3	0 — 4	0	

Beasts, 4129 ; Sheep and Lambs, 31,920 ; Calves, 288 ; Pigs, 205.

FRIDAY, Aug. 16.

The number of Beasts exceeds the demand, and our top quotations are with difficulty realised for the choicest. The supply of Sheep is considerable, but a large proportion of inferior quality ; consequently, the best descriptions support Monday's prices ; other kinds are lower. There is a demand for good Lambs, but middling ones are very unsaleable. Calves are more in request, at an advance of about 2d. per 8 lbs. From Germany and Holland there are 366 Beasts, 2690 Sheep, and 305 Calves ; from Scotland, 80 Beasts ; 250 from the Midland counties ; and 102 Milch Cows from the home counties.

Per st. of 8 lbs.—	s	d	s	d
Best Scots, Herefords, &c. ...	3	6 to 3	8	
Best Short-horns	3	4 — 3	6	
2d quality Beasts	2	8 — 3	2	
Best Downs and Half-breds	—	...		
Ditto Shorn ...	3	10 — 4	2	

Per st. of 8 lbs.—	s	d	s	d
Best Long-wools		to	...	
Ditto Shorn ...	3	4 — 3	8	
Ewes & 2d quality ...	—	—	...	
Ditto Shorn ...	2	8 — 3	2	
Lambs	4	0 — 4	8	
Calves	2	10 — 3	10	
Pigs	3	0 — 4	0	

Beasts, 1074 ; Sheep and Lambs, 13,980 ; Calves, 628 ; Pigs, 210.

MARK LANE.

MONDAY, Aug. 12.—The supply of English Wheat to this morning's market was moderate, including a few samples of new white, which were disposed of at 48s. to 52s. per qr., quality thin and variable, none fine ; in the old or foreign we observe no alteration in price, and the demand continues restricted to retail necessitous buyers.—Barley is inquired after, at fully last week's quotations.—The value of Beans and Peas is unaltered. There were a few new Peas at market, quality generally small and poor ; grey, 27s. to 28s. per qr. ; fine white made 31s. per qr.—The Oat trade is heavy, and late rates with difficulty maintained.

BRITISH PER IMPERIAL QUARTER.	s.	s.		s.	s.
Wheat, Essex, Kent, & Suffolk ...White	42	46	Red	37	41
— — fine selected runs ...ditto	46	50	Red	40	43
— — Talavera	46	52			
— Norfolk, Lincoln, & York...White	—	—	Red	36	42
— Foreign	35	52			
Barley, grind. & distil., 19s to 22s...Chev.	23	27	Malting	22	25
— Foreign....Grinding and distilling	15	21	Malting	20	23
Oats, Essex and Suffolk	15	18			
— Scotch and Lincolnshire ...Potato	18	21	Feed ...	17	19
— Irish .....Potato	16	20	Feed ...	13	17
— Foreign.....Poland and Brew	15	20	Feed ...	13	16
Rye	19	21	Foreign	18	20
Rye-meal, foreign.....per ton	5*l.*	6*l.*			
Beans, Mazagan .....22s to 24s.....Tick	24	2o	Harrow	24	26
— Pigeon .....25s — 28s...Wind-	—		Longpod	—	
— Foreign ..... Small	24	34	Egyptian	19	21
Peas, white, Essex and Kent.....Boilers	23	26	Suffolk...	24	28
— Maple.....24s to 27s .....Grey	22	24	Foreign	21	28
Maize ..... White	26	30	Yellow...	25	30
Flour, best marks, delivered... per sack	36	40			
— Suffolk ..... ditto	31	36	Norfolk	31	36
— Foreign .....per barrel	21	24	Per sack	31	34

FRIDAY, Aug. 16.—We have been fairly supplied with foreign and English Wheat during the week, but the market both on Wednesday and to-day was thinly attended, and but a moderate business was transacted on Monday's terms.—Barley and Oats meet with buyers at late prices.—In the value of Beans and Peas there is no alteration.—Flour is held firmly at former prices, but the demand is less active. — Floating cargoes of Galatz Maize are held at 29s., cost, freight, and insurance.—Although occasional heavy rains have been partial during the week, we do not hear of the crops having suffered materially from them ; harvesting has commenced pretty generally, and we have strong grounds for believing that the yield of Wheat will be under an average, some most important districts having suffered considerably from mildew, and the ears generally being more or less defective.

IMPERIAL AVERAGES.	WHEAT.	BARLEY.	OATS.	RYE.	BEANS.	PEAS.
July 6.....	40s 11d	21s 9d	17s 0d	23s 2d	26s 10d	28s 4d
— 13.....	41 3	21 5	16 11	23 3	27 2	26 6
— 20.....	42 4	22 3	17 9	22 7	27 5	27 11
— 27.....	43 6	22 3	18 1	24 9	27 4	27 8
Aug. 3.....	43 7	22 4	18 1	22 2	27 8	27 8
— 10.....	44 1	22 5	17 11	23 8	27 9	26 10
Aggreg. Aver.	42 7	22 1	17 7	23 3	27 4	27 6
Duties on Foreign Grain	1 0	1 0	1 0	1 0	1 0	1 0

Fluctuations in the last six weeks' Corn Averages.

PRICES.	JULY 6.	JULY 13.	JULY 20.	JULY 27.	AUG. 3.	AUG. 10.
44s 1d	...	...	...	...	...	
43 7	...	...	...	...		...
43 6	...	...	...		...	...
42 4	...	...		...	...	...
41 3	...		...	...	...	...
40 11		...	...	...	...	...

SEEDS.—AUG. 12.

Canary, per qr.....54s to 60s	Coriander, per cwt. ...18s— 22s		
Caraway, per cwt. ...29 — 33	Mustard, white, p. bush. 7 — 8		
Hempseed, per qr. ...34 — 35	— brown do. ..... 10 — 13		
Linseed, foreign, do. 37 — 45	Rape, per last .....27*l.*—28*l.*		
Clover, red, p. cwt....24 — 46	Cakes, Lindseed, p. 1000...8*l.* 15*s*		
— — foreign, do. — —	— — foreign, p. ton, 6*l.* 15*s*		
— white, do. .....36 — 48	— Rape, foreign, do., 3*l.* 17*s*		
— — foreign, do. — —	Tares, per bush... 3*s* 0*d*—4*s* 0*d*		

LIVERPOOL, FRIDAY, AUG. 9—Much rain has fallen yesterday and to-day, and more tone was imparted to our corn market this morning. Holders of Wheat demanded a small advance, but buyers operated very cautiously, and the business effected was at fully Tuesday's rates. Flour was in good demand, and quite as dear. Beans and Peas were each 6d. per qr. dearer. Barley and Oats commanded extreme prices. There was no change in the value of Indian Corn, and it was in fair request for Ireland. Arrivals into Liverpool from July 6 to Aug. 8 : Wheat, 6308 qrs. ; Malt, 344 qrs. ; Oats, 2134 ; Indian Corn, 7954 qrs. ; Oatmeal, 297 sacks ; Flour, 1545 sacks. Exports to Ireland : Wheat, 188 qrs. ; Peas, 33 qrs. ; Indian Corn, 2106 qrs. ; Indian Corn Meal, 71 brls. ; Flour, 408 sacks, 1058 brls. ——TUESDAY, AUG. 13. There is a little increase this week in the arrivals of Wheat, Oats, Oatmeal, and Flour from Ireland, but the importations from abroad are upon a smaller scale than of late, though still tolerably liberal. Our market was pretty well attended by millers and dealers. As regards Wheat, the buoyant speculative feeling of Friday disappeared, but we were compensated by a steady demand for consumption, at much the same prices as ruled on Tuesday last. Flour commanded full prices, and French gains favour. Old Oats moved slowly ; a small lot of Irish new sold at 2s. 8½d. per 45 lbs. Barley, Beans, and Peas fully sustained late rates. There was a fair inquiry for Indian Corn, but being firmly held for full prices the actual business was small. Present prices : Wheat, English red, per 70 lbs., 5s. 10d. to 6s. 4d. ; white, 6s. 1d. to 6s. 7d. Barley, Scotch and Irish, per 60 lbs., 2s. 10d. to 3s. 1d. Malt, English, per qr. pale, 48s. to 52s. Oats, English and Scotch, per 45 lbs., 2s. 8d. to 2s. 10d. Beans, English, per qr., 28s. to 32s. Peas, do. do., 27s. to 30s.

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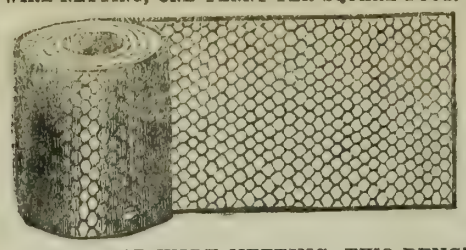
NEWS, NEWS, NEWS.—The best, cheapest, and largest Newspaper in the World.—LLOYD'S WEEKLY LONDON NEWSPAPER contains 60 large columns of the latest intelligence from all parts of the Globe, price only Threepence, postage free. Send Three Postage Stamps to E. LLOYD, 12, Salisbury-square, London, and receive one copy as a sample.

HOLLOWAY'S PILLS A CERTAIN CURE FOR HEADACHES, BILE, LOSS OF APPETITE, AND LOWNESS OF SPIRITS.—These invaluable Pills can be taken without damage from wet or cold, requiring no restraint from business or pleasure. They act mildly on the Bowels, without pain or griping, strengthen the Stomach, and promote a healthy action of the Liver, whereby they purify the Blood, cleanse the Skin, brace the Nerves, and invigorate the whole system. They prove an admirable remedy also for those who suffer from a debilitated constitution, as they create an appetite, correct indigestion, remove bile, giddiness, nervous or sick headaches, and palpitation of the heart.—Sold by all Druggists, and at Prof. HOLLOWAY'S Establishment, 244, Strand, London.

IMPORTANT INFORMATION.

DR. ROBERTS'S celebrated OINTMENT called the POOR MAN'S FRIEND, is confidently recommended to the Public as an unfailing remedy for wounds of every description, a certain cure for ulcerated sore legs (if of 20 years' standing), cuts, burns, scalds, bruises, chilblains, scorbutic eruptions and pimples in the face, sore and inflamed eyes, sore heads, sore breasts, piles, fistula, and cancerous humours, and is a specific for those afflicting eruptions that sometimes follow vaccination. Sold in pots at 1*s.* 1½*d.* and 2*s.* 9*d.* each. Also his PILULÆ ANTI-SCROPHULÆ; confirmed, by more than 40 years' experience, to be without exception one of the best alterative medicines ever compounded for purifying the blood and assisting Nature in all her operations: hence they are useful in scrofula, scorbutic complaints, glandular swellings (particularly those of the neck, &c.) They form a mild and superior family aperient, that may be taken at all times without confinement or change of diet. Sold in boxes at 1*s.* 1½*d.*, 2*s.* 9*d.*, 4*s.* 6*d.*, 11*s.*, and 22*s.* each.—Sold wholesale by the proprietors, BEACH and BARNICOTT, at their Dispensary, Bridport, and by the London Houses; and retail, by all respectable Medicine Vendors in the United Kingdom.

WIRE NETTING, ONE PENNY PER SQUARE FOOT.



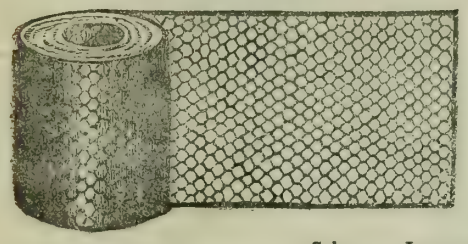
GALVANISED WIRE NETTING, TWO-PENCE PER SQUARE FOOT.—This article requires no painting, the atmosphere not having the slightest action on it. It was exhibited at the late Metropolitan Cattle Show, and was highly eulogised both for its utility and pretty appearance, and acknowledged to be the cheapest and best article ever produced. It forms a light and durable fence against the depredations of hares, rabbits, and cats, and is peculiarly adapted for Aviaries, Pheasantries, and to secure poultry; and by the galvanised requiring no paint, it answers admirably for training all kinds of creeping plants. Large quantities always kept in stock, of 18, 24, 36, and 48 inches wide; it can, however, be made to any dimensions desired. Patterns forwarded free of expense.

12	inches	wide	3d.	per yard.	30	inches	wide	7½d.	per yard.
18	"	"	4½d.	"	36	"	"	9d.	"
14	"	"	6d.	"	48	"	"	1s.	"

Galvanised do., 1d. per foot extra.

Extra strong Imperial Wire Sheep Netting, 3 feet, 1s. 6d. per running yard; if galvanised, 2s. Also every description of Wire Nursery and Fireguards. Wire House-lanterns and Shades, Fly-proof Dish Covers, Meat Safes, &c.; Window Blinds, 1s. 10d. per square foot, with bolts complete, in mahogany frames; Gothic Garden Bordering, 6d. per running foot; Flower Trainers, from 3d. each; Garden Arches, 20s. each; Flower Stands, from 3s. 9d. each; Galvanised Tying Wire for plants and trees, Dahlia Rods, and every description of Wire-work; Weaving, for the use of paper-makers, millers, &c.—At the Manufactory of Thomas Henry Fox, 44, Skinner-street, Snow-hill, London.

GALVANISED WIRE GAME NETTING.—7d. per yard, 2 feet wide.



	Galvanised.	Japanned Iron.
2-inch mesh, light, 24-inch wide ...	7d. per yd.	5d. per yd.
2-inch " strong " ...	9 "	6½ "
2-inch " extra strong " ...	12 "	9 "
1⅝-inch " light " ...	8 "	6 "
1⅝-inch " strong " ...	10 "	8 "
1⅝-inch " extra strong " ...	14 "	11 "

All the above can be made any width at proportionate prices. If the upper half is a coarse mesh, it will reduce the price one-fourth. Galvanised sparrow-proof netting for pheasantries, 3d. per square foot. Patterns forwarded post-free.

Manufactured by BARNARD and BISHOP, Market-place, Norwich, and delivered free of expense in London, Peterborough, Hull, or Newcastle.

FARMS WANTED AT MICHAELMAS NEXT.

MR. HURLEY, Farm Agent and Auctioneer, is instructed to obtain a really good Farm, from 200 to 600 acres, suitable to the growth of Turnips, Barley, &c., with good Farm Residence and Buildings (if near London, preferred). Also, a small Farm, from 70 to 150 acres, of good Meadow and Arable Land, Farm-house, and Homestead.—Full particulars to be sent prepared to Mr. Hurley, Offices, 62, Nelson-square, London. Parties having the above description of property, estates, houses (furnished or unfurnished), or professions of any kind for sale or to let, are solicited to forward particulars to Mr. Hurley for insertion upon his Register, for which no charge is made, unless a treaty is effected. Those requiring such, are requested to inspect the same.

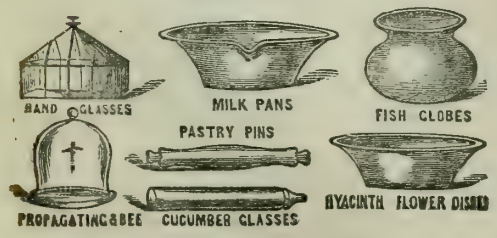
SURREY—FARM TO BE LET, WITH IMMEDIATE POSSESSION.

MR. HURLEY, Land Agent, has to Let an excellent FARM, with suitable House and Buildings, and upwards of 100 acres of good sound Turnip and Barley Land, with some Meadow.—For particulars, apply (inclosing two stamps), to the Auctioneer, 62, Nelson-square, London.

FARMS TO BE LET.

MR. HURLEY, Surveyor and Farm Agent, is favoured with the letting of six excellent ARABLE and MEADOW FARMS, in the counties of Surrey, Cambs, Sussex, and Kent, averaging from 200 to 400 Acres. Rents very moderate to meet the times. Good residences, and farm buildings. Full particulars on application (enclosing postage stamp) to Mr. Hurley, 62, Nelson-square, London.

GLASS FOR CONSERVATORIES, HORTICULTURAL PURPOSES, &c.



T. MILLINGTON'S SHEET GLASS, which is of the best description, varying from 16 to 32 ounces, at from 2d. per foot and upwards; 100 feet and 200 feet cases of large Sheet Glass, for cutting up, at 2½d. per foot. British Plate Glass, from 1s. 2d. to 2s. per foot, according to size. Patent Rough Plate Glass, from ⅛ to 1 inch in thickness, from 4d. per foot upwards. Glass Slates and Tiles. Milk Pans from 12 to 24 inches diameter, from 2s. to 5s. each Cucumber Tubes, from 12 to 24 inches long, at 1d. per inch. Lactometers, 7s. 6d. each. Wasp Traps.—Lists may be had, on application at the Warehouse, 87, Bishopsgate-street Without, same side as the Eastern Counties Railway.

Sales by Auction.

DALSTON NURSERY.

GREAT SALE OF GREENHOUSES, PITS, &c.

TO NOBLEMEN, GENTLEMEN, NURSERYMEN, BUILDERS, AND OTHERS.

MESSRS. PROTHEROE and MORRIS are instructed, by Mr. J. Smith, to submit to pubic competition by Auction, on the premises, Dalston Nursery, Middlesex, on MONDAY, September 2, at 12 o'clock (in consequence of the premises being required by the London and Birmingham West India Dock Junction Railway Company), the erection of 14 Greenhouses, several Pits, and one, two, and three-light Boxes, the greater portion of which are glazed with green glass; also a considerable quantity of Bricks, Paving Stones, Hot-water Pipe, Furnaces, &c. May be viewed prior to the sale. Catalogues may be had (1s. each, returnable to purchasers) of the principal Seedsmen in London, on the Premises, and of the Auctioneers, American Nursery, Leytonstone, Essex.

N.B. The whole of the choice Greenhouse Plants (including the Camellias, ranging from 18 inches to 10 feet, beautifully set with bloom buds) will be sold by Auction the latter part of September.

FULHAM ROAD.

TO GENTLEMEN, NURSERYMEN, AND OTHERS.

MR. D. A. RAMSAY has been favoured with instructions from Mr. J. Shearman, to submit to public competition (his lease having expired), on the premises, near Queen's Elm, Fulham-road, Brompton, about the first week in October, a portion of the VALUABLE NURSERY STOCK, comprising Standard and Dwarf-trained Peaches, Nectarines, &c., a large quantity of fine Evergreens, Deciduous Shrubs, Ornamental Trees, &c. A choice assortment of Standard and Dwarf Roses, &c. Further particulars in future Advertisements.—Brompton Nursery, Fulham-road, Brompton.

AMERICAN PLANTS, STANDARD ROSES, ORNAMENTAL TREES, &c.

MR. D. A. RAMSAY will sell by Auction, at the Brompton Auction Ground, Fulham-road, Brompton, one mile from Hyde-park corner, on TUESDAY, Oct. —, 1850, at 1 o'clock, a large quantity of choice AMERICAN PLANTS and other Miscellaneous Stock, the property of a country nurseryman, full particulars of which will appear in future Advertisements.—Brompton, Aug. 17.

CHELSEA.—IMPORTANT SALE OF NURSERY STOCK.

TO NOBLEMEN, GENTLEMEN, AND OTHERS, ENGAGED IN PLANTING.

MR. D. A. RAMSAY has received instructions to submit to public competition, by Auction, on the Premises, opposite Cremorne Gardens, King's-road, Chelsea, about the last week in September (without reserve), by order of Messrs. W. Dennis and Co., to clear about 5 acres of the land required for building purposes. The Stock comprises a large assortment of fine Evergreens, large Irish Ivies and other creepers in pots, 300 varieties of the finest Prize Gooseberries, a large quantity of Mulberry Trees of all sizes, the collection of Standard, Dwarf, and Pillar Roses, choice Deciduous Shrubs, Ornamental Trees, &c. The Stock on view till the time of sale; and for further particulars, see future Advertisements.

Brompton Auction Ground, Fulham-road, Brompton.

D. A. RAMSAY, Auctioneer, Valuer, &c., Brompton Auction Ground, Fulham-road, Brompton, takes this opportunity of returning his grateful thanks to his patrons, friends, and the trade in general, for the liberal support he has been honoured with, and trusts that by a continuance of his personal attention, with strictly moderate charges, he shall deserve their future patronage.

THE SURPLUS STOCK OF MESSRS. VAUGHAN AND CO.'S ARTIFICIAL STONE WORKS, preparatory to the Removal of the Firm to more extensive premises.

TO THE NOBILITY, GENTRY, ARCHITECTS, BUILDERS, FLORISTS, AND OTHERS.

MR. F. W. GODDARD (late with Messrs. Musgrove and Gadsden) has been favoured with instructions to sell by Auction, on the premises, 60, Stones'-end, Borough, on TUESDAY, August 27, at 11 o'clock, the SURPLUS STOCK of the above eminent manufacturers, whose productions enjoy an universal reputation for durability, elegance of design, and exquisite finish. It comprises finely modelled Statues after the ancient and modern masters, including Bacchus, Ceres, Hebe, Piping Faun, Baily's Eve at the Fountain Flora and Paris, Children after Chantrey, Faith, Hope, and Charity, the Seasons, the Elements, &c.; a pair of matchless Sea-horses, a life-size Stag, several pairs of Lions, Sphinxes, Dogs after Landseer, Eagles, and Storks; superb Fountains in every variety of style, pattern, and dimension, choice collection of Vases, Tazzas, and Garden Ornaments, Sepulchral Urns, Church Font, Head-stone, Coats of Arms, Sun-dial, Gothic Panels and Tracery, Caps, Trusses, and other Architectural Decorations, Balustrades, Sinks, Kerbs, two 12 feet Scagliola Columns with Ionic Capitals, and numerous other items.—To be viewed the day previously and morning of sale. Catalogues may be had on the premises, and at Mr. F. W. Goddard's Auction and Estate Agency Offices, 2, Moorgate-street, near the Bank, London.

VALUABLE NURSERY AND SEED TRADE FOR SALE.—The Business referred to has been established nearly 60 years, at an important Midland County Town. It possesses a good and extensive connection. The Nursery is of moderate extent, and well stocked. The Shop is situated in the Market Place, and most eligible. An applicant of moderate capital, with the requisite knowledge and energy, will be liberally treated with, and a Lease granted.—The Proprietor's address can be had at the Office of this Paper.

TO BE LET ON LEASE, A SMALL FARM, consisting of 61 acres of Arable, Pasture, and Meadow, with small Farm-house, two Cottages, two substantial Barns, Stabling, and other Out-buildings; the whole in good repair, situate about 50 miles south of London. Rent and other outgoings very moderate; a weekly market in the neighbourhood. Apply personally, or by letter, post-paid, to A. B., 7, Gresham-street West, London.

TO AMATEUR FLORISTS, AND OTHERS.

TO BE LET, A Compact Villa Residence, situated close to the Ealing Station, on the Great Western Railway, having front and back Flower Gardens, with span-roofed Greenhouse, 19 feet by 14 feet, with hot-water apparatus, pits, &c., suitable for a gentleman, or for a florist requiring premises on a small scale. The present proprietor removing, will treat liberally for the disposal of the furniture of the house, the garden plants, and stock.—For particulars, apply at Mr. Deek's Auction and Estate Agency Offices, 26, Albion-street, Hyde-park square, London.

TO NURSERYMEN, FLORISTS, AND OTHERS.

TO BE SOLD, by private contract, a very valuable LEASEHOLD NURSERY BUSINESS, of 5¼ years unexpired, at a very low ground-rent, the whole containing about 2000 feet of glass, and a fine stock of Plants, consisting of Camellias, Ericas, and other woody and herbaceous kinds; together with the ground-rents of two houses built on part of the ground.—For further particulars apply personally to Mr. Broadbridge, Priory Nursery, Larkhall-lane, South Lambeth, London.

WILMOT'S "PRINCE ARTHUR" STRAWBERRY.

THE GARDENERS' MAGAZINE OF BOTANY, HORTICULTURE, &c., of Saturday last (No. 37), conducted by Messrs. Moore and Ayres, contains the History and Culture of the above, with a correctly coloured plate, besides other matters interesting to the Florist and Botanist. Publishing in Weekly Numbers, price 6d.

London: Wm. S. Orr and Co., 2, Amen-corner.

ALBION INSURANCE OFFICE,
London, Aug. 12, 1850.

A GENERAL COURT OF PROPRIETORS OF THE ALBION INSURANCE COMPANY will be held at the Company's House, in New Bridge-street, Blackfriars, on Wednesday, the 28th instant, at 12 o'clock at noon, precisely, for the election of three Auditors for the current year, in conformity with the Deed of Settlement.

John Le Cappelain, Actuary and Secretary.

ALBION LIFE INSURANCE COMPANY.
INSTITUTED IN 1805.

Directors.

Matthew Harrison, Esq., Chairman.
John Hampden Gledstanes, Esq., Deputy Chairman.

Thomas Starling Benson, Esq.	T. W. Clinton Murdoch, Esq.
Jas. Whatman Bosanquet, Esq.	David Riddall Roper, Esq.
Frederick Burmester, Esq.	Charles Russell, Esq.
John Coningham, Esq.	Edward Stewart, Esq.
Fredk. Dawes Danvers, Esq.	Francis Wilson, Esq.

ADVANTAGES.—The Profits are divided every three years, and are payable in cash, in augmentation of the sum insured, or in reduction of the annual premium. At the last division in 1849, the cash bonus amounted to one-fifth of the total premium paid. The next division will take place in 1852. New Insurances should be effected before April 30, 1851. Extensive travelling limits, including some of the principal colonies, without the payment of any extra premium. Claims paid in 30 days after proof of death. For forms of proposal, prospectuses, &c., apply to any of the company's agents, or to

John Le Cappelain, Actuary and Secretary.

BRITANNIA LIFE ASSURANCE COMPANY,
1, PRINCES-STREET, BANK, LONDON.
Empowered by Special Act of Parliament, 4th Vic., cap. 9.

Directors.

William Bardgett, Esq.	Robert Eglinton, Esq.
Wm. Fechney Black, Esq.	Erasmus R. Foster, Esq.
George Cohen, Esq.	Peter Morrison, Esq.
Millis Coventry, Esq.	Henry Lewis Smale, Esq.
John Drewett, Esq.	

Auditors.

J. B. Bevington, Esq.; F. P. Cockerill, Esq.; J. D. Dow, Esq.

Medical Officers.

D. W. Cohen, M.D., 6, Cleveland-row.
John Hutchinson, M.D., 105, Milton-street, Dorset-square.
F. Le Gros Clark, Esq., Surgeon, 24, Spring-gardens.

Standing Counsel.

The Hon. John Ashley, New-square, Lincoln's-inn.
Mr. Sergeant Murphy, M.P., Temple.

Solicitor.—William Bevan, Esq., Old Jewry.

Bankers.—Messrs. Drewett and Fowler, Princes-street, Bank.

Among others, the following important advantages may be enumerated.

HALF CREDIT RATES OF PREMIUM.

Persons assured according to these rates are allowed credit (without security) for half the amount of the first seven annual premiums, paying interest thereon at the rate of 5 per cent. per annum, with the option of paying off the principal at any time, or having the amount deducted from the sum assured when the Policy becomes a claim.

Policies may thus be effected at lower rates than are generally required for the term of seven years only; whilst the holders have the same security for the payment of their claims, whenever death may happen, as if they paid double the amount of premium, which would be charged for insurances effected in the usual way.

Increasing Rates of Premium on a new and remarkable plan for securing Loans or Debts; a less immediate payment being required on the Policy for the whole term of life than in any other office.

Policies revived without the exaction of a fine, at any time within twelve months.

A Board of Directors in attendance daily at Two o'clock.

Age of the Assured admitted in the Policy.

Medical attendants remunerated in all cases for their reports.

Extract from the Half Credit Rates of Premium:

Annual Premium required for an Assurance of £100 for the whole term of Life.

Age.	Half Premium for seven years.	Whole Premium after seven years.
	£ s. d.	£ s. d.
30	1 1 9	2 3 6
35	1 4 11	2 9 10
40	1 9 2	2 18 4
45	1 14 10	3 9 8
50	2 2 6	4 5 0
55	2 12 9	5 5 6
60	3 6 8	6 13 4

Peter Morrison, Resident Director.

ANNUAL DIVISION OF PROFITS.

GREAT BRITAIN MUTUAL LIFE ASSURANCE SOCIETY, 14, Waterloo-place, and 52, King William-street, City.

The Chisholm, *Chairman.*

Richard Hartley Kennedy, Esq., *Deputy Chairman.*

This Society is established on the tried and approved principle of Mutual Assurance. The Funds are accumulated for the exclusive benefit of the Policy-holders, under their own immediate superintendence and control. The Profits are divided annually, and applied in reduction of the future Premiums. At the Annual General Meeting, held on the 9th ult., an elaborate and highly satisfactory Report of the state of the Society's affairs was submitted to the members, whereupon it was resolved, unanimously, that an allowance of 30 per cent. should be made on the Premiums payable on all Policies on the participating scale, on which five or more yearly payments had been previously made. Credit is allowed for Half the Annual Premium for the first five years. The following Table exemplifies the effect of the present reduction:

Age when Assured	Amount Assured	Annual Premium hitherto paid.	Reduction of 30 per cent.	Annual Premium now payable.
	£.	£ s. d.	£ s. d.	£ s. d.
20	1000	20 17 6	6 5 3	14 12 3
30	1000	25 13 4	7 14 0	17 9 4
40	1000	33 18 4	10 3 0	23 14 10
50	1000	48 16 8	14 13 0	34 3 8

A. R. Irvine, Managing Director.

14, Waterloo-place, Aug. 17.

Printed by William Bradbury, of No. 13, Upper Woburn-place, in the Parish of St. Pancras, and Frederick Mullett Evans, of No. 7, Church-row, Stoke Newington, both in the County of Middlesex, Printers, at their office in Lombard-street, in the Precinct of Whitefriars, in the City of London; and published by them at the Office, No. 5, Charles-street, in the parish of St. Paul's, Covent-garden, in the said county, where all Advertisements and Communications are to be addressed to the Editor.—Saturday, August 17, 1850.

THE GARDENERS' CHRONICLE
AND
AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 34—1850.] SATURDAY, AUGUST 24. [PRICE 6*d.*

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GRAND DAHLIA, HOLLYHOCK, AND MISCELLANEOUS FLOWER SHOW.

ROYAL SOUTH LONDON FLORICULTURAL SOCIETY. Under the Patronage of HER MOST GRACIOUS MAJESTY, THE QUEEN.

THE FIFTH AND LAST EXHIBITION for this season will be held at the ROYAL SURREY ZOOLOGICAL GARDENS, on WEDNESDAY, the 4th of September, 1850 (Open to all Exhibitors), when Prizes will be awarded for the following productions, viz. Miscellaneous and Specimen Plants, Dahlias, Hollyhocks, Verbenas, Antirrhinums, Cut Flowers, and Fruit. In addition to the Prizes offered by the Society, 2*l.* 10*s.* will be given for the best stand of 3 blooms of Seedling Dahlias in 1, 2, or 3 varieties (not sent out) of the exhibitor's own raising, and 2*l.* 10*s.* for Fancy Dahlias, ditto. Lists of Prizes and the Rules for exhibiting may be obtained from JOHN T. NEVILLE, Secretary, Ebenezer House, Peckham, Surrey.

SUTTON BENGER HORTICULTURAL AND FLORAL SOCIETY.—This Society will hold their 12th Annual Meeting in Draycot Park, on THURSDAY, Aug. 29.

THE SOUTH OF ENGLAND HORTICULTURAL SOCIETY.—A Grand Exhibition of FLOWERS, FRUITS, &c., will take place (by the kind permission of Major Colt), upon his beautiful Grounds at ROWNHAMS, near Southampton, on THURSDAY, the 5th of September. Every arrangement will be made to promote the comfort of the visitors, as well as the attraction of the Fêtes. The whole of the arrangements will be made under the direction of Mr. Ross, of the Horns, Nursling. Lady Mill, Mrs. Chamberlayne, and Mrs. Colt have kindly consented to patronise the exhibition. The Lady Patronesses' private Subscription Prizes will be given extra to Cottagers within eight miles of Rownhams, for the best collection of Fruits, Flowers, and Vegetables. The Gardens will be open at 1 o'clock. Admission by Tickets, previous to the 3d of September, at 1*s.* 6*d.*; if on that day, 2*s.* 6*d.* each. Colonel Yea and the Officers of the Royal Fusiliers have kindly placed their band at the disposal of the Committee.

Persons attending the Exhibition are requested to enter by the Nursling Lodge, and retire by the Baddesley Lodge.

THE BIRMINGHAM AND MIDLAND COUNTIES DAHLIA SHOW (open to all England) will be held in the Hall of Nations, Coleshill-street, Birmingham, on Monday, September 2d, and Tuesday, 3d, 1850.

Schedules and full particulars may be obtained of Mr. HOLDER, Coleshill-street, or Mr. MORETON, Hon. Secretary, Cregoe-street, Birmingham.

NEW SEED OF TRIFOLIUM INCARNATUM, DICKINSON'S IMPROVED ITALIAN RYE-GRASS, NATURAL GRASSES FOR PERMANENT PASTURE, AND WINTER VETCHES.

JOHN SUTTON AND SONS have just harvested the above valuable articles for present sowing, and will send them carriage free at very low prices.

Prices and other particulars may be had by post on application to JOHN SUTTON AND SONS, Reading, Berks.

THE BLACK PRINCE STRAWBERRY will be ready for sending out on the 2d of September next. It has gained two prizes recently, one at the Horticultural Society's Rooms in Regent-street, the other at the Royal Botanic Society, Regent's Park. It is the earliest of all Strawberries, excellently well flavoured, and a very prolific bearer. The fruit is medium sized, and very dark coloured when fully ripe; price 10*s.* per 100.

CUTHILL'S TREATISES will be published in a few days; they include a competition Essay on the Potato, sent to the Belgian Government; Management of Asparagus, Seakale, Rhubarb, Vegetable Marrow, Scarlet Runner, Strawberry, Melon, Cucumber, Chicory and Lamb Lettuce (the two latter as Salads), the Lisianthus Russellianus, Tree Mignonette, destruction of Woodlice and Green-fly, and Peat Charcoal as a manure. Price 2*s.*, or, by post, 2*s.* 6*d.*—To be had only of JAMES CUTHILL, Horticulturist, Camberwell, London.

WATERER'S DESCRIPTIVE CATALOGUE OF AMERICAN PLANTS, &c.

HOSEA WATERER begs to announce his new descriptive CATALOGUE OF AMERICAN PLANTS, CONIFERS, ROSES, &c., is just published, and may be had by enclosing two stamps for postage to HOSEA WATERER, Knap Hill Nursery, Woking, Surrey.

☞ Everybody who has any idea of planting the ensuing autumn should possess themselves of this Catalogue.

FLORAL NOVELTY. — PANSY COMPACTUM, or DOUBLE PANSY, named and described by Mr. G. GLENNY, to whom specimens were sent. From the habit and growth of this superb Pansy, with a profusion of flowers standing out upon long foot-stalks, it is rendered eminently attractive, and will doubtless form a standing ornament to the Flower Garden. N.B.—Strong plants will be sent out the first week in October, at 5*s.* each, or seven for 30*s.* Orders taken by A. DODS, Rose-hill Nursery, Brighton, who will execute them in rotation on receiving remittances from unknown correspondents.—Brighton, Aug. 24.

A LIST OF NEWLY INTRODUCED PLANTS NOW OFFERED FOR THE FIRST TIME BY JAMES VEITCH AND SON, EXETER:

Escallonia macrantha, 21*s.* each; one over to the Trade on three.
Ixora salicifolia, 21*s.* each; ditto.
Dipladenia urophylla, 21*s.* each; ditto.
Hoya coriacea, 10*s.* 6*d.* each; ditto.
Dipteracanthus spectabilis, 10*s* 6*d.* each; ditto.
Oxalis elegans, or Oxalis elegans major, 5*s.* each, or three for 10*s.* 6*d.* of either.
Calceolaria grandis, 5*s.* each, or three for 10*s.* 6*d.*

IXORA SALICIFOLIA (TRUE), WILLOW-LEAF IXORA.

MESSRS. VEITCH AND SON are now prepared to send out strong plants of the above beautiful and distinct IXORA, received by them from Java through Mr. Thos. Lobb. It is a lovely free-blooming species, flowering in a very young state, and at the Chiswick Exhibition in July last received the first prize for new and rare plants—the Silver Gilt Medal. It is figured and described in Curtis's "Botanical Magazine" for July last.

Strong well established plants 21*s.* each; one over to the Trade on three.—Exeter, Aug. 24

RENÉ LANGELIER, of the Clarendon Nursery, St. Helier, Jersey, takes the liberty of informing Amateurs of PEARS that his very extensive collection is now in full bearing, and embraces the present opportunity of soliciting their inspection of the different sorts now on the trees; many of the summer kind may be tasted. Communication from all parts of England daily, viâ London, Brighton, Southampton, Weymouth, Torquay, and Plymouth. R. L. is confident that amateurs of Pears will be gratified by an inspection.

DIGITALIS PURPUREUS SUPERBUS, or DOUBLE FOXGLOVE.

In page 435 of the present volume of the *Gardeners' Chronicle* is a wood-cut of this singularly attractive variety of Foxglove. Seeds have just been saved from the plant figured, and may be obtained in 1*s.* packets, by enclosing stamps to the amount to WM. URQUHART and SONS, Dundee.

TILEY'S VIOLA ARBOREA, OR PERPETUAL TREE VIOLET.—VIOLA ARBOREA, or the PERPETUAL TREE VIOLET (true).—In answer to numerous inquiries for the above, and great satisfaction given by the plants sent out last season by EDWARD TILEY, he begs to state that he has this year a fine stock of the above beautiful DOUBLE VIOLET now to dispose of, which he can highly recommend, this being the proper time for making beds or potting. They are beautifully scented; the blooms are as large as the double blue Hepatica; they bloom freely from August till the end of May, and are perfectly hardy. Twelve of these plants grown in pots will scent a large greenhouse, and a small bed, 9 feet long by 3 feet wide, will be sufficient to furnish a family with bouquets the whole of the winter and the spring. They should be planted in rather a dry situation and a loose soil, as the Violet will thrive and bloom finer than in wet or clay borders.

E. T. has been informed by the gentleman that introduced it into this country, that he has seen them growing in the thickets of Persia to the height of 4 feet, with large bushy heads to them, and hundreds of blooms on them at the same time. Large bushy plants, 6*s.* per dozen; smaller ditto, 3*s.* per dozen; or 1*l.* per hundred.

Also he has a fine stock of that splendid YELLOW VIOLET, or VIOLA LUTEA, which has been so much admired at the London exhibitions. In colour it is equal to the Crocus. Strong bushy plants 2*s* 6*d.* each; or smaller ditto, 1*s.* 6*d.* each.

KITLEY'S GOLIAH STRAWBERRY.—Strong well rooted plants at 3*s.* per dozen.

True BATH COS LETTUCE SEED, 1*s.* per packet.

Extra fine SWEET-WILLIAM SEED, saved from 24 distinct varieties, 1*s.* per packet.

ANTIRRHINUM SEED from all the best varieties, 1*s.* per packet.

WINTER CUCUMBER.—Lord Kenyon's Favourite, 2*s.* 6*d.* per packet.

The whole or any quantity of the above will be sent, postage and package free, to any part, on receipt of a Post-office order, or the amount in penny postage stamps.

Sold by EDWARD TILEY, Nurseryman, Seedsman, and Florist, 16, Pulteney-bridge, Bath.

NURSERIES, CLAPHAM, NEAR LONDON.
FINE LATE STRAWBERRY, "LA DELICIEUSE."

J. & J. FAIRBAIRN have much pleasure in announcing that they will be prepared to send out the above early in September.

J. and J. F. can with confidence recommend this STRAWBERRY, as one possessing first-rate excellence. Its distinguishing characters are—the plant, of hardy habit and great productiveness of bearing; fruit, rather above medium size and of exquisitely rich flavour; colour, amber, like a Bigarreau Cherry; season of ripening late, after most other Strawberries are over; fruit firm, remaining good longer after ripe than other varieties, thus lengthening the Strawberry season by a considerable period. From its many excellences, it will be found an acquisition in any establishment. Price, 60*s.* per 100; or 12*s.* per dozen. N.B. A remittance with order respectfully requested from unknown correspondents. Orders addressed to J. and J. FAIRBAIRN, Nurseries, Clapham, near London; or to the following Agents, will have prompt attention.

Austin and M'Aslin, Glasgow	Harrison, John, Darlington
Bunyard, T., Maidstone	Harrison, T., Hindon, Wilts
Backhouse, J., and Son, York	Imrie and Sons, Ayr
Burgess & Kent, Penkhull	Little & Ballantyne, Carlisle
Crane, Geo., Low Habberley, Kidderminster	Laird, Wm., Dundee
Dickson & Co., Edinburgh	Mackie, Arthur, Norwich
Dickson, F. and J., Chester	Mills, Edwin, Shaftesbury
Dickson and Turnbull, Perth	Macintyre, Jas., Taunton
Dixon, E. P., Hull	Pontey, Alex., Plymouth
Drummond and Sons, Stirling	Scott, J., Bathford, near Bath
Darby, R. F., Cirencester	Tait, Henry, Kelso
Fisher and Holmes, Sheffield	Veitch and Son, Exeter
Frettingham, Geo., Beeston, near Nottingham	Watkinson, T. P., Manchester
Garraway, Mayes, & Co., Bristol	Widnall and Davis, Cambridge
	Wheeler, J. C. & Co., Gloucester

MESSRS. STANDISH AND NOBLE'S new descriptive CATALOGUE OF SELECT HARDY ORNAMENTAL PLANTS is just published, and may be had for four postage stamps. Besides a Treatise on the cultivation of American Plants, it contains a Plate and Description of the Funebral Cypress, Notices of Cephalotaxis Fortunii, Cryptomeria japonica, Quercus sclerophylla and inversa, Viburnum plicatum and macrocephalum, with many recent introductions from the north of China, quite new to English gardens.

Messrs. S. and N. take this opportunity of stating that they give Designs for Laying out New Grounds and Plans for Improvements; also Estimates for all kinds of Planting, whether ornamental or economic.—Bagshot Nurseries, Aug. 24

HUGH LOW AND CO. have just published their GENERAL CATALOGUE OF PLANTS, which can be had free on application.—Clapton Nursery, London, Aug. 24.

NEW LATE STRAWBERRY,
WILMOT'S "PRINCE ARTHUR."

J. WILMOT, in offering this new variety of STRAWBERRY to the Public, is confident that it combines qualities which no other kind at present in cultivation does possess, being of delicious flavour, and coming in after the principal Strawberry season is over. It possesses the property of firmness of texture, so that it may be transmitted to any part of the kingdom without sustaining injury, as it may be kept for several days after being gathered, when fully ripe, without any indication of decay or loss of flavour.

"Prince Arthur" is one of the largest sized Strawberries, and a most abundant bearer; the foliage is small, and never exceeds 6 inches in height; the fruit is consequently fully exposed to the sun. Its dwarf habit requires it to be planted not more than a foot apart. The fruit is perfectly formed, of a rich scarlet, and colouring equally all over the berry. If planted at the distance recommended it will produce double the weight per acre of any other variety.

Strong plants will be ready for sale in September next, at 5*l.* per 100, on prepaid application only, to JOHN WILMOT, Isleworth, Middlesex; Robert Glendinning, Chiswick Nursery; William T. Atwood, Mortlake, Surrey; George Charlwood, Seedsman, Covent-garden; and Messrs. Hurst and M'Mullen, 6, Leadenhall-street, London.—Isleworth Middlesex, Aug. 24.

PELARGONIUM, "FOQUETT'S MAGNIFICENT."

CHARLES DIMMOCK, FLORIST, Ryde, Isle of Wight, having obtained a stock of the above from the raiser, will send out Plants, well-established, in 3-inch pots, in the first week in October next, at 7*s.* 6*d.* per plant, or 30*s.* for six, to the trade.

This flower has proved one of the most desirable of its class in cultivation, being a free bloomer, extraordinary trusser (some of the trusses had nine pips), very constant, and strong habit, the shape, colour, size, and substance is first-rate.—Terms: cash, and priority of payment will ensure priority of selection.

Nurseries, 113, High-street, Ryde, Isle of Wight, Aug. 24.

DANIEL BUTLER has purchased the Stock of SEEDLING CINERARIAS of Mr. J. Pond (a successful Amateur), of Devonshire Cottage, Bath, saved from the best sorts in cultivation with great care; all Show Flowers, viz., Madam Cerito, Sir Charles Napier, Bridesmaid, Lilac Perfection, Climax, Blue Beard, Dazel Rosea, Fairy, Lord Gough, Queen of May, and Beauty of Newington. The plants will be all had from Devonshire Cottage by D. B. as they are sent out, all true from the sorts named above. This will present an opportunity of possessing a first-rate collection at a very low price, viz., 4*s.* per doz. A deduction where a large quantity is taken.

N.B. A remittance expected from unknown correspondents.
Widcombe Nursery, Bath, Aug. 24.

KITLEY'S GOLIAH STRAWBERRY. — The merits of this Strawberry are now so well known, as being hardy, large, fine in colour, a most excellent flavour, and forces well, that all parties who have seen it growing, or tasted the fruit, have expressed their entire satisfaction with it. This is the fifth season it has fruited in the same bed, and the plants are now perfectly healthy, and likely to continue much longer in bearing; the fruit this season have been as large and more abundant than from younger plants.

From the *Gardeners' Chronicle*.—"STRAWBERRIES: *J. K.* Your Seedling Strawberry, Goliah, judging from its size and appearence, is worthy of cultivation."

From the *Gardeners' and Farmer's Journal*.—"STRAWBERRIES. *J. K., Lyncombe Vale*.—We have great pleasure in bearing testimony to the exquisite flavour of your Seedling Strawberry, 'Goliah.' In our opinion, it combines the piquant flavour of the Strawberry with the richness of the Pine, the delicious aroma of which it partakes in equal proportion to taste. Apart from the Queen of Fruits, we certainly do not remember anything in this way that conveyed to our senses so delicious a treat as the noble fruit to be known to the world as 'KITLEY'S GOLIAH STRAWBERRY.'"

Strong well-rooted plants are now ready at 3*s.* 6*d.* per dozen, or 1*l.* per 100, on prepaid application only to JAMES KITLEY, Bath; Messrs. Low and Co., Clapton Nursery; Mr. J. G. Waite, Seedsman, 181, High Holborn, London; Messrs. Garraway, Mayes, and Co., Bristol; Messrs. Lucombe, Pince, and Co., Exeter; and Messrs. W. E. Rendle and Co., Plymouth.

Lyncombe Vale Nursery, Bath, Aug. 24.

WILLIAM YOUNG begs the attention of Noblemen, Gentlemen, and Planters in general to inspect his extensive collection of CONIFEROUS PLANTS, consisting of Araucarias, Deodars, Douglasii, and all the leading kinds, from 1 foot to 10 and 15 feet high, with Cryptomeria japonica, bearing perfect cones.

Milford Nursery is one square piece of ground, about 30 acres, on a particular dry and healthy soil, filled with the most choice kinds of Ornamental Trees, Shrubs, and Forest Trees, of every description; Ash, Birch, Chestnut, Hazel, Willow; Scotch, Larch, Silver, and Spruce Firs; and other hardy Forest Trees, being planted for sale by the 100,000, whence they transplant equal to, if not better, than any other nursery in England.

Milford Nursery is two miles from the Godalming Station of the South-Western Railway, where conveyances are always in attendance.

EXHIBITIONS AT THE GARDEN
OF THE
HORTICULTURAL SOCIETY OF LONDON,
FOR THE YEAR 1851.

THE EXHIBITIONS WILL TAKE PLACE ON THE FOLLOWING SATURDAYS :—
MAY 3, JUNE 7, AND JULY 19.

SCHEDULE OF THE PRIZES.

FLOWERS.

(Pots are to be measured inside, 1 inch below the rim.)

Division I.—In which Nurserymen and Private Growers exhibit independently of each other.

1. Pelargoniums; in collections of 12 new and first-rate varieties, with perfectly distinct colours, cultivated with superior skill, in 8-inch pots. SG—CE—LS.
   N.B. The collections in which the varieties are most distinct *will have the preference.*
2. Pelargoniums; in collections of 9 varieties, in 11-inch pots. SG—CE—LS.
   N.B. Any plant that shall not have been actually grown in 11-inch pots will be disqualified.
3. Fancy Pelargoniums; in sixes, in 8-inch pots. CE—LS—SK.
4. Roses, in pots; in collections of 12 distinct varieties, in 13-inch pots. GB—SG—CE. *(In May and June only.)*
   N.B. The Judges will disqualify any collection that shall be found to contain a plant which has been recently placed in the pot from the open ground, or that is shown in a pot of any other size than 13 inches.
5. Yellow Roses, best six varieties. SK—SB—C. *(In June only.)*
   N.B. To be really yellow; pale-cream colours are inadmissible.
6. Cape Heaths; in collections of 10 entirely distinct varieties. GB—SG—CE.
   N.B. It is expected that the same plant shall not be exhibited on more than one occasion. The Judges, in making their award, will give, both in this and the next number, a marked preference to plants grown in their natural forms, without stakes or stays; and will also take distinctness of species into favourable consideration. No duplicate will be allowable.
7. Cape Heaths; in collections of 10 entirely distinct varieties, in 11-inch pots. SG—CE—LS.
8. Carnations, in collections of 12 distinct varieties, in 11-inch pots. CE—LS—SK. *(In July only.)*
9. Picotees, in collections of 12 distinct varieties. CE—LS—SK. *(In July only.)*
10. Pinks; in collections of 12 distinct varieties. SK—SB—C. *(In June only.)*
    N.B. Carnations, Picotees, and Pinks can only be shown as perfect plants grown in pots. Cut flowers in boxes will no longer be received.
11. Calceolarias, in twelves; in 11-inch pots. LS—SK—SB.
    N.B. No medals are to be awarded unless the plants are in very high health and extremely well grown. *(In May and June only.)*

Division II.—In which Nurserymen alone can show.

12. Exotic Orchids; in collections of 15 species of superior cultivation. GB—SG—CE.

Division III.—In which all persons are admitted to equal competition.

13. Single specimens of very superior cultivation, excluding everything which can be shown singly in other numbers, and plants not in flower. CE—LS—SK
14. Stove or Greenhouse plants; in collections of 20 plants. LG—GK—GB.
    N.B. Calceolarias, Fuchsias, Orchids, Pelargoniums and duplicates are excluded from all the four classes of Stove and Greenhouse plants. Only three species or varieties of the same genus can be allowed in this and the following number.
15. Stove or Greenhouse plants; in collections of 15 plants. GK—GB—SG.
16. Stove or Greenhouse plants; in collections of 10 plants. GB—SG—CE.
    N.B. Only two species or varieties of the same genus can be allowed in this number.
17. Stove or Greenhouse plants; in collections of 6 plants. SG—CE—LS.
    N.B. Not more than one species or variety of the same genus can be allowed in this number. No one can show in more than one of the classes of Stove and Greenhouse plants.
18. Greenhouse Azaleas in 12 distinct varieties. GB—SG—CE.
19. Greenhouse Azaleas; in 12 of the newer kinds, in 8-inch pots. SG—CE—LS.
20. Greenhouse Azaleas; in 6 distinct varieties. SG—CE—LS.
    N.B. No one can show in more than one class of Azaleas.
21. Indian Rhododendrons, and their hybrids; in 12 distinct varieties. GB—SG—CE. *(In May only.)*
22. Cape Heaths; in sixes, grown in 8-inch pots. CE—LS—SK.
23. Exotic Orchids; in collections of 20 species of superior cultivation. LG—GK—GB.
24. Exotic Orchids; in collections of 10 species of superior cultivation. GB—SG—CE.
25. Exotic Orchids; in collections of six species. SG—CE—LS.
    N.B. Nurserymen cannot show in either of these three classes of Orchids. No exhibitor can show in more than one of them.
26. Exotic Orchids; single specimens displaying *very* superior cultivation. SK—SB—C.
    N.B. No duplicate Medals can be here awarded.
27. Fuchsias; in threes, of three distinct colours. LS—SK—SB. *(In July only.)*
28. Pelargoniums; in six DISTINCT SPECIES, exhibiting superior cultivation. CE—LS—SK.
    N.B. By the word species is meant the wild kinds imported from the Cape of Good Hope, or New Holland, tuberous species inclusive, and not garden cross-breds.
29. Achimenes; in collections of six distinct varieties, exhibiting superior cultivation. CE—LS—SK. *(In July only.)*
30. Tall Cacti; six distinct varieties in flower. SG—CE—LS.
31. Roses of 50 varieties in loose bunches, each consisting of three trusses as they are gathered, so as to exhibit, as far as possible, the habit of the variety. CE—LS—SK. *(In July only.)*
    N.B. No one who exhibits in this number can also compete in the following.
32. Roses, exhibited as in No. 31, and in 25 varieties. LS—SK—SB. *(In June and July only.)*
    N.B. Private growers only can exhibit here. If Roses are brought for exhibition without attention to the regulations here explained, they will not be allowed to compete.
33. Helichrysums. CE—LS—SK.
34. Calosanths; in sixes. LS—SK—SB. *(In July only.)*
35. Statices; in collections of six species. CE—LS—SK.
36. Ferns, in collections of 10 hothouse species of very superior cultivation. LS—SK—SB. *(In July only.)*
37. New Hybrid Plants, exclusive of Roses, Rhododendrons, Azaleas, and garden cross-breds, such as Gloxinias and the like. SG—CE—LS.
    N.B. It is certain that much may be effected by hybridising plants in common cultivation, such as Lilacs, Honeysuckles, &c. &c. This class will be judged by the Society's officers.
38. Epacrises; in sixes. CE—LS—SK *(In May only.)*
39. Newly introduced or extremely rare ornamental plants in flower, not introduced by the Society. SG—CE—LS.
    N.B. These Medals will be awarded by the Society's officers, and not by the usual Judges. Exhibitors will particularly observe that none but new or rare plants can be exhibited under this number. *Nothing will be regarded as new which has been exhibited in the Garden or Regent-street in a previous season,* nor garden seedlings, hybrids, nor domesticated varieties of any kind. No prizes will be given to New Plants which have been introduced through the Society.
40. Miscellaneous subjects, exclusive of Ferns. SK—SB—C.
    N.B. Exhibitors under No. 40 will not be thereby *entitled* to a pass ticket. Cockscombs, Heartsease, Hydrangeas, and bouquets, together with all plants for which separate prizes are offered as single specimens, are altogether excluded from this number.
41. Seedling Hybrid Pelargoniums, of entirely new crosses. SB—C.
    N.B. Every seedling must be shown singly, and marked with the name it is to bear. The same seedling cannot gain a prize more than once in the season. The plants must be shown in pots, and not in a cut state.
42. Pansies; in twelves, in 8-inch pots. SK—SB—C.
43. Alpines; in twelves. SK—SB—C.
44. Cinerarias; in sixes, in 8-inch pots. SK—SB—C. *(In May only.)*
    N.B. Prizes will only be given to extremely fine specimens.
45. Seedling Florists' Flowers.
    A tent will be provided for the exhibition of these; but no medals will be awarded, *nor will they be entered.* The exhibitors will themselves mark their seedlings in their own way. The Society declines to express any opinion upon the merits of seedlings.

FRUIT.

Market Gardeners, or Growers (not Fruiterers), in the habit of supplying the Market, and Private Gardeners, exhibit independently of each other. Fruiterers are not allowed to exhibit at all. No duplicate awards can be made in any case whatever, except in O and P. No person can take more than one award in each Letter, except in B, D, I, L, N, O, P.

N.B. All Fruit must be sufficiently ripe for Market, WELL COLOURED, and PROPERLY NAMED by the Exhibitor, as far as practicable; if the contrary, it will be disqualified.

A Collections of Fruit. GK—GB—SG *in May.* GB—SG—CE *in June.* SG—CE—LS *in July.*
   N.B. No person receiving a prize for a collection, can also receive a prize for any separate exhibition of fruit.

B Pine Apples, in single specimens :—
   1. Queens. LS—SK—SB.
   2. Enville, Cayennes, Sugarloafs, Black Jamaicas, Otaheites, &c. LS—SK—SB.
   3. Providences. LS—SK—SB.

C Grapes in pots; three specimens to be shown. CE—LS—SK

D Grapes; in three bunches for private growers, and six bunches for Market Gardeners :
   1. Black Hamburgh. LS—SK—SB.
   2. Black Prince, or West's St. Peters. LS—SK—SB.
   3. White Muscadines, or Sweetwaters. LS—SK—SB.
   4. Muscats. LS—SK—SB.
   5. Frontignans, or other sorts, distinct from the foregoing. LS—SK—SB.

E Peaches, in sixes. SK—SB—C.

F Nectarines, in sixes. SK—SB—C.

G Apples and Pears of the previous year. SB—C.

H Figs, in sixes. SB—C.

I Cherries, in dishes of 1 lb. each :
   1. Black. SB—C. 2 White. SB—C.

K Strawberries, in pots; six pots to be shown. SK—SB—C.
   N.B. They must have grown in the pots in which they are shown.

L Strawberries, one dish each :
   1. British Queen, and similar kinds. SB—C.
   2. Keens' Seedling, and similar kinds. SB—C.
   3. Other kinds. SB—C.

M Oranges, Citrons, &c., in pots; no one to show more than one pot. LS—SK—SB.
   N.B. This class of Fruits is excluded if gathered.

N Melons, one specimen each, for the best flavoured. SK—SB—C.

O New varieties of any of the preceding kinds of fruit.

P Other kinds of fruit of peculiar excellence and value.
   N.B The medals under this and the preceding letter will be given at the discretion of the Society's officers.

MESSRS. VEITCH AND SON'S CATALOGUES OF NEW AND RARE PLANTS, STOVE AND GREENHOUSE PLANTS, GERANIUMS, AMERICAN PLANTS, &c., &c., are now ready, and can be had, on pre-paid application, by enclosing two postage stamps.—Exeter, August 24.

KITLEY'S GOLIAH STRAWBERRY.
ROBERT WHIBLEY has now ready fine plants at a very reduced price for cash, viz., 2s. per doz., or 10s. per 100. Also, Select CHRYSANTHEMUMS, from his well-known collection, from 6s. per dozen. Lists can be had.
Nursery, Kennington, London.

SAFFRON WALDEN.—SUPERB DOUBLE HOLLYHOCKS.
WILLIAM CHATER begs to announce that his NEW CATALOGUE is now ready, and may be had on application, by enclosing a postage stamp.
Hints on their cultivation given to purchasers, if requested.

CUTHILL'S BLACK PRINCE STRAWBERRY.—Those who by early planting wish to secure a full crop next season of the above Strawberry can have well rooted plants, fit for immediate delivery, sent free by post to any part of the kingdom (or in packages paid to London), by sending an order, or stamps, for 10s. 6d per 100, or 6s. for 50, to J. MICKLE, Folkestone, Kent.

GRAPE VINES IN POTS FOR FORCING.
J. WEEKS AND CO., King's-road, Chelsea, beg to call attention to their splendid collection of Grape Vines, all struck from eyes, now two and three years old, the finest Plants that have ever been offered for Sale, consisting of 60 varieties, all of the best sorts, warranted true.
THE HAMBURGHS AND MUSCADINES being the best for early forcing in pots, this is the best time for Gardeners to have them, so as to get the eyes ripe and prominent. This Nursery is well worthy of a visit, as all modern Horticultural improvements are in full operation.
J. WEEKS and Co., King's-road, Chelsea.

TO FLORISTS AND AMATEURS.
ESTABLISHMENT FOR THE INTRODUCTION OF NEW PLANTS, LUXEMBURG.
The undersigned, Agents to the above Establishment, are prepared to receive and transmit orders for the following new plants, lately introduced by J. LINDEN, of Luxemburg, deliverable on and after the 1st of September next.
FUCHSIA VENUSTA, H. B. K.—Strong plants, 1l. One of the most splendid species introduced, and far superior to Fuchsia serratifolia, of a similar habit, but differing therefrom by very large flowers; calyx of a lively vermilion orange, and large extended petals of a coral red. Native of the cold regions of New Grenada. This remarkable plant carried away the first prize at all the principal shows in Belgium, and is represented in the "Flore des Serres" for December, 1849.
FUCHSIA NIGRICANS, LINDEN.—Strong plants, 8s. Handsome species, an abundant flowerer, with dark purple petals.
ALLOPHLECTUS CONGESTUS, DECAISNE.—Strong plants, 12s. See description in Catalogue, to be had as under.
BOMARIA EDULIS.—Strong plants, 12s. A charming climber, lance-shaped leaves, light green above, dark red, spotted with yellow. This beautiful specimen carried away a medal at the great exhibition at Ghent.

BEFARIA ÆSTUANS	...	...	£1 4s.
,, DENSA	...	...	1 0
,, TRICOLOR	...	...	1 8

BETHAM AND BLACKITH, AGENTS FOR FLORISTS, Custom House and General Agents, Cox and Hammond's Quays, Lower Thames-street, London, Aug. 24.

IMPORTANT TO GARDENERS, &c.
R. RESTELL'S METALLIC FLEXIBLE GARDEN PEGS, PROPS, AND HOLDERS, will effect great saving in the Gardener's time, and last for years, giving an appearance of neatness and uniformity, and from their composition will not cause the slightest injury to the most delicate plants. Price 2s. per lb. The number varying according to weight. In the first 10 sizes, from 150 to the lb. Warranted not to corrode.—To be had of the principal Seedsmen and dealers in Horticultural Implements; and, wholesale, at the Manufactory of the Patent Metallic Ornamental Labels, 35, High-street, Croydon, Surrey.

STEELE'S PREPARATION, for preventing Weeds, Moss, &c., from growing on Parades, Garden-walks, and Roads. Sold in 5-gallon bottles, at 1s. 6d. per gallon.
Also, PEAT, BOG-EARTH, and LOAM, in bags not less than 5 cwt., at 9d. per cwt.
Orders, enclosing Post-office orders made payable to JONATHAN STEELE, Post-office, Dockhead, immediately forwarded to any part of the country.
Factory, Plough-road, Rotherhithe.

PIMLICO SLATE WORKS.—Cisterns, Filters, Milk and Salting vessels, Corn and Flour Chests, Sinks, Dairy and Larder Shelves, Malting and other Flooring, Skirting, Refrigerators, Garden Edging, Flower Boxes, Pine pit Linings, Hot-bed Frames, moveable Cattle Sheds, Coping, Drain Stones and Traps, Steps and Risers, Balcony Landings, Roofing Slates, ridge roll and flap; Waste Slate for drains, Sun Dials, Fountains, and all descriptions of plain Slate Work in Town, or direct from Mr. MAGNUS'S Works in North Wales.
ENAMELLED SLATE Chimney-pieces, Billiard Tables, Console and other Table Tops, Mural Tablets, &c., in imitation of marble, surpassing the choicest marbles in beauty and durability, at less than half the cost of the commonest descriptions. Price Lists forwarded on application to Mr. MAGNUS, 39 and 40, Upper Belgrave-place, London.

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One hundred 1, 2, and 3-light Boxes and Lights of all sizes ready for immediate use. Warranted best materials, packed and sent to all parts of the kingdom; 2-light Boxes and Lights from 1l. 4s. Garden Lights of every description, Conservatories, Green and Hot-houses, made and fixed in all parts of the kingdom. References given to the Nobility, Gentry, and the Trade, in most of the counties of England. JAS. WATTS, Hothouse Builder, Claremont-place, Old Kent-road, London.

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The Improved Patent Rough Plate, made by Messrs. Hartley and Co., can be supplied from this Warehouse, of every size and substance, at the same prices as at the works.
100 and 200 feet cases of large Sheet Glass, from 2½d. per foot. Small ditto, 10s. 6d. per 100 feet, packed in boxes ready for immediate delivery. Curators of Botanical Societies, Florists, Railway Agents, and others requiring large quantities, will, on sending dimensions, receive estimates at the lowest prices.
GLASS MILK PANS, CREAM POTS, Lactometers, Bee Glasses, Fish Globes, and all kinds of Dairy Glass, Propagating Glasses, Hyacinth Dishes, Cucumber Tubes, and every other description of Garden Glasses.
PATENT GLASS PENS, self supplying, never blot, never soil the ruler, and will write continuously for 12 hours.
Also, Glass Rulers, Glass Inks for office-stands, desks, &c. Stationers and Schools supplied. Wholesale Warehouse for Ornamental Shades, Lamp Shades, Gas Glasses, Genuine White Lead, Paints, Colours, and Pumps for Farm purposes.
Our Catalogue of 18 folios is the most complete ever published. No Gardener or Farm Bailiff should be without one. May be had Gratis on sending two postage stamps to Messrs. COGAN and Co., 48, Leicester-square, London.

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J. HENCHMAN begs to announce that his choice CALCEOLARIA SEED, saved from superb varieties, is now ready, at 2s. 6d. per packet. The attention of the trade is also invited to his stock of above 10,000 strong Seedling CEDRUS DEODARA, which he offers on very advantageous terms.—Edmonton, Middlesex, Aug. 24.

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Choice sorts by name, Messrs. SUTTON's best selection, per dozen	10	6
BULBOUS FLOWER-ROOTS, FOR POTS OR OPEN BORDERS.		
HYACINTHS, finest double, colours separate (without names) per doz.	3	6
,, ,, colours mixed per 100	21	0
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TULIPS, Early Van Thol, for pots or open borders ,,	8	0
,, Choice sorts, mixed for beds ... ... ,,	12	0
ANEMONES, finest double mixed ... ... ,,	7	0
,, fine early single, mixed ... ... ,,	7	0
RANUNCULUSES, fine double mixed ... ... ,,	3	6
HARDY NARCISSUS, sweet double white... per doz.	1	6
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JONQUILS, sweet double ... ... ,,	2	6
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GLADIOLI, many sorts mixed ... ... ,,	2	6
IRISES, mixed, many beautiful colours ... ... ,,	2	6

N.B. *Parcels of not less than* 10*s. value are sent carriage free to any Station on the Great Western, South-Western, or South-Eastern Railways; or to any Office in London or Bristol.*

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NEW SEEDLING STRAWBERRY—MYATT'S "SURPRISE."—This is a variety raised from the British Queen, which it resembles, though of a more robust habit, and a very free bearer, producing a greater abundance of those large angular-shaped Strawberries than any other variety, and finishing off the last fruit of a good size, price 50*s.* per 100.

Also Myatt's Eleanor, 5*s.* British Queen, Globe, Mammoth, Comte de Paris, Hooper's Seedling, Keens' Seedling, Swanston's Seedling, Elton Pine, 3*s.* 6*d.* Fertilised Hautbois, 5*s.* Cuthill's Black Prince, 10*s.* 6*d.* per 100. Kitley's Goliah, 3*s.* 6*d.* per doz., or 20*s.* per 100.—Manor Farm, Deptford.

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Alstrœmeria, Chilian	4*s.*	0*d.*	Pæonia, herbaceous ...	0	6
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Delphinium	0	4	Wallflower	0	4
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Fuchsia	1	0	Stocks, Emperor, 3 German varieties, separate	1	0
Geranium, 1*s.* 6*d.* and	2	6	Chænostoma polyantha	0	4
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Gladiolus, hybrid varieties	0	6	Lychnis fulgens	0	6
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,, Spanish	0	6			
Mimulus	0	6			
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20 Choice Greenhouse Perennials, 10*s.* 6*d.*; 12 for 7*s.* 6*d.*
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Remittances requested from unknown correspondents. Post office orders to be made payable to
BASS and BROWN, or to STEPHEN BROWN,
Seed and Horticultural Establishment, Sudbury, Suffolk.

The Gardeners' Chronicle.

SATURDAY, AUGUST 24, 1850.

MEETINGS FOR THE ENSUING WEEK.

COUNTRY SHOWS.—Tuesday, August 27: Handsworth and Lozells Floral and Horticultural.—Wednesday, Aug. 28: Salisbury West of England Dahlia, Warwickshire Horticultural, and Trowbridge Horticultural and Floral.

IN another column will be found the SCHEDULE OF PRIZES offered by the Horticultural Society at their Exhibitions in 1851. The following are among the principal changes.

All FLORISTS' FLOWERS are in future to be shown in pots, and not in boxes, or pans, as cut flowers. This proposal, first made we believe in the "Gardeners' Magazine of Botany," is wholly unobjectionable, and we cannot doubt its meeting with entire concurrence from the growers. It will put an end to the packing and trimming system, by which flowers are so changed that even their owners do not know them; and it will give amateurs a real means of judging of the respective value of the varieties. In this way, too, Pansies are readmitted, after a long and well deserved exclusion, on account of their worthlessness when shown in "pans."

INDIAN RHODODENDRONS and their hybrids are to be shown in twelves, with the same medals as the first class of Chinese Azaleas.

A class of the *newer* CHINESE AZALEAS in twelves, in 8-inch pots, has been formed for the convenience of beginners in the cultivation of such plants.

In like manner a new class of CAPE HEATHS, in sixes, will enable the small grower to show his skill in managing a proverbially difficult race.

In order to improve the quality of the miscellaneous COLLECTIONS OF STOVE AND GREENHOUSE PLANTS, it is determined that in no case shall any exhibitor be allowed to show more than three species or varieties of the same genus, and in the smaller of these collections one species or variety only of a genus is to be admissible.

The measurement of GARDEN POTS is to be made inside, 1 inch below the rim.

COLLECTIONS of FRUIT are restored, with the Gold Knightian and other Medals in May, the Gold Banksian and others in June, and the Silver Gilt, &c., in July; the value of the medals being in this way proportioned to the difficulty of exhibiting. These collections are, however, to be shown with the proviso that no one who exhibits in the collections shall show elsewhere. This will secure the smaller growers against the risk of being swamped by some horticultural Leviathan. Fruiterers are, as before, absolutely excluded from exhibiting.

PELARGONIUMS are to be shown in twelves and nines, instead of sixes.

Considerable alterations in the tables and tents are in progress, so as to meet the augmented extent of exhibition which must follow the changes now decided upon. It is in particular intended that better accommodation should be provided for the large miscellaneous collections; and, upon this subject, the Vice-Secretary would be glad of suggestions, in order that the convenience of exhibitors may be consulted as far as possible.

WE strongly recommend those of our readers who may be sceptical as to the prevalence of the POTATO DISEASE, from any favourable signs about their own crops, not to be too sanguine. The smooth surface of the sea is not more deceptive. Some weeks since we noticed, in a Leading Article, a morbid appearance which existed in our Potatoes about the base of the stems, running down the strings to the young tubers. No great change had taken place up to the time of getting up the crop, two days since, except that some of the very small tubers had completely decayed, passing into mere bags of water. Nothing could be more beautiful than the appearance of the Potatoes when raised; many of them were extremely fine, and all of the larger specimens, with the exception of two only, seemingly without the least taint of disease. A trifling shower fell upon them as they lay between the rows, but they were housed at night perfectly dry. This morning, after the lapse of only 36 hours, there is scarcely a tuber which does not exhibit unequivocal signs of disease, and the whole may be considered as lost. We have not yet had an opportunity of examining the peculiar symptoms exhibited by the infected tubers, but in some diseased Potatoes of the same variety brought to us from a neighbouring crop, the same little mould is present which we observed on the decaying stems in our own garden.

Many sorts of mildew are peculiarly prevalent during the present season, the alternations of heat and moisture favouring their growth in a very injurious degree. It is clear that two distinct diseases are prevalent amongst Potatoes, the one attacking the foliage, which, in many districts is rapidly failing, the other, the lower part of the stems and the smaller tubers, some of which when no larger than Peas we have observed completely decomposed. How far the general produce may be affected it is at present impossible to say, but the appearances are far from favourable. As on former occasions, cultivators seem inclined to refer every affection of their crops to one and the same cause. Some Onions, for instance, were forwarded to us lately, as affected by the Potato disease, from Chichester, and precisely the same malady is affecting them at Bath, the foliage gradually fading, and the bulbs presenting a fœtid mass of corruption. The disease is, indeed, in the first instance, due to a species of *Botrytis*, figured by Mr. BERKELEY, in the sixth volume of the "Annals of Natural History," under the name of *B. destructor*. The spores are far longer than in the Potato *Botrytis*, the threads of a pinkish grey, and there are no swellings towards the tips of the branches. The leaves soon assume a sickly tinge under the influence of the mould, and, as a natural consequence, the juices stagnating in the half-ripe bulbs, decomposition rapidly takes place, perhaps aided by the growth of the spawn of the mould within its cells. Meanwhile, as the foliage begins to wither, another mould, which appears to be identical with *Macrosporium Cheiranthi*, grows on the decaying leaves, distinguished by its dark olive-black threads and many-celled spores, the structure of which will amply repay a microscopical examination. This second mould, it should be observed, has nothing to do with the disease, but is simply a case of growth on matter already more or less decomposed, whereas the Botrytis attacks the green leaves, and evidently causes their destruction, and ultimately that of the bulb.

ON Saturday next, the 31st of August, will take place, throughout Great Britain and Ireland, the WORKING-MEN'S SUBSCRIPTION FOR A MEMORIAL OF THE LATE SIR ROBERT PEEL. Certainly, no class of men has derived greater or more lasting benefits than gardeners from the enlightened policy of that lamented statesman, and we trust that the amount which they may contribute will form no unimportant item in the sum hereafter to be announced. In common with every other class of workmen they have to thank Sir ROBERT PEEL for the final removal of that most oppressive of all impositions, the tax on bread; and they owe him an especial debt for the total repeal of the glass duties—a relief in itself of immense value to themselves, and of still more importance as the beginning of a great system of financial reform, already succeeded by the destruction of the duty on bricks, and no doubt to be followed, as the revenue improves, by a series of other measures of a similar nature. That the food tax was destroyed was wholly owing to the courage and self-immolation of Sir ROBERT PEEL; that England stands where she is, safe amidst the political tempests that have surrounded her, may be justly attributed to the same great man; that Englishmen are able to feel that what they do possess is secure, be it much or little, is his work; and the amount to be raised next Saturday will, we trust, show that the poor at least are grateful to their benefactors.

We have no means of knowing in what manner the fund thus to be raised will be appropriated; but we think the committee is composed of men whose character is a guarantee that it will be applied in some permanently useful manner, and not in the erection of monuments, and columns, and statues. Such vanities were despised by Sir R. PEEL during his life, and repudiated at his death. Peerages and public monuments are not for men like him. He loved what was useful; he sacrificed himself to the public advantage, and, of a surety, that which shall be the most generally and permanently beneficial is that which he would have wished for, could he have suggested it.

A working man's memorial is the greatest monument that can be raised to him, the highest compliment that could be paid to his memory; let it be worthy of THEM and of HIM.

The subscription will be one penny, *or any higher sum* which the means of the subscribers may permit. For the information of those who require information upon the subject, we give insertion to the following notice, which has been circulated by the central committee:

At a public meeting, held in the Great Room of the Whittington Club (late Crown and Anchor Tavern), Strand, on Wednesday evening, August 7th, JOSEPH HUME, Esq., M.P., in the chair, the following resolutions were adopted:

1. "That this meeting recognises with gratitude the benefits which, at great sacrifices to himself, were conferred upon this country by the late Sir ROBERT PEEL, and has seen with satisfaction the spontaneous disposition amongst the industrial classes to raise a fund for the erection of a durable memorial of his services, and pledges itself to give all the aid in its power to carry that object into effect."

2. "That this meeting recommends that preparations be made for a simultaneous collection, on the same day, throughout the United Kingdom; and that Saturday, the 31st of August, be the day for such collection; and that all contributions be paid into the Bank of England, to the names of the trustees, and the accounts closed in the month of September next."

3. "That JOSEPH HUME, Esq., M.P., be Chairman; Sir JOSHUA WALMSLEY, M.P., Honorary Secretary; and the following gentlemen members of the Central Committee, with power to add to their numbers:—John Masterman, Esq., M.P.; Sir James Duke, Bart., M.P.; Alderman Copeland, M.P.; Richard Cobden, Esq., M.P.; William Brown, Esq., M.P.; Sir James Graham, Bart., M.P.; John Bright, Esq., M.P.; James Wyld, Esq., M.P.; George Thompson, Esq., M.P.; Charles Lushington, Esq., M.P.; George Carr Glyn, Esq., M.P.; Newton Finch, Esq.; William Williams, Esq., M.P.; Mr. Sheriff Lawrence; Mr. Sheriff Nicoll; T. S. Duncombe, Esq, M.P.; Alexander Mackimon, Esq, M.P.; James Yates, Esq."

For the purpose of carrying the above resolutions into effect, the central committee earnestly recommend prompt and energetic action in the provinces. In all corporate towns a requisition should be forwarded to the chief magistrate to convene a public meeting. Committees should take the means necessary to afford working men in their localities the opportunity of sub-

scribing. This may in part be done by proper exertions in factories, workshops, and other establishments. A systematic effort should be arranged for the simultaneous collection on the 31st instant. All moneys should be forwarded, either direct to the Bank of England to the account of the trustees of the Working Man's Peel Memorial, or to Joseph Hume, Esq., M.P., at the above office.

Every information required for the furtherance of the object in view, may be obtained by application to the Hon. Secretary, at the office, 454, West Strand, London.

Dr. Lindley will now be glad to receive, with as little delay as possible, the communications of those correspondents who propose to contribute to the next Number of the "Journal of the Horticultural Society."

HOW TO MISMANAGE A GARDEN.

Chapter III.—Twin brother of Procrastination is Disorder. It is hard to say which deserves the higher rank in the art of mismanagement. If putting off has the advantages already pointed out, want of method increases them wonderfully. Disorder usually indeed accompanies procrastination; for it may be generally observed that the man who finds himself behindhand, sets to work helter-skelter, with a vengeance, when he does begin.

He who puts off is always behindhand; he who is behindhand is always in a hurry; and he who is in a hurry, is always in confusion. By this you may easily know the mismanager. He is behindhand and in disorder, because it enables him to show the skill that is in him when it is perceived how much he can do in "no time," and "any how," when he sets about it. Dr. Johnson, or some other sage, used to maintain that that was always best done which was quickest done. The parent of this maxim may therefore be held answerable for the prevalence of disorder; for helter-skelter is a sign of activity, and activity denotes quickness—which is the virtue insisted upon.

Observe the great mismanager; how he shines when you find him "drove into a corner." How he orders his men about! how his personal activity becomes conspicuous! Twenty directions are given in 10 minutes; the men run here, rush there; one is digging borders, another is trampling them down again while pruning the trees; a third begins to mow, but there is no scythe stones; away runs a fourth to find one; it is found; sweep goes the scythe over the Grass; the scythe is wrong set; the last time it was used was in the hay-field. "Put it to rights." "At it again." "Ah! the Grass wasn't rolled." "Where is the roller?" "Oh! in the stable-yard." "You, Tom, go and fetch it." "No roller is there; it is lent to a neighbour." "Never mind, we will do without it." Sweep, sweep, scrape, scrape, goes the scythe-blade; the Grass is stubborn; the worm-casts take off the edge; gravel-stones are all over the lawn. "Why, where is the broom?" The broom is brought; it is only a stump. "Well, that will do;" and so the work proceeds. "Why, who has been a stamping down the borders? Here, Joe, you rake off these cuttings, and put out the foot-marks." The ground is again made trim. "Well, but where are the Geraniums that were to be put out here? Peter and Sam just get a hand-barrow and fetch a lot from the potting ground." Away run the men; the door is locked. "Where's the key?" Nobody knows. "Well, then, Peter, you get over the gate, and hand the pots over the top to Sam, who'll stay on this side." Peter scrambles over; the gate is too high for him to reach over it; he looks about for a wheelbarrow to stand on; mounted on this he hands the Geraniums to his partner; but Sam is clumsy, and don't understand being put out of his way; down goes the pot; the best plant of the lot, a famous Tom Thumb in full flower, is knocked to pieces. No one can deny that a scene like this is exciting; it shows what energy and resources are at the command of the man who is in confusion. The dull, methodical fellow, who keeps his tools in their places, and takes his work in proper order, and who has no occasion to do it two or three times over, is no more to be compared with such a luminary as has just been pourtrayed, than a planet with a comet, or, to use a more homely comparison, than a Rose with a red Cabbage.

Surely, it is a frivolous objection to disorder to say that it makes everything consume two or three times as much labour as order would have required. That is precisely its merit; for does it not diminish poor-rates? and secure a comfortable living to many a poor man who would otherwise be put to his wits to exist?

Nor can it be admitted that a garden in disorder is a disagreeable object; on the contrary it is a pleasant relief to the monotony observable in ordinary places, and moreover it is an imitation of Nature, who we are told should be our guide in all things. Who ever saw anything like order in a forest? or on a common? or in a thicket? or in rocky ground? There is no order in these places; quite the contrary; and therefore a garden in order is altogether an unnatural sight—which it ought not to be.

There are persons who carry their ideas of order to a very extravagant point; they think that in the tool-house the tools should be all placed where they can be found in a moment; that in the seed-room everything should be regularly arranged in drawers or boxes, so as to prevent intermixture; that seed-papers after being opened should again be tied up or folded carefully; that there should be a shelf for books, and a desk for papers, and a file for accounts; and they even go so far as to maintain the necessity of the composts and crocks in a potting shed being kept in distinct bins. They say that the mere habit of attending to these things introduces economy and good management in other and very different matters; that it also improves a man's way of thinking, and teaches him to use his reason better. But a good mismanager should believe nothing of the sort; he should consider how much trouble it takes to get used to such ways; and as to their saving time in the long run, that is a contingency far too distant to be reckoned upon. "Enough for the day is the evil thereof." The mismanager, when he has done with his tools, will throw them in a heap, in the garden, or the yard; it is of no use to carry them to the tool-house. Very likely he may want to use them the next time in the place where he left them; and if not, he will know where to look for them. What harm is there in their standing in the rain? The wheelbarrow is painted; and the tools are of iron; and it will take a "precious sight" of leaving about to hurt *them*. As to seed-papers, and all that, why what matters it if a little seed is spilt; and if they get mixed "it don't signify, for one can always find it out when the seeds come up." Books and papers and pens and ink! What can be the advantage of keeping them in order? A mismanager has not so many of them; he can generally find what he wants without the need of such precautions; and if he should mislay a letter, or a bill, or any other papers, why perhaps he can get them again, or if not, he can console himself with the reflection that "mistakes may be made by anybody." Compost bins, and all conundrums of that sort are contemptible; they are very well for Lady Antrobus, or Mrs. Lawrence, or Mr. Rucker, or the great London growers, but to a mismanager they are mere trouble without profit. In fact, he gets on just as well if he mixes his soils all together and leaves them out of doors. Such trifles in no way affect the success of *his* operations. Κῆπουρος.

BRITISH ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE.

Thursday, *Aug.* 1.—In the Chemical Section Dr. Daubeny gave a statement of the progress of his experiments on the influence of carbonic acid on the growth of Ferns. It will be remembered that this subject was taken up to test the probability of the theory, that the excessive development of vegetation during the coal period depended on an abnormal quantity of carbonic acid in the atmosphere. In a series of experiments, performed last year, it was found that excessive quantities of carbonic acid injured Ferns. Dr. Daubeny stated that the Ferns were now growing in an atmosphere containing one per cent. of carbonic acid in excess above that ordinarily contained in air; and although it was thought that similar Ferns growing under the same conditions, but without carbonic acid in excess, were the most luxuriant—it appeared that they thrived well in this artificial atmosphere.—Mr. R. Hunt, who had also been requested by the Association to experiment on the subject, explained that he was not prepared to furnish a report at this meeting, owing to the great uncertainty which appeared to surround the inquiry. He stated that he found the diversified influences of light materially to affect the quantity of carbonic acid which the plants could absorb without immediate injury. He would still pursue his investigations, and he hoped to arrive at something more definite by the next meeting. On the same day, in the Natural History section, a paper was read *On the Hedge Plants of India, and the Conditions which adapt them for special purposes and particular localities*; by Dr. Hugh Cleghorn, H.E.I.C.S.—The author alluded to the improved face of the country over large tracts of Southern India, arising from the bridging of rivers, the formation of ghauts, the abolition of transit duties, the extension of made-roads, the better construction of labour-carts, and the completion of various public works; but adverted with regret to the still backward state of Indian agriculture, and the abject utilitarianism which characterises field operations, expressing the hope that ere long the lands will be more generally manured, the fields enclosed, the roadsides fenced, additional tracts cultivated, and English improvements extensively introduced into Hindostan. The Peninsular flora is remarkable for the great prevalence of thorny shrubs and prickly plants; yet, supplied with such materials for hedge-making as few countries possess, India exhibits often wretched enclosures, in many parts none at all. It is universally admitted that the bleak and barren districts stand pre-eminently in need of these appliances, for the development and preservation of their agricultural resources, which suffer greatly from the depredations of wild animals and stray cattle. The Cactæ, Agaveæ, and Euphorbiæ are adapted to the arid districts, their hard epidermal coverings enabling them to resist evaporation, and to flourish when refreshed with only occasional showers; the Mimoseæ and Cæsalpineæ seem to enjoy the more cold and moist climate of the Balaghaut district, whilst the Bambuseæ and Pandaneæ luxuriate with native majesty in the rich loamy soil of the Mulnaad (*i.e.*, rain country). Hence, were a railway to traverse the Peninsula, the fences ought to differ as the line is continued through various districts, in accordance with those conditions under which particular plants thrive best between certain limits of temperature and moisture. The following list of plants observed in use, or calculated for the formation of hedges, was appended to the paper, with vernacular names, and such observations as to habitat, mode of cultivation, &c., as might aid in the selection of species or afford information upon the question of local applicability:

I. Hedge Plants.

Opuntia Dillenii, Haw.	Epicarpurus orientalis, Blume.
Agave americana, L.	Jatropha curcas, L.
Euphorbia Tirucalli, L.	Pisonia aculeata, Rox.
,, antiquorum, L.	Capparis sepiaria, L.
Cæsalpinia sepiaria, Rox.	,, aphylla, Rox.
,, Sapoan, L.	Scutia indica, Brong.
Pterolobium lacerans, R. Br.	Azima tetracantha, Lam.
Guilandina Bonduc, L.	Gmelina asiatica, L.
Parkinsonia aculeata, L.	Balsamodendron Berryi, Arn.
Poinciana pulcherrima, L.	Toddalia aculeata, Pers.
Mimosa rubicaulis, Lam.	Bambusa arundinacea, Willd.
Inga dulcis, Willd.	,, spinosa, Rox.
Acacia arabica, Willd.	,, nana.
,, concinna, De C.	Dendrocalamus Tulda, Nees.
Vachellia Farnesiana, W. & A.	Pandanus odoratissimus, L.

II. Ornamental Plants, forming inner Fences.

Lawsonia inermis, L.	Adhatoda Vasica, Nees.
Lonicera ligustrina, Wall.	,, Betonica, Nees.
Citrus Limetta, Riss.	Graptophyllum hortense, Nees.
Morus indica, L.	Gendarussa vulgaris, Nees.
Punica granatum, L.	Gardenia florida, L.
Phyllanthus reticulatus, Poir.	Allamanda cathartica, L.
Hibiscus rosa sinensis, L.	

III. Plants used for edging Garden Walks.

Pedilanthus tithymaloides, Poit	Rosa indica, L.
Vinca rosea, Willd.	,, semperflorens, Curt.
Heliotropium curassavicum, L.	

Professor Royle considered this paper a most valuable one, and thought its title by far too modest for its merits. The importance of considering the adaptability of plants to particular soils and climates could not be overrated in all attempts at developing the resources of a country. Plants which would flourish in a rich alluvial soil would not grow in a sandy plain, and *vice versâ*. It was not always the case that indigenous plants were best adapted for culture in particular countries, and in India they had many instances of introduced plants growing more vigorously, and extending more widely, than native plants. Some botanists had expressed doubts with regard to the plants introduced from the New World into Hindostan, because they had old Sanscrit names, but it was frequently the case that new plants were called by the natives by some old name.

VILLA AND SUBURBAN GARDENING.

It is an important point with almost every one who cultivates Strawberries to have them early. Early-forced Strawberries are highly esteemed; and though the means of producing them may be but limited, still most people who possess a garden, and a little glass, make an attempt at forcing them. For very early work the first runners should be secured. These may be pegged down on small 3-inch pots, and, when fully established, removed from the parent plants and repotted into 6-inch pots, using rich loamy soil. Instead of the common practice of placing these pots behind a wall or hedge, on a north aspect, let them be plunged in the full sunshine up to their rims in coal-ashes or old tan. All runners which are made during the current autumn should be removed on their first appearance, and let the plants be watered once every week with liquid manure. Under such treatment they will have attained a highly matured condition by the approach of winter, and will be capable of producing an early spring crop.

As soon as the growing season is over, the pots should be taken out of the material in which they were plunged, and placed on their sides, to prevent the access of water. In order the more perfectly to effect this end, a quantity of old tan, sand, sawdust, or coal ashes should be provided for stacking them in. A dry situation should be selected for the purpose; the pots should then be placed upon their sides in two rows, the bottom of the pots facing each other, and the rims placed at the outer edge of the stacking material. The space between the pots should be filled up level with the tops, and another tier of pots added, until the ridge is 3 feet high. To throw off the wet, a covering of straw should be secured on the apex of the ridge. In severe weather the whole ridge may with facility be protected, and this will be the more desirable where a succession of forced Strawberries is required, as a portion will require to be put in the forcing-house or pit every fortnight; and this could not be done, under favourable circumstances, if the frost is allowed free access to them.

The above practice is only recommended for the earlier crops; for later ones it is not required. One of the largest growers of forced Strawberries for the London market never pots the later crops for forcing

until they are wanted for that purpose. His success is beyond question; but then old plants are never chosen. Young plants, about a year bedded out, are such as he selects; a great amount of trouble and expence is thus saved. This cultivator has been equally successful in forcing the same plants two seasons consecutively—a practice not generally followed. *Pharo.*

Home Correspondence.

Mildew on Grapes, &c.—Since my last communication I have collected further information on this subject, both by investigating various plants, as well as by referring to some of our best authorities upon the subject. The Grapes in my house are mostly spoiled, but the effect of the mildew is different upon different varieties, all those with white berries being least affected—the Sweetwater least injured of any; Muscats next; the Black Prince less injured than other dark-coloured varieties, while all the Hamburgh are destroyed. The disease has now extended to those on open walls, but the white Sweetwater is least affected. In a house recently erected, and in which Vines were planted this spring, the leaves had become slightly affected. Sulphur was dusted on and appeared to arrest the progress of the disease, but did not cure it. I have had fermenting horse-dung turned in, which has produced so much moisture that I find the disease has entirely disappeared. This is a step in the right direction, as it may serve in following years as a means of preventing this destructive pest. In pursuing the investigation, I have found that the mildew upon the Pea, the Grape, and the Rose is, so far as I can find, the same, Acrosporium monilioides; it is most rapid in production, and is communicated by its seeds to other plants. It appears to lie or grow upon plants, and when found upon Grapes appears like finely-powdered wood ashes; but upon examination with a microscope of highly magnifying power has the appearance as described in my last article, sometimes connected in clusters, similar to bunches of Grapes, or shooting out from each other like beads in a necklace; it is stated to lie only on the Grapes or plants, but a close examination shows it to be attached, as considerable discolouration appears upon the skin of the white Grapes after its removal; and upon removing it to other substances, it throws out small filaments, which hold those little band-like substances together, and by which it doubtless attaches itself to other plants when first transplanted; but those filaments are so extremely minute, that I have not yet found it possible to distinguish whether they are roots or not; before its first appearance upon the upper sides of the leaves of the Grapes, it is white and fibrous, like mould; but on submitting this substance to a very high magnifying power, it appears to consist of little cones of some fine substance, so exceedingly minute in its divisions as to defy the eye in discovering its constituent parts, and still appearing, when thus highly magnified, like specks of hairy mould, and composed of filament only—white, and not unlike, in general resemblance, the very fine cotton used by jewellers. No doubt remains that it is a parasitic fungus, and that it proceeds through all its various stages of development to perfect growth, and production of its seeds, which are communicated from plant to plant by the air, and under certain conditions of atmosphere, and of the plants to which it is communicated, continues to vegetate and prolong its species; but as we find all the larger classes of parasitic fungi grow more luxuriantly or entirely on plants in a debilitated or diseased state, it is to be inferred that these minute fungi vegetate only under the same conditions, and that therefore their appearance indicates previous disease in the plants attacked by them; and taking this view of the question, it is found with most vegetables, especially with the Pea, that it mainly arises from a deficiency of moisture at the roots, and I have seen it prevail most frequently in very dry autumns, especially in seasons when moderate dews prevail. Mr. Knight supposes that plants under such circumstances derive their chief support by absorption of moisture through their leaves, and that the flow of the sap is in some measure downwards, and that a continuance of this process produces a vitiated state of the sap and sap vessels, and consequent debility of the plant, and it then becomes open to attack of this or other parasites. One thing is certain, that if Peas are subjected to frequent, regular, and copious watering, they are not attacked by mildew; and it is stated by Loudon, that in Scotland, where there are heavy night dews, that this description of mildew is unknown. Also in situations well ventilated it prevails less extensively than in places where a confined circulation of air takes place, and even in hothouses partially shaded by surrounding buildings, it appears to attack with greater virulence than in those more open and better ventilated. It appears, therefore, that certain conditions of atmosphere, moisture, situation, and management, combine to its production; therefore I consider that free and copious watering at the roots, a full ventilation and copious watering of the house, as well as by syringing the plants towards evening, would tend especially to counteract its influence. But to be effectual, this system should be adopted as a preventative rather than as a cure, for when it has once become established, it is very difficult to arrest its progress, Vines having been thoroughly washed with a solution of corrosive sublimate, and afterwards with a coating of fresh lime, without the least apparent beneficial effect; and, so far as I can find from the statement of others, sulphur also has little effect in destroying it; where it has prevailed once it has returned again the following season, and I find that unless all the sashes and lights are removed and thoroughly washed with strong lime-water, brine, or corrosive sublimate, in the proportion of half an ounce at least to 1 gallon of boiling water, that its return may be expected as almost certain; but, in addition, it would be well to paint the whole of the inside of the woodwork, and to lime-wash all the brickwork of the building as a preventative, and I suggest that the Vines should be cut back as closely as possible, and every part be thoroughly washed with lime water, and then painted over with hot fresh slaked lime mixed with water. I offer these remarks with some degree of hesitation, not having fully tested them myself; but it appears that the treatment should be similar to that adopted in dusting Wheat for preventing the smut—Uredo segetum. No application is found so destructive to this fungus as the blue vitriol, and probably it may be found equally efficacious in this. I throw out these suggestions to the consideration of others. No direct attempts that I know of have at present been made to rid us of this pest; but in the case of the one affecting the Wheat, a remedy is applied, which is in most cases effectual. Much has been said of the Berberry shrub becoming invariably infected with and communicating the mildew to growing Wheat and Rye, for which see an elaborate account in the first part of vol. vii. of "Communications to the Board of Agriculture," as communicated by L. E. Windt to Sir Joseph Banks. The evidence there adduced was so conclusive that an act of the legislative assembly was passed directing all Berberries to be rooted up throughout the principality. But Loudon states it is a different description of mildew that infests the Wheat from that produced on the Berberry, and therefore denies the possibility of infection being carried on by its instrumentality to the Wheat plants. In corroboration of the communication of M. Windt, I am enabled to state that for many years together I have observed mildew affect Wheat opposite Berberry bushes in fences, shading off in degree as the distance became greater, and upon one occasion, after the Berberry bushes were supposed to have been eradicated, mildew was discovered, and upon making diligent search a Berberry shrub was discovered, having sprung up from the roots of the old plant. *Robert Baker, Writtle.*

Mildew on Parsnips.—I enclose for your inspection leaflets of the cultivated Parsnip attacked by a minute fungus, concerning which I wish to be edified. Persons who really know nothing at all about such matters, and judge only from unassisted eye appearances, say that the affection is identical with the Potato disease. *Pastinaca, August* 20. [The fungus appears to be a species of Botrytis, but not the same species as attacks the Potato.]

Musa Cavendishii, or Dwarf Banana.—Probably this is the farthest north part of the kingdom in which the Musa Cavendishii has ever ripened fruit. I therefore send you a specimen, to enable you to test its quality. Three years ago I was instructed to get a small plant of this Musa, and as our stove is very low in the roof, I was not sure but what it might go through the glass by giving it much pot room. However, early in the spring of 1848, I resolved to give it more root room. I planted it in an old cask 2 feet across the mouth and 2½ feet in depth, using strong turfy loam mixed with flakes of well rotten dung, and at the same time removed all suckers. I secured good drainage, as I found it delighted in plenty of water, and syringed it well in hot weather. The temperature of the house was kept at 65° in the day time and 50° at night. In a few weeks it began to throw up large dark green leaves, which had a beautiful effect among the rest of the plants, such as Polypodium aureum, and the like, with drooping habits. In September 1849, it began to show its flower-stalk, and in a few days afterwards a large cluster of fruit appeared in sight, which swelled on progressively till it became ripe. It is much esteemed for dessert. The height of the plant is 4½ feet, and the circumference of the stem 19 inches; each leaf measures 5½ feet in length and 2 feet in breadth. The number of pods that formed the cluster was 85, their united weight being 36 lbs. No one having the command of a Vinery should want a plant or two of this Musa. Its effect is fine under the foliage of Vines; and its fruit useful. It is much more deserving of a place in a Vinery than many other favourite plants we see some gardeners growing, or rather trying to grow, in a high temperature, harbouring red spider and other enemies to Vineries. The plant in question was never subjected to a higher temperature in winter than 40°, and in the summer time from 70° to 80°, with all the air that could be given. At times this Musa may be induced to fruit in 18 months under a very high temperature, but neither the quality nor quantity is so good, and the natural form of the plant is lost. *John M'Pherson, J. Pourie's, Esq., Reswallie, Forfarshire, Aug.* 5. [The fruit was excellent.]

Exhibition of 1851: *Flower-pots.*—Amongst the things enumerated as preparing for next year's great exhibition, I hope that flower-pots will not be forgotten; for if the improvements are successful, they will be more generally distributed than any other article. I see that others of your correspondents are interested in the subject, and the remarks contained in your paper of July 27th are deserving of attention by those who are manufacturers and designers of pottery. Dark colours will be found to harmonise best with plants which are supposed to be natives of warmer climates, and therefore all pale neutral tints should be avoided as exciting chilly ideas. The Etruscan colours would look well, especially upon a fine material. Scarlet or deep orange, buff and black; and perhaps some hints of shapes might be taken from those masters of the fictile art. For a commoner kind, and for those who still adhere to the notion that pots should be porous, I would recommend that they should be made of the same ware as at present (if it will not take glaze), smoothly glazed as far as three-fourths from the top with a warm brown or even a black glaze, the rest being left of a bright red, which would surely allow enough for drainage. The division of colours should be clearly and accurately marked by two or three lines; the lower end should be furnished with a projecting rim; the bottom should be separate, and pierced with holes like a kitchen colander, and should rest at least an inch from the ground in the inside, and be slightly concave on the upper surface. These surely would not be much dearer than the pots in present use, and certainly cleaner and less flaming. The shapes, perhaps, are as convenient as they can be. For superior articles, with a little study they could be produced so as to be elegant and ornamental, yet not too fanciful or attractive; for it must always be kept in mind that they are to be subordinate to the plants. Old pictures of interiors, particularly Dutch-Chinese patterns, in addition to new ideas, would furnish examples. Could gutta percha be applied for pots or cases for in-door use? The soft brown shades of many of the articles made of it is very agreeable to the eye, and the substance is far preferable to porcelain, on account of the brittleness of all fine pottery. *Amateur.*

Creosote a Preserver of Wood from Sea-worms.—Some time ago one of your correspondents requested information as to the means of preserving wood from the ravages of sea-worms. It is not generally known that some experiments made last century in Plymouth Sound pointed out that timber when paid with cheap oils remained intact, though other pieces of it sunk in the same place were much worm-eaten. Oil of tar was, 40 years ago, recommended for paying timber intended for a work in the same Sound, and latterly creosote, or oil of tar, has become of very general use for the protection and preservation of wood in bridges, railway sleepers, &c. Creosote is the cheapest of all oils, but for some purposes its application is objectionable, since it renders wood so highly inflammable that insurance offices refuse to insure any works impregnated with it, and its noisome and long-enduring smell render its use improper in various instances, such as in structures for horticultural purposes, for example. Where the latter disadvantage may be considered as prohibiting the use of creosote, cheap oils free from smell, as whale oil, would probably be equally effectual in preserving wood from sea-worms. *M.*

Stripping Fig Trees and other Plants of their Leaves.—I have been a gardener these 60 years, and am reported to be a good Fig grower. About this season I nail in the young growths, cutting none away except those whose position will not allow them to be fastened to the wall. Where the leaves are very numerous, and shade the fruit, I thin them out, a practice I have pursued with advantage, more especially where the Figs have been shaded by other trees. It not only improves the fruit, but the wood, from being exposed to the sun, gets ripened before frosts set in, and winters well. But the removal of the leaves is a point on which I and my younger brethren (saplings) disagree. The latter stick to theory, allow all the leaves to remain on, lose their young wood in the winter, from its being ill ripened, and have late crops, while my wood keeps firm and sound, and matures good crops every year. What is your opinion with respect to the removal of Fig tree leaves? *An Old Gardener.*——My gardener, according to an old custom inherited from his father, has stripped off almost all the leaves from my Fig tree, with the view of accelerating the ripening of the fruit, by exposing them more fully to the sun's rays. Will you be so good as state whether he is justified, either by nature or reason, in the commission of such an act; and whether he does not materially injure the tree with regard to its bearing next year, by retarding the ripening of the young wood, and by depriving it of the nourishment which I have always understood a plant derives from its leaves. He has also mown off all the foliage from the two-year-old Strawberry-beds. I consider this act also detrimental to the plants. Should he have acted improperly, I should like to convince him that such is the case by showing him your reply. *A. B.*—[Leaves in a healthy state should not be removed, unless with a view to making those which remain healthier and better. When leaves are old, and begin to change colour, they are of no further use, and may be removed without impropriety. Figs ought not to be grown in shady places.]

Scientific Names.—I have just been reading "Rural Hours in America," by Miss Cooper. In pages 55 to 60, first volume, I found observations similar to your own on names in botany. Miss Cooper ridicules the nomenclature in use with a good deal of humour. I think it will be pleasing to yourself to find a corroboration of your sentiments on the subject in so recent a work. I hope also that it may assist the cause of plain and universal terms in books of science. The coincidence between you and Miss Cooper shows the general and growing aversion to be treated with the dead letter instead of the living language in the science of botany. *Correspondent, Oxon.*

Monstrous Cucumber.—In passing down Exchange-street, Norwich, the other day, I observed a Cucumber full 15 or 16 inches in length at Mr. Ewing's seed esta-

blishment, with a full sized leaf growing from its middle. Are such monstrosities common, and to what causes are they to be assigned? *J. Butcher.* [This circumstance is not uncommon. The cause is supposed to be the growing of a leaf to the side of the Cucumber at the very moment when they were first formed in the bud.]

House-bugs and Ants.—Your columns have recommended the getting rid of bugs, and certainly extreme cleanliness alone will effect this desirable purpose; besides this, in some warm countries it is a common practice to destroy these noisome insects by pouring quite boiling water on the parts of furniture infested with them. In this way a first operation may not always be sufficient, but it is easily repeated until all the insects and their eggs are destroyed. Furniture and places the most infested with them may be speedily cleared by solutions of either corrosive sublimate, or of sulphate of copper. Corrosive sublimate leaves no stain after its application, and therefore would be to be preferred, were it not extremely poisonous, and its use is the more dangerous as its solution is colourless. Sulphate of copper is also a poison, but only when taken in considerable quantity; it has been employed with the most complete success for washing old walls, ceilings, floors, and furniture swarming with bugs. The mode in which it was used was to put a few ounces of sulphate of copper into a basin, pouring upon it soft water, stirring the whole occasionally until the whole solution became saturated; a small quantity of the sulphate remaining undissolved indicates that the solution is saturated. Has corrosive sublimate in solution been tried for the destruction of ants in dwelling houses? A strong lessive from wood ashes was some years ago resorted to to get rid of a small species of this insect, and was found to dislodge them from the apartment they had invaded. In the south of France oil of Juniper berries, called in the patois of the country *huile de cade* is frequently used in granaries to protect the corn in them from ants. For this purpose the oil is sprinkled on bare parts of the granary floor, but occasional renewals of the oil are requisite. It is also often mixed with the earth in preparing the *aire* on which corn is threshed, and in houses ants have been dislodged by *huile de cade* being put into the crevices of floors, and at their junction with the walls. *M.*

Potato Disease.—In this district (Grosmont, Yorkshire), the disease is spreading in all directions, and in many places with great virulence. Wherever the land is wettest, it is most apparent. I mean on particular spots in the same field. Thus, one field near me, undrained, but with a considerable slope towards the north, not a wet piece of land generally, a week since had not a green blade over three spaces of curvilinear form, nearly in contact with each other, which must be likened to very shallow irregular shaped basins of 40 or 50 yards in diameter. Elsewhere in the field the plants were all affected, but comparatively only slightly so. Again, in another field lying on land through which two drains had been driven, and, in the occupier's opinion, sufficiently dried the land, though it prevailed over the whole field, as must be seen on looking closely at the plants, yet here and there it was strongly apparent. In these spots I saw Equisetum sylvaticum growing. In my own garden I first detected it on the 5th, among some white Potatoes, what are called here "Golden Drops." They are on soil that has been well drained, 3 feet deep, dug 1 foot or 13 inches deep, and then increased in depth from 7 to 18 or 20 inches by the superposition of soil brought from other parts of the garden. Here, where the land is virtually subsoiled to a depth of 25 inches on the average, it has, to appearance, scarcely extended its ravages on the bine at all during the 11 days which have elapsed since I first observed it. In another part of the garden, set with Early Oxfords, and a local early light purple Potato (which I never saw elsewhere, nor have heard named, but is an excellent Potato, and I think, from experiment, earlier than the Ash-leaf), the disease is making rapid progress in the bine, but so far the tubers are almost entirely unaffected. Indeed, I have not taken up a rotten Potato this year, nor even one that I could decidedly pronounce diseased. These latter named Potatoes were set in October, and are, as it seems, the most diseased in the garden. I have others; Chalmont and Sheeptail Kidneys, Regents, Bishops, American Natives, Red and White Ash-leaves, &c., all more or less affected. In this district the Kidneys always suffer most. In fact, scarcely a Kidney is grown in the parish, except in my own garden. Thirty years since scarce anything but the Pink-eye, Pink-nose, or Painted Lady (for I have heard all three names applied to the same Potato), was grown by any one. Now, no one can grow it. I have tried it two years, contrary to the advice of sundry inhabitants and *quondam* growers, and nine out of every ten plants curled to such a degree, that by the time they were 6 inches high, a very slight gust of wind would snap them off close to the ground. In setting my autumn Potatoes, I tried short stable litter (not manure) against an artificial manure, the basis of which is the refuse Epsom salts of the alum-works. I see no difference as regards disease produced by this difference of treatment; although the patentee seemed, in conversation with me, to anticipate that his manure would act as a preventative to the disease. He grounded his expectation on the fact that some very badly diseased Potatoes being thrown by near his works, a portion of the heap had a quantity of the above-named impure sulphate of magnesia scattered over it. The effect was to arrest the progress of the disease in the tubers so entirely, that the portions of each which were sound when the sulphate was applied, were still sound and good when the remainder of the original heap was little or nothing but a mass of offensive corruption. Is there any correspondence between this result and that of the application of sulphurous acid mentioned in your Number for Aug. 10? *J. C. Atkinson, Danby near Grosmont, York.* Many persons have taken up their Potatoes, although they were not sufficiently ripe. Where the tubers have been stored, they are rotting most rapidly, and in a brief space of time there will, in all probability, be no sound ones remaining. I have this day seen some in a very sorry condition; they are a sort that are named here Early Seconds, and were nearly ripe when taken up. I am anticipating some information from you respecting some diseased Onions which I sent you. The bulbs are fast rotting, and emitting a most offensive stench. Strange to say, the Mignonette, which usually thrives much in the same garden, is all of it withering away, and, as it seems to me, under the same influence. The prevalence of the disease among Carrots, Parsnips, &c., is unmistakeable. I inclose some young plants of the Mignonette. *W. Watkins, Chichester.* [They are diseased; but whether in the same way as Potatoes does not appear.]

Societies.

Caledonian Horticultural, *August* 3.—Stove and Greenhouse Plants: 1st, Mr. Ritchie, gr. to W. M. Innes, Esq., for Æschynanthus pulcher, Balsamina repens, Cuphea platycentra, Begonia violæfolia, Zauschneria Californica, and Calosanthes coccinea. Achimenes: 1st, Mr. Ritchie, the kinds being A. grandiflora and patens. Fuchsias: 1st, Mr. Walker, gr. to J. Wood, Esq., for Nicholsii, Exoniensis, and Dr. Jephson. Roses: 1st, Mr. White, gr. to J. Russell, Esq., for Mrs. Bosanquet, Madame Desprez, Coupe de Hebé, Ne plus Ultra, Charles Duval, Paul Joseph, Aqueline Celline, George's Cuvier, Paul Perras, Viscomtesse de Cazes, Boule de Nantieul, and common Moss. Carnations: 1st, Mr. Henderson, gr. to C. K. Sivewright, Esq., for Duke of York, Favourite, Count Pauline, Lord Pollington, Lady Gardiner, Ely's No. 6, Hero of Middlesex, Lord Lonsdale, Earl Spencer, and Princess Charlotte. Picotees: Ditto, for Duke of Newcastle, Masterpiece, Juliet, Lady Chesterfield, Lady Alice Peel, Isabella, Ne plus Ultra, Formosa, Pride of the Village, and L'Elegante. Grapes: 1st, Mr. Smith, gr. to W. L. Paterson, Esq., for Black Hamburgh and White Frontignan; 2d, Mr. Baxter, gr. to Sir W. Gibson-Craig, for Muscat of Alexandria, and Black Hamburgh. Gooseberries: 1st, Mr. Lauder, for Whitesmith and Hedgehog; 2d, Mr. Lyall, with the same varieties; 3d, Mr. Thomson, gr. to Miss Graham, for Green Hedgehog and Golden Lion. Peaches: 1st, Mr. Pender, gr. to D. Anderson, Esq., for Royal George; 2d, Mr. Mitchell, gr. to Lady Keith, for Noblesse. Nectarines: 1st, Mr. Pender, for Elruge. Pine-apples: 1st, Mr. M'Connochie, for an Antigua Queen, weighing 5 lbs. 4 oz. Melons: 1st, Mr. Mitchell, for Seabright Netted; 2d, Mr. M'Connochie, for Beechwood. Cauliflowers: 1st, Mr. Mitchell, for Walcheren; 2d, Mr. Anderson, for Oxenford Castle. Peas: 1st, Mr. Addison, gr., Gosford, for Hairs' Dwarf Mammoth; 2d, Mr. Thomson, gr. to R. Sym Wilson, Esq., for the same variety. Six Culinary Vegetables: 1st, Mr. Pender, for Glen's Early Cabbage, French Beans, Carrots, Robertson's Yellow Turnip, Long Pod Beans, and Globe Artichokes. Silver Medal to C. K. Sivewright, Esq., for the newest and most improved Garden Implement, his implement being intended to facilitate various garden operations, such as hoeing, grubbing, &c. The prize of one guinea, offered by Messrs. Dicksons and Co. (through the Society), for the best four Cape Heaths, was awarded to Mr. Read, gr. to J. Syme, Esq., for small but well-grown plants of jasminifera, eximia, tricolor Wilsonii, and a variety of Irbyana, designated pulcherrima. Thanks and honorary awards were voted to Messrs. Dicksons and Co., for a collection of Exotic Plants, embracing Heaths, Lobelias, Achimenes, Seedling Calceolarias, a new species of Angelonia, and other plants of interest, besides cut blooms of Pelargoniums; to Messrs. J. Dickson and Sons, for a large number of Greenhouse and Stove Plants, including Lilies, Achimenes, and Fuchsias; to Messrs. Lawson and Son, who also sent a large collection of Exotics, embracing flowering specimens of Hæmanthus pubescens, H. coccineus, and Achimenes Jaureguia; also dwarf flowering plants of Rhodanthe Manglesii, trays of cut Roses, several interesting and rare Vegetables, such as the Long Bontsfield Turnip, White Sugar Beet, &c., and a collection of new Conifers, including Thuja chilensis, Juniperus funebris, Retinospora ericoides, and Biota glauca; to Mr. Stark, for collections of Greenhouse Plants, Alpines, trays of Rose blooms, Antirrhinums, a curious Statice from St. Petersburgh, and a flowering plant of Echnidia Bartonoides; to Mr. Carstairs, for Fuchsias, Balsams, and Geraniums; to Messrs. Downie and Laird, for a stand of Verbenas, with Fuchsias, among which Falstaff was particularly noticed, and several trays of Hollyhock blooms; to Mr. Methven, for a selection of Greenhouse Plants, embracing Heaths, Fuchsias, and Calceolarias, Adamia versicolor, and Selago fascicularis; to Messrs. Ballantyne and Son, for trays of Roses, and Hollyhocks; to Mr. Handasyde, for Roses, Carnations, and Verbenas; to Prof. Syme for Kalosanthes miniata nitida, upwards of 15 feet in circumference, and bearing 317 heads of flowers; to Dr. Neill, for Alpines and other plants, including Erpetion reniformis, Gesnera libanensis, &c.; to Prof. Dunbar, for Achimenes Jaureguia, Calystegia pubescens, and elegant Heaths and Fuchsias; to I. Anderson, Esq., for several exceedingly interesting plants, including Callitris splendens, and also a very curious hybrid Geranium, with the leaves quite white on one side of the plant, and green or variegated on the other; to Mr. Veitch, for Ferns and Mosses, the latter comprehending upwards of 50 species in excellent health; to Lady Grant, for a flowering specimen of Brunsvigia Josephinæ, and a basket of Myatt's Seedling Strawberry; to Mr. Nicoll, for greenhouse plants, a plant of Bishop's Dwarf Cluster Bean, showing it to be an excellent bearer; also blooms of Antirrhinums and Marigolds; to Mr. Mackie, for flowers of Orange, African, and French Marigolds; to W. Gilmore, Esq., for a basket of Kidney Potatoes and four specimens of Vegetable Marrow, with a fine display of Ten-week Stocks; to Mr. Burns, for Statice mucronata, a basket of cut flowers, and one of well grown vegetables, including Robertson's Golden Stone Turnip; to J. Renton, Esq., for a dish of Strawberries and two large Snake Cucumbers; to D. Anderson, Esq., for Peaches, Nectarines, Apricots, and Strawberries; to Mr. Adamson, for Mayduke Cherries, Fastolff Raspberries, and Elton Pine Strawberries; and to Mr. Addison, Gosford, for large Balsams, 13 varieties of Gooseberries, and a selection of the varieties of early and late Potatoes chiefly cultivated at Gosford. Thanks were likewise voted to Mrs. Greig, for a glass case of native Ferns; to Mrs. P. R. Ramsay, for flowers of a yellow Picotee; to J. Mood, Esq., for two boxes of Dahlias and Marigolds; to Mr. Lightbody, for a box of Picotees and Carnations; to Mr. Mackenzie, for Hollyhocks, dwarf Cockscombs, and a tall device of flowers; to J. Roughead, Esq., for a stand of cut flowers, and blooms of Dianthus; to Mr. Goodhall, for an elegant display of Larkspurs and Ten-week Stocks; to Mr. M'Connochie, for three well-grown Pine-apples, Moscow Queen, Ripley Queen, and Antigua, and two Persian Melons; to Mr. Anderson, for three dishes of well-kept Apples; to Mr. Lyall, for a dish of Citron de Carmes, and green Sugar Pears; to J. Russell, Esq., for Hollyhocks; to Mr. Lauder, for Gooseberries, and a dish of red Currants; to C. K. Sivewright, Esq., for Carnations and Picotees; to Mr. Veitch, for Hollyhocks; to Mr. Scott, for seedling Hollyhocks; to Mr. C. King, for double Carnation Poppies; to Mr. Young, for Carnations and Picotees; to Mr. Thom, for seedling Strawberries; and to Mr. Pringle, for seedling Gooseberries.

Meetings at Worton Cottage.—We wish to call particular attention to the Hollyhock, some exhibitions of which will be noticed hereafter. This flower has reached a point of beauty not sufficiently known in the country at large, and it is quite time the poor things we have observed in very large establishments were replaced by such flowers as have been exhibited by the Messrs. Chater. With this observation we will proceed to a detail of what have been submitted for exhibition. A variegated Geranium was produced by Mr. Layton, of Hammersmith, of good habit and with horseshoe foliage; the flowers scarlet, and a good trusser. Calceolaria: "T. W. N." Ground colour yellow, with crimson stripes and blotches; throat too large. Phlox: "A. O. H." Too near Drummondii oculata, with which it was compared. Carnation: "J. Scholefield and Son." Your seedling S. B. has all the excellent qualities observed in it at the Derby meeting; the petal is of fair shape and texture, smooth, white pure, scarlet bright, and well distributed. Knowsthorpe Pet will no doubt be worthy of its name. Picotee: Same growers. Bright purple of medium width; white very pure; will prove an acquisition in its class. Hollyhocks: Messrs. Chater and Son, of Haverhill, Suffolk, exhibited a very beautiful spike, shortened to 20 inches long, of a seedling named Queen of England, with 15 flowers upon it, each 5 inches in diameter, of a bright delicate pink colour; the guard leaf good, centre full and compact. Mr. Chater, of Saffron Walden, produced a collection of cut blooms well worthy of his reputation; amongst them many seedlings, included in his catalogue of this year for the first time, viz., Improved Purpurea Elegans, dark purple; Snowball Superb, delicate white; Seedling Rose, a bold flower; Walden Gem, deep ruby crimson, improvement in colour on Comet; Chater's Rosy Queen, beautiful deep blush; Spectabilis, deep rose, shaded with salmon; Orion, a very good shaped flower, light crimson; Improved Rosea Alba, a parti-coloured flower, valuable for a collection; and Venosa Improved, dark marbled colour. Accompanying them were a number of older varieties, including Black Prince, Pulchella, Sulphurea, Perfecta, Model of Perfection, Rosea Grandiflora, Magnum Bonum, Coccinea, Beauty Supreme, Queen (Barron's), Attractive, and Fireball—all worthy of a place in every garden. "W. J. E. Maidstone" sent spikes of two seedlings, small, but nicely formed: 1, a novel dark purple flower, with light edge, good centre and guard leaf; 2, with the flowers thickly set on the stem, colour a deep pink, with light edge, bold centre, the guard leaf wanting the smoothness of No. 1. "Kelso:" Mrs. Tait is very similar to Chater's Queen of England, noticed above, but it is not so full a flower; its colour is a rather more delicate pink. Raisers of the Hollyhock must try to obtain more substance and smoothness in the guard leaf; that obtained, will leave little to desire except variety of colour, and to that there seems no limit. Fuchsias: "R. G." Two single flowers of two light

varieties, one of them globose in character, but neither of them any improvement upon varieties in cultivation, if we except the corolla of No. 1, which is very well formed.

Review.

Griffith's Posthumous Papers. Arranged by J. M'Clelland. Calcutta. 1848.

When Mr. Griffith died he left his voluminous papers and large collections of all sorts to the East India Company, by whom the former were ordered to be printed, and the latter to be distributed. This was an act worthy of the most munificent government in the world, and increased the large debt already due to it by all students of natural history. It was also a graceful tribute to the memory of one of the most zealous and distinguished of the many who have perished in the company's service. His writings, of which so few have been previously published, furnish the best biography of Griffith's short but brilliant career—to those who can understand them.

We have now before us three octavo volumes of journals and botanical notes, with two quarto volumes of plates; and it is understood that more remain to be published. The latter and a considerable part of the former consist of hasty sketches and notices, more or less complete, of plants that came under the author's observation while in India. They constitute a mass of technical English mixed with scraps of Latin, or of technical Latin mixed with scraps of English; and although very far from being what Mr. Griffith could have intended to publish, are of high value on account of the original views and very careful investigation of minute matters which they comprehend. The importance of these documents is, however, much impaired by endless misprints, and by the imperfect manner in which the author's half legible notes have been transcribed. To foreigners, unacquainted with Indian proper names, and unable to distinguish between places and things, some of the notes will, we suspect, be wholly incomprehensible.

The journals and private letters which form the remainder of these volumes are of much general as well as scientific interest, containing as they do the daily notes made by so good an observer, during many years' travel in various parts of India, and his unreserved opinions concerning passing events, communicated confidentially to his friend Dr. Wight. We must, however, express our doubt of the propriety of making these opinions public. The letters were never intended for any other eye than that of the gentleman to whom they were addressed, and are full of hasty, ill-considered remarks, which the writer would have been the last man to put on record as his deliberate judgment. For instance, in one place, writing upon erroneous information, he says:

"It has been found that hybrids may be formed between Orchideæ of any of Lindley's sections! This is fatal to his Orchid classification! The seeds of these, though they appear perfectly formed, have not been made to germinate. Is not this startling? and to what new views of classification it may lead, who knows?"

So far is this from being the case, that we do not to this day know with certainty of a single mule Orchid; it is suspected, indeed, that some of our garden species have a hybrid origin, but no experimental proof of it has been obtained, or is likely to be. The paragraph just quoted is, in fact, self-contradictory, for it first asserts "that hybrids may be formed," and then that the seeds have not been made to germinate! so that the only evidence upon the subject is precisely that which is absent. No person's private letters ever required more severe pruning than those of Griffith; he was a man of a hot temper and impetuous feelings; and his opinions were hotly and impetuously expressed, whether in praise or in blame, without much consideration. His mind, moreover, was not so well trained as his eye; and consequently his reasoning was far inferior to his observation. He had an admirable skill in following minute facts through all the obscurities in which they are involved; and his correct knowledge of the theory of vegetation enabled him to observe correctly the phenomena that he witnessed. But when he proceeded to generalise, or to reason from the facts he noticed, then his value as a naturalist began to diminish. This was remarkably shown in his notions concerning the raments of Ferns, and sexes in the lower orders of plants.

In the 2d volume of these Posthumous Papers are found the private letters to which we have referred, and from them we select a few passages which are likely to interest the general reader. Writing from Cabul, Sept. 25, 1839, he says: [We correct the typographical errors.]

"Of this place itself I am quite tired, and shall be glad when the advance, which is expected to take place in a few days, actually appears in orders. The other side of the town did present some verdure, but this is as barren at present as any part of Arabia Felix: hills without a particle of vegetation, presenting one unvaried uninteresting brown hue. I have, in addition to the long march from Candahar, also made one of 24 days to Bamean and back, which place is on the other side of the Indian Caucasus, though still farther within the mountains, and is famous for its caves, gigantic idols, and ruins. And such scenery; how indescribable! A valley to some extent enclosed by most beautifully sculptured mountains, presenting every variety of colour—here rosy, red, yellow; there bluish, purple, brick-red, and presenting such infinite variety of outward form; here columnar, there having the appearance of richly fretted work; here a huge cliff, there a mountain thrown down, scattering its wreck in every direction. This trip gave me 200 species, mostly very alpine, thus swelling my list to 1200 species; alas! 1200 only, when I expected 2400 at least! But perhaps next spring will give me more additions. The curious vegetation still continues; and it is to all intents and purposes Mediterranean. One prevailing feature of the mountains, even as high as 13,000 feet, is the abundance of prickly Statices, forming a section to which the term Hystrix would be aptly applied. After crossing the highest ridge, Salsoloideæ become very common. We crossed five ridges of the following heights: 10,000, 11,320, 12,180, 12,480, 12,900. We had some severe cold; some snow and ice. Ice was found, or rather some half frozen snow, in ravines at 10,500 feet and upwards, and the effect it had on the vegetation was most marked. This was a fortunate circumstance, as it gave me specimens in flower, which elsewhere had long been out of flower, or even past seeding. Mosses still continue rare, and only one Orchidea and two Ferns have as yet been found in Affghanistan." This statement is, however, quite at variance with his botanical memoranda.

The account he gives of the Punjaub, in a letter dated Shikarpore, Feb. 1839, is not calculated to raise its vegetation in public estimation:

"At present I am in the worst country upon earth, that is, so far as botanical pabulum goes, for I never saw such abominable sandy wastes as those to which we have now become accustomed. India, on this side the Rajmahal Hills, is so bare of forest, that few places would afford a flora extending beyond a few hundred species, chiefly of such herbaceous forms as are connected with cultivation. Loodianah being in 31° north, has some European forms, a Linaria, Reseda, Medicago, Alisma, Sparganium, Typha foliis angustis, Farsetia Hamiltonii, Lithospermum, &c.; but as you correspond with Edgeworth, perhaps he has told you all. Scarcely a tree have I seen anywhere except a Mango, or Peepul, or such like. The country is generally covered, particularly along the Indus and its streams, with Tamarix, of which Tamarix Furas is a beautiful coniferous looking tree. What a name, Furas! when one so applicable as cupressoides might have been given. Around this plain, which is in 27° 55′, nothing is to be seen but Tamarix, Acacia modesta, and a still more interesting Acacia, Ziziphus, Calotropis Hamiltonii, &c., yet I have found some (to me) novelties which have afforded me some occupation lately. The best were a Phascum and a Poplar-like tree, which I suppose is Liquidambar, although, as usual, it disowns its character."

The scenery of Bootan is of a very different character.

"Since reaching the plains, I may say I have done nothing, as the vegetation is precisely the same as that of Lower Assam. Neither did I get many plants during the four last marches in the hills, for although the elevation of some ridges still amounted to 5000 feet, yet the vegetation is almost quite tropical. I regretted leaving the higher ranges, the climate being so exquisite, and the spring vegetation so beautiful. At Chupcha I availed myself of a halt to ascend 10,000 feet, and was well rewarded for my pains. But I saw enough to make me wish to remain there during the rains, at which period the flora of such places can only be said to exist. Anemones, Bistortæ, Morina, Iris, Betula, Saxifraga, Primula exquisitissima, Trillium, Abelia? Cerasus, Salix, Abies, Pinus, Papaveraceæ, Aconitum, Rhododendrons, Aquilegia, &c., were all observed in some stage or other. Of the Rhododendrons, I cannot speak in terms of sufficient ecstacy. I have upwards of 15 species, which number might perhaps be doubled by a longer residence. My collection will amount to between 1400 and 1500 species, including Mosses and Hepaticæ. Congratulate me on having found Lyellia, regarding which I was led to suppose that it was a native of high altitudes, whereas I find it no higher than 400 feet. I have only brought away about 3 lbs. of specimens. Bootan, from altitudes of 6000 to 10,000 feet, is a lovely country; defined open woods, interrupted by large patches of sward, with here and there marshy spots, give one a vast selection of spots to hunt over for plants. Of all woods, give me one with a plentiful sprinkling of Rhododendrons. With Gooseberries and Currants I have been quite familiar, and at lower altitudes than I expected. The chief vegetation of the higher spots, at least I mean temporary vegetation, consists of Monocotyledons, especially Liliaceæ. How shall I describe the Aroideæ, especially the Pythoneæ, of which I have seven species. The most curious plants I have lately found is a Peloriod Swertia, which Royle I think mentions, and a curious creeping Ranunculus-leaved monopetalous plant, probably a Sphaceleoidea." [What is that?]

Garden Memoranda.

Royal Botanic Garden, Glasnevin.—There is now in flower here, for the first time in Europe, the rare and beautiful Wallich Lily (L. Wallichianum) received by Mr. Moore from Major Madden, an invaluable Indian correspondent of the Garden. It is in the way of longiflorum and eximium, but has very narrow leaves.

Pymmes House, Edmonton.—Among the many relics of bye-gone days to be found in the neighbourhood of this familiar suburban village, few afford more interest than Pymmes House, an old-fashioned edifice, built somewhere about the time of Charles I., but suitably modernised in appearance by the present proprietor. Its bright-red coloured front, divested of all Roses and climbers, which might harbour damp, and whose fastenings might tend to deface it, is seen conspicuously through the trees from the public bye-way which passes near it. The grounds have been greatly improved within these five years, and a new coach-road to the house is at present in course of formation. The flower-garden contains a nice piece of ornamental water, adorned with patches of Water-Lilies, and surrounded by a closely shaven lawn, containing flower-beds, except on one side, where the object aimed at has been the hiding of the kitchen-garden, which lies beyond it. This has been effected by a thick hedge of Arbor-vitæ trees on the top of the slope; a little further down the bank a row of standard Roses; then a row of Dahlias and Hollyhocks mixed; and in front scarlet Geraniums and Verbenas, the latter scrambling among burrs down to the water's ege. Viewed from the walk on the opposite side, this arrangement has a strikingly good effect. Passing the lake and a graceful Napoleon Willow at its extremity, we reached a beautiful piece of lawn immediately in front of the house, furnished with four marble statues, a fine Cedar of Lebanon, a mossy cupped Oak, and other forest trees, and ornamented by two long parallel strips of geometrical flower-beds, the first series being divided from the broad gravel walk in front of the house by a Grass border about 8 feet wide, and the second series from the first by another strip of Grass some 40 feet in width. Here and there along the latter, intermixed with China seats, were boxfuls of Ivy-leaved Geraniums, whose appearance was very effective. In the beds, which are now nearly at their best, and very gay, we remarked Calceolarias Kentish Hero and Amplexicaulis. Geraniums: Rollisson's Unique, Mangles' variegated and another variegated kind, Luceum Roseum and a somewhat darker coloured variety, Fair Helen, the Improved Frogmore, Compactum, Tom Thumb, and other scarlets. Verbenas: La Ardoise, purplish blue; Heloise, ditto; Princess Alice, blush, with a rosy eye; Madame Rattier, blush, with a rosy pink centre; Crimson King; Perfection, white; Duchesse de Cazes, bluish purple, with a black eye; Array, crimson. Cupheas of different kinds, beds of Agathea cœlestis, and Ageratum cœlestinum; the blue Campanula carpatica, which had also a very pretty appearance in rows along the sides of the walks; Pentstemon gentianoides splendens, Petunia Shrubland Rose, and other varieties. Round the base of one of the statues we observed Plumbago Larpentæ, but it has never flowered, possibly owing to its being in too luxuriant a condition; a dry poor soil would seem to suit it best. Passing the lawn, the walk leads through a herbaceous garden, by the side of a brook full of the white Water Lily, which seems to luxuriate in its nearly still waters; and farther on, in the same brook, there is a waterfall, but it was not in action when we saw it. But to return to the flower garden: a portion of the old kitchen garden wall connects the Arbor-vitæ hedge above alluded to with the house, and in order to render this ornamental, it has been covered with Magnolias, Bignonia radicans, Jasmines, Wistaria sinensis, climbing Roses, &c., and at the end, next the hedge just mentioned, with a Fig tree, which, in the course of the season, produces bushels of Figs, the young fruit being always preserved from the winter's frost and wet by a waterproof covering. A lean-to greenhouse occupies a portion of this wall, opposite the head of the lake. It was gay with Clerodendrons, Balsams, Achimenes, Pentas carnea, Fuchsias, the charming Dipladenia crassinoda, a Hoya carnosa, with nearly 100 trusses of bloom on it, and in the darker parts of the house with Campanula pyramidalis, a very suitable plant for such situations. The small border at the base of the wall was composed of little circles, each containing a Fuchsia in the middle of dwarf-growing bedding plants. These circles were divided from each other by narrow walks edged with Box, and surfaced with light-coloured pounded China, which gave a lightsome appearance to a situation otherwise somewhat dark and gloomy. In the kitchen garden is a long span-roofed forcing-house, in three divisions, with pits in front for growing Melons in, &c. There are also a Vinery and a greenhouse, the latter containing Azaleas and Camellias, some pits, and a small propagating house. Cucumbers have been cut in the forcing-house from last October until now, and in the pits in front Beechwood Melons will soon be ripe, being a second crop from the same plants this year. Ridge Cucumbers have been all killed by mildew, which has been very troublesome here this season. For killing mildew on plants in houses, it has been found that sulphur-water (water after the sulphur has fallen to the bottom) is equally efficacious with dusting the plants with the sulphur itself, and it is a much more cleanly method, as the plants require no washing afterwards. In conclusion, it is but right to mention that everything exhibited the very best management, and reflected much credit on Mr. Speed, who is gardener at the Pymmes.

Miscellaneous.

Febrifugal Properties of Alkekengi (Nicandra physaloides).—The new observations contained in a communication from M. Gendron tend to confirm those made previously by the same gentleman on the advantages to be derived from the use of the capsules of Alkekengi in intermittent fevers. The author however

has ascertained that this plant cannot, as he had hoped it could, replace all the other more costly febrifuges. After a long series of experiments he has ascertained in what circumstances and quantities it can be used with success, and has discovered that the quantities before recommended by him were too small, and thus occasioned the failures which have been complained of by those who followed his directions. M. Gendron has studied the action of the different parts of the plant. The febrifugal qualities belong more particularly to the capsules and the berries; they are more marked if the fruit is allowed to ripen and even begin to dry upon the plant; the gathering should be made in October, when the medicine seems to act with most energy. Berries dried by a stove, powdered, and kept from air and light, retain their properties from one year to the other. The powder of the isolated capsules is very bitter; that of the berries is, in addition, acid. M. Gendron has given, without inconvenience, 30 grammes of this powder per day in two doses; an ordinary dose is from 10 to 12 grammes. *Comptes Rendus.*

Calendar of Operations.

(For the ensuing week.)

PLANT DEPARTMENT.

THAT the plants which are intended for various purposes, and different seasons, may each receive such sort of treatment as is most calculated to make them answer the end for which they are grown, a distinction should be made between those which are designed to keep up the display between this time and the end of November, and those which are to be useful during midwinter and early spring. A third class will consist of those plants, principally hard-wooded, which are cultivated more especially for their summer services. By reducing the thing to a system, in assembling together those whose season of flowering and required treatment are similar, it is more easy to give to each the particular treatment which its case demands. We are aware that to do this properly, several houses or pits are required; but where such conveniences are not at command, much may be done even in one house, by arranging the plants for the different periods, in such situations as may, on consideration of the matter, seem best calculated to ensure them the treatment they require. The peculiar requirements of individual species render very careful observation and reflection necessary. For instance, many plants do better at a distance from the glass, while the very existence of others depends upon their being freely and fully exposed to the light. After this time the creepers on the roofs of plant-houses should be kept within more moderate limits, and gradually reduced as the season advances, that the plants beneath them may not be deprived of the sun and air so necessary to mature their growth. Many plants in these houses are now in the last stage of flowering; and if attention has been paid to raising a stock of young plants, the old ones of many quick-growing soft-wooded species may be discarded. By this practice, the remaining plants may be placed further apart, thereby allowing a freer circulation of air amongst them. Plants of Gloxinias, Achimenes, &c., which are from time to time removed from the houses to ripen their growth, should be placed in a dry frame, where they can have plenty of light, but where their supply of water must be gradually reduced; they must not be allowed to get dry all at once, which is too commonly the treatment they receive, and in consequence of which many of them perish entirely.

FORCING DEPARTMENT.

MELONS.—These are now growing fast, and must have regular attention in regard to stopping and thinning. Let the plants have abundance of air, and retain a little all night, as the flavour of the fruit is much improved by a systematic attention to this point. Let them have an ample supply of water, except when the fruit is ripening. Continual care is necessary at this season, to prevent the establishment of the red spider on the leaves; and another enemy, not less to be guarded against is the cricket, which eats its way into the fruit both of Pines and Melons, just as they are approaching to maturity. The best way of destroying them is to mix some arsenic and crowfig (nux vomica), and lay a little in the bottom of an earthen pan, placing a pan of water near it. The crickets eat the poison greedily, until they are driven by thirst to the water, of which they drink till they burst.

FLOWER GARDEN AND SHRUBBERIES.

Cold frames, handlights, and every other convenience for propagating, will now be put into requisition. Calceolarias, Pentstemons, the best kinds of Lobelias, Senecio, Petunias, &c., when sufficiently struck and gradually hardened, may be taken up and potted. This mode of striking is very much less troublesome than in heated structures; while, at this season, it is equally certain. Prepare for getting the best Cinerarias potted. Let the Carnations and Picotees in pots, for winter flowering, have every attention, that when placed on the front shelves of the greenhouse stage in November, their flowering shoots may be strong and numerous. If they have been prevented flowering, and no shoots are now upon them of more than 4 or 5 inches in length, they may be allowed to grow from this time, as they will begin flowering in November, and if the plants are healthy, they will continue through the winter.

FLORISTS' FLOWERS.

PANSIES.—Plant out young plants for blooming next spring, and at the same time pot several of each sort for filling up vacancies, should any occur, from frost or accident. Several new ones are worth inquiring for, though these are less candidates for public favour; Mr. Beck is one of the most promising. RANUNCULUSES.—It will be advisable to make the bed for the next year's use. A good rich compost is most desirable, that of a cool nature is best; the bed should not be made higher than the paths. If well made, and turned several times during winter to sweeten, little more need be done till nearly planting time. As for Carnations and Picotees, the directions given last week may be attended to. AURICULAS and POLYANTHUSES.—The latter, at this season, will often have the neck of the plant bare; to counteract any ill effect, it will be requisite to move the soil about them, and draw it round the plants. Seedlings will also sometimes be thrown or drawn out by the large earth-worm; they should often be examined and carefully replanted, as the weakest plants often produce flowers with the best properties. DAHLIAS.—These must have the blooms shaded, if intended for exhibition, and fastened in such a manner that they cannot chafe or be injured by high winds. Pinks need but little attention, except watering them occasionally; when the soil has not been well attended to, wire-worms will attack them; as soon as their ravages are perceived, they must be caught, whatever may be the trouble.

KITCHEN GARDEN.

Continue at intervals to earth up some of the earliest Celery a few weeks before it is required for use; but, unless in very cold and late localities, it is better to defer the soiling of the general winter crop till the third or last week of September. Let the intermediate rows of Peas, &c., be cleared away as soon as possible after their produce is gathered, that the Celery may have the advantage of the additional light and air. As an extra stimulant for any crops which we wish to grow particularly fine, we have all the dung from the aviaries and poultry-yard carefully collected, and mixed with three or four times its bulk of charred refuse. The heaps of this mixture are cased over with charcoal-dust, and after lying a year in that state, we use it for almost all kitchen garden crops; considerable care, however, is necessary in this, as it is nearly as strong as guano, and of course an over dose would be dangerous. After the ground is regularly dunged and trenched, a light top-dressing of this mixture is forked or raked in, previous to planting or sowing the crops; and to others in a state of progress, we lay a ring of it a few inches distant round the collar of the plant, and cover it with a slight top-dressing of soil; the riches of the manure being diffused through the soil by the rain.

HARDY FRUIT GARDEN.

WALL TREES.—The tying in or nailing of these should now be gone over for the last time this season, that the young wood, from its closer proximity to the wall, may have a better chance of ripening. Now that the fruit of Morello Cherries is gathered, as many of their shoots as space will admit of without being crowded, should be laid in. Enough has been said about Strawberries in former Calendars, and all that is now necessary is to urge the early completion of the work connected with the summer management of this crop, especially in making new plantations, and cutting away the runners, and forking rotten dung about the roots of the older ones. The old Raspberry canes which have done bearing should now be cut away, and the strongest of the young canes tied loosely up in their places, stopping the very luxuriant ones at about 5½ feet high. A little rotten dung forked in amongst them will very much assist the swelling and ripening of the buds for next year's crop.

State of the Weather near London, for the week ending Aug. 22, 1850, as observed at the Horticultural Garden, Chiswick.

August.	Moon's Age.	Barometer.		Temperature. Of the Air.			Of the Earth.		Wind.	Rain.
		Max.	Min.	Max.	Min.	Mean	1 foot deep.	2 feet deep.		
Friday.. 16	8	29.972	29.944	78	53	65.5	61	61½	N.E.	.00
Satur... 17	9	30.003	29.966	76	49	62.5	63	62	W.	.00
Sunday . 18	10	29.996	29.767	76	49	62.5	63	62	S.W.	.00
Monday 19	11	29.795	29.753	68	4[illegible]	56.5	63	62	W.	.00
Tues. .. 20	12	29.718	29.706	68	43	55.5	61	62	S.W.	.01
Wed. ..21	13	29.646	29.612	62	32	47.0	60½	60½	S.	.45
Thurs....22	0	29.837	29.799	66	39	52.5	58	60½	S.W.	.00
Average....		29.852	29.792	70.5	44.3	57.4	61.3	61.5		.46

Aug. 16 Fine; slightly cloudy; very fine; cloudy.
— 17—Overcast; cloudy and fine; clear at night.
— 18—Fine; cloudy and fine; heavy clouds at night.
— 19—Fine; boisterous, with dry air; clear.
— 20—Fine; cloudy; shower in the evening.
— 21—Overcast; rain commenced 11 A.M.; clear; frost at night.
— 22—Quite clear; very fine; clear at night.
Mean temperature of the week 4½ deg. below the average.

State of the Weather at Chiswick during the last 24 years, for the ensuing week, ending August 31, 1850.

August.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds. N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 25	71.9	51.6	61.3	7	0.32 in.	2	2	1	1	5	7	4	2
Mon. 26	72.5	49.1	60.8	7	0.51	—	2	2	—	5	7	5	3
Tues 27	72.5	50.2	61.4	7	0.40	1	2	3	—	1	5	6	6
Wed. 28	72.8	51.6	62.2	12	0..0	—	5	3	—	4	3	7	2
Thurs. 29	72.8	50.2	61.5	10	0.58	3	3	4	—	2	7	2	3
Friday 30	71.6	50.4	61.0	6	0.92	—	4	2	—	4	5	6	3
Satur. 3	70.9	50.2	60.5	13	1.31	2	5	1	2	2	2	5	5

The highest temperature during the above period occurred on the 25th, 1826—therm. 83 deg.; and the lowest on the 30th 1838—therm. 38 deg.

Notices to Correspondents.

APRICOTS: *Sumertonensis.* The seedling is round, like the Peach Apricot, but woolly and insipid like the Orange. It is, therefore, new, but of no value, and we should not continue to grow it. Bud it with the Peach Apricot, quite as late, and really excellent.—*J G.* We are glad to see that your Apricots at Hexham are so fine, and to hear that the crop is so large. Hereabouts the frosts of May 3 destroyed most of this kind of fruit. Many thanks.

BOOKS: *A B.* Apply at 21, Regent-street.‡

DAHLIAS: *H B.* Whatever ails your Dahlias, of this you may be sure, that they are not struck by the Potato blight. We can offer no suggestion.—*G A.* The Horticultural Society neither has nor has had any such intention.

FUCHSIAS: *Kelvedon.* A very curious "sport," certainly. Two different kinds of flowers on the same plant is a novelty. Just try and propagate separately the two branches which bear the different flowers, and let us hear further. It is probable that in this way you will fix the variety. These "sports" are highly curious. The other day we saw, in the possession of the Earl of Jersey, a Dahlia which bore on the same stalk a deep purple self flower, and a white one streaked very slightly with purple.

HOLLIES: *A M.* They may be removed with safety in September.‡

HYDRANGEAS: Will the *Gardeners' Chronicle* inform *Romsey Abbey* why a bed of Hydrangeas planted in rich garden loam three years ago, and regularly watered, has constantly an unhealthy appearance, the leaves turning yellow, and a large proportion of the plants not flowering, but remaining dwarf? We refer this to the kind attention of correspondents who have seen the affection of which *Romsey Abbey* complains. In heavy land, where the roots make way with difficulty, we know that Hydrangeas are unwilling to flower, and grow in a stunted manner, manure them as you will.

HYDROSTATIC SYPHON: In reply to several inquiries we have to state that we are acquainted with this instrument only through our correspondents, who however speak well of it. The best plan is to enquire of Mr. Bird, the patentee.

INSECTS: *C H.* The caterpillars from Hyde-park are a brood of the buff-tip moth (Pygæra bucephala). They turn to chrysalids, inclosed in a silken case, and have no poisonous property. *W.—Bedhampton.* The caterpillar of the eyed hawk-moth (Smerinthus ocellatus). *W.—Sub.* Your leaves were badly attacked by the common thrips of the hothouse. Syringing with tobacco-water, and fumigation (the house being made as air-tight as possible), are the only remedies. The Camellia leaves were also attacked by the flat scale. Syringing with hot water will destroy these. *W.—Este.* The eggs are evidently those of the common Gooseberry saw-fly. *W.—J L S, Bedale.* We do not know by what insect the eggs on the Birch twig were deposited. *W.—C R.* We are glad to learn that the rains have dispersed the plant lice from the Oats. The caterpillar sent is that of the peppered moth (Biston betularius). *W.*

MILDEW ON GRAPES: *Young Gardener.* Mr. Baker has found (see p. 533) that the steam from hot dung will kill it. Before doing anything else, you had therefore, perhaps, better try the experiment, and report to us the result.‡

NAMES OF PLANTS: *J S.* We have no idea what it is.—*Cymro* 1, Polypodium vulgare; 2, Asplenium trichomanes; 3, Cystopteris fragilis; 4, Asplenium viride. *S.—C J W K.* Sallsburia adiantifolia; a hardy deciduous tree.—*Usk.* Saponaria officinalis.—*Erzeroum.* 31, Arnebia echioides.—*J Y, Clonmel.* Cassia lævigata.—*Dundee.* Some Phytolacca, and apparently the common Pocan or Poke, Ph. decandra.—*H R J.* A. Dianthus plumarius; B. Echinops sphærocephalus; C, Coronilla varia. Strike your cuttings now, if you can keep the plants over the winter. If not, wait till spring.—*J M R.* Scolymus hispanicus.—*J B.* 4, Hydrocotyle vulgaris; 2, Ajuga reptans; 1, Polygonum amphibium; 3, Peplis Portula.—*B T.* 1, Woodsia ilvensis, rare; 2, 4, and 9, Asplenium Filix-fœmina; 3, Lastrea Thelypteris; 5, L. oreopteris; 6, L. Filix-mas; 7 and 8, L. dilatata; 10, Polystichum lobatum; 11, Phymatodes Billardieri. *S.*

ORTHOGRAPHY: *A Prentice Laddie.* The author of such a list is a blind man undertaking to lead those who possess their eyesight. The spelling is infamous.

PITS: *G G.* You should have a pipe above your beds and a couple below, with the power of stopping the circulation in the upper pipe. The lower pipes must be in a chamber, which may be constructed with rough slabs. Do not use tanks for your bottom-heat; they give off too much moisture and rot the roots.

PRESERVING FRUITS. We have tried the quality of some jars of fruit, &c., preserved by the method of Mr. James Cooper, of Brixton-hill (see Advertisement, May 25). Upon opening the jars some were found of inferior quality, others very good, and one of them, of Mulberry, most excellent. Mr. Cooper's method evidently deserves to have a fair trial. Nothing could be better than his Greengages, and Raspberries and Currants.

RHODODENDRONS: *G F L.* Yellow or buff-coloured varieties are not uncommon. They may be obtained of any of the large Rhododendron growers.‡

RHUBARB: *H S and Co.* It is not easy to form an opinion about Rhubarb, when cut; and it is quite impossible to tell whether it is *early*, if sent for examination in the month of August!

ROSES: *Rosa.* The market gardeners propagate the Moss and Cabbage Roses by layers; by pruning the shoots back to two or three eyes early in spring, they are kept low and full of wood. Under careful culture the bushes may be kept handsome for several years. They should have a good dressing of well decomposed stable manure every winter. The following are 12 fragrant Hardy Autumnal Roses. Damask Perpetual: Duchess de Rohan, Julie de Krudner, Laurence de Montmorency. Hybrid Perpetual: Aubernon, Clementine Seringe, Cornet, Duchesse de Galliera, Dr. Marx, Marquisa Boccella, Polybe, Réine des Fleurs, Sydonie. Duchess of Mecklenburgh is only a second rate Rose.‡

STRAWBERRIES: *Amateur.* See our article on "Villa and Suburban Gardening" in another column.‡

VINES: *W F D.* If your Vines that are making their first year's growth, are growing vigorously and have plenty of room, do not yet stop their leaders.‖—*D W.* On your dry sandy bottom, your Vines have doubtless suffered from drought during the growing season, for then the Vine requires more water than is afforded it in very many cases. Your border ought to be made at least 2 feet deep, and on your subsoil it will be well to concrete it. You must cut back, to get strong wood. By making a rich border, with plenty of heat, plenty of air, and sufficient moisture you cannot fail to get strong wood; and as you say you succeeded best with the long rod system, keep by it.‖

WALL FRUIT: *Sub.* It may be preserved from wasps, &c., by wrapping it in tow; or, if you do not mind expence, you might try Halliman's fruit protector.‡

WEEDS: *A H R.* Lime will not destroy them; it is quite as likely to promote their growth. It is a great misfortune to succeed a sloven, but there is no remedy except patient weeding as fast as weeds make their appearance. In a year or two you may expect to be cleaned, provided you keep the ground well stirred during the first summer.

MISC: *Lady M.* Your Fuchsias are possibly too luxuriant to flower well; try the effect of partially starving one of them for want of water for a while. The main point to be attended to in the management of Pardanthus chinensis is to give it a long, warm, dry rest in autumn. Calistegia is readily increased by its roots. Your Alstrœmerias, whose "tubers are sound," will come up hereafter. Œnothera should be pronounced Enotheera.‡

SEEDLING FLOWERS.

ESCHOLTZIAS: *S W.* Semi-double Escholtzias are not uncommon, but they will not remain semi-double.*

FUCHSIAS: *S F and Co.* Considerably shrivelled when received; but apparently worthless as a "show flower."*—*T T, Chelmsford.* 2 is the best. It has a finely coloured corolla, and the sepals reflex well; but the latter, together with the tube, should be white, to contrast well with the corolla.*

HOLLYHOCK: *C and Son, Haverhill.* See our report of Worton Cottage Meeting in another column.*

PINKS: *Maria.* They are Pinks of little or no merit.*

VERBENAS: *T T, Chelmsford.* M. 2, scarlet, light eye; Fanny, nice light kind; and Forget-me-Not, purple; are distinct and worth growing. The rest are inferior to others of the same colours now in cultivation.*

MANURES.—The following Manures are manufactured at Mr. LAWES's Factory, Deptford Creek:

Corn and Grass Manure, per ton	£10	0	0
Clover Manure, do.	11	0	0
Turnip Manure, do.	7	0	0
Superphosphate of Lime	7	0	0
Sulphuric Acid and Coprolites	5	0	0

Office, 69, King William-street, City, London.

N.B. Peruvian Guano, guaranteed to contain 16 per cent. of Ammonia, 9*l.* 15*s.* per ton; and for 5 tons or more, 9*l.* 10*s.* per ton, in dock. Sulphate of Ammonia, &c.

PERUVIAN GUANO.—As Agents of the Peruvian Government for the importation and sale of this valuable MANURE, we think it right, for the protection of consumers and respectable dealers, to apprise them that the adulteration of the article is still extensively practised, and to recommend them to apply either to ourselves, to our agents, Messrs. GIBBS, BRIGHT, and Co., of Liverpool and Bristol, or to dealers of established character, in whose honesty and fair dealing they can place implicit confidence. ANTONY GIBBS and SONS.

CORN MANURE FOR WHEAT, BARLEY, OATS, BEANS, &c. &c.

THE LONDON MANURE COMPANY most confidently recommend the above, as they are daily receiving very satisfactory accounts from parties who used it with great success last season. It will be found fully equal to and much cheaper than Peruvian Guano, and is not so liable to produce so large a growth of straw. Price Seven Guineas per ton, 3 cwt. per acre. They also beg to offer their Concentrated Urate, Superphosphate Lime, Nitrate of Soda, Sulphate and Phosphate of Ammonia, Fishery and other Salt, Gypsum Sulphuric Acid, and genuine Peruvian Guano. To insure this free from adulteration, all purchasers can receive it direct from the Warehouses of the Importer.

Bridge-street, Blackfriars. EDWARD PURSER, Secretary.
Country Dealers and Agents supplied.

PURE WATER raised to any height from a small stream, where a fall can be obtained, by FREEMAN ROE and HANSON'S IMPROVED RAM; less waste, by two-thirds, than those ordinarily in use. Portable Steam Engines for Agricultural purposes, Threshing Machines, Deep-well Pumps, Water-wheels, Baths, Hot-water Apparatus, and Fountains. Towns supplied with Gas or Water. Drawings and Estimates made.—FREEMAN ROE and HANSON, Hydraulic and Gas Engineers; Office, 70, Strand, London.

DR. S. NEWINGTON'S AGRICULTURAL INVENTIONS.—An Illustrated Catalogue, together with a Lecture on the Seeding of Grain, and the after cultivation of the crops, sent gratis, on application to Messrs. DUFAUR and Co., 21, Red-lion-square, London.

THE CONICAL BOILERS INVENTED BY JOHN ROGERS, Esq., are supplied and fixed by JOHN SHEWEN, ironmonger, Sevenoaks. Also all kinds of Hot Water Apparatus. For Churches and Public Buildings, Mr. SHEWEN should be consulted, his Warm Air Apparatus being safer, more efficient, and more durable than any other.

BY HER MAJESTY'S ROYAL LETTERS PATENT.

PATENT HOTHOUSE WORKS, KING'S ROAD, CHELSEA.

E. DENCH invites the attention of Gentlemen about to erect Hothouses, &c., to the vast superiority in every respect possessed by his PATENT HOUSES, which he will warrant superior in every respect to any others. Good Glass from 16 to 21 oz. per foot, 1 foot wide, 3 feet long, furnished, and the Houses, when completed charged, from 1*s.* 3*d.* to 1*s.* 6*d.* per superficial foot, according to size and quantity; on one principle the roof is formed without wood or putty, and on another principle with wood rafters, and the glass put in with putty. Patent Sashes, requiring no paint, from 7*d.* to 9*d.* per foot. HEATING BY HOT WATER.

STEPHENSON AND Co., 61, Gracechurch-street, London, and 17, New Park-street, Southwark, Inventors and Manufacturers of the Improved CONICAL and DOUBLE CYLINDRICAL BOILERS, respectfully solicit the attention of scientific Horticulturists to their much improved method of applying the Tank System to Pineries, Propagating Houses, &c., by which atmospheric heat as well as bottom-heat is secured to any required degree, without the aid of pipes or flues. S. and Co. have also to state that at the request of numerous friends they are now making their Boilers of Iron, as well as Copper, by which the cost is reduced. These Boilers, which are now so well known, scarcely require description, but to those who have not been them in operation, prospectuses will be forwarded, as well as reference of the highest authority; or they may be seen at most of the Nobility's seats and principal Nurseries throughout the kingdom.

S. and Co. beg to inform the Trade that at their Manufactory, 17, New Park-street, every article required for the construction of Horticultural Buildings, as well as for heating them, may be obtained upon the most advantageous terms.

Conservatories, &c., of Iron or Wood, erected upon the most ornamental designs. Balconies, Palisading, Field and Garden Fences, Wire-work, &c.

MESSRS. NESBIT'S CHEMICAL AND AGRICULTURAL SCHOOL, 38, Kennington-lane, London.—A sound practical knowledge of Analytical and Agricultural Chemistry, Geology, Surveying, Levelling, Railway Engineering, &c., may be obtained in Messrs. NESBIT'S Academy, in addition to a good modern education.

Mr. NESBIT'S works on Arithmetic, Mensuration, Gauging, Land Surveying, English Parsing, &c., are published by LONGMAN and Co., and may be had of all Booksellers.

FOR WATERING GARDENS, BREWERS' USE, &c.
FLEXIBLE INDIA-RUBBER HOSE PIPES.

JAMES LYNE HANCOCK, Sole Licensee and Manufacturer of the PATENT VULCANISED INDIA-RUBBER PIPES and TUBING.

These Pipes are well adapted for Watering Gardens, conveying Liquid Manure, racking Beer and Cider, Gas Fittings, Chemical and all purposes where a perfectly sound WATERPROOF and FLEXIBLE PIPE is required.

Hot Liquors or Acids do not injure them. No oil or dressing is required in using them. They do not leak from remaining out of use, are permanently Flexible in all Temperatures, and are therefore particularly suitable for Fire Engines; and, from their not leaking, are found exceedingly useful in conveying hot or cold water to baths in dwelling houses and such like purposes.

A LIGHT VULCANISED INDIA-RUBBER HOSE is now manufactured for conducting Water and Fluids, at the following prices per foot:

Size.	¼ in.	⅜ in.	½ in.	1 in.	1¼ in.	2 in.	2½ in.	3 in.
1 ply ...	0*s.* 5*d.*	0*s.* 6*d*	0*s.* 8*d.*	0*s* 10*d.*	1*s.* 0*d.*	1*s.* 2*d.*	1*s.* 4*d.*	1*s.* 6*d.*
2 ply ...	0 8	0 9	1 0	1 2	1 5	1 8	2 0	2 3
3 ply ...	0 11	1 0	1 3	1 6	1 10	2 2	2 9	3 3

N.B. Vulcanised India-Rubber Garden Hose fitted with roses, jets, and branches, complete, with union joints ready to attach to pumps or water cisterns.

All orders or letters addressed to J. L. HANCOCK, at the Manufactory (and Warehouse), Goswell-mews, Goswell-road, London, will meet with immediate attention.

DICKINSON'S NEW ITALIAN RYE-GRASS SEED is now ready for delivery, price 7*s.* per bushel. No. 7, Curzon-street, May Fair, London.

HOW TO KEEP A HORSE FOR LESS THAN ONE SHILLING PER DAY.

"Do you bruise the Oats you give your horses?" "No." "Then you lose one bushel out of every three, and your cattle do not half so well."

MARY WEDLAKE AND CO.'S OAT-BRUISING MILLS. Superior Chaff Engines, simple in construction, doing from 50 to 500 bushels daily, and more. Almost all brewers and coachmasters in London use these implements.

118, Fenchurch-street, London. A pamphlet on the above, by sending 12 postage stamps. Chaff-cutters, Linseed, Bean, and Malt Mills.

IMPORTANT NOTICE.—EMIGRANTS are informed MARY WEDLAKE and CO. have from time to time supplied the first settlers to Swan River, Port Natal, and all the Australian Colonies, with AGRICULTURAL IMPLEMENTS; they beg an inspection of their stock, at 118, Fenchurch-street, near the Blackwall Railway. N.B. Persons becoming purchasers may have the benefit of an introduction to parties known to the firm at either of the above-named places.

WANTED A FARM of from 100 to 200 acres of Arable and Pasture Land, in good condition, with comfortable house and buildings, pleasantly situated in the neighbourhood of a railway, and at least 50 miles north-west of London. Rent to meet the times. The Advertiser would not object to take the Live Stock and Implements at a valuation, if they are desirable; and, provided the same advantage could be insured him on leaving the farm, would have no objection to pay a small remuneration for recent improvements on the land.—Letters, prepaid, to be addressed, stating particulars, to B. B., Post-office, Little Sutton, near Chester.

The Agricultural Gazette.

SATURDAY, AUGUST 24, 1850.

MEETINGS FOR THE FOLLOWING WEEK.

THURSDAY, Aug. 29—Agricultural Imp. Society of Ireland.
THURSDAY, Sept. 5—Agricultural Imp. Society of Ireland.

THAT our correspondents should criticise our remarks is what we both expect and desire, because the discussions thus created are the most effectual methods that can be devised for the illustration of the facts passing under our notice.

One of our correspondents, however, overlooking our real object and intention, has so far mistaken our meaning as to consider the recent remarks we made on the class of men to whom the management of estates is confided in the light of a personal attack. "He has observed," he says, "with pain our repeated attacks on the mixture of the solicitors' with the land-agents' business," and assures us that he has never, during 14 years, but once involved his employers in law expenses. This liability to the encouragement of litigation being one of the objections we made against the employment of lawyers as land-agents, we readily exonerate our correspondent from all liability to such a charge; at the same time, however, assuring him that his case is an exception to a general rule.

"N. P." may prove his own fitness, but that does not prove the fitness of his class, and does not answer one of our objections to these lawyer-land-agents. What we wish to see is, that landowners would, in the first place, take more interest in their estates themselves, and commit the subordinate management of them to men of skill and ability; at the same time giving them such a remuneration for their labour that they are under no necessity to eke out a paltry salary, by combining the somewhat incongruous professions of lawyer and land-agent.

"N. P." has given us one reason why landowners should not systematically visit their estates, as we recommend, namely, that they are tormented by "the tenant's asking for grants to which he is not entitled, which he has not been enabled to obtain from the agent." Our friend describes this case so feelingly that it must surely be his own. That the tenant is not able to obtain a certain "grant" from the agent is no proof that he is not entitled to it; and such a scene of confusion as an owner ordering what his agent had refused can never occur on a well-managed estate.

OUR remarks on the failure of CLOVER have led to some observations from Mr. SUMMERS on the common practice of "doctoring" the seed, which is undoubtedly one reason for this failure. In this, as in other purchases, we cannot too strongly urge upon our readers the importance of buying of those "on whom they can depend, for it is impossible for the most practised eye to detect the fraud. Sulphur, indigo, logwood, copperas, and verdigris, are all used in this nefarious practice, to the certain destruction of the vegetative power of the Clover seed." That this is one reason of failure of Clover there can be no doubt, and as it has been ascertained that certain parasitical plants do great injury on the Continent, we directed attention to this fact also with the hope that our correspondents would be on the look-out for them, and report to us if they found any. With regard to manures, we have to report (as we mentioned in our previous remarks on this subject) that though their use of course improves the crop, when the Clover is already there, yet not one that we tried seems to exert the slightest influence in preventing the mysterious disappearance of the Clover plant in early spring. Mr. SUMMERS suggests that possibly another cause for the failure of Clover may be that our land is not sufficiently deeply cultivated. Without for a moment under-valuing the importance of deep ploughing, we may remark that in our own case no difference can be observed between land that has been subsoiled and that which has received only the ordinary ploughing, and that we can see no greater success attend the growth of Clover on the lightest Turnip land than on the strongest clay. Both seem equally liable to fail.

The only remedy to this state of things that has hitherto been devised, has been the growth of Beans or Peas instead of Clover. This is a well-established fact, but the reason why this answers is as yet a mystery, chemical analysis having shown that the Clover plant and the Bean abstract from the soil as nearly as possible the same substances. In fact, Chemistry has not yet been able to throw light on the subject; for Dr. Anderson, of Edinburgh, recently analysed two soils, one on which Clover had failed, the other on which it had not, without being able to detect any satisfactory difference between them. Such is a brief summary of all we at present know on this important subject: it affords a striking instance how far we are from being thoroughly acquainted with the "principles" of agriculture.

LIQUID MANURE TANKS.

HAVING, about three months ago, made one of these indispensable adjuncts to modern farming, from which I was long deterred, imagining bricks, mortar, cement, and archwork to be the inevitable but costly materials of a tank, and having found that a good and durable tank may be built at a comparatively moderate expense, I herewith detail the method and the cost of such a tank. The inside contents are 6 feet long, 6 feet wide, and 6 feet deep. The ground—a pure sand—was dug out 7 feet deep, 8 feet long, and 8 feet wide. The bottom was puddled with clay a foot thick. An Oak post, 5 inches square, was placed about a foot from each corner; three Larch rails were morticed on each side of the tank into the posts; and slabs of Oak, Beech, or whatever odd rough timber I could find about my saw-pit, were nailed to the rails from the outside of them. One old crooked piece of Oak was especially sawed up for this purpose. The slabs were nailed vertically, and so we were not particular as to their all being the height of the posts, that is, 5½ feet. This entire frame was made and then taken to pieces again before it was placed in the tank. When set up, clay was puddled behind it one foot thick. Oak curbs were laid round the sides at the top. Pieces of Beech, 6 to 9 inches in diameter, chopped a little, to fit better together, were laid over as a covering, after a pump had been put down. The cast-iron pump was passed through a bore in one of the stoutest pieces of Larch, and supported by three iron struts standing on the curbs. Another stout piece of Beech had a large bore through it, for the purpose of knowing when the tank was full, and putting in such things as dead rats or poultry, or ammoniacal manures. Now the items of cost, which would be pretty much the same in any locality, were these:

	£.	*s.*	*d.*
Clearing a space of ground, one man two days of 9½ working hours each	0	4	4
Digging out tank and wheeling away earth 20 yards off, one man two days	0	4	4
One man puddling, 4½ days	0	9	9
One man making road to tank, one day	0	2	2
Sawyer, for 298 feet of Oak	0	11	3
Ditto, for 50 feet of Fir	0	1	9
Carpenter, 3½ days making frame	0	9	11
Ditto, two days putting up	0	5	8
Ditto, two days making roof	0	5	8
	£2	15	0

My carpenter is a good honest fellow about the place, but proverbially a slow hand. I cut my own timber, and procured the clay in making a ditch for quite another purpose, and hauled the materials at a leisure time; and the quantities of timber and clay, and the cost of hauling, may be calculated from the foregoing labour account, to which I must add 1*s.* 7*d.* for nails. Being perfectly satisfied with this tank, I have only to speak of its durability. The party to whom I am indebted for the mode of construction is the farm-superintendent at Queenwood College, in Hampshire, a place which I think well worth the notice of agriculturists. They may see there some first-rate practical farming, done with ease and without bluster and pretension. Queenwood College is, in fact, a school for the classical and commercial education of boys, having some 800 acres of land attached to it, and professors of chemistry and other sciences engaged. Mr. Edmundson, the proprietor, has also an agricultural school for young men desiring both scientific and practical agricultural knowledge. Well, here has been, among other tanks, one like that above described in existence and sound condition for eight years, and it appears to me to answer every purpose of more expensive tanks.

For making drains into a tank, the following I find a cheap and sufficient method. In front of your pigsties, or some edge of the dung in the yard where the liquor oozes out from the central mass, make a tank about 18 inches deep and 1 foot wide, with any old half bricks placed circular, and about 6 inches of clay puddled at bottom and behind, and put a grating at top of it. Then, from just underneath the curb which holds

the grating, run a drain to the main tank, of machine-made draining pipes of 2 to 3 inches bore, laid in a little clay puddled, and about a foot underground. The cast-iron grating can be taken out, and the little tank cleaned with the hand when it gets too full of solid matter. It is true that you do not get much into the tank in dry weather; but in wet weather I can testify you may save a great deal of valuable stuff, which flows through the dung from the centre to the outsides of it; and then, the horses being probably disengaged, one can easily be spared to empty the tank upon some adjacent pasture, even though it should be filled daily, as mine was during some of the late heavy rains. And this makes the Grass grow too; so that I am quite satisfied that with judgment in selecting the place and time of construction, such a tank as I have described may be made a profitable adjunct to the farm. *Amicus Tull.*

TABLE, showing the Consumption of Food and the Increase of Animal per Week, for each 100 lbs. Live Weight, as recorded by various observers.

SHEEP.

Description of Animal.	No. of animals	Duration of Experiment.	Authority.	Food consumed per Week to each 100 lbs. live wght of animal		Increase per week upon each 100 lbs. live weight.
				Description.	Quantities.	
		Wks. Dys.			lbs. oz.	lbs. oz.
Cotswold Ewes	10	8 0	Rev. A. Huxtable	....	....	2	
Ditto	10	8 0	Ditto	....	....	1 8½
Leicester Lambs in Shed	10	4 0	Ditto	1st week Swedes 3 last weeks Oilcake 3 last weeks Barley	....	3 9½
Leicester Lambs in Field	10	4 0	Ditto	Swedes only	....	1 12½
Downs Wether Tegs	30	10 5	J. B. Lawes	....	....	2 9½
Downs	5	14 0	Ditto	Oilcake Swedes	5 3½ 72 0	1 8
Ditto	5	14 0	Ditto	Oats Swedes	6 14 66 7	1 10½
Ditto	5	14 0	Ditto	Clover Chaff Swedes	6 7½ 91 2½	1 12½
Ditto	4	14 0	Ditto	Swedes	98 5½	1 1½
Ditto	5	19 0	Ditto	Oil-cake Clover Chaff	5 2 18 2½	1 3
Ditto	5	19 0	Ditto	Linseed Clover Chaff	5 2 14 12	1 1½
Ditto	5	19 0	Ditto	Barley Clover Chaff	5 3½ 15 9	1 1½
Ditto	5	19 0	Ditto	Malt Clover Chaff	4 15½ 15 10½	0 15½
Ditto	8	23 2	Ditto	....	....	1 0½
Ditto	5	9 0	Ditto	Clover Chaff Swedes	4 3½ 91 12½	1 5½
Ditto	5	9 0	Ditto	Clover Chaff Swedes	4 2 87 4	1 6½
Ditto	5	9 0	Ditto	Clover Chaff Swedes	4 9½ 79 6½	1 1½
Sheep	5	16 0	Morton	Oats Swedes	5 13 100 0	1 3
Ditto	5	16 0	Ditto	Oats Swedes	5 15 74 0	1 5½
Ditto	5	16 0	Ditto	Oats Swedes	5 14 65 0	1 3
Ditto	5	16 0	Ditto	Oats Swedes	6 0 47 0	1 8
Ditto	5	16 0	Ditto	Oats Swedes	5 11 45 0	1 2

Description of Animal.	No. of animals	Duration of Experiment.	Authority.	Food consumed per week to each 100 lbs. live wght of animal		Increase per week upon each 100lbs. live weight.
				Description.	Quantities.	
		Wks. Dys.			lbs. oz.	lbs. oz.
Sheep, Leicester	5	12½	Lord Radnor	Hay Pulse Swedes	5 3 10 9 133 0	2 3
Southdown	5	12½	Ditto	Hay Pulse Swedes	6 3 12 5 150 0	2 15½
Half-breds	5	12½	Ditto	Hay Pulse Swedes	4 6 9 3 138 0	2 0½
Cotswold	5	12½	Ditto	Hay Pulse Swedes	4 8 8 12 144 0	2 3
Leicester	5	18 0	Ditto	Grass	....	1 1½
Southdown	5	18 0	Ditto	Ditto	....	1 2½
Half-breds	5	18 0	Ditto	Ditto	....	1 4½
Cotswold	5	18 0	Ditto	Ditto	....	0 14½
Leicester	5	12 0	Ditto	Hay Swedes	11 0 174 0	2 0½
Southdown	5	12 0	Ditto	Hay Swedes	10 14 175 0	1 12
Half-breds	5	12 0	Ditto	Hay Swedes	11 1½ 180 0	2 3
Cotswold	5	12 0	Ditto	Hay Swedes	10 0 178 0	1 13½
Leicester Lambs	22	17 0	Mr. Rt. Woods	Oilcake Barley Turnips	2 11½ 2 11½ ad lib.	1 8½
Half-breds	22	17 0	Ditto	Oilcake Barley Turnips	2 11½ 2 11½ ad lib.	1 9½
Southdown	4	10 0	J. B. Lawes	Barley, dry Mangolds	5 0 69 2	1 6½
Ditto	4	10 0	Ditto	Barley, steeped Mangolds	4 12 90 8	1 11½
Ditto	5	10 0	Ditto	Malt, dry Mangolds	4 1½ 66 8	1 7½
Ditto	4	10 0	Ditto	Malt, steeped Mangolds	3 12½ 74 8	1 4½
Ditto	5	10 0	Ditto	Malt, dry Mangolds	4 13½ 75 0	1 8
Ditto	4	6 0	Ditto	Oilcake Mangolds	4 4½ 79 0	2 1½

ECONOMY OF MANURES.

On Wednesday, July 31, a lecture on this subject was delivered in the Trades' Hall, by Dr. Anderson, the chemist of the Highland Society. He said: It has appeared to me that the present affords an advantageous opportunity of calling your attention to questions which must unquestionably depend for solution on the mutual exertions of science and practice. For I hold it to be certain that the two must go together, and that though some of the facts we require may be determined in the laboratory, there are many questions which, though suggested by science, can be established only as facts by experiments in the field, performed with every attention to care and accuracy. I hold also that neither of these methods of experiment will in themselves suffice; they must go hand in hand if our results are to be of value. Separately the chances are that they lead to mere speculations, of which science will supply one set and practice the other; for you must allow me to say that practice has abundance of speculations of its own, which are often much wilder than those on which science ventures. In discussing the general questions of the economy of manures on the present occasion, I must be contented to do so in a very general manner, as your time will not permit me to go into any details, and I shall advert, in the first place, shortly to the general properties of manures. If we examine then any of our common plants, we find it to be composed of a considerable number of chemical substances. These substances may be divided into two great classes, separable from one another by a very simple experiment, which is neither more nor less than burning the plant. When this is done we obtain its ash, containing the whole of one of these classes; the other has in the process of burning passed into the state of gases, and so escaped the observation of our unassisted senses. The former of these are called the mineral or inorganic constituents of the plant, the latter the organic constituents, because they are peculiarly present in all organised beings. The latter of these classes is a limited one, and contains only four substances—carbon, hydrogen, oxygen, and nitrogen. The former is much more extensive, and comprehends a considerable number, of which the most important are sulphuric acid, phosphoric acid, lime, magnesia, potash, and soda. Now the existence of the plant depends upon its obtaining all these, as well as one or two less important substances, in sufficient quantity; without these it cannot flourish, and just in proportion to the amount in which they are supplied will be the luxuriance of its growth. I say the growth of the plant will be proportional to the supply of these constituents. This statement however is not to be taken in its widest sense, because Nature has fixed a certain limit beyond which no supply of these substances, however liberal, will raise its growth, but up to that limit the statement is substantially correct. From whence, then, is the plant to derive these substances? And in answering this question it is necessary to distinguish between the two classes of substances to which I have already referred, and to inquire separately into the sources of each.

Of the inorganic constituents there can be but one source, the soil namely, which to be fertile must contain the whole of these substances in greater or less quantity. It is different, however, with the organic constituents, which have a two-fold source, and of which part, or even the whole, may be derived from the surrounding atmosphere. The atmosphere is in fact a great reservoir of the organic constituents of plants, of which it contains all four; two of these, nitrogen and oxygen, forming almost the whole of it; the other two, carbon and hydrogen, existing in smaller proportion in the forms, respectively, of carbonic acid and the vapour of water. It must be understood, however, that all soils contain a certain quantity of the same substances, in the form of what is called organic matter, in a state in which all these four substances may be supplied to the plant. Now every fertile soil contains all the constituents of the plants which grow upon it, and that too in sufficient quantity to supply many successive crops, a position which I have had recently an opportunity of illustrating in a very complete manner, in a series of analyses of the Wheat soils of Scotland, published in the last No. of the Highland Society's Transactions. I have there shown that even nitrogen, of all others the element which we should least expect to find in them in abundance, nevertheless exists in what must be considered a comparatively large proportion. But it is important to observe that it is not enough that these substances shall exist in the soil; it is further necessary that they be present in a state in which they can become available to the growth of the plant. Now, to provide for this, Nature has introduced an extremely beautiful and important provision. In order that these substances shall be absorbed by the plant, they must exist in a soluble condition. It is, however, very manifest, that if the whole valuable constituents were soluble, the good effects of such an arrangement would be altogether defeated, for the rains would soon wash away from our soils all that they contained of valuable matter. To obviate this, however, Nature has so arranged it that these constituents exist in the soil in the state of insoluble compounds, which under the influence of air and moisture, gradually undergo a series of very complex decompositions, which slowly liberate the constituents, as they are required to support the life of the plant. But Nature has fixed a limit to this change, and has caused these constituents to become soluble with extreme slowness only, and in no greater quantity than is requisite for supporting that amount of vegetation which the general economy of the globe requires.

Now the whole principle of cultivation is to obtain by proper treatment from a given surface of land a greater amount of vegetation than it is capable of producing in a state of nature. And this is effected partly by tillage, which breaks up the land, and by the admission of air and moisture facilitates the decompositions, by which these valuable constituents of the soil are liberated from their insoluble state. The other and far more important means is by the addition to the soil of those substances which the plant requires, in other words by the use of manures. A manure, then, ought to contain all the substances which a plant requires for its growth. And this is unquestionably what a manure of theoretical composition should do. Nay, more, it ought to contain these substances exactly in the proportion which the plant requires, so that no waste may occur. It must, however, be manifest to every one acquainted with agriculture, and still more manifest to every one acquainted with chemistry, that it is impossible to carry out practically what is true in theory; nevertheless, the aim of skilful and scientific practice ought to be to approach as near to theoretical perfection as it is possible to do, though in the very nature of things we cannot even hope absolutely to arrive at it, or even near it. Although, however, we cannot hope to arrive at perfection, we may advantageously aim at a somewhat lower and less difficult standard, for experience and science concur in showing that all the constituents of a manure are not as equally important, but that those are most essential which the plant has greatest difficulty in obtaining from other sources. Now, in this point of view, nitrogen is the most important of all the constituents of a manure, because it is that which Nature supplies least abundantly. You may possibly express some surprise at this statement, considering that I, not many minutes since, mentioned that it is at present in enormous quantity in the atmosphere. But it so happens that nitrogen is exactly of all others the substance which most peculiarly requires to be presented to the plant in a special condition. It has been established on most unequivocal evidence that the plant cannot absorb nitrogen as such, and that all this immense mass of nitrogen existing in the air is not strictly useful to the plant, while it is only a very minute quantity existing in it, in the state of ammonia, which is of immediate value. And of the immense disproportion between the amounts of nitrogen in what I may call an inert and an active condition, some idea may be formed when I mention that 100 lbs. of atmospheric air contain about 77 lbs. of nitrogen, and, according to a recent determination, not more than $\frac{1}{4}$ of a grain of ammonia.

Next to ammonia in importance may be placed phosphoric acid, which is likewise a comparatively rare natural product, and of which also the great source in animal and vegetable sources, all of which, but especially animal substances, contain it in quantity. It is true that it is found also in the mineral kingdom; but it exists there so sparingly that as yet scarcely any advantageous use has been made of that which is obtained from this source. You will observe, then, and it is a matter of great practical importance, that the principal source of the two most important constituents of plants is from plants themselves; for even that portion obtained from animals comes originally from the plants upon which these animals have fed. And the same may be said of potash, of which the great source is still from plants. This is a point which I wish to impress particularly upon you, that plants form the great source of these substances; and that this is true, not merely of these substances as manures, but even when you go into a druggist's shop, and buy pure ammonia, phosphoric acid, or potash, every atom which you get has at

some time or other existed in a plant or an animal. These observations lead me directly to the consideration of that manure which consists of the decomposing portions of plants, and that of course is farm-yard manure, the most important of all, that on which the farmer must always be mainly dependent, and, I think I may also say, that regarding the economical management of which we have the least amount of definite information. I beg it to be understood as my decided opinion, that farm-yard manure must always be the farmer's main stay.

Some people still seem to expect that some complete substitute will be found for farm-yard manure. I can assure you, however, that any such supposition is utterly extravagant, and is certainly uncountenanced by chemistry. I do not mean to say that chemistry could not produce a substitute ; but what I mean is, that the farm-yard manure must always be much cheaper than any substitute which could be manufactured ; and the reason is to be found in the fact, that the constituents of such a manure must be extracted from plants, which must necessarily be expensive. While even supposing that to be done, farm-yard manure must, in the very nature of things, still always be produced. No question can then be conceived of more importance than that of obtaining this manure in its most perfect state ; but how that is to be done is exactly one of those questions still unsettled, and which I believe to require very complete and careful field experiments. The exact chemical estimation of the comparative values of different specimens of this manure is a very difficult matter ; partly from its extremely complex nature, and partly from the many questions it involves. Of course, good farm-yard manure will contain more or less of all the constituents of our crops ; but, in estimating its value, we must be contented to take into consideration only its most important constituents, and, in this way, I conceive we may obtain a sufficiently near estimate, by knowing the amount of nitrogen and phosphoric acid which it contains ; but of these, for many reasons, the first is by far the most important, as it is in respect to it that the value of farm-yard manure appears to vary most. In the management, then, of farm-yard manure, two different questions require to be considered—first, the production of a manure containing the greatest possible amount of nitrogen ; and, secondly, the successful conversion of that nitrogen into ammonia. It is not unimportant, of course, that the other constituents of the manure should be present in abundance ; but it may be assumed, as generally true, that the treatment likely to produce the greatest amount of nitrogen will be that which will produce the most valuable manure in other respects.

In regard to the first of these questions, there is little information. It is a common statement, however, that the value of the manure is dependent upon the nature of the food with which the cattle which produce it are supplied ; that, for instance, cattle fed upon oil-cake produce superior manure to those fed on Turnips. I am aware that this opinion is not universal, as I have heard it disputed by farmers of skill and experience. I am inclined however to believe that the opinion is to a certain extent correct. Supposing, then, that two samples of such manure differ, it must be obvious that it is the dung and urine of the cattle which differ ; the litter mixed with such dung will be the same in both cases. Now, some experiments made in the laboratory, on the pure dung and urine of cattle fed on Turnips and oilcake, appeared to me to confirm the opinion of the greater abundance of nitrogen in the produce of animals fed with the latter food. It will not do, however, to draw conclusions in such cases from a single analysis, so that I was anxious to have repeated and extended the experiments, but circumstances not within my own control have hitherto prevented my doing so. I would beg you, however, to observe that supposing it to be made out distinctly that farm-yard manure produced by oil-cake contains more nitrogen than that from Turnips, still this would not embrace the whole question. It would if you were to buy the manure, when, of course, all that you want is to get as much nitrogen as possible in the 100 tons or any other quantity which you may wish to buy. But it is quite another thing when you come to produce the manure on your own farm. The question then is, not whether 100 tons of the one contain more nitrogen than 100 tons of the other ; but whether the whole quantity of nitrogen produced by the one method of feeding is greater than the whole quantity of it produced by the other. Now, we have no experimental information on this point ; but I think it may be doubted whether in this point of view there is any such difference, because you will observe that though oil-cake contains more nitrogen—in fact about 2½ times as much as Turnips—still there is a much greater disproportion in the quantities of these substances with which you supply the cattle. You give an ox daily 1 cwt. of Turnips, but no one gives 30 lbs. of oil-cake daily, but more nearly 3 lbs. ; so that, in fact, the ox fed on oil-cake actually on the whole receives less nitrogen than when fed on Turnips. To pass then to another question—supposing cattle to be fed in exactly the same way, so as in fact to produce manure which at the moment of formation is of uniform quality, what are the circumstances under which that manure can be preserved with the least loss of its valuable matter? As regards the general question of the preservation of manure, I apprehend that the most important matter is its protection from air and moisture. In the way a common dung-heap is made, we have, in fact, exactly the conditions to occasion loss of its valuable constituents. It is exposed to a more or less free current of air, which facilitates the volatilisation of the ammonia as it is formed ; and it is exposed to the falling rain, which washes out the soluble salts, and what ammonia the winds have spared, into the subjacent soil. It is true that the former of these sources of loss can be got the better of by the use of acids or of gypsum and mixing with earth ; but when the ammonia is thus fixed, as it is said, it is fixed only as regards volatility, for it is still soluble, and liable to be washed away by rain. In order to have farm-yard dung in the best state, it must be preserved under cover, and my impression is that the introduction of covered dung-pits is likely to prove of great importance. There seems to me no doubt that in this way manure, in whatever way produced, must be best preserved. There appears, indeed, to be but one objection, which is, the expense of erecting a roof of sufficient extent to cover the whole manure of a farm. But surely, in these days of cheap building, some sort of inexpensive cover may be contrived. In order to ascertain this, we should have to ascertain by actual experiment what is the amount of gain by having the manure kept under cover, so as to know whether it is sufficient to leave a profit on the expense of covering it. We have another matter to attend to also, in the management of farm-yard manure—its fermentation namely, by which is meant the production of such a decomposition as converts the nitrogen present into ammonia. The importauce of this decomposition depends upon the fact that by this means we obtain a manure which acts with greater rapidity than one in which this decomposition has not been effected. The fact is, that the formation of ammonia takes place much more slowly when it has been incorporated with the soil than when it is heaped up in the dung-heap ; and, as the nitrogen must pass into the state of ammonia before it is absorbed by the plant, we require to effect as much of that change as possible, if we are to have a manure of rapid action.

He had referred hitherto solely to natural manures, and he had laid before them his view that no artificial manure would ever prove a substitute for that of the farm-yard ; but though that was the case, they might be, and he believed were, most important auxiliaries. Let them take the commonest kind of artificial manure—he meant, of course, guano—the finest quality of which was the cheapest and the best of the class. He said the cheapest and the best ; and it must necessarily be so, because the constituents which were of greatest value to the agriculturist were given in it in a larger quantity than they could be got in any other compound for the same money. His advice then would be to buy the best guano—never purchase inferior. The inferior was greatly more expensive. The decrease in the money value for which it might be obtained was nothing to the decrease in its valuable constituents as compared with the better sorts. The Peruvian was the best kind of guano, and it was by far the cheapest. Farmers were exposed to much risk of imposition in this matter ; adulteration was carried on to an extent which it is difficult to credit. He had recently gone over the number of samples of guano that had been forwarded to the office of the society for analysis to the number of 30 cases, and he found that out of that 30 there had only been 9 samples of such a quality as he himself, if purchasing, would have been disposed to accept. And this gave no accurate idea of the proportion of good to bad guano that was in use. Numerous samples of good guano came to the office, but few of those that were thoroughly adulterated, because the venders of such took care to keep as far as possible out of the reach of the chemist. Let them take guano of the best quality and they would find that two things entered largely into its composition, viz., ammonia and phosphoric acid, the two substances, as he had previously stated, the presence of which was most valuable in farm-yard manure. Now, in Peruvian guano they would find about 17 per cent. of ammonia and of phosphate of lime, a compound of lime and phosphoric acid, 23, 24, or 25 per cent, according to circumstances. In inferior guanos there might be found 23 or 24 per cent. of phosphate of lime, and 1 or 2 of ammonia ; and this, instead of being sold at one-third of the price of the other, as it should be, was sold generally at two-thirds. Guano might be considered as the type of a class of manures, and bones might be taken as belonging to it also. The value of that kind of manure was dependent upon two conditions. Some used burned bones. Now, in certain circumstances, that might be advantageous. The addition of phosphate of lime might alone be needed to certain soils. Such a case occurred in the pasture land of Cheshire. The application of bones to that exhausted soil operated almost as a charm upon it. The peculiar nature of the tillage under which it had been kept—all the butter and cheese raised upon it being conveyed elsewhere—reduced it to that state that the addition of phosphate of lime acted powerfully, and was indeed eminently beneficial. But in general such would not be the case, and therefore they should give the preference to bones that were unburned. There was another instance of a similar kind to which he might refer. In many cases he believed that bones were sold from which the glue had been extracted by boiling. This glue was a valuable commercial product. It was used in weaving, for stiffening yarn and other manufacturing purposes ; and several manufacturers had large boilers in which the glue was extracted. The bones were sold afterwards at no diminution of price from that of unboiled bones.]

Home Correspondence.

Heather as Litter : its behaviour in the Dung-heap.—As you have requested a communication on this point, I will offer you one, although it is not derived from the source you hinted at—direct experience ; yet, in its absence, may be permitted to stand in its stead. The ultimate results of the use of Heather must be as varied as the relative state of vitality or decay in which it may be when used. When alive, it is charged with a sap which is an anti-ferment ; a bog may be received as its type. If such be removed to a dung-heap, it can derive but very little advantage from its new position. If put into a dung-pit, it is likely that in process of time an interchange may take place between the bitter sap of the Heather and the alkaline urine associated with the dung. Whenever this is accomplished, the act of rotting may be said to begin, and will be more or less active in proportion to alkaline preponderance. Dung-heaps are generally "fire-fanged." Dung-pits, which receive the undiluted urinary drainage of stables, yield the richest manure ever at the farmer's command. *W. E. Gill, Truro, Aug.* 5.

Land Drainage Company.—I was very glad to see that a company is being formed to carry out the Drainage and Improvement Act of last session, and trust the company's operations will not be limited to England. Many proprietors here (in Ireland) who obtained loans under the Landed Improvement Act, 10 Vict., cap. 32, have been very much impeded in their efforts by the want of sufficient funds to build offices, make farm roads, &c., for the money obtained under 10 Vict., cap. 32, was only to be expended in drainage or subsoiling in most cases. When an increased quantity of land was brought into cultivation, or rather made fit for cultivation, it was still unproductive from want of means to lime it, from difficulty of access, or from deficient stock or farm buildings. If the company lent money on the security of owners who had been borrowers under 10 Vict. cap. 32, I think they would be safe in most cases, as there was always an investigation as to title, before money was lent under that act. If they had an inspector or local agent, I am certain they could have the tenant's security besides the landlord's. *R. M.*

Artificial Manures.—Would Mr. Paine, of Farnham, kindly inform the public what artificial manures he puts on his Oats and Barley? Perhaps he would also give his experience as to the advantage of a top dressing for Wheat—whether the ammonia might not be more profitably employed as a spring dressing instead of an autumn one. *A Young Farmer.* [In reply to "A Young Farmer," at Tonbridge, I have time only briefly to observe that I apply no uniform dose of manure to my land, but such as experience and a knowledge of some of the properties of the soil dictate to me. As regards the application of ammonia to the cereal crops, I repeat that it is of no importance in what form it is given to the soil ; therefore apply that which gives the largest per centage of ammonia for your money. This is shown also by Professor Way, in his paper "On the Power of Soils to Absorb Manure," in the last Journal of the Royal Agricultural Society ; and it is confirmed by direct experiments made by Mr. Solly, and by Mr. Lawes, also, at Rothamsted, and I have experienced the same result in my more general practice. At the present time Peruvian guano (not adulterated rubbish), giving 17 or 18 per cent. of ammonia is the cheapest source of supply. But to return to the immediate questions of your correspondent. On a field from which all the Turnips were removed, I applied a mixture of 4 cwt. per acre of wet guano dried up with soot, the analysis of which gave about 8 per cent. of ammonia ; to this I added 2 cwt. of my fossil phosphate powder. This has given me a most excellent crop of Barley ; in fact, the straw is too heavy, and very much laid. Last year, after a large crop of pulled off Swedes, I put 3 cwt. of Peruvian guano, mixed with the same quantity of phosphoric marl per acre, and the result, as I have before stated, was a trifle over 8 qrs. of Barley per acre ; and in 1848, on a field of Barley, after Swedes fed off by sheep, and top-dressed when about 6 inches high with 84 lbs. per acre of the sulphate of ammonia, mixed with 2 cwt. of phosphoric marl, we omitted a few lands in different parts of the field, and we considered that we obtained from 12 to 16 bushels more Barley per acre on the top-manured portions. Last year my Oat crop averaged full 12 qrs. per acre ; we have now just finished cutting this year's crop, and we expect to obtain an average of 14 qrs. This crop is after Turnips and Swedes, about half of which were drawn from the field. When the Oats were sown 4 cwt. per acre of the guano and soot mixture with the fossil powder was applied. The land is naturally a poor gravelly clay resting upon chalk. A neighbour of mine, upon a similar soil, after trenching it, applied 6 cwt. per acre of Peruvian guano, and his crop is about equal to my own, while another neighbour in an adjoining field to my Oats, who farms in the old-fashioned way, will not grow much above a fifth of either of our crops. I ought perhaps to add that we do not obtain a crop of weeds as well as corn, it being our object to have no trouble in cleansing our Turnip fallows. If I had pulled off all my Turnips, I should have doubled my artificial manuring for my Oats. In manuring ammoniacally for Wheat, if the soil were a clay or stiff loam I would apply the whole dose in the autumn ; if gravelly or chalky, half at the time of sowing and the remainder early in March. Read Mr. Thompson's and Prof. Way's papers in the last Journal of the Royal Agricultural Society. Mr. Lawes' expe-

rimental Wheat fields corroborate this view ; so also do my own in a minor degree. Had I time to spare (which I have not), I could describe some experiments on a field of young Hops, which minutely confirm Mr. Way's inferences on the relative power of gravel, calcareous marl, and clay to absorb ammonia. In conclusion, when we have weak spots of corn in any field, we mend them with guano in the spring. P.S Have any of your correspondents suffered from what is termed the "finger and toe blight" in their Swedes this season? My crop upon the chalk subsoil is one of the best I ever had, but that upon the lower green sand (our best Turnip land), is quite spoiled. There is not one sound Swede in 50. When I first noticed the disease I thought my artificial manuring was at fault, until I examined other fields near, well dressed with dung, and found them equally bad as my own. I understand that this disease is very prevalent through all the lower green sand formation in this neighbourhood, extending over several miles of country. *J. Manwairing Paine, Aug* 16.]

Brief Notes on the Farming of the North Riding of Yorkshire.—The Vale of Mowbray is a fine extensive valley, varying much in soil and cultivation. In the neighbourhood of Thirsk, and northward, some of the land is well cultivated, forward, and productive, while other land of equal natural capability is ill cultivated, backward, and unproductive. Why is it so? Here is much light sandy or gravelly, and some stronger land, which, from being too light and dry, or too wet, and all of it of poor quality, was formerly considered unworthy of cultivation, but which, by superior management, is producing beautiful crops of Turnips, corn, and Grass seeds, and fattening fine flocks of sheep. While, on the other hand, there is naturally better and stronger land, made so poor and unproductive by bad cultivation and want of sufficient drainage, as to be, in its present condition, quite incapable of profitable cultivation, but which, by being underdrained, subsoiled and properly laid down to pasture for a number of years, might be restored to such condition that it would then repay the expense of superior cultivation. This land, naturally strong and wet, has been made far more so by wretched mismanagement ; having been for many years wearied and worn out by sowing two white corn crops after a bad summer fallow, with very rarely, if ever, a green crop intervening. Much moor land is devoted to game, which would pay for improvement by judicious cultivation. This is evinced by a few isolated proofs, exhibited in well cultivated farms, now maintaining large flocks of sheep, and growing good crops of Turnips, &c., where formerly only a few half starved sheep and cattle strayed, and where the heath bird flew. Why then do such extensive tracts still remain in a state of Nature, in this fine farming and manufacturing county, where there are so many good labourers who would be glad of more employment on reasonable terms? Is grouse more valuable than wool and mutton in this country? Is the game more worthy of preservation than the biped? Or are black moors more pleasing to the eye than thriving plantations or more extensive woods? The North Riding of Yorkshire excels as a stock-breeding and dairying country. It contains a very large quantity of old Grass land, and that is favourable for these purposes. But hay and pasture Grass are too much relied upon, and far too much Grass is mown for hay ; it is a most expensive and unprofitable kind of food. The meadows are sadly injured by spring eatage, which throws hay-time so backward, that though it is now the middle of August it is not quite concluded, although some of the corn is ready for cutting, and some little is already cut. It would apparently be desirable to cultivate a considerable portion of the best moor land and inferior old sward, and to lay down some of the old-going tillage fields, and to substitute chopped straw, enriched with Linseed compound, for a great part of the hay, as a few superior cultivators have done here with much satisfaction. Hay-making is generally pretty well managed here, where some good lessons may be learned ; but a little more labour might frequently be employed advantageously to expedite the work ; and a similar remark may be made with respect to hoeing. More hoeing would be very advantageously bestowed upon both corn and Turnips. The latter are generally drilled and looking well, but hoed only once or twice over, instead of three or four times ; and corn is too often sown broadcast, and, when drilled, but little hoed. Many farms in this country are seriously injured by unnecessary hedges, trees, and game, and by waste of liquid and other manure, and the benefits of irrigation seem to be quite overlooked. Many of the landlords and tenants appear to be enlightened and liberal-minded men, and as such it is to be hoped they will not be offended by these notices, but that they may be beneficially attended to, coming as they do from *An Observant Farmer, North Riding, Yorkshire.*

Boxes.—I have read many letters on the advantages and disadvantages of box-feeding, which appears to rest on the use or abuse of the particular system. If an ox is placed in a shed 12 or 14 feet square, well ventilated, and sunk 4 feet below the surface of the farm yard, the liquid manure drained off into a tank, and clean bedding supplied frequently, I imagine he must be in a very comfortable position. If, on the contrary, the beast is living in a den many feet deep, undrained, and permitted to lie in his own filth, he must be in a wretched state, and one in which no sensible farmer would keep an animal, unless he wished the ox to lose instead of gain flesh. I have certainly seen animals in boxes not well attended to, and suffering from the want of clean bedding, in consequence of the expense of straw ; in this instance the plan did not answer, and the boxes were very properly converted into stalls. But oxen are not in a better case when tied up by the head, unless the dirt is constantly swept up, and removed from under them. To see them standing in rows with their hind quarters covered with manure, from being allowed to lie down in their own droppings, is a most disgusting sight, and not uncommon. Whether cows and bullocks live in boxes or stalls, success depends upon the care of the master and farm servants, in keeping them warm, clean, and supplied with fresh air. When publishing statements of the diseases prevalent amongst cattle in particular districts, it would be interesting to ascertain how many are victims of neglect and bad feeding, &c. At certain seasons of the year, when food is scarce, what a lamentable state of leanness is observable amongst the store cattle on a farm—every rib may be counted, the hide is immovable and almost without hair. Half famished animals are more liable to disease when fed up for the market, than they would be if some little flesh had been kept on their bones. The sudden change from starvation to plenty brings with it many maladies. *Falcon.*

New Mode of Harvesting Grain.—The season of the year, and the article on harvesting in your Number of the 3d inst., both recal to my mind the subject on which I addressed you on a previous occasion—vide vol. for 1849, p. 474, July 28. You may remember that I then suggested a trial of harvesting only the ears of the corn crops, the straw from which the ears had been cut off in the field being stacked in any place most convenient for its subsequent employment, either as food or litter. My idea was so far taken up by an engineer in Devonshire, that he proposed to exhibit a machine at the late Exeter meeting for taking off the ears as the corn was reaped, and the machine was entered in the catalogue ; but on enquiry in the show-yard I found it had not been completed in time. Could this sytem be adopted, it would obviate the objections stated by your correspondent in your Number for the 3d inst. to the reaping of Wheat. Since I addressed you before, I learn that my plan was adopted some years ago by a farmer when incendiary fires prevailed, when for safety he decapitated his Wheat sheaves by means of an old scythe-blade, and stored the ears in his barn. Also I learn from a gentleman who was for some time travelling in Australia, that in part of that country where labour was very scarce, a machine was employed, pushed forwards by a horse, which travelled through the fields of corn, plucked off the ears as they grew, threw them into a receptacle, and I think rubbed out the corn at once as it travelled along. In this case the straw not being wanted for dung was left standing, and I suppose set fire to or ploughed in where it grew. I think, too, the Romans had a reaping machine on the same principle, which is mentioned in the interesting article in the "Quarterly Review," "On the Agriculture of the Ancients." Allow me, then, again to invite the attention of gentlemen disposed to make experiments for the advancement of agricultural knowledge to the important saving in harvest work, and in the subsequent operations of separating the corn from the straw, if a ready means could be applied of taking off the ears and storing them alone under cover without the useless incumbrance of the straw. Our ingenious mechanics might also perhaps apply their skill to the production, at the approaching exhibition of all nations, of a machine adapted to cut off the ears from sheaves of corn as they were brought to it from the reaper's hand. To tax our horse or steam power with the useless labour of driving through a threshing-machine a vast quantity of straw, only to spoil it, seems a very rude and primitive mode of proceeding ; a relic of treading out the corn by animals, or of threshing by flails. We must go a shorter way to work soon, I feel persuaded. *T. T.*

Bread.—Some regulation is much wanted to compel bakers to make their quartern loaves of a certain weight, so that the labouring man may know what he is entitled to for his money. It is astonishing the difference there is in the size of the loaf of one shop and that of another, although both profess to sell the same description of bread. Notices appear in the windows of shops, offering the quartern loaf at prices which seem reasonable till the bread is weighed on the second day, when it is discovered to be deficient by some ounces of 4 lbs. It may be said that men are not obliged to deal with individuals who cheat them ; yet, in a manner, they are under the necessity of submitting to the imposition, and thus it happens. Working men, who are out of employment, or who do not receive their wages regularly, are driven to the shops of persons who will trust them, and, to obtain this advantage, they must receive bread without inquiring about the weight ; the indulgence, such as it is, will not bear investigation. Many huxters sell beer as well as bread ; thus enticing their unfortunate customers to entangle themselves irretrievably in debt, bringing misery on their families and ruin on themselves. In consequence of the poor man having to live from hand to mouth, and not being in possession of ready money to take advantage of wholesale prices, he pays one-third more for most consumable articles than his neighbour who can command a few shillings to lay out in a stock of tea, sugar, Potatoes, bacon, &c. It is wonderful that the spirit of the labourer is not broken (I mean the hard-working animal), who knows well enough how circumstances are against him, and yet toils on with little hope or prospect of bettering his condition, whilst he sees the idle and profligate flourishing. Indeed, it is extraordinary to think how many able-bodied youths, from 17 to 25 years of age, live without scarcely ever performing a day's work. They must exist on plunder of some sort. A strict police, and summary punishment before a couple of magistrates, in the shape of a severe flogging, would check such marauders. *Falcon.*

On Farm Buildings.—A very valuable improvement has been lately suggested in the erection of farm buildings, that the whole area be roofed over like the terminus of a railway. This idea is very little known, and will, no doubt, have to contend with much opposition. It will protect the animals, prevent the heavy rains from injuring the dung, and protect the manure from being dried on the surface by the hot suns of the early summer. For such roofs, corrugated iron is the most proper, as its own strength will stand over a moderate width, and it does not require any supporting substance on which to be laid. The asphalted felts are combustible, and require an under roof, on which they are fixed, and on both these points they are inferior to the corrugated iron. The three wings of the farmery will be roofed over with the thin iron, at the common elevation, in covering the width of 20 feet over walls ; three rows of roofing will cover the interior of the farmery, and may range north and south, and will rest on cast-iron pillars, which are placed in the subdivision walls of the feeding yards. The roofing can extend over the rickyard and the railway, and place all under one roof. If agriculture would look to the mighty, and at the same time the very convenient joint performances of machinery and railways, it would quickly perceive that many useful modifications of their utility might be introduced into the practical operations of its own departments. It may be very reasonably proposed, that all the articles of agricultural produce, which are changed in form for the purpose of being used, should be placed on the second floor of the farmery, or carried to it, and hence let down in the prepared form in the places where they are wanted. When it is preferred to cut the Turnips into slices and the hay into chaff, and when the incontestible improvement comes into use of cutting all straws that are used for litter—then it is evident that all the articles in the crude form must be placed on the higher floor, and descend from it in the prepared condition. In the improved use of threshing machinery, the unthreshed grain is raised from the ground-floor to the feeding board by means of a travelling carrier that is driven by the machinery ; or it may be carried from the ricks to the second floor on a high railway, that is placed to the necessary height. The grain from the ricks is laid upon a light waggon, which runs upon the railway to the feeding board. The power of steam will drive machinery to almost any extent ; and cutters may be placed on both sides of the engine for the purpose of cutting the straw, hay, and roots. The straw may be taken as it falls from the shakers, and put into the adjoining cutters of the kind to cut it into lengths of 3 or 4 inches for the purpose of litter. The hay may be cut into chaff by cutters closely adjoining. On the other side of the engine the roots may be cut by a similar application ; and can be raised to the box of the knives by a narrow travelling carrier from the ground floor, and in quantity as the cutters are able to manufacture. The cut food may be laid in stores, whence it can be carried in light waggons on railways to the required places, and let down in spouts. The railways for this purpose must run to the necessary positions for feeding cattle and horses, and for strewing litter over the yards. It is a good thing to have a railway on the ground between two rows of ricks, on which a waggon conveys the grain to the lower floor of the barn, whence a travelling carrier raises it to the second floor, where the machinery receives it to be scutched. A suggestion not much different, places the railway between the rows of ricks on cast-iron pillars, that stand at the height of the second floor of the machinery, and on which the grain is carried by a waggon to the feeding board. A third idea may be published, that the ricks of grain stand singly on four-wheeled platforms resting on a branch railway at a sharp angle of divergence with the main trunk, which leads to the threshing barn. When the rick is wanted to be threshed, the platform is run along the railway which inclines gently to the barn, where an outside shed receives the rick under cover from rain, during the time of threshing. The barn stands across the railway, and receives the rick without the labour of turning such a heavy body to a cross direction. The platforms are returned to the position on the branch railway, in order to receive a rick of the next year's growth. The ricks and machinery are covered by the corrugated iron roof of the farmery extending over them. The suggestion of having a second floor over the entire area of farm buildings, on which to perform all the manufacturing work in the preparation of the different articles for use, may be reckoned a chimera, or a wild sally of the imagination, and with it will be classed the idea of placing each rick of grain upon a four-wheeled platform, and running them entire to the barn, as each may be required to be threshed. But from a due consideration, there certainly appears nothing improbable in the feasibility of its adoption, and nothing impossible in the application and execution of the various parts of the composition. It is only an extension of the principle that has already been used on a minor scale and for smaller purposes. *J. D.*

Mangold Wurzel.—This root is now beginning to be more extensively cultivated in South Hants; not that the Swedish Turnip is a root less esteemed, for it is unquestionably one of the most valuable to the farmer;

cows, pigs and horses, poultry, and even dogs will eat thereof. The Mangold Wurzel this year has failed in many places, partly from the dry weather, and in part arising from bad management. In the first case the seed was deposited too shallow, and in the latter instance it was drilled upon the flat. The fly was said, also, to have destroyed the plant. This year I noticed the attacks of it for the first time; but the plants recovered, and are now looking well and strong. I fancy the fly has been wrongly charged with this crime, and the failure entirely arises from not depositing the seed in moist earth. Where the land is clean, well pulverised, and the seed carefully deposited, there is no failure; and I may add, let the crop be sown before the month of May. There is no question but "baulking" and dibbling is the surest and best method of raising this root. Even where short or long farm-yard manure is applied to the drills, a mixture of guano and ashes, or sifted short dung, dropped with the seed, will secure a regular and more even plant. By this method we have a fine plant; and even where only dung was applied in rows, and the seed drilled upon the top of the "baulks," and then rolled down, I have seen an excellent crop this year. *X. Y. Z., Hants.*

Agricultural Prints and Drawings.—Surely in 1850 an artist ought to be able to draw a plough, a harrow, or a yoke of oxen or horses when "hatched" (which, no doubt, means "attached") to a plough; but when any operation of farming is introduced into a drawing of rural scenery, and fields, the horses are wrongly yoked, or walk in the wrong furrow, or are passing up the wrong side of a ridge. The plough is all wrong, the harrows no one could imagine by whom made, save and except the painter. The furrow slices are laid all one way in a ridge. Divers other curious deviations or misrepresentations of our implements of peace might be added; but I really think that we who live in the country, love the country, and admire the "gear" of the husbandman, should have the pleasure of seeing it properly and faithfully delineated. *X. Y. Z., Hants.*

Land Improvement Company.—You allude in your last Number to the Land Improvement Company. I have obtained a copy of their act of incorporation, and am surprised at the extensive powers conceded to that company—powers which the House of Commons distinctly refused with reference to the improvement money proposed to be lent by Government. I allude more particularly to the power of erecting buildings, without which, in many cases, all other improvement is incomplete. This Land Improvement Company, if properly worked, will confer very great benefits upon agriculture. I have no doubt that the proprietors of entailed estates will be most anxious to avail themselves of its provisions. I am not so sure that the money will be forthcoming. After what has happened within the last 10 years, capitalists are naturally suspicious of joint stock companies. If you will draw public attention to the provisions of the Land Improvement Act, and to the advantages it offers as a pecuniary investment, you will do good service to the cause of agricultural improvement. *Rusticus.*

Manure for Grass Land.—I was anxious to know what quantity of Grass could be procured by stimulating manures, by experiment. This experiment has been made on 100 superficial yards of Grass land; and by manuring after every crop, I have mowed five times, and have had each time as much Grass on the land as what there usually is when persons mow for hay. The manures I made use of were pounded charcoal, malt-dust, muriate of ammonia, sulphate of magnesia, and nitrate of soda. The salts were put on in a liquid state, 2 oz. to each yard. I mowed the fifth time on the 10th of August. The land is by no means good land on which this experiment was made, and which is not yet completed. These manures will give to very poor land the appearance of very good land, as long as their effects last. *C. A. A. Lloyd, Whittington, Oswestry.*

Farm Memoranda.

Farming at Ury, N.B.—I felt the more satisfaction on reading the details on high farming, as it is termed, by Mr. Baker in his address to the London Farmers' Club, as they correspond in a great measure with my own practice. Some few things I differ with him on, such as devoting the whole of the farm-yard manure to grain crops and depending on artificial manures for the raising of green crops. I shall presently show that my practice is the reverse; but most of all do I object to his rotation of cropping, where he speaks of taking Oats or Barley after Wheat. The taking of two grain crops in succession, without the intervention of a fallow or green crop, has long been denounced in this country (Scotland) as contrary to the rules of good husbandry, and the tenants in their leases (for all farms in Scotland are let on leases of not less than 19 years) are prohibited from doing so. I have now been a practical farmer, farming my own property on a large scale, for nearly half a century; for the last 30 years I have devoted my whole energy and attention to the business, and certainly cannot be taxed with committing the details of the operation to others. Now, my mode of management is this: I follow a rotation of five on some farms, on others, of particularly good land, of seven—Oats, Turnips, two-thirds fed off on the land, Barley and spring Wheat sown out with seeds, and two years in Grass, for the most part gnawed with Leicester sheep; or Oats, Beans, and Peas drilled and manured, Wheat, Turnips, Barley with seeds, and two years in Grass. I give the whole of my grain crops a stimulus of 2 cwt. per acre of Peruvian guano, and apply the whole of my farm-yard manure to my green crops, with an addition of guano or bones. No doubt a good fair crop of Turnips may be raised by artificial manures, but you cannot raise anything like the same weight per acre as with 18 or 20 tons per acre of well-made farm-yard manure. I keep all my beasts in winter in straw yards, divided in lots of 10 to 15; these yards are surrounded with covered sheds 20 feet wide within walls, and with mangers for feeding with cut Turnips, &c., and spouted round. About the first week in February I clean out the whole of my yards, carting the manure to the most distant part of the farms intended for Turnips, drawing the horses and carts upon the mound, and, when completed, giving the mound a covering of earth on the top. It thus remains until about three weeks before it is applied to the land, when it is carefully trenched over, and soon takes a fermentation, and the operations of setting out the drills, covering in the drills, and sowing the Turnips, all go on at one and the same time. The manure made after February remains in the yards until the cattle are turned out to Grass about the 1st of May, when it is loosely thrown up, and devoted to the green crops nearest the farm steadings. I have about 800 acres of fine old pastures, laid down by my father more than half a century back, consisting of the best land upon the estate; one-half of this I retain in my own hands, the other half is let by auction yearly for the grazing season—that is from the 1st of May to the 1st of November. It then reverts to me, and generally lets at about 3*l.* per acre. The cattle are turned on the old pasture, and I devote the one and two year old Grass on my arable farms to my Leicester flock, until about the 1st of November, when the ewes are sent on the old pasture for the winter, the hogs and others put on Turnips, and the cattle removed to the straw yards. I know not whether Mr. Mechi and other great doctors of the present day will style this system high or low farming, but this I do know, that last year I would have readily backed 100 acres of Turnips, composed of Swedes, yellow and Northumberland Globes, against any hundred acres in the kingdom in one man's possession. I now come to the main question, does this pay? The price of Oats last spring and this summer is, in this county, about 13*s.* per qr. of 40 lbs. per bushel—8*d.* per bushel additional for all above that weight. Barley, 53 lbs. per bushel, 16*s.*—8*d.* additional per bushel above that weight. Wheat 30*s.* to 35*s.* per quarter of 62 lbs. per bushel—1*s.* per bushel above that weight. The farm I now occupy, when on lease, and farmed in a fair manner, some years back made a return, I shall say of Oats of about 5 qrs. per acre—that at the average price, under Protection, of 24*s.* per qr. or 18*s.* the Scotch boll of 6 bushels, paid about 6*l.* per acre. By furrow-draining, subsoil-ploughing, and the application of 2 cwt. per acre of guano, I have increased my Oat crops to 8 qrs. per acre, and other grain crops in proportion. Well, 8 qrs. of Oats at 13*s.* gives a return of 5*l.* 4*s.* per acre. Deduct 1*l.* per acre for guano, and 5*s.* per acre for interest of money for furrow-draining, reduces the return to 4*l.* per acre. I am thus 2*l.* per acre worse than with the moderate return of 5 qrs. per acre under Protection, which, in point of fact, is 10*s.* per acre more than the valued rent of the farm. *R. Barclay Allardice, in Bell's Weekly Messenger.*

Mr. Owen's Farm, near Liverpool.—Mr. Owen's farm, Lower house, West Derby, near Liverpool, contains 153 acres. The soil is a strong brown loam of a fair depth, and resting on a stiff clay subsoil. The farm has a slight inclination to the east, and the elevation above the sea, perhaps 50 feet. This year it is occupied in the following crops.

	A.	R.	
Old meadow and pasture	10	2	very good and clean.
Clover and seeds mown	68	2	ditto ditto.
Wheat after Potatoes & Turnips	32	2	very heavy & clean crop.
Oats after Ley, 7 acres } do. do. Wheat 13 „ }	20	0	ditto ditto.
Potatoes, 7A. 1R. } Turnips, 9 1 } Beet, 2 0 } Green Crops	18	2	exceedingly clean and well ordered.
Orchard and Garden	1	2	well kept and fruitful.
Homestead and roads	1	2	good order and neat.
	153	0	

Rotation of crops, 1st Potatoes, Turnips, and Beet, after Grass or Oats; 2d, Wheat, one-third sown with Clover and Grass seeds; 3d, one third Clover and Grass seeds mown, and two-thirds Oats, sown with seeds; 4th, 5th, and 6th, cut for hay. Stock kept are 7 horses, 1 bull, 14 dairy cows, improved short-horns, 5 pigs, total 27. In September and October, every year, grazes from 100 to 200 sheep on after-grass. In summer the stock is kept on pasture, or Clover in the stall, grains, and Egyptian Beans. In winter on hay, grains, Turnips, small Potatoes, Beet, oilcake and a little bran. About 200 tons of manure is made on the farm every year, which is principally applied to the Potato, Turnip, and Mangold Wurzel crops; and the remainder to meadow. Purchases about 600 tons of stable dung, at Liverpool, at a cost of 6*s.* per ton, exclusive of carting. This is mostly applied to the meadows. Has drained the whole of the farm since he entered upon it, 15 years ago, at the rate of 10 acres a year. The drains average 6 yards apart and 3 feet deep. The main drains are open stone drains, and the parallel ones filled 1 foot with cinders. The whole cost about 7*l.* per acre. 14 acres have been marled with 100 cubic yards per acre. The general improvements have been road making, filling up pits, draining, eradicating old fences, planting new ones, and erecting buildings. Mr. Owen's farm lying near Liverpool (5 miles) a considerable portion of the hay, straw, and roots are disposed of there, and manure purchased in return. There is no urine tank upon the premises; but all the liquid manure is carefully collected and thrown over the dung heaps, and other absorbants at intervals, which Mr. Owen considers quite answers as good a purpose, the manure being of far greater value than if the urine were drained into a tank. The land, when sown down, lies three years and mown every year, but has two dressings of dung, or compost during that time. The farm has been remodelled: not a vestage of any old fence remaining. New thorn fences have been planted, and which are well kept. The fields are large and of an oblong square, with pools constructed so that each will serve four fields, with a constant supply of water from the drainage into each. The ditches and water courses are clean and open. Carriage and cart roads, gates, posts, foot paths, styles, farm yards, &c. in perfect order. The following is thought worthy of recording, although no premium was awarded. There is very considerable merit in the cultivation of the farm, and in some respects peculiar. So far as the arable part, quite equal to Mr. Owen's farm, but a little deficient in the Grass part. It is owned and occupied by J. I. Blackburne, Esq., of Hale hall; the farm is within the park, and under the management of Mr. Nixon. It consists of 236 acres; lies on the banks of the Mersey, 10 miles from Liverpool. Is very gently undulated, but every part so far above high-water mark as to afford sufficient fall for perfect drainage. The soil is light sand and peaty loam, and the subsoil on some parts sand, and on other parts clay and sand. In 1849 was cultivated as follows.

					A.	R.	P.
Old meadow and Pasture					92	0	0
Clover and seeds mown					45	0	0
Wheat after Potatoes			9	0 0 }			
do. after Turnips and Beans			11	0 0 }	20	0	0
Oats after ley					24	0	0
Barley after Turnips, &c.					12	0	0
Beans	5	0 0					
Peas and Vetches	2	0 0					
Potatoes	20	0 0					
Turnips	10	0 0	Total Green Crops		41	0	0
Beet	2	0 0					
Carrots and Cabbage	2	0 0					
Homestead, roads, &c.					2	0	0
					236	0	0

The rotation adopted is 1st, Oats after Clover or Grass; 2d, green crops cultivated in drills; 3d, Wheat or Barley; 4th, Clover and seeds mown; 5th and 6th, pasture. The stock kept consists of 8 horses, 25 colts (ley stock), 3 bulls, 12 dairy cows, improved short-horns, 100 heifers (ley stock), 5 calves, 100 sheep, 40 pigs; total 293. The horses are fed on steamed food in the winter, and green food in the summer, with one bushel, each, of crushed Oats and Beans per week. From 300 to 400 tons of manure is made every year on the farm, and which is entirely used for green crops. The liquid manure is received in tanks, and carried by water-carts to the meadows. From 8 to 10 tons of guano, bones, and superphosphate of lime is purchased annually, and chiefly used to Grass land, Turnips, and early Potatoes. About 100 acres have been drained with tiles, the drains from 3 to 5 feet deep. A considerable portion of the land is old Grass, and occupied in grazing stock. The herbage of some portions of this might be much improved, both in quantity and quality, by the application of marl, or sea sludge (which lies convenient), lime, or bone manure. All these improvers have been applied to portions of it, and they all appear to answer well. Some parts of the farm, which had been old Grass, and unproductive, has been very much improved by breaking up, and undergoing a judicious course of cropping, and then laid down again to Grass. The management of the arable part of the farm could not well be better. The corn crops were all very heavy and very clean, the Barley too good. The Beans an average crop and tolerably clean. Potatoes, Turnips, and Beet looked exceedingly well when inspected in August, very clean and well ordered. Cabbages a heavy crop and ready for cutting. A considerable breadth of early Potatoes are planted, which are sent early to market, and the land afterwards either planted with Swedes or sown with yellow Turnips; 1½ acre of Potatoes early disposed of produced 70*l.*, and, on the same land a promising crop of Swedes was growing when I and Mr. Dixon inspected the farm. On other portions where the Potatoes had been sold off later, healthy crops of yellow Turnips were growing. The fences, roads, &c. were well kept, and there is little doubt but a fair and favourable balance sheet could be shown. *Rothwell's Agriculture of Lancashire.*

Miscellaneous.

Small Farm and Agricultural Schools.—In the "Farmer's Herald" of January, 1844, I wrote the following account of the management adopted upon a small farm in this county, upon the principle of green crops and Grasses, without any grain. It is occupied as a small agricultural school, and is situated in the township of Orrel, near Wigan; and in the occupation of the Rev. John Holgate. Since this was written it has changed ownership once or twice, during which transitions it has been for a few years rather neglected, owing to insecurity. It is now, however, under sufficient security of tenure, and the same principles of cultivation are adopted. I insert it not only as an example of superior management, but also as showing

in what manner the rising generation of small farmers and agricultural labourers may be instructed in the rudiments of a plain education, combined with a knowledge of their calling in life. The farm contains 7 statute acres, including the sites of buildings, yards, &c. The land is light, and was a few years ago very poor, and is not of the best description of light soils. In these 7 acres there were, 12 months since, a coalpit and a road quite across the farm; these are now quite done away with, and their sites, by very considerable labour, made into cultivable land, so that the whole farm will be under full cultivation next year. The following is the amount of produce this year:—Five short-horned milch cows have been kept through the summer. On the 14th of this month there were, on the premises, 6 tons of hay, 7 tons of Mangold Wurzel, and 18 tons of Swedish Turnips. This produce will keep the same cows well till June 1st next year, as it will afford each cow the following weight of food each day—15 lbs. of hay, 18 lbs. of Beet, and 47 lbs. of Turnips; total, 80 lbs. each. There are also several cwt. of prime Onions which will go to the market, and, in the course of the season, there has been 15*l.* worth of early and late Potatoes sold off the land, and the family of the master supplied with vegetables the whole year. The cows are kept the year through in the stall or yard: in the summer with Italian Rye-grass and a little Clover amongst it; and in the winter, on hay and roots. 1st, root crops; 2d, Grass, sown after the root crops; 3d year, Grass. Of course the land will be ultimately one year in roots, and two in Grass. No grain is cultivated. The cultivation adopted is as follows: In the winter, the second year's Grass is pared off. This is trenched under, and the bottom of every trench is loosened by a fork, so that about 18 inches of soil and subsoil is stirred. In the spring a part is planted with early Potatoes, a part with late Potatoes, and the rest sown with Beet and Swedish Turnip. When the early Potatoes are cleared off the land, by about the middle of July, it is sown with Italian Rye-grass, and is cut once the same autumn. This part can be cut four times the year following, and twice or three times the second year. The land which grows the late Potatoes, Turnips, &c., is sown with Italian Rye-grass in the spring following (March), and is cut twice that year, and occasionally three times. Dung is applied to the root-crops in drills, as they are cultivated by that method, and kept clean by the hoe and the spade. The liquid manure is applied to the second year's Grass. The labour is all performed by hand, with the boys of the school, except a few particular jobs, which are done by men. The master of the school assists at the labour, and has all the management of the land and the school. The boys, whether in trenching, delving, or hoeing, having each their lot to work upon, so that an idle boy is soon detected. Parents and guardians of boys in this school are expected to enter them for 18 months, on the condition of the following rules:—1. The boys are to be in the school three hours each day during six days of the week, and three hours at work on the land. 2. In the school they are to be taught reading, writing, arithmetic, English grammar and geography; and, in addition to Scriptural instruction, they will be taught the best methods of cultivating land. 3. During the first three months the boys received their instruction as a remuneration for their work; the second three months they are to receive 6*d.* per week in addition to their instruction, and an advance of 3*d.* per week at the beginning of each succeeding three months. 4. Any boy being absent from the school, without permission from the master, shall for each half day forfeit 1*d.*, to be deducted from his wages. *Rothwell's Agriculture of Lancashire.*

Notices to Correspondents.

ABORTIVE EARS: *Cymro.* We are unable to account for the case. If the grain was pulpy, the disease must have shown itself much earlier, and more abruptly than it generally does. For with us, this blight generally approaches so gradually, that the grain dries up before half formed, and the whole plant turns white but little before the general ripening of the crop.

BONE-STEAMING: *A G.* In further reply to "A. G.'s" enquiry, the steaming is continued 24 hours, the maximum pressure (at the safety valve) 28 lbs. on the square inch. The details, with a cut of the apparatus, are given in No. 27, Jan., 1850, of the Scotch Quarterly Agricultural Journal, p. 193. *J. Prideaux.*

CHINA GEESE: *A H.* We do not remember the advertisement alluded to. For profitable increase of young there is no goose to compare with the common domestic kind of a good stock. The China geese, both white and brown, are copious layers, and the goslings, when hatched, are as easily reared as any others, but they are less to be depended on for the fertility of their eggs, and as steady incubators. If these be selected for their ornamental value, take care to purchase healthy *young* birds, and let no other gander associate with them, either in their pasture or the water to which they have access. *D.*

CHICORY: *Upsilon.* Sow early in May 3 or 4 lbs. of seed, in rows 12 inches apart, in deeply, cleanly, and richly cultivated land. Keep hoeing between the rows, and single out to distances of 6 or 8 inches in the rows. The seed does not "come" for four or five weeks, therefore sow some Oat or Turnip seed with it to mark the rows, in order that you may hoe earlier than you otherwise could. The crop is taken up in October and November, washed, cut in small pieces, and dried in a kiln, which takes 7 or 8 out of the 9 tons of which the crop per acre may consist. It is then marketable, and may be sold to any dry-salter or wholesale grocer for perhaps 20*l.* per ton.

DRAINAGE OF SHALLOW PEAT: *F H C.* We do not see anything in the variety of the strata, to render any change in the ordinary practice necessary; and we should therefore place the drain about 3 feet 6 inches deep, and about 24 feet apart, using 2 inch pipe tiles.

FOOD FOR STOCK: *D.* Vetches sown now, if they had favourable circumstances, would be ready, though hardly full grown, before winter. Clover sown now would be ready in May or June next. Cattle will not eat Fern.

IMPLEMENT CATALOGUE AT EXETER: *J E G.* You had better apply to the Secretary of the English Agricultural Society.

LIME: *P.* To add lime in the autumn to land manured in spring is not bad policy. It would not be easy to burn clay on the top of lime kilns; because the operation of burning lime is a continuous process, a continual addition at top and an abstraction at foot of kiln.

MALT WASTE: *Thos. Jones.* It is useful as *food.*

PERUVIAN BARLEY: *W G E.*, who has this season given this sort of Barley a trial, and whose crop has greatly suffered from the effects of the late frosts, would be glad to know if others have suffered from the same cause, and how this sort of Barley is generally looking.

PIGS: *A B.* Porkers, 20 weeks old, ought to be worth more than 22*s.* 6*d.* a-piece. Stone Turnips may be 8 or 16 tons per acre, and they may last through a mild winter, or be destroyed by the first severe frost; it is therefore impossible to answer your question. Nevertheless, you may make a tolerable guess yourself, by calculating the consumption of sheep at a quarter cwt. daily a-piece.

POULTRY: *J F.* Mr. Dixon's work on poultry describes the subject in the manner of a naturalist, as well as in that of a poultry keeper. It does not contain anything on rabbits. The "Boy's Own Book" is, perhaps, sufficiently instructive on that subject.—*Country Curate.* Chickens confined in a yard may be permitted to eat Lettuce freely, or any other garden vegetable, as Cabbage, Spinach (ran to seed), &c., provided they are at the same time supplied with as much as they will take of grain or mixed meal food. Give them now and then, as a treat, a green turf, like those cut for larks' cages, only larger. *D.*

POULTRY DISEASE: *I J F.* Your "case" has been sent to "*D.*"

SWEDISH TURNIPS: *W G.* We have heard a good deal of the injuries they are receiving by wireworm. In the North they have an excellent crop. We cannot say whether there is generally an over tendency to grow leaf rather than bulb.

THE EPIDEMIC: The disease no doubt is "The Epidemic" of 1840. Give each the following, dissolved in gruel:—Sulphate of magnesia, ½ lb., sulphate of potash, 1 oz., nitrate of potash, 6 drs., tartarised antimony, 2 drs., and repeat the following day. Apply to the sore feet the following lotion, keeping the parts clean:—Sulphate of zinc, half an ounce; alum, 1 ounce; water, one pint. *W C S.*

TURNIP GROWING: *Anti-humbug* makes an unreasonable criticism. We are by no means indiscriminate admirers of Scotch farming.

WHEAT MIDGE: *A Correspondent* asks for information on this subject. We beg to refer him to vol. ii., Journal of Royal Agricultural Society, p. 22, &c., which refers to what was previously known, in a report on the diseases of Wheat, 1841; vol. iii., do., p. 36, a few additional memoranda towards elucidating their history, and a suggestion how to diminish their ravages, 1842; vol. vi., p. 139, a full account by J. Curtis; *Gardeners' Chronicle* for 1847, p. 604. These accounts leave the *practical* part of the question much as it was left in 1842, but the next step in the inquiry has been made on the other side of the Atlantic, and you will find it recorded in "Annals of Natural History" for February, 1850, p. 152.

Markets.

COVENT GARDEN, Aug. 24.

Vegetables are abundantly supplied; Hothouse Grapes and Pine-apples plentiful. The supply of Peaches and Nectarines is well kept up. Gooseberries fetch from 2s. 6d to 3s. 6d. per half sieve. Oranges and Lemons though scarcer are sufficient for the demand. West Indian Pine-apples are not quite so plentiful as they have been. Plums and Pears are still received from the Continent. Filberts are coming in very plentifully. Carrots and Turnips may be had at 3d. to 6d. a bunch. Potatoes are plentiful and cheap. Lettuces and other salading are sufficient for the demand, and so are Mushrooms. French Beans are scarcer. Cut Flowers consist of Heaths, Pelargoniums, Lily of the Valley, Carnations, Picotees, and Roses.

FRUITS.

Pine-apples, per lb., 4s to 6s
Grapes, hothouse, p. lb., 2s to 5s
Peaches, per doz., 4s to 15s
Nectarines, per doz., 4s to 15s
Apricots, per doz., 1s 6d to 5s
Cherries, per lb., 1s to 1s 6d
Melons, each, 2s to 4s
Gooseberries, per half sieve, 2s 6d to 3s 6d
Currants, p. half sieve, 3s to 4s
Raspberries, p. pottle, 4d to 6d
Plums, p. punnet, 1s to 1s 6d
Green-gages, do., 1s to 2s
Apples, dessert, p. bush, 4s to 8s
— kitchen, do., 1s 6d to 6s 6d
Lemons, per doz., 1s to 3s
Oranges, per doz., 2s to 3s
— per 100, 8s to 24s
Almonds, per peck, 6s
— sweet, per lb., 2s to 3s
Walnuts, p. 100, 1s 6d to 2s
— p. bush., 16s to 24s
Nuts, Barcelona, per bush., 20s to 22s
— Brazil, p. bsh., 12s

VEGETABLES.

French Beans, p. sieve, 3s to 4s
Cabbages, per doz., 6d to 1s
Cauliflowers, p. doz., 2s to 4s
Peas, per sieve, 3s to 6s
Beans, per sieve, 1s 6d to 2s
Sorrel, p. hf. sieve, 6d to 9d
Potatoes, per ton, 50s to 80s
— per cwt., 2s 6d to 4s
— per bush., 1s 6d to 3s
Turnips, per doz. bun., 2s 6d to 3s 6d
Red Beet, per doz., 1s to 2s
Cucumbers, p. doz., 1s to 6s
Leeks, per bunch, 1d to 2d
Celery, p. bundle, 10d to 1s
Carrots, per doz., 3s to 5s
Spinach, p. half sieve, 1s 6d to 2s
Onions, p. bunch, 2d to 6d
— Spanish, p. doz., 1s 6d to 4s
Shallots, per lb., 6d to 8d
Garlic, per lb., 4d to 8d
Artichokes, p. doz., 2s 6d to 3s
Vegetable Marrows, per doz., 6d to 1s
Lettuce, Cab., p. sc., 2d to 1s
— Cos, p. score, 6d to 1s 6d
Radishes, p. 12 hands, 9d to 1s
Small Salads, p. punn, 2d to 3d
Horse Radish, p. bdl., 1s to 4s
Mushrooms, p. pot., 9d to 2s
Fennel, per bunch, 2d to 3d
Savory, per bunch, 2d to 3d
Thyme, per bunch, 2d to 3d
Parsley, p. doz. bun., 1s to 2s
— Roots, p. bdle., 9d to 1s
Marjoram, per bunch, 3d to 9d
Mint, green, per bunch, 2d
Watercress, p. 12 bunch., 6d to 9d

COAL MARKET.—Friday, Aug. 23.

Holywell, 14s.; West Hartley, 13s. 9d.; Wallsend Braddyll's Hetton, 15s.; Wallsend Haswell, 15s. 6d.; Wallsend Hetton, 15s. 6d.; Wallsend Lambton, 15s.—Ships at market, 148.

HAY.—Per Load of 36 Trusses.

SMITHFIELD, Aug. 22.

Prime Meadow Hay	70s to 76s		Clover	70s to 84s	
Inferior ditto... ...	55	65	New Clover	65	75
Rowen	—	—	Straw	25	28
New Hay	60	75		J. COOPER.	

The supply short, but quite equal to the demand.

CUMBERLAND MARKET, Aug. 22.

Prime Meadow Hay	70s to 75s		Inferior	60s to 70s	
Inferior ditto... ...	50	65	New Clover	60	70
New Hay	50	65	Straw	26	30
Old Clover	75	80		JOSHUA BAKER.	

WHITECHAPEL, Aug. 22.

Fine Old Hay ...	68s to 72s		New Clover	70s to 75s	
Inferior ditto ...	—	—	Inferior ditto... ...	—	—
New Hay	55	65	Straw	24	28
Old Clover	78	85			

HOPS.—Friday, Aug. 23.

Messrs. PATTENDEN and SMITH report that there is a good retail trade for the few 1849's left unsold, but not much inquiry for other sorts. Another packet of the new growth has arrived, which is much better than the last, although very unripe. The price asked is 8*l.* 8*s.* Duty 200,000*l.*, with little disposition to back it, the nights being very cold and unequal.

SMITHFIELD, Monday, Aug. 19.

We have fewer Beasts to-day; however, the demand is less, and trade is no better than on Monday last. The supply of Sheep is not quite so large. Trade is cheerful, at fully late rates. Trade is heavy for Lamb; our top quotation is reached only in few instances. Calves are not so plentiful; some choice ones make a little more money. From Holland and Germany there are 763 Beasts, 2330 Sheep, and 155 Calves; from Scotland, 200 Beasts; and 2200 from the midland counties.

Per st. of 8 lbs.—	s	d	s	d
Best Scots, Herefords, &c.	3	8 to 3	10	
Best Short-horns	3	6 — 3	8	
2d quality Beasts	2	10 — 3	4	
Best Downs and Half-breds	—	... —	...	
Ditto Shorn	4	0 — 4	2	

Per st. of 8 lbs.—	s	d	s	d
Best Long-wools	...	to	...	
Ditto Shorn	3	6 — 3	10	
Ewes & 2d quality	...	—	...	
Ditto Shorn	3	0 — 3	4	
Lambs	...	4 0 — 4	8	
Calves	...	2 8 — 3	8	
Pigs	...	3 0 — 4	0	

Beasts, 3701; Sheep and Lambs, 29,350; Calves, 248; Pigs, 200.

FRIDAY, Aug. 23.

The supply of Beasts is considerable, so also is the demand. Prices are the same as on Monday. The number of Sheep is large, but the average quality is by no means good; consequently the choicest descriptions are as dear as of late; trade is slow for second-rate. Lamb is lower, the season for it being far advanced. Calves are plentiful; they make about the same as on Monday. From Germany and Holland there are 414 Beasts, 3060 Sheep, and 324 Calves; from Scotland, 100 Beasts; 300 from the midland counties; and 92 Milch Cows from the home counties.

Best Scots, Herefords, &c.	3	8 to 3	10	Best Long-wools	... to ...
Best Short-horns	3	6 — 3	8	Ditto Shorn	3 6 — 3 10
2d quality Beasts	2	10 — 3	4	Ewes & 2d quality	... — ...
Best Downs and Half-breds	—	... —	...	Ditto Shorn	3 0 — 3 4
Ditto Shorn	4	0 — 4	2	Lambs	... ... 4 0 — 4 6
				Calves	... ... 2 8 — 3 8
				Pigs	... ... 3 0 — 4 0

Beasts, 1098; Sheep and Lambs, 14,480; Calves, 591; Pigs, 215.

MARK LANE.

MONDAY, Aug. 19.—The supply of English Wheat to this morning's market by land carriage samples was very small, consisting chiefly of new (about 800 qrs.); the quality was very variable, and the great bulk remained unsold towards the close of the market. A picked run or two were taken at 48s. per qr. for the white, and 44s. for the red; old could only be disposed of at a decline of 1s. to 2s. per qr. on the prices of this day se'nnight. In foreign the business was quite trivial, factors not being inclined to submit to a similar reduction.—Barley is a slow sale at our quotations.—The value of Beans and Peas is unaltered.—There is a moderate sale for Oats at last week's prices.—The quantity of new Mustard at market consisted of about 150 qrs.; the seed was generally small, condition very variable, and only a few of the finest samples could be sold.

British per Imperial Quarter.	s.	s.		s.	s.
Wheat, Essex, Kent, & Suffolk ...White	42	46	Red	37	44
— — fine selected runs ...ditto	46	49	Red	40	43
— — Talavera	46	52			
— Norfolk, Lincoln, & York...White	—		Red	36	42
— Foreign	35	52			
Barley, grind. & distil, 19s to 22s...Chev.	23	27	Malting	22	25
— Foreign....Grinding and distilling	15	21	Malting	20	23
Oats, Essex and Suffolk	15	18			
— Scotch and Lincolnshire ...Potato	18	21	Feed ...	17	19
— Irish .....Potato	16	20	Feed ...	13	17
— Foreign.....Poland and Brew	15	20	Feed ...	13	16
Rye	19	21	Foreign	18	20
Rye-meal, foreign.....per ton	5*l.*	6*l.*			
Beans, Mazagan .....22s to 24s.....Tick	24	26	Harrow	24	26
— Pigeon .....25s — 28s...Winds	—		Longpod	—	
— Foreign ..... Small	24	34	Egyptian	19	21
Peas, white, Essex and Kent.....Boilers	28	30	Suffolk...	24	28
— Maple.... .24s to 27s .....Grey	22	24	Foreign	21	28
Maize ..... White	26	30	Yellow...	25	30
Flour, best marks, delivered...per sack	36	40			
— Suffolk ..... ditto	31	36	Norfolk	31	36
— Foreign .....per barrel	21	24	Per sack	31	34

FRIDAY, Aug. 23.—The supply of English corn this week has been very small, also from the Continent, excepting Wheat and Barley; of these the arrivals are good. The market this morning was very thinly attended, and in Wheat scarcely any business was transacted, and prices may be considered nominally the same as on Monday.—Fine Barley and Oats are inquired after, at fully late rates.—Beans and Peas maintain our quotations.—Rather higher prices are in some instances asked for Flour, but the trade is not brisk.—There is scarcely any inquiry for floating cargoes of Maize, the value of which remains nominally unaltered.

Imperial Averages.	Wheat.	Barley.	Oats.	Rye.	Beans.	Peas.
July 13.....	41*s* 3*d*	21*s* 5*d*	16*s* 11*d*	23*s* 3*d*	27*s* 2*d*	26*s* 6*d*
— 20	42 4	22 3	17 9	22 7	27 5	27 11
— 27.....	43 6	22 3	18 1	24 9	27 4	27 8
Aug. 3.....	43 7	22 4	18 1	22 2	27 8	27 8
— 10.....	44 1	22 5	17 11	23 8	27 9	26 10
— 17.....	43 8	22 8	18 4	23 0	28 2	26 5
Aggreg. Aver.	43 1	22 2	18 0	23 3	27 7	27 2
Duties on Foreign Grain	1 0	1 0	1 0	1 0	1 0	1 0

Fluctuations in the last six weeks' Corn Averages.

Prices.	July 13.	July 20.	July 27.	Aug. 3.	Aug. 10.	Aug 17.
44*s* 1*d*	...	...	...	...		...
43 8	...	..	...	...	...	
43 7	...	...	...		...	...
43 6	...	...		...	...	...
42 4	...		...	...	...	...
41 3		...	...	...	...	...

SEEDS.—Aug. 19.

Canary, per qr.....54s to 60s		Coriander, per cwt. ...18s— 22s	
Caraway, per cwt. ...29 — 33		Mustard, white, p. bush. 5 — 8	
Hempseed, per qr. ...34 — 35		— brown do. ..... 10 — 13	
Linseed, foreign, do. 37 — 45		Rape, per last .....24*l.*—26*l.*	
Clover, red, p. cwt....24 — 46		Cakes, Lindseed, p. 1000...8*l.* 15*s*	
— — foreign, do. — —		— — foreign, p. ton, 6*l.* 15*s*	
— white, do. .....36 — 48		— Rape, foreign, do., 3*l.* 17*s*	
— — foreign, do. — —		Tares, per bush...3*s* 0*d*—4*s* 0*d*	

LIVERPOOL, Friday, Aug. 16.—The supplies of grain and flour are on a moderate scale this week. We have had only a slender attendance of buyers at this morning's market, and the business in any article was on a very moderate scale. Wheat was held with tolerable firmness, but in a few instances the turn of prices was in favour of the purchaser. Flour commanded full prices, and good and superior quality was not plentiful. Oats were ½d. per bushel cheaper. Beans were 6d. to 1s. per qr. higher. Barley and Peas without change. Indian Corn was 6d. to 1s. per qr. lower than on Tuesday. ——Tuesday, Aug. 20.—The arrivals of grain and flour this week have been very moderate, both from our own coasts and from abroad. Complaints are still made of Wheat and Potatoes being much worse than last year, but they have not exercised any influence on our prices, except checking any material decline. The business at our Corn Exchange this morning was on a very moderate scale. The best qualities of Wheat and Flour supported late rates, but in some instances 1d. to 2d. per bushel less money was taken for the middle quality of red Wheat, and 6d. per barrel on the lower grades of American Flour. Old and new Oats were ½d. per bushel cheaper. Beans were 6d. per qr. higher than last Tuesday. Barley and Peas without change in value, and in fair demand. Present prices: Wheat, English red, per 70 lbs., 5s. 10d. to 6s. 4d.; white, 6s 0d. to 6s. 7d. Barley, Scotch and Irish, per 60 lbs., 2s. 10d. to 3s. 1d. Malt, English, per qr. pale, 48s. to 52s. Oats, English and Scotch, per 45 lbs., 2s. 7d. to 2s. 9d. Beans, English, per qr., 28s. to 32s. Peas, do. do., 27s. to 30s.

MITCHELL'S MINERAL BLACK PAINT.—This antiseptic Paint is intended for Park Fencing, and for all farming purposes; it is particularly adapted, by its prevention of dry rot in timber and repellance of damp, for Barns, Stables, Outhouses, Weather Boarding, Hop-poles; also for Carts, Waggons, &c., particularly the Wheels, and for Iron Hurdles, Iron Railings, and all Wood or Iron Work in exposed situations. For Brick Walls it is highly serviceable as a preventive of damp, and also for Walls intended for Fruit Trees, as, besides preserving the Wall, it increases the heat in all situations exposed to the sun, and prevents the harbouring of insects. It is also an excellent covering for Canvas, or Cart Tilts, Roofing, &c. Sold in casks containing from 1 cwt. to any quantity, at 17*s.* 6*d.* per cwt., quite ready for use, by

JAMES PHILLIPS and Co. (he sole agents), 116, Bishopsgate-street, Without, London.

GLASS FOR CONSERVATORIES, HORTICULTURAL PURPOSES, &c.



T. MILLINGTON'S SHEET GLASS, which is of the best description, varying from 16 to 32 ounces, at from 2*d.* per foot and upwards; 100 feet and 200 feet cases of large Sheet Glass, for cutting up, at 2½*d.* per foot. British Plate Glass, from 1*s.* 2*d.* to 2*s.* per foot, according to size. Patent Rough Plate Glass, from ¼ to 1 inch in thickness, from 4*d.* per foot upwards. Glass Slates and Tiles. Milk Pans from 12 to 24 inches diameter, from 2*s.* to 5*s.* each Cucumber Tubes, from 12 to 24 inches long, at 1*d.* per inch. Lactometers, 7*s.* 6*d.* each. Wasp Traps.—Lists may be had, on application at the Warehouse, 87, Bishopsgate-street Without, same side as the Eastern Counties Railway.

HARTLEY'S PATENT ROUGH PLATE GLASS, JAMES PHILLIPS AND CO., 116, Bishopsgate-street Without, beg to hand their list of Prices of the above description of GLASS. Cut to order in panes of

8 by 6	and under	10 by 8	at 4½*d.*	per foot.
10 by 8	,,	14 by 10	at 5*d.*	,,
14 by 10	,,	1½ foot, or sizes not exceeding 20 inches long	at 5½*d.*	,,
1½ foot	,,	3 feet, or sizes not exceeding 30 inches long ...	at 6*d.*	,,

PACKED IN BOXES of 50 feet each.

6 by 4 and 6½ by 4½...10*s.* 6*d.* 8 by 6 and 8½ by 6½...13*s.* 6*d.*
7 by 5 and 7½ by 5½...12*s.* 0*d.* 9 by 7 and 10 by 8 ...15*s.* 0*d.*

We do not pledge ourselves to execute large orders for small squares at the above prices, but only as far as they turn up in cutting. Should any quantity of small squares be required, a special contract is necessary.

MILK PANS 2*s.* to 6*s.* each, Metal Hand-frames, Tiles, and Slates; Propagating and Bee Glasses from 2*d.* each; Cucumber Tubes, 1*d.* per inch; Peach Glasses, 10*d.* each; Wasp Traps, 3*s.* 6*d.* per dozen; Pastry Slabs, Hyacinth Glasses and Dishes Shades for Ornaments, Fish Globes, Plate and Window Glass of every description, and Lamp Shades. Lactometers for trying the quality of Milk, 4 tubes, 7*s.* 6*d*; 6 tubes, 10*s.* Self-registering Thermometers for Greenhouses, Horticultural Glass, &c.

From the *Gardeners' Chronicle*, December 8, 1849:

"As for the article substituted for Rough Plate, and which is actually in the market for the purpose of imposing upon gardeners, it is wholly unfit for any horticultural purpose. The best samples of it which we have yet seen is sold by Mr. JAMES PHILLIPS, 116, BISHOPSGATE STREET, LONDON."

GLASS FOR CONSERVATORIES, &c.

HETLEY AND Co. supply 16-oz. Sheet Glass of British Manufacture, at prices varying from 2*d.* to 3*d.* per square foot, for the usual sizes required, many thousand feet of which are kept ready packed for immediate delivery. Lists of Prices and estimates forwarded on application, for PATENT ROUGH PLATE, THICK CROWN GLASS, GLASS TILES and SLATES, WATER-PIPES, PROPAGATING GLASSES, GLASS MILK PANS, PATENT PLATE-GLASS, ORNAMENTAL WINDOW GLASS, and GLASS SHADES, to JAMES HETLEY and Co., 85, Soho-square, London.

See the *Gardeners' Chronicle* first Saturday in each month.

GREEN AND HOTHOUSES made by Machinery, warranted best materials, glazed 16-oz. sheet glass, of a large size, with glass at both ends and one door, painted three coats of best oil-colour, and delivered to any Railway or Wharf in London.

Lean-to.				Unglazed.			Span-roofed, glass all round. Glazed.			Unglazed.			
ft.	ft.	£	*s*	*d*	£	*s*	*d*	£	*s*	*d*	£	*s*	*d*	
12 by	8	15	10	0	10	0	0	18	6	0	11	15	0	
15 —	10	22	10	0	14	5	0	25	10	0	16	9	0	
18 —	12	28	10	0	18	0	0	32	14	0	20	12	6	
21 —	12	32	10	0	20	0	0	37	8	0	23	2	0	
24 —	13	44	0	0	25	12	6	49	12	0	29	2	0	
27 —	14	51	4	0	29	17	0	58	5	0	33	15	0	
30 —	15	61	17	0	36	2	0	69	14	0	40	9	0	
35 —	16	73	4	0	42	14	0	82	7	0	47	15	0	
40 —	17	85	7	0	49	15	9	95	17	0	55	12	0	
45 —	17	93	15	0	54	13	9	105	10	0	61	12	0	
50 —	18	108	10	0	63	6	0	121	13	6	70	19	0	
55 —	18	115	16	0	67	11	0	130	4	0	75	19	0	
60 —	18	124	13	0	72	14	3	140	8	0	82	8	0	

Height in front, 3 feet 6 in., wood and glass; 3 feet 6 in. brickwork.

These Greenhouses are prepared in such a manner that any country carpenter can fix them with ease. A plan is sent free for the brickwork, &c.

Estimates for erecting and heating the above, on application. Lists of prices for Sash-doors, &c., post-free on application.

J. LEWIS, Horticultural Works, Stamford-hill, Middlesex.

TOOTHACHE PERMANENTLY CURED by using BRANDE'S ENAMEL for filling decaying Teeth, and rendering them sound and painless. Price 1*s.* Enough for several Teeth. The only substance approved by the medical faculty, as being unattended with pain or danger, and the good effects of which are permanent.

Sold by all Chemists in the United Kingdom. Twenty really authorised Testimonials accompany each box, with full directions for use. Sent free, by return for post, by J. WILLIS, 24, EAST TEMPLE CHAMBERS, WHITEFRIARS, FLEET-STREET, LONDON, in return for 13 penny stamps.

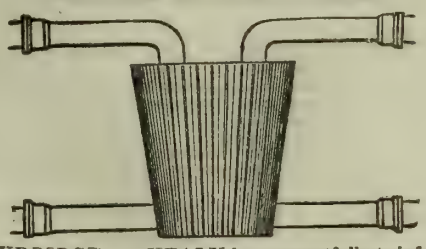
CAUTION.—The great success of this preparation has induced numerous unskilful persons to produce spurious imitations, and to Copy BRANDE'S ENAMEL Advertisements. It is needful, therefore, to guard against such impositions, by seeing that the name of JOHN WILLIS accompanies each packet.



ONE HUNDRED AND FIFTY Gallons per day of the Purest Water can be obtained with BIRD'S HYDROSTATIC SYPHON WATER PURIFIER, for purifying rain, river, tank, pond, or pump Water. This Scientific Instrument is only 4 inches in diameter, and 7 inches high; it is dropped into the vessel containing the water, and the pipe hung down outside, as indicated in the annexed drawing. It requires no fixing, and is set in action in two minutes.

Invented, made, and sold, by ALFRED BIRD, Experimental Chemist, Birmingham; and sold by all chemists and ironmongers in the kingdom; also sold wholesale and retail at Deane's, Ironmongers, London-bridge, London. Retail price 25*s.* each. Orders, containing a remittance, sent to any part of the kingdom. Packing-case 1*s.* extra.

REDUCTION IN PRICE OF BOILERS.



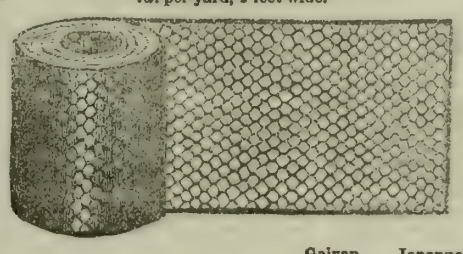
BURBIDGE AND HEALY beg respectfully to inform their Friends, in consequence of the present reduced price of iron, they are enabled to make a considerable reduction in the price of their Boilers. The price will be, now:

10 in.	will warm	50 ft. 4 in. pipe	... £1 15 0
12 in.	do.	75 ft. 4 in. do.	... 2 5 0
14 in.	do.	100 ft. 4 in. do.	... 2 15 0
16 in.	do.	150 ft. 4 in. do.	... 3 10 0
18 in.	do.	250 ft. 4 in. do.	... 4 10 0
21 in.	do.	350 ft. 4 in. do.	... 5 10 0
24 in.	do.	450 ft. 4 in. do.	... 7 0 0
		NEW PATTERN BOILERS.	
25 in.	will warm	600 ft. 4 in. pipe	... 11 10 0
30 in.	do.	800 ft. 4 in. do.	... 15 15 0
36 in.	do.	1500 ft. 4 in. do.	... 25 0 0

All Boilers with double arms, up to 18 in., 5*s.* extra; to 24 in., 10*s.* extra; all above the same price.

130, Fleet-street, London, Aug. 24.

GALVANISED WIRE GAME NETTING.—7*d.* per yard, 2 feet wide.



		Galvanised.	Japanned Iron.
2-inch mesh,	light, 24-inch wide ...	7*d.* per yd.	5*d.* per yd.
2-inch ,,	strong ,, ...	9 ,,	6½ ,,
2-inch ,,	extra strong ,, ...	12 ,,	9 ,,
1⅝-inch ,,	light ,, ...	8 ,,	6 ,,
1⅝-inch ,,	strong ,, ...	10 ,,	8 ,,
1⅝-inch ,,	extra strong ,, ...	14 ,,	11 ,,

All the above can be made any width at proportionate prices. If the upper half is a coarse mesh, it will reduce the price one-fourth. Galvanised sparrow-proof netting for pheasantries, 3*d.* per square foot. Patterns forwarded post-free.

Manufactured by BARNARD and BISHOP, Market-place, Norwich, and delivered free of expense in London, Peterborough, Hull, or Newcastle.

METCALFE AND Co.'s NEW PATTERN TOOTH-BRUSH and SMYRNA SPONGES.—The Tooth-Brush has the important advantage of searching thoroughly into the divisions of the teeth, and cleaning them in the most extraordinary manner, and is famous for the hairs not coming loose.—1*s.* An Improved Clothes-Brush, that cleans in a third part of the usual time, and incapable of injuring the finest nap. Penetrating Hair-Brushes, with the durable unbleached Russian bristles, which do not soften like common hair. Flesh-Brushes of improved, graduated, and powerful friction. Velvet-Brushes, which act in the most surprising and successful manner. The genuine Smyrna Sponge, with its preserved valuable properties of absorption, vitality, and durability, by means of direct importations, dispensing with all intermediate parties' profits and destructive bleaching, and securing the luxury of a genuine Smyrna Sponge. Only at METCALFE, BINGLEY, and Co.'s Sole Establishment, 130 B, Oxford-street, one door from Holles-street.

METCALFE'S ALKALINE TOOTH POWDER, 2*s.* per box.

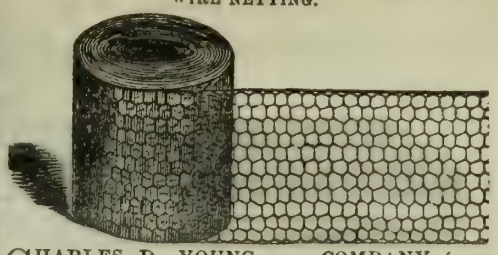
CAUTION.—Beware of the words "From METCALFE'S," adopted by some houses.

ALLSOPP'S EAST INDIA PALE AND OTHER BURTON ALES.—In consequence of a very inferior article being now too frequently sold under the name of these favourite Ales, the public are respectfully requested to apply at the respective stores, where a list of bottlers will be furnished, from whom these ales may be obtained genuine, and where also they may be had in casks of 18 gallons and upwards, either singly or in any quantity. Apply to Messrs. SAMUEL ALLSOPP and SONS, The Brewery, Burton-on-Trent, or their Stores, at 61, King William-street, City; Cork-street, Liverpool; High-street, Birmingham; and the Exchange, Manchester.

THE HIPPOPOTAMUS presented by H. H. the Viceroy of Egypt to the Zoological Society of London, is exhibited daily from One to Six o'clock, at their Gardens in the Regent's Park. The Band of the First Life Guards will perform, by permission of Colonel Hall, every Saturday, at Four o'clock. Admission One Shilling, on Mondays Sixpence.

OLD FEATHER BEDS RE-DRESSED, AND PURIFIED BY STEAM WITH PATENT MACHINERY.—This new process of dressing not only removes all impurities, but by expanding the feathers the bulk is greatly increased, and consequently the bed rendered much fuller and softer.—Charge for dressing, 3*d.* per lb. Old and Mothy Mattresses effectually cured and removed, fetched and returned, carriage free, within five miles.—HEAL and SON'S List of Bedding, containing full particulars of weights, sizes, and prices, sent free by post on application to their factory, 196 (opposite the chapel,) Tottenham-court-road, London.

STRONG PREMIUM HARE AND RABBIT PROOF WIRE NETTING.



CHARLES D. YOUNG AND COMPANY (LATE W. AND C. YOUNG),

MANUFACTURERS OF IRON AND WIRE WORK, &c.,
22, PARLIAMENT STREET, WESTMINSTER, LONDON;
48, NORTH BRIDGE, EDINBURGH;
32, ST. ENOCH SQUARE, GLASGOW;
1, CASTLE BUILDINGS, DERBY SQUARE, LIVERPOOL;

beg respectfully to call the attention of Landed Proprietors and others to their strong Wire-Net Fence, for excluding Hares and Rabbits from Gardens, young Plantations, Nurseries, &c.

This Net was exhibited at the Show of the Highland and Agricultural Society of Scotland, held lately at Inverness, where its Efficiency, Great Strength, and Exceeding Cheapness attracted general attention, and had awarded from the Judges the Society's Silver Medals, with high commendations.

The immense damage done by Hares and Rabbits in Gardens and Young Plantations is often so great, that in the course of a year or two it will amount to more than the entire cost of protecting them with this Net. It is so durable, that when Plantations are sufficiently advanced to be independent of its protection, it can be removed to other exposed situations with the greatest facility, by any labourer. As a Fence against Hares and Rabbits, it is of itself quite sufficient, having only to be unrolled and attached, with small wire sent for that purpose, to wooden stakes driven into the ground, about every six or seven feet apart. It is, besides, peculiarly adapted for rendering Hedges, Paling, or other existing Fences, *completely impervious* to such vermin; and by being cut up into small pieces of three or more feet, as required, it forms a most efficient guard, at little expense, for individual Plants and Shrubs.

PRICES.—18 ins. high, 9*d.*; 24 ins., 1*s.*; 30 ins., 1*s.* 3*d.*; and 36 ins., 1*s.* 6*d.* per lineal yard.

Or a web of 100 yards, 18 ins. wide, will cost	..	£3 15 0
Do. of 100 yards, 24 ins. wide	.. ..	5 0 0
Do. of 100 yards, 30 ins. wide	.. ..	6 5 0
Do. of 100 yards, 36 ins. wide	.. ..	7 10 0

If more or less than a web is required, it would be charged at the same rate per yard.

This Netting is also admirably adapted for Pheasantries and Poultry-yards, and is charged at the same rate. As carriage has, in many instances, been an obstacle to parties at a distance requiring this Net, C. D. Y. and Co. have made arrangements by which they will undertake to deliver it at any of the principal ports of Scotland, England, and Ireland, for One Halfpenny per lineal yard.

C. D. YOUNG and Co. cannot give a better idea of the great strength of their Premium Wire Netting than by stating that the weight of one yard of their 24-inch at 1*s.* is equal to 2½ yards of another article in the market, the same width, at 9*d.* per yard. Samples for inspection sent free of expense.

C. D. YOUNG & Co. manufacture every description of IRON and WIRE WORK required for this and foreign countries.

Workmen sent to all parts of Scotland, England, and Ireland.

TO AMATEUR FLORISTS, AND OTHERS.

TO BE LET, A Compact Villa Residence, situated close to the Ealing Station, on the Great Western Railway, having front and back Flower Gardens, with span-roofed Greenhouse, 19 feet by 14 feet, with hot-water apparatus, pits, &c., suitable for a gentleman, or for a florist requiring premises on a small scale. The present proprietor removing, will treat liberally for the disposal of the furniture of the house, the garden plants, and stock.—For particulars, apply at Mr. DEEK'S Auction and Estate Agency Offices, 26, Albion-street, Hyde-park square, London.

IMPORTANT INFORMATION.

DR. ROBERTS'S celebrated OINTMENT called the POOR MAN'S FRIEND, is confidently recommended to the Public as an unfailing remedy for wounds of every description, a certain cure for ulcerated sore legs (if of 20 years' standing), cuts, burns, scalds, bruises, chilblains, scorbutic eruptions and pimples in the face, sore and inflamed eyes, sore heads, sore breasts, piles, fistula, and cancerous humours, and is a specific for those afflicting eruptions that sometimes follow vaccination. Sold in pots at 1*s.* 1½*d.* and 2*s.* 9*d.* each. Also his PILULÆ ANTI-SCROPHULÆ; confirmed, by more than 40 years' experience, to be without exception one of the best alterative medicines ever compounded for purifying the blood and assisting Nature in all her operations: hence they are useful in scrofula, scorbutic complaints, glandular swellings (particularly those of the neck, &c.) They form a mild and superior family aperient, that may be taken at all times without confinement or change of diet. Sold in boxes at 1*s.* 1½*d.*, 2*s.* 9*d.*, 4*s.* 6*d.*, 11*s.*, and 22*s.* each.—Sold wholesale by the proprietors, BEACH and BARNICOTT, at their Dispensary, Bridport, and by the London Houses; and retail, by all respectable Medicine Vendors in the United Kingdom.

A CLEAR COMPLEXION.

GODFREY'S EXTRACT OF ELDER FLOWERS is strongly recommended for Softening, Improving, Beautifying, and Preserving the SKIN, and in giving it a blooming and charming appearance, being at once a most fragrant perfume and delightful cosmetic. It will completely remove Tan, Sun-burn, Redness, &c., and by its balsamic and healing qualities, render the skin soft, pliable, and free from dryness, scurf, &c., clear it from every humour, pimple, or eruption; and, by continuing its use only a short time, the skin will become and continue soft and smooth, and the complexion perfectly clear and beautiful. Sold in bottles, price 2*s.* 9*d.*, with directions for using it, by all Medicine Vendors and Perfumers.

THE BLOOD.—Our bodies have been entirely formed, *are now forming, and will continue to be built up during life from the blood. What the sap is to the tree the blood is to the animal frame; and inasmuch as the strength and verdure of a tree are dependant on the moisture derived from the root, the health and vigour of the body are indispensably connected with a pure and free circulation of this important fluid. It is this that must feed the flame of existence; and unless its replenishments are freely and purely communicated, the vital fire becomes clouded, burns dimly, and is ultimately extinguished. The grand object is to keep this precious fluid (the blood) in a pure and healthy state, for without this purity, disease will show itself in some way or other.*

PARR'S LIFE PILLS.

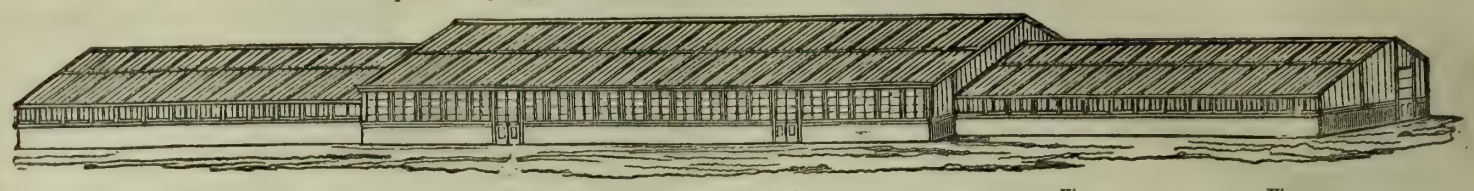
It is universally admitted that this medicine will purify the blood better than any other, and will conquer any disease.

None are genuine unless the words "PARR'S LIFE PILLS" are in WHITE LETTERS on a RED GROUND, on the Government stamp, pasted round each box; also the fac-simile of the signature of the Proprietors, "T. ROBERTS and Co., Crane-court, Fleet-street, London," on the directions.—Sold in boxes at 1*s.* 1½*d.*, 2*s.* 9*d.*, and family packets at 11*s.* each, by all respectable medicine vendors throughout the world.

GRAY, ORMSON, AND BROWN,

DANVERS STREET, CHELSEA,

Respectfully solicit the attention of the Nobility and Gentry to their superior manner of Erecting and Heating every description of Building connected with Horticulture. They have much pleasure in giving the following testimonial referring to the range of houses shown below.



Peach House, 30 by 16 feet. | Vinery, 30 by 16 feet. | Stove, 45 by 20 ft. | Greenhouse, 45 by 20 ft. | Vinery, 30 by 16 ft. | Vinery, 30 by 16 ft.

[Erected for John Shaw Leigh, Esq., Luton Hoo.]

Extract of a Letter from Mr. Fraser.—"I have much pleasure in expressing my entire satisfaction with the range of houses you erected here. I may also state that my honoured employer, John Shaw Leigh, Esq., is perfectly satisfied. I have no hesitation in stating, that to the best of my knowledge, there is not a more complete range of glass in the country, as regards both building and heating. I may add that they are admired by every Gardener who has seen them. I shall have much pleasure in answering any references you may please to direct.

(Signed.) "James Fraser, Gardener, Luton Hoo Park."

DALSTON NURSERY.

GREAT SALE OF GREENHOUSES, PITS, &c.

TO NOBLEMEN, GENTLEMEN, NURSERYMEN, BUILDERS, AND OTHERS.

MESSRS. PROTHEROE and MORRIS are instructed, by Mr. J. Smith, to submit to pubic competition by Auction, on the premises, Dalston Nursery, Middlesex, on MONDAY, September 2, at 12 o'clock (in consequence of the premises being required by the London and Birmingham West India Dock Junction Railway Company), the erection of 14 Greenhouses, several Pits, and one, two, and three-light Boxes, the greater portion of which are glazed with green glass; also a considerable quantity of Bricks, Paving Stones, Hot-water Pipe, Furnaces, &c. May be viewed prior to the sale. Catalogues may be had of the principal Seedsmen in London, on the Premises, and of the Auctioneers, American Nursery, Leytonstone, Essex.

N.B. The whole of the choice Greenhouse Plants (including the Camellias, ranging from 18 inches to 10 feet, beautifully set with bloom buds) will be sold by Auction the latter part of September.

BRENTFORD.

TO NOBLEMEN, GENTLEMEN, NURSERYMEN, MARKET-GARDENERS, AND PUBLIC COMPANIES, ENGAGED IN PLANTING.

MESSRS. PROTHEROE and MORRIS are favoured with instructions to submit to an unreserved Sale, by Auction, on the premises, Brentford Nursery, Middlesex, about the second week in October (by order of the executors of the late Mr. J. Ronalds), the whole of the valuable NURSERY STOCK, riding over about 30 acres, consisting of a large and rich assortment of Standard and Dwarf Maiden, Trained and Untrained Fruit trees, of every description; Ornamental trees, Deciduous and American Shrubs; fine Evergreens, &c. Further particulars in future advertisements.

American Nursery, Leytonstone, Aug 1850.

THE SURPLUS STOCK OF MESSRS. VAUGHAN AND CO.'S ARTIFICIAL STONE WORKS, preparatory to the Removal of the Firm to more extensive premises.

TO THE NOBILITY, GENTRY, ARCHITECTS, BUILDERS, FLORISTS, AND OTHERS.

MR. F. W. GODDARD (late with Messrs. Musgrove and Gadsden) has been favoured with instructions to sell by Auction, on the premises, 60, Stones'-end, Borough, on TUESDAY, August 27, at 11 o'clock, the SURPLUS STOCK of the above eminent manufacturers, whose productions enjoy an universal reputation for durability, elegance of design, and exquisite finish. It comprises finely modelled Statues after the ancient and modern masters, including Bacchus, Ceres, Hebe, Piping Faun, Baily's Eve at the Fountain Flora and Paris, Children after Chantrey, Faith, Hope, and Charity, the Seasons, the Elements, &c.; a pair of matchless Sea-horses, a life-size Stag, several pairs of Lions, Sphinxes, Dogs after Landseer, Eagles, and Storks; superb Fountains in every variety of style, pattern, and dimension, choice collection of Vases, Tazzas, and Garden Ornaments, Sepulchral Urns, Coats of Arms, Gothic Panels and Tracery, Caps, Trusses, and other Architectural Decorations, Balustrades, Sinks, Kerbs, two 12 feet Scagliola Columns with Ionic Capitals, and numerous other items.—To be viewed the day previously and morning of sale. Catalogues may be had on the premises, and at Mr. F. W. Goddard's Auction and Estate Agency Offices, 2, Moorgate-street, near the Bank, London.

FARMS TO BE LET AT MICHAELMAS NEXT.

MR. HURLEY, Auctioneer and Farm Agent, begs to urge Farmers and others requiring either large or small Farms, to make known their wants to him without delay, as he has upwards of Fifty Farms, both arable and meadow, of the first description, from 60 to 600 acres, adapted to every kind of Farming, and rents to meet the times, with good houses and outbuildings in the counties of Cambridge, Surrey, Berks, Bucks, Essex, Kent, and Middlesex Applications, accompanied by two stamps, will receive instant attention.—Direct to the Agricultural Agency Offices, 62, Nelson-square, Blackfriars-road, London.

SURREY, KENT, AND SUSSEX.

FARMS TO LET, FROM MICHAELMAS NEXT.

MR. HURLEY has TO LET the following, among other FARMS:—No. 1, a capital Farm, in Surrey, of 400 acres. No. 2, a capital Farm, same county, of 170 acres. No. 3, a capital Farm, tithe free, same county, of 600 acres. No. 4, a capital Farm, in Kent, of 220 acres. Also others, averaging from 60 to 300 acres, same counties, and in Middlesex. Rents low, to meet the times. The whole have good Houses and Outbuildings.—Applications (inclosing two stamps) addressed to the Land and Estate Offices, 62, Nelson-square, Blackfriars-road, London.

MOST DESIRABLE DAIRY AND GRAZING ESTATE, in the Tything of Pennycross, in Devon, within about Two Miles of the large and populous towns of Plymouth, Devonport, and Stonehouse.

TO BE LET BY TENDER, for a term of Fifteen Years, from Lady-day, 1851, all that the Barton of Pennycross, in the Tything of Pennycross, as the same is now occupied by Mr. Thomas Rowe, containing altogether about 240A. 3R. 0P (more or less). This ESTATE consists of prime Grazing and Dairy Land, and Orchards; and, from its near contiguity to the above towns (where dressing of the best description and in any quantities can be procured, and between which and the estates there is no turnpike-gate), such an opportunity is presented to a spirited Grazier and Agriculturist, who can command a capital of not less than 3000l., as is seldom offered to that class of persons. The Tithe-rent charges and the Parochial rates are extremely moderate.

The conditions on which the Estate will be Let may be seen at the Office of the under-mentioned, to whom tenders must be sent before the 1st day of September next; immediately after which time the person whose tender is accepted will be informed thereof. Mr. Rowe, the present tenant, will show the Estate, on application; or it may be seen by applying at Mannadon House, in Pennycross, aforesaid; and all other information can be obtained from Messrs. Little and Woollcombe, Solicitors, Ker-street, Devonport.—Devonport, Aug 24.

VALUABLE NURSERY AND SEED TRADE FOR SALE.—The Business referred to has been established nearly 60 years, at an important Midland County Town. It possesses a good and extensive connection. The Nursery is of moderate extent, and well stocked. The Shop is situated in the Market Place, and most eligible. An applicant of moderate capital, with the requisite knowledge and energy, will be liberally treated with, and a Lease granted.—The Proprietor's address can be had at the Office of this Paper.

BRITANNIA LIFE ASSURANCE COMPANY,

1, PRINCES-STREET, BANK, LONDON.

Empowered by Special Act of Parliament, 4th Vic., cap. 9.

Directors.

William Bardgett, Esq. | Robert Eglinton, Esq.
Wm. Fechney Black, Esq. | Erasmus R. Foster, Esq.
George Cohen, Esq. | Peter Morrison, Esq.
Millis Coventry, Esq. | Henry Lewis Smale, Esq.
John Drewett, Esq.

Auditors.

J. B. Bevington, Esq.; F. P. Cockerill, Esq.; J. D. Dow, Esq.

Medical Officers.

D. W. Cohen, M.D., 6, Cleveland-row.
John Hutchinson, M.D., 105, Milton-street, Dorset-square.
F. Le Gros Clark, Esq., Surgeon, 24, Spring-gardens.

Standing Counsel.

The Hon. John Ashley, New-square, Lincoln's-inn.
Mr. Sergeant Murphy, M.P., Temple.

Solicitor.—William Bevan, Esq., Old Jewry.

Bankers.—Messrs. Drewett and Fowler, Princes-street, Bank.

Among others, the following important advantages may be enumerated.

HALF CREDIT RATES OF PREMIUM.

Persons assured according to these rates are allowed credit (without security) for half the amount of the first seven annual premiums, paying interest thereon at the rate of 5 per cent. per annum, with the option of paying off the principal at any time, or having the amount deducted from the sum assured when the Policy becomes a claim.

Policies may thus be effected at lower rates than are generally required for the term of seven years only; whilst the holders have the same security for the payment of their claims, whenever death may happen, as if they paid double the amount of premium, which would be charged for insurances effected in the usual way.

Increasing Rates of Premium on a new and remarkable plan for securing Loans or Debts; a less immediate payment being required on the Policy for the whole term of life than in any other office.

Policies revived without the exaction of a fine, at any time within twelve months.

A Board of Directors in attendance daily at Two o'clock.

Age of the Assured admitted in the Policy.

Medical attendants remunerated in all cases for their reports.

Extract from the Half Credit Rates of Premium:

Annual Premium required for an Assurance of £100 for the whole term of Life.

Age.	Half Premium for seven years.	Whole Premium after seven years.
	£ s. d.	£ s. d.
30	1 1 9	2 3 6
35	1 4 11	2 9 10
40	1 9 2	2 18 4
45	1 14 10	3 9 8
50	2 2 6	4 5 0
55	2 12 9	5 5 6
60	3 6 8	6 13 4

Peter Morrison, Resident Director.

THE YORKSHIRE FIRE AND LIFE INSURANCE COMPANY.

Established at York, 1824. Empowered by Act of Parliament.

Capital 500,000l.

Trustees—Lord Wenlock, Escrick Park.
G. L. Thompson, Esq., Sheriff-Hutton Park.
Robt. Swann, Esq., York.

Bankers—Messrs. Swann, Clough, and Co., York.

Actuary and Secretary—Mr. W. L. Newman, York.

The attention of the public is particularly called to the terms of this Company for LIFE INSURANCES, and to the distinction which is made between MALE and FEMALE Lives.

Extract from the Table of Premiums for Insuring 100l.

Age next birthday.	Whole Life Premiums. A Male.	A Female.	Age next birthday.	Whole Life Premiums. A Male.	A Female.
10	£1 7 6	£1 5 4	46	£3 11 6	£3 3 2
13	1 9 3	1 7 0	50	4 1 9	3 13 3
16	1 11 3	1 8 10	53	4 11 6	4 2 6
20	1 14 4	1 11 6	56	5 4 0	4 14 0
23	1 17 0	1 13 8	60	6 6 0	5 12 6
26	2 0 3	1 16 2	63	7 4 0	6 9 6
*30	2 5 0	1 19 9	66	8 4 0	7 10 8
33	2 8 6	2 2 10	70	10 10 4	9 7 6
36	2 13 0	2 6 4	73	11 16 2	11 2 6
40	2 19 9	2 12 0	76	...	13 1 9
43	3 5 3	2 17 2	80	...	15 12 10

* *Example.*—A Gentleman whose age does not exceed 30, may insure 1000l., payable on his decease, for an annual payment of 22l. 10s.; and a Lady of the same age can secure the same sum for an annual payment of 19l. 17s. 6d.

Prospectuses, with the rates of premium for the intermediate ages, and every information may be had at the Head Office in York, or of any of the Agents.

FIRE INSURANCES are also effected by this Company, on the most moderate terms.

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PAXTON'S FLOWER GARDEN.

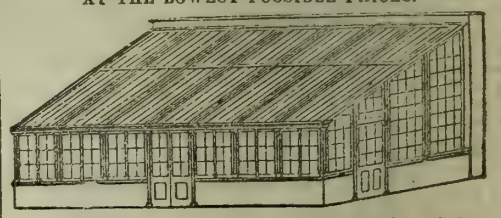
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Plans, Models, and Estimates of Horticultural Buildings; also Catalogues of Plants, Vines, Seeds, &c., forwarded on application.—J. Weeks and Co., King's-road, Chelsea London.

BAKER'S PHEASANTRY, Beaufort-street, King's-road, Chelsea, by special appointment to her Majesty and H. R. H. Prince Albert.—ORNAMENTAL WATER FOWL, consisting of black and white swans, Egyptian, Canada, China, barnacle, brent, and laughing geese, shieldrakes, pintail, widgeon, summer and winter teal, gadwall, Labrador, shovellers, gold-eyed and dun divers, Carolina ducks, &c., domesticated and pinioned; also Spanish, Cochin China, Malay, Poland, Surrey, and Dorking fowls; white, Japan, pied, and common pea-fowl, and pure China pigs; and at 3, Half-moon-passage, Gracechurch-street, London.

THE TEETH.—How often do we find the human face divine disfigured by neglecting the chiefest of its ornaments, and the breath made disagreeable to companions by non-attention to the Teeth! Though perfect in their structure and composition, to keep them in a pure and healthy state requires some little trouble; and if those who are blessed with well-formed Teeth knew how soon decay steals into the mouth, making unsightly what otherwise are delightful to admire, and designated unhealthiness by the impurity of the breath, they would spare no expense to chase away these fatal blemishes. But although most ladies are careful, and even particular in these delicate matters, yet few are sufficiently aware of the imperative necessity of avoiding all noxious or mineral substances of an acrid nature, and of which the greater part of the cheap Tooth Powders of the present day are composed. It is highly satisfactory to point out Messrs. Rowlands' Odonto, or Pearl Dentrifice, as a preparation free from all injurious elements, and eminently calculated to embellish and preserve the dental structure, to impart a grateful fragrance to the breath, and to embellish and perpetuate the graces of the mouth.—*Ladies' Gazette of Fashion.*

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Is a white powder compounded of the choicest and most *recherché* ingredients of the oriental herbal, of inestimable value in preserving and beautifying the Teeth, strengthening the Gums, and in rendering the breath sweet and pure. Price 2s. 9d. per box.—Sold by A. Rowland and Sons, 20, Hatton-garden, London, and by Chemists and Perfumers.

THE CURATIVE PROPERTIES OF HOLLOWAY'S OINTMENT AND PILLS ARE DAILY ATTESTED.—All ranks of society and medical men, both at home and abroad, speak of these incomparable medicines in the most flattering terms, and assert that in the severest cases of Chronic Ulcers, those even which were considered incurable, Holloway's Ointment has been truly efficacious when used, and there is no disputing the fact that Holloway's Pills are the very best family medicine ever known or tried. These admirable remedies will cure Rheumatic Affections, Glandular Swellings, Bad Legs, however inveterately diseased; likewise the most obstinate cases of Scurvy, Ringworm, Scrofula, or King's Evil.—Sold by all Vendors of Medicine, and at Professor Holloway's Establishment, 244, Strand, London.

Printed by William Bradbury, of No. 13, Upper Woburn-place, in the Parish of St. Pancras, and Frederick Mullett Evans, of No. 7, Church-row, Stoke Newington, both in the County of Middlesex, Printers, at their office in Lombard-street, in the Precinct of Whitefriars, in the City of London; and published by them at the Office, No. 5, Charles-street, in the parish of St. Paul's, Covent-garden, in the said county, where all Advertisements and Communications are to be addressed to the Editor.—Saturday, August 24, 1850.

THE GARDENERS' CHRONICLE
AND
AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Profes or Lindley.

No. 35—1850.] SATURDAY, AUGUST 31. [Price 6*d*.

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GRAND DAHLIA, HOLLYHOCK, AND MISCELLANEOUS FLOWER SHOW.

ROYAL SOUTH LONDON FLORICULTURAL SOCIETY. Under the Patronage of

HER MOST GRACIOUS MAJESTY, THE QUEEN.

THE FIFTH AND LAST EXHIBITION for this season will be held at the ROYAL SURREY ZOOLOGICAL GARDENS, on Wednesday, the 4th of September, 1850 (Open to all Exhibitors), when Prizes will be awarded for the following productions, viz. Miscellaneous and Specimen Plants, Dahlias, Hollyhocks, Verbenas, Antirrhinums, Cut Flowers, and Fruit. In addition to the Prizes offered by the Society, 2*l*. 10*s*. will be given for the best stand of 3 blooms of Seedling Dahlias in 1, 2, or 3 varieties (not sent out) of the exhibitor's own raising, and 2*l*. 10*s*. for Fancy Dahlias, ditto. Lists of Prizes and the Rules for exhibiting may be obtained from John T. Neville, Secretary, Ebenezer House, Peckham, Surrey.

GRAND TRIAL SHOW OF SEEDLING DAHLIAS, &c.—On THURSDAY, Sept. 19, the Annual Metropolitan Show of DAHLIAS will be held at the Gardens of the Grecian Saloon, on the same grand scale as it was conducted in 1847, when Established Flowers will be shown in five classes; New Flowers set out in May in two, and seedlings in two; in all, nine classes. There will also be two classes extra; one for new Verbenas, Fuchsias, Antirrhinums, Petunias, Phloxes, Pansies, and all other kinds of Flowers, Plants, Fruits, or Vegetables; and one for Implements, Tools, Apparatus, and various materials used in or appertaining to Gardens and Horticultural Establishments. The full schedule will appear in the Country Gentleman Weekly Garden Newspaper of September 2 9, and 16.

*** This will be by far the best Show of the season.

420, Strand, August 31.

WATERER'S DESCRIPTIVE CATALOGUE OF AMERICAN PLANTS, &c.

HOSEA WATERER begs to announce his new descriptive CATALOGUE OF AMERICAN PLANTS, CONIFERS, ROSES, &c., is just published, and may be had by enclosing two stamps for postage to Hosea Waterer, Knap Hill Nursery, Woking, Surrey.

☞ Everybody who has any idea of planting the ensuing autumn should possess themselves of this Catalogue.

NEW SEED OF TRIFOLIUM INCARNATUM, DICKINSON'S IMPROVED ITALIAN RYE-GRASS, NATURAL GRASSES FOR PERMANENT PASTURE, AND WINTER VETCHES.

JOHN SUTTON and SONS have just harvested the above valuable articles for present sowing, and will send them carriage free at very low prices.

Prices and other particulars may be had by post on application to John Sutton and Sons, Reading, Berks.

TILEY'S VIOLA ARBOREA, OR PERPETUAL TREE VIOLET.—Viola Arborea, or the Perpetual Tree Violet (true).—In answer to numerous inquiries for the above, and great satisfaction given by the plants sent out last season by Edward Tiley, he begs to state that he has this year a fine stock of the above beautiful DOUBLE VIOLET now to dispose of, which he can highly recommend, this being the proper time for making beds or potting. They are beautifully scented; the blooms are as large as the double blue Hepatica; they bloom freely from August till the end of May, and are perfectly hardy. Twelve of these plants grown in pots will scent a large greenhouse, and a small bed, 9 feet long by 3 feet wide, will be sufficient to furnish a family with bouquets the whole of the winter and the spring. They should be planted in rather a dry situation and a loose soil, as the Violet will thrive and bloom finer than in wet or clay borders.

E. T. has been informed by the gentleman that introduced it into this country, that he has seen them growing in the thickets of Persia to the height of 4 feet, with large bushy heads to them, and hundreds of blooms on them at the same time. Large bushy plants, 6*s*. per dozen; smaller ditto, 3*s*. per dozen; or 2*l*. per hundred.

Also he has a fine stock of that splendid YELLOW VIOLET, or VIOLA LUTEA, which has been so much admired at the London exhibitions. In colour it is equal to the Crocus. Strong bushy plants 2*s* 6*d*. each; or smaller ditto, 1*s* 6*d* each.

KITLEY'S GOLIAH STRAWBERRY.—Strong well rooted plants at 3*s*. per dozen.

True BATH COS LETTUCE SEED, 1*s*. per packet.

Extra fine SWEET-WILLIAM SEED, saved from 24 distinct varieties, 1*s*. per packet.

ANTIRRHINUM SEED from all the best varieties, 1*s*. per packet.

WINTER CUCUMBER.—Lord Kenyon's Favourite, 2*s*. 6*d*. per packet

The whole or any quantity of the above will be sent, postage and package free, to any part, on receipt of a Post-office order, or the amount in penny postage stamps.

Sold by Edward Tiley, Nurseryman, Seedsman, and Florist, 16, Pulteney-bridge, Bath.

HUGH LOW and CO. have just published their GENERAL CATALOGUE OF PLANTS, which can be had free on application.—Clapton Nursery, London, Aug. 31.

DANIEL BUTLER has purchased the Stock of SEEDLING CINERARIAS of Mr. J. Pond (a successful Amateur), of Devonshire Cottage, Bath, saved from the best sorts in cultivation with great care; all Show Flowers, viz., Madame Cerito, Sir Charles Napier, Bridesmaid, Lilac Perfection, Climax, Blue Beard, Dazel, Rosea, Fairy, Lord Gough, Queen of May, and Beauty of Newington. The plants will be all had from Devonshire Cottage by D. B. as they are sent out, all true from the sorts named above. This will present an opportunity of possessing a first-rate collection at a very low price, viz., 4*s*. per doz. A deduction where a large quantity is taken.

N.B. A remittance expected from unknown correspondents.

Widcombe Nursery, Bath, Aug 31.

MESSRS. J. and H. BROWN have to offer some fine large Double Camellias, Orange Trees, Scarlet Rhododendrons, Azaleas, and other large Ornamental Plants, suitable for any nobleman or gentleman about to furnish a new Conservatory. May be seen at the Nursery, or size and prices sent by post.

CHOICE PLANTS.

12	Fine Tea-scented Roses, one of a sort	9	0
12	Bourbon Roses, ditto, for planting in beds	10	6
12	Banksian and Multiflora Climbing Roses, in sorts	9	0
12	Newest Chrysanthemums, distinct varieties	8	0
25	Ditto ditto ditto	12	0
12	New Dwarf Lilliputian Chrysanthemums, ditto	10	0
12	Fine Perennial Phloxes, Belgian varieties	8	0
12	Gloxinias, very superior sorts, named	8	0
12	Achimenes, ditto, blooming plants	8	0
12	Choice Begonias, one of a sort	10	0
	Camellias, of choice sorts, well set for bloom, per doz.	30	0
	Azalea Indica, splendid varieties, ditto, ditto	25	0
	Fine Yellow Rhododendrons, each, 7*s*. 6*d*. to	10	6
24	Ericas, choice varieties, one of a sort	18	0
50	Select Greenhouse Plants, one of a sort, by name	45	0
100	Miscellaneous Stove and Greenhouse Plants, price and list to select from, free by post.		
	Orchidaceous Plants, 12 fine species	30	0
	Passifloras and Clematis, hardy and tender, each	1	6
	Geraniums, very best sorts, at reduced prices, by post.		
	Fancy Geraniums, one of a sor, per dozen	9	0
	Fuchsias, best new sorts, blooming plants, per dozen	10	0
50	Fuchsias, ditto small plants, sent by post	12	0
12	Ferns, Greenhouse and hardy varieties, sent by post	8	0
	New Antirrhinums, Petunias, and Verbenas, per dozen	4	0
6	Beautiful new Lilium lancifolium, one of a sort	12	0
	Violets, Arborea and Neapolitan, per dozen	4	0
	Vines, in pots, from eyes, choice varieties, per dozen	15	0
	Strawberry plants, all varieties, supplied by the dozen, or by the 100.		

Choice Primula, Geranium, Pansy, Calceolaria, and Cineraria Seed, 1*s*. per packet, by post.

Albion Nursery, Stoke Newington, London, Aug. 31.

NEW PLANTS AT REDUCED PRICES.—A List of GERANIUMS, FUCHSIAS, VERBENAS, PETUNIAS, CHRYSANTHEMUMS, and other Plants, at very reduced prices, is now ready, and will be sent on application, prepaid. The following selections now sending out.

FUCHSIAS.—Story's, Mayle's, Smith's, and Rumley's, new varieties of 1850, 12 for 20*s*.; or 20 for 30*s*.

VERBENAS.—Smith's, Barker's, Chauviere's, and other new varieties of 1850, 12 for 12*s*.; or 20 for 18*s*.

PETUNIAS.—12 new varieties of 1850 for 15*s*.

NEW CHRYSANTHEMUMS.—12 best new varieties of last season, fine plants, well established in 5-inch pots, for flowering this autumn, 15*s*.

60	very fine varieties, including the above	£2	0	0
40	ditto ditto ditto	1	10	0
25	ditto 17*s*. 6*d*. 12 superb varieties	0	9	0

All well established in 48-size pots.

Catalogues sent pre-paid on receipt of four postage stamps. Goods delivered free to London.

Bass and Brown, Seed and Horticultural Establishment, Sudbury, Suffolk

HYACINTHS, ANEMONES, JONQUILS, TULIPS, IRISES, CROCUSES, &c.—Carriage free, as see below.

JOHN SUTTON and SONS, Reading, Berks, having for many years imported Bulbous Flower-roots extensively from several celebrated Florists in Holland, they are well acquainted with all the most desirable kinds of Hyacinths, Tulips, Anemones, and other Bulbs, cultivated near Haarlem, and are also enabled to secure the finest quality of Bulbs at the Dutch market prices. An immense assortment is just imported direct from Haarlem, and early orders will be executed with the very best Bulbs, at the undermentioned low prices.

	s.	*d*.
HYACINTHS, FOR POTS OR GLASSES. Choice sorts by name, Messrs. Sutton's best selection, per dozen	10	6
BULBOUS FLOWER-ROOTS, FOR POTS OR OPEN BORDERS		
HYACINTHS, finest double, colours separate (without names) per doz.	3	6
,, ,, colours mixed per 100	21	0
CROCUSES and SNOWDROPS, many sorts ,,	2	0
TULIPS, Early Van Thol, for pots or open borders ,,	8	0
,, Choice sorts, mixed for beds ,,	12	0
ANEMONES, finest double mixed ,,	7	0
,, fine early single, mixed ,,	7	0
RANUNCULUSES, fine double mixed ,,	3	6
HARDY NARCISSUS, sweet double white per doz.	1	6
,, ,, Pheasant-eye, very sweet ,,	1	6
JONQUILS, sweet double ,,	2	6
,, sweet single ,,	1	9
GLADIOLI, many sorts mixed ,,	2	6
IRISES, mixed, many beautiful colours ,,	2	6

N.B. *Parcels of not less than* 10*s*. *value are sent carriage free to any Station on the Great Western South-Western, or South-Eastern Railways; or to any Office in London or Bristol.*

Address John Sutton and Sons, Reading, Berks.

TO THE ADMIRERS OF THAT SPLENDID AUTUMNAL FLOWER, THE CHRYSANTHEMUM.

YOUELL and Co. are now prepared to execute orders from their extensive and very select collection of the above, comprising all the new and fine continental varieties, at the following prices:

50	best new sorts	25*s*.
25	ditto	15*s*.
12	ditto	9*s*.

Well established in small pots, or by post free.

NEW DWARF CHINESE OR LILLIPUTIENNE CHRYSANTHEMUMS.

This new and beautiful class are well deserving the attention of cultivators from their exceeding dwarf habit (not attaining more than 1 foot in height). The profusion of flowers with which they are covered, as well as the great variety and distinctness of colour, will render them general favourites. Strong plants for autumn blooming are now ready for sending out at the following prices:

9	fine varieties sent out last year (for the first time) for	9*s*. 0*d*.
13	do. raised by M. Lebois (and sent out for the first time this season), for	30 0

One sent over to the Trade when two are ordered.

The latter are figured in the last December Number of the "Annales de la Societé d'Agriculture et de Botanique de Gand," and are perfect gems, engravings of which may be seen at Youell and Co.'s Nursery.

Descriptive Catalogues of the above may be had on application. Printed directions of their successful and easy method of cultivating the Chrysanthemums for exhibition, &c., will be forwarded with all orders.

ANEMONE SEED,

Saved from selected sorts, is now being harvested by Youell and Co. in the finest condition, and can be forwarded, per post free, at 2*s*. 6*d*. and 5*s*. per packet, sufficient to sow a bed of 12 and 24 yards. If sown at the present time it will afford a fine display through the autumn and winter months.

Royal Nursery, Great Yarmouth.

IXORA SALICIFOLIA (true), WILLOW-LEAF IXORA.

MESSRS. VEITCH and SON are now prepared to send out strong plants of the above beautiful and distinct IXORA, received by them from Java through Mr. Thos. Lobb. It is a lovely free-blooming species, flowering in a very young state, and at the Chiswick Exhibition in July last received the first prize for new and rare plants—the Silver Gilt Medal. It is figured and described in Curtis's "Botanical Magazine" for July last.

Strong well established plants 21*s*. each; one over to the Trade on three.—Exeter, Aug 31.

NURSERIES, CLAPHAM, NEAR LONDON.

FINE LATE STRAWBERRY, "LA DELICIEUSE."

J. & J. FAIRBAIRN have much pleasure in announcing that they will be prepared to send out the above early in September.

J. and J. F. can with confidence recommend this STRAWBERRY, as one possessing first-rate excellence. Its distinguishing characters are—the plant, of hardy habit and great productiveness of bearing; fruit, rather above medium size and of exquisitely rich flavour; colour, amber, like a Bigarreau Cherry; season of ripening late, after most other Strawberries are over; fruit firm, remaining good longer after ripe than other varieties, thus lengthening the Strawberry season by a considerable period. From its many excellences, it will be found an acquisition in any establishment. Price, 60*s*. per 100; or 12*s*. per dozen. N.B. A remittance with order respectfully requested from unknown correspondents. Orders addressed to J. and J. Fairbairn, Nurseries, Clapham, near London; or to the following Agents, will have prompt attention.

Austin and M'Aslin, Glasgow	Harrison, John, Darlington
Bunyard, T., Maidstone	Harrison, T., Hindon, Wilts
Backhouse, J., and Son, York	Imrie and Sons, Ayr
Burgess & Kent, Penkhull	Little & Ballantyne, Carlisle
Crane, Geo., Low Habberley, Kiddermuster	Laird, Wm., Dundee
Dickson & Co., Edinburgh	Mackie, Arthur, Norwich
Dickson, F. and J., Chester	Mills, Edwin, Shaftesbury
Dickson and Turnbull, Perth	Macintyre, Jas., Taunton
Dixon, E. P., Hull	Pontey, Alex., Plymouth
Drummond and Sons, Stirling	Scott, J., Bathford, near Bath
Darby, R. F., Cirencester	Tait, Henry, Kelso
Fisher and Holmes, Sheffield	Veitch and Son, Exeter
Frettingham, Geo., Beeston, near Nottingham	Watkinson, T. P., Manchester
Garraway, Mayes, & Co., Bristol	Widnall and Davis, Cambridge
	Wheeler, J. C. & Co., Gloucester.

KITLEY'S GOLIAH STRAWBERRY. — The merits of this Strawberry are now so well known, as being hardy, large, fine in colour, a most excellent flavour, and forces well, that all parties who have seen it growing, or tasted the fruit, have expressed their entire satisfaction with it. This is the fifth season it has fruited in the same bed, and the plants are now perfectly healthy, and likely to continue much longer in bearing; the fruit this season have been as large and more abundant than from younger plants.

From the *Gardeners' Chronicle*—"Strawberries: *J. K.* Your Seedling Strawberry, Goliah, judging from its size and appearance, is worthy of cultivation."

From the *Gardeners' and Farmer's Journal*.—"Strawberries. *J. K., Lyncombe Vale*.—We have great pleasure in bearing testimony to the exquisite flavour of your Seedling Strawberry, 'Goliah.' In our opinion, it combines the piquant flavour of the Strawberry with the richness of the Pine, the delicious aroma of which it partakes in equal proportion to taste. Apart from the Queen of Fruits, we certainly do not remember anything in this way that conveyed to our senses so delicious a treat as the noble fruit to be known to the world as 'Kitley's Goliah Strawberry.'"

Strong well-rooted plants are now ready at 3*s*. 6*d*. per dozen, or 1*l*. per 100, on prepaid application only to James Kitley, Bath; Messrs. Low and Co., Clapton Nursery; Mr J. G Waite, Seedsman, 181, High Holborn, London; Messrs. Garraway, Mayes, and Co., Bristol; Messrs. Lucombe, Pince, and Co. Exeter; and Messrs. W. E Rendle and Co., Plymouth.

Lyncombe Vale Nursery, Bath, Aug. 31.

TO ORNAMENTAL PLANTERS.

WHITLEY AND OSBORN respectfully beg to call attention to their PRICED CATALOGUE OF HARDY TREES AND SHRUBS for the ensuing season, which may be had on application to them at their Nursery, Fulham, near London.

N.B. If collections or large selections are taken, a deduction from the prices affixed would be made, and also when a large number of a sort are taken.

GENUINE SEEDS FOR SEPTEMBER SOWING,
All free by post.

12 packets of Hardy Annuals, 1s. 6d.; 24 do., 2s. 6d.; 12 do. Biennials, 2s.
1 strong plant or bulb of Heracleum giganteum, for flowering next summer, 1s.; 6 do., 4s. 6d.; 1 packet of new seed, 6d
1 packet of Cinerarias, fine mixed, 1s.; Hollyhocks, do., 6d.; Pentstemons, do., 6d.; Sweet-Williams, do., 6d.; Stocks, do., 6d. Seeds per oz.—Nemophila insignis, 8d.; do., 4 vars. mixed, 8d.

VEGETABLE SEEDS.—Lettuces, Normandy Cress, Lamb Lettuce, &c., 8d.: Cauliflower, per packet, 6d.—Remittances requested.

ABRAHAM HARDY and SON, Seed-growers, Maldon, Essex.

ROSES.

EDWARD DENYER, NURSERYMAN, Loughborough-road, Brixton, near London, begs to inform Noblemen, Gentlemen, &c., that his superb collection of Autumnal Roses is now in full bloom. E. D likewise invites an inspection of his unrivalled collection of Fruit Trees and Evergreen Shrubs, in quantities, of the finest growth. Orders taken for them at this time, and delivered in November next.

E. D. informs his friends that he has no seed shop in London.

WILMOT'S "PRINCE ARTHUR" STRAWBERRY.

J. WILMOT begs to state that he will commence sending out his new Strawberry next week. Orders forwarded to himself or the following agents will be duly executed. Price 5l. per 100.

AGENTS.—Robert Glendinning, Chiswick Nursery; William T. Atwood, Mortlake, Surrey; George Cranwood, Seedsman, Covent-garden; and Messrs. Hurst and M'Mullen, 6, Leadenhall-street.—Isleworth, Middlesex, Aug. 31.

SPLENDID DOUBLE RANUNCULUSES.

MR. SNELLING is prepared to send out a few hundred Roots of the above most beautiful Flower (the same Stock he sent out last March which gave such general satisfaction), at the low price of 5s. per 100, well worth 20s. Carriage free, 6s. per 100.—5, King's-road, Brighton.

"BRITANNIA" STRAWBERRY.

JAMES JACKSON, in offering his new seedling Strawberry BRITANNIA to the public, can with confidence recommend it to Gentlemen and Market Gardeners, as being a Strawberry that cannot fail to give general satisfaction, as it has a combination of excellent qualities not to be met with in any other at present in cultivation, being a very strong grower and an abundan bearer. It is as late as the Elton Pine, and much larger. It ripens well in any situation, and is of excellent flavour, and of a deep scarlet colour. It grows a large size, and has generally six or eight fruit on one stem. Strong plants of this superb Strawberry will be ready in September at 4l. per 100.—Application to be made to JAMES JACKSON, Gardener, Marfleet-lane, Hull; Mr. M'INTOSH, Seedsman, &c., Hull; Mr. DANIELS, Hessle-road Nursery, near Hull; or to Mr. HAIRS, Seedsman, 109, St. Martin's-lane, London. As the stock is limited, early prepaid orders will be promptly attended to. The usual allowance to the Trade.

EXHIBITION OF LILIUM LANCIFOLIUM, OR THE BEAUTIFUL JAPANESE LILY.

HENRY GROOM, CLAPHAM RISE, near LONDON, by Appointment FLORIST TO HER MAJESTY THE QUEEN, and to HIS MAJESTY THE KING OF SAXONY, begs to invite the Nobility, Gentry, and Public, to inspect his unrivalled collection of this most SPLENDID HARDY LILY, which is now in flower. For elegance of form, delicious fragrance, and freedom of flowering, it is not surpassed by any plant in cultivation. May be viewed every day (Sundays excepted). Admittance gratis.

TREES, SHRUBS, ROSES, VERBENAS, &c., FOR THE MILLION.

DAVID FERGUSON, LANDSCAPE GARDENER, CONTRACTOR, PLANTER, &c., offers common Laurels at 1l. to 5l. per 1000; if 100,000 are taken 10,000 will be added. Good standard Roses, 3 to 6 feet, 5l. per 100, and 40l. per 1000. Berberis aquifolium, fine, 1l. to 3l. per 1000. Evergreen Privet, strong, 1l. to 1l. 5s. per 1000. Cotoneaster microphylla, for hedges, &c., fine, 10s. per 100, and 4l. per 1000. Also large quantities of the following at low prices:—Fine specimen Cedrus Deodara and Pinus excelsa, 4 to 6 feet in height, in pots; fine specimen Arbor-vitæ, Aucuba japonica, Yews, Box, Phillyreas, red Cedars, Araucarias; Scotch, Silver, and Spruce Firs; Larch, Oak, Elm, Ash, Lime, Hornbeam, Hazel, double pink and scarlet Thorns, fine maiden Peaches and Nectarines, worked from trees in the houses on the spot; some of the fruit was exhibited at Regent-street, and received a Banksian Medal, this season, though very inferior to what D. F. has sent to his fruiterer at different times this season, which can be proved; with large quantities of other Fruit Trees. Also first-rate Verbenas, Petunias, Calceolarias, Geraniums, Fuchsias, Anagallis, Salvias, Cupheas, &c., for bedding out, at 1s. 6d. per dozen, if 5 to 20 dozen are taken; 1s. 3d if 20 to 50 dozen are taken; above 50 dozen, 1d. each; and if 100 dozen are taken, 5 dozen will be added. Carriage free to London, Birmingham, Leamington, Peterborough, Banbury, Bedford, and all intermediate stations on the North-Western Railway.

Lists marked for selection at the above prices sent free on application; but to those not already in possession of a collection, D. F. advises parties to state the colour and quantity they want, and leave the selection to him; and to those that have no convenience for wintering plants, they will find it advantageous to give their annual orders in August and September for the following spring, as they, on taking five dozen and upwards, will have the choice not only of those marked in the list, but any other bedding out plant, if possible to procure, at equally low prices.

Letters directed Buckingham, in place of Aylesbury, reach D. F. one day sooner, where all Post-office orders are requested to be made payable.

MAGNUS'S ENAMELLED SLATE is handsomer and more durable than the choicest Marbles, is less than half the cost of the commonest, and is PATRONISED by her MAJESTY and PRINCE ALBERT, the Nobility, Clergy, Architects of Eminence, Engineers, Builders, Railway Contractors, and the Public generally. It is suitable for Chimney-pieces, Pier-table tops, Vases, Ink-trays, and ornaments of various descriptions, Billiard-tables, Baths, Wash-stand, and Dressing-table Trays, Door Furniture, Candelabra, Columns, Monuments, Head Stones, Mural Tablets, Pilasters, Plinths, Fonts, Grand Staircases, Balusters, &c., and is made to represent not only the marbles in ordinary use but all the more costly descriptions, as Porphyry, Rose Granite, Broccatella, Brescia, Lapis Lazuli, Malachite, and Florentine Mosaics, and has obtained the Medal from the Society of Arts. Bored Chimney-pieces, from 25s. upwards. Price lists sent on application to Mr. MAGNUS, PIMLICO SLATE WORKS, 39 and 40, Upper Belgrave-place, London.

*** Roofing and Plain Slate work, of all descriptions, at low prices.

AMERICAN PLANTS.

JOHN WATERER'S CATALOGUE OF AMERICAN PLANTS, ROSES, CONIFERS, &c., is now published, and may be had gratis on application. It describes the colours of every Rhododendron worthy of cultivation, thus affording purchasers every facility in making selections.

American Nursery, Bagshot, Surrey.

THE SOUTH OF ENGLAND HORTICULTURAL SOCIETY.—A Grand Exhibition of FLOWERS, FRUITS, &c., will take place (by the kind permission of Major Colt), upon his beautiful Grounds at ROWNHAMS, near Southampton, on THURSDAY, the 5th of September. Every arrangement will be made to promote the comfort of the visitors, as well as the attraction of the Fêtes. The whole of the arrangements will be made under the direction of Mr. Ross, of the Horns, Nursling. Lady Mill, Mrs. Chamberlayne, and Mrs. Colt have kindly consented to patronise the exhibition. The Lady Patronesses' private Subscription Prizes will be given extra to Cottagers within eight miles of Rownhams, for the best collection of Fruits, Flowers, and Vegetables. The Gardens will be open at half-past 1 o'clock. Admission Tickets, previous to the 3d of September, 1s. 6d.; after that day, 2s. 6d., to be obtained at the following places: Horns Inn, Nursling; Messrs. Hacker, Marshall, and Jolliffe, Southampton; Messrs. Jacob and Johnson, Winchester; Mr. Newman, Swan, Romsey; Mr. Dyett, Red Lion, Totton; Mr. Adams, Anchor, Eling; Mr. Lowman, Crown, Lyndhurst; Mr. J. Keynes' Nursery, Salisbury; Mr Emanuel, High-street, Portsmouth; at the *Hampshire Advertiser* Office, Southampton; and of the Secretary. Colonel Yea and the Officers of the Royal Fusiliers have kindly placed their band at the disposal of the Committee.

Persons attending the Exhibition are requested to enter by the Nursling Lodge, and retire by the Baddesley Lodge.

CUCUMBER AND MELON BOXES AND LIGHTS.

One hundred 1, 2, and 3-light Boxes and Lights of all sizes ready for immediate use. Warranted best materials, packed and sent to all parts of the kingdom; 2-light Boxes and Lights from 1l. 4s. Garden Lights of every description, Conservatories, Green and Hot-houses, made and fixed in all parts of the kingdom. References given to the Nobility, Gentry, and the Trade, in most of the counties of England. JAS. WATTS, Hothouse Builder, Claremont-place, Old Kent-road, London.

MITCHELL'S MINERAL BLACK PAINT.—This antiseptic Paint is intended for Park Fencing, and for all farming purposes; it is particularly adapted, by its prevention of dry rot in timber and repellance of damp, for Barns, Stables, Outhouses, Weather Boarding, Hop-poles; also for Carts, Waggons, &c., particularly the Wheels, and for Iron Hurdles, Iron Railings, and all Wood or Iron Work in exposed situations. For Brick Walls it is highly serviceable as a preventive of damp, and also for Walls intended for Fruit Trees, as, besides preserving the Wall, it increases the heat in all situations exposed to the sun, and prevents the harbouring of insects. It is also an excellent covering for Canvas, or Cart Tilts, Roofing, &c. Sold in casks containing from 1 cwt. to any quantity, at 17s. 6d. per cwt., quite ready for use, by

JAMES PHILLIPS and Co. (he sole agents), 116, Bishopsgate-street, Without, London.

GLASS FOR CONSERVATORIES.

JAMES PHILLIPS AND Co. have the pleasure to hand their New List of Prices of GLASS for Cash.

CUT TO SIZE.

16 oz. from 2d. to 3½d. per foot.				
21	"	3½ " 5	"	
26	"	3½ " 7½	"	
32	"	4 " 9½	"	

SHEET SQUARES.

In boxes of 100 feet.	s.	d.
Under ... ... 6 by 4	12	6
6 by 4 and under 7 by 5	16	6
7 by 5 " 8 by 6	18	6
8 by 6 " 10 by 8	20	6

100 feet and 200 feet cases of large Sheet Glass, for cutting up, at 2½d. per foot. British Plate Glass, from 1s. 2d. to 2s. per foot, according to size.

HARTLEY'S PATENT ROUGH PLATE, packed in boxes of 50 feet each:

6 by 4 and 6½ by 4½	...	10s.	6d.	7 by 5 and 7½ by 5½	...	12s.	0d.
8 by 6 " 8½ by 6½	...	13	6	9 by 7 " 10 by 8	...	15	0

MILK PANS.

12 in. diameter	...	2s.	0d.	2 in. diameter	...	0s.	2d.
14 "	...	2	6	3 "	...	0	3
16 "	...	3	0	4 "	...	0	4
18 "	...	3	6	5 "	...	0	6
20 "	...	4	0	6 "	...	0	8
22 "	...	4	6	7 "	...	0	10
24 "	...	5	0	8 "	...	1	0
26 "	...	6	0	9 "	...	1	2
CREAM POTS, from 2s. each.				10 "	...	1	4
				11 "	...	1	6
				BEE GLASSES, same sizes.			

PROPAGATING GLASSES.

PRESERVE JARS.

3 inches diameter	...	0s.	3d	12 inches long	...	1s.	0d.
4 " "	...	0	5	14 "	...	1	2
5 " "	...	0	7	16 "	...	1	4
6 " "	...	0	9	18 "	...	1	6
7 " "	...	1	0	20 "	...	1	8
8 " "	...	1	3	22 "	...	1	10
9 " "	...	1	6	24 "	...	2	0

CUCUMBER TUBES.

Glass Shades; Tiles and Slates of any size; Wasp Traps, 3s. 6d. per dozen; Lamp Shades; Rough Plate Glass of every thickness. Lactometers, for trying the quality of milk, 4 tubes, 7s. 6d.; 6 do., 10s. Glass Stands for Pianoforte, and every article in the trade.

JAMES PHILLIPS AND Co., 116, BISHOPSGATE-STREET WITHOUT, LONDON.

GLASS WATER PIPES.

MESSRS. COATHUPES AND Co., GLASS MANUFACTURERS, Bristol and Nailsea, Somerset, continue to supply GLASS PIPES for the conveyance of water, &c., in lengths of from 3 to 7 feet, and from ½-inch to 4-inch bores; they provide also the necessary joints, which enable them to stand very considerable pressure.

CROWN, SHEET, AND ROUGH PLATE GLASS, FOR HOTHOUSES, CONSERVATORIES, &c.

The Improved Patent Rough Plate, made by Messrs. Hartley and Co., can be supplied from this Warehouse, of every size and substance, at the same prices as at the works.

100 and 200 feet cases of large Sheet Glass, from 2½d. per foot. Small ditto, 10s. 6d. per 100 feet, packed in boxes ready for immediate delivery. Curators of Botanical Societies, Florists, Railway Agents, and others requiring large quantities, will, on sending dimensions, receive estimates at the lowest prices.

GLASS MILK PANS, CREAM POTS, Lactometers, Bee Glasses, Fish Globes, and all kinds of Dairy Glass, Propagating Glasses, Hyacinth Dishes, Cucumber Tubes, and every other description of Garden Glasses.

PATENT GLASS PENS, self supplying, never blot, never soil the ruler, and will write continuously for 12 hours.

Also, Glass Rulers, Glass Inks for office-stands, desks, &c. Stationers and Schools supplied. Wholesale Warehouse for Ornamental Shades, Lamp Shades, Gas Glasses, Genuine White Lead, Paints, Colours, and Pumps for Farm purposes.

Our Catalogue of 18 folios is the most complete ever published. No Gardener or Farm Bailiff should be without one. May be had Gratis on sending two postage stamps to Messrs. COGAN and Co., 48, Leicester-square, London.

MESSRS. VEITCH AND SON'S CATALOGUES OF NEW AND RARE PLANTS, STOVE AND GREENHOUSE PLANTS, GERANIUMS, AMERICAN PLANTS, &c., &c., are now ready, and can be had, on pre-paid application, by enclosing two postage stamps.—Exeter, August 31.

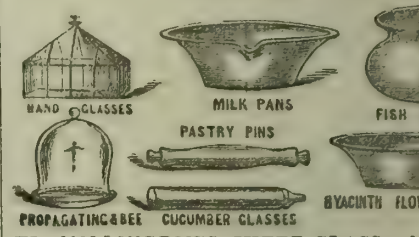
RENÉ LANGELIER, of the Clarendon Nursery, St. Helier, Jersey, takes the liberty of informing Amateurs of PEARS that his very extensive collection is now in full bearing, and embraces the present opportunity of soliciting their inspection of the different sorts now on the trees; many of the summer kind may be tasted. Communication from all parts of England daily, viâ London, Brighton, Southampton, Weymouth, Torquay, and Plymouth. R. L. is confident that amateurs of Pears will be gratified by an inspection.

GLASS FOR CONSERVATORIES, &c.

HETLEY AND Co. supply 16-oz. Sheet Glass of British Manufacture, at prices varying from 2d. to 3d. per square foot, for the usual sizes required, many thousand feet of which are kept ready packed for immediate delivery. Lists of Prices and estimates forwarded on application, for PATENT ROUGH PLATE, THICK CROWN GLASS, GLASS TILES and SLATES, WATER-PIPES, PROPAGATING GLASSES, GLASS MILK PANS, PATENT PLATE-GLASS, ORNAMENTAL WINDOW GLASS, and GLASS SHADES, to JAMES HETLEY and Co., 35, Soho-square, London.

See the *Gardeners' Chronicle* first Saturday in each month.

GLASS FOR CONSERVATORIES, HORTICULTURAL PURPOSES, &c.



T. MILLINGTON'S SHEET GLASS, which is of the best description, varying from 16 to 32 ounces, at from 2d. per foot and upwards; 100 feet and 200 feet cases of large Sheet Glass, for cutting up, at 2½d. per foot. British Plate Glass, from 1s. 2d. to 2s. per foot, according to size. Patent Rough Plate Glass, from ½ to 1 inch in thickness, from 4d. per foot upwards. Glass Slates and Tiles. Milk Pans from 12 to 24 inches diameter, from 2s. to 5s. each. Cucumber Tubes, from 12 to 24 inches long, at 1d. per inch. Lactometers, 7s. 6d. each. Wasp Traps.—Lists may be had, on application at the Warehouse, 87, Bishopsgate-street Without, same side as the Eastern Counties Railway.

CARSON'S ORIGINAL ANTI-CORROSION PAINT, especially patronised by the British and other Governments, the Hon. East India Company, the principal Dock Companies, most public bodies, and by the Nobility, Gentry, and Clergy, for out-door work at their country seats, The Anti-Corrosion is particularly recommended as the most durable out-door Paint ever invented, for the preservation of every description of Iron, Wood, Stone, Brick, Compo, Cement, &c., work, as has been proved by the practical test of upwards of 60 years, and by the numerous (between 500 and 600) testimonials in its favour, and which, from the rank and station in society of those who have given them, have never yet been equalled by anything of the kind hitherto brought before the public notice.

Lists of Colours and Prices, together with a Copy of the Testimonials, will be sent on application to WALTER CARSON, No. 9, Great Winchester-street, Old Broad-street, Royal Exchange.

No Agents.—All orders are particularly requested to be sent direct.

AYLESBURY DUCKS (White).—The Advertiser has for Sale a limited number of the above, in fine healthy birds, of this season; the breed is warranted pure and of the largest known, weighing, when fattened, 8 lbs. to 10 lbs. each. Price, including package, 8s. 6d. per couple.—Orders, accompanied by Post-office orders or reference, addressed to ISAAC BRUNNING, North-end, Great Yarmouth, will receive prompt attention.—August 31.

EMIGRATION.—A respectable, middle-aged married Man is desirous of an engagement to go out to the Australian Colonies. He is a good AGRICULTURIST, and has had considerable experience in the management and buying and selling of Stock and Grain. Would not object to a situation as Bailiff, either at home or abroad. The highest testimonials can be given as to character.—Direct to J. W., 94, Murray-street, Hoxton, London.

EMIGRATION TO AUSTRALIA.—New Line of Packets from Liverpool. Fine Goods 25s. per Ton.

PETREL ... 1200 Tons. To Sail 10th October.
CONDOR ... 1500 Tons. To Sail 10th December.

A 1. New Ships coppered and copper-fastened. For Freight or passage, apply to the Owners, GIBBS, BRIGHT, and Co., Liverpool.

NEWS, NEWS, NEWS.—The best, cheapest, and largest Newspaper in the World.—LLOYD'S WEEKLY LONDON NEWSPAPER contains 60 large columns of the latest intelligence from all parts of the Globe, price only Threepence, postage free. Send Three Postage Stamps to E. LLOYD, 12, Salisbury-square, London, and receive one copy as a sample.

CROGGON'S PATENT IMPROVED ASPHALTE FELT, as a Protective Material for Plants. Price 1d. per square foot. The following paragraph has appeared in the *North British Agriculturist*, voluntarily written by Mr. M'INTOSH, of Dalkeith: "We have used CROGGON'S PATENT FELT very extensively as a substitute for Russian mats for the protection of half-hardy trees and plants, covering alpine and cold pits, as well as those heated, and have found it a most economical and efficient protection. Its non-conducting properties, as well as its resistance of wet, renders it a valuable garden material for covering plants requiring protection from frost. Applied over glass in heated pits, it reduces the consumption of fuel more than one-half, while it greatly prevents the breaking of glass by the expansion of condensed steam, rain-water, &c., when frozen between the laps, which is well known to be the principal cause of breakage of glass in horticultural erections. The majority of greenhouse plants may be safely wintered in pits or houses, without the expence or trouble of heating, by merely covering them with this material, which, for convenience of taking off and putting on, should be made into frames of the exact size of the glass sashes, and made to fit between the rafters, and at a distance of 2 or 3 inches from the glass, enclosing a volume of air between them, which is found to resist cold better than when laid close upon the glass. In regard to durability, we have some of such frames which have been in constant use for the last 9 or 10 years. It is applicable also to conservative walls."—Sold in rolls 32 inches wide, by CROGGON and Co., 2, Dowgate-hill, London, whose Non-conducting Dry Hair Felt, when applied to Hot Water or Steam Boilers, saves 25 per cent. of fuel.

A LIST OF NEWLY INTRODUCED PLANTS NOW OFFERED FOR THE FIRST TIME BY JAMES VEITCH AND SON, EXETER:

Escallonia macrantha, 21*s.* each; one over to the Trade on three.

Ixora salicifolia, 21*s.* each; ditto.

Dipladenia urophylla, 21*s.* each; ditto.

Hoya coriacea 10*s.* 6*d.* each; ditto.

Dipteracanthus spectabilis, 10*s* 6*d.* each; ditto.

Oxalis elegans, or Oxalis elegans major, 5*s.* each, or three for 10*s.* 6*d.* of either.

Calceolaria grandis, 5*s.* each, or three for 10*s.* 6*d.*

NEW SEEDLING STRAWBERRY—MYATT'S "SURPRISE."—This is a variety raised from the British Queen, which it resembles, though of a more robust habit, and a very free bearer, producing a greater abundance of those large angular-shaped Strawberries than any other variety, and finishing off the last fruit of a good size, price 50*s.* per 100.

Also Myatt's Eleanor, 5*s.* British Queen, Globe, Mammoth, Comte de Paris, Hooper's Seedling, Keens' Seedling, Swanston's Seedling, Elton Pine, 3*s.* 6*d.* Fertilised Hautbois, 5*s.* Cuthill's Black Prince, 10*s* 6*d* per 100. Kitley's Goliah, 3*s.* 6*d.* per doz., or 20*s.* per 100.—Manor Farm, Deptford.

MESSRS. STANDISH AND NOBLE'S new descriptive CATALOGUE OF SELECT HARDY ORNAMENTAL PLANTS is just published, and may be had for four postage stamps. Besides a Treatise on the cultivation of American Plants, it contains a Plate and Description of the Funebral Cypress, Notices of Cephalotaxis Fortunii, Cryptomeria japonica, Quercus sclerophylla and inversa, Viburnum plicatum and macrocephalum, with many recent introductions from the north of China, quite new to English gardens.

Messrs. S. and N. take this opportunity of stating that they give Designs for Laying out New Grounds and Plans for Improvements; also Estimates for all kinds of Planting, whether ornamental or economic.—Bagshot Nurseries, Aug. 31.

NEW HYACINTH SUPPORT.—HOOPER AND CO., CENTRE AVENUE, COVENT GARDEN MARKET, invite the attention of the Flower-growing Public to their new and perfect

SUPPORT FOR HYACINTHS IN GLASSES.

Its excellence consists in its being neat in appearance, easily applied, keeping the bloom erect almost without being visible, and suited to every size and shape of Hyacinth Glass.

May be obtained of the principal Seedsmen and Florists.

UNIVERSITY COLLEGE, LONDON.—JUNIOR SCHOOL, under the Management of the Council of the College.

Head Master—THOMAS HEWITT KEY, A.M.

The School will open on TUESDAY, the 24th of September. The Session is divided into three terms, viz., from the 24th of September to Christmas, from Christmas to Easter, and from Easter to the 1st of August. The yearly payment for each pupil is 18*l.*, of which 6*l.* are paid in advance in each term. The hours of attendance are from a quarter past 9 to three-quarters past 3 o'clock.

The afternoons of Wednesday and Saturday are devoted exclusively to Drawing.

The Subjects taught are Reading, Writing, the English, Latin, Greek, French, and German Languages, Ancient and English History, Geography (both Physical and Political), Arithmetic and Book-keeping, the Elements of Mathematics and of Natural Philosophy, and Drawing.

Any pupil may omit Greek, or Greek and Latin, and devote his whole attention to the other branches of education. There is a General Examination of Pupils at the end of the session, and the Prizes are then given.

The discipline of the School is maintained without corporeal punishment. A Monthly Report of the conduct of each pupil is sent to his parent or guardian.

Further particulars may be obtained at the Office of the College. CHARLES C. ATKINSON, Secretary to the Council.

The College Lectures in the Classes of the Faculty of Medicine commence on the 1st of October; those of the Faculty of Art on the 15th of October.—August 31.

The Gardeners' Chronicle.

SATURDAY, AUGUST 31, 1850.

MEETINGS FOR THE ENSUING WEEK.

TUESDAY, Sept. 3—Horticultural .....3 P.M.
WEDNESDAY, " 4 Royal South London .....1 P.M.
COUNTRY SHOWS.—Monday, Sept 2: Birmingham and Midland Counties Dahlia—Tuesday, Sept. 3: Halstead Floral and Horticultural—Wednesday, Sept. 4. and Thursday, Sept 5: Newcastle-on Tyne Horticultural.—Thursday, Sept. 5: North Wilts Horticultural, and Liverpool Horticultural.—Friday, Sept. 6: Newbury Horticultural.

A SHORT paragraph in last week's "Newspaper" of the *Gardeners' Chronicle* gives a very inadequate idea of the result of a most interesting attempt at procuring cheap and instructive AMUSEMENT FOR THE agricultural POOR. Prof. HENSLOW is represented to have given an excursion and entertainment "to his poorer parishioners, who, to the number of about 200, left Hitcham at an early hour, and, under the charge of the Professor and several farmers of the parish, arrived by the railway at Ipswich about 9 o'clock, where they embarked in a steamer for Landguard Fort, the scene of the day's festivities." From this it would be inferred that Prof. HENSLOW himself paid the cost of the excursion. Such was by no means the case; quite the contrary. It is an important element in such arrangements that the *people should contribute* something towards them. They all paid alike (1*s.* 6*d.* this time) for their tickets, and they have declared that they did not grudge the money "one mite." Now 1*s.* 6*d.* and the loss of a day's work is no small sacrifice for a labourer. Then the doubling this for wife or sweetheart, and perhaps throwing in a trebling for a wayward child, really makes it a serious amount. But once in the year, a holiday of this kind (provided they get VALUE for their money) is well worth while for them, and a little help may be given here and there where most needed.

It is now, we believe, two years since an attempt was made at Hitcham to get up such little village excursions. On the first occasion not more than 80 labouring people formed the party. This year the number was limited to 199 from the village, exclusive of farmers, &c. An eye-witness of what passed describes it thus: "We had a most glorious day, without a single *contretemps* beyond some of the ladies getting their faces scorched. One young lady had her cheeks regularly blistered by the reflection from the water. The soldiers of the fort *fraternised* with us, played cricket, brought out a couple of great guns, and manœuvred them to please us—helped us in every way. After our dinner on tables and forms from the garrison, the forms were ranged in a large square, the 200 were seated upon them with their faces inside, and half a dozen of us walked round and *fed* them with a spoonful or two of ice cream, manufactured on the spot, with a large block of Wenham lake ice to kick about, cool the lemonade, &c. The whole affair, with the addition of scrambling for Nuts and Walnuts, &c., was most joyous. There were three or four of the Professor's Quaker friends and their families, who were the grand *promoters of the fun*, and, on reaching the wharf just one minute too late for the train, we all adjourned to the gardens of one of them (a banker in Ipswich), where he re-fed the whole party, and we enjoyed ourselves till a later train. I got home by 11 P.M. The waggons with the labourers reached Hitcham by midnight, and I heard of nothing but satisfaction. It was amusing, on crossing over the slight sand-bank before coming to the shore at Landguard Fort, to see the general rush and shout that was raised as down they stooped to examine the sea-weed."

Although the success of adventures of this kind depends a good deal upon securing some zealous coadjutors, yet no zeal can compensate for a want of the knowledge of practically working out the details. We are therefore happy to do something towards pointing out the mode of proceeding, by reprinting the following hand-bill, of which we have chanced to procure a copy, and which may be safely taken as a guide on all similar occasions, of which we hope in time to hear of many.

HITCHAM EXCURSION TO IPSWICH AND LANDGUARD FORT,

ON TUESDAY, 30TH JULY, 1850.

I. According to my expressed determination last year, I am making arrangements for a Village Excursion to Ipswich and Landguard Fort: having received assurances that we shall be welcomed at both those places.

II. The successful issue of such an Excursion (provided no untoward accident should occur) will mainly depend upon a general attention to a few Rules, which I here propose to those who wish to accompany me.

III. Every one is to be in good humour, accommodating towards all, and especially attentive to the ladies of the party. If the weather should prove unpropitious, every one is to make the best of it, and not to complain more than he can possibly help.

IV. Those who are invited on the present occasion are the Occupiers of Farms in Hitcham, the Resident Members of the Stoke and Melford Club, and those who attend the Adult Class on Saturdays. Every one who joins the party may also name a friend residing in Hitcham, for whose good conduct he will be responsible.

V. The tickets to be issued will be limited to 200, at 1*s.* 6*d.* each. All applications to be made at the Rectory on or before Friday the 26th. Should any tickets remain unapplied for after that day by the parties invited, those who have already received tickets may apply for more, for other friends. By this arrangement I hope to accommodate all, or nearly all, who may be wishing to take part in the excursion.

VI. The party are to assemble on the platform at Stowmarket by half-past 8.

VII. As the object of the party is not to be mere eating and drinking, but wholesome recreation to body and mind, the refreshments provided will consist of bread, cheese, butter, cake, with lemonade, and one or two pints of beer for those who may apply for an order to that effect when they receive their tickets. These orders for beer are not to be transferred to other parties; and if not needed are to be returned.

VIII. Should any one be prevented at the last moment from joining the party, 1*s.* of the money paid will be returned; and the remaining 6*d.* will be appropriated towards the expenses that will have been incurred, upon the supposition that such person would have been of the party.

IX. Every one must contrive for himself how to get from Hitcham to Stowmarket, and back again. If he is not able to persuade any one to give him a lift, he must consent (as others have done before) to wear out a little shoe leather. J. S. HENSLOW.

HOW TO MISMANAGE A GARDEN.

CHAPTER IV.—IT has been seen that procrastination and disorder are to be steadily observed in all well-mismanaged gardens. They are, in fact, so essential that it is doubtful whether, in their absence, any other invention for spoiling a place will be effectual. Fortunately, however, they are pretty generally united with many other customs to which attention must be paid by him who would excel his neighbours in this art.

Manure, for instance, is not unfrequently at the root of capital mismanagement. It is folly to say that a garden wants manure as much as a farm; and hence the practice of those gentlemen is to be highly commended who send all the products of the stable and cattle-yards to the farming-bailiff, instead of the gardener. Nay, who, if a hotbed is exhausted, cart it off to the fields, instead of letting it serve for the uses of garden crops. Turnips and Beet and field Beans, we all know, must have manure, and plenty of it; but the refuse of the shrubberies, with Grass-mowings, leaves, and rotten vegetables, are sufficient for the gardener. What does *he* want with manure? Geraniums and Verbenas, and shrubs and flowers, can't want manure. Seakale and Celery, and Cabbages and Parsley, are wild plants, and what do wild plants want with manure? People talk of growing Mushrooms upon hotbeds; but they grow well enough in the fields without a hotbed, and why should they want one in a garden? There is no doubt that reasoning of this kind is to be taken as a certain sign of good mismanagement. To be sure it may be said that one does not find on the cliffs such Cabbages as appear in gardens; and that the Celery which grows in salt marshes is not exactly like what is brought to table: but what is that to the mismanager? Does he not know that a Cabbage is a Cabbage after all, and that the difference is in the sort, not in the nature of the plant.

"I wish, Mr. Smith, that you would keep the borders of these old shrubberies always gay with flowers. It is very disagreeable to my lady when she comes down here in the autumn to see nothing but green bushes, without a flower among them." It was thus that the young Earl of Retford addressed the old gardener who had charge of the grounds round his shooting box on the borders of the moors. —"Certainly, my lord," was the reply, "if your lordship will allow me some dung; for the borders have been run out years ago; and nothing will grow in them now except the bushes."—"Manure for flowers, Mr. Smith! why I have been always told that it spoils them. However, speak to the steward." —But the steward was of opinion that what little stable litter was made by my lord's horses, while staying at Basledem, could be much better employed in making a hotbed for Melons in his own garden; and therefore Mr. Smith got none. The old gardener was of course driven to the usual expedient of doing without; and in the next spring his choicest flowers were carefully planted all round the shrubberies as my lord desired. But they did'nt grow much; some died; some bore a few flowers; most were stunted or spindling things; even the Hollyhocks hardly showed their heads above the bushes. When Lord Retford revisited his lodge, his first remark, as he drove up to the house was, that Smith had as usual neglected the flowers. "Really," said his lordship, "this is insufferable; the man grows fruit and vegetables well; but as to flowers he knows nothing about them. I think I shall send to Sir Peter Glow's for one of his flower garden men, and get rid of this old blockhead." It was useless for Smith to explain that he had mismanaged, according to the instructions of the steward; or to say that it was hard upon him to insist upon his growing flowers in old borders full of roots, from which even the leaves had been carefully swept for years. It was all in vain; flowers could not want manure; the steward said so; my lord always trusted to him, for he was a capital judge of horses, and a very clever fellow; and Mr. Smith received his discharge. There can be no doubt that Smith was wrong; the poor man was a good manager, and that did not suit the steward. It would never do to have about my lord a fellow that pretended to know more than he the steward knew. As to gardening, why anybody could garden.

It cannot be denied that this kind of mismanagement is much to be approved of. Gentlemen who have a gardener should always take the opinion of the steward in preference; or of the butler; or of the valet; or of the lady's-maid. Servants of that rank are generally persons of genius; and knowing nothing about the matter, are sure to give advice free from the prejudices of class. That they will disallow the use of manure is certain; firstly because it saves outlay, a great object with all mismanagers, who look to present expense and not to future gain; secondly, because it is dirty and littery, and offends the delicacy of their nostrils; and moreover because it is connected with what they call "the association of ideas." No person of delicacy could endure the thought of eating fruit and vegetables produced by the aid of that horrid stuff.

Let no manure then find its way into a garden; compel the gardener to do without it: disregard his assurances that the land is run out, or out of all heart; and if he will prevent the crops from succeeding, stop his grumbling by discharging him. You will soon get another: and in servants, as in all things else, variety is charming.

DESCRIPTION OF THE VICTORIA REGIA HOUSE AT CHATSWORTH.

In fulfilment of the promise given at p. 451 of the present volume, we now lay before our readers the plans and elevations of the hothouse erected at Chatsworth, for the cultivation of the Victoria Lily, together with descriptions and explanations by Mr. Paxton himself. In a mere gardening point of view, this structure is of great interest, showing, as it does, in how simple a manner large spaces may be covered with glass, and yet be suited for all the purposes of cultivation. It will also indicate the earliest conception of that palace of glass which is to receive the products of industry of all nations, in 1851, and which was thus described by Mr. Paxton to the great meeting at Bakewell:

"The building will be 2100 feet long by 400 broad. The centre aisle will be 120 feet broad, or 10 feet wider than the Conservatory at Chatsworth. The glass and its iron supports comprise the whole structure. The columns are precisely the same throughout the building and will fit every part; the same may be said of each of the bars; and every piece of glass will be of the same size, namely, 4 feet long. No numbering or marking will be required, and the whole will be put together like a perfect piece of machinery. The water is brought down valleys on the roof, and thence down the columns; the water in no instance has further than 12 feet to run, before it is delivered into the valleys or gutters; and the whole is so constructed as to carry the water outside, and the condensed water inside. The building is divided into broad and narrow compartments, and by tying these together there is little for the cross-ties of the centre to carry. The building is entirely divided into 24 places—in short everything runs to 24, so that the work is made to square and fit, without any small detail being left to carry out. The number of columns 15 feet long is 6024; there are 3000 gallery bearers; 1245 wrought iron girders; 45 miles of sash bars; and 1,073,760 feet of glass to cover the whole. The site will occupy upwards of 20 acres of ground, but the available space which may be afforded by galleries can be extended to about 30 acres, if necessary."

Fig. 1 represents the ground plan, which is 61 feet 6 inches long, and 46 feet 9 inches wide over walls. The circular tank is 33 feet diameter, and the centre part, which contains the soil for the plant, is 16 feet diameter. The eight tanks in the four angles are filled with aquatic plants of various kinds. The house is heated by a series of 4-inch cast iron pipes all round the inside of the external walls, proceeding from a Burbidge and Healey's boiler, and Sylvester furnace. The tanks are heated by 4-inch pipes, underneath each, as shown in the section; and by smaller sized lead pipes resting on the paved ledge of circular tank, also shown in the section. There are 30 openings between the piers, all round the house, for ventilators. Different compartments of the roof are also made to open by simple machinery, for the purpose of ventilation. The pathways are raised 3 ft. 6 in. above the general level outside, and the roof is supported by light wrought iron beams, resting on the eight internal columns, as shown on the ground plan.

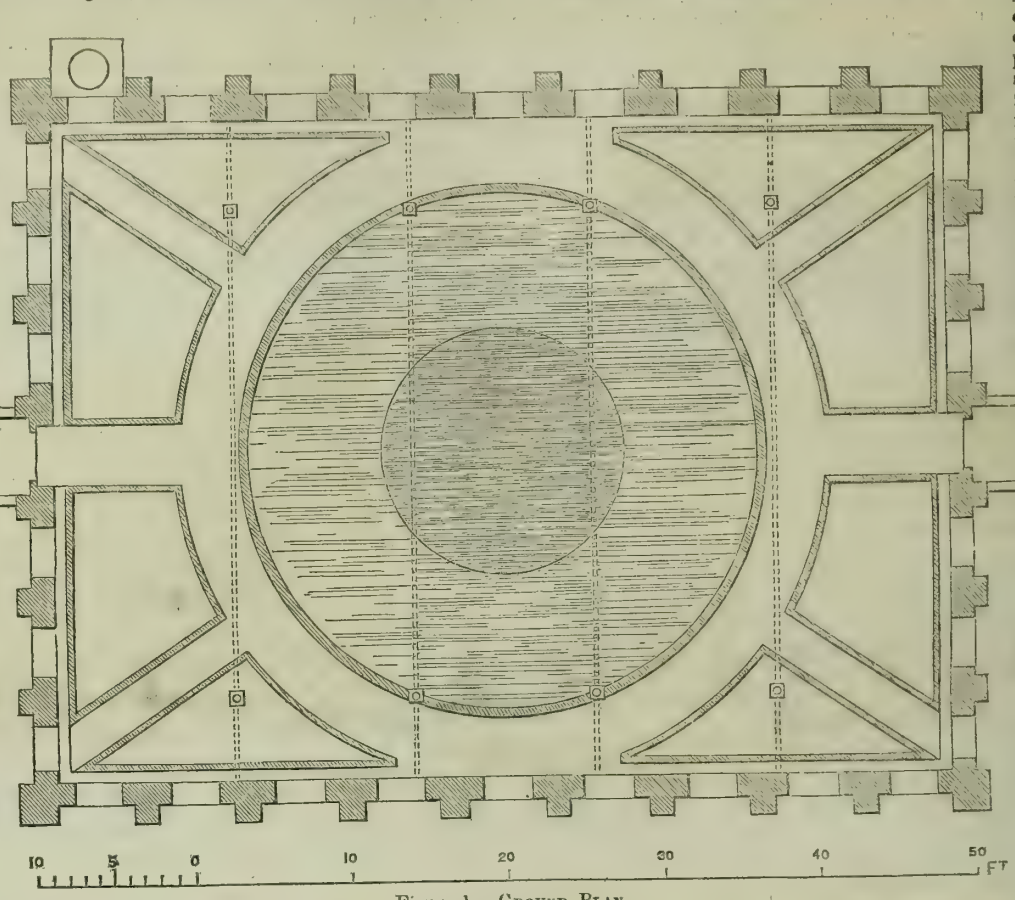


Figure 1.—Ground Plan.

Fig. 2 is a transverse section of the building, which shows a section of the circular tank, with the pipes under the centre part, and the small pipes on the paved ledge, forming the shallow part of the tank. Also the side pipes, and the manner of fixing the cast iron columns; together with the construction of the roof and its gutters, facia board, &c. The wrought iron beam shown in this section has a bearing in the middle, over the great tank, of 31 feet 3 inches. The height of the masonry, from the ground to the top of the coping, is 4 feet 9 inches; the column and arch 10 feet 6 inches; the plating and facia board 2 feet 1 inch, making the whole height from the ground line 27 feet 4 inches. By this section it will be seen that the upright sashes are placed behind the cast iron columns, so that the shafts of the pillars are isolated.

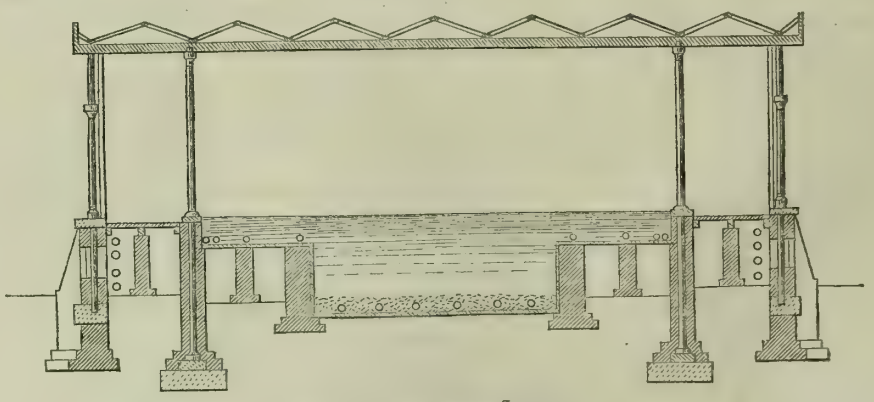


Figure 2.—Transverse Section.

Fig. 3 represents the end elevation, and shows the steps ascending to the entrance, the ventilators, cast iron arches, and facia board over the plating. The upright glass is 10 inches wide between the bars, and each spandrail between the arches is filled in with one piece of plate glass. The columns are 6 feet 6 inches from centre to centre, and the side elevation of the building presents a series of nine arches, as shown in the exterior view.

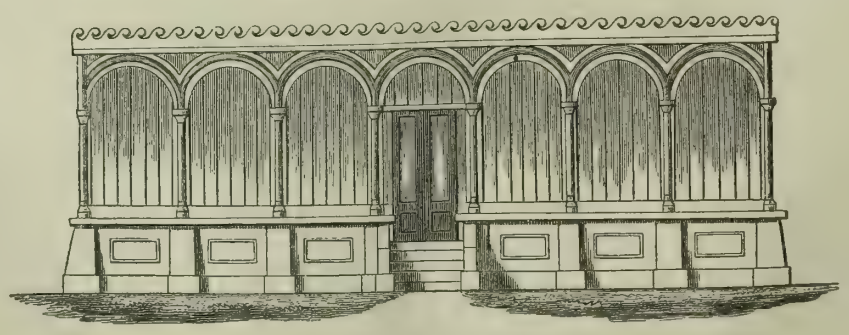


Figure 3.—End Elevation.

Fig. 4 is a parallel perspective representation of the interior, showing the internal construction, the mode of supporting the longitudinal ridge and valley, wooden rafters of the roof, &c.

Fig. 5 is an angular view of the building; both ends are alike, and both sides are of the same form. On the east side, which fronts the park, the masonry is partly hid by artificial rock work, and the ends and steps to the entrances are adorned with ornamental plants.

Construction: Mason, and Castings.—The foundations of external walls and tank walls are built of solid rubble work, well bedded in mortar. The curb of circular tank above the pathways, and curbs of the angular tanks, are of brick, cemented. The tanks are laid with pavement and covered with lead. The external walls are built of pick scappled coursed wallstone, with piers battering 9 inches, and a plinth formed of two courses of wallstone projecting 2 inches. The steps to entrances and curb walls bounding them are of rubbed grit stone, and the walls are covered with neatly boasted and weathered coping. The cast iron columns are 4 inches at the lower diameter of the shaft, and 3¼ inches in the upper diameter. The cast iron of the arches is 3¼ in. wide, by 2½ inches thick, chamfered. The wrought iron beams are 5 inches by 1 inch, with tension rods 1 inch in diameter.

Carpenter, &c.—The platings are 5 inches by 12 inches, the valley rafters of roof, 6 inches by 4 inches; and the ridge rafters, 5 inches by 3½ inches; with strengthening pieces over each iron beam, and sash bars 1½ inches deep. The ventilators are bead and flush, hung on the pivot and socket principle, in rebated wooden frames. The stiles and arches of upright sashes are 2 inches thick, together with the doors, which are framed and panelled, and furnished with brass locks and brass butts. The pathways are laid with 1½ inch Larch boards, ¼ of an inch apart, radiating round the centre tank, and resting upon Oak sleepers 4 inches by 3 inches. The roof ventilators are framed and glazed, and hinged to the rafters. The facia boards are wrought and cut out, as shown on the upper part, with mouldings planted on the plating, to form a cornice. The scroll is completed by painting in different shades. The curbs of all the tanks are finished with a neat rounded edged wooden capping, and the circular tank is provided with a neat railing and hand rail all round. The whole of the house is glazed with sheet glass 4 feet long by 10 inches wide, without overlaps in upright sashes, all being close jointed. Every part of masonry or brick work seen from the inside is covered with cement, and the whole of the structure, both externally and internally, is thoroughly painted in suitable and ornamental colours. The accompanying design, described in the foregoing paragraphs, is the type of my design for the building for the great industrial exhibition of 1851. When the

large conservatory at Chatsworth was built, a great point was gained by being able to have the glass manufactured in sheets of 4 feet in length; but since that period the improvements in different branches of manufactures have enabled me to make the present Lily-house (though comparatively small) of a much more light and elegant appearance.

It occurred to me that it only required a number of such structures as the Lily-house repeated in length, width, and height, to form, with some modifications, a suitable building for the exhibition of 1851. Hence arose the design for that structure, and the subsequent honour conferred on me by its unqualified adoption by her Majesty's commissioners. *J. Paxton, Chatsworth, August* 13.

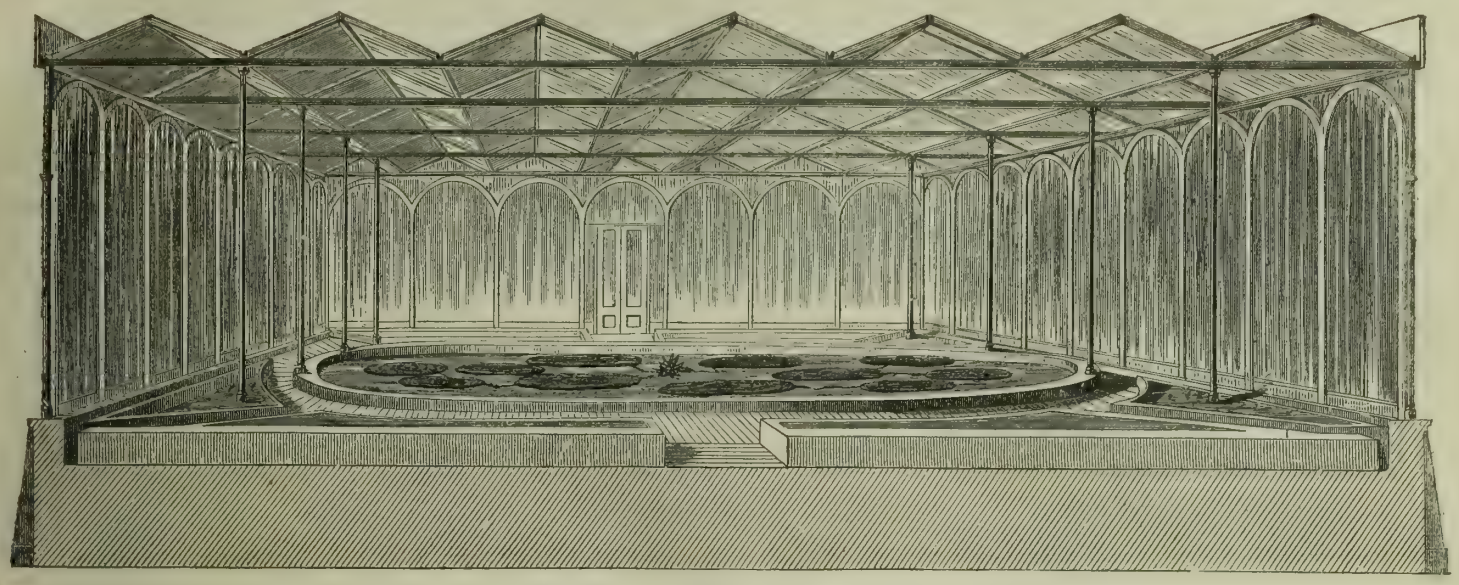


Figure 4.—Interior View.

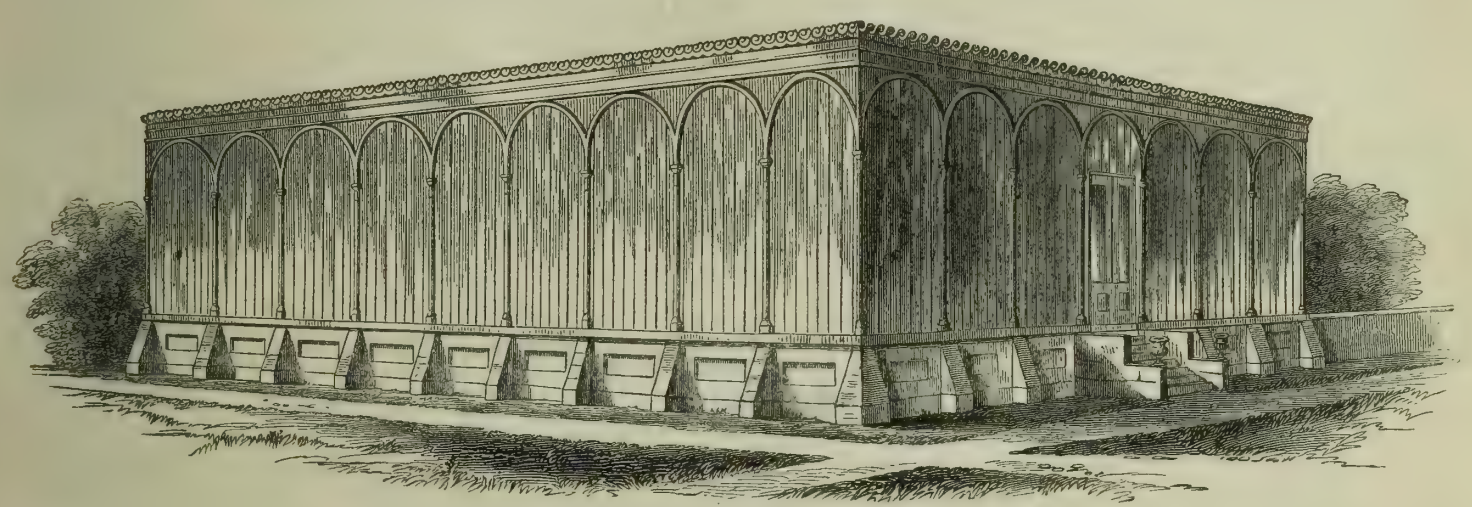


Figure 5.—Perspective View of the Exterior.

VILLA AND SUBURBAN GARDENING.

The production of early Strawberries with anything like success demands a considerable amount of care on the part of the cultivator. The first thing to be considered is the temperature, where houses or pits are exclusively set apart for their culture. This can readily be controlled; not so, however, where they are forced with other plants. In this latter case a crop must always be a matter of uncertainty.

When Strawberries are first removed from the open air and placed under glass, the temperature should not for some weeks exceed 52°. When flowering commences, the warmth may be increased a few degrees, and the fruit may be ripened in a temperature of from 60° to 65°. One very important point is to place the plants close up to the glass. The nearer they are kept to the light the better; there is little chance of securing a crop unless this is attended to. For this purpose temporary stages will be found a great convenience. These can be removed when the fruiting season is over, to make room for any other crop. The free access of air must be attended to, more especially during the period when the plants are in bloom. The fruit will not set well, if at all, unless an abundant supply of pure air is admitted on all favourable occasions; indeed some of our best growers admit air night and day, except in very severe weather; where a perfect command of heat is obtainable, the aeration can be much more satisfactorily conducted.

It is the practice of good cultivators to place each pot in a shallow pan, in order to be enabled to supply the plants more abundantly with moisture; but they must not be overdone in this respect. In dry weather, when they are supposed to suffer most, this moisture will be found of vast service, and they will succeed under such circumstances much better than if placed upon a shelf without pans.

I have proved another plan to be even better than the earthenware pans, and where opportunity offers of practising it, I would strongly and confidently urge its adoption. Cut fresh turves from a common or old pasture, 2 inches thick and 9 inches wide. These may be of any convenient lengths; place them on stages, with the grassy side downwards, and set the plants on them. The water administered, and especially the liquid manure which passes through the soil, and escapes at the bottom of the pots, will be absorbed by the turfs. This will constitute a supply for the plants in the most natural manner, as the roots will soon pass through the holes at the bottom of the pots, and penetrate the turf. The liquid manure which these turfs have absorbed will sustain the plants in a surprising manner, and the moisture which they give out under powerful sunshine will be highly beneficial.

The Strawberry plant under glass is extremely liable to be infested with green-fly, but this can be readily subdued by frequent fumigation. This should be especially attended to, and accompanied with frequent syringings. *Pharo.*

Home Correspondence.

Fixed Filters in Wells.—Perhaps a rainy day in the muirs may be turned to the advantage of some of your readers, by describing a new adaptation of a filter which I have recently tried with the best results. I formerly made some communications to you on this subject, which has been again agitated of late in the *Chronicle*. And your recommendation of charcoal, which I have adopted with good effect, coupled with the hint suggested by the floating filter (a patented article, some time ago described and engraved in the *Illustrated London News*), gave rise to the following experiment, which is not patented, but much at the service of any of your readers who may find it useful. It was successfully tried on as unpromising a chalybeate as could well be adventured on. It should be equally useful for a rain-water tank or well, having its bottom covered with charcoal, to preserve the freshness of the stagnant water. The chalybeate in question was strongly impregnated and flavoured with iron, threw up an oily scum, and on standing for a day, became of a brown tinge; when mixed with brandy, the grog was nearly black. The well being shallow was soon pumped dry, when I found its available depth below the cradling to be only some 3 feet; the sides consisted of a stratum somewhat resembling fine clay, mixed with stones of different kinds; a grey freestone rock of a most disagreeable pitchy odour, lay about a foot below the bottom of the well, and I endeavoured to carry down the cradling through the clayey substance to the rock, by removing it piecemeal. This process, and the necessary drying of the well in order to carry it on, brought the whole down; no one was in it, fortunately. On clearing out the rubbish, the well was found to be supplied by a spring, which oozed slowly through a portion of the above mixed clayey substance. To obtain greater depth, the rock was excavated to a depth of 10 feet, and the total supply was thus increased to 13 or 14 feet. In rebuilding the well, I had the space between the cradling and the surrounding ground, from which the water flowed, completely packed with sand and gravel. This filter somewhat improved the purity of the water; but its strong iron taste and oily scum remained in full vigour. Something more was therefore indispensable; and the plentiful supply of water I had thus obtained, in place of an original depth of only 3 feet, instigated me to further experiments, to convert it into some use. With this view I procured a barrel of about 4 feet in height; its bottom was perforated with holes, to allow the entrance of the water there. This arrangement also gave me the advantage of the increased pressure of a column of water, to the extent of these four additional feet, besides being necessary for the other mechanical appliances contemplated. A piece of canvas was fixed inside the barrel, over this perforated bottom, for the double purpose of retaining the superincumbent sand in the filter, as well as to aid the latter, as the sponge does in Robins'. Over the canvas was packed 9 inches of fine sand, mixed with a little very small gravel; then another layer of canvas, then 9 inches of charcoal, then a layer of canvas, then 9 inches of sand and gravel, then canvas, and lastly a perforated top was fastened firmly over the whole. Thus the entire filtering apparatus occupied rather more than one-half of the lower part of the barrel, leaving the rest or upper part as a reservoir for the already filtered water. The pipe of a pump was then fitted into the lid of the barrel, air-tight; and the barrel containing the filtering apparatus, after being fastened to a tressle about 3 feet high, was let down to within that distance of the bottom of the well; that space was left below, in order to obtain the supply from a cleaner body of water than the suction caused by the action of the filter might have produced, had it been placed near enough the bottom to agitate the deposit. It will be obvious that when the

pump was used, the air in the upper part of the barrel would be necessarily exhausted, creating a vacuum ; or in other words, the upper part of the barrel then became part of the pump. At first I was apprehensive of the smallness of my reservoir, but on subsequent trial the pressure of a column of water, of the diameter of the well and 10 feet in height, acting through the filter on the inside vacuum above, has been found to force the water so rapidly through it that the supply seems to be afforded much faster than it is possible to pump it off. For a few days the impurity remained with slight diminution, and I began to fear for the success of my experiment ; this, however, seemed to have been merely occasioned by the necessary cleansing of the filter ; for within a week the water was greatly improved in purity, and what is most remarkable the taste of iron became scarcely perceptible. The construction and materials of the filter might be easily and very considerably improved in many respects ; these, however, are minor points. It is the construction and arrangement of a filter, within a well of indifferent water, so as to convert, without any other trouble than the mere act of pumping the impure supply below into a pure stream above, to which I attach any merit of novelty or utility. *R. Stewart.* P.S. Will "B." (see p. 421, 1849) be kind enough to state what description of charcoal he used for keeping the water fresh during the long voyages mentioned in the note of advice appended to my former communication on this subject.

Roberts' Strawberry Tiles.—Early in the spring of this year I saw these tiles advertised in your Paper, and on account of the many good qualities which Mr. Roberts said they possessed, I was induced to purchase 100 of them for trial. The tiles and carriage together cost me 1*l.* 6*s.* I put them down in accordance with Mr. Roberts' directions, on one-half of a bed of Keens' Seedling ; on the other half of the bed I put straw, cut into pieces about 2 inches in length. The part of the bed on which the straw was put produced me at least 50 per cent. more Strawberries ; larger, and as clean and good in flavour as I had on the tiled part. The straw cost me 1*s.*, the tiles 1*l.* 6*s.*, and 50 per cent. of fruit into the bargain—these are facts, and the consequence has been a discontinuance of the tiles, except the placing of one here and there about the garden as traps for snails, &c., for which purpose they are useful. *Fairplay, August 27.*

Potato Disease in Scotland.—Having been for the last month on a tour through the Highlands of Scotland I have taken particular notice of the state of the Potato crop. Until I came here on Thursday last, I was hopeful that the crop would be matured in a healthy state, but I am sorry to inform you that within the last few days the most unfavourable symptoms have appeared ; in this neighbourhood the stalks have all turned black, and in the Island of Iona where I was on Saturday, the crop is entirely destroyed. *Oban, August* 26. [We regret to add that this is from a gentleman well acquainted with the disease—and no alarmist.]

Remedy for Mealy Bug. — Hereman's fluid and Kyle's liquid have been mentioned ; but "A Constant Reader" says of the latter, he "cannot get it." I do not know of any one who sells these mysterious compounds ; but I can with confidence recommend a liquid free from mystery, and that may be applied with safety—spirits of wine. I first tried whiskey ; afterwards I used spirits of wine, dipping the young tender shoots of Justicias, Clerodendrons, Torenias, &c., in it, without their being injured in the least. I have also applied it with a feather and camel-hair pencil. As a trial, let two large mealy bugs be placed on a leaf, touch one with water, and the bug will remain dry and uninjured ; touch the other with whiskey or spirits of wine, it will appear soaked through, die, and turn brown directly. *G. W., Redcar.*

The British Association. — In the *Gardeners' Chronicle* of Saturday, 17th August, in the account of the British Association for the Advancement of Science, I find it stated "that of 25 names upon the Council not a single botanist is to be found." The Council consists of the office-bearers for 1850 and 1851 as well as certain others. Among the office-bearers for 1851, I find Professor Henslow, of Cambridge, a Vice President of the Association, Professor Royle, one of the General Secretaries ; and among the other members of Council I find the names of Dr. Daubeny, and of E. Forbes, the Professors of Botany at Oxford, and at King's College, London, both of whom are enumerated in the same article, page 517, among the botanists who were present at the Edinburgh meeting. Though not referred to by your correspondent, it does not appear that botanists held any inferior position at this meeting, as Mr. Bentham and Dr. Greville were Vice Presidents of the Natural History section, and both a general and a local secretary were botanists. The scientific business of the Association being carried on in different sections, the committees of which generally consist of all those who have paid especial attention to the subject of the section, and who have the power of adding any names to their number, it seems to me that it must be the fault of the cultivators of any particular science if it does not take a prominent position. To the general committee, where the real business of the Association is carried on, all have access who have had a paper printed in any of the Society's printed Transactions. The Council has only a few meetings in the year, and carries out the resolutions of the general committee, and makes arrangements for the next meeting, and has little or nothing to do with particular sciences, except as connected with any resolution of the general committee. I would also ask, do the principal botanists attend the Association regularly or at all ? Does Robert Brown ? Do you ? Does Sir W. Hooker ? I have frequently heard at the Royal Society all of you complained of ? *Quæstor.*——In writing the notice referred to, we merely attempted to give an explanation of a fact which we suppose "Quæstor" will not deny, that little is done in and for botany by the Association. We did not excuse the botanists, but our eye caught the list of the Council for this year, and we found no name there that did not more fairly belong to some other department than to botany. It is well known to every one that both Dr. Daubeny and Professor E. Forbes, although professors of botany, are more devoted to other branches of science, and cannot, we think, be regarded as representatives of botany. We saw also Professor Henslow's name as a Vice-President of the next meeting, but his position in the Council is *ex-officio*, and as their meetings are in London, his influence can be but small, and therefore we expressly alluded to the 25 extra-official members of Council. "Quæstor" seems to know well the nature of the Council and its meetings, but he has certainly under-rated its position in relation to the Association. Although nominally the general committee have the power, the real guiding and directing influence of the Association is the Council. We did not intimate that there was any intentional neglect of botany, but supposing our impression of the importance of the Council wrong, how is it there are so few botanical papers read, and that botanists occupy so little the attention of the section ? We must leave the editor to answer one of the questions at the end of the above note. *Rep. Gard. Chron.* ——[Our reporter's statement will, we trust, be satisfactory to "Quæstor." It is evident that the acquaintance of the former with the machinery by which the British Association is worked is imperfect. No greater mistake could be made than to suppose that what is called the Council, *exclusive of the officers*, is the executive. In reality the business is done by the officers, who are generally the most regular attendants, and often the most efficient members. But even last year Prof. Forbes was on the Council ; Dr. Royle was General Secretary, and Prof. Balfour Local Secretary. We by no means acquiesce in the doctrine that neither Prof. Forbes nor Daubeny are botanists ; on the contrary both are distinguished in branches of that science, and especially in those branches which are best adapted to the purposes of the Association. As the Local Secretaries are those who generally make the arrangements with the Council for the ensuing meeting, they generally attend on some one of the Council Meetings ; so that there were in fact *three* botanists on the Council of last year, and there are *five* this year. Under these circumstances we cannot admit that botany is not fully represented. The real position of a science depends upon the papers read and the business done in the sections. Botanists did little a few years ago, but the Natural History section has greatly improved of late years, and both the botanical and zoological papers are of a different stamp from what they used to be. Though our reporter was mistaken in his views, it would be quite possible, indeed very probable, that a science might not be properly represented, as everything is got through as quickly as possible, and the list of officers of all kinds is made up as much as possible from those who are present or who attend pretty regularly. This very year a resolution was passed that the names of those who did not attend should not appear in the printed lists, and in this the Association was quite right. As to the botanists being insufficiently represented, we must say that if it is so it is the fault of themselves and of no one else. They make no effort as a body to hold a high station in the Association, and they have no right to complain of the consequences.]

The Mistletoe.—I placed a berry upon an Apple tree in my garden about 16 years ago ; for the first seven years the Apple tree and Mistletoe continued to grow and flourish luxuriantly together, but after that time the Apple tree began to die away every year by a branch at a time ; still the Mistletoe looked fresh and green, but it made little progress in growth. Last year I cut the only remaining branch off the Apple tree, leaving the Mistletoe to itself. [Since then the Mistletoe has died, proving that it cannot keep alive a tree on which it grows after the latter has been deprived of its branches, nor yet live upon it itself after the head of the tree is killed. The head of the Apple tree was above the Mistletoe ; it was a standard grafted on the Paradise stock. Do you think that the failure was owing to the Apple being grafted on the Paradise stock, and consequently not growing fast enough for the Mistletoe ? *R. Humphreys, Dunchurch Road, Rugby.* [The Mistletoe died because it had no more food to exist upon.]

Fuchsia spectabilis. — Excepting two plants, which are in my possession, I have not seen or heard of a healthy-growing plant of this Fuchsia in this neighbourhood. In March last I purchased mine of a nurseryman ; they were then very small plants in very small pots. At the beginning of April I shifted them into pots about 4 inches across. The mould I used was sandy peat, loam, and some leaf-mould. I then filled two larger sized pots with moss, in which I made a space for the pots in which were the two Fuchsias. I then placed them at the front of my greenhouse, always keeping the moss damp, so that but little watering was necessary. Their growth was rapid, and they continued perfectly healthy. At the beginning of July, having examined the roots and finding the pots well filled with them, particularly at the bottom, I placed them in pots 6 inches across, using in the compost more rich loam than at first. I then placed them in moss as before, and at the front of my greenhouse, where they have continued to this present time in a healthy state. They are now about a foot high, and have fine dark leaves more than 5 inches in length, exclusive of the stalk, and upwards of 2 inches in width. As the season is advancing, and as there is no present appearance of their blooming, I am afraid they will not do so this year, which will be a disappointment to me. From one of the plants I have taken four cuttings, which have been easily struck, and there are two other side shoots on the same. *W. W., Chichester.*

Planting Potatoes.—Amongst the million and more of suggestions which have been thrust upon your notice about the Potato, allow me to add mine for planting, which I have some faith in, from results. The Potatoes intended for seed must remain in the ground during the whole winter, or till such time as planting is to be done. The haulm must be removed when withering, or earlier, if showing any symptoms of blight, and the ridges well earthed up. When sowing is intended to be commenced, prepare the plot a fortnight before-hand, and as you proceed with the digging, sprinkle common salt over the surface lightly. The Potatoes must not be put in till 10 days after the application of the salt, then raise the Potatoes, and put them in immediately—the less time they are exposed to the air the better. I imagine that the sound Potato only will survive the winter, that it is far safer undisturbed in the ground than if taken up at the usual season, that the earth interposed between the tubers protects the sound from the unsound ones, should there be any, and that the seed is more naturally matured, and more likely, thus managed, to produce a sound crop. I have taken the idea about the strewing the salt on the earth 10 days before planting from —Wythe Esq., of Middleton, whose satisfactory and well carried-out experiments I had the opportunity to witness. I must add that the ground must be well drained, unmanured, and have a good aspect ; that the ridges should be at least 3 feet apart, and that the earth should be frequently and freely hoed during the growing season. All the superfluous rank-growing haulm should be cut away from time to time, so that the ground may receive the full influences of light and air. Whether the following whim is worth the ink that writes it, you can best determine. Shortly before the disease usually developes itself, let a strip 4 or 5 inches wide of common chalk or carbonate of lime be strewed between the ridges cleared of weeds. On a calm moist day, water this with sulphuric acid 20 times diluted. The carbonic acid evolved will, from its density or greater specific gravity, keep down, and slowly circulate through the haulm and leaves, to the destruction perhaps of some of the noxious insects, and noxious growths of small vitality, which may affect the crop, as well as to an improved condition of the plant, through the absorption and assimilation of this matter making gas. The gypsum formed by this procedure will be a fixer of the ammonia said to be both in the air and rain, &c. *T. J.*

The Cuckoo.—I have been somewhat amused, and not a little surprised, at the observations of some of your correspondents, upon the change of the note of the cuckoo, particularly at those of the intelligent and observant Mr. Bree, of Stowmarket, who says that he has not remarked this change till within these few years. A native of Ipswich, only some dozen miles from Stowmarket, as a boy upwards of 50 years ago, I was accustomed to observe, and now well remember, not only this change of note, but likewise the doggrel verses upon the subject in every ploughboy's mouth, which I send in all their native uneducated Suffolk abhorrence of the sibilant letter *s*, at the end of a verb, which, consequently, when the noun is singular, makes the rest plural :

> In April the cuckoo show his bill,
> In May he sing night and day ;
> In June he change his tune,
> In July away he fly,
> But in August away he must.

But I should have scarcely thus have troubled you, but for the purpose of introducing the following observations upon the economy of this bird :—I have a copy of "Stillingfleet's Tracts," which belonged to Mr. Teesdale, the well-known naturalist, in honour of whom the Iberis, formerly nudicaulis, is now Teesdalia. In this copy there are many brief marginal notes, and now and then a slip of paper appended where the margin did not suffice. At page 94, in the "Essay on the Economy of Nature," by Isaac J. Biberg, it is stated that "the cuckoo lays its eggs in the nest of other (?) small birds, generally the wagtail, or hedge sparrow, and leaves the incubation and preservation of the young to them." Upon which Stillingfleet in his notes remarks, that "Linnæus (quere Biberg) seems to have mistaken the white-throat for the hedge sparrow," and that this custom of the cuckoo is so extraordinary, and out of the common course of nature, that it would not be credible, were it not for the testimony of the most knowing and curious natural historians, such as Ray, Willughby, Gesner, Aldrovandus, Aristotle, and others. Mr. Teesdale's note upon this passage is this, "I have my doubts about the cuckoo's leaving the incubation of her eggs to a small bird, from the following circumstance : in the year 1765 I shot a cuckoo as she was rising from a bunch of Furze, and upon examining the place I found two eggs very warm, and with young ones in them. I am pretty certain she was sitting upon her own eggs. *R. T.*" In the hope

that these observations from so distinguished a naturalist may be acceptable, and induce more accurate investigation into this interesting subject, I have forwarded them to you, more especially as I have always thought it unlikely that such small birds as those to which the maternity is generally attributed, should be able to impart warmth enough to eggs so much larger than their own, as to be able to bring them to maturity. *J. B. K. L., Lynn.*——The altered note of the cuckoo has been noticed so long and so commonly, as to have formed the subject matter of one of those old rhymes of which every school-boy in my time knew a dozen or more. I have a note of this somewhere in my possession (which I cannot however find), and which runs somewhat thus :

When first the cuckow cometh, he doth sing
"Kooke-kow," "kooke-kow," to every kooke a kow,
But long summer days a change do bring,
'Tis the "kook-kook—kook-kow," many a kooke, scarce ever a kow.

I have myself noticed the change as long as I can remember, as well as the guttural sound noticed by Mr. Bree. This district, North Riding moorlands, abounds with cuckoos, there being, I should think, half-a-dozen for one as compared with the other parts of the country (in Essex, Cambridgeshire, Suffolk, Herefordshire, Berwickshire, and Yorkshire) with which I am by residence acquainted. From frequent observation I conclude that the change in the note of this bird is analogous to the changes which may be noticed by a close observer in the notes of almost every bird in the breeding season and its various epochs. Some birds, the nightingale to wit, become totally silent when the young brood is hatched. The note, at all events one of the notes, of the nuthatch is entirely different after "Valentine's-day," and till the breeding season is past, from those it uses at other periods ; and the same is true of the rook and other birds, which any one may notice for himself. As far as my observations go, you may always meet with young cuckoos soon after the period at which the senior cuckoos begin to use their altered calls. And I doubt not that, though they are innocent of incubation, they yet follow the rule of other birds as to their vocal exercises. I do not know if it has been generally noticed that after the period of the altered note comes a period of total silence, lasting some few weeks before they leave the country. The usual cry "Cuckoo" is always accompanied by much motion of the tail, which is elevated at the moment of utterance ; the altered note "Cuck-cuck-cuckoo," is very frequently, I might say much the most frequently here, uttered on the wing or just after settling on a tree, in which case the guttural sound always follows. *J. C. Atkinson, Danby, near Grosmont, York.*——Some of your correspondents seem to think that the cuckoo has sung this summer as it never sung before. The fact is, that when the male bird is away from the female his note is simply "cuckoo ;" but when he is toying with her it becomes rapid, and broken into monosyllables, such as your correspondents describe, and a hissing, shuffling noise at the same time frequently proceeds from one or both of the birds. But let me draw the attention of your readers to the note of the female cuckoo, one of the sweetest of sweet rural sounds—rapid, but soft and melodious, and so very different from that of the male that it is very generally supposed to proceed from one of our woodpeckers. Cuckoos abound here in their season. Soon after the middle of July their song suddenly ceases, and they all leave us, with the exception of a very few young birds then still unfledged, one of which I saw on the 19th of this month (August) followed by its foster parents. How marvellous the instinct which will ere long lead this young bird to a far distant land ! *A South Bucks Yeoman.*—[We think the Cuckoo question has now been carried *far enough.*]

Moor Park Apricots.—In the nursery of Messrs. Jessop, of Cheltenham, is a standard Moor Park Apricot, bearing at least 30 dozen fruit in fine condition. The tree stands isolated, and, as far as I can see, there is no peculiarity either in the soil or situation. *A Constant Reader, Gloucester, Aug.* 29.

Mignonette, from which bees are excluded, and the production of seed thereby prevented, blooms much more freely, for a much longer period, and with a more continuous odour, than when bees have access to it. *C.*

In and Out-door Grapes.—Last spring I introduced a branch of a white Sweetwater Vine into a frame on a slight hotbed, as soon as the bunches of Grapes were formed ; they grew rapidly and swelled very much, faster than the bunches on the same Vine on the open wall, but now the latter are double their size. Those in the bed are stunted the size of Peas, and now clear and ripe, while those on the wall are still quite green and swelling, and very handsome bunches, but most likely they will never properly ripen. Can you assign a reason for the failure of those within the frame ? also, would it be of any use now to introduce a fresh branch from the wall into the frame, if I can manage it ? *Inquirer.* [Yes]

Shrubs to withstand the Sea Breeze.—Would any of your readers kindly favour me with a good list of flowering shrubs that would not suffer from the sea breeze ? Hydrangeas are the only things that thrive with me in any amount of exposure. A gale laden with spray, which blackens everything around, leaves them unharmed ; but one becomes tired of these huge flowering masses. Aspect seems to affect their colour. A border of precisely the same soil, part of which is shaded from the afternoon sun, produces blue flowers ; while, where it is exposed to the wet, they are pink ; and just at the bend, one side of the shrub has pink and the other blue flowers, with a curious mixture of lilac. Any flowering shrubs that would endure an occasional gale would be invaluable ; the climate is otherwise excessively mild. Abutilon striatum has lived on a S E. wall for four or five years without any protection, and is covered with its graceful flowers ; on the same wall there is a flowering Myrtle 12 feet high ; in this, on a slight projection of the terrace, a chaffinch built its nest. Fuchsias also grow to any size the wall will permit. One of the old kind (rivularis ?) covers a rather exposed turret 17 feet high ; this is hardier than any other kind. The sweet-scented Verbena also grows to a great size ; while the common Laurel by its side perishes, and will only grow when sheltered from the wet. Shrubs not requiring a wall would be most useful. *F. A. P., St. Bride's Hill, Haverfordwest, Pembrokeshire.*—[We hope some one will give our correspondent the benefit of his experience, and that he will tell us what Fuchsia rivularis is.]

Societies.

Meeting at Worton Cottage, *Aug.* 28.—Messrs. Chater and Son, of Haverhill, Suffolk, produced the following varieties of Hollyhocks in fine condition : a single bloom of the Queen of England, noticed in our report of last week ; Beauty of Haverhill, silvery lilac, of fine form and size ; Fairy, externally a light-coloured variety, the ground colour of a darker shade ; Sulphurea Perfecta, a new yellow ; Obscura Aurantia (Rivers), a very fine flower, salmon and orange combined ; Black Prince, Eclipse, a very compact flower, veined maroon ; Magnus, Rubida, and Noblissima. These were the only flowers present, with the exception of some Orchids, and a nice display of cut Verbenas and seedling Antirrhinums, from the garden at Worton Cottage. As next Wednesday will be the exhibition-day of the Royal South London Floricultural Society, there will be no meeting here, and the season may be considered as virtually closed In the winter months, when matter for our columns is less pressing, we may perhaps have a few words to say upon these pleasant opportunities, which we can look back upon with unmixed satisfaction.

Royal Chelsea Dahlia, *August* 20.—This, the opening Exhibition of the season, proved very satisfactory.—Class I., open to all growers, 24 varieties : 1st prize, a Silver Cup, value 5 guineas, presented by T. B. Simpson, Esq., was awarded to Mr. Turner, Royal Nursery, Slough, for the following : Fearless, Earl of Clarendon, Sir F. Bathurst, Gem, Toison d'Or, Negro, Queen of Lilacs, Duke of Wellington, Thames Bank Hero, Mr. Seldon, Seraph, Scarlet Eclipse, Marchioness of Cornwallis, Shylock, Queen of the Isles, Richard Cobden, Nouppariel, Mrs. Seldon, Black Prince, Duke of Cambridge Frederick Jerome, Yellow Standard, Louis-Philippe, and Andromeda ; 2d, to Mr. Keynes, Salisbury, for Hon. Sidney Herbert, Cobden, Princess Louisa, Gaiety, Cleopatra, Capt. Warner, Miss Vyse, Purple Standard, Shylock, Magnificent, Sir F. Bathurst, Mr. Seldon, Lord Mayor, Snowflake, Duke of Cambridge, Essex Triumph, Privateer, Duke of Wellington, Yellow Standard, Sarah, Toison d'Or, Queen of Primroses, M. Gouberts, and Buffalo Girl —Class II., private growers, 12 blooms, a Silver Cup, value 5 guineas, presented by T. B Simpson, Esq., was awarded to Mr. Robinson, Pimlico, for Purple Standard, General Negrier, Queen of Lilacs, Duke of Wellington, Lady St. Maur, Richard Cobden, Scarlet Gem, Sir F. Bathurst, Mr. Seldon, Shylock, Princess Radziville, and Duchess ; 2d, to Mr. Black, for Mr. Seldon, Earl of Clarendon, Marchioness of Cornwallis, Thames Bank Hero, Shylock, Fearless, Richard Cobden, Magnificent, Elizabeth, Sir F. Bathurst, Queen of the Isles, Yellow Standard.—Class III , open to all growers, 12 fancy varieties : 1st prize to Mr. Keynes, for Flying Dutchman, Striata perfecta, Conspicua, Comus, Jeannette, La Rosiere, Candidate, Keepsake, Miss Blackmore, Comte de Flandre, Gasparine furstin Reuss, and Madame Basseville ; 2d, to Mr. Turner, for Striata perfecta, Conspicua, Lady Grenville, Elizabeth, Master G. Clayton, Comte de Flandre, Madame Wachy, Brunette, Jenny Lind, Delicata, Henrick von Gagern, and Princess Louisa —Class IV., private growers, 6 fancy varieties : 1st prize to J. Edwards, Esq., Holloway, for Jeannette, Flying Dutchman, Elizabeth, Princess Helena, Highland Chief, and Lady Grenville ; 2d, to Mr. Pope, Chelsea, for Elizabeth, Madame Wachy, Floral Beauty, Postsecretaire Hane, Jenny Lind, and Adolph Dubras.—Class V., private growers only, 6 blooms of new varieties, sold out for the first time in 1850 : equal 1st prize to J. Edwards, Esq., for Earl of Clarendon, Duke of Cambridge, Seraph, Snowflake, Sir F. Bathurst and Queen of the Isles ; 3d, to Mr. Robinson, for Sir F. Bathurst, Queen of Lilacs, Seraph, Earl of Clarendon. Beauty Supreme, and Queen of the Isles ; equal 1st prize to Mr. James, Stoke Newington, for Earl of Clarendon, Magnificent, Sir F. Bathurst, Premier, Beauty Supreme, and Queen of the Isles.—Class VI., private growers only, 6 blooms : 1st prize to Mr. Allen, Shacklewell, for Shylock, Mr. Seldon, Sir F. Bathurst, Capt. Warner, Duke of Wellington, and Fearless ; 2d, to Mr. Pope, for Mr. Seldon, Lady St. Maur, Purple Standard, Fearless, Richard Cobden, and Sir F. Bathurst. Extra prize for the best fancy seedling, not out, yellow tipped white, was awarded to J. Edwards, Esq., for Edwards' Mrs. Hansard, a noble variety, full, and of good form ; three blooms were exhibited. Seedlings.—These were neither very numerous nor very good, no doubt owing to the earliness of the exhibition. First class certificates were awarded to Mr. Keynes for Summit of Perfection (purple), and Hon. S. Herbert (orange and scarlet mottled) ; to Mr. Bragg, for Admiral (pale lilac) ; to Mr. Greathurst, for Lady Franklin ; and to Mr. Edwards, for Mrs. Hansard, yellow tipped white.

Reviews.

Practical Ventilation. By Robert Scott Burn. Blackwoods, 12mo, pp. 208.

This little work consists of five chapters, devoted respectively to, 1st, a few remarks on the necessity and importance of ventilation ; 2d, a short account of its principles, and their application to the ventilation of public buildings ; 3d, the ventilation of private houses ; 4th, that of agricultural edifices ; and 5th, the heating of buildings generally. A recapitulation and an appendix on the ventilation of ships are added. The author expresses a decided opinion that, in the great majority of cases, a very effective ventilation may be obtained, both cheaply and easily, by a proper attention to the laws regulating the motions of heated air, without any of that cumbrous machinery so often recommended if not employed.

The great principle on which every system of ventilation turns is thus laid down. "In ventilating buildings, two things should be borne in mind ; and as upon the proper attention to these depends the success of the plan, particular attention should be taken to see them carried into effect. These are the supply of the interior with fresh air, and the withdrawing it when vitiated. And here we would request attention to the fact, of which the evidence of all experience goes to prove the truth, "that *no foul air can by any possibility be extracted from the interior of any building, however well arranged the means to ensure its exit may be, unless an ample supply of pure air is admitted.* It is the force of air entering, that causes the vitiated air to be expelled. It is necessarily impossible to have ventilation without a movement of air."

Our readers will do well to remember this. How often do we find horticultural and agricultural buildings, which are said to be ventilated, provided either with one opening somewhere near the top, through which the foul air is expected to pass, whilst the lower part is kept carefully closed, or with an opening near the bottom, made for the entry of fresh air, whilst no means are provided for getting rid of the foul. The proper methods of obtaining these two ends the author professes to point out. His explanations are, as he himself tells us, intended for practical men, that is, for those conversant with the art of building ; this has led him into the mistake of being too short for other people, and of rendering his observations less intelligible and clear than he otherwise might have made them. At the same time many valuable hints may be obtained by the uninitiated, and especially from the fifth chapter, which contains some useful information relating to the construction of fireplaces, and the remedies for smoky chimneys. The appendix on the ventilation of ships is well worthy of perusal by those engaged either in building or in sailing in them.

Miscellaneous.

Common Flowers.—Had we not seen the remarkable collection of Messrs. Vilmorin-Andrieux and Co., we should not have believed that so fine an effect could have been produced by annuals grown, nearly all of them, in the open air. What beautiful effects might be had by means of these common plants, many of which are of our climate, if we could only grow and arrange them with the skill of these gentlemen ! Some of the vases in this collection would most certainly not suffer though compared with the most magnificent and attractive objects in the exhibition. The splendid tufts of Schizanthus Grahami and rubens will well bear to be compared with any Pelargonium, even with the splendid Reine des Français which did M. Chauviére such great credit. We appeal to all good judges or men of taste who saw the exhibition, to say whether we are not correct. What could be more graceful than the vases of Rhodanthe Manglesii, Eucharidium grandiflorum, Viscaria oculata, of Clarkia, with its snow white flowers ? What more magnificent than the Snapdragon, with its long spikes streaked with yellow and purple, surpassing anything of the sort we ever saw before ? Messrs. Vilmorin-Andrieux and Co. have a long established reputation to maintain, and most assuredly it suffered nothing by their last exhibition. Had we more room we should be delighted to describe in detail the numerous species which the clever men in this establishment have placed in the first rank among ornamental plants ; we should tarry over the delicate clusters of Grasses grown in pots (Aira pulchella, Stipa pinuata, Briza maxima, Lagurus ovatus, &c.), whose airy, silky, or velvet panicles contrast so well with their hair like foliage ; we should speak of those pretty violet-coloured composites (Brachycome iberidifolia) ; of those Everlastings with their metallic carmine scales ; of those dwarf Wallflowers, with their remarkably strange colours given them by consummate skill ; but the small space that is left us must be devoted to other horticulturists. *Revue Horticole.*

Hollyhocks.—If I were not afraid of advancing a horticultural heresy, I should say that many amateurs prefer Hollyhocks to Dahlias. The Hollyhocks of Belgium and Germany had a great celebrity long before they appeared among us. The collections of the Prince of Salm Dyck, and of M. Van Houtte, of Ghent, have been much admired. In other places varieties have been obtained with leaves more or less lobed, more or less entire, more or less palmate, all with flowers large, full, or coloured differently from those of other plants, being sometimes of a more or less dark mahogany colour, at others of a delicate tint, and varying from the purest white to the darkest glossy black. Some progress has also been made in the cultivation of those plants by ourselves. Since 1830 M. Pelissier, jun., a gentleman of Prado, has cultivated Hollyhocks, and from the seeds of a pink variety has succeeded in obtaining plants with flowers of a delicate rose colour, and which, in consequence of the extreme delicacy of their tints, and regularity of form, may serve both to encourage perseverance and as a good type for seed. In the following year, from the seeds of pink flowers, he obtained a beautiful, brilliant, clear, sulphur-coloured specimen, perfect in every respect. It is from the seeds of those two plants that he has obtained all the other beautiful and remarkable varieties which he now possesses, after a lapse of 10 years from his first attempts. As a

general rule, M. Pelissier prefers flowers with six exterior petals, with entire edges, well open, well set out, of a middling size, of a pure, clean, brilliant colour, and forming a perfect Anemone. Seeds sown in the spring and in unwatered ground, never flower till the second year. Experience has shown that if the seeds are sown in September, and in earth which is kept fresh, flowers may be obtained in June or July following, which are in no way inferior to those of spring-sown seeds. M. Pelissier follows the following plan of procedure. The seeds, which are taken as soon as they are ripe, from good specimens, are sown in September, in a border a foot and a half deep, and composed of good coarsely sifted garden earth, mixed with well worked soil. The seeds, if they are covered lightly with leaf-mould, and the soil is kept fresh, begin to swell at the end of a week; they require little care till spring, as they are not hurt by frost. In the spring the ground must be repricked, occasionally hoed, and frequently watered. As the flowers expand M. Pelissier removes whatever is not conformable to the type he has chosen, or is not of a marked colour, and like a perfect Anemone. It is by doing this every year that he has obtained 20 remarkable varieties, the names and characteristics of which have been kindly furnished by him, and are given below. 1. Souvenir de Malmaison, delicate rose, flower very full; perfection. 2. Géant de Batailles, red, flower very full. 3 Vestale, fine pure white, flower very full. 4. Anais, rose, flower very full; perfection. 5. Chromatella, dark yellow, flower very full. 6. Jeune Euphémie, clear red, flower beautiful, full; perfection. 7. Reine Victoria, cinnamon coloured, shaded, flower very full. 8. Grand Peking, nankeen-coloured, flower very full. 9. Amarante, dark red, flower very full. 10. Isabelle, dark red, flower very full. 11. Grand Colbert, dark rose, streaked, flower full, very perfect. 12. Marie Gabrielle, fleshy white, flower full; beautiful. 13. Matilde, clear cherry, flower very full. 14. Solfaterre, very clear yellow, flower very full. 15. Boule de Neige, beautiful white, flower well rounded, full. 16. Ophirie, yellow with a tint of pink, flower very full. 17. Arlequin, clear, approaching to dark violet, spotted with white. 18. Desprez, white, middle yellow. 19. Proserpine, very dark red, flower very full. 20. Pluton, black, flower very full. *Revue Horticole.*

Calendar of Operations.

(For the ensuing week.)

PLANT DEPARTMENT.

Stove plants which flower upon the young wood may with propriety be shifted now, as they will thereby be much invigorated; and the blossoms also will give evidence of the advantage, by their superiority in size and colour. Those, on the contrary, which flower upon the ripened wood, must be gradually encouraged to go to rest, as the days decrease in light. We would not pot any plants when they are very near their flowering season. Poinsettias which do not flower until January, we would encourage by repotting now, and by supplying them freely with liquid manure; as the floral leaves will be double the size that they would be if less liberally treated. We mention this as an instance of our meaning, as it is impossible to enter more fully into specific directions within the limits of the Calendar. Amaryllids in pots, as they show signs of ripening, should be gradually dried off. The Belladona Lilies in front of the houses, and at the foot of sunny walls, will be benefited by soakings of rich water. The Japan Lilies now coming into flower should have every possible encouragement by liberal waterings of clear rich water, and afford them a slight shade while in bloom.

FORCING DEPARTMENT.

Pineries.—The plants which have been recently potted, or shifted into new soil, are now growing vigorously. This state of things should be encouraged by a liberal temperature, but accompanied at all times by sufficient ventilation to prevent undue elongation of the leaves, and to mature their tissue while the sunlight is powerful enough for this purpose. A less humid atmosphere should be supplied generally, and especially to those intended for fruiting early next spring, as it is very important that they should acquire a strong sturdy habit, and that the accumulation and elaboration of sap be encouraged, rather than the increase of the size of the plant. Assist the swelling fruit with liquid manure, but admit abundance of air, for the sake of the flavour, and to prevent the crowns growing too luxuriantly.

Vineries.—Pay every attention to the preservation of ripe Grapes from the effects of damp, by avoiding the spilling of water about the houses, and by admitting a free current of air in all favourable weather, and accompanied by a little fire during rain or fogs. These houses should now, if possible, be freed entirely from plants in pots, or if any are allowed to remain they should be of kinds requiring little or no water, such as bulbs and other stove plants, which require a dry, cool treatment to lead them to repose. From this time the points of all growing shoots should be stopped, as the leaves produced after this time take from the stored-up energy, without ripening sufficiently early to benefit the Vines in return. Care, however, must be taken not to stop too closely the lateral shoots of Vines which are still growing vigorously, as they are liable in such cases to burst the buds too near the base of the shoots. As the wasps are now becoming troublesome, their ingress should be prevented, by fixing some thin bunting over the moveable sashes. Haythorn's hexagon or gauze net is the best material we are acquainted with for this purpose, as it effectually excludes wasps and flies, while the lightness of the fabric causes it scarcely to obstruct the light and air.

FLOWER GARDEN AND SHRUBBERIES.

Before the season is further advanced, every gardener should calculate, as nearly as may be, whether the extent of his framing conveniences will be sufficient to afford shelter during winter to his stock of established half-hardy plants, as well as to those he is now propagating. If his room is deficient, he must either restrict autumnal propagation within certain limits, or prepare additional pits without further loss of time. Brick pits are of course the most durable, and although expensive in the first outlay, are cheapest in the end. A very common make-shift pit is built of turves, which lasts several seasons and is very warm, but in appearance rather untidy. A sowing of hardy annuals may now be made for flowering early in spring; these will flower as soon as the earlier plants raised in frames next year, and as frame room in spring is generally scarce, it is worth while to economise it; they may be sown in the reserve garden, and afterwards transplanted.

FLORISTS' FLOWERS.

The exhibitions for Dahlias will now be in their zenith, and to procure fine blooms during the past stormy weather will have tested the skill and patience of many an amateur. Early flowers, from which it may be desirable to save seed, should have attention, and as they wither, the decaying florets should be extracted. Seedlings, especially weak late blooming ones, that give any evidence of good quality, though they may not be quite up to the mark in every respect, should be taken care of, to be tried again, as high cultivation another season may cause a more favourable development of their good qualities.—Hollyhocks are now attracting much attention as a florist's flower, and great improvement has been made in them. Save seed from the best. We adopt the plan of removing the upper part of the spike, leaving six or eight of the early blooms. When the plant throws four or five stems, and propagation of the variety is an object, one or more of the spikes of flowers may be sacrificed, in order that the seeds in the axils of the leaves may be more fully developed; the stem may be split and cut in lengths, shortening them on each side of the shoots, and place them under a hand-glass, taking care that the small portion retained is covered with soil, leaving the point of the bud exposed. This plan we have often successfully practised, and recommend it to our readers.

KITCHEN GARDEN.

Late crops of Turnip, Parsley, Spinach, &c., should be thinned before the plants begin to intrude upon each other. The earliest sowing of Cabbage-lettuce may be planted on a border with an east or west aspect, reserving the most favourable situations on the south borders for Endive and the later sowings of Cabbage-lettuce. Two sowings more of the latter should be made at intervals of 10 days. A main sowing should be made immediately of Early Asiatic Cauliflowers for planting under handlights, and preserving during winter in frames; and, at the same time, a little Early York Cabbage should be sown for an early spring crop, and a sowing of Red Dutch Cabbage for main crop next. Transplant late sown Cabbages in rows 8 inches asunder every way; of these, three-fourths will be drawn in a young state, and used as Coleworts; the remainder will be left to produce heads. Endive, Lettuce, &c., should be transplanted as soon as the plants are large enough to be handled.

State of the Weather near London, for the week ending Aug. 29, 1850, as observed at the Horticultural Garden, Chiswick.

August.	Moon's Age.	Barometer. Max.	Barometer. Min.	Temperature. Of the Air. Max.	Of the Air. Min.	Of the Air. Mean	Of the Earth. 1 foot deep.	Of the Earth. 2 feet deep	Wind.	Rain.
Friday.. 23	15	29.985	29.882	68	39	52.5	S	59½	S.W.	.00
Satur... 24	16	30.040	29.729	72	40	56.0	58	60½	S.	.10
Sunday . 25	17	30.068	29.899	67	54	60.5	58	59½	S.W.	.10
Monday 26	18	30.153	29.799	71	36	53.5	60	59	N.W.	.01
Tues. .. 27	19	30.213	29.908	72	49	60.5	59	60	S.W.	.00
Wed. .. 28	20	30.114	30.064	67	40	53.5	59	59½	N.	.00
Thurs.... 29	21	30.153	30.141	67	32	49.5	59	59½	W.	.00
Average....		30.103	29.917	55.1	41.4	55.1	58.7	59.6		.21

Aug. 23 Fine; cloudy and fine; clear and cold at night.
— 24—Fine; heavy thunder showers in forenoon, clear.
— 25—Lightly overcast; cloudy; slight rain with brisk wind.
— 26—Rain; cloudy and fine; very clear at night.
— 27—Clear and fine; overcast at night.
— 28—Fine; very fine; cloudy
— 29—Clear and fine; very clear at night; frosty.
Mean temperature of the week 6 deg. below the average.

State of the Weather at Chiswick during the last 24 years, for the ensuing week, ending Sept. 7, 1850.

Sept.	Average Highest Temp.	Average Lowest Temp	Mean Temp.	No. of Years in which it Rained	Greatest Quantity of Rain.	Prevailing Winds. N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 1	70.0	49.0	59.5	12	1.50 in.	2	4	2	4	2	6	2	2
Mon. 2	71.0	48.3	59.6	9	0.23	4	5	1	1	2	4	3	1
Tues 3	69.5	48.8	59.1	10	0.48	1	5	1	1	4	5	6	1
Wed. 4	70.2	48.9	59.5	11	0.58	4	5	3	—	4	4	3	2
Thurs. 5	70.0	48.9	59.4	12	0.30	2	3	6	—	4	3	4	2
Friday 6	70.5	47.4	59.0	11	0.70	1	4	3	—	1	10	6	1
Satur. 7	69.0	49.0	59.0	14	0.55	1	3	2	2	4	9	2	1

The highest temperature during the above period occurred on the 1st, 1843—therm. 85 deg.; and the lowest on the 6th. 1847—therm 31 deg.

Notices to Correspondents.

Back Numbers of the Gardeners' Chronicle: The publisher begs to say that the following may be had. Any subscriber who will forward postage stamps equivalent to as many numbers as are required, will have them sent free by post. The volume for 1847, price 30*s.*, and volume for 1848, price 30*s.* 6*d.*, can still be had. The volume for 1849 is now ready, price 30*s.* The volumes of former years are out of print.

1841—1, 8, 13, 14, 15, 16, 17, 18, 20, 22, 23, 24, 26, 27, 28, 29, 30, 31, 32, 34, 45, 46, 47, 48, 51.

1842—4, 6, 8, 11, 16, 18, 20, 31, 32, 42, 45, 50, 51, 52.

1843—13, 16, 17, 18, 20, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 36, 37, 40, 41, 42, 48, 49, 50, 52.

1844—All except 33, 36, 37, 46, 50.

1845—1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 13, 14, 15, 17, 18, 19, 20, 21, 23, 24, 25, 27, 28, 31, 33, 39, 40, 41, 42, 43, 44, 45, 50, 51, 52.

1846—4, 5, 6, 10, 11, 12, 13, 14, 15, 16, 17, 18, 20, 22, 23, 24, 26, 27, 42, 43, 46, 48, 49.

1847—1, 2, 3, 4, 5, 8, 11, 13, 14, 16, 19, 20, 21, 22, 27, 28, 32, 33, 36, 37, 41, 42, 43, 44, 45, 46, 47, 48, 51, 52.

1848—1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 30, 33, 34, 36, 37, 39, 40, 41, 44, 45, 47, 48, 51, 52, 53.

1849—All except 46, 47, 48, 49, 52.

Double Fuchsias: *W W.* They are not at all uncommon.*

Filberts: *Kernel Nutt.* In order to keep these for considerable time, they should be thoroughly dried, packed in dry casks or new flower-pots, with a slight sprinkling of salt, to prevent mouldiness, and then placed in a dry cool situation. The husks should be allowed to remain on them ‡

Fruit-trees: *Westerly Aspect.* As your aspect proves not suitable for Peaches, Nectarines, Apricots, nor even for Plums, better occupy it with the hardier sorts of Pears, such as Knight's Monarch, Suffolk Thorn, Thompson's, Marie Louise, Broom Park, and Eyewood. ‖

Indian-Rubber Tree: *Rus in Urbe.* Do not use a galvanised iron box; far better have a slate box. If you increase the size of the latter, you will increase the tree also, which, we suspect, will be inconvenient. So long as it remains in health, let it remain as it is; if it becomes unhealthy, give it a little guano-water.

Insects: *F A P.* We are obliged to you for the additional Rose leaves. We trust we shall be able to rear the insects inclosed. An analogous case may sometimes be met with at the tips of sprigs of Quickset hedges. *W.—F S.* The plants recently purchased are sadly infested with the mealy bug, and the tradesman who supplied them in such a state ought to be exposed. Spirits of wine is the best remedy. *W. — Y O.* The insects found on the Silver Fir are Lachnus pineti. Pray inform us of the locality where found. *W. —M J B.* We know no previous instance of the larvæ of Cecidomyiæ infesting the interior of Pea pods. Is the loose internal texture, within which some of the larvæ are buried, a fungus or a diseased state of the pod? *W.—W H C.* The insects on the Pea leaves are the slimy grubs of a saw-fly (Selandria æthiops). Syringing with lime water, or powdering the leaves with lime, is the best remedy. *W.*

Ivy: *A D O.* Cut it off above the ground and it will die, or set it on fire, if it is not dangerous to do so. Ferns may be removed if you dig up the very deep roots; what are called roots are nothing but underground stems.

Melons: *X Y Z.* It is not uncommon for the same plants to ripen two crops in one season. Under your circumstances four fruit to each plant will be sufficient ‡

Music: *Hannah.* We would willingly oblige you, but we cannot find room for poetry. We quite agree with you about "silly riddles." It ought not to have been inserted. If you will again send us the question, with your address, we will insert the question, and transmit the answer if we get one. Editors never preserve papers; they are used at once, or are thrown aside and wasted.

Names of Fruits: *J G, Bath.* Your Apricot is not a variety of Moor-park; it is the Turkey. You will find that it has a sweet kernel, that of the Moor-park is bitter. You state that, unprotected, it bears every year a good crop, when others on each side of it fail, an additional proof that the Turkey is a sort worthy of more extensive cultivation.‖—*J G.* The Jargonelle.‖

Names of Plants: *Erzeroum.* 464, Heliotropium villosum; 72, Rindera, near canescens; 96, Rindera; 142, Cerinthe; 228, Cynoglossum; 527, Acroptilon Pieris; 197, Centaurea pulchella; 515, Centaurea, near macrocephala.—*G B.* Apparently a morsel of some Heliophila, near H. arabidoides.—*A Sub* Origanum Dictamnus and Gazania uniflora.—*H R K.* Phacelia tripinnatifida.—*R M.* 1, Polygonum Persicaria; 2, Euphrasia officinalis; 3, Erica cinerea; 4, Hieracium Pilosella.—*P P.* 5, Odontoglossum nævium; the rest next week.—*Cymro.* It is the male Buffalo-berry, Shepherdia argentea.—*S H.* 1, Genista pilosa; 2, Erica tetralix; 3, Scabiosa succisa; 4, Tormentilla reptans; 5, Salix fusca; 6, Betonica officinalis; 7, Agrostis canina; 8, indeterminable—all wretched specimens of the commonest plants.—*L N R.* 1, Epipactis latifolia; 2, Gentiana amarella.—*G Plew, Thornhill.* Symphytum asperrimum, and some starved Anthriscus indeterminable.—*P H Ransom.* It is not possible to name plants sent in such a state; they look like a piece of peat. Here are the names of a few: 1, Croton pictum; 3, Rivina humilis; 6, some Justicia; 5, Nierembergia filicaulis; 2, the white Daboecia vulgaris; 10, Aponsoa incisa? 7, Lycopodium denticulatum.—*Rusticus.* 1, Atriplex patula; 2, Chenopodium ficifolium; 3, Polygonum Persicaria.—*R W C H.* A very fine variety of Stanhopea insignis.—*A Constant Reader.* It is an Agrostis, and the species called A. stolonifera. No species of this genus is worth cultivating where better Grasses will thrive; but in wet heavy land they have their value, on account of the abundance of the herbage they afford.—*Cavanensis.* The plant used in a moorland district in Ireland as an emetic, a small quantity bruised in water for this purpose proving very effectual, is Lycopodium Selago. Its emetic qualities are well known.—*E Graham.* Aster Tripolium.

Onions: *Sub.* Sow in a sheltered situation, and transplant in spring.‡

Pine-apples: *D H, Bilston.* You will find the information you seek in our weekly "Calendar of Operations."‡

Planting: *Gallicus.* We should certainly plant Coniferous plants, as well as other evergreens, now. Our experiment with them last year was perfectly successful.

Potatoes: *J S S, Hinckley.* A fine Potato certainly; but we cannot judge of its value without the experience to be gained by growing it.—*Birkhurst.* We believe the best course to pursue, where they are undoubtedly blighted, is to mow the stems down, to put 3 or 4 inches of earth over the ground, to roll it down with a heavy roller, and to leave them in the ground till they are ripe.‡

Roses: *F A P.* You may thin out the wood of your Noisette and Boursault Roses, &c, in the manner you propose with advantage. They will be both neater in appearance and will flower better.‡

Scarlet Geraniums: *Sub.* They may be wintered in a dark place, but it must be dry and free from frost ‡

Misc: *Lady M.* Salvia Regla should be treated just like S. splendens. Your Fuchsia serratifolia should be in bloom now. The principal points to be attended to in its management are to prevent over-luxuriance, and to get its wood well ripened.‡

SEEDLING FLOWERS.

Calceolarias: *J P.* Novel in appearance, being all more or less striped with yellow, orange, and bright brown. A step in the right direction; but if we may judge from the partially shrivelled specimens sent, they all want improvement in shape.*

Dahlias: *T B.* A large finely-formed flower, of great depth, and having a compact centre. It is one of the largest flowers we have seen. It is, however, much of the same shade as Mrs. Seldon.*

Heliotrope: *S V.* A pretty variety in the way of Voltaireanum.*

Lilies: *Kent Florist.* A highly coloured variety of Lilium lancifolium speciosum.*

Petunia: *J T R.* Unexaminable, on account of the bruised condition in which it was received.*

QUEEN'S COLLEGE, CORK.

SCHOOLS OF ENGINEERING AND AGRICULTURE.

THE SESSION for 1850-51 will commence on the 15th of OCTOBER.

Prospectuses, with details of the several Courses of Lectures in connection with these Schools, the Fees payable, &c., may be obtained by application to the Registrar, or to the Professor of Engineering or Agriculture.

Boarding Houses, licensed by the President, have been established in Cork, where Students are received and comfortably provided for on moderate terms, and their religious and moral conduct watched over by the Deans of Residences.

By order of the President,

Aug. 31. FRANCIS ALBANI, Registrar.

BURBIDGE AND HEALY'S COOKING APPARATUS, combining Sylvester's Patents.—This cooking apparatus possesses greater general advantages than any yet submitted to the public, both as regards strength of material and workmanship; in fact, the laws of heat are so applied as to produce the greatest effect with the least consumption of fuel, without destruction to the apparatus. B. and H. can safely recommend it, from experience, as unquestionably superior to anything of the kind hitherto made. May be seen in daily use at the Craven Hotel, Craven-street, Strand; Stevens' Hotel, Bond-street; Greenwich Hospital; University College Hospital; and is in use by upwards of 200 private families, and at the Manufactory, 130, Fleet-street, London. A prospectus can be forwarded upon application, detailing particulars and price.

MANURES.—The following Manures are manufactured at Mr. LAWES's Factory, Deptford Creek:

Corn and Grass Manure, per ton	...	...	£10 0 0
Clover Manure, do.	...	...	11 0 0
Turnip Manure, do.	...	...	7 0 0
Superphosphate of Lime	...	...	7 0 0
Sulphuric Acid and Coprolites	...	...	5 0 0

Office, 69, King William-street, City, London.

N.B. Peruvian Guano, guaranteed to contain 16 per cent. of Ammonia, 9*l.* 15*s.* per ton; and for 5 tons or more, 9*l.* 10*s.* per ton, in dock. Sulphate of Ammonia, &c.

THE LONDON MANURE COMPANY beg to offer as under:

LONDON MANURE COMPANY'S WHEAT MANURE FOR AUTUMN SOWING.

CONCENTRATED URATE. SUPERPHOSPHATE OF LIME. PERUVIAN GUANO. SULPHATE OF AMMONIA. TURKEY AND AGRICULTURAL SALT, GYPSUM, and every artificial Manure; also a constant supply of English and Foreign LINSEED CAKE of the best quality.

The London Manure Company will guarantee the Guano they supply to be free from the slightest adulteration.

Bridge-street, Blackfriars. EDWARD PURSER, Secretary.

BY HER MAJESTY'S ROYAL LETTERS PATENT.

PATENT HOTHOUSE WORKS, KING'S ROAD, CHELSEA.

E. DENCH invites the attention of Gentlemen about to erect Hothouses, &c., to the vast superiority in every respect possessed by his PATENT HOUSES, which he will warrant superior in every respect to any others. Good Glass from 16 to 21 oz. per foot, 1 foot wide, 3 feet long, furnished, and the Houses, when completed charged, from 1*s.* 3*d.* to 1*s.* 6*d.* per superficial foot, according to size and quantity; on one principle the roof is formed without wood or putty, and on another principle with wood rafters, and the glass put in with putty. Patent Sashes, requiring no paint, from 7*d.* to 9*d.* per foot. HEATING BY HOT WATER.

HOW TO KEEP A HORSE FOR LESS THAN ONE SHILLING PER DAY.

"Do you bruise the Oats you give your horses?" "No."

"Then you lose one bushel out of every three, and your cattle do not half so well."

MARY WEDLAKE AND CO.'S OAT-BRUISING MILLS. Superior Chaff Engines, simple in construction, doing from 50 to 500 bushels daily, and more. Almost all brewers and coachmasters in London use these implements.

118, Fenchurch-street, London. A pamphlet on the above, by sending 12 postage stamps. Chaff-cutters, Linseed, Bean, and Malt Mills.

CHEAP AND DURABLE ROOFING.

BY HER MAJESTY'S ROYAL LETTERS PATENT.

F. M'NEILL AND CO., of Lamb's-buildings, Bunhill-row, London, the Manufacturers and only Patentees of THE ASPHALTED FELT FOR ROOFING Houses, Farm Buildings, Shedding, Workshops, and for Garden purposes, to protect Plants from Frost.

At the Great National Agricultural Shows, it is this Felt which has been exhibited and obtained TWO SILVER MEDAL PRIZES, and is the Felt SOLELY patronised and adopted by

HER MAJESTY'S WOODS AND FORESTS,
HONOURABLE BOARD OF ORDNANCE,
HONOURABLE EAST INDIA COMPANY,
HONOURABLE COMMISSIONERS OF CUSTOMS,
HER MAJESTY'S ESTATE, ISLE OF WIGHT,
ROYAL BOTANIC GARDENS, REGENT'S PARK,

And on the Estates of the Dukes of Sutherland, Norfolk, Rutland, Newcastle, Northumberland, Buccleuch (at Richmond), the late Earl Spencer, and most of the Nobility and Gentry, and at the ROYAL AGRICULTURAL SOCIETY'S HOUSE, Hanover-square.

It is half the price of any other description of Roofing, and effects a great saving of Timber in the construction of Roofs. Made to any length by 32 inches wide.

PRICE ONE PENNY PER SQUARE FOOT.

*** Samples, with Directions for its Use, and Testimonials of seven years' experience, with references to Noblemen, Gentlemen, Architects, and Builders, sent free to any part of the town or country, and orders by post executed.

☞ The Public is cautioned that the only Works in London or Great Britain where the above Roofing is made, are

F. M'NEILL AND CO.'S

Patent Felt Manufactory, Lamb's-buildings, Bunhill-row, London, where roofs covered with the Felt may be seen.

The new Vice-Chancellor's Courts, at the entrance to Westminster Hall, were roofed with F. M'NEILL and Co.'s Felt about two years since, under the Surveyorship of Chas. Barry, Esq., R.A. Her Majesty's Commissioners of Woods and Forests are so satisfied with the result that they have ordered the Committee Rooms at the Houses of Parliament to be roofed with their Felt. Quantity altogether used, 24,000 feet.

NOTE.—Consumers sending direct to the Factory can be supplied in lengths best suited to their Roofs, so that they pay for no more than they require.

Every information afforded on the construction of Roofs, or any proposed particular application of the Felt.

PERUVIAN GUANO.—As Agents of the Peruvian Government for the importation and sale of this valuable MANURE, we think it right, for the protection of consumers and respectable dealers, to apprise them that the adulteration of the article is still extensively practised, and to recommend them to apply either to ourselves, to our agents, Messrs. GIBBS, BRIGHT, and Co., of Liverpool and Bristol, or to dealers of established character, in whose honesty and fair dealing they can place implicit confidence. ANTONY GIBBS and SONS.

STEPHENSON AND CO., 61, Gracechurch-street, London, and 17, New Park-street, Southwark, Inventors and Manufacturers of the Improved CONICAL and DOUBLE CYLINDRICAL BOILERS, respectfully solicit the attention of scientific Horticulturists to their much improved method of applying the Tank System to Pineries, Propagating Houses, &c., by which atmospheric heat as well as bottom-heat is secured to any required degree, without the aid of pipes or flues. S. and Co. have also to state that at the request of numerous friends they are now making their Boilers of Iron, as well as Copper, by which the cost is reduced. These Boilers, which are now so well known, scarcely require description, but to those who have not seen them in operation, prospectuses will be forwarded, as well as reference of the highest authority; or they may be seen at most of the Nobility's seats and principal Nurseries throughout the kingdom.

S. and Co. beg to inform the Trade that at their Manufactory, 17, New Park-street, every article required for the construction of Horticultural Buildings, as well as for heating them, may be obtained upon the most advantageous terms.

Conservatories, &c., of Iron or Wood, erected upon the most ornamental designs. Balconies, Palisading, Field and Garden Fences, Wire-work, &c.

The Agricultural Gazette.

SATURDAY, AUGUST 31, 1850.

MEETINGS FOR THE FOLLOWING WEEK

THURSDAY, Sept. 5—Agricultural Imp. Society of Ireland.

IN adjoining pages, REPORTS OF THE CROPS will be found from most of the counties in England, Scotland, and Ireland. We regret to see from them that the Wheat crop through most of the southern and midland counties of England, and generally through Ireland, has been very seriously injured by mildew, so that a return much under the average will be the general experience in our principal Wheat-growing districts: and in the North, since these returns have been received, very great injury, as appears from the following communication from Mr. GREY of Dilston, has been done by the wind.

"*Dilston, Newcastle-on-Tyne, Aug.* 26.—Since the time that I answered your circular, enquiring as to the state of the crops and probable produce in this part of the country, I think it right to inform you that the opinion I then gave has been greatly altered by the effects of the most disastrous wind that has ever occurred in the memory of the oldest inhabitants. It began to blow violently on the afternoon of the 18th, and continued till noon of the 20th. A great breadth of grain was ripe, but little had been cut, owing to the showery state of the weather. The result is most calamitous, especially in the north part of Northumberland, and the counties on the other side of the border. In some situations farmers are cutting the straw for thatching hay stacks and other purposes without threshing it. As far as an opinion can be formed, I think it likely that one-fourth of the crop in the district I have named has been wasted, and that very great loss has been sustained over a great extent of country, though in a less degree This must be considered as a great public calamity, and one which farmers were never less able to overcome than at present. *John Grey.*"

Excepting the extent to which the injury here estimated so highly may have been general, the crop of Wheat and of other grain in the north seems to be good. Oats, generally, and especially in Ireland, are a great crop. The returns regarding the Barley crop are various, agreeing in one thing, however, that its *extent* is not so great as in past years.

Green crops are generally good; Turnips being, however, in some instances affected with the "Finger and toe" disease. Potatoes are almost universally affected with the blight, which, however, at the date of these reports, especially in Ireland, seem not yet to have seriously affected the tubers. The districts where it has proved most destructive lie along the south coast of England. In proof, nevertheless, of its activity, we have, since the returns to our circular, in many instances received subsequent reports altering the estimate originally made of the crop, and in every case referring to the rapid strides which the disease appeared to be making.

IN a former Number we referred to the general LAND DRAINAGE AND IMPROVEMENT COMPANY which has been recently formed under an Act of Parliament, passed in the session of 1849, and intituled "An Act for the Incorporation of the General Land Drainage and Improvement Company, and for facilitating the execution of Land Drainage and other Improvements;" and it is hardly possible to name a measure more importantly affecting the landed interest than this. The objects to which its operations may extend, and the character of the direction to which its administration is confided, ensure its usefulness. The powers conferred upon the company may be stated under three heads, viz.:

"1. Of contracting for and executing all works for draining, irrigating with sewer water or otherwise, warping, reclaiming, inclosing, fencing, building on and otherwise improving flooded, uninclosed, waste, and other lands, with money to be advanced by the company or by other parties.

"2. Of performing works and improvements under contract with commissioners of sewers, local boards of health, corporations, trustees, and other public bodies.

"3. Of purchasing, improving, and reselling lands."

They thus possess the power (refused by the House of Commons to the Government last session) of charging land under disability with the cost of erecting farm-buildings; and they are enabled to purchase, improve, and resell land which has hitherto been considered indissolubly tied by the fetters of entail.* Here, then, is a wide enough field for their operations; and that it will be well cultivated, neither the profitable nature of the operations themselves nor the character of the officers whose services have been secured, permit us to doubt.

It may be desirable to give a simple illustration of the mode in which the Act is to be carried into effect. We quote the following from the Company's prospectus:

"Take the case of a nobleman or gentleman, *who is tenant for life of a settled estate*, which is mortgaged or charged with portions, and part of which consists of farms in the occupation of tenants, and needing improvement by drainage. It would be inconvenient to him to advance the amount required to drain the farms, and he is therefore desirous of availing himself of the assistance of the Company.

"The first step, after the Company had entertained his application, would be for them to make an accurate plan, specification and estimate of the proposed improvement.

"On his being satisfied with the plan and the cost of the works, he would enter into a provisional contract with the Company for their execution of the works at the estimated cost.

"Having done so, application would be made to the Inclosure Commissioners to sanction the proposed improvement, and on their favourably entertaining the application they would cause the land and the plan, &c. to be inspected and examined by an assistant commissioner or an engineer, and he would report his opinion thereon.

"On the commissioners being satisfied that the proposed improvement 'would effect a durable improvement in the yearly value of the lands, which will exceed the yearly amount proposed to be charged thereon,' they would sanction the provisional contract, which would thereupon become binding.

"The landowner being, in the case supposed, desirous of avoiding any outlay by himself, and of having the whole expense charged on the inheritance of the lands, would agree with the tenants for their paying the whole or a part of the yearly charge, in the shape of increased rent, and would give notice by advertisement, and to the mortgagees or incumbrancers on the estate, of his intention to apply for such a charge. On application to the Inclosure Commissioners, they would make in the first instance a provisional order, and (after, if they thought fit, an inspection by an assistant commissioner, or an engineer, to ascertain the due execution of the works), eventually an absolute order, charging the expense and the costs of the contract, inspection, &c., on the inheritance of the lands improved.

"The total amount of the charge is not to exceed the value of the improvement to the inheritance, and the charge is to be by way of terminable annuity, *not exceeding as regards drainage* 50 *years, or as regards farm or other buildings* 31 *years.*

"In the case supposed, the landowner would have his farms drained and permanently improved without the expenditure by himself of a single shilling; though, of course, in many cases, he might be willing to ease his tenant by bearing a portion of the yearly charge. The tenant would reap the immediate advantage of the improvement, on payment of such an increase of rent as would still leave him a new profit. The remainder-man, after a few years, would find the estate permanently improved, and freed from the temporary charge."

We shall hereafter describe more in detail the *modus operandi* in cases where farm buildings are to be erected on entailed estates. In the meantime, it may satisfy some of our readers, if we state to them, that we have been informed, on good authority, that there will be no lack of funds. With business men and capitalists managing such a valuable Act as the one referred to, it cannot be doubted that profit will be made; and when profit is to be made, there is always the wherewithal to secure it, if the public have confidence in the management.

* The company are empowered, by agreement, to purchase *any* flooded, uninclosed, waste, and other lands which landowners may be willing to sell, and to improve the same, and to resell the same to such landowners or any other persons; but the total quantity held by the company at any one time is not to exceed 1000 acres.

REPORT ON THE CROPS.

From our own Correspondents.

SCOTLAND. COUNTY.	WHEAT.	BARLEY.	OATS.	GREEN CROPS.	POTATOES.	STOCK OF OLD WHEAT.	WHEAT HARVEST GENERAL.	AUTHORITY.
ROSS	None grown	Very heavy	Very good	Very good	Good, signs of blight	.....	Oats, Sept. 1	J. M Mackenzie, Stornoway
	Above average	Full average	Inferior	Very good	Very good	Average	August 19	T. P. Dods, Dingwall
	Good	Fair	Short	Good	Partially diseased	.....	August 28	K. Murray, Tain
ELGIN	Above average	Average	Not average	Very fine	Fine and healthy	Average	August 23	J. Hamilton, Forres
	Average	Unequal	Very bad	Generally good	Disease commenced	Probably low	August 20	A. Robertson, Elgin
	Fine crop	Rather light	Very bad	Promising	Healthy as yet	Average	August 20	J. Grigor, Forres
ABERDEEN	.....	Poor crop	Very poor	Splendid	Very luxuriant	None	Oats, August 20	R. Smith, Kintore
	.....	Average	Unequal	Good	Disease appeared	None	Oats, August 20	J. Macdonald, Huntley
INVERNESS	Above average	Light	Light	Very good	Very good	Below average	September 1	J. Mackenzie, M.D., Inverness
FORFAR	Above average	Light	Very light	Under average	No disease	Average	August 24	A. Bell, Forfar
	Excellent	Heavy	Variable	Superior	Excellent	.....	September 1	R. Findlay, Kinnemuir
	Excellent	Good	Various	Good	Full and healthy	Average	August 30	R. Colvill, Chance Inn
	Good	Fair	Light	Good	Good	Average	August 27	D. D. Black, Brechin
PERTH	Average	Average	Stunted	Under average	Promising	Under average	August 16	D. Todd, B. of Earn
	Average	Average	1-third under av.	Promising	Average promise	Average	August 20	W. Ewing Crieff
	Good	Full average	Light	Generally fair	Not bulky	.....	August 20	C. Plenfair, Carse of Gowrie
FIFE	Extremely good	Fair average	Very healthy	Good promise	Average	Average	August 15	G. H. Slight, Abernethy
	Full average	Fair average	Fair crop	Good	Very well	Under average	August 26	R. Barclay, Crail
	Over average	Average	Short	Unequal	Healthy	Under average	August 28	J. Haxton, Drummod
	Full average	Average	Under average	Good	Under average	.....	August 20	G. Lewis, Kirkaldy
	Very good	Various	Deficient	Capital	Good and sound	Hardly average	August 15	R. Russell, Cupar
	Average	Over average	Light	Very fine	Full average	Average	August 22	W. Veitch, Kinghorn
	Average	Average	Under average	Average	Healthy	Under average	August 27	D. Tennant, St. Andrews
STIRLING	Full average	Over average	Average	Over average	Over average	Under average	August 26	R. M'Naughten, Stirling
HADDINGTON	Good and sound	Over average	Average	Good	Apparently good	Under average	August 26	W. Forrester, Carse
	Good	Good	Under average	Average	Average	Under average	August 22	J. Brodie, Abbey Mains
	Sound but thin	Excellent	Light	Suffering	Partially black	Under average	August 19	J. Russell, Beanston
	Average	Over average	Not average	Promise well	Slightly tainted	Less than usual	August 15	A. Howden, Preston-kirk
	Fair average	Very heavy	Various	Turnips good	Healthy	Average	August 15	G. Hope, Drem
MIDLOTHIAN	Fair	Fair	Rather short	Very good	Generally good	Average	August 20	J. Finnie, Edinburgh
	Fair average	Rather bulky	Under average	Promising	Good	Under average	August 19	J. Melvin, Ratho
RENFREW	Full average	Good	Fine	Ordinary	Disease appeared	Very little	August 26	G. Boyd, Renfrew
LANARK	Very good	.....	Average	Good	Very good	Not average	August 20	D. Gairdner, Hamilton
SELKIRK	Full average	Very favourable	Scarcely average	Good	Good and healthy	.....	August 26	J. Stalker, Galashiels
	Average	Good	Under average	Good	Look well	Under average	August 20	P. Brodie, Selkirk
BERWICK	None grown	Average	Average	Very good	Good	None	September 1	A. T. Wilson, Lammermuir
	Good bulk; partly mildewed	Very good	Good	Turnip first-rate	Good, partial disease	Not average	August 25	J. Wilson, Ayton
	Average	Good	Very light	Looking well	Fair crop	Very little	August 27	T. Hood, Cockburn-path
	Average	Over average	Average	Very good	Generally good	Hardly any	September 1	G. Logan, Greenlaw
	Excellent	Very good	Good	Turnips good	Disease beginning	Full average	August 23	R. Hunter, Lady-kirk
	Average	Good	Fair	Good	Partial failure	Not average	August 20	P. Mearns, Coldstream
ROXBURGH	Average	Full average	Average	Full average	Good	Average	August 26	J. Scott, Melrose
	.....	Average	Average	Very good	No disease	.....	.....	J. Grieve, Hawick
	Average	Average	Not average	Good	Look well	Under average	August 21	J. Brodie, Deanfoot
	Full average	Full average	Under average	Over average	Good	Not average	August 22	J. Thomson, St. Boswell's
AYR	Sound & average	.....	Average	Luxuriant	Disease, as 1846.	Under average	September 1	A. Ralston, Ayr
	Average	.....	Abundant	Good	Fair	Not average	August 28	J. Dykes, Kilmarnock
	Fair	.....	Good	Average	Disease general	Never less	August 27	A. Maccaw, Maybole
DUMFRIES	.....	Very good	Good	Very good	Good as yet	.....	.....	J. Little, Langholm
	Average	Average	Very good	Fair	Tainted	.....	August 20	A. Gardiner, Dumfries
	Not average	Over average	Full average	Fair, but affected by "anbury"	Disease general	Under average	August 20	W. Thomson, Dumfries
WIGTON	Good crop	Good	Good	Ditto, but affected by "anbury"	Good; diseased	Average	August 20 to 30	J. Caird, Wigtown
	Good average	Average	Average	Good	Universally diseased	As usual	August 30	A. H. M'Lean, Stranraer
	Full average	Very good	Light	Ditto, but affected by "anbury"	Disease has attacked all sorts	About average	August 20	T. Maclelland, North Balfern
	Average	.....	Over average	Good	Generally diseased	.....	August 20	J. Gibson, Glenluce
ENGLAND.								
NORTHUMBERLAND	Average	Good	Good	Well	Good	Never so low	August 30	W. Glover, Newcastle
	Good	Promising	Light	Good	Symptoms of disease	Generally low	September 2	—, W. Alnwick
	Nearly average	Good	Under average	Very promising	Full crop	Not average	August 30	J. Grey, Dilston
	Below last year	Good	Good	Excellent	Healthy	Never so low	September 1	T. L. Colbeck, Newcastle
CUMBERLAND	Over average	Very great crop	Over average	Most abundant	Abundant; doubtful	Less than usual	August 20	S. Rigg, Wigton
	Good	Very good	Very good	Very good	Good, but diseased	.....	.....	T. Wilson, Penrith
	Very good	Extremely good	Extraordinarily heavy	Much over average	Average; doubtful	Under average	September 1	F. Greeniss, Keswick
WESTMORELAND	Average	Good	Under average	Good	Good; diseased	Under average	August 27	J. Robinson, Warrop
	.....	Very good	Promising	Good	Nearly all diseased	Very little	August 27	W. Key, Kirkby Lonsdale
	Heavy crop	Heavy crop	Very large crop	Good	Good	Short	August 26	John Crossby, Kirkby Thore
DURHAM	Over average	Over average	Over average	Look well	All diseased	.....	August 14	W. Turner, Kendal
	Average	.....	Under average	Average	Promising	Very little	August 28	G. Bell, Hollgarth-street
YORKSHIRE	Look well	Good	Good	Good	Good, but doubtful	Average	September 6	R. Dixon, Darlington
	Full average	Various	Light	Abundant	Diseased, but not bad	Under average	August 14	F. W. Tyas, Doncaster
	Nearly average	Good	Good	Very good	Good; partly diseased	Under average	August 24	T. Howard, Leyburn
	Nearly average	Average	Light	Good	Promising	Average	August 20	M. Milburn, Thirsk
	Deficient	Average	Good	Well	No complaints	Under average	August 22	J. Oldroyd, Barnsley
	Laid, mildewed	Good	Fair	Good	Diseased	Under average	August 20	P. Stevenson, Rainton
	Hurt, not aver.	Good, but laid	.....	Very good	Good	Under average	August 17	H. Briggs, Wakefield
LANCASHIRE	Average	Average	Full average	Average	Promising	Under average	August 28	H. I. Turner, Richmond
	Good	Very good	Good	Good	Tops diseased	Under average	August 20	G. Drewry, Holker
	.....	.....	Very good	Good	Good; sound; cheap	.....	Oats, August 15	W. Wanklyn, Bury
	Very good	.....	Good	Excellent	Early; rotten	Very little	August 24	J. H. Haig, Preston
	Not promising	.....	Good	Various	Late sorts; attacked	One-fourth of aver.	August 24	F. Twining, Wigan
	Good	Good	Good	Good	Diseased	.....	August 28	T. C. Morton, Lancaster
	Most excellent	.....	Most excellent	Good	Good on moss	Average	August 20	M. Saul, Garstang
	Over average	.....	Full average	Excellent	Disease not violent	Average	August 24	E. Evans, Wigan
CHESHIRE	Average	Good	Average	Very promising	Disease appearing	Not much	August 15	R. Owen, Tarporley
	Light	Good	Middling	Various	Good, but diseased	Not average	August 23	H. Tipping, Warrington
DERBYSHIRE	Very good	Good	Good	Inferior	Very good	.....	August 15	A. J. Bernays, Derby
	Generally light	Deficient	Deficient	Suffering	Generally diseased	Average	August 18	S. Ward, Repton
NOTTINGHAMSHIRE	Under average	Hardly average	.....	Promising	Slightly injured	Near average	August 14	R. Hodgkinson, Retford
	Light	Light	Light	Various	Abundant	Average	August 15	J. Young, Newark
	Not average	Not average	Not average	Very bad	Complaints	Under average	August 16	E. J. Lowe, Notts
LEICESTERSHIRE	Two-thirds aver.	Average	Light	Bad	Good	Under average	August 15	J. Buckley, Loughborough
LINCOLNSHIRE	Much mildewed	Average	Various	Generally good	Tops failing	Under average	August 20	W. B. Wingate, Spilsby
	Do. and smutty	Average	Very light	Good	Partly diseased	Average	August 19	E. Darby, Horncastle
	Average crop; much damaged	Light	Light	Various	An abundant crop; diseased	Under average	August 20	W. Martin, Scamblesby
	Considerably injured by mildew	Coarse	Pretty good	Various	Haulm dead	Under average	August 25	R. Westland, Boston
	Very thin, and below average	.....	One-third below last year	Poor	Tops blacking	Average	August 16	T. Aitken, Deeping Fen
	Generally poor	.....	Fair	Average	Going at top	Average	August 17	T. Wright, Boston
	Laid, mildewed	.....	Heavy	Variable	Disease spreads	Under average	August 20	J. A. Clarke, Long Sutton
	Under average	Average	Average	Various	Good, but diseased	Average	August 19	F. Sowerby, Aylesbury
SHROPSHIRE	Average	Pretty good	Middling	Good	Diseased	Average	August 18	J. Powell, Shiffnal
	Under average	Average	Average	Deficient	Diseased	Under average	August 21	W. Minor, Market Drayton
	Not heavy	Average	Good	Various	Partly diseased	Under average	August 14	W. Eyton, Gossal
	Abundant	Abundant	Abundant	Promising	Good; diseased	Under average	August 19	C. A. A. Lloyd Whittington
	Strong crop	Very good	Poor	Good	Blighted	Under average	August 17	R. Sayer, Bridgenorth
	Average	Good	Average	Various	Black tops	Not average	August 14	E. Bowen, Ludlow
	Damaged	Good	Strong	Promising	Much diseased	Under average	August 16	—, Weston
	Average	Average	Average	Deficient	Diseased	Under average	August 20	R. Davis, Wenlock
STAFFORDSHIRE	Injured by midge	Good	Good	Very promising	Generally diseased	Rather small	August 20	J. Aston, Market Drayton
	Good	.....	Very good	Middling	Much diseased	Not average	August 20	J. Johnson, Tunstall
	Average	.....	Average	Good	Not much diseased	Never so little	August 18	E. Cole, Burslem
LEICESTERSHIRE	Mildewed and quality inferior	Very good	Pretty good	Swedes patchy; Turnips good	Disease pretty general	Very little	About the 24th	Thos. Spencer, Knossington
	Generally good	Good	Good	Various	Partially diseased	.....	About the 15th	S. H. Stallard, Newark
	Middling, but attacked by rust	Good	Good	Medium	Good at present	Under average	About the 16th	G. Townshend, Sapcote-fields
R TLANDSHIRE	Badly mildewed	Below average and coarse	Average	Unpromising	Partially diseased	Yes	About the 19th	W. Fancourt, Empingham
HEREFORDSHIRE	Bad, mildewed	Average	But little grown	Very promising	Haulm attacked; the tubers good	Under average	About the 17th	J. Scales, Pencraig, Ross
	Good	Under average	.....	Bad	Diseased haulm	Yes	August 12	J. Mathews, Blakemore
WORCESTERSHIRE	Average; bad	Average	Average	Indifferent	Blighted	Average	August 12	H. Hudson, Wick, nr. Pershore
	Average	Under average	.....	Not good, and late	Very much diseased	About an average	August 10	G. Crane, Kidderminster
	Under average	Average	Promising	Growing fast	Disease appearing	Less than usual	13th inst.	F. Williams, Doddenham
	Good crop	Good	Scarce	Inferior	Diseased	No	August 12	R. Smith, Westacre, Droitwich

REPORTS ON THE CROPS—CONTINUED.

COUNTY.	WHEAT.	BARLEY.	OATS.	GREEN CROPS.	POTATOES.	STOCK OF OLD WHEAT.	WHEAT HARVEST GENERAL	AUTHORITY.
WORCESTERSHIRE	Mildewed and blighted	Fair crop	Light crop	Various	Badly diseased	Yes	August 12	— Woodward, Little Comberton, Pershore
	Good	Average	Average	Deficient	Suspicious	Average	August 15	William Aitchison, Cornedon
WARWICKSHIRE	Below average	Average	Good	Various	Little diseased	Below average	August 13	W. Forrester, Stratd.-on-Avon
	Average crop	A fair average	Fair crop	Growing well	Blight increasing	No	August 18	J. Burbury, Wooton Grange
	Deficient	Good	Not good	Very bad	Partially diseased	Short	August 17	Thos. Chapman, Stoneleigh
	Much blighted	Good crop	Looks well	Good	Almost a failure	Average	August 14	John S. Leaven, Stratfd.-on-Av.
NORTHAMPTONSHIRE	Much blighted	Nearly average	Variable	Indifferent	Complaint of disease	Yes	August 12	John Whitwell, Peterborough
	⅔ of last year	Average	Average	Various	Disease increasing	Under average	August 15	Peter Lowe, Naseby, Welford
	Below average	Average crop	Average	Partial	Diseased	Below average	August 12	W. Gray, Courteenhall
HUNTINGDONSHIRE	Much diseased	Heavy but laid	Good	Backward	Good	Average	August 14	P. Purves, Huntingdon
	Mildewed and under average	Average.	.....	Good	Under average	Average	August 14	R. Beart, Godmanchester
CAMBRIDGESHIRE	Diseased; bad	Good	Generally light	Inferior	Good but diseased	Average	August 15	A. S. Ruston, Chatteris
	Blighted	Average	Average	Various	Very much diseased	Average	August 12	Page Howard, Grantchester
	Bad, below aver.	.....	Average	Various	Blighted	Very short	August 12	J. Fryer, Chatteris
NORFOLK	Under average	Average	.....	Various	Diseased	Not average	August 12	J. J. Hill, Briston.
	Very defective	Fair average	Not average	Not good	Mostly diseased	Under average	August 20	T. Brown, Denver
	Good	Good	Good	Various	Bad	Not average	August 12	S. Lock, Stokeferry
	Mildewed and inferior	Inferior	.....	Not good	Diseased	Not average	August 19	W. Cubitt, Barton Abbey
	Extremely defective	Average	Light	Partial	Diseased	Average	August 24	J. Warnes, Trimingham
SUFFOLK	Much injured	Not good	.....	Better	Diseased	Not average	August 15	E. S. Gowing, Eye
	Partly blighted	Not average	.....	Various	.....	Average	August 21	R. Garrett, Saxmundham
MONMOUTHSHIRE	Good	Middling	Very good	Promising	Tops blackening	As usual	August 12	W. H. Little, Abergavenny
	Full average	Various	Bulky	Good	Tops gone	Not average	August 12	G. R. G. Relph, Usk
	Under average	Under average	.....	Good	Diseased	Under average	August 12	T. Dyke, Monmouth
GLOUCESTERSHIRE	Good crop; one-fifth blighted	Good	Fair	Good—late	A splendid crop, diseased	Not average	August 20	R. Beman, Morton-in-Marsh
	Not average	Good	Various	Patchy	Going fast	Over average	August 16	J. Kearsey, Cirencester
	Barely average	Average	Good	Abundance	Tops blighted	Under average	August 15	J. F. Peacey, Winchcomb
	Good	Good	Good	Good	Diseased	Not average	August 15	J. Hunt, Almondsbury
	Good, mildewed	Middling	Pretty fair	Good	Diseased	Average	August 19	J. Gardner, Gloucester
	Good but laid	Fair	Pretty good	Very fair	Increasingly bad	Not average	August 20	S. Taylor, Barnwood
	Average, laid	Very good	Very good	Promising	All diseased	Not average	August 14	J. Burnell, Hanham
	Heavy and laid	Average	Average	Luxuriant	A fine crop, diseased	Very little	August 19	A. Tuckett, Warmley
OXFORDSHIRE	Mildewed	Fair average	Good	Good but late	Much diseased	Average	August 14	S. Druce, jun., Eynsham
	Deficient	Average	Good	Plentiful	Bad	Under average	August 12	S. Collier, Witney
BUCKINGHAMSHIRE	Much laid and blighted	Good	Good	Very good	Very much diseased	Not average	August 13	A. Frazer, Claydon
	Poor, blighted	Various	An average	Almost average	Generally diseased	Scarcely average	August 14	R. Vallentine, Leigh. Buzzard
BEDFORDSHIRE	Not average	Average	Very good	Promising	Much diseased	Average	August 12	W. Lavender, Biddenham
	Below average	Abundant, but not good	Very good	Good, but attacked by "anbury"	Generally diseased	Not average	August 13	T. Bennett, Woburn
	Injured	Fine	Middling	Generally good	A fine crop, but diseased	.....	.....	—— Bedford
HERTS	Below average	Average	Under average	Not good	A full crop; blighting	Never less	August 16	——, St. Albans
	Good	Very fine	Very fine	Very good	Disease appears	Average	August 14	C. Humbert, Watford
	Much blighted	Good	Average	Good	.....	.....	August 19	J. B. Lawes, Rothamsted
ESSEX	Laid; various	Good, but laid	Not full	Various	Good, but affected	Very little	August 10	J. J. Mechi, Kelvedon
	Good	Under average	Average	Good	*Haulm* diseased	Average	August 7	J. Malpas, Harwich
	Average	Average	Rather light	.....	Infected	Under average	August 12	C. Ball, Romford
	Much blighted	Partial	Not average	Various	Generally diseased	Under average	August 5	W. F. Hobbs, Colchester
	Various	Under average	Bad	Deficient	All diseased	Never less	August 19	R. Baker, Writtle
	Deficient	Coarse and thin	Good	.....	Diseased	Average	August 14	A. Barfield, Dunmow
MIDDLESEX	Not average	Very good	Full average	Very promising	Much diseased	Not average	August 15	C. Webster, Uxbridge
SOMERSET	Average	Good average	Very good	Particularly good	Half a crop	Average	August 20	C. P. Collyers, Dulverton
	Much injured	Average	Light	Excellent	Diseased	Not average	August 15	R. S. Graham, Butleigh
	Very good	Tolerable	Good	Good	Tops blighted	Not average	August 14	H. Cottrell, Congresbury
WILTSHIRE	Under average	Average	Good	Good	Diseased	Near average	August 12	T. Arkell, Swindon
	Under average	Not average	Average	All good	Tops gone; half crop	Not average	August 15	J. Spencer, Bowood
	Not average	Light crop	Good	Good	Much affected	Not average	August 20	G. Brown, Avebury
	Deficient	Good	Good	Good	General blight	Under average	August 12	G. N. Hulbert, Bradford
BERKSHIRE	Half a crop	Bad	Average	Good	Blighted	Not average	August 8	J. Williams, Abingdon
	Very bad	Bad	Fair	Good	Bad	Not average	August 12	R. H. Betteridge, Abingdon
	Average: hurt	Various	Good	Good	Much diseased	Average	August 12	J. Adnams, Thatcham
	Variable	Average	Full average	Abundant	Promising	Not average	August 14	E. W. Moore, Farringdon
SURREY	Average	Below average	Good	Good: "anbury"	Worse	Average	August 12	J. M. Paine, Farnham
KENT	1 qr. per acre	Middling	Good	Good	Dying off	Average	August 14	J. Smeed, St. Peter's
	below average							
	Under average	Under average	Very good	Very good	Rotting	Average	August 14	R. Matson, Wingham
	Under average	Ordinary	Average	Various	Diseased	Scarce	August 18	M. Sandford, Dover
SUSSEX	Under average	Fair	Under average	Promising	Blighted	Not average	August 15	J. Brotherton, Robertsbridge
	Under average	Average	Fair	Good	Wholly diseased	Under average	August 12	H. E. Sadler, Chichester
HANTS	Average	Blighted	Good	Good	All diseased	Average	August 20	W. Spooner, Eling
	Good and bright	Variable	Variable	Inferior	Very bad	.....	August 14	S. Cheetham Southampton
	Not average	Various	Good	Good: "anbury"	All rotting	Not average	August 14	J. Eames, Beaulieu
	Heavy, injured	Good bulk	Good	Very good	Diseased	.....	August 12	H. Raynbird, Laverstoke
	Far below aver.	Very bad	Over average	Good	Very bad	Average	August 14	J. T. Twynam, Stockbridge
	Average	Indifferent	Average	Good	All bad	Not average	August 15	J. W. Clark, Ramsey
	Average	Blighted	Over average	Good	Diseased	Under average	August 15	J. Blundell, Bursledon
DORSETSHIRE	Very good	Very good	.....	Generally good	Generally bad	Not average	August 10	"F. P. B M.," Dorchester
	Average	Over average	Good	Excellent	All diseased	Average	August 15	W. Voss, Corfe Castle
	Much blighted	Very good	Very good	Most excellent	Tops black	Not average	August 13	A. Huxtable, Sutton Waldron
	Under average	Not so good	Not good	Very good	Destroyed	Not average	August 19	J. Furmedge, Beaminster
	Not average	Average	Average	Over average	Greatly diseased	Scarce	August 15	George Fowler, Princehall
DEVONSHIRE	Average	Under average	Good	Very good	Good but diseased	Average	August 12	G. Turner, Exeter
	Average	Average	Average	Very good	Partly bad	Not average	August 17	T. Michelmore, jun., Totness
	Good	Good	Healthy but laid	Good	Haulm bad	Average	August 11	G. Langdon, Barnstaple
	Average	Over average	Promising	Late	*Tops* gone	Not average	August 14	J. Benson, Tavistock
	Under average	Average	.....	Fine	Very bad	Near average	August 17	S. Cornish, Kingsbridge
	Not like last year	Fair	Not average	Good	*Haulm* gone	Not average	August 20	W. F. Karkeek, Truro
	Under average	Average	Abundant	Promising	Greatly diseased	Not average	August 15	J. Michell, Feock
	Deficient	Not good	Promising	Good	As bad as ever	Average	August 12	J. Mills, Launceston
WALES.								
CAERNARVONSHIRE	Excellent	Excellent	Excellent	Excellent	Healthy and good	Not average	August 24	J. Williams, Conway
DENBIGHSHIRE	Under average	Average	Average	Average	Partly diseased	Not average	August 15	R. H. Griffith, Denbigh
	Full crop	Full crop	Full crop	Various	Much diseased	Not average	August 19	J. Girdwood, Chirk
CAERMARTHENSHIRE	Full average	Full average	Full average	Look well	Haulm going	Scarce	August 22	J. W. Lawford, Tivydail
PEMBROKESHIRE	Average	Thin	Average	Partial	Disease appeared	As usual	August 18	R. Carrow, Johnstone Hall
GLAMORGANSHIRE	Fair	Backward	Good	Very good	*Haulm* gone	Average	August 20	W. Edward, Swansea
	Average.	Average	Average	Average	Much diseased	Average	August 15	E. W. David, Cardiff
IRELAND.								
DONEGAL	Smut; diseased	Fills badly	Looks well	Promising	No hopes of a crop	.....	August 30	J. O'Donell, Ballyshannon
	Fair	Look well	Very fine	Fine	Partial failure	.....	September 1	T. J. Atkinson, Cavan Garden
	Under average	Very late	Good	Good	Diseased, not bad	.....	September 1	C. J. Boyce, Stranorlan
	Good	Good	Good	Not good	Diseased early	.....	August 25	W. Sinclair, Belmont
DERRY	Good	Pretty good	Excellent	Very promising	Blighting rapidly	.....	September 1	C. Pollock, Magherafelt
	Not average	Good	Very good	Never better	Going fast	Full average	September 1	S. Orr, Coleraine
	Excellent	Average	Very superior	Generally good	Crop going	.....	September 1	J. S. Clark, Maghera
	Not average	Best	Full average	All good	Getting worse	.....	August 20	J. Moore, Newtown Limavady
ANTRIM	Under average	Very good	Superior	Very good	Blighting rapidly	.....	September 1	A. M'Kinlay, Bushmills
	Various	.....	Good	Excellent	Disease general	.....	August 20	R. R. Houghton, Lisburn
	Promising	.....	Very good	Promising	Much diseased	.....	September 3	J. Burmiston, Randalstown
	Various	Little sown	Good	Look well	Disease rapid	.....	August 20	J. Lamb, Belfast
TYRONE	.....	Excellent	Over average	Good	Full half a crop	Very little	September 1	J. Buchanan, Omagh
	Not good	As good	Very good	Fair	Not so bad as 1846	.....	August 27	J. Knox, Strabane
FERMANAGH	Fair	.....	Very good	Very good	All black and rotting	.....	August 27	J. Patterson, Linaskea
	Generally good	Most excellent	Never better	Beautiful	*Leaves* blighted	.....	August 26	A. Mair, Linaskea
MONAGHAN	.....	.....	Luxuriant	Tolerable	*Tubers* abundant	.....	.....	G. B. Coulter, Castleblayney
	Deficient	.....	Over average	Very good	Another woeful year	.....	...	J. Marrow, Ballyboy
ARMAGH	Not well	.....	Very fine	Looking well	Blight set in	.....	August 23	R. B. Harding, Tanderagee
	Pretty good	.....	Very good	Very fine	*Stalks* black	.....	August 22	G. Green, Lurgan
	Not good	Good	Very good	Good	Uncertain	.....	August 21	J. Waigh, Cavanacan
	Average	Average	Very good	Fair	Slightly injured	.....	August 24	W. Paton, J.P., Armagh
DOWN	Very good	Very good	Excellent	Abundant	Partially affected	.....	August 20	Rev. H. E. Boyd, Dromara
	Over average	.....	Under average	Good	Disease progressing	.....	September 4	J. Marshall, Newry
	Very good	Very good	Abundant	Good	Tubers infected	.....	September 10	M. Forrester, Castlewellan
	Various	Average	Average	Good	*Stalks* diseased	.....	August 28	R. M'Cleery, Portaferry
	Various	.....	Average	Never better	Going fast	.....	Oats, August 23	J. M'Kee, Comber
	Average	Average	Over average	Not average	Rapidly going	.....	September 1	Rev. S. Simms, Loughbrick-
	Fair	Good	Very good	All good	As last year	.....	August 21	land
	Under average	Average	Average	Promising	Half gone	Under average	August 26	P. Grand, Portaferry
								J. Andrews, Comber

REPORTS ON THE CROPS—Continued.

IRELAND. COUNTY.	WHEAT.	BARLEY.	OATS.	GREEN CROPS.	POTATOES.	STOCK OF OLD WHEAT.	Wheat Harvest General.	AUTHORITY.
MAYO	.....	Bad	Very fine	Injured	*Tops* going	Not average	October	A. S. Perkins, Killaloe
	Good	Fine	Fine	Tolerable	Disease appearing	.....	August 28	G. Hildebrand, Westport
	Very good	Good	Good	Middling	Disease progressing	.....	September	Rev. W. B. Stoney, Castlebar
SLIGO	Good	Good	Very good	Very good	Going fast	.....	September	J. Knott, Battlefield
LEITRIM	Not average	None	Very good	Various	Blighted	.....	September 8	D. Boyd, Carrick-on-Shannon
	.....	.....	Good crop	Good	Disease increasing	.....	August 30	J. Lindsay, Manor-hamilton
CAVAN	.....	.....	Fine	Very well	*Stalks* going	.....	.....	J. Nesbitt, Belturbet
	Good	Average	Very good	Good	*Rapidly going*	.....	.....	J. Gibson, Bailliebo rough
LOUTH	Half destroyed	Fine	Thin	Very good	Diseased	.....	August 24	W. M'Culloch, Dundalk
GALWAY	¼ below average	Average	Not so good	Very good	Very bad	.....	August 20	R. B. Symonds, Banagher
	.....	Promising	Quite average	Very good	Tubers ¼ diseased	.....	.....	J. Ellis, Clifden
	Various	.. ...	Very fine	Various	*Leaves* black	Average	August 25	J. Sheil, Killoquet
ROSCOMMON	Very good	Good	Abundant	Well	*Leaves* blighting	.....	September 10	J. F. Blake, Galway
LONGFORD	Very bad	Good	Very good	Good	Blighted	.....	September 1	J. Kelly, Faraben
	.....	Good	Good	Good	Pretty good	.....	.....	E. Morgan, Edgworthstown
	.....	Average	Good	Prosperous	*Leaves* black	.....	September 1	W. Officer, Newcastle
	Complaints	.....	Good	Good	Tubers going	.....	September	J. Goodiff, Granard
WESTMEATH	Failure	Fair	Average	Very good	Very bad	.....	August 25	G. Bagnall, Rochford-bridge
	Failure	Good	Good	Good	Not half a crop	.....	August 28	R. Bagnall, Tyrrell's Pass
	Bad	Average	Very good	Promising	Blighted	.....	August 25	W. Newburn, Mullingar
QUEEN'S COUNTY	Not average	Good	Good	Good	*Stalks* diseased	.....	.....	T. Rose, Rathdowns
	Variable	Good	Excellent	Good	*Stalks* diseased	.....	.....	W. Neale, Mount Mellick
DUBLIN	Blighted	Average	Average	Very good	Diseased	.....	August 20	T. Ball, Malahide
KILDARE	Various	Good	Good	Good	Diseased	.....	August 20	G. Lamb, Castledermot
CLARE	Not average	Over average	Over average	Not good	Severely blighted	.....	August 25	E. Bennett, Newmarket-on-F.
	Blighted	Very good	Very good	Late	*Stalks* black	.....	.....	R. A. Stoddart, Kilkishea
	.....	Promises well	Good	Various	Panic subsiding	.....	.....	D. J. Wilson Belvoir
	.....	Indifferent	Generally good	.....	*Leaves* injured	.....	.....	H. Franks, Killaloe
	Bad	Good	Good	.....	"Going"	.....	September 1	R. Murray, Miltown, Malbay
	Very poor	Good	Good	Good	Diseased	.....	August 20	W. Digan, Killaloe
TIPPERARY	One-third lost	Excellent	Excellent	Excellent	*Stem* blighted	.....	September 1	R. D. Boulton Massy, Ballywire
	Not so good	Pretty good	Light	Good	*Leaves* diseased	.....	August 24	H. F. Fennell, Cahir
	Injured	Very good	Very good	Good	Disease apparent	.....	August 24	—, Clonmel
	Poor	Good	Very good	Promising	Half gone	.....	.....	O'Brien Dillon, Nenagh
KILKENNY	One-third failed	Good	Very good	Good	*Stalks* gone	.....	September 1	T. Somerville, Castle Comer
	Very bad	Good	Good	Good	*Stalks* bad	.....	August 18	E. Ryan, Kilfane
	⅓ blighted	Very fine	Very fine	Fair	Good, but gone	.....	August 20	D. A. Milward, Tullogher
	Bad as can be	Good	Productive	Bad	Blighting	.....	.....	R. Stone, Freshford
	Half blighted	Average	Good	Very good	Appearance of blight	.....	August 15	M. Murphy, Goresbridge
	One-third loss	.....	Very good	Very good	*Stalks* blighted	.....	August 20	J. Richardson, Piltown
CARLOW	Partial blight	Good	Good	Good	*Stalks* burnt	.....	August 20	P. B. Mosse, Carlow
WICKLOW	Injured	.....	Very good	Very good	*Leaves* black	.....	.....	T. De Reuzy, M D., Carnew
	Indifferent	Middling	Good	Indifferent	Unsound	.....	.....	J. Dickson, Tinakelly house
	Partial blight	Very good	Over average	Never finer	Diseased	.....	.....	J. Daly, Enniskerry
WEXFORD	Various	Good	Good	Good	*Leaf* damaged	.....	.....	J. Dram, New Ross
	One-fifth spoiled	Good	Various	Promising	*Top* much burnt	.....	.....	G. Gordon, Ferns
	Not half a crop	Middling	Various	Good	Getting worse	.....	August 17	G. Glasscott, Camolin
LIMERICK	Half a crop	Very bad	Not average	Very good	Very bad	.....	August 20	T. Rudd, Ferns
KERRY	Good	Good	Good	Very good	Bad	.....	August 28	G. Gubbins, Bruff
	Middling	Promising	Good	Good	Blighted	.....	.....	J. Creagle, Tarbert [mare
CORK	Damaged	Good	Good	Very good	Half the roots black	.....	.....	J. O'Sullivan, P.P., V.G., Ken-
	Indifferent	Very good	Indifferent	Bad	Much blighted	.....	.....	J. Wilkinson, Clogner
	Injured	Good	Average	Good	Average	.....	.....	T. C. Cole, J. P., Innishannon
	Much injured	Inferior	Very good	Excellent	Black	.....	.....	T. W. Cooper, Macroom
	Good	Generally good	Generally good	Fair	*Leaves* blighted	.....	August 17	H. Longfield, Doneraile
	Fair average	Well	Not heavy	Various	As bad as ever	.....	.....	J. Y. Kingston, Bantry [kilty
	Slightly burnt	Good	Very good	Backward	Diseased	.....	August 25	D. Macarthy, Gallinay, Clona-
	Light	Light	Light	Rather good	Blighted	.....	.....	R. Hudson, Youghall
	Not average	Average	Very good	Very good	One-third of a crop	.....	.....	A. Twiname, Kanturk
	Good	Good	Fair	Not so good	*Stalks* blighted	.....	.....	T. Jenkins, Ballymahera
	Average	.....	Good	Promising	*Stalks* diseased	.....	August 20	S. Piddell, M.D., Kildorry
WATERFORD	Under average	Average	Over average	Good	Leaves gone	.....	August 26	D. Barclay, Skibbereen
	Sh rt crop	Good	Light	Various	Generally diseased	.....	August 25	W. S. Barrow, Kilmacthomas
	Injured	.....	Fair	Various	*Stalks* withered	.....	.....	E. Kennedy, Kilmacthomas
	Injured	Fair	Under average	Very good	Blighted	.....	.....	G. Hill, Cappoquin

A DAIRY STOCK.

I recommend the following mode of managing a milk stock, the principles of which are followed by the best milk selling farmers. Curry and wisp the cattle once a day, give water twice a day, when in the stall, and an hour's airing in the yard. Let the food be given to them at exactly the same hour every day, and likewise the water. When food is given, and any cow does not take to it readily, take it from her and let her be without any until next feeding time (this is the way man should do to remain in health). Never pamper immediately after calving. At milking time the master or mistress should assist, or be present, in order to see that the milkers milk briskly, and without talking. A great deal depends on these two points. A milker may sing or whistle, but not talk, but then it must be tuneable. There is an old saying, that the last drop is the richest, and should be drawn. This is wrong, for the last drop from a good milker never does come. I have seen milkers pulling at the udder for the "last drop," while a weakly constituted cow has been nearly sick. A mother who has suckled children can understand this, and yet I have known thoughtless mothers to forget it when milking cows. In dripping a cow, a milker finishes with his right hand, by taking the teats in rotation, and getting what he can out; and when he gets hold of a teat, if he can get milk twice, he must try that teat again after he has gone them round; but if he can only get milk once, he should give up, for the last drop which ought to be taken is then come: and if more after this is got, it is a pull upon the milk veins, and is no richer than milk taken at the first, or rather, it is of an average quality. If a milk farmer intend to follow his business to the best advantage either he or his wife must themselves milk, or be present during the time of milking. One of the best managers I am acquainted with, always did the dripping himself, and left the others to do the regular milking.

The proper temperature for a dairy, where butter is made, will be from 50 to 60 degrees, according to the temperature of the weather. There should be plenty of air circulating through it. If it be too warm where the cream stands, it will lift in the cream mug, and the butter will be rancid; and if it be too cold, the cream will not get sufficiently acid for churning in proper time; in this case the butter will have what we call a bingey taste. Bad dairyers to insure good butter will churn the cream before it is acid, but this is a waste of labour, inasmuch as the cream, in this case, must be churned until it is acid, before the butter will separate from the milk. When churning commences the cream should be at from 62 to 68 degrees, according to the temperature of the weather, or of the room. No water should ever be used about butter in making up, as water left in butter is just as bad as milk, and it will soon make the butter bad. Nothing but labour, by working the butter, will produce real solid sweet butter, and make it keep sweet. The following is a statement for eight years, previous to 1840, of the stock, produce, &c., of a dairy farm in the neighbourhood of Rochdale. The farm is on the mixed system of dairying, that is, part of the milk is sold in the new, part skimmed, the cream being churned, and the skim-milk and butter-milk sold as well as the butter.

Year.	No. of Cows kept.	Quantity of Butter produced	Quantity of New Milk sold.	Value of Butter sold.	Value of Milk sold.	Total value of Produce.	Average produce of each Cow.
		lbs.	Qrts.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
1833	28	6608	5334	359 16 2	345 8 5	705 4 7	25 3 8½
1834	28	6695	6890	364 10 5	347 13 9	712 4 2	25 8 8
1835	27	6733	7735	366 11 7	328 5 11	694 17 6	25 14 7½
1836	25	6112	9380	357 15 8	353 2 0	710 17 8	28 8 8½
1837	25	6010	11390	376 5 0	334 19 10	711 4 10	28 8 11½
1838	24	5929	9391	347 2 2	340 4 10	687 7 0	28 11 1½
1839	25	5618	4743	328 19 4	313 13 1	642 12 5	25 14 1¼
1840	23	5530	2444	346 0 0	371 5 11	717 10 11	31 3 11¼

In addition to the above there were about 150 lbs. of butter, and 1000 quarts of milk annually consumed in the house; value about 15*l*. The cows were kept on pasture in the summer, with about one quarter bushel of grains each daily; in the winter on hay. Potatoes, Turnips, and grains, with Bean flour or Oatmeal. On an average 11 cows were changed (bought and sold), every year, at about 6*l*. loss for each cow changed. The farm was an entire Grass farm, consequently all the provender had to be purchased, and cost, on an average, 150*l*. per year. *Rothwell's Agriculture of Lancashire.*

Home Correspondence.

Live and Dead Weights of some Pigs, fed on Martin Farm, near Dover, 1850.—

No. of Pigs.	Live Weights.	Dead Weights.
4	798	548
2	532	374
4	896	595
1	238	177
2	253	168
4	989	695
4	1057	786
2	443	312
Small 6	526	329
2	549	398
2	542	373
2	528	388
2	528	394
Small 5	631	408
3	250	161
6	815	512
51	9575	6918

Or as 14 to 10. *M. Sandford.*

The Cow Parsnip as Food for Stock.—The only species of this plant indigenous in our country is the Heracleum sphondylium. Other species have been introduced, and those who have had occasion to travel by the Great Western Railway may have observed some fine specimens of the Heracleum sibericum on the bank of the approach to the Paddington terminus. Mr. Taunton informed M. Vilmorin, in the communication I referred to at page 523, that he had, for some years, been in the habit of sowing varieties of Heracleum in the autumn in patches amongst his Wheat. The young plant shoots in the following spring, and for the last four years, he says, "I have fed them off regularly with sheep three times in the course of the year. I begin them in April, when they furnish me with the first green food I have to succeed my Turnips and other root crops. Young sheep that have never before fed on it seem to dislike it at first, but those that have eaten it the previous year devour it greedily, as also do the young stock in a very short time; and so well does it agree with them that I give them nothing else for the remainder of the year." Mr. Taunton observed that sheep eat all the different species presented to them, without any apparent preference of one to the other. The H. sphondylium and H. sub-villosum seemed to be liked by cows, horses, and pigs; but there are some other kinds which the latter animals will not touch. The H. asperum seemed to be the most relished by the stock generally. In poor calcareous soils the plant will not attain that height and luxuriance of growth which distinguish it in its own indigenous deep rich earth. It requires a light soil into which its roots can run deeply down. Where Mr. T. had trenched the land the plants grew to the height of from 6 to 9 feet; but when sown on a hard shallow calcareous soil, its size, even after the lapse of three or four years, was quite insignificant. Therefore to prepare the land properly for it, the ground should be ploughed to, at least, the depth of 1 or 1½ foot; or, better still, it should be trenched even more deeply with the spade. The H. asperum, grown in a sandy, ferruginous soil, and deeply trenched, proved to be biennial, and died as soon as its fructification was over; whilst, in a calcareous soil, where it was fed by off by sheep (whether it was that the hard subsoil, arresting the spreading of its roots, prevented its running to seed, or that the same result was caused by the browsing of the sheep), it was as long lived as the other varieties, and, like them, for five years has not once run to a head. It is not easily destroyed where it has once established itself. A piece of ground, in which the plant had been too thinly sown, was ploughed up and harrowed for a fresh sowing. None of the old roots seemed to be injured by the operation; on the contrary, they shot out with increased vigour, seeming to prove that, in an extensive cultiva-

tion of the Heracleum, it should only be grown in land where it is intended to remain for several years; for it would be extremely difficult to get rid of it without far more trouble and expense than a mere ploughing Mr. Taunton had reason to believe that the productiveness of the crop of Heracleum would, after previous manuring, be even increased by a good ploughing and harrowing, but had not actually put this opinion to the test of experiment. It would be very expensive to trench any considerable extent of land for its cultivation; and yet, without that process, the advantages to be expected from its rapid growth and gigantic size could scarcely be looked for. In a deep loamy soil it might be cultivated with less labour and expense, for its roots would be able to spread themselves freely. A root of the H. asperum, dug up by Mr. T., was longer and larger than any Parsnip he had ever seen; and he mentions, on the authority of an able chemist, that the roots of the Heracleum contain more saccharine matter than those of any other plant of the same family, although to the taste they are not as sweet as the Carrot. The different species of Heracleum mentioned by Mr. Taunton are—H. sphondylium, sub-villosum, asperum, capsicum, hispanicum, longifolium, amplifolium, and one which he suspects to have been a hybrid between the H. sphondylium and asperum, as the two plants were growing near each other in his garden. The new plant was remarkable for its vigour and size, and presented many features of the H. sphondylium, but was more luxuriant and of a deeper colour. What has Mr. T.'s experience of the Heracleum been? *Wallia.*

Mowing v. *Reaping.*—In one of your recent numbers appeared some remarks by "R. V.," on the relative advantages of mowing and reaping corn. The writer was evidently a strong advocate for the latter practice, and, as strong advocates frequently do, somewhat exaggerated the data upon which he based his comparison. Now as harvest operations are pretty generally commenced throughout the kingdom, and as the weather seems to be very unsettled, I venture to ask you to give insertion to the results of my experience in the matter, and thus give to those concerned in such questions an opportunity of judging how far their individual circumstances may be best suited for the one or for the other practice. My object being more to place the practice of mowing in a fair light before your readers, than to oppose "R. V.'s" assumptions, I will briefly describe my own harvest arrangements, which are now in active play, and which have been tested by the past two years' experience on the same farm. Economy of labour being as necessary in the manufacture of corn as of calico, I have endeavoured to arrange mine so that the manual labour employed shall be suitable for the particular portion of the work required—that a man shall do a man's work, and a child a child's work, and that there shall be harmony throughout the whole machinery. I have 10 scythes at work. Each mower cuts in, and lays the mown corn up against the standing corn. He is closely followed by a child, as small as you please, whose work is merely to draw bands and lay them down in a straight line, ready for the sheaves; then follows a stout girl (or boy), who takes out the mown corn in her arm, and lays it in sufficient quantity for a sheaf on the band already prepared for it. I now require a good active man as bandster. He follows as closely as he can after the sheaves are laid, and firmly binds them, leaving them lying on the ground, whence they are lifted by another man, whose work is to place them in stooks in the usual manner. One bandster and one stooker are found to be sufficient for every two mowers. The binding is the hardest work, and the men generally change places with the stookers at dinner time. Taking the corn crop through—Wheat, Barley, and Oats—I find that each scythe can easily get through two acres a day, and at that rate the other hands employed are kept steadily at work. The cost of this I give you in the exact wages I am now paying—the mowers, 3*s.* per day; children drawing bands, 6*d.* to 8*d.*; girls taking out corn, 1*s.* to 1*s.* 2*d.*; bandsters and stookers, 2*s.* 2*d.* Thus a day's work with 10 scythes would be as follows:

10 Mowers, at 3*s.*	1	10	0
10 Children, at 8*d.*	0	6	8
10 Girls, at 1*s.* 2*d.*	0	11	8
10 Bandsters and Stookers, at 2*s.* 2*d.* ...	1	1	8
3 Rakers, at 1*s.* 9*d.*	0	5	3
	£3	15	3

This sum, taking 20 acres as the work done, would amount to about 3*s.* 9*d.* per acre; for Wheat alone it would be somewhat higher. Taking 15 acres as the day's work (and we are now cutting more than that), it would give about 5*s.* per acre as the cost. These wages include the usual allowance for beer. As a matter of cost there can be no question between the two modes; and as "R. V." has given its disadvantages, I will conclude by attempting to show its advantages. By mowing you are enabled to concentrate the strength, and get through the harvest much more quickly. By this division of labour you nearly double the effective power of the individual, and thus halve the cost; and you have all the labour under the eye at the same time. You leave far less on the ground than by reaping, as the horse-rake goes over the field after the stooks are lifted, and thus takes up anything that the drag hand-rakes may have left. The corn is ready to carry sooner than if reaped; the stubble is left much cleaner, and the land is ready for the plough directly the crop is carried. The only practical disadvantage that I can admit is the extra work in threshing, and this even is reduced to a very small amount where steam power is available. The carting, stacking, and thatching are of course affected in direct proportion to the length of stubble left by the two operations under comparison—but taking the average difference in the stubble at 6 inches, and the height of the plant at 4 ft. 6 in., it would only give in bulk about one-ninth, or 11 per cent., and in weight only about 5 per cent. of increase. This would, I think, be fully counterbalanced by the cost of mowing the reaped stubble (2*s.* 6*d.* per acre) and of carting it home at a time when the teams are most wanted in the fields. *W., August* 19.

Irrigation.—In looking around me I see streams flowing from the Hastings sand with its oxide of iron falling as a sediment, and from the chalk and oolite formations cold and bright as crystal, each striving for superiority, but little beneficial effect is perceptible on these tenacious clays, if it is not led over the land at the time it carries in suspension the sediment occasioned by floods. But if we travel into Wilts we there see the beautiful clear streams, that issue from the same chalk range, rousing the Grass in early spring amidst snows and frosts. Water flowing from the same strata, and which has passed through no different strata, must be nearly alike in composition, therefore we must look to the natural drainage of the Wiltshire meadows for these differing effects. That which is held in solution by the water cannot be extracted by mechanical means, therefore drainage is necessary in the clays of Dorset, that the water may pass through the soil, which would retain what is otherwise lost. Thorough drainage, an equal division of the irrigating water, and a quicker flow of it over the land, that it may more readily carry away and give off to the air the unwholesome gases generated by the plants, and by the decay of vegetable matter, would effect more than many imagine is possible in these retentive clays. *Geo Summers, Stoke Wake, Dorset.*

The Allotment System at Crowland, Lincolnshire.—Knowing that this influential means of assisting the poor had been for some time in operation at Crowland, I have made inquiries of parties appointed to superintend the occupation of the land, and am happy to find they are enabled to give so satisfactory an account of the tenants. In 1831 a memorial was presented to Thos. Orby Hunter, Esq., the then proprietor of the Postland estate, by several farmers and tradesmen, setting forth that on account of the distress and privation to which the labouring poor were reduced, they hoped he would take into consideration an allotment of land for the use of the labourers of Crowland. This appeal was generously met by the worthy gentleman, who granted 57 acres at 40*s.* an acre rent. One hundred allotments were marked out, of half an acre each, and 25 of about a rood; they were placed under the control of a committee, and a liberal subscription was raised to defray incidental expenses. The property now belongs to the Marquis of Exeter, who continues the management, rent, and tenantry, according to the original plan. The first occupants were selected indiscriminately from among the poor, to test how the utmost benefit could be derived from the adoption of the system; those who did not strictly conform to the rules were discharged, although comparatively few have forfeited their occupation, and not one conviction for dishonesty has occurred among the tenants since the scheme has been established. My chief informant is Mr. Marfleet, the very intelligent and philanthropic treasurer, who is enthusiastic in recommending the extensive adoption of the system in other places; he says the rents are paid pretty punctually, a small premium being awarded for payment on or before the day appointed, which premium is received by four-fifths of the tenants or allottees; half the occupation only is allowed to be in Wheat, the other half Potatoes; but from the failure of Potatoes, other crops have been for the last year or two cultivated, Carrots or Mangold Wurzel, or Beans or Peas. The present appearance of the cropping is described as flourishing, and the land as being in excellent order; the effect of the occupation has been most beneficial on the conduct and character of the occupiers, and the advantages which may be said to extend beyond them, as, in order to be duly qualified for a vacant occupation, a character for honesty and industry is indispensable, and the successful applicant is esteemed fortunate in obtaining an allotment. The land is not allowed to be underlet to a sub-tenant, nor is the Wheat allowed to be sold. Spade husbandry is recommended, but much of the ploughing and carting is done by the employers of the men when a team can be spared, attendance at some place of worship on a Sunday is insisted on, and "no occupier to work on his own land after 6 o'clock in the morning, nor before 6 o'clock in the evening, without leave from his employer; nor be allowed to work on his allotment during the day, when he has refused other work in the morning;" occupation to terminate on the party leaving the town; allowance to be made for seed and labour; no other land to be held with the allotment; a footpath 10 inches in width to be kept on each side next the land marks. Sixpence per half acre is charged for destroying moles, repairing roads, &c.; most of the tenants keep a pig. My friend Mr. M. is so thoroughly convinced of the utility of these allotments, after an experience of 20 years, that he strongly recommends the system for general adoption by all who can appropriate land on similar terms for the improvement of the condition and social habits of the labouring poor. A printed code of rules embracing the above-mentioned and some minor regulations are agreed to and signed by the tenant. *J. W., Peterborough.*

Bacon.—In reply to your correspondent "A. B.," I beg to say I have been in the habit of smoking hams and bacon with pyroligneous acid for several years, and the flavour it communicates has been generally approved. I procure the acid from the chemist, who prepares it of the proper strength and flavour, Westphalia or any other that may be preferred. The hams are cured in the usual way, and, when ready to take out of the brine, are either hung up or set against the salting pan to drain for a couple of days. The acid is then well rubbed over the hams, and they are dried as usual. Two or three tablespoonfuls of acid will be sufficient for a ham about 20 lbs. weight, according as much or little of the smoky flavour is required. *Mary.*

English and Scotch Farming.—I beg to apologise to the readers of your *Gazette* for a mistake at p. 475 concerning the pigs at Sandingburgh, and have likewise to thank Mr. Hutchinson for sending me a note stating my mistake as soon as he observed it in print. He certifies that his words to me were as follows—"Pigs have given me annually a sum of 200*l.* to 300*l.*, all bred by myself, and fed on the produce of the farm." I likewise find that your correspondent "Investigator" hopes for some detailed information concerning the stock and crops at Sandingburgh. "Investigator" must be far behind in feeding cattle for the butcher when he states being "very far" from realising 18*l.* or 20*l.* for his two-year olds. We, in our poor county, often sell our two-year olds at that price, and some as high as 22*l.*; therefore, he must have a bad stock of cattle, or, poorly fed. *H., Aberdeenshire.*

Farm Memoranda.

THE PARISH OF ANAHILT.—The subject of the present sketch is situate in the northern portion of the county Down. Resting on the clay slate formation, the soil is argillaceous, and the surface uneven, being in some parts undulating and in others interspersed with low conical hills. At the commencement of the present century the state of agriculture in this parish was extremely backward: the Potato was the only green-crop cultivated, and even that to a limited extent, whilst the implements of tillage were of the rudest and most primitive description, the wooden plough and wheel car being in general use. But a small breadth of Wheat was at that time sown, the principal grain crop being Oats of a description called Blantyre. Barley was also grown in some instances, and on most farms a patch of Flax. The sowing of Clover and other artificial Grasses was unknown to the bulk of the farmers, so that neither in summer nor winter was there any house feeding provided for the cattle, which in all seasons were allowed to roam abroad over bare and impoverished fields, that scarcely afforded them the means of existence. It may be readily imagined that under this mode of treatment the cattle were of a very inferior kind, and that the supply of manure at the disposal of the farmer was extremely small. This limited supply, after manuring the Cabbage garden, was spread upon a portion of ley ground, which was planted with Potatoes "sodded," or in lazy beds. The following year the Potato ground was sown with Oats and Flax; the Oat crop being repeated until the land was completely exhausted, when it was left out "to rest" as it was called, and another portion of the farm subjected to the same process. By this system of management, the land when laid out for grazing was filled with Couch-grass and other weeds. This defective culture did not, however, induce that poverty among the people that might naturally be supposed; rents were low, and the smaller farmers and their families were employed at the linen manufacture—the men in weaving—and the females in spinning and preparing the Flax: thus combining manufactures with agriculture, which enabled them to enjoy a considerable share of comfort and independence. From the time to which we allude up to the peace of 1815, the high prices obtained for farm produce, owing to the French war, produced what may be called a fictitious prosperity amongst the farming classes, but it does not appear that during this period the system of farming was materially improved. About the date above referred to, the Anahilt Farming Society was established, under the auspices of that distinguished advocate for agricultural improvements, the late lamented Marquis of Downshire; annual ploughing matches were held; iron ploughs, carts, and other improved implements of husbandry were introduced, and a new impetus appears to have been given to the progress of improved cultivation. Although this improvement was not so rapid as might be wished, it has on the whole been progressive. Drainage, though in general partial and inadequately performed, began to be more attended to; old zig-zag and useless ditches were levelled, and straight quick-set fences substituted where required; small patches of Turnips were sown, and the cultivation of the Grasses for Hay and green feeding gradually became general. As a consequence of the introduction of improved implements, the farming operations were performed with more skill and neatness, while the homesteads of the farmers assumed a greater degree of taste and order. This progressive improvement continued up to the falure of the Potato crop in 1845. The system of farming generally pursued was, however, anything but commendable; few of the farmers cultivated Turnips or other root crops as winter feeding for their cattle, devoting all the manure produced on their farms to the Potato crop, of which they raised considerable quantities, and which constituted the chief food of themselves and families, the surplus being sold or used to raise pork for the Belfast

market, and also, to a limited extent, as food for cattle and horses. During the last 20 years the Wheat crop has been more extensively grown, and latterly something more approaching to a proper rotation of cropping has been observed; and on some farms house feeding during the entire year has been adopted. For this purpose a succession of green crops—Turnips, Mangold Wurzel, Rape, Clover, and Vetches are kept up; and the collection of manure, both liquid and solid, is carefully attended to. The rotation pursued on those farms is the five-course shift, Rape and winter Vetches being succeeded by Potatoes or Turnips. It is to be regretted that the above practice is not general, as the previous system of taking two, and in some instances three, consecutive crops of grain, still obtains to a considerable extent; whilst the raising of green crops, the house-feeding of cattle, the collection of manure, and the cleansing of the land from weeds, are still very inadequately attended to. The farms in this parish vary in extent from 5 to upwards of 100 statute acres; the occupiers of small farms employing their leisure time at the cotton manufacture, the weaving of linen being almost given up, owing to the extremely low wages paid to linen weavers. From the foregoing outline, it will be seen that although the parish of Anahilt has made considerable advances, and has borne the pressure of the last four years as well perhaps as any locality in Ireland, there is still great room for improvement in the mode of tillage generally prevailing. Knowing that the people are intelligent, frugal, and industrious, we have no doubt that when the present unsettled state of agricultural affairs shall have passed away, the farmers of Anahilt will not lag behind in the march of improvement. It has been said that "the first step to improvements is the desire for improvements," and we are aware that in this parish the desire is fairly awakened. *John P. Hagan, in the Journal of the Chemico-Agricultural Society of Ulster.*

MR. KNOWLES' FARM NEAR BURY.—Joshua Knowles, Esq., Stormer Hill, Tottington, near Bury, is another of the class of spirited and determined improvers; having to combat against the unfavourable circumstances of a high altitude, an inferior climate, and an indifferent soil. As an example of what can be done in so unfavourable a situation, I shall here give the management of his farm, of which he is part owner and occupier, and part occupier only. The following is what I wrote upon going over the farm in the autumn of 1843. I have frequently been on the farm since, the last time being in the autumn of 1848. It is still carried on in the same spirit, and with the same results; the only difference being, that he now occupies more land than he at that time did. The farm contains 101 statute acres, one half of which is tolerably level. The soil of this part is mostly a strong loam, resting upon clay. The surface soil is from 10 to perhaps 18 inches deep. The remaining part of the farm lies at a considerable angle, and is much undulated. The surface soil upon this part of the farm is thin, and the subsoil a stiff clay. The lowest part of the farm will be about 350 feet above the level of the sea, and the highest part nearly double that height. The average fall of rain will be 40 inches at the least. Of course, the climate, either as to cold or moisture, is not a good one, and little adapted for the cultivation of corn. In the neighbourhood, there is a good demand for milk and butter; and the whole of the produce is converted into these articles, except that which is required for the keep of horses. The whole of the farm has been drained by the present occupier. Most of the old crooked fences are levelled, new ones planted where required, and good occupation roads made. The buildings have also been made substantial and convenient, and are mostly new. Two tanks have been made for urine and dung water, each 10 feet by 10 feet, and 4 feet deep, and are so situated that the liquid can be drawn off at the bottom into a water cart, and taken to the land. This is spread upon the meadow land, which consists of 50 acres, kept in a highly productive state by irrigation with water from a brook, or with liquid and solid manure. One meadow has had eight good crops of Grass cut from it during the last three years. Last year, there were 26 acres of Italian Rye-grass and Clover cut for soiling horses, and for hay. Part of this had been sown in the spring of that year, another part in the spring of 1842, and the remainder in 1841; but two years appears to me to be long enough to allow it to remain growing; for, in the third, it is generally thin of plants. For the first and second years, it was cut three times each year. In 1842 these were 13 feet in length, at three cuttings, from a field sown that spring, in the month of March. In the following year a field of 7½ acres kept 70 head of cattle for 15 days, beginning on the 9th of June. On July 28 the second cutting was commenced, there being an exceedingly full crop. In the same year there were 8 acres and 2 roods of Swedish Turnips, and 4 acres and 1 rood of Oats; no Wheat or Barley, a few Potatoes, and 10 acres of permanent pasture. There are also woodland, gardens, and pleasure ground, to the extent of 3 acres or more. The rotation is as follows:—1st, Turnips or Potatoes after Italian Rye-grass and Clover, or Oats; 2d Italian Rye-grass and Clover, cut for soiling or hay; 3d year the same; and the 4th also the same, except a part in Oats. The stock kept during that year consisted of 40 milk cows, one bull, 13 heifers, stirks, and calves, and 16 horses. There is a print and bleach works connected with the farm, in which a considerable number of horses are employed. Within these few years there have been 19 acres marled, and also a considerable portion of lime used within the previous eight or ten years. The ploughing is always deep, whether the surface soil be shallow or not; but only one furrow deep, not subsoiled or trenched. The Turnips and Potatoes are cultivated in ridges, these being from 30 to 36 inches from centre to centre, with the intervals deeply horse-hoed, several times previously to the tops closing. The Turnips in the rows are thinned to from 12 to 15 inches distance. A heavy dressing of manure is given to the crop, which is a mixture of stable dung, night soil, and ashes. The quantity is about 35 tons on an average to an acre. In 1842 the Turnip crop was upon the highest and worst part of the farm, and the crop averaged 33 tons per acre, being a very even clean crop. It took the prize from the Manchester Agricultural Society. On the second day of August in the following year, I was upon the farm, when the Turnip crop had the appearance of being the heaviest crop I had ever seen; but I was informed that the mildew took them in a few weeks after, which prevented them getting anywhere near the weight they otherwise would have been; but, notwithstanding this, the crop would yield 30 tons per acre, as I have been told. A few years previously to the date of these occurrences, the field which was sowed with Turnips in 1842 was not worth the rent of 10*s.* per acre. In the year 1843, Mr. Knowles had a premium awarded him by the Manchester Agricultural Society, for the best cultivated farm, as owner. Although he was merely the owner of a part, he could not compete as an occupier only. *Rothwell's Agriculture of Lancashire.*

Notices to Correspondents.

DAIRY MANAGEMENT: *T B.* would be glad of some information on a dairy subject. His butter has been soft and oily for several weeks, a fault it has never had before, though he has the same cows, the same pasture, and the same dairy maid. The cows are fine animals, of the Jersey breed; the cream is churned twice a week, in a wooden box-churn, in a cool place. He is not aware of any change in the plan, which, till lately never failed in giving a large supply of the finest butter.

ITALIAN RYE-GRASS: *Exeter* It may be fed after harvest, if very forward, without harm to the plant.

MANGOLD WURZEL: *W N R.* You will not injure the roots by taking their lower leaves just before they turn yellow.—*Pen.* Sprouted Mangold Wurzel must be pulled up and given to the pigs. The early seeding of the root may be owing to too early sowing. Pulling off the leaves, whether "lower" or not, will injure the plant, if they are still young and growing. If they are on the point of withering, they may be pulled, because they are then probably of more use as food directly, than they are in assisting the growth of the root.

RAPE: *P.* Your note did not contain your address. The question would have been answered before if it had been received. Sow 3 lbs. of Rape seed in rows 12 inches apart on a soil in good tilth; and you may sow 2 or 3 cwt. per acre of Peruvian guano broadcast the day before, and harrow it in. You will yet have a useful crop for sheep in spring, but it is getting late.

SALT: *B.* Apply about 2 cwt. of salt per acre during rainy weather in April. If the sun has killed the root-weeds, you may plough them in.

SCYTHES: *E J C.* Messrs. Drummond, of Stirling, advertise cradle scythes for harvest work. To mow and tie a crop of 30 bushels with ordinary bulk of straw, is worth here about 7*s.* 6*d.* to 8*s.* per acre, men earning 2*s.* 6*d.* to 3*s.* 6*d.* during a good harvest day. Bagging is a little dearer, and reaping 1*s.* to 1*s* 6*d.* per acre dearer.

STADDLES FOR CORN: *A Country Curate.* We should prefer the iron to the stone staddles were it not for the greater expense of the former.

Markets.

COVENT GARDEN, Aug. 31.

Vegetables are abundantly supplied; Hothouse Grapes and Pine-apples plentiful; the supply of Peaches and Nectarines from the open walls but middling. Gooseberries are nearly over. Oranges and Lemons though scarcer are sufficient for the demand. Plums and Pears are still received from the Continent in great abundance. Filberts are plentiful. Carrots and Turnips may be had at 3d. to 6d. a bunch. Potatoes are good and cheap. Lettuces and other salading are sufficient for the demand, and so are Mushrooms. French Beans are scarcer. Cut Flowers consist of Heaths, Pelargoniums, Carnations, Picotees, Asters, Fuchsias, Mignonette, Dahlias, Verbenas, Bignonia venusta, Stephanotis floribunda, Heliotropes, Calceolaria viscosissima, Japan Lilies, and Roses.

FRUITS.

Pine-apples, per lb., 4*s* to 6*s*	Apples, dessert, p. bush, 4*s* to 8*s*
Grapes, hothouse, p. lb., 2*s* to 5*s*	— kitchen, do., 1*s* 6*d* to 3*s* 6*d*
Peaches, per doz., 3*s* to 8*s*	Pears, per doz., 1*s* to 3*s*
Nectarines, per doz., 3*s* to 8*s*	Lemons, per doz., 1*s* to 3*s*
Apricots, per doz., 1*s* 6*d* to 5*s*	Oranges, per doz., 2*s* to 3*s*
Figs, per punnet, 2*s* to 4*s*	— per 100, 8*s* to 24*s*
Melons, each, 1*s* to 3*s*	Almonds, per peck, 6*s*
Gooseberries, per half sieve, 2*s* 6*d* to 3*s* 6*d*	— sweet, per lb., 2*s* to 3*s*
Currants, p. half sieve, 3*s* to 4*s*	Walnuts, p. 100, 1*s* 6*d* to 2*s*
Raspberries, p. pottle, 4*d* to 6*d*	— p. bush., 16*s* to 24*s*
Plums, p. punnet, 1*s* to 1*s* 6*d*	Nuts, Barcelona, per bush., 20*s* to 22*s*
Green-gages, do., 1*s* to 2*s*	— Brazil, p. bsh., 12*s*
— per sieve, 8*s* to 10*s*	Filberts, per 100 lbs. 22*s* to 30*s*

VEGETABLES.

French Beans, p. sieve, 3*s* to 4*s*	Shallots, per lb., 6*d* to 8*d*
Cabbages, per doz., 6*d* to 1*s*	Garlic, per lb., 4*d* to 8*d*
Cauliflowers, p. doz., 2*s* to 4*s*	Artichokes, p. doz., 2*s* 6*d* to 3*s*
Peas, per sieve, 3*s* to 6*s*	Vegetable Marrows, per doz., 6*d* to 1*s*
Sorrel, p. hf. sieve, 6*d* to 9*d*	Lettuce, Cab., p. sc., 1*s* to 1*s* 6*d*
Potatoes, per ton, 50*s* to 80*s*	— Cos, p. score, 6*d* to 1*s* 6*d*
— per cwt., 2*s* 6*d* to 4*s*	Endive, per score, 1*s* to 1*s* 6*d*
— per bush., 1*s* 6*d* to 3*s*	Small Salads, p. punn, 2*d* to 3*d*
Turnips, per doz. bun., 2*s* 6*d* to 3*s* 6*d*	Horse Radish, p. bdl., 1*s* to 4*s*
Red Beet, per doz., 1*s* to 2*s*	Mushrooms, p. pot., 9*d* to 1*s* 6*d*
Cucumbers, p. doz., 1*s* to 6*s*	Fennel, per bunch, 2*d* to 3*d*
Leeks, per bunch, 1*d* to 2*d*	Savory, per bunch, 2*d* to 3*d*
Celery, p. bundle, 10*d* to 1*s*	Thyme, per bunch, 2*d* to 3*d*
Carrots, per doz., 3*s* to 5*s*	Parsley, p. doz. bun., 1*s* to 2*s*
Tomatoes, p. punnet, 1*s* to 1*s* 6*d*	— Roots, p. bdle., 9*d* to 1*s*
Spinach, p. half sieve, 1*s* 6*d* to 2*s*	Marjoram, per bunch, 8*d* to 9*d*
Onions, p. bunch, 2*d* to 6*d*	Mint, green, per bunch, 2*d*
— Spanish, p. doz., 1*s* 6*d* to 4*s*	Watercress, p. 12 bunch., 6*d* to 9

HAY.—Per Load of 36 Trusses.

SMITHFIELD, Aug. 29.

Prime Meadow Hay	75*s* to 80*s*		Clover	75*s* to 85*s*	
Inferior ditto... ...	60	70	New Clover	65	75
Rowen	60	—	Straw	23	27
New Hay	60	80		J. COOPER.	

The supply short.

CUMBERLAND MARKET, Aug. 29.

Prime Meadow Hay	74*s* to 78*s*		Inferior	70*s* to 76*s*	
Inferior ditto... ...	50	68	New Clover	70	76
New Hay	50	68	Straw	26	30
Old Clover	81	86		JOSHUA BAKER.	

COAL MARKET.—FRIDAY, Aug. 30.

Holywell, 13*s.* 6*d*; Wallsend Riddell, 13*s.* 3*d.*; Wallsend Haswell, 15*s.* 6*d.*; Wallsend Hetton, 15*s.* 6*d.*; Wallsend Lambton, 15*s.*; Wallsend Tees, 15*s.* 3*d.*—Ships at market, 119.

HOPS.—FRIDAY, Aug. 30.

Messrs. PATTENDEN and SMITH report that the demand for fine 1848 and 1849 Hops continues good. Duty 200,000*l.*

SMITHFIELD, MONDAY, Aug. 26.

We have a large supply of Beasts; however, trade is good for the best qualities. All kinds meet with a fair demand. The number of Sheep and Lambs is also large; late rates are well maintained. Although Calves are plentiful, choice ones are freely disposed of at rather more money. From Holland and Germany there are 931 Beasts, 4900 Sheep, and 216 Calves; from Scotland, 100 Beasts; and 2300 from the northern and midland counties.

Per st. of 8 lbs.—	s	d	s	d	Per st. of 8 lbs.—	s	d	s	d
Best Scots, Herefords, &c.	3	8 to 3	10		Best Long-wools	...	to	...	
Best Short-horns	3	4 — 3	6		Ditto Shorn	3	6 — 3	8	
2d quality Beasts	2	8 — 3	2		Ewes & 2d quality	...	—	...	
Best Downs and Half-breds	...	... —	...		Ditto Shorn	2	10 — 3	4	
Ditto Shorn	4	0 — 4	2		Lambs	...	4	0 — 4	6
					Calves	...	2	8 — 3	8
					Pigs	...	3	0 — 4	0

Beasts, 4184; Sheep and Lambs, 31,620; Calves, 332; Pigs, 255.

FRIDAY, Aug. 30.

The supply of Beasts is good; trade is dull at rather lower prices. The number of Sheep is large for the time of year; the demand is limited, at about 2d. per 8 lbs. reduction. There is very little inquiry for Lamb, only a few choice ones are saleable. Calves are plentiful; inferior are much lower, and trade scarcely so good for the best. From Germany and Holland there are 420 Beasts, 1990 Sheep, and 319 Calves; from Scotland, 50 Beasts; 300 from Leicester and Northampton; and 93 Milch Cows from the home counties.

Best Scots, Herefords, &c.	3	6 to 3	8	Best Long-wools	...	to	...	
Best Short-horns	3	4 — 3	6	Ditto Shorn	3	4 — 3	8	
2d quality Beasts	2	6 — 3	2	Ewes & 2d quality	...	—	...	
Best Downs and Half-breds	...	... —	...	Ditto Shorn	2	10 — 3	2	
Ditto Shorn	3	10 — 4	0	Lambs	...	3	8 — 4	0
				Calves	...	2	2 — 3	6
				Pigs	...	2	8 — 3	8

Beasts, 1117; Sheep and Lambs, 12,860; Calves, 602; Pigs, 245.

MARK LANE.

MONDAY, Aug. 26.—There was a fair supply of Wheat from Essex this morning, but it consisted almost entirely of the new crop, quality good. The show on the Kentish stands was small, and chiefly old; the sale was slow, and last week's prices barely maintained. There was an improved demand for foreign Wheat, at a reduction of 1*s.* to 2*s.* per qr., but holders being generally firm restricted business.—Barley meets a good sale at our extreme quotations; there were a few samples of new at market, quality better than expected; they were sold at 28*s.* per qr.—Beans and Peas are inquired after, at late rates.—There is a good demand for Oats, and the turn is in favour of the seller.

BRITISH PER IMPERIAL QUARTER.	s.	s.		s.	s.
Wheat, Essex, Kent, & Suffolk ...White	42—46		Red	37—44	
— — — fine selected runs ...ditto	45—49		Red	40—43	
— — — Talavera	46—52				
— Norfolk, Lincoln, & York...White	—		Red	36—42	
— Foreign	35—52				
Barley, grind. & distil, 19*s* to 22*s*...Chev	23—27		Malting	22—25	
— Foreign....Grinding and distilling	15—21		Malting	20—23	
Oats, Essex and Suffolk	15—18				
— Scotch and Lincolnshire ...Potato	18—21		Feed ...	17—19	
— Irish .....Potato	16—20		Feed ...	13—17	
— Foreign.....Poland and Brew	15—20		Feed ...	13—16	
Rye	19—21		Foreign	18—20	
Rye-meal, foreign.....per ton	5*l.*—6*l.*				
Beans, Mazagan .....22*s* to 24*s*.....Tick	24—2		Harrow	24—26	
— Pigeon .....25*s* — 28*s*...Wind-	—		Longpod	—	
— Foreign ..... Small	24—34		Egyptian	19—21	
Peas, white, Essex and Kent.....Boilers	23—3		Suffolk...	24—28	
— Maple.... .24*s* to 30*s* .....Grey	22—28		Foreign	21—28	
Maize ..... White	25—30		Yellow...	25—30	
Flour, best marks, delivered... per sack	36—40				
— Suffolk ..... ditto	31—36		Norfolk	31—36	
— Foreign .....per barrel	21—24		Per sack	31—34	

FRIDAY, Aug. 30.—There has been a fair arrival of Wheat this week, but small of all other articles. This morning's market was thinly attended, and Millers continue to hold off from purchasing.—Prices of Wheat, Beans, and Peas are unaltered from Monday, but good fresh Barley and Oats are the turn dearer.—The Flour trade is heavy, but holders are not disposed to accept lower prices.—Business to some extent has been transacted in Indian Corn afloat, at 27*s.* 6*d.* to 28*s.* 6*d.* per qr. for Galatz.

IMPERIAL AVERAGES.	WHEAT.	BARLEY.	OATS.	RYE.	BEANS.	PEAS.
July 20.....	42*s* 4*d*	22*s* 3*d*	17*s* 9*d*	22*s* 7*d*	27*s* 5*d*	27*s* 11*d*
— 27	43 6	22 3	18 1	24 9	27 4	27 8
Aug. 3.....	43 7	22 4	18 1	22 2	27 8	27 8
— 10.....	44 1	22 5	17 11	23 8	27 9	26 10
— 17.....	43 8	22 8	18 4	23 0	28 2	26 5
— 24.....	43 6	23 0	17 9	20 10	28 1	26 3
Aggreg. Aver.	43 5	22 6	18 0	22 10	27 9	27 2
Duties on Foreign Grain	1 0	1 0	1 0	1 0	1 0	1 0

Fluctuations in the last six weeks' Corn Averages.

PRICES.	JULY 20.	JULY 27.	AUG. 3.	AUG. 10.	AUG 17.	AUG. 24.
44*s* 1*d*	...	...	...	...	...	...
43 8	...	...	...	...	...	...
43 7	...	...	...	...	...	...
43 6	...	...	...	...	...	...
43 5	...	...	...	...	...	...
42 4	...	...	...	...	...	...

LIVERPOOL, FRIDAY, Aug. 23.—The weather since Sunday has been boisterous and cold in this district, and the operations of harvest have been checked. The prices of grain and Flour, however, have been scarcely affected. The weather is fine again to-day. The demand for Wheat and Flour is languid, but holders are firm at Tuesday's prices. Oats and Oatmeal are both dull of sale, and easier to buy. Barley, Beans, and Peas each find a good demand at full prices. Indian Corn is more in favour, and 27*s.* per 480 lbs. was made of American yellow corn to-day, which is an improvement of 6*d.* per qr. Arrivals into Liverpool from the 20th to 22d Aug., inclusive: Wheat, 11,323 qrs.; Barley, 15 qrs.; Malt, 798 qrs.; Oats, 153 qrs.; Beans, 4 qrs.; Indian Corn, 1800 qrs.; Oatmeal, 955 sacks; and 5520 sacks and 12427 barrels of Flour.—TUESDAY, Aug. 20.—We have had moderate supplies of grain, meal, and Flour from Ireland and coastwise this week, but have good arrivals of Wheat and Flour from abroad. The business of the week has been to a fair extent in most of the leading articles, but without much variation in prices. At this morning's market we had a larger attendance of buyers than for a length of time. A considerable extent of business was transacted in Wheat, at the extreme prices of last Tuesday. Flour was in good request, at late rates. Barley, Oats, Beans, and Peas were each likewise quite as dear. There was rather more inquiry for Indian Corn, and not much being offered, it advanced 1*s.* per qr. on this day se'nnight. Present prices: Wheat, English red, per 70 lbs., 5*s.* 10*d.* to 6*s.* 4*d.*; white, 6*s* 0*d.* to 6*s.* 7*d.* Barley, Scotch and Irish, per 60 lbs., 2*s.* 10*d.* to 3*s.* 1*d.* Malt, English, per qr. pale, 48*s.* to 52*s.* Oats, English and Scotch, per 45 lbs., 2*s.* 7*d.* to 2*s.* 9*d.* Beans, English, per qr., 28*s.* to 32*s.* Peas, do. do., 27*s.* 6*d.* to 30*s.*

FOR WATERING GARDENS, BREWERS' USE, &c.
FLEXIBLE INDIA-RUBBER HOSE PIPES.

JAMES LYNE HANCOCK, Sole Licensee and Manufacturer of the PATENT VULCANISED INDIA-RUBBER PIPES and TUBING.

These Pipes are well adapted for Watering Gardens, conveying Liquid Manure, racking Beer and Cider, Gas Fittings, Chemical and all purposes where a perfectly sound WATERPROOF and FLEXIBLE PIPE is required.

Hot Liquors or Acids do not injure them. No oil or dressing is required in using them. They do not leak from remaining out of use, are permanently Flexible in all Temperatures, and are therefore particularly suitable for Fire Engines; and, from their not leaking, are found exceedingly useful in conveying hot or cold water to baths in dwelling houses and such like purposes.

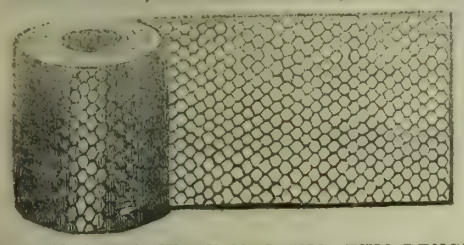
A LIGHT VULCANISED INDIA-RUBBER HOSE is now manufactured for conducting Water and Fluids, at the following prices per foot:

Size.	¼ in.	½ in.	¾ in.	1 in.	1½ in.	2 in.	2½ in.	3 in.
1 ply ...	0s. 5d.	0s. 6d.	0s. 8d.	0s. 10d.	1s. 0d.	1s. 2d	1s. 4d.	1s. 6d.
2 ply ...	0 8	0 9	1 0	1 2	1 5	1 8	2 0	2 3
3 ply ...	0 11	1 0	1 3	1 6	1 10	2 2	2 9	3 3

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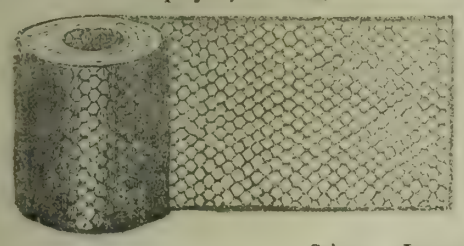
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12 inches wide	3d. per yard.	30 inches wide	7½d. per yard.
18 " "	4½d. "	36 " "	9d. "
14 " "	6d. "	48 " "	1s. "

Galvanised do., 1d. per foot extra.

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GALVANISED WIRE GAME NETTING.—7d. per yard, 2 feet wide.



	Galvanised.	Japanned Iron.
2-inch mesh, light, 24-inch wide ...	7d. per yd.	5d. per yd.
2-inch " strong " ...	9 "	6½ "
2-inch " extra strong " ...	12 "	9 "
1½-inch " light " ...	8 "	6 "
1½-inch " strong " ...	10 "	8 "
1½-inch " extra strong " ...	14 "	11 "

All the above can be made any width at proportionate prices. If the upper half is a coarse mesh, it will reduce the price one-fourth. Galvanised sparrow-proof netting for pheasantries, 3d. per square foot. Patterns forwarded post-free.

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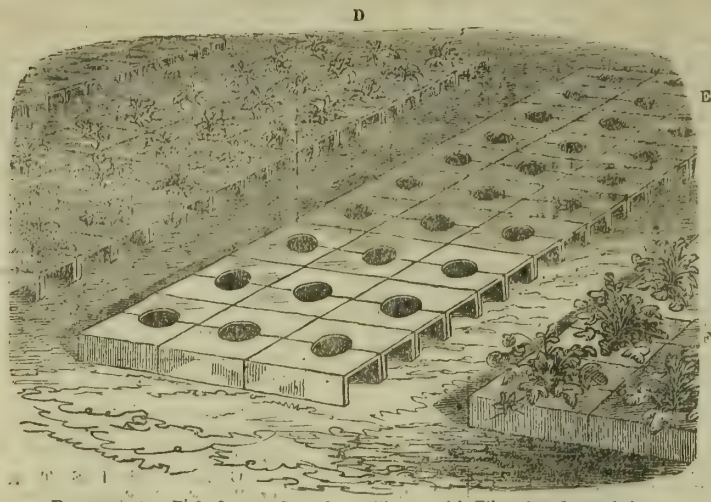
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A represents two rows of Celery in the trench before the Sockets are used, with the horizontal tube placed between them for the purpose of watering.

B shows two similar rows with the Sockets placed round each head of Celery prior to earthing against them.

C shows the Celery earthed up, as it appears about the end of September.

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A VIEW OF THE EAST FRONT;
A PORTION ON AN ENLARGED SCALE;
AND A GROUND PLAN.

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TO GENTLEMEN, NURSERYMEN, AND OTHERS.

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TO NOBLEMEN, GENTLEMEN, NURSERYMEN, BUILDERS, AND OTHERS.

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Also other excellent smaller Farms in the neighbourhood.

SUSSEX.—To be Let, a superior FARM, 230 acres, in the parish of Twineham, 168 acres arable and 41 acres meadow; the greater part has been thoroughly drained last year under the inspection of the Inclosure Commissioners; the timber and many of the hedges have been removed, and the land lies in large open fields; it is excellent wheat and bean land, but not of heavy tillage; most of it is fit for turnips; 15 acres of old pasture have been broken up this year, and the tenant will have the liberty to break up more. A good roomy Farm House, about 5 miles from the Hassocks Gate First Class station; only 7 miles from Brighton.—Apply to MR. HURLEY, Farm and Estate Agent, 62, Nelson-square, Blackfriars-road, London.

N.B.—Tenant may propose his own terms. Valuation very trifling.

Printed by WILLIAM BRADBURY, of No. 13 Upper Woburn-place, in the Parish of St. Pancras, and FREDERICK MULLETT EVANS, of No. 7, Church-row, Stoke Newington, both in the County of Middlesex, Printers, at their office in Lombard-street, in the Precinct of Whitefriars, in the City of London, and published by them at the Office, No. 5, Charles-street, in the parish of St. Paul's, Covent-garden, in the said county, where all Advertisements and Communications are to be ADDRESSED TO THE EDITOR.—SATURDAY, AUGUST 31, 1850.

THE GARDENERS' CHRONICLE
AND
AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 36—1850.] SATURDAY, SEPTEMBER 7. [PRICE 6*d.*

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OPEN TO ALL ENGLAND.

THE SECOND EXHIBITION OF THE LEEDS HORTICULTURAL AND FLORAL SOCIETY, will be held on WEDNESDAY and THURSDAY, the 11th and 12th of September, 1850.

Upwards of ONE HUNDRED GUINEAS are awarded.

SWEEPSTAKES.

In addition to the Prizes announced in Schedule, the Committee offer the following.

For DAHLIAS, 24 distinct varieties.

And also

For HOLLYHOCKS, 24 Spikes, dissimilar.

First Prize, 5*l.*; Second ditto, 3*l.* 10*s*; Third ditto, 2*l.*

Entrance to each class, 5*s.*; which will be added, *pro rata*, to the premiums.

The prizes for PINES, instead of those announced in Schedule, will be—First Prize, 2*l.*; Second ditto, 1*l.* 5*s.*; Third ditto, 15*s*,

Exhibitors must give three days' notice. Specimens sent from a distance will have every attention.

Schedules may be had on application to

J. BUCKTON and L. HICKS, Secretaries, Baggate, Leeds.

TO GARDENERS.

TO BE SOLD, by Private Contract, in small Lots, about 500 young APPLE AND PEAR TREES. To be viewed at Elm Lodge, Upper Holloway, on Tuesday the 10th and Wednesday the 11th instant, between 10 and 4 o'clock.

KITLEY'S GOLIAH STRAWBERRY.

ROBERT WHIBLEY has now ready fine plants at a very reduced price for cash, viz, 2*s.* per doz., or 10*s.* per 100. Also, Select CHRYSANTHEMUMS, from his well-known collection, from 6*s.* per dozen. Lists can be had.

Nursery, Kennington, London.

HUGH LOW AND CO. have just published their GENERAL CATALOGUE OF PLANTS, which can be had free on application.—Clapton Nursery, London, Sept. 7.

DUTCH BULBS FOR EARLY PLANTING, AT REDUCED PRICES.

HYACINTHS, named, new and beautiful varieties, distinct colours, per dozen	12*s.* 0*d.*
HYACINTHS, suitable for either pots or glasses, named, various colours, per dozen	6 0
HYACINTHS, not named, but in separate colors, p. 100	21 0
POLYANTHUS NARCISSUS, best sorts, named, from 4*s.* per dozen, to	6 0
TULIPS, Early Double and Single, named, the most showy varieties, per dozen	2 0
CROCUS, named, including all the best and newest varieties, per 100	2 6
CROCUS, Dutch, mixed, all colours, per 1000	12 0

The above, as well as every other variety of roots suitable for autumnal planting, may be had of

WILLIAM DENYER, Seedsman and Florist,

82, Gracechurch-street, near the Spread Eagle, London.

N.B. Descriptive and Priced Catalogues can be had on application.

ROBERTS' STRAWBERRY TILES.—The following list of distinguished noblemen and gentlemen comprehends but a few, who have not only approved, but highly commended these Tiles; and also further confirmed their opinion of them, by giving second and third orders for more of them (in some instances amounting to above a thousand). To remove the doubts of the sceptical as to the merits of the above invention, the Patentee is permitted to make reference to the undermentioned, as well as some hundreds more, whose names will be forwarded, if required. A pamphlet, with further particulars, will be forwarded free on application (enclosing three postage stamps), to Mr. JOHN ROBERTS, merchant, 34, Eastcheap, London.

The Lord Bishop of London
His Grace the Duke of Buccleuch
His Grace the Duke of Rutland
The Earl of De La Warr
Sir Henry Dryden, Bart., Daventry
Sir Claude Scott, Bart., Guildford
Chas. Mills, Esq., Hillingdon
J. Ladbroke, Esq., Epsom
Charles Hoare, Esq., Dawlish
— Alexander, Esq., Ipswich
James Dunlop, Esq., Malton
W. Cotton, Esq., Leytonstone
F. Pilch, Esq., Ipswich
H. Langton, Esq., Peckham

And hundreds of others who have given these tiles a fair trial.

NOTICE TO "FAIR PLAY."—If "Fair Play" will give his name and address, and state where his garden is situate, I will pay him for the tiles on delivery to me, and also the loss sustained on his fruit, on proof from any respectable persons of his assertions being correct.

JOHN ROBERTS, 34, Eastcheap, London.

MESSRS. STANDISH AND NOBLE'S new descriptive CATALOGUE OF SELECT HARDY ORNAMENTAL PLANTS is just published, and may be had for four postage stamps. Besides a Treatise on the cultivation of American Plants, it contains a Plate and Description of the Funebral Cypress, Notices of Cephalotaxis Fortunii, Cryptomeria japonica, Quercus sclerophylla and inversa, Viburnum plicatum and macrocephalum, with many recent introductions from the north of China, quite new to English gardens.

Messrs. S. and N. take this opportunity of stating that they give Designs for Laying out New Grounds and Plans for Improvements; also Estimates for all kinds of Planting, whether ornamental or economic.—Bagshot Nurseries, Sept. 7.

WATERER'S DESCRIPTIVE CATALOGUE OF AMERICAN PLANTS, &c.

HOSEA WATERER begs to announce his new descriptive CATALOGUE OF AMERICAN PLANTS, CONIFERS, ROSES, &c., is just published, and may be had by enclosing two stamps for postage to HOSEA WATERER, Knap Hill Nursery, Woking, Surrey.

☞ Everybody who has any idea of planting the ensuing autumn should possess themselves of this Catalogue.

A LIST OF NEWLY INTRODUCED PLANTS NOW OFFERED FOR THE FIRST TIME BY JAMES VEITCH AND SON, EXETER:

Escallonia macrantha, 21*s.* each; one over to the Trade on three.

Ixora salicifolia, 21*s.* each; ditto.

Dipladenia urophylla, 21*s.* each; ditto.

Hoya coriacea, 10*s.* 6*d.* each; ditto.

Dipteracanthus spectabilis, 10*s* 6*d.* each; ditto.

Oxalis elegans, or Oxalis elegans major, 5*s.* each, or three for 10*s.* 6*d.* of either.

Calceolaria grandis, 5*s.* each, or three for 10*s.* 6*d.*

IXORA SALICIFOLIA (TRUE), WILLOW-LEAF IXORA.

MESSRS. VEITCH AND SON are now prepared to send out strong plants of the above beautiful and distinct IXORA, received by them from Java through Mr. Thos. Lobb. It is a lovely free-blooming species, flowering in a very young state, and at the Chiswick Exhibition in July last received the first prize for new and rare plants—the Silver Gilt Medal. It is figured and described in Curtis's "Botanical Magazine" for July last.

Strong well established plants 21*s.* each; one over to the Trade on three.—Exeter, Sept. 7.

ROSES.

EDWARD DENYER, NURSERYMAN, Loughborough-road, Brixton, near London, begs to inform Noblemen, Gentlemen, &c., that his superb collection of Autumnal Roses is now in full bloom. E. D. likewise invites an inspection of his unrivalled collection of Fruit Trees and Evergreen Shrubs, in quantities, of the finest growth. Orders taken for them at this time, and delivered in November next.

E. D. informs his friends that he has no seed shop in London.

"BRITANNIA" STRAWBERRY.

JAMES JACKSON, in offering his new seedling Strawberry BRITANNIA to the public, can with confidence recommend it to Gentlemen and Market Gardeners, as being a Strawberry that cannot fail to give general satisfaction, as it has a combination of excellent qualities not to be met with in any other at present in cultivation, being a very strong grower and an abundant bearer. It is as late as the Elton Pine, and much larger. It ripens well in any situation, and is of excellent flavour, and of a deep sea let colour. It grows a large size, and has generally six or eight fruit on one stem. Strong plants of this superb Strawberry will be ready in September at 4*l.* per 100.—Application to be made to JAMES JACKSON, Gardener, Marfleet-lane, Hull; Mr. M'INTOSH, Seedsman, &c., Hull; Mr. DANIELS, Hessle-road Nursery, near Hull; or to Mr. HAIRS, Seedsman, 109, St. Martin's-lane, London. As the stock is limited, early prepaid orders will be promptly attended to. The usual allowance to the Trade.

CHOICE FLOWER SEEDS for present and autumn sowing, free by post, with directions for sowing, treatment, &c. Descriptive Catalogues sent on application. The following, saved from large collections of new and choice varieties, each, per packet.

Alstrœmeria, Cnilian	4*s.* 0*d.*	Pæonia, herbaceous	0 6
Anemone ..... 4*d.* to	1 0	Pentstemons, 6 varieties, 4*d.* to	0 6
,, new semi-dbl., 6*d.* to	1 0	Potentilla, from a collection of splendid hybrids	2 6
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Auricula	1 0	Polyanthus	0 6
Calceolaria	1 0	Ranunculus	2 6
Campanula, 6 varieties, 4*d.* to	0 6	Sweet William	0 4
Cineraria	1 0	Verbena, ... 1*s.* 6*d.* and	2 6
Delphinium	0 4	Wallflower	0 4
Dianthus	0 4	,, German, double, 6*d.* and	1 0
Fuchsia	1 0	Stocks, Emperor, 3 German varieties, separate	1 0
Geranium, 1*s.* 6*d.* and	2 6		
,, scarlets	0 6		
Gladiolus, hybrid varieties	0 6		
Gladiolus, from superior named flowers	2 6	Chænostoma polyantha	0 4
Gloxinia	0 6	Fuchsia corymbiflora alba, hybridised	1 6
Heliotrope	0 6	Lychnis fulgens	0 6
Hollyhock	0 6	Lobelia erinus grandiflora	0 6
,, 30 vars., separate	5 0	Silene Schafta	0 4
,, 20 ditto	3 6	Streptocarpus Rexii	0 6
,, 12 ditto	2 6	Sutherlandia frutescens	0 6
Iris, English	0 6	Veronica speciosa	1 0
,, Spanish	0 6	,, rosea	1 6
Mimulus	0 6		
Pansy	1 0		

For many other varieties, see Catalogue, sent on application.

20 Choice Greenhouse Perennials, 10*s.* 6*d.*; 12 for 7*s.* 6*d.*

20 Choice Hardy ditto 7*s.* 6*d.*; 12 for 5*s.*

20 Showy Hardy Annuals for spring flowering, 4*s.*

Remittances requested from unknown correspondents. Post office orders to be made payable to

BASS and BROWN, or to STEPHEN BROWN,

Seed and Horticultural Establishment, Sudbury, Suffolk.

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RENDLE'S NEW PRICED CATALOGUE OF BULBOUS ROOTS

Is just published, and can be had on application, gratis.

It contains a *descriptive* List of all the best Hyacinths, Tulips, Iris, Ranunculus, Anemones, Crocus, Liliums, Gladiolus, Ixia, &c., with some excellent *cultural advice* as to the best method of growing them. It will be found of great service to all growers.

The "Collections of Seeds" sent out by us having given such universal satisfaction, we have been induced to offer the following "Collections of Roots," which we are certain will please every purchaser.

For the List of Roots contained in the Collections, see our new Book Catalogue.

COLLECTIONS OF BULBS.	£	*s.*	*d.*
No. 1 Collection, all the most approved sorts ...	3	0	0
No. 2 Collection, containing smaller quantities ...	2	0	0
No. 3 Collection, for a small Garden	1	0	0

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100 Hyacinths in 100 very fine sorts.	Purchaser's selection	3	0	0
100 Hyacinths in 50 fine sorts.	Purchaser's selection ...	2	10	0
50 Hyacinths in 50 superior sorts	ditto ...	1	10	0
50 Hyacinths in 25 superior sorts	ditto ...	1	5	0
24 Hyacinths in 12 superior varieties	ditto ...	0	12	0
12 Hyacinths in 12 superior varieties	ditto ...	0	6	0

Where the selection of Hyacinths is left to W. E. R. and Co., they request to be informed whether they are intended for water, pots, or the open ground; also whether single or double Hyacinths are preferred. When the choice is left to them they generally send about two-thirds double, and one-third single, which gives a greater variety. Purchasers may rely upon really good sorts being selected when the choice is left to ourselves, and we will guarantee to give them satisfaction.

For Catalogues, and further information, apply to

WILLIAM E. RENDLE AND Co.,

Seed Merchants, Plymouth.

N.B. Our Hyacinths and other roots have just arrived from Holland in excellent condition

TO ORNAMENTAL PLANTERS.

WHITLEY AND OSBORN respectfully beg to call attention to their PRICED CATALOGUE OF HARDY TREES AND SHRUBS for the ensuing season, which may be had on application to them at their Nursery, Fulham, near London.

N.B. If collections or large selections are taken, a deduction from the prices affixed would be made, and also when a large number of a sort are taken.

AMERICAN PLANTS.

JOHN WATERER'S CATALOGUE OF AMERICAN PLANTS, ROSES, CONIFERS, &c., is now published, and may be had gratis on application. It describes the colours of every Rhododendron worthy of cultivation, thus affording purchasers every facility in making selections.

American Nursery, Bagshot, Surrey.

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HENRY GROOM, CLAPHAM RISE, near LONDON, by Appointment FLORIST TO HER MAJESTY THE QUEEN, and to HIS MAJESTY THE KING OF SAXONY, begs to invite the Nobility, Gentry, and Public, to inspect his unrivalled collection of this most SPLENDID HARDY LILY, which is now in flower. For elegance of form, delicious fragrance, and freedom of flowering, it is not surpassed by any plant in cultivation. May be viewed every day (Sundays excepted). Admittance gratis.

MESSRS. VEITCH AND SON'S CATALOGUES OF NEW AND RARE PLANTS, STOVE AND GREENHOUSE PLANTS, GERANIUMS, AMERICAN PLANTS, &c., &c., are now ready, and can be had, on pre-paid application, by enclosing two postage stamps.—Exeter, Sept. 7.

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Also Myatt's Eleanor, 5*s.* British Queen, Globe, Mammoth, Comte de Paris, Hooper's Seedling, Keens' Seedling, Swanston's Seedling, Elton Pine, 3*s.* 6*d.* Fertilised Hautbois, 5*s.* Cuthill's Black Prince, 10*s.* 6*d.* per 100. Kitley's Goliah, 3*s.* 6*d.* per doz., or 20*s.* per 100.—Manor Farm, Deptford.

KITLEY'S GOLIAH STRAWBERRY. — The merits of this Strawberry are now so well known, as being hardy, large, fine in colour, a most excellent flavour, and forces well, that all parties who have seen it growing, or tasted the fruit, have expressed their entire satisfaction with it. This is the fifth season it has fruited in the same bed, and the plants are now perfectly healthy, and likely to continue much longer in bearing; the fruit this season have been as large and more abundant than from younger plants.

From the *Gardeners' Chronicle*.—"STRAWBERRIES: *J. K.* Your Seedling Strawberry, Goliah, judging from its size and appearence, is worthy of cultivation."

From the *Gardeners' and Farmer's Journal*.—"STRAWBERRIES. *J. K., Lyncombe Vale*.—We have great pleasure in bearing testimony to the exquisite flavour of your Seedling Strawberry, 'Goliah.' In our opinion, it combines the piquant flavour of the Strawberry with the richness of the Pine, the delicious aroma of which it partakes in equal proportion to taste. Apart from the Queen of Fruits, we certainly do not remember anything in this way that conveyed to our senses so delicious a treat as the noble fruit to be known to the world as 'KITLEY'S GOLIAH STRAWBERRY.'"

Strong well-rooted plants are now ready at 3*s.* 6*d.* per dozen, or 1*l.* per 100, on prepaid application only to JAMES KITLEY, Bath; Messrs. Low and Co., Clapton Nursery; Mr. J. G. Waite, Seedsman, 181, High Holborn, London; Messrs. Garraway, Mayes, and Co., Bristol; Messrs. Lucombe, Pince, and Co, Exeter; and Messrs. W. E. Rendle and Co., Plymouth.

Lyncombe Vale Nursery, Bath, Sept. 7.

BEAUTIFUL BOUQUETS OF FLOWERS may be preserved perfectly fresh and blooming, for several days, in GLASSES adapted for gentlemen's coat button-holes, any part of a lady's dress, the hand, or for plaiting into the hair; and are forwarded to any part of the Kingdom, post free, in a box containing one dozen of the various kinds, on the receipt of postage stamps value 2*s.* 6*d.*, by JACKSON and TOWNSON, 89, Bishopsgate-street Within, London.

THE BLACK PRINCE STRAWBERRY, now sending out at 10*s.* per 100.

Also PRACTICAL INSTRUCTIONS FOR THE CULTIVATION OF THE POTATO, containing the Competition Essay for the Prize of 1000 francs offered by the Belgian Government. Also Instructions on the Management of Asparagus, Seakale, Rhubarb, Vegetable Marrow, Scarlet Runner, Strawberry, Melon, and Cucumber; Chicory and Lamb Lettuce as Salads; the Lisianthus Russellianus, and the Tree Mignonette. The Destruction of Woodlice and Green-fly; and Peat Charcoal as a Manure. By JAMES CUTHILL, Horticulturist, Camberwell, London.—Printed for the Author, and sold by him only. Price 2*s.*; or, by post, 2*s.* 4*d.*

GRAPE VINES IN POTS FOR FORCING.

J. WEEKS AND CO., King's-road, Chelsea, beg to call attention to their splendid collection of Grape Vines, all struck from eyes, now two and three years old, the finest Plants that have ever been offered for Sale, consisting of 60 varieties, all of the best sorts, warranted true.

THE HAMBURGHS AND MUSCADINES being the best for early forcing in pots, this is the best time for Gardeners to have them, so as to get the eyes ripe and prominent. This Nursery is well worthy of a visit, as all modern Horticultural improvements are in full operation.

J. WEEKS and Co., King's-road, Chelsea.

HOLLYHOCKS.

H. LANE AND SON, Great Berkhampstead, Herts, have about 30 varieties of fine DOUBLE HOLLYHOCKS, without names, which can be depended upon as splendid sorts, at 6*s.* per dozen. They will be ready the end of September, and orders sent out in rotation as received.

BULBOUS FLOWER ROOTS CHEAP.
Carriage free, as see below.

The best sorts of fresh imported Hyacinths, Tulips, Irises, Gladioli, Anemones, Crocuses, Ranunculus, &c., may be had at much less than the usual prices, in valuable assortments, as under.

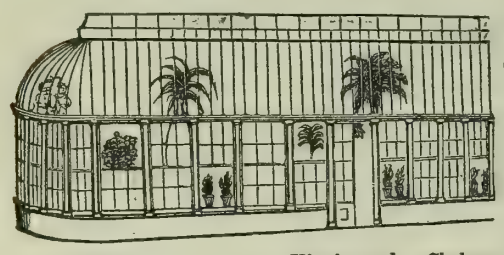
Choice assortment for pots, or glasses	...	...	£1 0*s.* 0*d.*
Do. do. in half the quantities	...	...	0 10 6
Do. do. for open ground	...	...	1 0 0
Do. do. in half the quantities	...	...	0 10 6

For particulars of the above assortments, see Messrs. SUTTON'S Priced Catalogue, just published, which may be had on application, inclosing one penny stamp, to JOHN SUTTON and SONS, Reading, Berks.

If Hyacinths only are required, Messrs. SUTTON'S best selection may be had at 10*s.* 6*d.* per dozen, with names and colours.

N.B. Parcels of not less than 10*s.* value are sent, carriage free, to any station on the Great Western, South-Western, or South-Eastern Railways, or to any office in London or Bristol.

HORTICULTURAL BUILDING AND HEATING BY HOT WATER.
WARRANTED BEST MATERIALS AND WORKMANSHIP AT THE LOWEST POSSIBLE PRICES.



J. WEEKS AND CO., King's-road, Chelsea, Horticultural Architects, Hothouse Builders, and Hot-water Apparatus Manufacturers. The Nobility and Gentry about to erect Horticultural buildings, or fix Hot-water Apparatus, will find at our Hothouse Works, King's-road, Chelsea, an extensive variety of Hothouses, Greenhouses, Conservatories, Pits, &c., erected, and in full operation, combining all modern improvements, so that a lady or gentleman can select the description of House best adapted for every required purpose.

THE HOT-WATER APPARATUSES (which are efficient and economical), are particularly worthy of attention, and are erected in all the Houses, Pits, &c., for both Top and Bottom Heat, and in constant operation in the Stoves.

The splendid collection of Stove and Greenhouse Plants are in the highest state of cultivation, and for sale at very low prices. Also a fine collection of strong Grape Vines in pots from eyes, all the best sorts.

Plans, Models, and Estimates of Horticultural Buildings; also Catalogues of Plants, Vines, Seeds, &c., forwarded on application.—J. WEEKS and Co., King's-road Chelsea London.

HOTHOUSES AND CONSERVATORIES made and fixed complete in all parts of the Kingdom, at a considerable reduction. One, two, and three-light Cucumber and Melon Boxes and Lights of all sizes, kept ready for use, packed, and sent to all parts of the Kingdom; warranted best material. Garden-lights of every description, at JAMES WATTS', Hothouse Builder, Claremont-place, Old Kent-road. Reference may be had to the Nobility, Gentry, and the Trade, in most of the counties in England.

CROWN, SHEET, AND ROUGH PLATE GLASS, FOR HOTHOUSES, CONSERVATORIES, &c.

The Improved Patent Rough Plate, made by Messrs. Hartley and Co., can be supplied from this Warehouse, of every size and substance, at the same prices as at the works.

100 and 200 feet cases of large Sheet Glass, from 2½*d.* per foot. Small ditto, 10*s.* 6*d.* per 100 feet, packed in boxes ready for immediate delivery. Curators of Botanical Societies, Florists, Railway Agents, and others requiring large quantities, will, on sending dimensions, receive estimates at the lowest prices.

GLASS MILK PANS, CREAM POTS, Lactometers, Bee Glasses, Fish Globes, and all kinds of Dairy Glass, Propagating Glasses, Hyacinth Dishes, Cucumber Tubes, and every other description of Garden Glasses.

PATENT GLASS PENS, self supplying, never blot, never soil the ruler, and will write continuously for 12 hours.

Also, Glass Rulers, Glass Inks for office-stands, desks, &c. Stationers and Schools supplied. Wholesale Warehouse for Ornamental Shades, Lamp Shades, Gas Glasses, Genuine White Lead, Paints, Colours, and Pumps for Farm purposes.

Our Catalogue of 18 folios is the most complete ever published. No Gardener or Farm Bailiff should be without one. May be had Gratis on sending two postage stamps to Messrs. COGAN and Co., 48, Leicester-square, London.

MITCHELL'S MINERAL BLACK PAINT.—This antiseptic Paint is intended for Park Fencing, and for all farming purposes; it is particularly adapted, by its prevention of dry rot in timber and repellance of damp, for Barns, Stables, Outhouses, Weather Boarding, Hop-poles; also for Carts, Waggons, &c., particularly the Wheels, and for Iron Hurdles, Iron Railings, and all Wood or Iron Work in exposed situations. For Brick Walls it is highly serviceable as a preventive of damp, and also for Walls intended for Fruit Trees, as, besides preserving the Wall, it increases the heat in all situations exposed to the sun, and prevents the harbouring of insects. It is also an excellent covering for Canvas, or Cart Tilts, Roofing, &c. Sold in casks containing from 1 cwt. to any quantity, at 17*s.* 6*d.* per cwt., quite ready for use, by

JAMES PHILLIPS and Co. (the sole agents), 116, Bishopsgate-street, Without, London.

HARTLEY'S PATENT ROUGH PLATE GLASS.

JAMES PHILLIPS AND CO., 116, Bishopsgate-street Without, beg to hand their list of Prices of the above description of GLASS.

		Cut to order in panes of	
8 by 6	and under	10 by 8	at 4½*d.* per foot.
10 by 8	,,	14 by 10	at 5*d.* ,,
14 by 10	,,	1½ foot, or sizes not exceeding 20 inches long	at 5½*d.* ,,
1½ foot	,,	3 feet, or sizes not exceeding 30 inches long ...	at 6*d.* ,,

PACKED IN BOXES of 50 feet each.

6 by 4 and 6½ by 4½...10*s.* 6*d.* 8 by 6 and 8½ by 6½...13*s.* 6*d.*
7 by 5 and 7½ by 5½...12*s.* 0*d.* 9 by 7 and 10 by 8 ...15*s.* 0*d.*

We do not pledge ourselves to execute large orders for small squares at the above prices, but only as far as they turn up in cutting. Should any quantity of small squares be required, a special contract is necessary.

MILK PANS 2*s.* to 6*s.* each, Metal Hand-frames, Tiles, and Slates; Propagating and Bee Glasses from 2*d.* each; Cucumber Tubes, 1*d.* per inch; Peach Glasses, 10*d.* each; Wasp Traps, 3*s.* 6*d.* per dozen; Pastry Slabs, Hyacinth Glasses and Dishes Shades for Ornaments, Fish Globes, Plate and Window Glass of every description, and Lamp Shades. Lactometers for trying the quality of Milk, 4 tubes, 7*s.* 6*d.*; 6 tubes, 10*s.* Self-registering Thermometers for Greenhouses, Horticultural Glass, &c.

From the *Gardeners' Chronicle*, December 8, 1849:

"As for the article substituted for Rough Plate, and which is actually in the market for the purpose of imposing upon gardeners, it is wholly unfit for any horticultural purpose. The best samples of it which we have yet seen is sold by Mr. JAMES PHILLIPS, 116, BISHOPSGATE STREET, LONDON."

GLASS FOR CONSERVATORIES, GREENHOUSES, PIT FRAMES, &c.

HETLEY AND CO. are supplying 16-oz. Sheet Glass, of British Manufacture, packed in boxes containing 100 square feet each, at the following REDUCED PRICES for cash, A reduction made on 1000 feet.

Sizes. Inches.			Inches.			Per foot.	Per 100 feet.
		Under 6	by 4	at	1½*d.*	is £0 12 6	
From 6	,, 4	,,	7 ,, 5	,,	2*d.*	,, 0 16 8	
7	,, 5	,,	8 ,, 6	,,	2½*d.*	,, 0 18 9	
8	,, 6	,,	10 ,, 8	,,	2¾*d.*	,, 1 0 10	
10	,, 8	,,	12 ,, 9	,,	2¾*d.*	,, 1 2 11	

Larger sizes, not exceeding 40 inches long.

16 oz. from 3*d.* to 3½*d.* per square foot, according to size.
21 oz. ,, 3½*d.* 5*d.* ,, ,, ,,
26 oz. ,, 3½*d.* 7½*d.* ,, ,, ,,

PATENT ROUGH PLATE, THICK CROWN GLASS, and PATENT PLATE GLASS for Horticultural purposes, at reduced prices, by the 100 square feet.

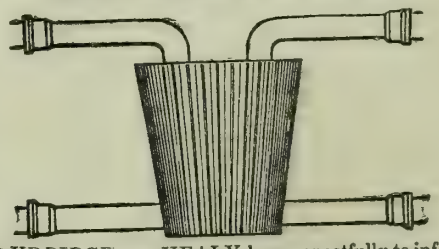
GLASS TILES AND SLATES made to any size or pattern, either in Sheet or Rough Plate Glass.

Propagating Glasses, Bee-hive Glasses, Cucumber Tubes, Glass Milk Pans, Glass Water Pipes, and various other articles not hitherto manufactured in glass.

PATENT PLATE GLASS.—The present extremely moderate price of this superior article should cause it to supersede all other inferior window glass in a gentleman's residence. No alteration connected with the sash is required.

GLASS SHADES, as ornamental to, and for the preservation of every description of goods susceptible of injury by exposure. Prices, since the removal of the Excise duty, reduced one-half. List of Prices and Estimates forwarded on application to JAMES HETLEY and Co., 35, Soho-square, London.

REDUCTION IN PRICE OF BOILERS.



BURBIDGE AND HEALY beg respectfully to inform their Friends, in consequence of the present reduced price of iron, they are enabled to make a considerable reduction in the price of their Boilers. The price will be, now:

10 in. will warm	50 ft.	4 in. pipe	... £1	15 0
12 in. do.	75 ft.	4 in. do.	... 2	5 0
14 in. do.	100 ft.	4 in. do.	... 2	15 0
16 in. do.	150 ft.	4 in. do.	... 3	10 0
18 in. do.	250 ft.	4 in. do.	... 4	10 0
21 in. do.	350 ft.	4 in. do.	... 5	10 0
24 in. do.	450 ft.	4 in. do.	... 7	0 0
NEW PATTERN BOILERS.				
25 in. will warm	600 ft.	4 in. pipe	... 11	10 0
30 in. do.	800 ft.	4 in. do.	... 15	15 0
36 in. do.	1500 ft.	4 in. do.	... 25	0 0

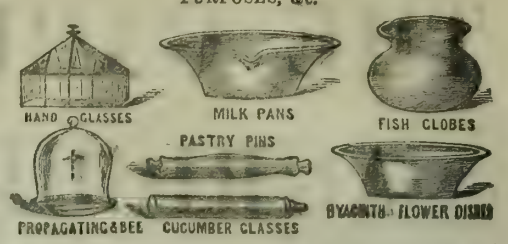
All Boilers with double arms, up to 18 in., 5*s.* extra; to 24 in., 10*s.* extra; all above the same price.

130, Fleet-street, London, Sept. 7.

ANTHONY'S PATENT AMERICAN CHURN.—This Implement has obtained the following prizes: the Silver Medal at the Meeting of the Royal Agricultural Society of England, at Exeter; the Highland Society's first prize for a large Churn, worked by power; and the first prize for one by hand, at Glasgow; a prize at Thirsk Agricultural Meeting; and first prize from the Royal Northern Agricultural Society.—Apply to KEY and MITCHELL, Depot for Patented and other New and Useful Inventions, 103, Newgate-street, London.

OLD FEATHER BEDS RE-DRESSED, AND PURIFIED BY STEAM WITH PATENT MACHINERY.—This new process of dressing not only removes all impurities, but by expanding the feathers the bulk is greatly increased, and consequently the bed rendered much fuller and softer.—Charge for dressing, 3*d.* per lb. Old and Mothy Mattresses effectually cured and removed, fetched and returned, carriage free, within five miles.—HEAL and Son's List of Bedding, containing full particulars of weights, sizes, and prices, sent free by post on application to their factory, 196 (opposite the chapel), Tottenham-court-road, London.

GLASS FOR CONSERVATORIES, HORTICULTURAL PURPOSES, &c.



T. MILLINGTON'S SHEET GLASS, which is of the best description, varying from 16 to 32 ounces, at from 2*d.* per foot and upwards; 100 feet and 200 feet cases of large Sheet Glass, for cutting up, at 2½*d.* per foot. British Plate Glass, from 1*s.* 2*d.* to 2*s.* per foot, according to size. Patent Rough Plate Glass, from ¼ to 1 inch in thickness, from 4*d.* per foot upwards. Glass Slates and Tiles. Milk Pans from 12 to 24 inches diameter, from 2*s.* to 5*s.* each Cucumber Tubes, from 12 to 24 inches long, at 1*d.* per inch. Lactometers, 7*s.* 6*d.* each. Wasp Traps.—Lists may be had, on application at the Warehouse, 87, Bishopsgate-street Without, same side as the Eastern Counties Railway.

WANTED, ALEXANDER RUSSELL, a Gentleman's Gardener, formerly in the employ of Geo. Robins, Esq., then in the service of E. Brande, Esq., of Turnhamgreen; then with Lord Lonsdale, of Barnes, Surrey; and latterly with — Lumley, Esq., "the Chancellor's," Hammersmith. The said ALEXANDER RUSSELL is a native of Scotland, speaks with a broad Scotch accent, is about 55 years of age, 5 feet 4 or 5 inches in height, round shoulders, with a downcast look, and red whiskers. Information as to his place of residence (if living), or place of burial (if dead), to H. F., at Mr. Luff's, Boot-maker, Kew, Surrey, will be handsomely rewarded.

YARMOUTH BLOATERS.—GENUINE AND OF THE FINEST QUALITY.

Yarmouth has for centuries been justly celebrated for its well-known "Yarmouth Bloaters," the delicacy of which, when obtained in their genuine state, requires no comment. Such an opportunity is now offered; and they can be forwarded to any part of the kingdom (on receipt of a post-office order), at 10*s.* per 100, or 6*s.* per 50 (package included).—All orders to be addressed to Mr. FREDERICK BROUGHTON YOUELL, Church-square, Great Yarmouth.

PIMLICO SLATE WORKS.—Cisterns, Filters, Milk and Salting vessels, Corn and Flour Chests, Sinks, Dairy and Larder Shelves, Malting and other Flooring, Skirting, Refrigerators, Garden Edging, Flower Boxes, Pine pit Linings, Hot-bed Frames, moveable Cattle Sheds, Coping, Drain Stones and Traps, Steps and Risers, Balcony Landings, Roofing Slates, ridge roll and flap; Waste Slate for drains, Sun Dials, Fountains, and all descriptions of plain Slate Work in Town, or direct from Mr. MAGNUS'S Works in North Wales.

ENAMELLED SLATE Chimney-pieces, Billiard Tables, Console and other Table Tops, Mural Tablets, &c., in imitation of marble, surpassing the choicest marbles in beauty and durability, at less than half the cost of the commonest descriptions. Price Lists forwarded on application to Mr. MAGNUS, 39 and 40, Upper Belgrave-place, London.

BAKER'S PHEASANTRY, Beaufort-street, King's-road, Chelsea, by special appointment to her Majesty and H. R. H. Prince Albert.—ORNAMENTAL WATER FOWL, consisting of black and white swans, Egyptian, Canada, China, barnacle, brent, and laughing geese, shieldrakes, pintail, widgeon, summer and winter teal, gadwall, Labrador, shovellers, gold-eyed and dun divers, Carolina ducks, &c., domesticated and pinioned; also Spanish, Cochin China, Malay, Poland, Surrey, and Dorking fowls; white, Japan, pied, and common pea-fowl, and pure China pigs; and at 3, Half-moon-passage, Gracechurch-street, London.

THE BLOOD.—Our bodies have been entirely formed, *are now forming, and will continue to be built up during life from the blood. What the sap is to the tree the blood is to the animal frame; and inasmuch as the strength and verdure of a tree are dependant on the moisture derived from the root, the health and vigour of the body are indispensably connected with a pure and free circulation of this important fluid. It is this that must feed the flame of existence; and unless its replenishments are freely and purely communicated, the vital fire becomes clouded, burns dimly, and is ultimately extinguished. The grand object is to keep this precious fluid (the blood) in a pure and healthy state, for without this purity, disease will show itself in some way or other.*

PARR'S LIFE PILLS.

It is universally admitted that this medicine will purify the blood better than any other, and will conquer any disease.

None are genuine unless the words "PARR'S LIFE PILLS" are in WHITE LETTERS on a RED GROUND, on the Government stamp, pasted round each box; also the fac-simile of the signature of the Proprietors, "T. ROBERTS and Co., Crane-court, Fleet-street, London," on the directions.—Sold in boxes at 1*s.* 1½*d.*, 2*s.* 9*d.*, and family packets at 11*s.* each, by all respectable medicine vendors throughout the world.

IMPORTANT INFORMATION.

DR. ROBERTS'S celebrated OINTMENT called the POOR MAN'S FRIEND, is confidently recommended to the Public as an unfailing remedy for wounds of every description, a certain cure for ulcerated sore legs (if of 20 years' standing), cuts, burns, scalds, bruises, chilblains, scorbutic eruptions and pimples in the face, sore and inflamed eyes, sore heads, sore breasts, piles, fistula, and cancerous humours, and is a specific for those afflicting eruptions that sometimes follow vaccination. Sold in pots at 1*s.* 1½*d.* and 2*s.* 9*d.* each. Also his PILULÆ ANTI-SCROPHULÆ; confirmed, by more than 40 years' experience, to be without exception one of the best alterative medicines ever compounded for purifying the blood and assisting Nature in all her operations: hence they are useful in scrofula, scorbutic complaints, glandular swellings (particularly those of the neck, &c.) They form a mild and superior family aperient, that may be taken at all times without confinement or change of diet. Sold in boxes at 1*s.* 1½*d.*, 2*s.* 9*d.*, 4*s.* 6*d.*, 11*s.*, and 22*s.* each.—Sold wholesale by the proprietors, BEACH and BARNICOTT, at their Dispensary, Bridport, and by the London Houses; and retail, by all respectable Medicine Vendors in the United Kingdom.

ANOTHER EXTRAORDINARY CURE OF A WOUND IN THE LEG BY HOLLOWAY'S OINTMENT AND PILLS.—Andrew Milton, Ostler, residing at Barton, about two years ago, bruised his shin, and being of a full habit of body, a severe inflammation ensued, which defied every effort to subdue; afterwards, an obstinate wound formed, and notwithstanding various treatments, it would not heal, and his leg became so bad that his surgeon urged him to have it amputated; but not wishing to lose his limb before giving HOLLOWAY'S Medicine a trial, he commenced, and he has reason to be grateful that he did, for by their use he has effected a sound and perfect cure.—Sold by all Druggists, and at Professor HOLLOWAY'S Establishment, 244, Strand, London.

FIRST CLASS SEEDLING GERANIUM.

RUNDLE'S BEAUTY OF MONTPELLIER.—This beautiful flower was exhibited at the Chiswick Horticultural Fete, May 18, 1850, and was very much admired, and was also noticed by all the leading publications; a description of which will be found in the *Gardeners' Chronicle*, by Professor LINDLEY; in the "Florist," by Mr. Beck; and in the "Gardeners' Magazine of Botany," by Mr. Glenny; all of whom speak in the highest terms of praise. Two Seedling Plants were also exhibited at the Royal Devon and Cornwall Horticultural Show, two days previous to the Chiswick Show, and won a Seedling Prize. It was noticed by the editor of the *Plymouth Herald*, and as it gives a good description of it we extract it.

"One of the principal attractions at the Show was a magnificent Seedling Geranium, raised by William Rundle, Esq., Montpellier House, Devonport, and for which an extra prize was awarded. It attracted the attention of every florist, and was undoubtedly one of the best flowers in the room. The ground colour is a bright pink, with a *pure white centre*, extending over one-third of the upper petals. It has a rich and velvety crimson maroon spot, beautifully tinted, and shaded off to the ground colour. It is an extra-sized flower, of good shape and substance, like Lyne's celebrated flower, *Forget-Me-Not*. In fact, it has very much the habit of this sterling flower, being of a short, robust growth, and throws its fine flowers well above the foliage."

Further description would be unnecessary, more than for us to say, that we are certain it will give the most complete satisfaction to every customer, and we can recommend it with the same confidence that we introduced Lyne's *Duke of Cornwall, Forget-Me-Not*, and Arnold's *Virgin Queen*. *These are all sterling flowers and are much admired even at the present day.*

Price 20s. each. One given over three to the trade.

Good strong plants will be ready about the middle of October. Apply to WILLIAM E. RENDLE and Co., Nurserymen, Plymouth.

Our new descriptive Catalogue of Geraniums, Azaleas, Camelliss, Fuchsias, &c., is just published, and can be had on application for one penny stamp.

SEEDS FOR PRESENT SOWING.

JOHN CATTELL has new seeds of the undernamed, now ready to send out in packets (postage free), at the prices annexed.

CALCEOLARIA, fine impregnated, warranted to give a good variety of sorts, with directions for their culture, 2*s.* 6*d.*

GERANIUM, from new kinds, sent out last year, of florist and fancy varieties, separate, or half of each, at the purchaser's option, 18 seeds, 2*s.* 6*d.*

GERANIUM, from scented sorts, 6*d.*

New spotted NEMOPHILA MACULATA, 6*d.* Old sorts, ditto, 3*d.* SCHIZANTHUS RETUSUS, 6*d.*

RHODANTHE MANGLESII, 1*s.*

Bulbs of Tropæolum brachyceras and tricolorum grandiflorum, worth the attention of the trade. Remittances to accompany orders from unknown correspondents.

Westerham, Kent.

BECK'S SEEDLING PELARGONIUMS.—No more remittances can be received for ROSA or SILK MERCER, as all the present stock is engaged.

Catalogues may be had on application to J. DOBSON, enclosing a stamp.—Worton Cottage, Isleworth, Sept. 7.

EXOTIC NURSERY, KING'S ROAD, CHELSEA.

MESSRS. KNIGHT AND PERRY have great pleasure in soliciting the attention of their Patrons to their NEW LABURNUM, L. autumnale, which, from its peculiar property of flowering profusely at this season, and continuing in bloom throughout the autumn, must be considered one of the most important as well as most beautiful acquisitions that has been made. It may now be seen in full flower at the Nursery.

They also respectfully invite an inspection of their healthy stock, free from insect, of FRUIT TREES, trained and untrained, which (combining the advantages of unusually elaborate attention to their culture, both in root and branch, with a particular method of labelling, to ensure the accuracy of the kind) are very excellent and cannot fail to afford complete satisfaction wherever supplied.

They likewise beg to observe that their Stock of VINES, raised from eyes obtained from the fruiting plants of the most celebrated growers in the country, is larger than ordinary, and of first-rate excellence.

SUPERB HOLLYHOCKS.

J. CHATER AND SON beg to announce that their New Descriptive Catalogue of the above flower is now ready, and can be had by enclosing a postage stamp.

Also, Choice Pansy Seed, 1*s.* per packet.

Nursery, Haverhill, Suffolk.

SLATE WORKS, ISLEWORTH, MIDDLESEX.

EDWARD BECK Manufactures in Slate a variety of articles for Horticultural purposes, all of which may be seen in use at Worton Cottage, on application to the Gardener, Sundays excepted. Priced lists of plant tubs and boxes forwarded on application.

The Gardeners' Chronicle.

SATURDAY, SEPTEMBER 7, 1850.

MEETINGS FOR THE ENSUING WEEK.

COUNTRY SHOWS.—Tuesday, Sept. 10: Hampshire Horticultural, and Shacklewell Dahlia.—Wednesday, Sept. 11: Manchester Botanical and Horticultural, Glasgow West of Scotland Horticultural, and Berkshire Horticultural.—Thursday, Sept. 12: Salhouse Village Horticultural, and Bath Horticultural.—Friday, Sept. 13: Darlington Horticultural.

WE have little conception in this country of the cold which the ORANGE TREE is capable of enduring, and we never think of trusting it in winter to any less effectual protection than a solid brick building warmed by artificial means. Nevertheless it is certain that on the Continent the trees are preserved by simpler shelter through winters to whose severity we have nothing to compare. It is related that upon reopening an hotel in Paris, which had been closed during two years, at the time of the great Revolution, it was found that part of the Orange trees left in the hibernatory without water or artificial warmth of any kind were still alive.

The other day, upon turning over some old letters, we found one dated Dec. 11, 1837, from the late Sir AUGUSTUS FOSTER, which puts the hardiness of the Orange tree in a still stronger light. Writing from Genoa, he says:

"Being under the impression that single Orange or Lemon-trees, or rows and groups of Orange or Lemon-trees might with care be brought to grow out of the ground in England like other plants, I have thought it might be worth while to mention to you the success which has now for several years attended a plantation that I made of seven Orange-trees in a much colder climate, in the garden of my country residence, on the hill of Turin, facing the highest range of the Alps. I was led to make the experiment from having by accident in the first year of my arrival at Turin, seen the way in which the Orange-trees in boxes were treated in the cellars of a Piedmontese nobleman's house during winter, where they were placed for several months, without light, or heat, or water, and exposed to severe cold, which almost every winter reaches to —12° or even —16° of REAUMUR's thermometer (+5° to —4° FAHR.). My group of Orange-trees were taken out of boxes, and planted in earth prepared for the purpose, in the year 1826. In the very severe winter of 1828-9, three of them perished, but not of the cold so much as the damp, for they were examined, and seen to be still safe in February, after the frost had reached above 15° of REAUMUR (—2° FAHR.), and perished a few days later from a return of the cold, attended by the drippings of a previous thaw. I had the three which died replaced, and from that time to this they have flourished and increased in size. I have them covered with a round cabin of planks, roofed with straw on the outside, at the end of October or beginning of November, and uncovered in April. They bear abundance of Oranges and Lemons, the former occasionally becoming eatable with sugar. At no other place in this country am I aware that the experiment has been tried, unprotected by a wall. But with a wall and a covering of wood and straw, to be taken off in the summer, I can scarcely doubt that the plants might be made to grow, without the clumsy accompaniment of large wooden boxes, in an English garden."

These statements afford abundant materials for speculation. They establish beyond all doubt the fact that in the north of Italy the Orange tree bears a degree of winter cold unknown in England. For this it is prepared by the complete ripeness of its wood, a state to which it will not arrive in this climate in the open air. But are we therefore to infer that it will not live with much less shelter than it now receives? Such an inference is so little justified by other well-known facts, that we submit to those who have Orange trees at their command the probability of their surviving the winter in barns, or dry out-houses, or under wooden screens where no artificial heating is applicable. Dryness in such an experiment is the first condition to secure; darkness is the second. The Orange tree will bear to be deprived of water during the whole of its season of rest, provided its roots are kept in the earth they grew in; how much dryness, beyond this, they will bear, is shown by the long exposure to the air which they undergo in the shops of the Italian warehousemen in London; and experience tells us that the effect of cold upon plants is feeble in direct proportion to their dryness. All trees kept in the dark, or at least kept where no sun can shine upon them, will bear without injury a degree of cold which would be fatal to them if exposed, when frozen, to the direct rays of the sun. Camellias, Chinese Azaleas, Indian Rhododendrons, and many New Holland plants, take no harm in cold pits in winter, provided those pits face the north. Some of them live out of doors perfectly well during winter, if under north walls. Why not the Orange also? It may be, indeed, that its constitution has some peculiarity that unfits it, more than the plants just named, for bearing severe cold; but that is completely negatived by Sir AUGUSTUS FOSTER's statement. We therefore regard the experiment of wintering Orange trees in cold houses, where the sun is excluded, as one offering reasonable chance of success. We shall test it ourselves, and would recommend it to others.

There is another part of the foregoing letter to which we cannot so readily assent. It is suggested that Orange trees on walls, properly sheltered, may be made to grow in the open ground. That we much doubt, unless upon raised borders, which shall be made to receive all the heat which air and solar rays can communicate. Cold as the winter may be in Piedmont, the summers are hot in proportion; and the earth must have a very different temperature from that of England. The mean temperature of Genoa in August is 75.92°, that of London is only 62.18°; and if we take these to indicate the temperature of the soil at a foot below the surface, we shall find more than 13 degrees of heat against us—a very large and important difference, for which we can provide no natural compensation. The success of planting Orange trees in the open ground, as Peach trees are planted, is therefore very problematical.

If the attempt is to be made, we would suggest that the border should be quite *above* the ground level, and placed upon a solid floor of concrete or pavement. It may be also a question whether some important gain would not be effected by fixing over the sloping border sheets of pierced zinc painted black. This is however a contrivance of which there is no other experience than what Mr. WILLIAMS gained at Pitmaston in Melon growing; and therefore we do not insist upon it.

SOME time since our attention was called to a curious case of hypertrophy in a crop of Peas observed by Dr. DICKIE, in the county of Aberdeen, and a somewhat similar case occurred last year in the great conservatory at Kew, on the leaves of more than one species of *Pleroma*. In the former case bodies, probably due to incipient fermentation, resembling the yeast fungus, were present; in the latter no such bodies were observed. But in an eruptive disease on the leaves of *Eranthemum pulchellum*, lately transmitted by one of our correspondents, where the external appearance is almost identical, the presence of a well-formed fungus is beyond all doubt. The under side of the leaves is spotted with little pale dirty white, or fawn-coloured pustules, which exhibit at first a cellular structure, and appear to be in that state a mere exuberant growth of the cellular tissue of the leaf, containing no trace of filaments, or anything like fructification. It is not, however, clear, when the further history of these pustules is taken into consideration, that they are really an altered state of the cells, and not a cellular tissue proper to the parasite; because not only is the stroma of many *Sphæriæ* distinctly and closely cellular, but even where no visible stroma exists, as, for instance, in *Sphæria herbarum*, the early stage of growth before any fructification is formed, exhibits simply a mass of cells, and as it approaches maturity the central cells are absorbed, while asci are developed from those near the walls. In a very curious genus, lately communicated by Dr. MONTAGNE, after the absorption of the central cells, the basal cells are transformed into spores, as in some Algæ.

In the production before us, the whole pustule is at first shapeless, and confused with the tissue of the matrix. After a time however the surface is rough, with a greater or less number of points, reduced rarely to one or two, which are the ostioles of so many perithecia. There are no asci, but myriads of very minute subelliptic spores are produced on short delicate sporophores, without any trace of asci. The fungus is therefore a Sphæronema, taking the genus in a certain degree of latitude; and it is very possible that at a certain stage of growth the spores ooze out, forming a globule or cirrhus at the tip of the ostiole, a circumstance dependent entirely on the degree to which the perithecia are susceptible of collapsion. Not having seen specimens in their place of growth, we cannot state positively that the case is so. For the same reason it is impossible to affirm what is the predisposing cause of the production of the parasite—which not only disfigures the leaves, but makes the flowers droop and turn brown before they are well expanded—or to suggest any remedy. The only parties capable of doing so are those who can watch its growth; and when once the real nature of the substance is ascertained, their observations, if made with care and tolerable acuteness, will be worth a thousand times more than any speculations in the closet. It is a cheering fact that the cultivator's eye is turned to every anomalous appearance, because it shows an increase of intelligence, and the very act of inquiry and expectation of a reply keeps the faculties on the alert, and stimulates to further observation. We would, however, strongly urge the wisdom of not leaning entirely upon others, but trusting a little as well to native powers of observation. It is well to know whether any anomalous appearance is due to a fungus or insect, or whether it is some diseased affection produced by outward conditions, or by innate constitutional weakness. But these points being ascertained, it is to the first observer of the affection that we may justly look for available information.

The species being undescribed may be characterised as follows: *Sphæronema deformans;* parasitic on living leaves; perithecia oblong, growing several together from a pallid pustule, which is rough with the free ostioles; spores minute subelliptic. *M.J.B.*

HOW TO MISMANAGE A GARDEN.

CHAPTER V.—It would be a great injustice to mismanagement if it were limited to withholding manure. The possession of that article is often as useful to the mismanager as the want of it.

A man who has nothing but good management to recommend him takes many precautions to secure manure in different states, and to apply it in a particular manner. He has his strong manure for Cabbages and Asparagus, his mild manure for flowering plants, his liquid manure for little delicate creatures. He attaches importance to the time when it is applied, and the manner, and the quantity. Nothing can be more fanciful than his mode of dealing with

it. If he has a tap-rooted crop to bring on he puts it deep in the trench under the seed; if he has a leaf crop he lightly forks it in.

A mismanaging genius despises all this; he finds no occasion for distinguishing what is strong from what is weak; manure is manure, and what is good for a Rose is good for a Geranium. As for the time of using it, why any time will do; if too late, it will do the plants no harm to wait; if too soon, at all events it is ready for them when they do want it. "Manure can't be wasted"—that is his maxim. It may as well be in the soil as anywhere else; and that is true, for if a crop is not ready to feed upon it, it is pretty certain that weeds enough will spring up to assist in its consumption.

Of all the "fancies" which the mismanager despises most, is that of putting manure into the bottom of trenches under the seed of tap-rooted plants; for how is manure to do the seed any good if so far away from it? The mismanager therefore puts it on the top; a plan which among other merits has this—that you can see it, and see what becomes of it. It is true that the genius generally finds his Carrots and Parsnips all forks and fibres, while the manager has roots as straight and as long as a foot rule; but then it is not the way of manuring that makes the difference; it is all the fault of the soil.

A dull-witted gardener, who uses liquid manure, gives it to his plants day by day, as they grow, a little at a time, and very weak; it is astonishing how much trouble he takes with his patients; one would think that he was feeding his children. The bold practitioner, on the other hand, proud of his mismanagement, drenches his plants with "good strong stuff;" one watering is enough for him; and pretty often enough for his plants, unless, indeed, he administers it when they are at rest, and then maybe it will be washed away from the roots before it can do any harm, especially if the plants are in pots.

In no department of his art does the talent of another sort of mismanager appear more conspicuous than in his application of manure. He finds it gives greenness and vigour to his Vines and Pear trees; he sees his yellow lawn speedily darkened by its invigorating influence; and he infers that so likewise his pallid Conifers, cramped in pots, or steeped in a bog, will soon be restored to the bright green colour for which they are valued. It happens, indeed, that they become yellower than before, and probably die outright; but it cannot be the manure that did it; some good-for-nothing fellow has poisoned the trees.

But the triumph of skill, with the mismanager, is his preparation of his manure. He gets stable litter, and throws it in a heap, treads it well, and leaves it till its inside is as full of ashes as an Apple of Sodom; he lets it heat well, to drive the rankness out; and leaves it exposed to rain, in order that it may be kept well together; he cuts a trench round it, to drain off the water; and when at last he has a pile of nice black, scentless matter, his operation is perfect. It has been observed, indeed, that, in gardens where this kind of manure is employed, the crops are not nearly so good as in places where another system is followed; but that is evidently because of the hungry soil which the mismanager has to work. He takes credit to himself for getting something in such a place; and well he may, all things considered.

In purchasing ready-made manure, a genius is still conspicuous. To strengthen that which is home-made, in the manner described, it is advisable to buy some guano, a capital material, which seems to suit all sorts of crops. But it is so troublesome to send to the county town for it, the penny post is so expensive, that he puts off ordering it till the season is well nigh gone. By great good luck, a very respectable gentleman gives the genius a call, for the express purpose of saying that he has brought a lot of guano to a railway station close by; price very low, quality capital, the sample is beautiful; it is not half so strong smelling as what his neighbour bought at twice the price. Of course, the mismanager, eager to save his master's money, and his own trouble, makes a bargain with the civil gentleman, and is supplied on the spot. Somehow or other, however, it turns out that the guano does not do much good; he can't see, after all, where it was put; it is plain that it doesn't suit his land, and he sagely determines to have no more of it. As for the garden on the other side the road, where such an amazing crop of Beet was had where the guano was put on, that is no rule; because everything seems, somehow, to grow well there. *Κῆπουρος.*

GARDENS IN HOLLAND.

Having been engaged by a Dutch nobleman of Brabant to arrange his gardens, I had an opportunity of looking over the crops of that district, and subsequently of those of Holland, visiting Mr. Van Houtte's establishment at Ghent, the Leyden Botanic Garden, and also of being present at the sale of plants belonging to his late Majesty, at the Hague. This ground has been gone over so frequently, and even recently by that acute amateur "Dodman," that I have but little hope of adding anything new, nevertheless the impressions formed by different writers ought to be compared, to enable those who stay at home to form a judgment of the practices of their neighbours, and to improve upon our own, where practicable. Having watched the Potato disease carefully in my own grounds, and that of my neighbours in the county (Kent), I was most anxious, upon landing at Ostend, to mark what difference, if any, existed in the state of the plant, as it regarded period of attack, variety of sort, or effect of change of soil. At a glance I perceived that the disease was more forward than I had a few hours before left it upon our own coast; for I did not see one plant with a green leaf, either then or subsequently in a run of 200 miles. At first the persons I inquired of said that the tubers were uninjured, it would only lessen the crop by contracting their size; and thus for a few days they were buoyed up by illusory hope, soon, however, to know how fallacious were their dreams; the fatal truth became too apparent, the disease of stem and leaves had infected the winter store. Judging from what I saw, not more than one-third of a crop can be reckoned upon at this time, with the chances that more would decay. Some of the most active were digging them up and shipping them off; and so hastily was this going on, that a field was dug in panes and then ploughed before the intervening portions were dug up. Cabbages and Broccolies were planted and Turnips were sown, the land having been previously manured.

The labourers of Holland do not so immediately depend upon Potatoes as ours do for a winter's store, for they eat salted Cucumbers, Cabbages, French Beans, and even Peas and Beans, all of which are put into tubs or large earthen vessels and weighted down with boards having stones for weights placed upon them. In this pickle the vegetables ferment, and the scum is carefully taken off at least twice a week, which appears to be all that is requisite. On these pickled vegetables they feed when the garden crops have mostly passed away. But it is curious to see how differently the Dutch labourer feeds now to our own. I saw many purchasing salted Cucumbers and Beets, and a cut of bread (black Rye-bread), on which they dined. Some, indulging in a little more luxury, added one or two eggs boiled hard. Meat in any form seems little used, and my friends told me, it would not be difficult to find many persons of mature age who had never tasted it. But Cucumbers, Carrots, Turnips, Cabbage, Lettuce, and Onions seem the staple articles of consumption during summer. Happy would it be if our Irish peasants would adopt a similar habit; it would make them more industrious, and wholly avert the horrors of famine. In other respects the Dutch are worthy of our imitation, for they do not try to grow crops for which their land is unfitted. If the Dutch farmer sought compensation for growing Wheat, wheaten flour must be at an enormous price; but he prudently grows Oats, Rye, and Buckwheat instead, for all of which his sandy land is appropriate. Then, as the cattle are housed in winter, an abundant supply of Turnips, Mangold Wurzel, and Clover is prepared for them. The pasturage about Schiedam, and for many miles around it, is of the very finest description, giving food to thousands of the finest black cattle I have ever seen. They have a practice here also of feeding them from tubs, containing grains after they have passed from the distillery, which no doubt adds much to their healthy appearance.

This is not the place to talk of pictures, although one passing remark upon the celebrated bull of Paul Potter may be allowed. This, as all the world knows, is a marvel of art, and as such stands unrivalled to the present day. But let us look at the breed, and compare it with those living animals of which I have just spoken, and truly we may say, "if the painter's art could no further go," the grazier's could, and the result is obvious to the spectator and profitable to the proprietor.

Except in the woods of the Hague and at those of Haarlem there are literally no large trees, although the woods are lined on each side by long avenues of Poplars and Willow Pollards, "such as the Flemish painter loves." But the Oak and Beech thrive here marvellously, attaining more growth in 20 years than ours do in 30. Their management of copses differs from our own. It seems that the inspector pays annual visits, and directs which are fit to cut down. This cutting usually takes place every six years, but wherever an Oak has been planted it is left till 12, and so comes in at the alternate falls. This is done for the maiden bark, which is stripped, cut into short lengths, and packed in bags chiefly for the English market. Whilst speaking of trees, it may be well to notice a practice the Dutch gardener has in the removal of large trees, whether of Oak, Beech, Elm, Poplar, or Lime, and which seems to answer well—namely, that of pruning all the branches off close to the stem; so that if you purchase trees with good handsome heads in the nurseries, when you receive them they are branchless, and perhaps 20 feet high. I noted those that had recently been planted, and could but remark how large a portion has taken root-hold. Many acres of blowing sand have been planted with Scotch Pines and Spruce Fir, with here and there a patch of Pinaster and Taurian Pine. The trees thrive well at first, but as thinning is wholly neglected, in a few years the whole have to be cut down, there not being a tree on an acre fit to form timber. I have frequently regretted that many plantations I had formed as a youth have been suffered to go to ruin, but here the practice is universal.

In looking over the gardens of the gentry I could but remark that the taste for curious trees appeared to be of earlier date than with us, for in many situations on a minor scale (not like our Syon House), were large trees of variegated Oaks, and others that had been grafted, and which now were goodly timber. The paucity of shrubs and evergreens was very remarkable, and the gardeners tell us that they will not live in their climate; but this is not so, for I found flowering shrubs, and even Rhododendron, Box, Holly, Bay, and Laurestine where they had been properly introduced. The reason of failure is, that they attempt to make them grow under large trees that have been thickly planted. Failing in this, the gardeners have recourse to young forest trees, and it is no uncommon thing to see a garden laid out in what they call English style, where the beds are wholly composed of young Oaks, Acacias, Hornbeams, or Beeches, under the large trees, and where, according to our notions, Lilacs, Syringas, &c., would have been more appropriate. In any one garden I visited I never saw a Magnolia; but the Tulip trees are of beauty far beyond the average of our own in foliage, and they flower profusely.

In the fruit tree department we have nothing to learn—our wall trees are generally better trained than theirs. Peaches and Nectarines are grown upon reed fences with wooden copings, and I did not see any novelty in the training of the Apples, Plums, or Pears.

In the kitchen gardens that I saw, more care appeared to be bestowed upon the culture of Carrots, for there were generally not less than six sowings of the Horn variety, so that they insure a plentiful supply of young ones the whole summer. The varieties of French Beans were grown more luxuriantly than with us; indeed, at first, I mistook them for Hops. The white Cucumber seems much to be preferred to the green, and I could imagine the horror of an English gardener, if placed with a Dutch one as a censor at a show. On the sandy lands the gardeners are saved much anxiety, for slugs and worms are wholly unknown. As the disease on Grape Vines has become so prevalent in the south-eastern districts of England, I was careful to inquire if it was known here; but I nowhere saw a vestige of it, either on those grown in the open air or under glass. A fellow traveller told me it had destroyed many vineyards in the Rhineland. In a short time, if it is deemed worthy, I will continue my remarks upon Van Houtte's nursery, the Leyden Botanic Garden, and the plants of his late Majesty of Holland. *William Masters, Exotic Nursery, Canterbury, August* 10.

[We are sure that our readers will be greatly obliged to our intelligent correspondent for as much more information as he may be willing to favour them with.]

BRITISH ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE.

Thursday, *Aug.* 1.—Section D.—*On the Per-centage of Nitrogen as an Index to the nutritive Value of Food,* by Dr. A. Voelcker.—The object of this paper was to show that the usual estimation of the nutritive qualities of an article of food is frequently attended with inaccuracies, which renders it desirable to modify our present methods in this respect in many cases. A circumstance which leads to considerable error is, the presence of ammoniacal salts in the juices of plants. In order to prove experimentally the presence of ammoniacal salts in larger quantities than hitherto suspected, and to avoid the objection that they might result from a partial decomposition of albuminous substances during the analysis, the author chose fungi for his experiments, which are rich in nitrogen and known as being highly nutritious. The species used was Agaricus prunellus, a species which is edible, and remarkable for forming most beautiful fairy rings. After having separated all soluble protein compounds by means of basic acetate of lead, which re-agent throws down these completely, the amount of nitrogen still present in the juice of these Agarics, in the form of ammoniacal salts, was found to be 0.204 per cent. for the fresh fungi, or 1.82 per cent. for the dry fungi. The whole amount of nitrogen in the same Agarics, collected at the same time, determined by combustion, was found to be 0.74 per cent. for the fresh fungi, or 6.61 per cent. for the fungi dried at 212° Fahr. Deducting from the last stated numbers the quantity of nitrogen found to exist in the juice in the form of ammonia, we find that only 0.536 per cent. of nitrogen in the fresh, or 4.799 per cent. of nitrogen in the dry fungi, exists in the state of protein compounds, and that nearly one-third of the nitrogen obtained by direct combustion exists in the form of ammonia in the juice, or at all events in a form in which the nitrogen adds nothing to the nutritive value of the fungi. The nutritive value of fungi has thus been overrated considerably; and there can be little doubt that the same is the case with many vegetables, which, according to the author's experiments, contain sometimes considerable quantities of ammonia in the form of ammoniacal salts.—Dr. Christison remarked that he had long been convinced that there was a considerable fallacy in the methods of determining the value of nitrogen, and he hoped Dr. Voelcker's communication would direct inquiry in a more satisfactory direction.—Dr. Daubeny made some observations on this paper; and particularly noticed the researches of Prof. Hoffman on the substitution of ammonia, or of its elements, for carbon, which it appeared to him pointed

to some laws in connection with the processes of assimilation of nitrogenous materials by growing vegetables.—Dr. R. D. Thomson offered some objections to the reception of the doctrine that nitrogen was the principal source of nutrition, since it is found that blood and the other animal constituents contain many other substances.—Dr. L. Playfair was pleased that Dr. Voelcker had pointed out a source of error in the determination of nitrogen. Having been engaged in examining the dietaries of a large number of extensive establishments, he should lay the results before the meeting.

VILLA AND SUBURBAN GARDENING.

The kind of soil which suits one sort of vegetable is often unsuitable for another. Carrots, for example, can only be produced in perfection in deep, light, sandy loam; and where this description of soil does not obtain, some means must be adopted to change or modify the existing staple. Lighten or deepen it as the case may require, so that the character of the soil may be modified, to suit the culture of this esteemed and valuable root. Road-scrapings, or sharp sand, will be found valuable for lightening stiff clays. Lay on a heavy coating, and afterwards well incorporate it with the existing surface for at least 18 inches or 2 feet downwards. Perform the work in autumn, and throw up the land into deep ridges, so as to fully expose it to the winter's frost. If the ground is naturally poor and unproductive, recourse must be had to manure. The best for Carrots, if it can be procured, will be well decomposed stable manure and rotten leaves. These should be well mixed together in autumn, exposed in narrow ridges to frost, and occasionally turned over during winter, in order to kill all insects and their eggs; for it is in such dry and warm materials that they take up their winter quarters. In the process of turning the manure heaps, a little salt may be occasionally sprinkled over them, which will also assist in exterminating slugs and other insects, and stimulate the crop afterwards.

These preparations having been carried into effect, and a full crop of Carrots the object in view, the ground should be again turned over during dry weather in January or February, but on no account touch it unless the soil is dried up by frosty winds. The ridges should be halved, that is, the half of two ridges turned into the furrow, and a new ridge formed, thereby exposing the centre of every ridge to the action of the atmosphere. This may appear a tedious operation, but where the production of good Carrots is a desideratum, the labour will be amply repaid.

The best time to sow for a principal crop is from the 20th of March to about the 10th of April. Much, however, will depend upon the weather. If heavy rains, or boisterous weather prevail, the work had better be delayed until the land is in proper *tilth*. The performance of an operation of this kind under adverse weather, is to propitiate a failure; for as a general rule, no operation of seed sowing should be performed unless those conditions evidently essential to success are secured. *Pharo.*

Home Correspondence.

Garden Gossip.—I too have a double-flowering Geranium, more surprising than "Willmer's Surprise," and I look upon the "matter of high gardening interest," in the acquisition of a race of double Geraniums, for bedding out, as only a question of time, and I take blame to myself for not having double Geraniums in abundance by this time, for I have repeatedly seen seedlings having from six to nine petals, but never with ten. These, however, did not come up to my ideas of bedders, and I destroyed them; for, to say the truth, I overlooked the idea of "the tendency to become double being increased." But now that you have pointedly made the suggestion, breeders will be more alive to the subject. I ought to have said, however, that I did keep one seedling with, I think, seven petals; and a very beautiful bedder it will be; it is from an only seed obtained in five years' class crossing with Diadematum rubescens—or D. superbum of the London gardens—the finest of all our bedding Geraniums. If any of your friends along the Valley of the Po were to undertake to originate a new race of double Geraniums, or an improved race of single ones, this should be the mother plant; but our climate is too moist for it to perfect seeds. It was in the hot summer of 1846 that I obtained the one seed from it which produced my favourite seedling, which I have called Diadematum regium. I tried many experiments with the mother plant, thinking that I could thus overcome its aversion to seed, and even to influence the constitution of the seedlings, if they should come; but I believe that this latter is a wrong notion, although many of us believe in it. Whether it was from the effects of these, or any of the experiments, I cannot tell, but one day last May I observed a curious formation of the stipules on one branch, something like the jagged calyx in your figure (p. 515), and by-and-bye flower-buds appeared with fringed envelopes, and at last a perfect double flower opened. Now was the time to collect all my philosophy to one point. What was to be done? Here was the wonder of the age staring me in the face, and if I let slip the opportunity of perpetuating the monstrosity, the like may not happen again for this generation. "Thinks I to myself," at last, something has caused a disarrangement in the formation of the parts; but as the season advances, and the plant gains more strength, this branch may possibly be able to regain the wonted character of its parent, and the best plan will be to cut it off from all communication with the parent, and so force it to form a community of its own likeness. The branch was accordingly cut off, cuttings made of it, and now they are all safely rooted, but whether they will show double blossoms remains to be seen. I think they will; indeed, I have no doubt on the point. I took the double blossom round the garden, but none of our gardeners could say what plant produced it. Now, it strikes me that if this Willmore Surprise originated at Oldford, near Birmingham, Mr. Cole's fingers had more to do with its doubleness than all the Hollyhocks in the country, and I wonder that he should allow such absurdity to pass through his garden gate. He is one of my pupils, whose diligence and attention to my vagaries in crossing flowers I shall always remember with gratitude. Moreover, he is the only young man I ever had to whom I could confide the issue of an experiment in that way with confidence. "It never rains but it pours." Two months after the appearance of this double Geranium, the double Calystegia pubescens from China turned single with me, and a very pretty flower it is—quite a charming hardy twiner, but I have not been able to seed it yet.—Beaumontia grandiflora: I am well pleased to learn that your worthy correspondent "A Devonian" has flowered this magnificent climber, or rather twiner, in his conservatory. Those who try to flower it in the stove are fighting against the air, and yet I have flowered it partially in the Orchid house, on the starving plan. I took the covers off a piece of old flue which passed by the side of a division wall which separates the Orchid house from an intermediate house; the length of flue is 8 feet, the depth 18 inches, and the width 14 inches. This was filled with rich compost, and the Beaumontia planted in it, and also the purple-fruited Passionflower; the latter with its roots thus cramped in the stove, and the top carried into the intermediate house, does very well, producing fruit and only half the usual growth of shoots and leaves, which render it almost troublesome under more favourable circumstances; being a free grower it receives the best part of the confined border, and leaves my favourite Beaumontia on short commons, but that has caused it to flower in the stove over the Orchids. Perhaps "A Devonian" would like to know that I once cut off a branch of the Beaumontia from the top of the conservatory with 29 flowers on one head, 17 of which were open at once; but he must be aware that these flowering branches should be cut back to a couple of joints in succession as they are done flowering. I do not know of any novelty in conservatory climbers, but there is a host of splendid Bignoniads yet to be introduced from the Brazilian forests, some of which would also do in our conservatories as well as this Beaumontia. *D. Beaton.*

Spot on Geraniums.—It is now very generally acknowledged that this disease is a fungus, generated probably by exposure to wet and cold, and curable, I believe, not by any nostrums, but by better treatment, as my experience appears to confirm. The annoyance I had suffered from this disease for several years past at length induced me to destroy my whole stock of Geraniums, excepting a few diseased plants, which I placed in a greenhouse having a span roof. In this situation several of them have remained unmoved for the last eight months, in full health, free from the "spot," and without being drawn up, although standing all the while upon the floor; while others not diseased, and standing on a stage under a lean-to glass roof facing the south, have, in six weeks only, lost much of their vigour, and become drawn up. Such appear to be the advantages of equable treatment and of span roofs. I may add that, although bees have been carefully excluded from both the houses, shading has not been resorted to in either; and that the petals of the Geraniums so treated have, nevertheless, not fallen off earlier or faster than when shading was formerly practised in the lean-to house. *C.* [Who says that it is a fungus?]

Potatoes.—Our Potatoes were planted here (the north of England) in March, which is considered late for planting them. They were well manured with the haulm of Peas, flower seeds, &c., which had been trodden down by pigs in the pig-yard, and mixed with good cow-dung. When the first Potatoes were lifted, they were very sound, and they continued in that condition until the 22d of August, when it was found that two lines, each about 20 yards in length, were attacked by disease, and we feared that the whole would soon become affected, for the tops were beginning to die down to the ground. We were, however, agreeably surprised to find, on a thorough examination, that the whole, with the above exception, were as sound as at first, and quite ripe, to which the dying off of the tops is to be attributed. They are as yet quite free from disease (being still examined every day), and we are led to think that they will now escape. The two lines referred to as having been attacked were immediately under the shade of a row of tall Poplars, which, when there is rain, throw the drip upon the Potatoes, and render the ground sour and heavy. This, I think, is sufficient to cause the speedy increase of disease. *S. F., Gateshead Nursery, Durham.*

Fuchsia spectabilis and other sorts.—Few, if any, have succeeded satisfactorily with respect to the management of this fine Fuchsia. Some of our best plant-men complain that they cannot grow it. Messrs. Veitch have never brought it to anything like perfection. Many might therefore be led to believe that it is uncultivable; but I have found the reverse to be the fact. My plant measures 6 feet 6 inches in height, 9 feet 3 inches in circumference, and has been in flower, more or less, since the middle of June. Has any one a finer specimen? This plant was received from Messrs. Veitch, last year, when it was only about 3 inches high. Some complain of Fuchsia serratifolia not flowering with them. I flower plants of that species both in a small and large state. My finest plant now stands 8 feet 3 inches high, by 9 feet 4 inches in circumference. Fuchsia corallina is a noble variety for pot culture. My finest plant of it is 12 feet high and 12 feet in circumference; 10 or 12 might be selected, not one of which would be under 10 feet in height. Fuchsia Comte de Beaulieu is another fine variety. My finest plant of it stands 6 feet high, by 8 feet 2 inches in circumference, the latter measurement being at 3 feet from the pot. The above are all in flower here at this time, and many who have visited Garnstone-park can bear testimony to the correctness of my statements. If any one has succeeded in growing and flowering these kinds of Fuchsias better, I shall feel grateful for their instructions as to the management of Fuchsias in pots. At another time I shall have much pleasure in giving my mode of growing and flowering the Fuchsia, provided no better success has been obtained by any other grower. *D. Kidd, gardener to D. P. Peploe, Esq., Garnstone-park, Hereford, Sept.* 3.

Inutility of Garden Rakes.—I am inclined to think that rakes are in a garden purely mischievous, keeping the surface of the soil in a state ill-suited to what grows in it, encouraging a false ambition of decorating that which is essentially ugly, do what you will, and leading the gardener to keep bare the spaces between the permanent flowers in the borders. I am disposed to order my gardener to use the hoe only. What is your advice on the subject? My soil is mostly very light. *O. F.* [The principal use of rakes is to render soil neat, and to prepare ground for seed.]

Luminous Insects.—Last night, about 10 o'clock, as I and my son were passing through a dark lane near this village (North-house, near Bideford), my attention was attracted by two well-defined phosphorescent spots shining clearly through a tuft of Grass by the road-side. On attempting to take up one of these (glow-worms as I supposed), I found that the luminous matter was a fluid which spread about under my fingers upon the ground, and which, on being rubbed upon my hands, covered them with light becoming for a time brighter by friction, but gradually dying away, and in less than two minutes becoming extinct. On proceeding to examine the other spot, I was somewhat startled at seeing it glide away in a serpentine course across the road like a little stream of phosphorescent quicksilver. On putting my finger upon it its progress was at once arrested, and I found it was an insect, and although too dark to see its character as such, I felt sure it was no glow-worm from its great comparative strength, and also from its persevering attempts to bite my hand. On bringing my captive to candle-light, I found it to be, as I had indeed already suspected, one of the centipede genus, of whose phosphorescent endowments I remember to have read. But what was the luminous fluid, which left neither odour, colour, nor trace of any kind upon my hands? Am I right in supposing it to be an excretion of the animal or of its mate? I enclose the insect, that you may inform me and your non-entomological readers of its species. *M.* [The luminous properties of Scolopendra (Geophilus) electrica have long been known, as indeed indicated by its specific name. The insect above alluded to, however, is distinct, being the Scolopendra (Lithobius) forcipata, which has not hitherto been observed to emit light. This light is produced by a fluid secretion from the animal, and is strongest during pairing time. *W.*]

The large Vine at Sillwood Park, Sunninghill.—This fine old Grape Vine was planted in the year 1815, and its trunk is now 21 inches in circumference. It is planted inside and near the centre of a lean-to house; it has nine horizontal branches, which extend right and left from the main stem; the area they cover is 123 feet by 14 feet. The Grapes are now colouring without the least artificial heat having been applied to them; there is not a square foot but has its bunch of Grapes. I may add that I should be most happy to show the Vine to any one who may be inclined to pay us a visit. *G. Brown, Gardener to Mrs. Forbes, Sillwood Park, Sunninghill, Berkshire.*

Potato Disease.—With respect to the Potato disease, which is very bad in this parish on the heavy soils, allow me to say that both last year and this I planted my Potatoes in drills, throwing in about 3 inches of cinder dust, and then covering the set with about 3 inches more. Last year I had not a peck of bad ones, and I yesterday took up my crop, and did not find 12 diseased ones. The crop is about 14 bushels. *A. F., Bedale.*——Potatoes planted in the beginning of April have this year proved a most excellent and abundant crop, while those planted later are blighted in the tops; notwithstanding this, however, the tubers are not diseased, the only defect is the size, according to the time they were planted, as the blight made its appearance here in the beginning of August, and, as a matter of course, as soon as the tops were blighted the tubers would then grow no larger. They are, however, excellent when cooked. *M. Saul, Garstang, Sept.* 3.

Pond Weeds.—We have a small pond in our garden which used to be supplied by pumping from a well; but in order to have better water for gold fish and some aquatics in pots, we lately, at some expence, brought a constant stream from a higher level, which keeps constantly dripping in and out; we, therefore, hoped the

green Ulva, or some such plant floating, would be banished; but instead of this it has so increased that the water is thicker and greener than when stagnant, though the tank is lined with cement throughout. What can we do to keep this green slimy plant from growing? We have, to-day, cleaned it out and put large pebbles in. Would moving them often be a preventive? *Constant Reader, Sandgate.*

Mildew.—Like the Potato disease, this, as to its cause, seems to defy all the investigations of learned and scientific men. One says it is excess of moisture in the air, or in the soil, or both; while another has just discovered the fact, that to water plentifully, with a large supply of moisture from horse-dung, is an effectual remedy. Who, then, is to decide when doctors disagree? Without, however, speculating too much on this point, I may state that I believe it is produced by a combination of causes. In the first place, there can be little doubt that a free circulation of air, with the houses kept clean and sweet, is a grand preventive, although atmospheric influences have a great deal to do with the evil. I have seen it very bad in Vines, Apricots, Gooseberries, and Potatoes, and even on Maple trees in parks, while, to the unassisted eye, it appeared to be the same sort on all, and I can compare its smell to nothing but to that of the bottom of a hay-rick after being wet through. In regard to its progress, I have found it get much worse after a few days of wet cold weather; and, in Vineries, affecting Hamburghs worse than other sorts of Grapes; even where Hamburghs and Muscats were grown under the same rafters, I have found the Hamburghs very bad, while the Muscats were, comparatively speaking, clean. The grand point, however, at issue is, what will cure it? Sulphur will, if applied in time, and persevered with; but it is neither one, two, nor three applications that will cure it if it is very bad. The house, or houses, ought to be carefully examined every morning, and if there is the least appearance of mildew, the plants affected should be immediately dusted with sulphur, and the application continued until the fungus is completely destroyed. Sulphur fails in a great many cases, because people have not patience to give it a fair trial. *J. T.*

Water Melons.—I beg to offer a few remarks on Water Melons, having grown them and seen them grow in one of the western islands for three years. I sowed the first year in beds adjoining common Melons, and treated them like the latter, but I soon found that I had made a mistake; after getting good strong shoots 5 or 6 feet long, I stopped them as I did those of other Melons, but they produced no fruit on the laterals like the kinds commonly cultivated; in fact they showed no fruit at all. This induced me to examine a field of them which was near me. I found it one mass of leaves and vine, and there was plenty of fruit, but not one on the lateral branches. After that I allowed mine to grow as they pleased, and after letting them run from 10 to 20 feet in length they produced very fine fruit, but it was late. The following year I divested some of their laterals, others I stopped, but I found I could get no fruit except from strong shoots from 10 to 20 feet in length. Last year I tried various other experiments, all of which proved that strong shoots of the above length, with abundance of leaves, were requisite in order to have good fruit. On another occasion I may give the mode of treatment I would pursue with the Water Melon in this country. *George Brown, Chelsea.*

Potato Pit.—The best method I have hitherto adopted in preserving my sound Potatoes good till spring, since the Potato disease of 1845, is by putting a single row or layer of Potatoes about 8 or 10 inches below the surface of the ground, in a dry situation, the same day as taken up, upon a layer of straw, and then covering them well but lightly with mould; I then add another layer of Potatoes, and so on, bringing the heap to a point. I afterwards dig a trench all round the heap or pit, and I place the earth therefrom evenly over the Potatoes, which preserves them from frost during the winter. I then cut a branch from the one made round the pit, which keeps it perfectly dry, and the Potatoes when taken out are equally as good and nicely flavoured as when first taken up. *W. Griffin, Daventry.*

Lapageria rosea.—It may be interesting to know that this plant may now be seen in flower in Mr. Skirving's Nursery, Walton, near Liverpool. *J. M., Walton Nursery, Sept.* 4. [It has also flowered in the garden of a gentleman living near Barnet.]

The Potato Disease first appeared in the crops about the 14th August; but, up to this time (September 3d), the tubers are sound, with a few exceptions, and we are yet in expectation of a full crop. The tops have commenced growing again on some fields. *W. Rothwell, Winwick, Lancashire.*

Shrubs, &c, that will withstand the sea breeze.—I have found the following to withstand it satisfactorily, and they may be of some little assistance to "F. A. P.": Hydrangea japonica, Fuchsia Ricartonii, Abutilon vitifolium, Leycesteria formosa, Veronica decussata, Ribes sanguinea, do. do. var. albida. These will all stand by themselves, without any wall. I venture to guess that what he calls his Fuchsia rivularis is the old Fuchsia radicans, from his description of its growing to the height of 17 feet on a wall, and I hardly know a garden in Wales in which I have not found it. I think in the climate of Pembrokeshire that the Benthamia fragifera might be found sufficiently hardy; it is at any rate well worth the trial. The Araucaria imbricata and Pinus insignis and Quercus Ilex are the best trees as evergreens to afford shelter against the sea breezes. *Cerniwaidd, Aug.* 31.——The following will grow near the sea.

Tamarix gallica	Colletia horrida
,, germanica	Eryngium maritimum
Atriplex Halimus	,, cordifolium
Salsola maritima	,, amethystinum
,, fruticosa	Arabis albida
,, herbacea	Helleborus niger
Hippophae rhamnoides	,, viridis
Crithmum maritimum	Arum maculatum
Convolvulus soldanella	Veratrum niger
Glaux maritima	Cineraria maritima
Ephedra distachya	Arbutus Unedo
Genista sagittalis	Kochia maritima
Scilla maritima	Halocnemum maritimum
Campanula Trachelium	Bupleurum fruticosum

The Fuchsia which he calls rivularis is probably virgata. *J. Rogers.*——The best shrub for planting by the sea side is Tamarisk; it has a beautiful appearance, is very hardy, and requires no support or training. A great quantity of it is grown in the neighbourhood of Brighton, Dover, Ryde, Hastings, &c. *B. W., Brixton.*

Early Shaw Potatoes ripe before the Ash-leaved Kidney.—I planted Early Shaw Potatoes, with Ash-leaved Kidneys, on a piece of ground rather of a stiffish character. The Shaws were certainly in advance of the Kidneys, to my surprise. The Kidneys yielded fairly, but they were employed a long time in making a large quantity of bine. Can any one inform me if I may attribute this failure of the Kidney to mature before the Shaw to the condition of the soil, and whether I could ensure the Kidney to beat the Shaw if I plant it in a loose, open, friable soil, on a warm headland. *A. B.*

A Slug Preserve.—Many contrivances have been invented for catching slugs and other insects in kitchen gardens, and especially among Strawberries; but none will be found to succeed better than Mr. Roberts' tiles. They seem, in fact, as if they had been made for this purpose. They form the finest breeding places for vermin that any man could have discovered. A gentleman asked a Strawberry grower the other day how he liked the tiles. "They are first-rate for catching slugs, and affording a harbour for vermin," was the reply; "but, for other purposes, they are worthless." "Well," says the gentleman, "I had some, in order to test their value, and we thought our Strawberries were not near so good upon them as formerly they were without them." "Well," said the Strawberry-grower, "put them to the purpose for which they are best adapted, *i.e.*, make slug-traps of them." *Jas. Cuthill, Camberwell.*

Societies.

Horticultural, *Sept.* 3.—E. Brande, Esq., in the chair. On this occasion several subjects of interest were produced. Mr. Henderson, of the Wellington-road Nursery, St. John's Wood, sent Vriesia splendens, with a long feather-like spike of scarlet floral leaves; Beaufortia purpurea, a small Swan River shrub bearing little round tufts of purple flowers near the ends of the branches; Eriocnema marmoratum and æneum, two Melastoma-like plants, more remarkable for their handsome variegated and velvety green foliage than for the beauty of their flowers; an attractive yellow-blossomed annual named Microsperma bartonioides; the well-known Æchmea fulgens; the white variety of Achimenes longiflora or Jaureguia; plants of Tigridia canariensis, whose flowers had unfortunately closed before the time of exhibition; the bright salmon-coloured, Geranium, called "Beauty of the Parterre;" brilliant cut flowers of two kinds of hybrid Gladiolus; a blue-flowered Convolvulus from St. Catherine; Messrs. Veitch's variety of Gesnera picta; and an unripe example of the Serpent Cucumber (Trichosanthes colubrina), a fruit which possesses poisonous qualities, but is very ornamental when ripe, on account of its bright red colour. A Banksian Medal was awarded for the five first mentioned plants.—Four kinds of Achimenes, consisting of longiflora, venusta, Skinneri, and grandiflora, were exhibited by Mr. Dobson, gr. to J. Foster, Esq., of Westbourne-grove, Bayswater. Some forced Late Admirable Peaches, remarkably large and fine, and some ripe Mangoes, were furnished by Mr. Scott, gr. to Sir George Staunton, Bart., Leigh-park, Havant, Hants. One or two of the Mangoes were somewhat injured by travelling; but the others arrived unblemished. It was stated that the tree which produced the fruit in question seldom or ever failed to ripen a good crop of excellent Mangoes every year. A Knightian Medal was awarded for these exhibitions.—A curiosity in the shape of a Pine-apple was exhibited by Mr. Steers, market gardener, Teddington. It was an example of one of those Pine-apples, or rather masses of Pine-apple (for one mass will often fill a peck measure), which are to be found in the markets of Batavia, and in which the pips possess the peculiar property of elongating and producing second fruits. In the specimen shown only two of the pips near the base had pushed, and were forming lateral fruit; but these furnished sufficient evidence that the peculiarity would be retained under cultivation in this country. Nothing can be stated as to its quality, for the fruit was not cut up.—Mr. Middlemiss, gr. to A. Pott, Esq., of Bentham-hill, Tonbridge Wells, sent two large coarse-looking Melons, affected with the disease mentioned at p. 516. It has been suggested that injudicious watering may have had something to do with the production of the evil; but Mr. Middlemiss stated that in his case, at least, this could not have been, for his Melons had never been watered. A plant, with six fruit on it, was reported to have four out of the six diseased.—From the Society's Garden came a very fragrant Orchid-like Epidendrum alatum; the Ginger-wort called Roscoea purpurea, Cuphea purpurea, pretty, but hardly sufficiently showy to make a good bedding plant; three Cape Heaths, Beaufortia splendens, the scarlet flowered Aphelandra cristata, three varieties of Achimenes, the gracefully drooping Bæckia patula, Boronia denticulata, the pale yellow Calceolaria cuneiformis, Franciscea Hopeana, and the following Grapes: Black Prince, Chasselas Musqué, and Olwer. The latter is described in the Journal of the Society, vol. iii., p. 307. It is a Rhenish wine Grape, something like the Sweetwater in appearance, and is stated to possess peculiar properties. The Chasselas Musqué is well known to be one of the finest Muscat-flavoured Grapes in cultivation, but it has got the bad character of being liable to crack. It has been ascertained, however, that the cause of cracking is too much moisture in the border, &c., at a certain stage of its growth, and that therefore the evil is entirely under the gardener's control. In the present dry season, not one cracked berry has been observed in the plant which has fruited in the Society's garden. The same establishment also furnished a small green Savoy (Chou de Milan très hâtif d'Ulm), which will be found to be valuable, on account of its being fit for use before the other sorts, and in being tender and good; but it is too small for market gardeners; likewise a red Capsicum, called the Tomato Capsicum, on account of its resemblance to that fruit. With those who are fond of mild Capsicums this will be a favourite. It is stated to be very productive.

Entomological, *Sept.* 2.—J. F. Stephens, Esq., V.P., in the chair. Donations to the library were announced from the Royal Society of London, the Imperial Society of Moscow, the Entomological Society of Stettin, &c., including a biographical memoir on the late Dr. Erichson by Dr. Klug, and an elaborate paper on the blind Annulosa of the Styrian caves, by M. Schiodte. Specimens of the rare Epunda lichenea, from the neighbourhood of Liverpool, were exhibited by Mr. Gregson; also specimens of the very beautiful Rhodaria sanguinalis and a new Elachista, by Mr. Shepherd, from New Brighton. Mr. S. Stevens exhibited specimens of an apparently distinct species of Amphimalla taken at Tenby by Captain Parry; also specimens of both sexes of a fine variety of Papilio (ornithoptera) Priamus, from Richmond river, on the east side of New Holland. Also specimens of Celoma ænea, Pytho depressus, and Rhagium indagator, sent from Perthshire by Mr. Weaver. Mr. Douglas exhibited a very interesting series of minute Lepidoptera from Folkstone, Mickleham, West Wickham, &c.; many of them bred from the larvæ, including several new species of Gelechia.—Mr. Westwood stated that he had recently received a number of specimens of Limexylon navale in the perfect state from Pembroke dockyard, where they had appeared by thousands, the larvæ infesting Oak timber, which had been in dock four years, and had been found uninjured when first received there. He also stated that he had received specimens of Apate capucina from the same dockyard, where it infested the Isturian Oak; and Mr. S. S. Saunders stated that, in the south of Europe, he had only found it inhabiting the trunks of Quercus Ilex. Mr. Westwood also stated that he had reared two species of Astyages (A. nigricella and Hemerobiella) from the case-bearing larvæ which had attacked the Pear trees in the Garden of the Horticultural Society at Chiswick during the past summer.—Mr. White gave an account of the perforation of a leaden water-pipe attached to a piece of American timber by the long-horned beetle Monohammus sutor, which had been reared within the wood. He also alluded to the lead-boring habits of Callidium bajulum, another beetle of the same tribe. He likewise exhibited a box of interesting Indian insects collected by Mrs. Captain Hamilton, including the butterfly, Idæa gaura of Horsfield, together with a drawing of its caterpillar, proving it to belong to the genus Euplæa. This exhibition led to an extended discussion as to the advantages resulting from an investigation of the preparatory stages of Lepidopterous insects, as well as to the relative value of the characters derived from the larva or perfect state of this order of insects. *W.*

Royal Horticultural Improvement of Ireland.—This Society held its last exhibition for the season at the Rotunda, on the 27th ult. It was the dullest period of the season for greenhouse and stove plants, and most of the florists' flowers were also past; competition did not, therefore, run high among either of these classes. Cape Heaths appeared to attract most attention, some of which were, indeed, beautiful examples of their kinds. We have on several occasions seen larger specimens, but rarely have these beautiful plants appeared in better condition, or handsomer, than at the late exhibition. The plant which obtained the first prize, for the best single stove exotic, was a beautiful specimen of Pleroma elegans, which was covered with large bright Tyrian purple flowers. The elegant habit of this plant, with its prettily-shaped dark green leaves and showy blossoms, renders it one of the most desirable subjects for a greenhouse, or cold stove, which has been introduced to our collections for some time. Among Orchids, the curious Peristeria elata was conspicuous; as was also a nice specimen of Stanhopea Wardii, which was suspended from the chandelier in the centre of the room. The varieties of Fuchsia exhibited were very good, and in considerable abundance, and they deservedly attracted much attention. There were several good samples of fruit and vegetables staged, but in no such quantity as might have been ex-

pected at an autumn exhibition. *From the Dublin Advocate of August* 28.

Review.

The Commercial Handbook of Chemical Analysis. By A. Normandy. Geo. Knight, fcap. 8vo, pp. 640.

The person who would undertake, in an age like the present, in which the rapid progress of science, art, and luxury is only equalled by the ingenuity and fraud with which almost every object of commerce is adulterated, "to indicate the falsifications or impurities which, naturally, accidentally, or intentionally, may contaminate the various articles met with in commerce, and to enable the public to detect the nature and amount of these sophistications and impurities," would enter upon a task requiring for its fulfilment an amount of general knowledge rarely to be met with in any one individual, and, we fear, not in the author of the work before us. We are ready to make reasonable allowance for mistakes, which must have been committed by any one, however well acquainted with his subject, in carrying out so difficult a task; but we were not prepared to find so much room for serious criticism as exists in the present volume.

It is evident that the author has a very limited acquaintance with natural history, and most especially with minute anatomy, upon which, above all other things, reliance may be placed most safely in the examination of all raw vegetable products. The mode of detecting fraud is in fact treated of much more in the manner of a chemist than of a naturalist, and far too incompletely even in the former point of view. For instance, while the author has taken the trouble to mention such substances as bromine, succinic acid, and others of interest only to the professed chemist, who would hardly be compelled to seek for information in a work of this sort, no mention is made of such common articles as Senna, of which hardly an unadulterated sample can be procured, or of the still commoner substance, we had almost said article of food, Tobacco, in the preparation of which, perhaps more adulteration is practised than in any other substance that can be named. Senna and Tobacco, which we have only taken by way of example, are not such rare and out-of-the-way things as to demand no attention or be excusably omitted.

Errors, too, are neither few nor far between. It is stated that sugar is extracted from *Arundo saccharifera*; and that "Chocolate is a preparation of the Cocoa-nut, obtained by grinding the nut roasted and shelled," &c. This is new. For our own parts, we always thought that Cocoa or Cacao was the seed of a plant called Theobroma Cacao, the resemblance between which and Cocoa-nut no ingenious naturalist has yet discovered. That this mistake is not a misprint seems to be shown by the context. Again, "*La veno beno* has been represented as being the leaf of a tree, and that tree a climbing plant, well known in the East under the name of Paun, which is clearly a much less pretty, and, consequently, a much less saleable name than *veno beno*. But by whatever name called, *La veno beno* is neither plant nor leaf, but simply a mixture of a very small portion of tea powder (broken tea leaves), with an excessively large quantity (upwards of 90 per cent.) of pulverised catechu." It is possible that various sorts of this trash may be sold in the shops; such samples as we have seen were a mixture of Catechu with various leaves, among which, Rhus coriaria, a powerful astringent, used by tanners, and perhaps Rhubarb, were ingredients. Chicory, we are told, cannot modify the stimulating action of coffee, except by dilution. "Chicory," it is added, "has no other virtue than that of imparting a brown colour to the water in which it is boiled or infused." Does the author mean to say that its tonic, aperient and sedative qualities disappear upon its being roasted? And how does he explain the undoubted fact, that those who cannot drink coffee pure, because of the wakefulness it produces, sustain no such inconvenience from the use of the mixture of chicory and coffee?

As a specimen of useless direction, the following example may be taken. We find it stated that "the purity of fixed oils may be approximatively determined, and the admixture of cheaper oils detected by observing the peculiar odours of the oil when gently heated. For this purpose, a few drops of the oil under examination should be poured in a small porcelain or platinum capsule, and exposed to the heat of a spirit lamp. The odour which is evolved immediately suggests that of the plant or animal from which it has been obtained, and this characteristic is valuable, more especially if observed in conjunction with the genuine oil, and furnishes accurate indications of the presence of Linseed oil, whale oil, train oil, or Rape oil in any mixture. M. Perrot, however, observes that the odour of the oil is not always a safe criterion, since an oil of the same fruit or nut has not always the same odour. This is especially the case with Olive oil, the odour of which differs according to the different places where it has been grown. The same is the case with other oils, if drawn cold, or if expressed under the influence of heat." Now let any one, knowing nothing but what he is told here, try to apply this test; the first part of it comes to this—"heat the oil, notice the odour, if the odour is not that of genuine oil the sample is adulterated;" but an inexperienced person might ask, how am I to know what the smell of genuine oil is? and without this how can I accuse the seller of the oil of having sold me an adulterated article? Supposing, however, this difficulty to be overcome, it is clear that the second part of the above passage practically annuls the first; how is anybody to know whether a given oil has been "drawn cold or expressed under the influence of heat?" If he knows that such is the case, the test is clearly inapplicable; if he does not know that such is not the case, the test is no less practically valueless.

The directions concerning arrowroot are little better; the microscope can indeed enable an observer to distinguish it from its falsifications; but certainly not by such peculiarities as are given by Dr. Normanby. A person who should find himself relying, in a witness box, upon such vague differences as are here given, would speedily discover their unsatisfactory nature. In like manner the method indicated of determining the falsification of tea by other leaves are wholly insufficient for the purpose; and all we are told about so important an article as guano is that the purchaser "should choose it as dry as possible;" on the other hand the reader is furnished with 12 pages of chemical matter relating to the mere qualities of pure guano.

Faults of this kind seriously detract from the utility of the present volume, which, nevertheless, contains a great deal of useful information, and may be made the basis of a work really worth consultation.

Miscellaneous.

Potato Disease in Canada.—We regret to hear that in many places in the neighbourhood of the city the Potato blight has again appeared. We have seen evidence of it in the vicinity of the River St. Charles, and a farmer from there informed us to-day that he had inquired of several farmers from Jacques Cartier and Valcartier, who state that the blight has also there appeared. *Quebec Mercury.*

Live Fences for Enclosures.—It is no easy matter, though very desirable, to be able to enclose land quickly and effectually. Some persons for this purpose use single stems, 4 or 5 feet high, placed crosswise, inclining from right to left and from left to right alternately; this plan is however not a good one as the plants grow irregularly, and the branches sometimes die and leave spaces very difficult to fill up: in order that this plan may succeed, the shoots should be interlaced as the plantation proceeds. Another plan is to make a double hedge; this, however, is objectionable. It often happens that the two lines of plants, though very close, will not grow the one amongst the other, but leave a space between them which destroys the solidity of the whole. Besides, no air circulating in this hollow, the young branches die and leave a sort of passage between the two hedges. To avoid these inconveniences I have adopted the following plan, and with great success. A trench a yard wide, and a little more than half a yard deep, is dug round the place to be enclosed. The earth removed by digging to the depth of one spade is put on the right bank, together with the turf from the surface previously placed there; the earth removed after this is thrown on the other bank: into the bottom of this trench is then thrown all the earth thrown up by the first, and some of that thrown up by the second digging, and the level of the plantation is obtained by means of the turf before mentioned. In the middle of this trench a cord is then stretched and kept in its place by stakes driven into the ground every 10 yards. The planting is then begun. The plants about three years old, and not quite 1½ foot high, are placed on the turf which is introduced among the roots. The latter are then covered with earth, on the top of which is lightly placed some well-worked dung, and the whole is then filled in with the earth remaining on the left bank. The plantation is in the course of the first year dug as much as necessary, and in the autumn rather deeply, not however so as to disturb the layer of dung already spoken of. The second year the same operations are performed, and the plants may be pruned. In the third year, and not before, the plants are cut down to the height of 3 feet. In the fourth year the hedge is formed, and may be pruned first in June and again in September. By this time the hedge will be a much better protection than those planted in the common way are at the end of 8 or 10 years. It must not be supposed that the above method of procedure is costly. My hedge kept in good order costs no more than an ordinary one badly kept up. The earth being well arranged works easily; and the pruning being performed twice a year, takes very little time, as there is no hard wood to cut. *Revue Horticole.*

Vibrio Graminis.—On the 28th of May I noticed that the leaves of the sheep's Fescue Grass (Festuca ovina), and if I recollect aright, of some other Grasses, growing close upon the sea coast, were affected with several purplish swellings, of which I brought away examples for examination. They only appear a little thicker than the leaf in whose substance they originate, and according to their length are squarish or oblong, slightly roughish, stiff and rounded like a piece of wire, and occupy either the entire breadth or are confined to the edges. At first, from finding in the interior only bluish or purplish granules, I felt disposed to attribute them to a fungus; till opening others more carefully, I observed several minute Annelides, coiled up in channels winding amongst the granules. These I subsequently found were Vibriones, of which one species, Vibrio Tritici, as is now well understood, produces the disease called "Ear Cockles," or "Burnt Corn" in Wheat. Others of somewhat similar character swarm in decaying Potatoes and Turnips, and the "eel" of vinegar is an example familiar to microscopic amateurs. Some of the knots contained only a single occupant, but one of the more elongated ones had about half a dozen of various sizes. The worms are white, almost transparent, very minute and slender, just visible to the eye, pointed at each end, the posterior tapered for a very considerable space, contracting as it were by three separate gradations till it terminates in a point; the head end is something like that of an eel, bluntish, and gradually widening out for a considerable way backwards, where there is a greenish annulus, formed perhaps by the commencement of the intestines, as behind this there is a cloudiness all along the middle. I could not perceive the oral opening, but behind the point there is a dusky spot connected by a line with the interior. The young ones are immaculate white, but the old contain a profusion of greenish granules, which may be either the eggs or the undigested food. Although not indicated externally, the body is evidently composed of a series of rings which separate the internal contents; as one in which the skin happened to be ruptured was emptied in a manner corresponding to this structure. The movement of the particles at the wound was a rapid rush, which extended itself by degrees upwards; but there were intervals where the current seemed to be impeded, as if by constrictions, upon passing which it again flowed freely. The worms placed in a moisture agitate themselves to and fro, but are usually rather inactive. The length is about 1 line. The species is probably new, and may be called Vibrio Graminis. According to the observations of Mr. Bauer, Vibrio Tritici is originally introduced, in the young or egg state, into the germinating seed-corn, and after a succession of generations during the passage, is conducted by the propulsion of the circulating fluid up higher and higher, till it reaches the ear. Whether this be the means by which the present species gains access to the position which it occupies, I cannot determine. It is by no means uncommon; and as the parts affected by its presence dwarf the blade, interfere with the healthy flow of the sap, and will probably soon decay, it may be regarded as somewhat prejudicial to the coast pastures, which are principally composed of the Grasses that it attacks. The granules with which the knots are filled give out a brown tincture when moistened. *J. Hardy, in the Annals and Magazine of Natural History.*

Sale of Plants.—A collection of Orchids, and a few Pitcher plants were sold by Mr. Stevens yesterday, at the following prices: Nepenthes sanguinea, 8*l.* 10*s.*; N. phyllamphora, 2*l.* 12*s.* 6*d.*; N. Rafflesiana, 1*l.* 14*s.*; N. lævis, 1*l.* 2*s.*; N. ampullacea, 1*l.* 2*s.*; Calanthe Masuca, 4*l.* 5*s.*; C. vestita, 2*l.* 10*s.*; Lælia superbiens, 2*l.* 7*s.* 6*d.*; Dendrobium Dalhousieanum, 1*l.* 1*s.*; D. Farmeri, 1*l.* 4*s.*; D. nobile, 1*l.* 1*s.*; D. Gibsoni, 1*l.* 1*s.*; Sobralia violacea, 1*l.* 4*s.*; Cattleya Mossiæ, 1*l.* 7*s.*; Aerides odoratum, 1*l.* Other lots, of which there were in all 125, fetched from 10*s.* to 1*l.*

Calendar of Operations.

(For the ensuing week.)

PLANT DEPARTMENT.

Many of the plants intended for winter flowering will have filled their present pots, and are still growing fast; but unless in the case of very small plants, it will be better not to pot them again this season, but to assist them with occasional waterings of liquid manure. The size of the flowering pot must in all cases be regulated by the purpose for which the plants are grown, as in most cases a supply of flowering plants is required for conservatory and drawing-room decoration; and as many of them will be required to fit various ornamental vases, it is necessary to practise the small shift system, making the soil as rich as the plants will bear it; and by such means keeping the pots as small as possible in proportion to the size of the plants; if any further stimulant be required, it must be applied in the shape of liquid manure. These remarks of course apply to quick-growing plants, which are cultivated for a particular purpose, and are afterwards of no particular moment; but those plants which are intended to form fine specimens of superior and skilful cultivation should never be cramped at the roots, except for the purpose of producing a more abundant supply of blossoms upon those which are shy in that respect if grown luxuriantly. Plants may be potted with safety and advantage at any season of the year, when the roots have made such progress into the soil of the last shift as to render the operation necessary, provided always that they are in an active state, and that such activity is not the result of unnatural excitement.

FORCING DEPARTMENT.

Peach-houses.—The trees in the early houses having matured their growth, the foliage is gradually falling off, notwithstanding the care that was taken to preserve it as long as possible. To prevent the littery appearance produced by the falling leaves, a birch-broom should be passed gently up the branches every second or third day, to bring down all the leaves which are ready, that they may be removed instead of being allowed to keep the house in an untidy state. As soon as the leaves are all off, the trees should be untrained, and the shoots washed over with a solution of sulphur and soft soap; taking care to perform both this operation and that of removing the leaves without injuring the young fruit or wood-buds for next year. The glass should be well washed, and the whole of the wood-work of the sashes and rafters either washed very clean or painted; the latter is of course preferable if circumstances permit. The front trellis and the back wall should be painted with oil paint. All this may be done by the ordinary labourers, and is therefore not so expensive as at first might be thought, while it gives the house a respectable

appearance, and effectually smothers every insect, in any stage, which may be lurking about the trees or their supports. As much of the effete soil as the roots will allow should be scraped away from the surface of the border, and replaced with fresh mellow loam, mixed with fine charred refuse, which all plants are fond off. No animal manure should be applied, as the trees can be stimulated to any required extent by using it in a liquid state during the growing season. The concluding operation will be to give the borders a good soaking of clean water, which will keep them sufficiently moist during the dormant season.

FLOWER GARDEN AND SHRUBBERIES.

About a month since we recommended all those who are anxious to make the finest display of flowers next summer, to take notes of the most effective plants for the purpose, and of the habits and peculiarities of each. We would recommend that such a review be carefully repeated, and the present state of the plants noted also, marking particularly those which at that time made a creditable display, but which are now become shabby or indifferent. The object of going over them several times is to distinguish those kinds which commence early in the season, and continue in the greatest perfection to the latest period; that in future arrangements these may be generally if not exclusively used, to the rejection of all those whose beauty is short-lived. In making arrangements of this kind, it is not necessary to include an immense variety; as the symmetrical relationship between the parts not only admits of repetition, but demands that the corresponding parts should be similarly furnished. The object should be to make the *tout ensemble* perfect; and in almost every case this may be done best by a small selection. For example, if a gardener has of each distinct colour, and of the most useful intermediate shades, a few suitable plants of different heights, he may with proper taste make the arrangement of his masses as perfectly beautiful as a thing of the kind can be. The best way to proceed then is to make a list of desiderata, filling it up for the present with the things which approach most nearly to his standard, and substituting other and better things as soon as they come under his notice. One very important point to be attended to in the selection of plants for bedding purposes is the proper balance between flower and foliage, and especially amongst the bright warm colours; a mass of inflorescence is all very well in the distance, when the proper complementary colours also come within the angle of vision from the same point; but those flowerbeds which are intended to please upon close inspection, must be plentifully interspersed with green foliage to relieve the eye from the unpleasant sensation produced by gazing on an intense colour. We would wish to see the principle of methodical arrangement carried far beyond the parterre, that every clump of shrubs may give evidence of the reign of good taste, in the disposition of shades and colours. Many of the finest and most showy herbaceous plants are now in their beauty, and by studying the effect they produce in different situations, it is more easy to decide where they may be introduced with the greatest advantage. The dark masses of Rhododendrons and other evergreen shrubs stand particularly in need, during the summer and autumn months, of some flowering plants, such as Phloxes, Aconitums, Chinese and Noisette Roses, Hollyhocks, &c., planted amongst them, and the latter cannot be placed in a more favourable situation for displaying their charms, than with the deep glossy green of the Rhododendron for a ground colour.

FLORISTS' FLOWERS.

DAHLIAS will yet require abundance of water, should the weather prove dry, and fine blooms may be expected. TULIPS.—A bed or beds should be made for the offsets, and seedlings should be got in as soon as possible; every precaution should be taken, as far as preparation of the compost goes, to insure their healthy growth. The most beautiful blooms are often from maiden bulbs, or the first flowers which the offset produces. Here, too, is the amateur's reserve, from which he drafts, to reinforce his main bed. Let this advice be attended to without delay, as it sometimes happens that weak offsets of very valuable sorts shrivel and perish by being kept out of the ground too long. Pot off rooted Carnations and Picotees, and place on ashes in a shaded and sheltered place. The best florists make an erection, covering with their frame-lights, so as to prevent excessive rain from soddening the soil; regular attention as to watering, &c., must be given.

HARDY FRUIT GARDEN.

Let the young plantations of Strawberries be well attended to by stirring the soil between the plants, and supplying them with plenty of liquid manure, that they may continue to progress at root, and fully employ their leaves in the elaboration of sap. Promote by any and every means their vigorous growth now, and fine fruit next year will be the reward. Alpine Strawberries should be looked to, to see that they are sufficiently moist, as they will soon be found useful in supplying a desirable addition to the dessert. If they are in a state to receive water, supply it in the shape of liquid manure. Plant a few beds of young runners on a north wall for another year; soil a sandy loam, moderately enriched. Look to the buds of fruit trees inserted in July and the early part of August, and loosen the ties. Proceed with forking dung in amongst fruit bushes and Strawberries, and thereby encourage the production of roots near the surface of the ground; these will materially assist in perfecting the growth of the plant, and preparing it for the healthy and abundant development of fruit. Attend to the gathering of fruit as it ripens, and if any of the trees are without names, take advantage of the opportunity of ascertaining their true name, and marking the fruit as well as the plants.

KITCHEN GARDEN.

Preparations should now be made for planting out the young Cauliflowers raised last month. A shallow trench should be formed sufficiently wide to receive the handlights; the soil should be removed to the depth of about 6 inches, and laying it on the edges in a manner similar to a Celery trench. The bottom should then be manured and dug, and spaces, the size of the handlights, marked out; of these, only the alternate ones should be planted, reserving the intermediate spaces to set the tops of the handlights upon, when not required over the plants. The strongest of the young Cauliflowers should then be planted about 4 inches apart; as soon as they are planted, the handlights should be placed over them, having first been put into proper repair. The tops however should never be left on, except in frost, or heavy rains, and even in the latter case, air should be admitted. Early Celery should be earthed up as required; but the main crop must still be deferred till it has arrived at its full growth, as there is yet time. If this method be followed, there will always be less loss by rolling in the latest earthed Celery or Cardoon crops, than in that which has been done early. It is scarcely necessary to say that fine weather should be chosen for this operation, and that the soil should be as dry as it can be reasonably expected at this season.

State of the Weather near London, for the week ending Sept. 5, 1850, as observed at the Horticultural Garden, Chiswick.

August and Sept.	Moon's Age	Barometer. Max.	Barometer. Min.	Temperature. Of the Air. Max.	Of the Air. Min.	Of the Air. Mean	Of the Earth. 1 foot deep.	Of the Earth. 2 feet deep.	Wind.	Rain.
Friday.. 30	☾	30.253	30.221	68	33	50.5	57	59½	N.	.00
Satur... 31	23	30.300	30.292	62	42	52.0	56½	58	W.	.00
Sunday . 1	24	30.348	30.333	72	46	59.0	56	57½	N.W.	.01
Monday 2	25	30.385	30.292	72	41	56.5	58	57½	W	.00
Tues. .. 3	26	30.238	30.190	64	51	57 5	57	57½	S.W.	.00
Wed. .. 4	27	30.322	30.274	66	30	48.0	57½	58	N E.	.00
Thurs.... 5	28	30.377	30.277	66	37	51.5	57	58	N.E.	.00
Average....		30.317	30.268	67.1	40.0	53.5	57 0	58.0		.01

Aug. 30—Very clear and fine; clear at night.
— 31—Fine; overcast and mild.
Sept. 1—Slight rain; overcast; clear at night.
— 2—Fine; very fine; clear.
— 3—Very fine; overcast.
— 4—Fine; very fine; clear at night; frosty.
— 5—Very clear; fine; clear.
Mean temperature of the week, 6 deg. below the average.

State of the Weather at Chiswick during the last 24 years, for the ensuing week, ending Sept. 14, 1850.

Sept.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds. N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 8	68.8	48.8	58.8	10	0.65 in.	1	4	1	2	4	9	2	1
Mon. 9	68.5	49.7	59 1	11	1.09	—	2	1	1	5	7	6	2
Tues 10	69.7	49.0	59 3	14	1.27	—	1	1	—	6	8	8	2
Wed. 11	69.0	47.7	58.4	9	0.46	2	3	—	—	4	5	7	3
Thurs. 12	66.7	45.8	56.2	8	0.49	3	4	—	2	1	4	10	—
Friday 13	67.0	46.7	56.8	11	0.49	2	2	4	1	2	5	5	3
Satur. 14	66.7	47.3	57.0	12	0.34	1	2	5	2	2	5	6	1

The highest temperature during the above period occurred on the 12th, 1841—therm. 84 deg.; and the lowest on the 12th 1848—therm 31 deg.

Notices to Correspondents.

ANBURY: *O P* will be obliged by an explanation of the meaning of this word, applied to the well known disease in Cabbages and in horses. We suppose that he is dissatisfied with the usual derivation of the word from the Anglo-Saxon *ambre* a wart or tumour.

APPLES: *W J N.* Your seedling Apple is middle-sized, handsome, and beautifully coloured; but in point of flavour scarcely first-rate.‖

BEES: *Anna.* If you wish to take the honey this season from your common straw hive, then the best mode is to destroy them by sulphur. But would it not be more congenial to your feelings to deprive yourself of the honey this year, and keep the present stock for swarms in future years, taking care to place the swarms in the improved straw hives? these hives are most easy of management, and allow you to take about a third of their produce of honey annually without destroying a bee, and which honey is very superior to that from a suffocated hive. *Y.—J W.* Remove the piece of comb, and stop with a bung and piece of linen. There is no occasion to fumigate the bees in order to weigh them; refer to page 592 of present volume. *Y.—Birkhurst.* As you cannot succeed with your bees in straw hives, there is much less chance of success in wooden ones. *Y.*

BLIGHT: *Lady J W.* It appears very extraordinary that your trees should be in the state described; but before forming an opinion we should like to hear the gardener's explanation, with which your ladyship will perhaps favour us.

BOOKS: *A small Nurseryman* will find his new trade unprofitable, if he does not understand it without the help of books. The best to consult is Loudon's "Encyclopædia of Gardening."—*J Kearney.* Read Dr. Lindley's "Vegetable Kingdom." People must be mad who say that plants are composed of insects.

BUDDING ROSES: *Petit Pierre.* Worsted is preferable to bast for tying the buds with. There is no difficulty in budding the Persian Yellow or Harrisonii. It should be effected when the wood is ripe. The same remark applies to Perpetuals. Perhaps the Hybrid China is the easiest class of Roses to bud. For six climbing Roses, for a south wall, in a northern county, choose the following—Hybrid China: Chênedollé, vermilion; Paul Perras, rose; Madame Plantier, white. Noisette: Luxembourg, purplish red; Solfaterre, yellow; Triomphe de la Duchere, rosy blush. ‡—*F A P.* Your question is answered last week, at p. 552.

CHERRIES: *Jane.* The Kentish Cherry is round, juicy—the juice pale, acid. Stalk generally short, and so firmly attached to the stone that the latter may be pulled out of the fruit by it. It is easily distinguished from the Morello; this has a long slender stalk; fruit heart-shaped, with purple juice, acid and astringent.‖

CLUB IN CABBAGES: *W F.* It is caused by an insect. Perhaps the best remedy is putting wood ashes in the holes along with the plants at planting time. ‡

CREEPERS: *Monday.* We would suggest Periwinkles, the large-flowered Tutsan, Helianthemums, Cotoneaster microphylla, Juniperus prostrata, and such rock plants as Alyssum saxatile, Omphalodes verna, Aubrietia deltoidea, and Nonnea lutea.

FIGS: *Gateshead.* You cannot do better than follow the excellent instructions on their culture given by Mr. Markham, of Hewell, in our volume for 1844, p. 228. Few gardeners grow Figs better than Mr. Markham.‡

GRAPES: *W H.* Josling's St. Alban's is a white Grape like the Chasselas Musqué. ‡

HEATING: *C B.* You will probably find a good answer to your inquiry in some of the following pages, viz., 38, 51, 102, and 573, of our volume for 1847, and 53 and 101, vol. for 1848.

HORTICULTURAL SHOWS: *S N.* At a country horticultural show a prize is offered for "the best grown specimen of any plant in flower." A splendid specimen is sent of L. lancifolium rubrum, with nine stems, all growing from one bulb (in the first instance), which has not been divided. *Quere.* Is this specimen disqualified by there being more than one bulb in the pot? [Certainly not.]—*S E.* We doubt whether Amaryllis vittata ought to be shown in a collection of greenhouse plants. ‡

INSECTS: *H O M., jun.* The caterpillar of the elephant hawk-moth (Sphinx elpenor). *W.—Beta.* The rat-tailed larvæ of the bee-like dipterous insect, Helophilus pendulus, found in drains, privies, &c. *W.—Adoxa.* The little flies found in myriads on the blades of Grass are the Sepeis cynipsea. We cannot account for their appearing in such profusion on the small piece of ground in question. They are harmless. *W.—T C.* The Curculio is the Cionus scrophulariæ. The larva on the Scutellaria is not that of a moth, but of some species of saw-fly. Pray try to rear them or send us specimens. Our largest Tipula is named T. gigantea. *W.—M J B.* It is evident from your letter that the Cecidomyiæ larvæ were not the cause of the diseased state of the pea-pods. The species are very difficult to rear. *W.—Y O.* We do not think these Lachni are ever destructive to full grown trees, but it would be easy to destroy those on small trees by fumigation with tobacco smoke beneath a good-sized para-petticoat. *W. —T L.* We shall be glad for any further information respecting the Sirex juvencus, and are glad to have your approval of our labours. *W.—W S H.* Your Vine leaves are infested by the common thrips. Fumigation and syringing repeatedly are the only effectual means of getting rid of it. *W.—Moschatellina.* The goat moth will attack healthy trees. You may preserve the caterpillars in spirits of wine, or by making an orifice at the end of the body, pressing out the entrails, and then blowing air into the skin till dry. The large ones which formed their cocoons will appear in the perfect state next June or July, when the trunks of the trees should be carefully searched and the moths destroyed. *W.—F A P.* The caterpillars which have so much alarmed the old woman are those of the Death's-head moth. *W.—G M.* The insect found on the bunch of Grapes is the caterpillar of a small moth, Cochylis omphaciella. It is of rare occurrence in this country, although well known in France, but an instance was recorded in our columns last year. *W.*

IRISH PEAT CHARCOAL: *J R.* The Irish Amelioration Society, in Waterloo-place, London, profess to sell it.

NAMES OF PLANTS: *A Lady.* 1 and 11, Lastrea Filix-mas; 2, Ceterach officinarum; 3, Asplenium Trichomanes; 4, A. Ruta-muraria; 5, A. lanceolatum; 6, no specimen; 7, A. Adiantum-nigrum; 8, Lomaria borealis; 9 and 14, Polypodium vulgare; 10, Pteris aquilina; 12, A. Filix-fœmina; 13, Lomaria borealis; 15, Scolopendrium vulgare; 16, A. Trichomanes; 20, Mercurialis perennis; 24, Erythræa centaurium. *S.—Erzeroum.* 784, Centaurea Jacea? 571, C. pulcherrima, a beautiful rarity; 140, 608, varieties of C. caucasica; 243, C. depressa; 520, C. squarrosa; 509, C. cardiformis; 526, C. calcitrapoides.—*L L.* Phlox Drummondi, and some variety of Delphinium grandiflorum.—*W.* Double Achillea Ptarmica or Sneezewort.—*Cymro.* We do not know whether Bullberry and Buffalo-berry are the same; Galega officinalis.—*Usk.* Verbena officinalis, common Vervain, and Ononis arvensis.—*Peripatetic.* It is not a fungus but an Algal called Nostoc commune. Sun, air, and dryness will destroy it; dampness and shade and want of air favour it. Do not use corrosive sublimate.—*O P.* 1, Bæckea Camphorosmæ, thus named because it looks like Camphorosma monspeliaca; 2, Saxifraga flagelliformis.—*J G, Clonmel.* No. 1 appears to be Cuphea miniata; No. 2 not.—*Adelaide.* Would you favour us with the native country of your plant? It is smashed to pieces, and will be difficult to determine.

PAINT: *H S* will be obliged by any of our correspondents mentioning their experience of Carson's anti-corrosive paint for the exterior of houses; the objects being the maintenance of its colour and keeping the interior free of damp; or if any other economical paint can be recommended which will bring about the above results, with the address where it is to be obtained, or the means of making the paint and the method of its application.

PEACHES: *R W Fairbairn.* Your seedling is excellent; but we fear its total want of colour will prevent its becoming a general favourite.

PROTECTED TRELLIS: *τ.* You may now remove the sashes; by exposure to the direct rays of the sun and open air, the shoots, which you say have grown well, will become more firm than would be the case if they were kept continually under cover.‖

RINGING: *A Subscriber.* The reason why ringing brings on fruitfulness is fully explained in the "Theory of Horticulture," and elsewhere. It may be briefly described as depending upon the elaborated sap, out of which flowers are formed, not being able to descend by the bark below the ring, and being, in consequence, compelled to accumulate in the branch above the ring.

ROSES: *W W W.* They can be safely moved during the next three weeks.‡

STOVE AND GREENHOUSE PLANTS: *G G.* Consult the reports of the different metropolitan exhibitions given in our columns during the past summer; they will furnish you with the best information on the subject about which you inquire.‡

STRAWBERRY TILES. We have received three eulogiums of Mr. Roberts's contrivance, one from a neighbour of his at Brixton, and two from ladies, who sign their names differently, and post their letters in different places; but who use language to the same effect, and write upon the same paper, stamped with the same device!!!

THOM'S SEEDLING STRAWBERRY. We cannot accept any authority except our own as to the merit of what are called new fruits, nor can we assist in circulating anonymous newspaper paragraphs on such a subject. With all possible care mistakes may be made; without extreme vigilance there would be nothing but mistakes.

WIREWORMS: *Sub.* Trap them in the manner mentioned at page 261. Are you sure that it is the wireworm which is injuring the roots of your Hollyhocks? ‡

MISC.: *Roderick.* There is no fruit called the Greengage which is not the Greengage Plum. We do not know of any good practical book on English and French measures. You will find the information in Encyclopædias, and we think also in Gutch's Pocket-book.—*A Subscriber.* "Malmesbury" forgot to send his address.—*B.* Your Brugmansia swarms with red spider. Prune it hard in and wash it well with a solution of sulphur and soft soap. ‡

SEEDLING FLOWERS.

FUCHSIA: *H T.* Tube and sepals a good clear white; corolla rosy pink, and perhaps rather small; substance good; a desirable variety.*

HOLLYHOCKS: *Y.* 2, 5, 6, 11, 13, 26, 44, 68, 91, 154, 197, 200, bright crimson; 3, 4, 22, 36, purplish crimson; 15, 16, 31, 115, 199, medium-sized rose; 79, pink varied with white; 50, 63, 89, buff and salmon; 7, 8, 155, good white; 46, 78, sulphur coloured, the latter the best of the two; 130, chocolate; 87, nearly black, but very thin. The above are all worth trying again, more especially the bright crimson kinds; but all of your flowers in their present state are too small to compete with the fine kinds now in cultivation. The other numbers appear to be worthless.‡

PETUNIAS: *G B.* Withered up and quite unexaminable.*

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The Agricultural Gazette.

SATURDAY, SEPTEMBER 7, 1850.

MEETINGS FOR THE FOLLOWING WEEK.

THURSDAY, Sept. 12—Agricultural Imp. Society of Ireland.
THURSDAY, — 19—Agricultural Imp. Society of Ireland.

THE value of science to agriculture does not at all depend upon the results of individual experience. Science is just the knowledge of the things with which the farmer has to do, and the more of that knowledge he has the better will it be for him. And we are happy to say that whatever blunders may have been made in the practical management of the farm attached to THE CIRENCESTER AGRICULTURAL COLLEGE, the natural sciences have been always well taught there. Taking it for granted, then, that all those farmers in its neighbourhood, who now look with a prejudiced eye upon that institution, are already perfect as practical men, they seem to forget that the very things in which they are deficient were always attainable there. Instead of paying all their attention to the farm, with the desire of finding all the fault they could, they ought to have anxiously inquired whether the things they did *not* know were taught upon it.

The idea they hold, and with which many from a distance come, that they shall find a model farm to have grown up in the two or three years during which Cirencester College has been in operation, is absurd to begin with; yet with all the untoward circumstances it has experienced—frequent change of management—occasional uncertainty of capital, and so on—its actual condition is not as it has been represented: the College farm is deficient in certain points only when compared with the picked farms of its neighbourhood—those of Mr. ANDERSON, Mr. BOWLY, Mr. LAWRENCE, and Mr. SLATTER: to put it beneath the general farming of the district is a totally unfounded statement. The spirit which actuates the harsh criticism it receives is both mistaken and impolitic: the one because it assumes and resents a sentiment which has had no part in the establishment of the College, and the other because it tends to the injury of an institution which, were it in thorough exercise and development, would be of great national value. Nevertheless it would be a good thing if this feeling could be either checked or disarmed of its bitterness; and we submit that the likeliest method of doing this would be to separate, in some measure, the farm from the College.

Farmers, whether rightly or not, will continue to hold that the results on the former represent the teaching in the latter; and, until the one is made a paying concern, it will not be believed that the other can furnish a sound agricultural education. It is understood that considerable modifications of existing plans are about to be carried out in the general management of the College as an educational institution. May not the present be a good time to carry out some such plan as we suggest for removing from it all the odium arising from its connection with an unprofitable farm? If free access to the farm were bargained for, it might be let to a skilful and energetic tenant without any loss of its value to the school: and a portion might be reserved sufficient for any experiments which the Professor of Agriculture might consider it for the advantage of his pupils to perform.

We understand that the number of students at the College has lately declined, and some think it might be more useful as an agricultural school. And it has been suggested that there is ample room for the co-existence of two departments within the institution—an upper school, or the College, at the present charge or a higher one, as 80*l.* per annum—and a lower or agricultural school kept quite distinct, at a charge that will bring in the sons of farmers at as early an age as from 10 to 16. However this may be, and whatever the ultimate fate of the institution, surely the circumstances out of which this decline in its usefulness has arisen admit of alteration—if it be wholly owing to misconception and torpidity on the part of the public, that admits of removal; but we believe that the necessity, now so generally acknowledged, that practical skill in the performance of agricultural operations is an essential part of agricultural education; and the feeling prevalent, whether it be just or not, that the skill of the teacher is indicated by the annual cash balance of his farm management, are among the most influential of the causes that have led to this result.

CHRONICLES OF A CLAY FARM.

(SECOND SERIES, No. VIII.)

THE concluding words of the conversation which had taken place (oh dear! what a long time ago!), between my worthy guest and myself over the breakfast table gave us both an inclination to go and look at the ploughing. A Wheat stubble which had been just drained was being broken up, for the next year's Turnip fallow. It was a stiff and rather thin soil, which had, to my long remembrance, been year after year suffering a continual loss, of that kind denoted by a deposit of fine sand at the bottom of each furrow, against the lower headland, from the silting away of the lighter particles of soil with the surface water that ran down them. I never used to look at it without asking myself 'How many hundred years has this been going on? and what must be the amount of deterioration of texture (to say nothing of loss of manure), which this field has suffered in the aggregate? Query—Would it be as stiff a soil as it has now the reputation of, if it had not been always parting with its sand by this continual process of superficial *scraping?*' When I came to drain it, I found that my suspicion was correct. Every here and there the subsoil was chequered by little 'pots' of pure sand, embedded in red clay, and so full of water that the drainer was obliged to tap them carefully to prevent large masses breaking off and rushing down with the fluid that burst out of them when the sides were cut through. The effect of the drainage was already most remarkable. The workmen called it 'beautiful;' and though nothing can present a more dreary look than a fresh drained field with all the cold varieties of subsoil lying exposed along the lines of the drains, I could not help feeling the truth of the expression applied as it was *prospectively* rather than to the actual scene before the eye. It was 'beautiful' in the same sense that many a rough-*looking* act, and many a painful soul-subduing thought, and many a rainy day of life's adversities, is 'beautiful'—by its consequences; and I always liked the word, so pregnant with faith in what is unseen except by the mental eye, that 'views the Future in the Instant.' Inexperience or ignorance would have called it intensely ugly, and would have preferred the previous smooth surface of the field, dank, cold, and intractable as it was before. What a pleasant effect upon the broad field of society it would have, if a few furrow-tiles could undermine some of the cold stiff surfaces one meets with here and there, through which nothing penetrates—in which no gentle plant takes root—while the lighter and better particles Nature originally gave, keep silting away, as life advances, leaving nothing but a hard and chilly surface growing colder and more impassive every day to all the genial influences which shower warmth upon the heart that will but expand to and accept them.

"Well! You *are* a-going deep to be sure!" said Mr. Greening, following the fresh-turned furrow and picking up an antediluvian lump of subsoil now and then, and crushing it between his fingers. "Why there's plenty of sand here: this 'll be mild enough for anything presently; you don't call this a stiff soil?"

"It has lain like a stubborn brute that wouldn't rise, for work or play, ever since I have known it. It won't know itself next year! It has never borne Turnip or Barley, since the Flood—which, in fact, it has never recovered, I suppose, till the draining-tools have bled it in this way. How little one can say what a soil is, till it is drained!"

"It does one's heart good to look at it now, however," replied Mr. Greening; "does'nt it make you *happy*-like to see this sort of change, and feel that you have done it? it does me."

"So happy, that at the end of a winter's day of draining-work I have sat for hours of delicious idle reverie, with the Lamp wasting beside me as I sat alone, dreaming the day's work over again; seeing with closed eyes, the long pent-up poison oozing away down its narrow channels,—poison no longer! and thinking of the future showers that will percolate and filter through the loosened soil and subsoil three or four feet deep, like some freed and gladdened thing, doing its bounteous Maker's bidding. I hardly know how to describe the sense of high privilege the thought brings with it—of being allowed humbly to aid, as it were, in Nature's glorious development. I know of no pleasure that surpasses it—or should surpass it—except one—except *one*—except ONE!"

"Goodness help us! why that's *three!*—And what may it be, after all, that lifts the knocker so many times for one visitor?"

"Look here, Greening! do you see that poor fellow cracking his whip over the horses in that lounging devil-may-care fashion? It's his first year at plough: he was 'kipping craows' for the last two or three. Isn't that a proper amusement for a thing with a human skull, and a real live human brain inside it? That's a promoted scare-crow! Does'nt he look happy?"

"Well! he's a right to do. He's doing his duty, is'n't he, as well as you and me! You can't do without him."

"Ah! yes,—yes! that's the answer. He's a machine——, driving a machine."

"Well—no—not exactly that, neither. They tell me a plough *a'i'n't a machine.* Come, I have you there for once, however. A plough's only a tool."

"True, true: a tool worked by horses, and dragging a man after it. You never spoke truer, Greening! And here we are somewhere near the middle of the nineteenth century, and talk of agricultural *improvements!* It shames me to think of it."

"What, ashamed o' the plough! O dear, dear! Well, I a'int, and never was, nor never shall be neither, that's *more*."

——"Too much, a little bit. How do you know you *never will be?*"

"Not however till something—— Oh, ho! I know now what you're after. *You're* a-driving now! Ay, ay! Now I think of it—they tell me you're always a-driving somehow against the plough. Well, what's the matter with it? So long as it's a good un, mind! Come now, I should like to hear from your own lips what you've got to say agin' it. I can *not* understand them books, so it's no use trying; and I *do* try, that's a fact; bnt as sure as I get half way down a page I go to sleep. A lot o' Chemistry and stuff! I'll back Common Sense agin' Chemistry any day. But I *should* like just to hear you on a bit about the plough—I think I could understand that; but you must please keep the words *close-cropp'd* you know—*no raspers!* A farmer's words should be like his hedges, I always think—plain and short and smooth-like, and not too many of 'em! and then they *may* help to 'fill the bushel' after all, p'rhaps. But about the plough—I beg your pardon—you was a saying something ——"

"No, no! go on, Greening! I like to hear *you.*"

"Well, I've done, i'faith! clean *out*, like. I'm your listener for half an hour—more, if you can spare it."

"Can you promise that? I've had many a useful hint from you—Could you sit and listen to my nonsense now, just for half an hour, straight on end—no snoring allowed, mind!—and what if I were to *read it*, instead of speaking? Now don't be frightened! it isn't a book—only a few sheets of paper poked away in a drawer somewhere, and scribbled over: fancy it a long letter from your ever affectionate brother beyond the sea, or a notice from your landlord that he's going to lower your rent, and giving all his reasons for it. Don't you think you could keep your eyes open?"

"Well, I think I could. But I hope it's in 'words of two syllables:' that's all I bargain for; and I'm your man, *now*. No time like present time!"

A few short steps homewards; a long rummaging over a drawer of papers; a great deal of settling down comfortably in arm-chairs; and, I'm afraid, a couple of cigars, followed this sudden resolution; and Mr. Greening looked wide awake, as the other casting his eye rapidly down the pages of a manuscript, which looked as if a swarm of spiders had crept out of the ink-pot and been playing at leap-frog over the paper—cleared his throat and began reading his

'Private notions on Cultivation.'

'There are three kinds of 'power' employed by man. The first is *manual* power, the second is *animal* power, and the third and most recent, is *mechanical* power. Each has its own peculiar *mode of action*; and refuses to adopt that of either of the others. The power of a man, from his erect figure, and the direction of his spine, acts most effectively in *lifting*. When he works at a winch, his greatest force is in lifting the handle from its lowest point in the circle, to about half way up. In pulling at the oar, or towing a barge, he inclines his figure so as to adjust it as much as possible in a direction perpendicular to the stress. In digging, he lifts the soil more than the plough does, and in pressing the spade into the ground he still employs perpendicular force, limited only by his weight. Manual labour is in fact most powerful in *perpendicular* action.

'But when the man gives up the spade, the hoe, or the flail, and employs his horse to cultivate or thresh for him, a new application of power becomes necessary. The back-bone of a four-footed animal is *horizontal*, not perpendicular, to the ground: and the adaptation of the power must be accordingly. The horse cannot *lift* and *press* the implement of cultivation, but he can *draw it along*; so the spade and the hoe are turned into tools of *traction*, and are *drawn* through the soil, raising it with the spiral wedge-like action of the plough, very damaging to the subsoil upon which the whole stress and hardening pressure come, but cheap and expeditious compared with the spade, so far as regards the mere *inversion*, or partial inversion, of the soil; though doing little towards its *cultivation*. Again, in threshing, the application of the horse's power must still be horizontal, like his figure, and his work be done by lateral pulling. The direction of animal power, in fact, is *horizontal*: and horizontal *traction* is the only form in which it can be applied.*

'But traction is not *necessary* to cultivation, nor is it even desirable. The plough, the harrows, the scuffler, and the horse-hoe, are only processes rendered necessary by the only possible mode of applying horse-power to the turning and breaking of the soil.

'*Mechanical* power is totally different: and has no more business to be applied *to the plough*, than a horse to a spade. When horses have been taught to dig, the steam-engine may perhaps be taught to plough: but nothing will be gained by either; because it is NOT THEIR MODE OF ACTION, respectively. The laws of Matter and of Motion are imperative; and pay no service to the stupid wall-eyed prejudice of man. Mechanical power has many modes of action; but whether wind, or water, or steam, be the driving agent, the favourite motion is the *vertically-circular*. The *horizontal* water-wheel is good, but extravagant, and of limited application; but it is worth mentioning as a singular exception. Where steam is employed, vertical-circular action is almost universal. Instance the steam-paddle, the screw-propeller, the common fly-wheel, the locomotive, the circular saw, the drum of the threshing machine, the steam pump, the Cornish engine, and many others that will occur to the recollection of the engineer. When we plough the sea, by steam, we do it with the circular blades of a paddle: *why not the earth?* When we cut wood into saw-dust by steam, we do it with the revolving teeth of a circular saw; why not the clod into soil as fine, by the *same mode of action?*

'What has the laborious dragging of a plough to do with steam-mechanism, whose mode of action lies in *rapid revolution*, which applied *behind* your locomotive (which must travel forward on the hard soil), could cut a trench a foot deep, and with its case-hardened tines, rasp away the soil from the land side to any pattern of fineness, as easily as a saw can cut a board—taking a moderate bite of six or eight feet wide as it—'

"'Gently *over the stones*!'" said Mr. Greening, suddenly waking up as the door opened and the crash of a fallen tumbler announced the entry of luncheon—"'a bite six feet wide!' my heart! who was it took that, sir! What a happy tite he must have had! What, luncheon a'ready! Well, it's uncommon interesting, I'm sure. Why, you'll be quite an Inventor! It's for all the world like what my little girl reads out to me o'nights from her 'Life o' Columbus'—somewhere in the beginning part, where he talks to himself so, till they all thought him out of his wits. I'm blest if it a'n't just like Columbus, as discovered America.—You ought to take a pattern out, sir."

"Did Columbus *take out a patent*, Greening?"

"Oh my! that's capital! a pattern for America! Well, that *is* a good'un, however; no, no, I guess what he discovered was a little too big for a pattern—'Wide as a world and broad as humanity,' as our parson says—No, no! he died quite the wrong side o' money-making, now I think of it.—But I wish you'd a' *talked it*, now, instead o' *reading*: for somehow the soft back of this chair o'yourn, and that—what was it—*piping-Dickler*—oh, dear; what a word that was; it sent me right off wool-gathering—I knew it would! I just shut my eyes to think it over a bit—and I was off like a shot. What *is* the use o' them long words—theyre just for all the world like the Spanish onions,—ha'n't half as much flavour in 'em as the little uns. That's what comes o' travelling abroad now! Blesh ye, them Romans and Antidaluvians as you 'a' been amongst, do'nt know no more about farming than a lot o'cockney tailors, for all their long words. Now do, sir, just try if you ca'nt *slice it up* like, into small words, so that a plain Englishman can understand it—"

——"And make it so plain that every one as he reads shall *think he knew it before*. Ah! that's the way to write—and talk—is'nt it, Greening! Well—come—We'll talk it over in plain English after luncheon." *Talpa.*

* Except in the case of a turnspit dog, or a squirrel in a cage, where it is applied to *generate* circular motion.

ON SHELTER FOR DUNGHEAPS.

Having within this day or two received the Journal of the Royal Agricultural Society, and although time has not permitted me to peruse it carefully, I have, much to my regret, observed a passage in Mr. H. S. Thompson's report to Mr. Pusey on the "Essays on Farm Buildings" wherein he disapproves of covered depôts for manure. I have not the pleasure of knowing who Mr. Thompson is, but from his address to Mr. Pusey, I suppose him to have been conjointly a judge of the merits of several essays for a prize on "Farm Buildings;" he must therefore necessarily be considered a high authority, and any *dictum* going forth publicly from such a person cannot fail to influence the opinions at least of that part of the agricultural community (and its name is unfortunately legion) who have not given a fair trial to roofed receptacles for manure.

Had Mr. Thompson been present this spring when my manure was carting out, and had he further witnessed the effects of it on my Turnips, some of them 700 feet above the level of the sea, and none under 600, on inferior land, he would indeed be a perverse man if he still maintained and continued to promulgate what appears to me to be a mischievous dogma. Inasmuch as Mr. Thompson appears a teacher in and contributor to the Journal of the Royal Agricultural Society, I submit to him as a legitimate question whether the opinion which he has so positively enunciated, is the result of a fair trial under his own immediate inspection, or whether it be founded on the information of any person or persons in whom he places confidence, who have given a fair trial to so important a matter. Meantime I will venture to submit my own humble opinion as antagonistic to his, however conscious I may be of the little weight it will necessarily have, in comparison to that of a person chosen by the Council of the Royal Agricultural Society to be an umpire in a question so vitally important not only to agriculturists but to the nation at large—"that of the best mode of constructing farm buildings."

It certainly does concern the Council of the Society to be cautious how they give forth opinions, which may mislead both landlords and tenants; and that the opinion which goes to discountenance the erection of a roof over a midden stead is an erroneous one, I can myself from the experience of years most amply testify; but then, I am met by the weighty authoritative sentence of a selected judge, whose fiat it may be deemed presumptuous to question, more particularly when the attempt is made by a novice like myself, whose proper location is on the great waters.

Who, with an eye in his head, and gifted with a particle of the reasoning faculties generally vouchsafed by a kind Providence, can help lamenting the wasteful mismanagement of manure on most farms, and more particularly on those of farmers who all their lives have been brought up to nothing else but agricultural employment, and who follow undeviatingly the practice of their fathers? What was more common than to see what ought to be manure exposed on an eminence to the alternate heats of summer, the blustering winds, the drenching rain and snow of winter—its essence wasting its fragrance in a puddling horse pond, or working its devious course to a running stream? Does this not require reform? and what reform more appropriate than by the erection of a roof to protect the manure from the vicissitudes of the weather—sinking tanks to receive the liquid from the stables, cowhouses, and piggeries, and at least weekly, pumping it on the mass which readily absorbs it—causing no undue fermentation, and helping to consolidate the whole, as it daily accumulates by the continual addition of strata, thus converted into fertilising substances. Such is the common practice at Gilgarran, not long since noted as the most sterile spot in the county, but now producing crops equal to any in it.

When I first commenced roofing my middens I had to contend with the jeers of my neighbours, and the deep rooted prejudices of my own people, who foretold an absolute failure and wasteful expenditure. But what say they now? That the manure when cut into has the appearance and consistency of the blackest peat moss, and that the improvement in it the very first year paid for all the expense: and so has it been as respects my stackyard, which has for several years been permanently roofed. Great was the discouragement offered to me, whilst this operation was in progress; but how stands the case now? It is visited from far and near by our most distinguished agriculturists, and their praise of it and my middens are unqualified. Several spirited gentlemen are adopting my plan; and yet, when a model of my stackyard was presented for their opinion to the sage judges of one of the annual Royal Agricultural shows a few years since, they did not deem it worthy of any other notice save that of their scoffs and jeers; thus dealing "a heavy blow and great discouragement" on an improvement which has elicited the unbounded plaudits of all who have seen its practical beneficial workings. I am forced to this egotistical vindication, in order that my own humble opinion, founded on strictly practical experience, may, so far as it can have weight, encourage enterprising men to adopt improvements in a great national interest, which all avow is so lamentably in the rear in this respect of other interests which do not so materially concern the public weal. Albeit that this vindication be opposed to the opinions of men of high sounding names, who perhaps may not have given a personal practical fair trial to experiments, which they nevertheless undertake authoritatively to write down. *James Robertson Walker, Gilgarran, Cumberland, August* 20.

THE SOIL AND THE AIR.

A Village Lecture.

(*Continued from p.* 507.)

Let me furnish other proofs of the fact that most of the bulky part of our plants is derived from the air: I have already proved it by showing that there is no other source except the air from which a plant can get its combustible part, and there are two other ways in which I can prove it—I can show you that the air is heavy enough to render it very likely that it contains enough of substance to grow plants of, and I can show you that it actually does contain the very things on which plants feed.

Why has the soil been always supposed to furnish the substance of plants? Is it because there is enough of it—good heavy stuff, that you might suppose able to build up heavy substantial plants and trees? Why the air surrounding the earth is at least 20 times as heavy as all the surface soil surrounding the earth—even supposing it to be on the average 12 inches deep? Though it is so easily moved through, the air is heavy enough, I can tell you. There are 15 lbs. weight of it resting on every square inch of ground. The whole atmosphere of the globe weighs as much as a ball of lead would weigh, though it were 60 miles in diameter. You can judge in some measure of the weight of the air by the way in which it will stretch a sheet of Indian rubber extended over an open jar fitted to the plate of an air-pump. If it were held at the four corners, and weights piled upon it they would stretch it, and if heavy enough they would break it; but if it rested on a stool they could not. Just so the air above it cannot stretch it now, because it rests on the air beneath: but remove the stool and the weights will stretch it: remove the air beneath, as can be done by this pump, and the air above will stretch it and burst through it.

But we can actually weigh the air. Take a bent tube, 3 ft. long, filled with quicksilver, and invert it. Why does the liquid metal stand 30 in. higher in one leg than in the other. If the air were pressing on both ends alike, it would stand at a common level in both branches of the tube; the reason why it is standing so high here must be because there is something pressing on the one surface which is not pressing on the other—the reason why it is standing so high in the one side is because the

air is pressing only on the other. The fact must be that the weight of the air pressing on the surface of the metal in the one leg of the tube is just the same as the weight of quicksilver above that level in the other. The air is supposed to be 45 miles high, and I say that supposing this tube extended 45 miles high to the outside of the atmosphere, this leg would contain the same weight of stuff in it as that, or else the balance would not be maintained. This is in fact a balance, weighing whatever is put into one leg of the tube by the height to which it will raise the quicksilver in the other; the air pressing here raises the quicksilver there to a height of 30 inches; that is, the weight of air pressing on every square inch of the earth's surface is the same as if 30 inches deep of quicksilver rested on every square inch. Now, 15 lbs. weight of quicksilver would rest on every square inch if it were covered 30 inches deep with it, therefore 15 lbs. of air rest on every square inch of the earth's surface. If I let the air in on this end again, you will see that the quicksilver (now bearing an equal weight of air on both sides) will regain the same level in each side; so that this is in fact a measure of the weight of the air.

When made in a more portable and elegant form it is called a barometer, from two Greek words which signify a measure of weight; and the height of the quicksilver in the tube indicates the weight of the air which presses it up; and as dry air weighs heavier than damp air, when the quicksilver sinks in the tube we anticipate wet weather, and so this tube becomes a weather glass, and when furnished with a float on the surface of the quicksilver it pulls round an index figure on a dial plate, and points to rain, fair, stormy, and so on; and this is the principle on which your weather glasses act. Well then we have just the same weight of air around the globe as if the surface of it were covered 30 inches deep with quicksilver, and that is as heavy as 12 to 20 feet of soil would be; and if you were never astonished at the 8 or 10 inches of soil being able to grow repeated crops of Grass or corn or trees without wasting away under the process, surely you ought not to be astonished at the air, which is 12 or 20 times as heavy, being able to do the same thing. The leaves of the tree do not indeed stretch through the whole air in search of food, as their roots do through the soil; but then the winds are continually mixing the particles of air up and bringing fresh ones to be fed upon by the foliage of the plants and the trees, so that *that* ought to be no hindrance in the way of our believing what is really the truth, viz., that plants get everything in them which will burn up from the air, and only their incombustible part —their ashes, which will not burn, away from the soil.

But now I will prove to you that the air really does contain, in the midst of it, the very particles of which wood is composed. I have here a piece of wood dried at a red heat, under circumstances which hindered it from taking fire; it is a piece of charcoal in fact, which is nearly all that remains of the wood after the water is driven out of it. Now, I say that the tree got this charcoal from the air, first, because it could not get it from the soil, which has not anything like enough of the stuff in it, and the air is the only other thing which the plant could get at to get it from.* Secondly, because the air is heavy enough—has matter enough in it to supply many such trees or whole forests, if they were wanted, from it—for it is many times heavier than the soil from which people generally think that such trees and plants do come. And, thirdly, I believe the tree gets its charcoal from the air because the air is not only heavy enough, but it contains the right things too; it contains the charcoally particles of this black substance present in it, as I shall now prove.

Take a jar full of oxygen gas; it is not common air, though air contains it, and it is to the oxygen that the air contains that it owes its ability to burn things, and its ability to maintain respiration—the breath of life in living animals. In the air this gas is mixed with another called nitrogen, which dilutes the former so as make it fit for the ordinary conditions of human life; were it not thus diluted it would be much too violent in its action. I have here a jar full of it, and you will see that it makes use of the least spark to produce a flame; so that if the air were pure oxygen every spark would end in a conflagration.

I shall burn this piece of wood in this oxygen gas. Now, on removing the wood I find a portion of it has disappeared—it has burned up—it has united with the oxygen gas, and is now in this jar in the form of a clear gas. The gas is of very different properties now; the oxygen gas being satisfied by union with the charcoal in this way has no longer any appetite, so to speak, for union with other things of the same kind; it will not now unite with the substance of tallow, and consequently so far from encouraging that chemical action which is productive of flame, it would extinguish flame immediately on its being brought in contact with it; and therefore also, so far from encouraging that chemical action which goes on during the respiration of animals, and to which the healthfulness of a fine bracing air is owing, it extinguishes that chemical action at once, and would choke any animal that fell into it; but to this point I shall refer again.

* The argument merely proves that all the carbon in vegetables came *originally* from the air. It does not determine what proportion of any particular plant came from the air, and what from the soil. In the early stages of its growth the plant derives a good deal of its substance from the soil, and some of even the carbonic acid of the air it may absorb through its roots. To supply the land with organic matter, in the art of cultivation, is necessary, not merely for the mechanical effort thus exerted on its texture, but for its use as food in supplying the plant with a portion of its organic part.

Now, if I prove that the air contains this gas, the carbonic acid gas, as it is called, which contains the charcoally part of wood, then I shall have proved that the air contains the very substances which we find in trees and plants, and which they take from it in the act of growth. And this is the way in which I prove that. The carbonic acid gas is recognised not only by its extinguishing flame and destroying life, but by this curious property, that when united with lime it forms a chalky insoluble substance; so that if I pour some clear lime-water into this jar of it, and shake it up, to induce the lime of the water to unite with the gas, it will become white and milky in appearance, owing to the formation of this chalky insoluble substance, as you see. Now, if I can pass a quantity of common air through some lime-water, and the lime-water originally clear becomes milky in this way, it will be because it, too, contains carbonic acid, and I shall thus have proved that there is in the air a gas which contains the very particles of charcoal which our plants and our trees require for their growth. Of course the air contains a very small portion of it, not so much as $\frac{1}{1000}$ of its bulk, because if it contained much it would destroy life instead of preserving it; and I must, therefore, employ an apparatus which enables me to draw a large quantity of air through a small quantity of lime-water; such an apparatus, in fact, as I have here, where the water below falls out and pulls the air in after it through the lime-water in this crooked tube; and you see that though clear before it is muddy enough now, owing to the formation of chalk in it, or carbonate of lime; and I have thus proved that the air contains the carbonic acid gas which was necessary to form this chalk, contains charcoal—contains the substance of our plants and our trees.

The air then contains charcoal, and gives it to plants. The fact is, that carbonic acid gas is a compound of charcoal and oxygen, you saw it formed when I burned the charcoal in the oxygen; and the fact is, that in the sunshine plants absorb the carbonic acid, take its carbon or charcoal, and give back its oxygen pure to the air. But before you can see the beauty of this process, for it does appear a really beautiful thing when rightly understood, it is necessary for you to know the properties of these two gases. Carbonic acid gas is "choke damp;" it sometimes collects in old wells and pits, and would then kill any one who enters them. It is heavier than common air, and so sometimes collects in deep places. There are places where this gas accumulates on the surface of the earth. There is a valley in the island of Java, in the bottom of which there is a spring of this gas, and accordingly the valley is a lake of carbonic acid gas, and it is, in reality, what it is called, the Valley of Death. Travellers who have visited it describe it as an utterly barren basin, with a rim of remarkably luxuriant vegetation, and the skeletons of animals cover the ground beneath; they had wandered in, been choked by the gas, and died. There was a skeleton of a man lying a little way down the slope; he had unwittingly entered the fatal lake of air, been intoxicated by breathing it, for it is a narcotic poison, and lying down, had died. No one dared venture to enter the fatal air to help or to recover a friend without the certainty of sharing his fate.

Now, wherever oxygen is uniting with charcoal, it is forming this deadly destructive gas; and every fire that burns, and every dungheap as it rots, and every breath that is drawn, is simply a uniting of the charcoally substance of wood or coal or straw or food with the oxygen of the air, and is constantly giving out carbonic acid gas. And the air, though it contains but little proportionally, contains a great deal of this gas actually. There is but $\frac{1}{1000}$ part of the air that is carbonic acid gas, but then there are 42,000 tons of air resting on every acre of the earth's surface, so that there are actually 4 cwt. of carbonic acid gas—a quantity containing 1 cwt. of charcoal—in the air over every square perch of ground; and this of course increases with every breath that is drawn and every fire that is burned, so that we might suppose in the course of years the atmosphere would become loaded with this gas, and animals would be unable to live in it; and no doubt this would ultimately be the case, for besides the fires which are thus making the air unfit for animal life, animals are rapidly making it unfit for themselves. Each of us gives out carbonic acid gas with the air we breathe—our lungs are in fact a little fireplace within each of us, where our food is in great measure burnt up, and our windpipe is the chimney by which the products of that combustion are sent into the air. It is in this way that the heat of the living body is kept up, whatever the coldness of the air. Whenever carbon unites with oxygen gas, heat accompanies the chemical action, and whether it be the coal in our fireplace or the straw in our dung-heaps, or the tallow in our candles, or the food in our bodies—the union of the oxygen of the air with the charcoal they respectively contain produce heat—heat in proportion to the rapidity of the process of union and the quantity of carbon in the fuel; and so in order to increase this heat, and induce the oxygen to combine rapidly with the charcoal, we build chimneys to draw the air through the furnace, or we turn over our dungheaps to cause the air to mix with them more thoroughly, or we run about and take exercise in order to breathe the faster; and so the furnace gets hotter, and the dungheap heats more rapidly, and we get warmer: or perhaps the heat is increased by using substances which contain more charcoal to unite with the oxygen gas, and in this way coke makes a hotter fire than wood, and oil or camphine a brighter heat than tallow; and for this reason, too, the Esquimaux of the arctic regions eats enormous quantities of blubber, while the inhabitant of the hot countries of India and China lives sparingly upon Rice. The heat in every case is proportioned to the quantity of charcoal which can be got in a given time to unite with the oxygen of the air; and so the cold-country man makes a perfect oil lamp of his lungs within him, and takes boisterous exercise to keep the bellows blowing, in order to preserve his warmth; while the hot-country man of placid temper and sluggish movement eats sparingly, employing less fuel because he loses less heat.

Now, I must not forget that I ought to be referring more especially to the fact that all these people and all living animals are loading the air with the poisonous gas which comes up through the windpipe chimney from the furnaces burning inside them. But let us still further digress for one minute, just to point out the fact which thus appears, that a large portion of the food an animal eats is in reality wasted—spent as fuel—burned up within it, just to maintain its bodily heat. And the farmer might take a hint from that; of course if his feeding cattle or sheep are exposed to cold and rain, they will need to burn more fuel to keep the heat of life within them. Keep them warm artificially, and less of the Turnip and hay which they eat will be burned up within them; keep them quiet in stalls or boxes, instead of in yards or fields, where they can run about, and the bellows will not work so actively, and the fire will not burn so fiercely in their lungs, and less of the food will be spent in the mere act of burning as fuel—more will be available for the purpose for which food is given, *i. e.*, for the formation of fat and the promotion of growth. It is not unfrequently the case that a lot of sheep, folded out in cold weather on the Turnip-field, gain no flesh at all. The fact is, every bit of food that is eaten by them is burned up within them just to preserve animal heat, and the farmer might just as well have thrown it all into the fire at once; but house those sheep, or feed them in sheltered yards, where they lose heat less rapidly, they will not need so much fuel to keep themselves comfortable, and some of their food will form flesh.

But now let us return to the fact that the air is being poisoned by all this breathing and fire-burning. You will find that a very little breathing through some lime water will make it muddy enough, proving how much more carbonic acid, and how much less oxygen, there is in the air that is breathed out than in the air that is breathed in. The fact is, the air we breathe out contains 100 times more carbonic acid than the air we breathe in. A man by the union of the air he breathes in with the carbon of his food in his lungs spits out in his breath in this way in the course of a year about 1½ cwt. of charcoal, as much indeed as there is in a sack of coals. Indeed the quantity of carbon or charcoal thus added to the air every year by the breath of all the animals, human or otherwise, in Great Britain, is estimated at 2,000,000 tons weight.

Well then the air would very soon become unfit for man and other animals to live in, were it not for the beautiful arrangement that as carbonic acid gas (CO^2) is sent into the air, plants remove it. As fast as charcoal in fires and candles and in food is uniting with the health-giving oxygen of the air, and forming the deadly CO^2, the plants are decomposing this carbonic acid, and taking the charcoal forming their own selves out of it, and giving back the health-giving oxygen pure to the air again; so that thus the air is maintained fit for use. It is only in the daylight or sunshine that plants have this power however, and you know that if you want to blanch a plant, a Rhubarb plant for instance, *i.e.*, hinder it from becoming woody, *i.e.*, hinder it from decomposing the CO^2 of the air, and so obtaining charcoal to form wood, all that you have to do is to keep it from the light. And again, if Wheat is too thick and luxuriant in spring time, so as to hinder the light from getting in upon its stems, those stems will be unable to decompose the CO^2 of the air—they will be unable, that is, to procure charcoal to make them hard and woody; they will be white and succulent, without strength, and liable to be laid by the rain; but mow those top leaves off, or let a lot of sheep bite them off, and you let the light in upon those stems, and they will regain the power they had lost, and they will strengthen and harden in consequence of again being able to procure their woody substance from the air. But that they can decompose the carbonic acid of the air, and, retaining its charcoal, give off the pure healthy oxygen, can be proved. I have taken a number of Cabbages, one after another, on successive days, cutting them about midday, when they might be supposed to be full of the gas, if ever they took any at all, and exposed them under water to the sun. Very soon bubbles of gas collected in the top of the glass, and on examination they have proved, by their ability to burn things brilliantly, that they were pure oxygen. Those Cabbages had been collecting the deadly gas as I and you were breathing it out, and as every chimney over a fire was sending it into the air, and they were decomposing it and sending the healthful part of it back to the air, and keeping the charcoal to themselves. See, then, how important the air is to plants, as well as to us; it provides them with all the woody part of their substance, it provides us with the breath we live upon and the fires that warm us. See how important the process of combustion, whether slow as in the case of ordinary decomposition, or more rapid as in the case of respiration and ordinary burning, is to plants. Unless in this

manner the air was continually supplied with this poisonous gas, plants might exhaust it of all the materials on which they feed and live. See how important plants are to us; they keep the air healthy for us, deprive it of those noxious gases which would otherwise soon collect and destroy us, forming their own substance at the expence of our enemy; so that the very thing which would destroy us is made to provide us with food and with fuel through their means. See, too, how admirably the growth of evil in the natural as well as in the moral world, is checked and made productive of good in the end, by the overruling hand of God's providence.

Thus much, then, we have learned regarding the air in connection with agriculture; it provides the plant with its woody substance, it keeps up the warmth of the living animal by burning a portion of its food in its lungs.

(To be continued.)

POULTRY MISCELLANIES.

4. The Feeding of Fowls.—Although a writer, having once sent forth his performance to the public, acts more wisely, as well as in a more dignified manner, by abstaining from all notice of the criticisms that may be offered upon it; still, some explanation may without impertinence be given to the readers of the *Agricultural Gazette*, why the statistics and calculations respecting poultry-feeding, required by a correspondent signing himself "Tau," were omitted in a recent publication. A courteous and reasonable demand, like his, deserves an answer.

One reason was, that no *general* rule as to the most economical food for fowls can be given, which shall be equally applicable to all circumstances and localities of Great Britain and Ireland. Thus, I am informed that in the West of England, Indian corn can often be purchased at such rates as to make it a cheap article of poultry diet; such is not the case here in Norfolk, though Rice may be often advantageously used. There is no doubt that each of the large sea-ports, such as Liverpool, London, Bristol, Glasgow, and Cork, offer some particular advantage of the kind to their neighbourhoods, if it be inquired after. Then, farmers have their tail or drop corn, which town residents can hardly come at, and which can scarcely be said to have a market value belonging to it. Millers have an unavoidable waste and amount of droppings, which can be saved from being utterly lost in no way that I know of, except by keeping poultry and pigeons to pick it up. So, it *is* saved and converted into money's-worth; but any professional valuer would be perplexed to put a value on it, which should go safely into any statistical tables and be quoted as an authority. Again, supposing that there were only *one* article of grain or other description of food on which poultry could be fed, and that of unvarying price all over the kingdom; still, the proportional amount of hand-feeding required by an equal number of fowls varies greatly, according to the circumstances of their owner. A head of 50 birds kept at a suburban villa, with high-dressed gardens and little other elbow-room, will not be able to obtain for themselves the same amount of unpurchased food as the 50 which belong to a small farmer, who has a common in front of his yard and a young plantation at the back. The 50 that are kept on a dairy farm will fare differently from the other 50 in whose master's barn the flail is perpetually going. Cochin China fowls, too, and Malays, will consume different amounts of food from bantams; and to strike an average on a miscellaneous collection, gives, in truth, only the phantom of a precise result. The only way in which a safe calculation of the exact quantity of food eaten by a given number of fowls, is to shut up that given number, *of the same breed and age*, and note what is consumed in a given time. But the experimenter should be warned that the birds, when first confined, will probably sulk, and not eat nearly so much as their brethren at large, and so an error will be admitted that would prove of considerable importance, if the calculations founded thereon were of equal consequence with those on which astronomy, navigation, or even large mercantile enterprises rely for satisfactory results. I have therefore thought it better to give "no account of the average quantity of grain each bird might be expected to consume," than to attempt giving such an account as I feel in my conscience must mislead, if it be made the ground-work of any calculation intended to be generally applicable. The best and most usual modes of fatting various poultry, such as pea-fowl, turkeys, guinea-fowl, geese, &c., have been stated, it is hoped, with sufficient fulness; but it is supposed that every one will and must depart a little, to the right or to the left, from any printed instructions, according as he finds that his own special means may be most judiciously made use of.

To meet, however, the wishes of "Tau," as well as may be, instead of aiming at any union-house-like infinitesimal apportionment of each crumb of provender to each eater, we will give a tolerably full account of our own stud of fowls at the present date, and of the way in which they are fed and managed. If a few other poultry keepers, at distant parts of the kingdom will afterwards send the details and routine of *their* fowl establishments, comparisons may be drawn and a selection from these different methods made, to suit the requirements of any amateur.

It may be premised that my own object in keeping fowls is not mere money profit. If it were clearly proved to me that at the end of the year I lost a small sum by them, I should still go on keeping them, for convenience and amusement's sake; and so would many other country ladies and gentlemen, and clergy. If it could be demonstrated to me that the eggs laid at home cost more per score than what eggs can be bought for in Leadenhall-market, I would still indulge in the home-produced article instead of French eggs 24 for the shilling, just as one would prefer a joint of home-fatted pork, although meat, spelled with the same four letters, might perhaps be bought in a neighbouring city one-eighth of a farthing cheaper per pound. If men want to enter on the business of fowl-dealing and fatting on a large scale, as a trade to live by, let them serve a short apprenticeship, and they will soon discover the most profitable way of proceeding, according to the produce and the demand of their own special locality. But I have never professed to write for this class of very useful persons, who are in general too acute, and too practically experienced, to need much instruction of the kind from books.

Another objection with me has been not to attempt the formation of anything like a *complete* collection or menagerie of poultry—though we have always wished to have plenty, both to observe and to eat—but rather to have a succession of breeds and species continually passing in review through our premises, to have their peculiarities noted, a pen-and-ink sketch of their portrait taken, and then, when what we fancy to be the secret of their life has been coaxed out of them, or shrewdly guessed at, to dismiss them as inconvenient supernumeraries, and replace them with less familiar faces. This mode is more suited to the income, the establishment, and the brains too, of most naturalist poulterers, than to have a vast, over-crowded, unwieldy aviary population, which distracts and perplexes the student as much as it pleases the common starer. There *are* minds capable of threading their way continuously through such a wilderness of interesting objects, and of carrying along with them at the same time a collection of clear and conclusive ideas; but such minds are not the majority, any more than Knowsley or the Regent's Park contain every-day collections. What the Earl of Derby and William Yarrell can do, is not expected to be done by everybody. It is wiser to attempt the performance of a feat a little below, rather than a little above one's powers.

Just now (July 1850), our stud consists of turkeys, geese, ducks, various breeds of fowls, pigeons, with their several young, besides guinea-fowl, guans, a stork, a brood or two of pheasants and partridges, and a few pair of cage birds, altogether about 150 head. At about seven in the morning during summer, those birds which had been shut up in their respective houses the night before are let out for the day. A sprinkling of Barley had been thrown on the floor of each house the previous evening. The geese (to begin with them), are driven into a large, well screened orchard (nearly an acre), that slopes slightly to the south, and contains a good sized pond. Here they have thrown down to them a few handfuls of Barley, as much as is thought sufficient for their gradually diminishing numbers, *i.e.*, about half a quarter of a peck for ten or a dozen geese. This, however, is shared with them by such fowls as choose to fly over the fence and join the breakfast party; the ducks too will frequently creep through and under the palings; so that although two or three additional handfuls may be given on such occasions, still if every handful, or even every grain were counted, no true account could be exactly rendered of the quantity of corn appropriated by the geese. Their principal maintenance is the Grass in the orchard, and we find that during summer they are thus kept in sufficiently good condition to kill into the house. During autumn and winter they require to be shut up to fatten in the regular way. About half this quantity of Barley is given at noon, and again at sunset in the court-yard, when they are driven up for the night at about 8 o'clock.

Our ducklings are kept pretty nearly in confinement, *i.e.*, in coops with small inclosures in front, from the time that they are hatched, till they are about a quarter grown. During this infantile state, they are entirely dependent on the food brought to them, consisting of bread crumbs, mixed Barley-meal, worms, &c. As soon as they are judged sufficiently robust to take to the water, of about an acre of which they have the range, besides open drains and ditches, they are turned loose with their nurse, but are always got home at night. Previous to this complete enfranchisement, they are, of course, disciplined by a few preliminary swims in a large milkpan sunk in the ground. If their nurse be a hen, they very soon desert her and cater for themselves; if a duck, then, under her guidance, they pick up by far the greatest part of their maintenance, costing nothing but the few kernels of Barley that are thrown to them three or four times a day, to keep them in the habit of returning home with tolerable frequency. Now it is impossible to make any calculation of what these birds consume, or are maintained by, that can afford real instruction. I cannot properly enter into any balance sheet the insects, worms, seeds, and water-weeds on which my ducks grow, get flesh, and even fat, although they are all the produce of my own premises. *De minimis non curat Lex.* The law careth not for crumbs and atoms. A farmer who wants to know the exact profit and loss on each duck and hen, would, we take it, be penny, or rather farthing wise, and pound foolish; that is, if his time and thoughts are worth money to him. And what most baffles us, is, that these savings which poultry get from off their walk, to the sparing of the Barley sack, perpetually vary. Thus, from Midsummer to Michaelmas, ducks cost very, very little to keep, where they have a proper range; and so do other poultry. Nature is then most liberal, but when the ground is petrified by frost and covered with snow, it is a different affair. Fowls are then at their most costly time. A calculation of the expense of keeping them at either period cannot but mislead. And as the greater number of ducks do not live six months, their yearly average consumption cannot be taken.

In the same way, turkey-chicks, and common chickens, are with us assiduously fed on their proper diet, their mothers being cooped, and dependent on the grain given them. As the younglings gain strength, they are gradually released; and, when finally turned adrift, have the range of more than 8 acres of lawn and grove, where their mothers and themselves find abundance of nutriment, which, though valuable, cannot be charged in any bill for the maintenance of the growing families. During the time the mothers remain cooped, a person goes round to them as often as thought needful, that point being much regulated by their respective ages, with a supply of suitable food. It mainly consists of hard-boiled egg chopped up with Lettuce and Onions, bread crumbs, boiled Rice (costing 1*s.* 4*d.* a stone) as a variety, Barley and fine pollard either mixed with cooked Rice, or by themselves mixed with a little water, as dry as can be to bring it to a consistence. Little chickens are treated to a few kernels of Wheat. The most economical way of distributing grain is to scatter it on the bare ground, and to give no more at a time than the fowls will quite consume; and we find that the only mode of preventing the sparrows from getting much more than their fair share (their really fair share would be none at all), is to remain with the birds and chicks while they are eating, till they are quite satisfied, and to repeat the visit at a short interval. Young chickens never should go more than two hours at most without a supply of food; for adult birds three times a day is plenty. It does not appear to me that extreme precision in stating the weights and measures of the articles used as food for live stock is so very necessary or expedient. For creatures that have either to work hard, or to grow, or to get fat, a little too much food is better than a little too little. We should prefer even some waste by sparrows rather than see our poultry stunted in their growth, or checked in their moulting, or moping about in ill-conditioned plumage. Full grown guinea fowl that have a range (and they should not be kept otherwise), require no more corn for their maintenance in health and full laying powers, than what they will have when the poultry is assembled by the corn measure at morning, noon, and night. With us, the least profitable birds are, we believe, the pigeons, of which there are about 40. Besides the corn which these get at the general mess, they are entertained with Peas (at the rate of about a peck a week), in their private apartment the pigeon-loft, to which, however, they are not at all confined. They are fed at an extra rate to prevent them from trespassing on our neighbours' fields. Pigeon pies in sufficiency could be had at a less cost, and the sale of choice pairs is not resorted to as a means of lessening the expense of keeping the flock.

The commissariat department of every rearer of a general stock of poultry must be arranged, not as for a regular army, where the men are all of a certain equal height, and are supposed to be of a certain equal capacity of stomach; but as for a mixed multitude or rabble, such as the followers of Peter the Hermit, or a disorganised riotous populace, consisting of old and young, male and female, healthy, sick, and lame. To the entire mass of this feathered band of insurrectionists (and very riotous they do become as the pangs of hunger continue to pinch them), it may be advised that three feeds of corn a day be administered till they are tolerably satisfied. It is an error to believe that poultry will eat corn to repletion; they will turn from that when they feel they have had a sufficiency of it, to pounce upon the fly, drag out the half-hidden worm, or crop the sprouting Grass. The waste of giving corn to fowls consists in throwing them down a large quantity at once, more than they care to have, and then leaving them to themselves, instead of doling it out handful by handful, and stopping the distribution as soon as appetite begins to flag. They should not be allowed to leave a grain. The juniors and the prisoners, and the invalids, must have separate attentions, which we are not expected to particularise here. For poultry that is put up to fatten loose in a small shed (really a good and more healthy way than fatting coops with separate compartments, for we never see a return of the birds which die instead of fatting from this incarceration), for poultry so confined no feeding trough is better than that figured as for turkeys in the "Ornamental Poultry," and a former volume of the *Agricultural Gazette*; but even the degree and kind of fatness expected in poultry is a matter of local taste and fashion. Most country people like a fowl, or a duck, that has been kept at large in high condition, either at the barn-door or in the pond, without any confinement at all; thus making an approach to the edible qualities of game. Londoners prefer birds that have never stirred, except in a dark cellar, nor used their wings, except to help them to a perch 3 feet from the ground, at most. This inaction of the muscles gives a peculiar tenderness to the flesh and unctiousness to the fat, which is much valued by metropolitan purveyors. As far as the digestion of the eaters is concerned, it would be well if the parties could exchange their tastes. The caponish and luscious peculiarity of the fowls supplied by the best London

poulterers, requires a little fresh air and exercise to settle comfortably; while the lightness of the barn-door flesh, if not eaten too soon after slaughter, is more suitable to a sedentary stomach. How hard, then, it is to dictate which is "the best mode of feeding and fatting" when connoisseurs differ so widely as to the result most worthy to be aimed at. *D.*

Home Correspondence.

Ought Farm-yard Manure to be decomposed before Led to the Field? is a question that has been discussed by a farmers' club, of which I am a member, and, by a show of hands, was decided in the affirmative. Boussingault, Thaer, Schwertz, Coke, and others have admitted the disadvantages attending the decomposition of farm-yard manure; yet the turning of the manure heap until, as some farmers say, black butter becomes black snuff, must be familiar to all that have passed through rural districts; and the "rivulet of blackish fluid, which is either wholly evaporated or lost in the ground," cannot be now foreign to their senses. We know, or ought to know, the essence of the manure is contained in the liquid; indeed, if allowed to remain long enough, the whole of the dunghill would run away in a liquid state; so that when practicable, and where attended with pecuniary satisfaction by its efficacious action, a person cannot be sane who would follow the practice of his grandfathers. M. Gazzeri ascertained that horse-dung lost more than half the dry matter it contained in the course of four months. Professor Johnston found, by the time the straw is half rotten, this loss amounts to one-fourth of the whole weight, while the bulk is diminished one-half. To increase its quantity and preserve its quality ought to be the aim of all. Half a yard of rotten dung ought to be equal in its effects to a yard of unfermented dung; yet the latter, when ploughed in in the autumn, has been found to produce better crops on all tenacious soils than the former, weight for weight. Soils of this texture are benefited by the gases evolved during fermentation, and by its opening tendency. "Some have even gone so far as to maintain that fresh excrements were injurious to vegetation. Proofs to the contrary are readily obtained; it is enough to recollect that in the grazing and folding of sheep and kine, the dung and urine pass directly into the ground of our pastures and fields, and who shall say that the land is not benefited by what it thus receives? Unquestionably fresh manures in excess prove injurious to vegetables; but as much may be said in regard to the best fermented dungs." (Boussingault.) Were we not guided by experience, perhaps we should be led to imagine there would not only be a saving of the ammoniacal salts, phosphates, &c., by applying it fresh to the soil, but that all soils would be equally benefited by being thus treated. Not so. The chemical action of the manure will be equally efficacious on light and heavy soils, but this is more than counteracted by the injurious mechanical action. Whilst unfermented dung will prove most beneficial to our clays, half-rotten dung will be most efficacious to soils of a medium texture, and rotten dung to our light ones. Decomposed farm-yard manure is no better adapted for every soil than one man is adapted for every profession. *George Summers, Stoke Wake, Dorset.*

Clover Failure.—Your remarks on my suggestions as to the probable cause of the failure of Clover, has led me to examine this subject more deeply. With our present knowledge on this mysterious subject, we can only avoid those enfeebling processes that tend to weaken the plant, and assist the injurious influences that cause the failure of the crop. This year one case only has come under my observation in this neighbourhood. The Clover in this field was fed too late, and saturated with water throughout the winter. Although I detected Orobanche growing on Furze, not far distant, with its peculiar brown or reddish scales, and didynamous monopetalous flowers—not a trace of it was to be found in this field. When sown, and when standing for a crop, there are few plants that depend so much on the weather for their success. Clover will grow luxuriantly even on sandy soil, in a wet summer, provided they are ploughed deeply, well manured, and in a low situation. I think most people will agree with me, that Clovers are much less precarious, in unfavourable seasons, on soils of close texture—on soils containing a portion of clay with an admixture of calcareous matter—when ploughed deeply, and well manured, than on any other soil. Most modern authorities affirm this assertion, but I trust to my own experience for its exactness. I reiterate my belief—the present culture of many is not deep enough to ensure its successful growth, in unfavourable seasons. These I take to be the causes of occasional failure; but there is a mystery yet to be solved. *George Summers, Stoke Wake, Dorset.*

Anbury.—Mr. J. Mainwaring Paine asks if any of your correspondents have suffered from the finger and toe blight in their Swedes this season. It has been very severe on the lower green sand in this neighbourhood, the stratum to which it is confined. It is prevented by a liberal application of the scrapings of roads made with calcareous gravel. An account of this was sent by me and printed in your journal about two years ago. If Mr. Paine requires further information, I shall gladly give it. *J. Clutterbuck, Long Wittenham, Abingdon.*

Disease in Turnips.—Attention has been directed to the serious losses which the Turnip growers suffer from the disease commonly called "fingers and toes." I have studied the subject for some years, and can corroborate the opinion of the Scotch farmers, that the only cure for this disease is to give the land a bare fallow, or to grow a crop of Potatoes, so that the Turnip crop may occur at an interval of 8 or 10 years, instead of 4 or 5, as usual. This bare fallow, or Potato crop, will protect the following crops of Turnips during several rotations. Lime is useful, though it is not so effectual as the above plan. If the Turnip fields be examined every year, it will be observed that if this system be not adopted, the "finger and toe" disease will spread further and further over the field, at each return of the Turnip crop. The diseased part of the Turnip sometimes contains the grub of an insect; but whether this is the cause of the disease, or the diseased Turnips are a favourable place for the development of the insect, we are unable to say. Such questions as this well deserve the attention of our agricultural societies, especially those which are now in the habit of distributing large sums of money in prizes for cattle; the comparative merits of the different breeds are now sufficiently well understood. Without for one moment undervaluing the benefit conferred upon agriculture by the prizes for cattle, we would recommend that prizes should be offered of sufficient amount to induce men properly qualified by previous study to devote their time to the elucidation of this disease of "fingers and toes," and a host of other similar evils from which the farmer sustains very serious losses. A 5*l.* or 10*l.* prize on this subject would only produce an essay that would be dear at the money; but let 100*l.* be offered, and there is some chance of the question being settled. As an instance of the benefit to be derived from such an inquiry as this respecting the "finger and toe" disease, we may mention that some portion of the Olive crop in France was yearly found to be destroyed by insects. A scientific gentleman was appointed by the French Government to investigate the subject, and by his suggestion (in those districts liable to this insect) the Olives are now pulled just before being quite ripe. The insects at this time have not reached maturity, and the crop is by this means quite preserved. There can be no reason why a similar investigation of the "finger and toe" disease should not be similarly useful. *T. C. L.*

The Cow Parsnip (Heracleum sphondylium).—Allow us to offer a few remarks in reply to your correspondent "Scotia" on the Heracleum sphondylium, and its uses for horticultural purposes. Although a common British plant, yet it is one of the most useful for cattle food, more especially for pigs and cows, which fatten upon it, also rabbits. We have some time since introduced and claim to be the first who suggested its general cultivation on the waste bogs, &c., in Ireland. With a view of confirming our ideas on this point, we have endeavoured this summer to improve it, and estimate its value, by the test of cultivation, from its seeds; and we are glad to say our expectations are fully realised; so much so, that we have obtained an extraordinary amount of green food from a small space of land. By judicious management it may be cut three times a year, as Lucerne. Its seeds must be sown in autumn or early spring, as it requires to lay a considerable time in the damp soil before it germinates. We shall feel pleasure in answering any of your inquiring correspondents relative to the improvement and cultivation of this native plant. Enclosed is a packet of our cultivated seed for your acceptance. *Hardy and Son, Maldon, Essex.*

Allotments.—Sir Arthur de Capel Brooke, Bart., has in the parishes of Great Oakley, Cottingham, and Middleton, 350 acres of land occupied by 170 tenants. The quantities of the holdings vary from 20 poles to 2 acres; but the greater portion are half acres. The smaller allotments, as roods and half acres, are either dug or forked with a strong three-pronged fork, 14 inches long and 8 inches wide. The acres are ploughed. The produce on those which are dug or forked were from 6 to 8 quarters last year per acre. The Wheat crops on these allotments this year are exceedingly good, but I do not think the quantity will be so good as last year. The heavy crops are much beaten down by the heavy showers. I observed both this and last year the best crops upon these allotments were produced from those plots which were dibbled with from 3 to 4 pecks per acre. The forward-sown Barley is also good. The Peas and Beans are partially injured by the fly. The Potatoes are much worse diseased than last year. It may not be improper to state that the crops now growing upon these 350 acres will be equal if not superior to any growing on the same quantity of land in this country respecting quantity and quality, when it is considered that 10 years ago this portion of land was woods in Rockingham forest, thickly planted with timber and underwood. The vast change that has been effected by the industry of the people in bringing the same into such a superior state of cultivation is praiseworthy to them, and must be a great satisfaction to the worthy baronet. *Jas. Miller.*

Law Agents and Land Agents.—I have, like your legal correspondent, been a reader of your Paper for some years. I have also, like him, derived a great deal of pleasure from the perusal of it, but from no part of it more so than from the remarks which have occasionally fallen from your pen upon the disadvantages of employing lawyers in the management of landed estates. Your correspondent may certainly be an exception, both in himself and his experience, but the comparisons which he makes use of far from illustrate with fairness the respective merits of law agents and land agents. I will, without going generally into the subject, touch upon two or three points upon which your correspondent founds his argument. He contends that a knowledge of the value of land is the mainspring of the existence of a country lawyer, and that he naturally acquires that knowledge from the duties which accrue to him in that capacity. Those who are practically acquainted with the occupation of land, and with the various expenses attendant upon it, and who from long experience are competent to form an opinion of the value of land for occupation, will scarcely attach much weight to the argument that a person—from the perusal of title deeds and musty parchments, and enquiries which he is compelled to make as to value, and which the present rental, whether fair or unfair, is probably near enough to determine—is likely to gain that experience which enables him to discriminate between good and bad occupation, and form an accurate judgment upon the oftentimes complication of points, which constitute the value of different and variously situated farms. I feel sure that scarcely a word is necessary to dispel the effect of any part of the argument of your correspondent, particularly as it fails of general application. The lawyers brought forward are men who care very little about litigation, and are also men of educated and enlightened minds, and consequently well fitted for the duty of placing landlord and tenant in a proper position. The land-agents, on the other hand, are for the most part ignorant and uneducated men, and have the certainly great failing (which arises from inexperience) of "go a-head" qualities. One word respecting the fairness of the comparison is unnecessary. To support an argument by otherwise than fair specimens of both classes is equally so. I will, having spun out these desultory remarks to a longer extent than I intended, leave the question in the hands of experience and common sense to decide, whether, in consulting the welfare of landlord, tenant, and the country, the manager of landed property should or should not understand it. *F. K. E., Aug.* 12.

Clover Failure.—Seeing some remarks in your Paper of the 24th ult., p. 537 *b*, on the failure of Clover, I wish to be allowed to offer some, the result of a little more than a year's practical experience in farming, combined with a little previous observation. At Lady-day, 1849, I commenced farming, and seeded down at the usual time, in the usual way, with permission of the off-going tenant, two Wheat fields with Clover and Rye-grass. I also sowed a field with Barley after Turnips, and seeded that down in the same way. The result was that neither Clover nor Rye-grass came on either of the Wheat fields, and only a very little Clover, with a poor crop of Rye-grass, on the Barley field, which had been insufficiently manured, with guano only, for Turnips, and these were not consumed on the land. I bought the seeds from neighbours who had raised them, sowed some themselves, and sold some to other neighbours, who had all good crops, thus proving that there was no fault in the seed. This year I have seeded down with Clover, &c., three fields of Wheat, two and a half being on fallow, and the remaining half being spring Wheat after Turnips, and in all of these the Clover and other seeds are well up, and promise a most abundant crop. I also sowed one of the Wheat fields of last year, which I had seeded down, but whereon the seeds had failed as before-mentioned, with Oats, having ploughed it before Christmas, and worked and treated it well in every respect, except that I did not manure it, having been told that it had been well fallowed and manured for the Wheat of 1849, the latter of which I have since had reason to believe was only partially true, and this I also seeded down again this year, the result being very little better than that of last year, so far as present appearances go; the red Clover coming up but sparingly, though plentifully sowed, and that which has come up being very weakly, and as small in the leaf, or smaller, than White Dutch. There is also a field with which I have been acquainted for upwards of 30 years, during which time one person farmed it till four or five years back, and in that time told me that he never could get a good crop of red Clover on it, and at length actually gave up trying to do so, but worked it very hard, keeping it under plough a good deal. This field is now beautifully covered with red Clover and other seeds in the hands of the new tenant, who has manured it well. The conclusion which I draw from the foregoing facts is, that it may probably be found in most cases, if fairly investigated, that the failure of Clover arises more generally from want of sufficiently manuring the land on which it is sown than from any other cause; and by giving a good top-dressing to the field in my occupation last alluded to, I do not despair even yet of obtaining a fair crop of it on that field also. Some of your readers may perhaps be disposed to criticise my course of farming, but to this I have been driven by the state in which I took the farm, and I do not think that this has much, if anything, to do with the partial failure of the Clover sown with the Oats, as it must be borne in mind that last year in every instance it failed with the Wheat, and was all but a total failure with the Barley; whilst this year it has succeeded well in every instance, excepting only this one field. How far it will "stick" remains to be proved. Lime is commonly said to be an aid to this, as also to stiffening straw and brightening the sample of Wheat, and if so, is I fear too much undervalued in modern farming; but as I have no experience on this point as yet, I only venture to state this as a general remark of divers persons who in practice seem to disbelieve their own assertion. *No longer a mere Looker-on.*

Reaping Wheat.—It may afford some gratification to the correspondent who addressed you on this subject

last week, to know that a machine for cutting the ears from the standing Wheat, leaving the straw to be gathered at leisure, has just been invented by a gentleman residing in Somersetshire, and that steps are being taken to bring it before the agricultural community. As the machine is constructed upon a well-established principle, and can be made for a small sum, there is every reason to hope that it will be of great utility. *A Reader.*

Reaping Machine.—Having observed in your Number (for August 24), the communication of a correspondent on a new mode of harvesting grain, I can inform you that in the neighbourhood of Dunbar, East Lothian, his suggestion has been carried out in a partial degree by the influence of the wind. The violent storms on Sunday the 18th, and Monday the 19th, broke off the heads of the Barley in several fields; luckily, however, there was a considerable quantity of Barley cut, and in some places there was not such a thing to be seen as the heads, except lying on the ground. On one farm in this part several children have been employed in picking them up, and it is probable that there may be several quarters of good grain saved from total loss by this means. *P. E. N.*—Observing in your Paper a wish expressed that some plan could be invented for taking off the ears of Wheat while standing in the field, I venture to send you a sketch of a very simple instrument I saw many years ago, in very common use in the United States of America for taking off the heads of Clover. It consists of nothing more than the body of a wheelbarrow, on an axletree, with two handles behind, so set that the body of the machine can be moved circularly on the axletree, and a horse attached to it by a chain and swingle tree on one side. The front board of the wheelbarrow is made slanting, and cut into teeth like a comb, shod with iron, or perhaps made of iron, and set very close at the angular point. The operation is the most simple possible. A man lays hold of the handles behind, and while the horse pulls the machine he moves the body of the barrow upon the wheels, circularly, upwards and downwards, humouring the growth of the Clover as he goes along; the heads of the Clover are all caught between the combs of the tool, and falling to pieces are thrown back into the body of the wheelbarrow, cut entirely to pieces, and in that country, where an idea prevails that sowing the husk with the Clover is better than threshing it out (I believe), it is sown in the state in which the tool takes it off; at all events each head falls into the most minute morsels. Why may not something of this sort be applied to Wheat? *Z. X. Y.*

The Study of Chemistry.—The expense of apparatus necessary in the study of chemistry might be taken from the shoulders of individual farmers by subscription, and the yearly expenses should be borne by an annual payment by each member of a class engaged in the study, who should be entitled to the use of the apparatus, and the services of the schoolmaster might be remunerated by the payment of a small sum each time his assistance was required. The farmer would reap the benefit of such an arrangement in many ways. His knowledge of chemistry would prevent the system of fraud pursued by dishonest tradesmen. From the experience I have had, I am quite confident that it will be a long while before the state of education will allow of people protecting themselves, consequently, some such plan is requisite. It will, of course, admit of great extension; the apparatus should be kept at the school, and the sons of farmers and others might meet there to their mutual benefit. If a library could be added so much the better. A series of lectures might be given in the winter season with advantage. *J. Stollard, Ipstones, Staffordshire.*

Calendar of Operations.

SEPTEMBER.

Lammermuir Sheep Farm.—Harvest operations are progressing rapidly, and under the most favourable circumstances. A very considerable proportion of the grain crop in our hill district has been cut, and in the course of a few days this will be carted and out of danger. The winds of the 19th ult. have done serious damage to the grain crop, especially in the lower districts, where much of it was dead ripe, and all of it near maturity. In general the quantity shaken amounts to the seed, and in many cases to much more. We commenced our harvest on the 26th by mowing Oats, but as yet have made very little progress, the fine weather having obliged us to keep all our hands working amongst the meadow hay, which the recent gales had scattered in every direction. Having now got this crop into something like a state of safety, we will now keep working at the corn, one-half of which is now quite ripe. With the exception of a few small Cheviots, all our lambs are now sold, and most of them off the farm. This leaves our shepherds some leisure, which is employed in manufacturing a supply of coarse meadow hay, sufficient to keep their cows for six or seven months. This is cut and prepared by the servant, and driven home by the master. Towards the latter end of this month the draft ewes will be prepared for sale. In the meantime harvest work, and distributing the meadow hay over the farm, in well sheltered places, where it can be available for sheep during snow-storms, will keep us fully occupied. *A Lammermuir Farmer.*

Notices to Correspondents.

Bad Butter: *Manxman.* The digestive organs are probably out of order. We would recommend a saline purgative—½ lb. of sulphate of magnesia, 1 oz. of nitrate of potash, dissolved in warm water or gruel, and repeated in smaller doses in a few days, if required. It may be well to put a little nitrate of potash in the milk—half a teaspoonful in a pail of 3 or 4 gallons of milk. *W. C. S.*

Cochin China Fowl: *A B.* You will find Mr. Baker's advertisement in the columns of to-day.

Kilns: *Enquirer.* The best form of kiln is the circular, tapering to the bottom, nearly in the form of the small end of an egg; indeed, there is no better form for kiln than that of an egg-shell from which the broad end has been cut, as is commonly done in eating. It is generally convenient to have two apertures at the bottom. The limestone, properly broken, and the coal, should be placed in alternate thin layers, usually in the proportion of three of the former to one of the latter; but limestones vary much in the quantity of coal required. The coal should not be placed nearer the lining of the kiln than 9 inches, so as to avoid burning the fire bricks. Where there is a constant sale, the proper plan is to keep the kiln always at work by drawing out small portions of the lime when sufficiently calcined, and adding fresh stone and coal at top. "Enquirer" should examine the best kilns near him. *J. G.*

Lime: *Constant Reader.* You had better lime *now*, and dress with guano in spring.—The peat is to be only charred. You must dig a hole, light a good fire in the bottom of it, pile on dry peat, and cover with wet peat to keep out the air; and when the fire is coming through, quench it with water.

Muzzle: *X Y Z.* Can a muzzle be so made as to prevent a calf from sucking its mother? I have had one which, though it had very sharp spikes, proved ineffectual; and is there such a thing as a Guernsey halter for tethering cows—a practice followed in Jersey and Guernsey; and where are they to be purchased in London?

Parsnips: *A M.* Do you propose to plant out roots for seed? In that case set them in 2 feet apart every way, in land not too rich, burying them up to the crown. If it be for roots, you need not sow till January or February. The Jersey Cow Parsnip is the best for cattle, if that is your object. Sow, shallow, 5 lbs. of seed per acre in rows 18 inches apart. If you have not farm-yard manure enough, sow 3 or 4 cwt. of guano broadcast.

Summer Crops: *Anon.* A succession of summer crops for cattle food, to come in at April and continue till November, will be Mangold Wurzel, to last you through June and July; Rye, through April and May; early Cabbages, through June, July, and August; winter Vetches, through May, June, and July; spring Vetches, through August, September, and October; Lucerne, through June, July, August, and September; early sown Rape, through August, September, and October; early Turnips through September, October, and November.

Superphosphate: *Ireland.* Your inquiry has been forwarded.

Swedes: *Hill-side.* They are suffering from the attacks of wire-worm. There is no help for you that we know of. You might plough the field up, if the crop is very bad, and sow White Mustard.

To Recover a Worn-out Farm: *A B* says, "My farm, consisting of three parts arable and two pasture, is upon the estuary of Milford Haven, where there is an abundance of sea-weed thrown up by the sea daily, and abundance of slime at low water; and lime at 4*s.* 6*d.* a ton on the next farm. The soil is dry and poor, and averaging a sufficient depth; and the subsoil, or next stratum, is a mixture of stones and earth so loose that after the heaviest rain the ground is dry immediately. With artificial manure (guano), which is expensive, I have an excellent field of Turnips, and with Seaweed an excellent field of Potatoes; but if any of your experienced correspondents will favour me with his advice upon the best mode of proceeding to recover a long neglected land, he will oblige. I have pared and burned about 20 acres this year; but these fields are overrun with Fern, which finds its nutriment many feet deep." [You must force good crops by guano, keep sheep and cattle on them, and so get manure enough to create and maintain fertility.]

Virginia: *W J birch.* The writer is now in that State. His meaning probably was, that the landlord would furnish *capital* on receiving half the *profit*.

Wheat: *Triticum.* The specimen sent is a very good Wheat—thin skinned in the berry, and well grown in the ear. We do not know it.

Markets.

COVENT GARDEN, Sept. 7.

Vegetables are abundantly supplied. Hothouse Grapes and Pine-apples are plentiful; Peaches and Nectarines from the open walls tolerably abundant. Gooseberries are all but over. Oranges and Lemons though scarcer are sufficient for the demand. Plums and Pears are still received from the Continent in abundance. Filberts are plentiful. Carrots and Turnips may be had at 3d. to 6d. a bunch. Potatoes are good and cheap. Lettuces and other salading are sufficient for the demand, and so are Mushrooms. French Beans are scarcer. Cut Flowers consist of Heaths, Pelargoniums, Carnations, Picotees, Asters, Fuchsias, Mignonette, Dahlias, Verbenas, Bignonia venusta, Stephanotis floribunda, Heliotropes, Calceolaria viscosissima, Japan Lilies, and Roses.

FRUITS.

Pine-apples, per lb., 4s to 6s	Pears, per doz., 1s to 3s
Grapes, hothouse, p. lb., 2s to 5s	Lemons, per doz., 1s to 3s
Peaches, per doz., 3s to 8s	Oranges, per doz., 2s to 3s
Nectarines, per doz., 3s to 8s	— per 100, 8s to 24s
Apricots, per doz., 1s 6d to 5s	Almonds, per peck, 6s
Figs, per punnet, 2s to 4s	— sweet, per lb., 2s to 3s
Melons, each, 1s to 3s	Walnuts, p. 100, 1s 6d to 2s
Plums, p. punnet, 1s to 1s 6d	— p. bush., 16s to 24s
Green-gages, do., 1s to 2s	Nuts, Barcelona, per bush., 20s to 22s
— per sieve, 8s to 10s	— Brazil, p. bsh., 12s
Apples, dessert, p. bush, 4s to 8s	Filberts, per 100 lbs. 22s to 30s
— kitchen, do., 1s 6d to 6s 6d	

VEGETABLES.

French Beans, p. sieve, 3s to 4s	Shallots, per lb., 6d to 8d
Cabbages, per doz., 6d to 1s	Garlic, per lb., 4d to 8d
Cauliflowers, p. doz., 2s to 4s	Artichokes, p. doz., 2s 6d to 3s
Peas, per sieve, 3s to 6s	Vegetable Marrows, per doz., 6d to 1s
Sorrel, p. hf. sieve, 6d to 9d	Lettuce, Cab., p. sc., 1s to 1s 6d
Potatoes, per ton, 50s to 80s	— Cos, p. score, 6d to 1s 6d
— per cwt., 2s 6d to 4s	Endive, per score, 1s to 1s 6d
— per bush., 1s 6d to 3s	Small Salads, p. punn, 2d to 3d
Turnips, per doz. bun., 2s 6d to 3s 6d	Horse Radish, p. bdl., 1s to 4s
Red Beet, per doz., 1s to 2s	Mushrooms, p. pot., 9d to 1s 6d
Cucumbers, p. doz., 1s to 6s	Fennel, per bunch, 2d to 3d
Leeks, per bunch, 1d to 2d	Savory, per bunch, 2d to 3d
Celery, p. bundle, 10d to 1s	Thyme, per bunch, 2d to 3d
Carrots, per doz., 3s to 5s	Parsley, p. doz. bun., 1s to 2s
Tomatoes, p. punnet, 1s to 1s 6d	— Roots, p. bdle., 9d to 1s
Spinach, p. half sieve, 1s 6d to 2s	Marjoram, per bunch, 8d to 9d
Onions, p. bunch, 2d to 6d	Mint, green, per bunch, 2d
— Spanish, p. doz., 1s 6d to 4s	Watercress, p. 12 bunch., 6d to 9

HAY.—Per Load of 36 Trusses.

Smithfield, Sept. 5.

Prime Meadow Hay	75s to 80s		Clover	70s to 88s	
Inferior ditto... ...	63	70	New Clover	—	—
Rowen	60	—	Straw	23	28
New Hay	—	—		J. Cooper.	

Trade dull.

Cumberland Market, Sept. 5.

Prime Meadow Hay	74s to 78s		Inferior	65s to 72s	
Inferior ditto... ...	50	66	New Clover	65	72
New Hay	50	65	Straw	26	30
Old Clover	78	84		Joshua Baker.	

Whitechapel, Sept. 5.

Fine Old Hay ...	68s to 72s		New Clover	75s to 80s	
Inferior ditto	60	62	Inferior ditto... ...	—	—
New Hay	—	—	Straw	24	28
Old Clover	80	85			

SMITHFIELD, Monday, Sept. 2.

We have a very large supply of Beasts, but the average quality is inferior, consequently many of the best descriptions make 3s. 8d. A considerable number of second-rate remain unsold. The number of Sheep is also large, and the demand small; trade is exceedingly heavy, especially for big Sheep. We cease to quote Lamb, as the season has closed; what few come to market only make mutton price. The supply of Calves is fully adequate to the demand; prices are with difficulty maintained. From Holland and Germany there are 974 Beasts, 4890 Sheep, and 217 Calves; and from Scotland, 200 Beasts.

Per st. of 8 lbs.—	s.	d.	s.	d.	Per st. of 8 lbs.—	s.	d.	s.	d.
Best Scots, Herefords, &c.	3	6	to 3	8	Best Long-wools	3	4	to 3	6
Best Short-horns	3	2	— 3	4	Ditto Shorn	...	...	—	...
2d quality Beasts	2	6	— 3	0	Ewes & 2d quality	2	8	— 3	4
Best Downs and					Ditto Shorn	...	...	—	...
Half-breds	3	10	— 4	0	Lambs	...	...	—	...
Ditto Shorn	...	...	—	...	Calves	...	...	2	2 — 3 6
					Pigs	...	...	3	0 — 4 0

Beasts, 4703; Sheep and Lambs, 32,810; Calves, 330; Pigs, 304.

Friday, Sept. 6.

We have a good supply of Beasts, but not many fresh up from our own grazing districts. Trade is dull, at Monday's prices. The number of Sheep is smaller, so also is the demand, and it is with difficulty that Monday's prices are realised for anything. Lamb is scarcely saleable. We are not so plentifully supplied with Calves as of late, and trade is rather better. From Germany and Holland there are 439 Beasts, 3100 Sheep, 271 Calves, and 14 Pigs; from Scotland, 70 Beasts; 300 from the northern and midland; and 82 Milch Cows from the home counties.

Best Scots, Herefords, &c.	3	6	to 3	8	Best Long-wools	3	2	to 3	4
Best Short-horns	3	2	— 3	4	Ditto Shorn	...	...	—	...
2d quality Beasts	2	6	— 3	0	Ewes & 2d quality	2	8	— 3	4
Best Downs and					Ditto Shorn	...	...	—	...
Half-breds	3	8	— 4	0	Lambs	...	...	—	...
Ditto Shorn	...	...	—	...	Calves	...	...	2	4 — 3 8
					Pigs	...	...	3	0 — 4 0

Beasts, 1032; Sheep and Lambs, 10,650; Calves, 491; Pigs, 310.

COAL MARKET.—Friday, Sept. 6.

Holywell, 14s.; Wallsend Haswell, 16s.; Wallsend Hetton, 16s.; Wallsend Lambton, 15s. 6d.—Ships at market, 100.

MARK LANE.

Monday, Sept. 2.—The supply of English Wheat by land carriage samples this morning from Essex, Kent, and Suffolk, was smaller and of worse quality than that of last week, consisting chiefly of the new crop; a very few of the finest samples were picked out at about last week's prices, but the great bulk remained unsold at a late hour. Although there appeared a better inquiry for the finest descriptions of foreign early in the day, little business resulted, holders being exceedingly firm in their demands, with which the millers were unwilling to comply.—Barley meets an improved inquiry, at an advance of 6d. to 1s. per qr.—Beans are unaltered in value.—We advance our quotations 1s. per qr. for English white Peas, and 1s. to 2s. per qr. upon foreign.—Oats are a fair sale, at an improvement of 6d. per qr.—The show of Mustard was considerable, and amounted to 1500 qrs.; some of the best samples were picked at about 6s. 6d. per bushel, but by far the greater portion could not be disposed of.

British per Imperial Quarter.	s.	s.		s.	s.
Wheat, Essex, Kent, & Suffolk ...White	42	—46	Red	37	—44
— — fine selected runs ...ditto	45	—49	Red	40	—43
— — Talavera	46	—52			
— Norfolk, Lincoln, & York...White		—	Red	36	—42
— Foreign	35	—52			
Barley, grind. & distil., 19s to 22s...Chev.	23	—27	Malting	22	—25
— Foreign,...Grinding and distilling	17	—22	Malting	20	—23
Oats, Essex and Suffolk	15	—18			
— Scotch and Lincolnshire ...Potato	18	—21	Feed ...	17	—19
— Irish .....Potato	16	—20	Feed ...	13	—17
— Foreign.....Poland and Brew	15	—20	Feed ...	13	—16
Rye	19	—21	Foreign	18	—20
Rye-meal, foreign.....per ton	5*l.*	—6*l*			
Beans, Mazagan .....22s to 24s.....Tick	24	—26	Harrow	24	—26
— Pigeon ..... 25s — 28s...Winds	—		Longpod	—	
— Foreign ..... Small	24	—34	Egyptian	21	—22
Peas, white, Essex and Kent.....Boilers	23	—31	Suffolk...	24	—28
— Maple.... .24s to 30s .....Grey	22	—28	Foreign	24	—31
Maize ..... White	26	—30	Yellow...	25	—30
Flour, best marks, delivered... per sack	36	—40			
— Suffolk ..... ditto	31	—36	Norfolk	31	—36
— Foreign .....per barrel	21	—24	Per sack	31	—34

Friday, Sept. 6.—With the exception of Russian Oats, of which the supply is large, the arrival of all grain, English and foreign, this week have been moderate. English Wheat supports our quotations of Monday last. Barley continues in good demand.—Beans are fully as dear, and rather more money is obtained for Peas.—Oats meet a free sale at former prices.—Flour supports its late value, and meets a ready sale.

Imperial Averages.	Wheat.	Barley.	Oats.	Rye.	Beans.	Peas.
July 27.....	43*s* 6*d*	22*s* 3*d*	18*s* 1*d*	24*s* 9*d*	27*s* 4*d*	27*s* 8*d*
Aug. 3.....	43 7	22 4	18 1	22 2	27 8	27 8
— 10.....	44 1	22 5	17 11	23 8	27 9	26 10
— 17.....	43 8	22 8	18 4	23 0	28 2	26 5
— 24.....	43 6	23 0	17 9	20 10	28 1	26 3
— 31.....	43 6	22 4	17 9	23 4	28 11	20 11
Aggreg. Aver.	43 7	22 6	18 0	22 11	28 0	27 0
Duties on Foreign Grain	1 0	1 0	1 0	1 0	1 0	1 0

Fluctuations in the last six weeks' Corn Averages.

Prices.	July 27.	Aug. 3.	Aug. 10.	Aug 17.	Aug. 24.	Aug. 31.
44*s* 1*d*	...	...		...	...	...
43 8	...	...	...		...	...
43 7	...		...	...	...	...
43 6	...	...	...	...	...	...
43 6		...	...	...	...	...
43 6	...	...	...	...		

SEEDS.—Sept. 2.

Canary, per qr.....48s to 54s	Coriander, per cwt. ...18s— 22s		
Caraway, per cwt. ...29 — 33	Mustard, white, p. bush. 4 — 8		
Hempseed, per qr. ...34 — 35	— brown do. ..... 7 — 13		
Linseed, foreign, do. 37 — 45	Rape, per last .....24*l.*—26*l.*		
Clover, red, p. cwt...24 — 46	Cakes, Lindseed, p. 1000...8*l.*15*s*		
— — foreign, do. — —	— — foreign, p. ton, 6*l.*15*s*		
— white, do. .....36 — 48	— Rape, foreign, do., 3*l.*17*s*		
— — foreign, do. — —	Tares, per bush...3*s* 0*d*—5*s* 6*d*		

Liverpool, Friday, Aug. 30.—The supplies received into this port, coastwise and from Ireland, since Monday last are light; and with the exception of a tolerable import of foreign Wheat, the arrivals of grain and Flour from abroad are comparatively moderate. At our market this morning the Wheat trade was firm, and a fair amount of business was transacted, on terms fully equal to, and in a few cases a little over, the current rates of Tuesday. Flour becoming less plentiful, and in good demand. Barley and Malt, although not readily saleable, remained unaltered in value. Beans, upon a moderate demand, supported late prices; and Peas were held steadily at late rates. Oats and Oatmeal of all descriptions barely sustained previous prices. Indian Corn realised a further advance this morning of 6d. per qr., with rather an active sale. ——Tuesday, Sept. 3.—The imports of grain and Flour from our own coasts are still on a moderate scale, but we are again liberally supplied from abroad. We had a steady but an active market this morning. Old Wheat met a moderate retail demand, at late rates. New Oats and new Oatmeal were less plentiful, and brought full prices. Grinding Peas were 1s. per qr. dearer. Barley and Beans without change. French Flour met a good sale, at extreme prices. In Indian Corn there was little doing, but it supported Friday's advance of 3d. to 6d. per qr. Arrivals and exports into Liverpool from the 27th Aug. to 2d Sept., inclusive: Wheat, 16,840 qrs.; Barley, 1885 qrs.; Malt, 810 qrs.; Oats, 6444 qrs.; Beans, 2705 qrs.; Peas, 273 qrs.; Indian Corn, 1722 qrs.; Oatmeal, 1745 sacks and 4623 sacks and 16,726 barrels of Flour.

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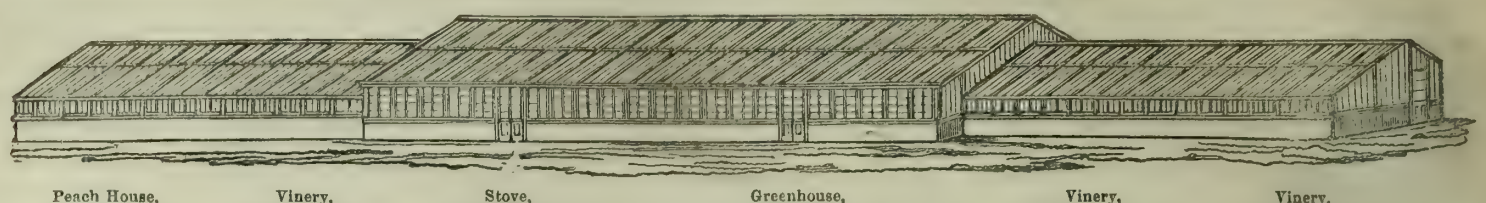
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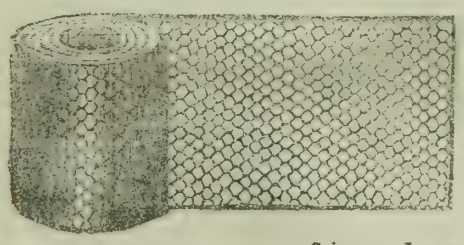
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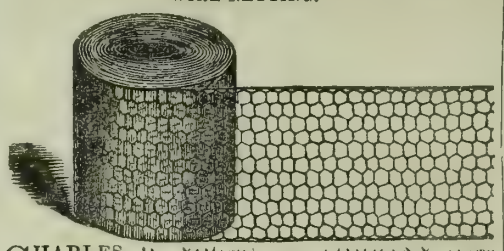
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WANTED, A SMALL FARM, from 20 to 50 acres. Particulars to be sent to Mr. HURLEY.

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HOT-WATER APPARATUS, with improved Boilers, requiring no brickwork, and arranged to continue in action from 12 to 16 hours without attention, adapted for Churches, Chapels, Conservatories, and every description of Building, supplied and erected on the most reasonable terms. Also the Thermanterion, an apparatus which warms without injuring the air, and recommends itself on account of its simplicity, durability, efficiency, and economy, especially adapted for Churches, Chapels, Halls, or Buildings, only used occasionally. — Apply to SPILLER and TAYLOR, Engineers, Battersea.

STRONG PREMIUM HARE AND RABBIT PROOF WIRE NETTING.



CHARLES D. YOUNG AND COMPANY (LATE W. AND C. YOUNG),

MANUFACTURERS OF IRON AND WIRE WORK, &c.,
22, PARLIAMENT STREET, WESTMINSTER, LONDON;
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beg respectfully to call the attention of Landed Proprietors and others to their strong Wire-Net Fence, for excluding Hares and Rabbits from Gardens, young Plantations, Nurseries, &c.

This Net was exhibited at the Show of the Highland and Agricultural Society of Scotland, held lately at Inverness, where its Efficiency, Great Strength, and Exceeding Cheapness attracted general attention, and had awarded from the Judges the Society's Silver Medals, with high commendations.

The immense damage done by Hares and Rabbits in Gardens and Young Plantations is often so great, that in the course of a year or two it will amount to more than the entire cost of protecting them with this Net. It is so durable, that when Plantations are sufficiently advanced to be independent of its protection, it can be removed to other exposed situations with the greatest facility, by any labourer. As a Fence against Hares and Rabbits, it is of itself quite sufficient, having only to be unrolled and attached, with small wire sent for that purpose, to wooden stakes driven into the ground, about every six or seven feet apart. It is, besides, peculiarly adapted for rendering Hedges, Paling, or other existing Fences, *completely impervious* to such vermin; and by being cut up into small pieces of three or more feet, as required, it forms a most efficient guard, at little expense, for individual Plants and Shrubs.

PRICES.—18 ins. high, 9d.; 24 ins., 1s.; 30 ins., 1s. 3d.; and 36 ins., 1s. 6d. per lineal yard.

Or a web of 100 yards, 18 ins. wide, will cost ..	£3	15	0
Do. of 100 yards, 24 ins. wide	5	0	0
Do. of 100 yards, 30 ins. wide	6	5	0
Do. of 100 yards, 36 ins. wide	7	10	0

If more or less than a web is required, it would be charged at the same rate per yard.

This Netting is also admirably adapted for Pheasantries and Poultry-yards, and is charged at the same rate. As carriage has, in many instances, been an obstacle to parties at a distance requiring this Net, C. D. Y. and Co. have made arrangements by which they will undertake to deliver it at any of the principal ports of Scotland, England, and Ireland, for One Halfpenny per lineal yard.

C. D. YOUNG and Co. cannot give a better idea of the great strength of their Premium Wire Netting than by stating that the weight of one yard of their 24-inch at 1s. is equal to 2½ yards of another article in the market, the same width, at 9d. per yard. Samples for inspection sent free of expense.

C. D. YOUNG & Co. manufacture every description of IRON and WIRE WORK required for this and foreign countries.

Workmen sent to all parts of Scotland, England, and Ireland.

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Persons assured according to these rates are allowed credit (without security) for half the amount of the first seven annual premiums, paying interest thereon at the rate of 5 per cent. per annum, with the option of paying off the principal at any time, or having the amount deducted from the sum assured when the Policy becomes a claim.

Policies may thus be effected at lower rates than are generally required for the term of seven years only; whilst the holders have the same security for the payment of their claims, whenever death may happen, as if they paid double the amount of premium, which would be charged for insurances effected in the usual way.

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Policies revived without the exaction of a fine, at any time within twelve months.

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Annual Premium required for an Assurance of £100 for the whole term of Life.

Age.	Half Premium for seven years.	Whole Premium after seven years.
	£ s. d.	£ s. d.
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55	2 12 9	5 5 6
60	3 6 8	6 13 4

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THE LIVERPOOL AND LONDON FIRE AND LIFE INSURANCE COMPANY.

NOTICE IS HEREBY GIVEN, that on the 29th instant, the Chief Office of this Company in London will be REMOVED to Nos. 20 and 21, POULTRY,

BENJAMIN HENDERSON, Resident Secretary.

3, Charlotte-row, Mansion-house,
Sept. 3, 1850.

NEW TALE BY MISS JEWSBURY.

THE LADIES' COMPANION for September 7th, contains Chapter First of The Sorrows of Gentility, by Geraldine E. Jewsbury—Miss Mitford's Readings of Poetry, Old and New—John Clare—The Sunbeam in the Attic, Chapter III.—Chapters on Dress, &c., &c.—With a beautiful large Engraving of "The Outcast;" also Illustrations of Dress, Work, &c.

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This day is published, price 2s. 6d., No. VII. of

PAXTON'S FLOWER GARDEN.

Edited by DR. LINDLEY and JOSEPH PAXTON,
And Illustrated by highly finished Plates and Woodcuts.
London: BRADBURY and EVANS, 11, Bouverie-street.

Just published, in post 8vo, 5s.; or free by post, 5s. 6d.,

A SYNOPSIS of the CONIFEROUS PLANTS grown in GREAT BRITAIN, and sold by KNIGHT and PERRY, of the Exotic Nursery, King's-road, Chelsea.

London: LONGMAN, BROWN, GREEN, and LONGMANS.

Printed by WILLIAM BRADBURY, of No. 13, Upper Woburn-place, in the Parish of St. Pancras, and FREDERICK MULLETT EVANS, of No. 7, Church-row, Stoke Newington, both in the County of Middlesex, Printers, at their office in Lombard-street, in the Precinct of Whitefriars, in the City of London; and published by them at the Office, No. 5, Charles-street, in the parish of St. Paul's, Covent-garden, in the said county, where all Advertisements and Communications are to be ADDRESSED TO THE EDITOR.—SATURDAY, SEPTEMBER 7, 1850.

THE GARDENERS' CHRONICLE
AND
AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 37—1850.] SATURDAY, SEPTEMBER 14. [PRICE 6*d.*

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THE GREAT TRIAL SHOW OF DAHLIAS AND NEW FLOWERS, and Exhibition of Implements and Materials used in Gardens, THURSDAY next, at the GRECIAN SALOON City-road. All persons intending to exhibit, are requested to give notice of their intention, and the room they require by Tuesday's Post. Schedules may be had at 420, Strand, and Eyre's Advertising Office, 19, Bouverie-street; and are printed at length in the Country Gentleman of last week. Subscribers. Messrs. Turner, Keynes, Barnes, Bragg, Edwards, Gaines, Harrison, the Metropolitan Union, Legge, Moore, Salter, Spary, Turville, and Whale.

*** Dinner 5*s.*; punctually at 3.

AMERICAN PLANTS.

JOHN WATERER'S CATALOGUE OF AMERICAN PLANTS, ROSES, CONIFERS, &c., is now published, and may be had gratis on application. It describes the colours of every Rhododendron worthy of cultivation, thus affording purchasers every facility in making selections.
American Nursery, Bagshot, Surrey.

HUGH LOW AND CO. have just published their GENERAL CATALOGUE OF PLANTS, which can be had free on application.—Clapton Nursery, London, Sept. 14.

EXHIBITION OF LILIUM LANCIFOLIUM, OR THE BEAUTIFUL JAPANESE LILY.

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WATERER'S DESCRIPTIVE CATALOGUE OF AMERICAN PLANTS, &c.

HOSEA WATERER begs to announce his new descriptive CATALOGUE OF AMERICAN PLANTS, CONIFERS, ROSES, &c., is just published, and may be had by enclosing two stamps for postage to HOSEA WATERER, Knap Hill Nursery, Woking, Surrey.

☞ Everybody who has any idea of planting the ensuing autumn should possess themselves of this Catalogue.

THE BLACK PRINCE STRAWBERRY, now sending out at 10*s.* per 100.

Also PRACTICAL INSTRUCTIONS FOR THE CULTIVATION OF THE POTATO, containing the Competition Essay for the Prize of 1000 francs offered by the Belgian Government. Also Instructions on the Management of Asparagus, Seakale, Rhubarb, Vegetable Marrow, Scarlet Runner, Strawberry, Melon, and Cucumber; Chicory and Lamb Lettuce as Salads; the Lisianthus Russellianus, and the Tree Mignonette. The Destruction of Woodlice and Green-fly; and Peat Charcoal as a Manure. By JAMES CUTHILL, Horticulturist, Camberwell, London.—Printed for the Author, and sold by him only. Price 2*s.*; or, by post, 2*s.* 4*d.*

ULMUS MONTANA, var. PENDULA FOLIIS VARIEGATIS—the Weeping Silver-striped Wych, or Scotch Elm.

MESSRS. PONTEY beg to inform the Trade and the Public that they intend sending out the above splendid Tree this autumn. It is equally robust and pendulous in its habit with the common Weeping Elm, and its leaf is distinctly striped or margined with silver. It is remarkable for its constancy in variegation, seldom or ever producing an entire green leaf. Several eminent people in the Trade have this summer seen the Stock of Plants, and pronounce it one of the greatest novelties in its line that for a long period has been introduced. The Plants are worked on stems from 3 to 6 feet high. One year worked, 10*s.* 6*d.*; two years, 15*s.*; and three years, 21*s.* each.

Messrs. PONTEY have also on Sale an extensive Collection of Ornamental Trees and Shrubs, catalogues of which can be had on application.—N.B. Remittances or references will be required from unknown correspondents.
Nursery, Kirkheaton, near Huddersfield, Yorkshire, Sept. 14

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BECK'S SEEDLING PELARGONIUMS.—No more remittances can be received for ROSA or SILK MERCER, as all the present stock is engaged.

Catalogues may be had on application to J. DONSON, enclosing a stamp.—Worton Cottage, Isleworth, Sept. 14.

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FUCHSIAS.—Story's, Mayle's, Smith's, and Rumley's, new varieties of 1850, 12 for 20*s.*; or 20 for 30*s.*

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40	ditto	ditto	ditto	1	10 0
25	ditto	17*s.* 6*d.*	12 superb varieties	0	9 0

All well established in 48-size pots.

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BULBOUS FLOWER ROOTS CHEAP.
Carriage free, as see below.

The best sorts of fresh imported Hyacinths, Tulips, Irises, Gladioli, Anemones, Crocuses, Ranunculus, &c., may be had at much less than the usual prices, in valuable assortments, as under.

Choice assortment for pots, or glasses		£1	0*s.* 0*d.*
Do.	do. in half the quantities	0	10 6
Do.	do. for open ground	1	0 0
Do.	do. in half the quantities	0	10 6

For particulars of the above assortments, see Messrs. SUTTON'S Priced Catalogue, just published, which may be had on application, inclosing one penny stamp, to JOHN SUTTON and SONS, Reading, Berks.

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No. 1 Collection, all the most approved sorts	3	0	0
No. 2 Collection, containing smaller quantities	2	0	0
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100 Hyacinths in 100 very fine sorts.	Purchaser's selection		3	0 0
100 Hyacinths in 50 fine sorts.	Purchaser's selection		2	10 0
50 Hyacinths in 50 superior sorts	ditto		1	10 0
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24 Hyacinths in 12 superior varieties	ditto		0	12 0
12 Hyacinths in 12 superior varieties	ditto		0	6 0

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For Catalogues, and further information, apply to
WILLIAM E. RENDLE AND CO.,
Seed Merchants, Plymouth.

N.B. Our Hyacinths and other roots have just arrived from Holland in excellent condition.

SEEDS FOR PRESENT SOWING.

JOHN CATTELL has new seeds of the undernamed, now ready to send out in packets (postage free), at the prices annexed.

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RHODANTHE MANGLESII, 1*s.*

Bulbs of Tropæolum brachyceras and tricolorum grandiflorum, worth the attention of the trade. Remittances to accompany orders from unknown correspondents.
Westerham, Kent.

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WM. BRAGG is authorised by EDMUND FOSTER, Esq., of Clewer Manor, to send out his new and choice varieties for 1850, Catalogues of which can be had on application. The Rev. Mr. ROUSE has likewise favoured W. B. with the stock of his superb Pelargonium "ALIBI." Other good and approved sorts; for description and price, see Catalogue, which contains lists of Chater's and other new and superb Hollyhocks, Pansies, Pinks, Picotees, Carnations, Roses, Chrysanthemums, &c.; ground and pot roots of show and fancy Dahlias.—Star Nursery, Slough, Bucks.

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VERBENAS, ditto ditto, 1850, 12*s.* per dozen.

CORRÆA speciosa major, Cooperii, bicolor, &c., in fine bushy plants, for winter flowering, 12*s.* per dozen.

PINKS, all the finest first-class show varieties, comprising such as have been exhibited in all the winning stands at the past metropolitan exhibitions, 12*s.* and 18*s.* per dozen pairs, and can be sent post free (September the best month for planting).

HYACINTHS, a superb collection of all the best kinds, known, for glasses or pot culture, at 9*s.*, 12*s.*, and 18*s.* per doz.

Catalogues can be had on application. Strong plants of their new Chrysanthemums for autumn flowering may still be had, for particulars of which see their Advertisement of Aug. 31. They also continue sending out packets of their fine Anemone Seed.—Royal Nursery, Great Yarmouth, Sept. 14.

MESSRS. STANDISH AND NOBLE'S new descriptive CATALOGUE OF SELECT HARDY ORNAMENTAL PLANTS is just published, and may be had for four postage stamps. Besides a Treatise on the cultivation of American Plants, it contains a Plate and Description of the Funebral Cypress, Notices of Cephalotaxis Fortunii, Cryptomeria japonica, Quercus sclerophylla and inversa, Viburnum plicatum and macrocephalum, with many recent introductions from the north of China, quite new to English gardens.

Messrs. S. and N. take this opportunity of stating that they give Designs for Laying out New Grounds and Plans for Improvements; also Estimates for all kinds of Planting, whether ornamental or economic.—Bagshot Nurseries, Sept. 14.

NEW AND CHOICE GERANIUMS,
AT VERY LOW PRICES.
PLANTS WILL BE READY ABOUT THE MIDDLE OF OCTOBER.

WILLIAM E. RENDLE AND CO., Plymouth, have this season a very large stock of the following GERANIUMS, and are enabled to offer them at the
FOLLOWING LOW PRICES.

Purchaser's Selection of Twelve from the following List for Forty Shillings; or without the first three for Thirty Shillings.

FOQUETT'S MAGNIFICENT, FOSTER'S GIPSY BRIDE, FALSTAFF,
Star, Ariel, Blanche, Negress, Cracker, Cassandra, Sundown, Symmetry, Gustavus, Gulielma, Grandiflora, Foster's Victory, Clown, Singularity, Refulgens, Cruenta, Princess, Junii, Rosamond, Harlequin, Emilie, Centurion, and Brilliant.

SCARLETS.—Commander in Chief, Excellence, and Queen of Summer.

FANCY GERANIUMS.

Purchaser's Selection of Twelve from the following List for Twenty-five shillings, or Twenty for Thirty-five shillings.

Alboni (Henderson's), Anais, Bouquet tout fait, Beauty of Winchester, Champion of Devon, Fair Emily, Fairy Queen, Jehu, Jehu improved, Ibrahim Pacha, Jenny Lind, Lady Rivers, Lemon-scented, La belle Africaine, Lady Plymouth, Lady Scarborough, Madame Grisi, Mazeppa, Superb, Madame Celeste, Minerva, Modesta, Magnifica Nosegay, Pheasant's foot, Prince of Orange, Picturata, Queen Victoria, Quercifolium coccineum, Radula, Rosa odorata, Sidonia, Statiaskii, Unique, and Zelia.

Purchaser's Selection of Twenty from the following List for Twenty shillings.

ARNOLD'S VIRGIN QUEEN (the best white known), Star of the West, Jenny Lind, Hoyle's Crusader, Orion, Marc Antony, Mary Queen of Scots, Rosy Circle, Nourmahal, Margaret, Mount Etna, Desdemona, Hebe's Lip, Aurora, Pluto, Champion, Pearl, Forget-me-not, Sunrise, Isabella, Duke of Cornwall, Conflagration, Black Prince, Mercury, Lady Ebrington, Scarlet Defiance, Rosa Mundi, Distinctus, Admiration, Mustee, and Flora's Flag.

Descriptions of most of the above-named Geraniums will be found in our NEW BOOK CATALOGUE OF PLANTS, which can be had on application for one penny postage stamp.

*** FIRST ORDER WILL SECURE BEST SELECTION.

All Orders above 2l. will be delivered free of carriage to any station on the Great Western, Bristol and Exeter, and South Devon Railways.

Railway and Steam communication from this port to all parts of Great Britian and Ireland.

WILLIAM E. RENDLE AND CO.,
NURSERYMEN, PLYMOUTH.

TILEY'S VIOLA ARBOREA, OR PERPETUAL TREE VIOLET.—VIOLA ARBOREA, or the PERPETUAL TREE VIOLET (true).—In answer to numerous inquiries for the above, and great satisfaction given by the plants sent out last season by EDWARD TILEY, he begs to state that he has this year a fine stock of the above beautiful DOUBLE VIOLET now to dispose of, which he can highly recommend, this being the proper time for making beds or potting. They are beautifully scented; the blooms are as large as the double blue Hepatica; they bloom freely from August till the end of May, and are perfectly hardy. Twelve of these plants grown in pots will scent a large greenhouse, and a small bed, 9 feet long by 3 feet wide, will be sufficient to furnish a family with bouquets the whole of the winter and the spring. They should be planted in rather a dry situation and a loose soil, as the Violet will thrive and bloom finer than in wet or clay borders.

E. T. has been informed by the gentleman that introduced it into this country, that he has seen them growing in the thickets of Persia to the height of 4 feet, with large bushy heads to them, and hundreds of blooms on them at the same time. Large bushy plants, 6*s.* per dozen; smaller ditto, 3*s.* per dozen; or 1*l.* per hundred.

Also he has a fine stock of that splendid YELLOW VIOLET, or VIOLA LUTEA, which has been so much admired at the London exhibitions. In colour it is equal to the Crocus. Strong bushy plants 2*s.* 6*d.* each; or smaller ditto, 1*s.* 6*d.* each.

KITLEY'S GOLIAH STRAWBERRY.—Strong well rooted plants at 3*s.* per dozen.

True BATH COS LETTUCE SEED, 1*s.* per packet.

Extra fine SWEET-WILLIAM SEED, saved from 24 distinct varieties, 1*s.* per packet.

ANTIRRHINUM SEED from all the best varieties, 1*s.* per packet.

WINTER CUCUMBER.—Lord Kenyon's Favourite, 2*s.* 6*d.* per packet.

The whole or any quantity of the above will be sent, postage and package free, to any part, on receipt of a Post-office order, or the amount in penny postage stamps.

Sold by EDWARD TILEY, Nurseryman, Seedsman, and Florist, 16, Pulteney-bridge, Bath.

TREES, SHRUBS, ROSES, VERBENAS, &c., FOR THE MILLION.

DAVID FERGUSON, LANDSCAPE GARDENER, CONTRACTOR, PLANTER, &c., offers common Laurels at 1*l.* to 5*l.* per 1000; if 100,000 are taken 10,000 will be added. Good standard Roses, 3 to 6 feet, 5*l.* per 100, and 40*l.* per 1000. Berberis aquifolium, fine, 1*l.* to 3*l.* per 1000. Evergreen Privet, strong, 1*l.* to 1*l.* 5*s.* per 1000. Cotoneaster microphylla, for hedges, &c., fine, 10*s.* per 100, and 4*l.* per 1000. Also large quantities of the following at low prices:—Fine specimen Cedrus Deodara and Pinus excelsa, 4 to 6 feet in height, in pots; fine specimen Arbor-vitæ, Aucuba japonica, Yews, Box, Phillyreas, red Cedars, Araucarias; Scotch, Silver, and Spruce Firs; Larch, Oak, Elm, Ash, Lime, Hornbeam, Hazel, double pink and scarlet Thorns, fine maiden Peaches and Nectarines, worked from trees in the houses on the spot; some of the fruit was exhibited at Regent-street, and received a Banksian Medal, this season, though very inferior to what D. F. has sent to his fruiterer at different times this season, which can be proved; with large quantities of other Fruit Trees. Also first-rate Verbenas, Petunias, Calceolarias, Geraniums, Fuchsias, Anagallis, Salvias, Cupheas, &c., for bedding out, at 1*s.* 6*d.* per dozen, if 5 to 20 dozen are taken; 1*s.* 3*d.* if 20 to 50 dozen are taken; above 50 dozen, 1*d.* each; and if 100 dozen are taken, 5 dozen will be added. Carriage free to London, Birmingham, Leamington, Peterborough, Banbury, Bedford, and all intermediate stations on the North-Western Railway.

Lists marked for selection at the above prices sent free on application; but to those not already in possession of a collection, D. F. advises parties to state the colour and quantity they want, and leave the selection to him; and to those that have no convenience for wintering plants, they will find it advantageous to give their annual orders in August and September for the following spring, as they, on taking five dozen and upwards, will have the choice not only of those marked in the list, but any other bedding out plant, if possible to procure, at equally low prices.

Letters directed Buckingham, in place of Aylesbury, reach D. F. one day sooner, where all Post-office orders are requested to be made payable.

FOREIGN BULBOUS ROOTS.

WM. HAMILTON, SEEDSMAN, &c., 156, Cheapside, London, begs to state that his Priced Catalogue of the above is now ready, and may be had (gratis) on application.

HYACINTHS in colours, named, for pots or glasses, 6*s.*, 9*s.*, and 12*s.* per dozen; in mixtures, 3*s.* per dozen. MIXED DUTCH CROCUS, 1*s* 6*d.* per 100. TULIPS for early forcing, 1*s.* per dozen. SNOWDROPS, 2*s.* 6*d.* per 100. NARCISSUS, 4*d.* to 6*d.* each. GLADIOLUS, IXIAS, IRIS, RANUNCULUS, ANEMONES, and a large assortment of other Roots, the prices of which will be found in his Catalogue.

W. H.'s Improved Supporter for Hyacinths, &c., 6*d.* each.

Address—156, Cheapside, London.

N.B. All prepaid orders exceeding 3*l.* sent carriage free.

PERMANENT PASTURE.

HENRY ROGER SMITHE, of Eastling, Faversham, Kent, engages to supply the Public with the NATURAL GRASSES AND TREFOILS, in mixtures suited to the description of soil which may be named, at 1*l.* per acre, allowing 3 bushels. The Seeds to be delivered on the railway. Mixtures for Lawns and old Pastures at an equal reduction. These Seeds are gathered by a gentleman, who, having made them his study from boyhood, now offers the result of his labour for the good of the landed interest, who are so suddenly and unequally taxed.

A reference is required from unknown correspondents.

THOM'S SEEDLING STRAWBERRY.

ROBERT THOM is now sending out plants of the above STRAWBERRY, which has been received by the public with the utmost favour. In addition to the flattering notices which have already been quoted from the provincial press, the attention of the gardening public is invited to the following extract from the "North British Agriculturist, and Journal of Horticulture:"

"THOM'S SEEDLING STRAWBERRY.—[The following has been received from a gentleman who is an excellent judge, and one on whose opinion every confidence may be placed. We have ordered a supply of plants for our own use.—HORT. ED.]—There are many good Strawberries, but I think this is one of the best. It has three excellent qualities—figure, flavour, and productiveness. It seems a hybrid between the old Roseberry and Myatt's Seedling, having all the rich flavour of the former, and the bold habit of the latter. The fruit is cone-shaped, of a deep scarlet colour, with pink flesh; and, as a bearer, it is unparalleled. A small plot of 7½ falls produced a quantity which, sold at 6*d.* the Scotch pint, would have yielded at the rate of 160*l.* per acre. This is the sort of thing for the cottage garden. A bed 6 feet by 4, would produce enough for a man, his wife, and half-a-dozen children, and some to spare for a neighbour, who continued to grow the old unproductive kind. I do not mean this as a grower's puff, for I have seen and tasted the plant, and can safely say that I never saw or tasted anything more luxuriant and luscious, and my remark was, that a plant in a pot would keep a man in fruit for a season. But it does not thrive in a pot, and it will not force. So if any try, on my recommendation, they must give it fair play, and allow it space to exhibit all its virtues."

Price 1*l.* 1*s.* per 100 plants; 25 plants sent, post free, for 7*s.* 6*d.*—Cornhill Gardens, Aberdeen.

FIRST CLASS SEEDLING GERANIUM.

RUNDLE'S BEAUTY OF MONTPELLIER.—For a description of this valuable flower, see the *Gardeners' Chronicle* of Saturday, Sept. 7. It is a sterling flower, and will be sure to give the greatest satisfaction. Price 20*s.* each. One over on every three to the trade.

Apply to WILLIAM E. RENDLE and Co.,
Nurserymen, Plymouth.

NEW HYACINTH SUPPORT.—HOOPER AND CO., CENTRE AVENUE, COVENT GARDEN MARKET, invite the attention of the Flower-growing Public to their new and perfect

SUPPORT FOR HYACINTHS IN GLASSES.

Its excellence consists in its being neat in appearance, easily applied, keeping the bloom erect almost without being visible, and suited to every size and shape of Hyacinth Glass.

May be obtained of the principal Seedsmen and Florists.

MAGNUS'S ENAMELLED SLATE is handsomer and more durable than the choicest Marbles, is less than half the cost of the commonest, and is PATRONISED by her MAJESTY and PRINCE ALBERT, the Nobility, Clergy, Architects of Eminence, Engineers, Builders, Railway Contractors, and the Public generally. It is suitable for Chimney-pieces, Piertable tops, Vases, Ink-trays, and ornaments of various descriptions, Billiard-tables, Baths, Wash-stand, and Dressing-table Trays, Door Furniture, Candelabra, Columns, Monuments, Head Stones, Mural Tablets, Pilasters, Plinths, Fonts, Grand Staircases, Balusters, &c., and is made to represent not only the marbles in ordinary use but all the more costly descriptions, as Porphyry, Rose Granite, Broccatella, Brescia, Lapis Lazuli, Malachite, and Florentine Mosaics, and has obtained the Medal from the Society of Arts. Bored Chimney-pieces, from 25*s.* upwards. Price lists sent on application to Mr. MAGNUS, PIMLICO SLATE WORKS, 39 and 40, Upper Belgrave-place, London.

*** Roofing and Plain Slate work, of all descriptions, at low prices.

CUCUMBER AND MELON BOXES AND LIGHTS.

One hundred 1, 2, and 3-light Boxes and Lights of all sizes ready for immediate use. Warranted best materials, packed and sent to all parts of the kingdom; 2-light Boxes and Lights from 1*l.* 4*s.* Garden Lights of every description, Conservatories, Green and Hot-houses, made and fixed in all parts of the kingdom. References given to the Nobility, Gentry, and the Trade, in most of the counties of England. JAS. WATTS, Hothouse Builder, Claremont-place, Old Kent-road, London.

MITCHELL'S MINERAL BLACK PAINT.—This antiseptic Paint is intended for Park Fencing, and for all farming purposes; it is particularly adapted, by its prevention of dry rot in timber and repellance of damp, for Barns, Stables, Outhouses, Weather Boarding, Hop-poles; also for Carts, Waggons, &c., particularly the Wheels, and for Iron Hurdles, Iron Railings, and all Wood or Iron Work in exposed situations. For Brick Walls it is highly serviceable as a preventive of damp, and also for Walls intended for Fruit Trees, as, besides preserving the Wall, it increases the heat in all situations exposed to the sun, and prevents the harbouring of insects. It is also an excellent covering for Canvas, or Cart Tilts; Roofing, &c. Sold in casks containing from 1 cwt. to any quantity, at 17*s.* 6*d.* per cwt., quite ready for use, by JAMES PHILLIPS and Co. (the sole agents), 116, Bishopsgate-street Without, London.

GLASS FOR CONSERVATORIES, GREENHOUSES, FRAMES, &c.

JAMES PHILLIPS AND Co. are supplying SHEET GLASS, 16 ounces to the foot, in boxes of 100 feet each, at the following prices for each:

Sizes. Inches.			Inches.			Per foot.	Per 100 feet.
	Under	6	by	4	at	1½*d.* is	£0 12 6
From 6	„	4	„	7	„	5 „ 2*d.* „	0 16 6
7	„	5	„	8	„	6 „ 2½*d.* „	0 18 6
8	„	6	„	10	„	8 „ 2½*d.* „	1 0 6
10	„	8	„	12	„	9 „ 2¾*d.* „	1 2 11

Larger sizes, not exceeding 40 inches long.

16 oz. from 3*d.* to 3½*d.* per square foot, according to size.
21 oz. „ 3½*d.* 5*d.* „ „
26 oz. „ 3½*d.* 7½*d.* „ „

Packed in Crates of about 250 feet each, and in sizes of about 40 in. by 30, 2½*d.* per foot.

HARTLEY'S PATENT ROUGH PLATE, packed in boxes of 50 feet each:

6 by 4 and 6½ by 4½ ... 10*s.* 6*d.* | 7 by 5 and 7½ by 5½ .... 12*s.* 0*d.*
8 by 6 „ 8½ by 6½ ... 13 6 | 9 by 7 „ 10 by 8 ... 15 0

Well worth the attention of Nurserymen and Market Gardeners.

GLASS TILES AND SLATES made to any size or pattern.

HALLIMAN'S REGISTERED FRUIT PROTECTORS, from 6*d.* to 1*s.* each.

MILK PANS, from 2*s.* to 6*s.* each.

PROPAGATING AND BEE GLASSES, from 2*d.* each.

WASP TRAPS, 3*s.* 6*d.* per dozen.

LACTOMETERS, for trying the quality of Milk, 7*s.* 6*d.* each.

STANDS, for Pianofortes, 1*s.* each.

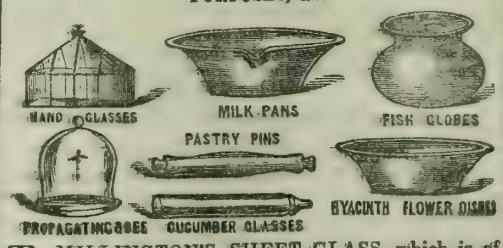
Glass Shades for Ornaments. Parian Marble. Wax and Alabaster Ornaments. Lamp Shades and Glasses. Patent and British Plate. Ornamental and Stained Glass; and every article in the Trade.

JAMES PHILLIPS AND Co., 116, BISHOPSGATE-STREET WITHOUT, LONDON.

GLASS WATER PIPES.

MESSRS. COATHUPES AND Co., GLASS MANUFACTURERS, Bristol and Nailsea, Somerset, continue to supply GLASS PIPES for the conveyance of water, &c., in lengths of from 3 to 7 feet, and from ½-inch to 4-inch bores; they provide also the necessary joints, which enable them to stand very considerable pressure.

GLASS FOR CONSERVATORIES, HORTICULTURAL PURPOSES, &c.



T. MILLINGTON'S SHEET GLASS, which is of the best description, varying from 16 to 32 ounces, at from 2*d.* per foot and upwards; 100 feet and 200 feet cases of large Sheet Glass, for cutting up, at 2½*d.* per foot. British Plate Glass, from 1*s.* 2*d.* to 2*s.* per foot, according to size. Patent Rough Plate Glass, from ½ to 1 inch in thickness, from 4*d.* per foot upwards. Glass Slates and Tiles. Milk Pans from 12 to 24 inches diameter, from 2*s.* to 5*s.* each Cucumber Tubes, from 12 to 24 inches long, at 1*d.* per inch. Lactometers, 7*s.* 6*d.* each. Wasp Traps.—Lists may be had, on application at the Warehouse, 87, Bishopsgate-street Without, same side as the Eastern Counties Railway.

GEORGE JACKMAN, NURSERYMAN, Woking, Surrey, 1½ mile from the Woking Station of the South-Western Railway, begs to announce that he has just published a new and complete CATALOGUE of his American Plants, Ornamental Evergreens and Flowering Shrubs, Standard and Dwarf Roses, Fruit and Forest Trees, &c., which may be had gratis on application.

HOLLYHOCKS.

H. LANE AND SON, Great Berkhampstead, Herts, have about 30 varieties of fine DOUBLE HOLLYHOCKS, without names, which can be depended upon as splendid sorts, at 6*s.* per dozen. They will be ready the end of September, and orders sent out in rotation as received.

A LIST OF NEWLY INTRODUCED PLANTS NOW OFFERED FOR THE FIRST TIME BY JAMES VEITCH AND SON, EXETER:

Escallonia macrantha, 21*s.* each; one over to the Trade on three.

Ixora salicifolia, 21*s.* each; ditto.
Dipladenia urophylla, 21*s.* each; ditto.
Hoya coriacea, 10*s.* 6*d.* each; ditto.
Dipteracanthus spectabilis, 10*s.* 6*d.* each; ditto.
Oxalis elegans, or Oxalis elegans major, 5*s.* each, or three for 10*s.* 6*d.* of either.
Calceolaria grandis, 5*s.* each, or three for 10*s.* 6*d.*

IXORA SALICIFOLIA (TRUE), WILLOW-LEAF IXORA.

MESSRS. VEITCH AND SON are now prepared to send out strong plants of the above beautiful and distinct IXORA, received by them from Java through Mr. Thos. Lobb. It is a lovely free-blooming species, flowering in a very young state, and at the Chiswick Exhibition in July last received the first prize for new and rare plants—the Silver Gilt Medal. It is figured and described in Curtis's "Botanical Magazine" for July last.

Strong well established plants 21*s.* each; one over to the Trade on three.—Exeter, Sept. 14.

GRAPE VINES IN POTS FOR FORCING.

J. WEEKS AND CO., King's-road, Chelsea, beg to call attention to their splendid collection of Grape Vines, all struck from eyes, now two and three years old, the finest Plants that have ever been offered for Sale, consisting of 20 varieties, all of the best sorts, warranted true.

THE HAMBURGHS AND MUSCADINES being the best for early forcing in pots, this is the best time for Gardeners to have them, so as to get the eyes ripe and prominent. This Nursery is well worthy of a visit, as all modern Horticultural improvements are in full operation.

J. WEEKS and Co., King's-road, Chelsea.

GLASS FOR CONSERVATORIES, &c.

HETLEY AND Co. supply 16-oz. Sheet Glass of British Manufacture, at prices varying from 2*d.* to 9*d.* per square foot, for the usual sizes required, many thousand feet of which are kept ready packed for immediate delivery. Lists of Prices and estimates forwarded on application, for PATENT ROUGH PLATE, THICK CROWN GLASS, GLASS TILES and SLATES, WATER-PIPES, PROPAGATING GLASSES, GLASS MILK PANS, PATENT PLATE-GLASS, ORNAMENTAL WINDOW GLASS, and GLASS SHADES, to JAMES HETLEY and Co., 25, Soho-square, London.

See the *Gardeners' Chronicle* first Saturday in each month.

CROWN, SHEET, AND ROUGH PLATE GLASS, FOR HOTHOUSES, CONSERVATORIES, &c.

The Improved Patent Rough Plate, made by Messrs. Hartley and Co., can be supplied from this Warehouse, of every size and substance, at the same prices as at the works.

100 and 200 feet cases of large Sheet Glass, from 2½*d.* per foot. Small ditto, 10*s.* 6*d.* per 100 feet, packed in boxes ready for immediate delivery. Curators of Botanical Societies, Florists, Railway Agents, and others requiring large quantities, will, on sending dimensions, receive estimates at the lowest prices.

GLASS MILK PANS, CREAM POTS, Lactometers, Bee Glasses, Fish Globes, and all kinds of Dairy Glass, Propagating Glasses, Hyacinth Dishes, Cucumber Tubes, and every other description of Garden Glasses.

PATENT GLASS PENS, self supplying, never blot, never soil the ruler, and will write continuously for 12 hours.

Also, Glass Rulers, Glass Inks for office-stands, desks, &c. Stationers and Schools supplied. Wholesale Warehouse for Ornamental Shades, Lamp Shades, Gas Glasses, Genuine White Lead, Paints, Colours, and Pumps for Farm purposes.

Our Catalogue of 18 folios is the most complete ever published. No Gardener or Farm Bailiff should be without one. May be had Gratis on sending two postage stamps to Messrs. DOGAN and Co., 48, Leicester-square, London.

TO GARDENERS, &c.

GUTTA PERCHA TUBING for Watering Gardens, spreading Liquid Manure, &c., may be had joined up to any length. Waterproof Soles for Boots and Shoes. Thread for tying up Plants. Gutta Percha Canvas suitable for nailing up Trees, &c.—Manufactured by THE GUTTA PERCHA COMPANY PATENTEES, 18, Wharf-road, City-road, London.

IMPORTANT TO GENTLEMEN, FARMERS, AND GARDENERS.

TO BE DISPOSED OF, the produce of Two Acres of POTATOES, from Mr. Sangster's prepared cuttings, on Mr. Wm. Weller's Farm, near the Falstaff Inn, on the road from Gravesend to Chatham, on the 30th inst., and the three following days, while they are being taken up. They are free from disease, and first-rate quality. Those who may not be able to attend, will please to forward their orders early (as the stock is small), to Messrs. HAY, SANGSTER, and Co., Nurserymen and Seedsmen, Newington Butts, London, with Post-office orders, payable to JOHN SANGSTER, Borough, which will meet due attention.

PRICE ON THE GROUND.

York Regents ... 6*s.* per bushel, 21*s.* per sack of 3 bushels.
American Natives ... 8*s.* do. 21*s.* do. do.
Soden's Early Oxford 10*s.* do. 27*s.* do. do.

Delivered at Rochester, or the Railway Station, at 1*s.* per bushel extra, including bag and sack.

Newington Butts, London, Sept. 14.

TO FLORICULTURAL AND HORTICULTURAL SOCIETIES and Others.—The following MARQUEES, having been bought under an execution, are TO BE SOLD reasonably, as second-hand:—250 feet by 28 feet, 180 feet by 40, 150 feet by 28, 120 feet by 33, 110 feet by 30, and 26 feet by 26.—Apply to BENJAMIN EDGINGTON, Marquee, Tent, and Rick-cloth Manufacturer, 2, Duke-street, Southwark, London.

WARMING.

HOT-WATER APPARATUS, with improved Boilers, requiring no brickwork, and arranged to continue in action from 12 to 16 hours without attention, adapted for Churches, Chapels, Conservatories, and every description of Building, supplied and erected on the most reasonable terms.

Also the THERMANTERION, an apparatus which warms without injuring the air, and recommends itself on account of its simplicity, durability, efficiency, and economy, especially adapted for Churches, Chapels, Halls, or Buildings, only used occasionally. — Apply to SPILLER and TAYLER, Engineers, Battersea.

MESSRS. VEITCH AND SON'S CATALOGUES OF NEW AND RARE PLANTS, STOVE AND GREENHOUSE PLANTS, GERANIUMS, AMERICAN PLANTS, &c., &c., are now ready, and can be had, on pre-paid application, by enclosing two postage stamps.—Exeter, Sept. 7..

SCARLET GERANIUMS.

CONWAY'S PRINCESS ALICE.*—Colour, bright vermilion, with white eye, large globe truss, free bloomer, of good habit, and a very desirable variety either for pot or bedding. Strong plants 5s. each on the 1st of October.

Also ready, at the same time, strong plants of Flower of the Day, 10s. 6d.; Commander in Chief, 5s.; Princess Royal, 2s. 6d.; Queen of Summer, 2s. 6d.; Trentham Scarlet, 1s. 6d.; Queen, improved, 1s. 6d.; Excellence, 1s. 6d.; Royalist, 1s.; Punch, 1s.; Gem, 1s.; Cottage Maid, 1s.

The above selection of 12 attractive varieties may be had for 30s., basket included.

NEW PETUNIA, CAPTIVATION.* — White, with purple throat, large and well-shaped flower; a good bedding plant; 3s. 6d. each.

GERANIUM, CORONATA.*—Pink and white, profuse and perpetual bloomer, flowering very early in the greenhouse, 3s. 6d. each.

CALCEOLARIA MULTIFLORA.*—Yellow compact dwarf variety for bedding, 3s. 6d. each.

* These plants were shown at the Metropolitan Exhibitions this season, and were greatly admired.

MARY CONWAY, Earl's Court Nursery, Old Brompton.

HEDENHAM ROSARY, BUNGAY, SUFFOLK.

A DESCRIPTIVE CATALOGUE of a Selection of THE BEST HOLLYHOCKS in cultivation, by R. B. BIRCHAM, for the Autumn of 1850, and Spring of 1851.

Name.		Colour.	s.	d.
Atro-purpurea ...	Chater's...	dark purple	1	6
Atro-sanguinea ...	Baron's ...	rich dark crimson ...	2	6
Aurantia ...	Rivers' ...	salmon	3	6
Abd-el-Kader ...	Bircham's	dark puce	3	6
Black Prince ...	Baron's ...	black	2	0
Blue-beard ...	...	dark ground, white-edged	1	6
Bicolor ...	Chater's...	purple and white ...	2	6
Commander-in-Chief	Baron's ...	light-edged rose ...	2	6
Coccinea ...	Ditto	bright scarlet	3	6
Comet ...	Chater's...	bright ruby red	7	6
Conspicua ...	Ditto	colour very much like Comet	3	6
Defiance ...	Bircham's	crimson purple	5	0
Delicata ...	Baron's ...	French white	2	0
Elegans ...	Chater's...	delicate blush	3	6
Enchantress ...	Ditto	beautiful deep pink ...	5	0
Formosa ...	Baron's ...	claret	2	0
Fireball ...	Bircham's	brilliant crimson ...	3	6
Magnum Bonum...	Baron's ...	fine maroon	7	6
Model of Perfection	Ditto	fine white, chocolate grd.	3	6
Mount Etna ...	Bircham's	bright red	3	6
Mr. C. Baron ...	Chater's...	delicate pinkish salmon	7	6
Napoleon ...	...	red and buff	1	0
Obscura ...	Chater's...	silvery shaded puce ...	5	0
Queen ...	Baron's ...	beautiful light blush ...	3	6
Ditto Rosy ...	Chater's...	beautiful deep blush ...	3	6
Queen of Roses ...	Bircham's	large rose	1	0
Robert Burns ...	Bircham's	rose-coloured, "size, shape, and colour excellent."—See *Gard. Chron.* Oct. 13, 1849.	3	6
Royal Standard ...	J. Chater's	dark red	3	6
Rosea superba ...	Baron's ...	deep pink	1	0
Rosea grandiflora	Ditto	light pink, perfect ...	5	0
Rosea alba ...	Chater's...	rose and white	2	0
Sulphurea perfecta	Rivers' ...	fine sulphur	2	6
Susanna ...	Bircham's	fine cream	5	0
Snow-ball, superb	Chater's...	pure white	3	6
Virgin Queen ...	...	good white	1	6
Walden Gem ...	Chater's...	fine deep ruby crimson ...	10	0
William Tell ...	Bircham's	dark lilac	5	0

If the Selection be left to R. B. B.

Twelve first-rate varieties of the above	£2	0	0
Twelve good ditto ditto ...	1	0	0
Twelve second-rate varieties	0	12	0
Twelve border ditto	0	6	0

Mixed sorts, 30s. per 100.

A remittance requested on delivery of plants. Post-office orders payable at Bungay, Suffolk, to ROBERT BIRCHAM.

Carriage paid to London. Plants added to compensate for carriage, and every attention paid to the packing.

The Gardeners' Chronicle.

SATURDAY, SEPTEMBER 14, 1850.

MEETINGS FOR THE ENSUING WEEK.

COUNTRY SHOWS.—Monday, Sept. 16: Camberwell Amateur Dahlia, and Surrey Dahlia.—Tuesday, Sept. 17: Royal Oxfordshire Horticultural.—Wednesday, Sept. 18: York Horticultural.

To what secret causes the MORBID APPEARANCES observed among plants are to be traced, will never be ascertained till a much larger number of cases than we yet know of shall have been accurately recorded. It is only by a comparison of such instances with each other and with parts in a healthy condition, and by a consideration of the numerous modifications of them, which abound in all directions, that any sound views of their cause, progress, and cure can possibly be arrived at.

It may be questioned, indeed, whether some of the morbid conditions with which gardeners are familiar can be properly called diseases; for they are connected with no decay or unhealthy change of the tissues, and can only be looked upon as instances of disturbed, not diseased, action. Nevertheless, as everything which is at variance with the ordinary state of a plant when in undoubted health must be regarded as a symptom of the natural functions being disturbed, it seems right to class among diseases, even such affections as perhaps merely indicate exuberant vigour.

The transition from health to disease and death may occur in two opposite directions. On the one hand we may have the sources of health wasted by gradual decay, contaminated by deleterious agency, and manifested, in the first instance, by signs of mere debility; on the other hand we may witness excessive enlargement, unnatural vigour, signs of unusual exuberance also passing by degrees into decay, emaciation, and death. These fundamental distinctions may be represented by a circle, of which, as in the accompanying cut, the point A represents a perfectly sound constitution, while the point B indicates disease equally brought on by vigour and weakness.



The first is *atrophy;* the second is *hypertrophy*. To the first belong yellowness, shrivelling, shanking, blindness, canker, casting foliage, dropping fruit or flowers, and the like. To hypertrophy we must refer the green pustules on Vine leaves, unnatural emission of roots from branches, as in the Vine and Laurel, watery shoots in trees, perhaps galls, cockscomb appearances, gum, fruit-bursting, unfruitfulness from excessive production of wood, and other affections of a similar kind.



It is not pretended that all diseases are to be referred to one or the other of these two classes. On the contrary, there are some which may be regarded as a mixture of the two; and there are others which depend upon circumstances quite foreign to either atrophy or hypertrophy. Nevertheless it will be useful in practice, and in considering how to deal with a disease, to ascertain whether or not it may not be placed in one or other of the two classes. The method of dealing with it must necessarily be governed by that preliminary determination.

The case now represented is one of those examples which appear to be distinctly referable to atrophy. In the spring of the present year, JOHN CROKER, one of the young men employed in the garden of the Horticultural Society, remarked some plants of the "Favourite" Pelargonium, and another or two, attacked by a singular swelling of the stem, attended by imperfect attempts at the production of leaves. As these swellings increased they were made the subject of enquiry, and it was ascertained that they consisted in an excessive development of the cellular (or fleshy) matter of the stem, assuming on the surface a warted or tubercular appearance; that the warts were of a great variety of sizes, all tapering to a sharp point, some divided into two plano-convex parts, and a few supported by minute stunted leaves. A section of the surface of the enlargement appeared as at A. The plants thus affected were feeble in their growth, made little progress, and gradually lost their leaves. Both cuttings and old plants of the "Favourite" Pelargonium were attacked. By degrees the fleshy masses rotted off; but the plants remained unhealthy during the rest of the summer.

Here it would seem that the disease consisted in an unnatural development of cellular matter at certain spaces on the stem, owing, it may be presumed, to the leaves being unable to consume the organisable matter existing in the stem. That matter, finding no demand upon it in the usual places, gradually collected, and at last, forced onwards by the vital forces of the plant, broke through the surface in the form of imperfect leaves and buds; for we entertain no doubt that the sharp tubercles which studded the excrescences, were a mixture of rudimentary leaves, incapable of extension after being generated, and of "growing points," in like manner arrested from an insufficient supply of food. Had the plant been sound in constitution, it would either have expended its sap in the formation of true leaves, and in that case no such accumulation as here occurred could have taken place; or, if by local causes the original leaves had been so disturbed in their action, that such an accumulation of sap was effected, then the leaves and buds consequent upon it would not have remained stationary after their first appearance, and would not have dropped off, but would have lengthened into true leaves and branches, and formed themselves into monstrous but permanent excrescences.

The present condition of these plants, at the end of a summer, is this. Some of them, which have been unable to gain greater vigour, are nearly dead. Others, on the contrary, which have now made more healthy shoots, have nearly lost their warts; but evidently retain their tendency to produce them. We presume that if means had been taken to bring on very vigorous growth, the warts would have disappeared altogether. Perhaps some one of our readers may have observed how this would be.

HOW TO MISMANAGE A GARDEN.

CHAPTER VI.—Water is not an uncommon source of profit to the mismanager. It is quite astonishing, indeed, how easily this element may be made to assist in spoiling a garden.

Foolish people say that it is a part of the food by which plants exist, and that it requires to be administered with care, skill, and discretion. But your geniuses are not to be bamboozled by fine names, or what the world believes to be authority. They know better. How, indeed, can anything be fed on water? Can a man, or a horse, or a sheep? Even a goose on a common won't live on water, but must have Grass. How, then, should a plant? The opinion of the mismanager is decidedly that water is of no other use than to moisten the soil, and therefore he keeps his soil as wet as he can.

He has also his own ways of applying it. When he waters the plants in his borders, he gives them "just a sprinkle," by holding the watering-can high, and allowing the drops to dash on the ground "quite natural like." By repeating this operation once a day, he will by degrees bring his ground to a nice hard surface, so as to keep in the heat, and be easily raked. It is true that hard, hot ground is not favourable to the admission of water, but, then, it has the advantage of looking well; and besides, if water is poured on it, somewhere or other it must go, and it will be sure to find its way to the roots——if it does not find its way to the gravel walks or a neighbouring ditch.

In like manner, if plants are in pots, they should be deluged overhead, from a coarse-rosed watering-can. When you see the water running out of the hole in the bottom of the pot, you can be under no mistake that plants have had enough. It is true that a good deal of soil and other matters run out of the pot along with the water; but that is of no consequence: there is the more room in the pot for a further supply of water. It is true that little or no water remains in the pot, the ball of earth being too hard

to receive it; but that also is of no importance, because it is so easy to water it again.

Some people, on the other hand, soak their potted plants very gently, and when the ball of earth has taken all it can, they then remove it carefully from the water. But that is troublesome, takes up a great deal of time, slops a man's legs, and is merely a fancy of folks who pretend to be wiser than their neighbours.

Another method to be particularly recommended is to water trees in the open ground, by pouring down water at the foot of the stem. The man who has a genius for mismanagement knows the advantage of that. Water is to moisten roots; the biggest roots are at the foot of the stem; therefore water should be applied to the foot of the stem. It must be owned that the advantage of the practice is not apparent, unless a heavy storm of rain should fall immediately afterwards; but as the reasoning is correct the practice must be right.

It will be evident that the plans of the mismanager are far more judicious than those of the man who contrives to irrigate his beds by turning a gentle stream over them. If it were only because so much labour is saved by irrigation, such a Frenchified way ought never be be adopted. It is just as absurd as that plan of warming water in tanks artificially heated or exposed to the sun, before using it. Who would drink lukewarm flat water, if he could get it fresh and cold from a deep well; and why should a plant like it? As to warming it by hot-water pipes, that is about the silliest scheme of the modern pretenders to a knowledge of gardening. A labouring man might as soon think of washing his face and hands in warm water. Besides, plants cannot feel. If you ask our friend the genius whether he does not think that warm water would agree better than cold with a labourer in a violent perspiration, or who had been stewing all day in a hothouse, he triumphantly enquires whether a plant is a man. It may be true that tropical plants come from countries where cold water is unknown; perhaps they do; perhaps they don't. At any rate the mismanager will teach them how to bear it; and it cannot be denied that to harden plants is an object with all real gardeners.

Never have a syringe in your garden. What is the use of a syringe? It only throws water on leaves; but where is the advantage of moistening leaves? Even if plants did feed on water, they would not feed by their leaves. You might as well put a man's roast beef under his arm-pit and expect him to fatten by it. Still more repugnant to all the mismanager's ideas is the foolish habit of syringing the walls and brick paths of a greenhouse. What is the use of that? What good can it do a plant to throw water on a brick wall not within a yard of it? No, no; keep the footpaths dry and nice to walk upon; keep the walls dry too—(if you do not they are very likely to be covered with "green") and then you will make things comfortable. If you do employ a syringe be sure to use it most when Vines are in flower, and afterwards when they are in fruit; and in the greenhouse, first when the flowers are opening, and next when the wood is ripening. When they are making their growth it is of no consequence.

These rules are highly deserving attention. There can be no doubt that if they are carefully studied, and the precepts duly observed, there will be little left to desire by him who would mismanage.
Κήπουρος.

GARDENING IN HOLLAND.—No. II.

IN that quaint old town yclept Ghent there are markets for flowers, for pigeons, and for puppy dogs, all of which I duly inspected. Fruit, vegetables, herbs, as well as medicinal drugs, are all exposed for sale in this congeries of markets. Amongst fruits were some varieties of summer Pears that differed from those grown for the market at home, but possessing no merit to warrant their introduction here. Nuts and a few Filberts were exhibited, and an abundance of Plums. Of these, the Greengage and Cherry Plums were most common, the former more yellow-green than we usually grow them, and the latter prettier to look at than to taste. Not a Peach or Nectarine was shown, but Apricots from standard trees were plentiful.

It was amongst the flowers that I had hoped to find varieties that are not cultivated with us; but such is the effect of rail and steam, that there was not a single plant but was familiar, although some were of kinds that we do not usually grow in pots. For instance, there were displayed three kinds of Marigolds, a Sunflower, China Asters, Mallows, and even Hollyhocks in pots. To me the China Asters appeared the only kind worthy of pot culture. A few Gladiolus Gandavensis and Lilium lancifolium enlivened the collections, but neither so well grown as we are accustomed to see them in England. In the culture of the Lilies one thing, however, surprised me, which was, that they had contrived to produce three or four blossoms upon stems not more than 18 to 24 inches high. I was tempted at first to believe that the roots were not there, only the flower-stems; but I afterwards learned that the roots were put late into pots and plunged in the open ground, having no other covering than ashes or sand.

The nursery of Van Houtte is a short distance from the town, and as time was precious, I drove, to allow as much as possible to this far-famed collection. The ground skirts the road for a good distance, the entrance being at the extremity furthest from the town, the reason for which I could not divine. A high hedge of Hornbeam protected hundreds of Camellias and New Holland plants, and prepared me for the sight of almost a town of glass houses. On arrival I noted the little attention that had been paid to the culture of specimen trees of hardy kinds, and the utter neglect of any attempt at what we call landscape gardening—all here was hard, mechanical, and business-like. It looked a manufactory for plants, as such, indeed, it is, and something more. I took a rapid glance over the herbaceous department, which is large, and contained some plants not usually cultured with us, especially some Composites. The Alstrœmerias were nearly out of blossom; they had been grown under glass, and the lights taken off as the plants had advanced. In this manner many bulbs are grown in this establishment, and some, as the Zephyranthes alba, that I should have thought would not have required this indulgence.

I had here the opportunity of seeing beds of Gladiolus Gandavensis in full flower; they differ slightly from each other, as has been well given in Paxton's plate; but there was none of them at all comparable with G. Brenchleyensis, of which some inquiries were made in the *Gardeners' Chronicle* a few months back. G. Brenchleyensis is a far superior flower, being at once of a higher as well as more pure and transparent a colour. I had left it in blossom at home only a few days before, and could not be mistaken Both hybrids have natalensis for one parent; but the other may have been cardinalis in one instance, and florabundus in the other; but however this may be, one thing is certain, namely, that we have no border flower a rival to G. Brenchleyensis—it is peerless.

After Groom's Lilies, or even my own, I could but feel that those I saw were not particularly well grown; but then it is not made a point of here, and there is quite enough well done to allow the truth to be told without offence. In fact, as far as plants go in this establishment, the very great merit is in the hothouses.

We have here collections of Palms and tree Ferns, of herbaceous Ferns and Tillandsias, &c., of dimensions we only expect to find at botanic gardens or our own Loddiges. These are in fine health; in one house placed so thinly that the form of each was shown, whilst in another that delightful intricacy of tropical forms is produced by growing them closely together, with twining creepers and dependent Orchids. The extensive use of Lycopodium, both on the borders and in pots, gave a freshness and coolness to the whole. A Cycas revoluta, with a stem 12 feet high, and dividing into four branches, with their leaves, gave a very extraordinary character to one of the houses. The houses are generally narrow, and some of them of extreme length; the longest appeared upwards of 300 feet, and with a path so narrow that one person only could pass down at the same time; but arrangements were made to pass each other at intervals, there being side niches in which one person might stand whilst another continued his way unimpeded. This long house was entirely filled with stove plants. Nearly all the structures are low, and at their entrance you have to descend some two or three steps.

In one house I observed nothing but Gloxinias, which were admirably grown. In this family Mr. Van Houtte seems to take particular interest, for here were seedlings and crossings almost without end; and amongst them were some very beautiful new varieties. A house has just been erected for the growth of Victoria regia; it is circular, the outer walls about 5 feet, upon which rests a curbing of stone, which receives the iron sash bars—for rafters there are none; these ascending at a low angle, are united by a circular collar of iron, upon which is supported the only means of ventilation. The tank is 3½ feet high, and the young specimens appeared very happy in an atmosphere of 95° Fahr. But the most remarkable part of this establishment, and one that separates it entirely from all rivalry, is the manufacture of coke and gas for the buildings. What gas could be required for, in such quantity, at first puzzled me; but when I saw a whole range of buildings, capable of holding 150 persons at their desks, I ceased to marvel.

It is here that artists paint the flowers from nature; these are copied, for form and shadow, upon stone, and struck off upon paper; each separate outline then is passed to youths to colour, as nearly as they can to the original—the artist who formed the first design superintending them. I believe we have no such artistic workshops at any nursery in England.

I returned as highly gratified with the place as with Mr. Van Houtte's politeness, and would recommend all lovers of gardening, travelling in Belgium, to spare a few hours to its inspection. *William Masters, Exotic Nursery, Canterbury.*

BRITISH ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE.

THURSDAY, *August* 1. — SECTION D. — PROFESSOR ROYLE, M.D., made a communication *On the Herbaria of the Hon. East India Company.* He stated that the collections of plants of the Company consisted of specimens collected by himself, and Messrs. Griffith, Falconer, Harris, Stocks, and others. Of these the most extensive was that of the late Mr. Griffith, containing about 12,000 species. These were principally from Assam and Affghanistan. The other collections contained Himalayan, Cashmere, Scinde, Abyssinian, African, and Arabian plants. The duplicates in these collections had been presented to various public museums. — Professor Walker-Arnott complained that in the distribution of their plants the Hon. East India Company had not given any to individuals who were studying the botany of India, and who would make much better use of them than public institutions, where frequently there was no provision made for their preservation, and they were regarded as mere lumber. He knew institutions where this had been the case, and at the same time the only individuals who could make use of these perishing treasures could not get at them. He was glad to hear that the stores of the India House were being distributed, and would suggest that such botanists as De Candolle, Bentham, Hooker, and others who were studying particular families of plants, should not be forgotten in their distribution.—Professor Balfour expressed his thanks to the East India Company for the plants presented to the University of Edinburgh, and hoped that they would be made use of there. —Professor Royle stated that the plants had been distributed at his suggestion, and he had thought that institutions to which all had access were the most likely places in which the plants would be made generally useful and available.

Remarks on Anacharis alsinastrum, by C. C. BABINGTON, Esq. This plant, which had been recently added to the British flora, threatened to become one of our most troublesome weeds. It was first discovered about eight years ago by Dr. George Johnston, of Berwick-upon-Tweed, in a pond at Dunse Castle, near that place. It was afterwards found by Dr. Johnston in the river Whittader, and although he had for many years been in the habit of botanising in the waters of this river, he had not previously seen it. It was observed only in small quantities at first, but it was now one of the most prominent features in the vegetation of the stream. Subsequent to Dr. Johnston's observations, it was found in a canal near Leicester. At this time it was examined by Mr. Babington, and although very like to a Canadian plant, the Udora canadensis, he had named it Anacharis alsinastrum. At first no flowers had been discovered, but he had now specimens to exhibit which possessed flowers. It was evidently a dicœcious plant, and the flowers on the present plants were staminiferous, but they possessed no anthers. The plant was allied to Vallisneria, and the flowers were attached to an elongated stalk similar to those of Vallisneria. Since the announcement of the discovery of the plant, three years ago, it had been found in many of the canals and rivers of this country; and in ponds and reservoirs where it had been introduced, it had been increased in such quantities as to render it necessary to remove it. This had been the case in the Cambridge Botanic Garden. Professor Walker-Arnott stated his conviction that this plant was precisely the same as the Canadian plant Udora canadensis.

In the MECHANICAL SECTION (G.), Mr. MACPHERSON brought forward a plan for preventing water-pipes bursting with the frost, but as several expert mechanicians present expressed their conviction that the author's plan would not be more likely to succeed than that of others, we merely record the fact for the purpose of indicating the desirableness of some method which would secure the object Mr. Macpherson had in view.

FRIDAY, *Aug.* 2.—In the CHEMICAL SECTION, Mr. R. HUNT read a report on the *Present State of our Knowledge of the Chemical Action of the Solar Radiations.* After an historical introduction, the author summed up as follows:—The chemical action of the sun's rays is proved, by its influence on organic and inorganic bodies, to extend over all the luminous rays of the prismatic spectrum—and slightly beyond them at the least refrangible end, and considerably beyond them at the most refrangible extremity. Living organisms and the products of organic life appear to be influenced by light—the luminous power—as distinguished from the purely chemical or calorific powers. The vitality of plants is stimulated by light; and although many functions are performed in the absence of luminous radiations, they appear to be all quickened by its exciting powers; at the same time we have evidence to show that the chemical principle is necessary to the processes of assimilation, and consequently to the production of many of the proximate constituents of plants. The author is of opinion—though he regarded the subject as open to serious inquiry—that the process of germination and budding are essentially influenced by the chemical principle *Actinism;* that the decomposition of carbon is peculiarly due to the luminous principle; and hence that the formation of wood in plants is a function of their vitality excited by *Light;* that the development of the flower is due to a delicate balance of the forces *Actinism* and *Light*, since we find that both the luminous and chemical agencies are very active during the process, and that the ripening of fruit and the perfecting of the healthful conditions of the seed are due to a combination of the calorific and chemical forces—as evidenced in the so-called parathermic rays—many of the properties of which have been examined by Sir John Herschel and Mrs. Somerville. With regard to the action of the rays of light on inorganic bodies, the author thought the following propositions established: 1. That the maximum of chemical (actinic) phenomena was to be found where there was the least quantity of

light and heat. 2. That as the luminous power increased—either in the spectrum or in natural phenomena—the chemical (actinic) power diminished, until it came to its minimum, where light—luminous power—existed at its maximum. 3. That although the chemical influence extended to the red or heat-giving rays, its operations were materially modified, and to all appearance changed, by the combined operation of the calorific power, and that results standing in direct opposition to those obtained by the pure chemical rays were given by the chemico-calorific rays. In conclusion, the author pointed out the wide field for investigation which was opening up to the experimentalist; and he showed that, although much had been achieved by the experiments already undertaken, there yet remained a most extensive ground for inquiry, which may be considered as absolutely unbroken; chemical action, vital power, electrical phenomena, and phosphorescence were proved to be directly dependent on the solar influences; but we yet want the researches which shall satisfactorily show whether these phenomena are due to one great principle modified by the matter on which it acts, or if they result from the operation of forces combined in action, although very different in their resulting effects.

VILLA AND SUBURBAN GARDENING.

When produced in perfection, few plants are more esteemed than the Lily of the Valley, more especially when brought into bloom during winter. Its fragrance and simplicity never fail to elicit for it a tribute of esteem from the fair sex. Nevertheless, how seldom do we see it well flowered in winter in private gardens. Let us, therefore, point out how this may be obtained.

As its name implies, it is the Lily of the Valley, delighting in rich deep alluvial soil. It will not thrive under trees, where all nutriment and moisture are absorbed. It would be nearly as consistent to expect a Water Lily to grow on a rock; such situations are, however, frequently assigned to it. A spot suitable for its successful growth should be selected where the staple is light, rich, and deep, and where moisture can be conveniently applied in dry weather when the plant is making its foliage, for unless a vigorous foliage is obtained, the flowers will be partial and small. In preparing the ground for planting, a generous coating of well-decomposed manure should be given, and if vegetable manure, such as decayed leaves, can be obtained, a large portion of this may be safely applied. Let the ground be turned up at least 18 inches deep and the manure well incorporated with the soil.

The best time to form new plantations of the Lily of the Valley is during autumn, when the foliage is becoming yellow; when planted at this season, in one year they will make strong flowering plants. If the plantations are made with a view to the plants being eventually potted and forced, they should be planted in patches of two or three roots, 18 inches apart, and 2 feet between the rows. By constant attention to moving the soil amongst them, and keeping the land clear of weeds, they will form strong roots fit for forcing in a year. The patches should be taken up whole and placed in the pot without disturbing the mass of roots, or tearing them asunder, as is frequently done, which, in fact, is one cause of failure.

Plants treated as above described are almost certain to bloom freely. A mixture of light loamy soil and leaf-mould will be found suitable material to pot them in. The pots should be placed in a cold pit or frame, and if a succession of bloom is required, a portion only should be put into the forcing-pit or hothouse at a time. A temperature of 60° will be found suitable for them. The surface of the pots should be kept moist, and as soon as they begin to emerge from the soil, frequent slight syringings should be afforded them. When the plants are coming into flower, they should be gradually exposed to a lower temperature, which will be the means of keeping them longer in perfection; or if they are intended for bouquets, they will not flag so soon as when they are cut from a stove. *Pharo.*

Home Correspondence.

Roberts' Tiles.—Having given Mr. Roberts' Strawberry tiles a fair trial this season, I must say that my opinion of them is most decidedly unfavourable. In a wet, dull season, they might be useful in keeping the fruit dry, but they certainly will not answer in a fine warm summer. The tiles become so hot that they actually cook the fruit, and I was compelled to remove them last July from two or three beds, or I should have lost all the crop. I left a few on one bed, the remaining portion being covered with fresh moss, and the contrast was striking, the fruit upon the moss being far larger and finer than those upon the tiles, many of which were quite scorched. I am also convinced that the tiles absorb a large amount of moisture from the ground, and, consequently, injure the growth of the plants. *Henry Doubleday, Epping, Sept.* 9.——I have used Mr. Roberts' tiles for two years, and have given them a fair trial. In comparison with slates, sweepings of lawns, and flints, I have found the tiles to be superior to anything that I have employed for keeping the fruit clean and free from vermin. I would not, however, recommend them to cobblers, and slow-go-motives, but to practical gardeners, in whose hands they are amongst the best articles that can be introduced into a garden. *D. Johns, The Gardens, Shobrook Park, Crediton, Devon.*

Potatoes from Cuttings.—Our Potatoes from cuttings are still growing vigorously, while those planted in the usual way are diseased. Although no chemist, it is my opinion that a proper quantity of starch is wanting to bring the Potato to maturity. From 7 lbs. of Potatoes, the produce of whole sets, planted in the usual way, on the 6th April, I had 1 lb. 3¾ oz. of starch. From the same sort, raised from cuttings, put in on the 4th May, the produce was 1 lb. 13½ oz., showing a difference of 9¾ oz. I observed, when taking the first water from the pulp, that that from the former was a very much darker brown than that from the latter, which was a muddy white. I have taken up my White-blossom Kidneys, the produce of tubers from cuttings of 1849. They are all sound; I have obtained 30 bushels off 6 rods. *John Sangster, Cumberland-place, Newington Butts.*

Large Cucumbers without Seeds.—The great pains taken to produce large Cucumbers with few or no seeds, is, as far as the palate is concerned, labour thrown away. Any common Cucumber, with however many seeds, not approaching to ripeness, or bitter, is as well flavoured and more digestible than the finest looking specimen that was ever grown at 50 times the cost and trouble. *C.*

Scientific Excursionists.—In reading the report of the British Association, in one of the Edinburgh newspapers, we are informed that nearly 300, belonging to the association and other learned bodies, set out on an excursion of pleasure to the Bass Rock and the ruins of Fontallan Castle. This was all very well; but there was one thing connected with the excursion I could scarcely believe, and had to read the paragraph twice over. We are told that "they had no botanist to name the plants picked up by one or two of them, the most conspicuous being the Beta maritima, as was supposed, and even the locality of the beautiful Lanatera arborea was not discovered. The Solan geese required no description, and their exceeding tameness gave every one a full opportunity of examining their form and plumage." Had it been a company of gardeners in the first year of their apprenticeship, we have no doubt that some of them would have been able to tell whether the plant that was picked up was the Beta maritima or not; but when we bear in mind that the cream of the scientific world were not able to distinguish the difference between the Beta maritima and the Cakile maritima, or the Crambe maritima, or the Chenopodium maritimum, or any other maritima, it is high time that they were turning their attention to Dr. Lindley's "School Botany." Is it right to be able to talk about Lepidodendron and Lepidostrobus, Neuropteris and Odontopteris, Sphenopteris and Cyclopteris, Stigmaria and Sigillaria, found in the stony herbarium of Nature, before we are able to distinguish between a Sea Beet and a Sea Goosefoot in a living state on our native shores? With such a company, in such a locality, we might have expected some addition to our marine botany—some new Cladophora or Sphærococcus, looking—

> "—— as if these wonderous plants had thought
> And power to choose out places for their growth;
> As if they sought to bless the homeliest haunts,
> And clothe the rock with beauty: bidding men,
> Passing perchance in haste, to pause and think
> Of Him who made them, and look scorn no longer
> On lowlier ones, whom the Most High hath placed
> In fitting stations."

It is really surprising that so many learned men should know so little about botany, almost as little as the tame inhabitants of the Bass Rock; for some of them may say, "Meæ alæ pennas non habent." *P. Mackenzie.*

Amateur Gardening.—As I conceive the object of your Paper is not only the further improvement of the literate in gardening matters, but also the instruction of the illiterate, I think your Calendar writer would do a service to many, if he would not only instruct them in the time and manner of cultivating their crops, but would add some information as to the character of vegetables, and the state in which they are fit for use; and the manner of preparing them for the cook. It is frequently said that God sends meat, but some one else sends cooks. The same might be said of amateur gardeners. For instance, I purchased this year a select parcel of garden seeds from one of the best growers who advertises in your Paper. Amongst them were several of which I knew nothing, but having the seeds, I wished to grow them, and having grown them, I wished to eat them; but from not knowing the nature of their formation and state for the table, I apprehend I have lost many. Amongst the "Cabbages" were the "Couve tronchuda," and "Jerusalem Kale." These were both sown in seed-beds, pricked out, and finally transplanted, and have grown away in good style. I looked for the "Couve" forming a head or heart, as other Cabbages, but they have all gone to leaves, as large as a coal-box, but no heart. The Jerusalem Kale partly run off to seed, and the others remain in broad leaf. No doubt the fault is in my ignorance; and having been a reader of your Paper for more than six years, as well as other horticultural works, there must be something very dull in me, or deficient in these works. May it not arise from the fact, that your contributors take it for granted that your readers are better informed than they really are? Or that while they provide for the proficient in the art, they neglect the instruction of the less informed. *A Learner.* [All amateurs should provide themselves with some book on routine gardening, as an addition to which the newspaper is most useful. Couve tronchuda does not heart.]

Brunsvigia Josephinæ.—It may perhaps interest some of your readers to learn that the treatment pointed out by me last year, for flowering the Brunsvigia Josephinæ, has fully succeeded again this season. I have now two of the smaller plants showing for flower, and two of the larger in full bloom; one or two others having now flowered consecutively two and three years. None have yet been repotted since I first had them from the Cape; and the breadth and substance of the leaves of those that were kept out of doors till the middle of November, as compared with the narrow and attenuated leaves of one that has grown all its time in the greenhouse (and which still shows no sign of flowering), testify to the fact that the want of success, in growing this kind of bulb, is almost, if not entirely, attributable to the too tender care that has hitherto been bestowed upon it. *Charles Leach, Clapham-park.*

Disease in Melons often originates at an early stage in the growth of the plant, either when it is transferred from the seed-pot, or in training after it is planted in the frame. I have seen healthy looking Melons die away suddenly, drooping as if the vines had been cut from the roots during hot sunshine; the roots, at the same time, being healthy. The cause of failure lay in the neck of the plant, being so much diseased that every channel had ceased to carry sap to the leaves. I am inclined, however, to think that a little care will, in most cases, prevent the evil. Last year my Melons suffered more or less from disease, the cause of which I pretty well understood, and this year I determined it to my satisfaction. I discovered the evil in this way—in potting the young plants from the seed-pot, I placed three plants in a pot; in one of the plants I made a slight bruise with my finger-nail, similar to a bruise occasioned by a grain of sand, when pressing down with the finger and thumb at potting time. I watched the progress of the sore; week after week it gradually increased, although the plants had the same healthy appearance as their neighbours. At this stage the plant had two Melons on it about half grown; by and bye the stem became diseased half-way through, and it increased rapidly until nothing more than the skin was left on the lower part of the stem. Nevertheless the leaves appeared healthy for many hours afterwards, but at last the sore proved fatal. In a second experiment I carefully potted three plants from the seed-pot, and when ready I planted them in the frame; but when the plants had commenced to run off, I slightly twisted one of them at the neck, as is too often done in training or by a current of air before the shoots are tied or pegged to their proper places. Bleeding took place instantly, but it did not appear to check the healthiness of the plant. This occurred in a 4-light pit, where the plants grew vigorously. When the Melons had attained the size of walnuts, the plants were trimmed and well watered; after watering, the bleeding matter that had congealed on the wound, became black, as though fermentation had taken place, when it rapidly increased, until all the tissue through the stem was diseased, the woody fibre decaying with it; the sap then ceased to flow, and the plant died. I accidentally bruised a plant at the neck in a similar way, when bleeding instantly took place. This being the only plant under the light, I lost all hopes of a crop; but as soon as I saw matter in the wound, I wiped it dry with a soft rag twice and sometimes thrice a day, taking care never to let the water touch the wound; at last it dried up, and the plant ripened three good-flavoured fruits. I have often had the branches go off in the same way, but I have always traced the evil to a twist in training, or where a leaf has been taken off, leaving the leaf-stalk to decay on the plant. *Wm. Culverwell, Thorpe Perrow.*

Herbaceous Plants.—Being a great admirer of herbaceous plants, I have frequently contemplated sending you a few lines, by way of an endeavour to recall the attention of cultivators to a class of plants that should never have been suffered to fall into neglect. To expatiate on their beauties would be superfluous, as their merits in that respect will scarcely be denied. I would only observe, that the beauty and interest of a garden may be greatly enhanced, both cheaply and easily, by a good selection of such interesting and ornamental subjects, and the borders or clumps kept constantly with something in bloom from February till December. I am pretty well acquainted with a garden (an old-fashioned one certainly), surrounded and intersected by 6 feet gravel walks, parallel with which are 6 feet flower borders. In the latter are three rows of permanent herbaceous plants placed 3 feet apart in the row; the taller behind, the intermediate in the middle, and the dwarfer sorts in front, and behind all, next the back alley, is a row of standard and dwarf Roses, with Narcissi, and other bulbs under them. These borders, although now greatly out of fashion, are often very much admired. In summer, the spaces between the permanent plants are filled up with showy annuals, biennials, &c., and throughout the summer and autumn they have a charming appearance. I am, however, not advising such an arrangement to be adopted by your readers. My object is simply to direct attention to the culture of the herbaceous hardy tribes of plants; let those who cultivate them, arrange them according to their own taste and circumstances. Again, there is the beautiful little Alpines; what a slender share of attention they enjoy, compared with their merits. *Querous.*

New Animal and Vegetable Food.—On the first establishment of the Zoological Society, I well recollect that it was set forth as being one of the principal objects of that institution to promote the introduction of new animals and fishes, useful and various, for the food of man; I was led to expect to see the silure and picture carp of the continent sporting in our rivers, and the guanaco and tapir convertible into saddles of meat, and

hams for the table. Now, although none of us may live to see that attainable, I do hope to hear that we should not charge in vain the fifth continent with not producing fruits or vegetables economically useful for the support and comfort of civilised man, when we never have taken any trouble to attain that end. I ask myself, were either Wheat, Oats, or Barley be, &c., fit for food in their native form? And then I say, why might not the Panicum lævinode of Mitchell, or other Grass growing seeds, be so improved by cultivation, as to make them fit objects for an article of export from that southern land to the old country? *C. P., of York.* [Possible; but not probable.]

Fairy Rings.—Most writers on this subject, if not all, have been imitators of Mr. Howitt, a favourite author of mine, but who is wrong in his theory as to the cause of these rings, at least according to my experience of them in this county. A great number of those which I have seen have only continued for one season. The diameters of the rings, or rather of the space within the circles, are of various dimensions—some only 3 or 4 feet, others from 10 to 20 feet. Other rings have continued for four or five seasons in succession, but every season in the same exact situation. I have been very particular on this point since I first saw Mr. Howitt's theory on their cause. One in a meadow near here has continued four years; the ring is 18 inches broad, and the space within the circle 24 feet in diameter. This is the largest I ever saw. The soil is a good rich loam 2 feet deep. In many cases which I have seen, the green mark has diverged outwardly or inwardly, for several feet, and returned to the true circle again. In some cases it has been broken off for a few feet. I have no theory on the subject, but according to my experience it is evident Mr. Howitt's is not a true one. I suppose them to be caused by the electric fluid; and yet I have one reason to doubt this, and that is, I never recollect seeing one on any but old Grass land. *W. Rothwell, Winwick.*

The Apple of the Dead Sea.—The following is an extract from Curzon. He made a somewhat singular discovery when travelling among the mountains to the east of the Dead Sea, where the ruins of Ammon, Jerash, and Adjeloun well repay the labour and fatigue encountered in visiting them. "It was a remarkably hot and sultry day; we were scrambling up the mountain, through a thick jungle of bushes and low trees, which rises above the east shore of the Dead Sea, when I saw before me a fine Plum tree loaded with fresh-blooming Plums. I cried to my fellow-traveller, 'Now, then, who will arrive first at the Plum-tree;' and as he caught a glimpse of so refreshing an object, we both pressed our horses into a gallop to see who would get the first Plum from the branches. We both arrived at the same moment, and each snatching at a fine ripe Plum, put it at once into our mouths, when on biting it, instead of the cool delicious juicy fruit which we expected, our mouths were filled with a dry bitter dust, and we sat under the tree upon our horses sputtering and hemming, and doing all we could to be relieved of the nauseous taste of this strange fruit. We then perceived, and to my great delight, that we had discovered the famous Apple of the Dead Sea, the existence of which has been doubted and canvassed since the days of Strabo and Pliny, who first described it. Many travellers have given descriptions of other vegetable productions, which have some analogy to the one described by Pliny; but up to this time no one had met with the thing itself either upon the spot mentioned by the ancient authors or elsewhere. I brought several of them to England; they are a kind of nutgall. I found others afterwards on the plains of Troy; but there can be no doubt whatever that this is the Apple of Sodom, to which Strabo and Pliny referred." Surely if the traveller, who found what he considers to be the "Apple of Sodom," had been a botanist, he would have been able to have told us more about the fruit than that it was a kind of nutgall. Has it been ascertained what plant it is that bears such Apples? *P. Mackenzie.*

On the Cultivation of the Melon in France.—The finest kind of this fruit is the Cantaloup, and is brought to great perfection in the environs of Paris, where it is produced in immense quantities. It is covered with tubercles or warts, from which appearance the French give it the distinctive *soubriquet* of "Melon *galeux.*" This delicious fruit averages 7 or 8, to even 10 lbs. in weight, and exceeds 2 feet in circumference. The finest Melons could be bought in Paris this season for 15*d.* and 20*d.* The method adopted by the best growers near Paris, among whom may be named Messieurs François and Decouplé, is as follows: When the young plant has formed its second or third leaf beyond the cotyledon, the stem is pinched off, or "stopped." The effect of this is to make it throw out two lateral branches, which again are stopped beyond their sixth or seventh leaf. The plant now comes into bloom, and as soon as the fruit is set, two, or at the most three, are selected as the most promising, and all subsequent ones are pinched off as they form, so as only to have this limited number on one plant, to preserve its vigour and increase the sap. The seeds of this Melon are found to vegetate, even when transmitted to the East and West Indies, taken from the fruit as brought to table. They should be merely wiped and dried, but not washed. The French gardeners follow the same system in growing the immense orange-coloured Pumpkin, or "Potiron," so extensively used to make vegetable soup on "meagre days." When it is desired to produce very large Pumpkins, only one fruit is retained on each plant, all the others being suppressed. It may be well to mention, as the result of careful observation, that the climate of Paris enjoys a far greater portion of solar heat and light than the meridian of London. *B. C. H., London, Sept.* 11.

Disasters in Gardening.—Some years ago I walled in an acre of ground for a garden. I got the interior borders ready for planting fruit trees, and taking Loudon's "Encyclopædia of Gardening," I chose from his lists the names of the best fruit trees of different sorts. These I got at a first-rate nursery, and handed over to my gardener to plant. He professed to be competent to do this in the best manner. Nothing could possibly be more unsatisfactory than the result. My crops, except Cherries, are indifferent, and many trees have not borne ripe fruit, from being planted in a bad aspect. With regard to the exterior walls, I took a different plan. I wrote to the *Gardeners' Chronicle*, saying I had so many yards of east, west, north walls, &c., and I asked what kinds of trees, and how many, I should plant in each aspect. I followed the directions given in answer, and I have now plenty of fine fruit ripening on my outer walls—nothing could do better. I do not know what to do with the inside trees. My best Pears are against the north wall, Crassane, Chaumontelle, and Glout Morceau; and my south is thrown away on Cherries. They have been eight years there, and would be troublesome to transplant. Will they do any good on the north? [No.] *Cavanensis.*

Limonia laureola.—This Limonia stood last winter in Mr. Skirving's nursery, near Liverpool, quite exposed, in a pot; not a leaf was injured. I saw it last April, after weathering the last severe winter, as green as a Leek, while Laurel, Yews, and scores of other things, were brown and nearly dead. It has a peculiar and aromatic smell, accompanied by a fine and noble appearance, and is altogether a splendid thing. How it has been obtained is unknown. *Thos. Williams, Haigh-hall Gardens, Wigan.*

Societies.

Tardebigg Horticultural Show and Cottagers' Gardening Society.—The first meeting and show took place in Hewell Park on Wednesday. It has been suggested and established by Lady Harriet Clive for the purpose of encouraging habits of industry among the neighbouring cottagers, and by fostering a taste for horticulture to increase those home-pleasures which are the green spots and brooks by the way in the poor man's journey of life; and it is only one of the many acts which are testifying that lady's constant thought and regard for those around her who have been blessed by Providence with but a small share of this world's good. The hour fixed for opening the show was 2 o'clock, and before that time a great number of well-dressed people had assembled from Bromsgrove, Redditch, and other neighbouring towns at the park gates; for, in order to lend an additional attraction to the meeting, the Hon. Mr. Clive had announced that the beautiful gardens adjoining the mansion should be thrown open to those who attended the show. When the crowd first entered the park the first thing that called their attention was a group of tents, in which were arranged the collections of fruits, flowers, and vegetables, sent for exhibition and competition. The largest contained the cottagers' vegetables, and a magnificent show of flowers and fruit from the gardens of some neighbouring gentlemen, but principally from the hothouses and conservatories of Hewell Grange itself. In an adjoining and smaller tent were the specimens sent by parties who did not come under the denomination of cottagers. Tickets of merit were adjudged to such of these as were thought worthy, and the exhibitors who obtained the greatest number of these also received prizes. The Yeomanry band was stationed near and played at intervals during the afternoon. The Hon. R. H. Clive and his son, Robert Clive, Esq., had been busying themselves all the morning in the arrangements, and Lady Harriet, with her daughters, Mrs. Pepys, and two or three other visitors from the house, were also early on the ground welcoming the visitors, and evidently sharing in the general pleasure. About three o'clock the children from the National Schools at Bromsgrove, something like 1000 in number, were brought on to the ground in 22 waggons, drawn by two horses each. They carried banners and boughs, and added not a little to the life of the scene. They were seated upon forms round about the tents, and seemed to enjoy their holiday mightily. After looking round the tents, the company strolled off to the gardens, and distributed themselves among the picturesque and winding walks of the rockery, through the conservatories, or the tasteful parterres and soft treading turf of the terrace in the French garden. The day was beautifully fine, and the company seemed full of admiration and thoroughly delighted. The gardens were in a high state of cultivation, and kept with a care and attention which bespeak the interest which Mr. Clive takes in them, and do infinite credit to the skill and taste of his gardener, Markham. Towards the close of the day, Mr. Clive distributed with his own hands the prizes, which varied in amount from 5*s.* to 3*s.* The judges were Mr. Robson, gr. to Lord Lyttelton; Mr. Smith, gr. to Captain Galton; and Mr. Dytch, gr. to Captain Taylor. With regard to the show itself, we must add our testimony to the very superior quality of many of the productions shown from the cottagers' gardens; they were, indeed, such as could not have been obtained without a good deal of practical knowledge and much attention. The Potatoes which Mr. Clive noticed were truly beautiful specimens of that favourite root; the Kidney Beans and Apples were also particularly fine. The tradesmen and superior class of workpeople did not exhibit so freely as might have been wished, owing, we believe, in some degree to a want of perspicuity in some of the rules, which will doubtless be set right before another meeting. As to the merely honorary part of the exhibition it was in itself a show. At the upper end of the large tent was a table of fruit from the Hewell hothouses, comprising fine Ischia Figs, Jamaica, Antigua, Queen, and Santa Cruz Pines, black Hamburgh Grapes, double Swalsh Peaches, Elruge Nectarines, Greengages, Apples, Pears, and Cherries, all in the highest state of perfection, and betokening that Mr. Markham was a grower worthy of such gardens. Towards 6 o'clock the exhibitors took away their collections, the 22 waggon-loads of children wheeled off the ground amidst the most vociferous shouts and hurrahs of their joyous burdens, and the general company gradually dispersed to their several homes. *Abridged from the Worcester Herald, Sept.* 7.

Royal South London Floricultural, *Sept.* 4.—This, the last exhibition of the season, was well attended; the show itself was above an average one. Dahlias, of which there were some admirable specimens, were produced in great numbers. Fancies are rapidly advancing to perfection in shape; we shall soon see them as unique in this respect as the ordinary varieties. The prizes were awarded as follows:—Amateurs and Gardeners, 24 varieties: 1. Mr. Robinson, gr. to I. Simpson, Esq., Pimlico, with Duke of Wellington, Purple Standard, Mr. Seldon, Queen of Lilacs, Thames-bank Hero, General Negrier, Mrs. C. Bacon, Imbricata, Lady St. Maur, Standard of Perfection, Yellow Standard, Richard Cobden, Fearless, War Eagle, Essex Triumph, Scarlet Gem, Nonpareil, Beauty Supreme, Louis Philippe, Queen of the Isles, Shylock, Duchess, Sir F. Bathurst, Oakley's Gem; 2d, Mr. Black, gr. to E. Foster, Esq., Clewer Manor, near Windsor, with Earl of Clarendon, Fearless, Richard Cobden, Mr. Seldon, Negro, Marchioness of Cornwallis, Fame, El dorado, Sir F. Bathurst, Charles Turner, Seraph, Queen of Lilacs, Duke of Wellington, Black Prince, Princess Louisa, Essex Triumph, Princess Radziwill, Mynn, Shylock, Purple Standard, Duke of Cambridge, Unique Superb, Hector (Turner's) Andromeda; 3d, Mr. Allen, Shacklewell; 4th, Mr. Cook, Notting hill; 5th, Mr. Weedon, Hillingdon.—12 Blooms: 1st Mr. Rowden, Adbury House, near Newbury, with Earl of Clarendon, Mrs. Seldon, Hero, Marchioness of Cornwallis, Black Prince, Mr. Seldon, R. Cobden, Duke of Cambridge, Seraph, Grenadier, Gem, Princess Radziwill; 2d, J. Edwards, Esq., Holloway, with Thames-bank Hero, Fearless, Andromeda, Beeswing, Duke of Cambridge, Duke of Wellington, Mr. Seldon, Earl of Clarendon, Sir. F. Bathurst, Snowflake, Shylock, Black Prince; 3d, to Mr. White, Chelmsford; 4th, Mr. Bennett, Dulwich; 5th, Mr. Battie, Erith; 6th, Mr. Hunt, jun., Paddington.—6 Fancy Varieties: 1st, Mr. Black, with Miss Compton, Elizabeth, Madame Bresson, Comte de Flandre, Miss Blackmore, and Gaeparine; 2d, Mr. Robinson, with Comte de Flandre, Emperor de Maroc, Madame Bassaville, Floral Beauty, Lady Grenville, Madame Wachy; 3d, C. Lockner, Esq., Paddington; 4th, Mr. Rowden. Nurserymen, 24 Blooms: 1st, Mr. C. Turner, Royal Nursery, Slough, with Grandis (Turner's), Sir F. Bathurst, Mrs. Seldon, Thames-bank Hero, Earl of Clarendon, Negro, Snowflake, Mr. Seldon, Queen of Lilacs, Marchioness of Cornwallis, Richard Cobden, Andromeda, Black Prince, Miss Hawtrey, Essex Triumph, Duke of Wellington, Grenadier (Turner), Nonpariel, Duke of Cambridge, Utilis, Seraph, Frederick Jerome, Yellow Standard, Fearless. Equal 1st, Mr. J. Keynes, Salisbury, with Magnificent, Cleopatra, Princess Louisa, Snowflake, Essex Triumph, Richard Cobden, Yellow Standard, Queen of the East, Bathonia, M. Gauberte, Sir F. Bathurst, Mr. Seldon, Mrs. Bacon, Gen. Negrier, Marchioness of Cornwallis, Crocus, Toison d'Or, Miss Vyse, Fearless, Dulcet, Shylock, Golden Fleece, Buffalo Girl, Sarah; 3d, Mr. Bragg, Slough; 4th, Mr. Gurney; 5th, Mr. Hunt, Paddington. Fancies: 12 blooms: 1st, Mr. C. Turner, with Striata perfecta, Belle de Nogent, Mrs. Hansard, Unique, Miss Compton, Elizabeth, Post-secretaire, Hane, Dulce's Lady Grenville, Jenny Lind, Mr. Labouchere, Comte de Flandre; 2d, Mr. Keynes, with Miss Compton, Elizabeth, Highland Chief, Comte de Flandre, Bell Bonquet, Rainbow, Candidate, Striata perfecta, Miss Blackmore, Lady Grenville, Forget-me-Not, Jeannotte; 3d, Mr. Bragg.

Hollyhocks were shown in spikes, and in capital condition, by Mr. Bircham, of Hedenham, Norfolk, and by Mr. Chater, of Saffron Walden; there were also numbers of single blossoms, which in this state looked miserable. They should be shown in spikes, or not at all.

Verbenas were poor. Some pretty seedlings were sent by Mr. G. Smith.

Seedling Dahlias.—These were more numerous than good. There were several useful flowers staged, but few novelties; among the latter, Mitchell's Queen of Beauties was the most attractive—colour, waxy soft white, with clear rose tip, and very delicate, but apparently having a treacherous centre; the form of its petal and outline are good. Bragg's Admiral is a good useful lilac, and appeared to be very constant. Others consisted of Keynes's Summit of Perfection, dark purple; do., Honourable Mr. Herbert, shaded red and yellow, both full flowers; Stein's Nil Desperandum, good heavy scarlet; Turner's Grandis, much the same colour; Holmes' Barmaid, very promising white; Do., Roundhead, dull buff, of fine form; Soden's Beauty of the Grove, small and neat, and the darkest flower we have seen. Edwards's Mrs. Hansard is a noble fancy, yellow tipped with white; this flower is large and of very fine form, decidedly the best of its class. A large number of blooms were put up for inspection, but we were unable to ascertain which flowers received certificates, on account of the crowd which had assembled before the cards were put on.

Review.

The British Flora, comprising the Phænogamous or Flowering Plants, and the Ferns. By Sir W. J. Hooker, K.H., and G. A. W. Arnott. The 6th edition. 12mo. Pp. 604. Longmans.

This is a particularly nice edition of a well-known and very useful work, aided by some lithographic drawings executed by Mr. Fitch, with his usual accuracy and admirable taste. To some it will be more acceptable than "Babington's Manual," because of its including more details of various kinds. We should, however, advise all students of British plants to use them both; in that way they will be able to compare discordant opinions concerning species and genera, and perhaps to draw their own conclusions. Upon this subject, however, we are tempted to quote in this place the author's words: "What is a genus, or what is a species, is a point upon which scarcely two botanists are agreed at the present day. With regard to the former, however

much it may be necessary to subdivide in a system comprehending the known plants of the whole world, so as to retain only a limited number of species in each genus, the same does not apply to a local Flora; and it is there preferable to constitute sections or subgenera, particularly when the limiting characters are inconstant, difficult, or obscure. A *species* cannot be so treated; it is formed, by our Maker, as essentially distinct from all other species, as man is from the brute creation; it can neither for convenience be united with others, nor be split into several; but the difficulty is to ascertain what is such a primitive or natural species; and it is here so great a difference of opinion exists. Some pronounce a species to be distinct if it presents a different habit or appearance to the eye, particularly if this be constant, although often indefinable: others consider it a species, although exhibiting no difference of aspect, provided it can be defined, even although the differences are so minute that they can be detected only by the microscope; while a third party are of opinion that the validity of a species may be tested by cultivation. The authors are not inclined to believe that any one of these tests is sufficient. Of all the works of Creation, we have a specific account only of man; but as the others appear to be formed on the same plan, there is a strong presumption in favour of those arguments which assimilate the species of plants to what we know of the human race. With regard to mankind, it is universally acknowledged that there now exists so great diversity between an inhabitant of the torrid and an inhabitant of the frigid zone, and even of any one part of the globe and of another, that it can only be accounted for on the principle that each succeeding generation has a tendency to recede more and more, in general appearance, from the original type; and if we apply this to the vegetable kingdom, we must at once allow that, although cultivation may sometimes in a single year or two satisfactorily show that two supposed species are the *same*, a thousand years' cultivation cannot prove them *distinct*. The more we cultivate a plant, or the more it is limited in its wild state to a particular climate or place of growth, the more permanency is given to the peculiarities of what was originally derived from the same root, or even seed-vessel, of another apparently widely different form. Hence a rare mountainous plant may frequently be a mere alpine permanent state of some common lowland species, or a Swedish species the more northern race or state of a southern one; and it is from this cause that we see in our gardens so many called species (as in the genus Achillea), which cannot now be referred satisfactorily to any of the wild ones, although primarily derived from them. Knowing, then, this tendency of Nature to give permanency to a variety of forms obtained from one primitive species, there appears to be less violence done to her laws by combining too much, than by subdivision, unless where there is an anatomical or physiological distinction. Linnæus took nearly all his specific characters from conspicuous parts, especially from the stem and foliage, and they were therefore natural; but at the present day we are prone to select minute ones: of these some are of trifling value, while others, sufficient to constitute subgenera, are connected with the habit of the plant, and should therefore not be neglected. Indeed the time may ere long arrive, when what are now called genera or subgenera will alone be considered species, and another Linnæus be requisite to reduce the chaos into order. In the meanwhile, we have endeavoured to steer a middle course: the species admitted in former editions are seldom reduced, unless where it was found that the characters were insufficient or variable; and as rarely has sanction been given to those which have been split off from other species, by the too-refined ingenuity of the German, Swiss, and modern Swedish botanists. If in one or two cases this neomania has been yielded to, it has been more on account of the remonstrances of the author's friends, who had opportunities of examining the living plant, than from any conviction of either the necessity or utility of so doing." In the justice of these views we may concur, but who is to apply them? and how?

The reader will find in this edition the authors' funeral discourse upon the once celebrated Linnean system. It will no longer answer the purpose of booksellers, because their customers have become too intelligent to occupy themselves with puerilities; and it is clear that the counsel who have for a quarter of a century been defending the sexual system, have now thrown down their briefs in despair.

Garden Memoranda.

Botanic Gardens, Glasnevin.—There is now in flower in this establishment the rare Allardia tomentosa (Decaisne), which is a new genus to our British collections, besides being important for its locality, viz., on the Thibet frontier, at an elevation of 12,000 feet. The plant when growing is very pretty, and will become a great favourite with those who look after plants suitable for rock-work. The large pink flowers, contrasted with the very woolly leaves, make a fine appearance. The stems rise, or rather grow, about 10 inches long, trailing on the surface of the ground. In this garden, from the same situation, are also specimens of the Potentilla rigida, of Wallich, a fine species, allied to P. fruticosa. It is very pretty, growing about a foot high, with large bright yellow flowers. The seeds from which both plants were raised were presented by Major Madden.

Bodorgan Hall, Anglesea, the seat of O. F. Meyrick, Esq.—It has been the custom for strangers visiting Wales to decry the attractions of the Island of Anglesea, and to devote all their attention to the mountain scenery on this side, or in the immediate vicinity of the Menai Straits. The country appears somewhat flat and barren about here, though this aspect is relieved at intervals by pleasing knolls and fertile valleys. But there is one spot adjacent, a perfect oasis in the desert, a most delightful mansion and park—the seat of Owen Fuller Meyrick, Esq., a descendant of one of our most ancient and highly respected Welsh families—sheltered by fine woods from the northern and western winds, on an eminence, gently undulating, and with an incline to the southward and eastward, herds of deer frolicking on the green sward, shaded walks, the waters of Carnarvon bay rolling in front, at the foot of the hill, some distance towards the interior, so as to present at high water the appearance of a vast lake, with the Carnarvonshire mountains in the distance; the whole furnishing *a coup d'œil* that is truly enchanting. But even this brilliant scene is eclipsed by the gardens, which are admitted to be the most perfect and best conducted in Wales, and may vie with many of the first character in England. The flower-garden is spacious, well stocked with the choicest plants, and tastefully laid out and preserved; the Vineries and Pineries are on the best principle, the hothouses exhibit a profusion of Orchids, the fruit and kitchen-gardens are in exquisite order, the shrubberies are carefully attended to and well arranged, and the Tobacco plantation is an object of much curiosity to strangers. The forestry and gardening departments are under the care of Mr. Ewing, who resides in a neat little cottage, with a turf before it on which fairies might love to dance, and the water not a stone's throw distant, and who has great pride and satisfaction, by permission of his employer, in showing respectable visitors over the grounds and gardens, and paying them every attention. The railway station being only about a mile from this delicious spot, considerable numbers have availed themselves of the privilege, during the last month or two, and we should be sorry indeed were any persons, fond of sylvan scenery, admirers of art and nature combined, lovers of order and neatness, and in search of the picturesque, to leave Wales without making this excursion. *Abridged from the North Wales Chronicle.*

Miscellaneous.

Wintering the Carnation.—As winter will soon approach us, perhaps the following plan of wintering the Carnation may prove acceptable. My frame stands on legs, and has a false bottom 8 inches from the ground, well drilled with a 1½-inch auger. On this bottom I put a layer of potsherds and brick-rubbish, and on these my pots (48's, each containing two plants) are placed. I then fill up to the rims with a compost of three parts cinder-ashes and one part sawdust, with a small quantity of powdered charcoal, all well mixed. In this mixture the plants may be watered without the least fear of injury from mildew, &c., as the water passes off freely, and no damp is generated in the frame from the earth beneath. In this way I have grown Carnations, &c., for a number of years, and have always had an extremely healthy stock. I have false bottoms in my frames, because I use them for other purposes, such as working Dahlias and growing Cucumbers in, &c. *Alpha, in Beck's Florist and Garden Miscellany for September.*

Method of hardening Objects in Plaster of Paris, and rendering them like Marble.—Take 2 parts of stearine, 2 parts Venetian soap, 1 part pearlash, and 24 to 30 parts of solution of caustic potash. The stearine and the soap are cut into slices, mixed with the cold ley, and boiled for about half an hour, constantly stirring. Whenever the mass rises a little cold ley is added. The pearlash, previously moistened with a little rain-water, is then added, and the whole boiled for a few minutes. The mass is then stirred until cold, when it is mixed with so much cold ley that it becomes perfectly liquid, and runs off the spoon without coagulating and contracting. Before using this composition, it should be kept for several days well-covered. It may be preserved for years. Before applying it to the objects, they should be well-dusted, the stains scraped away, and then coated by means of a thick brush with the mass as long as the plaster of Paris absorbs it, and left to dry. The coating is then dusted with leather or a soft brush. If the surface has not become shining, the operation must be repeated. *Archiv der Pharm.*, lvi. p. 327.

Cure for Serpent Bites.—The following account of the use of the seeds of a tree growing on the table land of the Cordillera, and called by the natives "Cedron," was communicated by M. Herran, chargé d'affaires for the republic of Costa Rica, in a letter to M. Jomard, and by him to the Academy of Sciences at Paris. "In the year 1828 some Indians brought to the market of Carthagena some seeds of the Cedron, and, to show their value, caused animals, as well as themselves, to be bitten by the most dangerous serpents, called toboba, corail de la Montagne, &c.; the rapidity with which the effect of the poison was neutralised was such that as much as a doubloon (3*l.* 6*s.* 6*d.*) was paid for a single seed. During my stay in Central America, I have myself been obliged to make use of the Cedron seed on eight occasions. It is applied as follows: 5 or 6 grains of the seed are rasped, and the powder, in a spoonful of brandy, is swallowed by the patient; next a piece of linen soaked in brandy, and powdered with more of the seed, is placed upon the wound; the patient is then left to himself, and seldom requires another dose, the cure being perfect. I have employed the same substance with success in intermittent fevers which had resisted the action of sulphate of quinine." *Comptes rendus.* [We are not informed what this Cedron is.]

On the Constituents and use of the Jerusalem Artichoke. By Messrs. Payen, Poinsot, and Férey, in "Journ. de Pharm.," xvi. p. 434.—"The Jerusalem Artichokes which the authors used for their experiments were grown upon a sandy soil of moderate goodness, which had been manured with ammonio-phosphate of magnesia. They contained in 100 parts, 76.04 water and 23.96 dry substance. The dry substance yielded on combustion 4.24 ash and 2.16 nitrogen. This is twice as much as is obtained from Potatoes, and somewhat more than the Cerealia contain. There was further obtained from 100 parts of Jerusalem Artichoke 0.87 of fatty matters, of which one was liquid, the other solid. This quantity is likewise twice as great as in the Potato. Water to which a little muriatic acid was added extracted 1.56 per cent. pecten, which was precipitated by spirit. The insoluble residue was treated with water to which one-twentieth ammonia was added, and expressed. It furnished an aqueous liquid, from which muriatic acid precipitated gelatinous pectic acid, which after washing and pressure amounted to 3.76 per cent. The dry substance, wholly exhausted with æther, was now washed with alcohol of 0.850 and 0.833. The crude saccharine matter was thus obtained, but still mixed with a little chloride of potassium and nitrogenous substance. It formed 68 per cent. of the dry substance, or 16 per cent. glucose for the fresh tubers. This large amount of sugar induced the authors to repeat the experiment. The tubers were rubbed to a paste and fermented; from the alcohol obtained 14.7 per cent. of glucose was calculated. Besides these constituents, albumen, gum, and two other nitrogenous matters, were detected in the tubers. The following are the tabulated results of the analysis:

Water	76.04
Glucose and other saccharine substances	14.70
Albumen and two other nitrogenous substances	3.12
Cellulose	1.50
Inuline	1.86
Pectic acid	0.92
Pectine	0.20
Salts	1.29
	100.00

The ash of the Jerusalem Artichoke contained the following constituents. I. is the analyses of some that were grown upon a soil manured with ammonio-phosphate of magnesia, and II. of purchased tubers:

	I.	II.
Silica	2.00	6.95
Carbonate of lime	4.12	10.23
Carbonate of magnesia	1.94	
Phosphate of lime and magnesia	33.50	16.62
Alumina	1.44	
Chloride of potassium	8.36	10.75
Sulphate of potash	11.16	10.66
Phosphate of potash	28.40	8.45
Carbonate of potash and traces of soda	9.93	36.34

The Jerusalem Artichoke also contains a small quantity of a violet pigment, which is deposited in the cellular tissue beneath the epidermis. According to this investigation, therefore, 100 parts of the Jerusalem Artichoke contain 23.96 parts of nutritive substance, and they are certainly well adapted for the fattening of pigs and cattle. *Chemical Gazette.*

Wash for Fruit Trees.—I am, at this season of the year, frequently asked what is the best wash for fruit trees, both trunk and limbs. The following has given me the best satisfaction of all the various mixtures I have tried, and I have used no other for at least 12 years:—I use a large vessel, say a tub, made by sawing a molasses hogshead in two, at the bung, which will hold about 70 gallons; in this tub I put a wheelbarrow load of yellow clay, and an equal quantity of fresh cow manure, covering it with water. After soaking and mixing a day or two, I add half a bushel wood ashes, 1 lb. of sulphur, 6 or 8 lbs. of soft soap, and mix well together; then slake half a peck of lime, and add to the above, using water sufficient to make the whole about the consistency of thin cream, which will nearly fill the tub; mix well together for several days; then, with a common whitewash brush (an old floor brush will answer), I paint the bodies of the trees, having first used a smaller brush to paint the crotches of the limbs, and the limbs themselves, as far as possible. I think any gentleman trying this wash, or paint, if you please, will find it to give him perfect satisfaction on every kind of fruit tree in ordinary cultivation with us. *Captain Lovett, in Hovey's Magazine of Horticulture.*

Mangold Wurzel.—We observed that Beet-root cut below the collar, produced neither leaves nor buds, even when in the earth. If Beet-root is pulled up and cut below the collar, it will not vegetate any more. The roots may therefore be exposed all the more to air and light, in order that fermentation may be prevented, since the development of leaves and buds need be no longer feared. The wound thus caused in the roots never causes them to alter or rot, if they are exposed to a temperature of from 53° to 59° F., in dry air. The wound soon heals, and the roots can be preserved without rotting. In order to ascertain by experiment the effect of this mode of keeping Beet-root, two lots of roots, the juice of which marked 7°, were taken in the month of November, 1848, the roots of one lot being cut across below the collar, and the roots of the other lot being in the state in which they are usually stored up. The two lots were placed in a dry spot, out of the reach of frost, and in which the air was renewed; at the end of February the juice was extracted from them. Those roots which had their collars had nearly all vegetated, and gave a juice marking 3°; those, on the other hand,

which were cut across, had neither leaves nor buds, and gave a juice marking from 6° to 7°. *Comptes rendus.*

Transmutation of Species. — The state of natural history in India reminds us continually of Pliny, and the mass of facts, fiction, shrewdness, and credulity there preserved. Occasionally its revelations rival the most recent experiments or speculations of our own philosophers. Bhubdev Teewaree, and other learned pundits of Almorah, affirm that the fact or fable of the transmutation of the Cerealia by means of frequent cutting or browsing has been known in India from time immemorial. The late Mr. G. T. Lushington informed me, that the same belief prevails at Bhurtpoor. According to Bhubdev, Wheat becomes Barley; Barley, wild Oats (Avena fatua); Rice, Panicum furmentaceum; while mundooa, Eleusine corocana, degenerates into Khurooa or Jhurooa, which seems to be Eleusine indica. They do not seem to have any tradition as to how and where the finer Cerealia were obtained. Dr. Griffith (p. 3) mentions the wild form of Oryza sativa as common in Silhet. *Major Madden, in the Journal of the Agricultural and Horticultural Society of India.*

Calendar of Operations.

(For the ensuing week.)

PLANT DEPARTMENT.

As we may soon look for cold weather as a natural consequence of the season, it behoves us to secure all our more tender plants immediately, lest we be taken by surprise, as many were last year. But for the present, even in less favourable localities, we would only put the most tender of our greenhouse plants under cover, as we dislike crowding the houses as long as it can be avoided, and there are many plants whose constitutions will allow of their being freely exposed for some time longer; as a familiar instance of this we may mention the Cytisus, Acacias, &c., and as the flowers of many such plants are valuable through the winter, the continued exposure will retard their season of blooming. In very cold localities, Chrysanthemums in pots should be placed in a cool house, or under the shelter of a wall, where they can be protected by drawing down a canvas in severe weather. Many plants whose wood is properly ripened may at once be removed to a cool light shed facing the north, or placed beneath the stage of the Geranium house; the situation should however be such, that frost can be effectually excluded without entirely depriving the plants of light. These will include Fuchsias, Hydrangeas, Plumbago capensis, Hibiscus, Brugmansia sanguinea, Erythrina, Bouvardia, Hedychium, Canna, Liliums, and a great many others that have done flowering, and only require protection from frost, and a moderate exposure to the light. By removing these, a greater space will be afforded for plants with healthy foliage. Balsams, Cockscombs, and other annuals which have been cultivated for decorating the plant houses during the summer must give place to the winter occupants, as they require the space.

FORCING DEPARTMENT.

PINERIES.—As the necessity for using artificial heat increases, considerable attention must be paid to regulating the temperature. The night temperature should be kept steadily ranging from 63° to 68°, with a bottom heat of 85°. As long as the daylight is strong enough to keep the plants in a healthy growing state, great care should be taken to prevent them receiving any check, and where the heat is supplied by dung linings, &c., this will require special attention. Examine carefully the wants of the plants as regards water; avoid either extreme, and syringe only in very fine weather, and then with water of the same temperature as the pits. Care must be taken not to syringe to such an excess as to allow the moisture to accumulate about the stems and hearts of the plants, as considerable injury will be done thereby during very dull weather. Admit air freely in such weather, to assist evaporation, even if extra fire heat is required to enable you to do so. VINERIES.—The pruning of Vines intended for early forcing should not be longer delayed, or they will be liable to bleed. The course of proceeding should be similar to that recommended for the early Peach-houses. The old, loose rough bark should be rubbed off, and the whole of the plants washed over with sulphur and soft soap. The glass should be cleaned, and all the interior of the house painted; every precaution should be taken to smother effectually insect life in every stage. The old worn-out soil should be removed from the surface of the border, as far as this is practicable without injury to the roots, and replaced by a rich compost, consisting of charred turf, fresh horse or deer dung, and lime rubbish, with a portion of rough bone dust. CHERRIES.—The forced Cherries will now be losing their leaves, and should, with the house they occupy, be treated exactly as was recommended for the early Peach-houses some weeks back. MELONS.—Unless these can be freely supplied with top and bottom heat, thereby allowing the admission of a free current of air, they will be of little further value; and, as the fruit ripens, they may be cleared out, to make room for various plants during winter. Take care, however, of those growing in pits which are furnished with the necessary facilities for keeping up the requisite amount of heat. We had such a house last year, from which the first fruit was cut in the first week of May, and which continued bearing in an uninterrupted succession till the end of October; and many fruits were cut after that; the last was used near the end of December.

FLOWER GARDEN AND SHRUBBERIES.

The propagator must be very active to get his cuttings struck while he has the advantage of genial weather; and that they may have the chance of getting fairly established before winter sets in, a strong force should be kept at such work till it is completed. If the cuttings are put in early, they have a much better chance of striking, and have a longer time to establish themselves, so that one early-struck well-rooted plant will go as far as two or three weakly things at planting out season; and when we consider the numbers of the latter that dwindle away during the winter, the disadvantage of delay is too obvious to need more comment. Young plants of Campanula pyramidalis, Antirrhinum, and other plants which require a slight protection, should be placed in a suitable situation. All these arrangements should, as far as practicable, be completed at once, so that the hands may be clear when the weather becomes so severe as to render it necessary to take up and pot the old plants required for another season. To this end, pits, frames, boxes, pots, &c., should be prepared, that when the job commences it may be completed as quickly as possible. No time should be lost in commencing any extensive alterations or improvements which it is proposed to carry out this autumn, as the ground is in a much more workable state now than it will be two months hence, and any shrubs shifted immediately will have time to strike fresh root before winter.

KITCHEN GARDEN.

If Cardoons will be required for the use of the kitchen before November, a few should now be earthed. It is a common practice to wind haybands round the stems, to keep the soil out of the hearts of the plants; but there are several objections to the practice, and particularly in very cold or wet ground. In such cases, the haybands unavoidably absorb moisture from the surrounding soil, and are thereby decomposed, thus forming a harbour for insects, and a natural conductor, by which the frost is admitted, where the object should be to exclude it. In such ground, we would prefer to surround the stem with a casing of sand, or fine coal ashes. In very dry sandy soils, the evil does not exist to so great an extent, and to such ground an admixture of sand or ashes would be injurious; but where it is of a stiff clayey nature, such an admixture will ameliorate the texture of the soil, besides being more suitable for the preservation of the crop. In any case do not allow the outer leaves to be stripped off, as they are much hardier by reason of their exposure, and form a natural guard to the more tender leaves within. Where soil is used, let it be as dry as possible, and made fine with the spade before it is placed round the plant. Let any plants be taken up, which, in spite of the rich manure given them, are beginning to run into flower. As they are of no use when blanched, but as the foliage is so noble, we generally make use of these by planting them in open spaces about the clumps in the pleasure ground. If the ground is properly enriched, they form very interesting and striking objects. They are excellently adapted for planting near the margin of water. The spring sown Onions should now be taken up and laid out to dry thoroughly before being strung and hung up for the winter. As the weather of our autumns is so very precarious, they should, if possible, be spread out thinly in an open shed; but if such a place is not at command, the next best is a hard dry gravel walk, from which the rain can pass freely off. Get them under cover, by all means, as soon as possible, but do not allow them to be thick together, nor be in too great a hurry to bunch them up. A quantity of Parsley should now be gathered and dried; it answers as well as the green for every purpose except garnishing, and, by securing a supply before hand, the demand of green leaves during winter is considerably diminished. Do not neglect to gather in due season ridge Cucumbers, Nasturtium seeds, Radish and Bean pods, Chillies, and other matters required for pickling and preserving.

State of the Weather near London, for the week ending Sept. 12, 1850, as observed at the Horticultural Garden, Chiswick.

Sept.		Moon's Age.	Barometer.		Temperature. Of the Air.			Of the Earth.		Wind.	Rain.
			Max.	Min.	Max.	Min.	Mean	1 foot deep.	2 feet deep.		
Friday..	6	●	30.343	30.285	64	30	47.0	56	57½	N.E.	.00
Satur...	7	1	30.401	30.357	67	33	50.0	55	57	E.	.00
Sunday .	8	2	30.446	30.388	60	36	48.0	55	56½	N.	.00
Monday	9	3	30.367	30.297	61	47	54.0	55	56	N.E.	.00
Tues. ..	10	4	30.318	30.288	65	35	50 0	55	56	E.	.00
Wed. ..	11	5	30.272	30.230	69	37	53.0	54½	56	E.	.00
Thurs ..	12	6	30.250	30.219	70	32	51.0	55	56	E.	.00
Average....			30.342	30.295	65.1	35.7	50.4	55.1	56.4		.00

Sept. 6—Clear; fine; cold easterly wind; clear and frosty at night.
— 7—Clear; very fine; clear and cold.
— 8—Cloudy and cold; clear at night.
— 9—Overcast throughout.
— 10—Overcast; clear and cold at night.
— 11—Foggy; very fine; clear.
— 12—Foggy; very fine; clear and cold.
Mean temperature of the week, 8 deg. below the average.

State of the Weather at Chiswick during the last 24 years, for the ensuing week, ending Sept. 21, 1850.

Sept.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds. N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 15	67.0	45.9	56.4	12	0.63 in.	—	4	2	2	5	1	5	5
Mon. 16	68.3	47.7	58 0	10	0.50	1	3	3	1	4	5	4	1
Tues 17	68.8	47.4	58 1	10	0.50	1	2	2	2	2	8	4	3
Wed. 18	65.9	44.6	55.2	12	0.76	1	6	1	1	2	6	4	3
Thurs. 19	66.8	45.4	56.1	10	0.60	3	3	3	—	5	7	1	2
Friday 20	67.0	44.8	55.9	10	0.45	—	4	3	3	2	4	5	3
Satur. 21	66.7	45.9	56.3	13	0.30	2	2	5	2	6	3	2	2

The highest temperature during the above period occurred on the 17th, 1843—therm. 84 deg.; and the lowest on the 17th, 1840—therm. 29 deg.

Notices to Correspondents.

BOOKS: *J Patterson.* Lindley's "Theory of Horticulture."—*G G.* If you wish to understand the subject you *must* begin at the beginning. Make yourself master of "School Botany."

CLEMATIS: *E G.* Strike the ripe wood in a little heat, in the same way as China Roses, or propagate by layers.

COUNTRY SHOWS: *NC.* The judges at the Dorchester show, who disqualified a collection of 12 greenhouse plants because of its having Zauschneria californica in it, were perfectly right.

CUCUMBERS: *J C.* Your Essex Hero is 22 inches long, nearly 8 inches in girth, very straight, short-necked, soft and spongy. We cannot understand to what purpose such fruit is to be applied.

DOUGLAS FIR: *G A.* We have not seen a weeping variety of it.‡

GLASS: *J H G.* We should use the patent rough plate for the roof; as to the sides, they may as well be glazed with common sheet. You will have less direct light with the former, but more diffused light. The size is immaterial; you had better consult price and convenience, only remember the larger the squares the less ventilation there will be by laps, and the more special ventilation must be provided. The more you have of the latter the better.

GRAPES: *G O L.* We think your plan of glazing the border with glass pantiles a very good one, but we cannot give prices. It is to be recollected that if your Vine roots are already in cold heavy clay at a distance below the surface, glazing the borders will not help you, unless you previously raise the roots.

HEATING: *H W B.* For Polmaise, which would suit your place, apply to Mr. Smith, of Leamington; or an Arnott stove, if you can get your servants not to mismanage it, would be quite sufficient. It might be placed in the wall between the two places. There is also an ingenious open stove by Mr. Pearse, of Jermyn-street, which might suit you; only, being open, it cannot be kept constantly alight without occasional attention.

INSECTS: *H S.* The caterpillar sent is that of the eyed hawk-moth (Smerinthus ocellatus). *W.* — *T C.* Thanks for the specimens, some of which have changed their skins, and become blue instead of black. *W.*—*J M M.* The caterpillar sent is that of the elephant hawk-moth (Deilephila elpenor). *W.*

MORPHOLOGY: *J L S.* Such appearances in Maize are by no means uncommon. They show how strong the tendency is in the unisexual Grasses to assume the usual hermaphrodite state.

NAMES OF FRUITS: *R W.* The Keswick Codlin, a sort extensively cultivated as an abundant bearer, and a good kitchen Apple.‖

NAMES OF PLANTS: *Erzeroum.* 294, Cnicus Benedictus; 562, Cirsium acaule.—*G W.* Stanhopea Bucephalus, and some Micropiper which we have not time to determine. That Vanda you mention is in cultivation!—*Adelaide.* Catalpa syringifolia; the leaves were so broken we thought they were lobed.—*A Gardener.* Phlox picta and Hardenbergia monophylla. Your Luculia will flower in the spring, if you do not force it.—*Selecus.* Gentiana Amarella.—*W H J.* It is the spawn of some fungus, but of what species no one can tell. Corrosive sublimate will destroy it.—*R W.* Bifrenaria racemosa.—*Cavanensis.* It is a Fuchsia of some sort.—*Sub.* We cannot undertake to names florists' flowers.‡

NUTS: *Bacca.* It is the Sapucaja nut, the produce of Lecythis Ollaria.

ORANGE TREES: *X Y Z.* Better let them alone till next spring, and remove them the moment the buds begin to swell.

PAINT. We hear good accounts of Carson's anti-corrosion paint, but we believe that painters find it troublesome to apply.

PAXTON'S COTTAGERS' CALENDAR may be had at the Office of this Paper, or of any bookseller, price 3*d.*, or 5*s.* for 25 copies for distribution amongst cottage tenantry.

PINUSES: *G E.* In order to effect the object you have in view, we would advise you to cut off the lowest tier of branches annually, until the stem is cleared to the desired height.‡

POTATOES: *Reader.* The York Regent is a white Potato.‡

ROBERTS' STRAWBERRY TILES: *Fairplay.* Will you enable us to communicate with you through the post confidentially?

ROOT-PRUNING PEACH TREES: *A H Z.* They may be root-pruned now, with the view of making them more fruitful next season, and with a greater chance of success than if the operation was deferred until October; for by cutting the long carroty roots, the growth of the tree will be checked, and the wood will have more time to ripen. The root-pruning of unfruitful trees at Midsummer tends to ripen the wood better, and promotes fruitfulness in a greater degree than if done in autumn. Root-pruning so late as last October, your trees had not a chance of ripening their wood. Open a trench down to the drainage, about 3 feet from the stem of your trees planted in 1846, cutting all the roots with the spade. After the trench is cleared thoroughly out, get down into it, and cut the roots smoothly with a knife, when the soil, if good, may be returned to its place. Curl in spring is caused by green-fly and cold weather. The former may be destroyed by dusting with sulphur or Scotch snuff; and the effect of the latter may be prevented by using a good canvas covering, which can be rolled up by means of lines and pulleys during fine weather, and let down when it is cold. This is better than fixing a thin material over the trees night and day, as is usually done, by which the trees are half blanched for want of light and the action of the sun. Cover well when necessary, and expose fully when the weather is fine.‡

SCARLET GERANIUMS: *E and Georgiana.* They may be wintered in a dry cellar, which is free from frost. With occasional protection the Verbenas may possibly winter safely where they are; but it is all chance-work. If you had wished to preserve them successfully, you should have put in cuttings of them early in autumn.‡

STRAWBERRIES: *Tristan.* Any kind of stone will do. Burrs were employed for no other reason than that they were cheaper than anything else in a district where natural stone is unknown. We do not esteem the Strawberry you name. It is not to be compared with the old Pine, the British Queen, or even Keens' Seedling. You cannot prevent Asparagus running to seed; all you can do is to hand-pick the plants when in flower.

THERMOMETER: *Mold.* We will see what can be done.

THE TREE ROSE: *W D.* At the request of numerous subscribers the price of this work is now reduced from 4*s.* 6*d.* to 3*s.* 6*d.*, post free; it can be forwarded to any address by a Post-office order being sent to James Matthews, at the Office of this Paper.

TOMATO SAUCE: *T B.* To make this, when the Tomatoes are quite ripe cut them in two, press out the pulp, and separate the seeds, then put them into a skillet with some savoury sauce, and a little salt. When of the thickness of Pea-soup, rub it through a coarse cloth, boil it to the consistence of marmalade, put it into jars, and in a day or two after pour over it lard or butter, and tie down with oiled paper. For further information, see p. 653, vol. 1847.‡

VERBENAS: *E C, Kent.* Pink, with a crimson centre and light eye; a nice variety, and well worth cultivating.°

VINERIES: *Senex.* 60° to 64° is not enough for Muscats. You ought to command 75° to 80°. We cannot suppose that the eminent firm you employed would put up a defective apparatus. They might be called upon for an explanation. What your gardener has said is so true that we should imagine him to be a master of his business.

MISC: *M R.* Stowe, Buckingham.—*Rosabella.* We do not know; probably in next year's pocket books.

TO OUR CORRESPONDENTS.—May we beg it to be understood that *we cannot answer inquiries privately through the post.* We are ready to give reasonable information through our columns, but we cannot consent to the labour of writing letters.

*** As usual, many communications have been received too late, and others are unavoidably detained till the necessary inquiries can be made. We must also beg for the indulgence of those numerous correspondents, the insertion of whose interesting contributions is still delayed.

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MANURES.—The following Manures are manufactured at Mr. LAWES's Factory, Deptford Creek:

Corn and Grass Manure, per ton	£10	0	0
Clover Manure, do.	11	0	0
Turnip Manure, do.	7	0	0
Superphosphate of Lime	7	0	0
Sulphuric Acid and Coprolites	5	0	0

Office, 69, King William-street, City, London.
N.B. Peruvian Guano, guaranteed to contain 16 per cent. of Ammonia, 9*l.* 15*s.* per ton; and for 5 tons or more, 9*l.* 10*s.* per ton, in dock. Sulphate of Ammonia, &c.

GUANO AND OTHER MANURES FOR WHEAT SOWING.—On Sale, Guano (finest Peruvian), Superphosphate of Lime, made from Bone, Bone-dust and half-inch, Dried and Prepared Night-soil, Urate, Gypsum, &c. Also Foreign and English Linseed Cake of the best quality.—Apply to MARK FOTHERGILL, 204 A, Upper Thames-street, London.

PERUVIAN GUANO.—As Agents of the Peruvian Government for the importation and sale of this valuable MANURE, we think it right, for the protection of consumers and respectable dealers, to apprise them that the adulteration of the article is still extensively practised, and to recommend them to apply either to ourselves, to our agents, Messrs. GIBBS, BRIGHT, and Co., of Liverpool and Bristol, or to dealers of established character, in whose honesty and fair dealing they can place implicit confidence. ANTONY GIBBS and SONS.

BY HER MAJESTY'S ROYAL LETTERS PATENT.

PATENT HOTHOUSE WORKS, KING'S ROAD, CHELSEA.
EDENCH invites the attention of Gentlemen about to erect Hothouses, &c., to the vast superiority in every respect possessed by his PATENT HOUSES, which he will warrant superior in every respect to any others. Good Glass from 16 to 21 oz. per foot, 1 foot wide, 3 feet long, furnished, and the Houses, when completed charged, from 1*s.* 3*d.* to 1*s.* 6*d.* per superficial foot, according to size and quantity; on one principle the roof is formed without wood or putty, and on another principle with wood rafters, and the glass put in with putty. Patent Sashes, requiring no paint, from 7*d.* to 9*d.* per foot. HEATING BY HOT WATER.

HOW TO KEEP A HORSE FOR LESS THAN ONE SHILLING PER DAY.
"Do you bruise the Oats you give your horses?" "No."
"Then you lose one bushel out of every three, and your cattle do not half so well."
MARY WEDLAKE AND CO.'S OAT-BRUISING MILLS. Superior Chaff Engines, simple in construction, doing from 50 to 500 bushels daily, and more. Almost all brewers and coachmasters in London use these implements.
118, Fenchurch-street, London. A pamphlet on the above, by sending 12 postage stamps. Chaff-cutters, Linseed, Bean, and Malt Mills.

The Agricultural Gazette.
SATURDAY, SEPTEMBER 14, 1850.

MEETINGS FOR THE FOLLOWING WEEK.
THURSDAY, Sept. 19—Agricultural Imp. Society of Ireland.
THURSDAY, — 26—Agricultural Imp. Society of Ireland.

IT may not be generally known that medals are offered at THE EXHIBITION OF NEXT YEAR for the best sacks of Wheat, Barley, Oats, Rye, Beans, and Peas respectively. Any one who wishes to compete must send a notice of his intention to the nearest local committee connected with the exhibition, during the course of next month, which is the latest period of entry: and from the same source he may obtain instructions for the further steps necessary to be taken. Foreigners will, no doubt, compete for these prizes, and our farmers, we imagine, would not like to hold back. The characters as to weight, quality, and uniformity of sample will determine the merit of the different parcels exhibited, and certainly there are in this country varieties good enough which have been harvested well enough to furnish specimens qualified for a good place in what *may* be made, and no doubt *will* be made, by foreigners, if not by ourselves, a very interesting section of the exhibition.

AT page 426 in our number for July 6 of the present year, there will be found a tabular statement of certain DRAINAGE REPORTS, kindly furnished by correspondents during the year 1847, and published in our volume for 1848. These reports embrace an extent of nearly 4000 acres of land lying in England, Scotland, and Ireland. They include every variety of soil, describing it as "strong clay," "hard clay," "weak clay," "stubborn clay," "heavy clay," "alluvial clay," "clay of various consistencies," "poor white clay," "weald clay," &c.—"strong loam," "red loam," "soft loam," "sandy loam," "light mould," "sandy soil," "gravel and coarse sand," "blowing sand," and "various." They describe cases in which the depths of drains adopted varies from 22 inches to 60, and the intervals between them from 16 feet to 70—in which the acreable cost of the operation varies from 2*l.* 10*s.* to 10*l.* 11*s.*—in which the material has been "bushes," "broken stones," "tiles and soles," "pipe tiles," and "stones over tiles,"—in which the result has varied from "a partial failure" to a "permanent improvement." They furnish, with respect to most of the instances described, the extent and cost of the operation, the nature of the soil, the direction, depth, and material of the drains, the cost of the digging, and the condition of the land before and after the operation. They may thus surely be deemed worthy of study; and we shall endeavour, accordingly, to point out some of the lessons which they appear to teach.

As to the *direction* of the drains, it is worthy of note, that in every instance in which they had been cut "across the slope," the result was unsatisfactory, the operation had "little effect," and was "imperfect"—the land was "not perfectly drained"—"not much improved"—"fallows were still needed on it," and it had to be redrained in the direction of the greatest fall; after which the same reports speak of it as "now perfectly dry"—"worth 30 per cent. more to rent"—"paying the expense of redraining the first year"—and so on. The fact, then, regarding the proper direction of drainage in all lands, not so steep as that a stream of water down it is liable to wear away the trench, seems clear enough; and the advantage of the direct descent appears to be chiefly owing to the immediate passage from the land thus afforded to the drain water, which has no such opportunity as drains cut aslant the slope offer, for percolation from the conduit through the land below it.

On the *depth* of drains these reports do not furnish distinct comparative statements. In the few cases in which a deeper re-drainage was executed, the result—a great improvement—has to be divided between the effect of increased depth and that of an altered direction of drains, so that the portion of merit due to these causes respectively is not easily attainable. Many cases of successful deep drainage, however, are recorded. Thus, in Northamptonshire, strong and stubborn clays were drained 4 feet deep, at intervals of from 30 to 36 feet, with ample success; and we are told that Mr. PARKES' system, formerly condemned in that neighbourhood, is now approved. Again, at Ardingley, in Sussex, 100 acres of weald clay were drained 4 feet deep, at intervals of from 30 to 50 feet, and at a cost of 3*l.* 15*s.* per acre, and the crops of Wheat have been increased by 8 or 10 bushels per acre. On the other hand, we have, in Staffordshire, a case in which "strong loam resting on clay," then in a poverty-stricken state, was drained 22 inches deep, at intervals of 33 to 36 feet, at a cost of from 3*l.* 14*s.* to 4*l.* 5*s.* per acre, and the result "answered all expectation"—better crops of better quality being obtained. And 120 acres of stiff clay in Cheshire appear to have been perfectly drained at a depth of 30 inches—the drains being 18 feet apart. In another case, too, the result of deep drainage on a strong clay appears to have convinced the reporter that it is "wrong in principle." We believe him in this to have arrived at a wrong conclusion, and we recommend him and all others, who may not already have matured their opinions on this subject, to read an article on "Agricultural Drainage," which appeared originally in No. CLXXI. of the "Quarterly Review," and has lately been republished in a separate form.* There is ample experience in favour of very deep drains in very stiff clays, and their success under such circumstances perfectly corresponds with the indications of theory. Water will not filter from land so long as its weight is insufficient to force the power of attraction which holds it there. And thus the depth in every wet soil, where it begins to weep from the sides of a trench, is the point above which there is height enough of water in the land to overcome the capillary attraction which tends to retain it. The depths of this point will obviously be greatest where the capillary force is greatest; and, as this approaches its maximum in the stiffest clays, so these drains must be cut the deepest. That is the theory of the subject as it has been often expounded of late years; and one is surprised that the accident of a puddled surface, which may in any case have hindered for a year or two the efficiency of a deep drain, should have been allowed to interfere with the general adoption of an idea which appears inconsistent with the practice of shallow drainage in stiff clays.

There is a good deal in the reports we are referring to upon the *intervals* between the drains in the several instances described—but no such distinct comparisons are possible from the materials they furnish as would bring out the effect of a greater or less interval under any particular circumstances of soil and depth of drain. We are inclined to think that the nature of the climate has more to do with the correct solution of this question than the nature of the soil; and that the quantity of rain which the field is likely to receive during 24 hours is a more important datum in determining the proper interval of drainage than the per centage of alumina its soil contains. But on this and other points to which our tables refer we cannot now enter—we must be satisfied for the present with having exhibited what they appear to express upon the depth and direction of drains.

* "Agricultural Drainage." JOHN MURRAY, London.

THE SOIL AND THE AIR.

A VILLAGE LECTURE.

(*Concluded from page* 572.)

BUT plants contain ashes as well as wood and water, and these ashes they get from the soil. The mineral parts of a plant, its ashes if it be burnt, are as necessary to its growth as is the wood of which it chiefly consists. A large tree contains a very few pounds of ashes, a heavy Mangold Wurzel a very few grains, and yet without this small quantity of mineral matter neither of them could grow. And it is not every kind of earthy matter that will do, there are particular kinds that it needs, and without which it cannot live. And very often it happens that a soil is barren, just because it does not contain the particular kind of earthy matter that is wanted; and so when that one thing is added it is at once made fertile again.

The ashes of plants contain 11 or 12 of the 60 different kinds of matter which are supposed to exist. They do not all contain the same kinds. Wheat contains, in many respects, a different sort from Turnips, Oats contain a different sort from Clover, and so on. If you were to grow Wheat year after year upon the same ground, and always sell the produce from off the land, the land would very soon cease to be able to grow Wheat; the Wheat would ultimately take out of the soil all that sort of mineral matter which it requires, and when there is no more of that matter there, then that soil will be barren so far as Wheat is concerned; but it may not be barren for other crops, the mineral matter for which may still be present. And you can imagine how, by growing Turnips after Wheat, and Barley after Turnips, and Clover after Barley, and so on, each taking its own sort of matter from the soil, that the period when the soil would be exhausted for *all* these crops, of the mineral matter they respectively require, would be delayed for a very long time. And this is the secret of the advantage of having a rotation of crops; it is as if you had half a dozen people living on the food of one store-room. If they came one after another, and all of them ate only bread, the larder would be very soon exhausted, for the beef and other things there are supposed to be of no use to them; but if the first took bread, and the second beef, and the third bacon, and so on, the larder would keep them living for at least six times as long. Just so with the land: if you have one crop which takes *a*, and another which takes *b*, and a third taking *c*, and a fourth *d*, out of a soil which contains *a* and *b* and *c* and *d*, then if these crops be taken one after another, they will exhaust the land much more slowly than if all the four crops one after another took *a* only, for that would soon be all used up. And when, as we know, the straw of Wheat, and the manure from Turnips, and so on, are returned to the land, it will be a very long time indeed, if *ever*, before the soil, under this good management, will have been exhausted of all mineral food for plants that it contains.

This mineral food for plants does not enter them in grains or as sand, it can only enter them when it is dissolved in water, and thus it goes in by the extremities of the roots. It is known that the sap or juice of plants is a thick viscous sort of fluid, and it is known that that sort of fluid is a very thirsty sort of thing, possessing considerable affinity for water. Well, the little holes at the end of the roots are too small to let this thick viscous fluid out, but not too small to let the water in, and so the desire of the sap to unite with the water can be gratified only by the water passing through these holes into the tree, and thus the process goes on. I have got just such a process going on here in this vessel. I have here some sugar and milk mixed together—a viscous fluid possessing the requisite desire to unite with water, and it is separated from the water by a skin of bladder, the pores of which are large enough to allow water to pass through, but small enough to hinder the milk from passing through, and so the milk pulls the water in, and it rises in the tube. Just so the sap rises in the tree, and pulls in the water out of the soil, which water contains all those mineral substances which the plant requires.

Now for one word on drainage. Fancy a soil full of water, so that any rain which falls on it just rolls over the surface into the next ditch without getting into the land. The water in such a case, by excluding the air, will sour the land; it will convert what would have been good food for plants into poison for them; but even supposing it did not do this, the plants would soon starve. For you must remember that a plant in the soil is just like a man would be who was chained by the leg to one place in the larder. The larder may be full of food, but as soon as the man had eaten all that was within his reach he would starve, though in the midst of plenty; that is, he would do so if there were not some contrivance in operation for carrying the different dishes by him as he stood, so that he might take a bit here and a bit there as they passed, just as he chose. Now, in a well drained soil the rain water is just such a contrivance as this. It dissolves out the mineral part of the soil and carries it by the roots of plants, so that they may take a bit here and a bit there as they choose, and thus they are fed; but if the land be not drained, the water soon fills it, and

then no more rain will sink in and the water is stagnant in the land—there is no current through it—the dishes in this larder are lying still on their shelves, and as soon as the poor plant has eaten up all the food around it (even supposing it is food and not poison), it must starve, for it cannot go about after its food like an animal; it is like an animal chained by the leg; it is stationary, and must die if food is not brought to it. The use of draining is not to get rid of water, it is to make use of water; it is to keep the soil so that rain shall sink through it and feed the plants, not off it and leave them to starve. Abundance of water is a good thing. What is more fertile than a water meadow? but then it must not be stagnant water, which keeps the food for plants away from them, or converts it into poison. It must be water in motion, continually carrying food to the roots of plants, as in a water meadow or in a well drained field it does.

Now, what is this mineral matter which the soil contains, and without which the plant must starve? I cannot go over all the different things it contains. I will refer to only two. Here is one—a piece of one; this thing I have in this bottle is called phosphorus; it was got out of the bone of an ox; all bones contain some of it. Where did the ox get it? It got it out of the Grass it fed on. Where did the Grass get it? It must have got it from the soil. And all fertile soils do contain some of it. It is in its pure or uncombined state, a waxy looking thing of very remarkable properties. It is very easily set on fire, and burns most brilliantly in the oxygen gas, as you see. Now the Grass could not grow, and Turnips could not grow, unless they had some of this to feed upon; and when the soil is exhausted of it, it will be barren for almost all crops. This substance, phosphorus, is an important part of bones, and it is a fortunate thing that almost all plants do require it from the soil, and do contain it in their substance, for otherwise animals could not form their bones by eating those plants as food. Well if your soil does not contain enough of this phosphorus, all you have to do, is to apply a lot of bone-dust, which contains the phosphorus it wants. You know that that is a powerful manure, and almost all its power it owes to this phosphorus. Milk and cheese contain a lot of phosphorus in them. Milk, the food for infants, must contain it, or it would not enable the growth of the bones of the child; or of the young animal that receives this food. Now all the phosphorus in milk or in cheese is taken out of the Grass, and the soil of the farm; and on a dairy farm, no manure has a more fertilising influence than this bone-dust, which restores this phosphorus to the almost exhausted soil. And whereas nothing in the soil is of any use to plants, but what will dissolve in the water which they take up by their roots; and whereas bone-dust dissolves very slowly in rain water, so any means by which you can make the bone-dust dissolve more readily, will greatly increase its effect—will make a small quantity of it, in fact, do for the year what a large quantity would otherwise be required for. And that is the secret of the effect of the oil of vitriol upon bone-dust. Bones and acid, as it is called, or superphosphate as it is sometimes called, is more powerful than common bone-dust, just because it is more easily dissolved in water. A less quantity of the superphosphate will make the Turnips grow as well, because it is more soluble, and the rain water will dissolve as much phosphorus out of a cwt. of it, while the crop is growing, as it would out of many bushels of the simple bone-dust. And now suppose we have got our Turnips, we give one-half of them to a lot of young cattle with growing bones, and the other half to a lot of full grown fattening oxen, whose bones are as large and as heavy as ever they will be. Don't you see that the former, the young beasts, will take all the phosphorus out of their food to make their bones with, while the latter will use hardly any of it; and this is the reason why manure from the former is not nearly so good as manure from the latter. The manure from the full grown fatting oxen contains all the phosphorus of their food to be used over again by another crop of Turnips, and that from our store stock contains none of it, for they need it all to make their bones of; or, in the case of cows, to make their milk of. And thus you see that it is not so much bulk of manure that the farmer wants; that would be of little use, provided the bulk in question did not contain the right things. A ton weight of guano has in it more of the mineral food of plants than 50 tons of poor farm dung; and to talk of a heavy dressing of dung, does not convey any idea of how the soil has really been treated. A heavy dressing of poor dung may not be half so enriching as a very light application of good manure.

But the ashes of plants contain many mineral substances besides phosphorus—they contain sulphur, and lime, and iron, and magnesia, and the earth of flint, and several gases, and soda, and potash. Now I will just refer to one more of them—potassium, the metal of potash. I have some here; this was obtained from the ashes of a plant which got it from the soil. Not a mouthful of bread or of meat you eat but contains some of this substance. It is a soft metal floating on water, and having such a tendency to violent chemical action, that it catches fire and burns as soon as it reaches the surface of the water. This potash and potassium is added whenever you apply wood ashes to the land, and they are a very powerful manure in many cases, and their power as a manure is owing to the potash they contain.

Well, then, we have seen that a plant obtains its combustible part from the air, and its mineral part from the soil—that the mineral part is not the common earth of the soil, but consists of 10 or 11 things in the land, which emit them in comparatively small quantities, and which the farmer must restore as the plants remove them, or the soil will be found to get poorer. We have seen that draining is a contrivance by which the rain-water continually going through the soil to the underground drains, instead of off it to the open ditches, is enabled to feed the roots of plants with the things which it dissolves out of the land. We have seen that these things must be kept in the land by the cultivation and manuring of the farmer, or else the land will lose its fertility. We have seen that plants have no power to change one thing into another—if the things you give them in manure be not the things they require, the manure will be useless, and the plants will be stunted or starve. Strange as it may seem to those who see the manure continually added to the land, and the Wheat continually taken from it, a plant has no power to convert one thing into another. It can but take the atoms or particles you give it. It will flourish if they are food, it will starve if they are withheld, and if they are poison it will die. Take some manure and burn it, you will find that it has ashes; burn some Wheat, too, and you will find that the mineral part of both is alike—that the ashes of the Wheat contain the very same things as those of the manure, and the very atoms you might have added to the land in that manure would have been built up in the Wheat plant. There is no mysterious or necessary connection between a heavy dressing of dung applied to the land and a heavy crop taken from it. It is not the weight, it is the composition of the manure that must be looked to to determine its agricultural value. The crop finds in the manure the very particles which it requires as building material. Draining and good cultivation are the hodmen who bring these building materials to the growing plants. Plants are at once the masons who put them together, and the erection that is in process of completion; and the whole procedure goes on under the eye, and according to the laws, of that great Master Builder who contrived the whole wonderful system of vegetable growth, and confers the life which puts it in exercise. *M. S.*

BOG CULTIVATION.

One part of White Moss, near Middleton, to the extent of nearly 200 acres, has been improved, under the superintendence of Mr. James Dixon, now agent to Robert Gregge Hopwood, Esq., of Hopwood. This part of White Moss has been purchased, or leased, by Messrs. Gould and Jones, at whose expense it has been brought into cultivation. It now carries excellent crops of corn, Clover, and roots, although the climate is far from what is termed good. This Moss lies at an altitude of about 400 feet above the level of the sea. The drainage is perfect, which is not always the case in Moss improvements. The following detail of improvements made upon this Moss is from information furnished by Mr. Dixon himself.

"The whole extent improved is divided into fields of from 6 to 8 acres in extent each. The fields are in the form of parallelograms, not more than 70 yards wide, all joining up to suitable roads formed for the purpose. The fields are divided by the means of large open drains. The first operation in improving was the cutting of these divisions or main drains, 5 feet wide, and from 2 to 3 feet deep, thus providing suitable outlets for the water. Drains were then opened across the fields from one main to another, being cut 20 inches wide, and 24 inches deep. The whole extent intended to be improved as a first undertaking, was gone over in the way herein specified; and by the time that all the cross drains were cut, the mains were in a fit condition for being deepened another foot, but in no case should there be any immoderate haste in performing this work, owing to the pulpy state of the surface. It was found the most judicious method to open the drains at different intervals, getting nearly the depth in one season, and completing or covering up such as were to be under drains the season following. The cross drains were cut to the depth of not less than 4 feet 6 inches when completed, and the mains as much deeper as the condition of the peat would allow.

The main drains, as before observed, were left open, forming a division between each field; cross drains were cut at from 5 to 7 yards distance, laid with sods, and covered up before any attempt was made at further improvement. The mode of cutting these drains was with an implement called a tommy spade. This spade is straight on the shaft, and the operator cuts so that his drain sides are nearly vertical. The surface sod is taken neatly out to the depth of 12 inches, and laid carefully on one side in order to be a covering for the lowermost spit, this being 18 inches deep, and cut with an implement called a spitting tool; after which the surface was introduced on the spit, and formed what is understood by the term wedge and shoulder drain.

After draining, the surface was broken up, partly with the plough and partly with the spade. In ploughing, to prevent sinking, the horses are provided with wood pattens attached to their feet, made firm by light iron plates, and fastened by means of a bolt. As a further preventive against sinking, the horses were not allowed to walk on the ridge, or in the furrow, but on the undisturbed surface. After ploughing, a heavy roller with 8 or 10 circular knives fastened to its cylinder, was drawn with four or five horses over the land. This instrument cuts the tough peat into small pieces. A large harrow was then employed to effect a further reduction. Marling being the next operation, was done by a portable railway, without which, peat bogs of any extent cannot be by any means cultivated to advantage.

The waggons and other machinery required to complete one mile of this sort of railway will cost about 400*l.*, and when laid down on a tolerably level line, one horse will draw upon it from three to four tons. Sand was used in connexion with marl, in the proportion of one of sand to two of marl, and of the two substances about 200 cubic yards were applied to the acre. Night soil and coal ashes have been applied as manure, and found to answer much better than others, not only as immediate help to the crops, but also to reduce and decay the live peat to a soil. To prepare the peat ready for cropping required three ploughings and three harrowings, and twice cutting with the roller; these operations on the average cost about 3*l.* per acre.

In breaking up by the spade, the surface was first turned over with the plough, then spade trenched, with the ploughed furrows laid underneath, as the work proceeded. This operation cost from 4*l.* to 4*l.* 10*s.* per acre. The extra outlay in the cultivation by the spade has been found to be amply repaid in the results of the produce, which have been estimated to be from 10 to 15 per cent. in favour of that implement. The following is an estimate of about the average cost of bringing this Moss into cultivation, excluding the cost of making roads, &c., viz:—

Draining, including mains	£4 0 0
Marling and sanding 200 cubic yards	4 10 0
Manure, night soil, &c., 30 tons	7 10 0
Trenching	4 0 0
	£20 0 0

Some parts of the improved peat were first planted with Potatoes, others sown with Swedish Turnips, common Turnips, and Mangold Wurzel: all in drills. Oats have been produced on the Moss in question, averaging full 60 bushels per acre. Also Turnips from 26 to 32 inches in diameter, and at the rate of about 20 tons per acre."

A railway has been made from the Manchester and Leeds line right on to this Moss, by which manure is conveyed from Oldham and Manchester, and the produce from the Moss to any market. Being situated in a manufacturing district the greatest part of the produce is sold from the land, consisting of hay, corn, straw, and roots, and manure brought in return. Very little stock is kept on the land besides the working horses. The rotation adopted after the Moss is brought into a regular system of cultivation is, 1st Oats, after Clover; 2d Potatoes or other root crops; 3d Wheat, winter or spring varieties according to the time of sowing, which is sometimes in the early spring months; 4th, Clover, cut twice. The detail of the work is as follows:—the Clover root is ploughed one furrow in the spring, and the Oats sown broadcast and harrowed in, and when the new crop is in the second or third leaf, it is rolled.

After harvest the land is ploughed one furrow deep, and left all winter. The spring following it is cross ploughed, then well harrowed and gone over with the cultivator and harrow alternately at intervals, until the soil is well pulverised, and the weed roots picked out and burnt. The land is then drawn out in 27 inch ridges with a double mould board plough. Dung is then cast upon the land and put in heaps of from 1 cwt. to 1½ cwt. in each, the heaps being put about 6 yards asunder in every third drill. It is then spread equally in the furrows and the ridges, reversed with the double mould board plough. The mode of management is the same whether for Potatoes, Turnips, or Mangold Wurzel, only the Potato sets are laid on the dung before covering up, and the Turnip and Beet seed are sown above it after it is covered, the ridges being rolled before and after sowing. Mangold Wurzel is sown early in April, afterwards Potatoes are planted in that month, and also in May. Swedish Turnips are sown from the middle of May to the middle of June. Different varieties of the common Turnip are sown (as soon as time and circumstances will allow), on the remainder of the fallowed land; of course that land on which those crops are sown the latest, receives extra scarifyings and harrowings before sowing.

All these root crops are gone over with the drill cultivator or horse hoes, during the growth of the crop, and the plants thinned and kept clean by hand hoeing and weeding. Potato sets are laid from 9 to 12 inches asunder in the drill, and the best Turnip plants left at about 12 inches. As these crops are removed from the land in the autumn or winter, the land is ploughed one furrow if the weather suits, the Wheat seed also being sown broadcast and harrowed in. In April following the crop is rolled, then red Clover and Rye Grass sown, and the land bush harrowed and rolled again. After the Wheat is harvested, a top dressing of night soil and ashes is given as soon as the land and weather will permit, or of guano or soot in the spring following. The quantity of seed Oats sown per acre is about 5 bushels, and of Wheat, 2½ bushels. *Rothwell's Agriculture of Lancashire.*

THE POTATO HARVEST.

Allow me to point out to the agriculturist what has long appeared to me a general and serious neglect in gathering in that most important vegetable the Potato. I have observed for years in my travels through the different counties of England, in my professional pursuits, a general tardiness in securing the Potato crops at a proper season; and as that season is already at hand, the suggestions I have to offer will perhaps now

be most opportune and serviceable. It is generally but erroneously supposed that the Potato is not ready until the top appears completely decayed or withered up; whereas, it is unquestionably ready as soon as the functions of the stem and leaves have ceased to act: the tuber then derives no further nourishment, and can be no better for lying in the ground; consequently as soon as the Potato tops become exhausted—that is, have lost their vigorous greenness, and are evidently turning to a languishing yellow, the tuber has reached the height of its growth, and can derive no additional good by remaining longer in the ground, and should therefore be got up the first favourable opportunity in fine weather and stored away in as clean and dry a state as possible. Many crops will be found ready in the early part of September, and by the end the whole ought to be got in. Instead of this, hundreds of acres every season remain ungathered at the end of October, and many in November, the natural consequences of which neglect are deterioration in quality, and inevitable loss in quantity, many being seriously damaged by the heavy autumnal rains or by frost, both as they lie in the ground and in the process of taking up. It is gratifying however to know that although the Potato disease prevails to some extent in all parts of the country, yet its prevalence is far less than it has been for some years past; therefore, if strict attention be paid to the getting in of the crops we may confidently expect a fair average supply of good healthy Potatoes, which have long been not only scarce and dear, but very deficient in quality. The improvement in the health of the Potato this year is variously accounted for; by some it is attributed to a proper supply of rain, which has been pretty general, and which has kept the plant in a state of regular growth throughout the season; great transition of drought and wet promoting the disease.

On a visit to a friend on the west side of Sheffield, a month ago, I learnt from the gardener that the crops of Potatoes were for the most part scarcely diseased. On my enquiring into the state of the weather in that neighbourhood, it appeared the ground had been very dry, that then heavy rains succeeded, and, the ground having a clayey bottom, the wet lodged too much about the roots. About 3 miles from the former place, on the opposite side of the same town, where the soil was of a loose nature and free from clay, the disease had not made its appearance. The gardener was of opinion that there had been sufficient rain in that locality to keep the plant in a proper and healthy state of growth.

At a third place, which I visited a fortnight ago, in a fine neighbourhood near Doncaster, the crops in the garden were quite free from disease; and, upon asking the gardener what kind of manure he had used, his reply was, None, but that the ground was in good condition, having had a copious supply of manure the previous year; the produce was certainly clean and beautiful. The proprietor, a close observer, informed me that his field Potatoes, which were planted in March, were equally good; but he showed me a small field belonging to a farmer, and separated from his own vegetable garden only by a road, in which the whole crop was so much diseased as to be almost useless. My friend attributed the failure to two causes which he had told the farmer at the time of planting would be prejudicial to the crop, viz., late planting and copious manuring on the top of the sets with fresh stable manure. They were planted at the end of May, and grew vigorously until the end of July, when the disease took them, and the tops at the time I am speaking of were completely black and withered. My own crops planted at the end of April cannot be said to be entirely free from disease, but so nearly so that my men in taking up a plot of upwards of 300 square yards say they have not found more than 2 lbs. weight of diseased Potatoes in the whole. The Prince Regents are scarcely ready, but promise to be a fine crop, and are equally free from disease. They were all planted at the same time. Previous to planting, all the ground was trenched over two spades deep. The soil is of a loose kind nature. We laid on the top a moderate quantity of quick-lime, then mixed it well and regularly amongst the soil, then a trench was thrown out about 3 inches deep with a spade, and a small quantity of well-decayed stable manure was spread all over the bottom; the set was placed on the top, and lastly the trench filled in to its original level. I may add that spent Hops have been used to some of our crops, which answer admirably, and better perhaps than any other tillage. We have also found crops succeed well in fine coal ashes, the trench being half filled with them and quick-lime employed as above. I believe ashes to be invaluable for strong land. I do think it of importance to plant in good time in the spring, say from the middle of March to the middle or not later than the end of April. Late planted crops are more liable to the disease than early planted ones, as they are growing vigorously towards the end of summer, when it is considered the disease does the most mischief.

I think there is no advantage in planting much sooner than the first named period. The tops are in great danger of being cut off by early spring frosts and the crop seriously injured; besides, early planting affords all the more time. It is moreover of the utmost importance that plenty of room be allowed between the rows, so as to admit a free circulation of air as well as the sun's rays, both of which are essential for driving off stagnant and impure damps, which lodge amongst the crowded tops. Two feet from row to row for such as have moderate tops, and 3 feet for strong spreading kinds, are the proper distances. *Joshua Major, Knosthorpe, near Leeds, Sept.* 3.

P.S. We ought not to be alarmed by the black and withered appearance that the Potato tops present just now in almost every locality, as this is to be attributed more to the late high winds than to the effects of the Potato disease.

RAPE CAKE FOR SHEEP.

Finding that in consequence of my remarks at the discussion after the council dinner of the Yorkshire Agricultural Society at Thirsk, my relation, Mr. Charnock, of Holmefield House, had written, without my knowledge, to Mr. Milburn, the secretary of the society, confirming what I said on that occasion, I should be greatly obliged to you to allow that letter—a copy of which, with Mr. Charnock's permission, I send herewith—a place in your next impression, or in as early a number as you can find space for it. It is a subject which is creating great interest amongst the agricultural portion of your readers, and as Mr. Charnock has explained very fully his plan of operations, its publication will render the greater practical service. I would further beg permission to add that so far from the sheep not eating rape cake, Mr. C. has at this time 50 of his draft ewes that are daily eating their ordinary ration of rape cake alone, without any linseed cake. *J. H. Charnock.*

"*Holmefield House, near Ferrybridge, Aug.* 12, 1850.

"My dear Sir—Seeing that my relative, Mr. J. H. Charnock, has been speaking at your meeting, at Thirsk, of my mode of feeding sheep principally on rape cake, and that some doubts were expressed as to whether the animals could be induced to eat rape cake, I hasten to furnish you with the particulars of my system, the results of which, in the shape of fat hogs, you last spring did me the honour to praise. I first commence teaching my ewes to eat rape cake at lambing time, but from their now having had it the previous season they eat it readily. At lambing time the ewes have free access every night to troughs, in which is crushed rape cake, placed in the lambing fold. As they lamb and go to pasture, the rape cake is continued through the summer, at the rate of half a pound each ewe per day. At weaning time, about the middle of July, I take the ewes from the lambs, giving to the latter, on their old pasture, as much cake as they will eat in the proportion of one-third rape cake to two-thirds linseed cake; this proportion is continued until I remove them on the second crop of Clover, when I alter the cake to one-third linseed and two-thirds rape, which is continued through the winter, giving to each sheep ½ lb. of cake per day on Turnips, and always cutting the Turnips from the commencement. In this way I find no difficulty in getting my flock to eat rape cake, if of good quality; for there are certainly some samples of rape cake no animal can be persuaded to eat; such as have been heated on shipboard, or in the warehouse, or have become fusty from being stowed in a damp room, or on a damp floor. I also find sheep prefer foreign to English-made rape cake. But sweet good rape cake is not only readily eaten by sheep, but experience has proved to me that it is a most healthy food for them. Since I began to use it liberally my flock has been much more healthy, and the deaths have decreased to a very small per centage annually. The amount of deaths in my ewe flock from October 1, 1849, to July 8, 1850, was barely 1½ per cent., and in my hog flock from July 1, 1849, the time of weaning, to the date of their going to market, fat, and clipped, was scarcely 1½ per cent. This small number of deaths does not arise from anything peculiarly favourable in the season, nor in the plan of giving cake, for some very good sheep farmers who reside near me, and who give their sheep quite as much cake per head annually as I do (but all linseed) were comparing notes with me the other day on the advantage of using rape cake as part of the food of young sheep; and they admitted their loss of lambs, both at weaning time and when first put on to Turnips last year was very considerable, whilst I did not lose one lamb at either of these times. The principal cause of death in my hogs was apoplexy, from high feeding; but I find a regular supply of salt does much to check that disease. One great claim rape cake has to the attention of the sheep breeder is that not only does it check scouring, but it seems a complete preventative to that most fatal disease amongst newly-weaned lambs. Perhaps if given with too much dry food it might confine the bowels of sheep too much, but when given with succulent food it seems peculiarly adapted to prevent too great laxity.

The reason I first tried rape cake for sheep was from seeing the great good which green rape did to young sheep; and considering that the seed of a plant contained the very essence of that plant concentrated, I determined to try the effect of rape cake, more especially as I had seen it given to a certain extent to cattle in the Netherlands. Economy has caused me to persevere in it, as I find it by far the cheapest food I ever met with for sheep; and when given to sheep on Turnips the succeeding crop of Barley is better than if the same value in Oats, Peas, or Beans had been given to them. I gave from 4 to 6 lbs. of rape cake each per day to 30 young heifers in my straw fold last winter; they eat it readily and did very well upon it, with a small supply of cut Turnips. I first persuaded my ewes to eat rape cake by sprinkling a little salt upon it; there is one thing, however, which is almost needless to mention to you, that much of the success attending the feeding of sheep on cake depends on the shepherd's care, attention, and cleanliness; the troughs should be cleaned out daily, and the appointed time of feeding should be strictly and punctually kept. The cake troughs should be so made as to keep the rain from the cake. Before I conclude allow me to say that the plan of giving cake to my sheep all through the year is part of my system (on very light and naturally poor land) to manure directly for every crop; and I find passing highly nutritious food through the stomachs of animals to be the easiest mode of applying manure, and at a time, and to a purpose, when most needed. The young sheep, as a growing animal, is a great robber of your soils, especially of phosphoric acid. It ought therefore to have it supplied in the food you give it; and you cannot more readily, or at a less cost, do this than by giving rape cake, which contains more phosphoric acid than linseed cake. The ashes of rape (green) are particularly rich in phosphoric acid, containing nearly 20 per cent. Excuse this rough and somewhat hurried letter. I have no ends to serve; but if I can bring a cheap food under the notice and use of the agricultural world, I shall be satisfied, only you may rely upon my not riding my hobby further than is profitable. I should certainly not have troubled you with this had it not been for the recent discussion at Thirsk. *Charles Charnock.*"

Home Correspondence.

Evening Schools for Adults.—The following remarks, made at the establishment of an evening school in an agricultural district, sufficiently indicate the plan proposed, which I happen to know was successfully carried out during the past winter. *M. S.*

"Now, as to the management and guidance of the affair—that, of course, so soon as it is fairly at work, will be matter for the consideration of the subscribers themselves; for it is much to be desired that people should not talk of joining it for a mon h and then leaving it, as if it were a thing apart from themselves; they should think of it as their own and of themselves, as joining together for mutual benefit in establishing it. The future government of the room, then, will rest with the subscribers themselves, who will no doubt choose a committee from among themselves to determine future arrangements, but as it is necessary to have rules made to begin with, and a system arranged before subscribers join, I beg to propose that the following 7 (intelligent farmers and working men), who, I dare say, will join as subscribers to the room, should be a committee, to arrange the details of its management to begin with. As regards the support of the room and of the evening school, the following at the present time are our means. We shall have, I fully expect, a least 30 subscribers; that will yield 15*s.* a month. We have succeeded in obtaining promises from kind friends, who will give us gratuitous lectures at monthly intervals during the winter. From these six lectures I expect we shall receive as admission money at least 30*s.* a month; add 5*s.* a month as the quarterly sixpences of the evening school, and we have 50*s.* a month, or 15*l.* in the six months, as what we may call our educational fund. Out of this, the cost of lighting and warming this room four nights in the week will be at least 2*l.*; that of lighting and warming the school-room three nights in the week for the school will be 30*s.*. 8*l.* or 9*l.* will be spent in books and maps and newspapers ordered for the reading room, and then about 4*l.* will be left towards the support of the evening school—that will cost about 6*l.* or 7*l.*; but the difference will I have no doubt be made up by subscriptions for the purpose. These then are the prospects we entertain of support. To those who propose joining us, I may now as well say what are the means with which we at present start. The following is a list of books which we already have in our library, many of them containing engravings and other illustrations of the subjects they treat of. Some of these I have taken the responsibility of ordering on account of the library; others are presents from friends: Lives of Eminent Englishmen, with Portraits, 16 vols.; China and the Chinese, 3 vols.; History of British Commerce, 3 vols.; Literature and Learning in England, 2 vols.; The Englishwoman in Egypt, 2 vols.; British Chemical Manufacture, 1 vol.; Life of Wm. Caxton, 1 vol.; Dialogues on Instinct, 1 vol.; Mind among the Spindles, 1 vol.; The Elephant, 1 vol.; Pinnock's English History, 1 vol.; Donaldson on Manures, Grasses, and Farming; Lawson's Agriculturist's Manual; Main's Farmer's Manual; Smith's Productive Farming; The Farmer's Medical Dictionary; Stewart's Stable Economy; Wiggins on Under-draining. We have also in smaller volumes, Cleeve's Book of Inventions; several volumes on different branches of natural history; on the Thunderstorm; Natural Phenomena; History of the Plague; Winter in the Arctic Regions; Short Memoirs of Eminent Men; Narrative of Shipwrecks. We have also the following newspapers: The Express daily paper, one local paper, the Mark Lane Express, the Gardeners' Chronicle, Bell's Weekly Messenger, the Economist, the Irish Industrial Advocate, the Midland Counties Herald, the Scottish Farmer, the Illustrated London News, and the Pictorial Times. And I believe that in weekly or monthly periodicals of interest to us as farmers, or interesting as containing the public news and current literature of the day, our room will be well furnished. This will be in some measure out of the funds subscribed by the members themselves, but chiefly by the kindness of friends—for we would not be altogether independent. We are very glad to be under obligations to others for assistance of this kind; indeed, so long as we have this roof over our heads we cannot be independent, and I am sure none of us wish to lose that feeling of gratitude which all of us entertain for the generous munificence which has erected so admirable a school-room for our village. In addition to the library and newspapers, subscribers will have free access to the monthly lectures, for which 3*d.* and 6*d.* are charged to others; they will also, if any one should prefer it, be able to attend the evening school on such nights of the week as they fix upon. There are no doubt some young men among us who will think they ought to attend the school rather than the reading room; if they subscribe to the latter they will be able to attend both. I would just say a few words in conclusion on the principle of this movement. You may depend upon it that all of us need relaxation and entertainment for the mind. I believe this is just as much a necessary of life as bread and water are necessaries of life. You may depend upon it that *we will have it too*, whatever our station in life may be; and unless we either join together or are assisted to obtain it from instructive and useful sources, it will be looked for and found in useless or mischievous sources. And I submit to you that *a great mistake* is committed by those who are anxious to benefit their neighbours, by those who are anxious to spread what benefits they have themselves received; if they confine themselves to relieving the body or offering dry instruction in school to the mind. Why do they leave all the *pleasures* of life, which are by far the most attractive to the young, and to those whom we are especially anxious to have as friends and assistants, in the hands of the *enemy;* for so it is when a young man looks around him on a summer or a winter's evening after his day's work, and finds nothing better than the skittle-ground or the card-table to go to—games which

might, perhaps, be harmless, but which NEVER HAVE BEEN HARMLESS YET, because they are made the occasion by the men in whose hands they are of commencing and confirming those habits of drinking which are, I firmly believe, one of the deepest curses under which this country labours. I am sure that the pleasures of interesting and instructive reading, of listening to illustrated lectures on interesting subjects, and so on, are as superior to those which any public-house has to offer as light is superior to darkness; and I hope that our friends who may be interested in this matter, but who may not be able to join us as members of our society, will yet assist us as far as they can to make this room as interesting and attractive as possible. Books, and money to buy books, are what we want. In what I have said, however, on the subject of useful amusements for the purpose of displacing those which are mischievous, I wish to be understood as addressing only those of our friends who are interested in this subject, and I have not been speaking *to* young men when I have been speaking *of* them. If I had to address those young men themselves who may hitherto have frequented public-houses and card-tables for want of anything better to engage their leisure hours, I would speak in a very different style from this. I would, indeed, ask them to join us here, and assure them they will find far more satisfactory amusement and enjoyment with us; but I would confidently warn them that whether better places are open for them or not, it really is at their peril they continue as hitherto, where they can *do* nothing but mischief, where they can *receive* nothing but mischief, and where it is simple truth to say that hundreds and thousands have continued before them till they have come to wish that they had never been born."

Clover Failure.—I venture to suggest the trial of an experiment on Clover cultivated under two distinct conditions. You may test the results upon such as is grown together with Barley in the usual way, and also upon such as is grown in the unusual way, free from the disadvantageous influence to which it must of necessity be subjected under the ordinary treatment it experiences in an agricultural routine. If you turn to the *Agricultural Gazette* of 1844, page 529, you will find some remarks I made upon the subject of Clover failure, after a short and imperfect view I had just been taking of this question. I then asked for an experiment, and I have continually asked for it ever since, of a very simple description, which I consider necessary as a preliminary step for acquiring a datum on which an argument may be safely raised as to whether Clover failures are not essentially and primarily to be ascribed to the condition under which the seed is grown. If some 50 or 60 farmers will back a research on this subject by merely leaving a single stetch without Barley when they sow their Clover next year, it is most probable that two more years will not have elapsed before we shall have ascertained whether a failure in other parts of a field extends to the stetch on which no Barley has been sown. If it should turn out that it does not extend to that ridge, we may fairly say that the presence of the Barley has had something to do with the failure elsewhere, and that I need not repeat what I have already suggested. I may however add to what has been said before, that I am now inclined to think the condition of the seed when raised from crops cultivated in the usual manner may have less to do with the evil than I had supposed at first might possibly be the case; still, I would not withdraw the suggestion already given, of testing this point also with direct experiment; such parts as have come under my own observation within the last few years have tended to confirm me in the notion I had formed of the necessity of treating the inquiry rather with reference to physiological than purely chemical consideration. I have heard farmers say they cannot afford to lose the Barley for the sake of keeping the Clover healthy, and they immediately arrive at the conclusion that the experiment I have suggested would be useless. But I need not tell you that even if the Barley turn out to be the primary cause of these failures, there would be no need of entirely abandoning its culture in order to secure the Clover. Let us understand the merits and demerits of the case, and then your chemical experiments may furnish data for so far modifying present practice as shall enable the farmers to raise their invalid crops of Clover over the difficulties to which they have subjected them. I have observed several suggestions and conjectures about Clover failures and the remedy for them, of later years; but I have only heard of a single instance of a direct experiment having been made of the time to which I refer, and in that case there were no failures in any part of the crop, so that no satisfactory result could be obtained. If it had been thought worth while to try this experiment in every county of England at the time it was suggested, I cannot doubt that we should long since have had an opportunity of knowing whether the cause of Clover failures is rather to be sought for in physiological or chemical consideration. I have no idea that suggestions about Orobanche, Cuscuta, and others to which I could refer, are at all likely to throw light on the present question of Clover failure. *J. S. H.*

Dairy Stock.—I think you will find great errors in your "dairy stock account," published at page 556, especially in the article of milk sold; in 1833 I find the price of butter sold was 13*d.* per lb., and the milk 1½*d.* per quart; in 1837 the butter was sold at 15*d.* per lb., and the milk 7*d.* per quart; in 1840 the butter sold at 15*d.*, but the milk at 3*s.* per quart! This of course will materially alter the amount of produce sold per cow per annum; it was the large amount each cow netted that called my attention to the particulars. I should, however, very much like to see a fair statement of the real average value of a cow per annum, and many other of your readers, I have no doubt. *Buffer.* [You forget that part of the milk only was sold in the *new*, otherwise where did the butter come from? and that the quantity of milk given is only that of the *new* milk sold. The result, however, is extraordinary enough to suggest doubts of its accuracy, and we should be glad if Mr. Rothwell would re-examine it.]

Farmers' Clubs.

LONDON FARMERS' CLUB, *June 3.*—"*Upon High Farming, showing how and to what extent capital can be applied to a given quantity of land to ensure the greatest amount of profit.*"

Mr. BAKER, of Writtle, said: I consider, in pursuing this investigation, as set down for this evening, that my object will be best secured and more effectually obtained by taking up the question as a farmer's question, and in examining its various bearings, to consider it as an occupation carried on for the sole object of remuneration and profit, and to treat each investment as made with reference entirely to that object. In fact I shall consider the land in its twofold character: first, as to the investment made by the landlord, by which the largest return by way of rent can be produced; and secondly, by the tenant, as a business carried on, which, by his application of capital and skill, may be made to realise the largest possible annual return. I will presume, therefore, that the land having been thoroughly drained and cultivated, and the investment made, that we are in fair progress to realisation; but it must not be expected that such result can be made in the first year; it will take at least four years before high farming can begin to repay; the land must participate in the general benefit to arise from extra cultivation and manuring for at least that period; but if the land had previously been under a worse than an ordinary state of cultivation, it will require at least seven years before it may be said to be fully established. The main features to be attended to are, the producing a large amount of green crops for consumption by cattle and sheep, to make such application of inorganic substances to the soil as may be necessary to insure success—in fact, by the addition of lime, chalk, clay, silica, &c., as may be necessary for the general amelioration of the soil; to apply the manure produced upon the farm with the utmost economy and care, keeping in mind always that two light dressings will at different periods produce a greater return than one heavy one for all grain crops, whilst to green crops it will be necessary to apply manure more bountifully, as no damage will ensue by producing them as fine and at the same time abundantly in quantity as possibly may be effected; and as regards the application of guano, it will be found most advantageous to apply it to the production of root and other green crops in preference to grain crops, reserving the farmyard manure as much as possible for the latter. And it may be worth while here to observe that by a series of experiments communicated to me by a most intelligent cultivator, as well as derived from other sources, it has been found that more than 2 cwt. of Peruvian guano applied to each statute acre of Wheat or Barley did not repay the cost of the application, as it was found, in numerous experiments, that as the quantity became increased, the result diminished the quantity of grain, although it would have been considered otherwise, as the straw was materially increased, and by increasing the quantity to 4 cwt. per acre, there was no increase whatever in the grain from where no application took place. With Grass it was otherwise, and with root crops also; an increase in quantity upon the former produced a greatly increased amount of Grass, until the evil was apparent in the opposite direction by the weakness produced in the stems being such as to cause the crops to become lodged, whilst with root crops 4 cwt. or even 5 cwt. can be used if applied with skill, but 3 cwt. appears to be the quantity that may be used with the greatest advantage; and in every experiment made by myself, when not drilled, I have found the better plan to sow it and cover with a shallow ploughing a few days previous to ploughing for the depositing the seed; by such process, even in dry weather, we need not fear losing the guano by evaporation, as on its being covered in, the ammonia becomes at once fixed and therefore not liable to escape. The making and management of manure, next to draining, is the most essential operation towards the improvement of the farm. Much diversity of opinion at the present time exists as to the mode in which it should be carried out. One class, and that a very limited one, contends for the system of lodging the cattle upon latticed floors, so that the manure may escape through the interstices and be collected below. In that case I think the means as hitherto resorted to are not complete; the flooring below the latticed floor should consist of an inclined plane, from the front to the back of the building, and should be first laid with concrete and covered with asphalte, and when the moderate cost at which this can be effected is estimated against the advantage to be derived, it will be at once apparent; every portion of the manure and urine of the animals will be thereby saved and easily conveyed to receptacles behind, for mixing with ashes, burnt earth, or other substances; the opening will also allow the man attending the cattle to easily clean away manure, or even wash down the floor in the best manner. The detail of application afterwards I shall not enter into, having never practised the system, and until I am convinced more of its utility than I am at present, I fear I never shall, except so far as mere experiment may lead me. I have not come to this conclusion without sufficient reason for so doing, and I am quite satisfied that upon corn farms the better mode of making manure is to use all the inferior straw for litter, and for the purpose of absorbing the animal fæces; we thereby have it in the most convenient state for application to the soil, and thus return the ingredients that have entered into the formation of the straw to the soil. The system next introduced is that of confining the cattle separately in covered sheds, called boxes, the floors of which are sunk several feet below the surface in each division; in these places, about 10 feet by 8 feet, the animals are kept for several months together, fresh litter being added daily; the accumulated manure thus made is found to be highly concentrated, no other moisture having been admitted but such as is deposited by the animal, and it is doubtless one of the best modes of producing manure. But it is objectionable on some accounts, for young animals especially, whose growth is better insured by having liberty of action, and having a constant supply of fresh air, and it has been found injurious to them if afterwards subjected to the changes of atmosphere that follow upon exposure; therefore for all breeding stock it is highly objectionable, and, as a system, can only be made applicable to fattening cattle, or for cattle designed from the commencement for fattening; besides, upon a farm where a mixed description of cattle is kept, the extent of covered building required would be greater than landlords are disposed to erect, and it is a question still unsettled whether the advantage to be gained is equivalent to the annual sum that would as a per centage be chargeable upon such a system of management. Another, and certainly, in my estimation, a more beneficial mode, is by covered yards, in which a number of cattle may be kept for rearing or fattening purposes. No rain-water should be allowed by this process to fall upon the manure in the yards, and in fact the result is the same as in the box-feeding system, the only difference being that the cattle have liberty of moving about over the whole extent of the yards; but judging from observation, the manure thus produced is better than I have seen under any other system. The Rev. Mr. Cooke, of Semer, in Suffolk, has perhaps more fully succeeded than any other person in carrying out this system; his yards are well aranged, and the buildings judiciously constructed, and, as models, may be viewed with advantage by any one desirous of adopting this certainly most excellent system. The common and almost universal practice in this kingdom is to keep the store and breeding stock in open yards, and to stall the oxen under covered buildings, the manure from which is, or ought to be, daily spread over the yards, to be trodden in by the stock moving at large; but it unfortunately happens in most cases that the rain-water falling upon the building descends into the yard, and flows through the manure exposed to its action, and thus a very large proportion of its valuable quality is lost, and too frequently is seen stagnating in the open ditches, or running to waste in various directions; but this may be materially obviated, and perhaps sufficiently upon corn-growing farms, by having the eaves of the buildings supplied with cast-iron or zinc troughing, and thus convey away the water by underground drains. If this process is well carried out, none of the valuable properties of the manure need be lost, for if no part of the deposits of the cattle are allowed to escape, every portion must be retained, not in so highly a concentrated state, but sufficiently so for all useful purposes. As the object of this discussion is to ascertain the best mode of producing manure as one of the essential points to insure success, I have been the more minute in describing the various processes resorted to, and must leave every one, under the various circumstances of place and convenience, to adopt that mode which can be most readily applied; the result will be pretty much the same if every portion of the deposits of the cattle is made available. The application will nevertheless be the same, provided the respective farms are of similar character; but as I presume that in every occupation more or less green crops are annually produced, the intention should always be to secure the largest possible quantity of the manuring properties that those crops will produce by feeding with cattle and sheep, and it has been found that the sooner the application of manure is made to the land after removal from the sheds or yards the greater the effect, and, therefore, it should never be allowed to enter into active fermentation if it can be avoided; but as a difficulty arises frequently to prevent that object being carried out, then it should be carted out and consolidated as far as possible, by drawing the loads of manure upon the heaps, and after the sides are trimmed, then to cart upon the heaps as much fresh earth as will keep the whole mass in as compact and solid a state as possible; and a few days only previous to application, to fork it over for the purpose of mixing, and as soon as it has arrived at a state of fermentation to cart it upon the land, and plough it in as quickly as possible. It is true that a small portion of the gases thus generated by fermentation will escape; but, on the other hand, the manure will become far more portable, and will eventually give a better result, than if turned in in quite an undecomposed state. I have practised both modes, and have found in dry seasons that the application of raw manure is frequently injurious to the crops, from keeping the land open and porous, and therefore rendering it liable to be affected by drought. The chief application of the manure should be for the production of the green crops or such other crops as precede the Wheat crop; the latter will generally succeed better after a crop of Beans, Peas, Clover, or Turnips have intervened between the Wheat crop and the manure than when the application is made direct for the Wheat. Farms now said to be high-farmed must be considered as having external aid by the assistance of guano or other portable manures, purchased for producing the Turnip or root crops; it is more suitable to their growth than for corn crops, as experience proves; and by a liberal application of it, nearly or even the whole of the farm-yard manure may be spared for grain crops. The horses, and indeed every description of stock, should be foddered in yards during the summer as well as in the winter, and it would be better that each horse have a division to himself, or only four horses be kept in each yard. All the green food should be cut into chaff, first using about one-third of green to two of dry food, increasing the quantity until the proportion is reversed, or the dry food superseded altogether. The detail, as pursued by myself, I will give in a letter that I drew up at the request of a gentleman, and which process I am now pursuing, having, from the middle of April last in the current year, foddered all my horses and most of my neat stock upon that system. Whatever mode is pursued, it is important that a dressing of at least 10 or 12 yards of manure should be raised for every acre of arable land yearly; and I assert that, under proper management it may be accomplished. In addition to the green crops thus consumed, every portion of hay, to be cut also into chaff, should come into use upon the farm during the year, and as much also of the green crops as can be applied with advantage: but I am doubtful if cattle, sheep, or pigs can be fed upon grain with any profitable result, except so far as they contribute to the quantity of manure raised upon the farm. A bushel of Barley or Peas has always been considered as equivalent to the production of a stone of 8lbs. of meat; therefore if the price of the meat is less per stone than the grain per bushel, the difference is a loss, and *vice versa*. Upon the judicious application of manure much of the success of the cultivator depends. By an application of it too liberally, as much injury may ensue to grain crops as by doling it out too sparingly; and therefore, practically speaking, the judgment of the cultivator will be manifested to the casual observer by the even character of the crops produced over the whole farm, and not, as is too frequently found on the side of public roads, that the fields, from having been more highly manured, have crops luxuriating in rank vegetation, whilst those fields not under observation, and at a distance from the homestall, have crops of a starved character and appearance, contrasting themselves like the fat and lean ears in Pharoah's dream. The successful application of manure should, as far as possible, be at once to cart it on and cover it in speedily with the plough, especially for green crops; but in autumn it frequently happens that large masses have to be moved for the coming crops of Wheat and Beans, and then it is absolutely necessary that the dressings be completed during the continuance of weather suitable and as expeditiously as possible. I may, I fear, be exceeding the ordinary limits of the discussions by dilating to such an extent upon these essentials of high cultivation, viz., the producing of manure, and by its application yearly increasing the general character of the soil and progressive advancement of the condition and power of the farm to maintain itself in the highest possible state—produce crops, by judicious management, to make the largest return with the greatest amount of profit. Another most important point is, how best to effect that object by the system of cultivation to be pursued, and I must therefore presume that the farm is sufficiently stocked with active horses at all times to carry out an expeditious system of converting the land to the production of the forthcoming crop, immediately upon the present one being removed; for unless such is the case, it will be impossible to realise the largest available product that the farm will give if its ability is not taxed to the utmost. It will, therefore, be necessary at all times, and through all seasons, that the number of horses be sufficient, especially during the summer months. As soon as any crop is removed, the more speedily the land can be ploughed the better, not only as a means of keeping down weeds, but also by keeping the land in good tilth, and available for the production of the forthcoming crop. This system, pursued for a series of years upon the same land, will almost eradicate weeds, and the hoeing of the crops will thereby be comparatively reduced to a modicum of what originally was the case. It may perhaps save time if I show the particular cultivation of one field as it has taken place during a series of years, as better exemplifying the system pursued, than by dealing generally with the question. The land referred to is of a light or gravelly character, with a subsoil of sandy loam and strong loam and clay alternately, with a fair depth of staple, originally of a poor character, producing the wild Radish, known as white Charlock, Corn Marygold, Mayweed, and a species of Vetch called Tare-tyne, which on the lighter portions of the land used to grow up with the Wheat and grain crops to such an extent as to be out of the power of the hoe to eradicate without partially destroying the crops

with them. By an application of chalk clay in quantities varying from 60 to 120 tons per acre, all those pests have disappeared, and by that process and thorough drainage alone, the produce has been doubled; until this operation was effected (and which it took several years to complete) the application of manure was of little avail except in the production of green crops, for which the land was always well calculated. The cultivation during 12 years was as follows:

	Cultivation.					Manure.				Crops.
	Ploughing.	Scarifying.	Harrows.	Drillings.	Rollings.	Manure.	Clay and Chalk.	Guano.	Soot.	
						Tons.			Bush.	
1839	2	1	4	1	1	—	—	—	—	Wheat.
1840	5	3	8	2	3	16	40	—	—	Rye, and Tares, and Swedes drawn.
1841	1	1	4	1	2	—	—	—	40	Barley.
1842	4	2	4	1	1	20	Earth and Lime.	—	—	Early Peas, Turnips, part fed, and part drawn.
1843	2	—	4	1	2	—	20	—	—	White Oats.
1844	1	—	4	1	1	10	—	—	30	Wheat.
1845	5	1	6	2	3	16	—	2	—	Rye, and Rye and Tares, mown green, Swedish Turnips.
1846	2	2	4	1	2	—	—	2	—	Barley.
1847	—	—	—	—	—	—	—	—	—	Red Clover, twice mown.
1848	1	2	4	1	1	12	—	—	—	Wheat.
1849	3	1	5	1	2	6	—	—	—	Barley.
1850	3	—	—	—	—	—	—	—	—	Now green crop.
	29	13	47	12	18	80	60	4	70	

The foregoing has been indiscriminately selected, and the statement not in any case exceeding the actual number of operations. This put into comparison with some of the statements that have lately appeared, especially that one of Mr. Huxtable, showing how Wheat can be produced by one ploughing and a few pounds of ammonia, if not disproving others, at least exhibits a system practically applied for a series of years without regard to public exposure, and which, if it has no other recommendation, at least involves a large amount of labour, and exceeding that stated by Mr. Mechi as his maximum, viz., 40*s.* per acre. It would have facilitated this investigation had I been able to have given the quantities produced in each year, but this I am unable to do. The average, I presume, of Wheat to have been about 4 qrs.; of Barley, 6 qrs.; Oats, 7 qrs.; Clover-hay, from 3½ to 4 tons; Swede Turnips about 20 tons; of Rye, cut green, 10 tons. The Pea crop was a deficient crop, all the green crops productive. The expenditure for the period will stand thus:—

Cost of Manure per Acre.

80 loads manure, about one moiety carted from town, 5*s.*		£20	0 0
40 loads chalk clay, 1*s.* carting, 2*s.* 6*d.*		7	0 0
20 loads lime and earth		2	0 0
70 bushels soot and carting, 6*d.*		1	15 0
4 cwt. guano		2	0 0
	10)	32	15 0
		£3	5 6

Manual Labour and General Expenditure per Acre.

Harvesting Wheat and Barley, 15*s.*, six times	£4	10 0
,, Oats once	0	14 0
Cutting Clover, Rye, and Tares, and carting, 10*s.*	1	10 0
Pulling and carting Turnips, 3 tons, 24*s.*	3	12 0
Threshing and carting 12 qrs. Wheat, 4*s.* 3*d.*	2	11 0
,, 18 qrs. Barley, 3*s.*	2	14 0
,, 7 qrs. Oats, 2*s.* 3*d.*	0	15 9
Tying and marketing straw, 7*s.*	2	10 0
10)	18	16 9
	£1	17 8

Cultivation by Horses, &c.

2½ Ploughings, 8*s.*	£1	0 0
1½ Scarifyings, 3*s.*	0	3 9
4½ Harrowings, 9*d.*	0	3 6
1½ Drilling, 3*s.*	0	3 9
1½ Rolling, 1*s.* 1*d.*	0	1 6
Striking furrows; water-furrowing	0	1 0
Hoeing	0	2 0
Sowing soot and guano	0	3 0
	1	18 6

General Outgoings, Rent, &c.

Repairs and incidentals	0	2 6
Rent 27*s.*, dunging 5*s.* 6*d.*	1	12 6
Tithe rent-charge	0	7 6
Rates and Insurance	6	5 6
Interest on 10*l.* at 7½ per cent.	0	15 0
	3	3 0

Summary.

Manure	3	5 6
Cultivation	1	17 8
Ditto	1	18 6
Rent and charges	3	3 4
	10	5 0

By Produce.

	At 56*s.*			At 40*s.*		
Wheat, 12 qrs., not seed	£23	8	0	£16	0	0
Barley, 11 qrs., not seed	11	14	0	8	0	0
Oats, 7 qrs., net seed	32	0	0	22	10	0
Rye and Tares, 30 tons green food	9	0	0	6	0	0
Swede and White Turnips, 54 tons	15	0	0	10	0	0
Straw: Wheat £6 0 0	27	0	0	18	0	0
Barley 5 8 0						
Oats 2 2 0						
	13	10	0	9	0	0
10)	131	12	0	89	10	0
	£13	3	2	£8	19	0

To Meet Profit and Return of Outlay in Improvements.

Ordinary cultivation of one acre under four-course shift.

1 acre ploughed 5 times	£2	0 0
,, 3 harrowings	0	2 3
,, 1 Scarifying	0	3 0
,, 2 Rollings	0	1 6
,, Drilling	0	3 0
	£2	9 9
Manured with 16 loads, equal to 4 loads per acre per annum	1	0 0
Hoeing	0	7 0
Harvesting	0	14 0
Spreading	0	0 6
Threshing	0	9 0
Carting	0	3 6
Sundries	0	2 0
	2	16 0
Rent, &c., as before	3	0 0
	£8	5 9

Second Year—Barley.

1 Ploughing	£0	8 0
4 Harrowings	0	3 0
2 Rollings	0	1 6
Drilling	0	3 0
Carried over	£0	15 6

Brought forward	£0	15 6
Manure, hoeing, &c., as before	2	16 0
Rent, &c., as before	3	0 0
	6	11 6

Third Year.

Clover, Peas, or Beans	£1	15 0
Rent, &c., as before	3	0 0
	4	15 0

Fourth Year—Wheat.

1 Ploughing	£0	8 0
4 Harrowings	0	3 0
1 Rolling	0	1 0
Drilling	0	3 0
	0	15 0
Manure, hoeing, &c., as before	2	16 0
Rent, &c., as before	3	0 0
	£6	11 0

First year	£8	5 9
Second year	6	11 6
Third year	4	15 0
Fourth year	6	11 0
4)	26	3 3
Average cost of cultivation	6	10 9
Add for draining by tenant	0	0 0

By Wheat, 3 qrs. 4 bush., at 2*l.* 16*s.*	£9	16	0	at 40*s.*	7	0 0
Barley, 5 qrs.	9	0	0		6	0 0
Clover, 3 tons, at 7*l.* 15*s.* / Or Peas or Beans, 3½ qrs. 5*l.* 5*s.*	6	10	0		4	7 8
Turnips, 1 moiety fallow	3	10	0		2	13 4
	28	16	0		20	1 0
Straw	3	5	0		2	1 6
4)	32	1	0		22	2 6
	£8	0	3		£5	10 7

It therefore appears by this comparison, which has been drawn up without regard to the result, that the profit upon a large investment in farming is about the same proportionately with the smaller investment. Under the high farming the average expenditure would be 10*l.* 5*s.* per acre; the return, with Wheat at 56*s.* including profit, 13*l.* 3*s.* 2*d.*; with Wheat at 40*s.*, 8*l.* 19*s.* per acre, showing a loss of 9*s.* 3*d.* per acre. Under the ordinary system of cultivation, of manuring the land once in four years and taking one crop of Wheat, one of Barley, one of Clover, and one green crop, the result would be, with Wheat at 56*s.*, a return of 8*l.* 0*s.* 3*d.* per acre, with Wheat at 40*s.*, 5*l.* 10*s.* 7*d.*; the expenditure 6*l.* 10*s.* 9*d.* per acre. So that either under high farming or fair average farming, although the annual expenditure may be increased 50 per cent., still the crops under the same reduction will not yield any profit, but show a positive loss. It has in cases similar to the one now under discussion been of late the fashion to compare high or very good farming with very bad farming; but as good farming is now the rule, and not the exception in the present day, it is unfair to make such deductions. If Wheat and grain cannot be produced at a profit under ordinary circumstances of low expenditure, and regular ordinary practical application, then how can it be produced at increased expenditure with greater profit? The subject viewed dispassionately is an anomaly if otherwise construed; I am nevertheless an advocate for producing the utmost possible quantity from each and every acre under cultivation, but I hesitate advising others to act up to that principle, until they shall be satisfied that prices will be sufficiently high to become remunerative; and it has been not only my opinion, but that of all practical men who have followed farming as a business, that by a proper alternation of crops and a steady and consistent system, more corn can be produced than by adopting the system of growing Wheat in succession on the same land, or even more frequently than the intervention of ameliorating crops will allow, within a very short period. Wheat was and is still the grain by which the farmer meets his chief payments, and this he does without any consideration whether it produces him more or less than other crops: he still endeavours to obtain as much Wheat per annum as possibly can be obtained, when it might have been that other crops would have paid him as well or better. I should be one of the last to disparage the attempts of others, however feeble, in pursuit of agriculture, having through a long life exerted myself in effecting that object by applying the utmost practical skill and knowledge I was possessed of, combined with such science as I have been able to obtain, to effect it; but I confess I have of late been startled at the assertions put forth by certain persons that, in proportion as prices diminish, exertions and outlay of capital should increase. As in trade so it is in farming; whenever profits become reduced, it is wise to limit transactions, and when losses occur to reduce them still further. None but gamblers pursue their object with increased energy as the risk becomes greater.

Miscellaneous.

On the Nutrition of Plants. By Prof. Magnus.—Prof. Magnus has instituted a series of experiments upon the vegetation of Barley. The Barley was subjected essentially to the same treatment as that adopted by the Prince of Salm Horstmar; in the analyses, the results of all those experiments which have been made in recent times have been applied. The author preferred this method of determining the constituents necessary for the growth of the Barley to that of the mere ash analyses, for the reason, that although the latter enable us to ascertain what inorganic constituents occur in a plant, they do not give us any further information as to whether they are all requisite for it. If the latter were the case, the ashes of the same species of plant ought always to exhibit the same composition, whilst in fact rather considerable deviations occur. This evidently depends upon the circumstance, that sometimes more, sometimes less of the alkalies and earths contained in the soil enter the juices of the plants, according as they exist in a more or less soluble state, as Saussure has already shown by his experiments. On drying the plants, the mineral constituents contained in the juice, which are thus as it were accidental ingredients, are left, and are subsequently met with in the ash. Hence this sometimes amounts to more, sometimes to less; and contains sometimes more of one, sometimes more of another inorganic substance, according as this has been applied to it from the soil. Hence it is possible that certain substances, which are by no means essential to the existence of a plant, may constantly be met with in its ash. We might imagine, *e. g.* that the lime or magnesia which occur in all manures, and are therefore met with in all ashes, are still by no means indispensably requisite for some plants. We must therefore enter upon a synthetical method, in addition to the analytical one which has hitherto been adopted. With this view Prof. Magnus placed grains of Barley in pure carbonised sugar in a series of experiments; various salts were then added to this; and in another series of experiments, the same seeds were placed in pure felspar. The carbon was obtained from pure white sugar-candy, which was fused in a large porcelain dish, and heated until it formed a hard mass; this was then taken from it, and thoroughly heated to redness in a well-closed porcelain crucible. To be certain that the carbon contained no mineral constituents, 2 grms. of it were burnt upon silver foil in oxygen gas. They left a mere trace of residue, which weighed much less than half a milligramme, hence less than $\frac{1}{4000}$ of the weight of the carbon. Eight different experiments were made with this carbon. In one, it was used without any addition; in the second, all the mineral matters existing in the plants were mixed with it, and in the following quantities:

	per cent. of the weight of the carbon.
Carbonate of lime	4.0
Protocarbonate of manganese	0.5
Carbonate of magnesia	2.0
Peroxide of iron	1.0
Sulphate of lime	1.0
Phosphate of lime	2.0
Chloride of sodium	0.5
Chloride of potassium	0.5
Silicate of potash (soluble glass)	4.0
	15.5

In the third, all these salts, with the exception of the silicate of potash, were added to the carbon, being most intimately mixed with it, as in all the following experiments; the silicic acid was therefore absent. In the fourth, the chloride of sodium was omitted instead of the former; sodium was therefore absent. In the fifth, the phosphate of lime was omitted; phosphoric acid was therefore wanting. In the sixth, the sulphate of lime; hence there was no sulphuric acid. In the seventh, the protocarbonate of manganese; and to be certain that the peroxide of iron used in this experiment was perfectly free from manganese, it had been precipitated by succinate of ammonia; hence there was no manganese present. In the eighth, the chloride of potassium and the silicate of potash were omitted; and instead of them, 1.5 per cent. of finely-powdered and elutriated rock-crystal were added; here potash was therefore absent. In each of these experiments, three different vessels were used; in each of them a grain of Barley was placed, so that each experiment was performed three times. The vessels were made of zinc, coated with a thick layer of rosin and wax. Their diameter at the top was 1.75, at the bottom 0.5 inch, and they were 5 inches in height. To avoid the variations of temperature, which readily occur in such small vessels, there were always 12 of them fitted into the lid of a wooden box containing sand, so that the zinc vessels were perfectly surrounded with sand. These boxes were placed in a front window of a room facing the south. By opening small panes, the air could be sufficiently renewed. Although the deposition of dust could not be entirely avoided in this way, yet it was as little as possible in experiments of this kind. As often as the carbon got dry, it was moistened with distilled water; and to restore the deficient nitrogen to the plants, water containing one-thousandth of its weight of carbonate of ammonia was added, a quantity which is imperceptible to the tongue. In those vessels which contained carbon without any addition, the plants attained a height of 5 inches. In the others they were either stunted or undeveloped. As in the latter an effervescence of a white salt almost invariably appeared upon the surface of the carbon, this gave rise to the supposition that the carbon might have contained too large a quantity of soluble salts. To remove these, the plants were taken out of the carbon, and then each of the seven mixtures mentioned above, with which the experiments 2 to 8 inclusive had been made, were exhausted with water. Three new vessels were then filled with each of them, and two grains of Barley placed in each vessel. The plants then developed were unequally strong, and in some of these mixtures they even attained a height of 14 inches, whilst those in the vessels containing the pure carbon became developed to a height of 5 inches only. Hence it is evident that the presence of even a small quantity of salts is injurious to vegetation. At first, salts to the amount of 15.5 per cent. of the weight of the carbon were added; of these, however, the chloride of sodium

and chloride of potassium were the only soluble ones, and these together do not form more than 1 per cent., and very small quantities only of difficultly-soluble salts, as sulphate of lime, were present. Scarcely any development then took place; but after the greater portion of these had been removed by exhaustion with water, the plants grew better, although, even after this treatment, the quantity of the remaining salts appeared still too great. The experiment however showed decidedly that Barley cannot be developed without some mineral matter, but dies after having attained a height of 5 inches; whilst, when a small quantity of salts is added, vegetation proceeds much further. How far it would be possible, however, so to mix the small quantities of the various salts with the carbon, that they may be uniformly distributed, and that perfect development of the plants be attained, can only be decided by subsequent investigations. *Monatsbericht der Akedemie der Wissensch.*, zu Berlin, Feb. 1850, pp. 60-71. *Chemical Gazette.* (*To be continued.*)

A Comparison of Farmers.—The great bulk of the Lancashire farmers are bad accountants; indeed, a large number of them keep no accounts whatever; and their profits and losses are only judged of by the weights of their purses at the end of the year. This is certainly a very true criterion, but it gives a man no knowledge of the true cause either of his losses or his profits; it is thus that farmers in general are not aware of the great difference in the amount of the clear available marketable produce from a farm highly cultivated. To show this, in a clear point of view, I have taken the average amount of produce of three farms in this parish. The number of acres under arable cultivation on each farm is the average number for five years, 1834, 1835, 1836, 1837, and 1838, in which I valued the tithes of this parish. The amount of the produce of each farm is also the average amount of those five years. The Clover, Potatoes, and Turnip crops I did not value; of course the weight of these I have estimated by my own experience, but without having the power to test the accuracy of the estimate. I am well acquainted with the soil and the cultivation of every farm in the parish, and, in every case where I have tested my valuation of the crops, I have invariably found that I had rather over-valued the crops of the bad farmer, and under-valued those of the good one. This will show that the following statement will be rather against the highly cultivated farm, and in favour of the badly cultivated one; and from my own experience in farming, I believe this will nearly always be the case in estimating the value of crops. No. 1 is a farm under very good cultivation, No. 2 is a farm in an average state of cultivation for this county, and No. 3 is very badly cultivated; No. 2 is by far the best land, No. 3 is a better soil than No. 1, but is more difficult to manage. The result of the practice on these three farms is, that the tenant on No. 1 began the world with little money, little learning, except the knowledge of labour; has had a little farm, has punctually paid the highest rent per acre, and is now independent of his farm. No. 2 had sufficient capital to begin business, had a good common education given him, has had a large farm of good soil, and at a very reasonable rent, always conducted himself respectably, and perhaps has saved some money, but I have my doubts whether much or not. The tenant of No. 3, with a good sized farm, of very fair soil, and at a fair rent, is now about on his "last legs." He had sufficient capital, but no education.

No. 1.—Two Horses Kept.

Average No. of Acres.	Name of Crop.	Average Produce per acre.	Average gross amount of Produce.	Deduct for family, servant's horse, corn, and seed.	Clear average amount of Produce to be Sold.	Average Price.	Clear value of Produce.
						£ s. d.	£ s. d.
5	Wheat.	42 bsh	210 bsh.	40 bsh.	170 bsh.	0 6 6	55 0 0
5	Oats.	60 ,,	300 ,,	150 ,,	150 ,,	0 2 9	20 12 6
8	Potatoes.	10 tns	80 tns.	6 tns.	74 tons	2 10 0	185 0 0
5	Clover Hay.	3 ,,	15 ,,	8 ,,	7 ,,	4 0 0	28 0 0
23			Value of disposable produce				288 17 6
			Gross Value per acre per annum of disposable produce				12 11 2

No. 2.—Six Horses Kept.

						£ s. d.	£ s. d.
35	Wheat.	24 bsh	840 bsh.	145 bsh.	695 bsh.	0 6 6	225 17 6
30	Oats.	40 ,,	1200 ,,	600 ,,	600 ,,	0 2 9	82 10 0
20	Potatoes.	8 tns	160 tns	15 tons	145 tons	2 10 0	362 10 0
8	Turnips	15 ,,	120 ,,	...	120 ,,	1 0 0	120 0 0
10	Fallow.						
30	Clover Hay.	1½ ,,	45 ,,	24 ,,	21 ,,	4 0 0	84 0 0
133			Total Value of disposable produce				874 17 6
			Gross Value per acre per annum of disposable produce				6 11 7

No. 3.—Three Horses Kept.

						£ s. d.	£ s. d.
17	Wheat.	18 bsh	306 bsh.	75 bsh.	231 bsh.	0 6 6	75 1 6
17	Oats.	26 ,,	442 ,,	300 ,,	142 ,,	0 2 9	19 10 6
4	Potatoes.	4 tns	16 ,,	4 ,,	12 ,,	2 10 0	30 0 0
13	Fallow	...	...	...	...	...	...
17	Clover Hay.	1 ,,	17 ,,	12 ,,	5 ,,	4 0 0	20 0 0
86			Total Value of disposable produce				144 12 0
			Gross Value per acre per annum of disposable produce				2 2 0

From the clear annual value per acre, in all the cases, there are the rent, rates, the manure purchased, and the wages to pay. I have taken no account whatever of the meadow and pasture land on these farms; but the produce from these portions of each farm will be about in the same proportion as upon the arable part. In short, on the farm No. 1, there are as many milch cows kept as upon No. 3, on which is three times the extent of Grass land; and I have no doubt but each cow on No. 1 will give one-third more milk and butter than those on No. 3. Nos. 1 and 2 are very suitable soils for Potatoes and Turnips, and, in South Lancashire, have an advantage in this respect over No. 3. But No. 3 could be made to produce heavier crops of Wheat, Oats, Beans, and Clover, with less manure than No. 1. The produce of No. 2 would be doubled by the same management as is applied to No. 1. In South Lancashire there is a market for every description of farm produce, which is not the case in every part of North Lancashire; but carry out the same style of cultivation in a purely grain or Grass-growing district, and the result will be the same. Everyone will be aware of the great difference in the expense per acre in the cultivation of No. 1, to that of No. 3; and thus the tenant of No. 1 confers a double benefit on the country by the extra money he expends on labour, manure, implements, &c., besides the greater amount of produce to dispose of to supply the wants of the people. But notwithstanding his greater outlay, he will have a heavier balance in his purse at the end of the year. Rent, lays, and taxes are the same, whether the cultivation be good or bad. *Rothwell's Agriculture of Lancashire.*

Calendar of Operations.

SEPTEMBER.

East Lincolnshire Farm, *September* 8.—We last week finished cutting Oats and Barley, and commenced leading Wheat. Of the latter, we cannot this year give a very favourable report; it is small, and in some districts mildewed, particularly in the Fens. The Barley is not amiss, but our best crop this year is Oats: these were grown after Turnips fed off with sheep well caked, and there are probably 10 qrs. to the acre. We mow, as I suppose you are aware, everything here; women and boys following each gang of men, raking and tying. They are getting 7*s.* per acre. Turnips look well on the farm, though not equally so elsewhere. The late fine dry weather, so favourable for harvesting, has for the present retarded their growth, and made Grass keep very bare; so that after getting in harvest, rain will be acceptable. We shall this fall sell off our breeding ewes and buy in an equal number of lambs, to go on Turnips with our own, intending to work a dry flock, which will, we think, answer best here. *H. E.*

Notices to Correspondents.

Dibbling Machine, &c.: *F A S.* Your letter has been forwarded to Mr. Wilkins.

Malt: *A Subscriber.* A bushel of good malt is equal to 24 lbs. of sugar. See Roberts' "British Wine Maker and Domestic Brewer," a small 8vo, of 300 pages.

Poultry: *H N M.* "The Poultry Yard," by P. Boswell, Glasgow.

Systema Agriculturæ: *G S.* It was published first in 1669, and written by John Worlidge.

Markets.

COVENT GARDEN, Sept. 14.

Vegetables are abundantly supplied. Hothouse Grapes and Pine-apples are plentiful; Peaches and Nectarines from the open walls abundant. Oranges and Lemons though scarcer are sufficient for the demand. Plums and Pears are still received from the Continent. Filberts are plentiful and good. Carrots and Turnips may be had at 3d. to 6d. a bunch. Potatoes are good and cheap. Lettuces and other salading are sufficient for the demand, and so are Mushrooms. French Beans are scarcer. Cut Flowers consist of Heaths, Pelargoniums, Carnations, Picotees, Asters, Fuchsias, Mignonette, Dahlias, Verbenas, Bignonia venusta, Stephanotis floribunda, Heliotropes, Calceolaria viscosiasima, Japan Lilies, and Roses.

FRUITS.

Pine-apples, per lb., 4*s* to 6*s*	Pears, per doz., 1*s* to 3*s*
Grapes, hothouse, p. lb., 2*s* to 5*s*	Lemons, per doz., 1*s* to 3*s*
Peaches, per doz., 3*s* to 8*s*	Oranges, per doz., 2*s* to 3*s*
Nectarines, per doz., 3*s* to 8*s*	— per 100, 8*s* to 24*s*
Apricots, per doz., 1*s* 6*d* to 5*s*	Almonds, per peck, 6*s*
Figs, per punnet, 2*s* to 4*s*	— sweet, per lb., 2*s* to 3*s*
Melons, each, 1*s* to 3*s*	Walnuts, p. 100, 1*s* 6*d* to 2*s*
Plums, p. punnet, 1*s* to 1*s* 6*d*	— p. bush., 16*s* to 24*s*
Green-gages, do., 1*s* to 2*s*	Nuts, Barcelona, per bush., 20*s* to 22*s*
— per sieve, 8*s* to 10*s*	— Brasil, p. bsh., 12*s*
Apples, dessert, p. bush, 4*s* to 6*s*	Filberts, per 100 lbs. 22*s* to 30*s*
— kitchen, do., 1*s* 6*d* to 6*s* 6*d*	

VEGETABLES.

French Beans, p. sieve, 3*s* to 4*s*	Garlic, per lb., 4*d* to 8*d*
Cabbages, per doz., 6*d* to 1*s*	Artichokes, p. doz., 2*s* 6*d* to 3*s*
Cauliflowers, p. doz., 2*s* to 4*s*	Vegetable Marrows, per doz., 6*d* to 1*s*
Peas, per sieve, 3*s* to 6*s*	Lettuce, Cab., p. sc., 1*s* to 1*s* 6*d*
Sorrel, p. hf. sieve, 6*d* to 9*d*	— Cos, p. score, 6*d* to 1*s* 6*d*
Potatoes, per ton, 50*s* to 80*s*	Endive, per score, 1*s* to 1*s* 6*d*
— per cwt., 2*s* 6*d* to 4*s*	Small Salads, p. punn, 2*d* to 3*d*
— per bush., 1*s* 6*d* to 2*s*	Horse Radish, p. bdl., 1*s* to 4*s*
Turnips, p. 12 bun., 2*s* 6*d* to 3*s* 6*d*	Mushrooms, p. pot., 9*d* to 1*s* 6*d*
Red Beet, per doz., 1*s* to 2*s*	— per bushel, 5*s* to 7*s*
Cucumbers, p. doz., 1*s* to 6*s*	Fennel, per bunch, 2*d* to 3*d*
Leeks, per bunch, 1*d* to 2*d*	Savory, per bunch, 2*d* to 3*d*
Celery, p. bundle, 10*d* to 1*s*	Thyme, per bunch, 2*d* to 3*d*
Carrots, per doz., 3*s* to 5*s*	Parsley, p. doz. bun., 1*s* to 2*s*
Tomatoes, p. punnet, 1*s* to 1*s* 6*d*	— Roots, p. bdle., 9*d* to 1*s*
Spinach, p. half sieve, 1*s* 6*d* to 2*s*	Marjeram, per bunch, 6*d* to 9*d*
Onions, p. bunch, 2*d* to 6*d*	Mint, green, per bunch, 2*d*
— Spanish, p. doz., 1*s* 6*d* to 4*s*	Watercress, p. 12 bunch., 6*d* to 9*d*
Shallots, per lb., 6*d* to 8*d*	

HAY.—Per Load of 36 Trusses.

Smithfield, Sept. 12.

Prime Meadow Hay	75*s* to 80*s*		Clover	84*s* to 90*s*	
Inferior ditto... ...	63	70	New Clover	70	80
Rowen	90	—	Straw	23	27
New Hay	—	—		J. Cooper.	

Whitechapel, Sept. 12.

Fine Old Hay ...	70*s* to 74*s*		New Clover	75*s* to 80*s*	
Inferior ditto ...	—	—	Inferior ditto... ...	—	—
New Hay	63	68	Straw	26	28
Old Clover	80	85			

Smithfield, Monday, Sept. 9.

The supply of Beasts is large, but choice qualities scarce, consequently 3*s.* 8*d.* is obtained for many of them; other descriptions are lower. Several remain unsold. The number of Sheep is small; trade is more cheerful, and a few are sold dearer. The best Calves are dearer, being scarce. From Holland and Germany there are 960 Beasts, 3310 Sheep, and 153 Calves; from Scotland, 30 Beasts; and 2500 from the northern and midland counties.

Per st. of 8 lbs.—	s d	s d	Per st. of 8 lbs.—	s d	s d
Best Scots, Herefords, &c.	3 6	to 3 8	Best Long-wools	3 6	to 3 8
Best Short-horns	3 2	— 3 4	Ditto Shorn	... ...	— ...
2d quality Beasts	2 6	— 3 0	Ewes & 2d quality	2 8	— 3 4
Best Downs and Half-breds	3 8	— 4 0	Ditto Shorn	... ...	— ...
Ditto Shorn	... ...	— ...	Lambs	... ...	... — ...
			Calves	... ...	2 6 — 3 10
			Pigs	... ...	3 0 — 4 0

Beasts, 4740; Sheep and Lambs, 28,560; Calves, 252; Pigs, 235.

Friday, Sept. 13.

The supply of Beasts far exceeds the demand; the average quality is inferior, the choicest are therefore pretty freely disposed of; trade is very bad for all other kinds. The number of Sheep is for the time of year large. Lower prices are taken, and several remain unsold. We are again abundantly supplied with Calves; the best descriptions are lower, and inferior ones are with difficulty disposed of at a very low price. From Germany and Holland there are 348 Beasts, 1740 Sheep, 235 Calves, and 10 Pigs; from Norfolk and Suffolk, 40 Beasts; from Leicester and Lincoln, 350; and 72 Milch Cows from the home counties.

Best Scots, Herefords, &c.	3 4	to 3 8	Best Long-wools	3 4	to 3 6
Best Short-horns	3 0	— 3 2	Ditto Shorn	... ...	— ...
2d quality Beasts	2 4	— 2 10	Ewes & 2d quality	2 8	— 3 2
Best Downs and Half-breds	3 8	— 4 0	Ditto Shorn	... ...	— ...
Ditto Shorn	... ...	— ...	Lambs	... ...	... — ...
			Calves	... ...	2 0 — 3 6
			Pigs	... ...	3 4 — 4 4

Beasts, 984; Sheep and Lambs, 10,420; Calves, 528; Pigs, 290.

COAL MARKET.—Friday, Sept. 13.

Holywell, 14*s.* 6*d.*; Wallsend Riddell, 14*s.* 6*d.*; Wallsend Haswell, 15*s.* 6*d.*; Walsend Stewart's, 16*s.* 6*d.*; Wallsend Tees, 16*s.* 3*d.*—Ships at market, 45.

MARK LANE.

Monday, Sept. 9.—There was a fair supply of English Wheat this morning from Essex, Kent, and Suffolk, which was cleared by the millers on fully the terms of this day se'nnight. Foreign was held firmly at last week's prices, but sales were limited.—Barley of all kinds is 1*s.* per qr. dearer.—The late value of Beans is fully maintained.—Peas must be written 2*s.* per qr. higher.—The sale of Oats is less lively than last week, and prices are unaltered.—The supply of Mustard Seed was somewhat less than last Monday, and disposed of on the same terms.

British per Imperial Quarter.	s. s.		s. s.
Wheat, Essex, Kent, & Suffolk ... White	44—47	Red	42—45
— — fine selected runs ...ditto	45—49	Red	—
— — Talavera	46—52		
— Norfolk, Lincoln, & York...White	—	Red	36—42
— Foreign	35—52		
Barley, grind. & distil., 22*s* to 24*s*...Chev.	26—30	Malting	25—27
— Foreign....Grinding and distilling	17—23	Malting	20—24
Oats, Essex and Suffolk	15—18		
— Scotch and Lincolnshire ...Potato	20—23	Feed ...	19—21
— Irish .....Potato	16—20	Feed ...	13—17
— Foreign.....Poland and Brew	16—20	Feed ...	15—17
Rye	26—28	Foreign	—
Rye-meal, foreign.....per ton	—		
Beans, Mazagan .....24*s* to 28*s*.....Tick	25—27	Harrow	25—27
— Pigeon .....26*s* — 29*s*...Winds	—	Longpod	—
— Foreign ..... Small	24—34	Egyptian	21—22
Peas, white, Essex and Kent.....Boilers	30—34	Suffolk...	—
— Maple.... .24*s* to 32*s* .....Grey	22—30	Foreign	26—32
Maize ..... White	28—30	Yellow...	25—30
Flour, best marks, delivered... per sack	36—40		
— Suffolk ..... ditto	32—36	Norfolk	32—36
— Foreign .....per barrel	22—25	Per sack	32—35

Arrivals this week.

	Wheat. Qrs.	Barley. Qrs.	Oats. Qrs.	Flour.
English ...	5530	240	480	1010 sacks
Irish	—	—	1000	
Foreign ...	10450	4210	20220	— brls.

Friday, Sept. 13.—There has been a fair arrival of English and foreign Wheat this week, and good of foreign Oats, but moderate of other descriptions of corn. The attendance at market this morning was small, but holders insist on extreme prices for Wheat and spring corn of all kinds; our quotations are therefore unaltered.—There is a fair sale for Flour at late rates.—Floating cargoes of Galatz Maize are held at 28*s.*—The weather during the last week has been fine, and favourable for finishing the harvest, which is now everywhere about concluded throughout Great Britain, and the result, according to the best information we have been enabled to obtain, will show the Wheat crop to be below an average, Peas and Beans very bad, Barley and Oats moderate. Prices of all grain have been well supported, with rather an upward tendency, excepting for Oats. Considerable business has again been transacted in floating cargoes of Wheat, chiefly Polish Odessa, for Ireland, at 39*s.* to 40*s.* per quarter.

Imperial Averages.	Wheat.	Barley.	Oats.	Rye.	Beans.	Peas.
Aug. 3.....	43*s* 7*d*	22*s* 4*d*	18*s* 1*d*	22*s* 2*d*	27*s* 8*d*	27*s* 8*d*
— 10	44 1	22 5	17 11	23 8	27 9	26 10
— 17.....	43 8	22 8	18 4	23 0	28 2	26 5
— 24.....	43 6	23 0	17 9	20 10	28 1	26 3
— 31.....	43 6	22 4	17 9	23 4	28 11	20 11
Sept. 7.....	43 2	23 6	17 11	25 4	28 9	27 10
Aggreg. Aver.	43 7	22 7	18 0	23 1	28 6	27 0
Duties on Foreign Grain	1 0	1 0	1 0	1 0	1 0	1 0

Fluctuations in the last six weeks' Corn Averages.

Prices.	Aug. 3.	Aug. 10.	Aug 17.	Aug. 24.	Aug. 31.	Sept. 7.
44*s* 1*d*	...		...	...	...	...
43 8	...	...		...	...	...
43 7		...	...	...	...	...
43 6	...	...	...	...	...	...
43 6 —	...	...	...			
43 2	...	...	...	...	...	

SEEDS.—Sept. 9.

Canary, per qr.	52*s* to 60*s*	Coriander, per cwt.	18*s*— 21*s*
Caraway, per cwt.	29 — 33	Mustard, white, p. bush.	4 — 6
Hempseed, per qr.	34 — 35	— brown do.	7 — 10
Linseed, foreign, do.	37 — 45	Rape, per last	24*l.*—26*l.*
Clover, red, p. cwt.	— —	Cakes, Lindseed, p. 1000	8*l.*15*s*
— — foreign, do.	— —	— — foreign, p. ton	6*l.*15*s*
— white, do.	— —	— Rape, foreign, do.	3*l.*17*s*
— — foreign, do.	— —	Tares, per bush.	3*s* 0*d*—5*s* 6*d*

Liverpool, Friday, Sept. 6.—The weather this week has been exceedingly favourable for harvest work, which is fast approaching to conclusion. Complaints of the yield of the new crop of Wheat are prevalent, but they have not exercised any influence on the price of any article of the trade. At this morning's market the business in Wheat was moderate, but it included two or three purchases for shipment to Ireland, at Tuesday's prices. Sack Flour maintained late value, but American barrels were rather easier to buy. Oats and Oatmeal were without change. Grinding Barley, Beans, and Peas were each in active request, and brought extreme rates. Indian Corn is held with much firmness, and 28*s.* per 480 lbs. is the value of the best American yellow.—Tuesday, Sept. 10.—There was a fair attendance of town and country millers at our Corn Exchange this morning. There was not a large business done in Wheat and Flour, but extreme prices were obtained for both articles. Oats and Oatmeal were not plentiful, and fully late terms were paid for those also. Egyptian Beans advanced 6*d.*, and grinding Peas 1*s.* per qr., with a ready sale.

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Ipswich Museum, 1849.

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Parsley
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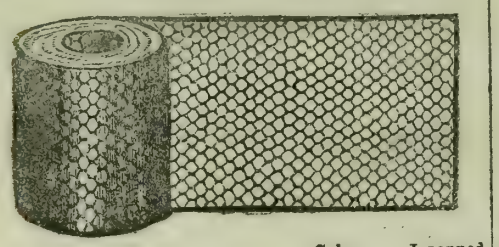
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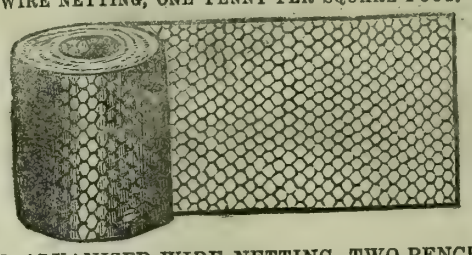
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Garden, how to mismanage a	596 c	Squashes	599 a
— an invalid's	599 a	Stables, to ventilate	602 b
Grain, reaping v. mowing	604 c	Sugar, beer from	605 a
Herb gardens at Mitcham	599 c	Tanks, iron water	598 a
Landowners, lesson to	604 a	Villa gardening	597 a
Lucerne, to sow	606 b	Village excursions	596 c
Manure for every crop	602 a	Vines	600 c
Melon, Trentham Hybrid	598 a	Wheat, cultivation of	604 c

FOREIGN BULBOUS ROOTS.

WM. HAMILTON, SEEDSMAN, &c., 156, Cheapside, London, begs to state that his Priced Catalogue of the above is now ready, and may be had (gratis) on application.

HYACINTHS in colours, named, for pots or glasses, 6*s.*, 9*s.*, and 12*s.* per dozen; in mixtures, 3*s.* per dozen. MIXED DUTCH CROCUS, 1*s.* 6*d.* per 100. TULIPS for early forcing, 1*s.* per dozen. SNOWDROPS, 2*s.* 6*d.* per 100. NARCISSUS, 4*d.* to 6*d.* each. GLADIOLUS, IXIAS, IRIS, RANUNCULUS, ANEMONES, and a large assortment of other Roots, the prices of which will be found in his Catalogue.

W. H.'s Improved Supporter for Hyacinths, &c., 6*d.* each.

*** Not to be equalled by any now offered to the public.

Address—156, Cheapside, London.

GEORGE JACKMAN, NURSERYMAN, Woking, Surrey, 1¼ mile from the Woking Station of the South-Western Railway, begs to announce that he has just published a new and complete CATALOGUE of his American Plants, Ornamental Evergreens and Flowering Shrubs, Standard and Dwarf Roses, Fruit and Forest Trees, &c., which may be had gratis on application.

SLATE WORKS, ISLEWORTH, MIDDLESEX.

EDWARD BECK Manufactures in Slate a variety of articles for Horticultural purposes, all of which may be seen in use at Worton Cottage, on application to the Gardener, Sundays excepted. Priced lists of plant tubs and boxes forwarded on application.

BULBOUS FLOWER ROOTS CHEAP.

Carriage free, as see below.

The best sorts of fresh imported Hyacinths, Tulips, Irises, Gladioli, Anemones, Crocuses, Ranunculus, &c., may be had at much less than the usual prices, in valuable assortments, as under.

Choice assortment for pots, or glasses	...	...	£1	0*s.* 0*d.*
Do. do. in half the quantities	...	...	0	10 6
Do. do. *for open ground*	...	...	1	0 0
Do. do. in half the quantities	...	...	0	10 6

For particulars of the above assortments, see Messrs. SUTTON'S Priced Catalogue, just published, which may be had on application, inclosing one penny stamp, to JOHN SUTTON and SONS, Reading, Berks.

If Hyacinths only are required, Messrs. Sutton's best selection may be had at 10*s.* 6*d. per dozen, with names and colours, or second best selection* 5*s.*

N.B. Parcels of not less than 10*s.* value are sent, carriage free, to any station on the Great Western, South-Western, or South-Eastern Railways, or to any office in London or Bristol.

TILEY'S VIOLA ARBOREA, OR PERPETUAL TREE VIOLET.—VIOLA ARBOREA, or the PERPETUAL TREE VIOLET (true).—In answer to numerous inquiries for the above, and great satisfaction given by the plants sent out last season by EDWARD TILEY, he begs to state that he has this year a fine stock of the above beautiful DOUBLE VIOLET now to dispose of, which he can highly recommend, this being the proper time for making beds or potting. They are beautifully scented; the blooms are as large as the double blue Hepatica; they bloom freely from August till the end of May, and are perfectly hardy. Twelve of these plants grown in pots will scent a large greenhouse, and a small bed, 9 feet long by 3 feet wide, will be sufficient to furnish a family with bouquets the whole of the winter and the spring. They should be planted in rather a dry situation and a loose soil, as the Violet will thrive and bloom finer than in wet or clay borders.

E. T. has been informed by the gentleman that introduced it into this country, that he has seen them growing in the thickets of Persia to the height of 4 feet, with large bushy heads to them, and hundreds of blooms on them at the same time. Large bushy plants, 6*s.* per dozen; smaller ditto, 3*s.* per dozen; or 1*l.* per hundred.

Also he has a fine stock of that splendid YELLOW VIOLET, or VIOLA LUTEA, which has been so much admired at the London exhibitions. In colour it is equal to the Crocus. Strong bushy plants 2*s.* 6*d.* each; or smaller ditto, 1*s.* 6*d.* each.

KITLEY'S GOLIAH STRAWBERRY.—Strong well rooted plants at 3*s.* per dozen.

True BATH COS LETTUCE SEED, 1*s.* per packet.

Extra fine SWEET-WILLIAM SEED, saved from 24 distinct varieties, 1*s.* per packet.

ANTIRRHINUM SEED from all the best varieties, 1*s.* per packet.

WINTER CUCUMBER.—Lord Kenyon's Favourite, 2*s.* 6*d.* per packet.

The whole or any quantity of the above will be sent, postage and package free, to any part, on receipt of a Post-office order, or the amount in penny postage stamps.

Sold by EDWARD TILEY, Nurseryman, Seedsman, and Florist, 16, Pulteney-bridge, Bath.

TO GARDENERS, &c.

GUTTA PERCHA TUBING for Watering Gardens, spreading Liquid Manure, &c., may be had joined up to any length. Waterproof Soles for Boots and Shoes. Thread for tying up Plants. Gutta Percha Canvas suitable for nailing up Trees, &c.—Manufactured by THE GUTTA PERCHA COMPANY PATENTEES, 18, Wharf-road, City-road, London.

FIRST CLASS SEEDLING GERANIUM.

RUNDLE'S BEAUTY OF MONTPELLIER.—*This beautiful flower was exhibited at the Chiswick Horticultural Fête, May* 18, 1850, *and was very much admired, and was also noticed by all the leading publications; a description of which will be found in the* Gardeners' Chronicle, *by* Professor LINDLEY; *in the* "Florist," *by* Mr. Beck; *and in the* "Gardeners' Magazine," *by* Mr. GLENNY; *all of whom speak in the highest terms of praise. Two Seedling Plants were also exhibited at the Royal Devon and Cornwall Horticultural Show, two days previous to the Chiswick Show, and won a Seedling Prize. It was noticed by the editor of the* Plymouth Herald, *and as it gives a good description of it we extract it.*

"One of the principal attractions at the Show was a magnificent Seedling Geranium, raised by William Rundle, Esq., Montpellier House, Devonport, and for which an extra prize was awarded. It attracted the attention of every florist, and was undoubtedly one of the best flowers in the room. The ground colour is a bright pink, with a *pure white centre*, extending over one-third of the upper petals. It has a rich and velvety crimson maroon spot, beautifully tinted, and shaded off to the ground colour. It is an extra-sized flower, of good shape and substance, like Lyne's celebrated flower, *Forget-Me-Not*. In fact, it has very much the habit of this sterling flower, being of a short, robust growth, and throws its fine flowers well above the foliage."

Further description would be unnecessary, more than for us to say, that we are certain it will give the most complete satisfaction to every customer, and we can recommend it with the same confidence that we introduced Lyne's *Duke of Cornwall, Forget-Me-Not*, and Arnold's *Virgin Queen. These are all sterling flowers and are much admired even at the present day.*

Price 20*s.* each. One given over three to the trade.

Good strong plants will be ready about the middle of October. Apply to WILLIAM E. RENDLE and Co., Nurserymen, Plymouth.

Our new descriptive Catalogue of Geraniums, Azaleas, Camellias, Fuchsias, &c., is just published, and can be had on application for one penny stamp.

AMERICAN PLANTS.

JOHN WATERER'S CATALOGUE OF AMERICAN PLANTS, ROSES, CONIFERS, &c., is now published, and may be had gratis on application. It describes the colours of every Rhododendron worthy of cultivation, thus affording purchasers every facility in making selections.

American Nursery, Bagshot, Surrey.

SAFFRON WALDEN.

SUPERB "DOUBLE HOLLYHOCKS."

WILLIAM CHATER begs respectfully to inform the public, that he is now sending out Plants of his unequalled collection of this ornamental flower. See Catalogue, which may be had on application, by enclosing a postage stamp. Hints on their cultivation given to purchasers, if required.

Saffron Walden, Essex, Sept. 21.

HEDENHAM ROSARY, BUNGAY, SUFFOLK.

A DESCRIPTIVE CATALOGUE of a Selection of THE BEST HOLLYHOCKS in cultivation, by R. B. BIRCHAM, for the Autumn of 1850, and Spring of 1851.

Name.		Colour.		*s.*	*d.*
Atro-purpurea	... Chater's	dark purple	...	1	6
Atro-sanguinea	... Baron's	rich dark crimson	...	2	6
Aurantia	... Rivers'	salmon	...	3	6
Abd-el-Kader	... Bircham's	dark puce	...	3	6
Black Prince	... Baron's	black	...	2	0
Blue-beard	...	dark ground, white-edged		1	6
Bicolor	... Chater's	purple and white	...	2	6
Commander-in-Chief	... Baron's	light-edged rose	...	2	6
Coccinea	... Ditto	bright scarlet	...	3	6
Comet	... Chater's	bright ruby red	...	7	6
Conspicua	... Ditto	colour very much like Comet		3	6
Defiance	... Bircham's	crimson purple	...	5	0
Delicata	... Baron's	French white	...	2	0
Elegans	... Chater's	delicate blush	...	3	6
Enchantress	... Ditto	beautiful deep pink	...	5	0
Formosa	... Baron's	claret	...	2	0
Fireball	... Bircham's	brilliant crimson	...	3	6
Magnum Bonum	... Baron's	fine maroon	...	7	6
Model of Perfection	Ditto	fine white, chocolate grd.		3	6
Mount Etna	... Bircham's	bright red	...	3	6
Mr. C. Baron	... Chater's	delicate pinkish salmon		7	6
Napoleon	...	red and buff	...	1	0
Obscura	... Chater's	silvery shaded puce	...	5	0
Queen	... Baron's	beautiful light blush	...	3	6
Ditto Rosy	... Chater's	beautiful deep blush	...	3	6
Queen of Roses	... Bircham's	large rose	...	1	0
Robert Burns	... Bircham's	rose-coloured, "size, shape, and colour excellent."—See *Gard. Chron.* Oct. 13, 1849.		3	6
Royal Standard	... J. Chater's	dark red	...	3	6
Rosea superba	... Baron's	deep pink	...	1	0
Rosea grandiflora	Ditto	light pink, perfect	...	5	0
Rosea alba	... Chater's	rose and white	...	2	0
Sulphurea perfecta	Rivers'	fine sulphur	...	2	6
Susanna	... Bircham's	fine cream	...	5	0
Snow-ball, superb	Chater's	pure white	...	3	6
Virgin Queen	...	good white	...	1	6
Walden Gem	... Chater's	fine deep ruby crimson	...	10	0
William Tell	... Bircham's	dark lilac	...	5	0

If the Selection be left to R. B. B.

Twelve first-rate varieties of the above			£2	0 0
Twelve good ditto	ditto	...	1	0 0
Twelve second-rate varieties	...	...	0	12 0
Twelve border ditto	...	...	0	6 0

Mixed sorts, 30*s.* per 100.

A remittance requested on delivery of plants. Post-office orders payable at Bungay, Suffolk, to ROBERT BIRCHAM.

Carriage paid to London. Plants added to compensate for carriage, and every attention paid to the packing.

THE BLACK PRINCE STRAWBERRY, now sending out at 10*s.* per 100.

Also PRACTICAL INSTRUCTIONS FOR THE CULTIVATION OF THE POTATO, containing the Competition Essay for the Prize of 1000 francs offered by the Belgian Government. Also Instructions on the Management of Asparagus, Seakale, Rhubarb, Vegetable Marrow, Scarlet Runner, Strawberry, Melon, and Cucumber; Chicory and Lamb Lettuce as Salads; the Lisianthus Russellianus, and the Tree Mignonette. The Destruction of Woodlice and Green-fly; and Peat Charcoal as a Manure. By JAMES CUTHILL, Horticulturist, Camberwell, London.—Printed for the Author, and sold by him only. Price 2*s.*; or, by post, 2*s.* 4*d.*

MESSRS. STANDISH AND NOBLE'S new descriptive CATALOGUE OF SELECT HARDY ORNAMENTAL PLANTS is just published, and may be had for four postage stamps. Besides a Treatise on the cultivation of American Plants, it contains a Plate and Description of the Funebral Cypress, Notices of Cephalotaxis Fortunii, Cryptomeria japonica, Quercus sclerophylla and inversa, Viburnum plicatum and macrocephalum, with many recent introductions from the north of China, quite new to English gardens.

Messrs. S. and N. take this opportunity of stating that they give Designs for Laying out New Grounds and Plans for Improvements; also Estimates for all kinds of Planting, whether ornamental or economic.—Bagshot Nurseries, Sept. 21.

NEW SEEDLING STRAWBERRY—MYATT'S "SURPRISE."—This is a variety raised from the British Queen, which it resembles, though of a more robust habit, and a very free bearer, producing a greater abundance of those large angular-shaped Strawberries than any other variety, and finishing off the last fruit of a good size, price 50*s.* per 100.

Also Myatt's Eleanor, 5*s.* British Queen, Globe, Mammoth, Comte de Paris, Hooper's Seedling, Keens' Seedling, Swanston's Seedling, Elton Pine, 3*s.* 6*d.* Fertilised Hautbois, 5*s.* Cuthill's Black Prince, 10*s.* 6*d.* per 100. Kitley's Goliah, 3*s.* 6*d.* per doz., or 20*s.* per 100.—Manor Farm, Deptford.

WATERER'S DESCRIPTIVE CATALOGUE OF AMERICAN PLANTS, &c.

HOSEA WATERER begs to announce his new descriptive CATALOGUE OF AMERICAN PLANTS, CONIFERS, ROSES, &c., is just published, and may be had by enclosing two stamps for postage to HOSEA WATERER, Knap Hill Nursery, Woking, Surrey.

☞ Everybody who has any idea of planting the ensuing autumn should possess themselves of this Catalogue.

A LIST OF NEWLY INTRODUCED PLANTS NOW OFFERED FOR THE FIRST TIME BY JAMES VEITCH AND SON, EXETER:

Escallonia macrantha, 21*s.* each; one over to the Trade on three.

Ixora salicifolia, 21*s.* each; ditto.

Dipladenia urophylla, 21*s.* each; ditto.

Hoya coriacea, 10*s.* 6*d.* each; ditto.

Dipteracanthus spectabilis, 10*s.* 6*d.* each; ditto.

Oxalis elegans, or Oxalis elegans major, 5*s.* each, or three for 10*s.* 6*d.* of either.

Calceolaria grandis, 5*s.* each, or three for 10*s.* 6*d.*

IXORA SALICIFOLIA (TRUE), WILLOW-LEAF IXORA.

MESSRS. VEITCH AND SON are now prepared to send out strong plants of the above beautiful and distinct IXORA, received by them from Java through Mr. Thos. Lobb. It is a lovely free-blooming species, flowering in a very young state, and at the Chiswick Exhibition in July last received the first prize for new and rare plants—the Silver Gilt Medal. It is figured and described in Curtis's "Botanical Magazine" for July last.

Strong well established plants 21*s.* each; one over to the Trade on three.—Exeter, Sept. 21.

TULIPS, RANUNCULUSES, ANEMONES, HYACINTHS, GERANIUMS, AURICULAS, LILIUM LANCIFOLIUM, AND NEW PLANTS.

HENRY GROOM, Clapham Rise, near London, by Appointment FLORIST TO HER MAJESTY THE QUEEN, AND TO HIS MAJESTY THE KING OF SAXONY, begs to inform the Nobility, Gentry, and Amateurs, that his CATALOGUE of the above FLOWERS is ready, and will be forwarded by post on application.

HOLLYHOCK—"QUEEN OF ENGLAND."

JOHN CHATER AND SON beg to announce that they intend sending out early in October, the above new Hollyhock, at 5*s.* per plant, or with it 11 other distinct Show varieties—the 12 for 35*s.*, hamper included, carriage paid to London. For colour and description see catalogue, which may be had by enclosing a postage stamp, addressed to J. CHATER and SON, Nurseries, Haverhill, Suffolk.

Post-office orders payable at Haverhill.

DUTCH BULBS AND OTHER FLOWER ROOTS.

THOMAS JACKSON AND SON respectfully announce that they have received, in fine condition, their annual consignment of the above; and as they import none but those of the largest size and best quality, purchasers may rely upon having fine roots.

Good mixed double Hyacinths for Borders, 3*s.* 6*d.* per dozen.

Fine named double and single Hyacinths for Glasses or Pots, from 6*s.* per dozen.

The newest Crocuses, and all other Bulbs at the same moderate rate.

ROYAL GARDENS, HAMPTON COURT.

Having added by lease these famous Gardens to their previously extensive premises, "T. J. and Son" now possess the largest Glass Establishment in the Trade. To their General Stock, they respectfully invite the inspection of Noblemen, Gentlemen, and Purchasers, who will find in fine health and great quantity (in the Fruit Department), Fruiting and Succession Pines, Figs, Vines, Cherries, Strawberries, &c., in pots for forcing; (in the Flower Department), Orchidaceous, Stove, Greenhouse, and Herbaceous Plants; (and in the open Ground), Fruit, Ornamental, and Forest Trees, Shrubs, Roots, and General Nursery Stock on Sale, at the lowest remunerative prices.—Nursery and Seedsmen, Kingston, Surrey, Sept. 21.

[ADVERTISEMENT.]

THE PENNY-PLANT GENTLEMAN TO MR. DICKSON, Editor of the Floricultural Department of the GARDENERS' AND FARMERS' JOURNAL.

SIR,—After reading your unwarrantable attack on my character, in the Journal of the 10th August, which a friend has sent me, and presuming you have only a tenth of the superior abilities you assume, *you must have known it to be false*, and for that reason my first idea was to take Lynch-law on your person, but it was at the moment not within reach—the next, legal proceedings; but on consideration I found I could not consistently give my oath in court that you have done, or will do me, any injury. On the contrary, after getting cool, I now think you have just filled a vacancy I wanted, by electing yourself my engine-driver, to clear the way for my second trip; and, what is equally good, you say you are provided with stokers and fuel. You are a bold fellow, Dickson, as you confess, in taking the charge, that it is new to you. You even say that you do not know how the machinery works; but rely on your long experience, in putting on the drag, as driver of Dickson and Co.'s old waggon, that you and your cowardly backers can stop the steam. If this is all you have to trust to, I think the sooner you get back to the old waggon, before your assistants leave, the better—though shakey, it may last you some time. Placing yourself on the rails under such circumstances is little short of madness, particularly as my second is an express and is already started; the passengers—principally ladies, the second and third classes, surrounded as they are with first class Verbenas, Geraniums, &c., unknown to them before in such profusion—look so happy, that I cheerfully accept, at their warm hearted requests, to act as director and guard. From the slight view I have taken, I see many of the former seats filled with the same parties, and what is very gratifying, some have brought their daughters and mothers. Having been the road before, we are now going cheerfully on, as they have had ocular proof that I will not deceive them; that however much dust you and your dusty companions may create, I will try and take care that it does not blind them. But to be serious; you have wilfully left out the words bedding-out plants, which any one referring to my Advertisement will see that it alters the meaning; and any one at all conversant with Flowers must know that first-rate bedding-out Plants are different from new Florists' Flowers. Though every year is adding to this class of plants, still before they have weathered the storms, and shown their habits for a season out of doors, and proved worthy, they cannot in justice be called first-rate for that purpose, however beautiful and suitable for pot culture under glass. I also challenge you to produce one single instance of my sending out new Florists' Flowers as first-rate at high prices. I also challenge you to produce a single instance of my offering Cups, Medals, or Money as prizes for my own seedlings coming out the same season. I may also add that I do not offer new plants the first year at one penny, though judging from what has come out this year, many of them are hardly worth it; but why not the raisers of new flowers make arrangements amongst themselves, and rule the prices the first year, say, for Verbenas, 5*s.* in May, 4*s.* in June, &c.? I, for one, though held out by the editor as a destructionist and impostor, will agree to it. My object is to send out really good bedding-out plants, without any regard to when they came out, such as the first gardeners in the kingdom cultivate, with the view of supplying a class that takes great interest in flowers, but cannot afford to give annually 6*d* per plant for bedding out stuff. A sample of the Verbenas was exhibited at the Botanic Society's show in June and July, and we believe the best ever shown. I have been a grower of flowers upwards of 36 years, and have had prizes more than 30 years ago; and I remember, as if it only occurred yesterday, who I got my first Tulip, Rose, Hydrangea, &c., from, and can fully appreciate the pleasure of those that are fond of flowers when they gain their object. I believe that I was the first that had medals for seedling and specimen plants of Verbenas in London. I am also in the full belief that it will do nurserymen good, by allowing the amateurs more room in their houses for choice plants, and I have no doubt that it will create thousands of new customers; and, therefore, will give greater scope for the raisers of new varieties and novelties, supported as I am by the ladies, and having the good fortune this season to have the services of that now rare animal SUPPOSITITIOUS DICKSONII, which I hope to make good use of as a novelty to attract attention for 1851. And as my system of growing plants by the 100,000 appears beyond your comprehension, you, like all ignorant and obstinate people, condemn what you do not understand. Though I had 100,000 unsold this season, I will try again to deserve the name of "the penny plant gentleman" (*not self christened*) which you say has novelty to recommend it, and leave the vendors of Primroses and Lavender, three bunches a penny, for the present, to the protection of Mr. Dickson, who appears to me, by his leading article of the 10th, to be more qualified for them than editor of a paper that claims the character of being the *only organ of publicity for genuine property and honesty.*

Stowe, Buckingham. DAVID FERGUSON.

P.S. The above was sent to the journal, but as it appears not consistent with their sort of justice, it has not been inserted; I therefore respectfully inform the proprietor of the above journal that if not inserted the following week after this notice, I will take out legal proceedings against him.

FERGUSON'S SUMMER AND WINTER BEDDING-OUT PLANTS.—Ladies and Gentlemen, if you want choice for the summer you will find it advantageous to order now for May, 1851. I have room to winter almost an unlimited number; and where the reference is respectable, and no doubt of their genuine quality, I will not wish a remittance till they prove worthy.

I also offer, at double the price, the following, in about equal quantities, for filling the beds in winter, and which can be removed to a reserved place before planting the Verbenas, &c., in May, and returned again and again, without injury. Nice plants of Aucuba japonica, Chinese Arbor-vitæs, Junipers, Green Holly, Laurestinus, Tree Box, Common and Portugal Laurel, Cotoneaster microphylla, Yew, Berberis aquifolium, &c. For larger stuff, see other advertisements. As the rail is completed to Aylesbury and Buckingham, D. F. invites inspection. For specimen plants, the former; small, the latter.

DAVID FERGUSON, Nurseryman, &c., near Buckingham.

ULMUS MONTANA, var. PENDULA FOLIIS VARIEGATIS, the Weeping Silver-striped Wych, or Scotch Elm.

MESSRS. PONTEY beg to inform the Trade and the Public that they intend sending out the above splendid Tree this autumn.

The variety is an original with themselves, and was found in their Nursery some years ago. It is equally robust and pendulous in its habit with the common Weeping Elm, and its leaf is distinctly striped or margined with silver. It is remarkable for its constancy in variegation, seldom or ever producing an entire green leaf. Several eminent people in the Trade have this summer seen the Stock of Plants, and pronounce it one of the greatest novelties in its line that for a long period has been introduced. The Plants are worked on stems from 3 to 6 feet high. One year worked, 10*s.* 6*d.*; two years, 15*s.*; and three years, 21*s.* each.

MESSRS. PONTEY have also on Sale an extensive Collection of Ornamental Trees and Shrubs, catalogues of which can be had on application.—N.B. Remittances or references will be required from unknown correspondents.

Nursery, Kirkheaton, near Huddersfield, Yorkshire, Sept. 21

MESSRS. KNIGHT AND PERRY feel themselves called upon to offer their most grateful acknowledgments for the confidence with which their numerous Patrons have recurred to them when in want of GARDENERS, and beg most respectfully to state that the scrutiny and vigilance they have always employed in selecting good and clever men (to which the almost invariable satisfaction that has so long attended their recommendations is mainly attributable), is, if possible, increased now; and that the steps they take to arrive correctly at the private as well as the professional character of those they send out as Gardeners, Foresters, Bailiffs, &c., induce them to engage, unhesitatingly, to furnish first-rate men in these capacities whenever called on to do so.

Exotic Nursery, King's-road, Chelsea, London.

UPTON PARK.

SLOUGH DAHLIA SHOW, SEPTEMBER 26.—W. BRAGG, of the Star Nursery, will give a SILVER CUP, value five guineas, in addition to the other Seven Prizes offered, to Amateurs and Gentlemen's Gardeners, for the best 12 blooms of DAHLIAS, dissimilar flowers, to be ready for the judges by 12 o'clock, and remain till 6. Fancy Dahlias, six blooms; new Dahlias, Pansies, Roses, Hollyhocks, &c., as usual. Seedling Dahlias, three blooms, in stands.

BULBOUS ROOTS, GRAPE VINES, &c.

J. WEEKS and Co., King's-road, Chelsea, beg to inform the Nobility and Gentry that they have now got a large collection of fine Bulbs, which they can supply very cheap. Small collections made up, consisting of Hyacinths, Narcissus, Tulips, Jonquils, Crocus, Snowdrops, Gladiolus, Alstrœmium, Anemones, Ranunculus, Iris, Scilla, and other appropriate kinds, for 30*s.*, 20*s.*, and 10*s.* Priced Catalogues sent upon application. Also a very fine collection of GRAPE VINES IN POTS, from eyes two and three years old, for FORCING IN POTS or PLANTING.—STOVE AND GREENHOUSE PLANTS in extensive variety.

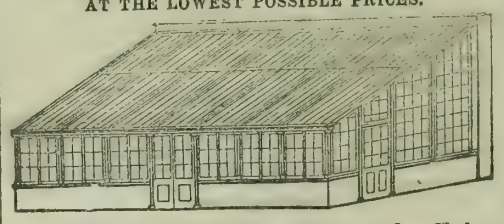
J. WEEKS and Co., King's-road, Chelsea.

BECK'S PELARGONIUMS AND OTHER RAISERS' VARIETIES.—Twelve of the following Varieties ARE NOW READY TO BE SENT OUT in exchange for a post-office order on Brentford for Two Guineas, including package and delivery to London: Blanche, Centurion, Cassandra, Crusader, Delicatissima, Dorcas, Emilia, Gustavus, Gulielma, Lalla Rookh, Lamartine, Mont Blanc, Meleagre, Minna, Ondine, Princess, Alonzo, Ruby, Rosamond, Star, Symmetry, and Sarah.—Post-office orders are requested to be made payable to JOHN DOBSON. The Varieties of 1849 are not yet ready, but those of 1848 may be selected. Descriptive Catalogues may be had upon application to J. D., enclosing a postage stamp.

N.B.—Growers of Pelargoniums should provide themselves with what they require at once, and shift them into larger-sized pots than they are sent out in.

Worton Cottage, Isleworth, Sept. 21.

HORTICULTURAL BUILDING AND HEATING BY HOT WATER.
WARRANTED BEST MATERIALS AND WORKMANSHIP AT THE LOWEST POSSIBLE PRICES.



J. WEEKS AND CO., King's-road, Chelsea, Horticultural Architects, Hothouse Builders, and Hot-water Apparatus Manufacturers. The Nobility and Gentry about to erect Horticultural buildings, or fix Hot-water Apparatus, will find at our Hothouse Works, King's-road, Chelsea, an extensive variety of Hothouses, Greenhouses, Conservatories, Pits, &c., erected, and in full operation, combining all modern improvements, so that a lady or gentleman can select the description of House best adapted for every required purpose.

THE HOT-WATER APPARATUSES (which are efficient and economical), are particularly worthy of attention, and are erected in all the Houses, Pits, &c., for both Top and Bottom Heat, and in constant operation in the Stoves.

The splendid collection of Stove and Greenhouse Plants are in the highest state of cultivation, and for sale at very low prices. Also a fine collection of strong Grape Vines in pots from eyes, all the best sorts.

Plans, Models, and Estimates of Horticultural Buildings; also Catalogues of Plants, Vines, Seeds, &c., forwarded on application.—J. WEEKS and Co., King's-road, Chelsea, London.

GREEN AND HOTHOUSES made by Machinery, warranted best materials, glazed 16-oz. sheet glass, of a large size, with glass at both ends and one door, painted three coats of best oil-colour, and delivered to any Railway or Wharf in London.

Lean-to.				Unglazed.			Span-roofed, glass all round.						
							Glazed.			Unglazed			
ft.	ft.	£	*s*	*d*	£	*s*	*d*	£	*s*	*d*	£	*s*	*d*	Height in front, 3 feet 6 in., wood and glass; 3 feet 6 in. brickwork.
12 by	8	15	10	0	10	0	0	18	6	0	11	15	0	
15 —	10	22	10	0	14	5	0	25	10	0	16	9	0	
18 —	12	28	10	0	18	0	0	32	14	0	20	12	6	
21 —	12	32	10	0	20	0	0	37	8	0	23	2	0	
24 —	13	44	0	0	25	12	6	49	12	0	29	2	0	
27 —	14	51	4	0	29	17	0	58	5	0	33	15	0	
30 —	15	61	17	0	36	2	0	69	14	0	40	9	0	
35 —	16	73	4	0	42	14	0	82	7	0	47	15	0	
40 —	17	85	7	0	49	15	9	95	17	0	55	12	0	
45 —	17	93	15	0	54	13	9	105	10	0	61	12	0	
50 —	18	108	10	0	63	6	0	121	13	0	70	19	0	
55 —	18	115	16	0	67	11	0	130	4	0	75	19	0	
60 —	18	124	13	0	72	14	3	140	8	0	82	8	0	

These Greenhouses are prepared in such a manner that any country carpenter can fix them with ease. A plan is sent free for the brickwork, &c.

Estimates for erecting and heating the above, on application. Lists of prices for Sash-doors, &c., post-free on application.

J. LEWIS, Horticultural Works, Stamford-hill, Middlesex.

PIMLICO SLATE WORKS.—Cisterns, Filters, Milk and Salting vessels, Corn and Flour Chests, Sinks, Dairy and Larder Shelves, Malting and other Flooring, Skirting, Refrigerators, Garden Edging, Flower Boxes, Pine pit Linings, Hot-bed Frames, moveable Cattle Sheds, Coping, Drain Stones and Traps, Steps and Risers, Balcony Landings, Roofing Slates, ridge roll and flap; Waste Slate for drains, Sun Dials, Fountains, and all descriptions of plain Slate Work in Town, or direct from Mr. MAGNUS'S Works in North Wales.

ENAMELLED SLATE Chimney-pieces, Billiard Tables, Console and other Table Tops, Mural Tablets, &c., in imitation of marble, surpassing the choicest marbles in beauty and durability, at less than half the cost of the commonest descriptions. Price Lists forwarded on application to Mr. MAGNUS, 39 and 40, Upper Belgrave-place, London.

PERMANENT PASTURE.

HENRY ROGER SMITHE, of Eastling, Faversham, Kent, engages to supply the Public with the NATURAL GRASSES AND TREFOILS, in mixtures suited to the description of soil which may be named, at 1*l.* per acre, allowing 3 bushels. The Seeds to be delivered on the railway. Mixtures for Lawns and old Pastures at an equal reduction. These Seeds are gathered by a gentleman, who, having made them his study from boyhood, now offers the result of his labour for the good of the landed interest, who are so suddenly and unequally taxed.

A reference is required from unknown correspondents.

E. FOSTER, ESQ.'S, NEW PELARGONIUMS.

WM. BRAGG is authorised by EDMUND FOSTER, Esq., of Clewer Manor, to send out his new and choice varieties for 1850, Catalogues of which can be had on application. The Rev. Mr. ROUSE has likewise favoured W. B. with the stock of his superb Pelargonium "ALIBI." Other good and approved sorts; for description and price, see Catalogue, which contains lists of Chater's and other new and superb Hollyhocks, Pansies, Pinks, Picotees, Carnations, Roses, Chrysanthemums, &c.; ground and pot roots of show and fancy Dahlias.—Star Nursery, Slough, Bucks.

NURSERIES, CHESHUNT, HERTS.

A. PAUL AND SON respectfully inform their Customers and the Public in general, that their New and Descriptive CATALOGUES of Roses and Hardy Ornamental Flowering Trees and Shrubs will be ready by the 1st of October. Applications, enclosing two stamps for the Rose, and one for the Tree Catalogue, will be immediately attended to.

TREES, SHRUBS, ROSES, VERBENAS, &c., FOR THE MILLION.

DAVID FERGUSON, LANDSCAPE GARDENER, CONTRACTOR, PLANTER, &c., offers common Laurels at 1*l.* to 5*l.* per 1000; if 100,000 are taken 10,000 will be added. Good standard Roses, 3 to 6 feet, 5*l.* per 100, and 40*l.* per 1000. Berberis aquifolium, fine, 1*l.* to 3*l.* per 1000. Evergreen Privet, strong, 1*l.* to 1*l.* 5*s.* per 1000. Cotoneaster microphylla, for hedges, &c., fine, 10*s.* per 100, and 4*l.* per 1000. Also large quantities of the following at low prices:—Fine specimen Cedrus Deodara and Pinus excelsa, 4 to 6 feet in height, in pots; fine specimen Arbor-vitæ, Aucuba japonica, Yews, Box, Phillyreas, red Cedars, Araucarias; Scotch, Silver, and Spruce Firs; Larch, Oak, Elm, Ash, Lime, Hornbeam, Hazel, double pink and scarlet Thorns, fine maiden Peaches and Nectarines, worked from trees in the houses on the spot; some of the fruit was exhibited at Regent-street, and received a Banksian Medal, this season, though very inferior to what D. F. has sent to his fruiterer at different times this season, which can be proved; with large quantities of other Fruit Trees. Also first-rate Verbenas, Petunias, Calceolarias, Geraniums, Fuchsias, Anagallis, Salvias, Cupheas, &c., for bedding out, at 1*s.* 6*d.* per dozen, if 5 to 20 dozen are taken; 1*s.* 3*d.* if 20 to 50 dozen are taken; above 50 dozen, 1*d.* each; and if 100 dozen are taken, 5 dozen will be added. Carriage free to London, Birmingham, Leamington, Peterborough, Banbury, Bedford, and all intermediate stations on the North-Western Railway.

Lists marked for selection at the above prices sent free on application; but to those not already in possession of a collection, D. F. advises parties to state the colour and quantity they want, and leave the selection to him; and to those that have no convenience for wintering plants, they will find it advantageous to give their annual orders in August and September for the following spring, as they, on taking five dozen and upwards, will have the choice not only of those marked in the list, but any other bedding out plant, if possible to procure, at equally low prices.

Letters directed Buckingham (where all Post-office orders are requested to be made payable), in place of Aylesbury, reach D. F. one day sooner.

CROWN, SHEET, AND ROUGH PLATE GLASS, FOR HOTHOUSES, CONSERVATORIES, &c.

The Improved Patent Rough Plate, made by Messrs. Hartley and Co., can be supplied from this Warehouse, of every size and substance, at the same prices as at the works.

100 and 200 feet cases of large Sheet Glass, from 2½*d.* per foot. Small ditto, 10*s.* 6*d.* per 100 feet, packed in boxes ready for immediate delivery. Curators of Botanical Societies, Florists, Railway Agents, and others requiring large quantities, will, on sending dimensions, receive estimates at the lowest prices.

GLASS MILK PANS, CREAM POTS, Lactometers, Bee Glasses, Fish Globes, and all kinds of Dairy Glass, Propagating Glasses, Hyacinth Dishes, Cucumber Tubes, and every other description of Garden Glasses.

PATENT GLASS PENS, self supplying, never blot, never soil the ruler, and will write continuously for 12 hours.

Also, Glass Rulers, Glass Inks for office-stands, desks, &c. Stationers and Schools supplied. Wholesale Warehouse for Ornamental Shades, Lamp Shades, Gas Glasses, Genuine White Lead, Paints, Colours, and Pumps for Farm purposes.

Our Catalogue of 18 folios is the most complete ever published. No Gardener or Farm Bailiff should be without one. May be had Gratis on sending two postage stamps to Messrs. COGAN and Co., 48, Leicester-square, London.

BY HER MAJESTY'S ROYAL LETTERS PATENT.

PATENT HOTHOUSE WORKS, KING'S ROAD, CHELSEA.

E. DENCH invites the attention of Gentlemen about to erect Hothouses, &c., to the vast superiority in every respect possessed by his PATENT HOUSES, which he will warrant superior in every respect to any others. Good Glass from 16 to 21 oz. per foot, 1 foot wide, 8 feet long, furnished, and the Houses, when completed, charged from 1*s.* 3*d.* to 1*s.* 6*d.* per superficial foot, according to size and quantity; on one principle the roof is formed without wood or putty, and on another principle with wood rafters, and the glass put in with putty. Patent Sashes, requiring no paint, from 7*d.* to 9*d.* per foot. HEATING BY HOT WATER.

BAKER'S PHEASANTRY, Beaufort-street, King's-road, Chelsea, by special appointment to her Majesty and H. R. H. Prince Albert.—ORNAMENTAL WATER FOWL, consisting of black and white swans, Egyptian, Canada, China, barnacle, brent, and laughing geese, shieldrakes, pintail, widgeon, summer and winter teal, gadwall, Labrador, shovellers, gold-eyed and dun divers, Carolina ducks, &c., domesticated and pinioned; also Spanish, Cochin China, Malay, Poland, Surrey, and Dorking fowls; white, Japan, pied, and common pea-fowl, and pure China pigs; and at 3, Half-moon-passage, Gracechurch-street, London.

CUCUMBER AND MELON BOXES AND LIGHTS.

One hundred 1, 2, and 3-light Boxes and Lights of all sizes ready for immediate use. Warranted best materials, packed and sent to all parts of the kingdom; 2-light Boxes and Lights from 1*l.* 4*s.* Garden Lights of every description, Conservatories, Green and Hot-houses, made and fixed in all parts of the kingdom. References given to the Nobility, Gentry, and the Trade, in most of the counties of England. JAS. WATTS, Hothouse Builder, Claremont-place, Old Kent-road, London.

TO NURSERYMEN, FLORISTS, &c.

A. VAN GEERT, Florist, Ghent, begs to inform the above that he has just published his New CATALOGUE OF PLANTS, which may be had on application to his Agents, Betham and Blackith, Custom House, Shipping, and General Forwarding Agents, Cox and Hammond's Quays, Lower Thames-street, London.

MESSRS. VEITCH and SON'S CATALOGUES OF NEW AND RARE PLANTS, STOVE AND GREENHOUSE PLANTS, GERANIUMS, AMERICAN PLANTS, &c., &c., are now ready, and can be had, on pre-paid application, by enclosing two postage stamps.—Exeter, Sept. 21.

WILMOT'S "PRINCE ARTHUR" STRAWBERRY.

J. WILMOT begs to state that he will commence sending out his new Strawberry next week. Orders forwarded to himself or the following agents will be duly executed. Price 5*l.* per 100.

Agents.—Robert Glendinning, Chiswick Nursery; William T. Atwood, Mortlake, Surrey; George Charlwood, Seedsman, Covent-garden; and Messrs. Hurst and M'Mullen, 6, Leadenhall-street.—Isleworth, Middlesex, Sept. 21.

The Gardeners' Chronicle.

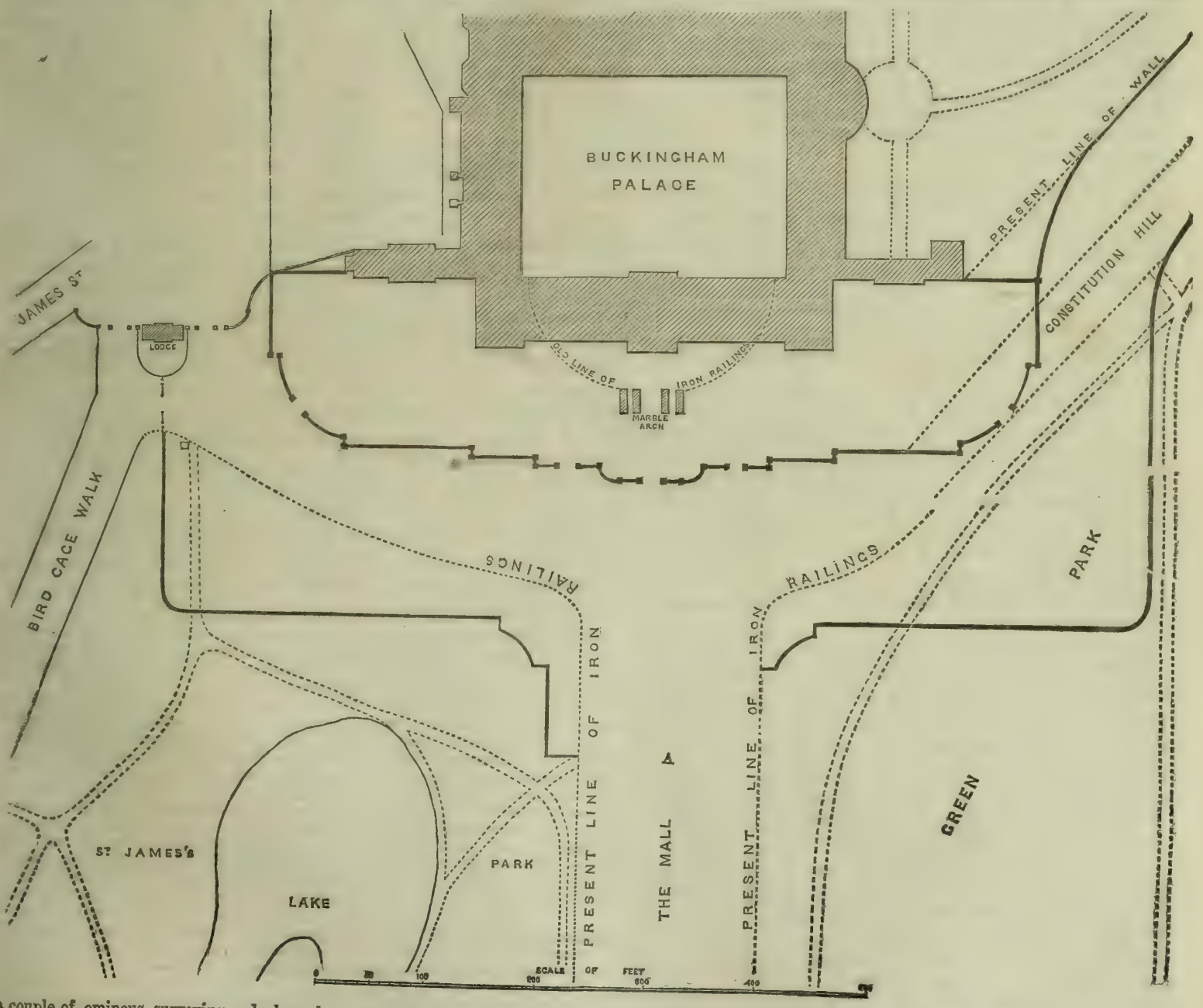
SATURDAY, SEPTEMBER 21, 1850.

MEETING FOR THE ENSUING WEEK.

Country Show.—Tuesday, Sept. 24: Whitby Floral and Horticultural.

An outery has been raised against the Woods and Forests by a part of the daily press, who, in their zeal for popular rights, fancy they have discovered a flagrant case of popular wrong. A few workmen have been seen cutting a straight line across the esplanade in front of Buckingham Palace; a couple of ominous surveying rods have been observed in the Green-park; some costermongers' carts have been detected emptying themselves of their loads in front of the palace; and, in connection with this, the famous marble arch has begun to disappear. Hence it has been inferred that Lord Seymour is about to perpetrate some official enormity.

According to the *Times*, the Commissioners are "coolly proceeding to occupy a large slice of the Green-park temporarily, and a section of St. James's-park *en permanence*;" the public is hereafter to discover, "to the *universal disgust*, that the beauty of both parks has been marred, and the proportions of one cruelly curtailed." "Ministry and Parliament having alike fled from town, the censures of the member for Montrose having melted into air, and the 'pledge' of Sir Charles Wood having become a thing of the past, the Commissioners set bravely to work with 11,000*l.* in hand." They begin by pulling down the famous marble arch. "They had not settled where the arch was to go, but at all events it must come down; so a road is made into the nearest field, which happened in this case to be the Green-park, and there, shrouded by a wooden enclosure, the relics are to lie till an available position is found. If the place of reconstruction is so uncertain, it might have been as well to hire the yard of some eminent builder and store the materials in a more fitting locality. The only alternative is to suppose that there is *some definite object in the choice of* so singular a stone-yard as the sward of the Green-park hard by the palace windows."—"The Woods and Forests have commenced their campaign by cutting off a fine piece of St. James's-park, and are proceeding to pile up the dismembered arch in the middle of the Green-park. Any one may see that, having effected a beginning of their plan, and bored all London with their stone-yard during the time of the Exhibition next year, and perhaps for some years after, they will agitate for some more money in order to finish the job." We next have a formidable account of some intentions entertained by Mr. Nesfield of constructing magnificent gardens in front of Buckingham Palace, to be cut out of the Green-park and St. James's-park; and an assurance that the ornamental water is to be curtailed. "From the clearance already made at the upper end," says the *Times*, "we discover that one-third of the whole length of the lake would be cut off."



It is difficult to conceive how a journal, with such means of ascertaining the truth as the *Times* possesses, could have fallen into this series of mistakes. The statements are made under a total misapprehension of the intention of the Commissioners and of the facts of the case, as will be seen by the accompanying plan, in which the works now in progress are indicated by solid lines, and the existing boundaries of roadway and iron fencing, by dots.

From this it appears that it is intended to form a court-yard in front of the Palace, about 50 yards broad and 264 yards long, for the purpose of diverting the existing roadway from the walls of the palace, and of securing some degree of quiet to its inhabitants; and that in order to replace the roadway thus removed, Constitution-hill will be made to sweep gracefully round the new court-yard, while a similar bend will be given to the line of road from Pimlico. In carrying out this plan a small triangular morsel of the useless naked ugly end of the enclosure in St. James's Park will be cut off; the water will not be approached within 100 feet, and no interference whatever will take place with public convenience. On the contrary, public convenience will be consulted, and the appearance of one of the few public buildings in London which people care to look at, be wonderfully improved.

These are the exact alterations which are "to create universal disgust, to mar the beauty of the parks, to curtail their proportions with unheard-of cruelty, and to cut off one-third of the whole length of the lake!" Surely a mare's nest of such dimensions was never found before.

Can any one doubt that instead of "the beauty of the parks being marred" it will be very greatly improved? The appearance of Buckingham Palace has been the subject of some just and much unfair criticism; it is admitted very generally to be unworthy the sovereign of England; but whether that be so or not there the building stands, and it must be finished. The works now in progress are the completion of it; they are as necessary to the building as any other portion of the decorations. Not to construct them would be to leave the Queen's London residence in the same state as a London shopkeeper's house without its area railings. Until the marble arch is down, and the outer court-yard, with the road surrounding it, is completed, the front of the palace must remain little better than a stone-yard. We confidently believe that these changes will be productive of as beautiful an effect as is

attainable under existing circumstances. The main public approach to the palace will be by the Mall, which, stopped by the court-yard, with its graceful outline, will extend symmetrically to the right and left, on the one hand leading to Constitution-hill, and on the other to the Birdcage-walk and Pimlico.

As to the end of the ornamental ground in St. James's-park it will undergo no change; there will be no curtailment of the lake and no interference with public convenience; its end will be turned, so as to suit the new court-yard; and that is all. For our own part we could have wished that some alteration of this end of the Park had been made; it is evident that the original design was here left incomplete, with a view to some change like that in progress; for it is inconceivable that the refined taste which planned the modern park would have placed the ugliest portion of it, a portion which is a blot upon the plan, next the front of a Royal Palace.

The unfortunate marble arch is another subject upon which the *Times* is eloquent. It is astonished at its removal to the Green-park (a place within a few yards of its present position), and suggests that it is put there because the Woods and Forests have a lurking affection for a certain "discarded plan;" and in another place the public is assured that there must be some definite object in the choice of so singular a stone-yard as the sward of the Green-park, hard by the palace windows. We dare say there is a definite object, and we would suggest the great probability that the place to which it is to be removed is some point in advance of the palace, towards the Horse Guards. It is indeed reported that Lord Seymour's wish is to have it at A. in the annexed plan, a not inappropriate position; and if so, it must, we think, be admitted that a more convenient station for the "stone-yard" could not have been selected until the arch can be reconstructed.

We have alluded to "a discarded plan" by Mr. Nesfield. This is described as follows: "It proposed to make two large ornamental gardens in front of Buckingham Palace—one on the north, and one on the south side of the Mall; the northern one being taken out of the Green-park, and the southern one out of the ornamental enclosure in St. James's-park. The two would extend in length from Stafford-house to the western extremity of the Mall, and in breadth from the Birdcage-walk to the straight path leading into Cleveland-row. The marble arch would be placed in the centre of the Mall, parallel with the east side of the two gardens and between them." It would be difficult to find any person of taste not ready to admit that gardens like these would be a beautiful feature of the ground; and that they would harmonise much better with the architectural features of the Palace front than the rough shrubbery and little water squirt which they would cover. Nor would they curtail the space open to public recreation; because they would be as public as the gardens of the Tuileries; in fact, their area would be greater than the present area by the whole surface of the water which they would displace, and which is now only to be looked at.

But all this speculation is as useless as the description in the *Times;* for there is no intention whatever of executing Mr. Nesfield's design, as will be seen by our plan of what is really doing; and it is probable that it never will be executed. Experience shows that John Bull, who is eager enough to censure Government for the paltry appearance of all public buildings, is still more eager to withhold the means of doing anything noble and worthy of comparison with foreign architectural works; and we see no probability of Buckingham Palace being more favoured than other places.

Many attempts have been made in this country to call the attention of the public to the mass of nutritious food which decays neglected in our woods and fields every autumn, in the shape of fungi. The prejudices, however, against any general appropriation of these viands seem almost insurmountable, and they are every now and then confirmed by some lamentable occurrence like that which lately took place at Bristol, from the use, as it is said, of some large species resembling the common Agaric. Unfortunately in such cases it is seldom possible to determine accurately the species which have been eaten, much less the attendant circumstances, a due appreciation of which could alone lead to any trustworthy result. In the cases which have come under our own notice there has always been a little mystery about the matter. At Cambridge, some years since, a whole family suffered from eating Blewits (*Ag. personatus*) a species commonly sold in the London markets, and used regularly in some families as an excellent article of food. Other species however were known to be intermixed in small quantities, though scarcely determinable when received, and it seems more just to attribute the evil result to them than to a species which is acknowledged to be generally safe and wholesome.

In the Bristol case we have seen no specimens, except indeed some sent to us from Clevedon-court are the same with those said to be common in Leigh Wood; but, as far as appears on its surface, the species in question was the common *Ag. arvensis*, a species exposed for sale in immense numbers in our markets, and one of which we never scruple to make use. During the course of last autumn we examined multitudes of Mushrooms in Covent Garden market, and, except forced specimens, we did not see a single true Mushroom, though many bushels were strewed about the stalls. It is very difficult therefore to understand how a species eaten very extensively with impunity, should in some individual families, where the number of their component members is not small enough to account for any peculiarity of constitution like that which renders mussels dangerous, prove not merely injurious but fatal. It is probable that in all such cases the quantity taken into the stomach has been large; and it is possible that, in some, mineral poisons may have been concerned. Amanitine, the principle on which the dangerous property of fungi depends, exists very possibly in different proportions in different samples; and it is natural to expect that those which are produced artificially should exhibit, on analysis, a comparatively smaller proportion of such principles, in consequence of being removed, when growing, from the influence of light. At present, however, the chemical analyses of these productions are far from complete; and it is much to be desired that comparative experiments should be made of *Agaricus campestris*, produced naturally and artificially, as also of *A. arvensis*.

In most foreign markets there is a public inspector of the fungi exhibited for sale, and it is said that in consequence accidents are extremely rare. Were the quality, however, of particular species very variable, no system of inspection could guard against accidents, except indeed, as at Paris, no Mushrooms were admitted except those raised artificially. We cannot help therefore suspecting that, where accidents do occur, it would be found, on fitting examination, that the fault did not lie against species which experience has pronounced wholesome, but was due to an ignorant admixture of really deleterious kinds.

A correspondent reproaches us with allowing others to give bad advice. He says; "I am aware the conductor of a periodical cannot be considered responsible for such advice, yet I think it behoves him to be careful, that great mischief does not ensue from following it. This must be the case if Potato growers should be induced to imitate your correspondent in this day's *Chronicle* respecting the taking up the crop. I have been a very large grower for the last 30 years, and during my early years I made many experiments about the time of taking up and the manner of securing them. Much, I believe, yet remains to be proved as to the best mode of keeping them, but I have invariably found that fully ripened Potatoes weigh the heaviest, keep the best, and are much the best in flavour. Shaws are getting ripe, and perhaps may be taken early, but I appeal to the salesmen in Covent Garden market to justify me, when I say that there is not a ripe Regent to be found in the market, neither will there be for many days to come. October is quite early enough to dig for storing the main crop of Regents; and if your correspondent would consult any of the small market gardeners, they would assure him they never so well please their customers as when they dig for their daily supply quite up to the severe frosts. And further, if he will leave a small piece undug, and covered with mulch, to keep out the frosts, he will not require to be told how vastly superior will be the fresh dug Potatoes to the ordinary stored ones."

He must be a very careless reader of the *Chronicle* who charges us with allowing bad advice to go forth under the guise of "Correspondence." On the contrary, it must be obvious that we almost overstep the bounds of courtesy, in criticising our correspondents' statements. The views of the gentleman whose censure we thus notice are precisely what we have advocated for years. So long ago as the year 1846, we pointed out, by the example of Mr. Shepherd, of the Calf of Man, the great advantage of leaving the crop in the ground. In fact, we said then, what we now repeat, that if it were not for the inconvenience of the practice, the best way of storing Potatoes is to leave them in the ground where they grow, guarding them only from wet and cold.

The soundness of this principle is incontestable; but like many other sound principles, it cannot be observed, except in a few cases. It is for the public to consider in what way it can be best applied. As to the particular passage to which our correspondent objects, we cannot discover where it is, and therefore give this general disclaimer.

HOW TO MISMANAGE A GARDEN.

Chapter VII.—Potting is an operation in which the talents of a mismanager are generally conspicuous. The quality of the implement, its size, and the mode of using it, are each subjects in which he is particularly conversant.

In the selection of pots he will always take the softest, because he thinks they suit plants best; that is to say, they become dry sooner than others, are hottest in the sun, coldest in draughts, the most difficult to clean, and by far the most perishable. The latter circumstance is of no consequence, for it increases the potter's bill, and expense is no object with him, as has been already shown.

In preparing earth in which potted plants are to grow, the same skill should be conspicuous. Always sift your earth as fine as you can get it; it looks so nicely. Ram it down as tight as you can; that prevents water running off, and saves the watering-can; if it is "rather stiffish," so much the better; there will be the sooner a nice hard ball.

When you crock a pot, don't put one large crock over the hole, and a handful more over that. One is quite enough; whether it lies over the hole or on one side, is a trifle; if it does not cover the hole, the earth will, if you only press it down tight enough.

Always keep your plants in small pots—as small as they will grow in; and never shift them if you can help it. By this means you will ensure nice little specimens, and you may have four or five times as many sorts in the same space as your neighbour, with his one-shift system. Perhaps he will have more flowers and a finer display than you; but what then? You will have a much larger collection. If the plants should happen to die, do not throw them away on any account, but leave them with their sticks in; they will show what a famous collection you have had. The advantage of this may be seen by any one who visits Sir Andrew Aguecheek's houses in the county of York.

There is a foolish fashion of growing what they call Coniferous plants for out-of-door specimens; if you fall into that fancy take especial care that your plants remain in the pots long enough to get corkscrew roots; this is easily managed by considering well, say for three or four years, where you will put them; and in the meanwhile if you keep them in small pots standing on cinder-ashes, plenty of nice young roots will come out of the bottoms of the pots. Some say that corkscrewed Pine trees are apt to blow over when they are old; if so, that is an additional reason for getting them into such a condition; a Pine tree reeling over from the perpendicular is picturesque.

Perhaps you would like to repot a plant; in that case never touch the old ball; let it alone, and drop it gently into the new pot, working some nice fine mould all round it. You will see immediately how easily it receives water; liquid will be through the hole in the bottom almost as soon as it touches the mould. Smith says that it won't touch the roots; but never mind him. Have not your father and your father's grandfather always done as we advise? And how can a man do better than walk in the way of his forbears?

May be you intend to pot Strawberries for forcing; if so, mind not to put them into the pots till you want to set them going; their roots cannot be better than in the open ground. At all events, if you do pot them beforehand, it is essential that you should not do it before the end of November; having done it, put them in a corner till you want them. Some people pack them in Bracken or leaves, or some material that will shelter them. Do not follow so ignorant an example. Is not a Strawberry hardy? what need, then, can it have of protection? To be sure the great forcers of Strawberries take much pains to shelter their plants till they are wanted, and to prepare them months beforehand: but these are the prejudices of mere practice, and beneath the genius of a mismanager. Κῆπουρος.

VILLAGE EXCURSIONS.—Letter I.

You have taken such prominent notice of our little village excursions, that I cannot decline responding to your wish, that I should give your readers a few further details concerning them. If such details should not be adapted to all localities, they may perhaps be suggestive of other methods of proceeding, suitable to the circumstances of each case. Here, we are a purely agricultural village, in a very out of the way district of Suffolk, at 6 and 7 miles distance from the two nearest railway stations. Very few of our grown up labourers can either write or read, which is the case also with some of our farmers, the majority of whom are only small occupiers. When I came to reside here, 10 years ago, it struck me as a bad feature in the habits

of the place, that the labouring population had few opportunities allowed them for enjoying a day's holiday, beyond the one customary holiday at Whitsuntide. Plenty of hard work, without recreation for body or mind, was the usual life of the best labourer, and the more especially, if he were one of that description of character, not unfrequent among us, than whom there can scarcely be named a better specimen of a simple-minded Christian doing his duty in that state of life to which it has pleased God to call him.

Your readers may be sure that in a large half-impoverished village, where many of the occupiers are unable to employ the amount of labour requisite for the efficient cultivation of the soil, there will be found not a few irregular characters debased in their habits, and dangerous in their dispositions. Such characters will always take care to have their periods of recreation; but, unhappily, when the choice is entirely left to themselves, they have recourse only to the lowest and coarsest forms of self-indulgence. We all know what is the usual resource of the uneducated and vicious—hard drinking at intervals, if not as a constancy. Tales are even told of certain delegated lords over many acres, who, in bygone times, would sit at table drinking for three days and three nights, after a "frolic," as all entertainments in eating and drinking are designated in this part of the world. It was the "parson's frolic" for the occupiers of farms at the tithe audit; it is the "gentleman's frolic" to his tenants on rent-day; and the "farmer's frolic" to his labourers at harvest home. Although I have, happily, not heard of any such prolonged outbreaks in my own time, I cannot deny that I have formerly known a few to keep their seats for 24 hours after I had left the table at one of these "frolics." However, nothing so bad as this has happened, to my knowledge, for some years.

It has always appeared to me a most advisable object to endeavour to wean people (so far as influence and example may enable us) from low and degrading forms of indulgence, by teaching them to take pleasure in healthy recreation, and in gratifying and agreeable exhibitions. Without dwelling upon the various ways in which such an object may be attempted, past experience has satisfied me that the description of excursions of which you have taken notice at p. 547, when properly looked after and subjected to due control, are among some of the very best means at our command for affording rational and agreeable recreation. They serve to awaken in us all a spirit of mutual toleration, and due respect for whatever may be peculiar to our relative positions in society.

On such occasions we may safely assist in improving the enjoyments of the day, by promoting innocent amusements for which we no longer retain a relish ourselves, or perhaps may never have possessed any. It has surprised many persons to witness how orderly and inoffensively some of the very roughest natures will join in such recreations as I allude to, when they have been forewarned of the terms on which they have been invited to partake of them.

When I made some early attempts at introducing recreation, of one sort or another, into our "parish routine," one of these consisted in a display of fireworks on my lawn. It was then earnestly represented to me by those who fancied they thoroughly understood the disposition of their labourers, that it would be a fatal experiment to admit them on my premises after dark, as I should inevitably find much wilful damage would be the consequence. Some slight damage may now and then have occurred from sheer ignorance that a labourer could possibly be doing anything very wrong by walking through a hedge (like a sportsman!) in preference to going round by the gate; but I do not remember to have had cause to regret a single act of wanton mischief upon any occasion when the people had free access to my premises, upon the understanding that I was placing confidence in them. I believe as many shillings would cover all the damage that I have received in as many years.

I find I have allowed my pen to run on in merely prefacing what I was proposing to communicate, and you must now draw your pen through every sentence you consider superfluous. A few scattered hints may serve to indicate the general condition and character of our people, better than any more formal description; and as I have no time to spare for condensing, you must allow me to put down my remarks as they come to mind, and then you can make use of such as you consider may be serviceable. I must reserve for another letter what I have to say about village excursions. *J. S. Henslow, Hitcham, Sept.* 5.

VILLA AND SUBURBAN GARDENING.

I REMEMBER the time when the production of a Cucumber in winter was considered a mighty horticultural feat; and when such a thing was accomplished by some lucky gardener, his neighbours were placed in no very enviable position. Where accommodation is afforded, the case is different now. In the hands of a good gardener, a Cucumber pit, properly constructed and efficiently warmed, will secure an abundance of fruit throughout the winter, or, if need be, during the whole year. Amateurs, however, rarely possess proper conveniences for such operations, and the question arises, Can Cucumbers be produced in winter without such a structure? I answer, Easily; and I shall proceed to point out how the thing can be effected.

I must premise that I write for those who possess some kind of structure which is heated in winter to a stove temperature; but it does not follow that it must be of a particular construction or arrangement; any house, whether it be a Pine stove, a Grapery, or a plant stove, or even a forcing pit, will produce Cucumbers in winter, where space can be found near the glass for a few pots. Let a little seed be sown early in autumn, or a few plants struck from cuttings, which will answer equally well. When they are about 6 inches high, procure as many pots, 15 inches across, as you have space for; perhaps that may be only a couple, but even from two pots an occasional fruit may be obtained. The next point is to have at hand some nice mellow loam of a turfy nature, in a rough state; all the fine soil should be screened out of it. With this mix one-fourth half-decayed leaves, and your compost is complete.

In potting, place a few large pieces of broken pots in the bottom of the pot, so as to secure complete drainage; then fill up with soil, placing the young plant in the centre, with the old ball about an inch under the surface of the new soil, which should be, when finished, about level with the top of the rim, as it will subside, and thus make room for a future dressing. When potting is completed, give the whole a liberal watering, using on this, as on all subsequent occasions, water at the temperature of 80°; the pots may then be placed in the positions assigned to them; and as the plants grow, the Vines must be carefully supported, and trained, in order that the light may get unobstructed to all parts of the plant.

The remaining grand point in the culture of Cucumbers is to keep them free from insects, such as thrip, mealy bug, red spider, and green fly. The usual remedies of fumigation, syringing, &c., must be resorted to; for should these pests ever be permitted to take possession, the plants may as well be thrown away. Let me, therefore, earnestly entreat those who may attempt the culture of Cucumbers on this plan, to keep their eyes open. I have been eating for the last 10 months fruit from plants treated in the manner I have been describing. *Pharo.*

BRITISH ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE.

FRIDAY, *Aug.* 2.—In the NATURAL HISTORY SECTION a paper was read by Dr. LANKESTER from G. Newport, Esq., on the *Reciprocal Relations of Vital and Physical Forces.*—This was of some interest, as indicating the direction that physiological inquiry is taking with regard to the relationship of vital to physical forces. The author stated that as early as November 1845, he had advocated in a paper read before the Linnean Society, and published in an abstract of that paper at the time in the "Athenæum" and *Gardeners' Chronicle*, views similar to those which had since been advocated by Prof. Matteucci, Dr. Fowler, and Dr. Carpenter. These views were considered by the Council of the Linnean Society as of too startling a nature to admit of publication without further evidence, and they had accordingly omitted all reference to the subject in Mr. Newport's paper as published in their Transactions. The report of the proceedings of the Linnean Society in the "Athenæum" and *Gardeners' Chronicle* was read to the section, as well as the original passage from the paper as presented to the Linnean Society. Some new remarks of Mr. Newport on the subject were subsequently read at the Physiological Sub-Section.—Dr. Carpenter stated that it frequently occurred that such was the condition of science that the same thought occurred to many observers at the same time. He freely admitted that Mr. Newport had preceded him in pointing out the correlation of vital and physical forces. It was due, however, to Dr. Fowler to say that 50 years ago he had prosecuted researches on this subject. There was, however, a great difference between the idea of the correlation of physical and vital forces and the mere hypothesis of their identity. The investigation of their correlations was likely to lead to important results. Mr. Grove had the merit of first appreciating the importance of studying the correlation of physical forces; but this was no less obvious between such forces as motion, chemical affinity, heat, light, magnetism, and electricity, than between these and various forces observed in the animal body, as the nerve force, muscle force, &c.

On Some Peculiar Bodies which occur in Aldrovanda vesiculosa, Utricularicæ, and other Aquatic Plants, by Professor PARLATORE, of Florence.—The author delivered his remarks in French. He drew attention generally to the condition of the tissues in submerged plants, and pointed out the regular character of the intercellular cavities in their various organs. He described particularly the forms assumed by those cavities in the genera Pontedera, Myriophyllum, Utricularia, &c. Although most frequently smooth around their walls, and very regular in form, they sometimes presented projections of various forms in their interior. This was especially the case in Nymphæa and Nuphur, where the projections assumed the forms of irregular compound hairs. Sometimes these bodies were scaly. In the cavities of Myriophylium crystalline bodies presented themselves.—Dr. Lankester remarked that crystals were not uncommon in the intercellular cavities of water plants. He had seen them very abundant in some species of Chara. In this case they were apparently carbonate of lime, and they were more abundant in proportion to the quantity of carbonate of lime contained in the water in which the plants grew. Bodies similar to those described by Professor Parlatore in Nymphæa and Nuphar existed in the air cells of Victoria regia.

Report of the committee appointed to investigate the subject of the Vitality of Seeds. By H. E. STRICKLAND, Esq.—The report stated that the committee had continued their labours, and a list of the seeds of various plants which had been planted, and which had been ascertained to have been kept from 5 to 50 years, was given. These lists are published in the Transactions, and will one day furnish materials for general conclusions with regard to the period of time for which seeds will retain their power of growth.—Dr. Daubeny said that the result of the experiments, as far as they had gone, went to show the fallacy of the opinion that seeds retained their vitality through long periods of time. The notions abroad on this subject were truly absurd. He had lately seen a Fern which a gentleman supposed he had grown from sporules obtained from a fossil plant from the coal measures. The committee had been greatly assisted by persons sending them old seeds to experiment upon; but generally the number sent was too few to be of value. As many as two or three thousand seeds should if possible be sent at a time.

In the MECHANICAL SECTION a communication was made *On a Register Hygrometer for regulating the Atmospheric Moisture of Houses*, by Mr. APPOLD.—This instrument, with a variation of one quarter of a degree in the hygrometric state of the atmosphere, opens a valve capable of supplying 10 quarts of water per hour, conveying it on to the surface of warm pipes covered with blotting paper, by which the water is evaporated until the atmosphere is sufficiently saturated, and the valve thereby closed. A lead pencil attached registers the distance the hygrometer travels, and thus a sheet of paper moved by a clock would show the hygrometric state of the atmosphere at any period of time.

MONDAY, *August* 5.—In the CHEMICAL SECTION a paper was read entitled, *Some Observations on the Growth of Plants in Abnormal Atmospheres*, by Dr. J. H. GLADSTONE and Mr. G. GLADSTONE.—Whereas oxygen is the most important constituent of the atmosphere, so far as animal life is concerned, it is upon the carbonic acid, ammonia, and aqueous vapour that the vegetable world is supremely dependent. The question arises, Does the oxygen and nitrogen of the air play no important part in the process of vegetation? The following preliminary experiments, with a view to the solution of this and similar inquiries, were detailed by the authors. A Pansy lived for the length of 24 days in an atmosphere of hydrogen, containing 5 per cent. of carbonic acid; one similarly placed in an atmosphere of common air remained healthy for a longer period. Five Onions just commencing to sprout were severally placed in carbonic acid, carbonic oxide, coal gas, air containing 8 per cent. of light carburetted hydrogen, and ordinary atmospheric air. The germination of the first two was entirely stopped; while the hydrocarbons appeared considerably to accelerate the growth of the vegetable. The plants in each instance lost weight. A Pansy in flower, a young Stock, and a Grass plant were placed in pure nitrogen gas. The former two soon died, but the Grass was left growing a month after the commencement of the experiment. Another Pansy was placed in a mixture of oxygen and hydrogen gases in the proportion requisite to form water. In order to imitate the balance that obtains in nature between animal and vegetable life, some flies were introduced, along with some sugar to serve as their food. The experiment was commenced a fortnight since, and the plant, when last observed, was in good condition. Owing to the low specific gravity of the mixed gases, the flies were unable to mount on the wing, or make the usual buzzing noise; but the substitution of hydrogen for nitrogen in the atmosphere, had no marked effect upon their breathing, thus confirming the observations of M. Regnault, by an instance drawn from the Articulata.

IN the GEOLOGICAL SECTION a paper was read *On a Tertiary Fossiliferous Deposit underlying Basalt in the Island of Mull*, by the Duke of ARGYLL.—The island consists of trap, granite, and mica slate, all of which are seen in the small bay near Ardtun, and at this place are some small veins of coals interstratified with columnar basalt. A little north of the bay is Ardtun Head, a perpendicular cliff of 130 feet, intersected by a deep fissure or ravine, accessible from the moor above. The cliff consists of the following horizontal beds:—1. At the top, 20 or 30 feet of rudely columnar basalt; 2. A thin laminated stratum containing fossil leaves; 3. Volcanic ashes; 4. A second leaf-bed; 5. A second bed of volcanic ashes; 6. A third leaf-bed; 7. Amorphous basalt; 8. Columnar basalt, occupying the base of the cliff. The volcanic ash-beds are undistinguishable from some modern formations at Vesuvius, and from the tuff at Madeira and Auvergne. The second leaf bed is 1½ to 2 feet thick, and in its lower part is a mere mass of vegetation. In the third bed the leaves are less numerous, and imbedded in a volcanic mud, which now forms a hard whinstone; the leaves are black and look charred, but this is not necessarily the case: no trunks, boles, or even small twigs were found. From these appearances the Duke concluded that the leaves had accumulated from autumn to autumn in a shallow lake, and had been overflowed by soft mud, in which they were preserved. The only indication of living animals found with the leaves was the track of a worm.—Prof. Forbes stated that the leaves were in a very beautiful state of preservation, and belonged to species of Plane, Alder, Pine, Equisetum, and some others. From the presence of flints the deposit appeared to be newer than the chalk, whilst in the latest tertiaries only vegetable

remains of a more boreal character were found. The leaves most resembled some eocene specimens from Styria, figured by Dr. Unger, and those found in the (eocene) pipe-clay beds of the Isle of Wight. Sir John Richardson had also discovered leaves of similar character at Mackenzie River, Arctic America. With respect to their situation, fossil leaves had been found in beds under basalt in Iceland; and Prof. Oldham had just mentioned to him, that he found vegetable remains and leaves in a similar situation in the north of Ireland, but neither of these cases had been examined or published.—Mr. J. Smith said that the only clue to the discovery the Duke had made was the accidental finding of a "stone that looked like a leaf" by a sportsman.—Mr. Sedgwick, referring to the idea that dicotyledonous leaves (unless coniferous) were unknown in secondary strata, said that he had found such in the green-sand bordering the Hartz mountains. The trap rocks of the Hebrides had been considered of older tertiary date by Buckland and Conybeare 30 years since.

Home Correspondence.

Nepenthes.—"Is Nepenthes Rafflesiana a stove or an Orchidaceous plant? At a late exhibition of the Coventry and Warwickshire Horticultural and Floricultural Society, it was shown and awarded the first prize, as an Orchidaceous plant. *A Constant Reader.*" [This is a marvellous discovery of the Coventry and Warwickshire judges. A Nepenthes an Orchid! What next? If there should be a cattle show, these judges would no doubt determine a pig to be a bullock.]

Iron Water Tanks.—I have need to apply a large, wrought-iron tank, capable of containing about 25 hogsheads, to the purpose of maintaining a supply of rain-water for the use of my garden and plant houses. From what has been suggested to me, I am led to ask whether the water (which may be more or less, according to the season and demand), is likely to be affected by the iron, so as to become injurious to plants of a delicate nature. And if yes, whether any, and if any, what means can be adopted to obviate all such ill effects? Requesting the favour of an answer through the medium of the *Gardeners' Chronicle*, I subscribe myself, what I really am, *A Taker-in of your Paper from the first Number to the present day.* [An uncoated iron tank will injure the water left in it. Perhaps water would stand in it without injury if the tank was well coated with pitch and tar, not coal tar. This is worth a trial.]

The Trentham Hybrid Melon.—I have ripened two crops of the above Melon on the same plant this year. The first crop consisted of seven fruit, the largest weighing 2 lbs. 14 oz., and the smallest 2 lbs. By the second crop I had six fruit, about equal in quality to those of the first produce. I have now another crop swelling fast. *H. B., Epsom.*

Large Produce of Potatoes from a whole set.—We dug here in the garden to-day (Sept. 16th), 22 lbs. of Potatoes, the produce of one set planted whole early this spring. They are all perfectly free from disease. The only way in which I can account for so great a produce, is that the set was whole, planted early, well moulded up, and not crowded by any other plant; hence the necessity of planting thinner than is usually done. I am of opinion that every one who has a pole of garden ground, ought to read Mr. Cuthill's essay on the Potato. *J. Rust, Chase-side House, Enfield.*

Pelargonium Galls.—This is a gardener's name for those curious excrescences which you have noticed at p. 579. They are familiar to most of us, more especially to those who grow the old-fashioned varieties, some of which are hardly a season free from galls; but, for my own part, I could never make out that they were either the cause or the consequence of ill health. The old Oak-leaved variegated Pelargonium, which is a sport from graveolens, is, of all the kinds I have seen, the most subject to them. Galls are produced on the roots and on all parts of this plant. I have been of opinion for a long time that this variegated plant first originated from one of these galls, although I have failed to get any of the galls to make buds, after trying them in various ways, and even splitting them thin, laying the pieces pressed on sand in pots, with and without glasses; still I think that I have seen a gall on the collar of a vigorous strong variety of the more recent seedlings burst into a shoot, and that the gall formed a dry burr round the shoot for a time. With this, however, I cannot charge my memory so as to be quite certain; but that I often failed with galls from different varieties, cannot be a mistake, for I made the last attempt as late as last June, with a gall which formed on a cutting of the variegated Oak-leaved Pelargonium; before it was rooted this gall had more matter in it than the cutting which produced it. It has occurred to me since I sat down to write this, that the best plan would be to cut off a slice from the top of the gall (as soon as the latter was observed) during the height of the growing season, still leaving the gall attached to the parent plant; thus, by arresting the efforts of the mass to extend onwards, we might force it to form buds on the edges of the cut part. This process seems feasible enough; besides, we have some analogous cases with leaves, bulbs, &c., on record. May it not be possible to obtain variegated Geraniums by this process? If so, we should have a proof at once of the old idea that variegation in the leaves arises from a diseased condition of the parent plant. *D. Beaton.*

The "Willmore Surprise" Pelargonium.—In a late Number is inserted an article from Mr. Beaton, respecting this Pelargonium, a representation of which is given at p. 515. Mr. Beaton says that he has a double-flowering Pelargonium more surprising than the Willmore. Now let us see in what Mr. B.'s more surprising plant consists. He says his seedlings repeatedly had from 6 to 9 petals, but never 10; this is nothing very different from Mrs. Willmore's plant, which has not less than 7, and sometimes 9 petals. But, it appears, that because Mr. B.'s plants did not produce 10 petals, they were destroyed as good for nothing; yet Mr. B. says he has saved one with 7 petals, "and a very beautiful bedder it will be." Is this the plant which is to be more surprising than Willmore's? I am very well acquainted with Mrs. Willmore's Pelargonium, and quite agree with you, "that it is a most desirable plant for bedding out;" and I can recommend it both on account of its brilliancy of colour and good habit. All I can say is, that, if Mr. Beaton will send forth a more surprising plant, I am sure the public will be thankful to him for it. Mr. B. has fallen into a mistake as to the owner of the plant. It does not belong to J. Willmore, Esq., of Oldford, but is the property of Mrs. Willmore, of the American Nursery, Strawberry Vale, Edgbaston. It is an accidental seedling, as is stated in the *Chronicle*, and was found amongst a bed of Hollyhocks, where it had stood the previous winter. *F. B. Westcott, Edgbaston.* [We have received a letter on this subject—for the most part a repetition of the above—from Mr. Cole, gardener to J. Willmore, Esq., of Oldford.]

Societies.

CALEDONIAN HORTICULTURAL, *Sept.* 5.—At this, which was the Fruit and Dahlia competition meeting, the following prizes were awarded:—Peaches: 1st, Mr. Crocket, gr. to Colonel Ferguson, for Bellegarde and Twyford; 2d, Mr. Campbell, gr., Alva House, for Red Magdalen and Noblesse. Nectarines: 1st, Mr. Campbell, for Newington and Elruge. Muscat Grapes: 1st, Mr. Fowler, gr. to Sir T. B. Hepburn, Bart., Smeaton; 2d, Mr. Ramsay, gr. to Sir G. Clerk. Black Hamburgh: 1st, Mr. Blair, gr. to Mrs. D. C. Durham, Largo; 2d, Mr. Addison, gr. to the Earl of Wemyss. Frontignan: 1st, Mr. Reid, gr. to Professor Syme, for a fine bunch of Black. Heaviest bunch of Grapes fit for dessert: 1st, Mr. Marshall, gr. to A. Croil, Esq., for White Syrian, weighing 4 lbs. 5 oz.; Mr. Fowler, of Smeaton, produced a bunch of White Syrian, weighing 4 lbs. 13 oz., but not being sufficiently ripe it did not receive a prize. Pine Apples: 1st, Mr. M'Connochie, Taymouth Castle, for a Ripley Queen, weighing 4 lbs.; 2d, Mr. Anderson, gr. to the Earl of Stair, also for a well-grown Queen. Apricots: 1st, Mr. M'Farlane, Lochend, for Moorpark and Breda; 2d, Mr. Thom, gr., Newton Don, for Hemskirk and Moorpark. Greengage Plums: 1st, Mr. Calder, gr. to Lady Harris; 2d, Mr. Sinclair, gr. to W. Campbell, Esq. Plums, other than Greengages: 1st, Mr. Anderson, for Victoria and Magnum bonum; 2d, Mr. Sinclair, for Washington and Orleans. Highest-flavoued Melon: 1st, Mr. Thomson, gr. to Mrs. D. C. Durham, for Irish Green-fleshed; 2d, Mr. Reid, for Henderson's Green-fleshed. Heaviest twelve Jargonelle Pears, fit for immediate use: 1st, Mr. Addison, Gosford; 2d, Mr. Gilmour, Mary Cottage—the latter being the heaviest, but not quite ripe. The display of Dahlias was excellent: Nurserymen's Class, 1st, Messrs. Dickson aad Sons, for Crocus, Mrs. Seldon, Cleopatra, Duke of Wellington, Magnificent, Yellow Standard, Miss Spears, Duke of Cambridge, Knight of Nova Scotia, Thames Bank Hero, Marchioness of Cornwallis, Sir F. Bathurst, Mrs. Anderson, Standard of Perfection, Grenadier, John Edwards, Purple Standard, and Princess Radziville; 2d, Mr. Handasyde, for Purple Standard, Queen of Primroses, Grenadier, Duke of Wellington, Queen of Lilacs, Toison d'Or, Sir F. Bathurst, Crocus, Shylock, Madam Henrietta, Lily White, Mrs. Seldon, Yellow Standard, Frederick Jerome, Buffalo Girl, Elizabeth, and Queen of Sheba. Practical Gardeners: 1st, Mr. Young, gr. to Mrs. H. N. Ferguson, for General Negrier, Fearless, Purple Standard, Mrs. Seldon, Snowflake, Grenadier, Duke of Wellington, Elizabeth, Captain Warner, Yellow Standard, Sir F. Bathurst, and Marchioness Cornwallis; 2d, Mr. Oswald, Murthly Castle, for Crocus, Purple Standard, Knight of Nova Scotia, Shylock, Marchioness Cornwallis, Caractacus, Mrs. Seldon, Grenadier, Boule de Feu, Duke of Wellington, Beeswing, and Frederick Jerome; 3d, Mr. M'Donald, gr. Drummond Castle. Amateurs' department: 1st, Mr. King, Inveresk, for Caractacus, Duke of Wellington, Sir F. Bathurst, Purple Standard, Shylock, and Beeswing; 2d, Mr. Paton, Whitehill, for Beeswing, Crocus, Grenadier, Marchioness Cornwallis, Duke of Wellington, and Shylock. Fancy Dahlias: 1st, Mr. M'Donald, Drummond Castle, for Rainbow, George Clayton, Adolphe, Hermione, Surprise, and Jenny Lind; 2d, Mr. Currie, gr. to Miss Wedderburn, Inveresk Lodge, for Miss Blackmore, Christmas Box, Keepsake, Dr. Horner, Oillet Parfait, Rainbow, Miss Jane, Miss Stephens, Mr. Shaw, and General Cavaignac. Best four spikes of Hollyhocks: Mr. White, gr. to J. Russell, Esq., for Model of Perfection, Elegans, Napoleon, and Rosa grandiflora; 2d, Mr. Pow, gr. to A. Berwick, Esq., for Napoleon, Lady Clerk, Mrs. Berwick, and Robert Hunter. Pentstemons: 1st, Mr. Currie, for Giganteus elegans, McEweni, Gentianoides splendens, Murrayanus, La Polka, and Buckii; 2d, Mr. Munro, gr. to J. Marshall, Esq., for Buckii, Gentianoides, Watterstoni heterophyllus, McEweni, and Gentianoides coccineus. Phloxes: 1st, Mr. Kerr, gr. to R. Brown, Esq., for Purpurea perfecta, Aspasia, Imbricata, Elegantissima, Richardsoni, and Antagonist; 2d, Mr. Currie, for Princess Galitzen, Downiana, Amanda, Gerard de St. Trena, Purpurea perfecta, and Elegantissima. Vegetables: Mr. Pender, gr. to D. Anderson, Esq. Productions not intended to compete for prizes, for which thanks and honorary awards were voted, according to circumstances: Thanks to Messrs. P. Lawson and Son, for Roses, Dahlias, Marigolds, and Greenhouse Plants; to Messrs. Dickson and Co., for Hoya bella, Cyrtoceras reflexum, and other plants; to Messrs. J. Dickson and Sons, for Dahlias, Lilies, Fuchsias, Heaths, and other plants; to Messrs. Ballantyne and Sons, for Hollyhocks and Marigolds; to Mr. Mackintosh, for a fine Lilium and Hollyhocks; to Mr. Stark, for Pentstemons Murrayanus and heterophyllus, and Dahlias, Hollyhocks, Fuchsias, and Verbenas; to Messrs. Downie and Laird, for Hollyhocks; to Mr. Handasyde, for fancy and other Dahlias; to Mr. Methven, for two seedlings of Azalea pontica, and a specimen of Lilium lancifolium; to Mr. Kelly, for Tritonia aurea, and blooms of Hollyhocks and Dahlias; to Mr. Howie, for specimens of Borecole; to Mr. Robertson, for Pansies; to Sir W. Gibson-Craig, Bart., for a dish of Hampton Court Morello Cherries, of superior quality; to Professor Dunbar, for exotic plants, including Stanhopea insignis, Fuchsia Coralina, Heaths, and Lilies; to Mr. M'Connochie, for samples of Monro's green-fleshed Melon, Blackhall's green-fleshed, and Queen Anne's Pocket Melon, together with two Moscow Pines, and one Ripley Queen, for which an honorary award was made for superior cultivation; to Mr. Pender, for fruit, Erica ampullacea, and several Japan Lilies; to Mr. Low, for a floral device; to W. Waddell, Esq., for German Asters and Marigolds; to Mr. Foulis, for Hollyhocks and Picotees; to Mr. Anderson, for Peaches and Nectarines, from a flued wall; to Mr. Aitken, for a basket of large Onions, treated with a preparation of gas tar; to W. T. Thomson, Esq., for Dahlias; to Professor Syme, for White Frontignan Grapes; to Mr. W. Melville, for Champion Black Hamburgh Grapes; to J. Mood, Esq., for Asters and Dahlias; to R. Girdwood, Esq., for Mimulus moschatus grandiflorus, and three Seedling Petunias; to Mr. Young, for Dahlias; to Mr Marshall, for French and African Marigolds; to Mr. Stenhouse, for Marigolds; to Mr. Scrymgeour, for German Asters and Marigolds; to Mr. Grieve, for two Seedling Pansies; to Mr. Nicoll, for Verbenas, Hollyhocks, and Marigolds; to Mr. Finlayson, for a Seedling Pansy; to Mr. M'Farlane, for a Spanish Capsicum; to Mr. Gordon, for a Seedling Hollyhock, and a stand of French Marigolds; to Mr. Burns, for Hollyhocks; to Mr. Anderson, for Frontignan Grapes, from a Vinery, the outside border of wnich was renewed in December, 1849; to Mr. H. Craigie, for Jargonelle Pears and Plums; to T. Hutchison, Esq., for African and French Marigolds; to Mr. Sinclair, for autumn and spring-sown Onions; to A. Richardson, Esq., for Lilium lancifolium speciosum, and Œnothera taraxifolia; to Mr. Gilmour, for Jargonelle Pears; to A. Roughead, Esq., for four large Gourds; and to Mr. Causey, for three ditto.

At this meeting several new members were elected.

Reviews.

Nurserymen's Lists for 1850.

THE most remarkable of these, and probably the best that has yet been seen, is the *Synopsis of the Coniferous Plants grown in Great Britain, and sold by Knight and Perry*, a small quarto of 64 pages. In this work, for it is more than a trade catalogue, are comprehended numerous details concerning the genera of Conifers, and the species or varieties included under them. By many of their customers these details will no doubt be read with interest. Like the catalogue of Conifers now publishing in the Journal of the Horticultural Society, this is founded upon Endlicher's "Synopsis," with such deviations as have been suggested by the authors' experience. The two lists will, however, be found essentially different, especially in the distribution of the Firs. Messrs. Knight and Perry recognise the genera Picea, Larix, and Cedrus, which Endlicher and, after him, the authors of the Horticultural Catalogue altogether object to; the latter indeed refuse to admit such genera even as sectional divisions. The fault of this, as of all nurserymen's catalogues, is that the greatest possible extension of names is an admitted principle; and varieties are recognised which are of no interest or importance even if they exist. Thus under Cedrus, we have first, *Cedrus Libani foliis argenteis*, the Silver Cedar; and then comes *C. elegans*, which is the same thing, and which is also the *Cedrus atlantica* of Manetti and Endlicher.

The catalogues of plants sold by *Mr. Hosea Waterer*, of Knap-hill, and *Mr. John Waterer*, of Bagshot, are not merely rich in American plants, but offer a great diversity of other hardy ornamental species. The first is the most complete, and represents a more extensive stock than the second. Both deserve to be consulted by the purchaser.

Messrs. Paul, of Cheshunt, have issued their priced Catalogue of Hardy Ornamental Trees and Shrubs, forming a seventh division of their list; the six others can be had separately.

We have also before us "A Descriptive Catalogue of Garden Seeds, cultivated and sold at the Wethersfield Seed Garden (Connecticut), by *Comstock, Ferre, and Co.*" This is a little, but useful dissertation on practical gardening, as well as a trade catalogue. It is more indeed the former than the latter, for, strange to say, we cannot find a *price* given from one end of this list to the other; it would seem that mere price cata-

logues are distributed separately. The following account of the Squash will serve to show how this American catalogue is got up :

"Squash (Fr. *Courge*.—Sp. *Calabaza*).—The Squash is a native of warm latitudes, and may be divided into summer and winter, bush and running varieties. Being all very tender and sensitive of cold, they cannot with safety be planted in the open ground before the middle of spring. The hills should be manured and prepared the same as for Cucumbers, and all sorts thinned to two or three plants in a hill. *Early Yellow Bush Scollop.*—An early, flat, scollop-shaped variety, of a deep orange yellow, and smooth skin ; used when young and tender for boiling, and at maturity for making pies. *Early White Bush Scollop.*—Similar in shape to the yellow ; light cream-coloured. It grows to larger size, of a coarser quality, and is a little later ; more grown at the south than any of the others. Both varieties are called Patty-pan in the Middle States, where all the summer sorts have the local name of Cymlings. *Early Bush Summer Crookneck.*—The richest and best sort for summer ; very early and productive. It is small, crooked necked ; covered with warty excrescences (the more warty the better) ; colour, bright yellow ; shell, very hard when ripe. It is used only when young and tender, which may be known by the pressure of the thumb nail through the skin. These three sorts should be planted 3 feet apart. There are yellow, white, and green running varieties of nearly the same shape, but they take up too much room to be allowed a place in a common garden. *Green Striped Bergen.*— This is cultivated to considerable extent for the New York market. It is small, bell-shaped, and striped with dark green and white ; a bush variety of strong growth, requiring to be planted 4 feet apart. Used both green and ripe. It does not produce great crops, but is quite sure to ripen in the coldest seasons. *Vegetable Marrow.*—This is intermediate between the Pumpkin and the Squash, used mostly when young and tender, like the summer Squashes, but is inferior to any of them. Fruit, long oval, very fleshy and succulent ; colour, light yellow. There are different coloured varieties. Plant 6 feet apart, on account of its running habit. The English make great use of it. *Fall, or Winter Crookneck.*— The kind most generally cultivated in New England, for fall and winter ; necks, long and solid ; colour, pale yellow, the deeper the colour the better. There is a striped variety of the same quality, with which this is usually mixed. It yields well, and is excellent for pies ; valuable also as a farm crop for feeding hogs and cattle. *Canada Crookneck* is a small early variety of the above, that bears well, and is by many esteemed preferable. From their running habit, these two last require to be planted 6 feet apart. *Autumnal Marrow.*—This is the most popular kind in the Boston market. Form, ovate, pointed ; skin, extremely thin, bright orange or salmon-coloured ; flesh, deep orange, finely grained, and excellent flavoured ; seeds large, white. Average weight, 6 or 8 lbs. It keeps well in winter, and will boil as dry as a Potato. Plant 8 feet apart. The very best. *Lima Cocoa-nut.*—A large, long, blue Squash, very fine grained, and sweet ; seeds, white ; very late, but if well ripened will keep till spring ; esteemed for boiling dry. Plant 8 feet apart, and leave but two plants in a hill. The varieties of the Squash are so numerous, and they intermix so easily, that it is very difficult to preserve each pure. The rage for mammoth Squashes we hope has gone by ; they are always coarse grained and watery, only fit for stock feeding. Small and medium sized Squashes are uniformly finer grained and richer flavoured."

Miscellaneous.

An Invalid's Garden.—I am, and have been for years, a great invalid, and am passionately fond of flowers, though unable to enjoy their beauties out of doors, and am therefore confined to those which I can tend in my windows. Whilst endeavouring to while away many weary hours, the thought has frequently been forcibly impressed upon my mind, that an immense increase of recreation and pleasure is yet within reach of sufferers like myself. It may be visionary, yet I assure you, I have dwelt on my plan with the most delighted feelings, and pictured in my mind's eye a perfect little paradise of flowers. The late measures of Government, in removing the duty on bricks and glass, will now enable even me to attempt what I have long only thought of. My plan is simply this : to have built a span-roofed pit, covered with thick rolled glass, which is not much dearer than slates ; and on each side to have a bed, if I may so call it, heated by hot water (to be used only when required) ; the surface of the bed to be of sheet iron, painted and vulcanised, or undergone some process to prevent rust. In this iron I would have a series of circles cut, into which I would fit earthenware vessels, like seed pans, with ornamented margins, and arranged artistically. Now, would it not be possible to have these pans filled with beautiful flowers ? and, to keep up the beauty of the place, as the flowers went out of bloom, might not the pans be lifted, and others, from a reserve garden, substituted ? Could not one pan have scarlet Verbenas, pegged down so as to make a mass ? another white, and so through all the various shades ? Could there not be some filled with Gladioli, Ixias, Achimenes, &c. ? Could there not be circular masses of Crocuses, Hyacinths, and flowers of a similar character, for spring ? These might be succeeded by scores of other things, and why not thus have a miniature flower garden ? Here could the effect of combination and contrast of colour be carried out, affording information of the most interesting kind ; and here could I, or any other invalid, secure from draughts and damp, tend these beautiful offsprings of Nature, and though debarred from the enjoyments which many others have, here we could, in thankfulness, look from Nature up to Nature's God. How beautiful would be masses of Russian Violets, the lower sorts of Calceolarias, Campanulas, Mimuluses, and every other plant that is used for bedding. Then I would have wires stretch over-head, on which might hang in festoons the Maurandya, Calempelis, Passiflora, &c. I would have no single plants, except the climbers ; and the others should be so planted as to fill their respective pans or beds. Now, do you not think my plan possible ? and would it not be very beautiful ? *I. F., Manchester.* [We like the idea much, and if well carried out it would indeed be beautiful. *Midland Florist.*]

Cecidomyiæ of the Willow, Rose, and Rock-rose.—It has recently been discovered by the German naturalists, that several of the galls which the Cynipides originate upon the leaves of trees produce two different forms of gall-fly ; it has not however, so far as I am aware, been remarked, that the galls formed by the dipterous Cecidomyiæ may in like manner be colonised at one and the same time by distinct species. The rose-gall upon the summits of Willow shoots has attracted the attention of most observers, and De Geer has briefly indicated the fly (Cecidomyia salicina), which he reared from the red larva which occasions it, as black with brown wings. During the present spring I met with one of these productions upon the Salix cinerea, tenanted by about 8 or 9 pupæ, which became flies on the 22d of May, and these were at once seen to be not all of one species. The smallest and most numerous had the wings dusky and very pubescent, with the antennæ 17-jointed in the male and 16-jointed in the female, and were from ¾—1 line long, and the expanse of the wings 2 lines. The second, of which I only obtained a single male, was considerably larger, had the antennæ 22-jointed, the wings ample, clear, with only a few scattered hairs. Length 1½ line, expanse of the wings 4 lines. I have not been able to identify these with any described species, and have named the first C. saligna, and the second C. Cinerearum*. The Cecidomyia Salicina of De Geer, according to Macquart's account, has about 20 joints in the antennæ, and has the wings hairy and slightly obscure. Length 2 lines. The woody oblong gall of the Willow likewise produces a Cecidomyia, which I venture to term C. Gallarum-Salicis. If I mistake not, from an examination of dried specimens, the antennæ are 20-jointed in the male and 19-jointed in the female, and the wings are slightly dusky and grayish pubescent. The length is 1½ line, and the wings are 3 lines in expanse. Bouché, on the other hand, describes from this gall an insect which he likewise designates Cecidomyia Salicina, as 1 line long, with brown wings. There is thus a great confusion of synonyms on this topic, and it is possible from the observations which I have just recorded, that this may have arisen from insects really distinct having passed under the review of different observers. Mr. Westwood has recently brought forward another species found in the young twigs of Salix viminalis and S. rubra. This he names C. viminalis, and in it the antennæ are 17-jointed in both sexes, and the wings are colourless, with the hinder margin strongly fringed. I have also recently remarked an instance of two species of gall-midges acting in concert on Roses. The leaflets of various wild species of these are tenanted in the centre by companies of larvæ which cause this part to thicken and blister on each side of the midrib, and the leaflet being thereby prevented from expanding, protects, as if in a pod, the little community. These larvæ have the characters of those of the Cecidomyiæ, viz. are spindle-shaped or subelliptical, only slightly convex, with distinct sub-compressed lateral margins, the head end attenuated to a point, with a pair of horn-like bristles behind it, a dusky spot visible above and beneath, and a dagger-shaped polished mark on the fore-part of the breast ; and the hinder end is sub-truncate, slightly tuberculate. The most numerous is orange mottled with yellow ; and the other is white, smoother, more minute, with the hinder apex tri-tuberculate : both are sparingly bristled across the segments. The first is scarcely distinct from another yellowish grub often found on the underside of the leaves of garden Roses affected with mildew, which appears to be engaged in devouring the minute fungi in which the disease consists. They descend into the soil to undergo their changes, and I doubt if I shall succeed in rearing them. About the time of their first appearance, however, I met with two species of Cecidomyiæ frequenting the infested Rose bushes, of which one, C. Rosarum, was occupied in depositing its eggs in the unopened leaflets. They are both undescribed species, and till the contrary is proved, I shall assume that they are the parents of the grubs in question. *J. Hardy, Penmanshiel, in the Annals and Magazine of Natural History.*

Chinese Dahlias.—Some 30 or 40 years since, before Mr. Chater's time, Chinese Hollyhocks took well-merited precedence of all other Hollyhocks. Now I see by the advertisements of Messrs. Turner, Youell, and others, that Chinese Chrysanthemums of a foot high are to elbow their somewhat intractable predecessors out of the greenhouse into the borders. And truly there are few flowers that need dwarfing so much as those. But is it that these diminutive species are really natives of the Celestial Empire ? Or is it not rather that the national epithet has come to be identified with any duodecimo edition of an ordinary plant, from the singular power that most singular of people have from time immemorial exercised over forest and orchard trees ? I myself once succeeded, by the bye, in obtaining an Apple tree with four full grown ripe Apples on it, though it was only about as many inches high. That, however, died before the next season. But to return. Why should we not have Chinese Dahlias ? It may interest some of your readers to know that I have accidentally found there is no difficulty in having plants to flower, and very tolerably in character too, when the blossom is many times the size of the whole plant. About six weeks ago, when thinning the shoots of my Dahlias, I thought I might as well strike one of each, as, if they did not flower this season, they might make a duplicate collection of tubers for some friend. By putting them in a cold frame till the callus was formed, and then subjecting them to heat, they readily rooted ; and there they are still in sixties, from 1 to 3 inches high, with the pots full of roots, and waiting to be planted out. But two of them when taken had buds formed, which I did not cut off ; and now I wish I had taken none but such as had buds ; for I think it would have attracted notice, even at Worton Cottage, on a Wednesday, to see on the table a bloom of Captain Warner or of George Clayton, if not exactly fit for a specimen bloom at an exhibition, yet still in very fair condition, on plants respectively 1½ and 2½ inches high. Probably I am now too late ; but I have in consequence just taken off several tops with buds where they could be spared, simply for the sake of the curiosity ; and if they come to anything worth notice, I will inform you. *Iota, in Beck's Florist and Garden Miscellany for September.*

Mitcham : its Physic Gardeners and Medicinal Plants.—More than 2000 years ago the physicians of Greece were supplied with herbs, of which their Materia Medica chiefly consisted, by a class of persons called ῥιζοτόμοι (rhizotomi or root-cutters), who occupied themselves with the collection and sale of roots and herbs. They are mentioned by Theophrastus in connexion with the φαρμακοπώλαι (pharmacopolæ or pharmacopolists). Most of them were illiterate and superstitious, and ascribed magical virtues to the roots and herbs which they collected. Among the Romans these cullers of simples were termed herbarii (herbarists), and, if we are to believe Pliny, they were a sad set of knaves. At the present day, and in our own country, the ῥιζοτόμοι of the Greeks and the herbarii of the Romans are represented by a class of persons called simplers, who go about the country collecting those medicinal herbs which grow wild, and the demand for which is insufficient to induce the dealers to cultivate them. The plants thus collected are sold chiefly to the herbalists, by whom the profession and public are supplied. But those medicinal plants for which there is a sufficient demand, and which can be grown in this country, are cultivated in physic gardens or physic grounds, by persons called physic gardeners or herb growers. Although the cultivation of medicinal plants is carried on in various parts of England, yet more land is employed in this way in Surrey than in any other county ; and by far the greatest part of our physic grounds lie in the parish of Mitcham and its neighbourhood, about nine miles from London. The soil of this place is a rich black mould. The cultivation of physical plants at Mitcham commenced about a century ago. Lyson, who wrote in 1796, says, that 40 years before his time there were only a few acres employed in the cultivation of medicinal herbs in this parish ; whereas, at the time he wrote, about 250 acres (of which 100 acres were devoted to the cultivation of Peppermint), were occupied by physic gardeners. At the present time more than 800 acres are devoted to the cultivation of medicinal herbs at Mitcham, Merton, and Carshalton. About 1768 or 1769, Mr. Potter began the cultivation of physic plants at Mitcham. He was succeeded by his relative, Mr. James Moore, who furnished Mr. Malcolm with the information contained in his work relating to the medicinal plants cultivated at Mitcham. The following are the names of the principal growers at the present time, with the number of acres of land each person has under cultivation, and the number of stills in use :

Growers' Names.	No. of Acres.	No. of Stills.
Mr. Moore...	350	5
,, Arthur	300	3
,, Martin	40	3 not much used.
,, Newman	40	1
,, Sprules	50	2
,, Weston	40	0
	820	14

Several other growers cultivate a few acres of land. A considerable number of medicinal plants are cultivated at Mitcham. Among the most important of these may be mentioned Aconite, Chamomiles, Belladonna, Elaterium, Liquorice, Henbane, Lavender, Spearmint, Peppermint, Roses, Poppies, Savine, Violets, Angelica, stinking Orache, Caraway, Foxglove, Lovage, Elecampane, Marshmallow, and Hemlock. The principal part of the growers cultivate only Peppermint and Lavender, and some a few Chamomiles. Mr. Arthur grows rather a larger number of plants than any other. *Pharmaceutical Journal.*

On the Odoriferous Principle of the Leaves of Angræcum fragrans.—The leaves of Faham, known also by the name of Fahon or Fahum leaves, are imported from the Mauritius ; they are obtained from a plant first described by Dupetit-Thouars under the

* Cinereæ, a sectional term applied by Mr. Borrer to the Sallows.

name of Angræcum fragrans, belonging to the Orchideæ. Like many of the exotic orchids, the Faham is parasitic. It is a charming plant, and much sought after by the Asiatics on account of its fragrance. It is sufficient to touch the fresh leaves for the fingers to remain impregnated with their aroma. The dry leaves, which occur in commerce, have an odour which considerably resembles that of the Vanilla, belonging to the same family of plants. Alchol and æther separate the aromatic principle; boiling water removes a slightly bitter principle and a mucilaginous substance, besides the aroma. In the country whence they are derived, and even in France, a very agreeable tea is prepared from them, which is used as a digestive, and even recommended in diseases of the respiratory organs. Mixed with ordinary tea, they impart to it an extremely agreeable perfume. *M. Gobley, in the Chemical Gazette.*

Calendar of Operations.

(For the ensuing week.)

PLANT DEPARTMENT.

In addition to making this department as gay as possible at this season, attention to cleanliness and order should be rigorously enforced, as the time is drawing near when this will be looked to as a principal means of affording gratification and enjoyment, in lieu of that which is rapidly disappearing from the open flower garden; and when attention is concentrated more exclusively upon the plant-houses, anything which is untidy or out of order, will the sooner attract notice. Some nice good-shaped plants of hardy Rhododendrons, Azaleas, Kalmias, &c., which are well supplied with blossom-buds, should be taken up, potted, and plunged in a bed of ashes, from whence they can be brought forward in succession as they are required. Roses, in pots, for winter use, should be examined, and any that require re-potting or top-dressing should be immediately attended to; a little stimulus in the way of rich soil will encourage the progress of their roots, and prepare their buds for a healthy and vigorous expansion. Attend to the staking of Chrysanthemums, and stimulate their growth by occasional waterings of liquid manure. Let them be fully exposed to the sun; but in this situation they must be carefully attended to with regard to water, or they will lose their lower leaves. Remove all suckers as they appear. Encourage the growth of Cinerarias, Primulas, Calceolarias, &c., by re-potting them, as often as they require it, into light rich soil, and give them every other attention calculated to ensure a strong sturdy growth.

FORCING DEPARTMENT.

Vineries.—Admit a free circulation of air through these houses, and attend vigorously to the destruction of insects by the ordinary appliances. Keep the atmosphere as cool as possible, where the wood is ripe, or nearly so; and in all cases stop the growth of laterals, even where a warm temperature is of necessity kept up, for the purpose of ripening the crop; as the leaves, produced during this month, cannot possibly attain a perfect development sufficiently early to repay the amount of stored up sap, which they have consumed in their formation. Where the fruit is not yet fully ripe, a brisk temperature must be maintained, as the keeping properties of the fruit depends on their being matured before the end of this month. Pineries.—Encourage the growth of successions by abundance of heat and moisture, as long as the strength of daylight and the fine autumn sun will sanction such a course. Let the bottom heat range from 84° to 87°. Continue to shift any that need it, or that are required to furnish the necessary succession, and place them under the most favourable circumstances of top and bottom heat, shade, and moderate moisture, until they have begun to make roots into the new soil.

FLOWER GARDEN AND SHRUBBERIES.

If it is intended to take up any of the plants from the open garden, and preserve them for filling the beds another season, it should be done early, that they may have time to start fresh before winter. The lifting will generally be confined to any new or very choice plants, of which there is not a sufficient stock of young ones; and to scarlet Geraniums, which produce flowers more abundantly upon old plants than upon young ones. The latter should be taken up, pruned to within one healthy joint of the old wood, and planted close together in pots or boxes. They should be placed in a moderately warm greenhouse, on a frame of the same temperature; and if the soil is moderately moist at the time of potting, water should be withheld till they have commenced to form new shoots and roots. Other beds may now be cleared of their occupants, wherever these are getting shabby or untidy in their appearance. Gather seeds as they ripen, and give due attention to mowing, cleaning, weeding, rolling, &c. If short moderately hardened shoots of Hybrid Perpetual and Bourbon Roses are taken off at their junction with the preceding growth, and placed in a slight bottom heat, they will strike root easily, and if potted off into rich soil, will come in admirably for flowering in pots during next spring or the following winter. It is now high time to plant spring flowering bulbs, and the ground intended for them should be immediately cleaned and prepared by making it light and rich. The soil in which they flourish most beautifully consists of a highly enriched sandy loam. A more cheerful appearance may be given to the beds by interspersing them with some plants of the hardy Primrose or Polyanthus, or with small plants of Erica carnea from the reserve garden. These flower at the same time, and may also be returned to the reserve garden in April or May next. Many of the early flowering herbaceous plants are in a dormant state, and if it is wished to remove them to other than their present situations, or if it is desired to increase the stock by division, this is an excellent time to effect these objects, as they will commence rooting immediately, and will have to establish themselves before the ground is locked up with frost.

FLORISTS' FLOWERS.

The continuous dry weather has rendered it imperatively necessary to give copious waterings to Carnation and Picotee layers. Many will now be sufficiently rooted to detach from the parent plant, and we would recommend immediate potting. The soil or compost should not be rich, rather a stout turfy loam, with a fair proportion of river sand, will be found suitable. A pint pot will be sufficiently large for a pair of layers. After potting, they may be placed in a cold frame, shut close for a few days, till the plants have again struck, when they may gradually be inured to the open air, keeping them carefully watered, and sheltered from heavy rains. Now get in the compost for the best Tulip bed. Rounding it up, we would recommend mats to cover it in the event of heavy rains, for though the early part of November is the usual time for planting, still should the weather be suitable, and the state of the bed permit, we would get the bulbs in the latter end of October. Pinks.—The soil has of late been much parched, and watering between the plants will be necessary. Put out seedlings for next year's blooming; plant in rich soil. Polyanthuses.—Keep free from weeds, and remove flower stems, which tend at this season to weaken the plants unnecessarily.

HARDY FRUIT GARDEN.

Wall Trees.—Any over-luxuriant growth should still be pinched, to prevent any excess of growth in one part of the tree, to the injury of weaker branches. In late situations, Peaches will continue to grow for some time after this, especially if the season should prove wet; and to prevent this, when such a tendency has been observed, we have often at this season cut trenches round the trees immediately after the fruit has been gathered from early kinds. The trenches should be cut at distances proportioned to the size and age of the trees; and all the strongest of the roots cut back with a knife, to check any exuberant growth, and to promote the ripening of the wood. This plan has answered fully. The cut roots soon emit new fibres, and the trees improve amazingly by it. Our borders being concreted below, enables this operation to be more readily performed than it could be if the roots were allowed to descend deeply into the subsoil. The late Peaches cannot be root-pruned till after the fruit is gathered; but all that require it should be attended to as soon as circumstances will permit. The best way to protect fruit from wasps is by means of the hexagonal gauze net, as formerly recommended.

KITCHEN GARDEN.

Any crops of Potatoes still remaining in the ground should be got up without delay, carefully sorted, and slightly sprinkled with quick-lime, or the caustic ash produced by charring or burning refuse; a good plan to ensure perfect dryness is to fill up the crevices between them with dry charcoal dust, which will absorb any moisture exhaling from the Potatoes. But as this does not prevent their heating, we prefer to keep them as dry and cool as possible, by passing a current of air through them. Avoid the too common large heaps, in which the Potatoes become very hot, and are much more likely to become diseased. The best way is to store them in small heaps, containing from eight to twelve bushels in each; and, as an additional precaution against their heating, a few draining pipes may be laid round the edge, pointing towards the centre, by which air will be admitted on all sides; and the egress of the vapour may be provided for by fixing a single pipe upright in the centre of the heaps. They should be formed on the surface of a dry piece of ground, which is much better than to dig pits for them. They should at present be only partially covered, laying over them sufficient straw and soil to exclude and throw off the rain, but deferring their frost-proof casing of soil till the nearer approach of winter. In addition to the rows of Parsley planted at the foot of the south walls, a few boxes should be filled with some carefully selected plants of extra curled, to afford a supply in extraordinary cases during winter, when deep snow or other causes prevent access to the plants in the open ground. The boxes will stand under the trellis of a Peach-house or some other cool place during winter. At the same time a few boxes should be filled with Tarragon and Green Mint, to force into leaf during winter and spring. In very cold localities a frame, or a few handlights, should now be devoted to the raising of small Salads for late autumn use.

State of the Weather near London, for the week ending Sept. 19, 1850, as observed at the Horticultural Garden, Chiswick.

Sept.	Moon's Age.	Barometer. Max.	Barometer. Min.	Temperature. Of the Air. Max.	Of the Air. Min.	Of the Air. Mean	Of the Earth. 1 foot deep.	Of the Earth. 2 feet deep.	Wind.	Rain.
Friday.. 13	☽	30.266	30.241	68	32	50.0	54½	56	E.	.00
Satur.. 14	8	30.239	30.221	59	40	49.5	54	55½	E.	.00
Sunday. 15	9	30.252	30.247	65	52	58.5	54	55½	E.	.00
Monday 16	10	30.284	30.251	67	51	59.0	55	55½	E.	.00
Tues. .. 17	11	30.290	30.197	69	39	54.0	55	56	E.	.00
Wed. .. 18	12	30.073	29.888	69	46	57.5	55½	56	E.	.00
Thurs .. 19	13	29.803	29.700	70	53	61.5	56	56	S.E.	.02
Average....		30.137	30.106	66.7	44.7	55.7	54.8	55.8		.02

Sept. 13—Slight fog; fine; clear and frosty at night.
— 14—Foggy; fine; clear.
— 15—Slight fog; cloudy and fine.
— 16—Overcast; fine; cloudy at night.
— 17—Clear; cloudy and fine; overcast.
— 18—Fine; overcast; dusky haze.
— 19—Foggy; overcast; rain at night.
Mean temperature of the week, 3 deg. below the average.

State of the Weather at Chiswick during the last 24 years, for the ensuing week, ending Sept. 28, 1850.

Sept.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds. N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 22	67.0	46.3	56.7	11	0.40 in.	—	1	7	1	5	5	4	1
Mon. 23	65.5	46.0	55.8	13	1.21	—	5	4	1	6	5	2	1
Tues 24	65.3	46.5	55.9	10	0.75	2	4	2	1	4	7	3	1
Wed. 25	65.9	46.0	56.0	10	0.30	1	4	1	2	4	7	4	1
Thurs. 26	66.2	46.4	56.3	14	0.69	—	4	3	1	3	6	1	1
Friday 27	65.2	45.3	55.3	14	0.57	—	2	3	1	4	6	6	2
Satur. 28	64.6	44.7	54.6	11	0.80	1	3	2	1	8	5	3	2

The highest temperature during the above period occurred on the 25th, 1842—therm. 82 deg.; and the lowest on the 27th, 1828—therm. 24 deg.

Notices to Correspondents.

Beet-root: *H B.* The roots of Beet which has run to seed are only fit for pigs—if they can be coaxed into eating them. If you mean that the roots are only producing flower stems, then the roots may be given to cattle: they are not fit for table.

Books: *M X.* Lowe's "Primitiæ of the Flora and Fauna of Madeira" is the only book that relates to the subject. You had better procure Lindley's "Natural System."—*R D.* Dr. Lindley's "School Botany."

Emigration: *C E.* If you have 30*l.* at your command, emigrate by all means, South Australia is a good colony, and if your medical men recommend it, we would advise you to go there, or you might take Nelson in New Zealand. However, rather abide by the advice of your friends.

Foreign Fruit: *T H.* The Nespres japonica is Mespilus (alias Eriobotrya) japonica, a well-known Chinese fruit tree. It is hardy in the south of England, but requires a greenhouse in this part. It will fruit then with the same treatment as an Apricot. The Chinese call it Lo-quat.

Fruit Trees: *A B* "Having lately seen an immense crop of fruit where the border is raised high, considerably above where the trees are grafted, wishes to know whether it is healthy treatment; or, if it encourages fruitfulness?" In general it is not advisable to raise the soil higher than to cover that part of the stem which had been originally under ground. Burying the stem above the graft is not conducive to fruitfulness, in the first instance; but after the tree has commenced bearing, the crop may be better supported in some cases. For example, Pear trees brought into early bearing on the Quince stock, and then earthed up, so that the Pear stem could strike root, are better able to support a weighty crop than would be the case if fed by the Quince alone.‖—*E T C.* For succession in your late Vinery, you may plant Black Hamburgh, White Muscat of Alexandria, Black Morocco, Calabrian Raisin, and two West's St. Peter's. In your Peach-house Noblesse and Bellegarde, in front; Royal George and Grosse Mignonne, at back. You may train a Vine up every third rafter, and succeed tolerably well, as others have done; but Peaches cannot have too much light. The sale by auction, to which you allude, was that of the Stanwick Nectarine; it will suit your purpose.‖

Insects: *Y, Bucks.* With a tree so large as your Weymouth Pine, we know of no other plan to get rid of the aphides than constant syringing with a garden engine. *W.—Imago.* Your larva, which feeds on the green aphides, is that of one of the lace-winged flies (Chrysopa perla). *W.—T H.* We found no insect in or about the Rose twig, but from its appearance and your description it seems to have been a small mite, and not a caterpillar. We cannot determine nor suggest a remedy without seeing a specimen. *W.—A M P G B.* The grubs found at the roots of the Turnips are the caterpillars of a moth (Agrotis segetum). Hand-picking by children is the only remedy against the present, and defence against next year's attacks. *W.—T W T.* The insects which infest your granary are the common weevil. It has been found that 130° to 140° of heat (according to Fahrenheit), will destroy them. Constant shifting of the grain also stops their propagation, and white-washing the granaries is also very objectionable to them. *W.—C.* The Bean stalks sent were found to contain the small horny empty cocoon of a two-winged fly, like that of Musca pumilionis. We have not before heard of this being the cause of so large an amount of injury, and shall be much obliged for a further supply of specimens and particulars. *W.—T C.* Next week. Please to send better specimens, and properly pinned. *W.*

Maize: *W K and A P.* Thanks; it is under examination.

Monstrous Cucumber: *Lackington Rectory.* Pray do: we shall be very curious to see it.

Mushrooms: *A H E.* There can be no doubt, according to all received notions on such matters, about the goodness of your Mushrooms. If they cannot be eaten with impunity it would be better to abstain from all except those which are cultivated, a course generally adopted at Paris. We do not quite understand whether the specimens you have sent are similar to those which were supposed to be fatal at Bristol. Perhaps you will kindly give us this information.

Names of Fruits: *E B E.* 1, Newington Nectarine; 2, Violette Hâtive do. Plums: 1, Cooper's Large Red; 2, Coe's Golden Drop. Be so good as to send a leaf of the Peaches 1, 2, 3.‖

Names of Plants: *Erzeroum.* 67, Echinospermum; 142, Cerinthe.—*P P.* No. 1, Acineta glauca is Cycnoches Pescatorii, under which name it will be published in "Paxton;" it belongs to the same set as Cycn. barbata; 2, Brassavola Perrinii; 3, Perhaps Onc. Baueri, which differs from O. altissimum by its contracted panicle; 4, some variety of Gongora fulva.—*Kirkennan.* The bush is Rhamnus catharticus; the tree seems to be some sort of American Walnut.—*H R J.* Cratægus punctata.—*A Constant Reader.* Quercus Cerris.—*A Florist.* Mahernia incisa and Phlox suaveolens. Allamanda cathartica is a stove plant.—*Sylvanus.* Leonotis Leonurus.—*M E H.* A very common monstrous form of Lilium candidum; we are not aware that it has any particular name, except that of "monstrous."

Peaches: *Sub.* says, "My Peaches on a south wall are now so woolly as to be quite worthless; can you inform me of the cause of this defect? Is it owing to the weather, or the soil, or to the sort, or to being left to hang too long upon the tree?" [We presume to the sort; but should like to hear from others.]

Peach Trees: *Sub.* When Peach trees have suffered much from blight two or three years running, there is little chance of their recovery, and new trees should be planted. But this only upon the supposition that they are gumming and cankering, and making no sound wood.

Potatoes: *Z.* The holes in the haulm are where the leaves grew, and are not caused by insects, but by the natural decay of the stalk at those places. The Lychnis stalk is what is technically called "fasciated;" the cause of such appearance is unknown.

Rating Greenhouses: *W B B* would be glad to know if William Malcolm, of Kensington Nursery, and others, went as a deputation to the Right Hon. W. Pitt respecting the rating or taxing nurserymen's glass, and what was the decision?

Roberts's Strawberry Tiles: *D Kidd.* Much obliged: it arrived too late for this week.

Truffles: *Constant R.* No means of cultivating Truffles have yet been devised.

Yucca Gloriosa: *Sub.* The flower stem may be removed, as soon as the plant has done blossoming.‡

Misc.: *P T O.* Roman cement may be repaired by another coat put over the old one. Get the old wood of the Passionflower thoroughly ripened, and as much as you can of it. Cut off, in pruning, nothing more than the weak or unripe wood.

GUANO AND OTHER MANURES FOR WHEAT SOWING.—On Sale, Guano (finest Peruvian), Superphosphate of Lime, made from Bone, Bone-dust and half-inch, Dried and Prepared Night-soil, Urate, Gypsum, &c. Also Foreign and English Linseed Cake of the best quality.—Apply to MARK FOTHERGILL, 204 A, Upper Thames-street, London.

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The Agricultural Gazette.
SATURDAY, SEPTEMBER 21, 1850.

MEETINGS FOR THE FOLLOWING WEEK.
THURSDAY, Sept. 26—Agricultural Imp. Society of Ireland.
THURSDAY, Oct. 3—Agricultural Imp. Society of Ireland.

HAVING received a copy of the pamphlet, lately published by Lord WILLOUGHBY D'ERESBY, giving plans and description of his STEAM PLOUGH, I feel the more called upon to offer a few observations on it, as I saw, when abroad lately, a long quotation of some remarks of mine * on Steam-*cultivation* appended to an engraving of Lord WILLOUGHBY'S machine in the '*Illustration Universel*,' (the Paris 'Illustrated News,') by M. ST. GERMAIN LE-DUC.

But no two views of the subject, I fear, can be wider apart than those of his Lordship, and my own. I hold it (under favour) to be an idea *fundamentally erroneous* to attempt to combine steam-machinery with the Plough. I have already given my reasons for this at some length in a little work published last year on the history of Agriculture, from which the extract in the French Journal above alluded to, was taken. And I hope I am not presumptuous in repeating my conviction that until the idea of the Plough, and in a word, of all *Draught*-cultivation is utterly abandoned, no effective progress will be made in the application of Steam to the tilling of the earth. I repeat what I have said before, that 'ploughing' is a mere *contrivance for applying animal-power to tillage*. Get out of animal power, and you leave 'ploughing' behind *altogether*. Get into steam-power and you have no more to do with the Plough, than a Horse has to do with a spade. It is *no essential whatever* of cultivation that it should be done by *the traction of the implement*. Spade-work is perpendicular. Horse-work is horizontal. Machine-work is *circular*.

Whoever would now dream of retaining the form of the hand-flail in the Threshing-machine, or that of the oar in a steam-ship, or of putting the piston-rod to work at the lever-end of a pump-handle? Yet doubtless these bastard attempts were all made in their day, till the several inventors had come to see in turn that

"'Tis gude to be *off with the old love*
Before ye be on wi' the new!"

I am aware that I am repeating myself, unavoidably, in all this; but no one can imagine, without trying it, the difficulty of making the mechanical part of the question intelligible to the agriculturist, and the agricultural part to the machinist. The steam-engine has no taste whatever for straight draught. He is a *revolutionist*, in the most exact sense of the word. He *works* by revolution; and by revolution only will he cut up the soil into a seed-bed, of the pattern required, be it coarse or fine. And *that*, it is my firm belief, he will be seen doing at a handsome average, before a very large portion of another century shall have passed over our heads. Why should it not be? Why should not a strip or lair of earth be cut up into fine soil *at one operation* (and sown and covered in, too), as easily as a circular saw cuts a plank into saw-dust? As to employing a steam-engine to turn a drum, to wind up a rope, to drag a plough, to turn up a furrow, and all this as a mere prelude for an after-amusement to all the ancient tribe of harrows, scufflers, rollers, and clod-crushers, to do supplementally the real work of cultivation, it reminds one of "the house that JACK built." One can hardly blame the iron ribs of any respectable boiler for bursting at the first pull at a task so utterly at variance with every known law of mechanical advancement, so offensive to the economics, I had almost said the very ethics of the steam-engine.

I trust I may be forgiven for so boldly speaking; but I am sorry to think of one useful shilling being thrown away in the attempt, unprofitable even if successful, of harnessing steam with horse harness, to do horse's work in a horse's way; the implement itself, whose wretched work it is put to accomplish, being a tool with sentence of death written upon it (be it as ancient as it may), for its tyranny to the subsoil, which bears the whole burthen and injury of its laborious blundering path.

I say the Plough has sentence of death written upon it, *because it is essentially imperfect*. What it does is little towards the work of cultivation; but that little is tainted by a radical imperfection—damage to the subsoil, which is bruised and hardened by the share, in an exact ratio with the weight of soil lifted, *plus* that of the force required to effect the cleavage, and the weight of the instrument itself. Were there no other reason for saying it than this, this alone would entitle the philosophic machinist to say, and see, that the plough was never meant to be immortal. The mere invention of *the subsoiler* is a standing commentary on the mischief done by the plough.

Why then should we struggle for its survival under the new dynasty of Steam? The true object is not to perpetuate, but as soon as possible to get rid of it. Why poke an instrument seven or eight inches under the clod, to tear it up in a lump by main force, for *other instruments to act upon*, toiling and sweating and treading it down again, in ponderous attempts at cultivation wholesale—when by simple *abrasion of the surface* by a revolving-toothed instrument, with a span as broad as the hay-tedding machine, or CROSSKILL'S clod-crusher, you can perform the *complete* work of *comminution* in the most light, compendious, and perfect detail?

Imagine such an instrument (*not rolling* on the ground, but) performing *independent* revolutions *behind* its locomotive, cutting its way down by surface abrasion, into a semicircular trench about a foot and a half wide, throwing back the pulverised soil (just as it flies back from the feet of a dog scratching at a rabbit-hole): then imagine the locomotive moving forward on the hard ground with a slow and equable mechanical motion, the revolver behind, with its cutting-points (case-hardened) playing upon the *edge*, or *land-side* of the trench as it advances, and capable of any adjustment to coarse or fine cutting, moving always *forward* and leaving behind perfectly granulated and precisely *inverted*, by its revolving action, a seed-bed seven or eight inches deep, *never to be gone over again* by any after-implement except the drill, which had much better follow at once, attached behind with a light brush-harrow to cover the seed.

It is hard, by mere language and without a diagram, to describe intelligibly to the mind's eye an instrument that has not been seen; however it may have become familiar enough to my own eye. My notion may be wrong, but I am strongly induced to feel that such an instrument alone will ever fulfil *the requisitions of the steam-engine*, which shortens and *remodels* every labour it undertakes, and never condescends to old appliances, except where they are themselves intrinsically perfect in their mode of action.

Why did Steam reject *the Pump-handle* and *the Oar?* Because in both the leverage is obtained by loss of labour and time, occurring during the back-movement of the handle, a movement necessary to the manual, but not to the mechanical agent. For the same reason whenever it is applied to till the earth, it will antiquate every instrument that *cultivates by traction*, because traction is not only not necessary to cultivation, but is inherently mischievous on other grounds, apart from the clumsiness, inaccuracy, and incompleteness of the work it turns out.

But THE STONES! There is much fear expressed for the teeth of the circular-cutting implement I have described, when they come in contact with Stones. The objection would have been equally valid, at first sight, against the use of the Plough or the Scuffler. Let me see the instrument in use where there *are no stones*—(and there are plenty of broad acres in England of this class;) and it will not be long before it gets upon the others. If it cost five pounds an acre to clear them out, it must be done, and would in such case, well pay to do it. But the truth is that the instrument itself suggests the kind of machine which, with a little adaptation (greater power and slower motion), might perform this preliminary service at the least expense. If land is to be like a garden in one respect, I see no good reason why it should not in all. I do not think stones will stand long in the way of Steam, or be readily-preferred to bread; if, *where there happen to be none*, a steam-driven cultivator can be brought to bear, which, after the simple and beautiful example of *the mole*, shall play out the long comedy of our present field cultivation in *a single act*, present a finely-granulated seed-bed by a single process, almost at the hour required, and trammel up the 'long summer fallow' into the labour of a day, with an accuracy as perfect as the turning of a Lathe, and an aëration (and consequent oxygenation) of the soil as diffusive and minute as that of a scattered mole-heap, or the dust flying from a steam-saw bench.

Implement-makers and mechanicians would not be long in understanding all this, if they were not under the supposition, received at second hand by them, and therefore the more difficult to eradicate, that ploughing is a necessary form of cultivation to be kept in view. Once let the Q.E.F. be clearly understood by them, once let them be made fully to perceive that 'ploughing' is merely the first of a long series of *means* towards the accomplishment of a particular end, that end being the production of *a seed-bed*, of suitable depth and texture, and with the soil as nearly as possible inverted in its bed—and I do not think they will be long in setting the steam-engine about its proper task, in the proper way. But their attention is distracted, at present, from the end to the means. They are taught to think that the plough is a *sine quâ non*—that steam-cultivation of necessity implies steam-*ploughing*, and they are led to give up the task in despair, bebause they are at fault upon a false scent.

We have many *rolling* implements employed in the field, but we have only one instance of a *revolving* implement. The clod-crusher and the Norwegian-harrow *roll*, the hay-tedding machine (one of the best instruments ever invented) *revolves*. I use the words somewhat arbitrarily, but the difference I allude to is very important. The first are liable to the evil of 'clogging;' because they derive their axis motion *from the soil* as they pass over and *press upon* it. This action must not be confounded with that of a machine which *has its cause of revolution within itself*, independent, and acting *upon* the soil as a circular-saw acts upon a board, or the paddle-wheel of a steamer, upon the water. The teeth of a saw clear themselves, by the centrifugal motion they communicate to the particles they have detached from the substance they act upon. A circular 'cultivator' steam-driven will do the same, for I have proved it. It does so more effectually according to the speed (of revolution) and the state of moisture of the soil. This last incident is as it should be; for it is not desirable that a clay soil should be dealt with when in an improper state for cultivation; and one great advantage of such an instrument as I point to would be that it would so immensely enlarge the choice of a suitable period, by its compendious accomplishment of the whole work of culture.

My object however, at present, is not so much to

* See page 75, in No. 5 of the *Agricultural Gazette*, 1850.

advocate the particular mode of applying Steam-power, which I myself suggest, as to explain again, and more fully, the grounds on which I feel more and more strongly assured that the attempt to employ it through the medium of the plough must be eventually renounced. I have left a great deal unsaid, to avoid prolixity; but propose, at another opportunity, to enter more closely into the subject. Mr. Way's admirable Lectures on The Effect of Manures relativrly with the degree of disintegration of the Soil, read me a forcible chapter on the *Agricultural* bearing of the mode and means of cultivation I have hinted at, and on which a good deal had passed in my mind, from the peculiar notice bestowed on that passage of my work above alluded to, but which only went so far as to assert the superiority of the spade, as a cultivator, over the plough; a superiority which I am now far from thinking unsurpassable. *C. Wren Hoskyns.*

The discussion, which has occupied some of our correspondents during the past few weeks, on the subject of Clover Failures, was brought to what must, for the present, be considered a satisfactory conclusion, by the paragraph in our last week's Number from the pen of Professor Henslow. One thing seems tolerably clear — that analysis has hitherto failed to corroborate, with any certainty, the theory which attributes the result to an exhaustion of those particular substances in the soil which form the known composition of the Clover plant it is supposed to require. And we are thus thrown back on physiological considerations in our search for an explanation.

We refer once more to the matter, just to draw the attention of our agricultural readers to the desirableness of the experiment which Professor Henslow has suggested. If, on any land liable to this disease, or infirmity, or whatever it may be called, a single ridge were left unsown with Barley at the next Barley seed-time, in instances frequent enough to embrace all the varieties of English soil and climate, a comparison of the Clover on the sown and unsown ridges over that extent and variety of circumstances, would be likely to expose the cause of the mischief, and so to suggest a method for its removal.

It would at all events show whether the failures so frequently recorded of this crop are owing to the unnatural conditions to which, during a considerable period of its growth, it is subjected. We hope that this will be borne in mind, next spring, by a number sufficient to clear up the mystery in which the subject is at present involved.

ON MANURING EVERY CROP.

In the *Agricultural Gazette* of Aug. 3, there appeared an interesting letter from Mr. Paine, on your remarks on Mr. Hudson's plan of manuring for every crop. It appears that Mr. Paine has followed this plan for many years with perfect success, and has kept his land in good heart, by the aid of artificial manures alone, the farm-yard manure being systematically applied to the Hop-grounds. It is for the purpose of pointing out how far Mr. Paine's plan of thus dispensing with farm-yard manure is generally applicable, that I would direct attention to the subject.

In the first place, artificial manures are indispensable, if the plan of manuring for every crop is to be adopted. As, however wet the land is, they can easily be applied, to say nothing about the little labour they require in carriage, as compared with dung or compost. The difficulty is, how far the former will supersede the latter in general farming. There is no doubt but that, upon fresh land, and where they are eaten on with sheep, Turnips can be grown with nothing but artificial manures. But where this practice has been long persisted in, it has been found advisable to use a portion of farm-yard manure along with the other. The deterioration of the land, necessitating this use of the two combined, is the more distant the more Turnips and Clover are eaten on the land. To those who, like Mr. Paine, can dig such an abundant quantity of coprolites out of the subsoil of their own farms as to be able to apply it at the rate of 8 cwt. per acre, as well as occasionally to consume the Turnips on the ground, it appears that, as far as the Turnip at least is concerned, this deterioration may be indefinitely postponed. But, in addition to these, it appears that Mr. Paine is also near a marl pit. Such local advantages are so rarely combined that though admiring the boldness which has enabled him to dispense with ordinary manure altogether, still it is an example that must be cautiously imitated, as we strongly suspect, that even with the large quantity of coprolites, he is able to apply, he would be unable to keep his land in good heart, without either farm-yard manure or marl—these two latter being often rich in certain substances required by vegetation, and which are not abundantly present in either coprolites or guano. Mr. Paine's letter has tended to modify my views of the extreme importance of farm-yard manure, without, however, satisfying me that the exclusive use of artificial manures can be generally adopted. Mr. Paine has gone further than you ventured to recommend; your remarks being intended to show the advantage and importance of using artificial manures along with the farm-yard manure, and to point out that whilst Turnips and other green crops could in many cases be grown without farm-yard manure, as a general rule artificial manures could not be depended on for the cereals. That at least has been the result of my experience and observation.

That fallows have been diminished, are diminishing, and will be still further diminished, is our opinion; but there is yet a great extent of land on which, partly from the want of drainage, and partly from the nature of the soil, green fallow crops are the exception to the rule. It is upon such land as this that we particularly request information as to how far artificial manures have enabled our readers to dispense with farm-yard manure. Upon these soils nothing we have hitherto tried bears any comparison with the dung heap.

This is a most important matter, and we will do our utmost to procure a satisfactory solution to the following question. What is the reason that a good Turnip crop can be grown with artificial manure, and why can they not be exclusively depended upon for the cereals after a bare fallow? I am aware that I expose myself to the attack of some of the formidable go-a-head men of the present day, by the mere use of the word "fallow." But as I am not defending fallows, but finding them already in existence, it becomes of importance to ascertain the best method of cultivating them.

In your remarks on this question, you pointed out the probability of the Clover being one of the most likely crops, on strong clays, to derive benefit from the liberal use of artificial manures; upon cereals I recommend some caution in their use.

In Mr. Hudson's case of manuring for every crop, it must not be forgotten that between every two grain crops, either a crop of Clover or Turnips intervened, which were eaten on the ground along with oilcake by sheep. This is obviously applying the manure for the grain crop in a different form to what it is possible to do on strong clays. Does this point out to us the importance of using a more highly azotised manure for the grain crop than for the Turnip? We know that the dung of animals fed on oilcake is especially rich in azote or ammonia; and Mr. Paine, as the result of his experience, expresses a wish that ammoniacal salts can be furnished to us at a cheaper rate than we have hitherto been able to procure them in guano. *T. L. C.*

THE CONSTRUCTION AND VENTILATION OF STABLES.

(*Concluded from p.* 522.)

The first step to be taken in ventilating stables is to make provision for the admission of fresh air. This ought to be done at the very lowest part of the building. The simplest method is by making apertures (proportioned, as we shall hereafter show) in the wall nearest the ground. If there is only one side of the stable occupied by the horses, the fresh-air apertures should be made in the wall opposite to the stalls; the bottom of the apertures should be flush with the inside floor. If these apertures are left quite open, not only will spaces be left through which rats may obtain admittance to the interior, but, what is of more importance, the air will be allowed to rush in, in one unbroken volume; thus creating a disagreeable draught. This latter inconvenience will be best obviated by fixing on the interior, across the aperture, a sheet of perforated zinc, with holes say from 120 to 140 in the square inch. Instead of zinc, horse-hair cloth or cocoa-nut fibre may be used; or for want of a better material, coarse canvas. The outside of the apertures ought to have means by which the quantity of air admitted may be regulated. The simplest that can be adopted are the following. First, a box made of wood, say half-inch thick, the inside diameter of which is equal to that of the aperture, and the depth not greater than 3 inches; it must be open both at top and bottom. Fasten this on the wall, opposite the aperture, so that the inside of the aperture and it shall be on a line. Let it carry a flap inside capable of being held in any position that may be required, so as to allow much or little ingress. The second mode consists of a wooden box, exactly similar to those pipes often seen at the end of liquid manure carts; and similarly provided with a vertical sliding shutter. This may be fastened opposite the apertures, and according as the shutter is lifted up, so will the air be admitted.

A very desirable and simple valve may be made of zinc, in the following manner: make a square zinc box, of length equal to the depth of aperture in the wall, and of size to fit closely in it. The length of this should be equal to the depth of wall; open at one end, and closed at the other with a flat piece of zinc, half an inch or so larger all round. To this side should be attached a knob or handle to move the box in and out of the aperture. On the four sides of this moveable box, cut out slits or apertures, those being larger nearest the closed or outer end, and getting gradually smaller towards the open or inner one. If this box is slid into the aperture, close up to the wall, the projecting flange preventing it from going altogether through, the aperture will be closed, so that no air will be able to pass through to the building; if, however, it is pulled out some inch or two, the slits or apertures will be uncovered, allowing air to pass through them to the aperture, thereafter to the interior. The more the box is withdrawn, the more holes will be uncovered, and the more air admitted. The small holes or slits may be placed nearest the closed end, and gradually increasing in size towards the open end. The whole area of these, when the box is fully out, should manifestly be equal to the area of the aperture. To prevent the box being pulled out altogether, a small catch or projecting piece may be placed at its open end. All these contrivances we have described, however simple and effective they are, are nevertheless open to some objection, that is, that they project some distance from the wall, to which they are fixed; this is inconvenient, as they are liable to be destroyed, being in the way. If this is objected to, the simplest form of valve, which is close up to the wall, is the "sliding" or "damper" valve. It consists of a frame of zinc, iron, or other indestructible metal, fastened to the wall, opposite the aperture; a solid flat piece of iron or zinc, larger than the aperture, slides in the inside of this framing vertically. A spring may be used to keep it in any desired position; but the general method is to suspend the moveable plate, by a chain passing over two pulleys, working in brackets fixed in the wall, and having at the extreme end a counterpoise weight, exactly balancing the valve plate; by moving the counterpoise up or down, the plate is passed from across the opening in any desired ratio.

As the air near the bottom of the wall, on the outside, may be liable to be filled with dusty materials, &c., it may be deemed advisable to lead the air to the interior from a higher source. In buildings about to be constructed, this will best be done by building flues in the upright wall, having the outside aperture covered with bars of wood, or metal, to prevent birds from passing down the flues. The aperture for the admission of the air to the interior should be flush with the floor, if the air is admitted at once to the interior. In stables where the heads of stalls are placed at the walls, they cannot thus be supplied with fresh air, the horses incurring the risk of injury by cold draughts. When the stalls run alongside each wall, there is necessarily a passage between them. Here then is the best place to admit the air. If apertures or small pits, say 18 inches square, and 8 or 9 inches deep, are made in the floor, in the centre of this passage, at regular distances from each other, and covered with gratings to prevent accidents—air being admitted to them, it will pass through the apertures in the grating, to the interior. The best way to supply these pits with air, is to lead a tunnel communicating with the external atmosphere, from the side of each. Thus, suppose a passage to be between two rows of stalls, each row having six stalls, a fresh air pit should be placed opposite each stall, and supplied with air by a pipe or tunnel, leading from the outside wall, and running beneath the stall.

Where either of these plans for admitting fresh air are not considered eligible, from fear of expense or from local circumstances preventing their being carried into effect, the following plan may be adopted. At the distance of 4 or 5 feet from the floor make apertures in the outside walls; to the inside fasten boxes in such a manner that the air in entering shall be thrown upwards. A simple plan of obviating the inconvenience of having the air thrown down on the horses, is by having the apertures cut in a sloping direction, instead of horizontal.

We have now to consider the best plan of removing the foul vitiated air from the interior of the stable. The natural motion of heated air is upwards; it is the best mode in theory to remove it from the top of an apartment. And it is also so in practice; to draw air from out of its natural upward course, either in a horizontal or downward direction, requires power of considerable force. This power is generally obtained by fire draught, and sometimes by machinery. The most simple and obvious mode of allowing the foul air to escape is by mere openings made in the roof; these, however, are inadmissible, as the rain is allowed free ingress by them, and the wind is easily dashed downwards to the interior. The next simplest plan is to have louvre boards placed at the roof, or at the side walls near the ceiling, if there is an inner ceiling, thus making a space between it and the roof, in which generally hay, &c., is placed; the best planof withdrawing the foul air is to have wooden boxes communicating with the interior of the stable by apertures made in the inner ceiling. These boxes should pass up through the space between the ceiling and roof, through apertures made in the roof. They should project at least 18 inches above the roof, and be furnished with contrivances by which the wind and rain may be prevented passing down them. If there is no inner ceiling, but the external roof boarded simply over, the apertures should be made in the highest part, and be provided with boxes projecting some distance above the ridge, and properly finished at top. These wooden boxes will act much more certainly for the withdrawal of the foul air than the common luffer boards so frequently used. As the ascensive power of heated air depends upon its temperature, due means should be taken to preserve this till it is finally delivered to the atmosphere. If, then, it is confined in tubes it will be kept closer together, in a more concentrated form than if allowed to spread itself beneath a wide open luffer boarded space. As it is of importance to have the apertures for the admission of the fresh and the withdrawal of the foul, well proportioned to the number of animals there may be in the stable, we give the following rule, deduced from practical experiments, made by writers on the subject. Supposing the height of the house, from the floor in the interior to the ridge of the roof, to be between 20 and 25 feet, the square surface or area of the aperture for withdrawing the foul air should be 10 square inches for each animal, horse, or cow, housed in the stable. If the height is 30 feet, and between that and 25, 12 square inches of aperture should be allowed

for each animal. Thus, if the height from floor to ridge is 27 feet, and the number of cattle contained is 12, then 12×12=to 144 square inches, or one square foot, is the size of aperture; a box or hole 12 inches square will give this area. Instead of having one box of this size for the exit of the foul air, it will be better to divide this into two or more, and place a box at certain intervals along the roof—the foul air rising at several points, will at once be taken away; whereas, if one aperture alone is used, say, at the centre of roof, the foul air from either end of the stable will have to travel along till the aperture is gained. In dividing the area of aperture thus found, it must be remembered, that half the size of box will not give half the area. Thus it might be supposed that if a box 12 inches square, gives 144 sq. inches, one 6 inches square would give 72 or half, whereas it only gives the fourth, or 36 inches; so that four tubes of 6 in. square would be required to give an area equal to a box of 12 inches square. If the boxes are made square, an easy way of computing the area of their ends or section, is by multiplying the length of one of the sides by itself; thus, a box 3 inches square has an area of 9 square inches; 4 of 16, 5 of 25, and so on. The area of the fresh air apertures should be equal to that of the foul air.

In cold weather, the great objection to ventilation of stables, is the cold air admitted. Simple and inexpensive modes of heating are easily available, and should be adopted. On a future occasion we may present our readers with a few notes on the subject. *B.*

THE MANAGEMENT OF HEAVY SOILS.

The terms heavy and stiff are often used in reference to soils which, if thoroughly drained and well cultivated, would merit a different description; but for the purpose of this discussion, all wet soils may be included, as their present state in most parts of England appears to be similar in many respects, and the suggestions which may be thrown out will be generally applicable to them.

The improvement made during the last few years in the management of such soils thoughout the country has on the whole been considerable; many thousands of acres have been thoroughly drained and brought under a more perfect system of culture, nevertheless an inspection of the wet soils of England at the present time shows at once that but little improvement or work of any kind is or has been attempted upon them, whilst that little is for the most part done badly. There are of course numerous exceptions to this rule; it would be singular if there were not, considering the rank attained by this country in all that relates to art, science, or civilisation. Many adopt improvements, employ much labour, and direct it in accordance with the requirements of the case; but after making every allowance for the large proportion of Grass land requiring little labour, the general result is as above stated. Cutting and securing the hay crop is well managed, and so are stacking and thatching. The latter is particularly well done, much better than in any part of Scotland, but the progress of permanent improvements is slow and uncertain, and most of the operations of culture, such as ploughing and harrowing, are managed in a manner which must necessarily come short of the purpose intended.

Of the causes which have contributed to this state of matters little need be said here, the chief cause is undoubtedly the want of proper relations between landlord and tenant. Little improvement can, as a general rule, be expected, until better arrangements in this respect are made, having for their object the benefit of all parties, by enabling that mode of management to be adopted, which will best develop the fertility of the soil, and bring about its permanent amelioration. This stands at the very threshold of improvement, and such being the case, it seems surprising that a good understanding on the subject does not universally prevail. Industry and skill are the sources of wealth and prosperity, and it might be supposed that all concerned would be ready to encourage their application, and to assist in removing any impediment thereto, but this leading principle does not appear as yet to have been generally recognised by those most interested.

The greatest drawback at present to the proper management of at least three-fourths of the soil of England, is the want of thorough draining; the rain water is retained more or less amongst the roots of the crop, instead of permeating equally through the whole mass of soil, to a depth of 2 feet or 3 feet from the surface, and passing clearly away from thence, without being checked at any place; under such circumstances, even the most skilful management would fail in preserving the crop from injury, or the soil, when stiff, from being cemented together. To say that such soil should be drained without delay, is to say nothing; its drainage ought long ago to have been complete, and the occupiers should by this time have been able to undertake all labour necessary to its full fertility, and to manage every detail thereof, not only in a perfect, but in an economical manner. If draining were carried out to the required extent, superior management would soon follow. The light dry soils of Norfolk and Suffolk are on the whole very fairly cultivated, and the same observation may be made respecting the wolds of Lincolnshire and Yorkshire. The downs of the southern counties, and other places where the soil, though not naturally very fertile, is naturally dry, and fitted to admit of an extended system of green cropping, now recognised as an essential feature of well conducted farming. It was no doubt the dry condition of a large portion of the land in the Lothians, coupled with a good climate, and the vicinity of good markets, which enabled that part of Scotland to take a lead in farming, and to maintain a superiority so long over other parts, over the west of Scotland for instance, where much rain falls, and where much of the soil, only a few years ago, was of the wettest and stiffest kind; but the introduction of thorough draining, and the formation of railways, have already effected a great change. Every year is bringing the condition of soils, formerly reckoned stiff and inferior, near to that of the Lothians, and in the end the value of the former may possibly not be much below that of the latter. In like manner, the wet soils of England, if thoroughly drained, might soon be managed as well as those naturally dry, and when this has been done, the produce of the heavier soils will be much the greatest.

The shallow working too, so common in all parts of England, suits the lighter soils, whereas it scarcely constitutes half culture on those which are firm and heavy. The reason will be apparent to all who understand the principles of tillage, and the importance of a suitable texture in the soil. Imperfect harrowing, and the use of four or five horses in line in the plough, also operate very injuriously upon the heavy soils, whereas their effects would scarcely be apparent on the lighter. The great object in the management of stiff soil is to keep it open, and bring all its minutest parts into ready contact with air and water, to the greatest possible depth. To succeed in this, perfect working and great care in many respects is necessary. The proper result cannot be attained until the drainage is complete, but a soil 8 inches in depth might in all cases be procured, if the land were properly ridged; this would be greatly superior to the present depth of 3½ inches or 4 inches, but still it would be insufficient, especially for tap rooted plants, such as Beans. Accordingly each time that green cropping or fallowing is undertaken after thorough draining, one furrow at least should be carried to the depth of 12 inches, every clod within that depth should be reduced as near as possible to a powder, by harrowing and grubbing, and the new and old earth will at the same time be mixed and blended together. The surface soil will not by this means be buried, it will still be available, together with all the ingredients it contains, and the new earth will be available, also, both chemically as affording matter for the sustenance of the crop, and mechanically as assisting to form a proper medium for the preparation and retention of its nourishment. If the soil is stiff at the depth of 5 or 6 inches, no better reason can be given for turning it up at once, that it may be ameliorated by being mixed with that on the surface, but generally it is not stiff at the above depth. It has been beat together by a wretched system of management, but it is not tenacious until reaching a depth of 13 or 14 inches. The subsoil below 12 inches should be stirred to the depth of at least 6 or 8 inches, more as often as may be necessary to keep it open, and fit it for absorbing water readily from the upper soil; but as a general rule, no part of it should ever be brought to the surface. The plough should work not less than 6 inches deep each time the soil is turned over; deeper ploughing can be managed at any period, but it is of comparatively little avail, unless the new earth turned up is afterwards pulverised effectually and thoroughly mixed with the old, as well as exposed to the powerful influence of the sun during the process, and this can only be done to advantage at the time of green cropping or fallowing.

If green cropping, upon the heavy soils of England, were extended to four or five times its present limits, it would form a grand means of keeping the soil open, clean, and pulverised, and would afford scope for the industry and skill of the farmer. One of the chief advantages of fallowing is the facility with which the soil under its operation can be deepened, and mixed together more effectually than has ever been attempted before, but this can also be managed in preparation for green cropping; in either case, supposing the drainage to be perfect, the first furrow given in spring should be 12 inches deep, whatever the depth of the winter furrow may have been; it may be given across if circumstances answer, or at an angle if the land is steep. The breadth of the furrow should not exceed 6 or 7 inches, that the draught may not be too great, and that every part of the earth to the above depth may be stirred and fairly shifted out of its place. The land should be well harrowed previously (an operation generally neglected in England), and an abundance of grubbing and harrowing may do all that is necessary afterwards. It should be observed that subsoiling or ploughing to a greater depth than 5 or 6 inches upon light land would be likely to prove injurious.

But how can ploughing to a depth of 12 inches, on stiff soil, be managed with the ploughs used in many places, and especially with the method of yoking horses in line to them; the truth is, it cannot be accomplished by such means, but this does not alter the necessity of its being done, although it shows the necessity of procuring implements fitted for the purpose, and of training men and horses to apply them properly. The common swing plough, well made and used, and drawn by three horses abreast, is quite sufficient. Some now use ploughs of a rather larger size, which are no doubt better, but the common plough will answer perfectly if the depth of its body is sufficient, its cutting and turning parts not shaped and placed by mere chance, but with a perfect knowledge of the work they are to perform, and the conditions essential to their performing it effectually, and with the least expenditure of power; its beam at the coulter placed so as to balance as nearly as possible the resistance on each side, and continued from that point to the muzzle or nozzle in the line of motion; without some degree of attention to this, no plough ever did or ever will work well. The practice of yoking horses in line, occasions the necessity of twisting the beam to the right, to make the plough take up a position 9 or 10 inches to the left of the horses. But it is easy to see that the draught must be thereby increased, and that the implement cannot work so steadily. Very few even of the best ploughs met with in England, possess the properties necessary to adapt them for the work of a well managed farm; but all farther mention of their defects must be deferred for the present.

Harrows for working heavy land should contain eight bulls, and consist of two parts only; to make these parts act as one they should be firmly connected by iron rods running across their whole breadth through the bulls and jointed at the middle; the harrow will then accommodate itself to the inequalities of the ground, and at the same time possess the power arising from its being thus connected—its whole weight will be available to prevent its being readily tossed up and down. The bulls should be 6 feet long, to distribute the tines effectually, and to impart that steadiness essential to proper working. They should be furnished with five tines each, and placed 14 or 15 inches apart; they should be drawn at that angle which is necessary to make the tines cover the whole of the land equally, without omitting any part or following in the track of each other, and the tines should be of sufficient length to prevent the bulls from touching the ground. Such harrows may be drawn by three horses, abreast, or by two as the surface becomes smooth; if the soil is of a stiff description it should be harrowed when not too dry. Sometimes it is advisable to harrow soon after ploughing; the cultivator or grubber should take in not more than 3 feet, its tines should only be five in number, they should be sufficiently in advance of each other, and the body or frame on which they are mounted should be of sufficient length for that purpose; the points or socks, if feathered at all, should not be more than about 4 or 4½ inches broad. They should be long pointed, and the points should be kept thin; that part of the tines underground should be set forward at a considerable angle, to make them penetrate readily.

The advantage of a smooth surface, especially in facilitating the use of the cultivator or grubber, will be apparent; the drainage should be such as will allow the land to remain in a flat state with perfect safety; but in the meantime, until draining can be done, ridging is a point requiring much more consideration than is usually bestowed upon it. The ridges should not be less than 14 feet wide, at that width they should be raised nearly a foot in the middle, and the surface of each should form exactly the segment of a circle: culture may then be made as effectual, manure as beneficial, and the crop as secure as they can be without thorough draining; all parts of the ridge will be affected equally by the water falling on it, the surface will be nearly level for some distance on each side of the centre, and no part unduly exposed to drought, and the sides becoming steeper as they approach the furrows will accelerate the progress of the water tending there, as it increases in quantity. The furrows should be deep and clear, and of a regular inclination in the bottom to convey the water away when collected. The convenience of working requires that they should be straight and perfectly parallel to each other, and that the ridges should all be of equal width; ridges once properly formed should never be altered either in shape or position until the drainage is made perfect.

In the management of heavy soils everything which tends to consolidate either the soil or subsoil should also be as much as possible avoided; ploughing when the soil is saturated with water, and especially ploughing at any time with four, five, or even three horses in a line, should be carefully guarded against, if for no other reason than to prevent the subsoil from being glazed over or beaten firm. The use of horses and ploughs on such soil at all is a necessary evil, the effects of which may however be in a great measure obviated by perfect culture and proper care. Carting should also be conducted with care, and avoided if possible when the soil is not in condition; even heavy cattle should be excluded when the ground is soft in winter, as they then occasion injury in various ways; heavy soil requires no pressure, its own weight assisted by the action of rain soon makes it sufficiently firm, after it has been ploughed or stirred. Hence rolling, especially if the land is in Grass, should seldom be attempted, unless absolutely necessary to smooth the surface for cutting, and then a light roller made of timber, and used when the soil is not quite dry, or soon after a slight shower has fallen, will answer the purpose. An equal and ready filtration of all rain water through at least 18 inches of soil, and the complete exclusion of free water within or below that depth, is the first condition necessary. When this result is attained, air and heat are at the same time freely admitted, and the soil to a considerable depth undergoes a gradual disintegration, and becomes less stubborn, more easily cultivated, and more fertile, to secure an equal diffusion of water, and prevent the slightest accumulation thereof. Drains must be made of a suitable depth, and also near each other. Mixing and pulverisation of the soil 12 inches deep, and stirring the subsoil below, will then bring all parts of the earth into immediate contact with air and water, and the admixture of burnt clay or any other porous material fitted to assist in keeping the soil open, will be highly beneficial, especially on the stiffest kind of soil; on the other

hand, compression of any kind will assist in excluding the air, and in checking the descent of water, and must accordingly prove injurious.

Extensive improvements are in many places required to general and thorough drainage before the land can be managed easily and well, and it seems desirable that these as well as the amelioration of the soil should be constantly going on. The state not only of the farm, but of the farmer himself, and his servants, cattle, and implements, should be tending toward perfection, which however no one is likely to attain in all respects for at least a century to come. The expense of improvement in various cases appears to have been heavy, on account of the whole being done at once; whereas, in other cases, the greater part of the work has been managed by properly directing the labour of the men and horses usually employed by the farmer. The number of horses on English farms generally appears sufficient, but the methods of yoking more than one to a cart, or two to a plough, are, as a general rule, far from satisfactory. The work of a well managed farm cannot in any case be economically and readily gone through by such means. The adoption of a good system of working would enable much more work to be undertaken at the same expense, and experience, combined with proper care, as regards allotting to each man that share of the work which he is best qualified to perform, might soon enable all labour to be done well. The practice of entrusting awkward boys or untaught men with important work, such as ploughing, should be abandoned, as this of itself must go far to obviate the chance of success either in the case of high or low farming. Work of almost every description must be done much more effectually, and made to answer the purpose with much greater certainty, than at present, before high farming as regards the application of much labour, the purchase of much manure, and the growth of the finest kind of crops can be successful; labour skilfully applied is quite necessary, but unless the purpose is answered the expense may not be repaid, and matters may only be made worse. The breaking up of heavy Grass lands, for instance, would be a great advantage if properly managed, seeing that scarcely a single acre thereof has ever been laid down in a condition fitted to derive the full benefit of a surface dressing, or produce a good crop of Grass; but if the land on being broken up were tilled in the same imperfect manner as much of that already under cultivation, it would be deteriorated instead of improved, and yet no crops of any great value could be expected from it, so long as it continued under such management. *James Donald.*

Home Correspondence.

Lesson to Landowners.—At the time the Government made known the intention to repeal the Corn-laws, which is now nearly five years since, the owner of an estate of about 4000 acres, situate in the centre of England, alarmed at the prospect which free trade presented, of reduced rent and diminished income, had his attention drawn to the necessity of preparing his tenants for the lower prices they would have to take for the produce of their farms, and sought, in the improvement of his estate, for means to enable them to continue its successful cultivation. The success which has attended his proceedings offers so valuable an example to others, that I trust I shall be excused for giving some account of it. At the period mentioned the estate was divided into farms of 130 to 300 acres, which, tithe free and arable, with valuable pasture, were let at rents of from 15*s.* to 30*s.* an acre. The tenantry, although ancient, had held only by the year; the land, which is naturally fertile, had had scarcely anything done to improve it, and the farmers had little idea of any capability in the soil beyond what their inferior practice had developed. The quantity of pasture upon each farm allowed of a considerable quantity of stock being kept, but as the cattle were grazing all the winter in the meadows, and no provision of winter food, except hay, was given them, the arable land had no benefit from the stock; and its cultivation being upon a course without root crops, and but little assisted by manure, gave only very moderate returns. To tenants so farming, Sir Robert Peel's announcement of free trade created considerable alarm, for they, as well as their landlord, saw little chance of their continuing to do as they had done; but in the improvement of their inferior practice, and in the amendment of the general state and ill condition of their farms, the proprietor was told there would be found ample scope to cover their reductions from free trade, and on this he was told to rely. The assistance of a new land-agent, and from a distant district, was obtained, and he at once saw how much of the imperfect success of the tenants was owing to the ill condition of their farms, and their ignorance of the improved practices which the cultivation of inferior soils had elsewhere called forth; he knew the difficulty there would be in introducing the different practices, which he considered essential to the future successful cultivation of their farms, and he could only hope to effect this by at once destroying their confidence in their past practice, and making them place a higher appreciation of the capability of their soill. He determined on a course which should at once drive them to adopt a different system, and at the same time should encourage them to enter into improvements of their farms. It was with these views that at the first audit the tenants were informed they would each receive notice to quit, but that leases for 21 years would at the same time be offered them, at an advance of rent of 20 per cent.; that permission would be given them to break up certain portions of the pasture of their farms, after they had been drained, upon plans that would be given them; that draining tiles would be allowed them to drain all their land, but the draining was to be done at depths, and upon the plans to be laid down; that their homesteads would be improved, and sheds built to give them accommodation for wintering their stock in yards, and fattening of cattle in stalls; and they would be allowed to remove all unnecessary hedges and trees injurious to the corn; but at the same time their leases would forbid their existing practice of taking two white corn crops in succession; and they would be obliged to dress a fourth of their arable land every year, and other restrictions would be introduced on what they had been in the habit of doing. It was expected in this way they might be made to adopt a more advantageous course of husbandry, and that their farms might be put into better condition, and made more productive, so as to become cheaper to them at the increased rents, than they had been under the old. I must pass over the difficulties of the next three years, the stand made against these measures, the obstacles thrown in the way, the withdrawal of some of the tenants, the objections raised to the deep draining, and the attempting the cultivation of roots where roots had never grown, &c.; fortunately, some of the tenants left, and the readiness with which the vacated farms were re-occupied, and at still higher rents, and the example which the new tenants afforded, who, directed by their leases, at once proceeded to grub hedgerows, to deep drain, and raise Turnips and green crops, and better clean the land, were answers to many of their objections. And now it is to the result I would call attention, which is as follows: this estate now affords a clear rental of 23 per cent. advance on the rental of 1845. The rents are now better paid than they ever have been; the last two audits were held quicker than ever after the quarter days, and at each the whole of the rents were collected without an arrear; and the tenants, with scarcely an exception, admit they are doing well, and their farms are cheaper than they were to them at the old rents; and well they may say so, for such crops as they have had the last two years were never before seen in their parishes. I am aware that such an instance of meeting the requirements of free trade is little likely to have the approval of tenant farmers, and yet how far more truly beneficial has been the course here adopted, than would have been that of the proprietor, seeking to afford relief by reducing his rents. No reduction could have given the same relief, but would have been mischievous. *H. D.*

The want of better Draining of the Public Parks.—My residence in the neighbourhood of the Regent's-park has made me acquainted with the damp state in which this land lies for five or six months in the year, from the want of better draining; and I am a witness to not only how much this interferes with its public utility, but also to what is of far more consequence, namely, to the injurious effect the vapours daily generated from its surface have upon the atmosphere around it. Were the mischief confined to the inconvenience to the pedestrians, I should hardly think of drawing public attention to it, but when I consider how much the climate of the neighbourhood is lowered by the daily rise of moisture from its surface, and how desirable it is that the effect which an undrained surface has upon climate should be better considered, I think the ill state of so large a surface in a populous district is well worth drawing attention to. To the want of more effectual draining, and to the high level of several pieces of water in the Regent's-park, do I ascribe much of the damp condition of the houses which surround it, and the consequent depreciated estimation in which residences are now held in this otherwise attractive neighbourhood. I believe I may go still farther, and attribute much of the fog and raw cold of London in the winter season to the large extent of marshy and undrained clay land which nearly surrounds it. When we consider the effect on the neighbourhood of the alternate daily rise and fall of temperature upon a wet surface, of the exhalations by day and deposit of dew at night, the consequence of the daily alternation of temperature, the importance of making the district round London as dry as possible I think becomes very apparent. I believe it is about 20 years since any general attempt was made to thoroughly drain the surface of the Regent's-park, and I have no hesitation in saying, from my examination of the ground last winter and spring, that whatever means have been used to lay it dry, they have been far from effectual; but this is not at all surprising, for only in the last six or seven years has the effectual draining of clay soils been scientifically understood. Within this period the influence of water upon the temperature of soils was first brought to general attention by Mr. Parkes' valuable communications to the Royal Agricultural Journal, and even now the rise of water by absorption, and the cold generated by the action of the sun upon a wet surface, is only becoming understood so as to point out the occasion for deep drains in clay land to dry the surface. At the time the Regent's-park was drained 20 years ago recourse was had to shallow drains, under the erroneous idea that water had to be admitted into the drains from the surface, and that such soils were impervious to water at a greater depth; but now that experience has shown of how little use is such shallow draining, and how desirable it is to the inhabitants that this ground should be effectually drained, it is to be hoped something now will be done. The bad consequences to health and comfort from a damp atmosphere are so considerable that every means should be used to lessen the sources from which arise our winter fogs and mizzling rains. Of all sources, none are more fruitful than the daily exhalations in the winter from wet Grass land, and we have yet to learn how much our climate may be improved by deep draining. *Hewitt Davis.*

The Cultivation of Wheat.—In an article of the *Agricultural Gazette* a few weeks since, Mr. Mechi alluded to a system of growing Wheat without ploughing, which had been practised by an Essex farmer with great success. I have obtained the following particulars, which may not prove uninteresting to some of your readers. Seven years since Mr. Piper selected an acre of heavy and an acre of light land for this experiment, the surface soil being about 9 inches deep, resting on clay and undrained (Mr. Piper now intends draining it). The plan of the cultivation pursued for the last seven years has been, as soon as the harvest was over, to hand-hoe the stubble and weeds and then to burn them. At the latter end of September or beginning of October (he has commenced a month earlier this season) the seed Wheat was dibbled at 3 gallons to the acre, in rows 12 inches wide, and in holes 4 inches apart in the rows, two or three seeds in each hole, and about 2 inches deep. He has now got one of my dibbles, and finds he can do the work in a more satisfactory manner. Mr. Piper informs me he has not ploughed this land for seven years, neither moved it in any way, excepting, he says, about half an inch deep with the hand-hoe, to clear it from weeds. He states that he has never been troubled with wireworm on this land, and that, when the seed was deposited at defined intervals, he has never had his crop "winter proud," however early he may have sowed. I may here state that the farmers in my neighbourhood are now putting in their Wheat (September 5th), at the rate of 2 pecks to the acre, and I have no difficulty in inducing them to follow my system, as I always guarantee them 40 bushels per acre, provided this be the average, which is more than they can grow on their own old-fashioned plan of throwing the seed on the earth and leaving the rest to Nature. From the appearance of the crops when reaped, I do not think I shall have to pay a farthing this season, and in many instances, where I could superintend the cultivation myself, the yield will surpass by some bushels what I have allowed. But to proceed. The average yield of Wheat in Mr. Piper's neighbourhood is between 7 and 8 sacks per acre, and the following is a copy of the expenses and profit, as given me by Mr. Piper. He has charged 8*s.* per acre for drilling, which he can now get done by machine for 3*s.*; for reaping, 1*l.* per acre, which might be done for 11*s.*; and for hand-hoeing, from 6*s.* to 8*s.* per acre, which might be done for 1*s.*

The Five years of Wheat after Wheat without Ploughing, ending 1849.

	£	s.	d.
Rent	1	10	0
Tithes	0	7	0
Rates	0	3	0
Hoeing after harvest	0	12	0
Dibbling	0	8	0
Seed Wheat	0	2	3
Hoeing 2½ times, 6*s.* per acre	0	15	0
Reaping	1	0	0
Carting	0	6	0
Thatching stack	0	2	0
Threshing, at 4*s.* p. qr.	1	1	0
60 bushels of soot, at 8*d.* per bushel	2	0	0
Scaring Birds	0	3	6
Trussing Straw	0	4	0
	£8	13	9

	£	s.	d.
42 bushels Wheat, at 5*s.* 6*d.* per bushel	£11	11	0
Straw, 2½ tons	3	0	0
Chaff	0	9	0
	£15	0	0
Expenses	8	13	9
Profit per acre	£6	6	3

Labour per acre.

	£	s.	d.
Hoeing	1	7	0
Dibbling	0	8	0
Harvesting	1	0	0
Carting, Stacking, &c.	0	3	6
Thatching	0	2	0
Threshing	1	1	0
Sowing Soot	0	2	0
Scaring Birds	0	2	6
Trussing Straw	0	4	0
	£4	11	0

S. Newington, M.D., Hastings.

Reaping v. *Mowing.*—As this matter has already been pretty fully discussed, I should have thought it unnecessary to have said more on the subject, but for the reason that "W." has accused me of exaggeration and assumption in my last remarks thereon. Had "W." taken my various calculations *seriatim*, and shown one, or more, or all of them, to have been wrong, he might with some degree of justice and reason have impeached me with exaggeration, but not till then; as I allowed and still allow that mowing is cheaper than reaping in the first instance, and that is all he has been able to show throughout a whole column of writing. But "W.'s" manner of treating the question is certainly unique, as he not only launches off about exaggeration and assumption, without offering the least proof or calculation for his assertions, but assures us that his object is not to oppose "R. V.'s" assumption, but merely to state the matter at issue in a fair light. Well, as my object is now to gain a notch from "W." respecting his mowing, I would very much like to know what kind of crops he grows, and what kind of men, women, and children he employs to get over 2 acres a day to a scythe? I can assure "W." that such information is most desirable in these days of distress, when farm labour well nigh swallows the produce of the land. I am also certain that his "go-ahead" system will be hailed as a boon throughout her Majesty's dominions, if he can only put others in the way of doing things as cleverly as himself. We never before heard nor read that 10 scythes could cut down 20 acres of corn a day on an average for harvests together. We dare not dispute "W.'s" assertions, but may reasonably presume

that his crops are meagre or that his men are monsters. "W.'s" calculation about the different length, weight, and bulk of stubble left between the methods of cutting high and low, is not quite correct as a rule for the crops in those parts we are acquainted with. I tested the weight of a long length of stubble, next the ground, an equal length of straw next the corn ear, and found that 15 inches of stubble equalled in weight 2½ feet of straw, measuring from the ear. Therefore if the length of the stem before being cut measures 3 feet 9 inches, and 15 inches of stubble is left behind, there is then nearly half the bulk, and quite 50 per cent. of the entire weight of straw left on the ground, instead of 5 per cent., as "W." states. In some cases we have seen 18 inches of stubble left after reaping high; when there were about three cart loads of corn in the straw, and three loads of stubble per acre. In such cases the crops have ranged from 35 to 45 bushels per acre, and the entire straw and stubble weighed about 2 tons. It is easy for "W." to impute "exaggeration" to me, and equally easy it appears to assume a mistaken theory in support of his own system, while it is just as easily and simply put down. I have seen the mowing of Wheat partially carried on a dozen years ago on some of the largest and best managed farms of Bedfordshire. I know it has been prosecuted off and on for some years on three farms, where it is now abandoned for reaping. I have seen labourers prefer the sickle to the scythe when allowed their choice, when cutting down at a certain price per acre. All that goes to show that mowing has been well and truly tried, and found wanting in cases of large crops. I am, however, fully aware that mowing is successfully carried on in some parts, so far as celerity and less expense, in the first instance, goes; but that does not settle the question as to which is the best and cheapest method of the two—mowing or reaping—from the time of cutting down till the straw be made into manure and the corn be prepared for market. Why should from 20 to 30 cwt. of straw be unnecessarily moved four times instead of carrying the great bulk of the straw at once from the field to the yard where it is be consumed? Cannot the ears of corn be threshed out without passing all the long straw through the machine? To show that I am not at all singular in my ideas regarding this matter, I beg the insertion of the following letter from the *Bucks Advertiser* of last week. The writer is quite unknown to me, but his opinions exactly coincide with my own, and with those of farmers generally. "*Short Shearing in Reaping.*—The general use of threshing-machines has caused many farmers to make new calculations as to the best method of cutting and harvesting Wheat; and the result of these calculations has almost invariably been a return to the old system of cutting the corn high up the stalk, so as to have as little straw with the ear as possible. The systems of cutting close to the ground, and of mowing, which had come into vogue of late years, have, during the present harvest, been abandoned by most intelligent agriculturists, as being the most expensive in the end, though they offer an immediate saving of expense. When Wheat is reaped high up, it is necessary to go over the ground a second time, in order to reap or mow the straw, for we cannot in this country afford to do as is done in Australia and America, where the farmer clips the ears of corn short off, and leaves the straw to be ploughed in upon the land. We want the straw for manure; which the Australian and the American farmers, having an abundance of fresh land, care little or nothing about. Here, then, is the immediate advantage which the mowers and low-cutters have over the high-shearers of corn. But when the corn comes to be threshed, it is found that the rapidity and ease with which the machine works upon the short-cut, compared with its operation when cumbered with the long straw, give a saving in this part of the process in favour of the high-sheared corn, which more than makes up for the extra expense of the men having had to go twice over the fields. There are other advantages in favour of the short-reaped Wheat, as to carrying and thatching, which are important. But it is the economy in threshing which is decisive. When the flail was used, little attention was paid to such details. One of the great advantages of the introduction of scientific machinery into agricultural operations is, that it makes men observe and calculate exactly the comparative celerities and expenses of different processes. This leads to accuracy, to improvement, and to good order; instead of the old slovenly system on which farmers used to keep their reckonings, like their lands, very much in the rough." I shall certainly be delighted to learn further particulars regarding the way to set about mowing Wheat at 5*s.* per acre, and other crops at 3*s.* 9*d.*, including beer. The prices for reaping, through Bedfordshire and Buckinghamshire, have this harvest ruled from 7*s.* 6*d.* to 13*s.* per acre. We have heard of no mowing being done under 7*s.* per acre. Neither did we see any account at anything like "W.'s" price, in all the accounts from the various parts of England, published in last year's *Gazette*. Corn cut down, tied up, shocked, and raked, at an average of 3*s.* 9*d.* per acre! Why we shall be rejoiced to know how this can be done universally, and shall most certainly be three-fourths converted from reaping to mowing by a solution of that knotty point. *R. V., Sept.* 9.

To make Beer with Sugar.—When the act passed authorising the use of sugar in breweries, it was supposed that such method of manufacture would be very generally adopted. That this has not been the case may be partly attributed to the low price of malt, and partly to a faulty mode of employing the materials, which has caused the experiment to fail in many instances, and given rise to the idea that beer made from sugar will not keep. The principal error fallen into by the brewers has been the practice of boiling the sugar with the wort. This is a great mistake; the sugar should never be boiled in any stage of the operation. I have tasted most excellent bitter beer, made according to the subjoined receipt, having perhaps more briskness of flavour than beer made in the ordinary manner; and the chief advantage of which, as I was informed, consisted in the length of time for which it would keep without becoming hard. I have since heard of a brewery in Surrey, where, in consequence of the use of sugar, the spoiled beer returned by the various customers during the year was so much reduced as to be barely sufficient for their finings. The present price of sugar, of the quality fit for brewing, is about 30*s.* per 112 lbs., and it is calculated that 50 lbs. of sugar are about equal to 2 bushels of malt. *Recipe:*—Boil 54 gallons of water in a copper; run it into a mash-tub, and let it cool to 90° Fahr. Put in 4 bushels of malt; let it stand three hours, covered with sacks, &c., to keep steam in; run into underback, and immediately pump into copper. Mix, and stir 8 lbs. of Hops with it. Boil three hours; run in trough to cooler, mixing 25 lbs. of sugar, with the hand, in the wort as it runs along the trough. Cool to 70°; and let down into working-tub. Make a second wort in precisely the same way as the first, with the same malt and Hops, and 25 lbs. more sugar; cool it separately, and mix it with first wort in the working-tub. Put one pint of yeast into flat-bowl; put bowl into wort, so that wort can just touch yeast. Let it work 12 hours, during which time skim off yeast three times. Keep it covered except when being skimmed; and back off into casks in cellar. It may work a fortnight. Fill up the casks every morning with what has worked out of the cork hole into the tub beneath. Skim it before returning it to cask, cleaning away all the yeast which rises to the top of the cask through the bung-hole. Put three or four handfuls of dry Hops into cask through bung-hole, and bung it up. If very strong beer is required, keep the first wort by itself. If the usual strength is sufficient (4 bushels of malt, 50 lbs. of sugar, and 8 lbs. of Hops), make 108 gallons of beer. The sugar should be of a strong grainy quality. *Another Method of Mixing Sugar:*—Immediately before running wort into cooler, take out of copper two pailfuls of wort, and empty into small cask. Mix sugar with it. Pour back into copper, mixing thoroughly, and directly run it off into cooler. Do not boil wort after sugar is added. *Stephen Cave.*

On the Nutrition of Plants. By Prof. Magnus. (*Continued from p.* 590.)—In other similar experiments, also, which the author made, the injurious influence of salts was equally distinctly perceptible. Thus, instead of the carbon, a coarsely-powdered felspar, which occurs at Silesia near the Schreibersau, and is used at the porcelain manufactory of Berlin, was employed. It had been powdered at this manufactory by an iron stamp. Part of it was used in a pure state; to another part all the above-mentioned salts were applied, and of these to 100 parts of felspar—

	per cent.
Carbonate of lime	2.0
Carbonate of magnesia	2.0
Protocarbonate of manganese	0.5
Sulphate of lime	1.0
Phosphate of lime	2.0
Chloride of sodium	0.5
Silicate of potash	1.0
Spathic iron ore	1.0
	10.0

The spathic iron, from its insolubility in aqueous solution of carbonic acid, appeared better adapted for experiments upon vegetation than peroxide of iron which has been heated to redness, for this is perfectly insoluble. That used in these experiments came from Lobenstein, and according to an analysis by Hagen contained—

	per cent.
Protoxide of iron	45.79
Protoxide of manganese	11.34
Lime	1.08
Magnesia	3.25
Carbonic acid	39.27
	100.73

An experiment was also made, in which the same salts, with the exception of the phosphate of lime, as well as a third, in which all the salts, with the exception of the silicate of potash, were mixed with the felspar. Three small porcelain pots were filled with these three mixtures, and three or four grains of Barley placed in each; water was then poured over them. The grains however did not spring up. The three spoiled grains were then removed, and each of the three mixtures exhausted with distilled water. When three porcelain pots were now again filled, and the grains of Barley placed in each, the plants in all the three mixtures attained on an average a height of 14 inches, and sent forth some five, others seven leaves. Besides these mixtures, some grains of Barley were also placed in pure felspar. They attained a height of 15 inches, and produced seven perfect leaves. All the plants then produced ears, and one of them brought forth two perfectly-developed grains; whilst in all the other experiments, both with carbon and felspar, no trace of ear was apparent. The plants produced in the pure felspar also were of such strength, that even after the lower leaves had perfectly withered, new shoots were sent out from at least two of them. A perfectly similar result was yielded by an experiment in which the same felspar was used, a third part of which however had been ground fine and elubriated, the same substance from the porcelain manufactory being again made use of. In this case, one plant attained a height of 20 inches, and produced four perfect grains. The plants in this finely-granular mass were altogether stronger than those in the coarse felspar, but their first evolution occupied a much longer time than in the latter. The two latter experiments show the great influence of the mechanical structure of the soil upon vegetation. In both the same felspar was used; both were begun at the same time, and carried out under exactly similar circumstances; but the progress of vegetation in the two was totally different. In the coarsely-powdered felspar the grains had all sprung up at the end of five days; whilst in the fine they had required eight days. For the latter had become so hard and solid by being moistened with water, that a hole could hardly be bored in it with a pointed iron; it was therefore natural that the leaf-bud which was formed could scarcely force its way through it. But when the plants had attained a height of 5 inches, those in the fine felspar appeared much stronger, and surpassed the former in their vegetation. This probably arose from the circumstance, that the finer mass retains moisture better, and absorbs carbonic acid and ammonia from the atmosphere in larger quantities. Moreover, it might also happen that the felspar was partially decomposed, and that this decomposition took place more easily in the case of the fine than the coarse. But that the vegetation took place so much better altogether in the pure felspar than in that treated with salts, even when the soluble portion of the latter was removed by exhaustion with water, affords proof of the small quantities of salts required by the plants for their nutrition, and how injurious is the presence of larger quantities. *Monatsbericht der Akademie der Wissensch*, zu Berlin, Feb. 1850, pp. 60-71. *Chemical Gazette.* (*To be continued.*)

Calendar of Operations.

SEPTEMBER.

Bedfordshire Farm.—The harvest has for some time been concluded, and as usual, preparation is going on for another crop. The horses here have lately been employed in carting clay upon a light sandy soil; and in ploughing and cleaning the Wheat stubbles for Rape and Tares. The clay is filled and spread for 3*d.* per two-horse load. About 80 loads are applied per acre. In breaking into a clay pit, much more labour is required to fill a certain number of loads than when a pit of considerable depth is obtained. It is therefore a necessary consideration, what price should be given for filling clay, according to circumstances. Our men earn nearly 2*s.* per day at clay cart, at the rate of 3*d.* per load, filling from a pit about 7 feet deep, and 20 feet wide. Claying land is rather expensive, but an indispensable and permanent improvement on the lightest sands. The crops of last harvest are much inferior in point of yield to those of last year. In a field of ours, which promised some 40 bushels or more per acre, six weeks before harvest, the actual result from threshing has turned out but little more than 30 bushels per acre. The field in question was made the subject of some experiments. Part of it was drilled at intervals of 9 inches apart, at the rate of 6 pecks per acre; part was sown broadcast, at the rate of 6 pecks per acre; part was dibbled, at the rate of 5 pecks per acre; and part was dibbled with Dr. Newington's patent implement, at the rate of 4 pecks per acre. The drilled part turned out more by about 3 bushels per acre than the dibbled part; while the part which was broadcast (although not proved), appeared inferior to either the drilled or dibbled. It is but fair, however, to state, that although the drilled part of the field produced the greatest yield, the land was superior to the dibbled part. About an acre of that planted with Dr. Newington's dibble failed, from the ravages of slugs, &c. This was filled up in March by transplanting, and at harvest was quite equal or superior to any other part sown in the usual way. We have never seen transplanting fail when properly performed at a proper time; that is, that the plants were firmly fixed in the soil when the land was neither too dry to prevent the plant from gaining root, nor too wet to be puddled by the feet of the planters. A person told me some time ago that he found it an excellent preventive against wireworm on old lea to plough frequently in winter, in snow, if possible, which destroyed the eggs of the vermin. He also told me of a novel method of recovering wireworm-eaten Wheat, by treading. He said two labourers came to him asking for employment at a time when he required no *hands* for common work. He observed, however, that the men appeared to have unusually *great feet*, and thought they would just do to tread the wirewormy Wheat, which he proposed to them. The men at first did not like the job, and said it looked like making fools of them. However, after a little encouragement, they set to work, and saved several acres of Wheat in a field where part was not trodden, and failed completely. Heavy rolling has long been known as useful in destroying wireworm; but as the effects of the heaviest roll is not much felt an inch below the surface, very little good frequently results from rolling. Preparation is at present going on around us for sowing winter Beans. From appearances winter sowing will soon usurp the place of spring planting. The usual quantity of seed used here, is from 3 to 4 bushels per acre. About the same quantity of Tares are sown per acre. Trifolium is now being sown in considerable quantities; it is more adapted for light than heavy soils. About 20 lbs. per acre is a good seeding. Where summer fallows once prevailed, a crop of winter Tares is now generally sown. The land is first dunged, where a good crop is obtained; if the land is foul, it requires ploughing as frequently as the weather will permit after the crop is consumed. On arable farms, sheep are now turned upon Turnips, and fatting cattle are being stall-fed on roots, &c. The pigs are living partly upon the corn stubbles, and partly upon roots. Many breeders of pigs keep the boar from the sows for a month or two after this time. Some however, who have good accommodation for housing young pigs, keep breeding all the year through. Potato digging is now occupying many hands. In a circle of 10 miles circumference from this, there are supposed to be upwards of 500 acres of Potatoes grown. The roots are more free from disease than for several years past. The current prices for digging and dividing into three sorts is 1*l.* per acre, or 1*s.* 6*d.* per score bushels. Many Potato growers prefer pitting in the ground to house storing. The pitting system retains the freshness, moisture, and weight of the roots better than the house storing; but when turning is necessary, the latter system is the best. Labourers are now well employed. The usual wages are from 8*s.* to 10*s.* per week. Hours, from 6 to 6 o'clock. Piece-work is becoming more common, and no doubt would prevail more if the farming community were more acquainted with the various kinds of measurement. *R. V.* [Will "R. V." be kind enough in future to send his contributions to our calendarial section one post earlier.]

Notices to Correspondents.

COCHIN CHINA FOWLS: *P A H.* We have been in correspondence with the parties referred to, in consequence of your letter, and the following is the conclusion arrived at: "There is nothing in 'P. A. H.'s' description of the eggs to disprove their being genuine Cochin China. Richardson's statements are not infallibly to be relied on, and their long journey is a sufficient reason for so small a number of chickens being hatched from them. I now never attempt to hatch eggs brought from a great distance, *unless I could fetch them myself.* I would give no opinion about the one surviving chicken without seeing it. It *may* be a pure bird, though strange-looking in its youth. *D.*"

DAIRY MANAGEMENT: *Rev. R. C.* says, "I see in my paper this week a statement respecting the management of a dairy and the produce of it. If you or any of your correspondents could supply a similar statement about a Devonshire dairy, I think it might be interesting and useful to some of your west country subscribers." [It is better to place the milk in the pans directly it comes from the cows.]

HARD AND BRITTLE HOOFS: *J S.* Barbadoes tar and Olive oil; mix and anoint the feet daily. *W. C. S.*

LUCERNE: *Old Sub.* Sow 10 lbs. per acre in shallow drills 12 inches apart, in the end of April, on a deeply and richly tilled soil of a loamy character.

POULTRY HOUSE: *Sub.* We must refer you to "Ornamental Poultry," 2d edit., p. 225-8; "Walter B. Dickson on Poultry," p. 28-42; "Farming for Ladies," Chap. I. Woodcuts and a description of a well-arranged fowl-house are in preparation for a forthcoming number of Blackie's "Cyclopedia of Agriculture."

SHIELDRAKES: *Sub.* A sufficiently full account of these birds in captivity on fresh water lakes, cannot yet be given, for want of room. We cannot tell the cause of the blindness. Corn alone will not keep them in health; in a state of nature the greater part of their sustenance is obtained on the sea-shore—a shell-fish diet. They are fond of cockles and small mussels.

THE MANGE: *J L.*, next week. In the meantime we refer you to a shilling book, by Richardson, on "The Dog."

THISTLES: *H.* must just "pull, hoe and spud" again. There are instances enough on record to prove the accuracy of the popular idea that this will ultimately destroy the weed.

ERRATUM: In page 585, col. *b*, for "The depths of this point will obviously be greatest where the capillary force is greatest; and as this approaches its maximum in the stiffest soils, so these drains must be cut the deepest," *read* "The depth of this point will obviously be greatest where the capillary force is greatest; and as this approaches its maximum in the stiffest soils, so, *there*, drains must be cut the deepest."

*** Communications reaching town after Wednesday cannot be answered till the following week.

Markets.

COVENT GARDEN, SEPT. 21.

Vegetables are abundantly supplied. Hothouse Grapes and Pine-apples are plentiful; Peaches and Nectarines from the open walls abundant. Oranges and Lemons though scarcer are sufficient for the demand. Plums and Pears are still received from the Continent. Filberts are plentiful and good. Carrots and Turnips may be had at 3d. to 6d. a bunch. Potatoes are good and cheap. Lettuces and other salading are sufficient for the demand, and so are Mushrooms, but owing to the dry weather the latter are not good. French Beans are scarcer. Cut Flowers consist of Heaths, Pelargoniums, Carnations, Picotees, Asters, Fuchsias, Mignonette, Dahlias, Verbenas, Bignonia venusta, Stephanotis floribunda, Heliotropes, Calceolaria viscosissima, Japan Lilies, and Roses.

FRUITS.

Pine-apples, per lb., 4s to 6s	Pears, per doz., 1s to 3s
Grapes, hothouse, p. lb., 2s to 5s	Lemons, per doz., 1s to 3s
Peaches, per doz., 1s 6d to 6s	Oranges, per doz., 2s to 3s
Nectarines, p. doz., 1s 6d to 4s	— per 100, 8s to 24s
Apricots, per doz., 1s 6d to 5s	Almonds, per peck, 6s
Figs, per punnet, 2s to 4s	— sweet, per lb., 2s to 3s
Melons, each, 1s to 3s	Walnuts, p. 100, 1s 6d to 2s
Plums, p. punnet, 1s to 1s 6d	— p. bush., 16s to 24s
Green-gages, do., 1s to 2s	Nuts, Barcelona, per bush., 20s to 22s
— per sieve, 8s to 10s	— Brazil, p. bsh., 12s
Apples, dessert, p. bush, 4s to 8s	Filberts, per 100 lbs. 22s to 30s
— kitchen, do., 1s 6d to 6s 6d	

VEGETABLES.

French Beans, p. sieve, 3s to 4s	Garlic, per lb., 4d to 8d
Cabbages, per doz., 6d to 1s	Artichokes, p. doz., 2s 6d to 3s
Cauliflowers, p. doz., 2s to 4s	Vegetable Marrows, per doz., 6d to 1s
Peas, per sieve, 3s to 6s	Lettuce, Cab., p. sc., 1s to 1s 6d
Sorrel, p. hf. sieve, 6d to 9d	— Cos, p. score, 6d to 1s 6d
Potatoes, per ton, 50s to 80s	Endive, per score, 1s to 1s 6d
— per cwt., 2s 6d to 4s	Small Salads, p. punn, 2d to 3d
— per bush., 1s 6d to 3s	Horse Radish, p. bdl., 1s to 4s
Turnips, p. 12 bun., 2s 6d to 3s 6d	Mushrooms, p. pot., 9d to 1s 6d
Red Beet, per doz., 1s to 2s	— per bushel, 5s to 7s
Cucumbers, p. doz., 1s to 6s	Fennel, per bunch, 2d to 3d
Leeks, per bunch, 1d to 2d	Savory, per bunch, 2d to 3d
Celery, p. bundle, 10d to 1s	Thyme, per bunch, 2d to 3d
Carrots, per doz., 3s to 5s	Parsley, p. doz. bun., 1s to 2s
Tomatoes, p. punnet, 1s to 1s 6d	— Roots, p. bdle., 9d to 1s
Spinach, p. half sieve, 1s 6d to 2s	Marjoram, per bunch, 8d to 9d
Onions, p. bunch, 2d to 6d	Mint, green, per bunch, 2d
— Spanish, p. doz., 1s 6d to 4s	Watercress, p. 12 bunch., 6d to 9d
Shallots, per lb., 6d to 8d	

COAL MARKET.—FRIDAY, Sept. 20.

Eden Main, 15s. 3d.; West Hartley, 16s. 6d.; Wallsend Haswell, 16s. 3d.; Wallsend Stewart's, 16s. 3d.—Ships at market, 28.

HOPS.—FRIDAY, Sept. 20.

Messrs. PATTENDEN and SMITH report that at Worcester Fair yesterday about 1400 pockets of new Hops were pitched, and about 715 sold, at prices varying from 75s. to 80s.; choice, 82s. Very few of the best growths sold, the planters not submitting to these prices. Duty for the district, 20,000*l.*; and for the kingdom, 210,000*l.* to 215,000*l.* A good demand for new Sussex and Weald of Kents this morning.

SMITHFIELD, MONDAY, Sept. 16.

The continuance of dry weather causes a large supply of stock to market, and a large proportion are in very middling condition; consequently still a few of the choicest Scots make 3s. 8d., but so rarely we cannot quote it. Trade is exceedingly dull for Sheep, and our top quotations are with difficulty obtained. The supply of Calves is larger than the demand. From Holland, Germany, and Denmark there are 1031 Beasts, 3270 Sheep, and 198 Calves; and 3000 from the northern and midland counties.

Per st. of 8 lbs.—s d s d	Per st. of 8 lbs.—s d s d
Best Scots, Herefords, &c. ... 3 4 to 3 6	Best Long-wools . 3 2 to 3 6
Best Short-horns 3 2 — 3 4	Ditto Shorn ... ... — ...
2d quality Beasts 2 4 — 3 0	Ewes & 2d quality 2 8 — 3 0
Best Downs and Half-breds ... 3 8 — 4 0	Ditto Shorn ... ... — ...
Ditto Shorn ... ... — ...	Lambs ... ... — ...
	Calves ... ... 2 0 — 3 6
	Pigs ... ... 3 0 — 4 0

Beasts, 4629; Sheep and Lambs, 31,820; Calves, 294; Pigs, 280.

FRIDAY, Sept. 20.

The number of Beasts is very large, and the demand small; consequently lower prices are taken, and many remain unsold. There are considerably more Sheep than are wanted; a few are sold at rather lower rates. Trade is exceedingly dull for Calves at very low prices. Our foreign supply consists of 629 Beasts, 1380 Sheep, and 171 Calves. We have 81 Milch Cows from the home counties.

Best Scots, Herefords, &c. ... 3 4 to 3 6	Best Long-wools . 3 4 to 3 6
Best Short-horns 3 0 — 3 4	Ditto Shorn ... ... — ..
2d quality Beasts 2 2 — 2 8	Ewes & 2d quality 2 6 — 2 10
Best Downs and Half-breds ... 3 8 — 3 10	Ditto Shorn ... ... — ...
Ditto Shorn ... ... — ...	Lambs ... ... — ...
	Calves ... ... 2 0 — 3 4
	Pigs ... ... 2 8 — 3 8

Beasts, 1242; Sheep and Lambs, 7410; Calves, 305; Pigs, 295

HAY.—Per Load of 36 Trusses.

SMITHFIELD, Sept. 19.

Prime Meadow Hay	72s to 78s	Clover	70s to 85s
Inferior ditto... ...	60 68	Second cut	60 72
Rowen	60 —	Straw	23 27
New Hay	— —		J. COOPER.

Trade dull.

CUMBERLAND MARKET, Sept. 19.

Prime Meadow Hay	75s to 78s	Inferior	65s to 72s
Inferior ditto... ...	55 68	New Clover	65 72
New Hay	— —	Straw	25 28
Old Clover	78 84		JOSHUA BAKER.

WHITECHAPEL, Sept. 19.

Fine Old Hay ...	68s to 72s	New Clover	74s to 80s
Inferior ditto ...	— —	Inferior ditto... ...	— —
New Hay	63 68	Straw	24 27
Old Clover	80 84		

MARK LANE.

MONDAY, Sept. 16.—The supply of English Wheat by land carriage samples this morning from the near counties was moderate, and disposed of at an advance of fully 1s. per qr; the demand for foreign was not extensive, but some of the inferior qualities and finest red command extreme prices.—Malting Barley must be written 1s. per qr. cheaper; the value of Grinding is maintained.—White and Maple Peas are 2s. to 3s., and Dun 1s. per qr. dearer.—Beans are inquired after, and a shade higher.—Oats meet a ready sale; for the finest qualities rather more money is obtained.

BRITISH PER IMPERIAL QUARTER.	s. s.		s. s.
Wheat, Essex, Kent, & Suffolk ...White	45—48	Red	42—46
— — fine selected runs ...ditto	46—50	Red	—
— — Talavera	46—52		
— Norfolk, Lincoln, & York...White	—	Red	36—42
— Foreign	35—52		
Barley, grind. & distil, 22s to 23s...Chev.	26—29	Malting	24—26
— Foreign....Grinding and distilling	17—23	Malting	20—24
Oats, Essex and Suffolk	15—18		
— Scotch and Lincolnshire ...Potato	20—23	Feed ...	19—21
— Irish .....Potato	16—20	Feed ...	15—17
— Foreign.....Poland and Brew	18—22	Feed ...	16—18
Rye	26—28	Foreign	—
Rye-meal, foreign.....per ton	—		
Beans, Mazagan .....25s to 27s.....Tick	26—28	Harrow	26—28
— Pigeon .....28s — 32s...Winds	—	Longpod	—
— Foreign ..... Small	24—34	Egyptian	22—23
Peas, white, Essex and Kent.....Boilers	32—36	Suffolk...	34—37
— Maple.... ,32s to 34s .....Grey	29—31	Foreign	26—36
Maize ..... White	26—30	Yellow ...	25—30
Flour, best marks, delivered... per sack	36—40		
— Suffolk ..... ditto	32—36	Norfolk	32—36
— Foreign .....per barrel	22—25	Per sack	32—35

ARRIVALS IN THE PORT OF LONDON LAST WEEK.

Flour, 14808 sks — — brls	Wheat. Qrs.	Barley. Qrs.	Malt. Qrs.	Oats. Qrs.	Beans. Qrs.	Peas Qrs.
English	3646	268	4982	480	304	354
Irish.....	—	—	44	1480	—	—
Foreign	18220	4857	—	25894	666	—

FRIDAY, Sept. 20.—Excepting foreign Oats, of which the supply is large, the arrivals of grain either from our own coast or abroad have been moderate; this morning's market was thinly attended, and the sale of all descriptions of corn was limited. Holders, however, are very firm, and on the business transacted Monday's quotations are fully supported.—Flour being held on somewhat higher terms, restricts sales.

ARRIVALS THIS WEEK.

	Wheat. Qrs.	Barley. Qrs.	Oats. Qrs.	Flour.
English ...	2990	530	60	1070 sacks
Irish	—	—	1300	
Foreign ...	6440	3220	27290	— brls.

IMPERIAL AVERAGES.	WHEAT.	BARLEY.	OATS.	RYE.	BEANS.	PEAS.
Aug. 10.....	44s 1d	22s 5d	17s 11d	23s 8d	27s 9d	26s 10d
— 17.....	43 8	22 8	18 4	28 0	28 2	26 5
— 24.....	43 6	23 0	17 9	20 10	28 1	26 3
— 31.....	43 6	22 4	17 9	23 4	28 11	20 11
Sept. 7.....	43 2	23 6	17 11	25 4	28 9	27 10
— 14.....	42 10	23 9	17 4	26 10	29 7	28 9
Aggreg. Aver.	43 5	22 10	17 10	23 10	28 6	27 2
Duties on Foreign Grain	1 0	1 0	1 0	1 0	1 0	1 0

Fluctuations in the last six weeks' Corn Averages.

PRICES.	AUG. 10.	AUG 17.	AUG. 24.	AUG. 31.	SEPT. 7.	SEPT. 14.
44s 1d		...	...	...	...	...
43 8	...		...	...	...	...
43 6	...	...	...	...	...	...
43 6	...	...		...	...	...
43 2	...	...	...			...
42 10	...	...	...	...		

SEEDS.—SEPT. 16.

Canary, per qr.....52s to 60s		Coriander, per cwt. ...17s— 21s	
Caraway, per cwt. ...29 — 33		Mustard, white, p. bush. 4 — 6	
Hempseed, per qr. ...34 — 35		— brown do. ..... 7 — 10	
Linseed, foreign, do. 37 — 44		Rape, per last .....24*l.*—26*l.*	
Clover, red, p. cwt....—	—	Cakes, Lindseed, p. 1000...8*l.* 15s	
— — foreign, do. —	—	— — foreign, p. ton, 6*l.* 15s	
— white, do. .....—	—	— Rape, foreign, do., 3*l.* 17s	
— — foreign, do. —	—	Tares, per bush... 3s 0d—5s 6d	

LIVERPOOL, FRIDAY, SEPT. 13.—There have been better supplies of Oats and Oatmeal from Ireland during the last three days, but the principal import is from France, whence we have received nearly 10,000 qrs. of Wheat, and 11,179 sacks of Flour. At this morning's market the sales of Wheat and Flour proceeded slowly, but in all cases fully Tuesday's prices were obtained. Fine mealing Oats are scarce and wanted, those offering to-day were of inferior quality, and not saleable. Grinding Barley has become scarce, and was 1d. per bushel dearer. Beans and Peas were each also 6d. per qr. higher. Indian Corn was the turn dearer to-day, and 28s. per 480 lbs. is the value of the best American yellow.——TUESDAY, SEPT. 17.—There is little increase in the supplies of grain, &c., from Ireland this week, consisting of the new crop. We have had remarkably fine weather for finishing up the northern harvest. The trade for every article has been very firm throughout the week, with a steady business going forward. The trade in Wheat at this morning's market was tolerably steady, considering the extent of the foreign arrival. The business transacted was only moderate, and in some instances, from the ship, 1d. per bushel decline on last Tuesday's prices was submitted to. Flour was in fair request, and late prices were supported. Grinding Barley was 1d. per bushel, and Egyptian Beans 6d. per qr. higher. Oats were in limited request, and rather easier to buy. Peas were fully as dear. No transactions in Indian Corn transpired, and last week's prices are continued.

PRICE FOURPENCE. OF ANY BOOKSELLER.

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SWINBORNE'S FARMER'S COMPLETE ACCOUNT BOOK, 9*s.*; ditto for LARGE FARMS, 14*s.*; ditto, Cheap Edition, 5*s.*; SWINBORNE'S BAILIFF'S ACCOUNT BOOK, 6*s.* 6*d.*

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BEAUTIFUL WHISKERS, HAIR, SKIN, AND TEETH! TWENTY RECIPES INDISPENSABLE TO ALL—For the best Liquid Hair Dye extant; remedies for freckles, sunburns, pock-marks, ringworm, and all other disfigurements; superfluous, weak, or grey hair, baldness, &c.; Pommade and Bandoline, for producing, beautifying, and curling the hair; Amandine for beautifying the hands, lips, and complexion; Tooth Powder for purifying the teeth and breath; white Enamel for filling decayed teeth; Liquid Glue, Cement for broken china, glass, &c.; a Certain Cure for soft or hard Corns, Bunions, &c.; and a choice selection of French Perfumery, all medically attested, will be sent on receipt of 25 postage stamps.—Address, Miss ROSALIE COUPELLE, 35, Ely-place, Holborn, London.

"The hair dye alone is worth ten times the cost of all."—*Miss Hill, Plaistow.*

LADIES AND GENTLEMEN'S DRESSING CASES.—MECHI, 4, Leadenhall-street, London, invites an inspection of his STOCK, which possesses peculiar advantages both in quality and price. There is a general complaint that the internal fittings of Dressing-cases are often very inferior. Those who purchase at MECHI'S will be sure of having everything of the best, because he has long been celebrated for the superiority of his Cutlery, and has bestowed equal pains in bringing to perfection his Tooth, Nail, Hair, and Shaving Brushes, and other necessaries. In fact, he considers it essential that each article in a Dressing-case should be perfect in itself, so as to render the whole useful and complete. Those who desire to have particulars may obtain a Catalogue gratis. The largest assortment in London of Papier-maché manufactures, and the usual stock of articles suited for presents. MECHI'S Peculiar Steel Razors, 7*s.* and 10*s.* per pair. His Magic Strops, 2*s.* 6*d.* to 6*s.* 6*d.*; paste, 6*d.* and 1*s.* per cake. Cutlery ground and repaired daily on the premises.

NEWS, NEWS, NEWS.—The best, cheapest, and largest Newspaper in the World.—LLOYD'S WEEKLY LONDON NEWSPAPER contains 60 large columns of the latest intelligence from all parts of the Globe, price only Threepence, postage free. Send Three Postage Stamps to E. LLOYD, 12, Salisbury-square, London, and receive one copy as lea samp

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Capital 100,000*l.*, with power to increase to 500,000*l.*

Three-fifths of the Profits of this Company will be divided among the assured; and the first division will take place at the expiration of the First Quinquennial period in 1854, after which the Bonuses will be added annually to the Life Policies. No charge is made for Policy Stamps.

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This Company transacts the following description of business:—

1. Life Assurance with participation in Profits, or a Low Scale of Premium without participation, at the option of the Assured.

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3. The Union of Life Assurance with Guarantee for Fidelity, so that the Life Assurance Policy is made conditional on the continued honesty of the Assured. The leading advantages of this plan may be thus summed up:—

TO EMPLOYERS.—The Union of a Life Assurance Policy with a Bond for Fidelity gives an additional Guarantee for the honesty of those employed in situations of trust, who by any dereliction of duty would forfeit their Life Policy.

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TO THE EMPLOYED.—A considerable Reduction of Premiums on the two risks. This saving is effected on the ground that the Company can only be called on to pay one or the other of the risks incurred; for if the Employed continue honest, the Life Assurance Policy only becomes a claim, whilst, if he is dishonest, the Life Assurance Policy is forfeited.

Prospectuses and further information may be obtained upon application at the offices of the Company, or to any of the Company's Agents.

By order, JAMES KNIGHT, Secretary.

HARTLEY'S PATENT ROUGH PLATE GLASS, JAMES PHILLIPS AND CO., 116, Bishopsgate-street Without, beg to hand their list of Prices of the above description of GLASS.

		Cut to order in panes of	
8 by 6	and under	10 by 8	at 4½d. per foot.
10 by 8	,,	14 by 10	at 5d. ,,
14 by 10	,,	1½ foot, or sizes not exceeding 20 inches long	at 5½d. ,,
1½ foot	,,	3 feet, or sizes not exceeding 30 inches long ...	at 6d. ,,

PACKED IN BOXES of 50 feet each.

6 by 4 and 6½ by 4½...10s. 6d. | 8 by 6 and 8½ by 6½...13s. 6d.
7 by 5 and 7½ by 5½...12s. 0d. | 9 by 7 and 10 by 8 ...15s. 0d.

We do not pledge ourselves to execute large orders for small squares at the above prices, but only as far as they turn up in cutting. Should any quantity of small squares be required, a special contract is necessary.

MILK PANS 2s. to 6s. each, Metal Hand-frames, Tiles, and Slates; Propagating and Bee Glasses from 2d. each; Cucumber Tubes, 1d. per inch; Peach Glasses, 10d. each; Wasp Traps, 3s. 6d. per dozen; Pastry Slabs, Hyacinth Glasses and Dishes Shades for Ornaments, Fish Globes, Plate and Window Glass of every description, and Lamp Shades. Lactometers for trying the quality of Milk, 4 tubes, 7s. 6d; 6 tubes, 10s. Self-registering Thermometers for Greenhouses, Horticultural Glass, &c.

From the *Gardeners' Chronicle*, December 8, 1849:

"As for the article substituted for Rough Plate, and which is actually in the market for the purpose of imposing upon gardeners, it is wholly unfit for any horticultural purpose. The best samples of it which we have yet seen is sold by Mr. JAMES PHILLIPS, 116, BISHOPSGATE STREET, LONDON."

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T. MILLINGTON'S SHEET GLASS, which is of the best description, varying from 16 to 32 ounces, at from 2d. per foot and upwards; 100 feet and 200 feet cases of large Sheet Glass, for cutting up, at 2½d. per foot. British Plate Glass, from 1s. 2d. to 2s. per foot, according to size. Patent Rough Plate Glass, from ½ to 1 inch in thickness, from 4d. per foot upwards. Glass Slates and Tiles. Milk Pans from 12 to 24 inches diameter, from 2s. to 5s. each Cucumber Tubes, from 12 to 24 inches long, at 1d. per inch. Lactometers, 7s. 6d. each. Wasp Traps.—Lists may be had, on application at the Warehouse, 87, Bishopsgate-street Without, same side as the Eastern Counties Railway.

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See the *Gardeners' Chronicle* first Saturday in each month.

IMPORTANT TO GENTLEMEN, FARMERS, AND GARDENERS.

TO BE DISPOSED OF, the produce of Two Acres of POTATOES, from Mr. Sangster's prepared cuttings, on Mr. Wm. Weller's Farm, near the Falstaff Inn, on the road from Gravesend to Chatham, on the 30th inst., and the three following days, while they are being taken up. They are free from disease, and first-rate quality. Those who may not be able to attend, will please to forward their orders early (as the stock is small), to Messrs. HAY, SANGSTER, and Co., Nurserymen and Seedsmen, Newington Butts, London, with Post-office orders, payable to JOHN SANGSTER, Borough, which will meet due attention.

PRICE ON THE GROUND.

York Regents	... 8s.	per bushel,	21s.	per sack of 3 bushels.
American Natives	... 8s.	do.	21s.	do.
Soden's Early Oxford	10s.	do.	27s.	do.

Delivered at Rochester, or the Railway Station, at 1s. per bushel extra, including bag and sack.

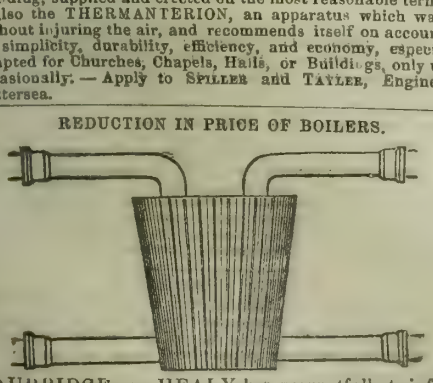
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Also the THERMANTERION, an apparatus which warms without injuring the air, and recommends itself on account of its simplicity, durability, efficiency, and economy, especially adapted for Churches, Chapels, Halls, or Buildings, only used occasionally. — Apply to SPILLER and TAYLER, Engineers, Battersea.

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BURBIDGE AND HEALY beg respectfully to inform their Friends, in consequence of the present reduced price of iron, they are enabled to make a considerable reduction in the price of their Boilers. The price will be, now:

10 in.	will warm	50 ft.	4 in. pipe	... £1	15 0
12 in.	do.	75 ft.	4 in. do.	... 2	5 0
14 in.	do.	100 ft.	4 in. do.	... 2	15 0
16 in.	do.	150 ft.	4 in. do.	... 3	10 0
18 in.	do.	250 ft.	4 in. do.	... 4	10 0
21 in.	do.	350 ft.	4 in. do.	... 5	10 0
24 in.	do.	450 ft.	4 in. do.	... 7	0 0

NEW PATTERN BOILERS.

25 in.	will warm	600 ft.	4 in. pipe	... 11	10 0
30 in.	do.	800 ft.	4 in. do.	... 15	15 0
36 in.	do.	1500 ft.	4 in. do.	... 25	0 0

All Boilers with double arms, up to 18 in., 5s. extra; to 24 in., 10s. extra; all above the same price.

130, Fleet-street, London, Sept. 7.

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HOLLAWAY AND SON are instructed to sell by Auction, on WEDNESDAY, 24 October, a THRESHING MACHINE (nearly new), adapted for Steam or Water Power, producing at one operation a sample ready for market, and (being fitted with Clyburn's Separater) perfectly uniform in size. Also a most valuable collection of Agricultural Implements, many of them prize ones at the Royal Agricultural Society's Shows, and selected from the best makers, regardless of distance. Also 300 prime Leicester Sheep, store beast, &c., the property of Mr. JAMES BIGGS, Desborough, Northamptonshire, who is leaving his Farm. The machine may be seen in operation from 9 to 11 o'clock on the morning of Sale, at which hour the Sale will commence. Desborough is five miles from Market Harborough Station, Rugby and Stamford Railway,

FOR WATERING GARDENS, BREWERS' USE, &c.
FLEXIBLE INDIA-RUBBER HOSE PIPES.

JAMES LYNE HANCOCK, Sole Licensee and Manufacturer of the PATENT VULCANISED INDIA-RUBBER PIPES and TUBING.

These Pipes are well adapted for Watering Gardens, conveying Liquid Manure, racking Beer and Cider, Gas Fittings, Chemical and all purposes where a perfectly sound WATERPROOF and FLEXIBLE PIPE is required.

Hot Liquors or Acids do not injure them. No oil or dressing is required in using them. They do not leak from remaining out of use, are permanently Flexible in all Temperatures, and are therefore particularly suitable for Fire Engines; and, from their not leaking, are found exceedingly useful in conveying hot or cold water to baths in dwelling houses and such like purposes.

A LIGHT VULCANISED INDIA-RUBBER HOSE is now manufactured for conducting Water and Fluids, at the following prices per foot:

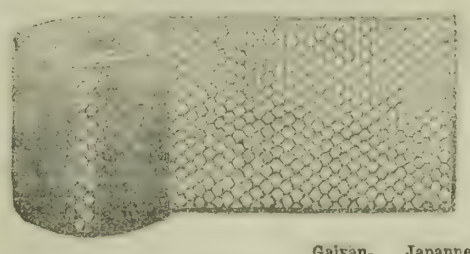
Size.	½ in.	⅝ in.	¾ in.	1 in.	1½ in.	2 in.	2½ in.	3 in.
1 ply ...	0s. 5d.	0s. 6d.	0s. 8d.	0s 10d.	1s. 0d.	1s. 2d.	1s. 4d.	1s. 6d.
2 ply ...	0 8	0 9	1 0	1 2	1 5	1 8	2 0	2 3
3 ply ...	0 11	1 0	1 3	1 6	1 10	2 2	2 9	3 3

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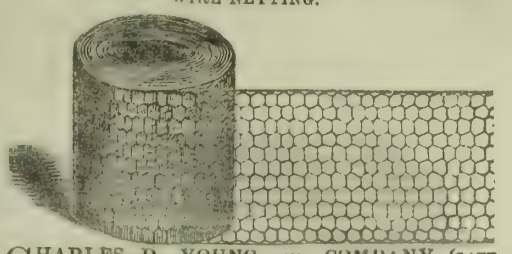
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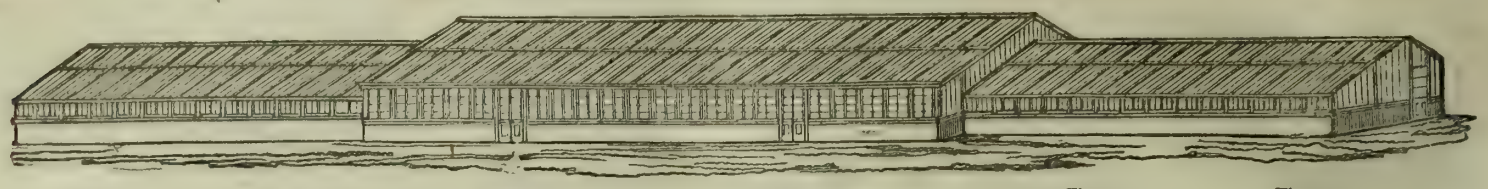
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*** Our Autumn Catalogue of Forest Trees, Fruit Trees, and Shrubs will be ready in a few days.

BASS AND BROWN'S AUTUMN CATALOGUE is now ready. It contains Descriptive Priced Lists of Superb Seedling and other Ranunculi, Gladioli Early and Double Tulips; also Priced Assortments of Choice Imported Dutch Hyacinths, Narcissus, Iris, Jonquils, Crocus, the Lancifolium and other Lilies, with a great variety of other bulbs and dry roots. The latter part contains Descriptive Lists of Choice and Select Roses, a few New and other desirable Evergreen and Flowering Shrubs, Hardy Climbing and Hardy Herbaceous Plants, Prize Gooseberries, and other choice fruits, &c.

A separate List of Geraniums and other new and select plants at reduced prices. Catalogues forwarded, prepaid, for two penny stamps.

Our Foreign Bulbs have arrived in fine condition.

Seed and Horticultural Establishment, Sudbury, Suffolk.

WOODLANDS NURSERY, MARESFIELD, near UCKFIELD, SUSSEX.

WM. WOOD AND SON having with much care made a choice Selection of the best CINERARIAS from those sent out during the last two seasons, and having a fine stock of healthy plants, that will bloom well during the ensuing winter and spring, beg to offer them on the following terms, viz.:

12 very superb new varieties	18*s.* 0*d.*
24 ditto ditto	30 0
12 new Fuchsias of 1850	18 0
12 new Verbenas of 1850	15 0
24 ditto ditto	25 0
12 new Petunias of 1850	18 0
Superior mixed double Hollyhocks, per dozen	6 0
Superb named ditto, per dozen	18 0

TILEY'S VIOLA ARBOREA, OR PERPETUAL TREE VIOLET.—VIOLA ARBOREA, or the PERPETUAL TREE VIOLET (true).—In answer to numerous inquiries for the above, and great satisfaction given by the plants sent out last season by EDWARD TILEY, he begs to state that he has this year a fine stock of the above beautiful DOUBLE VIOLET now to dispose of, which he can highly recommend, this being the proper time for making beds or potting. They are beautifully scented; the blooms are as large as the double blue Hepatica; they bloom freely from August till the end of May, and are perfectly hardy. Twelve of these plants grown in pots will scent a large greenhouse, and a small bed, 9 feet long by 3 feet wide, will be sufficient to furnish a family with bouquets the whole of the winter and the spring. They should be planted in rather a dry situation and a loose soil, as the Violet will thrive and bloom finer than in wet or clay borders.

E. T. has been informed by the gentleman that introduced it into this country, that he has seen them growing in the thickets of Persia to the height of 4 feet, with large bushy heads to them, and hundreds of blooms on them at the same time. Large bushy plants, 6*s.* per dozen; smaller ditto, 3*s.* per dozen; or 1*l.* per hundred.

Also he has a fine stock of that splendid YELLOW VIOLET, or VIOLA LUTEA, which has been so much admired at the London exhibitions. In colour it is equal to the Crocus. Strong bushy plants 2*s* 6*d.* each; or smaller ditto, 1*s* 6*d.* each.

KITLEY'S GOLIAH STRAWBERRY.—Strong well rooted plants at 3*s.* per dozen.

True BATH COS LETTUCE SEED, 1*s.* per packet.

Extra fine SWEET-WILLIAM SEED, saved from 24 distinct varieties, 1*s.* per packet.

ANTIRRHINUM SEED from all the best varieties, 1*s.* per packet.

WINTER CUCUMBER.—Lord Kenyon's Favourite, 2*s.* 6*d.* per packet.

The whole or any quantity of the above will be sent, postage and package free, to any part, on receipt of a Post-office order, or the amount in penny postage stamps.

Sold by EDWARD TILEY, Nurseryman, Seedsman, and Florist, 16, Pulteney-bridge, Bath.

CHOICE SEEDLING CALCEOLARIAS AND CINERARIAS.

JOHN HENCHMAN begs to state that he has a few hundreds of choice seedlings to spare, from the stock raised for his own growth, at 2*l.* per 100. The seed was saved with great care from choice varieties, and the plants are free and healthy. The Cinerarias will commence blooming in February and March, and the Calceolarias in April and May, and will continue to bloom all the summer. Orders amounting to 2*l.* sent carriage free to any part of England. A few packets of Calceolaria seed at 1*s.* and 2*s.* 6*d.* each. A remittance requested from unknown correspondents.

Edmonton, near London.

SPLENDID NEW GERANIUM—"THE VILLAGE MAID."

HENRY WALTON, FLORIST, &c., Edgend, Marsden, near Burnley, Lancashire, begs to offer to his kind patrons and the public in general his splendid light SEEDLING GERANIUM, "THE VILLAGE MAID," of which the following description was given in the Gardeners and Farmers' Journal, July 13, 1850: "Your seedling is a noble flower; form good; upper petals purplish crimson, shading to bright rose, veined with black, beautifully margined with white; the lower petals well shaped, of the purest white, almost resembling frosted silver, their exquisite consistency inducing this magnificent appearance. We are averse to eulogising a Pelargonium on the inspection of a single pip, but the universal beauty of yours has induced the exception." Opinion of Mr. Whomes, Windsor Nursery: "Lower petals stout and decided good white, with great breadth; the upper petals finely formed and well covered; a decided beat on Arnold's Virgin Queen." Opinion of Mr. E. Tiley, Nurseryman, Pulteney Bridge, Bath: "I have received your Geranium blooms, which I have shown to two or three Geranium growers, and they were of the same opinion as myself—that it is one of the best shaped flowers yet grown, and very distinctly marked."

H. W. can with confidence recommend the above as a fine trusser and good habit. Strong plants, well established, 1*l.* 1*s.* The usual allowance to the Trade, and one over when three are taken.

H. W. also begs to inform his numerous patrons in general that his Autumn Catalogue of Geraniums, Fuchsias, Cinerarias, Hollyhocks, &c. &c., is now ready, and may be had on application, inclosing one stamp.

ROSE CATALOGUE.

H. LANE AND SON, Great Berkhamstead, Herts, will send their New CATALOGUE to all their old customers free, and new applicants may have it by enclosing two penny stamps. Those who are about planting Pleasure Grounds, &c., should inspect H. L. and Son's Nurseries (about 50 acres), as they have a fine healthy stock of some thousands of Cedrus Deodara, 2 to 4 feet; Araucarias, 2 to 3 feet; Abies Douglasi, from seed, 4 to 5 feet; with all the leading Pinus. Rhododendrons, all the hardy varieties from white to crimson, growing in loam, from which they remove readily; also the hybrids of Sinensis, greenhouse varieties; Azaleas, best Ghent; with a general collection of Trees and Shrubs, both for the Pleasure Ground and Park; also of Fruits, Catalogues of which may be obtained by enclosing two penny stamps. The stock of Plants at these Nurseries is kept constantly removed, to ensure success, and not drawn up to be sold at a price to deceive the public. Double Camellias, and Greenhouse Azaleas, 1 to 4 feet—prices given on application.

CAMELLIAS, CHRYSANTHEMUMS, &c.

CHANDLER AND SONS, NURSERYMEN, Vauxhall, London, are now sending out fine young Plants, with flower-buds, of all the leading sorts of CAMELLIAS, at 30*s.* per dozen, package included; also good Plants for flowering this autumn of the best and newest varieties of CHRYSANTHEMUMS, at 12*s.* per dozen, package included.

CHANDLER and SONS have also to offer a fine stock of large Plants of China Arbor-vitæ, Hollies, common Laurel, Box, Scarlet Arbutus, &c., at very moderate prices.

DUTCH BULBS, EARLY FLOWERS FOR THE WINTER AND SPRING ADAPTED FOR BLOOMING IN-DOORS AND IN THE BORDERS. — The undersigned having received their annual importation of DUTCH BULBS from Haarlem, offer the following choice collection for 10*s.*, viz.: Half-dozen first-rate Hyacinths for glasses, Half-dozen good Hyacinths for pots, 50 Crocuses, four separate colours; 50 Double Snowdrops, Half-dozen Double Van Thol Tulips, Half-dozen Early Van Thol Tulips, 1 dozen Double White Sweet-scented Narcissus, Half-dozen Double Jonquils, 1 dozen Winter Aconites, 25 splendid Mixed Tulips, and 1 dozen best Mixed Double Anemones.—CLARKE and COMPANY, Seedsmen and Florists, 86, High-street, opposite the Town-hall, Borough, London.

GERANIUMS.

JOHN CATTELL has now ready to send out fine healthy plants of the following new and splendid sorts, at the prices annexed: Prince of Orange, 10*s.* 6*d.*; Nandee, 7*s.* 6*d.*; Nonesuch, 10*s.* 6*d.*; Christabel, 7*s.* 6*d.*; Lord Gough, 5*s.*; Lord Stanley, 5*s.*; Crispina 5*s.*; Satisfaction, 5*s.*; the set of eight, including package, 40*s.* The above are Hoyle's set of eight, as sent out in November 1849, at 21*s.* and 31*s.* 6*d.* each. Twelve of the following very superior sorts, mostly new ones in 1848, purchaser's selection, package included, for 24*s.* (Those with F are fancy varieties): Salamander, Oriflame, Rosamond, Abd-el-Kader, Brilliant, Virgin Queen, Windsor Castle, Crusader, Flamingo, Mont Blanc No. 2, Forget-me-Not, Alboni (F), Hero of Surrey (F), Jenny Lind (F), Odorata magnifica F). Every sort of the above ought to be in the most unique collection.

The best and most distinct of the older kinds, both Fancy and Florist varieties, 12*s.* per doz. Seedled sorts, in 12 varieties, 8*s.*; Flower of the Day, strong, 10*s.* 6*d.* each.

DUTCH AND OTHER BULBS.

J. C. begs to observe that his collection of the above have arrived in fine condition, a priced Catalogue of which is now ready, and may be had on application by enclosing a penny stamp. He would particularly call attention to his very splendid Seedling Lilium speciosum or lancifolium, eight varieties of which are entered in his Catalogue, worth adding to every collection, as they come into flower a fortnight before punctatum, and vary in colour from punctatum to deeper than Speciosum rubrum. Also to his fine collection of Amaryllis, &c. A remittance or reference from unknown correspondents.

Westerham, Kent, Sept. 28.

BURMAN'S "MRS. BURMAN," PINK, warranted one of the most perfect ever offered, 5*l.* per pair.

LIGHTBODY'S "LORD JEFFERY," PANSY, has been much admired, comes in fine character throughout the season, and has been awarded a certificate of "first class."—Per plant, 5*s.*

Strong healthy plants of the above superb flowers are now ready. Large collections of the finest show varieties of Tulips, Auriculas, Pinks, Pansies, Carnations, &c. The roots of his seedling Ranunculus (which surpass all other varieties) are this season unusually fine. Catalogues may be had by enclosing a postage stamp.—GEORGE LIGHTBODY, Falkirk, N.B.

TO NURSERYMEN, FLORISTS, &c.

J. LINDEN, late of Luxembourg, begs respectfully to inform the above that he has removed his Establishment to 74, Chaussée d'Haecht, Faubourg de Schaerbeck, Bruxelles; and also to state that his fine collection of ORCHIDACEOUS PLANTS has been enriched by many recent novelties, which he offers at moderate rates.

Orders received through his London Agents, BETHAM and BLACKITH, Custom-house and General forwarding Agents, Cox and Hammond's Quays, Lower Thames-street, London.

COCHIN CHINA FOWLS.—A few well bred Birds of this season for sale. For particulars.—Apply to Messrs. JESSOP BROTHERS, Nursery Gardens, Cheltenham.

DUTCH BULBS FOR EARLY PLANTING.

HYACINTHS, named, new and beautiful varieties, distinct colours, per dozen	12*s.* 0*d.*
HYACINTHS, suitable for either pots or glasses, named, various colours, per dozen	6 0
HYACINTHS, not named, but in separate colors, p. 100	21 0
POLYANTHUS NARCISSUS, best sorts, named, from 4*s.* per dozen, to	6 0
TULIPS, Early Double and Single, named, the most showy varieties, per dozen	2 0
CROCUS, named, including all the best and newest varieties, per 100	2 6
CROCUS, Dutch, mixed, all colours, per 1000	12 0

The above, as well as every other variety of roots suitable for autumnal planting, may be had of

WILLIAM DENYER, Seedsman and Florist,
82, Gracechurch-street, near the Spread Eagle, London.

N.B. Descriptive and Priced Catalogues can be had on application. No charge for packages.

TULIPS, HYACINTHS, RANUNCULUSES, ANEMONES, LILIUM LANCIFOLIUM, GERANIUMS, AURICULAS, AND CARNATIONS.

HENRY GROOM, Clapham Rise, near London, by Appointment FLORIST TO HER MAJESTY THE QUEEN, and TO HIS MAJESTY THE KING OF SAXONY, begs to recommend to the attention of the Nobility, Gentry, and Amateurs, his extensive collection of the above Flowers, which he can supply of the finest quality at the following moderate prices. He begs to state that this is a good season of the year to make a selection of the various kinds.

100 TULIPS, in 100 superfine sorts, named	£7 7 0
100 „ in 50 „ „	5 5 0
Superfine mixtures, per 100, from 6*s.* to 21*s.*	
25 HYACINTHS, in 25 superfine sorts, named	1 5 0
Fine named sorts, per doz.	0 9 0
100 RANUNCULUSES, in 100 superfine sorts, named	2 10 0
Superfine mixtures, per 100, from 5*s.* to 21*s.*	
100 ANEMONES, in 50 superfine sorts, named (new collection)	2 2 0
Superfine mixtures, per 100, from 6*s.* to	0 10 6
„ „ single, per 100	0 5 0
LILIUM LANCIFOLIUM ALBUM, each, from 1*s.* to	0 2 6
„ „ punctatum, each, from 3*s.* to	0 10 6
„ „ roseum, each, from 3*s.* 6*d.* to	0 10 6
„ „ rubrum or speciosum, each, from 3*s.* 6*d* to	1 1 0
„ „ cruentum, each, from 5*s.* to	0 10 6
A new Collection of HYBRID SEEDLING LILIES, six sorts, named for	0 15 0
25 GERANIUMS, in 25 superfine sorts, named	3 3 0
Fine varieties, named, per doz., from 12*s.* to	0 18 0
25 AURICULAS, in 25 superfine sorts, named	2 10 0
Good named varieties, per doz.	0 18 0
12 pairs CARNATIONS, in 12 superfine sorts, named / 12 „ PICOTEES, „ „	2 10 0

H. GROOM begs to say that his CATALOGUE is ready, and will be forwarded by post on application.

NEW CAMELLIAS, &c.

YOUELL AND CO., possessing an extensive Stock of all the new and very best varieties of the above, in beautiful healthy plants, well furnished with flower-buds, beg to offer them at 30*s.* per dozen, package included. Catalogues can be had on application.

YOUELL and CO. also beg to call attention to the following:

ERICAS, of the best autumn, winter, and spring-flowering kinds, 6*s.* to 9*s.* per dozen

EPACRIS, ditto ditto, 9*s.* to 12*s.* per dozen.

APHELEXIS humilis, macrantha purpurea, speciosum, superbum, and other fine sorts, 9*s.* per dozen.

STATICE MACROPHYLLA, a beautiful Conservatory or Greenhouse Plant, 3*s* 6*d* each.

MITRARIA COCCINEA, a splendid hardy shrub, with large scarlet flowers, fine bushy plants, 18*s.* per dozen.

FUCHSIAS, all the new and best varieties of 1850, 18*s.* per dozen.

VERBENAS, ditto ditto, 1850. 12*s.* per dozen.

CORRÆA speciosa major, Cooperii, bicolor, &c., in fine bushy plants, for winter flowering, 12*s.* per dozen.

PINKS, all the finest first-class show varieties, comprising such as have been exhibited in all the winning stands at the past metropolitan exhibitions, 12*s.* and 18*s.* per dozen pairs, and can be sent post free (September the best month for planting).

HYACINTHS, a superb collection of all the best kinds, known, for glasses or pot culture, at 9*s.*, 12*s.*, and 18*s.* per doz.

Catalogues can be had on application. Strong plants of their new Chrysanthemums for autumn flowering may still be had, for particulars of which see their Advertisement of Aug. 31. They also continue sending out packets of their fine Anemone Seed.—Royal Nursery, Great Yarmouth, Sept. 28.

ROSES.—The Descriptive CATALOGUE of ROSES, 20th Edition, for the present autumn, by THOMAS RIVERS, is now ready for delivery; it will be sent as usual, gratis, to all known correspondents. Applications enclosing two postage stamps will also be promptly attended to. The above edition, entirely re-written and arranged, contains only the most select Roses, both old and new, so that the purchaser will not be confused by a lengthened list of mere nominal varieties.
Sawbridgeworth, Herts.

SEED POTATOES FOR AUTUMN PLANTING.—FOR SALE, a few Tons of TAYLOR'S FORTY-FOLD, a choice round Potato, almost as early as the Ashleaf, equal in keeping and table qualities to the best York Regents, a good cropper, and proved to resist the disease better than any other variety, escaping in some neighbourhoods in the midst of infection. Price of picked middle size (or large size) for seed, 7*s.* per cwt., or 6*l.* 10*s.* per ton. Small seed 5*l.* 10*s.* for cash.—Apply to Mr. W. J. KNIGHT, General Agent, Bridgewater, Somerset.

NEW ROSE CATALOGUE.

WM. WOOD AND SON have the pleasure of announcing that their DESCRIPTIVE CATALOGUE for the ensuing season is now ready. In addition to the splendid collection enumerated in former Catalogues, the present edition contains many varieties of first-rate merit.
As heretofore, the Catalogue will be duly forwarded to all who have favoured W. W. and S. with their commands, and may be had Gratis on application; also Catalogues of Ornamental Trees and Shrubs, Coniferæ, American, Herbaceous, and Greenhouse Plants; and Descriptive Catalogues of New and Choice Fruit-trees, new Verbenas, Fuchsias, Cinerarias, &c. &c. The Trade Catalogue is also now ready.
Woodlands Nursery, Mar-sfield, Uckfield, Sussex.

DUTCH BULBS AND OTHER FLOWER ROOTS.

THOMAS JACKSON AND SON respectfully announce that they have received, in fine condition, their annual consignment of the above; and as they import none but those of the largest size and best quality, purchasers may rely upon having fine roots.
Good mixed double Hyacinths for Borders, 3*s.* 6*d.* per dozen.
Fine named double and single Hyacinths for Glasses or Pots, from 6*s.* per dozen.
The newest Crocuses, and all other Bulbs at the same moderate rate.

ROYAL GARDENS, HAMPTON COURT.

Having added by lease these famous Gardens to their previously extensive premises, "T. J. and Son" now possess the largest Glass Establishment in the Trade. To their General Stock, they respectfully invite the inspection of Noblemen, Gentlemen, and Purchasers, who will find in fine health and great quantity (in the Fruit Department), Fruiting and Succession Pines, Figs, Vines, Cherries, Strawberries, &c., in pots for forcing; (in the Flower Department), Orchidaceous, Stove, Greenhouse, and Herbaceous Plants; (and in the open Ground), Fruit, Ornamental, and Forest Trees, Shrubs, Roots, and General Nursery Stock on Sale at the lowest remunerative prices.—Nursery and Seedsmen, Kingston, Surrey, Sept. 28.

MESSRS. STANDISH AND NOBLE have to offer the following very desirable plants as under; at the same time they beg to observe that they supply every kind of Nursery Stock, Catalogues of which can be had on application.
AZALEA INDICA, "GLORY OF SUNNING-HILL."—In general appearance this plant, when in bloom, reminds one of Nerium splendens, producing large double rose-like flowers of the richest pink; good plants, 3*s.* 6*d.* to 10*s.* 6*d.* each.
CRYPTOMERIA JAPONICA SEEDLINGS.

1 year	12*s.* per doz., or 63*s.*	per 100.
2 years	18*s.* ,,	105*s.* ,,
3 years	30*s.* ,,	210*s.* ,,

1 foot 6 inches to 2 feet 6 inches high, 60*s.* per dozen.
2 feet 6 inches to 3 feet 6 inches high, 90*s.* ,,
3 feet 6 inches to 4 feet 6 inches high, 126*s.* ,,
And larger plants in proportion.
The whole of the above, with the exception of the one and two years seedlings, were planted into the open border last spring, are fine robust specimens, and fit for immediate planting.
CRYPTOMERIA JAPONICA var. NANA, a very singular dwarf variety, 10*s* 6*d.* to 21*s.*
CUPRESSUS FUNEBRIS, or WEEPING CYPRESS. (North of China.)
6 inches high, 10*s.* 6*d.* each; 12 to 15 inches, 20*s.* each.
These plants are from the open border—robust specimens fit for immediate planting.
15 ins. to 24 ins., 31*s.* 6*d.* each; 24 ins. to 30 ins., 42*s.* each.
CUPRESSUS GOVENIANA. (California.)
6 to 9 inches, 7*s.* 6*d.* each; 9 to 15 inches, 10*s.* 6*d.* each.
15 to 24 inches, 20*s.* each; 2 to 3 feet, 31*s.* 6*d.*
CUPRESSUS LAMBERTIANA, 2 feet, 3*s.* 6*d.* each.
CUPRESSUS THURIFERA, var. ELEGANS, perfectly hardy.
1 foot to 2 feet high, 3*s.* 6*d.* to 5*s.* each.
CEPHALOTAXUS FORTUNII, strong plants, 31*s.* 6*d.* each.
For description, see "Botanical Magazine," by Sir W. Hooker.
FORSYTHIA VIRIDISSIMA.
1 foot 6 inches to 2 feet ... ... 1*s.* 6*d.* to 2*s.* 0*d.* each.
2 feet to 3 feet ... ... ,, 2*s.* 6*d.* ,,
3 feet to 4 feet ... ... 3*s.* 6*d.* ,, 5*s.* 0*d.* ,,
Fine bushy plants from open border fit for immediate planting.
JASMINUM NUDIFLORUM ... ... 1*s.* 0*d.* each.
Flowering plants ... ... 3*s.* 6*d.* ,,
This is a very desirable winter flowering hardy plant, producing a profusion of flowers of the richest yellow from December to February.
QUERCUS SCLEROPHYLLA. (North of China.) This is undoubtedly the most remarkable of all evergreen Oaks, having foliage as large as the Spanish Chestnut, and more than twice the substance. Strong seedling plants 42*s.* each.
QUERCUS INVERSA. (North of China.) Also evergreen, with smooth entire leaves, having remarkably large male inflorescence. Seedlings, 42*s.*
TAXODIUM SEMPERVIRENS.
1 foot to 1 foot 6 inches ... ... 2*s.* to 2*s.* 6*d.* each.
1 foot 6 inches to 2 feet 6 inches ... 3*s.* 6*d.* to 5*s.* ,,
3 to 4 feet ... ... 7*s.* 6*d.* to 10*s.* 6*d.* ,,
Larger in proportion.
VIBURNUM PLICATUM. (North of China.) A noble shrub, producing in great profusion large globular heads of flowers of the purest white. Strong plants, 21*s.* each.
WEIGELIA ROSEA.
6 inches high ... ... 1*s.* 0*d.* each.
1 foot to 1 foot 6 inches ... ... 1*s.* 6*d.* to 2*s.* 6*d.* each
1 foot 6 inches to 2 feet ... ... 3*s.* 6*d.* to 5*s.* 0*d.* ,,
These last are fine bushy flowering plants.
Selections of the finest Autumnal Flowering Roses.
Standards ... ... 15*s.* 0*d.* per dozen.
Half Standards ... ... 12*s.* 0*d.* ,,
N.B.—Messrs. STANDISH and NOBLE have a large quantity of very fine common Laurels, from 2 feet to 6 feet high; also Spruce Fir, from 2 feet to 4 feet high; which can be sold very cheap, particulars of which can be had on application.
Bagshot Nursery, Sept. 28.

TO GARDENERS, &c.

GUTTA PERCHA TUBING for Watering Gardens, spreading Liquid Manure, &c., may be had joined up to any length. Waterproof Soles for Boots and Shoes. Thread for tying up Plants. Gutta Percha Canvas suitable for nailing up Trees, &c.—Manufactured by THE GUTTA PERCHA COMPANY PATENTEES, 18, Wharf-road, City-road, London.

HYACINTHS AND OTHER ROOTS.

RENDLE'S NEW PRICED CATALOGUE OF BULBOUS ROOTS

Is just published, and can be had on application, gratis. It contains a DESCRIPTIVE *List of all the best Hyacinths, Tulips, Iris, Ranunculus, Anemones, Crocus, Liliums, Gladiolus, Ixia, &c., with some excellent* CULTURAL ADVICE *as to the best method of growing them. It will be found of great service to all growers.*
The "Collections of Seeds" sent out by us having given such universal satisfaction, we have been induced to offer the following "Collections of Roots," which we are certain will please every purchaser.
For the List of Roots contained in the Collections, see our new Book Catalogue.

COLLECTIONS OF BULBS.	£	*s.*	*d.*
No. 1 Collection, all the most approved sorts ...	3	0	0
No. 2 Collection, containing smaller quantities ...	2	0	0
No. 3 Collection, for a small Garden	1	0	0

For details of Collections, see Catalogue.

100 Hyacinths in 100 very fine sorts. Purchaser's selection	3	0	0
100 Hyacinths in 50 fine sorts. Purchaser's selection	2	10	0
50 Hyacinths in 50 superior sorts ditto ...	1	10	0
50 Hyacinths in 25 superior sorts ditto ...	1	5	0
24 Hyacinths in 12 superior varieties ditto ...	0	12	0
12 Hyacinths in 12 superior varieties ditto ...	0	6	0

Where the selection of Hyacinths is left to W. E. R. and Co., they request to be informed whether they are intended for water, pots, or the open ground; also whether single or double Hyacinths are preferred. When the choice is left to them they generally send about two-thirds double, and one-third single, which gives a greater variety. Purchasers may rely upon really good sorts being selected when the choice is left to ourselves, and we will guarantee to give them satisfaction.
For Catalogues, and further information, apply to
WILLIAM E. RENDLE AND Co.,
Seed Merchants, Plymouth.
N.B. Our Hyacinths and other roots have just arrived from Holland in excellent condition.

FERGUSON'S SUMMER AND WINTER BEDDING-OUT PLANTS.—Ladies and Gentlemen, if you want choice for the summer you will find it advantageous to order now for May, 1851. I have room to winter almost an unlimited number; and where the reference is respectable, and a doubt of their genuine quality, I will not wish a remittance till they prove worthy.
I also offer, at double the price, the following, in about equal quantities, for filling the beds in winter, and which can be removed to a reserved place before planting the Verbenas, &c., in May, and returned again and again, without injury. Nice plants of Aucuba japonica, Chinese Arbor-vitæs, Junipers, Green Holly, Laurestinus, Tree Box, Common and Portugal Laurel, Cotoneaster microphylla, Yew, Berberis aquifolium, &c.
For larger stuff, see other advertisements. As the rail is completed to Aylesbury and Buckingham, D. F. invites inspection. For specimen plants, the former; small, the latter.
DAVID FERGUSON, Nurseryman, &c., near Buckingham.

KITLEY'S "GOLIAH" STRAWBERRY.

ROBERT WHIBLEY is supplying fine plants at a very reduced price, for cash, viz., 2*s.* per dozen, or 10*s.* per 100. Also select Chrysanthemums, in great variety; blooming plants in 5-inch pots, from 6*s.* per dozen. Lists can be had.

SELECTED NEW SCARLET GERANIUMS.

The following superb sorts will be ready on and after the 21st of October: Flower of the Day, 10*s.* 6*d.* each; Phenomenon, Tom Thumb's Master, Gem of Scarlets, Tom Thumb Improved, Symmetry, Pink Pet, Cerise Unique, Punch, Hydrangæflora, Queen of Summer, Magnum Bonum, Perpetual, Lady Agnes Byng, Jenny Lind, Cottage Maid, Trentham Scarlet, 12*s.* per dozen, or 11 and Flower of the Day for 20*s.* Orders selected in the rotation received.
Chester Nursery, Kennington, London.

NEW HYACINTH SUPPORT.—HOOPER AND CO., CENTRE AVENUE, COVENT GARDEN MARKET, invite the attention of the Flower-growing Public to their new and perfect
SUPPORT FOR HYACINTHS IN GLASSES.
Its excellence consists in its being neat in appearance, easily applied, keeping the bloom erect almost without being visible, and suited to every size and shape of Hyacinth Glass.
May be obtained of the principal Seedsmen and Florists.

TREES, SHRUBS, ROSES, VERBENAS, &c., FOR THE MILLION.

DAVID FERGUSON, LANDSCAPE GARDENER, CONTRACTOR, PLANTER, &c., offers common Laurels at 1*l.* to 5*l.* per 1000; if 100,000 are taken 10,000 will be added. Good standard Roses, 3 to 6 feet, 5*l.* per 100, and 40*l.* per 1000. Berberis aquifolium, fine, 1*l.* to 3*l.* per 1000. Evergreen Privet, strong, 1*l.* to 1*l.* 5*s.* per 1000. Cotoneaster microphylla, for hedges, &c., fine, 10*s.* per 100, and 4*l.* per 1000. Also large quantities of the following at low prices:—Fine specimen Cedrus Deodara and Pinus excelsa, 4 to 6 feet in height, in pots; fine specimen Arbor-vitæ, Aucuba japonica, Yews, Box, Phillyreas, red Cedars, Araucarias; Scotch, Silver, and Spruce Firs; Larch, Oak, Elm, Ash, Lime, Hornbeam, Hazel, double pink and scarlet Thorns, fine maiden Peaches and Nectarines, worked from trees in the houses on the spot; some of the fruit was exhibited at Regent-street, and received a Banksian Medal, though very inferior to what D. F. has sent to his fruiterer at different times this season, which can be proved; with large quantities of other Fruit Trees. Also first-rate Verbenas, Petunias, Calceolarias, Geraniums, Fuchsias, Anagallis, Salvias, Cupheas, &c., for bedding out, at 1*s.* 6*d.* per dozen, if 5 to 20 dozen are taken; 1*s.* 3*d.* if 20 to 50 dozen are taken; above 50 dozen, 1*d.* each; and if 100 dozen are taken, 5 dozen will be added. Carriage free to London, Birmingham, Leamington, Peterborough, Banbury, Bedford, and all intermediate stations on the North-Western Railway.
Lists marked for selection at the above prices sent free on application; but to those not already in possession of a collection, D. F. advises parties to state the colour and quantity they want, and leave the selection to him; and to those that have no convenience for wintering plants, they will find it advantageous to give their annual orders in August and September for the following spring, as they, on taking five dozen and upwards, will have the choice not only of those marked in the list, but any other bedding out plant, if possible to procure, at equally low prices.
Letters directed Buckingham (where all Post-office orders are requested to be made payable), in place of Aylesbury, reach D. F. one day sooner.

FOR SALE, a new and valuable invention for HATCHING GAME AND POULTRY at all seasons of the year. The apparatus has been thoroughly tested, is perfectly portable, and capable of hatching twice the number of eggs at one-fourth of the cost of any incubator hitherto introduced to the public. A person of energy and capital might realise a large income by effecting a purchase of the invention, and taking out a patent; or a respectable party would be treated with to take a share in the undertaking.—Address, R. S. T., Mr. Newman's, Goat-lane, Norwich.

A LIST OF TERRESTRIAL AND EPIPHYTICAL ORCHIDEÆ,
FOUND IN ASSAM AND THE NEIGHBOURING HILLS.
[Unless specifically mentioned, the Plants are Epiphytes, and from the Hills.]
Apply to Messrs. CHARLES CANTOR AND CO., in Calcutta, who will receive orders for Orchideæ of Assam and the Hills in the vicinity.

1	Oberonia iridifolia	
2	,, species	
3 *b*	Liparis bracteata, Upper	
4 *b*	,, concinna [Assam	
5 *b*	,, anceps	
6 *a*	,, cylindrostachys	
7	,, longipes	
8	Otochilus fuscus	
9	,, species	
10	Pholidota imbricata	
11	,, undulata	
12 *a*	,, articulata	
13 *b*	,, 3 species, new	
14	Cœlogyne flavida	
15	,, undulata	
16 *b*	,, fimbriata	
17 *b*	,, barbata	
18 *a*	,, longicaulis	
19 *b*	,, procera	
20	,, cristata	
21 *b*	,, rigida	
22 *a*	,, Wallichiana	
23 *a*	,, præcox	
24 *b*	,, maculata	
25	,, prolifera	
26 *a*	,, nitida	
27 *a*	,, ocellata	
28 *b*	,, media	
29 *b*	,, elata	
30	,, ovalis	
31 *b*	,, Gardneriana	
32 *b*	Trichasma suavis	
33 *a*	Bolbophyllum umbellatum	
34 *b*	,, Careyanum	
35 *a*	,, flexuosum	
36 *a*	,, Jenkinsii	
37 *a*	Cirrhopetalum cæspitosum	
38 *a*	,, cornutum	
39	,, macrophyllum	
40 *b*	Trias	
41 *a*	Eria paniculata	
42	,, flava	
43 *b*	,, pusilla	
44 *b*	,, densiflora	
45 *b*	,, clavicaulis	
46 *b*	,, planicaulis	
47	,, ferruginea	
48 *b*	,, convallarioides	
49 *b*	,, spec. fl. large, rose-coloured	
50	Aporum anceps, Plains	
51 *a*	,, Jenkinsii	
52	,, acinaciforme	
53	Dendrobium Pierardi, Plains	
54 *b*	,, heterocarpum	
55 *a*	,, Paxtonii	
56 *a*	,, fimbriatum	
57 *a*	,, longicornu	
58 *a*	,, formosum	
59 *b*	,, intermedium nov. spec.	
60 *b*	,, pulchellum	
61 *b*	,, nov. species	
62	,, calceolus	
63 *a*	,, densiflorum	
64 *b*	,, sulcatum	
65 *b*	,, bicameratum	
66 *a*	,, Jenkinsii	
67	,, cœrulescens	
68	,, nobile	
69 *a*	,, Gibsonii	
70 *b*	,, candidum	
71 *b*	,, stuposum	
72 *a*	,, Cambridgea-clavatum [num	
73 *b*	,,	
74 *b*	,, Dalbousianum	
75 *b*	,, Devonianum	
76 *b*	,, Farmerii	
77 *b*	,, Griffithii	
78 *b*	,, transparens	
79 *b*	Dendrobium densiflorum pallidum	
80 *b*	,, Ditto, like the above, but rose-coloured	
81 *a*	,, multicaule	
82 *a*	,, amœnum	
83 *b*	Spathoglottis pubescens, ter.	
84	Arundina bambusifolia, do., partly Plains	
85 *a*	Phaius grandifolius, do.	
86	,, Wallichii, do.	
87 *a*	,, albus, do.	
88 *b*	,, maculatus, do.	
89 *a*	,, Apaturia senilis, ditto Plains	
90 *a*	Eulophia virens, do., do.	
91	Vanda teres	
92 *a*	,, cristata	
93 *b*	,, nov. spec. yellow, streaked with brown	
94	,, nov. spec., dull purple	
95	Camarotis purpurea	
96 *a*	Micropera pallida, partly Plains	
97	Saccolabium retusum	
98 *a*	,, micranthum	
99 *b*	,, rigidum	
100 *b*	,, carinatum	
101 *b*	,, calceolare	
102 *b*	,, curvifolium	
103 *b*	Sarcanthus junceus, Plains	
104 *b*	,, affinis, do.	
105 *b*	,, oxyphyllus, do.	
106 *a*	Agrostophyllum Khasyanum	
107 *a*	Œceoclades ampullacea	
108	Aerides affine, partly Plains	
109 *a*	,, multiflorum, Plains	
110 *b*	,, suaveolens, do.	
111	,, odoratum, do.	
112 *b*	,, refractum	
113 *a*	Xiphosium acuminatum, *Griffith.*	
114 *b*	Acanthophippium Silhetense, terrest., Plains	
115 *a*	Cymbidium giganteum	
116 *a*	,, lancifolium	
117	,, aloifolium, Plains	
118	,, pendulum, do.	
119 *a*	,, eburneum, fl. very large	
120 *a*	,, inconspicuum	
121 *a*	,, longipetalum	
122	Euproboscis pygmæa, *Griffith*	
123	Geodorum dilatatum, ter., Plains	
124 *a*	,, candidum, do., do.	
125 *a*	Calanthe densiflora, do.	
126	Platanthera spec., do.	
127	Perityslus elatus, do., do.	
128	,, spec., do., do.	
129 *a*	Habenaria ovigera, do.	
130 *b*	,, 4 new species, do.	
131 *b*	Pogonia, 2 species, do.	
131 *a*	Cyrtosia, do., Gowhatty	
133 *a*	Spiranthes, ditto, Nowgong	
134	Zeuxine sulcata, do., do.	
135 *b*	Anæctochilus Roxburghii ditto	
136 *b*	,, 2 new species, do.	
137 *b*	Cypripedium venustum ditto	
138 *b*	,, insigne, do.	

N.B. Plants not marked are common. Plants marked with an *a*, are found less frequently, and are consequently considered as somewhat rare. Plants marked with a *b* are seldom brought in, and consequently are considered very rare.
Fifty rupees for a box measuring 3 cubic feet, containing 40 to 50 plants of the larger kinds, or 50 to 80 of the middle and smaller kinds. One rupee for a single plant of the common kinds. The rare and very rare in proportion. If any new plants, not discovered before, are sent, a separate charge will be made.
A plant is generally composed of a bunch containing 5 to 10 stems, or more. Those with pseudo-bulbs, 10 to 20 or more; and Aerides, Vanda, Saccolabium and Orchideæ of similar growth, 2 or 3 together.

IMPORTANT TO GENTLEMEN, FARMERS, AND GARDENERS.

TO BE DISPOSED OF, the produce of Two Acres of POTATOES, from Mr. Sangster's prepared cuttings, on Mr. Wm. Weller's Farm, near the Falstaff Inn, on the road from Gravesend to Chatham, on the 14th Oct., and the three following days, while they are being taken up. They are free from disease, and first-rate quality. Those who may not be able to attend, will please to forward their orders early (as the stock is small), to Messrs. HAY, SANGSTER, and Co., Nurserymen and Seedsmen, Newington Butts, London, with Post-office orders, payable to JOHN SANGSTER, Borough, which will meet due attention.

PRICE ON THE GROUND.

York Regents	8*s.* per bushel,	21*s.* per sack of 3 bushels.	
American Natives	8*s.* do.	21*s.* do.	do.
Soden's Early Oxford	10*s.* do.	27*s.* do.	do.

Delivered at Rochester, or the Railway Station, at 1*s.* per bushel extra, including bag and sack.
Newington Butts, London, Sept. 28.

BURBIDGE AND HEALY'S COOKING APPARATUS, combining Sylvester's Patants.—This cooking apparatus possesses greater general advantages than any yet submitted to the public, both as regards strength of material and workmanship; in fact, the laws of heat are so applied as to produce the greatest effect with the least consumption of fuel, without destruction to the apparatus. B. and H. can safely recommend it, from experience, as unquestionably superior to anything of the kind hitherto made. May be seen in daily use at the Craven Hotel, Craven-street, Strand; Stevens' Hotel, Bond-street; Greenwich Hospital; University College Hospital; and is in use by upwards of 200 private families, and at the Manufactory, 130, Fleet-street, London. A prospectus can be forwarded upon application, detailing particulars and price.

NEW SEEDLING STRAWBERRY—MYATT'S "SURPRISE."—This is a variety raised from the British Queen, which it resembles, though of a more robust habit, and a very free bearer, producing a greater abundance of those large angular-shaped Strawberries than any other variety, and finishing off the last fruit of a good size, price 50*s.* per 100.

Also Myatt's Eleanor, 5*s.* British Queen, Globe, Mammoth, Comte de Paris, Hooper's Seedling, Keens' Seedling, Swanston's Seedling, Elton Pine, 3*s.* 6*d.* Fertilised Hautbois, 5*s.* Cuthill's Black Prince, 10*s.* 6*d.* per 100. Kitley's Goliah, 3*s.* 6*d.* per doz., or 20*s.* per 100.—Manor Farm, Deptford.

WATERER'S DESCRIPTIVE CATALOGUE OF AMERICAN PLANTS, &c.

HOSEA WATERER begs to announce his new descriptive CATALOGUE OF AMERICAN PLANTS, CONIFERS, ROSES, &c., is just published, and may be had by enclosing two stamps for postage to HOSEA WATERER, Knap Hill Nursery, Woking, Surrey.

☞ Everybody who has any idea of planting the ensuing autumn should possess themselves of this Catalogue.

AMERICAN PLANTS.

JOHN WATERER'S CATALOGUE OF AMERICAN PLANTS, ROSES, CONIFERS, &c., is now published, and may be had gratis on application. It describes the colours of every Rhododendron worthy of cultivation, thus affording purchasers every facility in making selections.

American Nursery, Bagshot, Surrey.

GEORGE JACKMAN, NURSERYMAN, Woking, Surrey, 1¼ mile from the Woking Station of the South-Western Railway, begs to announce that he has just published a new and complete CATALOGUE of his American Plants, Ornamental Evergreens and Flowering Shrubs, Standard and Dwarf Roses, Fruit and Forest Trees, &c., which may be had gratis on application.

E. FOSTER, ESQ.'S, NEW PELARGONIUMS.

WM. DRAGG is authorised by EDMUND FOSTER, Esq., of Clewer Manor, to send out his new and choice varieties for 1850, Catalogues of which can be had on application. The Rev. Mr. ROUSE has likewise favoured W. B. with the stock of his superb Pelargonium "ALIBI." Other good and approved sorts; for description and price, see Catalogue, which contains lists of Chater's and other new and superb Hollyhocks, Pansies, Pinks, Picotees, Carnations, Roses, Chrysanthemums, &c.; ground and pot roots of show and fancy Dahlias.—Ste- Nursery, Slough, Bucks.

FIRST CLASS SEEDLING GERANIUM.

RUNDLE'S BEAUTY OF MONTPELLIER.—For a description of this valuable flower, see the *Gardeners' Chronicle* of Saturday, Sept. 7. It is a sterling flower, and will be sure to give the greatest satisfaction. Price 20*s.* each. One over on every three to the trade.

Apply to WILLIAM E. RENDLE and Co.,
Nurserymen, Plymouth.

NEW AND CHOICE GERANIUMS,
AT VERY LOW PRICES.
PLANTS WILL BE READY ABOUT THE MIDDLE OF OCTOBER.

WILLIAM E. RENDLE AND Co., Plymouth, have this season a very large stock of the following GERANIUMS, and are enabled to offer them at the
FOLLOWING LOW PRICES.

Purchaser's Selection of Twelve from the following List for Forty Shillings; or without the first three for Thirty Shillings.

FOQUETT'S MAGNIFICENT, FOSTER'S GIPSY BRIDE, FALSTAFF,

Star, Ariel, Blanche, Negress, Cracker, Cassandra, Sundown, Symmetry, Gustavus, Gulielma, Grandiflora, Foster's Victory, Clown, Singularity, Refulgens, Cruenta, Princess, Junii, Rosamond, Harlequin, Emilie, Centurion, and Brilliant.

SCARLETS.—Commander in Chief, Excellence, and Queen of Summer.

FANCY GERANIUMS.

Purchaser's Selection of Twelve from the following List for Twenty-five shillings, or Twenty for Thirty-five shillings.

Alboni (Henderson's), Anais, Bouquet tout fait, Beauty of Winchester, Champion of Devon, Fair Emily, Fairy Queen, Jehu, Jehu improved, Ibrahim Pacha, Jenny Lind, Lady Rivers, Lemon-scented, La belle Africaine, Lady Plymouth, Lady Scarborough, Madame Grisi, Mazeppa, Superb, Madame Celeste, Minerva, Modesta, Magnifica, Nosegay, Pheasant's foot, Prince of Orange, Picturata, Queen Victoria, Quercifolium coccineum, Radula, Rosa odorata, Sidonia, Statiaskii, Unique, and Zelia.

Purchaser's Selection of Twenty from the following List for Twenty shillings.

ARNOLD'S VIRGIN QUEEN (the best white known), Star of the West, Jenny Lind, Hoyle's Crusader, Orion, Marc Antony, Mary Queen of Scots, Rosy Circle, Nourmahal, Margaret, Mount Etna, Desdemona, Hebe's Lip, Aurora, Pluto, Champion, Pearl, Forget-me-not, Sunrise, Isabella, Duke of Cornwall, Conflagration, Black Prince, Mercury, Lady Ebrington, Scarlet Defiance, Rosa Mundi, Distinctus, Admiration, Mustee, and Flora's Flag.

Descriptions of most of the above-named Geraniums will be found in our NEW BOOK CATALOGUE OF PLANTS, which can be had on application for one penny postage stamp.

*** FIRST ORDER WILL SECURE BEST SELECTION.

All Orders above 2l. will be delivered free of carriage to any station on the Great Western, Bristol and Exeter, and South Devon Railways.

Railway and Steam communication from this port to all parts of Great Britian and Ireland.

WILLIAM E. RENDLE AND CO.,
NURSERYMEN, PLYMOUTH.

THE BLACK PRINCE STRAWBERRY, now sending out at 10*s.* per 100.

Also PRACTICAL INSTRUCTIONS FOR THE CULTIVATION OF THE POTATO, containing a Competition Essay for the Prize of 1000 francs offered by the Belgian Government. Also Instructions on the Management of Asparagus, Seakale, Rhubarb, Vegetable Marrow, Scarlet Runner, Strawberry, Melon, and Cucumber; Chicory and Lamb Lettuce as Salads; the Lisianthus Russellianus, and the Tree Mignonette. The Destruction of Woodlice and Green-fly; and Peat Charcoal as a Manure. By JAMES CUTHILL, Horticulturist, Camberwell, London.—Printed for the Author, and sold by him only. Price 2*s.*; or, by post, 2*s.* 4*d.*

PERMANENT PASTURE.

HENRY ROGER SMITHE, of Eastling, Faversham, Kent, engages to supply the Public with the NATURAL GRASSES AND TREFOILS, in mixtures suited to the description of soil which may be named, at 1*l* per acre, allowing 3 bushels. The Seeds to be delivered on the railway. Mixtures for Lawns and old Pastures at an equal reduction. These Seeds are gathered by a gentleman, who, having made them his study from boyhood, now offers the result of his labour for the good of the landed interest, who are so suddenly and un qually taxed.

A reference is required from unknown correspondents.

NURSERIES, CHESHUNT, HERTS.

A. PAUL AND SON respectfully inform their Customers and the Public in general, that their New and Descriptive CATALOGUES of Roses and Hardy Ornamental Flowering Trees and Shrubs will be ready by the 1st of October. Applications, enclosing two stamps for the Rose, and one for the Tree Catalogue, will be immediately attended to.

SAFFRON WALDEN.
SUPERB "DOUBLE HOLLYHOCKS."

WILLIAM CHATER begs respectfully to inform the public, that he is now sending out Plants of his unequalled collection of this ornamental flower. See Catalogue, which may be had on application, by enclosing a postage stamp. Hints on their cultivation given to purchasers, if required.

Saffron Walden, Essex, Sept. 28.

The Gardeners' Chronicle.

SATURDAY, SEPTEMBER 28, 1850.

MEETING FOR THE ENSUING WEEK.
TUESDAY, October 1—Horticultural .....3 P.M.

IN these days, when quacks endeavour to cram their nostrums down simple people's throats, and persuade JOHN BULL that their conundrums are the only things under heaven by which a gardener may hope to prosper, there is some danger that the real principles of horticulture may be lost sight of, and that the simple rules of science and good sense may be abandoned, for a foolish belief in the potency of tiles, and pipes, and pots, and pans, and other trumpery. It is therefore time to declare that good gardening wants no such aids; that the simplest means are those which, in skilful hands, lead to the best results, and that he is the best gardener who produces the greatest profit at the smallest cost.

When the great engineer, with some tackle and a few score labourers, lifted the vast tube of the Menai bridge, he did no more perhaps than a PHARAOH could have accomplished by the united force of 10,000 slaves. But, in the one case we had science, skill, and economy; in the other, brute force and barbarian profusion. Will anyone venture to place the despot on a level with the philosopher? In like manner when a gardener with a clear head, skill, and a glazed box, produces crops that are at the least equal to those obtained in costly hothouses with all the appliances of wealth and material, we must take care not to elevate the owner of the latter, even though he wear a smart coat, and clean linen, to a level with the former, ragged and poor as his apparel may be, and seldom as his wages go to the payment of a washer-woman. The first is the great gardener; the other is infinitely his inferior *as such*, even though he should have a handle to his name.

If any one wishes to apply these observations he will do well to read "CUTHILL'S Practical Instructions,"* for then he will find what simple means are needed to bring about the most perfect results in the branch of gardening to which they refer. We are too little in the habit of meeting with gardening advice to which no exception can be fairly taken, either theoretically or practically, not to draw attention particularly to this little book, in which the reader will find the results of a good cultivator's experience told without humbug and coxcombry. The author is a market-gardener; he gets his living out of a small piece of ground at Camberwell; his interest impels him in every way to observe the utmost possible economy consistent with profit; he therefore eschews all fiddle-faddle schemes for dandifying a kitchen garden; and he tells his readers honestly and fully what he does and how he does it. The goodness of his advice concerning the Potato is attested by the fact that he is not among the serious sufferers by disease.

As it is probable that no crop is worse grown or worse managed, as a whole, than Asparagus, we shall select some of Mr. CUTHILL'S remarks upon that root, in illustration of the foregoing observations. The following is his description of the London market garden method:—"The present plan of making Asparagus beds round London, consists in putting on *an immense quantity of manure*, and trenching the ground three or four feet deep, mixing the manure as the work proceeds. In March the ground is measured out after the following manner; suppose that a fence runs south and north, or otherwise, 3 feet is allowed between it and the first row; a drill is drawn about two inches deep, the seed sown thinly, say six inches or a foot apart, that gives choice of drawing out the weakest, in order that the permanent crop may stand one foot apart. The next row is sown 18 inches from the one just mentioned; then for the alley and two sides of the bed, 5 feet are allowed; then another row of seeds, and so on, that gives two rows to each bed. The first year Onions are generally sowed all over the ground; the second year, Lettuce, or any dwarf-growing vegetable that will not choke the Asparagus, and so on; until the third year, when the beds are formed out, and a few inches of mould dug out of the alley, and put on the crowns; but only a few of the finest heads are cut this year. Autumn arrives, and when the haulm is cut, the whole of the ground is forked over, and planted with Cabbage, Coleworts, or winter greens; then in spring the beds are largely supplied with mould out of the alleys, covering the crowns from 8 to 10 inches deep. The finishing of the cutting must be left to the grower. A fair crop of heads must be left after four or five weeks' cutting, in order, in some measure, to strengthen the young buds for the next year's crop, and to restore to the roots what has been taken from them, in the shape of a crop; but *not one head must be allowed to grow until you leave off cutting entirely* at the end of the fourth year (?) When the haulm gets ripe, it is all cut down, and the mould thrown into the alleys, and there enriched, and the whole of the beds and alleys are planted again with Cauliflowers, &c."

By this method the ground is economised with much skill, no doubt, and never allowed to be at rest; but the practice is in this defective, that the beds are dry when they should be moist, and that the Asparagus has to force its way upwards through a solid mass of resisting matter, which hardens the shoots by the resistance it offers to their progress, and renders them tasteless, by depriving them of light, except at the tip, which the Londoner nibbles with so much satisfaction. Mr. CUTHILL'S plan is this:

"I propose that each row be planted 3 feet distant from the other, and that each plant stand 1 foot apart in the row. This will give ample room for cleaning the crop, and for drawing up earth over the crowns, *so as to form a ridge 3 or 4 inches deep*, to be lowered again for the purpose of enriching the soil in the autumn and winter. By this method I consider that Asparagus might be cut *at least ten days earlier than it is* by the plan now practised of burying the roots deep in a bed of earth, where sun and air cannot act upon them; and, as for flavour, it has long been proved that, although gentlemen's gardeners do not grow Asparagus so large as the market-gardener, of the two, it is by far the *finest in flavour*, with *at least three times more eatable* matter in each head, though only two-thirds the length. I have had Asparagus sent to me from Brussels, all blanched together a beautiful creamy white, but, when cooked, I could not discover the taste of Asparagus in it. It was watery and insipid, as highly blanched Asparagus must always be, having only the watery flavour of the roots. I have proved this years ago, by keeping it in frames shut up, and the glass covered over with mats to exclude light."

—"As soon as the dead haulm is cut down in autumn, I give the beds a good rich dressing of rich manure for the winter, salting them in spring, and covering the manure with mould, to prevent evaporation. The rain carries down the strength of the winter covering to the roots; and, when spring arrives, it might be raked off into the alleys, leaving only mould enough on the beds to protect the roots from the summer sun. We have then Asparagus, green, and eatable almost to the very root."

In the preceding quotations the italics are our own. It will probably be urged that this advice is nothing new. We believe that to be so. But what the reader of gardening works wants is not novelty, but instructions as to how he is to find his way through the farrago of interested and disinterested recommendations by which he is surrounded. It is of no consequence to 9 men in 10 how many ways there may be of doing a thing; what they want to know is the best way; or, if there is some difference of opinion as to that, which way is certainly an excellent one. How seldom they are told this by persons they can trust, their own experience will show them. It is as a most useful help, as far as it goes, to those who most require help, that we have given this prominent place to a notice of "CUTHILL'S Practical Instructions."

THE KALOSANTHES COCCINEA and varieties, as bedding plants, cannot be excelled either in beauty or the facility with which their cuttings are struck and brought into a flowering state. The immense and singularly compact head of bloom that can be obtained from each comparatively small plant, in about nine months from the time the cuttings are put in, combined with their rich colour, render them the most attractive plants in the parterre.

We will proceed at once to give our mode of cultivating the family for bedding purposes, knowing, from the numerous inquiries made about our mode of treatment, that many of our readers will appreciate any information on the subject; and those who have only seen these plants cultivated in pots, for exhibition, will, we are sure, be gratified to learn

* "Practical Instructions for the Cultivation of the Potato," containing a Competition Essay for the Prize of 1000 francs offered by the Belgian Government. Also instructions on the management of Asparagus, Seakale, Rhubarb, Vegetable Marrow, Scarlet Runner, Strawberry, Melon, Cucumber; the Tomato, or Love-apple; Chicory and Lamb Lettuce as salads; the Lisianthus Russellianus; the tree Mignonette. The destruction of woodlice and green-fly; and peat charcoal as a manure By JAMES CUTHILL, Horticulturist, Camberwell.

that they are equally beautiful when planted out in beds; for, when well managed, their fine compact appearance and the size of the flower far surpass that of individual plants grown in pots. Any time about the end of September we take some strong points of the growing shoots, and after forming them into cuttings of 2½ inches in length, cutting close to a joint, and stripping the leaves from the bottom for about ¾ of an inch, we lay them on the potting bench to dry for 24 hours. This is necessary, as from the extreme succulence of the plants they are apt to rot if put in at once.

Shallow pans or boxes 4 inches deep, and any convenient length and width, are prepared by putting in 2 inches of drainage, then a little moss or sphagnum, and over that some lumpy peat or loam an inch deep; and then an inch of sandy loam, fine lime rubbish and sand, well mixed and pressed closely down.

The cuttings should be put in about an inch or 1½ inch apart, and a slight watering given to settle the soil round them. Place them in any frame or pit, or even in the greenhouse, close to the glass, and they will strike freely, and continue rooting all the winter. The tops will not grow much if kept near the glass, and plenty of air is allowed to circulate about them; nor is it desirable, as, the dwarfer the plants are, the more novel and beautiful they look.

In March prepare some compost for potting them, by mixing three parts sandy loam, some fine lime rubbish, a very little leaf soil, or lumpy peat and sand. Take the plants from the pans with little balls of soil, by raising them gently up with the potting-stick, and pot them singly in 4-inch pots well drained. Place them in a frame or pit, with their tops only 4 or 6 inches from the glass, and where the frost can be excluded; keeping the frame close for about a week or ten days; after which, they must be gradually inured to a circulation of air. Tilting the sashes at the sides, by placing the tilter between them and the rafter, will be found to answer better than sliding, or only tilting at the back. The object is to give strength, without drawing the plants up, and by keeping the glass close to their tops, to cause them to set flower-buds, which they will readily do under such treatment; and by planting out time, which with us is about the beginning of June, every plant, if well managed, will have its head of bloom perfectly formed, and beginning to expand.

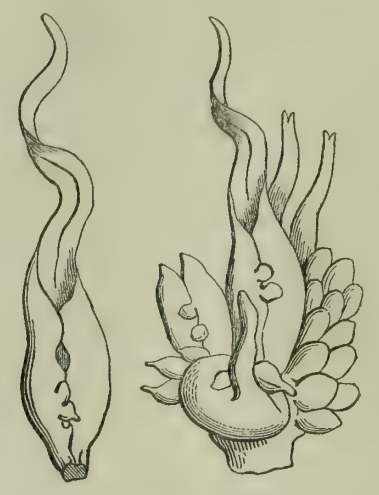
Kalosanthes look best planted in circular or oval beds, placing the tallest in the centre, and gradually descending to the edge; the last row should be placed in the ground a little deeper than the rest, and should slightly incline outwards, in order to give a rounded appearance. Any good border soil seems to suit them; but if poor, some fresh loam and leaf soil should be added. We always water the plants well before turning them out of the pots, and the bed also when necessary. Some green Moss laid upon the surface of the bed, gives it a neat appearance, and prevents evaporation.

It will be found that no plant which is so beautiful can be more easily managed; and when in flower, it always attracts more notice than anything else. *G. F.*

It is curious how the merest accident sometimes affords valuable facts, where attention is alive to profit by every opportunity of observation. A few days since, a child just five years old brought a green capsule of a Carnation which was surmounted by three unusually large stigmas, begging that it might be opened for her to see what it contained. Nothing uncommon was anticipated, but on dissection our interest was at once excited. Amongst a number of the ordinary nearly colourless ovules six or seven much larger green bodies appeared, each surmounted by a white subulate process. On further examination, these were found to be almost cartilaginous, with a strong suture on the outer side, and a very faint one behind, being evidently abortive ovaries terminated by a stigma longer than themselves. After some search another specimen was found in which the placenta was divided into three distinct parts, two of them connected with the stigmas by the usual cord and bearing normal ovules, the other having three more or less perfectly formed ovaries, the upper and lower of which alone were furnished with a stigma, though all bore towards their base imperfect ovules. The remaining ovules, which had not undergone complete transformation, were no longer amphitropal, but erect. There was in no case any central placenta, but it was confined to the margin thus communicating immediately with the stigma without any stigmatic cord.

The fact tends to confirm the notion that the ovules are really, like the ovaries, metamorphoses of the leaves; and to throw light upon the true nature of central placentæ, showing that the curious capsule of Cerastium figured in our volume for 1844 by Mr. Babington is not so decisive on the point as might at first be supposed. We do not, however, advert to the matter merely on account of its physiological interest, though such instances of transformation can scarcely be too frequently noticed in a publication which has quite as much in view the diffusion of information already existent, as the recording of new or interesting facts; but, to give another example, in addition indeed to thousands, of the wisdom of always being on the watch for the information, and we may add too the rational pleasure which lies scattered beneath our feet merely waiting for some one, as it were, to pick it up. So true is it that

> By a rich loving-kindness, redundantly kind,
> Thus pleasure is spread thro' the earth,
> In stray gifts to be claimed by whoever shall find.



2. 1.

1. General view of the placenta, magnified. Two of the divisions, of one of which the stigmatic tissue alone is visible, bear normal amphitropal ovules; the third division bears ovaries instead of ovules, or if ovules, they are orthotropal. It will be observed that the two upper ovaries show the suture, the lower one not; because they are arranged round a reduced axis, the corresponding stigmatic tissue being entirely wanting.
2. One of the ovaries more highly magnified, showing two or three ovules towards the base.

Since the foregoing remarks were written, other capsules have occurred, confined, however, to a single plant, which throw a little more light on the nature of the placenta. In these, as in the former case, we find it in the full-grown capsules divided into three distinct lobes, one or more of them bearing transformed ovules and entirely free above, the other nearly in the normal condition and showing clearly the prolongation of its tissue into the stigma. In an early stage of growth the transformed ovules were strongly pedicellate and deflected, exhibiting at the apex a slight trace of the suture. Sometimes a second rudimentary and perfectly sessile carpel was visible at the base of the peduncle, while in other instances two carpels sprung at once from the tip of a common peduncle. No trace of ovules in these cases was visible, but the marginal placenta was manifested by a slight swelling. Other ovaries occurred approaching more nearly to the normal structure, but consisting of two carpellary leaves only, and having two distinct stigmas. In these the gradual change from marginal to central placentation was perfectly visible. A section near the apex in some ovaries exhibited distinctly two marginal placentæ; in others, however, on one side the placenta was marginal, while that on the other was entirely free; and lower down both were free, presenting the usual appearance of stigmatic cords connected with a central mass covered with ovules.



Fig. 1. An ovule in an early stage of transformation deflected on its stem, with the rudiments of a second carpellary leaf at its base. *a*. A section below the middle, showing on one side a little swelling, the rudiment of the placenta. Fig. 2. Two carpellary leaves seated at the apex of a short peduncle. *b*. A section of the same, exhibiting distinct placentæ in the larger carpel, and a fissure in the smaller, without any trace of placentæ. *c*. A monophyllous carpel, with ovules on the marginal placenta, which below this point is perfectly free. *d*. A diphyllous carpel divided just below the stigma. *e*. Ditto, showing one placenta free, and the other attached.

In one well-formedmonophyllous carpel the same structure was extremely plain; in this case, however, ovules were formed on the placenta while yet attached to the edges of the carpellary leaf. It appears, therefore, certain that in this instance the placentation is essentially marginal, but that at a very early period of growth the three placentæ, separate from the base upwards, forming a central solid mass below, but evidencing their primitive distinction by the three cords connected with their respective stigmas. Great differences were observed in the positions of the sutures. In some ovaries they were uniformly directed to the axis, in others, on the contrary, they were external, according to the particular carpels of the normal capsule which might chance to be developed, the other being altogether repressed or merely rudimentary. The transformed ovules, it should be observed, were often much distorted in consequence of having so little room for development, and frequently bent backwards to the bottom of the capsule. *M. J. B.*

HOW TO MISMANAGE A GARDEN.

Chapter VIII.—Autumn will be a most fortunate season for you if you desire to shine in the great art upon which you are receiving instructions. Then, and in winter, occur many good opportunities of displaying skill, by producing effects that are sure to be visible through the succeeding and perhaps many succeeding summers. If indeed they are steadily persevered in, ten to one you will have a garden as trim as a school-boy's play-ground in less than no time.

Now is approaching the time for pitting late Potatoes. Dig a hole for them in the ground in the full sunshine, line it with straw, fill it at least a yard deep; put some straw over the Potatoes, and then cover them with mould. In this way you will keep them nice and warm; and as Potatoes come from South America, which you know is a warm part of the world, it must be right to keep them warm. Thus preserved, you will always be able to get at the Potatoes, and you can easily satisfy yourself of their being warm, by putting your hand in. In these days you may perhaps find also some pretty white cottony threads spreading over them; Nature will probably provide them with cotton night-caps, which must help to keep them warm. People who set up for observers, and pretend to be wiser than their neighbours, do say that they smell dry rot in the cotton, which they maintain is nothing but a fungus in disguise. But a Mushroom is a fungus, and you will judge whether the cotton is a Mushroom. Why, it is no more like it than an egg is like a game-cock, or a grub like a cockchafer.

Should matters have been managed rightly, it is pretty certain that a good many of the Potatoes will be diseased by the time when spring arrives. That will be a subject of further congratulation; for has it not been ascertained that diseased Potatoes give the best crops? And if you should not want all the rotten ones for sets you can grind them into starch, by which you will have the opportunity of showing your economical as well as horticultural talent.

As it may be forgotten hereafter, and as it would be a matter of regret that any such invaluable maxims as these should be accidentally omitted, a few words more on the Potato should be treasured in the memory. In the first place always take up the crop, while the skin will slip, if pressed upon by the thumb; this will insure soft watery Potatoes, which are more pleasant than hard mealy ones, better suited to weak digestions, and take less fire to cook. In the second place, never plant in the autumn; for if you do, the roots will be chilled in the winter, instead of lying comfortably warm in a snug pit. Instead of planting Potatoes in the autumn, put it off as late as you can; say till June, when the earth is warm, and you are pretty sure of fine weather. That was the Irish plan, and if you read newspapers, you will recollect what great advantage attended it. Finally, when you manure this root, always use the strongest and rankest stuff that can be procured. You will have fine long haulm, and a great promise of a crop.

The first frost will bring down all the leaves that the dry autumn has left hanging on the trees. They are a nuisance already; the ground is covered with them, and a gardener has enough to do in sweeping them away. Some people lay them in heaps, and let them rot, and fancy they make capital manure. A gardening genius will not follow so childish an example. For what is the use of leaves? if they were wanted by trees they would not tumble off; a man might as well treasure up his teeth after they are drawn, in the hope that they will help the remainder. If you do save them they shrink away to nothing. Much better burn them, or dig a hole in the ground and bury them; then they can't blow away again and put you to trouble over

again. By carefully sweeping them off your borders and destroying them, the further advantage is gained of diminishing by degrees the size of the leaves borne by trees another year; and if you do but go on long enough, it is not unlikely that trees will cease producing leaves, and then there will be no more trouble in sweeping them up.

Attention to these rules may be beneficial in other respects. There is the Strawberry; a dirty, ugly, ill-looking plant when the fruit is over. By all means mow off its leaves in August: or if you forget it then do so now; better late than never. You will soon see a crop of bright green leaves peeping above the ground, and mending the appearance of the beds, which will get quite a vernal appearance. The worst of it is that when spring itself comes the shoots may not be so strong as could be wished, and the fruit may be smallish. And so with Vines; in our short summers we have not half sun enough for the Vine: to quicken the ripeness of the berries, by all means pull off plenty of leaves, so as to expose the bunches. There can be no objection to this; for what is the use of the leaves between the sun and the berries? If the last do not become sweet, that only shows that even the skill of a mismanager is insufficient to ripen Grapes in England. *Κήπουρος.*

WHAT THE FRENCH SAY ABOUT THE VINE MILDEW.

In the month of March, 1849, several of the market gardeners in the environs of Paris, and the gardeners of the ancient royal residences, observed, in the houses in which Chasselas were forced, a sort of ash stain the leaves, spread more and more, and cover most of the bunches, the berries of which were then beginning to appear. Vegetation was checked; the shrivelled berries, which had a sort of mushroom smell, grew but little, and although some bunches continued to grow, the fruit which escaped the blight was poor, bitter, misshapen, covered with a hard crust, clotted, sooty, cracked, so that the seeds were visible, scarcely two-thirds the proper size, and nearly the whole crop was lost.

In the June following a similar phenomenon was observed in the open air near the houses which had been visited in the spring. The blight originating in their vicinity spread rapidly in the direction of the winds, and for 300 or 400 yards round no Vine pole, trellis, espalier, or counter espalier, unprotected by trees or high walls, was free from it. A similar thing occurred this year, and although in the places attacked in 1849 the disease may this time have been a little less intense, it unfortunately spread over a much greater space. It has appeared, too, in several new places. The varieties which suffered most were the Frankendale, then the Muscat, then the Chasselas, the Raisin-gris, and the Madeleine. In these cases every berry less than half grown, when attacked, is generally lost; in those that are more than half grown, the disease is mild or altogether absent. This mildew is nothing but a parasite of the same class as the transient mould, which, in circumstances favourable to its development, spreads with alarming rapidity. It appears on the upper surface of the full-grown leaves in the shape of whitish crowns, with corroded centres; it takes complete possession of the young shoots, and causes their dried edges to become crisp and to turn up. In the bunches of Grapes, it first attacks the central stem and its great offshoots, fills up the spaces between the ramifications, spreads in every direction over the peduncles, and envelopes the berry in its accursed web.

Struck with the apparent similarity of this species to the mildew (Oidium leuconium *Mérat*) on Rose trees and Pansies, and, desiring to ascertain the points of resemblance or of difference between these minute fungi, I asked M. Augrand, whose Vines were attacked as well as my own, to assist me in examining them microscopically. A Pansy leaf and a berry of attacked Chasselas were put successively under a glass magnifying from 300 to 400 times. Both were exactly alike, and resembled an ice plant on a small scale. There was exactly the same crystalline, confused, fleshy, transparent net-work, with naked, and often moniliform threads, plunged in the parenchyma, shrivelled at the points of insertion, and surmounted with corpuscles, which were either solitary or grouped in elongated gland-shaped bunches. The mildew of a Rose tree, examined immediately afterwards, was found to be exactly the same thing; nor is the parasite peculiar to these three plants, for a few days afterwards I found it in an open field, a mile and a half from the centre of infection, on Sinapis alba and Polygonum aviculare; they were so covered with it that the slightest touch brought down from the Sinapis a cloud of sporules. Having then to deal with a transient mucor, the following means were taken to prevent its ravages. *Brushing* is not of much use, in consequence of the impossibility of practising it on a large scale. *Washing* is of no use if water is used alone, or with a little lime or alum. Had not the season been so far advanced, I should have tried weak acids; they are easily applied, and one or two experiments with them seemed satisfactory. *Disbudding.*—Last year, as well as this, I thought the parasite sprouted, more especially in the shade. I acted accordingly, but in consequence of more than one contradictory observation, and of the fact that the upper part of the leaves only is attacked, I can offer no positive statement on this head. *The Removal* of the attacked bunches and leaves is certainly the best thing that can be done at first, but it is impracticable when the parasite has been scattered by wind. *Tobacco Smoke.*—M. Crémont, a great market gardener, in whose houses the scourge first appeared last year, observed its daily progress in a small temporary house, and, justly alarmed, he carefully removed the attacked parts, washed the rest at intervals, closed the house as completely as possible, and burnt in it several pounds of Tobacco. This was very successful. A short time afterwards the blight appeared in a permanent house, tobacco was again tried and failed. A fumigation which was easy in a narrow house, became ruinous and impossible in a larger one, and in which were several delicate plants that were in all probability not improved by the process. *Dusting.*—The uselessness of lime and alum in solution has already been mentioned. Flowers of sulphur scattered over the plants, previously well washed, gave better results. The trials were not however sufficiently numerous to enable me to recommend this method with any confidence in its success. *Comptes rendus.* [It is clear that these French gentlemen never read the *Gardeners' Chronicle*, which nevertheless has a considerable French circulation.]

GARDENING IN HOLLAND.—No. III.

At Antwerp the only time I could spare for gardening was given to the noble vegetable market, extending throughout the whole of the grand street—the Place Mer. Here not alone the extent was surprising, but the regularity in which the materials were placed; small baskets of curious form occupying the front rank, and the larger behind; the pictorial dresses of the women, some having bright brazen vessels for milk beside them, and the rich glow produced by countless baskets of cleanly washed Carrots, altogether produced a sensation not easily forgotten. The Cauliflowers, which were very abundant, did not appear to have been grown at Antwerp; and I afterwards found that they came from Holland. It would puzzle our English cooks and gardeners too, to know what use could be made of such a quantity of Purslane; but each market-day brought its fresh supply. This market delighted me 12 years ago, and it had lost none of its pristine interest. It is here we see how the Dutch and Flemish masters made up their pictures, and it required no stretch of imagination to believe that some paintings actually were taken from the persons I had seen, so little is costume or Dutch complexion altered. Since I was here, the citizens have done honour to themselves, by erecting a magnificent statue of Rubens; and what is still better, have placed it in precisely that spot where the Cathedral is seen to best advantage, the statue breaking the uninteresting roof, whilst, on either hand, its beautiful details and grander features appear as though they were made for the figure, and it for them. It is perfect. And now by one bound I am at the Hague, and in the King's garden, where, as the catalogue informed us, were the finest, the rarest, and best of specimen plants to be sold by auction.

My expectation was raised very high; all I had hitherto seen justified the assurance that if private enterprise could effect so much, that the right direction of wealth and princely power would command absolute horticultural perfection. Alas! how these fairy visions vanished before the reality. What was my disappointment when I saw that most of these specimens were out of health; some had been badly trained, and none showed that they were at home and happy—none, as our exotics do at Kew, smile upon us gratefully for their culture. Turning to my catalogue, I felt that its compiler imagined how fine these things could be, and described what he imagined rather than what he saw.

There certainly were a few good tree Ferns, and a Bamboo, and a Pandanus or two well grown; but the Oranges, Orchids, and Stove plants were most disappointing. Notwithstanding all this, the Dutch newspapers contained paragraphs to the effect that the finest Rhododendron arboreums in Europe had been sold for certain numbers of florins; but I thought the writers of the articles could never have seen those at the Exotic Nursery, Chelsea.

For old recollection sake, notwithstanding that the railway would have conveyed me to Leyden in an hour, yet I preferred to enjoy the quiet of transit by trackschuyt on the canal, which occupied three hours. The evening was fine, and the gardens and summer-houses that gem the margin for miles were nearly all peopled, showing that here in the same latitude as that I had left, it was the habit of the people to live more in the open air.

At Haarlem I visited a few grounds devoted to the culture of bulbs; of course at this season there were but few things in blossom. It however afforded me the opportunity of seeing the soil in which the Hyacinths are grown. Their mode of treatment is so well known as to require no comment. I may here remark that 30 years ago I raised Hyacinths from seeds, and produced good flowering bulbs that were in appearance equal to those imported, but this was done at too great a cost to be profitable. I am convinced, however, that we have many spots in England that would grow them at as little expense as they are produced for in this neighbourhood; but it would require that the cultivator should entirely devote himself to that single object. We, the nurserymen of England, are attempting too much; we are nearly all aiming at the whole round of culture; whereas, were one to fix himself solely to the culture of pot plants, another to bulbs, a third to fruit trees, a fourth to forest trees and flowering shrubs, and the like, all might be better done. This we repeatedly see amongst amateurs who devote themselves to Tulips, Carnations, Auriculas, and Pinks; and let me here ask, what nurserymen by profession can compete with them? I can imagine that as civilisation and refinement extend, and the taste of gardening and the appreciation of the beautiful becomes general, that this sub-division of labour will follow as a consequence; and that a purchaser one day will no more think of going to a fruit tree grower for his Roses and Dahlias, than he would now call upon his butcher for capons or turkeys. The truth of this was never more apparent than by comparing a small collection of curious forest trees with anything of the sort I had seen at home.

At this place no other culture was attempted, and the quantity of grafted Oaks (many of kinds, if not unknown at least rare with us), of Acacias, Caraganas, and rare variegated trees, fully convinced me of the advantage that would accrue, were nurserymen to circumscribe their energies to one kind of practice. My next will give an account of the present state of the Botanic Garden at Leyden. *William Masters, Exotic Nursery, Canterbury.*

VILLA AND SUBURBAN GARDENING.

Every plant which blossoms in winter and early spring, is on that account doubly valuable; hence, no conservatory or greenhouse ought to be without the Chinese Primrose (Primula sinensis), however common it may have become. I will, however, now more especially direct attention to its improved varieties, under careful culture. The size of the flowers have been greatly increased, and the colour of the pink variety has been brought many shades darker; the edges have become deeply fringed, which, probably, may be considered no improvement in the eye of a florist; still "variety is charming."

Some of the single varieties of the Chinese Primrose are exceedingly handsome, and being of easy culture they are everybody's flower. Improved varieties are only to be obtained by careful attention to the saving of the seed, selecting such only as are really fine, and keeping them apart from inferior kinds. They should be placed in a situation where they will receive abundance of air and sunshine. In close houses, and at a distance from the glass, they scarcely produce a perfect seed. If the seeds are sown in the beginning of summer, the plants will be strong enough to bloom at Christmas. Their whole culture may be perfectly accomplished in a cold frame or pit, taking care when the plants are young to shade them during scorching sunlight. Beautiful kinds have been raised by crossing the white with the pink, and *vice versâ*, the seedlings partaking of both parents. Singular and interesting shades of colour have been thus produced. Seedlings soon flower, and afford an early opportunity of discarding all inferior varieties; none should be cultivated but such as are really handsome. Those retained may be shifted into flowering-pots, for the purpose of promoting their growth, and inducing a fine bloom.

The soil which I have found to answer well for them, has been equal parts fibrous loam and leaf-mould, with about one-sixth of silver sand. These should be well intermixed when in a rather dry state, and kept under cover until wanted; because, when a prolongation of flowering plants is desired, it may not be either convenient or favourable to pot them all at one time. I would suggest that some of the seed be sown early in the year, and that a couple of sowings follow; by this mode a succession will be obtained; all the plants which are really fine should be carefully preserved, to flower a second season. These will form strong plants, which can be brought into a little warmth late in autumn, and can, consequently, be made to flower earlier than young plants. The old specimens, when done flowering, should have a cool shady place, unless it may be plants from whence seed is to be obtained. A north aspect, protected from wet, will answer the purpose. They must be kept dry, and should have a rather prolonged season of rest. This is absolutely necessary. *Pharo.*

Home Correspondence.

Victoria Regia at Chatsworth.—The original plant of Victoria regia, which was received here from the Royal Gardens at Kew, and of which a description and particulars were given in a previous paper, has now produced its 140th leaf and 112th flower bud; during the season of the plant's partial torpidity, a few of the buds then produced were removed at an early stage of their growth, lest so constant a succession of flowers should debilitate and prove otherwise detrimental to the health and vigour which it was desirable the plant should sustain. The whole of those permitted to remain expanded their blooms perfectly, although during the brightest weather in summer it was found advisable to afford some degree of shade to the flowers, in order to prevent their becoming too fugitive, perishing in much less time than two days, the usual period of their duration. This old plant has now 17 leaves, some of which are of a very large size, although there is an evident diminution in the dimensions of every leaf which now expands, evidently indicating that the plant is fast approaching its period of rest. From some of the early, as well as the more recent flowers, an abundance of fine plump seeds have been procured, from which a large number of strong plants have been raised

and, by the kindness of the Duke of Devonshire, have been widely and liberally distributed. The seed of the young plant, which now occupies the tank of the new house formerly described, was sown on the 12th February last in a small pot, and placed in the tank occupied by the parent. The first leaf made its appearance on the 11th of March, just one day less than a month after being sown. When the young plant had become sufficiently established, it was placed in the centre of the large tank, shown at p. 549—in the mound of soil prepared in the same manner as described for the old tank. This was done on the 26th of June. The plant was partially sheltered for a few days, with a two-light frame placed over it, upon planks, until the growth commenced. When established the leaves unfolded rapidly, and the first flower-bud made its appearance on the 28th of August, which opened in its white and fragrant form on the 5th of September, and fully unfolded its centre on the following day; at this stage of its growth the leaves were 4 feet 8 inches in diameter. A gradual increase in size has continued since that time, and the dimensions at present are about 5 feet, with a constant succession of flowers. The growth is remarkably vigorous, and the leaves appear very likely, in a short time, to reach the outer wall of the tank, although the diameter is 33 feet 6 inches; and, if we might judge from present progress, there is little doubt but next year the leaves will be much larger than any we have yet seen; indeed, at present, nothing can exceed the luxuriant and healthy progress the whole plant is making. The various species of Nymphæa, and other plants in the small tanks also, grow with remarkable rapidity. Amongst these may be mentioned Nymphæa cærulea, rubra, Lotus, dentata, and odorata; Nelumbium speciosum, luteum, and others; and altogether the structure must be considered most satisfactory, as every species planted in it flourishes to a degree seldom met with. *Joseph Paxton, Chatsworth.*

Orchids. — Is the enclosed flower Mormodes aromaticum? [Yes.] The pollen masses, when removed, have a powerful odour of Vanilla, quite different from the general odour of the flower. I have a plant of Oncidium Cebolleti, which has thrown out young growths from every joint of the flower stem. Is that unusual? [Yes.] Would Orchids grow in peat charcoal? [Don't know.] *W. D. H., Clonmel.*

The Wilmore Surprise Pelargonium.—I regret that I was led into an error respecting the possessor of this flower. Before I wrote to you I consulted my plant foreman, who once wrought in the Birmingham Botanic Garden; he also thought that the seedling had been found at Oldford, and he heard something to that effect in London last May. I also regret that Mr. Westcott did not read my notice of it carefully before he wrote to you; it would have saved him from the error of supposing my plant to be a seedling. But I write more particularly to assure Mrs. Wilmore that my double Pelargonium shall never come into competition in the market with her Surprise; and that I hope she will get a ready sale for it after what you have said of it; backed, as it is, by Mr. Westcott's experience, there can be no fear of its turning out a most useful bedder. I cannot, however, subscribe to the doctrine, that a seedling of any kind, be it ever so curious, can be half so surprising as those derangements of existing forms which it is the province of morphologists to explain and account for; and as to a bed of Hollyhocks or a bed of Horse-chestnuts having had an influence on this or any other seedlings out of their own families, we ought not, even by implication, to countenance the idea; at least, men of education should not do so. *D. Beaton.* —— Some of your correspondents seem to have discovered a mare's nest, for double Pelargoniums, with from seven to nine petals, scarcely deserve the name of semi-double flowers. For more than 20 years the old double purple has been common enough; on any market morning in Farringdon or Covent-garden it may be bought for less than a shilling; and it is no unusual occurrence to see it in the hawker's baskets, though those gentry are by no means so much enamoured with it as some of your readers. I suspect the Wilmore Surprise to be identical with it, at least the wood-cut you have given very closely resembles it. During the season we have bloomed here several dozens of an old kind, known as Eliza Sauvage, and every flower has been self coloured, and most of them semi-double, some flowers producing a dozen petals; but we thought so little of them that the whole have been thrown in the rubbish heap. Story's Mont Blanc, comparatively a new kind, almost invariably produces semi-double flowers; and I imagine that the Album planum of Mr. E. G. Henderson's list is the double form of Mont Blanc. Double Pelargoniums are by no means a new feature; but I grant that whoever succeeds in raising a good double kind will deserve well of the public. Next season I shall certainly try my luck, taking the old double purple for one parent, and one of the fancies most inclined to produce six or seven-petalled flowers for the other. Notwithstanding what Messrs. Foster, Beck, Hoyle, and others have accomplished, I am convinced that cross breeding, so far as Pelargoniums are concerned, is quite in its infancy, and that by a judicious selection of parents more may be accomplished in two or three years than has generally been achieved in treble that time. A short time back Mr. Beaton recommended, in the "Cottage Gardener," Ibrahim Pacha as a parent to breed a new class of bedding Pelargoniums from, but to attempt to breed from such a flimsy ragged thing is a waste of time in the present day. I have thrown scores of seedlings superior to Ibrahim Pacha away this season. *H. Rosier, Brooklands Nursery, Blackheath.*

Postage Regulations.—I beg to call your attention to the new Postage Act (10th and 11th Vic., cap. 85), which charges every paid letter returned double. This is not only injurious to the revenue, but is a great drawback to the trade and commerce of the country. *A Subscriber.* [A very great improvement, in our opinion. The *random transmission* of circulars has become a nuisance to everybody.]

Double Flowering Heath.—Have any of your readers observed a disposition in Heaths to produce double flowers? While dressing some plants the other day, I remarked three or four double blossoms on Erica Wilmoriana, an example of which I enclose for your examination. *Cliftonia, Sept.* 23.

Roberts' Strawberry Tiles.—I am surprised to see so many noblemen and gentlemen's signatures quoted in favour of these tiles. I find no good to result from their use whatever; but the reverse. They scorch the fruit before it is half ripe, entice and harbour vermin, prevent rain-water from getting to the roots, unless hand-watering is resorted to; and I am sure that all who have used them must confess that the truss of fruit entirely overhangs the tile, and the two ends are altogether deficient, except for small growing kinds. My employer has been written to for his signature, but before he gave it, he asked my opinion respecting the tiles. I told him they were worthless, having previously applied them to four kinds of Strawberries. Now if I have misapplied them in any way, I shall be thankful to any one of those noblemen's or gentlemen's gardeners who may approve of them to correct me, and show me what benefit they have derived from them; if the tile is to be used at all, there is room for much improvement. But as economy is the leading feature of the day, it is a duty to our employers, as practical men, to reject everything that is not an improvement; for it is only by practical men that the value of such articles can be fairly tested; and who is the gardener holding anything like a large place, who cannot contrive a dozen other things more to the purpose, and better for vegetation, at no expense? We all know that in large gardens there are enough of necessary expenses, without incurring foolish ones. I may add, that I have the good fortune to serve one of the most liberal employers and greatest promoters of horticulture in England; but that is no reason why his money should be spent foolishly on things from which no benefit can be derived. *D. Kidd, Garnston-park, Hereford, Sept.* 18.——I tried Roberts' tiles two seasons back; since that period they have been unused. The principal objection I had to them was, that one pair of tiles would not keep the fruit of one plant clean; and I believe few will deny the uselessness of expecting fine large fruit if the plants grow so closely together as to admit of the tiles forming a compact mass; for two-year old plants they are perfectly useless, as the fruit and foliage would cover a space twice as large as the tiles. I cannot help saying that I think it the duty of a journalist to guard the public against useless whims, particularly such costly ones as Mr. Roberts would encourage. *G. T. W.*

A Magnum Bonum Plum Tree at Grey's-court, Henley, has upon it 621 Plums. The tree is 15 feet in height and 20 feet in width; it is so covered with fruit that the branches and leaves can scarcely be seen. The Plums are very large, of a fine rich colour, and excellent in flavour. *Anon, Sept.* 21.

Potatoes.—I planted four sorts this year, viz., Manleys, Oxford Kidneys, York Regents, and Early Purples. They are now all out of the ground and housed, and the effect of the disease upon them is as follows: first bad, second not so bad, third better, fourth scarcely touched. In point of produce I have about an average crop; the Early Purples are the best in every respect, both in size, yield, and condition. *Falcon.*——The following little experiment may be useful. In April last two rows, side by side, of 6 yards each, were set with red winter Potatoes. One row was manured in the usual way, the other was not. When the plants of the unmanured row appeared above ground, they were watered with cows' urine, diluted with water. The plants, as they grew, assumed a strong dark green colour. A few days ago the Potatoes were dug up. The unmanured row (fine tubers and not one small) produced 30 lbs.; the manured row (several small tubers), 20½ lbs. *E. Edwards, Penegoes Rectory, Sept.* 18. ——I commenced taking up my Potatoes, which were planted on moss land, on the 11th of September, and I find my produce is at the rate of 186 loads per acre, of 240 lbs. to the load. They are of first-rate quality, although about the 1st of August they were attacked by the blight, which appears to have been general throughout the country, and which led many to suppose that the crops would be destroyed, as in former years. I however allowed mine to remain in the ground up to the time above stated, examining the tubers daily in different parts, for the tops were completely destroyed by the blight. I however never found any appearance of disease amongst the tubers. *M. Saul, Garstang, Sept.* 21.

Leeks.—As "Taffy" has from time immemorial been a great patron of the Leek, he ought to know something about its cultivation. His practice is quite at variance with the acknowledged principle, that the leaves are the lungs of the plant, as twice in the course of its growth he cuts off from the extremity of its leaves or flag about 3 inches from its point. Is he right or wrong? *L., Llandilo.*

Societies.

Royal Horticultural of Ireland, *Sept.* 12.—At this, the autumn show, a fine display of gardening produce was exhibited. At this late period of the year, exotic plants are seldom numerous or fine. The showy and generally admired Pelargoniums are on the wane, and Fuchsias grown in pots are now past their best. Notwithstanding this, however, the stages were well filled at the late show, and the plants generally were in good condition. One competitor only appeared at this, as well as at the last show, for the Lord Lieutenant's prize for the best 12 Exotics; which, being the highest the Society has to offer, is not a little surprising. The plants in the group exhibited were tolerably well grown, but none of them of very recent introduction, nor otherwise remarkable. For the Society's prize of best 12 Exotics there were three competitors, and some good plants shown. Dipladenia splendens, Chironia viscosa, and other rare plants, were among the group which obtained the first prize. For the best 8 Exotics there were also three competitors. The first prize group was a nice lot, containing plants of Chætogastra strigosa, Adamia versicolor, which, with the others, were well grown. The prize for the best Exotic in flower was obtained for a nice specimen of the East India Moth plant; and that for the best Exotic in foliage, for a huge specimen of Musa Cavendishii—the Cavendish Plantain There was only one small group of four Orchids exhibited for competition. The collection of Heaths was the worst we ever saw exhibited in the Rotunda—mostly out of bloom; and, indeed, in such a state as would have warranted the judges in disqualifying the whole of them. There were three competitors.—Among the Nurserymen there was only one solitary competitor, who had the prizes awarded to him as a matter of course.—From the Royal Dublin Society's Botanic Garden, Glasnevin, groups of beautiful Orchids and Liliums were furnished. Among the latter was a finely-bloomed plant of the rare Lilium Wallichianum, which was recently sent to Mr. Moore from the Himalayas, and bloomed in that establishment for the first time in Europe. It produces the largest flowers of any of the species yet introduced. A large plant of Stanhopea Wardii was suspended from the roof, the curiously-shaped flowers of which attracted much attention. The show of Dahlias was probably the best ever seen in Dublin. The large marquee on the lawn was nearly filled with groups of these gorgeous flowers. The fruit was also exceedingly good, and in profusion; but the vegetables were unusually scarce, a circumstance which calls for the immediate attention of the Society. The deficiency in this department, at our horticultural exhibitions, is amazing. Our fine gardeners would probably regard it as little to their credit to carry off prizes in this department! *Dublin Advocate.*

Royal Horticultural of Cornwall, *Sept.* 6.—The prizes were awarded as follows: Finest Pine-apple (Black Jamaica), Mr. Williams; 2d (Queen), Mr. Vivian. Best Melon, the Silver Medal (Teneriffe), Mr. G. N. Simmons; 2d (King's Own, green-flesh), Mr. Daubuz; 3d (Pinkey Prize), Rev. Canon Rogers. Best Dish of Grapes (Muscats, West's St. Peter, Black Prince, Black Hamburgh), Mr. Vivian; 2d (Royal Muscatelle, Black Hamburgh, Red Muscadine, Tokay, Black Prince, Black Frontignan), Admiral Reynolds. Best Bunch of Grapes (Muscat of Lunelle), Mr. Vivian. Best 6 Peaches (Noblesse), Rev. Canon Rogers; 2d (Bellegarde), Sir C. Lemon, Bart.; 3d (Ford's Seedling), Mr. Vivian. Best 6 Pears (Bon Chretien), Rev. T. Phillpotts; 2d, Admiral Reynolds. Best collection of Pears (Beurré d'Aremberg, Marie Louise, Beurré Diel, Bon Chretien, Napoleon, Epine d'Hiver, Old Chaumontel, Chaumontel Besi, Glout Morceau, Duchesse de Angoulême, Buchanan's Spring Beurré, Bergamot, Louise Bonne), Admiral Reynolds. Best 6 Nectarines (Violet Hâtive), Mr. Daubuz; 2d (Elruge), Sir C. Lemon, Bart. Best 12 Apples (Irish Peach), ditto; 2d (Kerry Pippin), Rev. Canon Rogers; 3d (Lucombe Seedling), Rev. T. Phillpotts. Best collection of Apples (Kerry Pippin, Brown Spice, Red Quarandine, Sops of Wine, Autumn Pearmain, Box Apple, Golden Apple, Gilliflower, Ribston Pippin, Lemon Apple, Shelston's Pippin, Hawthornden, Brandy Pippin, Russet Nonpareil, Adam's Pearmain, Cornish Aromatic, Old Nonpareil, &c.), Rev. Canon Rogers; 2d (Old Golden Pippin, American Pippin, Crofton, Skyehouse Russet, Court of Wick, Spice Apple, Winter Warden, Ribston Pippin, Royal Russet, Nun's Pearmain, Early Nonpareil, Old English Nonpareil, Mollet's Guernsey, Golden Pippin, Cornish Gilliflower), Admiral Reynolds. Best Dish of Cherries (Morello), Rev. Canon Rogers; 2d, Rev. T. Phillpotts. Extra: Nectarines (Elruge), Rev. T. Phillpotts. Plums (Caledonian), Admiral Reynolds. Peaches (Noblesse), Mr. W. M. Tweedy.—Flowers: New ornamental plant, the Bronze Medal (Gesnera picta), Mr. Daubuz. Best 12 Stove and Greenhouse Plants (Ixora rosea, Ronde etia speciosa major, Leschenaultia Baxteri, Statice arborea, Lilium lancifolium rubrum, Allamanda cathartica, Chirita zeylanica, Chironia floribunda, Pleroma elegans, &c.), Mr. F. Passingham; 2d (Æschynanthus Lobbianus, Gesnera picta, G. zebrina, Clerodendrum affine, Aphelandra cristata, Crowea saligna, Erica Hartnelli, &c.), Mr. Daubuz; 3d (Cyrtoceras reflexum, Vinca rosea, Erica vestita rosea, Begonia multiflora, B. nitida, Cuphea platycentra, Pentas carnea, &c.), Mr. W. M. Tweedy; 4th (Clerodendron paniculatum, Lilium lancifolium punctatum, Chirita sinensis, Pentas carnea, Scutellaria splendens, Achimenes venusta, Begonia floribunda, &c.), Mr. G. N. Simmons. Best 6 ditto (Æschynanthus Lobbianus, Tetratheca verticillata, Clerodendron squamatum, Dipladenia crassinoda, Pleroma elegans), Mr. Daubuz; 2d (Vallota purpurea, Leschenaultia formosa, Balsamina latifolia, Zauschneria californica, Statice puberula), Mr. F. Passingham; 3d (Justicia nodosa, Begonia incarnata. Achimenes patens, Thunbergia alata, Gloxinia Handleyana), Mr. G. N. Simmons. Best Stove Specimen (Dipladenia crassinoda), Mr. Daubuz; 2d Cyrtoceras reflexum), Mr. F. Passingham; 3d (Begonia fuchsioides), Rev. T. Phillpotts. Best Greenhouse Specimen (Adamia versicolor), Mr. G. N. Simmons; 2d (Thunbergia alata), Rev. T. Phillpotts; 3d (Hoya carnosa), Mr. F. Passingham. Best Orchid (Dendrobium Gibsoni), Mr. W. Daubuz; 2d (Oncidium Lance num superbum), Rev. T. Phillpotts. Best Heaths (Hartnelli, ampullacea, montana, Lambertiana rosea), Mr. F. Passingham; 2d (Clowesiana, inflata, Irbyana, retorta), Mr. Daubuz. Best Heath Specimen Aitoniana), Mr. F. Passingham; 2d, Mr. Daubuz. Best Fuchsias (Mirabilis, Ignea, Unique, Elegantissima, Gem of the West, Newtoniensis), Mr. Daubuz; 2d (Rose Quintal,

Fountain, Acantha, Purity, Rickard's Seedling, Dr. Smith), Mr. G. N. Simmons; 3d (Purity, Elegantissima, Corallina, Duke of Cornwall, Dr. Jephson, Exoniensis), Mr. F. Passingham. Best Fuchsia, specimen (Falstaff), Mr. W. Hockin; 2d, Admiral Reynolds. Best 12 Dahlias (Duke of Wellington, Sir E. Antrobus, Admiral Stopford, Mr. Seldon, Miss Vyse, Alice Hawthorn, Hector, Athalet, Scarlet Gem, Lilac Standard, Grenadier, Beeswing), Mr. M. Williams; 2d (Admiral Stopford, Beeswing, Sir E. Antrobus, Cleopatra, Antagonist, Princess Radziville, Box, Toison d'or, Shylock, Captain Warner, Lady of the Lake, Essex Primrose), Mr. Daubuz; 3d (Mr. Seldon, Capt. Warner, Cleopatra, Beeswing, Lady of the Lake, Box, Sir E. Antrobus, Duke of Cambridge, Shylock, Bathonia, Yellow Standard, President of the West), Mr. Vivian; 4th (Captivation, Mrs. Shelley, Princess Royal, Fulwood Scarlet, M. Adolphe, Rembrandt, Cassandra, Miss Vyse, Beeswing, Cleopatra, Hope, Bathonia), Rev. Canon Rogers. Best 6 do. (Princess Radziville, Sir E. Antrobus, Antagonist, Captain Warner, Box, Admiral Stopford), Mr. Daubuz; 2d, (Admiral Stopford, Marchioness Cornwallis, Miss Lane, Athalete, Aurantia, Fearless), Mr. M. Williams; 3d (Cleopatra, Mr. Seldon, Beeswing, Bathonia, Box, Shylock), Mr. Vivian; 4th (Madame Helena Caregliano, Cleopatra, Box, Sir Robert Sale, Lilac Standard, Lady of the Lake), Mr. W. M. Tweedy. Best Collection of Roses (Bouquet de Flore, Bourbon Queen, Dr. Marx, Lawrence de Montmorency, Jenny, Grenadier, Mrs. Elliott, Ophirie, Archduke Charles, Prince Albert, Prudence Procter, Safranot, Souvenir de la Malmaison, Géant des Batailles, Mogador), Mr. M. H. Williams; 2d (Souvenir de la Malmaison, La Reine, Baron Prevost, Safranot, Countess Duchatel, Mogador, Bourbon Queen, Mrs. Elliott, Prince Albert, Lawrence de Montmorency, Bouquet de Flore, Louis Philippe, William Jesse, Comte de Paris, Géant de Batailles, Ophirie), Mr. M. Williams. Best collection of Hollyhocks, Mr. M. Williams. Best collection of Asters, Mr. Vivian; 2d, Sir C. Lemon, Bart. Collection of Cut Flowers, Mr. G. N. Simmons. Best collection of Bulbous Plants (Lilium lancifolium album, punctatum, roseum, and speciosum; Vallota purpurea), Mr. F. Passingham. Best Verbenas (Robinson's Defiance, Ibrahim Pacha, Satellite, St. Margaret, Favourite), Mr. W. M. Tweedy; 2d (Louis Napoleon Bonaparte, St. Margaret, Tricolor alba, General Lamoriciere, White Perfection), Mr. G. N. Simmons. Best Marigolds, Admiral Reynolds; 2d, Sir C. Lemon, Bart. Extra: Zinnias, Admiral Reynolds. Achimenes, Admiral Reynolds. Balsams, Mr. F. Passingham.

Reviews.

The Course of Creation. By John Anderson, D.D. London: Longmans, 8vo; pp. 420.

This work is an introduction to the study of Geology, in the shape of essays on the character of the country, passed through by a person starting from the Grampians and proceeding to the Alps by way of England and France. The author tells us that having studied Geology as an amusement, and collected together a considerable quantity of notes, both of his own observations and of those of others, he was induced to publish them, in the hope that they might lead other people to employ their leisure hours in the study of the same interesting science. "Having," he says, "gathered, and now put together in this form, the notes of my researches, I do not mean to aver that I have visited every locality referred to, or personally observed everything noticed in the publication. Where so much has been done by others I have carefully examined their works. Where the field is so boundless, and the course of illustration necessarily so discursive, I have freely made use of their collected materials. Still, I have been induced to adopt the line of description from the Grampians to the Alps, because, at sundry, though often distant periods, I have examined the various suites of rocks comprised betwixt these mountain boundaries. If there be any novelty in the volume, it will be found not in the subject-matter itself, nor in the mode of treating it, but by following the geographical sequence in the description of the several geological formations, and their relations to each other in the countries passed over."

Accordingly the author commences with an outline of the geology of Scotland, describing in this, the first part, all the lower formations from the primary rocks to the carboniferous system. In the second part, in which he treats of the geology of England, he notices the Permian and Oolitic systems, the Wealden formation, the Cretaceous and Tertiary systems, and the mammoth period. In Part III., the physical union of France with England, the geological structure of Switzerland, the Alps, Mont Blanc, the Boulder formation and Glaciers, as well as the thickness of the earth's crust, together with the theories of central heat, are discussed and examined. The fourth and last Part contains an outline of the general principles of the science, and an examination of the points in which the conclusions arrived at by modern geologists are at variance with the mosaical account of the creation.

The author's style is clear and familiar, and the work is worthy of a perusal by all lovers of Nature, as well as by those, if any there now be, who are afraid that the study of natural history and of geology in particular, should tend to bring religion into disrepute, and to lower the moral and intellectual character of man. In what point of view the author regards geology will be apparent from the following extract.

"The magnificent work of creation, whose course we have been tracing in some of its primordial arrangements, in the geological phenomena of the earth's crust, and in its relations to the vast planetary system of which it is a member, is the result over all of design and intelligence. The changes wrought in the earth's structure and framework, from period to period, have not been brought about by merely mechanical changes of physical conditions. There are order and method in the inorganic, no less than in the organic forms, into which matter in any of the earth's revolutions has been cast. There is prospective contrivance, each for each. The alterations made in the outward surface, whether of sea or land, have been always such as were best adapted to the habits and requirements of successive living tribes. And the whole amount of change, in both departments of nature, has ever been in such measure and degree as to show, from the beginning, a persistent principle of stability in the system, and a wise, all-controlling arm, to be regulating and directing everything. The invisible things of God, from the creation of the world, are clearly seen; and we cannot, if we would, rid ourselves of the thought, that somewhere and beyond, there is, not a 'primitive cause' only, but a Divine Being, the master of the universe, potentially in and present through all things."

"The researches of science, the deeper they go into the secrets of nature, issue in the surest and brightest disclosures of the Divine Architect of the universe. We are enabled, by the lights which are furnished by the various branches of ascertained knowledge, to read in some degree the mind and purpose of God in the creations of his hand. We see in many instances what is actually intended by certain arrangements and combinations—why, and for what end, objects are constructed in a particular way, and how it is that trains of events are made to follow in one uniform order rather than in any other. The universe, we discover, is not only bound by laws permanent and unchanging: the laws themselves have an end to serve, a particular result to accomplish. Accumulations of matter are brought together with a definite precise view; living substances are constructed with organs suited to their conditions of existence; relations of air, earth, and water, are established, which nicely answer the functions to be performed; and in ten thousands of cases are manifested the form, size, position, qualities of hardness, softness, and cohesion in the individual parts which can best secure their own special well-being along with the general conservation of the framework to which they are attached."

There are a few good woodcuts of fossils, &c., for the purpose of illustrating the text; but there being no index, a student cannot find, without considerable loss of time, any cut he may wish to refer to.

Garden Memoranda.

Messrs. Paul's Nursery, Cheshunt.—Containing as it does many thousands of Roses of all classes and descriptions, it is scarcely possible to visit this "garden of the Queen of Flowers" at almost any season of the year, except, perhaps, the very "dead of winter," without finding something to admire—something to repay one for a visit. As early as the beginning of June the Scotch Roses, followed by the foremost of the hybrid Chinas, will be found in bloom. The former is a class of Roses quite as much cultivated as they deserve to be. The hybrids of the China, Bourbon, and Noisette, among which are to be found some of the most valuable Roses in cultivation, continue in flower from the middle of June to nearly the end of July; and contemporary with them are the Provins, Moss, Albas, Damask, and their hybrids, together with the French and hybrid Provins. A few of the best of early-flowering Roses are Brennus, Charles Duval, Coupe d'Amour, Coupe de Hébé, Frederick II., Fulgens, Lady Stuart, Paul Perras, Paul Ricaut, Richelieu, Triumphe de Laqueue, and Virginie Zechler. Among the "Moss and their hybrids" we would select À Feuilles Pourpres, Celina, Etna, Lanei, Presque partout, Princess Royal, and Purpurea rubra. These require high cultivation; but their beauty amply repays a little extra attention. Among Damask, Alba, French, and hybrid Provins, perhaps the best are La Ville de Bruxelles, Madame Soetmans, Sextus Papinius, Félicité, Parmentier, Madame Audot, Princesse Lamballe, Adèle Prévost, Boule de Nanteuil, D'Aguesseau, Jeanne d'Albret, Marjolin, Ohl, Pashot, Shakespeare, Blanchefleur, Jean d'Urfé, and La Volupté, or Letitia. Harrisonii and Persian Yellow are the two best hardy yellows in cultivation, the latter being, perhaps, the better of the two. It blooms freely under ordinary treatment, but it requires some care in pruning. The head should be well thinned, and the shoots that are left for flowering suffered to remain long. If shortened in much, a fine head of wood will be formed, but there will be no flowers. The old Double Yellow, when it opens well, is, as most people know, an admirable Rose; but it is ten chances to one if it expands its flower-buds. With the exception of Harriet Martineau and Paul Ricaut, which are not very new, few novelties of any note have been added to any of these classes lately.

Owing to the long continuance of dry weather which we have experienced this season, Autumn Roses have flowered but poorly in most places, and Messrs. Paul's Nursery has formed no exception. The Hybrid Perpetuals, not above 20 years back, limited to the scarlet Four Seasons and the Rose du Roi, but now, on account of their numbers and beauty, usually the glory of the autumnal Rose-garden are this season almost destitute of flowers, offering in this respect a striking contrast with their brethren the Bourbons, Noisettes, Chinas, and Teas, which are at present everywhere tolerably gay. This is a fact worth remembering; for the Perpetuals, with their great beauty and strong Rose fragrance, have of late been making their way into gardens, to the exclusion of the Noisettes and Chinas; but in a very dry year, like the present, and in naturally dry soils, it will be found that the latter are our most grateful friends, affording us fine bouquets of fresh Roses, which otherwise would have been scarce. We, however, remarked that Géant des Batailles, a Hybrid Perpetual, and certainly the glory of the Rosery, as far as brilliancy of colour is concerned, was flowering finely, as were also one or two others. Among the Bourbons which were in flower, some of the best were Dupetit Thouars, a very high coloured Rose; Queen, Aramis, Armosa, Paul Joseph, Aurore du Guide, Comice de Seine et Marne, Acidalie, Triomphe de la Duchesse, Bouquet de Flore, George Cuvier, Souvenir de la Malmaison, Leveson Gower, and Menou. The two latter are comparatively new Roses, and very good ones. Two Perpetual Mosses, Herman Kegel and General Drouet, are said to be well worth cultivating, but we did not see them in perfection. Among Noisettes, Miss Glegg is a nice white, perhaps in some respects an improvement on Aimée Vibert; Fellenberg is a showy crimson and a free bloomer, and Mrs. Siddons is not a bad yellow; Eclair de Jupiter is a good climber, cherry or carmine in colour, and Caroline Marniesse, creamy white, also deserves a place for this purpose. A small dwarf Noisette, called Pumila alba, is well worth having for pot culture. It forms a good companion to that universal favourite, the little pink Fairy Rose, than which few plants are more suitable for window decoration. In China Roses we noticed rather a novelty in the shape of Eugéne Beauharnais, a good amaranth-coloured flower. Narcisse, Souvenir d'un Ami, and Vicomtesse de Cazes, will be found worth adding to collections that do not already possess them; but, like all Tea Roses, they are rather tender, and will require some protection from frost. The greatest novelties among the Hybrid Perpetuals we saw, were Duchesse de Montpensier, Etendard de Marengo, brilliant crimson, and one of the best of Roses; Naomi, and Pius IX. Soleil d'Austerlitz is also a good addition to this class; but where shall we find equals to Géant des Batailles, Baronne Prevost, and La Reine? These are the cream of Hybrid Perpetuals, and the cheap rate at which they are now sold brings them within the reach of even the cottager. Comte Bobrinsky is worth attention, on account of its charming colour; and where variety is wanted, the following should be added: Baronne Hallez, Caroline de Sansal, Duchesse de Praslin, General Cavaignac, Madame de Lamoricière, Rosine Margotin, Duchess of Sutherland, and Laurence de Montmorency.

Messrs. Paul are erecting a double span-roofed house for wintering small pot Roses in. It is 80 feet long, about 20 feet wide, and 7 feet high from the floor to the centres of the spans. The wood-work of the roof consists of astragals (no rafters), placed 15 inches apart, and it is glazed with panes about 18 inches in length. Some of the uppermost panes (six in the whole length), move outwards on hinges, for the purposes of ventilation, which is also effected by means of wooden ventilators placed in the brick walls which form the sides and ends. The passages are immediately below the highest parts of the roofs, sunk, and have beds on either side, on which the plants will be placed. It is to be warmed by means of two of Mr. Rivers's "brick Arnott stoves," one at each side about half way from either end of the house. The roof consists of sixteen pieces screwed together, and, if necessary, may be entirely removed in summer.

Of other florists' flowers besides Roses, Messrs. Paul cultivate Dahlias and Hollyhocks. Of the latter they have some promising seedlings; some of the best of the named kinds which we saw were—Snowball, white; Model of Perfection, white with chocolate ground; Delicata, French white; Rosea alba, rose and white; Queen, light blush; Rosea grandiflora, light pink; Enchantress, deep pink; Fulgens, dark shining crimson; Sulphurea perfecta, sulphur; Napoleon, red and buff; Purpurea elegans, purple; Rubida, reddish purple; Coccinea, scarlet; Formosa, claret; Magnum Bonum, maroon; Black Prince, the darkest of all Hollyhocks; Mulberry Superb, also a rich dark kind; Comet, bright ruby red; Obscura, shaded puce; Blue Beard, dark ground, white edges, and veined; Miss Forbes, light rose; Wellington, rosy red.

Near the specimen Rosery, a small arboretum has been formed, which in time will be very interesting. It contains many of the best Conifers, Oaks, and other select trees and shrubs, the object being to show purchasers good examples of what they buy in a small state.

In conclusion, we may mention a mode of fumigating, which we saw here. It consisted in using small cylinders about 1 foot long, composed of alternate layers, or rolls of tobacco and match paper. These were suspended above the stone path from the ends of twigs, fastened horizontally to the stage. On being lighted at the lower end, the draught up the centre of the cylinder or small pipe kept the latter burning, and in this way a large house may be readily filled with smoke, and it is said at a very cheap rate, without any trouble, beyond that of lighting the ends of six or seven small pipes, like those just mentioned. Those who do not possess Brown's fumigator, may find this plan worth a trial.

Miscellaneous.

Spotting of the Leaves of Grasses, &c.—I have often been unable to account for the suddenness with which the leaves of Ranunculus repens, and of many Grasses (Triticum repens and Alopecurus pratensis being of the number) growing by the sides of walls, become whitened in minute specks and irregular lines all over the upper surface, as if the colour had been extracted from them, or had left some cells by a kind of elective preference for others. I have recently found this to be occasioned by a small dusky red-legged mite, which harbours under stones, but comes out in the sunshine in immense swarms to feast upon the foliage. Owing to the

numerous mouths at work, large patches, especially in the Grasses, are speedily drained of their sap and become quite dead or blighted. The mite is not described in any accessible work on the Arachnides. Dr. Johnston considers it to be a Rhyncholophus, but that the structure of the fore-legs indicates an affinity with Bryobia. From Trombidium it differs, he observes, in the eyes being sessile and on the shoulders. I have named it R. haustor. It occurs likewise upon the leaves of fruit-trees, but the dusky parts are then greener. In autumn it is much darker and more convex. It runs rapidly, agitates its fore-legs like antennæ, sloughs off its skin where it feeds, and leaves behind it an excrementitious deposit that glitters like honey-dew. *J. Hardy, Penmanshiel, in the Annals and Magazine of Natural History.*

Calendar of Operations.

(For the ensuing week.)

PLANT DEPARTMENT.

MANY Australian and other plants, which have been set in the open air during summer, but which were thought too hardy to be put under cover in the early part of the month, should now be removed to favourable situations under glass, and there placed as near the light as possible, as the process of ripening goes on much faster than in the open air, while the plants may be protected from our cold autumnal rains. They should, however, have the advantage of a free circulation of air, which should continue night and day, unless the weather is very cold. Oranges standing in the open air should be removed into their winter quarters during the next week in most parts of England; and as all other greenhouse plants must soon be housed, the necessary preparatory arrangements should be immediately completed. The climbers in the roofs of the houses should be considerably reduced in bulk, reserving a proper selection of shoots for late autumn flowering, and for adequately furnishing the roof next summer. In addition to this means of admitting the light more freely into the house, let the glass be washed, that the plants may have every chance. Promote the growth of Gesnera zebrina, Achimenes picta and cupreata, by a strong bottom-heat, with a moderate top-heat; do not allow the latter to be too excessive, or the leaves will be less hardy in their constitution, less durable, and less useful in the decoration of drawing-rooms and conservatories, for which purpose these beautiful plants are admirably adapted. As the Japan Lilies go out of flower, let the pots be laid on their sides for a week or two, in a sunny situation; after which they must be repotted in sandy loam and a little peat, and plunged in a bed of ashes in an open situation. These plants require a very short period of rest; but although the roots are active during winter, the plants should be kept in a cool place until spring, when a few for early flowering may be placed in the greenhouse.

FORCING DEPARTMENT.

Where dung linings are used for forcing pits of any description, means should be taken to secure them from the autumn rains, which check fermentation, and cause the heat to decline at a time when it is most wanted; this evil involves a continual turning and renewal of the linings. In constructing a frame, in which fermenting material is to be employed as the heating medium, the front wall-plate should never be more than 12 or 15 inches above the level of the path; as by this means it is kept warm with a smaller quantity of fermenting material, and, at the same time, it gives the facility of covering the trenches with wooden shutters, suspended on hinges from the outside wall by one edge, and resting by the other on the wall of the trench. These shutters should be fixed with just sufficient incline to carry off the wet, and they should be made strong enough to serve as a gangway. Melons and Cucumbers must now have careful attention, to continue them in a fruitful state as long as possible. See that the lights are in good order, that drip does not introduce canker among the Melons. Water judiciously, and select the mornings of fine days for the purpose; endeavour to keep the pits perfectly clean and wholesome, by admitting at all times sufficient air to ensure a circulation. Let the walls be occasionally washed with lime and sulphur, to destroy insects. It is indispensable to keep up a good temperature, top and bottom; and if no better means are at command, this must be effected by dung linings, and by covering with mats and shutters at night. Young Cucumbers for winter forcing, recently planted, should not be stopped until they have reached the top of the trellis, when the point should be pinched out, to induce the formation of lateral shoots. Be careful not to allow the plants to be weakened by the production of clusters of male blossoms. Give sufficient heat and moisture to induce a vigorous growth, but accompanied by a free circulation of air, to ensure a sturdiness of habit; to this end, also, let the glass be kept perfectly clean, that they may have all the light possible at this season. After planting, a slight shade is necessary for a short period during strong sunshine, but they must be quickly inured to full exposure.

FLOWER GARDEN AND SHRUBBERIES.

The work of this department, though entirely of a routine character, must be strictly attended to at this season, as neglect or untidiness never shows more strikingly than when the flowers which attracted attention in summer have disappeared. Remove annuals and other herbaceous half-hardy plants as soon as they show signs of approaching decay, and let others of more hardy constitution be divested of their decaying flowers and flower stems. We have before endeavoured to impress upon our readers the fact, that a garden, to bear close inspection, must at all times and seasons wear a phase of progression, and a plant with an unhealthy appearance should be at once removed to the infirmary, if it is worth it, and to the rubbish yard if it is not. As in the eye of any one accustomed to habits of order, the bare soil has a more agreeable appearance than a neglected flower garden, the turf, the edges of the walks, the plants, shrubs, or trees, and the ground around them should wear an appearance of neatness and perfect order. Beds for Hyacinths, Tulips, and other early spring-flowering bulbs, should be prepared and planted immediately. They grow and flower in the greatest perfection when planted in a light sandy loam, which has received a liberal dressing of thoroughly decomposed manure; but which should be carefully kept from coming in contact with the bulbs, by placing a little sand round them at the time of planting. As the roots of these bulbs descend deeply into the ground, a good stratum of rich manure should be trenched in about 12 or 15 inches below the surface. In planting Crocus or other bulbs which are liable to be attacked by mice in winter, a little chopped Furze should be placed around them.

FLORISTS' FLOWERS.

Seedling Pansies will occasionally bring a fine bloom, even at this late period. If there should be any qualities giving indication of future excellence, means should be adopted to propagate it. There is some danger attending transplantation; it will be advisable, if there are any side shoots, however minute, to strip them off, and place in clean river sand under a hand-glass. If not, prune the plant, cutting away the very gross shoots, and protect in very severe weather. If beds for next spring's bloom have not been made, do so. Hoop them over, protecting from heavy cold rain. We are aware that many do not take this precaution, yet those who wish to excel, will find their account in the extra trouble. PINKS.—However careful the amateur may be in making up his bed, a solitary wireworm will sometimes escape him; the consequence is, that he has the mortification to see, possibly, some fine sort wither, and when thus attacked, the plant is beyond remedy. A vigilant search must be made in the bed, when the marauder will often be found within a short distance, perhaps not more than an inch below the surface. If it escapes detection in this manner, then cut some Potatoes in quarters, insert a butcher's skewer in each, and place these pieces of Potato in all directions in the bed. It will be far better to put 20 in, than have another Pink destroyed; and these traps will generally be found efficacious. For other florists' flowers, the directions given last week may be attended to.

KITCHEN GARDEN.

The Cardoon is the finest winter vegetable we have, and it keeps sound till March, if the earthing be deferred till the middle of October. It does not grow much after being earthed up; and as size is of consequence, it is well on this account to let the earthing be deferred as long as the plants are safe from frost. If it be intended to use haybands for binding round them, they should be prepared in wet weather, when the men cannot work outside. Continue the use of strong liquid manure to such crops as can profit by it; and especially Asparagus, to compensate in some measure for the present draught upon its energies by the seeds. Pay particular attention to young crops, by stimulating their growth where needful, and guarding them from the attacks of insects by a sprinkling of soot and lime round them. As a general preventive, which is always superior to cure, it is a good plan to work a dressing of soot into the ground, in company with animal or vegetable manure, when the operations of digging, forking, or trenching are going on. In cleaning the ground, use the fork as much as possible, in preference to the hoe and rake; nothing can be of greater benefit to crops at this season than affording the sun and air additional facilities for penetrating and permeating the soil.

State of the Weather near London, for the week ending Sept. 28, 1850, as observed at the Horticultural Garden, Chiswick.

Sept.	Moon's Age.	Barometer.		Temperature. Of the Air.			Of the Earth.		Wind.	Rain.
		Max.	Min.	Max.	Min.	Mean	1 foot deep.	2 feet deep.		
Friday.. 20	14	29.632	29.463	66	53	59.5	56½	56½	S.	.10
Satur... 21	15	29.813	29.531	69	41	55.0	57	56½	S.W	.50
Sunday . 22	16	29.839	29.834	71	46	58.5	56	56½	S.	.06
Monday 23	17	29.803	29.733	71	51	61.0	56½	56½	E.	.04
Tues. .. 24	18	29.724	29.715	67	45	56.0	57	57	S.W.	.12
Wed. .. 25	19	29.803	29.782	68	48	58.0	57	57	S.W.	.00
Thurs .. 26	20	29.870	29.850	60	44	52.0	56½	56½	S.	.72
Average....		29.790	29.691	67.4	46.8	57.1	56 6	56.3		1.54

Sept. 20—Overcast and mud; cloudy; rain.
— 21—Boisterous; fine; heavy rain at night.
— 22—Heavy rain; fine; clear at night.
— 23—Rain; cloudy; lightning in the evening.
— 24—Cloudy; very fine; sultry; rain.
— 25—Dense fog; very fine; slightly clouded.
— 26—Overcast; constant heavy rain; cloudy.
Mean temperature of the week, 1 deg. above the average.

State of the Weather at Chiswick during the last 24 years, for the ensuing week, ending Oct. 5, 1850

Sept. and Oct.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds. N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 29	64.4	45.7	55.1	13	0.35 in.	1	2	3	2	5	7	2	2
Mon. 30	64.5	45.5	55.0	11	0.38	2	1	3	1	5	6	6	—
Tues 1	63.8	46.5	55 2	11	0.53	2	3	2	2	6	6	3	1
Wed. 2	64.2	44.0	54.1	13	0.48	1	4	1	—	6	6	4	2
Thurs. 3	63.5	45.0	54 2	13	1.01	1	3	—	1	7	8	2	2
Friday 4	63.8	43.4	53 6	11	0.36	—	5	2	—	5	8	3	1
Satur. 5	63.0	41.7	52.4	9	0.57	4	3	2	1	5	5	4	—

The highest temperature during the above period occurred on the 5th, 1834—therm. 80 deg.; and the lowest on the 3d, 1836; 5th, 1826 and 1845—therm 29 deg.

Notices to Correspondents.

BOOKS: *G B.* The Supplement to Loudon's "Hortus Britannicus" just published.

BUCKINGHAM PALACE: *W Th.* We see no advantage in discussing this matter, which is settled so far as the gardening part of the question is concerned.

BULBS: *W G.* There is no such plant as Brunsvigia superbiens. You will find good instructions for the management of such plants in our volume for 1849, p. 663. The sorts you name are easily made to flower, and are very pretty.

FORCING STRAWBERRIES: *G W T.* Six-inch pots will answer your purpose; but you cannot expect to succeed so well with plants so far from the glass as if they were within 2 or 3 feet of it. Of course you will feed with manure-water. Your house may be heated efficiently by hot-water in a flow and return 4-inch iron pipe, or you might try one of Mr. Rivers's brick Arnott stoves, figured at p. 51, 1846.‡

FRUIT PRIZES: *Limerick.* We can hardly advise you to incur any expense in showing in this country. If you wish to do so, the meetings of the Horticultural Society, 21, Regent-st., London, are open to you; they take place on the first Tuesdays in October and November. Medals are awarded there, but only to first-rate productions. We should say six Easter Beurrés are enough for a dish in June. Consult the published Schedules for next year.

GARDENERS' SOCIETY: *G Brown.* There is no such society.

GUANO: *H F S.* You may use it with great advantage to Pines, Vines, and all such plants. It is best administered when mixed largely with water. If you have any information that is new respecting Vine mildew, we should be obliged to you for it.

INSECTS: *Pinus.* The small beetles sent as infesting the Larch are, we believe, the Tomicus Laricis; but the specimens are so smashed and saturated with turpentine that we cannot decide. The only mode of destroying them is to collect the shoots of the present year, which are attacked, and burn them. *W.—J D.* The insects sent are females of Sirex gigas; see *Gardeners' Chronicle*, 1850, p. 517, August 17th, for description and figure. *W.—T C.* 1, Syrphus Ribesii; 2, Chrysotoxum fasciatum; 3, Syrphus balteatus; 4, S. vitripennis; 5, Tachina sp.? 6, Syrphus topiarius; 7, 8, scutatus; 8, S. Melissæ; 9, Eristalis tenax; 10, ditto var.; 11, Volucella mystacea. Some of those just received are not identical with those sent last week. Allow us to recommend your pinning your insects in the usual manner. The insects sent are not fit for the cabinet. The caterpillar is that of Mamestra persicariæ. *W.—G B.* The grubs which have attacked the Pears, Plums, and Cherries are the slimy larvæ of Tenthredo æthiops. Syringing with lime water and dusting with lime are the safest processes. It is of no use dressing the trees and walls in winter, as the grubs descend deep into the earth under the trees to undergo their chrysalis state. *W.—A S.* Your Oak leaf is covered with Oak-spangles, which are formed by minute hymenopterous insects called Cynips. ‡

IRON PIPES: *A B.* Pray explain what you really mean by "the water Corroden in iron Tank and pipes," and we will give you the best advice we can.

IVY: *H C.* Clip it when you please, say in March, and perhaps again at Midsummer. ‡

NAMES OF PLANTS: *B.* Rochea falcata; Vallota purpurea, a very beautifully coloured variety. — *B.* Apparently a very young state of Escallonia montevidensis.—*C H W.* Euphrasia officinalis, common Eyebright.—*Erzeroum.* 612. Marchantia. —*M Bartlett.* Ipomopsis elegans.—*W B Page.* Some Curcuma, probably C. leucorhiza; if not we will say so next week.—*Sweet Gall.* Hippophäe rhamnoides, a wild shrub found near the sea.—*A P.* Apparently fragments of Bromus secalinus. The first Tuesdays in October and November.—*E B E.* Peach, Nectarine, or Almond leaves.—*A B C* It is Oidium fructigenum.—*W G H.* Lomaria borealis, *Smith.* (Blechnum boreale, *Linn.*) *S.—W D H.* Adiantum pubescens, *Schkr. S.*

PAXTON'S COTTAGERS' CALENDAR may be had at the Office of this Paper, or of any bookseller, price 3*d.*, or 5*s.* for 25 copies for distribution amongst cottage tenantry.

ROBERTS'S STRAWBERRY TILES: *W K P.* We cannot insert statements, either for or against, unless the writers are known to us or to others whom we know. Anonymous communications are inadmissible.

STUDDING AND WIRING WALLS: *B.* Use eyed studs and galvanised wire stretched horizontally. Let the studs be built in the wall, and they should be forked at the ends to prevent the possibility of their being drawn out. They should be placed 3 feet apart in every second course of bricks. Let the wire be passed through the eyes of the studs, and screwed tightly at either end of the wall to keep it straight. Nothing but the eye of the stud should project beyond the face of the wall, and the wire should not be further from the latter than ¼ or ⅜ of an inch, just far enough from it to allow a tie to be easily passed between the wire and the wall.‡

SWEET WILLIAM: *J S.* Very curious; a cut is preparing.

VINES: *An Owner.* If by mould you mean Vine mildew, you have nothing to do except to watch its FIRST appearance in the form of small specks, and then to powder those specks with flowers of sulphur. Unless the condition of your Vine is hopeless, it will get well under this treatment.

MISC.: *R H.* We assure you that we did not review the work you name. We never review works having no relation to natural history or rural economy.—*A R.* You may move your Pinus now with safety. Winter your Pentstemon speciosum in a frame.‡—*J Abell.* Though rather late in the season, you may root-prune your Cloth of Gold Rose now. The Acacia may also be moved now. Its name cannot be ascertained without flowers. ‡

SEEDLING FLOWERS.

ANTIRRHINUMS: *R W and Z.* Pretty enough, but in their present state all too small.*

DAHLIAS: *J S.* Your purple and white "fancy" is, on the whole, a fairly formed flower; but the tips are somewhat irregular, and it is also defective in the centre. — *T M W.* Yellow tinged with brown, average size, and good in form and petal. Closely shaded it will be clear yellow. Desirable if constant.*

FUCHSIAS: *J P.* A large bold flower, but the sepals and the tube should have been pure white. They would then have formed a more striking contrast with the violet-purple corolla.*—*G W.* Judging from the flowers sent, your Fuchsia is certainly inferior to many of the light kinds now in cultivation.*—*T W L.* A good border kind.*

GLADIOLI: *J C.* All very beautiful, though perhaps somewhat wanting in brilliancy of colour.*

GLOXINIAS: *A B.* A pretty light variety, with a handsomely blotched and spotted throat.*

HEATHS: *Abergavenny.* In the way of Gellida, but hardly so good. It may, however, be worth preserving, on account of its peculiar pale green colour.

JAPAN LILIES: *T W L.* All handsome and worth cultivating.*

PANSY: *J F.* A common-place flower, which will not do for exhibition in a good stand.*

PETUNIAS: *J W E.* No. 2 is the best, but it is too small; the other is more common.* — *G R.* Shrivelled up and unexaminable.*

SALVIA: *T M W.* Not in good condition, but apparently unattractive.*

VERBENAS: *B J, H T, and W C.* Not examinable, being all too much shrivelled up.*

TO OUR CORRESPONDENTS.—May we beg it to be understood that *we cannot answer inquiries privately through the post.* We are ready to give reasonable information through our columns, but we cannot consent to the labour of writing letters.

GUANO AND OTHER MANURES FOR WHEAT SOWING.—On Sale, Guano (finest Peruvian), Superphosphate of Lime, made from Bone, Bone-dust and half-inch, Dried and Prepared Night-soil, Urate, Gypsum, &c. Also Foreign and English Linseed Cake of the best quality.—Apply to MARK FOTHERGILL, 204 A, Upper Thames-street, London.

MANURES.—The following Manures are manufactured at Mr. LAWES's Factory, Deptford Creek:

Clover Manure, per ton	£11 0 0
Turnip Manure, do.	7 0 0
Superphosphate of Lime	7 0 0
Sulphuric Acid and Coprolites	5 0 0

Office, 69, King William-street, City, London.

N.B. Peruvian Guano, guaranteed to contain 16 per cent. of Ammonia, 9*l.* 15*s.* per ton; and for 5 tons or more, 9*l.* 10*s.* per ton, in dock. Sulphate of Ammonia, &c.

THE LONDON MANURE COMPANY beg to offer as under:

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CONCENTRATED URATE. SUPERPHOSPHATE OF LIME.
PERUVIAN GUANO. SULPHATE OF AMMONIA.
FISHERY AND AGRICULTURAL SALT, GYPSUM, and every artificial Manure; also a constant supply of English and Foreign LINSEED CAKE of the best quality.

The London Manure Company will guarantee the Guano they supply to be free from the slightest adulteration.

Bridge-street, Blackfriars. EDWARD PURSER, Secretary.

BY HER MAJESTY'S ROYAL LETTERS PATENT.

PATENT HOTHOUSE WORKS, KING'S ROAD, CHELSEA.

BENCH invites the attention of Gentlemen about to erect Hothouses, &c., to the vast superiority in every respect possessed by his PATENT HOUSES, which he will warrant superior in every respect to any others. Good Glass from 16 to 21 oz. per foot, 1 foot wide, 3 feet long, furnished, and the Houses, when completed, charged from 1*s.* 3*d.* to 1*s.* 6*d.* per superficial foot, according to size and quantity; on one principle the roof is formed without wood or putty, and on another principle with wood rafters, and the glass put in with putty. Patent Sashes, requiring no paint, from 7*d.* to 9*d.* per foot. HEATING BY HOT WATER.

STEPHENSON AND Co., 61, Gracechurch-street, London, and 17, New Park-street, Southwark, Inventors and Manufacturers of the Improved CONICAL and DOUBLE CYLINDRICAL BOILERS, respectfully solicit the attention of scientific Horticulturists to their much improved method of applying the Tank System to Pineries, Propagating Houses, &c., by which atmospheric heat as well as bottom-heat is secured to any required degree, without the aid of pipes or flues. S. and Co. have also to state that at the request of numerous friends they are now making their Boilers of Iron, as well as Copper, by which the cost is reduced. These Boilers, which are now so well known, scarcely require description, but to those who have not seen them in operation, prospectuses will be forwarded, as well as reference of the highest authority; or they may be seen at most of the Nobility's seats and principal Nurseries throughout the kingdom.

S. and Co. beg to inform the Trade that at their Manufactory, 17, New Park-street, every article required for the construction of Horticultural Buildings, as well as for heating them, may be obtained upon the most advantageous terms.

Conservatories, &c., of Iron or Wood, erected upon the most ornamental designs. Balconies, Palisading, Field and Garden Fences, Wire-work, &c.

QUEEN'S COLLEGE, CORK.

SCHOOLS OF ENGINEERING AND AGRICULTURE.

THE SESSION for 1850-51 will commence on the 15th of OCTOBER.

Prospectuses, with details of the several Courses of Lectures in connection with these Schools, the Fees payable, &c., may be obtained by application to the Registrar, or to the Professor of Engineering or Agriculture.

Boarding Houses, licensed by the President, have been established in Cork, where Students are received and comfortably provided for on moderate terms, and their religious and moral conduct watched over by the Deans of Residences.

By order of the President,

Sept. 28. FRANCIS ALBANI, Registrar.

CHEAP AND DURABLE ROOFING.

BY HER MAJESTY'S ROYAL LETTERS PATENT.

F. M'NEILL AND Co., of Lamb's-buildings, Bunhill-row, London, the Manufacturers and only Patentees of THE ASPHALTED FELT FOR ROOFING

Houses, Farm Buildings, Shedding, Workshops, and for Garden purposes, to protect Plants from Frost.

At the Great National Agricultural Shows, it is this Felt which has been exhibited and obtained TWO SILVER MEDAL PRIZES, and is the Felt SOLELY patronised and adopted by

HER MAJESTY'S WOODS AND FORESTS,
HONOURABLE BOARD OF ORDNANCE,
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HER MAJESTY'S ESTATE, ISLE OF WIGHT,
ROYAL BOTANIC GARDENS, REGENT'S PARK,

And on the Estates of the Dukes of Sutherland, Norfolk, Rutland, Newcastle, Northumberland, Buccleuch (at Richmond), the late Earl Spencer, and most of the Nobility and Gentry, and at the ROYAL AGRICULTURAL SOCIETY'S HOUSE, Hanover-square.

It is half the price of any other description of Roofing, and effects a great saving of Timber in the construction of Roofs. Made to any length by 32 inches wide.

PRICE ONE PENNY PER SQUARE FOOT.

*** Samples, with Directions for its Use, and Testimonials of seven years experience, with references to Noblemen, Gentlemen, Architects, and Builders, sent free to any part of the town or country, and orders by post executed.

☞ The Public is cautioned that the only Works in London or Great Britain where the above Roofing is made, are

F. M'NEILL AND CO.'S

Patent Felt Manufactory, Lamb's-buildings, Bunhill-row, London, where roofs covered with the Felt may be seen.

The new Vice-Chancellor's Courts, at the entrance to Westminster Hall, were roofed with F. M'NEILL and Co.'s Felt about two years since, under the Surveyorship of Chas. Barry, Esq., R.A. Her Majesty's Commissioners of Woods and Forests are so satisfied with the result that they have ordered the Committee Rooms at the Houses of Parliament to be roofed with their Felt. Quantity altogether used, 24,000 feet.

NOTE.—Consumers sending direct to the Factory can be supplied in lengths best suited to their Roofs, so that they pay for no more than they require.

Every information afforded on the construction of Roofs, or any proposed particular application of the Felt.

PERUVIAN GUANO.—As Agents of the Peruvian Government for the importation and sale of this valuable MANURE, we think it right, for the protection of consumers and respectable dealers, to apprise them that the adulteration of the article is still extensively practised, and to recommend them to apply either to ourselves, to our agents, Messrs. GIBBS, BRIGHT, and Co., of Liverpool and Bristol, or to dealers of established character, in whose honesty and fair dealing they can place implicit confidence. ANTONY GIBBS and SONS.

CARSON'S ORIGINAL ANTI-CORROSION PAINT, especially patronised by the British and other Governments, the Hon. East India Company, the principal Dock Companies, most public bodies, and by the Nobility, Gentry, and Clergy, for out-door work at their country seats, The Anti-Corrosion is particularly recommended as the most durable out-door Paint ever invented, for the preservation of every description of Iron, Wood, Stone, Brick, Compo, Cement, &c., work, as has been proved by the practical test of upwards of 60 years, and by the numerous (between 500 and 600) testimonials in its favour, and which, from the rank and station in society of those who have given them, have never yet been equalled by anything of the kind hitherto brought before the public notice.

Lists of Colours and Prices, together with a Copy of the Testimonials, will be sent on application to WALTER CARSON, No. 9, Great Winchester-street, Old Broad-street, Royal Exchange.

No Agents.—All orders are particularly requested to be sent direct.

FOR WATERING GARDENS, BREWERS' USE, &c.
FLEXIBLE INDIA-RUBBER HOSE PIPES.

JAMES LYNE HANCOCK, Sole Licensee and Manufacturer of the PATENT VULCANISED INDIA-RUBBER PIPES and TUBING.

These Pipes are well adapted for Watering Gardens, conveying Liquid Manure, racking Beer and Cider, Gas Fittings, Chemical and all purposes where a perfectly sound WATERPROOF and FLEXIBLE PIPE is required.

Hot Liquors or Acids do not injure them. No oil or dressing is required in using them. They do not leak from remaining out of use, are permanently Flexible in all Temperatures, and are therefore particularly suitable for Fire Engines; and, from their not leaking, are found exceedingly useful in conveying hot or cold water to baths in dwelling houses and such like purposes.

A LIGHT VULCANISED INDIA-RUBBER HOSE is now manufactured for conducting Water and Fluids, at the following prices per foot:

Size.	¼ in.	⅜ in.	½ in.	1 in.	1½ in.	2 in.	2½ in.	3 in.
1 ply ...	0*s.* 5*d.*	0*s.* 6*d.*	0*s.* 8*d.*	0*s* 10*d.*	1*s.* 0*d.*	1*s.* 2*d.*	1*s.* 4*d.*	1*s.* 6*d.*
2 ply ...	0 8	0 9	1 0	1 2	1 5	1 8	2 0	2 3
3 ply ...	0 11	1 0	1 3	1 6	1 10	2 2	2 9	3 3

N.B. Vulcanised India-Rubber Garden Hose fitted with roses, jets, and branches, complete, with union joints ready to attach to pumps or water cisterns.

All orders or letters addressed to J. L. HANCOCK, at the Manufactory (and Warehouse), Goswell-mews, Goswell-road, London, will meet with immediate attention.

HOW TO KEEP A HORSE FOR LESS THAN ONE SHILLING PER DAY.

"Do you bruise the Oats you give your horses?" "No."

"Then you lose one bushel out of every three, and your cattle do not half so well."

MARY WEDLAKE AND CO.'S OAT-BRUISING MILLS. Superior Chaff Engines, simple in construction, doing from 50 to 500 bushels daily, and more. Almost all brewers and coachmasters in London use these implements.

118, Fenchurch-street, London. A pamphlet on the above, by sending 12 postage stamps. Chaff-cutters, Linseed, Bean, and Malt Mills.

The Agricultural Gazette.

SATURDAY, SEPTEMBER 28, 1850.

MEETINGS FOR THE TWO FOLLOWING WEEKS
THURSDAY, Oct. 3—Agricultural Imp. Society of Ireland.
THURSDAY, — 10—Agricultural Imp. Society of Ireland.

THERE is a great deal of mistaken benevolence which purchases an immediate good at the expense of ultimate injury. The systematic relief of distress, without reference to its cause, is an instance of this; and so is the treatment of one's "neighbour" according to his necessity rather than according to his desert. The man who would diminish pauperism in any locality, or improve the condition of the labouring class around him, is much more likely to attain his object by exerting himself for those who are still among the self-maintaining, than by striving for the relief of the dependent. And on this ground, among many others, we contend for the soundness of that judgment which approves of the ALLOTMENT SYSTEM. It is not as relief granted to the poor, but as enabling them to achieve it for themselves—it is not as any direct benefit conferred upon them, but as the means of fostering those habits of industry and economy by which they will be benefited—that the allotment system is especially praiseworthy. The owner of the land on whom we depend for its extension is not asked to exercise any self-denial, or suffer any loss that others may thus be the gainers. He will himself be a gainer along with them, receiving higher rents for his land than farming on the large scale can afford him; and his tenantry will benefit through the opportunity he thus offers them for saving that time and those means which would otherwise be wasted and probably misspent.

The following communication from "An Essex Labourer" illustrates the great importance of allotments of land to men in his station, in individual cases, but it is more particularly important, we believe, in illustration of the general subject of the relationship between master and servant. The writer says:—

"I am an old soldier, having served my country (as the usual term is) for many years; I have medals to show (granted by the present not over liberal Ministry), and I am grateful to say that I receive a pension. Yet in this consists my hardship: I have worked on a farm for 23 years, 11 in the service of its present occupier, the rest in that of his uncle, and during that period I am not aware that I ever committed myself in any way, or I should have been instantly discharged. In March last, however, my master told me that he did not want me any longer. I said 'I hope, Sir, you will not discharge me, as I have been so long on the farm;' his answer was, 'I have no fault to find with you, but I think as you have a shilling a day from Government, you can do better than many now out of employ.' This is no doubt true, yet, I think, no one can say that it is not a great hardship upon me, having as I have three children, and wishing to give them a better schooling than I myself received, as a means of helping them on in the world. It is impossible for me to do this now, as I have not been able to get more than a week's work from the time I have referred to till the present. Now I think if I could get an acre or two of land to cultivate, I should be able to rub on well, as it would fill up the time when I cannot get a job; but, in this part of the county (Essex), there is no chance unless you take it of a tenant farmer, and they charge you such an enormous rent that no one can have a chance of getting a living on it—as much as 4*l.* an acre for very poor land, and 6*l.* for a better quality. Now any one at all conversant with land must know that it will not repay a man's labour at this rent. What I wish is, that those gentlemen who have land to let would divide it into small portions, say 10, 15, or 20 or more acres; they would get more rent, after paying a person to collect it, and might have it every three months if necessary. I am certain that any gentleman who might try it would increase his quantity every year, and at the same time be conferring a great benefit on his poorer neighbours. There is one gentleman in this neighbourhood who has taken a small field from one of his farms and divided it into allotments. He might let ten times the quantity, but the tenant does not like it. *An Essex Labourer.*"

Now, supposing all the particulars bearing on the transaction here related to have been correctly stated, we believe his master to have erred in discharging from his service this "Essex Labourer." We do not know the character of the men with whom he had to compete, but in the event of having to discharge from our service a certain weekly value of labour, we certainly should feel to have acted with greater wisdom in selecting the weakest, rather than the strongest hands, for dismissal. We are entirely unacquainted with the history of this man, except in so far as our readers are also made acquainted with it by his own pen; but the case seems to furnish a good text for some general observations, and of course the above remarks are made without any personal intention. The lesson we would endeavour both to learn and to teach, for we believe it to be a just one, is to treat our men, not according to their necessity, but according to their desert. Give honour to skill, ability, trustworthiness, and labourers will strive after them; but let the necessity or helplessness of our men be the guide of their treatment, and we shall soon be surrounded by pauperism enough. The circumstance that a man's merit had been authenticated by a pension would induce us to choose him, rather than one of whose worth we could not be so sure, for any favour we had to confer. And 23 years' knowledge of his steadiness might well strengthen his claims upon our consideration. Let the best labourer have the best wages, whether he have a family or not—whether he have other means of support or not. And, just so as regards allotments, let the largest be offered to the strongest and most skilled, to the man who can have the most assistance in its cultivation from his children, to him who, living nearest the allotment ground, and having the smallest garden already, will have the most time at command. If poverty and not ability is to be our guide in allotting these small farms, they will have a pauperising rather than a strengthening tendency, as everything has which acts as a premium upon weakness or distress.

The allotment system we recommend is however something very different from that which the "Essex Labourer" himself suggests. The circumstances must be very rare which would justify any proprietor in cutting his large farms into 10, 15, or 20 acre pieces, as he proposes. It is desirable that in every locality there be farms of all sizes—that at no stage in the succession, from 10 acres to 1000, should there be an interval so wide as to be impassable by any one who has prospered on its lower side and would rise beyond it. It is desirable that the steps on the social scale be frequent enough, and therefore near enough to encourage those who would mount: but let the platform be largest at that height where it is most for the benefit of the community that the majority should be. We would furnish the amplest means for climbing from one platform to another; but this is quite another thing from reducing the levels of the platforms themselves. We would have large farms as a general rule, but we would make them accessible from the platform of the labourer; the allotment system would represent the first "round" of the ladder connecting them, and above it, in succession, should be a series of farms, in-

creasing in size, to correspond with the increasing means of the industrious and intelligent man, who alone is able to rise.

THE RESULTS OF MACHINERY.

A Village Lecture.

Doubtless, many amongst you will remember the great disturbances made a few years ago by some bands of discontented labourers, who set to work to destroy all machines used in the cultivation of the land. And why did they so act? Because, as they said, the introduction of machinery had been the means of throwing people out of employ. Knowing that some of you whom I address to-night entertain the same opinion, I am led to preface a course of lectures upon mechanics, with an essay to prove to you the incorrectness of your way of thinking. You think that machinery is a curse, while I consider it to be a blessing. Before, however, we can proceed to argue this point, we must come to understand what we each mean by a machine. Else, you taking it to mean one thing, and I another, we shall never understand each other. You may not call many implements machines which I do. Now let us examine a variety of things. Some of you have been hoeing to-day; is your hoe a machine? You all shake your heads, so I will say—No. Others have been using the spade; is that a machine? No, again. Who is it that has been ploughing and harrowing? Can we call the ploughs and harrows machines? No. The dairy-maid will make butter to-morrow; is her churn a machine? No. The forks? No. Your knives? No. The noisy implement worked by four horses and a number of men, which has been making so much dust here to-day, is that to be called a machine? Yes. You seem all agreed. And why do you call it a machine? Because it throws a great many threshers out of employ? Some nod, while others shake their heads. Because it can do more than a man can, in the same time? You are not agreed. Because it does the work so well? No. Because it is very complicated, and works by means of a great many wheels? You are undecided. Then I am to conclude that you cannot give me a reason for calling it a machine. Some more questions may help us, perhaps. We will try to find another machine. The cart? No. The dibbling-irons? No. The drill? Some yes, and others no. The flail? No. The dressing-machine? You differ. The horse churn? Again you are disagreed. Well, these questions will serve our purpose for the present. You will perhaps be surprised when I tell you that I consider all the implements mentioned to be properly called machines. You differ among yourselves as to what is a machine, and what is not. You cannot draw a line anywhere. If I say, tell me why you call an implement for threshing corn quickly a machine, and one for threshing it slowly not a machine; why a horse-churn is a machine and a common churn is not, you are confused, and say you don't know.

Now the most sensible distinction I have ever known to be drawn between the two, was made by a poor man. About 20 years ago the hand-loom weavers of Glasgow were reduced to great poverty by the introduction of machinery, which superseded their labours. An inquiry was made into the circumstances of the suffering families, and some of the weavers appeared before a committee of the House of Commons. John Foster, the first witness examined, made the following answers to the questions put to him. "*Q.* Are the committee to understand that you attribute the insufficiency of your remuneration for your labour to the introduction of machinery? *A.* Yes.—*Q.* Do you consider therefore that the introduction of machinery is objectionable? *A.* We do not. The weavers in general of Glasgow and its vicinity do not consider that machinery can or ought to be stopped or put down. They know perfectly well that machinery must go on, that it will go on, and that it is impossible to stop it. They are aware that every implement of agriculture or manufacture is a portion of machinery, and indeed everything that goes beyond the teeth and nails (if I may use the expression) is a machine. I am authorised by the majority of our society to say that I speak their minds as well as my own in stating this." Now if John Foster is right, how wrong are you! Let us talk about the threshing machine. Some call it a machine, because it throws men out of employ. So, then, is the horse a machine, for he does with the plough the work that six men would perform with spades, or with the harrow the work that the same number of men would perform with rakes. The horse displaces human labour, and is, by your reasoning, on that account a machine. More men would be employed if there were fewer horses, so that horses are great evils. Others call it a machine because it works by means of wheels. So then is the cart a machine. It displaces the labour of men, who would otherwise be used as porters for the conveyance of manure from the yard and heaps to the field. The Turnip cutter and the grindstone are also machines for the same reason. Some say that it is a machine because it threshes corn quicker and more cheaply than the flail. Then all things that work quickly and cheaply are great evils, you would have us believe, and this we know to be absurd when you are all so glad to be supplied with water by pumps in your own houses, rather than have to draw it from the well, or fetch it from a great distance. We must come to John Foster's distinction, argue as we will, and we must allow that the simplest tool is a machine, while the most perfect machine is only a complicated tool.

Will you agree with me when I say that everything that tends to displace human labour, is a machine? Yes. And you would reject all machinery as being unbeneficial to you? Yes and no. Well, for the sake of showing you to what condition you would be reduced without it, I will suppose that you all assent.

Iron has become so necessary to you, that you cannot fancy yourselves without it. Would you not consider that man mad, who proposed the abolition of all iron hoes? Yes. Well, but the use of iron hoes greatly lessens, you say, the amount of human labour. Such an act, would provide work for a greater number of men, for with crooked sticks so much land could not be hoed in a day, and therefore the more men would have to be employed. Then the spade to supersede the plough, a great deal more work would be furnished to the poor, and were we to cultivate the land with our nails and hands, all the men, women, and children in the country would find employment; and not employment, merely, but misery and starvation also. Labour in itself is not a good, it is profitable labour that benefits and raises a people. On this fact all the question hinges. To it we shall shortly return, but I wish you now to think of the subject of a lecture I delivered to you about two months ago. If you remember, I described the deplorable condition in which our ancestors the Britons were found by the Romans. How, think you, have we risen from such a miserable plight, but by learning to use the machines brought by the Romans, and by becoming acquainted with the arts of civilisation the value of which they taught us? They bored into the earth and brought up iron, and tin, and copper; they felled the Oaks of our forests, built boats, and erected houses, &c.; they showed us those vast resources of wealth, by the ingenious and economical use of which we have been transformed from an insignificant tribe to the most powerful nation of the world. The labouring people of Spain and Portugal are now in nearly as miserable a state as we were then. And why? Because they have few machines. When the Spaniards went to South America for gold, they were obliged to compel the natives to labour for them without remuneration. They could put into their hands no tools, save the spade and the pickaxe, and the work with these tools was so slow and so costly, as scarcely to fall beneath the value of the gold obtained. The ore in which gold is found would not be worth picking up, were we destitute of machines to manufacture it. Had these Spaniards made use of mining engines, and set a few smelting furnaces going, the result would have been very different, and the thousands of Mexicans who died of exhaustion at these works, might have lived to work to their own profit and that of their masters, upon the lighter processes of refining, of beating, and of drawing. The Chinese labourers are the poorest in the world for this sole reason; and the hard worked Hindoos, because they lack machines to economise time and labour, are ever employed in the most servile offices of cultivation, &c., which machines perform for us, and are so fully occupied with these that they could not, supposing that there was sufficient capital to employ them about other and more profitable work, have recourse to it. What thousands are there employed as hewers of wood and drawers of water, as bearers of palanquins and beasts of burden; in short, how many millions of hands are engaged there in operations that machines would perform for us, increasing thereby our power, and cheapening our productions. The work of producing cotton, silk, and sugar, is performed so slowly, because by human labour alone, and so expensive from the same reason, that all the capital of the country is expended in the mere growth of these materials. If India could economise human labour and money in the first operations, so as to release a part of the capital and force, to carry on the processes of manufacturing the raw material into fabric and marketable ware, what a vast source of wealth would she find laid open to her! But, as I will presently show, we have cunningly laid hold upon this means of wealth, and have thriven upon it, proving indisputably that a small community with machinery is more powerful than a mighty empire without it. The poor Hindoo still toils under a fierce sun in the Cotton fields, or plies the wheel beneath the Tamarind tree for a miserable pittance of rice, whilst we import his bales of cotton and hanks of silk to unravel and wear in England, and offer them again to him in his own market at a price which remunerates our mechanics, our manufacturers, our merchants, and our shipowners, and for which he is glad to obtain them.

You see New Zealand on the map there. The inhabitants of that country possess no machines, and are compelled to beat their corn between stones in order to convert it into meal. Would any one of you like to stop at home 80 days out of the 365, in order to beat your corn into flour?

There are many who from infancy to manhood are clothed in the produce of the loom, and surrounded by the benefits of machinery, without bestowing a thought on the sources of these benefits. I think those people who cry out against machinery are not the most consistent in the world. Let us examine the cottage of such a man. Of what is it built? The walls are of plaster. Plaster is composed of lime, and we cannot dig for chalk, which is converted into lime in the kiln, without spades and pickaxes, which are machines. It is roofed with slates. Slate is obtained by machinery from the quarry, and cut for roofing purposes into thin layers by machines. The framework of the house consists of beams and rafters and uprights, &c., all evenly cut and fitted together in a surprisingly little time, and with but a very small waste of material, but not without machines. The carpenter's rule, his hatchet, his saw, his planes—and his centre-bits, his gimlet, his bradawl, his nails, and his hammer—these are all machines, and without them would few houses be built, and those few less comfortable than the meanest hovel in our village. Let us go into the bedroom. Well now that bedstead should not be here; machines have been employed to construct it. You may be exposed to draughts on the floor, but still that must be your resting-place. What is to be your covering? certainly not blankets nor sheets, for you scorn the results of machinery. You will not object to wrap yourself in sheep-skins, for they can be your sole clothing. It is not honest to object to machinery, to say that it is a bad thing, and yet to enjoy the blessings it dispenses in this way. You must excuse me if, for the sake of your character, I turn you out of this comfortable house altogether.

You may think that I have exaggerated the case; but I assure you that I have not done so. Comfortably housed and provided as you are, it is difficult to picture so miserable a contrast. But you have only to fancy yourselves the very reverse of what you are at present. Step forth from your cottage, put off your clothes, and roam abroad; abandon the use of all iron-shod tools, of all metals, of coals; give up your roads, break down the bridges, let the horses run wild, feed upon vegetables that you can produce by the work of your hands only, together with the wild fruits of herbs and trees; thus reduce yourselves, and you may then conjecture what it is to be without machinery. One of the chiefs of the people of New Zealand, who had been supplied with tools by the English vessels, told Mr. Marsden, a missionary, "that his wooden spades were all broken, and he had not an axe to make any more; his canoes were all broken, and he had not a nail or gimlet to mend them with; his Potato grounds were uncultivated, and he had not a hoe to break them up with; and that for want of cultivation he and his people would have nothing to eat." This shows you the state of a people without machinery. *F. R. S.*

(To be continued.)

POULTRY MISCELLANIES.

5. *Deformities in Fowls.*—I have no doubt that many of the ailments amongst poultry, for which the suggestion, by the Editor, of a remedy is requested, are cases quite past all hope of aid by physic. However healthy the fleshy and intestinal parts of any creature may be, if its bony skeleton be distorted, things cannot go on right with it. If a fowl is dispirited, sulky, refusing to eat its due share, pining away with no one knows what malady, a careful handling of it, and an examination by that means of the shape of its bones, will often reveal a deformity of structure, and so save a deal of useless doctoring. It is a case for the cook, instead of the veterinary surgeon, and the sooner a decisive operation is performed the better.

a. A not uncommon mis-shape is a distortion of the two bones that lie one on each side of the back-bone, and which in carving are called the side bones; it is generally accompanied by a twisting, *upwards and downwards*, not side-wise, of the backbone itself. Now, protected by these bones, and close beneath them, lie the lungs, the kidneys, and the ovaries or egg-organs; and the healthy action of these tender and irritable parts must be disarranged by a mis-shapen back and side bones. This deformity is less frequent and less easily detected than the one next to be mentioned. It is sometimes indicated by a squatness of stature in disproportion to the size of the bird, the usual carriage of the breed to which it belongs being considered; and by passing the fingers under the feathers along the back towards the tail, the irregular depressions and swellings of the bones may be felt, if of a very decided character. I regret not having saved specimen bones of any patient of this class, in order that they might be engraved, to show clearly the malformation which it is wished to describe. I *think* I have seen this in some water birds.

b. The most usual deformity is that of the sternum or breast-bone. The keel of the breast-bone is twisted in a way which it is impossible to show without the aid of shaded drawings. To this are attached the great muscles belonging to the fore-part of the body, so that the outward as well as the inward mechanism of the creature is deranged by this deformity. I have seen the same defect in turkeys as well as in fowls, but never in water-birds, nor, that I remember, in any gallinaceous game. It is most common in late hatched birds. Bantams, the rearing of which has been deferred till the latter part of the season, in order to keep them dwarf, are apt to be thus deformed, and consequently incapable of performing all their animal functions properly. People sometimes pride themselves on having the smallest hen in the town, or in the county, which on inspection proves to be a useless unproductive curiosity, that can just be kept in life. Were an attempt made to reduce the size of any large breed by persisting in hatching them late, the chances are that half the chickens would come with distorted breast-bones. And in carving, the crooked breast-bone is more commonly met with in turkeys in March, than in Turkeys at Christmas, *i.e.*, the birds that come from the latest broods. But besides late hatching, too close confinement, and insufficient variety of food for the chickens will cause the complaint. Just as a baby fed on arrow-root, without a due supply of milk and baked flour or biscuit in its diet, will grow fat and get the "rickets!" So, if chicks have not given to them, and are not allowed to get for themselves, in their meals, the materials wherewith to make bones, they will grow

into cripples and become good for nothing, or die, in spite of the most potent remedies that Mr. Editor and his *aide-de-camp* may kindly prescribe to the unseen patient. This is why we have so repeatedly recommended the mixture of fine pollard, and even bran, which contain many of the elements of bone, with rice and other matters, that are deficient in them, as chicken food. For the same reason calcined oyster-shells, egg-shells, and all kinds of kitchen scraps are to be offered.

c. A rarer accident is the production of a cross bill. No chick so disorganised has ever been hatched under our own inspection; but this summer I saw in an aviary a living specimen of this unhappy configuration. The bird was kept alive with soft food, appearing to have a difficulty in picking up grain; and it is clear that the chances of such a creature surviving long in a wild state are very small. For it is not like the mandibles of the grosbeak, a peculiar adaptation to suit a particular purpose, but an alteration by disease of the usual adaptation of the bird's bill to its food. We should be more inclined to destroy such a miserable sufferer, than to endeavour to prolong its existence.

d. Crooked Feet and Toes.—The claws of a *rasorial* or scratching bird are not expected to be particularly taper and delicate; still, in their very coarseness there is a model form, which, if much deviated from, becomes a deformity. The feet are then unable to harrow up seeds and insects, and the creature is less competent to procure food according to its natural instincts. But the defect is obvious, and not likely to cause perplexity, like malformation of the unseen bony parts. The owner of the ugly oddity can please himself whether to kill or spare it. We have lately had hatched a chicken all whose toes turn inwards right and left on a horizontal plane, with a strong curvature. It walks and runs as well as the rest of the brood, but would be unable to tear a tough turf to pieces with its feet.

In reference to "Miscellany, 2," at p. 507, scepticism is expressed by "I. J. F." (who keeps a small number of fowls, like "A Constant Reader," and under much the same circumstances), as to the disease, with which they are similarly affected (some having a little swelling in the head, while others have a rattling noise in the throat), being curable in its early stages. He is fearful on that point, and hopes "D." will excuse his differing from him; for his fowls have been ill about two months, and are without evidence of recovery, although they have "the eye of the master" upon them. He would like to be informed whether "D.," or any other keeper of poultry, has proved that this "plague" has ever been known to be thoroughly eradicated from the yard, without destroying the whole of the stock.

Now here one might say that the remedy was worse than the disease. With a single lot of half a dozen, or half a score, it might be of no heavy consequence; but to destroy a various collection of 100 or 200 head, because a few of the number will persist in sneezing and crying "pip," seems a stroke rather too much in the style of Mohammed Ali. There is one decidedly efficacious medicine, which people who keep fowls in small confined yards (especially when surrounded by the lofty buildings of a town) cannot command, namely, sunshine—hot, dusty basking-corners for their poultry. They cannot turn the rays of the sun from their direct course, and persuade them to warm the chilly soil. So the fowls fail to thrive. But we happen to be in actual possession of fowls which have been cured, or have recovered, it is difficult to pronounce which, from the malady; and are now, as far as one can tell, in perfect health. A little "sneeze and pip" will always be hanging about a large stock of poultry, with every care. The object, of course, is to reduce it to the lowest amount. Contrary, it must be confessed, to the popular notion, we do not believe it to be infectious in the early stages; but decidedly epidemic, depending upon locality. Certain farms will have a certain various proportion of disease among their poultry, which proportion, as compared with that of other farms, is constant through a course of years, the care and degree of intelligence bestowed on each being the same. Why else should some counties have been known, for years past, as more favourable than others to the rearing of poultry? And it is remarkable that such counties should be those which lie upon the chalk, as Norfolk, Cambridgeshire, Kent, Sussex, &c. One curious point about this Protean malady, which, in its more advanced stages, is the same as that called roup in most poultry-books, is that although not infectious (according to our belief), it seems to be self-generated under special circumstances. Thus, if a lot of healthy fowls are made to join company, from a distance, with a large company of others, all in apparent good health, the chances are, that most of the new comers will have to go through a course of "sneeze and pip" till they are seasoned to their new habitation, and some of them perhaps die. Whether fowls that have made a long journey are more liable to these attacks we would not say; but certain it is that nearly every stranger has to go through the ordeal, and we can speak to the fact, after considerable experience in the reception of strange birds, with such certainty as to induce a resolve never to *lend* a valuable bird, but either to part with it entirely, or to refuse to let it go. We conceive that the effluvium of a large head of poultry, all in apparent health, may act injuriously, say infectiously, on a healthy lot of new-comers, though they themselves suffer no detriment from inhaling it. The fresh arrivals are then supposed to have brought the "sneeze and pip," though, poor things, they are the injured parties. I fear that from this cause many a fowl-dealer has been unjustly accused of sending unhealthy specimens to his customers. They have often enough sins of actual commission to answer for, without having to bear the blame of what they cannot obviate. But the first-class London dealers, such as Mr. Baily, of Mount street, on receiving an order seldom execute it from their own home stock, but procure what is wanted from correspondents, or from supplies out at walk in the country; and, doubtless, always would do so, if requested. But it would be more agreeable to write a chapter on the Health than on the Diseases of Fowls, and we do not care speedily to recur to the subject. As before stated, rue has proved the most efficacious drug in our own poultry-yard; but a dose of jalap, or a calomel and colycinth pill may also be good, as empirical alteratives, to take the chance that a change in the system of the creature may turn out an improvement. But prevention is better than cure. It is a strange superstition, the belief that, in the case either of man, beast, or bird, a something, put down the throat, should be able to remedy everything that is wrong within; whether resulting from vice, indolence, over-eating, over-drinking, starvation by hunger, cold and wet, or mere feebleness of vital force. A "Parr's Life Pill" for fowls would sell. So much less trouble to give the poor things a bolus, than to look to their cleanliness, comfort, and sufficient and equal feeding; *i. e.*, seeing that the weaklings have their share as well as the cocks and hens of the walk, four or five times a day, especially in wet weather, when such charity is most truly, and indeed welcome. *D.*

AGRICULTURAL DEFINITIONS AND EXPLANATIONS.

Agriculture is the art of cultivating the soil, and of manufacturing the produce into food for man and for beast; and into food for the crops we produce.—It includes all the operations by which we can artificially increase the natural produce of the earth: the most perfect system of agriculture being that which produces the greatest amount of free produce.—The laws of nature applicable to the art of gardening, are equally applicable to that of farming. "I cannot distinguish between an individual gardener and a national gardener; the same means will produce the same result, whether on a large or small scale. The question is, is the manual labour applied properly? if it is, the cost is of no consequence on the large scale, provided there is capital." (Mechi.)

To obtain the object of agriculture or of any other art, there must be a scientific system adopted, on certain known principles, fitted to the circumstances of the case—the particular soil, the climate, and demands of our market. A practical knowledge of all the sciences which contribute to the art of agriculture, as well as a practical knowledge of the various operations which are required to carry out the work, and a knowledge of the external influences affecting them, are necessary to the profitable prosecution of the art.

A knowledge of the chemistry, the vegetable physiology, the geology, and the mechanics of agriculture is necessary to the practice of agriculture scientifically. All our proceedings must be in unison with the laws of Nature, or they will be fruitless. To this we must add the knowledge of the proper application of labour under every circumstance in which the soil may be placed. The study of agriculture is in fact the study of Nature in all her various operations, for the farmer witnesses the operations of her laws under almost every circumstance of his annual routine of procedure.

The laws of Nature, which regulate vegetation, are immutable; under the same circumstances they present the same result. Plants grow in the same manner in the richest and in the poorest soil, although their state of luxuriance be widely different; they live on nearly the same food, and the same circumstance causes the death of all, and when dead (whatever may have been the difference of their luxuriance), they all decompose and pass into their original elements in the same manner.—Thus the laws which regulate the growth, and which cause the decay of plants, are as unchangeable as their results are certain, but there are certain circumstances under which growing plants are frequently placed, which increase or retard the progress of their growth, and which present a uniform result. These relate to the variety of the soil, and the state of the cultivation under which it is placed, and the variableness of the climate.—The circumstances under which plants grow most luxuriantly, and come to the greatest perfection, are therefore of the utmost importance, and should be studied, and always adopted; and those circumstances under which their growth is retarded, must also be studied, that they may be prevented or avoided. The advantages therefore are obvious which that farmer possesses who is acquainted with the principles regulating the various operations which belong to agriculture, and who thus has fixed principles to direct him in all his agricultural operations.—Cultivation or tillage may be defined as being the proper mechanical arrangement of the particles which compose the active soil for the production of our crops.—Matter is indestructible; we cannot create or destroy a single atom. All that we can effect in our operations is merely to change the position and relations of some of them. All active soil is composed of solid materials, these never change their nature; they are, however, converted into liquid and gaseous forms, and transferred from one body to another by mechanical and chemical force.—But all the vegetable and animal matters, which are universally found in rich and well cultivated soils are in a constant state of change, passing into their original elements. This fact should never be lost sight of; for if we do not yearly fill up this loss, which is daily going on, it is evident that the capabilities of the soil will yearly decrease.—A certain mechanical condition of the soil is necessary for every plant, to afford it support and nourishment. The soil, therefore, ought always to be in such a state of cultivation as to furnish the matter which the plants require to bring them to perfection. The rain, the dew, and the insensible humidity of the atmosphere, furnish much of the matters which plants require during their growth; hence the necessity of growing those plants which are suited to the climate and soil, and of adopting such a system of cultivation as will at all times keep the mechanical condition of the soil in such a state as will give free admission for the rain and air to the roots of the plants, that the vegetable and animal matters in the soil may be readily decomposed, and the plants may receive from out of such decomposition the matter upon which they depend for healthy growth, whether it be for the production of leaves, stem, bulbs, or seed.—The mechanical alteration of the soil enables the roots of plants to go in search of nourishment which the soil contains, which, without perfect cultivation, would be locked up within its hard solid mass. The fine fibrous roots cannot penetrate the unbroken hard earth, but if the clods be broken small they grasp them, winding round about them, and sucking out the nourishment they contain. When the soil is well and deeply cultivated, the fine silken fibrous roots ramify and extend further, and penetrate deeper into the soil in search of nourishment than when the cultivation has not been so deeply and perfectly made.—The effects produced by bringing up fresh portions of the subsoil at intervals of time, and exposing them to the action of the atmosphere, and particularly to the frost during winter, tends greatly to pulverise and enrich the soil, and by the use of the harrow after the frost, while the land is dry, we complete by art what Nature began. Land that is deeply ploughed in the autumn, if kept dry during winter, resists the drought in the summer much better than that which is not ploughed till late in the spring.—The perfect cultivation of the soil, often repeated, presents every time a fresh portion of earthy materials to the influence of the atmosphere, which enables it to absorb those gases which hasten the decomposition of the organic and inorganic matter in the soil. And by deep cultivation between the rows of our root crops we bring down the influence of the atmosphere to the bottom of the active soil, and place it in contact with all the materials of which the soil is composed, thus hastening their decomposition—the results, whether liquid or gaseous, being presented to the roots and leaves of the plant. This is most apparent when it is performed after the manure has been applied; every repeated act of cultivation then acts on the organic and inorganic matter, and decomposes them.—Every operation of the plough, cultivator, horse-hoe, drag, harrow, and roller, accelerates and increases the disintegration of mineral masses in the soil, and liberates those materials in it which supply the plants with the inorganic matter they require; by this we extend the field in depth for the roots of our crops, and expose every portion of the cultivated soil to the most powerful action of the atmosphere, which imperceptibly reduces it to minute atoms. These mechanical exposures of the soil prepare it for the chemical changes which must follow before the inorganic matter can become soluble and liquified or capable of entering into the fine spongioles of the roots of plants.—When the soil and temperature are most favourable for putrefaction, the organic and inorganic matter will be most rapidly decomposed, and most luxuriant vegetation will follow, but then the organic matter will be sooner exhausted, and the soil will sooner require to be replenished with a fresh supply of vegetable and animal matter, food for plants.—If the mineral matters of a soil be in such proportion as to keep it at all times in a state favourable for the production of good crops under a regular course of alternate husbandry, no kind or degree of cultivation will ever derange the proportion of these materials, but the quantity of vegetable and animal matter, in all their various degrees of decomposition, will be constantly changing, and these must be as certainly replaced, or the productiveness of the soil will diminish.—The quantity and state of the manure in the soil is of the utmost importance to the farmer, and the more rapidly he gets the soil to decompose the manure, for the production of his crops, the greater will be his return, if he takes all the advantage of it which he has in his power to do.—It must appear that the objects of all our acts of cultivation is to give to the soil the power of rapidly preparing and giving up the nourishment it contains to the plants, and also the means of rapidly discharging its redundant moisture. Perfectly-drained and well-cultivated soil has this power by capillary attraction; but all this depends on the state of the soil and subsoil, as well as on the quantity of decomposing organic matter in it.—The roots of the Wheat and Turnip plants have been traced to a depth of 4 and 5 feet on land that had been perfectly drained and subsoil-ploughed; this shows the advantage of deeply cultivating the soil and subsoil. By doing this to a depth of from 1 to 2 feet we double the extent of the active soil, and thus double the extent of the field for the roots to fasten on. The roots are doubled, and they send up double the quantity of nourishment to the leaves, and these, being also doubled in extent, they prepare double the sap for the production of double the return.—Liebig says: "The size of a plant is in proportion to the surface of the organs which are destined to carry food to it. A plant gains

another mouth and stomach with every new fibre of root and every new leaf. When the food of a plant is in greater abundance than its organs require for their perfect development, the superfluous nourishment is not returned to the soil, but is employed in the formation of new organs; so when the subsoil is dried to a sufficient depth, and the organs and fibrous roots have received sufficient food for the proper development of the plant, the superfluous food is employed in the formation of additional fibres, the roots grow deeper in the mellowed subsoil and receive additional food, which is appropriated by the plant."—The depth of the active soil in which the roots have to pasture, that is, from which they draw their nourishment, requires all the cultivator's ingenuity to enlarge; for we cannot extend an acre in length or in breadth, but we can extend it in depth; and if we increase the depth of the active soil to double its present depth, we double the field of pasture for the roots of our plants to go in search of nourishment. By this means alone, the roots are greatly increased in length and the leaves are greatly increased in surface, and consequently they assimilate to their nourishment a greatly increased amount of matter, upon which the plant grows. The surface of the leaves being so greatly enlarged, they have increased power of drinking in the carbonic acid and ammonia from the atmosphere which it naturally supplies; the size of the leaves of all plants show the marked difference between a luxuriant and a sickly and poverty-stricken plant; this increased growth of the leaves produces a corresponding growth of the roots and the seed.—The roots of plants must have the power of extending and ramifying themselves in every direction in the soil, to enable the plant to extend its stem and leaves in the air. The soil must therefore be either naturally or artificially prepared "to drink in the rain of Heaven," and then if we get the rain and the dew, and the "clear shining of the sun after the rain," we may calculate on the most productive crops. —Now, as we find that a regular and sufficient supply of sap to the roots and leaves of plants is absolutely necessary to their healthy development, and as the rain from Heaven gives this vigorous growth which is so much desired, and as we have no control or influence over the clouds to cause them to drop down their richness, or, when the earth has enough, to make them withhold for a season, we must look to the proper cultivation of the soil as the only means within our reach of imbibing moisture from the atmosphere and storing up a supply to be used in times of drought, and we must also prepare the soil, by perfect drainage and deep cultivation, to part with the moisture when it comes in too great abundance. *J. M.*

Home Correspondence.

Covered Dung Heaps.—It is with much satisfaction I have perceived that a correspondent has come forward in your last Paper to bear his testimony in behalf of the advantages of keeping farm-yard dung under cover, and that he is enabled to support his arguments by the weight of practical experience. Having advocated the advantages of the practice in an essay lately published in the "Journal of the Royal Agricultural Society of England," it was with feelings almost akin to dismay, that I found that the practice was condemned by one of the judges of the "Essays on Farm Buildings," in the same Journal in which the essays appeared. The importance of the subject induces me again to allude to it; but in so doing it is far from my intention to say one word in disparagement of the very able and excellent essay which succeeded in obtaining the prize, or in the slightest degree to impugn the decision of the judges, whose practical experience, scientific acquirements, and unimpeachable integrity, I cheerfully and freely acknowledge. Believing, however, that what is right in principle cannot be wrong in practice, my opinion as to the advantages of keeping dung under cover, is not in the slightest degree altered by the opinion of so high an authority as Mr. Thompson, whose objections to the practice appear to be founded on certain inconveniences which he has found to attend it. I conceive that as compared with the advantages of the plan, the objections he has named are trivial and easily obviated. The dung when removed to the dung-heap, may be evenly spread and well saturated with the urine of the cattle collected in the neighbouring tank; and compression may be very economically secured by means of a number of store pigs, which may have access to the dung-heap from small yards, or feeding places closely adjoining. The advantages of box-feeding, I take it, are principally owing to the admirable manner in which the dung is preserved under cover, and undiluted by rain; and when we bear in mind the fact, that in some counties of England double the rain falls as does in others, and that in some seasons we have an excess of moisture, and in others a deficiency;* it surely cannot be contended that it is perfectly right to expose such a valuable article as farm-yard dung to such constant vicissitudes, so that a ton of dung shall at one time contain 90 per cent. of water, and at others scarcely 60. One of the advantages of high-feeding with cake or corn is, to enrich the dung in its most valuable constituents, to render it more concentrated, in fact; and it is this want of concentration which is the principal fault of ordinary farm-yard dung, and which renders its removal to the field so laborious and expensive. If, therefore, it is right to concentrate our dung as much as possible by high feeding, it surely cannot be correct to dilute it again by means of water. We estimate the value of good dung too highly to pursue the Augean method of cleaning our stables by turning a river through them; why then should we advocate the kindred practice of exposing them to be washed, and burdened, and diluted by the rains of heaven? Let us reflect, for a moment, on the amount of this useless water thus added to the dung-heap. The latter, *e. g.* only 56 feet by 20 (no more than half that usually found) will receive, during three wet months of the year, no less than 5973 gallons of water, or 24 tons in weight, which is required to be thrown into a cart by manual, and carted to the field by horse labour. Estimating this at 1*s.* 6*d.* per ton, we have the sum of 36*s.*, which repeated three times a year amounts to upwards of 5*l.*; the cost of labour alone in removing this annual deposition of 72 tons of water from the place where it ought not to be, to the place where it is not wanted. But perhaps it may be urged, that although 72 tons of rain water may have fallen on the dung-heap, yet this quantity is not found when the dung is removed. If so, so much the worse! What has become of it? Either it has been washed out below, and with it much of the soluble portion of the manure, or it has disappeared above by evaporation, carrying with, it into the atmosphere, a great portion of that costly ammonia which Professor Way estimates at 6*d.* per lb. And here, although we have been bold enough to calculate the cost of loading and carting to the field the rain water, supposing it to have remained in *statu quo*, our arithmetical powers sink under the task of computing the vast amount of loss sustained by our dung-heaps from the escape of ammonia, caused by excess of moisture. This, however, we may safely assert, that there is no reasonable amount of cost to be incurred in covering in a dung-heap, the interest of which sum will not be greatly exceeded by the amount of loss arising from the escape of the most valuable portions of manure; and with this assertion we must conclude. *W. C. Spooner.*

* In the months from April to October inclusive, we had double the rain in 1846, that we had in the following year.

Harvest in Eskdale, Dumfries-shire, is now pretty well over; upon some farms, all is in the stackyard. Crops have not turned out as they promised, in the beginning of August. Barley is a full average; Oats have turned out light, upon all inferior soils; Turnips which looked splendid a month ago, have, for 10 days past, stood still, and assumed an unhealthy brown appearance, as if suffering from drought. In many places, "finger and toe" is prevailing to a great extent; a friend of mine has 50 acres, where there is scarcely a sound Turnip. Potatoes looked well up to the middle of August, when the unmistakeable black blotches appeared upon the leaves, accompanied with the peculiar smell of former years. The shaws are now almost completely black; but this was assisted by a frost on the night of the 22d ult. The tubers are much diseased in some localities, and but to a limited degree in others; but there is disease, more or less, everywhere. The extent will not be known, till "raising" time. The crops in this district being comparatively late—suffered little or nothing from the shake-wind, which did so much damage on the 19th and 20th of August. The weather, for the last fortnight, has been all a farmer could desire —finer, at this season, is not recollected by that important personage, the oldest inhabitant. *J. L.*

Long Dung or short Dung.—In your Number for August 24 I presumed so far as to assert that "dung-pits, which receive the undiluted urinary drainage of the stables, yield the richest manure ever at the farmer's command;" and, in an adjoining column of the same page, I found my opinion fully corroborated by that of Dr. Anderson, the chemist of the Highland Society. But we have now the old notion revived, of the superiority of long dung for clay land, by Mr. George Summers. Now, it is well known that "unfermented dung" cannot contribute food to the plant, and is so far worthless. Among the conditions of fermentation are heat and moisture. In undrained wet clay lands the latter is abundant, and the common temperature of the atmosphere supplies the other, although but slowly. There the "unfermented" passes slowly through its several stages of decomposition, where the fermented or short dung disappears altogether at an early stage, aided by the water of the tenacious supersaturated clay; in fact, it had arrived at an advanced stage of decomposition when used. We will now take a slight glance at the composition of the two, in relation to the requirements of the crop. The "long dung" can yield but little more than carbonaceous and an insignificant proportional of inorganic matter; whereas the short dung from the pit, to which I have already alluded, is, in addition, fully charged with phosphates and ammoniacal salts, derived mainly from the undiluted urine, and which salts are recognised as among the most valuable parts of any manure, be its name or nature whatever it may; and, I may add, by which its value to the farmer is estimated. Of these valuable fertilising salts, "long dung" has, comparatively speaking, none, nor does it acquire any by being "turned" over with earth until it becomes "short." The beneficial effects of long dung are confined, chemically, to the slow evolution of carbonic acid gas to the roots, and, mechanically, whenever ploughed in the direction of the inclination of the ground, and thus clumsily helps to do what tiles would accomplish ten thousand times better. To the wet tenacious clay-land farmer I would respectfully say, use drain-tiles well, and leave the long dung in the urinous pit to increase in richness, so that you in turn may become rich. *W. E. Gill, Truro.*

Frequent v. *distant Draining.*—In Mr. Mechi's book of "Letters on Agricultural Improvement," the motto on the title page is, "We must never forget that accurate and multiplied quantitative facts form the only substantial basis of science;" and as the basis of his own science of draining, he quotes the following incontrovertible facts, astounding, but certain, because based on well substantiated experience. "That the deeper the drainage the better the crops; and the earth over the drains must never be less than 18 inches. That drains 4 feet deep, and 30 feet apart, will drain land effectually and permanently, even the heaviest soils, of the utmost quantity of surface water. The deeper the drain, even in the strongest soils, the quicker the water escapes. That deep and distant drains are by far the most profitable." A doubt may be hazarded, that Mr. Mechi has not collected a sufficient number of quantitative facts to establish these and similar points as incontrovertible in draining. In many cases of very retentive clays, water will stand as if there were no drain below it, in a quantity of earth of 18 inches. This fact is of daily occurrence. Deep drains require a porosity in the subsoil, to take the water from the surface, and convey it to the drain. In many clays, any cavity will not draw water above 1 foot from the edge; and soils are known, where a distance of the drains at 5 and even 4 yards will not drain the intervening space, owing to the imperviousness of the subsoil. Deep and distant draining has hitherto been useful in showing the necessity of placing a drain between the wide locations as speedily as possible. In all purely clay soils, the drains cannot be too shallow, provided they are not disturbed. This is the opinion and practice of the Duke of Portland, who has the drains placed in the furrows, and the ridges of the land are carefully kept in that position. And after all that has been said and written about draining, this method yet stands high, as the gathering of the ridges forms a convexity which throws the water to the drains. The advocates of deep and distant drainage have never met with clays sufficiently viscous and retentive to convince them that water will not percolate to the distant drains, and that the distance of 30 feet is totally useless. The point for consideration is, how is the water to get into the drains? to which the very obvious answer is, by frequency of the positions, and a shallow access on the top. Water must be removed from wet lands as speedily as possible; and not by a slow, filtering process, but by a rapid evacuation. The late Mr. Smith, of Deanston, told the writer of this article, in private conversation, that he had fixed 30 inches as the average depth of general drainage, and that he had never seen reason to alter his opinion. The frequency may be varied from 12 to 24 feet according to the wetness of the land, and the climate. Mr. Mechi and his adherents would experience a total failure with intervals of 30 feet on very wet and viscous clays, and on the moorband subsoils of concreted clay, sand, and gravel, which are wholly impervious to water, and over which the cultivable stratum is very shallow, with the water floating between the hard and soft depositions. This circumstance requires the top of the drains to be level as possible with the surface of the subsoil; over which the water floats and wanders, in order to be intercepted. These soils are of the most difficult drainage. *J. D.*

Cultivation of Land.—Instead of giving decided rules for the tillage of all descriptions of land, would it not be better for individuals to state their experience in various localities? pointing out the nature of the soil, and the average weather at the period of sowing and planting. Draining clay soils, and the destruction of weeds under all circumstances, may be considered necessary to good farming, as well as keeping roads in repair, and trimming hedges; but as to any arbitrary system of cropping, as fitted for peculiar lands, it appears rather a dangerous attempt to guide men, without an acquaintance with their wants and capabilities. For instance, clay soils differ so materially, that it seems quite impossible to give instructions for the cultivation of one description that will suit every other. The treatment of stiff clay with a sour blue subsoil, must be handled in a manner, and greater expense entered into, than would be required were the under stratum composed of more convertible materials, for the growth of vegetation. Even the same quality of land under a dry or a moist climate, must have different management. Again as to the three, four, or five-course plan, much must depend upon the capital of the farmer, and his oportunities of making a yard full of manure; with a plentiful heap of plant food, green and grain crops may succeed each other; dressing the soil for the former only, and thus giving half the arable part of the farm muck every year, which must of course be rich stuff. The collection of manure and its judicious application are most important on the one hand, not to permit the land to become impoverished, and on the other not to give it a surfeit, which is quite possible; carting a quantity on to last three, instead of two years, to save trouble, had better be avoided—the first crops absorbing more than is necessary for their perfect condition, and the third going without, and exhausting the land at the same time. In farming, as in other trades, a man may be "penny wise and pound foolish." Grudging labour where the liberal employment of hands would send corn to the mill, and save it another time, a great outlay with small profit. I do not wish to lay down the law, although I may seem so inclined; my principal object in occasionally troubling the *Gazette*, is to promote discussion, and obtain hints from individuals who are more competent to teach them, than I can possibly be. I am content that the little my brain contains

may benefit the public, provided I can pick something out of the heads of others. *Falcon.*

Waggons v. *Carts in the Harvest Field.*—[The following letters are from the *Stamford Mercury.*] (1). I beg to hand you below the particulars of a match tried to-day, in consequence of a challenge made by Sir John Thorold, at the last meeting of the Grantham Agricultural Association. The trial was made in a 20-acre field of shorn Wheat, occupied by Mr. Fisher, in the parish of Barkston. The distance from the stack to the gate is half a mile, and to the further side of the field nearly three quarters of a mile. The field lies on the side of a hill, and is pretty steep; and all the loads, when full, were drawn upwards. The stack-yard, also, is the most steep and awkward one to be found in the neighbourhood. The field was fairly divided, and the men and boys were equal on both sides. The number of carts and of waggons used on either side was four, and the horses used in the waggons were seven, while those in the carts were four. Each party had a separate stack, and the two parties commenced at once. The result was that the whole field was cleared in two hours and 28 minutes; and that when the cart party had cleared their half of the field, the waggon party had still two loads to take out. *Cors. Lundie, Agent for Sir John Thorold.*—(2). The above match having been made in an unusual manner (the drivers having been allowed to trot their horses whenever they could), and having been accomplished in so short a time that a number of persons desirous of seeing the carts at work came too late, it was arranged that the same parties (viz., Sir John Thorold and Mr. Fisher) should try the thing again at the ordinary rate of driving. The trial was accordingly made to-day, in a field of mown Oats on Mr. Fisher's farm. The extent of the ground cleared is 12 acres; the crop was a heavy one, and the distance from the stack-yard is a mile and a quarter. On the way the river Witham is crossed by a ford, and the approaches on either side are steep and almost frightful. As in the former case, the men and boys were equal on both sides, and the number of waggons and of carts on either side was five. The horses used in the carts were five, while those used in the waggons were ten. The time occupied in clearing the ground was 4¾ hours. Both parties began and finished together, and it was found, by measurement of the stacks, that the carts had conveyed about two loads more than the waggons. The trial of last week proved favourable to carts on level and up-hill ground, while this day's result is equally favourable for both up-hill and down. In going down to the river, it was found necessary to lock a wheel of the waggons, and to arrange the horses so as to allow of an additional leader in going up; while the carts went straight on without stop or change of circumstances. The results of these trials are believed to be more favourable to carts than any of the many experiments whereof accounts have been published from time to time in various parts of England. The reasons of this are believed to be, first, that, in most cases, the competitions were in effect rather between men than horses, whereas in the present cases the men were on both sides ample in number, skill, strength, and will, and the carriages were kept in constant motion, rarely having to wait more than a few minutes for a loader; and, secondly, that the carts used in many cases, though "Scots," have not been of the best form. The carts employed here are of the construction most approved in Berwickshire, and are as nearly as possible of the form represented in plate 12 of the "Rural Cyclopædia." *Cors. Lundie, Suston, near Grantham, Aug.* 27. P.S. Mr. Fisher and all his men began these trials with a conviction that waggons were the better, and a determination to prove them so.

Fresh and Fermented Dung.—Some short time ago, during a discussion in the Farmers' Club House, Bridge-street, Blackfriars, on the subject of farm-yard dung, Mr. Mechi observed that the days of dung-heaps were being numbered, by which he meant that farm-yard dung would be used fresh, and not subjected to the fermentative process, by being laid in heaps. This observation drew from the audience the answer of "monstrous" several times repeated, but experience shows that there is no monstrosity in the matter. During my own varied and extensive practice several occasions happened to confirm very fully the observation that was made by Mr. Mechi. A heap of dung having failed to cover a field of summer fallow for Wheat in the autumn, a quantity of very strawy dung was brought from the cattle yard, where it was made by the horses and some young beasts that were fed with Vetches. It was spread on the land and ploughed in with one furrow, which failed to cover the dung, owing to the strawy bulk of the materials. It lay in this very unsightly condition during the six weeks of harvest, when the straw was considerably decomposed and covered by the seed furrows of the ground. When the seed was harrowed into the ground, the finishing process was still unsightly, and much of the dung lay above ground, in a seemingly half-decomposed condition. By the month of March the remains were still very visible, and the Grass seed harrows in April had the business of finally separating the materials of the dung. Very soon after that process, a most evident superiority appeared in the Wheat crop on the portion of land thus treated—the braird matted thick and close to the ground, a sure sign of superiority, and the plants assumed and maintained a more vigorous green colour throughout the summer, and the crop ripened earlier than the field, and produced a greater return, which was distinctly visible. This fact showed the uselessness of dung being fermented; and also suggests that the farm-yard dung, usually laid on the fallow lands in autumn, should be spread as a top-dressing in March on the young Wheat plants. After lying for a time, it should be harrowed well over the surface, to prepare for the Grass seeds, which will thus receive an excellent bed of finely-pulverised materials. Moveable railways will convey the dung to the land in March by means of light iron waggons. The sowing of Turnips showed the same results, in the case of fresh dung from the door of the cowshed, with very little straw intermixed, being laid in the usual quantity in the hollows of the drills, and covered by the plough, and the seed sown over it. The crop of Turnips was superior, by 50 per cent., to heated bones and fermented dung in the usual quantity, and on the same field of land, where soil showed no difference of quality. And the straw being cut for litter, in the length of 2 or 3 inches, would not cause any inconvenience to being covered in the land. These facts corroborate Mr. Mechi's observation; and a friend in East Lothian writes me, that farm-yard dung has been carried from the yard to the field that has been drilled for Beans, in the depth of winter, and laid in small heaps or spread along the drills, and lay there for months, exposed to every change of weather—washed by the winter's rain and snow, bleached by the frost, and dried by the strong winds; yet excellent crops are grown under this system, and that too at an elevated point of cultivation; and, in the low districts of the country, the crops in that way were better than those in the usual way. This is no dare-devil experiment, but the success of several years' practice; and, however it may clash with the doctrines of chemistry, facts are stubborn things. *J. D.*

Permanent Pasture.—On laying down land to permanent pasture there is a prevalence of the Lolium perenne on Rye-grass during the first year; this is accounted for in its being a less durable plant, as it is the nature of Grasses that some being more permanently inclined will not run to Bent till the second year, others require the soil to contain particular nutritive qualities, gained by rest from culture; all are fickle in vegetating if weather and culture do not suit them. With respect to the Lolium perenne running to Bent the first year, it is not to be wondered at, as in the common culture of Saintfoin we add Trefoil, because it would not be sufficiently made up at the first year; on the other hand, the fast growing Italian Rye-grass may be sown in the autumn for a fair crop on the following year: regarding man, he requires 20 years to come to maturity, but it is not unproportionate to the age he arrives at; on the other hand, the fly lives but for a few hours. This all tends to prove the order and similarity of Nature in everything, and that one species of Grass takes a longer time to arrive at its maturity than another. The nicety in forming a mixture of Grasses is, to have sorts not only adapted to the soil to yield a fair crop for the first year, without injuring those which do not run to Bent, but to form a succession of herbage to create fat and health. Some persons sow Lolium perenne alone, and allow it to remain for years, trusting that Nature (without man's aid) will supply the Grasses required. Plants will come to suit the land (but not to suit him), unless he exerts himself. Grasses are gregarious, the Rye-grass especially takes very little nourishment from the land at periods of the year, and unless the mixture be such as to allow one Grass to closely succeed another, the natural products of the soil will spring up. To obtain our object, an unusual degree of cleanliness and pulverisation of the soil is required. It is difficult to extirpate weeds if they spring up with the Grasses. Good rotten dung or decayed vegetable mould is required as a substitute for old turf earth; Grass seed should be very slightly covered with earth, as you may have observed at every ploughing of the land, vegetation is produced; in wet seasons the seed being washed in by the rain is sufficient. *Henry Roger Smithe, Eastling, Faversham, Kent.*

Clover Failure.—Having observed that the Clover crop in an 8 acre field was not growing so well as it usually does, I examined the plants, and found that nearly every leaf over the whole field was drilled full of holes by some insects. I accordingly directed some persons to examine it at different times during the day, and discover the cause. Yesterday morning, before breakfast, they brought me two plants, each having six or eight slugs on it, which were busy at their destructive work. Can you recommend what is best to be done under these circumstances? *J. H. S.* [Sow slaked quicklime in some moonlight night, when the slugs are out.]

Drains Down Hill.—The question whether to lay drains down the slope, or across the slope, is still in dispute. May not the conflicting opinions of the two parties be reconciled, by making a distinction commonly not adverted to between two very different cases. 1. The first case is, when clay-land is to be drained, for the purpose of carrying off the rain-water that falls on its own surface only. 2. The second case is when land is to be cleared of the water rising from below, which is derived from the rain falling on lands of higher level. In the first mentioned case, I apprehend experience has shown, that to drain down the slope is most effectual; but in the second case, on the contrary, has not the old plan of draining across the slope been proved to be preferable? *S. S.*

Notices to Correspondents.

BUCKWHEAT: *Inquirer.* It is in seed and in flower and in bud at its harvest time. You must just choose that time when the first appears to be a maximum.—We should be inclined to apply guano as a top-dressing to the *Wheat.*

FLOORING: *J H S.* Your question has been sent to one who has erected such sheds.

FOOD FOR PIGS: *P A.* We should prefer Tares, Clover, or Trifolium incarnatum to Rye-grass as food for pigs. The Rye-grass should not be sown later than early in September.

HAY-MAKING MACHINES: *P T O.* Mrs. Wedlake, of Romford, makes them, we believe, of first-rate construction.

ITALIAN RYE-GRASS: *W R* You had better not sow Italian Rye-grass now; wait till spring. About green crop rotation see an Essay in the last Number of the Royal English Agricultural Society's Journal, on increasing our supplies of animal food. If you have it not, send us your address.

LAND DRAINAGE COMPANY: *S P.* We have not by us their prospectus; and if they wish to be known they should advertise.

LIAS CLAY: *B B.* It is very calcareous; and its fertilising powers when burned may be owing partly to its containing caustic lime, and partly to the circumstance that burned clay possesses the power of concentrating within itself ammonia and other gases, of fertilising tendency. It pays well to burn the clods on clay land. Stiffe burning is the most economical system.

MANGOLD WURZEL LEAVES: *G W.* Bury them in a pit, the bottom of which admits of drainage, and mix common salt with them in the proportion of 2 lbs. of salt to 1 cwt. of leaves. "By this process Mr. Huxtable has kept them for 2½ years, at the lapse of which time they were eaten with avidity by cows, sheep, and pigs."

MOODY'S TURNIP CRUSHER: *An Old Subscriber.* It is a sparred iron framework of an inverted conical shape. The roots are thrown in and forced or grated through, by a sort of revolving piston, which catches them between it and the bars of the framework. Mr. Moody, of Shaftesbury, Wiltshire.

MR. WILKINS' DRILL; *F A S.* If "F A S." will pay for the making one, I will superintend the making. I think the expense would be about 20*l*; but I could make one for 10*l*., if I fitted it to the carriage of another drill, which I could do. You understand it puts in guano at the same time with the seed, or either separately; but if both are put in together, I put each in in separate rows, thus, corn, guano, corn, guano, corn, guano; or guano between each row of seed. This my drill will do; or it will put both in in one row together, as you please. Two seeds cannot, unless I wish it, be deposited in the same place; the seed drop one by one; but of course I could drop 1, 10, or 100. So that with the same accuracy I can put in as little as a pint an acre, or as much as a coomb. In 5 minutes also it is the best horse-hoe I ever saw. *G. Wilkins.*

OILCAKES: *A B* says—"In the analysis of the various sorts of oilcake, by Mr. Way, in the Journal of the Royal Agricultural Society, he comes to the conclusion that English cake contains more oil in it than the American. I think he is in error. The American oilcake is dry and friable (some is hard), and never fungates (to coin a word); the English cake kept under like circumstances soon is covered with fungi. This must arise from water—moisture—not from the presence of oil."

PROFESSOR WAY'S PAPER: *Member of the Roy. Ag. Soc.* We will publish extracts. We cannot assist you in your search for second-hand copies of the Journal.

PIGEON DEALERS: *X X X.* Messrs. Bailey, of Mount-street, Grosvenor-square, London; and Baker, who advertises in our columns.

SUPERPHOSPHATE: *Inquirer* had better postpone the application till February.

TO TETHER COWS: *G W* says—"There is no better collar for te hering cows than a stout leather strap and buckle, like a simple dog collar."

TURNIP SEED: *P T O.* We are not aware that it is necessary to the excellence of the seed that the plants from which it was saved should have been transplanted.

Markets.

COVENT GARDEN, SEPT. 28.

Vegetables are abundantly supplied. Hothouse Grapes and Pine-apples are plentiful, more especially the former. Peaches and Nectarines are less abundant. Oranges and Lemons though scarcer are sufficient for the demand. Plums and Pears are still received from the Continent in great abundance. Filberts are dearer. Carrots and Turnips may be had at 3d. to 6d. a bunch. Potatoes are good and cheap. Lettuces and other salading are sufficient for the demand. Mushrooms are scarcer, as are also French Beans. Cut Flowers consist of Heaths, Pelargoniums, Asters, Fuchsias, Mignonette, Dahlias, Verbenas, Bignonia venusta, Stephanotis floribunda, Heliotropes, Calceolaria viscosissima, Japan Lilies, and Roses.

FRUITS.

Pine-apples, per lb., 4s to 6s	Apples, dessert, p. bush, 4s to 8s
Grapes, hothouse, p. lb., 2s to 5s	— kitchen, do., 1s 6d to 3s 6d
— Portugal, p. lb., 8d to 1s	Lemons, per doz., 1s to 2s
Peaches, per doz., 1s 6d to 6s	Oranges, per doz., 2s to 3s
Nectarines, p. doz., 1s 6d to 4s	— per 100, 8s to 24s
Apricots, per doz., 1s 6d to 5s	Almonds, per peck, 6s
Figs, per punnet, 2s to 4s	— sweet, per lb., 2s to 3s
Melons, each, 1s to 3s	Walnuts, p. 100, 1s to 2s
Plums, p. punnet, 1s to 1s 6d	— p. bush., 12s to 24s
Green-gages, do., 1s to 2s	Nuts, Barcelona, p. bsh, 20s to 22s
— per sieve, 8s to 10s	— Brazil, p. bsh., 12s to 14s
Pears, per doz., 1s to 3s	Filberts, per 100 lbs., 40s to 50s

VEGETABLES.

French Beans, p. sieve, 3s to 4s	Garlic, per lb., 4d to 8d
Cabbages, per doz., 6d to 1s	Artichokes, p. doz., 2s to 4s
Greens, p. doz. bunches, 3s to 4s	Vegetable Marrows, per doz., 6d to 1s 6d
Cauliflowers, p. doz., 2s to 4s	Lettuce, Cab., p. sc., 1s to 1s 6d
Sorrel, p. hf. sieve, 6d to 9d	— Cos, p. score, 6d to 1s 6d
Potatoes, per ton, 50s to 80s	Endive, per score, 1s to 1s 6d
— per cwt., 2s 6d to 4s	Small Salads, p. punn, 2d to 3d
— per bush., 1s 6d to 2s 6d	Horse Radish, p. bdl., 1s to 4s
Turnips, p. 12 bun., 2s 6d to 3s 6d	Mushrooms, p. pot., 1s 6d to 2s 6d
Red Beet, per doz., 1s to 2s	— per bushel, 5s to 7s
Cucumbers, p. doz., 1s to 6s	Fennel, per bunch, 2d to 3d
Leeks, per bunch, 1d to 2d	Savory, per bunch, 2d to 3d
Celery, p. bundle, 1s to 1s 6d	Thyme, per bunch, 2d to 3d
Carrots, per doz., 3s to 5s	Parsley, p. doz. bun., 1s to 2s
Tomatoes, p. punnet, 1s to 1s 6d	— Roots, p. bdle., 9d to 1s
Spinach, p. half sieve, 1s 6d to 3s	Marjoram, per bunch, 2d to 4d
Onions, p. bunch, 2d to 6d	Mint, green, per bunch, 2d
— Spanish, p. doz., 1s 6d to 4s	Watercress, p. 12 bunch., 6d to 9d
Shallots, per lb., 6d to 8d	

SMITHFIELD, MONDAY, Sept. 23.

The number of Beasts is again large, and the average quality is still very indifferent; consequently the choicest are disposed of, but inferior kinds are scarcely saleable. Although the supply of Sheep is not excessive, the demand is so small they cannot all be sold, notwithstanding a reduction is submitted to. There is more demand for a choice Calf, but trade generally is bad. The foreign supply consists of 1267 Beasts, 4570 Sheep, 205 Calves, and 10 Pigs.

Per st. of 8 lbs.—	s	d		s	d
Best Scots, Herefords, &c.	3	4	to 3	6	
Best Short-horns	3	0	— 3	4	
2d quality Beasts	2	4	— 2	10	
Best Downs and Half-oreds	3	8	— 3	10	
Ditto Shorn	...	...	—	...	

Per st. of 8 lbs.—	s	d		s	d
Best Long-wools	3	4	to 3	6	
Ditto Shorn	...	...	—	...	
Ewes & 2d quality	2	8	— 3	2	
Ditto Shorn	...	...	—	...	
Lambs	...	...	—	...	
Calves	...	...	2	4 — 3	6
Pigs	...	...	3	4 — 4	0

Beasts, 4872; Sheep and Lambs, 29,810; Calves, 281; Pigs, 550.

FRIDAY, Sept. 27.

The supply of Beasts is large; it chiefly consists of foreigners and those left from Monday. Choice qualities being scarce

meet with a very ready sale; but trade is exceedingly bad for all other kinds. Sheep are plentiful for the time of year. There is more inquiry for the best descriptions, but on the average trade is no better. There is very little trade for Calves, and 3s. 4d. is an extreme quotation. From Holland and Germany there are 508 Beasts, 2150 Sheep, 234 Calves, and 20 Pigs; 200 Beasts from the midland counties; and 87 Milch Cows from the home counties.

Best Scots, Herefords, &c.	3	4 to 3 6	Best Long-wools	3	4 to 3 6
Best Short-horns	3	0 — 3 4	Ditto Shorn	...	— ..
2d quality Beasts	2	4 — 2 10	Ewes & 2d quality	2	8 — 3 2
Best Downs and Half-breds	3	8 — 3 10	Ditto Shorn	...	— ...
Ditto Shorn	...	... — ...	Lambs	...	— ...
			Calves	2	4 — 3 4
			Pigs	3	4 — 4 0

Beasts, 1026; Sheep and Lambs. 7360; Calves, 502; Pigs, 510.

HAY.—Per Load of 36 Trusses.

SMITHFIELD, Sept. 26.

Prime Meadow Hay	70s to 75s	Clover	70s to 85s	
Inferior ditto	60	66	Second cut	60 75
Rowen	60	—	Straw	22 26
New Hay	—	—		J. Cooper.

CUMBERLAND MARKET, Sept. 26.

Prime Meadow Hay	70s to 75s	Inferior	60s to 72s	
Inferior ditto	50	65	New Clover	— —
New Hay	—	—	Straw	24 28
Old Clover	78	84		Joshua Baker.

WHITECHAPEL, Sept. 26.

Fine Old Hay	68s to 72s	New Clover	70s to 80s
Inferior ditto	— —	Inferior ditto	— —
New Hay	65 68	Straw	22 26
Old Clover	75 84		

COAL MARKET.—Friday, Sept. 27.

Ravepsworth West Hartley, 15s. 6d.; Wallsend Riddell, 16s.; Wallsend Hetton, 17s.; Wallsend Bewick, 16s.; Wallsend Lambton, 16s. 9d.—Ships at market, 30.

HOPS.—Friday, Sept. 27.

Messrs. Pattenden and Smith report that the demand for new Hops continues very brisk at full prices. Duty, 210,000*l.*

MARK LANE.

Monday, Sept. 23.—The supply of Wheat by land carriage samples from Essex this morning was moderate, but large from Kent; the best qualities were realised at fully last week's prices, but the secondary and those of inferior condition met a slow sale. Foreign was in rather improved but retail demand, and our quotations continue to be fully supported.—Malting Barley is unaltered in value; grinding is the turn cheaper.—Beans are quite as dear as on this day se'nnight.—White Peas must be written 1s. per qr. cheaper; other sorts maintain last week's prices.—The arrival of Oats being considerable, all descriptions must be written 6d. per qr. lower.—Full prices are asked for Flour, but the sale is not brisk.

Per Imperial Quarter.	s. s.		s. s.
Wheat, Essex, Kent, & Suffolk ...White	45—48	Red	42—46
— — fine selected runs ...ditto	46—50	Red	—
— — Talavera	46—52		
— Norfolk, Lincoln, & York...White	—	Red	36—42
— Foreign	35—52		
Barley, grind. & distil., 22s to 23s...Chev.	26—29	Malting	24—26
— Foreign....Grinding and distilling	17—23	Malting	20—24
Oats, Essex and Suffolk	15—18		
— Scotch and Lincolnshire ...Potato	20—23	Feed	19—21
— Irish ...Potato	16—20	Feed	15—17
— Foreign...Poland and Brew	18—22	Feed	16—18
Rye	26—28	Foreign	—
Rye-meal, foreign...per ton	—		
Beans, Mazagan ...25s to 27s...Tick	26—28	Harrow	26—28
— Pigeon ...28s — 32s...Winds	—	Longpod	—
— Foreign ...Small	24—34	Egyptian	22—23
Peas, white, Essex and Kent...Boilers	32—35	Suffolk	34—36
— Maple.... 32s to 34s ...Grey	29—31	Foreign	26—36
Maize ...White	26—30	Yellow	25—30
Flour, best marks, delivered...per sack	36—40		
— Suffolk ...ditto	32—36	Norfolk	32—36
— Foreign ...per barrel	22—25	Per sack	32—35

Friday, Sept. 27.—Excepting foreign Wheat, of which the supply is good, the arrivals of grain this week have been small. This morning's market was thinly attended, and for the samples of English Wheat left over from Monday, that day's prices are unobtainable. Foreign was neglected, and prices must be considered nominal. Barley is a heavy sale at Monday's prices. Beans and Peas unaltered in value. Oats are in improved demand, and the turn in favour of the seller. The Flour market is heavy; Norfolk and American is 6d. to 1s. cheaper. During the week a large business has been done in floating cargoes of Wheat and Maize from the Mediterranean for Ireland.

Imperial Averages.	Wheat.	Barley.	Oats.	Rye.	Beans.	Peas.
Aug. 17	43s 8d	22s 8d	18s 4d	23s 0d	28s 2d	26s 5d
— 24	43 6	23 0	17 9	20 10	28 1	26 3
— 31	43 6	22 4	17 9	23 4	28 11	20 11
Sept. 7	43 2	23 6	17 11	25 4	28 9	27 10
— 14	42 10	23 9	17 4	26 10	29 7	28 9
— 21	42 7	24 10	17 1	26 4	29 5	29 5
Aggreg. Aver.	43 2	23 3	17 8	24 3	28 10	27 7
Duties on Foreign Grain	1 0	1 0	1 0	1 0	1 0	1 0

Fluctuations in the last six weeks' Corn Averages.

Prices.	Aug 17.	Aug. 24.	Aug. 31.	Sept. 7.	Sept.14.	Sept.21.
43s 8d	—	...	...	...	...	...
43 6	...	—	...	...	...	...
43 6	...	...	...	...	...	...
43 2	...	...	...	—	...	...
42 10	...	...	...	...	—	...
42 7	...	...	...	...	...	—

Liverpool, Friday, Sept. 20.—A fair quantity of Wheat and Flour from foreign ports has arrived during the last three days, but from our own coasts the importation has been very light of any article of the grain trade. At this morning's market there was a large display of samples of Wheat and Flour, and having only a moderate demand, prices were the turn in favour of buyers. The market is at present very bare of good mealing Oats. Barley, Beans, and Peas each brought extreme rates, with a steady healthy demand for feeding purposes. Indian Corn continues to be held firmly, at 28s. per 480 lbs. for the best American yellow, but there is very little passing in the article this morning.——Tuesday, Sept. 24.—We have to note a further very abundent import of Wheat from the Baltic, the near Continental ports, including France and the south of Europe, with equally large arrivals of States, Canadian, and French Flour. The pressure of these extraordinary importations of Wheat and Flour, added to the heavy arrivals of last week, has not produced that serious impression upon the trade which was anticipated at our market to-day, the decline in English and Irish new Wheats not exceeding 2d., and the general qualities of foreign merely 1d. per 70 lbs. from the rates of Tuesday last. Malting Barley and Malt may be noted 1s. per qr. lower. Beans remain steady in value. Peas advanced 1s. per qr. Oats move slowly, on late terms. The trade closed firmly at the currency of this day se'nnight. Wheat, English red, per 70 lbs., 5s. 8d. to 6s. 2d.; white, 6s. 0d. to 6s. 5d. Barley, Scotch and Irish, per 60 lbs., 2s. 10d. to 3s. 2d. Malt, English, per qr. pale, 48s. to 53s. Oats, English and Scotch, per 45 lbs., 2s. 9d. to 3s. 0d. Beans, English, per qr., 28s. to 32s. Peas, do. do., 31s. to 33s.

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A

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100 and 200 feet cases of large Sheet Glass, from 2½*d.* per foot. Small ditto, 10*s.* 6*d.* per 100 feet, packed in boxes ready for immediate delivery. Curators of Botanical Societies, Florists, Railway Agents, and others requiring large quantities, will, on sending dimensions, receive estimates at the lowest prices.

GLASS MILK PANS, CREAM POTS, Lactometers, Bee Glasses, Fish Globes, and all kinds of Dairy Glass, Propagating Glasses, Hyacinth Dishes, Cucumber Tubes, and every other description of Garden Glasses.

PATENT GLASS PENS, self supplying, never blot, never soil the ruler, and will write continuously for 12 hours.

Also, Glass Rulers, Glass Inks for office-stands, desks, &c. Stationers and Schools supplied. Wholesale Warehouse for Ornamental Shades, Lamp Shades, Gas Glasses, Genuine White Lead, Paints, Colours, and Pumps for Farm purposes.

Our Catalogue of 18 folios is the most complete ever published. No Gardener or Farm Bailiff should be without one. May be had Gratis on sending two postage stamps to Messrs. COGAN and Co., 48, Leicester-square, London.

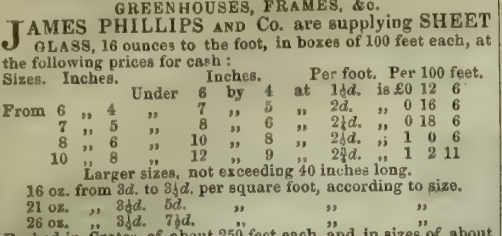
GLASS WATER PIPES.

MESSRS. COATHUPES AND Co., GLASS MANUFACTURERS, Bristol and Nailsea, Somerset, continue to supply GLASS PIPES for the conveyance of water, &c., in lengths of from 3 to 7 feet, and from ½-inch to 4-inch bores; they provide also the necessary joints, which enable them to stand very considerable pressure.

A LARGE STOCK OF SILVERED PLATE GLASS for Mirrors, also Crown and Sheet Glass in Crates and Squares for Dwelling and Hothouse Glazing, at WILLIAM PERKS Junior, and Co.'s, Glass and Lead Warehouse, 52, Dale-end, Birmingham.

DEPOT FOR HARTLEY'S PATENT ROUGH PLATE GLASS.

GLASS FOR CONSERVATORIES, HORTICULTURAL PURPOSES, &c.



T. MILLINGTON'S SHEET GLASS, which is of the best description, varying from 16 to 32 ounces, at from 2*d.* per foot and upwards; 100 feet and 200 feet cases of large Sheet Glass, for cutting up, at 2½*d.* per foot. British Plate Glass, from 1*s.* 2*d.* to 2*s.* per foot, according to size. Patent Rough Plate Glass, from ¼ to 1 inch in thickness, from 4*d.* per foot upwards. Glass Slates and Tiles. Milk Pans from 12 to 24 inches diameter, from 2*s.* to 5*s.* each Cucumber Tubes, from 12 to 24 inches long, at 1*d.* per inch. Lactometers, 7*s.* 6*d.* each. Wasp Traps.—Lists may be had, on application at the Warehouse, 87, Bishopsgate-street Without, same side as the Eastern Counties Railway.

GLASS FOR CONSERVATORIES, &c.

HETLEY AND Co. supply 16-oz. Sheet Glass of British Manufacture, at prices varying from 2*d.* to 3*d.* per square foot, for the usual sizes required, many thousand feet of which are kept ready packed for immediate delivery. Lists of Prices and estimates forwarded on application, for PATENT ROUGH PLATE, THICK CROWN GLASS, GLASS TILES and SLATES, WATER-PIPES, PROPAGATING GLASSES, GLASS MILK PANS, PATENT PLATE-GLASS, ORNAMENTAL WINDOW GLASS, and GLASS SHADES, to JAMES HETLEY and Co., 35, Soho-square, London.

See the *Gardeners' Chronicle* first Saturday in each month.

HOTHOUSES AND CONSERVATORIES made and fixed complete in all parts of the Kingdom, at a considerable reduction. One, two, and three-light Cucumber and Melon Boxes and Lights of all sizes, kept ready for use, packed, and sent to all parts of the Kingdom; warranted best material. Garden-lights of every description, at JAMES WATTS', Hothouse Builder, Claremont-place, Old Kent-road. Reference may be had to the Nobility, Gentry, and the Trade, in most of the counties in England.

WARMING.

HOT-WATER APPARATUS, with improved Boilers, requiring no brickwork, and arranged to continue in action from 12 to 16 hours without attention, adapted for Churches, Chapels, Conservatories, and every description of Bui ding, supplied and erected on the most reasonable terms.

Also the THERMANTERION, an apparatus which warms without injuring the air, and recommends itself on account of its simplicity, durability, efficiency, and economy, especially adapted for Churches, Chapels, Halls, or Buildings, only used occasionally.—Apply to SPILLER and TAYLER, Engineers, Battersea.

POTTER'S GUANO.—MR. POTTER continues to prepare his GUANO, with the latest improvements, at the same low price which has given so much satisfaction. He recommends parties wishing to secure a genuine unadulterated article, to address their orders direct to the Factory, No. 28, Clapham-road-place, London.

N.B. Superphosphate of Lime and Gypsum, of guaranteed quality, at lowest prices.

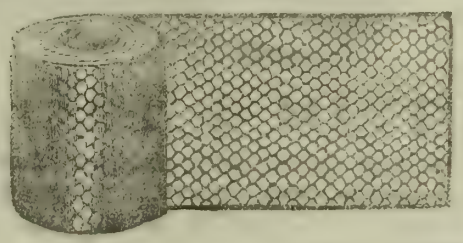
Mr. POTTER has one of Cantelo's Egg-hatching Machines for sale, at less than half price.

NOTICE.—On Account of the POTATOES not being yet ready to take up, as formerly advertised by HAY, SANGSTER, and Co., the time is unavoidably altered to the 14th October.—18, Cumberland-place, Newington-Butts, London.

MAGNUS'S ENAMELLED SLATE is handsomer and more durable than the choicest Marbles, is less than half the cost of the commonest, and is PATRONISED by her MAJESTY and PRINCE ALBERT, the Nobility, Clergy, Architects of Eminence, Engineers, Builders, Railway Contractors, and the Public generally. It is suitable for Chimney-pieces, Pier-table tops, Vases, Ink-trays, and ornaments of various descriptions, Billiard-tables, Baths, Wash-stand, and Dressing-table Trays, Door Furniture, Candelabra, Columns, Monuments, Head Stones, Mural Tablets, Pilasters, Plinths, Fonts, Grand Staircases, Balusters, &c., and is made to represent not only the marbles in ordinary use but all the more costly descriptions, as Porphyry, Rose Granite, Broccatella, Brescia, Lapis Lazuli, Malachite, and Florentine Mosaics, and has obtained the Medal from the Society of Arts. Bored Chimney-pieces, from 25*s.* upwards. Price lists sent on application to Mr. MAGNUS, PIMLICO SLATE WORKS, 39 and 40, Upper Belgrave-place, London.

*** Roofing and Plain Slate work, of all descriptions, at low prices.

GALVANISED WIRE GAME NETTING.—7*d.* per yard, 2 feet wide.

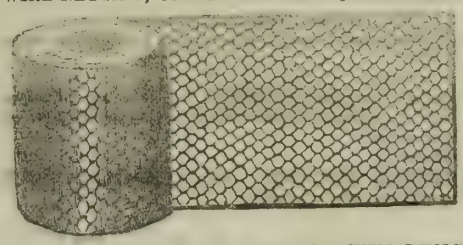


		Galvanised.	Japanned Iron.
2-inch mesh, light, 24-inch wide	...	7*d.* per yd.	5*d.* per yd.
2-inch „ strong „	...	9 „	6½ „
2-inch „ extra strong „	...	12 „	9 „
1⅝-inch „ light „	...	8 „	6 „
1⅝-inch „ strong „	...	10 „	8 „
1⅝-inch „ extra strong „	...	14 „	11 „

All the above can be made any width at proportionate prices. If the upper half is a coarse mesh, it will reduce the price one-fourth. Galvanised sparrow-proof netting for pheasantries, 3*d.* per square foot. Patterns forwarded post-free.

Manufactured by BARNARD and BISHOP, Market-place, Norwich, and delivered free of expense in London, Peterborough, Hull, or Newcastle.

WIRE NETTING, ONE PENNY PER SQUARE FOOT.



GALVANISED WIRE NETTING, TWO-PENCE PER SQUARE FOOT.—This article requires no painting, the atmosphere not having the slightest action on it. It was exhibited at the late Metropolitan Cattle Show, and was highly eulogised both for its utility and pretty appearance, and acknowledged to be the cheapest and best article ever produced. It forms a light and durable fence against the depredations of hares, rabbits, and cats, and is peculiarly adapted for Aviaries, Pheasantries, and to secure poultry; and by the galvanised requiring no paint, it answers admirably for training all kinds of creeping plants. Large quantities always kept in stock, of 18, 24, 36, and 48 inches wide; it can, however, be made to any dimensions desired. Patterns forwarded free of expense.

12 inches wide	3*d.* per yard.	30 inches wide	7½*d.* per yard.
18 „ „	4½*d.* „	36 „ „	9*d.* „
14 „ „	6*d.* „	48 „ „	1*s.* „

Galvanised do., 1*d.* per foot extra.

Extra strong Imperial Wire Sheep Netting, 3 feet, 1*s.* 6*d.* per running yard; if galvanised, 2*s.* Also every description of Wire Nursery and Fireguards. Wire House-lanterns and Shades, Fly-proof Dish Covers, Meat Safes, &c.; Window Blinds, 1*s.* 10*d.* per square foot, with bolts complete, in mahogany frames; Gothic Garden Bordering, 6*d.* per running foot; Flower Trainers, from 3*d.* each; Garden Arches, 20*s.* each; Flower Stands, from 3*s.* 9*d.* each; Galvanised Tying Wire for plants and trees, Dahlia Rods, and every description of Wire work; Weaving, for the use of paper-makers, millers, &c.—At the Manufactory of THOMAS HENRY FOX, 44, Skinner-street, Snow-hill, London.

ALLSOPP'S EAST INDIA PALE AND OTHER BURTON ALES.—In consequence of a very inferior article being now too frequently sold under the name of these favourite Ales, the public are respectfully requested to apply at the respective stores, where a list of bottlers will be furnished, from whom these ales may be obtained genuine, and where also they may be had in casks of 18 gallons and upwards, either singly or in any quantity. Apply to Messrs. SAMUEL ALLSOPP and SONS, The Brewery, Burton-on-Trent, or their Stores, at 61, King-William-street, City; Cork-street, Liverpool; High-street, Birmingham: and the Exchange, Manchester.

SCURVY, LEPROSY, SCROFULA, AND ALL DISEASES OF THE SKIN, CAN BE CURED BY HOLLOWAY'S OINTMENT AND PILLS.—The heaviness, weariness, dejection of spirits, and other oppressions usually attendant on those who suffer from diseases of the skin, are speedily removed by the use of HOLLOWAY'S Ointment and Pills. The efficacy of these Medicines in improving the bad habit of body and curing complaints of this distressing nature stand unrivalled; and in many parts abroad, where the malady is so prevalent, the cures are wonderful. The purifying properties of the Pills, and the peculiar effect the Ointment has on the skin, render them superior to every other remedy.—Sold by all vendors of medicine, and at Prof. HOLLOWAY'S Establishment, 244, Strand, London.

NEW GERANIUMS, &c., AT REDUCED PRICES, NOW READY FOR SENDING OUT.

BASS AND BROWN have a large, healthy, and vigorous stock of the following, well-established in 4-inch pots. Orders will be executed in rotation as they are received.

NEW VARIETIES SENT OUT LAST SEASON.

Foster's Gipsy Bride	... 10*s.* 6*d.*
„ Constance	... 7 6
„ Conspicuum	... 3 6
Beck's Loveliness	... 5 0
„ Governor	... 5 0
„ Painter	... 5 0
„ Rosalind	... 5 0
Gaines's Flying Dutchman	... 7 6
Hoyle's Prince of Orange	... 7 6
„ Satisfaction	... 7 6
„ Nonsuch	... 5 0
„ Christabel...	... 7 6
„ Crispina	... 5 0
„ Naudee	... 5 0
Foquett's Magnificent	... 7 6
„ Symons's Field Marshal	... 7 6

Any 12 *of the above for* 3*l.* 10*s.*, *or* 12 *of our own selection for* 2*l.* 15*s.*

Any 12 *of the following new varieties of the autumn of* 1848 *for* 1*l.* 10*s.*, *or* 12 *of our own selection for* 1*l.* 5*s.*

Belle of the Village (Hoyle's)
Brilliant (Topping's)
Cracker (Beck's)
Crusader (Hoyle's)
Delicatissima (Beck's)
Elegans (Topping's)
Emilia (Beck's)
Flamingo (Hoyle's)
Mont Blanc, No. 2
Princess (Beck's)
Prometheus (Hoyle's)
Princess Helena (Whomes')
Queen Victoria (Whomes')
Rebecca (Topping's)
Refulgent (Beck's)
Rolla (Hoyle's)
Salamander (Gaines')
Sparkler (Hoyle's)
Star (Beck's)
Sundown (Beck's)
Symmetry (Beck's)
Virgin Queen (Arnold's)
Windsor Castle (Whomes')

Any 12 *of the following first-rate older varieties for* 1*l.*, *or our own selection for* 15*s.* *Any* 20 *for* 1*l.* 10*s.*, *or* 20 *of our own selection for* 1*l.* 1*s.*

Armada (Foster's)
Augusta (Hoyle's)
Brockii
Camellia alba
Cassandra (Beck's)
Cavalier (Beck's)
Centurion (Beck's)
Chimborazi (Hoyle's)
Clara (Stewart's)
Cruenta (Beck's)
Distinctus (Miller's)
Duke of Hamilton (Foster's)
Empo (White's)
Fair Rosamond
Fire-fly (Lyne's)
Forget-me-Not (Lyne's)
Gigantic (Beck's)
Grandiflora (Beck's)
Gulielma (Beck's)
Gustavus (Beck's)
Isabella (Beck's)
Jenny Lind (Lyne's)
Mary Queen of Scots (Gaines')
Mercury (Lyne's)
Mrs. Brock
Mustee (Beck's)
Negress (Garth's)
Orion (Foster's)
Painted Lady (Foster's)
Peri (Lyne's)
Pericles (Foster's)
Rachel superb
Resplendent (Beck's)
Rosa Mundi (Miller's)
Rosamond (Beck's)
Rosy Circle (Beck's)
Scarlet Defiance (Miller's)
Star of the West (Lyne's)

A collection of the best old varieties at 6*s.* *to* 9*s.* *per doz.*

FANCY GERANIUMS.—Hero of Surrey (Gaines's), 3*s.* 6*d.*; Alboni (Henderson's), 3*s.* 6*d.* 12 fine showy varieties for 15*s.*, or six for 9*s.*

FUCHSIAS.—Story's, Mayle's, Smith's, and Rumley's new varieties of 1850. 12 for 1*l.* 5*s.*, or 12 of our own selection for 1*l.*

VERBENAS.—Smith's, Barker's, Chauviere's, and other new varieties of 1850. 12 for 15*s.*, or 12 of our own selection for 12*s.*

PETUNIAS.—12 of our own and other varieties of 1850 for 15*s.*, or six for 10*s.*

NEW CHRYSANTHEMUMS, well set for bloom.

12 strong and bushy plants, best new varieties of last season, for flowering fine this autumn ...	... £0 15 0
60 splendid varieties, including the above, 2*l.*; 40 ditto for	... 1 10 0
25 fine varieties, 17*s.* 6*d.*; 12 ditto for	... 0 9 0

Goods carriage free to London, or any station on the London and Bury line, and extra plants sent gratis with orders of 40*s.*

Remittances requested from unknown correspondents. Post-office orders payable to BASS and BROWN, or to STEPHEN BROWN, Seed and Horticultural Establishment, Sudbury, Suffolk.

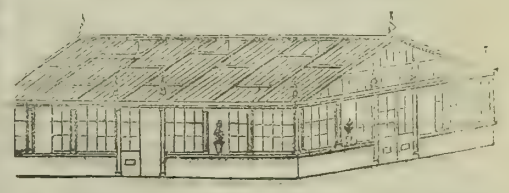
BULBOUS ROOTS, GRAPE VINES, &c.

J. WEEKS and Co., King's-road, Chelsea, beg to inform the Nobility and Gentry that they have now got a large collection of fine Bulbs, which they can supply very cheap. Small collections made up, consisting of Hyacinths, Narcissus, Tulips, Jonquils, Crocus, Snowdrops, Gladiolus, Alstræmolum, Anemones, Ranunculus, Iris, Scilla, and other appropriate kinds, for 30*s.*, 20*s.*, and 10*s.* Priced Catalogues sent upon application. Also a very fine collection of GRAPE VINES IN POTS, from eyes two and three years old, for FORCING IN POTS or PLANTING.—STOVE AND GREENHOUSE PLANTS in extensive variety.

J. WEEKS and Co., King's-road, Chelsea.

HORTICULTURAL BUILDING AND HEATING BY HOT WATER.

WARRANTED BEST MATERIALS AND WORKMANSHIP AT THE LOWEST POSSIBLE PRICES.



J. WEEKS AND CO., King's-road, Chelsea, Horticultural Architects, Hothouse Builders, and Hot-water Apparatus Manufacturers. The Nobility and Gentry about to erect Horticultural buildings, or fix Hot-water Apparatus, will find at our Hothouse Works, King's-road, Chelsea, an extensive variety of Hothouses, Greenhouses, Conservatories, Pits, &c., erected, and in full operation, combining all modern improvements, so that a lady or gentleman can select the description of House best adapted for every required purpose.

THE HOT-WATER APPARATUSES (which are efficient and economical), are particularly worthy of attention, and are erected in all the Houses, Pits, &c., for both Top and Bottom Heat, and in constant operation in the Stoves.

The splendid collection of Stove and Greenhouse Plants are in the highest state of cultivation, and for sale at very low prices. Also a fine collection of strong Grape Vines in pots from eyes, all the best sorts.

Plans, Models, and Estimates of Horticultural Buildings; also Catalogues of Plants, Vines, Seeds, &c., forwarded on application.—J. WEEKS and Co., King's-road, Chelsea, London.

JOBSON'S PATENT LIGHT AND HEAT REFLECTING STOVE GRATE,

SUITABLE FOR

DINING AND DRAWING ROOMS, BREAKFAST AND BED ROOMS, HALLS, &c.

No. 1.



No. 2.

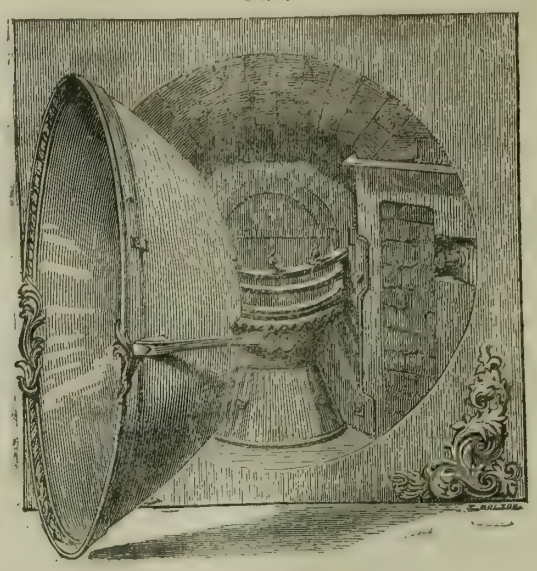


Fig. No. 1 shows the Stove as it appears when in use.
Fig. No. 2 shows the Reflector drawn out to remove the Ash-pan, &c.

(Extract from the *Architect* of July 6.)

"We have been much struck with the peculiarities of this admirable and scientific invention. It effects a considerable saving of fuel, and all the heat and light are so completely thrown into the room as to afford a degree of cheerfu ness and wa mth which twice the amount of fuel would fail to produce in any ordinary fire-place. The full heat is diffused equally into every corner, and the floor is thus warmed without any draught across the feet. Risk of fire is very much lessened by the facilities afforded for building the stove in, so as to secure it from the accumulation of soot at the back; and the simple contrivance by which the reflector is moved forwards and backwards at pleasure, gives perfect command over the ventilation and heat of the apartments. We must say, that in all its varieties, this new grate is truly admirable; we cannot speak too highly of the merits of the invention."

(Extract from the *Literary Gazette* of June 1.)

"So sound are the principles upon which the efficacy of this stove depends, and so ingenious are the contrivances to adapt those principles to the requirements of room-warming, aye, and of room-cooling (if over-heated), that we have no hesitation in describing Jobson's as the nearest approach we have yet seen to the perfection of a grate-stove."

COTTAM & HALLEN

Beg to direct public attention to JOBSON and CO.'s newly-patented Stove Grate, which for efficiency, combined with economy, they believe to be unequalled.

The peculiar features of this invention are that the Reflector entirely surrounds the fire; that it can be removed at pleasure, with the greatest ease; and that the Ash-pan, being placed out of sight, does not require to be taken out and emptied more than three times a week. A far greater amount of warmth is obtained from even a much less quantity of fuel than is used in the common fire-place, and its *very moderate price* brings it within the reach of *all classes.*

A SELECTED ASSORTMENT OF THESE STOVES; also a large and well-assorted stock of FURNISHING IRONMONGERY and BRASS and IRON BEDSTEADS—any of which latter can be fixed as Rheioclines, or Patent Spring Beds—may be seen at the Show-rooms, 76, OXFORD-STREET, three doors west of the Princess's Theatre.

COTTAM AND HALLEN, ENGINEERS, IRONFOUNDERS, AND IRONMONGERS.
MANUFACTORY, 2, WINSLEY-STREET, OXFORD-STREET, LONDON.

BOOKS.

THE NATIONAL CYCLOPÆDIA OF USEFUL KNOWLEDGE, VOLUME XI., is now ready, price 5*s.*, in cloth lettered.—*** VOLUME XII., to be published December 31st, 1850, will complete the Work.

HALF HOURS WITH THE BEST AUTHORS.—*** The SECOND QUARTER, forming VOLUME II., with a Frontispiece, containing Portraits of MILTON, BARROW, POPE, and DEFOE, is now ready, handsomely bound in Cloth, Price Half-a-Crown. The FIRST VOLUME is constantly on sale.

PICTORIAL HALF-HOURS.—*** The FIRST QUARTER, forming VOLUME I., with an Illuminated Frontispiece, being a fac-simile of Rubens' "Wise Men's Offering," is published, handsomely bound in cloth, price 3*s.* 6*d.*

On Saturday, October 12,

KNIGHT'S PICTORIAL SHAKSPERE.—THE NATIONAL EDITION. Part I., containing THE TWO GENTLEMEN OF VERONA, with Forty Illustrations, Price 1*s.*

KNIGHT'S CYCLOPÆDIA OF THE INDUSTRY OF ALL NATIONS. Number I., Price 2*d.*

London: CHARLES KNIGHT, 90, Fleet-street; and sold by all Booksellers in Town and Country.

THE FIRST VOLUME OF
HOUSEHOLD WORDS,
A Weekly Journal,

DESIGNED FOR THE INSTRUCTION AND ENTERTAINMENT OF ALL CLASSES OF READERS,

CONDUCTED BY CHARLES DICKENS,

Is now ready, price 5*s.* 6*d.*, in cloth boards.

PART VI., PRICE 9*d.*, WILL BE PUBLISHED ON THE 30th INSTANT.

OFFICE, 16, WELLINGTON STREET NORTH (where all Communications to the Editor must be addressed); and all Booksellers and Newsmen.

HATTON NURSERY, NEAR HOUNSLOW, MIDDLESEX.
TO NOBLEMEN, GENTLEMEN NURSERYMEN, FLORISTS, AND OTHERS.

20,000 Scarlet and other Rhododendrons, 20 000 Ghent and other Azaleas, 2000 Andromedas, 6000 Kalmias, 2000 Hardy Heaths, 1000 Daphne Cneorum, 3000 Cedar of Lebanon, 1 to 4 feet, in pots, 300 Pæonia arborea; also a large quantity of Seedlings of sorts.

MESSRS. PROTHEROE AND MORRIS are directed, by the Executors of the late Mr. John Ronalds, to offer to an unreserved sale by Auction, on the premises, Hatton Nursery, near Hounslow, Middlesex, about 1½ mile from the Feltham Station, on MONDAY, October 14, and following day, at 11 o'clock, the whole of the valuable NURSERY STOCK, consisting of a large and rich assortment of American Plants, Evergreens, and Deciduous Shrubs, comprising Laurels, Irish Yews, Pinus of sorts; Spruce, Scotch, and Larch Firs; Lime, Alder, Ash, Plane, a large quantity of Quick, three fine specimens of Cedrus Deodara, 8 to 10 feet, &c.—May be viewed prior to the sale. Catalogues had (6*d* each, returnable to purchasers) on the premises; of the principal Seedsmen in London; and of the auctioneers, Leytonstone, Essex.

N B. The whole of the valuable Stock of the Butts and Toplans Nurseries will be sold by Auction, on Monday, Oct. 21, and following days.

TO GENTLEMEN, FLORISTS, AND OTHERS.

MESSRS. PROTHEROE AND MORRIS will Sell by Auction, at the Mart, Bartholomew-lane, on FRIDAY, October 11th, a superb collection of CARNATIONS, PICOTEES, and PINKS; also about 100 rows of very choice Tulips (the property of Mr. Willmer, Sunbury), together with a few first-rate double and single Hyacinths. May be viewed the morning of sale. Catalogues had at the Mart, and of the Auctioneers, American Nursery Leytonstone, Essex.

A LARGE AND IMPORTANT SALE OF EVERGREENS
TO NOBLEMEN, GENTLEMEN, NURSERYMEN, AND OTHERS.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. J. Smith to submit to an unreserved Sale by Auction, on the premises, Dalston Nursery, Middlesex, on THURSDAY, October 17th, and following day, at 12 o'clock precisely, the whole of the valuable EVERGREENS, comprising fine-grown plants of variegated Hollies, Aucuba, Box, Laurestinus, Laurels, Phillyreas, Scarlet Aubutus, Bay, Rhododendrons, Azaleas, Lilac, Ivies, Brooms, and Clematis in pots, together with the remaining Greenhouse Plants. May be viewed, and Catalogues had, one week prior to the sale (6*d* each, returnable to purchasers) on the premises; of the principal seedsmen in London; and of the Auctioneers, Leytonstone, Essex.

FARM WANTED IMMEDIATELY IN WILTS OR DORSET.

MR. HURLEY is instructed to obtain immediately A GOOD TURNIP-LAND FARM, OF 50 OR 100 ACRES, with good Farm-house and Buildings, in either of the above counties.—Full particulars to be sent to the Agricultural Agency Offices, 62, Nelson-square, Blackfriars-road, London.

DEVON.—DELIGHTFUL RESIDENCE, WITH LAND, TO BE SOLD OR LET IMMEDIATELY.

MR. HURLEY is instructed to dispose of a beautiful ESTATE in Devon, having an excellent RESIDENCE, situate near the Market Town of Bideford (which will be the terminus of the Taw Vale Railway), 38 miles from Exeter, and close to the Church; is very picturesque, a south aspect, well sheltered, diversified Scenery, excellent Walled Garden, Green-house, and 27 acres of Land in a ring fence, in the highest state of cultivation. A Trout Stream runs through the property, which is two miles only from the sea, running at spring tides up to the gates. Price 2000 guineas. Rent 90*l.*—For plans and to treat, apply to the Auctioneer (enclosing two stamps), 62, Nelson-square, Blackfriars-road, London.

FARMS TO LET AT MICHAELMAS NEXT.

MR. HURLEY, Farm and Estate Agent, is instructed to let the following, amongst other desirable farms: No. 1.—TWO EXCELLENT FARMS in Herts, 26 miles from London, and close to the Great Northern Railway, consisting of 526 and 287 acres respectively, admirably adapted for Turnips, Wheat, &c., and for carrying a large flock. Rents, 18*s.* and 21*s.* per acre; superior residences and buildings. No. 2.—A first-rate Farm of 160 acres, near Windsor; good house, &c. No. 3.—A capital Farm at Enfield, of 105 acres, equally divided; superior residence and buildings. No. 4.—An excellent Farm, with gentleman residence, &c., with 100 acres of very capital land, equally divided; situate in Essex, within 4 miles of the Harlow station. No. 5.—A good Farm in Sussex of 230 acres, well drained, and adapted to the growth of Wheat and Beans, but not of heavy tillage. Rent 20*s.* per acre, tithes, &c., 6*s.* Good Premises; tenant may propose his own terms. No. 6.—A small Farm of 61 acres, in Sussex, with Farm-house and two Cottages. Rent, on lease, 50*l.* a year. No. 7.—A capital Farm, in Kent, of 220 acres. Rent 135*l.* a year, tithe 30*l.* Two capital Farms, in Surrey, of 400 and 170 acres. Rent and tithes low; the latter tithe free. Another, in same county, of 600 acres; rent and tithes very low. Also a good Farm at Fulmer, Bucks, of 90 acres, nearly equally divided. And, lastly, three Farms, in Kent, consisting of 155, 123, and 76 acres respectively; rents low.—Apply for terms (inclosing two stamps) to the Auctioneer, 62, Nelson-square, Blackfriars-road, London.

WANTED, A SMALL FARM, from 20 to 50 acres. Particulars to be sent to Mr. HURLEY.

CHELSEA.—IMPORTANT SALE OF NURSERY STOCK.
TO NOBLEMEN, GENTLEMEN, AND OTHERS, ENGAGED IN PLANTING.

MR. D. A. RAMSAY has received instructions to submit to public competition by Auction, on the Premises, opposite Cremorne Gardens, King's-road, Chelsea, on TUESDAY October 1st, and two following days, at 12 o'clock (without reserve), by order of Messrs. W. Dennis & Co., to clear about five acres of land required for building purposes. The Stock comprises a large assortment of fine Evergreens, large Irish Ivies, and other Creepers in pots; 300 varieties of the finest Prize Gooseberries, a large quantity of Mulberry Trees of all sizes; the collection of Standard, Dwarf, and Pillar Roses; choice Deciduous Shrubs, Ornamental Trees, &c. The Stock on view till the time of sale.—Catalogues may be had on the premises; of the principal Seedsmen; and of the Auctioneer, Brompton Auction Ground, Fulham-road, London.

Printed by WILLIAM BRADBURY, of No. 13 Upper Woburn-place, in the Parish of St. Pancras, and FREDERICK MULLETT EVANS, of No. 7, Church-row, Stoke Newington, both in the County of Middlesex, Printers, at their office in Lombard-street, in the Precinct of Whitefriars, in the City of London; and published by them at the Office, No. 5, Charles-street, in the parish of St. Paul's, Covent-garden, in the said county, where all Advertisements and Communications are to be ADDRESSED TO THE EDITOR.—SATURDAY, SEPTEMBER 28, 1850.

THE GARDENERS' CHRONICLE
AND
AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 40—1850.] SATURDAY, OCTOBER 5. [PRICE 6*d.*

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ERRATUM—In Mr. LIGHTBODY'S Advertisement of the 28th ult., headed "Burman's Mrs. Burman Pink," the price should be 5*s.* per pair, and not 5*l.*

WOODLANDS NURSERY, MARESFIELD, near UCKFIELD, SUSSEX.

WM. WOOD AND SON having with much care made a choice Selection of the best CINERARIAS from those sent out during the last two seasons, and having a fine stock of healthy plants, that will bloom well during the ensuing winter and spring, beg to offer them on the following terms, viz.:

12 very superb new varieties	18*s.*	0*d.*
24 ditto ditto	30	0
12 new Fuchsias of 1850	18	0
12 new Verbenas of 1850	15	0
24 ditto ditto	25	0
12 new Petunias of 1850	18	0
Superior mixed double Hollyhocks, per dozen	6	0
Superb named di to, per dozen	18	0

CHOICE SEEDLING CALCEOLARIAS AND CINERARIAS.

JOHN HENCHMAN begs to state that he has a few hundreds of choice seedlings to spare, from the stock raised for his own growth, at 2*l.* per 100. The seed was saved with great care from choice varieties, and the plants are free and healthy. The Cinerarias will commence blooming in February and March, and the Calceolarias in April and May, and will continue to bloom all the summer. Orders amounting to 2*l.* sent carriage free to any part of England. A few packets of Calceolaria seed at 1*s.* and 2*s.* 6*d.* each. A remittance requested from unknown correspondents.
Edmonton, near London.

BASS AND BROWN'S AUTUMN CATALOGUE is now ready. It contains Descriptive Priced Lists of Superb Seedling and other Ranunculi, Gladioli, Early and Double Tulips; also Priced Assortments of Choice Imported Dutch Hyacinths, Narcissus, Iris, Jonquils, Crocus, the Lancifolium and other Lilies, with a great variety of other bulbs and dry roots. The latter part contains Descriptive Lists of Choice and Select Roses, a few New and other desirable Evergreen and Flowering Shrubs, Hardy Climbing and Hardy Herbaceous Plants, Prize Gooseberries, and other choice fruits, &c.
A separate List of Geraniums and other new and select plants at reduced prices. Catalogues forwarded, prepaid, for two penny stamps.
Our Foreign Bulbs have arrived in fine condition.
Seed and Horticultural Establishment, Sudbury, Suffolk.

FIRST CLASS SEEDLING GERANIUM.

RUNDLE'S BEAUTY OF MONTPELLIER.—*This beautiful flower was exhibited at the Chiswick Horticultural Fête, May* 18, 1850, *and was very much admired, and was also noticed by all the leading publications; a description of it will be found in the* Gardeners' Chronicle, *by* Professor LINDLEY; *in the* "Florist," *by* Mr. Beck; *and in the* "Gardeners' Magazine," *by* Mr. GLENNY; *all of whom speak in the highest terms of praise. Two Seedling Plants were also exhibited at the Royal Devon and Cornwall Horticultural Show, two days previous to the Chiswick Show, and won a Seedling Prize. It was noticed by the editor of the* Plymouth Herald, *and as it gives a good description of it we extract it.*

"One of the principal attractions at the Show was a magnificent Seedling Geranium, raised by William Rundle, Esq., Montpellier House, Devonport, and for which an extra prize was awarded. It attracted the attention of every florist, and was undoubtedly one of the best flowers in the room. The ground colour is a bright pink, with a *pure white centre*, extending over one-third of the upper petals. It has a rich and velvety crimson maroon spot, beautifully tinted, and shaded off to the ground colour. It is an extra-sized flower, of good shape and substance, like Lyne's celebrated flower, *Forget-Me-Not*. In fact, it has very much the habit of this sterling flower, being of a short, robust growth, and throws its fine flowers well above the foliage."

Further description would be unnecessary, more than for us to say, that we are certain it will give the most complete satisfaction to every customer, and we can recommend it with the same confidence that we introduced Lyne's *Duke of Cornwall*, *Forget-Me-Not*, and Arnold's *Virgin Queen*. *These are all sterling flowers and are much admired even at the present day.*
Price 20*s.* each. One given over three to the trade.
Good strong plants will be ready about the middle of October. Apply to WILLIAM E. RENDLE and Co., Nurserymen, Plymouth.
Our new descriptive Catalogue of Geraniums, Azaleas, Camellias, Fuchsias, &c., is just published, and can be had on application for one penny stamp.

TESTIMONIAL TO MR. MUNRO, late Gardener to the Horticultural Society of London.—At a Preliminary Meeting, held at the Roebuck Inn, Turnham Green, September 30th, 1850; Mr. Glendinning, Mr. Thompson, Mr. Cock, Mr. Edmonds, Mr. Gordon, Mr. Caie, Mr. Ayres, and Mr. Ivison being present, Mr. GLENDINNING was called to preside. Mr. Caie was then elected Secretary, and Mr. Edmonds Treasurer.
It was then Resolved, That a subscription not exceeding Half-a-crown for each person should be entered into for the purpose of presenting Mr. MUNRO with a suitable Testimonial of esteem, on his retiring from the superintendence of the Horticultural Society's Garden, which appointment he held for upwards of Thirty years.
Persons desirous of contributing are requested to forward their subscriptions to the Treasurer, Mr. Charles Edmonds, Chiswick House, Chiswick, Middlesex.
It was also Resolved, That the Subscription List be closed on Saturday, November 16th, 1850.
*** Post office orders payable at Turnham Green.

ROSE CATALOGUE.

H. LANE AND SON, Great Berkhamstead, Herts, will send their New CATALOGUE to all their old customers free, and new applicants may have it by enclosing two penny stamps. Those who are about planting Pleasure Grounds, &c., should inspect H. L. and Son's Nurseries (about 50 acres), as they have a fine healthy stock of some thousands of Cedrus Deodara, 2 to 4 feet; Araucarias, 2 to 3 feet; Abies Douglasi, from seed, 4 to 5 feet; with all the leading Pinus. Rhododendrons, all the hardy varieties from white to crimson, growing in loam, from which they remove readily; also the hybrids of Sinensis, greenhouse varieties; Azaleas, best Ghent; with a general collection of Trees and Shrubs, both for the Pleasure Ground and Park; also of Fruits, Catalogues of which may be obtained by enclosing two penny stamps. The stock of Plants at these Nurseries is kept constantly removed, to ensure success, and not drawn up to be sold at a price to deceive the public. Double Camellias, and Greenhouse Azaleas, 1 to 4 feet—prices given on application.

GERANIUMS.

JOHN CATTELL has now ready to send out fine healthy plants of the following new and splendid sorts, at the prices annexed: Prince of Orange, 10*s.* 6*d.*; Nandee, 7*s.* 6*d.*; Nonesuch, 10*s.* 6*d.*; Christabel, 7*s.* 6*d.*; Lord Gough, 5*s.*; Lord Stanley, 5*s.*; Crispina, 5*s.*; Satisfaction, 5*s.*; the set of eight, including package, 40*s.* The above are Hoyle's set of eight, as sent out in November 1849, at 21*s.* and 31*s.* 6*d.* each. Twelve of the following very superior sorts, mostly new ones in 1848, purchaser's selection, package included, for 24*s.* (Those with F are fancy varieties): Salamander, Oriflame, Rosamond, Abd-el-Kader, Brilliant, Virgin Queen, Windsor Castle, Crusader, Flamingo, Mont Blanc No. 2, Forget-me-Not, Alboni (F), Hero of Surrey (F), Jenny Lind (F), Odorata magnifica (F). Every sort of the above ought to be in the most unique collection.
The best and most distinct of the older kinds, both Fancy and Florist varieties, 12*s.* per doz. Scented sorts, in 12 varieties, 8*s.*; Flower of the Day, strong, 10*s.* 6*d.* each.

DUTCH AND OTHER BULBS.

J. C. begs to observe that his collection of the above have arrived in fine condition, a priced Catalogue of which is now ready, and may be had on application by enclosing a penny stamp. He would particularly call attention to his very splendid Seedling Lilium speciosum or lancifolium, eight varieties of which are entered in his Catalogue, worth adding to every collection, as they come into flower a fortnight before punctatum, and vary in colour from punctatum to deeper than Speciosum rubrum. Also to his fine collection of Amaryllis, &c. A remittance or reference from unknown correspondents.
Westerham, Kent, Oct. 5.

RARE AND HARDY CONIFERÆ.—Planters are respectfully informed that YOUELL and CO. can supply 25 Rare and Hardy species of the above, in pots, for 5*l.*, package included and carriage paid to London or Hull, names of which can be had on application. They also invite attention to their extensive Stock of ARAUCARIA IMBRICATA (well adapted for sea-side planting), and CEDRUS DEODARA, which they can supply in any quantity from 1 to 3 ft. in height.

TO THE ADMIRERS OF THAT SPLENDID AUTUMNAL FLOWER, THE CHRYSANTHEMUM.

YOUELL AND Co. are now executing orders from their extensive and very select collection of the above, comprising all the new and fine continental varieties, in beautiful, healthy, dwarf, bushy plants, set with flower-buds, and in 5 inch pots, at 12*s.* per dozen. A few sets of the 9 Liliputian Chrysanthemums of 1849, in 5-inch pots, at 12*s.* the set.

NEW CAMELLIAS, &c.

YOUELL AND CO., possessing an extensive Stock of all the new and very best varieties of the above, in beautiful healthy plants, well furnished with flower-buds, beg to offer them at 30*s.* per dozen, package included. Catalogues can be had on application.
PINKS, all the finest first-class show varieties, comprising such as have been exhibited in all the winning stands at the past metropolitan exhibitions, 12*s.* and 18*s.* per dozen pairs, and can be sent post free.
HYACINTHS, a superb collection of all the best kinds known, for glasses or pot culture, at 9*s.*, 12*s.*, and 18*s.* per doz.
STRAWBERRIES.—The following are warranted true to name:

Per Hundred—	*s.*	*d.*
Alpine White	3	6
Red	3	6
Austrian Scarlet	3	6
Carolina	3	6
round white	5	0
Comte de Paris	3	6
Coul, or Sir G. Mackenzie's late scarlet	3	6
Cuthill's Black Prince	7	6
Downton	5	0
Elton Pine	3	6
English (Kitley's) p. doz.	2	6
Grove-end Scarlet p. 100	3	6
Hautbois (prolific)	2	0
large flat	5	0
Keens' Seedling	3	6

Per Hundred—	*s.*	*d.*
La Liegoise	2	6
Martham Seedling, fine and early	7	6
Myatt's Eleanor	5	0
Globe	3	6
British Queen	3	6
Pine-apple	5	0
Eliza	3	6
Myatt's Prolific	5	0
Princess Alice	3	6
Roseberry	3	6
black	5	0
Royal Pine (fine)	5	0
Swainston's Seedling Pine	3	6
Turner's Pine	5	0

Royal Nursery, Great Yarmouth.

NEW SEEDLING GERANIUM.

RUNDLE'S BEAUTY OF MONTPELLIER has been Purchased by the following Nurserymen:—Messrs. Henderson and Co., Pine-apple-place; Messrs. E. G. Henderson and Co., St. John's Wood; Mr. Charles Turner, Royal Nursery, Slough; Messrs. Bass and Brown, Sudbury; Mr. Keynes, Salisbury; Mr. W. Cock, Chiswick; Mr. B. N. Cant, Colchester; Mr. W. Bragg, Slough; Mr. Wm. Ivery, Peckham, Surrey; and most of the other leading Nurserymen in the kingdom.
Strong Plants now sending out, 20s. each, one-third off to the trade, with one added to every three.
Apply to WILLIAM E. RENDLE & Co.,
NURSERYMEN, PLYMOUTH.

TO NURSERYMEN, FLORISTS, &c.

A. VAN GEERT, FLORIST, Ghent, begs to inform the above that he has just published his New CATALOGUE OF PLANTS, which may be had on application to his Agents, BETHAM and BLACKITH, Custom House, Shipping, and General Forwarding Agents, Cox and Hammond's Quays, Lower Thames-street, London.

SEEDLING CINERARIAS.

WM. IVERY has selected from his stock of superb SEEDLINGS, the following varieties, which are now ready to send out.
CINERARIA ELECTRA.—A violet purple, petals broad, notch scarcely perceptible, outline tolerable, habit beautiful, size average, colour new, bright yellow disc, and flower abundant. 7*s.* 6*d.*
CINERARIA MADAME MIELLEZ.—Pure white ground, black eye, blue edge, the colour of the Neapolitan violet, not the slightest notch, petals broad, indentation between the petals slight, bloom abundant, and habit excellent.
The above are figured in the "Gardeners' Magazine of Botany," May, 1850; from which this description is taken. 7*s.* 6*d.*
CINERARIA FEARLESS.—Light blue, fiery centre, white disc, and form good. 5*s.*
CINERARIA EMPRESS.—Clear white ground, edged with rosy purple, very fine truss of flowers. 5*s.*
W. I. can supply good show Cinerarias at 15*s.*, 21*s.*, and 30*s.* per dozen. A Select Catalogue of Cinerarias, Geraniums, Fancy Ditto, Scarlet Ditto, Fuchsias, Verbenas, Antirrhinums, Phloxes, Choice and Select Plants.
Hanover Nursery, Peckham, near London.

TO GENTLEMEN ENGAGED IN PLANTING, BUILDERS, AMATEURS, &c.

J. J. FOSTER, of the Edgeware Nurseries, begs to announce that he has a large Stock of fine EVERGREENS, FRUIT TREES, ORNAMENTAL SHRUBS, and FOREST TREES, which, being grown on an adhesive soil, move safely, with good balls of earth. He has also a beautiful collection of the finest ROSES, admirably well grown. The whole at moderate prices.—Coaches leave the Old Bell, and Black Bull, Holborn, several times a day, and pass the Nurseries. Fares, outside, 1*s.*; inside, 1*s.* 3*d.* Goods delivered in town, and at 12 miles distance round, free of charge.

AURICULAS, ALPINES, POLYANTHUSES, CARNATIONS, PICOTEES, PINKS, PANSIES, PRIMROSES, RANUNCULUSES, AND THE LANCASHIRE SHOW GOOSEBERRY-TREES, &c.

JOHN HOLLAND, Bradshaw Gardens, Middleton, near Manchester, respectfully informs purchasers of the above "Florists' Flowers" that his extensive Collections are unrivalled for health and vigour, and to which every new variety is regularly added as soon as out.
Priced Catalogues of all the above are now ready, and may be obtained by enclosing a postage stamp.

EDWARD GEORGE HENDERSON, Wellington-road Nursery, St. John's-wood, London, begs to announce that on the 20th of this month he will be prepared to send out the following new FANCY GERANIUMS, raised by him, and proved in 1850; and he feels confident they will give as much satisfaction as Geranium Alboni sent out by him last year.
BLACK PRINCE, 10*s.* 6*d.*—A fine rich dark maroon (upper and lower petals same colour), with light centre, the petals slightly margined with rose; a free bloomer, of good habit, and quite distinct.
EXQUISITE, 10*s.* 6*d.*—A fine clear smooth-edged flower; upper petals, blotch of lilac with deep belt of bright rose, margined with white; under petals marked with rose; a nice compact trusser, of good habit, and an early bloomer.
MARION, 10*s.* 6*d.*—Upper petals rich crimson, with clear white margin; under petals clear white, with belt of bright rose; white centre; a good dwarf close habit, an abundant bloomer, and continues flowering in perfection the whole season.
PRIMA DONNA, 10*s.* 6*d.*—Upper petals dark crimson-purple, shading off in veins to a light edge; lower petals blotched and pencilled, having a striped appearance; a good trusser, free bloomer, and retains its flowers for a considerable time.
PRINCE ALBERT, 10*s.* 6*d.*—Upper petals deep crimson velvet, with clear white margin; under petals white, blotched and veined with violet; large flower, a very constant and free bloomer.
REINES DES FLEURS, 10*s.* 6*d.*—Clear white ground, with intense violet plum blotch, and broad belt of white; under petals white, slightly marked with rosy purple; good form and a free bloomer.
E. G. H. can recommend the above as being perfectly distinct in themselves, and from any other varieties now in cultivation.
E. G. H. will also have the following new PELARGONIUMS to send out at the same time:
CORA, 7*s.* 6*d.*—Orange scarlet white centre, moderate size, a remarkable early blooming variety.
FIREBALL, 10*s.* 6*d.*—A beautiful rich crimson scarlet, centre violet shading to white, a decided improvement on Salamander.
PRINCESS ROYAL, 10*s.* 6*d.*—A fine rich purple flower, with a deep blotch of maroon on upper petal; good habit and free bloomer.
STANDARD BEARER, 10*s.* 6*d.*—A fine bold flower, upper petals a rich orange crimson, lower petals bright salmon; excellent habit and free bloomer.

CUTHILL'S "BLACK PRINCE" STRAWBERRY.

WILLIAM HUSSEY has to offer the above early STRAWBERRY at 4s. per 100; and also the undernamed kinds, at, per 100.

British Queen	...	...	2s 0d	Keens' Seedling ...	2s 0d
Comte de Paris	...		2 6	Princess Alice Maude	2 0
Eleanor	...	...	3 6	Caroline...	2 0
Elton Pine	...	...	2 0		

VINES from Eyes, 2s. 6d. to 3s. 6d. each.

Seedling CINERARIAS, raised from all the best named sorts of last year, at 3s. per doz., post free 3s. 6d.—A Catalogue of W. H.'s Collection of Florists' Flowers and other Plants can be had by enclosing one penny stamp for postage.

Horticultural Gardens, Norwich, Oct. 5.

ROSA MANETTII.—An Amateur wishes to dispose of 200 or 300 Standard and Dwarf ROSES, also 100 or 200 MANETTII Dwarfs for stocks, which are in good condition, and first-rate varieties, mostly autumnals; they will be sold at about half the usual price. Any person taking the whole quantity may have them very reasonably.—Apply, post paid, to W. H. S., 9, Wellington-street North, Strand, London.

HERTFORD ROSE NURSERIES.

E. P. FRANCIS'S NEW ROSE CATALOGUE, containing all the newest kinds introduced and worth cultivating, will be ready for delivery on and after Monday, October 7, and will be forwarded gratis on application. The Collection this year is very extensive and remarkably fine.

TRUE DOUBLE ROMAN NARCISSUS.

ROBERT HALL begs to advise the arrival of his annual importation of the above-named, which is the most fragrant of all the Narcissus, price 3s. per dozen. Also True Dutch Hyacinths, best sorts, 6s. per dozen, or three dozen for 15s.; Crocus, Jonquils, &c., at his Foreign Warehouse, 63, South Audley-street, Grosvenor-square, facing the Chapel.

AMBROSE'S SEEDLING FANCY PELARGONIUMS.—To be sent out the middle of October, for prepayment only, the first remittance to secure the first selection. Post-office orders are requested to be made payable at Chelsea.

GAIETY.—A small, distinct, and pleasing variety, top petals rich mulberry, with a pink margin; lower petals spotted with the same, a close grower, and very free, the leading fancy flower of the season. 21s.

BELLE MARIE.—A fine, distinct flower, smooth, and of fine substance, top petals rich mulberry, margined with crimson, lower petals with the same; constant and free; the only fancy Geranium that obtained a certificate at the Royal Botanic Exhibition of 1848. 21s.

NE PLUS ULTRA.—A great novelty, top petals deep crimson, shaded with purple; lower petals much the same colour, having a delicate margin of pale pink, a well-defined white throat, very distinct, the truss having very much the appearance of an Auricula flower; a close grower, and very free. 21s.

PERFECTION.—Top petals bright rose, margined with white; lower petals spotted with rosy lilac; free bloomer, constant, and excellent habit. 10s. 6d.

DELIGHT.—Ground colour blush, top petals having a beautiful pink blotch, and prettily pencilled with rose; fine habit, and free bloomer. 7s 6d.

PILOT.—Ground colour white; top petals blotched with mulberry, lower petals having a spot of the same colour on each; fine dwarf habit, and very free. 10s. 6d.

W. A., having a few packets of Fancy Geranium Seed to dispose of, begs to offer the same at 2s. 6d. per packet of 40 seeds. Battersea, Oct. 5.

DUTCH BULBS, EARLY FLOWERS FOR THE WINTER AND SPRING ADAPTED FOR BLOOMING IN-DOORS AND IN THE BORDERS. — The undersigned having received their annual importation of DUTCH BULBS from Haarlem, offer the following choice collection for 10s., viz.: Half-dozen first-rate Hyacinths for glasses, Half-dozen good Hyacinths for pots, 50 Crocuses, four separate colours; 50 Double Snowdrops, Half-dozen Double Van Thol Tulips, Half-dozen Early Van Thol Tulips, 1 dozen Double White Sweet-scented Narcissus, Half-dozen Double Jonquils, 1 dozen Winter Aconites, 25 splendid Mixed Tulips, and 1 dozen best Mixed Double Anemones.—CLARKE and COMPANY, Seedsmen and Florists, 86, High-street, opposite the Town-hall, Borough, London.

PLANTING SEASON.

H. SILVERLOCK invites inspection of his superior Stock of ORNAMENTAL EVERGREENS, 1 to 6 feet in height (among which are Laurustinus, full of bloom-buds, 1 to 3 feet), FLOWERING SHRUBS, and FOREST TREES, TRAINED and other FRUIT TREES, of the best kinds, all of which having been frequently transplanted, and great care be-towed on their training and cultivation, are in excellent order for removal, and will be offered at moderate prices.

H. S. has also a collection of the choicest and most desirable CONIFERÆ in pots, and a large stock of CAMELLIA JAPONICA, in fine condition.—North Gate Nursery, Chichester.

BULBOUS ROOTS, GRAPE VINES, &c.

J. WEEKS and Co., King's-road, Chelsea, beg to inform the Nobility and Gentry that they have now got a large collection of fine Bulbs, which they can supply very cheap. Small collections made up, consisting of Hyacinths, Narcissus, Tulips, Jonquils, Crocus, Snowdrops, Gladiolus, Alstræmeria, Anemones, Ranunculus, Iris, Scilla, and other appropriate Kinds, for 30s., 20s., and 10s. Priced Catalogues sent upon application. Also a very fine collection of GRAPE VINES IN POTS, from eyes two and three years old, for FORCING IN POTS or PLANTING.—STOVE AND GREENHOUSE PLANTS in extensive variety.

J. WEEKS and Co., King's-road, Chelsea.

REMARKABLY CHEAP.

JAMES TURRELL begs to offer to the Public the finest and cheapest lot of FOREST TREES, SHRUBS, &c., ever offered for public sale. The Trade liberally treated with.

FOREST TREES, of sorts, 8 feet high, 42s. per 1000.

Arbutus 2½ feet; Arbor-vitæ, 4 feet; Cedars, 4 feet; Bay, 3 feet; Yew, 4 feet; Cypress, 4 feet; Manilla Box, 2 feet—9s. per dozen.

Laurustinus	...	...	...	per 100, 50s. fine.
Quick	...	...	...	per 1000, 10s.
Larch	...	...	...	per 1000, 30s. strong.
Privet	...	...	...	per 1000, 40s. fine.

Dwarf Box, Laurel, Firs, Portugal Laurel, Euonymus, Box, Evergreen—3 to 4 feet high, 4s. per dozen.

Var. Holly, fine, 10s. 6d. per dozen; Broad leaf ditto, fine, 10s 6d. per dozen; Large Spruce Fir, 4s per dozen; Aucuba, from 4s. to 6s. per dozen; Alaternus, 6s. per dozen.

J. T., wishing to clear his ground of some of his large stock of Trees and Shrubs for other purposes, feels confident greater bargains cannot be made elsewhere.

When large orders are given liberal allowance will be made. Remittances are requested from unknown correspondents, to be made payable to J. TURRELL, Providence Nursery, Ramsgate.

TO GARDENERS, &c.

GUTTA PERCHA TUBING for Watering Gardens, spreading Liquid Manure, &c., may be had joined up to any length. Waterproof Soles for Boots and Shoes. Thread for tying up Plants. Gutta Percha Canvas suitable for nailing up Trees, &c.—Manufactured by THE GUTTA PERCHA COMPANY PATENTEES, 18, Wharf-road, City-road, London.

HOYLE'S SEEDLING PELARGONIUMS.

C. TURNER has a few strong plants left of Ajax, May Queen, Nectar Cup, Flavia, Generalissimo, Corinne, Isis, and Cardinal. No more orders can be received for Ocellatum or Rubiola.

Catalogues, with full description, can be had on application.

Royal Nursery Slough, Oct. 5.

NEW CARNATIONS, PICOTEES, PINKS, AND PANSIES.

CHARLES TURNER'S DESCRIPTIVE CATALOGUE is now ready, containing some fine new varieties of the above, not before offered for sale.

Royal Nursery, Slough, Oct. 5

KNIGHT AND PERRY, Exotic Nursery, King's-road, Chelsea, respectfully invite an inspection of their fine healthy stock of PEACH, NECTARINE, and other FRUIT TREES (free from insect, and of all the best kinds, both trained and untrained), which cannot fail to afford complete satisfaction wherever supplied, as they combine the advantage of the most elaborate attention to their culture, both in root and branch, with a particular method of labelling, ensuring the accuracy of each kind; their stock of VINES, raised from eyes obtained from the fruiting plants of the most eminent growers in the country, is larger than ordinary, and of first-rate excellence.—Exotic Nursery, King's-road, Chelsea.

SCARLET PELARGONIUMS.

CONWAY'S "*PRINCESS ALICE," colour Vermillion, with a white eye, large globe truss, free bloomer, of good habit, and a very desirable variety, either for pot or bedding. Strong plants, 5s. each.

Also, now ready to be sent out, strong plants of Flower of the Day, 10s. 6d.; Commander-in-Chief, 5s.; Princess Royal, 2s. 6d.; Queen of Summer, 2s. 6d.; Trentham Scarlet, 1s. 6d.; Queen Improved, 1s. 6d.; Excellence, 1s. 6d.; Royalist, 1s.; Punch, 1s.; Gem, 1s.; Cottage Maid, 1s. The above selection of 12 attractive varieties may be had for 30s., basket included.

New Petunia, "*Captivation," white with purple throat, large and well shaped flower; a good bedding plant. 3s. 6d. each.

Geranium "*Coronata," pink and white; profuse and perpetual bloomer, flowering very early in the greenhouse. 3s. 6d. each.

Calceolaria "*Multiflora," yellow, compact dwarf variety, for bedding. 3s. 6d. each.

* These plants were shown at the metropolitan exhibitions this season, and were greatly admired.

MARY CONWAY, Earl's Court Nursery, Old Brompton, London.

TILEY'S VIOLA ARBOREA, OR PERPETUAL TREE VIOLET.—VIOLA ARBOREA, or the PERPETUAL TREE VIOLET (true).—In answer to numerous inquiries for the above, and great satisfaction given by the plants sent out last season by EDWARD TILEY, he begs to state that he has this year a fine stock of the above beautiful DOUBLE VIOLET now to dispose of, which he can highly recommend, this being the proper time for making beds or potting. They are beautifully scented; the blooms are as large as the double blue Hepatica; they bloom freely from August till the end of May, and are perfectly hardy. Twelve of these plants grown in pots will scent a large greenhouse; and a small bed, 9 feet long by 3 feet wide, will be sufficient to furnish a family with bouquets the whole of the winter and the spring. They should be planted in rather a dry situation and a loose soil, as the Violet will thrive and bloom finer than in wet or clay borders.

E. T. has been informed by the gentleman that introduced it into this country, that he has seen them growing in the thickets of Persia to the height of 4 feet, with large bushy heads to them, and hundreds of blooms on them at the same time. Large bushy plants, 6s. per dozen; smaller ditto, 3s. per dozen; or 1l. per hundred.

Also he has a fine stock of that splendid YELLOW VIOLET, or VIOLA LUTEA, which has been so much admired at the London exhibitions. In colour it is equal to the Crocus. Strong bushy plants 2s. 6d. each; or smaller ditto, 1s. 6d. each.

KITLEY'S GOLIAH STRAWBERRY.—Strong well-rooted plants at 3s. per dozen.

True BATH COS LETTUCE SEED, 1s. per packet.

Extra fine SWEET WILLIAM SEED, saved from 24 distinct varieties, 1s. per packet.

ANTIRRHINUM SEED from all the best varieties, 1s. per packet.

WINTER CUCUMBER.—Lord Kenyon's Favourite, 2s. 6d. per packet.

The whole or any quantity of the above will be sent, postage and package free, to any part, on receipt of a Post-office order, or the amount in penny postage stamps.

Sold by EDWARD TILEY, Nurseryman, Seedsman, and Florist, 16, Pulteney-bridge, Bath.

FOREIGN BULBOUS ROOTS.

WM. HAMILTON, SEEDSMAN, &c., 156, Cheapside, London, begs to state that his Priced Catalogue of the above is now ready, and may be had gratis on application.

HYACINTHS in colours, named, for pots or glasses, 6s., 9s., and 12s. per dozen; in mixtures, 3s. per dozen. MIXED DUTCH CROCUS, 1s. 6d. per 100. TULIPS for early forcing, 1s. per dozen. SNOWDROPS, 2s. 6d. per 100. NARCISSUS, 4d. to 6d. each. GLADIOLUS, IXIAS, IRIS, RANUNCULUS, ANEMONES, and a large assortment of other Roots, the prices of which will be found in his Catalogue.

W. H.'s Improved Supporter for Hyacinths, &c., 6d. each.

*** Not to be equalled by any now offered to the public.

Address—156, Cheapside, London.

NEW SEEDLING PANSIES—"COMMANDER-IN-CHIEF" AND "PRINCE ARTHUR."

YOUELL AND CO. beg to announce they are now prepared to execute orders for the above first-rate PANSIES, which they guarantee will give the highest satisfaction.

"COMMANDER-IN-CHIEF" was exhibited at the Worton Cottage Meeting of May 29th, under the initials of "T. T.," and the following opinion is given in "Beck's Florist" of July last: "No. 2, Yellow ground, bronzy purple top petals, lower ones margined with the same colour, bold eye, showing to great advantage: *a fine flower for Exhibition*"

The following opinion of this fine flower is also given in the *Gardeners' Chronicle*, of June 20th, under the initials of "Y. Y." "No 2, Rich yellow ground, top petals dark maroon, lower petals margined with the same colour—eye good; a full-sized and fine flower."

"PRINCE ARTHUR," white ground, top petals rich dark purple, lower ones margined with the same colour, eye good—flowers large and of great substance.

This was exhibited with "Commander-in-Chief" at the Worton Cottage Meeting, and obtained the following opinion: "No 38, Style of Optimus, and a considerable improvement upon it, having more ground colour."

Strong plants of the above 5s. each per post free if required; and one over to the Trade when three are ordered.

Royal Nursery, Great Yarmouth, Oct. 5.

COCHIN CHINA FOWLS.—FOR SALE, a few choice full grown Chickens, bred from imported birds.—Apply to JAMES MATHEMER, Fit Place, Grays, Essex. The Gravesend steamers call at Grays pier.

COCHIN CHINA FOWLS.—A few well bred Birds of this season for sale. For particulars.—Apply to Messrs. JESSOP BROTHERS, Nursery Gardens, Cheltenham.

PHILLIPS' PATENT FIRE ANNIHILATOR.—The Directors of the Fire Annihilator beg to inform the public that, with the consent of Her Majesty's Commissioners of Woods and Forests, they have completed the erection in Battersea Fields, near to the Water-works (about a quarter of a mile from the Nine Elms Pier), of a house of larger dimensions than that recently set fire to at Woolwich, the whole of which they intend to set fire to on TUESDAY, the 8th of October, at 11 o'clock A.M. precisely, in order to show the efficacy of the Annihilator in extinguishing fire. They have also purchased a vessel, in the hold of which they will make a large fire for the same purpose. Tickets of admission may be had gratis on application by letter addressed to the Secretary of the Fire Annihilator Company, 105, Leadenhall-street, City. N.B. Those who are not able to obtain tickets will have an opportunity of witnessing the demonstration from the river, nearly opposite Pimlico Pier.

SLATE WORKS, ISLEWORTH, MIDDLESEX.

EDWARD BECK Manufactures in Slate a variety of articles for Horticultural purposes, all of which may be seen in use at Worton Cottage, on application to the Gardener, Sundays excepted. Priced lists of plant tubs and boxes forwarded on application.

PIMLICO SLATE WORKS. — Cisterns, Filters, Milk and Salting vessels, Corn and Flour Chests, Sinks, Dairy and Larder Shelves, Malting and other Flooring, Skirting, Refrigerators, Garden Edging, Flower Boxes, Pine pit Linings, Hot-bed Frames, moveable Cattle Sheds, Coping, Drain Stones and Traps, Steps and Risers, Balcony Landings, Roofing Slates, ridge roll and flap; Waste Slate for drains, Sun Dials, Fountains, and all descriptions of plain Slate Work in Town, or direct from Mr. MAGNUS'S Works in North Wales.

ENAMELLED SLATE Chimney-pieces, Billiard Tables, Console and other Table Tops, Mural Tablets, &c., in imitation of marble, surpassing the choicest marbles in beauty and durability, at less than half the cost of the commonest descriptions. Price Lists forwarded on application to Mr. MAGNUS, 39 and 40, Upper Belgrave-place, London.

BAKER'S PHEASANTRY, Beaufort-street, King's-road, Chelsea, by special appointment to her Majesty and H. R. H. Prince Albert.—ORNAMENTAL WATER FOWL, consisting of black and white swans, Egyptian, Canada, China, barnacle, brent, and laughing geese, shieldrakes, pintail, widgeon, summer and winter teal, gadwall, Labrador, shovellers, gold-eyed and dun divers, Carolina ducks, &c., domesticated and pinioned; also Spanish, Cochin China, Malay, Poland, Surrey, and Dorking fowls; white, Japan, pied, and common pea-fowl, and pure China pigs; and at 3, Half-moon-passage, Gracechurch-street, London.

CUCUMBER AND MELON BOXES AND LIGHTS.

One hundred 1, 2, and 3-light Boxes and Lights of all sizes ready for immediate use. Warranted best materials, packed and sent to all parts of the kingdom; 2-light Boxes and Lights from 1l. 4s. Garden Lights of every description, Conservatories, Green and Hot-houses, made and fixed in all parts of the kingdom. References given to the Nobility, Gentry, and the Trade, in most of the counties of England. JAS. WATTS, Hothouse Builder, Claremont-place, Old Kent-road, London.

FERNS.

JAMES PHILLIPS AND CO. beg to direct attention to their new description of GLASS SHADE and DISH for the growth of Ferns, at once ornamental and better adapted than any other yet made. Price varying from 2s. to 13s. each.

HYACINTH DISHES.			ROOT GLASSES.	
12 inches	... ...	2s. 6d.	Common shape, p. doz.	3s. 0d.
9 "	... ...	1 6	Improved do. do.	6 0
6 "	... ...	1 0		

116, Bishopsgate-street Without, London.

GLASS FOR CONSERVATORIES, GREENHOUSES, PIT FRAMES, &c.

HETLEY AND CO. are supplying 16-oz. Sheet Glass, of British Manufacture, packed in boxes containing 100 square feet each, at the following REDUCED PRICES for cash. A reduction made on 1000 feet.

Sizes. Inches.					Per foot.	Per 100 feet.
	Under 6	by 4	at	1½d.	is £0 12 6	
From 6 " 4	" 7	" 5	"	2d.	" 0 16 8	
7 " 5	" 8	" 6	"	2½d.	" 0 18 9	
8 " 6	" 10	" 8	"	2½d.	" 1 0 10	
10 " 8	" 12	" 9	"	2½d.	" 1 2 11	

Larger sizes, not exceeding 40 inches long.

16 oz. from 3d. to 3½d.	per square foot, according to size.			
21 oz. " 3½d.	5d.	"	"	"
26 oz. " 3½d.	7½d.	"	"	"

PATENT ROUGH PLATE, THICK CROWN GLASS, and PATENT PLATE GLASS for Horticultural purposes, at reduced prices, by the 100 square feet.

GLASS TILES AND SLATES made to any size or pattern, either in Sheet or Rough Plate Glass.

Propagating Glasses, Bee-hive Glasses, Cucumber Tubes, Glass Milk Pans, Glass Water Pipes, and various other articles not hitherto manufactured in glass.

PATENT PLATE GLASS.—The present extremely moderate price of this superior article should cause it to supersede all other inferior window glass in a gentleman's residence. No alteration connected with the sash is required.

GLASS SHADES, as ornamental to, and for the preservation of every description of goods susceptible of injury by exposure. Prices, since the removal of the Excise duty, reduced one-half. List of Prices and Estimates forwarded on application to JAMES HETLEY and Co., 35, Soho-square, London.

GLASS FOR CONSERVATORIES, HORTICULTURAL PURPOSES, &c.



T. MILLINGTON'S SHEET GLASS, which is of the best description, varying from 16 to 32 ounces, at from 2d. per foot and upwards; 100 feet and 200 feet cases of Sheet Glass, for cutting up, at 2½d. per foot. British Plate Glass, from 1s. 2d. to 2s. per foot, according to size. Patent Rough Plate Glass, from ¼ to 1 inch in thickness, from 4s. per foot upwards. Glass Slates and Tiles. Milk Pans from 12 to 24 inches diameter, from 2s. to 5s. each. Cucumber Tubes, from 12 to 24 inches long, at 1d. per inch. Lactometers, 7s. 6d. each. Wasp Traps.—Lists may be had, on application at the Warehouse, 87, Bishopsgate-street Without, same side as the Eastern Counties Railway.

SPLENDID NEW GERANIUM—"THE VILLAGE MAID."

HENRY WALTON, Florist, &c., Edgend, Marsden, near Burnley, Lancashire, begs to offer to his kind patrons and the public in general his splendid light SEEDLING GERANIUM, "THE VILLAGE MAID," of which the following description was given in the Gardeners and Farmers' Journal, July 13, 1850: "Your seedling is a noble flower; form good; upper petals purplish crimson, shading to bright rose, veined with black, beautifully margined with white; the lower petals well shaped, of the purest white, almost resembling frosted silver, their exquisite consistency inducing this magnificent appearance. We are averse to eulogising a Pelargonium on the inspection of a single pip, but the universal beauty of yours has induced the exception." Opinion of Mr. Whomes, Windsor Nursery: "Lower petals stout and decided good white, with great breadth; the upper petals finely formed and well covered; a decided beat on Arnold's Virgin Queen." Opinion of Mr. E. Tiley, Nurseryman, Pulteney Bridge, Bath: "I have received your Geranium blooms, which I have shown to two or three Geranium growers, and they were of the same opinion as myself—that it is one of the best shaped flowers yet grown, and very distinctly marked."

H. W. can with confidence recommend the above as a fine trusser and good habit. Strong plants, well established, 1*l.* 1*s.* The usual allowance to the Trade, and one over when three are taken.

H. W. also begs to inform his numerous patrons in general that his Autumn Catalogue of Geraniums, Fuchsias, Cinerarias, Hollyhocks, &c. &c., is now ready, and may be had on application, inclosing one stamp.

WATERER'S DESCRIPTIVE CATALOGUE OF AMERICAN PLANTS, &c.

HOSEA WATERER begs to announce his new descriptive CATALOGUE OF AMERICAN PLANTS, CONIFERS, ROSES, &c., is just published, and may be had by enclosing two stamps for postage to Hosea Waterer, Knap Hill Nursery, Woking, Surrey.

☞ Everybody who has any idea of planting the ensuing autumn should possess themselves of this Catalogue.

NEW SEEDLING STRAWBERRY—MYATT'S "SURPRISE."—This is a variety raised from the British Queen, which it resembles, though of a more robust habit, and a very free bearer, producing a greater abundance of those large angular-shaped Strawberries than any other variety, and finishing off the last fruit of a good size, price 50*s.* per 100.

Also Myatt's Eleanor, 5*s.* British Queen, Globe, Mammoth, Comte de Paris, Hooper's Seedling, Keens' Seedling, Swanston's Seedling, Elton Pine, 3*s.* 6*d.* Fertilised Hautbois, 5*s.* Cuthill's Black Prince, 10*s.* 6*d.* per 100. Kitley's Goliah, 3*s.* 6*d.* per doz., or 20*s.* per 100.—Manor Farm, Deptford.

NEW ROSE CATALOGUE.

WM. WOOD AND SON have the pleasure of announcing that their DESCRIPTIVE CATALOGUE for the ensuing season is now ready. In addition to the splendid collection enumerated in former Catalogues, the present edition contains many varieties of first-rate merit.

As heretofore, the Catalogue will be duly forwarded to all who have favoured W. W. and S. with their commands, and may be had Gratis on application; also Catalogues of Ornamental Trees and Shrubs, Coniferæ, American, Herbaceous, and Greenhouse Plants; and Descriptive Catalogues of New and Choice Fruit-trees, new Verbenas, Fuchsias, Cinerarias, &c. &c. The Trade Catalogue is also now ready.

Woodlands Nursery, Marefield, Uckfield, Sussex.

MESSRS. STANDISH AND NOBLE have to offer the following very desirable plants as under; at the same time they beg to observe that they supply every kind of Nursery Stock, Catalogues of which can be had on application.

AZALEA INDICA, "GLORY OF SUNNING-HILL."—In general appearance this plant, when in bloom, reminds one of Nerium splendens, producing large double rose-like flowers of the richest pink; good plants, 3*s.* 6*d.* to 10*s.* 6*d.* each.

CRYPTOMERIA JAPONICA SEEDLINGS.

1 year ... ... 12*s.* per doz., or 63*s.* per 100.
2 years ... ... 18*s.* „ 105*s.* „
3 years ... ... 30*s.* „ 210*s.* „
1 foot 6 inches to 2 feet 6 inches high, 60*s.* per dozen.
2 feet 6 inches to 3 feet 6 inches high, 90*s.* „
3 feet 6 inches to 4 feet 6 inches high, 126*s.* „
And larger plants in proportion.

The whole of the above, with the exception of the one and two years seedlings, were planted into the open border last spring, are fine robust specimens, and fit for immediate planting.

CRYPTOMERIA JAPONICA var. NANA, a very singular dwarf variety, 10*s.* 6*d.* to 21*s.*

CUPRESSUS FUNEBRIS, or WEEPING CYPRESS. (North of China.)

6 inches high, 10*s.* 6*d.* each; 12 to 15 inches, 20*s.* each.
These plants are from the open border—robust specimens fit for immediate planting.
15 ins. to 24 ins., 31*s.* 6*d.* each; 24 ins. to 30 ins., 42*s.* each.

CUPRESSUS GOVENIANA. (California.)

6 to 9 inches, 7*s.* 6*d.* each; 9 to 15 inches, 10*s.* 6*d.* each.
15 to 24 inches, 20*s.* each; 2 to 3 feet, 31*s.* 6*d.*

CUPRESSUS LAMBERTIANA, 2 feet, 3*s.* 6*d.* each.

CUPRESSUS THURIFERA, var. ELEGANS, perfectly hardy.
1 foot to 2 feet high, 3*s.* 6*d.* to 5*s.* each.

CEPHALOTAXUS FORTUNII, strong plants, 31*s.* 6*d.* each.
For description, see "Botanical Magazine," by Sir W. Hooker.

FORSYTHIA VIRIDISSIMA.

1 foot 6 inches to 2 feet ... ... 1*s.* 6*d.* to 2*s.* 0*d.* each.
2 feet to 3 feet ... ... „ 2*s.* 6*d.* „
3 feet to 4 feet ... ... 3*s.* 6*d.* „ 5*s.* 0*d.* „
Fine bushy plants from open border fit for immediate planting.

JASMINUM NUDIFLORUM ... ... 1*s.* 0*d.* each.
Flowering plants ... ... 3*s.* 6*d.* „
This is a very desirable winter flowering hardy plant, producing a profusion of flowers of the richest yellow from December to February.

QUERCUS SCLEROPHYLLA. (North of China.) This is undoubtedly the most remarkable of all evergreen Oaks, having foliage as large as the Spanish Chestnut, and more than twice the substance. Strong seedling plants, 42*s.* each.

QUERCUS INVERSA. (North of China.) Also evergreen, with smooth entire leaves, having remarkably large male inflorescence. Seedlings, 42*s.*

TAXODIUM SEMPERVIRENS.

1 foot to 1 foot 6 inches ... ... 2*s.* to 2*s.* 6*d.* each.
1 foot 6 inches to 2 feet 6 inches ... 3*s.* 6*d.* to 5*s.* „
3 to 4 feet ... ... 7*s.* 6*d.* to 10*s.* 6*d.* „
Larger in proportion.

VIBURNUM PLICATUM. (North of China.) A noble shrub, producing in great profusion large globular heads of flowers of the purest white. Strong plants, 21*s.* each.

WEIGELA ROSEA.

6 inches high ... ... 1*s.* 0*d.* each.
1 foot to 1 foot 6 inches ... ... 1*s.* 6*d.* to 2*s.* 6*d.* each.
1 foot 6 inches to 2 feet ... ... 3*s.* 6*d.* to 5*s.* 0*d.* „
These last are fine bushy flowering plants.

Selections of the finest Autumnal Flowering Roses.

Standards ... ... 15*s.* 0*d.* per dozen.
Half Standards ... ... 12*s.* 0*d.* „

N.B.—Messrs. Standish and Noble have a large quantity of very fine common Laurels, from 2 feet to 6 feet high; also Spruce Fir, from 2 feet to 4 feet high; which can be sold very cheap, particulars of which can be had on application.

Bagshot Nursery, Oct. 5.

KITLEY'S "GOLIAH" STRAWBERRY, 3*s.* 6*d.* per dozen, or 1*l.* per 100.

CUTHILL'S "BLACK PRINCE" STRAWBERRY, 2*s.* per dozen, or 10*s.* per 100.

For descriptions of the above excellent sorts, see late Numbers of this Paper.

		Per 100.			Per 100.
Myatt's Eliza ...	...	3*s.* 6*d.*	Cooper's Seedling	...	3*s.* 6*d.*
„ Mammoth	...	3 6	Elton	...	3 6
„ British Queen		3 6	Keens' Seedling	...	3 6
„ Globe ...	...	3 6	Cole's Prolific ...	...	3 6
„ Prolific	...	3 6	Deptford Pine ...	...	3 6
„ Victoria	...	3 6	Roseberry ...	...	3 6

All the above are excellent sorts, and can be highly recommended.

All orders above 2l. carriage free to any station from Plymouth to London or Gloucester.

Apply to William E Rendle & Co., Nurseryman, Plymouth.

*** Our Autumn Catalogue of Forest Trees, Fruit Trees, and Shrubs will be ready in a few days.

AMERICAN PLANTS.

JOHN WATERER'S CATALOGUE OF AMERICAN PLANTS, ROSES, CONIFERS, &c., is now published, and may be had gratis on application. It describes the colours of every Rhododendron worthy of cultivation, thus affording purchasers every facility in making selections.

American Nursery, Bagshot, Surrey.

GEORGE JACKMAN, Nurseryman, Woking, Surrey, 1¼ mile from the Woking Station of the South-Western Railway, begs to announce that he has just published a new and complete CATALOGUE of his American Plants, Ornamental Evergreens and Flowering Shrubs, Standard and Dwarf Roses, Fruit and Forest Trees, &c., which may be had gratis on application.

The Gardeners' Chronicle.

SATURDAY, OCTOBER 5, 1850.

For a long time past, a Mr. John Roberts has been attempting, by means of advertisements, circulars, private applications, and epistolary persecution, to impress upon the public mind the very great importance of certain pipes, tiles, sockets, and so forth, which he has "registered for horticultural purposes." A short notice of these was published in our columns on the 29th of Sept., 1849, on which occasion it was stated that they might be worth a trial, by persons regardless of expense; but that *two hundred and eighty-nine pounds* per acre was rather a large sum to pay for a contrivance to grow Strawberries.

Since that time we ourselves procured some of the Strawberry tiles, whose excellencies were such as to justify an outlay of the magnitude above described; and we had the opportunity of seeing them under trial by others. The result was unfavourable; we found them disadvantageous rather than useful; and therefore on the 3d of August last, in pointing out a method of Strawberry growing which we had found economical and excellent, we presumed to use these words:—"We think a plan like this far preferable to Mr. Roberts's tiles, or to any contrivance for growing Strawberries on the level ground. In the first place it is cheap instead of dear; then it looks well instead of being ugly; thirdly, it harbours no vermin; and, moreover, it allows rain-water to soak easily into the whole mass of rich materials of which the bed consists." (p. 483.) Beyond this we made no remark. A few days afterwards we received from Mr. Roberts a letter, printed at p. 514, among the advertisements, charging "us, or some of our friends, *with having a large stock of burrs to dispose of*." We should have passed this over without further notice, as a piece of mere impertinence from an ignorant man, had it not been for what we are now about to relate, and to which we feel it necessary that public attention should be drawn.

On the 31st of August a correspondent, writing under the name of "Fair Play" (p. 550), after stating his dissatisfaction with these tiles, added that he had discontinued them, except as snail-traps, &c., for which purpose they are useful. A week later, Mr. Cuthill, a market-gardener at Camberwell, confirmed this assertion (p. 566), adding that no contrivance "for catching slugs and other insects in kitchen-gardens, and especially among Strawberries," would be found to succeed better than Mr. Roberts's tiles. The result of this was a lawyer's letter, addressed, on the 10th of Sept., to Mr. Cuthill by Mr. Charles Wellborne, of 31, Tooley-street, Southwark, from which the following is an extract:

"My client, Mr. John Roberts, has brought me a paragraph, written by you, commenting upon his celebrated Strawberry tiles in a most unjust and false manner, with a view clearly (for some wicked purpose or other, best known to yourself) to destroy the sale of such tiles, and thereby to greatly injure and damnify my client. Now, I am told you had the impudence to tell my client to his face that you had prevented one gentleman from buying his tiles by your malicious falsehoods promulgated with respect thereto, &c., &c.—I therefore have to say, that unless a full and ample apology *be inserted by you in the 'Gardeners' Chronicle' Newspaper*, to be published *next Saturday*, for your false and unjustifiable remarks relative to my client's tiles, and also a like apology be made to my client in writing, an action at law will certainly be commenced against you for recovery of damages already sustained, or which may be hereafter sustained, by or through your unjust and false remarks made about my client's Strawberry tiles."

On the 14th Sept., Mr. Doubleday, of Epping, presumed to express an unfavourable opinion of these tiles (p. 581), a couple of hundred which he had purchased having proved useless. On the 17th Sept., Mr. Doubleday received by the post a letter of which the following is the concluding paragraph:

"If you cannot employ yourself better than in writing such nonsense (to say nothing of what is worse), I think you are truly pitiable; did I not suppose it ignorance, I should take other steps to set you right. John Roberts."

Along with this was a newspaper slip, dated Sept. 9, in which the Editor compared Mr. Roberts to the late Mr. Thomas Andrew Knight! Shortly before the arrival of Mr. Roberts's letter, Mr. Doubleday received also through the post the following anonymous sentence. "See *Gardeners' Chronicle* of to-day (Sept. 14), which plainly shows you to be a cobbler, and not a *practical* gardener." This communication, although anonymous, was in a handwriting which is undistinguishable from that of one Holmes, an agent of Roberts.

At p. 614, Mr. D. Kidd, the intelligent gardener at Garnstone-park, near Hereford, expressed an unfavourable opinion of these tiles, of which he had made full trial, and forthwith Roberts dispatches an insolent letter to Mr. Kidd, and another letter of complaint to his employer. What sort of folks he supposes gardeners to be, that he hopes to dragoon them into silence we cannot tell; but we feel it our duty to protest against this most insolent attempt, firstly, at forcing them to purchase what they find unserviceable; and, secondly, at bullying them into a dishonest silence.

While this person complacently accepts every statement which he can obtain in favour of his tiles, he charges us and others who dislike them with falsehood, misrepresentation, and ignorance—especially ignorance of gardening. It happens that his tiles have been tried in the Garden of the Horticultural Society, by Mr. Thompson, the Superintendent of the Fruit Department; and we now republish his report upon them, dated June 28.

"These tiles are each about a foot in length and six inches wide. Two edges are turned down square; and on these turned down edges alone the tile rests on the ground, leaving between the latter and the under surface of the rest of the tile a clear space of an inch and a half. The ends are not turned down, so that when these are placed against each other, the cavity may be said to be continuous. A semicircular opening is cut out of one side of each; and a couple being placed, one on each side of the plant, a circular hole is formed for its growth, and the foliage and fruit can spread over the one-foot square platform constituted by the two tiles. Plants of Keens' Seedling, British Queen, and Old Pine Strawberries were planted under equal circumstances last autumn, in a row on the border in front of a south wall. When planted, tiles were placed round 80 plants of the above varieties; to the remainder, left for comparison, nothing was done. The weather was hot and dry when the fruit was ripening, and ripe fruit was quite as soon gathered from those plants which were not surrounded with tiles as from those that were. It was observed in many instances, that where the fruit rested on the tiles, the part in contact was pale, showing that the ripening process was not uniform throughout, consequently the flavour was not found superior to that of others grown in the most common way. The produce on the whole was inferior; for it must be obsered, that the tiles afforded excellent shelter for many insects, some of which attack the plants, others the ripening fruit; in both ways deteriorating the crop. These tiles might be employed in particular cases where straw, or the more enriching litter employed by market gardeners and others, would be considered unsightly, even though bleached by sun and rain. The cavity is bad, for the reasons above stated. Were it done away with, or, in other words, if the straight side were left as it is, at right angles with the top, and with the semi-circular opening, but no edge turned down on the opposite side, then the soil or other top-dressing could be raised round the plants, and on it the tile could rest and form a straight edging where desirable. All that can be said in favour of the tiles in question is, that they keep the fruit clean from soil. But, on the other hand, they prevent the rain from refreshing the roots, and thus prove injurious to the health of the plants, whilst they also harbour insects that spoil the fruit."

We make no comment upon these statements. They show conclusively what is to be expected of Mr. Roberts's Strawberry tiles, and also what is to be expected from Mr. Roberts himself by those who have the misfortune not to agree with him;

especially if they venture to make their experience public for the information of their neighbours.

And now let us ask WHO is this Mr. ROBERTS, the eminent horticulturist, the philosopher whom his scribes place by the side of the great ANDREW KNIGHT (!), the experienced cultivator who tells gardeners they know nothing about their trade, and who has found out the way to grow "Strawberries, Grapes, Peaches, Melons, and other fruits," together with "Celery, Asparagus, and other vegetables," as Strawberries, Grapes, Peaches, Melons, Celery, and Asparagus were never grown before—by only just using his tiles, sockets, pipes, and pots? This great personage is set down in the Directory as JOHN ROBERTS, 34, Eastcheap, *wholesale spice dealer.*

WE have been enabled, through the kindness of a friend near Bristol, to ascertain that the FUNGUS which proved so fatal there was not any species of Agaric. The boy who survived said that "they were things as if with pinholes underneath," which indicates some species of *Boletus*, a genus containing some of the most dangerous as well as the most delicious of fungi. Since this fatal occurrence, it is reported that serious illness has taken place from the use of Mushrooms purchased in the Bristol market, which perhaps may be the key to the query lately submitted to us respecting a sample of apparently good Mushrooms, about which it was said that there had been some controversy in the neighbourhood. Doubts indeed have frequently arisen respecting the safety of certain varieties of *A. campestris* and *arvensis;* and in some parts of England the latter is uniformly rejected by housekeepers, though the greater portion of the ketchup sold in the same districts is made principally from that species. It is curious, however, that the true Mushroom is in the present day but rarely used in Italy, where fungi form a very important part of the food, and where extremely doubtful and unpalatable species, such as *Agaricus melleus*, are consumed to a great extent. In the time of MICHELI all the varieties of *A. campestris* were much used at Florence, but though abundant in the neighbourhood, VITTADINI informs us that he never saw a specimen exposed for sale in the markets of Milan and Pavia, while at Rome it is expressly ordered that every Pratajuolo shall be thrown into the Tiber. Much credit cannot however be given to the degree of knowledge with which the prohibitory lists are drawn up in that country, when it is stated that the large orange-yellow gilled Mushroom, so much esteemed in Italy, passes under the name of *Agaricus campestris* in some of the lists, from a merely accidental juxtaposition in one of them.

The prejudice against our common Mushroom exists to an equal extent in some parts of Switzerland. The servants of an English nobleman, and amongst them the gardener who had, to the astonishment of the Italians, raised Mushrooms artificially in Italy, in passing through Vallais, found a large quantity of very fine *Agaricus campestris*, which, on halting in the afternoon, were cooked and eaten amidst the remonstrances of the peasants. The nobleman himself passing by a few days after inquired whether anything had been seen of the horses and servants. "Yes, my lord," was the reply, "but the men are certainly all dead by this time; for in spite of our warnings, they would eat Mushrooms."

Agaricus procerus is accounted an excellent article of food, and is sometimes sold in the London markets. This, however, like *A. campestris*, *arvensis*, and *personatus* has not escaped slander. Dr. LÉVEILLÉ informs us that in passing through Niévre he saved a whole family from imminent danger who were on the point of dressing a quantity of a large form of *A. clypeolarius*, which had been mistaken for it, and *A. rhacodes* is another dangerous species to which it bears a close resemblance. We can therefore not give full credit to the reports of fatal effects arising from the use of that species.

It is however, after all, possible that all the esculent species may, under rare circumstances, be unwholesome, though it is equally possible that some poisonous or unwholesome matter may have been present in all the recorded cases, wholly independent of the fungi. In PICO'S "Melethema," Supp. p. 8., a circumstantial account is published of many instances of the deleterious effects of the common Mushroom (Pratajuolo), and CROLLA has given a detailed description of a fungus which seriously affected nine persons, two of whom died, and which was clearly the common Mushroom. Dr. GREVILLE'S name would be a sufficient guarantee for the case of poisoning with *A. procerus*, reported in the "Gazette Médicale" for 1839, had *A. rhacodes* been distinguished from it at that period, which was not the case. *M. J. B.*

THE average fall of rain near London during 24 years (1826—1849), has been about 24 inches (24.017). The wettest year in the above period was that of 1841, when the amount of rain was 30.97 inches. The driest year was 1847, when there fell only 16.25 inches. The wettest month in the whole period was October, 1846, when we had 5.54 inches; and the driest month was December, 1829, when only 0.15 was indicated by the rain gauge. Even this was exceeded by March of the present year, when there fell only 0.13 inch.

The depth of rain which has fallen in the garden of the Horticultural Society, between the 1st of January and the 30th September of the present season, is as follows:

January	1.43	June	1.40
February	0.95	July	2.68
March	0.13	August	0.97
April	1.79	September	2.35
May	1.84		
			13.54

Hence it appears that we ought to have during October, November, and December, only 2.71 inches, supposing this to prove the driest season in 24 years; or 17.43 inches if it should be the wettest; or 10.46 inches if the amount of rain should reach the average.

HOW TO MISMANAGE A GARDEN.

CHAPTER IX.—Autumn and winter bring many more opportunities of bad management than some folks dream of. A few more may as well be at once recommended to the attention of the learner, so that he may think them over carefully before the time to profit by them shall have passed away.

Of course you will be just now planting out your Endive for winter use. True it is rather late, but as we said before, better late than never. Indeed it may be doubted whether there is not great advantage in having it as small as possible; there will be so much the less to blanch; and you may use thumb-pots or the next size for that purpose, instead of the great heavy expensive covers which large Endive requires. Your own intelligence will tell you that 20 small plants, covering a square foot of ground, are quite as much as one plant occupying the same space; just as a Vine with 50 half-pound bunches of Grapes is quite as remarkable a specimen of gardening as if it bore five bunches of 5 lbs. each.

When you tie up Endive for blanching, or if you do not tie it up, when you cover it take care that it is wet. Old-fashioned people prefer dry weather for this operation, and endeavour to keep it dry: but you will not imitate them. To be sure it may rot from wet, but then it may not; and if it does rot it will be more tender, that is to say more soft.

When you are earthing up your Celery, don't trouble yourself to do it gently, and with care; chuck the earth into the trench, a good shovelful at a time; it is sure to come right. As for the earth getting in among the leaves, why the cook can wash it out again; and if it should be rather gritty, in spite of the washing, why that is of no consequence, for you will not have the eating it.

It will be necessary, perhaps, to put your Raspberry beds in order. Be sure to prune out the young canes instead of the old ones; of course the bearing wood is what you want, and you may see by the remains of flowers that the old canes are what have been bearing the crop lately gathered. If they are weakish and rather dry, it will occur to you that they must have been exhausted by the young canes, and that if the young are removed the old will be strengthened. Good gardeners say that the effect of this mismanagement is to destroy the next year's crop: but if that should be so, you will have the satisfaction of looking to the chance of a crop the year after. Another thing you may attend to; dig well about the roots of your Raspberries; root-pruning is a very fine thing, as you know by its being so much recommended by Mr. Rivers; and what is good for a Pear must be good for a Raspberry. No doubt there is a difference between them; for Pear-roots are coarse, and woody, and naturally go down into the subsoil, while Raspberry roots are fine and fibrous, and lie near the surface. But what then? All mismanagers of any reputation know that a root is a root, just as a hand is a hand, and a mouth a mouth.

On no account will a bad manager break up the surface of his ground in winter. He sees no advantage in letting the frost in; why then take the trouble? especially when it makes a place untidy. As for slugs and other nuisances which a hard winter may kill, he can catch them in the summer time; it is good employment for a boy or two. He sees no use in having the soil broken down by frost, because it is sure to come together again in time. Instead of adopting so old a plan, he will sweep up all the leaves, and leave the ground nice and level, and hard, and neat; the harder the better, because it keeps the frost out. To be sure, Sandy Dinmont, who has the next garden, and who put his thermometers into the ground the year before, found that the hard ground was the coldest, and the broken ground the warmest; but a man may have enough to do if he is to mind such stuff as that.

Always roll the lawn when frozen; the Grass is brittle then, and will crackle under the roller; you may see that by the marks that are left where the roller has passed. This saves mowing; never mind the Grass being black, it will get green again in time, if it doesn't die. If the Grass should die, it will be easy to throw down some seeds, or to buy some more turf. *Κῆπουρος.*

HARDY FRUITS IN 1850.

HAVING often appeared in the columns of the *Gardeners' Chronicle* as the advocate of plans connected with fruit culture in the British Isles, based on principles so simple that the wayfaring man may readily understand them; I trust I may, as years roll on, be permitted either to bear increased testimony to the facts alluded to, or to sign my recantation when such becomes requisite. As to simplicity, I know not how it is; but one portion of the world — the gardening world I mean—seems to esteem a thing in proportion as it is elaborate or complicated. I much fear this is the larger portion. An horticultural "dipping in Jordan," such persons cannot comprehend, or do not appreciate.

In looking back on the memorable days when the "Gardeners' Magazine," conducted by the late talented and lamented Mr. Loudon, was in all its glory; or at least when hundreds of young aspirants for future horticultural fame gloried as the period came round for devouring a fresh number; I cannot but reflect — that with all the fanfaronade of certain fruit doctors of that day—there has been little advance in the culture of our out-of-door fruits. In observing this, I do not mean to say that nobody but myself has advanced. I am not quite egotistic enough; for well I know of several, in various parts of the kingdom, who have, like myself, repudiated the fine *paper systems* of those days, and betaken themselves to principles more in accordance with the habits and constitutions of the trees in question.

Everybody knows that the season of 1850 has been very much abused in the fruit way—at least in our northern parts; and everybody knows also, that there appears some plea for this ungentlemanly procedure, inasmuch as in the last week of March we had a thermometer of 16° in this part of Cheshire; other persons quote much lower, but of this there is room for doubt, inasmuch as I have found that those who have had the least success quote the lowest thermometer. Our 16°, was however a real matter of fact; and I have testimony much higher than my own (if it were needed) to prove it. This then is certainly a serious case, and evil results might indeed very naturally be expected to follow from it; and so they have, in at least two-thirds of the gardens within half a hundred miles of where I write; and not only around here, but in our more southern counties, if half the complaints we hear are correct.

Now, I may be permitted to say, that the gardens here have been a complete exception. Apples are the only fruit which can be termed a partial crop, and this I do not wonder at; for last year they were fearfully overladen, a circumstance which is well known of itself to induce a partial rest for a season. Plums, Cherries, Pears, Peaches, Nectarines, Strawberries, Raspberries, Gooseberries, with red, white, and black Currants, have all produced full crops; so full indeed, that I may probably never again witness such a fructiferous season, taking them both individually and collectively.

But now for the reasons. Is the season alone to blame for the numerous failures? Do all parties fully understand, appreciate, and carry out the one fundamental principle of ripening the wood? Here lies the real gist of the subject; and until this question is *thoroughly* comprehended, so long shall we hear of "horrible seasons," "cold blasts," "bad localities," "bad soils," "blights," "damp districts," and all the host of fruit evils, for the crimes and devastations of which a very broad margin is always left in the fruit book.

It is well known what a fuss has been made about the covering or non-covering of fruit blossoms; and how Drs. Tweedledum and Tweedledee have been knocking their heads together; which said craniums, being somewhat of the pumpkin character, have of course made a great deal of noise. These doctors never fairly settled this affair; but like most other angry disputants, left off with the chains of their prejudice faster riveted than ever.

Let us put a case; a gardener, we will say, who in the month of January succeeded to a situation in which his predecessor happened to be a deep border man, and a rich soil man; let us also add, that instead of paying attention to the removal of all shadowy and waste spray, during the period, when alone the foundation of good "setting" could be laid, he depended on those neat-looking systems of winter pruning (which appeared so smart on paper), for carrying out his object. Does any good gardener suppose, that by covering *alone*, a crop of fruit could be secured? And if he failed after the application of sundry yards of bunting or canvas, is it sound logic to charge the failure on the covering principle? Well, thus hath the argument been conducted in the main, and it is high time that common sense was infused into the question; and that fact should rule instead of hypothesis.

I do not by any means intend to say, that our tender fruit-trees will not produce crops *without* covering; all

I contend for is, that coverings judiciously managed re capable of rendering much service; like all other matters, the use and the abuse are two very distinct affairs.

In regard to their use, I would here respectfully urge on all parties interested in the discussion, the importance of using coverings, not only as protectors, but as retarders; that is to say, by a timely use, to cause the trees to blossom later than they would do without it. Surely, no one will deny that, as spring advances, every week lessens the chances of adverse weather, or, at least, of those intense frosts, which occurring in March, and even April, at once astonish and alarm. I here speak of the average of seasons; no one season may be allowed to settle this case. Every old gardener can bear testimony to the power of the sun acting on a south aspect, occasionally, early in February; so great is the extreme thus suddenly occurring at times, that I once knew a gardener confined to his bed for many weeks by a fit of ague or intermittent fever, brought on, (as said the doctor), by the sudden change. The person in question, told me that, having a dark coat on, he felt the heat strike to his chest as he was pruning Apricots against a south wall; the period, if my memory serves me, was about the beginning of March. I name this, by the way, merely in confirmation of the fact before alluded to, and to show that such sudden vicissitudes, which are so frequent in our climate, are a positive injury; and that it is far better to keep the tree in a quiet equilibrium until spring has advanced a little, and the soil has again begun to borrow heat from the atmosphere.

I have been a great advocate for both early made wood, and early ripened wood; and those who may remember how strenuously I have contended for such during the last half score of years, will no doubt at once think that I am "blowing hot and cold." "What!" Mr. A. will say, "first contending for early shoots, and then next, all for retarding; who can reconcile such contradictory advice?" I can, Mr. A., assuredly. That part of the wood which is excited thus prematurely is not the first to produce the best early bearing wood for the ensuing year, inasmuch as it is confessedly liable to blister and all the various checks consequent on a stagnated flow of sap. Besides, the retarding here spoken of, if it retard the wood-buds, does not interfere with an early root action. The root should be thrown somewhat in advance of the branches, a doctrine now recognised by all our best cultivators, and confirmed by practice as being of great importance. Although such may appear to apply mainly to the Peach, Nectarine, and Apricot, it will be found to bear as well on our tender Pears, and indeed most of our trained fruit trees. I therefore advise that the covering be applied very early in February; and that when the blossom-buds *will* burst, the covering be removed almost daily; not fearing what are termed cold winds, but merely warding off severe frosts.

After all, however, the ripening of the wood is the great secret; without this all will be futile; with it, all is tolerably easy. It is not necessary here to explain over again how this is effected; enough has been said on that head. Suffice it to say, that shallow borders with dry bottoms, a due attention to summer stopping or finger and thumb work, and the occasional use of top-dressings, are amongst the principal agents. *Robert Errington, Oulton Park, Aug.* 26.

VILLAGE EXCURSIONS.—Letter II.

In my last I prefaced the remarks I have promised you about "Village Excursions," by glancing at some of the considerations which have gradually led up to my introducing them, as one of the best methods for encouraging general, social, and friendly intercourse. Various methods are now in vogue; some of them appear to me too partial in their application for this object, though serviceable so far as they go. I believe we are all agreed, that the stability of our social scheme is more likely to be secured by the encouragement of mutual good-will between all classes of the community, than by any amount of police, or other extraneous force. I shall presently have occasion to contrast one of the old (but to me bygone), schemes for bringing together men of different habits, pursuits, and degrees, with the plan now under consideration. But I must here refer to the causes which more immediately induced me to propose our first excursion two years ago.

There is a benefit society for the labouring population established in this part of the country, whose members meet annually at distances of 9 and 16 miles from this village, on alternate years. These distances make it inconvenient to many, and even impossible for some members to attend these anniversaries. Being one of the directors of this society, it occurred to me that I could arrange a holiday for such of my own parishioners as were members of it, at no greater expence to them than they would have to incur at the anniversary dinner. I invited any of the party (they were then about 40 in all), to accompany me to the Ipswich Museum, giving each of them permission, also, to nominate a companion. Two or three of the farmers asked to be allowed to join this party. We visited the Museum, and inspected the extensive iron works of the Messrs. Ransome; all returned well satisfied with the treatment they had experienced. The orderly behaviour of the entire party was so perfectly satisfactory during the whole of this somewhat experimental trip, that I determined the following year to extend our operations. All who had been of the first party were now invited, each with permission to nominate a companion. I retained a *veto* in issuing the tickets, but found no occasion to exercise it in any case where application was made to me according to the prescribed rule. We were joined on this occasion by several of the farmers, to whom the good conduct of the party on the previous year had been reported. Our party now had reached to 170, including members of my own family, and all my servants. The proposal was to visit Harwich, and to take a peep at the sea. The party were not prepared for all they had to expect. Scarcely any of them had ever seen the sea, or been in a boat. Dread of the water was a predominant feeling, and some of the more faint-hearted staid at home from this cause, though longing to join us. Even the railway was a novelty to several, and there was much whistling and shouting provoked on immerging into the darkness of the tunnel.

On this occasion the plan of our trip from Ipswich to Harwich had been arranged and mainly provided for by members of the committee of the Young Men's Association at Ipswich. They had cleared out a warehouse by the river-side, in which they received us to breakfast; and then put us into a steamer profusely decorated with flags, and having on board a good band of music. After the usual amount of trepidation on crossing a plank for the first time, laid from the shore to the boat, all fear of the water soon subsided, and never did novices to such methods of locomotion apparently enjoy themselves more thoroughly. The foam raised by the paddles was an object of quiet wonder; but one young lass was inquisitive enough to ask, "Is it hot water?" the appearance, no doubt, reminding her of the wash-tub. Permission having been previously secured to inspect the arsenal and fort, we were received on the quay by the party who had readily granted this indulgence; and I must remember, when I come to sum up some of the requisites for securing success to these excursions, to allude to the importance of obtaining the assistance and countenance of persons at a distance from the starting point. After inspecting boarding-pikes, cannon, and other materiel to "make fighting," we adjourned to the cliffs at a short distance from Harwich, where we had also secured permission to assemble in the private grounds of a gentleman, where we attacked some frugal fare. This essential matter discussed, we returned in a body to Harwich, accompanied by the band, and graced with the presence of ladies, who seemed to be not less pleased with the adventure than the gentlemen of our party.

The perfect success of the day encouraged me to carry out a somewhat radical reform in part of our village economics, which I could not expect would be received at first with universal favour among the farmers, though I felt sure it would meet with the approbation of some, and I have confidence in believing it will be acknowledged in the end to be a decided improvement by nearly all.

In my last letter I alluded to the old-fashioned tithe audit dinner of a bygone system. In many parishes this dinner has been dispensed with ever since the Tithe Commutation Act has taken effect. Several clergymen have gladly availed themselves of the opportunity of abolishing an old custom which, in many cases, placed them in a somewhat equivocal and anomalous position, as presidents over parties which often ended discreditably to one, two, or more of the guests. It had become the established rule at such annual "frolic" in this village, to allow wine to the extent of one bottle per head (the party averaging not much below 40). As several never thought of drinking more than a reasonable quantity, a portion of their share was thus left to be consumed by those who are never backward in drinking to any extent that may be freely allowed them. Still I was unwilling to abolish an old custom which (however abused) afforded us an opportunity of meeting in friendly intercourse. It now occurred to me, that I could secure this object in a far better manner by appropriating the sum which these somewhat unsatisfactory "frolics" cost me, towards a fund for carrying out such excursions as double experience had proved to be grateful to those who had tried them.

The third excursion, to which you have so lately referred, was founded upon this policy; and the result has proved perfectly satisfactory to myself, and, I may add, to every one who accompanied me. No doubt all good things may be abused, as well as tithe audit-dinners; and these excursions may admit of abuse, like everything else. But the means of preventing abuse, and of correcting abuse, lie more within our own power, when a few precise rules and restrictions are laid upon those who consent to associate with us on these occasions. And then what a difference between presiding at a table where three dozen of wine have to be discussed by three dozen guests, in a close, hot room, amidst clouds of tobacco-smoke (to say nothing of the fumes of beer and brandy), and finding oneself associated with a joyous party in the open air! A distant whiff from an occasional cigar of some determined smoker, can scarcely offend the most fastidious nose. Where the maximum allowance is two pints of beer (diluted with a sufficiency of milder potations), there is no risk of intemperance, even with those whose throats are least under self-control. I need not say anything in detail respecting our last excursion, as you have picked out some of the plums, and redressed them "*more tuo*" for the amusement of your readers; and I will reserve what I have further to say concerning the mode of planning such village excursions, so as to make them profitable to all who are not predeterminately disposed to be ill humoured, or are above believing that such occasional "fusions" of all degrees and parties, can tend to better things than to "confusions" in our social relations. *J. S. Henslow.*

VILLA AND SUBURBAN GARDENING.

In the course of his gardening pursuits, the want of proper nourishing soil is often severely felt by the amateur; and it occasionally happens, that such can only be procured at great expense, and with much difficulty. It is the want of proper material which too frequently defeats his object, and damps his ardour. It sometimes happens, however, that the very compost he requires is at hand, but is neglected. He forgets that he has a heap of decaying weeds, that he has quantities of Gooseberry prunings, Raspberry prunings, the rakings and dead wood of his shrubbery, and that these are a nuisance, which is daily increasing. What to do with them puzzles him; the expense of carting a large heap of them off his confined premises, is considerable; but something must be done with them. This is a dilemma in which scores of amateur gardeners are placed. They do not know that Couch and refuse cuttings and prunings are convertible into the very kind of material they most require in the great bulk of gardening operations. Permit me, therefore, to state how this knowledge is to be improved by them.

Suppose, for example, that we find in an amateur's refuse corner a year's accumulation of rubbish. Let a space near this heap be cleared just sufficient to ligh a portion of dry materials, in order to form a foundation of burning matters, by which the whole shall, in process of time, be ignited, not with the intention of consuming the heap, but rather with that of charring it. When this is accomplished to the extent above stated, keep on adding rubbish, in order to prevent flames from bursting forth; but if not, smother the fire beneath. When the whole of the refuse is banked up, and ignition is proceeding slowly, but surely, look round the compost-yard, and collect refuse parings of turf or peat, the exhausted soil from pots, and cover the burning heap, so as to keep it in a smouldering state. It should remain in this condition until the whole mass has become charred through. During the process it will require occasional attention to prevent anything like flame. When it becomes cool, it will be fit for use—store it away, and look upon it as a prize of no mean value. It contains both chemical and mechanical virtues, in no small degree. If I recollect rightly, the late Mr. Andrew Knight held such a fertiliser in the very highest esteem; and well he might, for it would puzzle modern venders of quack medicines for vegetable debility to approach it in value even in the present day. *Pharo.*

BRITISH ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE.

In the Natural History Section a paper was read *On the Effects of Salt on Vegetation*, by Dr. Aug. Voelcker, Prof. of Chemistry in the Royal Agricultural College, Cirencester.—This paper contained the preliminary results of some experiments, undertaken with a view of studying the effects of salt on vegetation in general, and to determine more in particular in what quantity salt produces a beneficial and in what quantity an injurious effect on different plants. The plants selected for experiment were Cabbages, Beans, Onions, Lentils, Stellaria media, Senecio vulgaris, Carduus pratensis, Anthoxanthum odoratum, Poa annua, and Radishes. They were all grown on the same soil, of a calcareous character, and potted on the 1st of May, and experimented upon with salt solutions of different strength on the 10th of May. The following are the general results derived from these experiments. 1. Salt solutions, containing 3 grains of salt, 6 grs., 12 grs., and 24 grs. of salt, produced no injurious effect on the above-mentioned plants, which had been regularly watered with them during two months, with the exception of Anthoxanthum odoratum, which was killed by a solution containing 24 grs. of salt, in the course of a month. 2. Such weak solutions appeared to benefit most plants experimented upon, particularly Cabbages, Radishes, and Lentils. The Lentils, which were watered with a salt solution, containing 24 grs. of salt per pint of rain water, were nearly one-half larger in size than those watered with 6 grs. of salt per pint; and these, again, were more vigorous than the Lentils, which received no salt at all. 3. Salt solutions, containing 48 grains of salt, proved to be prejudicial, in the course of a month, to Lentils, Stellaria media, Senecio vulgaris, and Poa annua; and exercised no injurious effect on Cabbages, Beans, Onions, Radishes, and Carduus pratensis. 4. Salt solutions containing 96 grains of salt had an injurious effect on Lentils, Stellaria, Senecio vulgaris, Poa annua, Cabbages, and Beans; but no effect on Carduus pratensis, Onions, and Radishes. 5. Cabbages will continue to grow, though sickly, when watered regularly during a month, with a salt solution, containing 192 grains of salt, and even when watered with a solution containing 382 grains of salt per pint. 7. Solutions of salt, containing 192 grs. of salt per pint, proved unprejudicial in the course of a month to Onions. 8. Grasses are affected by salt more readily than any other of th plants experimented upon. 9. Solutions, containing 27 grs. of salt, decidedly benefited Radishes, Lentils, Onions, and Cabbages. Many of the plants had taken up so large a quantity of salt that they tasted like strong brine, and, notwithstanding, they grew healthily, which evidently shows that salt, in a moderately-diluted solution, has no poisonous effect on many plants. In con-

clusion, the author mentioned that his experiments differ from those of Mr. Randall, made with Fuchsias But as Mr. Randall used a water from a particular source, and not pure salt water, and may have contained other poisonous substances, it is the opinion of the author that so small a quantity of salt as that contained in the water with which Mr. Randall experimented, cannot be regarded as the cause of the observed poisonous effects.—Professor Balfour stated that some of the plants referred to by Professor Voelcker were naturally sea-side plants, and no inference could be drawn from them, he thought, as to the influence of solutions of salt on their growth.—Professor Walker-Arnott said that many plants would bear large quantities of salt that were not especially sea-shore plants. Thus, Poa annua would grow and flourish at the edge of the sea. He knew for a fact that the seeds of plants which had grown by the sea shore, and which were not naturally maritime plants, would germinate and produce plants which would bear larger quantities of salt than those which were produced away from the sea.

Home Correspondence.

Couve Tronchuda, or Portugal Cabbage.—It is stated in your Paper of the 14th ult., p. 581, that the Couve Tronchuda does not heart. I beg leave to assure you that it does heart; and it has hearted with me, and also with those other amateur gardeners near this, who have been so fortunate as to obtain some plants of the true sort, raised from seed sent by Dr. Lindley to a gentleman, a friend of his, and a neighbour of mine, some years since; and from which plants I have saved excellent seed, and do so every year, by merely protecting the plants from frost during the winter months, under (a Melon frame, not otherwise than required. I consider that I have in some degree acclimatised this most excellent and delicious vegetable, and that it is now more capable of enduring hardship than the first year I had it. I then lost nearly half of the plants under the frame, and now I do not lose one in twenty, and the Cabbage is equally good and pure in every respect as the first year I had it. I believe that there is not much of the genuine seed of this Cabbage to be purchased in Britain, and that an hybridised article having been sown, has induced some persons to believe that it does not heart. The seed should be imported from Lisbon direct. It grows near and about Braganza. *Mediensis, Ireland.* [We can assure our correspondent that he will be disappointed if he procures Couve Tronchuda from Portugal. As to hearting, our observation was made with reference to the solid hearts of ordinary Cabbages. It hearts, no doubt, but loosely.]——I have to thank you for your insertion of a letter I addressed to you a short time since upon the subject of losses I had experienced in my horticultural operations, and your remark at the close of the letter was certainly very judicious, viz., "that all amateurs should provide themselves with some book on routine gardening;" but can you tell me where such a work is to be met with as will give the information my letter sought? I have Loudon's "Encyclopædia of Gardening," Abercrombie's "Every Man his own Gardener," Paxton's "Cottagers' Calendar," and Rennie's "Alphabet of Scientific Gardening;" but none of them give the description of the vegetables in the form when fit for food. Loudon comes nearest to the point required. I have however met with the matter I sought for, but in a work in which it would least be expected to be found; and, for the benefit of others, I transcribe it. It will be found in the "Encyclopædia of Domestic Economy," by Webster and Parkes: "2426. The Couve Tronchuda (Brassica costata) or Portuguese Cabbage, from Tranxuda, Portugal, is much cultivated on the Continent, and was introduced here in 1821; it is grown chiefly for the midribs of the outward large leaves, which, when divested of their green parts, and well boiled, make a good dish, somewhat resembling Sea-kale. The heart, or middle part of the plant is, however, the best for use; it is peculiarly delicate, tender, and agreeably flavoured, without any of the coarseness which often belongs to the Cabbage tribe." It would, I think, be well if our writers upon horticulture would take a lesson from this, and precede every article the culture of which they undertake to instruct in, with a description of the article itself. Medical men in their elementary treatises of diseases, in the first place describe them, and point out the features by which they are to be distinguished from any other similar disease, before they begin to prescribe the remedies or mode of treatment. Such should be the treatment of horticultural subjects in an elementary work. But where will you find the distinction pointed out between the Cauliflower and Broccoli? I remember nowhere, except in this said work of Webster and Parkes, and here I fell upon it by mere accident. Let Mr. M'Intosh take a hint from this in any new edition of his work he may publish. *A. B. C.* [The difference between Broccoli and Cauliflower has been fully pointed out at p. 299 of our volume for 1846.]

Potatoes.—I have just completed taking up my Potatoes, and I have not found more than one or two diseased in each bushel. They were planted in February, part on ground broken up from Grass, the turf dug in last year, and planted without manure. This year a light dressing of half rotten leaves was put in the drills on the sets, which were then covered with about 5 inches of soil. The crop was light, but the Potatoes were large and mealy. I had some ground that has been planted several years with Potatoes, without manure, dressed with manure from the cow-yard, and dug in last November; it was afterwards planted in February with early sorts. The crop was undiseased, abundant, and good in all respects. The tops of all the Potatoes in this neighbourhood were attacked with a black speck on many of the leaves on the 3d of August. The disease spread from leaf to leaf, slowly, until all were destroyed, leaving the principal stalks almost uninjured. Our soil is a strong clay, but in other soils the result is nearly the same. The following may be taken as the report of this neighbourhood for several miles round, viz., light crops, large Potatoes, and good in quality. For the last three years our ground has not produced one half sound Potatoes on an average. The extreme dryness of the summer has been greatly in their favour this year; they have not been soaked to the roots since April. But, while the Potatoes have been benefited by it, Turnips are quite a failure; Grass is very scarce, and timber trees are shedding their leaves at least 20 days earlier than last year. I have tried diseased Potatoes for sets in alternate rows with sound ones, from the same lot for the last two years, both cut and uncut. The result has been that, while some of the diseased sets grew, and produced a good crop, others came to nothing. In 1849 the sound sets produced as great a weight of tubers in 8 yards, as the diseased ones did in 12 yards, and this year as six to nine; quality alike in both cases. I have found Soden's Early Oxford superior to about 20 other sorts; Forsyth's Early Coloured is a good cropper, but the eyes are deep, and there is much waste in preparing it. *H., Ludlow.*——My Potatoes were attacked with disease, as usual, about the third week in August, and in a few days every top was destroyed. I directed my gardener to keep three rows of Thurston's Conqueror of equal length, distinct from the rest, and to leave the tops on one row; mow them off the 2d, and pull them up on the 3d. The following is his statement of the weight, taken up the first week in September: haulm left on, 37 lbs.; haulm pulled up, 33 lbs.; haulm cut off, 34 lbs. There were very few diseased tubers in any of the rows, and, he says, about equal. Of course the experiment is incomplete, as the diseased tubers in each row ought to have been weighed. The disease in this neighbourhood seems to be leaving the tuber and expending all its virulence on the haulm—how is this? I shall be glad to try the experiment of planting diseased and healthy sets in the autumn. Will you give us a short schedule, that the experiment may be tried by a great number upon the same model? *C. R. Bree, Stowmarket.*——I beg to forward you a sample of Potatoes taken up to-day, which appear to be very much infected with disease. They are called Neville's Defiance, an early Potato, which was planted in trenches covered with leaf-mould, without any other preparation of manure, the first week in November, the previous crops being late Peas after early Broccoli. They did not come up till the usual time, but they were cut down by the frost just after they had made their appearance. Since they have come up again they have all along appeared healthy, and, what is most remarkable, there is not the slightest indication of disease in the haulm. Owing to the dry weather the latter droops very much, but still it is in good health. Have you heard of a similar case? [No.] *W. J. Ward, Gardener, Prospect Hill, near Reading.*

Pelargoniums.—I have read with pleasure your description of the "Wilmore Surprise," which will, doubtless, prove an acquisition, and will certainly be something different from anything at present in cultivation. I wish we could rely as much on the descriptions of the so-called new varieties that are continually making a noise in the world; when once your half-guinea has been paid for a plant, it is mortifying to find it so much like some you already possess, that if you accidentally lose the name, you will take it for one of your old favourites, the flowers are so much alike. I have in my possession a single flower with 13 petals; when fully expanded it measured 3¼ inches across; it was not quite so good in shape as the other flowers on the plant, but nearly so. Unfortunately, I have not been able to get the plant, or the branch (which I struck) on which it grew, to produce me such another monster. I have a blue Cineraria raised from seed, which has two of its flowers quite double. I have removed all the single blossoms but one which has a few extra petals, and I hope I shall be able to ripen seed from it, and thus obtain a good addition to this favourite race of plants. *H., Ludlow.*——I saw an article in last week's *Chronicle*, on the Wilmore Surprise, by Mr. Rosier, of Brooklands Nursery, Blackheath, in which he supposes Mont Blanc to be the same thing as Album planum of Mr. E. G. Henderson's catalogue; fearing this statement may lead some into error, I beg to say that Album planum was grown, at the Wellington-road Nursery, at least two years before Mont Blanc was sent out, and is quite a different habited plant. Mr. R. does not mention that there are two distinct varieties of Mont Blanc, both of which were raised by Mr. Story, and sent out through Mr. Beck under the Nos. 1 and 2. The former (No. 1) is the variety that produces the semidouble flowers, and is of no value; the latter (No. 2) is an excellent Pelargonium, and worthy of being in every collection. *T. S. Somerville, Wellington-road Nursery, St. John's Wood.*

Incarvillea grandiflora.—Novelties in the way of Bignoniads being on the *tapis*, brings to mind a plant I saw a short time since, which, although not new, will be not the less available, it being one of the most lovely things I have seen of late, namely Incarvillea grandiflora. It is probably hardy in some parts of England, but it richly deserves the protection of a greenhouse in cold climates. I imagine that it is, like most of the family, a very shy bloomer; but when it does flower well it is really beautiful. *J. Cole, Oldford.*

The Proper Season for Planting Evergreens.—I believe that there cannot be a more mistaken practice than the common one, of planting evergreens at the same season as deciduous trees. However contrary to received opinion it may be, I do not hesitate to say, that the worst months for planting evergreens are December, January, February, and March; and the best, June, July, August, and September. Even in a dry summer, evergreens run little danger, if the planter will take the trouble of throwing a good souse of water into the hole before planting. *S. B., Dorking.*

Village Ignorance.—I will give you an illustration of village ignorance, and the manner in which it gives rise to popular error. A woman with a very vivacious manner brought to me on Saturday evening two very fine live chrysalids of Acheronta Atropos, which she found in her Potato bed in an earthy sort of nest. She had kept them for a day or two and fed them with Potato leaves, of which she declared they had eaten! Now, this is the sort of evidence from whence arises the hedgehog and viper stories of which we hear so much. This woman believed that the pupæ had fed upon the Potato-top, and thought she was giving me some useful information as to their future management. *B.*

Hoya bella.—This plant grows with me very freely, and produces abundance of flower buds, but they all fall off without expanding. Have any of your correspondents experienced the same defect, or can they suggest a remedy? My plant is growing in a pot in a cool Orchid house, with plenty of light and air, and moderate moisture. Other Hoyas flower under the same treatment, but it does not. I have lately removed it to a warmer house, but it is impossible for a plant to look more healthy than it has done in its former abode. It appears to differ in habit from Hoya carnosa, as the peduncle itself falls off after the buds have fallen, instead of throwing out fresh buds as that species does. This however may be peculiar to the unhealthy state of my plant. *J. R.*

The Willow-leaved Ixora (I. salicifolia).—A plant now in bloom here has a truss of flowers on it which measures 16 inches in circumference. I am much pleased with this Ixora, and I am sure, when it shall have become better known, it will be a greater favourite with the public, both for the purposes of exhibition and for private decoration. It appears to be "worked" on Ixora coccinea; but this is not a good stock for it, for we all know that the Ixora tribe throws up ground shoots, which renders them unfit for stocks. I have been obliged to remove several such shoots already; besides, this plant possesses as strong a habit as any of the others. Gardenia Fortuni, too, is often worked on G. florida and G. radicans, while the two latter are weaker kinds than the former. *D. Kidd.*

Societies.

Horticultural, *Oct.* 1.—E. Brande, Esq., in the chair. Sir R. Burdett, Bart., J. S. Leigh, Esq., and L. B. Foster, Esq., were elected Fellows. A Banksian Medal was awarded to Mr. Turner, of Slough, for an exhibition of Dahlias, consisting of large and exquisite blooms from plants that were stated to have been in flower for nearly two months. The sorts were as follows:—Duke of Wellington, Thames Bank Hero, Fearless, John Edwards, Magnificent, Earl of Clarendon, Richard Cobden, Mrs. Seldon (Turner), Essex Triumph, Queen of Lilacs (Turner), Mr. Seldon (Turner), Toison d'Or, Snowflake, Scarlet Gem (Turner), Seraph, Mynn, Queen of Primroses, Black Prince, Mr. Palmer, Rosea Alba, Grandis, Model, Miss Hawtrey, and Goliah; the last six being seedlings. The same grower also showed 12 fancy flowers, viz.: Belle de Nogent, Highland Chief, Mrs. Hansard (Edwards), Freund Schmidt, General Cavaignac, Gasparini, Nonsuch (Turner), Dulcinée, Rainbow, Mrs. Labouchere, Striata Perfecta, and Pretty Polly (Turner); the latter a seedling of considerable promise.—Mr. Bragg, of Slough, received a Certificate of Merit for "The Hon. Mrs. Ashley," a beautiful waxy-looking light seedling, tipped and shaded with rose. It is a flower of good form, but unfortunately possesses an imperfect centre.—J. Edwards, Esq., of Holloway, sent six blooms of his beautiful white-tipped yellow fancy seedling, named Mrs. Hansard; and Mr. Turner exhibited the following three seedlings, raised by Mr. Stein: Nil Desperandum, scarlet; Nepaulese Prince, shaded maroon—both fine flowers; and New Standard, a purple and white "fancy." Other florists' flowers consisted of 12 spikes of Hollyhocks from Mr. Bragg, for which a Certificate of Merit was awarded, and some nice looking Petunias from Mr. Gadd, gr. to T. Lenox, Esq., of Hammersmith. Flowering examples of the new Chilian climber, Lapageria rosea, were exhibited by Mr. Selkirk, gr. to W. J. Meyers, Esq., of Shenley, and by Messrs. Veitch and Son, of Exeter. It was stated to have been sent by Mr. Lobb, from "Conception," to the Exeter Nursery, where it has blossomed in a conservatory; but it is the opinion of Messrs. Veitch that it will prove hardy. They have found it to be a very free growing plant, but whether or not it will turn out to be a profuse bloomer remains to be seen. The blossoms, individually, are extremely handsome, and exactly resemble the published drawings of them both in shape and colour, except that the minute white spots which are represented as being spread over the interior of the crimson

bell were nearly wanting, or very indistinctly marked in the specimens shown, to each of which a Banksian Medal was awarded. Mr. Young, of Milford Nursery, Godalming, sent two plants in pots of Cryptomeria japonica about 3 feet high, loaded with young cones. It was stated that the Cryptomeria had ripened seeds at Strathfieldsaye, the seat of the Duke of Wellington, and that young plants had been raised there from them.—Mr. Franklin, gr. to Mrs. Lawrence, produced a collection of Orchids, consisting of Oncidium Papilio, Vanda suavis, Lælia Perrinii, Cattleya bicolor (with a highly-coloured lip), a Cycnoches from Costa Rica, and one or two other plants. A Knightian Medal was awarded.—Messrs. Jackson, of Kingston, received a Certificate of Merit for a nice exhibition of Odontoglossum grande, plants of which were stated to keep in blossom in a cool show-house, at the Kingston Nursery, for several weeks together.—Mr. Ingram, gr. to her Majesty at Frogmore, sent cut specimens of a seedling Heath, in the way of princeps, which promises to be well worth cultivating; also a beautiful example of the Prickly Cayenne Pine-Apple, weighing 7 lbs. 5 oz. It was somewhat unripe at the top; but every Pine-grower knows that it is difficult to get this kind of Pine-apple to ripen perfectly from end to end. A Large Silver Medal was awarded it.—Mr. Ward, gr. to W. Stephens, Esq., sent two Envilles and a Globe, whose weights were respectively 5 lbs. 2 oz., 4 lbs. 4 oz., and 4 lbs.; and Mr. Eckford, gr. to C. Child, Esq., of Bromley-palace, showed a small Queen which had been ripened out of doors. It was stated to have been planted out on the 14th of May last. Various Grapes were shown, among which was a sample of Black Hamburgh, from the large Vine at Cumberland-lodge, which was stated to have ripened this year a very heavy and fine crop. The bunches exhibited were rather above the average size and well coloured. Mr. Forsyth, gr. to Viscount Barrington, Beckett, near Shrivenham, had three beautiful bunches of Black Hamburgh, but a little rubbed by travelling, weighing respectively 2 lbs., 1 lb. 10 oz., and 1 lb. 7 oz. A Banksian Medal was awarded them.—Mr. Fleming, gr. to the Duke of Sutherland at Trentham, produced three bunches of Millhill Black Hamburgh, weighing respectively 1 lb. 10 oz., 1 lb. 9½ oz., and 1 lb. 6 oz., and a bunch of Dutch Hamburgh, 1 lb. 4 oz. A Banksian Medal was awarded to the Millhill, which is a large and finely flavoured Grape, quite distinct from either the common Black Hamburgh, or the old Dutch Hamburgh, which does not always become black, but is often of a flame or red colour. Examples of a different Grape, bearing the same name, to which a Certificate of Merit was awarded, were communicated by Mr. Ferguson, of Stowe. Mr. Agent, gr. to W. M. Webster, Esq., sent a large punnet of Black Hamburgh, not large either in bunch or berry, but very black, and beautifully covered with bloom. Well grown specimens of the same kind of Grape were contributed by Mr. Rust, gr. to J. Maclaren, Esq., of Ticehurst, Sussex. A Certificate of Merit was awarded them. Cambrian and Late Admirable Peaches were furnished by Mr. Meyers, of Brentford; and Mr. Budd, gr. to J. Reeves, Esq., sent a ripe fruit of the Egg Gourd (Cucurbita ovifera) which, in a ripe state, has the reputation of being an excellent winter vegetable.—From the Garden of the Society came Brassia brachiata, the new yellow flowered annual Microsperma (Eucnide) bartonioides, Pronaya elegans, Plumbago Larpentæ, a variety of Japan Lily, Niphæa oblonga, Manettia cordifolia, a tolerably gay plant at this season; Angelonia moschata, a rather handsome species; the little pale-green flowered Clematis graveolens, a suitable plant for rockwork; a hybrid Anemone, raised between A. japonica and the white Indian A. vitifolia; two species of Aphelandra; Boronia denticulata, a Cape Heath, and two fine specimens of the Siebold Sedum just coming into flower. The same establishment also furnished samples of the Barrington and Chancellor Peaches, two good late varieties.

Garden Memoranda.

Bowes' Manor, near Southgate, the Residence of the Lord Chancellor.—Since we visited this interesting suburban villa, in 1848, several improvements of importance have been effected in the garden scenery around the house, and further alterations are contemplated. On the north front, a considerable portion of the adjacent meadow has been converted into dressed ground, a broad gravel walk, straight and level, with a wide margin of Grass, has been formed along the side of the lawn, from the house towards the "New River," and the shrubbery at the extremity of the lawn, on this side of the house, is about to be broken up into clumps, with Grass between them, which will extend and improve the appearance of this part of the garden. A new entrance from the public road has been made nearly opposite the end of the house, whose seclusion is, however, maintained by throwing up a high bank of earth between the gate and the house, and planting it with evergreens, intermixed with Hollyhocks, Dahlias, scarlet Geraniums, the taller growing kinds of Calceolarias, and, towards the margin, Verbenas and Mignonette. A new shrubbery has been planted up the side of the boundary wall on the south front, and on the west side the courses of the walks have been greatly altered, fresh flower beds have been formed, and other improvements effected. The small kitchen garden on this side of the house is about to be added to the flower garden, its walls will be removed, and any portion of the glass erections worth preserving will be put up in the old kitchen garden, in which new forcing pits are about to be erected. The place, under the superintendence of Mr. Lindsay, is altogether gradually assuming a character which in time cannot fail to be highly interesting. The house itself stands near the middle of the dressed ground, with open grassy sward on one side, and a tolerably extensive lawn, with its lake, island, and flower-beds on the other. A rustic bridge over a narrow part of the lake leads to the island, in the centre of which is a secluded dell, furnished with a fountain and basin, and over-canopied with Roses and climbing plants, forming an agreeable and cool retreat in a warm summer day. A large vase placed in the water, between the house and the island, had a very ornamental appearance. It was filled with tall scarlet Geraniums in the centre, Salvia fulgens, the clear yellow Calceolaria viscosissima, and other plants, the whole being surrounded by Indian Cress, which hung over the side of the vase down near the water. Bedding plants have been very effective here this season. We remarked a large circular bed arranged in the following manner. In the centre was a mass of the scarlet Geranium compactum, then came a belt of Fish's dwarf variety of Ageratum cœlestinum; this was succeeded by Calceolaria Kayii, next which was Tom Thumb Geranium; the whole being finished off by Verbenas, Mignonette, and the little blue Lobelia gracilis. Some of the other beds were planted after the same fashion; but there were also many self-coloured ones, among which few made a better display than one or two which were occupied with Robinson's Defiance Verbena, which proves to be a capital bedder. Verbena Satellite likewise makes a good bed, as do also the Verbenas Duchesse Décazes, Rayii, Perfection, St. Margaret's, Hendersoni and Charlwoodii. A very good bed was formed by surrounding the old horse-shoe Geranium with Mangles' variegated. Through most of the beds Mignonette was largely sprinkled, adding fragrance to their beauty.

Miscellaneous.

Adelges Abietis.—This insect forms the cone-like excrescences on the Spruce Fir. The original matriarch lives outside the gall, remaining all winter in a dormant state at the root of the bud. As soon as the bud swells she revives likewise, and speedily becoming enlarged with the juice imbibed, she lays some hundreds of eggs about her. The bud meanwhile, instead of growing in length, becomes fleshy, and this fleshiness is communicated to the leaves. The result is an arrested bud, into the recesses of which, the young issuing from the cluster of ova on the outside of it beneath betake themselves, and become soon closed in during the growth consequent on the increased irritation occasioned by their presence in its interior. As to the alleged diversity of the species produced by the small rounded cones at the summit of twigs (Chermes coccineus, Ratz.), and those from the larger, more fleshy, and more oblong galls arising at the bases, or enveloped in the substance of shoots (C. viridis, Ratz.), the greater exposure to the sun is sufficient to give a deeper tint of colour as well as a more rapid evolution to the inclosed inmates. The difference assigned in the structure of the wing-veins quite eludes my detection. Those arrested individuals that pass the winter on the branches are perhaps the progeny of winged females, which are oviparous. I observe, also, that winged females of two other species are in like manner oviparous, viz., those of A. Laricis and A. corticalis. M. Macquart had long since remarked this fact in regard to A. Laricis, and felt persuaded that it was only the second generation whose winged females are in this condition. He considered it to be a Psylla, and being anomalous, proposed to form of it a new genus, which, not finding he had prefixed a name to, MM. Amyot and Serville, in attempting to supply the oversight, have called Cnaphalodes (Hemipt. 594, 595). The structure however of the larvæ of Adelges, as well as that of the mature insect, indicates that it follows the type of the Coccidæ rather than either that of the Psyllidæ or Aphidæ. *J. Hardy, Penmanshiel, in the Annals and Magazine of Natural History.*

On the Use of the Bark of Adansonia digitata in Intermittent Fevers, by M. Simon Pierre.—About two years ago M. Duchassaing, a physician at Guadaloupe, communicated to the Academy of Sciences the result of some experiments he had made with the bark of the Adansonia in intermittent fevers. The use of this bark he learned from the negroes, who constantly employ it in cases of marsh fever. Experiments have been made with this bark in Burgundy, where fever is endemic, and at the Hotel Dieu at Paris. The results have been so satisfactory that I think them deserving of the attention of the academy. Having taken cases in which fever was severe, and had not been overcome by sulphate of quinine, the patients were cured, and that completely, by the use of the bark in question. I have been able to make but seven observations, my stock of bark being consumed. In all the circumstances in which I have applied this remedy, the attacks of fever were clearly marked, and of different types. Of the patients, some lived in Burgundy, some came from Africa, and one from La Rochelle; one, moreover, was a surgeon who had been a patient for several months. None of them were attacked so slightly as to be cured by repose in bed. The bark of Adansonia was given in a dose of 30 grammes in one litre of water; three such doses were generally sufficient. The taste of this decoction is not at all disagreeable, and its action is not accompanied by any of those inconveniences which are sometimes produced by sulphate of quinine. Adansonia digitata is common in Senegal, where Adanson, who described it, saw it employed for the purposes I have mentioned. Nothing would be easier than to get a new supply of bark; and considering, on the one hand, the high price of Peruvian bark, as well as the expense to which the public are put in the treatment of intermittent fevers, and, on the other hand, the difficulty of obtaining sulphate of quinine, even adulterated, it may perhaps be worth the while of the academy to pay attention to the facts above stated, and to endeavour to obtain a plentiful supply of this bark from abroad. After this communication was read, M. Bussy announced that the Government had already taken up the subject, and that a large quantity of baobab (Adansonia digitata) had been imported for the purpose of being examined in a chemical and therapeutical point of view. M. Bussy also expressed his readiness to place samples of the bark in the hands of such practitioners and chemists as might desire them. *Comptes Rendus.*

Calendar of Operations.

(For the ensuing week.)

PLANT DEPARTMENT.

Watering is an operation which at this season must be performed with increased caution, and the little that is required should be given in the morning, when the ventilation is first increased above the ordinary night quantity. To assist in drying up the damp which is unavoidably engendered both by the watering and the natural circumstances of the season, a moderate fire should be lighted at the same time, except when the sun itself is strong enough for the purpose. The application of artificial heat during the day will render it necessary to open the ventilators wider, to allow free egress for the evaporated moisture. Extremes, however, must, in this, as in every case, be carefully avoided, keeping in mind that the object in using the pipes or flues during the day is merely to free the house and its atmosphere from superfluous moisture, and that the existence of the latter is calculated to be injurious. A very arid atmosphere is not less irreconcileable with the well-being of plants which are in the possession of healthy foliage. It is even more detrimental to them than to the ripe fruit of the Vine. The middle course must be the one pursued, regulating the amount of air and fire-heat, so as to effect the desired purpose by the usual time of reducing the air in the evening, when the heat should be checked by means of dampers in the flues, or stop-cocks in the hot water pipes. After such treatment during the day, the heat enclosed within the house will generally be sufficient during night for greenhouse plants; as they will endure a much lower temperature when comfortably dry, than under different circumstances. Stove plants require much the same treatment at this season, taking care, of course, to proportion the temperature according to their natural requirements. If their wood is properly matured they will stand uninjured in a very low temperature. Ixias, Sparaxis, and other Cape bulbs of that kind, should be repotted and plunged in a cool frame, or they may be planted out in a frame of prepared soil, and their elegant blossoms used for placing in the glasses. In favourable localities it is not necessary to use a frame, as they may be planted in the ground in a nicely prepared border, and left there for several years. It is not by any means a good plan to part these plants too frequently, as they are not very productive of flowers the first year after they have been disturbed. If grown in pots therefore, unless very much crowded, it will be better to be content with carefully removing as much of the soil as can be managed, without disturbing the bulbs, and replacing it by some fresh soil. For the smaller growing kinds, the compost should be light and sandy, containing a considerable admixture of peat; but for Gladioli, and others of similar growth, a soil somewhat richer and stronger is needed. In all the plant-houses let most scrupulous cleanliness and neatness prevail, and spare no pains to give them a gay and cheerful appearance, that the contrast between them and the external desolation, now beginning to reign around, may be more conspicuous. At this season, by good management, plant-houses may be made a luxury indeed, and will afford pleasure to their proprietors.

FORCING DEPARTMENT.

As the length and strength of daylight is now so rapidly diminishing, all the glass sashes of the different structures should be washed; and to render the good effects of this ablution as permanent as possible, the mats, &c., which are all used for covering at night, should be carefully removed to the sheds during the day and kept perfectly clean, or the sashes will soon be as dirty as ever. Pineries.—Montserrat Pines, which are now showing or flowering, will be invaluable in early spring and should be assisted by every available means. A steady bottom and top-heat must be maintained, and the most careful attention paid to watering. Let them have all the light possible, especially while they are in flower, at which time air must be liberally admitted during the day, to dry the atmosphere, and to prevent the monstrous growth of their crowns. Vineries.—In the Vineries containing winter Grapes every exertion must be made to prevent damp. Any faulty places on the roof which admit drip should be repaired, and slopping of water entirely avoided. Where there are beds of tan or leaves for plunging plants in during the summer, it is a good plan to surface the beds with dry sand, to keep down evaporation. Any Grapes which are not yet properly ripened should be kept a little warmer during the day; this will at the same time assist to ripen

the wood. Let all growing laterals be constantly removed, to allow of the freer admission of light; and in cutting the fruit from spurs, prune back at once to the most promising eye near the base. Mushrooms.—Continue to make up successional beds, as the season advances, and spawn and soil the earlier ones, as they are ready. It will be found time and material well bestowed to spawn the beds twice, with an interval of a fortnight between the two spawnings; by this simple means, we ensure a regularity of crop all over the beds, and the supply is more abundant and more permanent. Let the beds be spawned 1 foot asunder, in the first instance, leaving marks where it is inserted; and plant the second lot midway between the first. Keep the floor constantly moist, and the house quite dark. Let the admission of fresh air be from the lower part of the house, through the floor, if possible, and have ventilators so arranged that the evaporation may pass off freely at the top.

FLOWER GARDEN AND SHRUBBERIES.

Little can be done in this department, except in cleaning and removing annuals and half-hardy plants as they cease to be effective; and, as the various masses of these are removed, the beds should be at once filled with their winter and early spring occupants, whether of bulbs or dwarf evergreens. In planting the former no time should be lost; but, if a press of other work renders it necessary to postpone the latter, let the ground be neatly dug over, to give it a clean and fresh appearance for the time being. Attend to the pruning and training of climbers, and the staking and tying of any plants requiring artificial support. Very great exertions should be made at this season to render the neat and orderly keeping of a place conspicuous, that it may in some degree compensate for the gradually fading beauty. As the leaves of some of the trees are now beginning to fall, it becomes every day a more difficult matter to keep the grounds in order, and renders the most industrious perseverance necessary to maintain them in a creditable condition. Let the necessity of intense exertion be forcibly impressed on the mind of every propagator; every day's delay in putting in cuttings, at this season, lessens the short time that they would have for striking root and strengthening themselves before winter. Unless this work is completed a very strong force should be concentrated upon it, as the early summer display for next year depends considerably on the greater part of the half-hardy stock being propagated in the autumn. Attend to those in progress, by judicious watering, shading, and ventilation; remove all decayed leaves, and carefully cut away every attempt at producing flowers. As soon as the cuttings are rooted, let them be gradually but speedily inured to the open air, that they may form sturdy, healthy plants before winter. If frame-work in winter cannot be afforded for the autumn-struck Roses, they should be planted in rich soil, in well sheltered borders, in the reserve garden, that they may have time to establish themselves. The Tea-scented and other tender kinds should occupy a compartment by themselves, where they can be conveniently protected from frost. Brompton, Queen, and late Ten-week Stocks should be transplanted into light soil, in a warm, dry border, where they can be protected by placing a wooden frame over them during winter. Take advantage of favourable weather for gathering seeds; those of biennials and perennials should be cleaned immediately, and sown in the reserve garden. A considerable time, often amounting to an entire season, is saved by sowing many such plants in autumn.

KITCHEN GARDEN.

Do not, because the season is far advanced, allow the destroying of weeds to be neglected, as many of them will yet perfect their seeds, and increase out-door difficulties another year. We have sometimes seen a gardener attend energetically to this during the earlier part of the season, but by suffering the autumn weeds to grow and ripen, he had more than his old work to do again the next year. The earthing up of Celery and Cardoon crops had better not be longer deferred, lest they should be injured by frost; the operation should be performed when the ground is dry, finishing the work at one operation. This plan for the late crops is excellent, as both these vegetables are found to keep a month or two later than plants earthed up early; and the work is done at less expense when done at one operation. Take advantage of wet weather to rub seeds out, rope Onions, and twist haybands for Cardoons; and let the most useful men help forward with the work in the other departments.

HARDY FRUIT GARDEN.

Let the different varieties of Apples and Pears be carefully gathered as they ripen, and labelled. The shelves on which they are laid should be quite clean and dry, and the atmosphere of the fruit room kept perfectly sweet by allowing a free current of air to enter below, and pass through the roof, thereby carrying away with it all the exhalations which, if allowed to stagnate within the room, would materially injure the keeping qualities of the fruit. In storing the fruit let all inferior or damaged ones be carefully picked out, laying them aside for immediate use; if this be not attended to, such fruit will soon begin to decay, and if not immediately detected will be liable to communicate the disease to their neighbours. The fruit room should be cool and dry, and provided with means for preventing excessive changes of temperature; it should be provided with efficient means for excluding frost, either by shutters or curtains to the windows. When its situation happens to be near a plant house, or early forcing house, heated by means of a boiler, a small hot water pipe properly supplied with stop taps may be carried round the room; this would ensure the exclusion of the frost, and in very wet weather would be useful to drive out the damp. Shelves are preferable to drawers for keeping fruit in during winter; as it is more easily examined, and any that is beginning to decay can be removed without injuring that which is still sound. When drawers are used it is scarcely possible to avoid considerable injury to the fruit every time they are moved, as it is inevitably rolled and rubbed about, thus causing it to become spotted and unsightly, and at the same time hastening its decay. If the planting or removing of any fruit trees is contemplated this autumn, preparation should be made for the purpose as early as possible, that the work may be completed immediately after the leaves begin to fall. If this is attended to the trees will feel their way into the new soil this season. If any new trees are wanted from the nurseries, it is advisable to order them immediately, that they may be amongst the earliest selections from the nurserymen's stock.

State of the Weather near London, for the week ending Oct. 3, 1850, as observed at the Horticultural Garden, Chiswick.

Sept. and Oct.	Moon's Age.	Barometer. Max.	Barometer. Min.	Temperature. Of the Air. Max.	Of the Air. Min.	Of the Air. Mean	Of the Earth. 1 foot deep.	Of the Earth. 2 feet deep.	Wind.	Rain.
Friday .. 27	21	29.802	29.690	67	48	57.5	56	56½	S.W	.49
Satur... 28	((	29.857	29.782	63	42	52.5	56½	56⅝	W.	.00
Sunday . 29	23	29.846	29.380	62	42	52.0	56½	56⅝	S.W.	.29
Monday 30	24	29.359	29.266	59	40	49.5	54	56	W.	.01
Tues. .. 1	25	29.596	29.249	59	38	48.5	54	55½	N.W.	.08
Wed. .. 2	26	29.870	29.799	58	43	50.5	53	55	N.	.02
Thurs .. 3	27	29.877	29.874	56	44	50.0	53	54½	E.	.02
Average....		29.745	29.577	60.5	42.4	51.5	54.8	55.8		.91

Sept. 27—Fine; thunder and heavy shower in afternoon; rain at night.
— 28—Quite clear; fine; clear.
— 29—Fine; rain; overcast; heavy rain at 10 P.M.
— 30—Rain; rather boisterous; fine; overcast.
Oct. 1—Fine; cloudy; rain; clear.
— 2—Fine; very fine; slightly clouded.
— 3—Slight rain; hazy; densely overcast.
Mean temperature of the week, 3 deg. below the average.

State of the Weather at Chiswick during the last 24 years, for the ensuing week, ending Oct. 12, 1850.

Oct.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds. N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 6	61.8	47.5	54.6	12	0.78 in.	1	2	3	3	3	7	4	1
Mon. 7	62.7	44.3	53.5	15	0.55	1	4	1	2	4	9	2	1
Tues 8	60.3	43.0	51.9	12	0.63	1	4	3	2	4	5	5	1
Wed. 9	60.3	43.8	52.0	13	0.52	1	4	1	1	4	8	5	1
Thurs. 10	61.3	43.6	52.4	11	0.63	1	2	3	1	7	7	2	1
Friday 11	62.5	43.6	53.1	11	0.31	1	3	2	2	5	8	4	2
Satur. 12	60.1	42.8	51.5	14	1.00	2	3	1	1	4	5	7	2

The highest temperature during the above period occurred on the 6th, 1834—therm. 79 deg.; and the lowest on the 6th, 1826; 7th, 1844; and 9th, 1829—therm. 29 deg.

Notices to Correspondents.

To our Correspondents.—May we beg it to be understood that *we cannot answer inquiries privately through the post.* We are ready to give reasonable information through our columns, but we cannot consent to the labour of writing letters.

Books: *J R Kelly.* There is no good gardeners' dictionary adapted to modern gardeners. Loudon's "Encyclopædia of Gardening" is the nearest approach to such a work. Don's is waste paper. We are not booksellers, and do not give prices, or such information as should be found in advertisements.—*A Sub.* Books with coloured plates cannot be sold at a low price. Sowerby's "English Botany" and Baxter's "Genera of British Flowering Plants" are both cheap works of the kind. They may be had of all booksellers. We never give prices or recommend tradesmen. We cannot answer your inquiry about a successor to "Lady's Botany," because you do not state what your further objects are. The plant often called Tea-tree by cottagers is Lycium barbarum. Kalosanthes coccinea may be had in every nursery, under the old name of Crassula coccinea.—*R T M.* Hooker and Arnott's "British Flora" will perhaps suit your views. But you must be well acquainted with botanical language in order to understand it. The same work will give you information concerning all other wild flowering plants as well as Grasses. If you do not understand the book, then you should study Lindley's "School Botany," and the Glossary of terms in the same author's "Elements of Botany." If you want a work with plates you had better procure Parnell's "British Grasses," in 2 vols. large 8vo.

Bulbs: *Inquirer.* Take up Amaryllis formosissima now, and transfer it to a greenhouse. Let the leaves be allowed gradually to wither; keep the pot dry. In the spring begin to force in March, and in the end of May turn the plants out again. Tigridias must be now taken up, and the roots kept in a dry room, secured from frost, until next May.—*D M.* Plant Hyacinths, Crocuses, Snowdrops, Snow-flakes, Anemones, Squills, Fritillarias, Winter Aconite, and early Tulips; not Ranunculuses.

Country Shows: *J H* says, that at a local show in Scotland, where six herbaceous plants were exhibited, one of them was a Tiger Lily, and he asks if that is right, *i. e.*, are bulbs classed as herbaceous plants? This it rather a difficult question. In common parlance bulbs are distinguished from herbaceous plants; but bulbs certainly are herbaceous plants notwithstanding.

Crocuses: *Stanton.* If you will plant together the *large* yellow, with purple and white vernus of different shades, they will all flower at the same time, without other precaution. There are no colours among Crocuses except yellow, white, and various tints of purple.

Cucumbers: *A Subscriber.* Jabus Maid Cucumber is not grown at the Chiswick Garden, nor do we know anything about it.

Dahlias: *S S.* There is nothing new in the specimen sent. Among Dahlias such occurrences are very common. ‡

Elder Wine: *Pen.* First sort very excellent. Boil 20 gallons of water; when cold add 20 lbs. of Raisins cut or chopped small; let them work together 10 days, stirring them twice each day; strain the liquor through a flannel bag; then add 6 quarts of Elder juice, and a little juice of Sloes; put the whole into a cask, adding 7 lbs of moist sugar, and ¼ oz. of isinglass dissolved in a little of the liquor, with 2 pints of brandy; let it stand three or four months, when it may (if fine) be bottled. Another and inferior sort: To a peck of berries put 3 gallons of water; boil it half an hour, then strain it through a coarse sieve; to every gallon of liquor put 3 lbs. of moist sugar, and the whites of two eggs; then stir all together and boil it again half an hour; skim it well; when almost cold work it with a little yeast; when put into the cask add to it some Cloves and Ginger; also a pound of stoned Raisins to every gallon of wine; let it stand three months; then bottle it.—N.B. The Ginger should be bruised.

Forcing-house: *Agrestis.* You may grow against the wall either a Peach or Apricot or Greengage Plum, provided the Vine-leaves do not overshadow the wall. If your garden will admit of your doing so, you had better take from the open walls each year a tree large enough to cover the space in your house, and put it back again in the succeeding autumn, replacing it by a second tree from your walls.

Fruits: *E B B.* Twelve sorts of Pears for a south aspect wall: Marie Louise, Gansel's Bergamot, Beurré Bosc, Beurré Diel, Winter Nelis, Thompson's, Knight's Monarch, Passe Colmar, Glout Morceau, Old Colmar, Easter Beurré, Beurré Rance. Twelve sorts of Plums for a south aspect: Royale Hâtive, Green-gage, Reine Claude Violette, Washington, Jefferson, Nectarine, Denyer's Victoria, White Magnum Bonum, Blue Perdrigen, Coe's Golden Drop, Coe's Fine Late Red.‖

Fruit-rooms: *An Old Friend.* A fruit-room should be ventilated well, and kept cold, but not lighted, except occasionally. The greater the circulation of air the better. Do not use straw, because it is apt to be mouldy. Dry fern is the best material. Do you really think that any men are so dull as not to understand what is meant by mismanagement?

Fruit Trees: *A Subscriber.* The following are good sorts of Peaches for forcing: Royal George, Grosse Mignonne, Bellegarde. Nectarines for the same purpose: Elruge, Violette Hâtive, and the Stanwick. Peaches for the open wall: Grosse Mignonne, Royal George, Noblesse, Bellegarde, Barrington, Late Admirable. Nectarines: Add the Impératrice to the three above mentioned. The White Marseilles, Pregussata, and Brown Turkey are good for forcing. The small pale green Fig to which you allude is most probably the Nerii. You may grow the Jargonelle, or any early Pear, on a north aspect. ‖

Glass: *J E.* If Hartley's patent rough plate be suitable for the growth of Grapes in houses, it will be suitable for their growth in pits. Where is the difference? ‡

Hyacinths: *Mary Springfield.* You cannot force Hyacinths twice successively. You should plant them in the open borders, in dry well drained places, and they will supply you with a gay decoration of your out-of-doors garden.

Incrusted Boilers: *A B.* The "fur" may be removed by adding sal-ammoniac (or muriate of ammonia) to the water, in the proportion of 1 ounce or so to every 90 gallons of water. "Fur" will however be again deposited unless you use rain-water in future. ‡

Insects: *A B.* Your tree is covered with the mussel scale. If you can wash it and scrub it repeatedly with hot water you may clean it; if you cannot you must endure the evil, for it is incurable. The tree should not have been allowed to get into such a state.—*R A.* The caterpillar is that of the peppered moth, Biston betularius. *W.*—*J C M.* The insect sent with the seed of Wheat is one of the myriapods, a species of Julus, but completely destroyed. It is often, but improperly, mistaken for the wireworm. *W.*—*H R J.* Westwood and Humphreys' "British Butterflies and Moths," three vols. 4to, contains descriptions and figures of all the species, of full size, with the caterpillars. Wood's "Index Entomologicus" contains figures of all the species reduced to the width of about an inch, without caterpillars; and the Lepidopterous volumes of Stephens' "Illustrations" contain descriptions of all the species, with a few figures. All are easily obtainable. *W.*

Landscape Gardening: *A Rector.* If you will favour us with your address we will write to you privately. Your letter is sent to Mr. Kidd.

Mildew: *Wix.* Surely you do not imagine that we approve of every notion which may enter our correspondents' heads. When opinions are entertained by one man of average intelligence, it is probable that the same opinions, however childish or absurd, will be held by others; and the easiest way to expose them is to publish them. We cannot personally deal with every folly, or vulgar error; for we do not derive our origin from Briareus, but you must own that we grapple with a reasonable number. Your letter next week.

Names of Fruits: *Inquirer.* Your Grape, said to be from the Crimea, is not like any known variety of the Vitis vinifera. It has a small oval black berry, with a shiny pulp, very bad, detestable, like some of the American Fox Grapes ‖—*J S.* The Summer Franc-Réal.‖—*J K, Bath.* 1, Beurré Rance; 3, Duchesse d'Angoulême; 6, Passe Colmar; 53, Ne plus Meuris; 19, Pond's Seedling Plum. Your seedling Peach is a clingstone, and none of that description is reckoned first-rate in this climate.‖—*A Constant Subscriber, Hythe.* The Golden Noble Apple.‖—*Thomas Gee.* Violette Hâtive Nectarine.‖—*M B.* The long-shaped dark-coloured Pear is the Bishop's Thumb; the other, bruised, is perhaps the Orange Bergamot.‖

Names of Plants: *Diss.* We are unacquainted with the material called "Alva marina" (prepared seaweed), sold at the bedding warehouses for stuffing mattrasses.—*Ravenswood.* 1, Lastrea spinulosa? 2, L. recurva? It is impossible to decide with certainty from such specimens as these; they are young plants of large growing species; in a few years the same plants, if placed under favourable circumstances, will probably develope fronds 2 feet or more in length. *S.*—*Erzeroum.* 222, Symphytum near caucasicum; 405, Echium vulgare; 47, Nonnea pulla, a bad specimen. Borage-worts should have their ripe fruits attached. 131, Onosma microspermum; 278, Onosma?—*G L.* Epidendrum gladiatum, and Galeandra Baueri.—*Anna Harrison.* The white state of Cyclamen hederæfolium.—*Vectis.* Certainly it is Alyssum maritimum.—*Ordovix.* Cuscuta Trifolii.—*W D.* Godetia purpurea.—*J R M.* Your plant is not in a state for determination. Send it again hereafter with ripe fruit as well as flowers, and some account of its history. You had better send your thermometer to a philosophical instrument maker.—*W D F.* Plants can rarely be named from an inspection of a single leaf. Yours is probably a New Holland Acacia, near A. lophantha. We venture to doubt its South American origin.—*D C L.* A specimen and clever sketch of — common Hemp, Cannabis sativa.—*Ravenswood.* It is Celsia Arcturus, which will not bear frost. You will never manage a greenhouse by books alone. A good help is Mackintosh's "Greenhouse, Hothouse, and Stove."—*E N R.* The Convolvulus is our common Bindweed, Calystegia sepium; Digitalis ferruginea, Helenium autumnale.

Potatoes: *D.* If you will consult our volumes for 1845, 1846, and 1847, you will find that autumn planting is attended with the greatest success. We believe it to be by far the best plan if land is ready, and if Mr. Grey of Dilston's method is observed.

Rabbits: We should be greatly obliged to any correspondent who will inform *An Old Friend of this Paper* as to the best means of catching rabbits or preventing their incursions—he would prefer catching them. His steel traps do not always hold them. Is there any book on the subject?

River Water: *X Y Z.* We presume that you can take what water you require, so that you do not injure others. But you should consult your solicitor.

Vine Leaves: *Belper.* We are unable to ascertain what ails the leaves. The appearance is very much that of leaves acted on by the fumes of sulphur, or sulphurous acid. We doubt whether they are *diseased* in the proper sense of the word.

SEEDLING FLOWERS.

Antirrhinums: *M H.* A very large-flowered robust variety, suitable for borders.*

Calceolarias: *M H.* Both good flowers, and worth cultivating; but of the two we like 16 best.*

Dahlias: *Z.* Your seedling is large, well up in the centre, and of good outline; but it is somewhat "ribby." The blush flower is well formed, very deep, and has a compact centre; when shaded it will pass for a white. Apparently two good flowers; but of their constancy of course we can form no opinion.*—*T R P.* So much bruised and spoiled by travelling that no opinion of their merits could be formed.*

Fuchsias: *W D.* Worthless as a show flower.*

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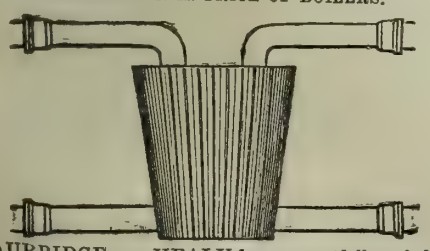
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REDUCTION IN PRICE OF BOILERS.



BURBIDGE AND HEALY beg respectfully to inform their Friends, in consequence of the present reduced price of iron, they are enabled to make a considerable reduction in the price of their Boilers. The price will be, now:

10 in. will warm	50 ft. 4 in. pipe	... £1 15	0
12 in. do.	75 ft. 4 in. do.	... 2 5	0
14 in. do.	100 ft. 4 in. do.	... 2 15	0
16 in. do.	150 ft. 4 in. do.	... 3 10	0
18 in. do.	250 ft. 4 in. do.	... 4 10	0
21 in. do.	350 ft. 4 in. do.	... 5 10	0
24 in. do.	450 ft. 4 in. do.	... 7 0	0
NEW PATTERN BOILERS.			
25 in. will warm	600 ft. 4 in. pipe	... 11 10	0
30 in. do.	800 ft. 4 in. do.	... 15 15	0
36 in. do.	1500 ft. 4 in. do.	... 25 0	0

All Boilers with double arms, up to 18 in., 5*s.* extra; to 24 in., 10*s.* extra; all above the same price.

130, Fleet-street, London, Oct. 5.

IMPORTANT NOTICE — EMIGRANTS are informed MARY WEDLAKE and CO. have from time to time supplied the first settlers to Swan River, Port Natal, and all the Australian Colonies, with AGRICULTURAL IMPLEMENTS; they beg an inspection of their stock, at 118, Fenchurch-street, near the Blackwall Railway. N.B. Persons becoming purchasers may have the benefit of an introduction to parties known to the firm at either of the above-named places.

DR. S. NEWINGTON'S AGRICULTURAL INVENTIONS.—An Illustrated Catalogue, together with a Lecture on the Seeding of Grain, and the after cultivation of the crops, sent gratis, on application to Messrs. DUFAUR and Co., 21, Red-lion-square, London.

TO CLERGYMEN.

ROYAL AGRICULTURAL COLLEGE, CIRENCESTER.

It being intended, after Christmas, 1850, to establish a School for boys under 17 years of age as In-students at this College, a PRINCIPAL is wanted to superintend the Institution. He must be a Clergyman, and competent both for the teaching and management of youth. Salary 300*l.* a year, with a fee of 2*l.* per head for every pupil in the school. Out-students above that age will continue to be received as usual.

By order of the Council, PHILIP BOWES, Secretary.
London Office, 26, King William-street, West Strand.

ROYAL AGRICULTURAL COLLEGE, CIRENCESTER.

WANTED, an intelligent PRACTICAL FARMER, thoroughly competent to undertake the Management of the Farm attached to the College. He will be expected to cultivate the farm on the most improved system consistent with economical principles.

By order of the Council, PHILIP BOWES, Secretary.
London Office, 26, King William-street, West Strand.

PURE WATER raised to any height from a small stream, where a fall can be obtained, by FREEMAN ROE and HANSON'S IMPROVED RAM; less waste, by two-thirds, than those ordinarily in use. Portable Steam Engines for Agricultural purposes, Threshing Machines, Deep-well Pumps, Water-wheels, Baths, Hot-water Apparatus, and Fountains. Towns supplied with Gas or Water. Drawings and Estimates made.—FREEMAN ROE and HANSON, Hydraulic and Gas Engineers; Office, 70, Strand, London.

The Agricultural Gazette.

SATURDAY, OCTOBER 5, 1850.

MEETINGS FOR THE TWO FOLLOWING WEEKS.
THURSDAY, Oct. 10—Agricultural Imp. Society of Ireland.
THURSDAY, — 17—Agricultural Imp. Society of Ireland.

THE best plan for applying the LIQUID MANURE OF THE FARM to the soil has long been an interesting subject to farmers. Attend as many public or private meetings as we may, we find this among the most prominent topics of discussion. Englishmen, Irishmen, and Scotchmen, are agreed upon the propriety of abusing each other roughly for the waste of liquid manure upon their respective farms. Indeed, the theme has become of such a common-place character that every amateur, on making his *debut*, is sure to cuckoo it with an air of importance, as if, at the first yoking of his harrow, he had brought to the surface an immortal discovery.

Practical men, on the other hand, who are probably as guilty of theorising, in their own way, as their more gifted companions, have, in self-defence, been all along complaining that philosophers have not yet propounded a theory capable of being reduced to practice, by which they might be enabled successfully to apply the liquid which flows from their dunghills. "Liquid manure tanks," pumps, carts, and expensive apparatus, have been set actively in operation in every province of the kingdom, but without being able to establish anything in the shape of general practice. Results exhibited have not furnished sufficient evidence of success to induce general imitation, and in some cases the whole has turned out a fruitless expenditure. We have seen Grass lands watered over and over again, winter season after winter season, and no beneficial results produced. And why? simply because the soil was saturated to overflowing with water previous to the application. The liquid manure-tank never overflows until the pores of the earth are first full and the rain which has fallen is flowing upon the surface. Great things are invariably talked of prior to the commencement of such experiments, and the attention of practical men duly invited to witness results, but under such circumstances need we wonder at disappointment? Seeing is believing with practical men, and one failure of this kind is sufficient to counter-balance a thousand arguments to the contrary.

The successful and oft-quoted example of Chinese practice is not sufficient to convince. "Far-fetched fowls," it is said, "have fair feathers:" but the climate and agriculture of the celestial empire are very different from those of Britain. Were English farmers a race of market gardeners or peasant proprietors they might, perhaps, notwithstanding this, imitate those of China, but in our present position the pattern requires more hands than we have at our command. And, in practice, to propose a scheme which requires more hands at one season of the year than can be employed at another, is just to propose what is tantamount to an impracticability. It is just to propose an Irishman's life to an Englishman—half his time in the poor-house, and the other half in the field. And we much confess that in our present position, until spade husbandry is adopted, with all its detailed superintendence of the land, we are not sanguine of that system of direct liquid manuring being carried out by farmers generally. Individual experiments may be successfully made, but these, however valuable in themselves, go for little as affecting general practice, and until the public mind has, by steam ploughs and steam labour, taken one-half of the farm work out of the hands of our labourers, we shall not have the means at command to overtake these and other details of the farm as they deserve.

Why the application of liquids, as manure to the soil, is attended with more expense and difficulty, has already partly been accounted for. Over the greater part of Britain, in the first place, they can only be successfully applied at seasons of the year when the labour market is empty, or when labourers are otherwise employed. In the second place they must be carefully applied, or the leaves of plants may suffer; and thirdly, prepared liquids generally require to be diluted, which adds considerably to the expense of transport.

Another scheme has been proposed by Mr. JASPER W. ROGERS, of Dublin, which has many things to recommend it. "It has," says Mr. ROGERS, "been my good fortune to discover that peat charcoal, specially prepared for the purpose, possesses the power of absorbing and retaining all those most valuable products," meaning "the ammoniacal and other volatile gases" previously referred to. "It is perhaps the greatest absorbent known. It will take up and retain many times its own bulk of those gases. Hence its inestimable capability for effecting the deodorisation of all sorts of manure, retaining all the virtues of the liquid matter, as well as its volatile products." Mr. ROGERS proposes to filter through finely powdered peat charcoal, placed in tanks prepared for the purpose, the urine of the stable, cow hovels, and liquid which flows from the dunghill. In this operation the charcoal retains all the elements of the food of plants contained in the urine, and allows nothing to pass through it but pure water.

The published experiments on peat charcoal as a manure, encouraging though they are, have been chiefly confined to its mixture with night-soil, and not to the liquid manure of the farm. Experiments are still wanting to test its efficacy when mixed with the dung of cattle in the various climates of the different provinces of the United Kingdom. Experiments in the moist climate of Ireland afford no satisfactory evidence of what may be expected in the dryer districts of the south and east of England. We would, therefore, suggest to those who have the opportunity the propriety of performing experiments in different parts of the country in order to test the merits of peat charcoal as a manure, both in a mixed and unmixed state, with the dung of horses, oxen, sheep, and swine. A very little addition to the quantity of agricultural produce, which means such as this might produce, sometimes compensates for a considerable defalcation in its price.

These experiments might be variously conducted, both as to the manure itself and the mode of manufacturing it, on the one hand, and its application to the different crops, on the other:—For instance,

1. Parties who already have urine tanks—general receptacles of all sorts, have only to take a few old bags, such as guano-bags, Potato-baskets, &c.—fill these with peat charcoal, and then lower them into the tank for a short time. The charcoal will soon absorb the maximum quantity of all the enriching elements of the liquid which it is capable of doing, and become a very valuable compound. The bags may be emptied and refilled until a sufficient quantity is obtained. The whole could then be mixed together and applied to different crops in different manners, as the party had a mind, on alternate ridges, with pure charcoal, farm-yard manure, &c.

2. A similar, but more extensive series of experiments could be made by using a temporary hole or cesspool adjoining the stable, cow-hovels, &c., or even in the interior of them, with or without bags. A small hole, sufficient to hold one guano-bag, would soon yield a quantity sufficient for any number of experiments. Different mixtures, with the charcoal, could thus be obtained, and a variety of applications made on the different crops.

3. The whole of the urine, as it passes from cattle, might be profitably mixed with the charcoal; but the liquid which flows from the dunghill invariably contains an excess of water. The charcoal in this case could be placed in the bottom of a tank-hole, old barrel or trough sunk in the soil, &c., with a drain leading to it, so as to remove this excess of water. The liquid from the dunghill would then flow in upon the top of the charcoal, and, in being filtered through it for the drain, would leave all its enriching elements, or the greater portion of them, in a mixed state. The insoluble portion of them would, no doubt, remain upon the top of the charcoal, but could be mixed as it was removed from the tank.

4. The moment droppings fall from cattle in the stall, their more volatile and valuable elements are disengaged, and hence lost. No scientific demonstration is here wanted in order to prove the accuracy of this deduction. The smell which arises from them settles the question in the most satisfactory manner, and the loss sustained is far from being an unimportant one to the farmer. Peat-charcoal may be more profitably used by applying it so as to absorb all the liquid and juices of the droppings the moment they fall, than afterwards, as in the previous examples. For this purpose the pavement behind the cattle and under their beds or litter may be strewed with finely powdered charcoal. During summer, when horses and cows are stall-fed upon Tares, Clover, &c., a very large quantity of ammoniacal and other valuable gases would be obtained which are now generally dissipated in the atmosphere, and hence not only lost, but injurious to the health of animals inhaling them.

Again, the bottoms of sheep pens, and even stalls of oxen, are now being constructed of boards or wooden bars or gratings, so as to allow the droppings to pass through. Where this is the practice, a small quantity of charcoal strewed daily on the bottom of the pen, would be attended with favourable results. Also where cattle are fed in loose boxes, a small quantity strewed over the top of the litter daily, would be found equally advantageous.

Reports of experiments could be forwarded to the different agricultural periodicals, so as to ascertain general results from the different provinces, and if these went to show that the conversion of the liquid manure of the farm into solid manure through the instrumentality of *peat-charcoal* is the best practice, then the long puzzling question we noticed at the outset of the remarks is at last solved. *B.*

A few weeks ago, a gentleman who had previously been engaged in mercantile affairs, called upon a friend of ours, a farmer, stating that he was leaving England in a fortnight, as an emigrant, and requesting instruction in farming operations. We had previously heard of "writing" being taught in six lessons, but we certainly before never met with one who expected to obtain a competent idea of the varying operations of a farm in 12 days. Our readers will undoubtedly be amused at the almost contemptuous opinion this gentleman must have had of practical farming. Some such idea will assuredly pass through the mind of most of our readers: and yet is not the contempt with which farmers view the application of scientific investigation to agriculture, an exact counterpart of this gentleman's folly? or are they not still worse than he, inasmuch as they will not bestow even a fortnight's attention to the subject, while they ridicule those who do so?

We really would urge upon our agricultural friends to take the advantage of some of the cheap railway trips, to visit any of the seats of our manufacturing industry, and let them there examine for themselves the results of the application, not merely of mechanical, but also of chemical science. Let them also particularly observe that many of the most important of these results have come in their present practical shape direct from the laboratory of the chemist. No course of lectures, no amount of reasoning or arguing on our part, could be so effectual in removing the absurd prejudice farmers feel against that on which our manufacturers set so much value, namely, the application of science to their business.

It will be answered that growing a crop of corn is a widely different operation from the preparation of soda or any other chemical manufacture. We reply, it only differs in being more difficult and complicated. The variation of the seasons, frost or snow, rain or drought, all seriously enter into the list of the farmer's difficulties, and not at all into the manufacture of soda. We admit the force of this objection; but is the greater difficulty an excuse for the farmer despising the assistance of that knowledge which has been so useful to the manufacturer. Because a certain part of the growth of his crops is beyond his control, is the farmer to neglect the study of that which is directly under his management? But is there no point of resemblance between the soda manufacturer and the farmer? We think there is. The manufacturer mixes together, in certain proportions, coal, sulphate of soda, and chalk. Now, if these substances were merely mixed together very carefully, and left for some time, a slight chemical change would take place, and a small quantity of carbonate of soda would be the result. Such a plan of procedure would however be too slow and too imperfect for the manufacturer; so, in order to expedite the process, heat, in a properly prepared furnace, is applied, and the utmost quantity of soda the mixture is capable of yielding is at once obtained. In like manner the farmer knows that if Wheat, for instance, be sown on an impoverished soil, he will get a crop, but like the result of the simple mixture of the ingredients for preparing soda, much too small to be remunerative. In this dilemma the farmer adds to the soil a certain quantity of manure, and he finds that his crop of Wheat is in direct proportion to the quantity of manure applied, and to the state of preparation of the soil and of the manure. He finds that there is a difference of his crops (independent of the seasons) in proportion to the labour bestowed on the soil, and the care given to his manure heap, exactly as the manufacturer of soda finds his results depend upon the careful preparation of the necessary mixture, and the skill with which the after part of the process is conducted. Both are equally a chemical process, and there was a time when the manufacture of soda was as great a mystery as the growth of the Wheat crop; but no sooner is the former thoroughly understood than improvements immediately follow. In like manner—to pursue the very simple case we have taken—is the farmer sure that the manure he applies to his Wheat crop is the best possible for that purpose? Is it, as usually applied, in the best possible condition for the desired end? Or rather, in nine cases out of ten, does he know anything at all about the matter? Hugging their own ignorance, and shutting their eyes to the benefits derived by the manufacturer, do not many farmers evince no wish to procure for themselves, or to secure for their children, any education better than the village schoolmaster can communicate? We venture to predict that the end of the 19th century will scarcely, in this respect, be proud of the middle.

We have been induced to make these remarks from observing the meagre support given the Cirencester College by the body of men it was able to benefit.

ABSORPTION OF MANURE BY EARTHS AND LOAMY SOILS.

This subject has excited a very lively interest of late, and particularly since the appearance of Professor Way's Essay in the last Journal of the Royal Agricultural Society. Experiments in various branches of culture had long since unerringly pointed to the great fact that manures, particularly the ammoniacal and fetid ingredients of liquid manure, are absorbed and held fast by all soils fitted to the cultivation of grain crops, and of the best garden vegetables. Such experiments, having been undertaken for some definite object, did not at the time lead to any conclusions bearing upon the question of absorption, which now occupies general attention, and has been solved in a manner so entirely conclusive. Some of the experiments alluded to now may recur to the recollection of many persons who have been in the habit of applying manure-water of various kinds to potted plants, and to such, the following statement of simple, but unerring, facts, may afford some gratification, and also conduce to the further extension of experimental science.

A liquid manure was prepared by steeping four heaped garden-trowels (call the bulk half a gallon) of horse-droppings, that were collected in a heap about Midsummer, in twice the volume of hot rain-water for 20 hours, to which was added about a quarter of an ounce of strong liquid ammonia; and the mass was repeatedly stirred. The ammonia was intended to extract more of the humic matter, which, by the progress of decay (*eremacausis* of Liebig), had formed in the droppings. In the meanwhile, a glass cylindrical vessel, 8 inches long, 4 wide, open at both ends, but at one terminating in a contracted orifice, was prepared by tying over that neck a piece of strong linen, to act as a drainer. This glass was nearly filled with light garden earth, rather loamy, but comprising so little chalk as to show merely the slightest frothy beading on applying strong muriatic acid. The earth was screened, but neither finely sifted nor powdered, and just so moist as to permit the free and gradual circulation of fluid throughout every particle of it. When so filled and patted by the hands as to make the soil lie evenly in every part of it, the glass was placed, small end downwards, in a position to permit all the drainage filtrate to be caught in a clean glazed pan. The manure-water was then drained from the mass and left to deposit its feculence till a clean, though not bright liquid remained. This fluid was tested for ammonia by immersing in it a bit of quicklime, which liberated so much of that gas as to produce a sensible hazy cloud of vaporous muriate of ammonia on presenting the stopper of a muriatic acid bottle to it. It was then tested for sulphuric acid by several barytic solutions with scarcely any result; for lime or its salts, by oxalate of ammonia, equally without visible results; but not so for muriatic acid, for nitrate of silver caused a curdy deposit of the muriate. The "questions" so answered furnished the basis for comparative final results. Over the surface of the mould in the cylindrical glass were poured two-ounce measured portions of the liquid manure, watching and waiting for the progress downward and through the soil between each addition. By the time that from 8 to 10 fluid ounces had penetrated, drops of liquid began to pass through the linen, and before the 12th ounce had entirely sunk down, three fluid ounces of filtrate were in the receiver. Here it should be noted that the soil was fully saturated by the time that 10 ounces had been used, because the fluid which passed subsequent to the addition of the last two-ounce portion began to assume a faint brown tinge; whereas the first portions were quite pale, almost as much so as rain-water.

The reader will do well so to try every kind of manure-water—that which runs from farm-yard mixens, and all others that are prepared artificially, even including solutions of guano, and he will rarely fail (if the soil be appropriate—sand and heath-mould are not so) to obtain proof that colour and odour are effectually destroyed, and thus a first and convincing evidence of the attractive energy of soils will be obtained.

The next series of experiments upon the filtrate comprised a repetition of the testings mentioned above. First, a lump of lime was immersed, and, in accordance with the results obtained by Mr. Way, the ammonia was absent—the mould had held it fast. Again, with a similar accordance, the test by oxalate of ammonia gave proof demonstrative that lime in abundance had been carried down in a state of chemical union with two acids at the least; for nitrate of silver threw down much chloride of silver, showing the predominance of muriatic (hydrochloric) acid; and three barytic tests (the simple solution, the acetate, and the nitrate), all and severally produced a cloudiness of the sulphate.

Now whence could these salts of lime have been derived, and by what agency? The question is equally important and deep, as is another to which it gives rise, namely—What will be the ultimate bearing of such results upon the theory and processes of thorough land draining, since it should appear that the clear water which passes is, in point of fact, reduced to the condition of hard water, which in itself is inimical to vegetation. *J. T.*

THE RESULTS OF MACHINERY.

A Village Lecture.

(*Concluded from p.* 618.)

Now let us inquire into the question of profitable and unprofitable labour. You all know what is meant by capital. Your capital is muscular; mine is pecuniary and mental. The aim of each is to use this capital profitably. You employ your muscles profitably when you earn a fair weekly wage. I employ my money profitably when I increase it. You would consider yourselves ill paid to earn less per week than bread and meat cost you. I should think my capital badly laid out except I realised some per centage upon it. What would you think if I came home one day from market with a number of strong hampers, furnished with straps to be slung across the shoulders, and told you that henceforth I should disuse the carts and employ a great many men to carry manure down to the field instead of having it carted thither? "Well," you would say, "I never heard anything to come up to this. Here's our master going to work us like beasts. I wonder what he conceits to sell his corn for? To be sure some people have queer notions; but, for my part, I'd rather try to win than to lose." Well, the cost of producing my Wheat and other grain would of course far exceed the market value of it, if I was the only farmer who pursued the plan, and then I should lose each year a part of my capital; but supposing all farmers followed my example, there would be but little grain wanted; because scarcely any one could afford to buy it, and the land, consequently, would be left to nourish weeds. This system, therefore, being unprofitable, would fail.

Suppose that one of you dwelt on the top of a hill, and could only procure water by fetching it from a pond at the bottom. If you had a boy that task would fall upon him, and instead of taking him to work you would leave him at home. You would be not a little pleased, on coming home one evening, to hear your wife say, "Oh, John! I've got such good news; you can't guess it, but our landlord has been here, and a right good gentleman he is. I told him how it took one person's time to fetch the water, and he said that he would be at the expense of sinking a well, and building a pump for our row. The boy can go with you now, and then his wages will pay both rent and shoe bill."

I do not expect that you would grow Potatoes in your gardens if you could purchase them for less money than they would cost you in labour, manure, and seed. "No," you would say, "it is unprofitable labour, and I will try and turn my land to better account. And if you could buy all vegetables and grain, and all that you could depend upon your garden to produce, more cheaply than you could produce them, I am not wrong in saying that you would allow your gardens to go out of cultivation. In a word they would not pay.

You think much of your gleaning here, but in America the fields are never gleaned. The wives and children of the labourers can turn their time to better purpose.

Years gone by your wives used to knit stockings; but now that they are to be bought for less than the materials previously cost, no one thinks of making them, and the knitting needle has been broken up for bradawls. The spinning-wheel is for the same reason no longer heard, and the pillow and bobbins of the lace-maker are rarely seen at our cottage doors now. The machinery used in the manufacture of these articles was so inefficient, and the time expended so great, therefore, that none but the rich could afford to give the high prices that the maker was obliged to put upon them in order to pay himself: consequently, the demand for stockings and lace, &c., was small. Any means that will lessen the cost of production, either of food or clothing, &c., must have the effect of increasing the demand for them. To satisfy this demand, an increase of capital is necessary; and this capital sets to work a greater number of

men. Now by machinery the cost of production is lessened. Let us take a case. In some cities of Spain, at certain periods of the year, water is as dear as wine; this is owing to the want of a little simple machinery common with us. Thousands of men are engaged as water-carriers. These men will not work except they are paid, so the high price of water renders it an article of luxury even to the rich, and the poor are fain to do without it. Suppose that each city employed 600 water-bearers, paying each 10s.,—300*l.* alone per week, laid out in what we may call the production of water. A simple contrivance is introduced by which the city is supplied with water for 50*l.* per week. The people or corporation of that city will find itself 250*l.* in pocket, and the 600 water-carriers will be dismissed. The city authorities call a meeting. The chairman rises and says:—"Gentlemen, by the late economical arrangement in our water-works, the city is supplied with water at less cost than formerly, and I find that we are the gainers of 250*l.* per week. It is for you to say to what purpose this money shall be placed." One member says, our roads want paving; another, the old harbour must be repaired; a third rises to propose the construction of a new one, and the laying out of public walks; while a fourth reminds the members that one or two monuments are to be erected. The chairman then sums up the proposals, and says, "Well, gentlemen, there are plenty of idle men about; let us set them to work before they get into mischief, and into prison, where they will be a burden to us." A portion of the men are employed by the 50*l.* per week, to keep the water-works in order; the remainder are forthwith set to work by the 250*l.*, and the city is greatly improved.

I get my Wheat threshed for a less sum by machinery than I can by hand, and the money saved in this way goes to give employment to a greater number of people in various directions about the land. If you combine to destroy all the machines upon my farm that economise human labour and lessen the cost of food, you benefit neither yourselves nor me. You will oblige me to employ fewer hands, and to do a much less amount of work; I must either drop all my improvements and do just what is necessary, or give up a part of my land. The consequence will be that food will be raised in price to you, together with all those necessaries and conveniences of life that do not employ your labour, so that all classes would fare the worse for the destruction of machinery.

After what has been said, it is almost needless to ask if it is not always your aim to expend as little labour at home as possible. You would not work at home upon anything that could be done as well by your lads, and you would be dissatisfied to leave two lads at home to accomplish what could be done by one alone; and, if the work which engaged your one boy could be done by some contrivance without him, you would consider yourself very happy. It is therefore your object to set fast as little capital (which is labour) at home as possible, to invest the greater quantity in a better concern. The less labour spent at home the greater will be the amount of weekly wages. If you receive more than can, with good management, be spent on the necessaries of life, you have the more with which to purchase its comforts. You build a sty, buy a pig, hire a rood or an acre of land, and by these means gradually rise beyond all fear of the workhouse.

Collectively, we endeavour to follow as near as possible the example of the individual. As a nation, we are anxious to economise the labour requisite to make provision for our own necessities, and to gratify our own tastes and pleasures, in order that we may have the greater amount of labour to expend in the service of other nations, for which we receive adequate remuneration. If we consume all that we produce, it is clear that there will remain nothing to sell, and we shall be in the condition of that labourer whose weekly wages only cover his weekly expenditure. The more goods we have every year over and above our consumption, of course the richer we shall be. Our aim therefore should be to increase the amount of food and clothing, &c., without multiplying the consumers of either. Could we but find labourers who were never hungry, thirsty, nor cold, our purpose would be accomplished. And so it is, for what are steam engines and power looms, &c., but silent labourers that require neither food nor clothing. Their cost, in the first instance, is great, but is not equal to the value of goods that must have been consumed by the men they represent. By animals we increase our force without materially increasing our consumption, for their food is less expensive than that consumed by the men they displace; and then as to clothing, God has made them independent of us.

A few facts, taken from a calculation authorised by Parliament some years ago, will show you that by the destruction of machinery and the disuse of animals, we should not only put it out of our power to furnish the necessaries and luxuries of life to the people less advanced than ourselves, as we now do, but that we should be unable to satisfy our own wants. There are 30,897,000 acres of land in England and Scotland. To work this land there are only 2,132,440 effective men; they would not be nearly sufficient. The agriculturists of these countries have discovered however the means of creating a force 12 times the amount of the human force by the use they make of domestic animals. The tabular view stands thus—

	Effective Working Men.
Human race, 5,000,000, equal to	2,132,446
Horses of full growth, 1,250,000, equal to ...	8,750,000
Oxen, &c., 5,500,000, equal to	13,750,000
Total,	24,632,446

The human force engaged in the manufactures and commerce of Great Britain is equal to 4,264,893 effective men. This is raised by the addition of animal power to 7,275,497; by the force supplied by wind and water to 21,115,497; and yet further by steam engines to a force equal to 27,115,497 effective men. You will see from the table behind me at what the various powers are estimated.

	Effective Men.
Animate force, equal to	7,275,497
Mills and Hydraulic Engine, ...	1,200,000
Windmills	240,000
Wind and Navigation	12,000,000
Steam Engine	6,400,000
	27,115,427

Supposing that the 4,264,893 labourers were released from the towns, &c., to join the agriculturists, who, without their animals, &c., would be but 2,132,446 men, there would be only a force of 6,397,339 men, which, in comparison with the force equal as we have seen, to 24,632,446 working men would be only as one to four.

We had increased our power therefore at this time, by the employment of animate and inanimate force, from 6,000,000 to 51,000,000 of effective men. But no good would result to us if such a human force should take the place of those machines and animals that now represent it. There would then be some reason in the cry "England is over-populated; there is not bread for the people." You will see however clearly enough how we are benefited by an increased power without an increased consumption, and I need say no more on the point.

And now let us gather a few facts by which we may know how we have been benefited as a nation by machinery. The woollen trade during the early centuries of our history was the great staple of this country. Inferior in skill to the French and the Germans, we sold our wool, &c., at a low price in its raw state to these people, who manufactured it in their own lands, thereby employing their own people, and then returned with it to our market, where it commanded a high price. Thus originated the proverb, "The stranger buys of the Englishman the skin of the fox for a groat and sells him the tail for a shilling." By procuring foreign workmen to teach us their craft, we kept and manufactured the wool, and thus transferred the "stranger's" profits to our own pockets. This was done by the use of foreign machinery. You will smile when I tell you that we have played the same trick with the people of India, and China, and Persia, and Egypt, who produce cotton and silk, &c., and being unable to do anything with it themselves, they sell it to us. We bring it to England, and employ a great number of people to manufacture it into all manner of wearing apparel and useful fabric, and then ship it to those countries and to others, making the purchasers pay us handsomely for all our trouble. By reason of the long passage from India to England the raw material was at first very dear; but the discovery of the passage round the Cape of Good Hope rendered the distance less and the material cheaper. This took place in the 17th century. There were then only the old hand-loom weaving machines and the spinning-wheels going, so that the cost of production or manufacture rendered the price of cotton goods very great, and their sale limited. In 1760 there were 50,000 spindles at work in Lancashire alone. But the spindles could not keep time with the weavers. Some quick method was required to supply the weft. The demand was no sooner made known than forth from the recesses of invention came the very apparatus. I shall not explain it now. A Mr. Lawrence Earnshaw is reported to have invented a machine to spin and reel cotton at one operation, which he destroyed, fearing that it would throw a great many poor out of employ. The reverse of this was proved subsequently by Richard Arkwright, a barber. He invented, in 1769, the apparatus to which I refer, "and by so doing gave bread to two millions of people, instead of 50,000; and assisted by subsequent invention, enormously raised the importation of cotton wool from India; set in motion 6,000,000 spindles instead of 50,000; and increased the annual produce of the manufacture from 200,000*l.* to 36,000,000*l.*" One portion in three of this cotton is used by ourselves.

Two centuries ago not one person in a thousand wore stockings. One century ago not one person in five hundred could bless himself with a pair. Now, not one person in a thousand complains of cold feet from the want of them. The stocking frame makers looked upon the advent of a new machine doing their work with terror; but without reason, for there was more employment for them when every body began to wear stockings. In Nottingham and Derby there are thousands and tens of thousands of persons engaged in this manufacture instead of a few hundreds. Just the same with the lace making. "Two hundred years ago a lady of rank only exhibited her lace when she displayed her diamonds." Now that lace is so exceedingly cheap every body wears it. The manufacture of lace has become, therefore, most extensive instead of very limited, and is the means of employing many people with a machine where it employed a very few without one. The woollen manufacture in like manner has increased surprisingly. In Britain there are 1738 mills, worked by 86,411 persons, realising an annual value of 25,000,000*l.*

In the linen manufacture there are 393 mills and 43,000 people employed within them; its annual value does not exceed 10,000,000*l.* The annual value of silk manufacture is 10,000,000*l.*; there are 150 silk mills, which give employment to 35,000 hands. The hardware manufacture is very extensive, employing 300,000 hands; its annual value is 18,000,000*l.* Then there is the commerce of Britain, to which all this manufacturing gives a mighty stimulus, for we export by far the greater part of our manufactured goods, bringing back money or raw material, or other articles, in exchange. You cannot longer entertain a doubt that the manufacture of cotton, of wool, of silk, of iron, and of a thousand articles that I have not mentioned, by machinery, has produced one of the great results for which machinery is be desired, namely, cheapness of production. And the advantages thus obtained will, you may depend upon it, be equally certain of attainment, when applied in the case of agricultural machinery, from the cheaper and more abundant produce of the land. *F. R. S.*

PHILOSOPHY OF THE DUNGHILL.—No. I.

Farm-yard manure is the produce of roots, straw, corn, Beans, Linseed, oil-cake, &c., consumed by working cattle and fattening stock, having a sufficient quantity of litter. This manure supplies all the materials necessary for the growth of our crops, and it contains all the elements which they require for their perfect development, such as carbon, hydrogen, oxygen, azote, phosphates, chlorides, &c.

The Production of Manure.—The constant attention to its accumulation and its preservation, the preparation and the proper application of it, require constant and unremitting attention every day of the year. The value of manure varies greatly with the kind of food which the animals consume. Beasts, consuming fattening food, such as cake, Linseed, and corn, produce manure more than double the value of that which is made by store stock and young beasts consuming the food generally given to store animals, such as straw or bad hay, with a small quantity of roots, which they sometimes recive in addition. Both the quantity and quality of manure must be attended to; the richer part of it—the urine and that made by the fattening stock have our utmost attention, that none of it go to waste; it must be husbanded and stored up for use, and this can easily be done by such an arrangement as will make an intimate mixture of the excrements of the fattening stock with the breeding and store stock. The best mode of feeding either fattening or store stock is in boxes, and this is the only mode by which the excrements of all animals can be readily mixed; by this system the most valuable part of the exerements, the urine, is all retained. Dry straw should be given to litter the stock sufficient to absorb the liquid manure; this is the best and most important part of our manure manufactory. The urine of our cattle is generally double the weight of the dung, so Dr. Thompson says—dung 9 lbs., urine 20 lbs.; besides urine contains a greater relative proportion of richer material than dung. It must also be borne in mind that fresh dung does not contain the same quantity of ammonia as it contains when it is in a certain stage of fermentation. "The urine of a sow when fresh contains only 1 per cent. of ammonia, while it contains nearly 3 per cent. when it is fermented" (Sprengel); and when it was mixed with its own weight of water before it was fermented it contained more than 8 per cent. of ammonia.

The substances which form the mass of the manure made on —— farm are the straw of 120 acres Wheat, the straw of 30 acres of Beans, 60 acres of Swedes, Turnips, Mangold Wurzel, and Carrots, averaging 20 tons per acre; these are all consumed by fattening stock in the boxes during the autumn, winter, and spring, and during summer we have 30 acres of Clover, which is fed off by sheep folded on the ground, exeept what is cut green for horses, about 50 pigs, and about 20 fattening beasts in the boxes; and as the leaves of Mangold Wurzel, the Carrots, and Turnips are the richest materials for forming a manure compost, all the leaves of our root crop are carted home and given to the stock in the yard to be picked over by them, and the remainder trampled under their feet; when these accumulate it is carted out to a place where a dunghill is to be formed, and here it is mixed with the dung of other animals.

The only animal matter we have within our reach is the excrements of the live stock kept for labour, store stock, and those fattening for the butcher; they consist of horses, oxen, sheep, and pigs. It must be remembered that the quantity of animal exerements we can use is just in proportion to the quantity of stock we keep, and the quality of it, to the quality of the food they contain; besides the 60 acres of roots and 30 acres of Beans, the stock have Oats, Peas, Vetches, Indian corn, Linseed, oilcake, and bran, in such quantities as we think necessary, according to the condition the stock are in.

Our stock consists of 9 horses, 20 beasts, from 100 to 150 sheep, and about 60 pigs, during the summer five months; and, in the winter seven months, we have 9 horses, from 40 to 50 head of beasts fattening, from 250 to 300 sheep fattening, and from about 60 to 100 pigs. Most of the urine of these animals is absorbed by the litter in the boxes, except that of the horses, which runs to the tank and is pumped over the dung-heap. *J. M.*

(To be continued.)

Home Correspondence.

Spade Cultivation.—Amongst the machinery shown at the Mechanics' Institute Devonport, are some for printing. I was presented with a paper, of which they were throwing off copies every minute; in which was the offer of a premium for the best essay on the cultiva-

tion of Dartmoor. Now as that is a field extensive enough to try something superior to our present plough or spade, I thought it a good time again to urge the matter; but then the rebuffs I have met with, when trying to reason the case with farmers, came crowding on my mind. "Expensive machinery, and intelligent men! Nonsense; at present prices too—impossible. Don't come to us theorising. What can you know about it?" This passing whilst watching the machinery, I fell into a reverie, in which I thought myself transported to the time printing was invented. Methought by the side of the printer, stood one of those, who had heretofore gained much *éclat*, by writing well and quickly. My powers of description cannot portray the look of contempt, with which he eyed the printer, whilst delivering himself of the following sally. "Here's a complicated and expensive machine. What are you doing with it?" The printer with a smile hands him a paper—the offer of a premium for the best cultivation of Dartmoor. "So you think that complicated affair necessary, do you? Why, it is like employing an elephant to carry a fly. See I will take a piece of paper, and with a pen only, produce something very superior to your advertisement." "But observe," remarked the printer, "I can print as many copies as you write words." "You can, can you, then how are all we writers to get employment, pray tell me that?" The question was not whether the printer could prove his invention to be useful or not, the prejudices of the writer blinded him. Nevertheless printing gradually made its way, although bigotry could not appreciate it. The analogy of the cases struck me. It is always difficult to overturn established opinions, and farmers have been so long nursed, that we ought not to expect them to walk well, when first placed on their own legs; or if a pun may be allowed, there should be time allowed for their under-standings to strengthen. Therefore let us add line upon line, and precept on precept. I therefore again urge some mechanic to make a machine containing many spades and forks. I have in a former paper described the sort of machine I thought most applicable to steam-power, which is, that spades and forks should be stuck round a cylinder, worked by steam-power, and propelled on a portable railway. As I then observed, I am no mechanic, therefore can only disseminate my ideas. I believe the steam-power might be shifted to suit a variety of purposes, such as threshing, grinding, the before-mentioned spade work, but more particularly to draining the land. A machine of this sort would require a clever man to guide it, and then I hope to see my pet plan carried out; that is, a man of this description to live in every farm house, who would be of still greater advantage, in making intelligent beings of the present animals, yclept ploughmen. The evening schools for adults, and village lectures, must tend to raise such a class of men. At present it is lamentable to see the shifts resorted to, in a farm-house of an evening to kill time, which might be so delightfully used in guiding the young to observe; again I say to observe, for who has such pleasing books to give instruction through as the naturalist? Nature's laboratory is always open to the inspection of the enquirer, and I believe a few years will place the farmer amongst the most intelligent, as well as the most industrious class of men; for all will allow, they are industrious, although it is often like going down a well to fetch water, instead of using the pump handle. They have this great advantage over those sedentarily employed, whether with hands or head, they can acquire health and practical knowledge whilst following their vocation; therefore study, properly guided, would in their case prove the best and most agreeable relaxation, whilst the sedentary must take exercise, and in some cases entirely refrain from all mental excitement. Perhaps some will say what connection is there between good farm machinery and this anticipated improvement in the mental condition of the farmer and farm labourer? Everything. At present their employment is so labourious, that weariness destroys the spirit of improvement. But let them be once rid of that burden, and the same dogged firmness which has enabled them to plod along so burdened, will cause them to soar aloft, when the weight is taken off; in which flight I heartily wish them God speed. *Anon.*

Mr. Wilkins's Wheat.—For many years the attacks made upon me were founded on the notion that I could not grow corn on the system I explained and always successfully practised, because it was contrary to the long cherished practice of the farmers of this country; but, as year after year my practice was always more than successful, and never failed; and as all my parishioners, nearly, had more or less adopted my system; and as it was found from yearly experience that the closer they followed my system the larger were their crops with proportionately less exhaustion of their soil; the attacks upon the system had gradually died away, and would soon have been forgotten. But now the attack is turned from my system of corn cultivation to the kind of Wheat I grew. The Vice-Chairman of that large and respectable assemblage at Mr. Mechi's annual gathering, proclaimed, that the Wheat I grew "was of a coarse quality and no better than Rye," and this assertion was received with what reporters would term thunders of applause; and it has since been industriously disseminated throughout the whole country, and has gained the more credit because the speaker may be said to be a neighbour, and therefore was presumed to know the truth of all he said on the subject. But what are the facts? In this parish alone, on my system I have grown Wheat for 13 years, and as far as I can remember, I never grew the same kinds, with but one exception, twice over; and I always grew at least three kinds, changing them every year, and one year I grew six kinds. I add also, that I always sold what I did sell in the market for the best price, but I generally sold the greater part for seed, from the supposition that the kinds I grew, from their large yields, were very prolific kinds, whereas the secret lay in the mode of cultivation only, and not in the kinds of Wheat, since I believe I changed and changed until I had grown all kinds nearly known in my neighbourhood. But last year I grew about half an acre of Egyptian Wheat from a little seed I obtained accidentally, and an account of which I published in the *Agricultural Gazette*, and I have grown nearly 3 acres again this year with equal success. Several gentlemen also have grown it this year from seed I sent them, and their accounts of its production and quality confirm all I have thought or said about it. Indeed it is a most valuable kind of Wheat, and I have no doubt whatever but its cultivation will in a few years become quite general in this country. But this year I grew in two fields three other kinds of Wheat as well as the Egyptian, and I challenge Mr. Hobbs to produce better kinds of his own stock and own growth to exhibit against them. I had a small field of Barley also seeded on my system with 2 pecks of seed an acre only, and the quality of that I will exhibit likewise against any Barley of Mr. Hobbs' own stock and own growing. In conclusion I subjoin an account of this same Wheat so harshly condemned by my friend Mr. Hobbs, copied from a note by the learned Calmet, on the 5th verse of the 41st chapter of Genesis—"Seven ears of corn came up upon one stalk, rank and good." "This is not an unusual and monstrous production, as it has often been supposed to be; a species of Wheat which grows in Egypt actually bears when perfect this number of ears on one stalk. The stem is solid, or at least full of pith, in order to yield sufficient nourishment and support to so great a weight as the ears bear, whereas the stem of our own Wheat is a mere hollow straw."—*Calmet on the 41st chapter of Genesis.* I add that this is an exact description of the Wheat I am growing; I have found in my field 16 ears on one stalk, and 4000 grains from single roots of one grain, or 4000-fold; folly alone therefore can condemn it. *George Wilkins.*

The Steam Plough.—Though I am only an old practical farmer, I have long been convinced that the old system of farming will no more suit present times than an old spinning-wheel will do now. Agricultural improvement has proceeded slowly, and is still sadly behind-hand in comparison with manufactures. Now, though it is easy to see what is wrong, it is very difficult to say what would be right. But it seems to me that the whole system of agriculture requires to be remodelled—I had almost said revolutionised, but that is an offensive word. However, instead of taking it for granted that any approved practice is perfect, or nearly correct, we should doubt its correctness, and put it to the test of proof. To begin with ploughing; we have proof that it is not so good for the crops as digging. The dragging of a wedge-like plough through a stiff wet soil is the very likeliest way to make it stiffer and wetter, by pressing the soil and case-hardening the subsoil. I have been led to these remarks by reading an excellent article in the *Agricultural Gazette* of the 21st September by C. W. Hoskyns. It confirms some indefinite ideas which had previously occurred to my mind. I had thought of the possibility of inventing a digging machine to be worked by horses or by some other suitable power; and I give my ideas to the public, hoping that they may be useful to some enterprising machine-maker. The weight of a steam-engine seems to be particularly objectionable. Power without ponderosity seems to be what is required by the farmer. The agricultural engineer should himself be a practical farmer. The principle of the hay-making machine seemed to me to be suitable for a digging machine. It might probably be made with a number of strong narrow blades, of a hollow form, like draining spits, to fly out of the drum, and be driven by stampers into the soil, as soon as ever they touched it. In this sort of way they might enter the ground, take it up and turn it over, leaving it light, by proceeding on the undug ground, and receding from that which it has stirred. This backward progress seems very essential on strong wet land, though not on that which is dry and light, and needs to be compressed. At first such a machine would of course be somewhat imperfect; but if the principle were proved to be practicable, improvements and additions would soon follow, making the machine more and more perfect. Some power far less ponderous and expensive than the present locomotive engine, seems to be requisite. But, being only a practical farmer, I merely throw out hints for the consideration of scientific men, who will not, I am sure, be above considering the opinion of *An Old Farmer.*

Irish Land Investment.—Permit me to trouble you with a few remarks on the subject of Irish land investment, and more particularly with reference to that branch of it which of all others has, I think, been least discussed, viz., the policy of encouraging the introduction into that country of the unemployed or inadequately remunerated capital, skill, and industry of the other parts of the kingdom, whereby, through her growing prosperity, the commensurate welfare of the whole community would, we all know, be greatly promoted. Another motive for thus addressing you is, that I have long been connected with an Irish land company, which, though failing in the ultimate object of its establishment, *i e.*, a profitable return to the shareholders, has not so failed from causes having the slightest identity with the question of the capabilities of the soil, but, on the contrary, has constantly afforded abundant proof that, with proper management, it may unquestionably be cultivated at an ample and in some cases a high profit. My object, then, is first to claim the attention of the capitalist, who can scarcely turn to a profitable and safe investment elsewhere, and although some few enterprising men of that class have lately purchased estates in Ireland, and thus shown their confidence in the improved state of the country, I would beg to ask the large fundholders and men of capital who desire to become landed proprietors, what are the reasons that have deterred them from following the far-sighted examples I have alluded to. Formerly no doubt the purchase of or settlement upon an Irish estate would have been a far bolder speculation than a similar venture at California; life and property being in times past anything but secure. But who will say that they are now less so than in England? He who should make that assertion would surely libel the former country, whilst provoking comparisons unfavourable to the latter. It is certainly notorious that the horrible crime of assassination has been even in later times occasionally committed in Ireland. But look at the causes which have produced these stains on the national character of this brave and generous, but calumniated people—landlords and tenants. And let me ask, will Englishmen go there to revive these bygone causes of discontent? At all events they have now subsided, and are no longer a bar to the improvement of the country, the redundant population having from various causes been greatly thinned, and being likely to remain so from continued emigration. Poor-rates being for the same reason, and the improveing state of the country, and more equitable assessments, greatly reduced; and above all, political and religious animosities being at an end; whilst land can now be purchased of the encumbered estates commissioners with perfect security of title, and other important advantages calculated to facilitate improvements, at prices too which, according to the opinions of competent judges, are, if not extremely low, at least decidedly moderate. Let us therefore hope that many more enterprising men will be found amongst the bidders for the forthcoming estates, with reference to which I may further assert, that whilst it cannot be doubted the recent calamitous visitation has considerably lowered the actual rentals, and consequently the present marketable value of land, no one acquainted with Ireland, or who can form any conception of the prospective development of its vast resources, can doubt that whatever may have been the rates of purchase hitherto (whether high or low), the present improving state of the country, which the most unpractised eye may see at a glance must, ere long, inevitably attract the spare capital of England, and occasion a considerable rise. To parties, therefore, disposed to purchase, I would say, "Buy whilst you can, at the present moderate if not low prices (being well advised in your selections); for of the certainty of profitable results from judicious purchases, sound economical management, and personal superintendence, perhaps no fact was ever established by more abundant experience and testimony, public and private, particularly from the time of the well-known reports to Government by Messrs. Griffiths, Nimmo, Edgeworth, &c., 40 years back, down to the no less celebrated report in 1845 of the landlord and tenant inquiry, known as 'Lord Devon's Commission.' And when you the purchasers have pocketed your title (which you may literally do), go to work with spirit, engrafting on your system of management firm but fair and considerate treatment of the tenants and peasantry, encouraging also settlers from other parts of the kingdom; and be assured you will have no cause to regret your position and prospects as Irish landlords." And now let me give a word of advice to the farmers of England and Scotland, who, whilst they complain of being ruined, find so few to sympathise with them—and to farmers' sons, more particularly, "Take your Saxon bone and sinew, with what capital you can scrape together, to the but half explored mine of wealth I have pointed out to you—the right arm of Britain—where undoubtedly you may do well. Your patient, toiling industry would be amply rewarded by a generous soil, farms which are held at remarkably moderate rents, and with a light taxation, as compared with that of England; the example, too, of your more mature system of farming would be highly beneficial to the country, and materially help to raise it to its proper national level." In short, it is certain that whilst Ireland would be benefited as I have stated, and by the circulation of the capital of such settlers there never was a finer opening—such a golden opportunity—than is afforded by the present transition state of that country; not merely for men of capital and enterprise, in search of large tracts or entire estates, but equally for the young farmers and graziers of England, to whom it offers opportunities and prospects of success which cannot now be looked for in this country; and, all points considered, far superior to those afforded by emigration. They who desire to acquire freeholds, but have not the means of doing so at once, might nevertheless take farms upon lease or under agreement to pay for them by periodical instalments; and I know several liberal-minded proprietors—English as well as Irish—who would gladly treat with respectable parties either way; indeed I could point out many desirable tracts, with which I am acquainted from personal inspection, where excellent farms may be had upon fair terms, and upon which industrious young men might save money, whilst the good that would accrue to Ireland in thus originating an independent yeomanry, is beyond calculation. All that the proposed settlers would have to do before striking a bargain would be to personally select the land, under good previous advice as to the locality and nature of the soil, having of course also regard to the vicinity of markets, roads (the excellence of which over even bogs and mountains will rather surprise them), and manures, the latter of which are placed by Nature so abundantly and accessible, as if to shame man for his apathy and ingratitude. But I fear you will consider I have trespassed too much upon your time, and therefore conclude by recommending the farmers and graziers to turn the matter over in their minds, and if they want to see the sort of stock the Irish pastures can produce, and which England cannot excel, to take a trip to the celebrated fair of Ballinasloe, the greatest cattle mart in the kingdom; and if, after thus seeing this interesting country and its staple productions, they do not imbibe some warmth of feeling for its welfare, they are made of far colder

materials than I am. PS. I have said nothing directly of the other great resources of the country in mines, fisheries, &c., because I conceive that they cannot be materially developed until the land has got into more extensive and efficient occupation and culture. *F. F.*

Food for Poultry.—On referring to the *Gardeners' Chronicle*, No. 22, June 1st, 1850, p. 348, Poultry Management, in column the 3d, line 14th, I find there is a mistake, viz., 20 oz. per day each of tallow cake or chandler's greaves. It is very improbable that one fowl will eat 20 oz. per day, 1 oz. per day each is quite enough, it is only given to supply the want of insects. I suppose the words ought to have been 20 oz. per day for the 21 fowls [no doubt]. *J. H.*

The Study of Chemistry.—I am induced to offer the following remarks from the perusal of a paragraph in your Paper of last week on this subject. I quite agree with Mr. Stollard that a considerable time will elapse, with the present system of education, ere the farmer will be enabled to protect himself from the gross imposition to which he is exposed; and when we consider the small amount of scientific information that would really be of great value to the farmer, I think it highly desirable that some plan should be adopted to supply so great a desideratum. I would recommend those who are conveniently situated to obtain the services of a neighbouring chemist and druggist, who would find it much to his advantage to devote a portion of time for the furtherance of such an object; and he would be enabled to supply the necessary apparatus at a moderate price, as amateurs are frequently charged exorbitantly, not being acquainted with the real value of apparatus and chemicals. I would recommend that a large portion of the latter should be made by the students; independent of the reliance to be placed upon one's own article, it affords practice in manipulation, and the study of the various compounds, and the decompositions which take place in making them, tend well to explain the principles of the science. It would be very advantageous to have a course of lectures during the winter; farmers would find an evening very profitably spent, even had they to walk a few miles for that object. As to the lecturer and director of the class, I think most towns can supply a person competent to discharge those duties. Many such persons are now to be found amongst the druggists, as ample means are now afforded for the education of that hitherto neglected class, which I cannot but think will ere long be of much service to the farmer; as those who have qualified themselves are not only initiated into the science of chemistry and its various applications, but have an acquaintance with vegetable physiology, a knowledge of which, however slight, I conceive to be of great value to the farmer. We may look with admiration to the lofty Poplar or monarch of the forest; but how few think from whence they came, or how they are nourished and supported.

> "While through the neighbouring field the sower stalks,
> With measured step; and liberal throws the grain
> Into the faithful bosom of the ground:
> The harrow follows harsh, and shuts the scene.
> Be gracious, heaven, for now laborious man
> Has done his part. Ye fostering breezes, blow;
> Ye softening dews, ye tender showers, descend;
> And temper all, thou world reviving sun,
> Into the perfect year."

I think few can contemplate upon the period so aptly described by the poet, without experiencing an anxious desire to become familiar with the processes of Nature daily going on around us, and which we so anxiously watch, but not drawing from them those lessons they are calculated to teach, until we arrive at the period alluded to by the poet, when he says,

> "Far as the circling eye can shoot around,
> Unbounded tossing in a flood of corn."

But to return to the subject of lectures: if they cannot be obtained, I would recommend meetings to be held at which papers should be read and discussed on subjects brought forward after due notice for discussion; the meetings, if duly organised and well arranged, would be productive of much benefit, as not only would the attendants gain much information by the mutual exchange of ideas and the result of each others' experience, but a taste would be acquired for reading and study, and by their union the means of acquiring information would be greatly facilitated. There would, moreover, be an object in instituting investigations and experiments, by which means an accumulation of practically useful facts would be obtained which otherwise would remain unobserved. Although it is universally acknowledged at the present day that the resources of the soil cannot be fully developed without a combination of scientific knowledge and practical skill, yet how few, comparatively speaking, come forward and devote their energies to the furtherance of an object so desirable as the combination of the above-named requirements. Great credit will be due to those who at the present crisis will come forward and exert themselves in establishing societies and meetings for facilitating the acquisitions of scientific information, and I venture to say they will receive ample remuneration, if only in the satisfaction they will experience in being conscious of having contributed their mite towards advancing the well-being of the community. *Amator Naturæ.*

Commercial Value of Human Excretæ and Peat Charcoal Manure.—Public attention has within these few years been strongly directed to the necessity of preserving and making use of those fæcal matters which, though highly valuable as manure, have hitherto been allowed, from various causes, to run to waste. Though no one has denied the value of human excretæ as manure, yet, as far as I am aware, no attempt has yet been made to determine by analysis their exact market value, and thus to compare them with other manures. The subject was thought of sufficient importance to warrant our undertaking in the laboratory an investigation of the subject. By weighing the excretions of one person for some time it was found that the average weight of solid fæces was 7 to 8 oz. avoirdupois, and the urine 3½ lbs. per diem. The weight of the latter will of course vary with the quantity of water drunk, the state of the air, &c.; but the solid materials given out in it daily will be nearly the same. The annual amounts will, therefore, be nearly 1½ cwt. solid excrement, and 11 cwt. of urine. The following tables show the composition of these substances, as determined by Messrs. Bailey and E. Cottingham.

Composition of the Solid and Liquid Excrements of Man in the natural state.

	Solid Excrement.		Urine.	
	Per cent	Per ton. lbs.	Per cent	Per ton. lbs.
Moisture	73.25	1641	97.09	2175
Nitrogen	1.94	43	.79	18
Organic matter	22.01	493	1.30	29
Inorganic matter	2.80	63	.82	18
	100.00	2240	100.00	2240

Composition of Dried Human Excrements.

	Solid Excrement.		Urine.	
	Per cent	Per ton. lbs.	Per cent	Per ton. lbs.
Nitrogen	7.25	163	27.14	607
O ganic matter	82.29	1843	44.69	1002
Inorganic matter	10.46	234	27.14	631
	100.00	2240	100.00	2240

Composition of the Excrements of one Man for one year, at the rate of 1½ cwt. of solid Fæces, and 11 cwt of Urine per annum.

	Natural.		Dry.	
	Solid Excrements. lbs.	Urine. lbs.	Solid Excrements. lbs.	Urine. lbs.
Moisture	123.0	1196.3	.....	.....
Nitrogen	3.3	9 9	3.3	9 9
Organic matter ...	37.0	15.9	4.7	15.9
Inorganic matter...	4.7	9.9	37.0	9.9
	168.0	1232.0	45.0	35.7

From the previous table it will be seen that, exclusive of water, we have 45 lbs. of dry matter in the solid fæces, and 35.7 lbs. of dry matter in the urine given out annually. The following table shows the composition of the mixed materials dry.

Composition of the mixed Excretæ, dry.

	In Annual Amount of 80.8 lbs.		Per cent.	
	lbs.	lbs.	lbs.	lbs.
Nitrogen equal to ammonia	16.	13.2	19.8	16.33
Organic matter	.....	53 0	.....	65.61
Inorganic matter	.....	14.6	.....	18.06
containing Phosph. Acid	2.67	.....	3.3	.....
	.....	80 8	.....	100.00

From a comparison with other manures in the market, it would appear that the value of 80.8 lbs. of dry solid matter is about 10*s*. In order to compare it properly with guano and other manures, we must see its compositiou when it contains 12 per cent. of moisture, the same as ordinary guano.

Composition of Mixed Human Excrements with 12 per cent. of Moisture.

Nitrogen (equal to 17.42 per cent of ammonia) ...	14.37
Organic matter	57.74
Inorganic matter (containing 2.9 per cent. of phosphoric acid)	15.89
Moisture	12.00
	100.00

In the subjoined Table the dried excretæ are compared with Rape-cake and Peruvian guano. The ammonia in the guano is calculated at 14 per cent., which is about the average.

Comparison of Dried Human Excretæ with Rape-cake and Guano.

	Rape-cake.		Guano.		Mixed Human Excretæ.	
	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.
Moisture		195.8		268.8		269.0
Nitrogen		115.4		258.6		322.0
equal to Ammonia	140.0		313.6		309	
Organic matter ...		1654.2		938 6		1293.0
Inorganic matter ...		274.6		774.0		356.0
containing Phosphoric Acid ...	43.7		224.0		64.9	
		2240.0		2240 0		2240.0

From the previous Table it will be seen that the dried excretæ are preferable to the guano and Rape-cake as far as concerns the ammonia, and superior to the Rape-cake and inferior to the guano as respects the phosphoric acid. The latter could easily be supplied by bones or coprolites. Many methods have been proposed for getting rid of the excess of moisture from fæcal matter. Among others, Mr. Rogers proposes to use peat charcoal, which not only absorbs water, but also possesses powerful deodorising properties. Mr. Rogers, by means of a proper machine, mixes two parts of peat charcoal with one of excretæ, and the resulting material is at once ready for use or carriage. The following is an analysis (by my assistant, Mr. Bailey, F.C.S) of one of the mixtures made by Mr. Rogers, in his experiments at the Mechanics' Institute, Southampton-buildings, in October last:

Peat Charcoal Manure.

	Per Cent.		Per Ton.	
	lbs.	lbs.	lbs.	lbs.
Moisture		30.66		687
Nitrogen equal to		4.89		109
Ammonia	5.92			
Organic matter and Charcoal ...		55.23		1237
Inorganic matter		.....		207
containing Phosphoric Acid ...	0.63		14	

In order to compare the peat charcoal manure with guano, we will show its composition with 12 per cent. of moisture.

	Per Cent.		Per Ton.	
	lbs.	lbs.	lbs.	lbs.
Moisture		12.00		269
Nitrogen equal to		6.20		139
Ammonia	7.5		167	
Organic matter and Charcoal ...		70.09		1570
Inorganic matter		11.71		262
containing Phosphoric Acid ...	0.8		17	
		100.00		2240

The peat charcoal manure, with only 12 per cent. of moisture, and assisted with some phosphates, would therefore be more valuable than Rape-cake, and nearly half the value of guano. *J. C. Nesbit, Agricultural and Scientific School, Kennington.*

The Agricultural Labourers.—Perhaps in no district of equal extent do the agricultural labourers work more freely and skilfully, and live more respectably and comfortably, than in the East Riding of Yorkshire; and this too without being paid higher in proportion to the quantity and quality of the work than in other parts of Great Britain. The cause may probably be found in the superior morality of the labourers, and this from their being less tempted to drunkenness than in those places where it is customary to give a daily, or frequent allowance of liquor as a part of payment, or a stimulus to labour, and thus to create or perpetuate an appetite for it, which is still more increased by the allurements of those public pests, beer-shops—those dens of dissipation, those decoys which, like the delusive vapour, lead to destruction; or where cider or other intoxicating liquors are cheap and common, the general consequence of which is extravagance, vice, and destitution. But as various causes frequently co-operate in producing the same effect, it may be added that this superior character has been greatly promoted by the boys and young men living in the houses of moral and respectable farmers; and by the labourers having their victuals in lieu of about half their wages, with steady industrious managing, and not unfrequently religious, working farmers, with whom they both work and eat, and from whom they receive many a time a good moral lesson, or religious admonition. The circumstance, too, of labourers commonly having a garden and decent and often pretty cleanly cottage, with about a rood of ground for spade culture, and sometimes a cow and land to keep her and one or two pigs, has very greatly tended to promote the comfort and respectability of the labourers of the East Riding. It may be considered an act of policy, as well as benevolence to promote these things, and with them moral and religious education, and habits of obedience, neatness, and cleanliness; for by such means the poor-rates are reduced, and the industry, skill, morality, and contentment of the present and rising generation greatly promoted. *An Old Farmer.*

The Wheat Crop.—On going over a piece of drilled Wheat this morning, I observed the rows full of gaps, many of them a yard long; on examining the cause, I found grain after grain eaten as to the germ by the enclosed insect, which had rolled itself up in the hole, you may perceive. What is the name of the animal? it seems a species of hundred-legged monster. The ground must be full, as half the seed is destroyed by them. Here my dibble comes into play; without it I should be obliged to have the crop drilled again. I may mention that the crop is not drilled with the common drill, but by a drill which drops the seed at defined intervals in the rows. This crop was got in the 5th of September; supposing it was left to the end of October, the usual time about here, it would have been impossible to have drilled it again in time. My opinion has been for a long time that Wheat should be got in immediately after harvest, and every time it is high enough it should be eaten down by sheep before winter, particularly on light land, and that no artificial manure should be put on till spring. I think that when the manure is put in with the seed it excites the growth of the plant unnaturally, and renders it liable to after complaints; I never give exciting food to any young organised being, but wait till it is in a state for cramming. With respect to Turnips, Swedes, and Mangold Wurzel, I conceive that, after the heat has gone, there are no fattening properties formed in the roots; they increase in bulk, but it is watery food that is formed after October. I have tested my idea with respect to adding a month or six weeks to our summers, by keeping the earth between the rows constantly moist and in a pulverised state by frequent stirrings. The roots grown under these circumstances are not only larger than they would otherwise have been, but they contain more nourishing qualities, having obtained their bulk during the heat of summer. I have also another idea, that the seed of all these roots may be sown in April, and the plan I adopt to prevent the plants running to maturity is to stir them frequently; this I find cuts off the roots, which seem to cause the plants to run to seed, as it is called. I have

found this also among all plants, Wheat, Barley, &c., which when late hoed or stirred have a tendency to throw out fresh shoots instead of forming seed. What do you think of manuring a piece of land highly, and sowing Oats for hay instead of Clover or seeds, so as to get double the crop that Clover will produce, and a food which cattle prefer to Clover? Do you know that if Swedes or Turnips be given to cows immediately they are milked, the butter does not taste of them, particularly if the crown be cut off? *S. Newington.* [The growth of roots in September and October is, in our opinion, the most important part of them. Scottish crops of roots are so good because of the cooler climate in which they grow. About the insect, see "Notices to Correspondents."]

Sandridge Farm.—Having noticed some few months since an article in the *Agricultural Gazette*, written by a Scotch friend of Mr. Hutchinson, bailiff to Mr. Kinder, of Sandridge Bury, Herts, I was led to take some little notice, on my way to the show at St. Alban's, of the state of the farm he manages, or at least of such parts of it as may be seen from the road. It is evident from the eulogies, without exception, bestowed on his system of management, in the letter referred to, either that Mr. Hutchinson could not have taken his friend into the field of seeds adjoining the Sandridge lane, in which there is standing at present as fine a crop of Docks as I think can be found in the county, all of which have shed their seed, to say nothing of a fair allowance of Thistles; or else, that the Scotch gentleman, not being accustomed to see Docks, &c., grow, did not recognise them for noxious and pernicious weeds, which no good husbandman would allow to flower and shed their seed, while he possessed the means of preventing it. I should not have been led to notice the state of the field, had not this friend of Mr. Hutchinson's held him up as a pattern to the farmers of Hertfordshire, in general, without, as I think, due consideration of the state of Mr. Kinder's farm throughout, and without sufficient knowledge of the management and skill of very many farmers in the county. *A Hertfordshire Farmer.*

Calendar of Operations.

SEPTEMBER.

Dorset Farm, *Sept.* 30.—We have got to the close of the agricultural year, and in looking back upon it, we have no reason to complain. The weather has upon the whole been favourable, and the Wheat crop, with some slight exceptions, is a fair average; there has been a little blight in some parts, although not to any extent near this, and it has been all harvested in very good order. Barley is about an average crop, but the quality is hardly so good as formerly. The crop of hay in water meadows has been good, but that on dry ground is light, as we had some very dry weather in June, which stopped its growing; but, upon the whole, we have a very good supply of it for the winter. Turnips are generally above an average crop. I do not think that I have ever seen a better crop in this locality, and I have no doubt it is owing to the extra quantity of superphosphate of lime used. This manure is now beginning to be estimated at its proper value, and I trust that we will all guard against being imposed upon by a spurious article; if we open our eyes, perhaps we may find that it is not in all cases what it ought to be. I, in my simplicity, have always thought that it was composed of bones and sulphuric acid and nothing else—is it so? because, if it is not, it ought to be, as any other materials such as chalk, or ashes, or even guano, we could mix with it ourselves in the proportion that we think best. It is true that we do not possess chemical knowledge sufficient to instruct us in the character of manures best adapted to our circumstances, but surely we must be allowed to be as good judges of what the soil that we are working requires as those who never saw it; and I cannot help thinking that it would be well if farmers would get into the way of making these things themselves. There is no magic in the operation. We may not make it nominally so cheap as we can buy it, but there is no reason why we may not—and make it as good. The Potato crop has turned out more favourably than we expected, the proportion of diseased ones in ours is small and the crop is fair, and the quality is better than it has been for several years. Our work is now sowing Rye and Vetches, part of which is in, and we have begun ploughing for Wheat. We have had the weather extremely dry since harvest, and were unable to plough up the lea until within these few days, that we have had a good fall of rain. We have got up the best of our cattle in the house on Turnips and hay, and they will soon be all in at night, as the weather is getting rough and cold. Our sheep are all getting Turnips part of the day. We shall commence Wheat sowing this week, and we shall soon begin to store the Mangold Wurzel. Our dairy cows are still having nothing but Grass; but we shall have to give them a little hay, by night, soon, and keep them in the house. *G. S.*

Lammermuir Sheep Farm, *Sept.* 30.—The whole of our lambs have now been disposed of, and the last lot will be removed in a few days. The Cheviot cast ewes are also sold and away, and the black-faces will be drawn, and part of them disposed of as soon as possible. On the whole, we have made about the same prices as last year, and when contrasted with grain farmers, we must say that stock masters have comparatively little ground for complaint. Our stock of rams of different breeds is now laid in, and most of the cast sheep disposed of. In the course of a fortnight the rams will be put into a small well-fenced enclosure, both to keep them out of mischief, and to have them in fresh condition before being turned among the ewes. We intend beginning the bathing of the sheep about the 29th of October, so that this operation may be completed and the jackets put on the hogs before the 22d November, when the rams are put to the ewes. The cows have been brought into the byres at night since the cold weather commenced, returning to their pasture during the day. We may notice that, though the past autumn has been highly favourable for our pastures, yet from the prevalence of heavy dews, foot-rot has been unusually prevalent on soft grounds. Frequent dews and mists seem, indeed, to induce this troublesome disease as readily as continued rains. We find cleanliness and strewing the sorsing pens with caustic lime to be the best preventative, and great care on the part of the shepherd in paring the hoofs, and applying caustic to the affected parts, the best cure. A change of weather having taken place on the 20th, harvest operations have since been greatly interrupted, and we have still about 15 acres of late Oats to cart. Attending to harvest work, and carting out hay (which has been ricked for some time) to sheltered places on the hills, for the use of the sheep during snow, have occupied our farm labourers during the past month. During October they will be similarly employed, and when these operations and some other odd jobs—which have been lying back—have been completed, the ploughing of stubbles will be commenced. We purpose laying all the summer made manure on the stubble now, and ploughing it in immediately. Our Turnips, on ground similarly treated last autumn, with the addition of 2½ cwt. of Peruvian guano when sown, are much superior to those which received the same quantity of each kind of manure, spread in the drills at the usual time. Besides, the former method saves much time during Turnip sowing, when a few days gained is of the utmost consequence. Of course it can only be practised where the ground is clean. Our Turnips have been greatly refreshed by the recent rains, and are an excellent crop. Harvest is generally finished in our neighbourhood. *A Lammermuir Farmer.* [Your notices generally come one day too late. Will you kindly post them a day earlier.]

Notices to Correspondents.

Address: *An Essex Labourer* would oblige us by his address.

Cyclopedia of Agriculture: *W W R P.* It is the same work. Twenty-four numbers is the limit we shall honestly *endeavour* to keep within.

Journal of Agricultural Society: *Member of Royal Ag. Soc.* You may communicate with A. B., Polytechnic Magazine Office, 4, Beaufort-buildings, Strand.

Permanent Pasture: *H Footman.* Pare and stifle-burn your Wheat stubble, and plough up before winter; cultivate and clean it well, and manure heavily for Turnips. Feed them off on the land if it be dry enough, and plough up for Barley crop, which put in with a thin seeding early in March, and when it is up sow the following mixture of seeds in damp weather, and bush-harrow it into the land:—Alopecurus pratensis, 1 lb.; Avena flavescens, 1 lb.; Dactylis glomerata, 2 lbs.; Festuca duriuscula, 2 lbs.; F. heterophylla, 1 lb.; F. rubra, 2 lbs.; Lolium italicum, 3 lbs.; L. perenne, 5 lbs.; Poa nemoralis, 2 lbs.; P. pratensis, 1 lb.; Medicago lupulina, 1 lb.; Trifolium pratense perenne, 3 lbs.; T. repens, 4 lbs. Total, 28 lbs. You can get the kinds from the seedsmen.

Poultry Disease. Since the last "Poultry Miscellany" was written, information has been given me from a trustworthy quarter, that about half a teaspoonful of cod-liver oil in which a small pinch of cayenne pepper has been mixed, is an efficacious remedy for the sneezing and "pip" crying disease. Nearly a teaspoonful is a dose for a large adult bird; for younger and smaller patients, less in proportion. Remembering that cod-liver oil was a new invention, and fearing that this medicine for fowls might be of the same fashionable and ephemeral nature that Mustard seed, brandy and salt, &c. &c., have been for men and women, I inquired if *any* oil would answer the purpose, and what oil had been thus used before that from cod's liver came into vogue. The answer was, that train or whale oil had been so employed. At the same time a correspondent writes, "I have found a head (a *clove* is meant) of Garlic the most efficacious remedy." Both these remedies are, of course, empiric; still they may be worth trying. *D.*

Sundries: *W H M.* Too late for this week.

Turnips: *A B.* Dale's Hybrid may be depended on in ordinary frosts—and with oilcake you can put bullocks on Turnips from Grass without any falling off. Get them accustomed to the Turnips by bringing a few to them in the field.

Markets.

COVENT GARDEN, Oct. 5.

Vegetables are abundantly supplied. Hothouse Grapes and Pine-apples are plentiful, especially the former. Peaches are less abundant, and Nectarines are over. Oranges and Lemons though scarcer are sufficient for the demand. Plums and Pears are still received from the Continent in great abundance. Filberts are dearer. Carrots and Turnips may be had at 3d. to 6d. a bunch. Potatoes are good and cheap. Lettuces and other salading are sufficient for the demand. Mushrooms are scarce, as are also French Beans. Cut Flowers consist of Heaths, Pelargoniums, Asters, Fuchsias, Mignonette, Dahlias, Verbenas, Bignonia venusta, Stephanotis floribunda, Heliotropes, Calceolaria viscosissima, Japan Lilies, and Roses.

FRUITS.

Pine-apples, per lb., 3s to 5s	Lemons, per doz., 1s to 2s
Grapes, hothouse, p. lb., 1s to 3s	Oranges, per doz., 2s to 3s
— Portugal, p. lb., 8d to 1s	— per 100, 8s to 24s
Peaches, per doz., 3s to 10s	Almonds, per peck, 6s
Figs, per punnet, 2s to 4s	— sweet, per lb., 2s to 3s
Melons, each, 1s to 3s	Walnuts, p. 100, 1s to 2s
Plums, p. punnet, 1s to 1s 6d	— p. bush., 12s to 24s
Pears, per doz., 1s to 3s	Nuts, Barcelona, p. bsh, 20s to 22s
— per half sieve, 6s to 15s	— Brazil, p. bsh., 12s to 14s
Apples, dessert, p. bush, 4s to 8s	Filberts, per 100 lbs., 40s to 50s
— kitchen, do., 1s 6d to 3s 6d	

VEGETABLES.

French Beans, p. sieve, 3s to 4s	Garlic, per lb., 4d to 8d
Cabbages, per doz., 6d to 1s	Artichokes, p. doz., 2s to 4s
Greens, p. doz. bunches, 3s to 4s	Vegetable Marrows, per doz., 6d to 1s 6d
Cauliflowers, p. doz., 2s to 4s	Lettuce, Cab., p. sc., 1s to 1s 6d
Sorrel, p. hf. sieve, 6d to 9d	— Cos, p. score, 6d to 1s 6d
Potatoes, per ton, 50s to 80s	Endive, per score, 1s to 1s 6d
— per cwt., 2s 6d to 4s	Small Salads, p. punn, 2d to 3d
— per bush., 1s 6d to 2s 6d	Horse Radish, p. bdl., 1s to 4s
Turnips, p. 12 bun., 2s 6d to 3s 6d	Mushrooms, p. pot., 1s 6d to 2s 6d
Red Beet, per doz., 1s to 2s	— per bushel, 5s to 7s
Cucumbers, p. doz., 1s to 6s	Fennel, per bunch, 2d to 3d
Leeks, per bunch, 1d to 2d	Savory, per bunch, 2d to 3d
Celery, p. bundle, 1s to 1s 6d	Thyme, per bunch, 2d to 3d
Carrots, per doz., 3s to 5s	Parsley, p. doz. bun., 1s to 2s
Tomatoes, p. punnet, 1s to 1s 6d	— Roots, p. bdle., 9d to 1s
Spinach, p. half sieve, 1s 6d to 3s	Marjoram, per bunch, 2d to 4d
Onions, p. bunch, 2d to 6d	Mint, green, per bunch, 2d
— Spanish, p. doz., 1s 6d to 4s	Watercress, p. 12 bunch., 6d to 9d
Shallots, per lb., 6d to 8d	

HOPS.—Friday, Oct. 4.

Messrs. Pattenden and Smith report that the demand for new Hops continues very brisk, at improving prices. Duty, 215,000*l.*

COAL MARKET.—Friday, Oct. 4.

Holywell, 15s. 6d.; Eden Main, 15s. 6d.; Wallsend Haswell, 17s.; Wallsend Stewart's, 16s. 9d.; Wallsend Tees, 16s. 6d.—Ships at market, 202.

SMITHFIELD, Monday, Sept. 30.

The number of Beasts is very much smaller than on Monday last, consequently trade has improved. The choice qualities have in some instances exceeded our top quotation. The supply of Sheep is also smaller; trade is, however, slow, and although the best kinds are rather dearer, it is exceedingly difficult to obtain an average advance. Good Calves are rather scarce, and about 4d. per 8 lbs. dearer. From Holland and Germany we have 868 Beasts, 4970 Sheep, 94 Calves, and 81 Pigs; from Scotland, 10 Beasts; and about 2000 from the northern and midland counties.

Per st. of 8 lbs.—	s. d.	s. d.
Best Scots, Herefords, &c.	3 8 to 3 10	
Best Short-horns	3 4 — 3 8	
2d quality Beasts	2 8 — 3 0	
Best Downs and Half-breds	3 10 — 4 2	
Ditto Shorn	... ... — ...	
Best Long-wools	3 6 to 3 8	
Ditto Shorn	... ... — ...	
Ewes & 2d quality	3 0 — 3 4	
Ditto Shorn	... ... — ...	
Lambs	... ... — ...	
Calves	... ... 2 4 — 3 8	
Pigs	... ... 3 4 — 4 4	

Beasts, 3703; Sheep and Lambs, 25,310; Calves, 188; Pigs, 500.

Friday, Oct. 4.

The number of Beasts is large; however, for the best kinds there is inquiry at about Monday's quotations, but second-rate are lower. The supply of Sheep is a fair average; trade is dull, but the choicest kinds are not lower. The supply of Calves has considerably fallen off, but the demand is too limited to advance prices. From Holland and Germany there are 327 Beasts, 1780 Sheep, 110 Calves, and 21 Pigs; 500 Beasts from the northern and midland counties; and 93 Milch Cows from the home counties.

Best Scots, Herefords, &c.	3 6 to 3 10	Best Long-wools	3 4 to 3 8
Best Short-horns	3 4 — 3 8	Ditto Shorn	... ... — ...
2d quality Beasts	2 6 — 2 10	Ewes & 2d quality	2 8 — 3 2
Best Downs and Half-breds	... 3 10 — 4 2	Ditto Shorn	... ... — ...
Ditto Shorn	... ... — ...	Lambs	... ... — ...
		Calves	... ... 2 4 — 3 8
		Pigs	... ... 3 0 — 4 4

Beasts, 1121; Sheep and Lambs, 8620; Calves, 323; Pigs, 495.

HAY.—Per Load of 36 Trusses.

Smithfield, Oct. 3.

Prime Meadow Hay	70s to 75s	Clover	70s to 80s
Inferior ditto... ...	60 66	Second cut	60 70
Rowen	55 60	Straw	21 25
New Hay	— —		J. Cooper.

Trade very dull.

Cumberland Market, Oct. 3.

Prime Meadow Hay	72s to 75s	Inferior	60s to 72s
Inferior ditto... ...	50 65	New Clover	— —
New Hay	— —	Straw	24 28
Old Clover	78 84		Joshua Baker.

Whitechapel, Oct. 3.

Fine Old Hay ...	68s to 72s	New Clover	72s to 80s
Inferior ditto ...	— —	Inferior ditto... ...	— —
New Hay	65 68	Straw	22 28
Old Clover	78 84		

MARK LANE.

Monday, Sept. 30.—The supply of Wheat from Essex this morning was moderate, from Kent large; little progress could be made with sales until a decline of 1s. to 2s. per qr. was submitted to, at which reduction a large proportion of the latter remained unsold late in the day; the condition is inferior to what it has hitherto been. Business in foreign is extremely limited, and prices must be considered nominal.—The value of fine malting Barley is fully supported; in foreign no alteration.—Beans remain as last quoted.—Peas are the turn cheaper.—There has been a fair sale for Oats at our quotations.

Per Imperial Quarter.	s. s.		s. s.
Wheat, Essex, Kent, & Suffolk ...White	45—48	Red	40—46
— — fine selected runs ...ditto	46—49	Red	—
— — Talavera	46—52		
— Norfolk, Lincoln, & York...White	—	Red	36—42
— Foreign	35—52		
Barley, grind. & distil., 22s to 28s...Chev.	26—29	Malting	24—26
— Foreign....Grinding and distilling	17—26	Malting	20—24
Oats, Essex and Suffolk	15—18		
— Scotch and Lincolnshire ...Potato	20—23	Feed ...	19—21
— Irish .....Potato	16—20	Feed ...	15—17
— Foreign.....Poland and Brew	18—22	Feed ...	16—18
Rye	26—28	Foreign	—
Rye-meal, foreign.....per ton	—		
Beans, Mazagan .....25s to 27s.....Tick	26—28	Harrow	26—28
— Pigeon .....28s — 32s...Winds	—	Longpod	—
— Foreign ..... Small	24—34	Egyptian	22—23
Peas, white, Essex and Kent.....Boilers	32—35	Suffolk...	34—36
— Maple.....32s to 34s .....Grey	29—31	Foreign	26—36
Maize ..... White	28—30	Yellow...	25—30
Flour, best marks, delivered... per sack	36—40		
— Suffolk ..... ditto	32—36	Norfolk	32—36
— Foreign .....per barrel	22—25	Per sack	32—35

Arrivals in the Port of London last Week.

Flour, 12279 sks	Wheat.	Barley.	Malt.	Oats.	Beans.	Peas
— 7850 brls	Qrs.	Qrs.	Qrs.	Qrs.	Qrs.	Qrs.
English	4073	1034	3393	817	671	870
Irish.....	—	—	9	4012	—	—
Foreign	15923	2747	—	5874	295	137

Friday, Oct. 4.—The supplies of grain, both English and foreign, since Monday, have been moderate, excepting foreign Wheat, of which the arrival is considerable. The little English Wheat fresh up for this morning's market could only be disposed of at a decline of 1s. per qr.—Beans and Peas are unaltered in value.—Barley and Oats met a fair sale at late rates.—Flour is difficult of disposal, except at a slight reduction in price.

Arrivals this week.

	Wheat. Qrs.	Barley. Qrs.	Oats. Qrs.	Flour.
English ...	3990	1620	2580	2030 sacks
Irish	—	—	5340	
Foreign ...	24910	5890	9330	— brls.

Imperial Averages.	Wheat.	Barley.	Oats.	Rye.	Beans.	Peas.
Aug. 24.....	43s 6d	23s 0d	17s 9d	20s 10d	28s 1d	26s 3d
— 31.....	43 6	22 4	17 9	23 4	28 11	29 11
Sept. 7.....	43 2	23 6	17 11	25 4	29 9	27 10
— 14.....	42 10	23 9	17 4	26 10	29 7	28 9
— 21.....	42 7	24 10	17 1	26 4	29 5	29 5
— 28.....	42 8	24 8	16 10	26 4	29 5	30 0
Aggreg. Aver.	43 0	23 7	17 5	24 10	29 0	28 2
Duties on Foreign Grain	1 0	1 0	1 0	1 0	1 0	1 0

Fluctuations in the last six weeks' Corn Averages.

Prices.	Aug. 24.	Aug. 31.	Sept. 7.	Sept. 14.	Sept. 21.	Sept. 28.
43s 6d	—		...	...	...	...
43 6	...	...	...	...	...	...
43 2	...	...		...	...	...
42 10	...	...	...		...	...
42 8	...	...	...	...	...	
42 7	...	...	...	...		...

SEEDS.—Sept. 30.

Canary, per qr.....52s to 60s		Coriander, per cwt. ...17s — 21s	
Caraway, per cwt. ...29 — 33		Mustard, white, p. bush. 4 — 6	
Hempseed, per qr. ...34 — 35		— brown do. ..... 7 — 10	
Linseed, foreign, do. 37 — 44		Rape, per last .....24*l.*—26*l.*	
Clover, red, p. cwt....— —		Cakes, Lindseed, p. 1000...8*l.* 15s	
— — foreign, do. — —		— — foreign, p. ton, 6*l.* 15s	
— white, do. .....— —		— Rape, foreign, do., 3*l.* 17s	
— — foreign, do. — —		Tares, per bush... 3s 0d.—5s 6d	

Liverpool, Friday, Sept. 27.—Beyond a few parcels of Wheat and Oatmeal from Ireland, we have received scarcely anything worth naming thence or coastwise since Monday last; the supplies from abroad, within the same period, are likewise rather light compared with the superabundant importations of Wheat and Flour during the two preceding weeks. At our market this morning we had a liberal display of samples. The tone of the Wheat trade was languid, and prices of all descriptions were nominally a little depressed in value. Barley, Malt, Beans, and Peas, continued to be held at late rates, although in these active business was apparent to-day. Old Oats being scarce and in request were quite as dear as on Tuesday, whilst new were dull and the turn lower.——Tuesday, Oct. 1.—This day's market was thinly attended by the local trade, and we had fewer buyers than usual from the country, so that with a superabundance of Wheat offering on sale, business proceeded very slowly, and to effect transactions of even a limited nature both old foreign and new Irish must be quoted fully 2d. per bushel lower on the week. Malting and grinding Barley, as well as Beans and Peas, without variation in value, but the trade languid for each. New Oats declined 1d. per 45 lbs., and Oatmeal 6d. per load; but for old samples of both we continue our previous quotations. Yesterday a considerable quantity of Indian Corn was taken for shipment to Ireland; to-day the transactions on the spot are not so numerous, but the article is very firmly held, and floating cargoes are readily saleable at very full rates.

HARTLEY'S PATENT ROUGH PLATE GLASS.

JAMES PHILLIPS AND CO., 116, Bishopsgate-street Without, beg to hand their list of Prices of the above description of GLASS. Cut to order in panes of

8 by 6	and under	10 by 8	at 4½*d.* per foot.
10 by 8	,,	14 by 10	at 5*d.* ,,
14 by 10	,,	1½ foot, or sizes not exceeding 20 inches long	at 5½*d.* ,,
1½ foot	,,	3 feet, or sizes not exceeding 30 inches long...	at 6*d.* ,,

PACKED IN BOXES of 50 feet each.

6 by 4 and 6½ by 4½...10*s.* 6*d.* | 8 by 6 and 8½ by 6½...18*s.* 6*d.*
7 by 5 and 7½ by 5½...12*s.* 0*d.* | 9 by 7 and 10 by 8 ...15*s.* 0*d.*

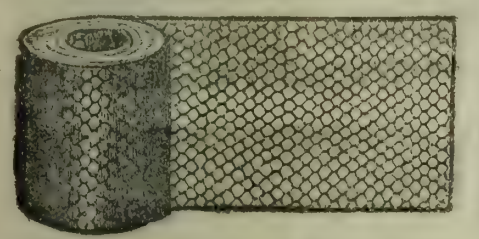
We do not pledge ourselves to execute large orders for small squares at the above prices, but only as far as they turn up in cutting. Should any quantity of small squares be required, a special contract is necessary.

MILK PANS 2*s.* to 6*s.* each, Metal Hand-frames, Tiles, and Slates; Propagating and Bee Glasses from 2*d.* each; Cucumber Tubes, 1*d.* per inch; Peach Glasses, 10*d.* each; Wasp Traps, 3*s.* 6*d.* per dozen; Pastry Slabs, Hyacinth Glasses and Dishes Shades for Ornaments, Fish Globes, Plate and Window Glass of every description, and Lamp Shades. Lactometers for trying the quality of Milk, 4 tubes, 7*s.* 6*d.*; 6 tubes, 10*s.* Self-registering Thermometers for Greenhouses, Horticultural Glass, &c.

From the *Gardeners' Chronicle*, December 8, 1849:

"As for the article substituted for Rough Plate, and which is actually in the market for the purpose of imposing upon gardeners, it is wholly unfit for any horticultural purpose. The best samples of it which we have yet seen is sold by Mr. JAMES PHILLIPS, 116, BISHOPSGATE STREET, LONDON."

GALVANISED WIRE GAME NETTING.—7*d.* per yard, 2 feet wide.



		Galvanised.	Japanned Iron.
2-inch mesh, light, 24-inch wide	...	7*d.* per yd.	5*d.* per yd.
2-inch ,, strong ,,	...	9 ,,	6½ ,,
2-inch ,, extra strong ,,	...	12 ,,	9 ,,
1⅝-inch ,, light ,,	...	8 ,,	6 ,,
1⅝-inch ,, strong ,,	...	10 ,,	8 ,,
1⅝-inch ,, extra strong ,,	...	14 ,,	11 ,,

All the above can be made any width at proportionate prices. If the upper half is a coarse mesh, it will reduce the price one-fourth. Galvanised sparrow-proof netting for pheasantries, 3*d.* per square foot. Patterns forwarded post-free.

Manufactured by BARNARD and BISHOP, Market-place, Norwich, and delivered free of expense in London, Peterborough, Hull, or Newcastle.

STRONG PREMIUM HARE AND RABBIT PROOF WIRE NETTING.



CHARLES D. YOUNG AND COMPANY (LATE W. AND C. YOUNG),

MANUFACTURERS OF IRON AND WIRE WORK, &c.,
22, PARLIAMENT STREET, WESTMINSTER, LONDON;
48, NORTH BRIDGE, EDINBURGH;
32, ST. ENOCH SQUARE, GLASGOW;
1, CASTLE BUILDINGS, DERBY SQUARE, LIVERPOOL;

beg respectfully to call the attention of Landed Proprietors and others to their strong Wire-Net Fence, for excluding Hares and Rabbits from Gardens, young Plantations, Nurseries, &c.

This Net was exhibited at the Show of the Highland and Agricultural Society of Scotland, held lately at Inverness, where its Efficiency, Great Strength, and Exceeding Cheapness attracted general attention, and had awarded from the Judges the Society's Silver Medals, with high commendations.

The immense damage done by Hares and Rabbits in Gardens and Young Plantations is often so great, that in the course of a year or two it will amount to more than the entire cost of protecting them with this Net. It is so durable, that when Plantations are sufficiently advanced to be independent of its protection, it can be removed to other exposed situations with the greatest facility, by any labourer. As a Fence against Hares and Rabbits, it is of itself quite sufficient, having only to be unrolled and attached, with small wire sent for that purpose, to wooden stakes driven into the ground, about every six or seven feet apart. It is, besides, peculiarly adapted for rendering Hedges, Paling, or other existing Fences, *completely impervious* to such vermin; and by being cut up into small pieces of three or more feet, as required, it forms a most efficient guard, at little expense, for individual Plants and Shrubs.

PRICES.—18 ins. high, 9*d.*; 24 ins., 1*s.*; 30 ins., 1*s.* 3*d.*; and 36 ins., 1*s.* 6*d.* per lineal yard.

Or a web of 100 yards, 18 ins. wide, will cost	..	£3 15 0
Do. of 100 yards, 24 ins. wide	..	5 0 0
Do. of 100 yards, 30 ins. wide	..	6 5 0
Do. of 100 yards, 36 ins. wide	..	7 10 0

If more or less than a web is required, it would be charged at the same rate per yard.

This Netting is also admirably adapted for Pheasantries and Poultry-yards, and is charged at the same rate. As carriage has, in many instances, been an obstacle to parties at a distance requiring this Net, C. D. Y. and Co. have made arrangements by which they will undertake to deliver it at any of the principal ports of Scotland, England, and Ireland, for One Halfpenny per lineal yard.

C. D. YOUNG and Co. cannot give a better idea of the great strength of their Premium Wire Netting than by stating that the weight of one yard of their 24-inch at 1*s.* is equal to 2½ yards of another article in the market, the same width, at 9*d.* per yard. Samples for inspection sent free of expense.

C. D. YOUNG & Co. manufacture every description of IRON and WIRE WORK required for this and foreign countries.

Workmen sent to all parts of Scotland, England, and Ireland.

THE HIPPOPOTAMUS, presented to the Zoological Society by the Viceroy of Egypt, is exhibited daily at their Gardens in the Regent's-park, from 11 to 4 o'clock. Visitors desirous of seeing the animal in the water are recommended to go early. Admission 1*s.*; on Mondays, 6*d.*

DROITWICH UNION.

SCHOOLMASTER AND SCHOOLMISTRESS WANTED.—NOTICE is hereby Given, that the Guardians of Droitwich Union will, on WEDNESDAY, the 16th day of October next, at their Board Meeting, proceed to the Election of a SCHOOLMASTER and SCHOOLMISTRESS, for the Droitwich Union Workhouse School. Candidates must not be less than 25 years of age, and will be expected to be not only competent to instruct the children in the elements of those branches of learning which are taught in the school, but also to be thoroughly versed in the principles of industrial training, as approved and recommended by the Committee of Council on Education, and practically acquainted with the mode of inculcating the same. The parties appointed must be able to pass the examination of her Majesty's Inspector of Schools, and the Election will be subject to the approval of the Poor-law Board.

Salaries proportioned to the competency of the teachers elected, which will be tested by examination, will be given of not less than 35*l.* per annum, together with such rations as the house affords, and washing, for the Schoolmaster; and of not less than 25*l.* per annum, together with such rations as the house affords, and washing, for the Schoolmistress, if respectively duly qualified.

Candidates are requested to send in, free of expense, their applications in their own handwriting, with Testimonials addressed to "The Clerk to the Guardians of the Droitwich Union, Droitwich," and superscribed "Application for the Office of Schoolmaster," or "Schoolmistress" (as the case may be) on or before Tuesday, the 15th day of October next.

No applicant need attend before the Board unless officially written to for that purpose.

By order of the Board. HENRY BEARCROFT.

Board Room, September 25.

MITCHELL'S MINERAL BLACK PAINT.—This antiseptic Paint is intended for Park Fencing, and for all farming purposes; it is particularly adapted, by its prevention of dry rot in timber and repellance of damp, for Barns, Stables, Outhouses, Weather Boarding, Hop-poles; also for Carts, Waggons, &c., particularly the Wheels, and for Iron Hurdles, Iron Railings, and all Wood or Iron Work in exposed situations. For Brick Walls it is highly serviceable as a preventive of damp, and also for Walls intended for Fruit Trees, as, besides preserving the Wall, it increases the heat in all situations exposed to the sun, and prevents the harbouring of insects. It is also an excellent covering for Canvas, or Cart Tilts, Roofing, &c. Sold in casks containing from 1 cwt. to any quantity, at 17*s.* 6*d.* per cwt., quite ready for use, by JAMES PHILLIPS and Co. (he sole agents), 116, Bishopsgate-street Without, London.

LIGHT, CHEAP, AND DURABLE ROOFING.

CROGGON'S PATENT ASPHALTE ROOFING FELT is perfectly impervious to rain, snow, and frost, and has been tested by a long and extensive experience in all climates. Saves half the timber required for slates; can be laid on with great facility by farm-servants, or unpractised persons. Price 1*d.* per square foot.

CROGGON'S PATENT NON-CONDUCTING FELT, for Steam Boilers and Pipes, saves 25 per cent. of fuel.

Samples and Testimonials sent by post, on application to CROGGON and Co., 2, Dowgate-hill, London.

EXHIBITION OF 1851.—NOTICE TO EXHIBITORS is hereby given, that Her Majesty's Commissioners have fixed the 31st of October, as the LAST DAY for RECEIVING APPLICATIONS FOR SPACE from the different LOCAL COMMITTEES of the United Kingdom, the Isle of Man, and the Channel Islands. Intending exhibitors failing to give due and sufficient notice to the nearest Local Committee, cannot be assured that their claims for space will receive any consideration. (Signed) M. D. WYATT, Secretary.

CLARKE STREET, BRISTOL.

TO AGRICULTURISTS, IMPLEMENT MAKERS, WHEELWRIGHTS, EMIGRANTS, TIMBER MERCHANTS, IRON MERCHANTS, CONTRACTORS, ENGINEERS, AND THE PUBLIC GENERALLY.

MESSRS. BARNARD, THOMAS, AND CO., in consequence of the Dissolution of Partnership of Messrs. Stratton, Hughes, & Co. (Successors to Mr. Richard Stratton), Manufacturers of WHEELS, CARTS, WAGGONS, and AGRICULTURAL IMPLEMENTS, will have the honour of submitting for Sale by Public Auction, in lots, without reserve, on THURSDAY, the 17th of October, 1850, and following days of business, until all is sold, the Valuable and Extensive Manufactured and Unmanufactured STOCK, Plant, Machinery, Founders', Wheelwrights', and Smiths' Tools of this first-rate Establishment; also the Counting-House Fixtures and Fittings, Agricultural Books, Two Valuable Milch Cows, One Heifer Calf; Levelling and Surveying Apparatus, by the most eminent makers; Travelling Britzka, Five Cab Phaetons, and a great variety of Miscellaneous Effects.

On WEDNESDAY, the 23d of October, will be offered for Sale by Auction, on the Premises, at 2 for 3 o'clock precisely, the valuable LEASE of the said PREMISES, for the remainder of a term of 21 years, from Michaelmas 1848. The Plant, Machinery, Tools, &c., can be had with the Lease at a valuation, if desired; otherwise they will be Sold by Auction, in lots, as hereinbefore stated, and in the order named in the Catalogues. At the same hour and place will be submitted for competition, the PATENT in Stratton's Wrought Iron, and that in Read's Subsoil Plough; and also the Registrations of Stratton's Tumbler Cart and Stratton's Cylinder Cart.

Catalogues will be ready for delivery on and after Monday, the 7th of October, at 2*s.* 6*d.* each, at the Auctioneers' offices, or on the Premises; and the whole of the Effects may be viewed from that day until the day of sale, between the hours of 10 and 4 o'clock.

Bills at Three Months' date, with approved security, will be accepted for all purchases above 50*l.*

For any additional particulars, as regards the Lease or Patents, application to be made to J. BABKER, Esq., Solicitor, Broad-street, Bristol; or, as to the Stock, to the Auctioneers, Albion Chambers, Bristol.

INTERESTING FACT.—The following singular and authentic case of restoration of the human hair is worthy of observation, more particularly as it relates to an article of high and universal repute during the last half century. "Mr. A. Hermann, of Queen-street, Soho, had been quite bald for some time past, and had tried various preparations for the recovery of his hair, but without any beneficial result. He was then induced to try the effects of 'Rowland's Macassar Oil,' and after daily applying it for about two months, he, much to his gratification, had his hair quite restored, and now possesses a beautiful head of hair. This fact speaks too strongly for itself to require comment."—*Bell's Weekly Messenger.*

ROWLAND'S MACASSAR OIL.—The unprecedented success of this discovery in restoring, preserving, and beautifying the Human Hair, is too well known and appreciated to need comment. For Children it is especially recommended as forming the basis of a Beautiful Head of Hair, and rendering the use of the fine-comb unnecessary. Price 3*s.* 6*d.*—7*s.*—Family Bottles (equal to 4 small), 10*s.* 6*d.*, and double that size, 21*s.* per bottle.

*** Each bottle of the genuine article has the words ROWLAND'S MACASSAR OIL engraved in two lines on the Wrapper; and on the back of the Wrapper nearly 1500 times, containing 29,028 letters.

Sold by A. ROWLAND and SONS, 20, Hatton Garden, London; and by Chemists and Perfumers.

PRICE FOURPENCE. OF ANY BOOKSELLER.

CONTENTS OF THE NUMBER FOR SATURDAY LAST, SEPTEMBER 28, OF

THE ATHENÆUM,

JOURNAL OF ENGLISH AND FOREIGN LITERATURE, SCIENCE, AND THE FINE ARTS.

Twenty-four large Quarto Pages.

Reviews OF, WITH EXTRACTS FROM

History of Don Pedro, of Castile. By P. Mérimée.
Populations of Austria and Turkey. [*Les Peuples de l'Autriche, &c.*] By H. Desprez.
Description of Natal. By J. S. Christopher.
Zoology of Voyage of Samaraag. Ed. by A. Adams.
Rudimentary Treatises on Science.
The Spanish Rake: a Comedy. By R. Jones.
The Templar: a Play. By A. R. Slous.
St. Ethelbert: a Tragedy. By A. Haviland.
On a Liberal Education. By Dr. Whewell. [2d Notice.]
Nature and Office of the State. By A. C. Dick.
Antiquities of Richborough. By C. R. Smith.

Original Papers—Jenny Lind in America — English Penny-a-Lining—Mr. Taylor and the Authorship of Junius.

Foreign Correspondence—Naples: A Visit to the Island of Capri.

Our Weekly Gossip—The Cheap Excursion System—Outrage on Mr. Cureton—Encroachment on St. James's Park—New Botanical Society—Meeting of Welsh Eisteddfod—Coronation Stone at Kingston—New Cure for Madness—A Wonderful Project—Progress of the Telegraphic System of Communication.

Scientific Gossip — Improvements in Photography — Spheroidal State of Fluids—Iodine in Plants and Animals—Proceedings of American Scientific Association.

Fine-Art Gossip—Statue of Chief Justice Tindal—Pedestal of Statue of Charles, at Charing-cross—Desecration of Westminster Abbey.

Music and the Drama — Sadler's Wells Theatre ('The Cavalier')—Strand ('Alvarez')

Musical and Dramatic Gossip—Concerts at Her Majesty's Theatre—Unpublished Opera by Mendelssohn—The Opera in Paris.

Miscellanea—The Remains of James the Second—The Reptile-room by Night.

Order the Athenæum of any Bookseller.

ANOTHER SUFFERER FROM A LIVER COMPLAINT CURED BY HOLLOWAY'S PILLS.—The Wife of a respectable tradesman, residing in the neighbourhood of Thrapston, was suffering for more than two years from a severe liver complaint, during which period she received the best medical advice, but without deriving the slightest benefit therefrom. She then made trial of Holloway's Pills, and by their use alone she has been restored to perfect health. The name of the party cured is not made public, but Mrs. Collier Bookseller, Thrapston, can vouch for the authenticity of the case. These pills are also an infallible remedy for indigestion, bilious attacks, headaches, and all disorders of the stomach.—Sold by all Druggists, and at Professor HOLLOWAY'S Establishment, 244, Strand, London.

ANOTHER CURE OF COUGH AND HOARSENESS by Dr. LOCOCK'S PULMONIC WAFERS.—"Parliament-street, Liverpool: Sir, I had been troubled with a cough and hoarseness for nearly two years, without relief, when I was induced to try Locock's Wafers, the effects of which were soon visible, for one large box (2*s.* 9*d.*) has quite cured me. I have since recommended them to several of my friends, and they also have experienced the greatest relief from them.—J. WILLIAMS." Witness, M. P. Roberts, chemist, Ranelagh. They have a pleasant taste. Price 1*s.* 1½*d.*, 2*s.* 9*d.*, and 11*s.* per box.—Agents, DA SILVA and Co., 1, Bride-lane, Fleet-street. Sold by all medicine vendors.

Also Dr. LOCOCK'S FEMALE WAFERS, highly recommended to ladies, have no taste of medicine. Price 1*s.* 1½*d.*, 2*s.* 9*d.*, and 11*s.* per box. All pills under similar names are counterfeits.

METCALFE AND Co.'s NEW PATTERN TOOTH-BRUSH and SMYRNA SPONGES.—The Tooth-Brush has the important advantage of searching thoroughly into the divisions of the teeth, and cleaning them in the most extraordinary manner, and is famous for the hairs not coming loose.—1*s.* An Improved Clothes-Brush, that cleans in a third part of the usual time, and incapable of injuring the finest nap. Penetrating Hair-Brushes, with the durable unbleached Russian bristles, which do not soften like common hair. Flesh-Brushes of improved, graduated, and powerful friction. Velvet-Brushes, which act in the most surprising and successful manner. The genuine Smyrna Sponge, with its preserved valuable properties of absorption, vitality, and durability, by means of direct importations, dispensing with all intermediate parties' profits and destructive bleaching, and securing the luxury of a genuine Smyrna Sponge. Only at METCALFE, BINGLEY, and Co.'s Sole Establishment, 130 B, Oxford-street, one door from Holles-street.

METCALFE'S ALKALINE TOOTH POWDER, 2*s.* per box.

CAUTION.—Beware of the words "From METCALFE'S" adopted by some houses.

THE BLOOD.—Our bodies have been entirely formed, *are now forming, and will continue to be built up during life from the blood. What the sap is to the tree the blood is to the animal frame; and inasmuch as the strength and verdure of a tree are dependant on the moisture derived from the root, the health and vigour of the body are indispensably connected with a pure and free circulation of this important fluid. It is this that must feed the flame of existence; and unless its replenishments are freely and purely communicated, the vital fire becomes clouded, burns dimly, and is ultimately extinguished. The grand object is to keep this precious fluid (the blood) in a pure and healthy state, for without this purity, disease will show itself in some way or other.*

PARR'S LIFE PILLS.

It is universally admitted that this medicine will purify the blood better than any other, and will conquer any disease.

None are genuine unless the words "PARR'S LIFE PILLS" are in WHITE LETTERS on a RED GROUND, on the Government stamp, pasted round each box; also the fac-simile of the signature of the Proprietors, "T. ROBERTS and Co., Crane-court, Fleet-street, London," on the directions.—Sold in boxes at 1*s.* 1½*d.*, 2*s.* 9*d.*, and family packets at 11*s.* each, by all respectable medicine vendors throughout the world.

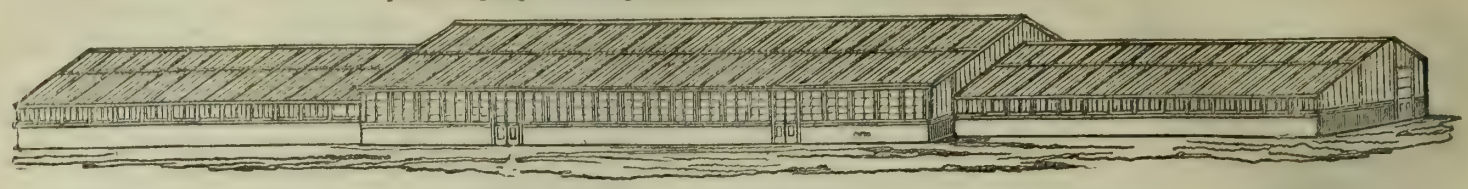
A CLEAR COMPLEXION.

GODFREY'S EXTRACT OF ELDER FLOWERS is strongly recommended for Softening, Improving, Beautifying, and Preserving the SKIN, and in giving it a blooming and charming appearance, being at once a most fragrant perfume and delightful cosmetic. It will completely remove Tan, Sun-burn, Redness, &c., and by its balsamic and healing qualities, render the skin soft, pliable, and free from dryness, scurf, &c., clear it from every humour, pimple, or eruption; and, by continuing its use only a short time, the skin will become and continue soft and smooth, and the complexion perfectly clear and beautiful. Sold in bottles, price 2*s.* 9*d.*, with directions for using it, by all Medicine Vendors and Perfumers.

GRAY, ORMSON, AND BROWN,

DANVERS STREET, CHELSEA,

Respectfully solicit the attention of the Nobility and Gentry to their superior manner of Erecting and Heating every description of Building connected with Horticulture. They have much pleasure in giving the following testimonial referring to the range of houses shown below.



Peach House, 30 by 16 feet. | Vinery, 30 by 16 feet. | Stove, 45 by 20 ft. | Greenhouse, 45 by 20 ft. | Vinery, 30 by 16 ft. | Vinery, 30 by 16 ft.

[Erected for John Shaw Leigh, Esq., Luton Hoo.]

Extract of a Letter from Mr. Fraser.—"I have much pleasure in expressing my entire satisfaction with the range of houses you erected here. I may also state that my honoured employer, John Shaw Leigh, Esq., is perfectly satisfied. I have no hesitation in stating, that to the best of my knowledge, there is not a more complete range of glass in the country, as regards both building and heating. I may add that they are admired by every Gardener who has seen them. I shall have much pleasure in answering any references you may please to direct.

(Signed.) "James Fraser, Gardener, Luton Hoo Park."

RARE ORCHIDS FROM THE BRAZILS.

MR. J. C. STEVENS has just received, in excellent condition, a small, but very select parcel of ORCHIDS, from the Organ Mountains, in Brazil, consisting of fine masses of Cattleya marginata, the rare Miltonia cuneata, and a new species of Lælia with orange flowers, Huntleyas, &c. They will be sold by Auction, at his Great Room, 38, King-street, Covent-garden, on FRIDAY next, 11th October, at 12 for 1 o'clock.—May be viewed on the morning of sale, and Catalogues had.

RHODOTHAMUS KAMTCHATICUS, A NEW AND BEAUTIFUL HARDY SHRUB.

MR. J. C. STEVENS has received instructions from Messrs. Loddiges, of Hackney, to offer for competition, on FRIDAY, October 11, at his Great Room, 38, King-street, Covent Garden, the Entire Stock of the new and beautiful hardy shrub RHODOTHAMUS KAMTCHATICUS, figured and described in "Paxton's Flower Garden" for the present month, consisting of from 80 to 100 fine Plants, in lots, unless a suitable offer should be made for the whole at the time of sale. May be viewed on the morning of Sale, and Catalogue had.

HATTON NURSERY, NEAR HOUNSLOW, MIDDLESEX.
TO NOBLEMEN, GENTLEMEN, NURSERYMEN, FLORISTS, AND OTHERS.

20,000 Scarlet and other Rhododendrons, 20,000 Ghent and other Azaleas, 2000 Andromedas, 6000 Kalmias, 2000 Hardy Heaths, 1000 Daphne Cneorum, 3000 Cedar of Lebanon, 1 to 4 feet, in pots, 300 Pæonia arborea; also a large quantity of Seedlings of sorts.

MESSRS. PROTHEROE and MORRIS are directed, by the Executors of the late Mr. John Ronalds, to offer to an unreserved sale by Auction, on the premises, Hatton Nursery, near Hounslow, Middlesex, about 1½ mile from the Feltham Station, on MONDAY, October 14, and following day, at 11 o'clock, the whole of the valuable NURSERY STOCK, consisting of a large and rich assortment of American Plants, Evergreens, and Deciduous Shrubs, comprising Laurels, Irish Yews, Pinus of sorts; Spruce, Scotch, and Larch Firs; Lime, Alder, Ash, Plane, a large quantity of Quick, three fine specimens of Cedrus Deodara, 8 to 10 feet, &c.—May be viewed prior to the sale. Catalogues had (6d. each, returnable to purchasers) on the premises; of the principal Seedsmen in London; and of the Auctioneers, Leytonstone, Essex.

NB. The whole of the valuable Stock of the Butts and Toolans Nurseries will be sold by Auction, on Monday, Oct. 21, and following days.

A LARGE AND IMPORTANT SALE OF EVERGREENS.
TO NOBLEMEN, GENTLEMEN, NURSERYMEN, AND OTHERS.

MESSRS. PROTHEROE and MORRIS are instructed by Mr. J. Smith to submit to an unreserved Sale by Auction, on the premises, Dalston Nursery, Middlesex, on THURSDAY, October 17th, and following day, at 12 o'clock precisely, the whole of the valuable EVERGREENS, comprising fine-grown plants of variegated Hollies, Aucuba, Box, Laurestinus, Laurels, Phillyreas, Scarlet Aubutus, Bay, Rhododendrons, Azaleas, Lilac, Ivies, Brooms, and Clematis in pots, together with the remaining Greenhouse Plants. May be viewed, and Catalogues had, one week prior to the sale (6d each, returnable to purchasers) on the premises; of the principal seedsmen in London; and of the Auctioneers, Leytonstone, Essex.

TO GENTLEMEN, FLORISTS, AND OTHERS.

MESSRS. PROTHEROE and MORRIS will sell by Auction, at the Mart, Bartholomew-lane, on FRIDAY, October 11th, a superb Collection of CARNATIONS, PICOTEES, and PINKS; also about 100 rows of very choice TULIPS, with a few first-rate Double and Single HYACINTHS, CROCUSES, &c. &c. May be viewed the morning of sale. Catalogues had at the Mart, and of the Auctioneers, American Nursery, Leytonstone, Essex.

HENDON NURSERY.—TO NOBLEMEN, NURSERYMEN, BUILDERS, AND OTHERS.

MESSRS. PROTHEROE and MORRIS are instructed to submit to public competition by Auction, on the premises, Mill Hill, Hendon, Middlesex, near the King's Head Inn, on WEDNESDAY, October, 9, 1850, at 11 o'clock (by order of the proprietor, in consequence of a portion of the land being required for other purposes), the well-selected NURSERY STOCK, consisting of fine EVERGREENS and ORNAMENTAL TREES; viz., Laurel, Portugal Laurel, Box, Aucuba, Holly, Rhododendron, Laurustinus, Broom, Daphne, Arbor-Vitæ, Privet, Bays, Phillyrea, Alaternus, Standard Roses, Sweet Briar, Guelder Rose, Altœa frutex, Laburnums, Elm, Lime, Chestnut, Oak, Beech, Birch, Sycamore, Mountain Ash, Weymouth Pine, Scotch Spruce and Larch Fir, Poplar, Standard Cytisus, White Jasmine, fine Mulberries, Gooseberries, and Currants, Strong Quick, &c.—May be viewed prior to the sale. Catalogues had on the premises; of the principal Seedsmen; and of the Auctioneers, American Nursery, Leytonstone, Essex.

IMPORTANT TO SEEDSMEN, NURSERYMEN, AND OTHERS.

MESSRS. PROTHEROE and MORRIS have received instructions from the assignees of Mr. Charles Bunyard (a bankrupt), to offer to public competition by Auction, on the premises, Nash and Hicks's Warehouse, Horsleydown, about the last week in October, the whole of the valuable SEEDS AND IMPLEMENTS IN TRADE, viz., Sacks, Bags, Weights and Measures, &c.—May be viewed, and Catalogues had of Wm. Whitmore, Esq., official assignee, Basinghall-street; of Messrs. Marten, Thomas, and Hollam, Solicitors, Mincing-lane, London; of the principal Seedsmen in London; and of the Auctioneers, American Nursery, Leytonstone, Essex.

FITZROY PARK NURSERY, HIGHGATE.
TO NOBLEMEN, GENTLEMEN, NURSERYMEN, BUILDERS, AND OTHERS.

MESSRS. PROTHEROE and MORRIS will Sell by Public Auction, on the Premises, Fitzroy Park Nursery, Highgate, near the Gate House, on THURSDAY, Oct. 10th, 1850, at eleven o'clock (by order of the Proprietor, in consequence of the land being required for building), the thriving NURSERY STOCK, comprising 2000 Laurels from 6 to 8 feet, 6000 Aucubas from 1 to 4 feet, Green Hollies, Cedar of Lebanon, Portugal Laurels, Sweet Bays, Spruce Firs, Red Cedars, Laurustinus, Limes, Evergreen Oaks, Rhododendrons, Azaleas, Kalmias, &c. Also Standard and Dwarf-trained Peaches, Apricots, and Nectarines, together with a large quantity of Chrysanthemums, Fuchsias, &c. &c., in pots.—May be viewed prior to the Sale. Catalogues had on the premises; of the principal Seedsmen; and of the Auctioneers, American Nursery, Leytonstone.

FARMS TO LET AT MICHAELMAS NEXT.

MR. HURLEY, Farm and Estate Agent, is instructed to let the following, amongst other desirable farms: No. 1.—TWO EXCELLENT FARMS in Herts, 26 miles from London, and close to the Great Northern Railway, consisting of 526 and 287 acres respectively, admirably adapted for Turnips, Wheat, &c., and for carrying a large flock. Rents, 18s. and 21s. per acre; superior residences and buildings. No. 2.—A first-rate Farm of 160 acres, near Windsor; good house, &c. No. 3.—A capital Farm at Enfield, of 105 acres, equally divided; superior residence and buildings. No. 4.—An excellent Farm, with gentleman residence, &c., with 100 acres of very capital land, equally divided; situate in Essex, within 4 miles of the Harlow station. No. 5.—A good Farm in Sussex of 230 acres, well drained, and adapted to the growth of Wheat and Beans, but not of heavy tillage. Rent 20s. per acre, tithes, &c., 6s. Good Premises; tenant may propose his own terms. No. 6.—A small Farm of 61 acres, in Sussex, with Farm-house and two Cottages. Rent, on lease, 50l. a year. No. 7.—A capital Farm, in Kent, of 220 acres. Rent 135l. a year, tithe 30l. Two capital Farms, in Surrey, of 400 and 170 acres. Rent and tithes low; the latter tithe free. Another, in same county, of 600 acres; rent and tithes very low. Also a good Farm at Fulmer, Bucks, of 90 acres, nearly equally divided. Also a small Meadow Farm, of 60 acres, with good Residence and Buildings, situate near Bristol, and a Railway station. Likewise a good Farm of 200 acres, 45 Meadow; Good Premises, near the Hatfield Station, Herts; and three excellent Farms in Berks, near the Great Western Railway, of 400, 530, and 500 acres, respectively. Rents to meet the times. And, lastly, three Farms, in Kent, consisting of 155, 123, and 76 acres respectively; rents low.—Apply for terms (inclosing two stamps) to the Auctioneer, 62, Nelson-square, Blackfriars-road, London.

NORTH WALES—IN THE MAGNIFICENT VALE OF CLWYD.

MR. HURLEY is instructed to sell, by private treaty, a most desirable FREEHOLD FARM ESTATE, situate in the centre of this very beautiful Vale, the scenery of which needs no eulogium. The residence is adapted to a respectable family, and buildings good. The land comprises 118 acres of superior Meadow and Arable, in a good state of cultivation. The Estate is surrounded by three distinct turnpike roads—is adjacent to many family mansions, and joins Llanerch park and grounds, and from its commanding position, offers a fine site for building an elegant villa residence. It lies 1½ mile from St. Asaph Cathedral (where English service is performed), and within eight miles of Rhyl, a justly celebrated watering-place, and a first-class station on the Chester and Holyhead Railway. The shooting and fishing are excellent; and Lord Mostyn's hounds are in the vicinity. For plans, and to treat, apply (enclosing 4 postage stamps) to Mr. Hurley, Land Agent and Auctioneer, 62, Nelson-square, Blackfriars-road, London.

LEICESTERSHIRE.

MR. HURLEY is instructed to SELL, by Private Contract, a very excellent FREEHOLD FARM ESTATE, tithe free, in the above county, with a large and gentlemanly Residence, capital Buildings, and 142 acres of superior Arable and Meadow Land, near the market towns of Loughborough, Derby, and Leicester; bounded by good roads, and within easy access of a railway, and in the immediate vicinity of three packs of hounds. There are valuable mines of Coal upon the Estate, which may be worked at an exceedingly low cost, from the facilities offered.—For Terms, Plans, and further particulars, apply (enclosing four stamps) to Mr. Hurley, 62, Nelson-square, Blackfriars-road, London.

IMPORTANT SALE OF 1000 CAMELLIAS, 200 AZALEA INDICA, LARGE COLLECTION OF STANDARD ROSES, LILIUMS, AND DUTCH BULBS.

MR. HASLAM begs to announce that he will, on WEDNESDAY, the 9th of October, and two following days, sell as above, at the Auction Mart, Bartholomew-lane, London. Catalogues to be had at the Mart, and of the Auctioneer, South Essex Nursery, Epping, Essex.

TO BE LET, a FARM of 83 acres—60 Arable and 21 Meadow—with good Farm-house, Orchard &c.; situated 1½ mile from the Edenbridge Station of the Dover Railway, with immediate possession. Rent 60l. a year.—For particulars apply to Mr. M'Laren, Limpsfield-lodge Farm, near Godstone, Surrey.

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THE HOT-WATER APPARATUSES (which are efficient and economical), are particularly worthy of attention, and are erected in all the Houses, Pits, &c., for both Top and Bottom Heat, and in constant operation in the Stoves.

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Plans, Models, and Estimates of Horticultural Buildings; also Catalogues of Plants, Vines, Seeds, &c., forwarded on application.—J. Weeks and Co., King's-road, Chelsea, London

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London: Wm S. Orr and Co., Amen-corner.

THE HUNNYBUNS AT THE SEA-SIDE.

THE LADIES' COMPANION, for October 5, contains the First Part of the above.—Also, Sorrows of Gentility, by Miss Jewsbury, Chap. VII.—Chapters on Gems and Jewellery in the Olden Times, Chap. II.—The Brigands Come Back; with an Illustration.—Crochet.—Chenille Muffatoes; with Illustrations.—&c., &c.

*** A Number is published weekly, price 3d., Stamped, 4d., and in Monthly Parts. Part IX. is now ready, price 1s. 2d.

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THE EDINBURGH REVIEW, No. CLXXXVIII will be published on THURSDAY, October 10th, 1850.

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Just published,

RESEARCHES INTO THE EFFECTS OF COLD WATER UPON THE HEALTHY BODY, TO ILLUSTRATE ITS ACTION IN DISEASE. By Howard F. Johnson, M.D., Physician to The Ferns Hydropathic Establishment, Alderley Edge, Cheshire.

Printed by William Bradbury, of No. 13 Upper Woburn-place, in the Parish of St. Pancras, and Frederick Mullett Evans, of No. 7, Church-row, Stoke Newington, both in the County of Middlesex, Printers, at their office in Lombard-street, in the Precinct of Whitefriars, in the City of London; and published by them at the Office, No. 5, Charles-street, in the parish of St. Paul's, Covent-garden, in the said county, where all Advertisements and Communications are to be addressed to the Editor.—Saturday, October 5, 1850.

THE GARDENERS' CHRONICLE
AND
AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 41—1850.] SATURDAY, OCTOBER 12. [PRICE 6*d.*

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JOHN B. SMITH begs most respectfully to inform the Nobility, Gentry, and the Trade that his stock of AZALEA INDICAS are very fine this season, and well set for bloom, and comprise several new and striking novelties. The new yellow varieties of Rhododendrons are very strong and fine, as also Rhododendrons in general, Camellias, Roses, Lilliums, &c., all offered at the very lowest ebb of price; Catalogues of which may be had by inclosing a postage stamp.
Norbiton Nursery, Kingston, Oct. 12.

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J. CHATER AND SON beg to announce that they are prepared to send out good plants of the above, at 5*s.* per plant, or with it Eleven other distinct show flowers for 35*s*; also 12 fine named varieties for 15*s*. For description see List, which may be had on application.
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In No. 38 of the "North British Journal of Horticulture," it is described thus: "On standards its fruit attains the full size of a Green-gage so grown. In form it is more obovate, in colour more yellow, beautifully marbled with reddish-brown spots, the side most exposed to the sun, clouded with purplish red, and covered with a rich bloom. Flesh yellowish; flavour high and luscious, adhering slightly to the stone, which is small for the size of the fruit. On walls it attains a larger size, but in no way improves in flavour, which we think is the case with all standard-grown fruits, and hence in this case the high merits of this variety, which as a dessert fruit is equal to the old Green-gage (the best Plum grown), and superior to it in being so much hardier."

AMBROSE'S SEEDLING FANCY PELARGONIUMS.—To be sent out the middle of October, for prepayment only, the first remittance to secure the first selection. Post-office orders are requested to be made payable at Chelsea.
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W. A., having a few packets of Fancy Geranium Seed to dispose of, begs to offer the same at 2*s.* 6*d.* per packet of 40 seeds.
Battersea, Oct. 12.

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Messrs. S. and N. take this opportunity of stating that they give Designs for Laying out New Grounds and Plans for Improvements; also Estimates for all kinds of Planting, whether ornamental or economic.—Bagshot Nurseries, Oct. 12.

NEW FANCY GERANIUMS AND CINERARIAS.

EDWARD GEORGE HENDERSON, Wellington-road Nursery, St. John's Wood, London, will commence sending out on the 20th inst. the following new FANCY GERANIUMS, at 10*s.* 6*d.* each; for description see *Gardeners' Chronicle* of last week:

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MARION.	REINES DES FLEURS.

Also, in November, his new CINERARIAS, a description of which will be given in the *Gardeners' Chronicle* of next week.

NEW SEEDLING PANSIES—"COMMANDER-IN-CHIEF" AND "PRINCE ARTHUR."

YOUELL AND CO. beg to announce they are now prepared to execute orders for the above first-rate PANSIES, which they guarantee will give the highest satisfaction.
"COMMANDER-IN-CHIEF" was exhibited at the Worton Cottage Meeting of May 29th, under the initials of "T. T.," and the following opinion is given in "Beck's Florist" of July last: "No. 2, Yellow ground, bronzy purple top petals, lower ones margined with the same colour, bold eye, showing to great advantage: *a fine flower for Exhibition.*"
The following opinion of this fine flower is also given in the *Gardeners' Chronicle*, of June 20th, under the initials of "Y. Y." "No 2, Rich yellow ground, top petals dark maroon, lower petals margined with the same colour—eye good; a full-sized and fine flower."
"PRINCE ARTHUR," white ground, top petals rich dark purple, lower ones margined with the same colour, eye good—flowers large and of great substance.
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Royal Nursery, Great Yarmouth, Oct. 12.

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The "Collections of Seeds" sent out by us having given such universal satisfaction, we have been induced to offer the following "Collections of Roots," which we are certain will please every purchaser.
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N.B. Our Hyacinths and other roots have just arrived from Holland in excellent condition.

TESTIMONIAL TO MR. MUNRO, late Gardener to the Horticultural Society of London.—At a Preliminary Meeting, held at the Roebuck Inn, Turnham Green, September 30th, 1850; Mr. Glendinning, Mr. Thompson, Mr. Cock, Mr. Edmonds, Mr. Gordon, Mr. Caie, Mr. Ayres, and Mr. Ivison being present, Mr. GLENDINNING was called to preside. Mr. Caie was then elected Secretary, and Mr. Edmonds Treasurer.
It was then Resolved, That a subscription not exceeding Half-a-crown for each person should be entered into for the purpose of presenting Mr. MUNRO with a suitable Testimonial of esteem, on his retiring from the superintendence of the Horticultural Society's Garden, which appointment he held for upwards of Thirty years.
Persons desirous of contributing are requested to forward their subscriptions to the Treasurer, Mr. Charles Edmonds, Chiswick House, Chiswick, Middlesex.
It was also Resolved, That the Subscription List be closed on Saturday, November 16th, 1850.
*** Post office orders payable at Turnham Green.

BECK'S PELARGONIUMS.—The TWO GUINEA COLLECTIONS of Twelve Plants have amongst them RUBY, SARAH, and DORCAS, seedlings not sent out before, but frequently exhibited in our winning collection, may be had in exchange for a post-office order on Brentford, in favour of JOHN DOBSON; package and carriage to London included. They are in 3-inch pots, and wanting an immediate shifting. Catalogues may be had on prepaid application, enclosing one postage stamp.—Worton Cottage, Isleworth.

HERTFORD ROSE NURSERIES.

E. P. FRANCIS'S NEW ROSE CATALOGUE, containing all the newest kinds introduced and worth cultivating, is now ready for delivery, and will be forwarded gratis on application. The Collection this year is very extensive and remarkably fine.

NEW GERANIUMS, &c., AT REDUCED PRICES, NOW READY FOR SENDING OUT.

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„ Constance	7 6
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Gaines's Flying Dutchman	7 6
Hoyle's Prince of Orange	7 6
„ Satisfaction	7 6
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„ Christabel	7 6
„ Crispina	5 0
„ Nandee	5 0
Foquett's Magnificent	7 6
„ Symons's Field Marshal	7 6

Any 12 *of the above for* 3*l.* 10*s.*, *or* 12 *of our own selection for* 2*l.* 15*s.*

Any 12 *of the following new varieties of the autumn of* 1848 *for* 1*l.* 10*s.*, *or* 12 *of our own selection for* 1*l.* 5*s.*

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Crusader (Hoyle's)	Rolla (Hoyle's)
Delicatissima (Beck's)	Salamander (Gaines')
Elegans (Topping's)	Sparkler (Hoyle's)
Emilia (Beck's)	Star (Beck's)
Flamingo (Hoyle's)	Sundown (Beck's)
Mont Blanc, No. 2	Symmetry (Beck's)
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Any 12 *of the following first-rate older varieties for* 1*l.*, *or our own selection for* 15*s.* *Any* 20 *for* 1*l.* 10*s.*, *or* 20 *of our own selection for* 1*l.* 1*s.*

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Augusta (Hoyle's)	Isabella (Beck's)
Brockii	Jenny Lind (Lyne's)
Camellia alba	Mary Queen of Scots (Gaines'
Cassandra (Beck's)	Mercury (Lyne's)
Cavalier (Beck's)	Mrs. Brock
Centurion (Beck's)	Mustee (Beck's)
Chimborazi (Hoyle's)	Negress (Garth's)
Clara (Stewart's)	Orion (Foster's)
Cruenta (Beck's)	Painted Lady (Foster's)
Distinctus (Miller's)	Peri (Lyne's)
Duke of Hamilton (Foster's)	Pericles (Foster's)
Empo (White's)	Rachel superb
Fair Rosamond	Resplendent (Beck's)
Fire-fly (Lyne's)	Rosa Mundi (Miller's)
Forget-me-Not (Lyne's)	Rosamond (Beck's)
Gigantic (Beck's)	Rosy Circle (Beck's)
Grandiflora (Beck's)	Scarlet Defiance (Miller's)
Gulielma (Beck's)	Star of the West (Lyne's)

A collection of the best old varieties at 6*s.* *to* 9*s.* *per doz.*

FANCY GERANIUMS.—Hero of Surrey (Gaines's), 3*s.* 6*d.*; Alboni (Henderson's), 3*s.* 6*d.* 12 fine showy varieties for 15*s.*, or six for 9*s.*
FUCHSIAS.—Story's, Mayle's, Smith's, and Rumley's new varieties of 1850. 12 for 1*l.* 5*s.*, or 12 of our own selection for 1*l.*
VERBENAS.—Smith's, Barker's, Chauviere's, and other new varieties of 1850. 12 for 15*s*, or 12 of our own selection for 12*s.*
PETUNIAS.—12 of our own and other varieties of 1850 for 15*s.*, or six for 10*s.*

NEW CHRYSANTHEMUMS, well set for bloom.

12 strong and bushy plants, best new varieties of last season, for flowering fine this autumn	£0 15 0
60 splendid varieties, including the above, 2*l.*; 40 ditto for	1 10 0
25 fine varieties, 17*s.* 6*d.*; 12 ditto for	0 9 0

Goods carriage free to London, or any station on the London and Bury line, and extra plants sent gratis with orders of 40*s.*
Remittances requested from unknown correspondents. Post-office orders payable to BASS and BROWN, or to STEPHEN BROWN, Seed and Horticultural Establishment, Sudbury, Suffolk.

FIRST CLASS SEEDLING GERANIUM.

RUNDLE'S BEAUTY OF MONTPELLIER.—For a description of this valuable flower, see the *Gardeners' Chronicle* of Saturday, Sept. 7. It is a sterling flower, and will be sure to give the greatest satisfaction. Price 20*s.* each. One over on every three to the trade.

Apply to WILLIAM E. RENDLE and Co.,
Nurserymen, Plymouth.

TO GENTLEMEN ENGAGED IN PLANTING, BUILDERS, AMATEURS, &c.

J. J. FOSTER, of the Edgeware Nurseries, begs to announce that he has a large Stock of fine EVERGREENS, FRUIT TREES, ORNAMENTAL SHRUBS, and FOREST TREES, which, being grown on an adhesive soil, move safely, with good balls of earth. He has also a beautiful collection of the finest ROSES, admirably well grown. The whole at moderate prices.—Coaches leave the Old Bell, and Black Bull, Holborn, several times a day, and pass the Nurseries. Fares, outside, 1*s.*; inside, 1*s* 3*d*. Goods delivered in town, and at 12 miles distance round, free of charge.

GAINES' SUPERB SEEDLING FANCY GERANIUMS for 1851, which he can recommend as being New, Distinct, and Free Bloomers.

GAINES' CREOLE.—Upper petals nearly black, with white edge; lower petals the same. 10*s.* 6*d*

GAINES' DIANTHEFLORA.—Upper petals crimson, edged with white; lower petals white, with a distinct spot in each. 10*s.* 6*d.*

GAINES' VENUS.—Pure white, with large dark spot in the upper petals. 10*s.* 6*d.*

GAINES' GENERAL JUNG.—Crimson edged with white; white centre. 10*s* 6*d.*

GAINES' QUEEN OF THE ISLES. — Pure white, with large cherry spot in each of the petals. 15*s.*

GAINES' DESIRABLE.—Lilac pink, edged with white. 10*s*, 6*d.*

GAINES' UNIQUE. — Beautiful lake, edged with white; centre pure white. 10*s.* 6*d.*

GAINES' EXCELSA. — Upper petals maroon, edged with white; lower petals pink, with rose spot. 10*s.* 6*d.*

GAINES' FLORIBUNDA. — Crimson purple, edged with pink; light centre. 10*s.* 6*d.*

GAINES' CIRCULARITY.—Dark crimson, perfectly round, with a belt of pure white round each petal. 15*s.*

GAINES' SUPERB SEEDLING SHOW GERANIUMS.

GAINES' AFFGHAN.—Large rosy pink, with dark blotch in the upper petals, edged with rose; centre pure white. 31*s.* 6*d.*

GAINES' MOUNT HECLA.—Brilliant scarlet, crimson spot; white centre. 31*s.* 6*d.*

GAINES' ANTIOPE. — Upper petals crimson, edged with pink; lower petals pink, white centre. 31*s.* 6*d.*

GAINES' SURPRISE.—Upper petals rose, with dark spot, shaded with orange; under petals rose, white centre. 21*s.*

GAINES' VULCAN.—Fine rose, with dark spot in the upper petals; very large trusser. 21*s.*

GAINES' DAZZLE.—Orange scarlet, black spot in the upper petals; white centre. 31*s.* 6*d.*

GAINES' INVINCIBLE.—Upper petals rose, with dark spot shaded with orange; lower petals bright rose; white centre. 21*s.*

GAINES' PURPUREA.—Good purple, with large regular spot in the upper petals. 21*s.*

GAINES' PROMETHEUS.—Bright orange red. 21*s.*

GAINES' ADONIS.—Beautiful rose, with orange crimson spot; white in the centre. 21*s.*

COCK'S MARS.—Upper petals crimson, with large dark crimson spot; lower petals dark rose. 21*s.*

A General List can be obtained by applying at the Nursery, Surrey-lane, Battersea.

LAURELS.—FOR SALE, several thousands of well grown and thriving Laurel Plants, from 2½ to 3½ feet high. Delivered at the Railway Station, Salisbury, at 25*s.* per 1000. Apply (if by letter post paid), to Mr. JEFFERY, Wardour, Salisbury.

KITLEY'S "GOLIAH" STRAWBERRY, 3*s.* 6*d.* per dozen, or 1*l.* per 100.
CUTHILL'S "BLACK PRINCE" STRAWBERRY, 2*s.* per dozen, or 10*s.* per 100.

For descriptions of the above excellent sorts, see late Numbers of this Paper.

	Per 100.		Per 100.
Myatt's Eliza ...	3*s.* 6*d*	Cooper's Seedling ...	3*s.* 6*d.*
„ Mammoth ...	3 6	Elton	3 6
„ British Queen	3 6	Keens' Seedling ...	3 6
„ Globe... ...	3 6	Cole's Prolific	3 6
„ Prolific ...	3 6	Deptford Pine... ...	3 6
„ Victoria ...	3 6	Roseberry	3 6

All the above are excellent sorts, and can be highly recommended.

All orders above 2l. carriage free to any station from Plymouth to London or Gloucester.

Apply to WILLIAM E RENDLE & Co., Nurseryman, Plymouth.
*** Our Autumn Catalogue of Forest Trees, Fruit Trees, and Shrubs will be ready in a few days.

NURSERY GROUNDS, ADJOINING THE NEW CHURCH, LAKENHAM.

JOHN BELL begs to inform his Friends and the Public, that he intends disposing of the remainder of his NURSERY STOCK this autumn. The Stock consists of Ornamental Trees, Evergreens and Flowering Shrubs, Forest Trees of every description, with several thousand Fruit Trees, at the under-mentioned prices, including all the popular sorts in cultivation, warranted true to name.

	Per Doz.	Per 100.
APPLES.		
Dwarf Plants	£0 4*s.*	£1 10*s.*
Standards	0 9	3 0
Espaliers	0 15	5 0
PEARS.		
Dwarf Plants	0 6	2 0
Standards	0 12	4 0
Pyramidal, fine bushy	0 12	4 0
„ extra size	1 10	
Espaliers	1 0	6 0
PLUMS.		
Dwarf Plants	0 6	2 0
Standards	0 12	4 0
Espaliers	1 0	6 0
CHERRIES.		
Dwarf Plants	0 6	2 0
Standards, fine	4 0	3 0
Espaliers	0 18	6 0
APRICOTS, PEACHES, AND NECTARINES.		
Dwarf Maiden Plants	0 9	3 0
„ Trained	1 0	
Standard Trained...	2 2	
Figs, Dwarf...	0 12	
Gooseberries, 100 varieties	0 2	0 12
Currants, black, white, and red ...	0 2	0 12
Fastolff Raspberry	—	0 6
Fine Standard Roses	0 12	4 0
Half „ „	0 9	3 0
Dwarf worked, 6 to 12 inches	0 6	2 0

Priced Catalogues may be had at J. BELL'S, 3, Exchange-street, Norwich, by inclosing one penny stamp, where all orders addressed will meet with immediate attention.

GEORGE JACKMAN, NURSERYMAN, Woking, Surrey, 1¼ mile from the Woking Station of the South-Western Railway, begs to announce that he has just published a new and complete CATALOGUE of his American Plants, Ornamental Evergreens and Flowering Shrubs, Standard and Dwarf Roses, Fruit and Forest Trees, &c., which may be had gratis on application.

REMARKABLY CHEAP.

JAMES TURRELL begs to offer to the Public the finest and cheapest lot of FOREST TREES, SHRUBS, &c., ever offered for public sale. The Trade liberally treated with.

FOREST TREES, of sorts, 8 feet high, 42*s.* per 1000.
Arbutus, 2½ feet; Arbor-vitæ, 4 feet; Cedars, 4 feet; Bay, 3 feet; Yew, 4 feet; Cypress, 4 feet; Manilla Box, 2 feet—9*s.* per dozen.

Laurustinus	per 100, 50*s.* fine.
Quick	per 1000, 10*s.*
Larch	per 1000, 30*s.* strong.
Privet	per 1000, 40*s.* fine.

Dwarf Box, Laurel, Firs, Portugal Laurel, Euonymus, Box, Evergreen—3 to 4 feet high, 4*s.* per dozen.

Var. Holly, fine, 10*s.* 6*d.* per dozen; Broad leaf ditto, fine, 10*s* 6*d.* per dozen; Large Spruce Fir, 4*s* per dozen; Aucuba, from 4*s.* to 6*s.* per dozen; Alaternus, 6*s.* per dozen.

J. T., wishing to clear his ground of some of his large stock of Trees and Shrubs for other purposes, feels confident greater bargains cannot be made elsewhere.

When large orders are given liberal allowance will be made. Remittances are requested from unknown correspondents, to be made payable to J. TURRELL, Providence Nursery, Ramsgate.

LARGE SURPLUS STOCK OF FOREST TREES, SHRUBS, &c., NOW ON SALE AT RENDLE'S NURSERY, PLYMOUTH. ESTABLISHED 1788.

WILLIAM E. RENDLE AND CO., PLYMOUTH, *have a large SURPLUS STOCK of the following TREES and SHRUBS; and as the ground is required for other purposes, they will be sold at the following low prices:*

*** CARRIAGE FREE (See below.)

THORNS OR QUICK.—10,000 fine transplanted Thorns, from 12 to 15 inches high, for 3*l.* 10,000 one-year old Seedlings, at 1*s.* 6*d.* per 1000.

LARCH FIRS.—We have a very large stock of fine stuff, about 3 feet in height; the price will only be 18*s.* per 1000 if 5000 are taken.

TURKEY OAKS.—Fine, handsome, well-selected trees, well transplanted. 80*s.* per 1000, worth at least 20*s.* per 100.

BERBERIS AQUIFOLIA.—A large quantity of fine stuff, 18 inches, 16*s.* per 100. This is a fine Shrub for underwood.

SCOTCH FIR.—Large stock of fine stuff, 24 to 30 inches in height, 18*s.* per 1000, if 5000 are taken.

PINUS AUSTRIACA.—We have an extensive stock of this valuable tree, of the finest possible growth, 12 to 18 inches, fine and novel, 35*s* per 1000.

RHUBARB: MITCHELL'S ROYAL ALBERT, *the earliest of all.* — We have more than a thousand strong roots, 15*s.* per dozen. *These will produce abundantly next Spring,* if planted now.

RHUBARB: MYATT'S VICTORIA, very strong roots, 15*s.* per dozen; smaller ditto, 9*s.* per dozen. YOUELL'S TOBOLSK, 3*s.* per dozen.

RASPBERRIES: RENDLE'S LARGE BEEHIVE.—This is a large handsome variety, very prolific, delicious flavour, and has given the most complete satisfaction to all. Strong Canes, 20*s.* per 100; 3*s.* per dozen.

YOUELL'S FASTOLFF, 10*s.* per 100.

STRAWBERRIES: KITLEY'S GOLIAH, 3*s.* 6*d.* per dozen; 20*s.* per 100. CUTHILL'S BLACK PRINCE, 2*s.* per dozen; 10*s.* per 100. *All the following excellent sorts at* 3*s.* 6*d.* per 100: Myatt's Eliza, Mammoth, British Queen, Globe, Prolific, Victoria, Cooper's Seedling, Elton, Keens' Seedling, Cole's Prolific, Deptford Pine, and Roseberry.

SEAKALE AND ASPARAGUS in large quantities, very reasonable.

BEST DOUBLE RUSSIAN MATS, 5*l.* per 100.

BLACK NAPLES CURRANTS, very superior to the old sort, 6*s.* per doz.

GOOSEBERRIES.—Some of the best known, 30*s.* per 100.

ARBUTUS.—Fine plants in pots, 12 to 18 inches, 5*s.* per dozen.

ILEX OAK.—Fine plants, *in pots*, 18 to 24 inches, 5*s.* per dozen, worth 10*s.* per dozen.

CEDRUS DEODARA.—Fine stock of nice young seedling plants, two years old, in pots, 6*s.* per dozen.

Our Autumnal Catalogue of Forest Trees, Shrubs, and Fruit Trees can be obtained for one penny stamp.

All orders above 5*l.* will be delivered CARRIAGE FREE to any Station on the Great Western, Bristol and Exeter, or South Devon Railways; or to Cork, Dublin, or Belfast. Steamers from this port to Cork, Dublin, and Belfast twice a week.

The South Devon Railway is now open to Plymouth; the station being within one minute's walk from our Counting-house.

FIRST ORDERS WILL HAVE THE PREFERENCE. ALL ORDERS WILL BE EXECUTED IN STRICT ROTATION.

WILLIAM E. RENDLE and Co., Nurserymen, Plymouth.
Established 1786.

WATERER'S DESCRIPTIVE CATALOGUE OF AMERICAN PLANTS, &c.

HOSEA WATERER begs to announce his new descriptive CATALOGUE OF AMERICAN PLANTS, CONIFERS, ROSES, &c., is just published, and may be had by enclosing two stamps for postage to HOSEA WATERER, Knap Hill Nursery, Woking, Surrey.

☞ Everybody who has any idea of planting the ensuing autumn should possess themselves of this Catalogue.

AMERICAN PLANTS.

JOHN WATERER'S CATALOGUE OF AMERICAN PLANTS, ROSES, CONIFERS, &c., is now published, and may be had gratis on application. It describes the colours of every Rhododendron worthy of cultivation, thus affording purchasers every facility in making selections.

American Nursery, Bagshot, Surrey.

NEW ROSE CATALOGUE.

WM. WOOD AND SON have the pleasure of announcing that their DESCRIPTIVE CATALOGUE for the ensuing season is now ready. In addition to the splendid collection enumerated in former Catalogues, the present edition contains many varieties of first-rate merit.

As heretofore, the Catalogue will be duly forwarded to all who have favoured W. W. and S. with their commands, and may be had Gratis on application; also Catalogues of Ornamental Trees and Shrubs, Coniferæ, American, Herbaceous, and Greenhouse Plants; and Descriptive Catalogues of New and Choice Fruit-trees, new Verbenas, Fuchsias, Cinerarias, &c. &c. The Trade Catalogue is also now ready.

Woodlands Nursery, Marshfield, Uckfield, Sussex.

NEW SEEDLING STRAWBERRY—MYATT'S "SURPRISE."—This is a variety raised from the British Queen, which it resembles, though of a more robust habit, and a very free bearer, producing a greater abundance of those large angular-shaped Strawberries than any other variety, and finishing off the last fruit of a good size, price 5*s.* per 100.

Also Myatt's Eleanor, 5*s.* British Queen, Globe, Mammoth, Comte de Paris, Hooper's Seedling, Keens' Seedling, Swanston's Seedling, Elton Pine, 3*s.* 6*d.* Fertilised Hautbois, 5*s.* Cuthill's Black Prince, 10*s.* 6*d.* per 100. Kitley's Goliah, 3*s.* 6*d.* per doz., or 2*s.* per 100.—Manor Farm, Deptford.

FIRST CLASS SEEDLING PANSIES.

JAMES NEILSON, AUCTIONEER and FLORIST, Falkirk, begs respectfully to intimate to the lovers of the PANSY, that he will send out his celebrated Seedling Pansies by the end of October, viz., JEROME, NORAH, and BOULANGER. The following is a description of the Flowers:—

JEROME has a creamy-white ground colour, beautifully laced with a light blue lilac-purple on the three under petals, with upper petals the same as the lacing, and a striking large bold dark centre; form and substance first-rate, and was awarded the First Class Certificate by the Scottish Pansy Society.

NORAH has a pure white ground, most superbly laced with blue purple, fine dark centre, edges smooth, and form perfect, and is most decidedly the thickest Pansy with a white ground in cultivation; and can never be much improved upon, as it is the perfection of the Pansy.

BOULANGER has a golden yellow ground of the richest colour imaginable, and laced with a brown purple; has a large conspicuous dark centre, with edges smooth and form perfect; and, if the expression may be used, with substance thick as leather.

The above three flowers will be an acquisition to any collection whatever; indeed, as much so as "Magnificent" was when sent out by J. N., and is still to this day.

Plants of the above will be sent post free to any part of the United Kingdom at 5*s.* each, with the usual discount to the trade only, when more than three plants are taken. "Boulanger" will not be sent out till Spring. Remittances from unknown correspondents payable at the Post-office, Falkirk.

Falkirk, Oct. 12,

RHODODENDRON CINNAMOMUM var. CUNNINGHAMI.

MESSRS. GEORGE CUNNINGHAM AND SON are now prepared to send out plants of the above-named splendid RHODODENDRON. It is figured in the August Number of "Paxton's Flower-Garden; by John Lindley and Joseph Paxton." And for a description of its merits and origin, the advertisers refer the public to that periodical. The price is 21*s.* each, with the usual discount to the trade.

Oak Vale Nursery, Liverpool, Oct. 12.

HUNTINGDON NURSERIES.

MRS. WOOD, in returning her sincere thanks for the kind patronage she has received in the Nursery, Seed, and Flower Trades, begs to announce that she has retired from the same, in favour of her Nephew, Mr. JOHN INGRAM, by whom for some years past the Business has been superintended, and for whom she earnestly solicits a continuance of that support which for upwards of a century has been accorded to her late husband's family. All debts owing to and from Mrs. WOOD will be received and paid at the Nurseries, Huntingdon; and it is respectfully requested that all post-office orders be made payable to SUSAN WOOD.

JOHN INGRAM, in succeeding to the above business, most respectfully informs the planting and horticultural public, that nothing shall be wanting on his part to merit a continuance of the favours for so many years liberally bestowed on his predecessors. The stock comprises an immense quantity of Fruit, Forest, and Ornamental Trees, Evergreens, Roses, &c., as well as a large collection of Stove, Greenhouse, and Bedding Plants, with every description of Florists' Flowers, of all of which Catalogues may be had on application. Seeds for the supply of the Kitchen and Flower Gardens are grown on the premises, the detached character of these Nurseries affording excellent facilities for keeping the varieties pure and distinct.

A few stocks, containing fine dormant buds, of the STANWICK NECTARINE to be sold at 21*s.* each. Very fine well-rooted SPRUCE FIRS, 2 to 3 feet, 30*s.*; 3 to 4 feet, 35*s.* per 1000.

Huntingdon is situated on the main trunk of the Great Northern Railway, which will afford a cheap and rapid transit both north and south.

N.B. The business will in future be carried on under the firm of "WOOD and INGRAM."

TO NURSERYMEN AND FLORISTS.

SHEPHERD'S "PRIORY QUEEN," a SEEDLING GERANIUM raised from Luceum roseum: colour much brighter, with compact circular truss of flowers, very dwarf habit small foliage, and a very free bloomer.

See an abstract from Beck's "Florist," for September:—"*W S, Kew.* Seedlings from Luceum roseum. Of your two varieties the one with compact circular truss is a very pretty thing, and if a free bloomer will be valuable for bedding purposes." Any Nurseryman or Florist wishing to possess the Stock can see the same in bloom, and will be liberally treated with, by applying to WM. SHEPHERD, Gardener, Priory, Kew, Surrey.

SEED TRADE.—Seeds of every description, and of the best quality, can be had at J. G. WAITE'S SEED ESTABLISHMENT, 181, High Holborn, London, at 20 per cent. lower than any other House in the Kingdom.

POTATO ONIONS, fine sound Bulbs, 14*s.* per cwt.—Oct. 12.

NEW EARLY FORCING BEAN.

J. G. WAITE begs to inform Market Gardeners, and the Public generally, that he can supply any quantity of the TRUE SION HOUSE DWARF FRENCH BEAN at 24*s* per bushel. It is well known as the earliest and most prolific in cultivation.—181, High Holborn, Oct. 12.

LONDON PARTICULAR LONG SCARLET RADISH has now been proved to be the earliest and best in cultivation, 500 bushels having been sent out last season, and given the greatest satisfaction. Any quantity, warranted to grow 95 per 100 seeds, can be had at 25*s.* per bushel, on application to J. G. WAITE, 181, High Holborn, London.—Oct. 12.

RHUBARB ROOTS.
MITCHELL'S ROYAL ALBERT, 70*s.* per 100.
MYATT'S LINNEUS, 70*s.* per 100.
MYATT'S VICTORIA, 48*s.* per 100.
J. G. WAITE, 181, High Holborn, London.—Oct. 12.

DUTCH BULBS.

CLARKE AND Co., SEEDSMEN and FLORISTS, 86, High-street, Borough of Southwark, London, beg to inform the Public that they have received a second Importation of genuine DUTCH BULBS this week, ex Earl of Auckland, from Rotterdam, which will enable them to supply a Choice Assortment of all kinds of Roots.

CLARKE and Co. will be happy to forward their Descriptive Catalogue, free, upon application.—The Trade supplied.

TO BE SOLD, TWO ALDERNEY COWS and Forty SOUTHDOWN EWES, in Lamb, Forty STOCK LAMBS, and One Hundred WELCH WETHERS.—To be seen at Mr. M'LAREN'S, 10, Grove Vale, near Peckham-rye, Surrey.

MESSRS. J. AND H. BROWN inform the nobility and gentry they supply large or small quantities of fine Evergreens, Ornamental Shrubs, Superior Fruit Trees, &c., to furnish New Walls, Gardens, and Pleasure Grounds. Also Choice Plants for New Conservatories, &c. Packages forwarded to any part of the United Kingdom or the Continent.

	s	d
Fine Dwarf and Standard Trained Peaches, Nectarines, Apricots, Plums, Pears, and Cherries. The best and most approved sorts of these respective kinds, true to name, each, 2s 6d., or per dozen	24	0
Untrained or Maiden Ditto, 1s. 6d. each, or per dozen ..	15	0
Apples, Dwarfs and Standards of best sorts, per dozen...	15	0
Fine Gooseberries, Currants, and Raspberries, per dozen	3	0
Fine Figs, Medlars, Walnuts, and Mulberries, each ...	2	0
Strong Vines from eyes and layers, in pots, per dozen ...	15	0
Filberts, new thin shelled and red skinned, per dozen...	3	0
Strawberries, all the varieties by the dozen or 100.		
CHOICE AMERICAN PLANTS.		
Andromeda floribunda, fine blooming plants, per dozen	18	0
25 Azaleas, new hardy Belgian varieties, on their own roots, with flower-buds, one of a sort by name ...	20	0
25 American Azaleas, ditto ditto	15	0
6 Andromedas, of sorts, including floribunda ...	8	0
6 Kalmias and Ledums, one of a sort, by name ...	6	0
12 Hardy Heaths, of sorts, ditto	8	0
25 Hardy American Shrubs, one of a sort by name ...	10	6
12 Rhododendrons, including scarlet, white, and rose, hardy varieties	12	0
New Hardy Yellow Rhododendrons, each, 7s. 6d. to ...	10	6
6 Fine Hardy Magnolias, one of a sort by name ...	10	6
50 Dwarf Roses, on their own roots, by name ...	16	0
12 Tea-scented Roses, one of a sort by name, in pots ...	9	0
Standard and half-standard Roses, per dozen, 12s. and	15	0
Moss Roses, per 100	25	0
New Crimson Moss Rose, per dozen	6	0
Bourbon Roses, and Geant des Batailles, in pots, per dozen	10	6
Scotch Roses, one of a sort, per dozen	6	0
Double White and Purple Primula Sinensis, each ...	1	6
12 Greenhouse Azaleas, one of a sort, blooming plants	25	0
12 Choice Camellias, by name, ditto ditto ...	30	0
50 Superior Greenhouse Plants, one of a sort, by name...	45	0
24 Choice Ericas, one of a sort, by name	15	0
12 Orchidaceous Plants, choice species, and good plants	30	0
12 Newest Chrysanthemums, distinct varieties ...	8	0
12 New Dwarf Liliputian Chrysanthemums, ditto ...	10	0
Fine New Yellow Picotees and Carnations of best show sorts, with names, per pair	2	6
Pinks, very best show sorts, by name, per dozen pair	12	0
Violets: Arborea, Russian, and Neapolitan, per doz.	4	0
Cinerarias, new choice varieties, per dozen, 6s. and	9	0
Fancy and other Geraniums, best sorts, per dozen ...	9	0
Passifloras, Jasminums, and Clematis, of sorts, each	1	6
Cryptomeria japonica and 6 choice Pinus, for ...	10	0
Hyacinths, Crocus, Tulips, Lilies, and all kinds of Dutch roots for forcing, &c.		

Albion Nursery, Stoke Newington, London, Oct. 12.

CUTHILL'S BLACK PRINCE STRAWBERRY, Now sending out, price 10s. per 100.

Also, PRACTICAL INSTRUCTIONS FOR THE CULTIVATION OF THE POTATO, containing the Competition Essay for the Prize of 100 francs, offered by the Belgian Government.

Also, Instructions on the Management of Asparagus, Seakale, Rhubarb, Vegetable Marrow, Scarlet Runner, Strawberry, Melon, Cucumber, Chicory and Lamb Lettuce as Salads; the Lisianthus Russellianus, the Tree Mignonette, the Destruction of Woodlice and Green fly; and Peat Charcoal as Manure.

By JAMES CUTHILL, Horticulturist, Camberwell.

London: Printed for the Author, and sold by him, price 2s., or by post 2s. 6d. Sold also at Hamiltons and Co., 33, Paternoster-row.

A Lad about 17 years of age wanted.

KNIGHT AND PERRY, Exotic Nursery, King's-road, Chelsea, respectfully invite an inspection of their fine healthy stock of PEACH, NECTARINE, and other FRUIT TREES (free from insect, and of all the best kinds, both trained and untrained), which cannot fail to afford complete satisfaction wherever supplied, as they combine the advantage of the most elaborate attention to their culture, both in root and branch, with a particular method of labelling, ensuring the accuracy of each kind; their stock of VINES, raised from eyes obtained from the fruiting plants of the most eminent growers in the country, is larger than ordinary, and of first-rate excellence.—Exotic Nursery, King's-road, Chelsea.

TRUE DOUBLE ROMAN NARCISSUS, 3s. per dozen.
THE MOST FRAGANT AND EARLIEST FLOWERING OF ALL THE NARCISSUS.

ROBERT HALL begs to advise the arrival of his Annual Importation of the above-named BULBS, in fine healthy condition. Also, fine Dutch HYACINTHS 6s. per dozen, or 3 dozen for 15s. Crocus, Jonquils, Tulips, &c., at his Foreign Warehouse, 63, South Audley-street, Grosvenor-square, facing the Chapel.

Priced Catalogues may be had by post, and postage stamps taken in payment.

TILEY'S VIOLA ARBOREA, OR PERPETUAL TREE VIOLET.—VIOLA ARBOREA, or the PERPETUAL TREE VIOLET (true).—In answer to numerous inquiries for the above, and great satisfaction given by the plants sent out last season by EDWARD TILEY, he begs to state that he has this year a fine stock of the above beautiful DOUBLE VIOLET now to dispose of, which he can highly recommend, this being the proper time for making beds or potting. They are beautifully scented; the blooms are as large as the double blue Hepatica; they bloom freely from August till the end of May, and are perfectly hardy. Twelve of these plants grown in pots will scent a large greenhouse; and a small bed, 9 feet long by 3 feet wide, will be sufficient to furnish a family with bouquets the whole of the winter and the spring. They should be planted in rather a dry situation and a loose soil, as the Violet will thrive and bloom finer than in wet or clay borders.

E. T. has been informed by the gentleman that introduced it into this country, that he has seen them growing in the thickets of Persia to the height of 4 feet, with large bushy heads to them, and hundreds of blooms on them at the same time. Large bushy plants, 6s. per dozen; smaller ditto, 3s. per dozen; or 1l. per hundred.

Also he has a fine stock of that splendid YELLOW VIOLET, or VIOLA LUTEA, which has been so much admired at the London exhibitions. In colour it is equal to the Crocus. Strong bushy plants 2s 6d. each; or smaller ditto, 1s 6d. each.

KITLEY'S GOLIAH STRAWBERRY.—Strong well-rooted plants at 3s. per dozen.

True BATH COS LETTUCE SEED, 1s. per packet.

Extra fine SWEET WILLIAM SEED, saved from 24 distinct varieties, 1s per packet.

ANTIRRHINUM SEED from all the best varieties, 1s. per packet.

WINTER CUCUMBER.—Lord Kenyon's Favourite, 2s. 6d. per packet.

The whole or any quantity of the above will be sent, postage and package free, to any part, on receipt of a Post-office order, or the amount in penny postage stamps.

Sold by EDWARD TILEY, Nurseryman, Seedsman, and Florist, 16, Pulteney-bridge, Bath.

ROSE CATALOGUE.

H. LANE AND SON, Great Berkhamstead, Herts, will send their New CATALOGUE to all their old customers free, and new applicants may have it by enclosing two penny stamps. Those who are about planting Pleasure Grounds, &c., should inspect H. L. and Son's Nurseries (about 50 acres), as they have a fine healthy stock of some thousands of Cedrus Deodara, 2 to 4 feet; Araucarias, 2 to 3 feet; Abies Douglasi, from seed, 4 to 5 feet; with all the leading Pinus. Rhododendrons, all the hardy varieties from white to crimson, growing in loam, from which they remove readily; also the hybrids of Sinensis, greenhouse varieties; Azaleas, best Ghent; with a general collection of Trees and Shrubs, both for the Pleasure Ground and Park; also of Fruits, Catalogues of which may be obtained by enclosing two penny stamps. The stock of Plants at these Nurseries is kept constantly removed, to ensure success, and not drawn up to be sold at a price to deceive the public. Double Camellias, and Greenhouse Azaleas, 1 to 4 feet—prices given on application.

WOODLANDS NURSERY, MARESFIELD, near UCKFIELD, SUSSEX.

WM. WOOD AND SON having with much care made a choice Selection of the best CINERARIAS from those sent out during the last two seasons, and having a fine stock of healthy plants, that will bloom well during the ensuing winter and spring, beg to offer them on the following terms, viz.:

12 very superb new varieties	18s.	0d.
24 ditto ditto	30	0
12 new Fuchsias of 1850	18	0
12 new Verbenas of 1850	15	0
24 ditto ditto	25	0
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Superior mixed double Hollyhocks, per dozen ...	6	0
Superb named ditto, per dozen	18	0

NEW SEEDLING GERANIUM.

RUNDLE'S BEAUTY OF MONTPELLIER has been Purchased by the following Nurserymen:—Messrs. Henderson and Co., Pine-apple-place; Messrs. E. G. Henderson and Co., St. John's Wood; Mr. Charles Turner, Royal Nursery, Slough; Messrs. Bass and Brown, Sudbury; Mr. Keynes, Salisbury; Mr. W. Cock, Chiswick; Mr. B. N. Cant, Colchester; Mr. W. Bragg, Slough; Mr. Wm. Ivery, Peckham, Surrey; and most of the other leading Nurserymen in the kingdom.

Strong Plants now sending out, 20s. each, one-third off to the trade, with one added to every three.

Apply to WILLIAM E. RENDLE & Co.,
NURSERYMEN, PLYMOUTH.

The Gardeners' Chronicle.

SATURDAY, OCTOBER 12, 1850.

FOR some years past VINES have been seriously attacked by a kind of MILDEW, which in many instances has ruined the crop, and in others has almost destroyed the plants themselves. In our vol. of 1847, p. 779, the Rev. Mr. BERKELEY pointed out the true nature of this affection, showing that it was caused by the presence of a minute parasitic fungus which he described and figured under the name of *Oidium Tuckeri*. He also suggested the application of sulphur as a means of stopping the ravages of this mildew. Little attention, however, seems to have been paid to the hint; for in 1848 the mischief was greater than ever. But on the 22d July of that year Mr. KYLE, an intelligent gardener at Leyton, announced (p. 493), that he had stopped the evil by the application of sulphur and water.

From that time to the present no certain opinion seems to have been formed concerning the value of this application. We have always recommended it, asserting that if it is employed early enough to check the mildew, a cure would be effected. Those who have tried it do not agree as to the result. Some find it effectual; others derive no benefit from it. The French, who have been sufferers like ourselves, evidently know nothing of the remedy (see p. 613), and are even now hunting for a mode of cure. Others, on the contrary, report the total disappearance of the mildew under a persevering application of sulphur: and no doubt remains that with skill and attention this Grape disease has ceased to be formidable. What the causes of failure may have been, it rests with those who have failed to discover. We can only announce the fact that sulphur is an undoubted cure; for what succeeds in Hammersmith must succeed at Thoméry.

In confirmation of this statement we now lay before our readers the following letter from Messrs. LEE and Co., of the Nursery, Hammersmith, dated October 4, 1850.

"We beg your acceptance of a few Grapes of our growing, as an instance of the triumph of sulphur over mildew. When the Grapes were as large as Peas the house was struck from end to end with mildew, scarcely a bunch being without one or two berries affected, which no doubt would have spread to every berry, if not taken in time. We immediately commenced throwing powdered sulphur over every bunch, all over the leaves and wood, and continued this practice daily for several weeks. The sulphur was not washed off till the Grapes were half coloured and yet the bloom is uninjured. No fire was lighted in the house and no other means employed except once syringing the berries with sulphured water. This is the second instance that has come under our personal observation this summer in which mildew has been completely stopped by the application of sulphur without even the aid of a fire, and this in a cold damp season."

The Grapes here referred to were as well swelled, as well coloured, as well ripened, as handsomely covered with bloom as the best Grapes to be found where the mildew is unknown. In fact, in the absence of the statement made by Messrs. LEE, no one could have imagined that they had been mildewed at all.

And now arises the important enquiry whether sulphur will not destroy all other kinds of mildew. That of the Peach, of the Rose, of the Hop, Pea, and Onion, are all very closely related to each other; all possess the same habits, and are formed from tissue which is apparently the same in the one as in the other. We are informed that evidence exists of a cure for the Hop mildew having been undoubtedly found in flowers of sulphur driven repeatedly among the leaves; and we have now before us the registered design of an ingenious instrument contrived by Mr. EPPS, of Maidstone, for the express purpose of throwing clouds of sulphur among the leaves into the air of Hop fields.

The machine in question in some respects resembles FRY'S, mentioned at p. 501 of the present volume; but is really a powerful instrument, as well as being constructed upon a better principle. It consists of a fan-blower, worked by a wheel, and driving air rapidly through a passage in the casing of the fan. Above this passage is placed a hopper, containing the sulphur to be projected. Below the hopper, and between it and the air passage, is a box containing a sieve or perforated plate, and connected with the hopper by a flexible tube. This box receives the sulphur from the hopper, and conveys it to the air passage through which the fan-blower is to drive it. The oscillating horizontal motion requisite to ensure the constant action of the sieve is obtained by a lever and cam, which are set in action by the rotatory motion of the wheels that work the fan-blower. This last part of the contrivance is of great importance, because it ensures uniformity of delivery to the sulphur, preventing all choking up and sticking together of the particles.

Having seen this instrument in action, we can only add that it appears to us to be by far the best of the mechanical inventions for throwing into the air sulphur or other substances in a state of minute division.

A CORRESPONDENT has sent us an example of the Sweet William, in a peculiar state. It appears to have been in that condition during the whole summer, without producing flowers. Our correspondent suggests that it may be an instance of a moss growing on the top of the stem, where the flowers should be. As others may be equally puzzled by the peculiarity, it seems desirable to explain fully its real nature.

The following cut represents the appearance of three of the branches of the part where flowers should have grown; and the amputated portions indicate



where other branches of like nature once grew. They occupy exactly the place of flowers. Each consisted of a large number of small, pale-green, spreading, narrow, sharp-pointed leaves, placed over a slender twig; and the tuft, viewed as a whole, certainly bore a striking resemblance to a bunch of some kind of Hair-moss (*Polytrichum*). It is, however, manifest, that the appearance is produced by the conversion of the flowers into branches, and that the case is merely a striking one of "proliferousness."

A flower consists of certain parts called bracts, sepals, petals, stamens, carpels, placed one within the other, in the order in which they are here enumerated, and arranged round a common centre. In the beginning they are all alike, and in no respect distinguishable from leaves. As the formation of a flower advances, these tiny leaves, obedient to the vital force resident in that part of the plant, assume the condition of bracts, sepals, petals, stamens, and carpels, each having its peculiar form, and its allotted

office to perform in the economy of the plant. But if anything disturbs the operation of that vital force which is necessary for the formation of a flower, then, in that case, the tiny leaves, no longer subject to the floral influences, all extend into leaves; and, at the same time, the centre, which in the flower is a fixed point, acquires full power of extension, clothes itself with other leaves, and advances into the condition of a leafy twig.

Such cases as this can be explained in no other way; thus interpreted, their history becomes intelligible, and they prove to a demonstration that a flower is really nothing more than an ill-developed branch, clothed with leaves, in a peculiar condition. On such cases rests the doctrine of morphology, so important to the gardener, as the key to numerous phænomena, which essentially affect the success of his operations.

HOW TO MISMANAGE A GARDEN.

Chapter X.—If you have a greenhouse to keep, or a stove, or any such place, especially a greenhouse, great opportunities will occur of managing badly. Glass houses are sure to tell the observer, at the end of a winter, what amount of talent of that sort is at the command of the gardener, or of the amateur who has no gardener.

The principal points to attend to by him who wishes to spoil his plants, may be classed under the two heads of heating and airing; and, in the first place, of heating.

Never light your fire till the last minute in the day; put off and dawdle as long as you can; then, when the cold begins to be sharp, make up a rousing fire, and get the heat up as quickly as possible. By this means you may accomplish three things of importance in mismanagement; you are sure to waste half your fuel, you may crack the flue, and you must keep your plants growing at night, which is the wrong time. By these simple means you encourage the coal merchant, find a job for the bricklayer, and make a mess of your plants. If the flue is cracked and the bricklayer is not to be found, the smoke will make its way into the house; this will give you an opportunity of opening the sashes, to let the smoke out again, and of cooling down the house by bringing in cold air—a method particularly advantageous at Christmas time. These little inconveniences are obviated by lighting the fire early, and getting the heat up slowly; but that is only good management, of which you are not in search.

When you put fuel into the fire-place, pitch it in as far as you can get it to go; in that way you will be certain some day to have the satisfaction of blowing up your flue—an interesting philosophical experiment which will enable you to understand the effect of uniting gases, so as to produce an explosive mixture. If you bank up your fuel close to the door of the fire-place, this cannot happen; the fire will burn better, and there will be less waste; but that again is good management, which is to be avoided.

Never cause your flues to be cleaned from soot till the plants are brought into the house for the winter. You can then try whether the flues will draw; perhaps they will. and then you need not have them cleaned till they catch fire, and burn the house down; perhaps they will not, and then you can have the job done as well as at any other time. As to the dust and soot dirtying your plants, why, you can wash them again, and very likely they will look as well as ever.

Never consider with how little fire plants may be preserved; that would be good management. On the contrary, keep the heat up well, most of all at night; in that way you are sure to have tender, pale-green leaves and shoots, with pale flowers, and not many of them. It is surprising how delicate and interesting a collection of greenhouse plants may be made by such means. As to resting your plants, never think of the thing; what is the use of plants at rest? they might as well be dead. Keep them always growing, and fastest in the autumn. In that way you may depend upon bringing them into the worst possible state in the shortest possible time.

Never give air in winter; plants managed as is here suggested cannot bear it. Shut the houses up close, and keep your fire going. Why should plants have air? If that is what they want they might as well be out of doors, where they will have plenty of it. As for their breathing, and in that way spoiling the air about them, as animals do, who ever saw a plant breathe? If it did breathe we must see it. We do not see it; therefore it does not breathe.

When you water your greenhouse plants in winter, take it cold from the pump, or the tank outside, and dash it over them. As they cannot feel, the coldness cannot hurt them; and it saves the trouble of warming the water. An amateur has been known to spoil his whole crop of early Grapes and forced Strawberries in this manner; and it cannot be denied that that is as good an example of mismanagement as could be desired.

Instructions like these are too valuable to be mixed with others of a different nature, and therefore I pause, in order to give you a week's time to think them over, and see how they can be made to suit your case. Κῆπουρος.

GARDENING IN HOLLAND.—No. IV.

Leyden has a character and appearance more stayed and sedate than either Rotterdam or Amsterdam. It is not without business, but is not all bustle; one here feels that man has time for reflection, and that life has other attractions than mere money getting. I have an affection even for the descendants of those citizens who could perceive the difference between being remitted for a few years from civic taxation and being permitted to found an University within their walls—a difference between present gains and future greatness—the difference between self-aggrandisement and a noble looking forward for their city's and their country's elevation in the scale of nations. With the long line of eminent men, who, being nurtured here, have shed a halo over literature, art, and the sciences, we have nothing to do with here; but it is quite in keeping with my design to treat of the results, as shown in the museums and botanic gardens which they have left us. I strolled into the University, which seems adapted for its purposes without architectural embellishments. It is plain and utilitarian in its character; but the council-room, with its *veræ* effigies of upwards of a hundred of the professors who have aided in the advancement of knowledge for two centuries, could not be looked at without emotion. Here we see the men who have connected themselves with our own literature, as well as that of other nations, and Salmatius to an Englishman, who is proud of his Milton, will be gazed at with interest.

The learned Scaliger is there; and Boerhaave, who gave to medical science at once comprehensiveness and enlargement; these, with Brugmans and Van der Palem, arrest our attention and receive our homage. The Town Hall is well worthy a visit. The Herbarium, the Museum of Natural History, and that of Egyptian, Greek, and Roman Antiquities, as well as the Botanic Garden, are only a short distance from each other; and many a lover of all, like myself, must have been perplexed as to which object he should first pay his attention.

I went to the garden, and my only reget was the absence of the botanical Professor de Vriese from the town. I was, however, received by an intelligent gardener who had both the ability and will to assist me in my investigations. The gate open, I was in front of a noble group of Aloes and Agaves, one of the latter so large and so healthy that I wondered that it had not flowered years ago. My informant assured me that it would blow the next year, but I confess I saw no indications of the coming event. He told me however that two had flowered in that establishment during the time that he had worked there. The bust of the great Linnæus, and those of Dodonæus, of Clusius, and of Brugmans, adorned this part of the gardens, and seemed most appropriately and specially to belong to it. A group of recently introduced Conifers has been planted within the last three or four years, but their situation is not well chosen, for they must inevitably do injury to the houses, so soon as they acquire a tree-like character. The want of space also must account for so many good things being placed so closely together. This brought us to the range of houses, the largest of which contained a few of the trees of New Zealand, whose leaves were of singular forms, and their colour either dusky green or quite brown. I could but think that, with no other adjuncts, how difficult it would be to produce effective groups in park scenery. Here I was shown that physiological curiosity that has occasioned so many speculations and disquisitions — the three-tined fork that was discovered imbedded in the solid trunk of a tree. It has been so well sawn that the tool is still fixed at the cross-bar, and showing only part of the tines. I have seen a large stone wholly imbedded in the like manner. I suppose the imbedding to have taken place in each case in this manner. A tree having been cut down throws up numerous shoots, and when the period arrives for cutting down the underwood, two or three were left, which ultimately would form a single stem. Now, suppose a stone or a workman's tool to be left on the original stump, and the two or three secondary stems to grow on till they met, such implement, stone, or other object, would inevitably become imbedded, to be revealed only in an after time, when the timber was cut up. I minutely traced the annual augmentation of layers in the present case, and am convinced that the growth has proceeded from two centres only. The house devoted to Palms has some noble specimens, that are well cared for; and an occasional good plant of Fern assured me that they must have been selected from a larger collection. There I saw a plant in full blossom that is only now, a month later, colouring with me—the Vriesia splendens, whose scarlet bracts are most vivid, and whose foliage is regularly barred with deep brown marks. I think this plant will long assert its right to favour in our stoves.

Passing these, we arrived at a house occupied entirely with the smaller species of succulents; these were placed more thinly than we are accustomed to see them, and the pots were sunk in troughs containing earth. So placed, they were growing delightfully, and many o the sorts were producing leaves much larger than were to be obtained under ordinary culture. A frame heated with leaves and manure, contained the dwarf Cereus from Chili and Mexico; they also were plunged. Masses of grotesque looking carbonate of lime, some tufaceous, were employed to grow several sorts of succulents upon, and with very good effect. When these plants are put upon rockwork, as occasionally seen with us, they do not admit of removal (and consequently are not proper for a nursery); but in this manner I am convinced a good rockwork of succulents might be formed, and the masses might be removed for sale with little more trouble than if they had been grown in pots. I saw here but few sorts that I am not growing, and our set of these plants, thanks to his Grace of Bedford, is infinitely superior at Kew. If my memory serves me rightly, however, the larger specimens of Aloes and Agaves are finest here. They have a house well filled with Orchids; but somehow or other they do not appear in health, there is but little foliage and that not of a luxuriant character; they reminded me of those belonging to the King, at the Hague, for condition; but this collection was by far the most extensive. Returned to my own Orchids I see a vigour of growth that I nowhere saw in Holland; and I am convinced that we must look for the cause in their being too much coddled in that country. Some nice young Pitcher plants, and several forms of Anæctochilus, with their beautiful variation, had been recently added, as I understood, from England. *W. Masters, Exotic Nursery, Canterbury.*

BRITISH ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE.

On the Epidermal Appendages of the Genera Callitriche, Hippuris, Pinguicula, and Drosera, by Dr. Lankester, F.R.S.—Although it was frequently stated that aquatic plants had no epidermis, yet many of them were covered with a very perceptible distinct layer of cells, which Schleiden calls epiblema. In certain instances this external layer of cells seemed capable of developing appendicular organs, as was the case with plants growing in the air. The author had previously published a description of certain bodies, which occurred on the surface of the stem and leaves of Callitriche verna. These bodies were stellate in form, and consisted of several cells united to one which acted as the base, and attached the rest to the surface. Since that time he had observed the same bodies covering the surface of the stem of Hippuris vulgaris. They were composed of a larger number of cells in Hippuris, and the author had not detected them on the leaves. Finding them on Hippuris, and Callitriche, he had sought them on Myriophyllum, but had not succeeded in detecting them there. He had however detected similar bodies on the surface of the leaves of Pinguicula vulgaris. These had been previously described by Professor Dickie. In Pinguicula, the stellate bodies were found lying directly on the surface of the leaf, or elevated upon one, two, or more cells, so as to resemble clavate hairs. In Pinguicula they were quite distinct from the stomates, and this might be taken as an indication of the nature of these bodies, in Callitriche and Hippuris. The author had also observed bodies of a similar kind on the surface of the leaves, and on the so-called hairs of Drosera rotundifolia. It was an old observation alluded to by Meyen, and dwelt upon by Morren, that the hairs of Drosera contained spiral vessels. The author had traced these to the bundles of vessels which formed the veins of the leaf, and stated that we must regard the hairs of Drosera as segments of the leaf. He regarded as the true hairs of Drosera the stellate bodies above referred to.

A few Remarks on the Treatment and Flowering of a plant of Dracæna Draco, or Gum Dragon Tree, in the Botanic Garden of Trinity College, Dublin, by J. T. Mackay, LL.D., M.R.I.A., Director.—The Dracæna Draco, or Gum Dragon Tree, on a plant of which I beg to make a few observations, was raised by me in the College Botanic Garden, in 1810, along with several others, from seeds brought from Madeira. After it had been grown in a pot for 10 years, it was planted out in a bed of earth in a large stove or hothouse. About three years ago it became too tall for the house, and in order still to secure the plant for the collection, the following experiment, suggested by my intelligent chief assistant, Mr. Bain, was made by him. The stem, which was then about 15 inches in diameter, was, during six months, gradually cut across, 4 feet above the root, about an inch deep at a time, when a little hot lime was applied to the wound, to prevent bleeding. The root and lower portion of the stem were then removed as being useless, and the upper portion of the stem suspended immediately above the former station of the plant. In the course of eight months, during which time it was kept perfectly dry, it threw out several aerial roots from the edge of the stem where it had been cut. It was then lowered into its former position, and had the stem and roots sunk about 4 feet, in dry sandy mould. This was done a year and a half ago, and the plant, which is now in excellent health, has lately flowered; and is, I believe, the only one that has done so in Great Britain or Ireland. It is a Liliaceous plant, having numerous small flowers produced on racemes, composing the large panicle, which was 4 feet in length and 3 feet in diameter. A portion of the panicle, and two drawings of the plant, I now lay before the meeting. As the above experiment on

Dracæna Draco has succeeded so well, the author thought the same treatment would be well worth trying on Palms and other indigenous plants when they become too tall for the house. — Professor Balfour thought Dr. Mackay's experiment of importance, as it might lead to the saving of many valuable plants. He feared, however, that the plan would not be found to answer for all endogenous plants. He did not think we could save Palms in this way, or they should be very glad to save a fine Caryota, which, because it broke the windows of their Palm-house, they had condemned to a cruel death, by exposure to the open air.

On the species of Gossypium, and the effects of Climate in altering the character of Cotton, by Professor Royle, M.D.—The author entered into a detail of the conditions of soil and climate which produced a change in the character of the Cotton plant. He criticised the species which had been created by botanists, and proposed to reduce the number very considerably. —Professor Walker-Arnott quite agreed with Dr. Royle, on the propriety of reducing the number of species of the genus Gossypium. He believed also, that with care Cotton might be produced in India, as good as any which came from America.—Dr. Cleghorn said that his experience of the changes in plants produced by climates and soil, enabled him fully to confirm the observations of Dr. Royle.

ROSES.

I promised that during the present season I would notice those particular varieties which might fairly be called permanent ornaments to the British gardens; and, although I may not mention all that in many persons' estimation deserve that distinction, I shall flatter none; and, therefore, if I commit an error, it will be one of omission.

The exhibitions of Roses in the autumn are very likely to deceive many buyers, who see great beauty in the bunches put up at a show, because, however diversified and interesting they may appear when gathered and bunched, many of the most inviting are of bad habit, and do not look well on the tree; whereas my old favourite, Fellenburgh, would look poor beside the rich and double varieties we see in bunches. Those which I prize are of fine habit. I have found one of the very best in Madame Desprez, which is, I have no doubt, now in full bloom in every situation; a Rose exceedingly double, a free grower, with healthy bright foliage, and showing constantly a noble head well furnished with flowers of a delicate and rather pale colour. It is not, like some of the most beautiful, bare of bloom, showing here and there a splendid flower, on the end of a vigorous rambling shoot, and for a long period bare altogether; nor is it, like others, equally beautiful in a bunch, but hanging on weak footstalks, as if they were blighted when on the plant. Next to Madame Desprez, and forming a fine contrast for colour, I have Pourpre parfait, in some gardens called Pourpre farfait, which I take to be a mistake. This is a rich double Rose, an abundant bloomer, deep purple crimson, and, like the others I have mentioned, forming a fine head, well furnished with blooms; and next to them I have Noisette Jaune Desprez, with flowers at the end of every shoot; and though not so gay as many others, making a very good variety; and Amie Vibert, literally covered with its snow-white flowers.

Now, here I have white, pale rose, crimson, purple, and yellow white, all richly flowering the whole season, and at this time so striking that, although I have a hundred varieties, many of them highly esteemed, I could honestly wish them to be changed, that I might see these five repeated all through the garden. I have straggling flowers on Mrs. Bosanquet, Miss Elliot, Madame Laffay, and 20 others; but they form no feature, and do not assist the garden, however well they may have appeared at one period for a short time; therefore, with all these claims, and they have many, they do not, like the others, enliven the scene for months together. I wish, therefore, to call the attention of all those amateurs who delight in Roses to the state of these collections now, and to beg them to take a walk round their gardens for the purpose of contrasting those with little or no flower with such as are covered with bloom, and to ask themselves whether any amount of beauty for a month compensates for the barrenness the rest of the year. I shall follow up this subject, and by way of finishing my remarks on Roses and Rose gardens, will give a list of those which come nearest to my notions of continuous bloomers; for although I have been furnished by very competent persons with lists recommended to me, and purchased for that quality alone, I confess that I cannot rank one-fifth of them among my pets whose features are always the same. I admit that most of those supplied to me as perpetual bloomers are rarely out of bloom; but two or three flowers on a large straggling head do not supply that striking and desirable feature which I consider invaluable in a Rose tree. I intend to turn out from my Rose borders all that will not keep a constant and abundant bloom. I must find a place for many of them, for the individual Roses are splendid; but I want no more in my flower garden than will keep up the main features of a Rose the greater part of the summer and autumn. I will assign the best of the others a quarter of less importance to the general appearance. I have ranges of Rose trees 4 feet from the paths on both sides, and these I want to be always in general bloom. *Crito.*

THE CULTURE OF THE VINE A HELPMATE TO THE CULTURE OF THE MIND;

OR, TWO BIRDS KILLED WITH ONE STONE.

[for cottagers.]

Culture of the Mind.

The preface, my friends, shall be short, and my introduction shorter; for my wishes will be fulfilled should I succeed in showing that the Vine is useful as well as ornamental, and the care bestowed on its culture equally beneficial to body and mind. Furthermore, I hope that after you have digested for yourselves my remarks, you will be able to discover the plan, object, and use of them.

The margin adds grace to the stream.

A wink to the wise is better than a nudge to the foolish.

First, then, let us consider where the Vine naturally grows in its greatest perfection, and what conduces to that perfection of growth; and I think the question will be sufficiently answered for our purposes by broadly stating that the Vine flourishes best in a hot climate, and originally came from the East; also that it loves a mountainous district.

The less said the soonest mended.

Art is a distillation of Nature, by which its spirit is concentrated above proof.

Manures.—To be mixed with the soil when made for the border, the best are whole bones, hoofs of cattle; also cuttings of leather, woollen rags, feathers, hair, &c.

Riches, like muck, are of no use unless spread.

Liquid.—If the goodwife does any washing, apply the soap-suds on a summer's evening in drills, and rake the soil over. If the goodman kills a pig, do the same with the blood. Soot-water also; one quart of soot to 12 of water; drainings of dung-heaps, &c.

Top-dressing.—All prunings, leaves, weeds, &c., should be put into a heap to rot, or, what is better, charred in a slow fire kept smothered by soil, by which means all seeds, insects, &c., are got rid of, and all the nutritive part remains except the water. Apply it as a top-dressing in November.

A wise man scorneth nothing be it never so small or homely.

Never waste any vegetable matter, for what has once been vegetable is ready to become so again, and a person might as well expect abundance of water in a spring which he is constantly exhausting, should no rain fall, as plants to flourish when the vegetable matter, of which so large a part is formed, has been extracted and never given back to the soil.

Every little makes a mickle; every mickle makes a muckle.

Conclusion.—Perhaps one will say, "This is all very well, but it is a great deal more trouble than it is worth; besides, I have not time. It is very pretty amusement for those who have nothing better to do. So there's an end of the matter." First, be pleased to recollect that what is here put down, though it may seem a good deal, is to be spread over a good many years of 365 days each; a good deal of time to do a good deal in. 2. When it is well done the greater part is done for life; more, it will be a living memorial of industry and worth, more useful and lasting than a tombstone. 3. Nothing good is given to man without labour. 4. Labour makes a man, idleness fattens a pig. 5. It will give a higher standard of general cultivation, a greater interest in all the works of Nature, increase observation, teach the wonderful laws by which God is working every day, and induce a habit of thankfulness for His gifts. 6. The labour is at home, it may be, with the assistance of wife and children. 7. It makes home look cheerful and comfortable. Lastly, Grapes are very pleasant things to eat, are very wholesome, can be made into wine or turned into money, all or either of which are worth some labour. If you now think it too much labour, then go and eat (but not Grapes), drink (but not wine), sleep (if you can without labour), and be miserable.

As self-evident an axiom as the nose is part of the face, or that knowledge is not practice.

Always taking out of the meal-tub, and never putting in, soon comes to the bottom—as poor Richard says.

The lazy man exerteth himself to find excuses.

Who are they, pray?

The compiler answereth in eight propositions.

To everything there is a season—and a time to every purpose under the sun.

Well begun, half done.

A type of a well spent life, the older the more and better fruit does it bear.

An old saw that is not too rusty but it will still cut.

The argument toucheth the lazy man more nearly he yieldeth; he taketh a spade and he planteth a Vine.

VILLA AND SUBURBAN GARDENING.

Villa gardeners have peculiar tastes; some delight in the culture of Cucumbers, other prefer growing Melons; why, then, should there not be individuals desirous of producing in their little gardens their own Cayenne Pepper? A vast number who have only limited glass coverings, might easily accomplish the operation, and when once they have partaken of the produce of their own gardens, manufactured with their own hands, they will for ever afterwards eschew the foreign article.

A small long kind grown by market gardeners for the India pickle manufacturers, will be most suitable for the purpose. The Cayenne produced from it is pungent in quality, and being an exceedingly profuse bearer, it will be found not only the most eligible kind, but also the most profitable, and best suited for hot pickles. Some of the other varieties are equally good for both purposes; but being indifferent bearers, they are not to be recommended.

Early spring (the end of February, or beginning of March), is the season for sowing it, in order that the plants may be sufficiently advanced to enable them to have the summer months to ripen in. A small portion of seed will suffice. It should only be slightly covered, if covered at all; and the pot in which it is sown should be put in a warm place, such as in a pit or frame; and if a temperature of 60° is maintained, it will vegetate in 10 days. As soon as the plants are 2 inches in height, they may be potted into 3-inch pots, placing one plant only in a pot, and a good watering with tepid water should be given them. When the water has in some measure passed off, either by evaporation, or through the soil, place them in a similar temperature as before, close to the glass, to prevent their becoming drawn. Keep them moderately moist, and in a few weeks the pots will be filled with roots; no time should then be lost in shifting into the pots in which they are intended to produce their fruit. Permit me, however, to direct attention to the kind of compost best suited for them.

Take good loam (if of a turfy nature, so much the better), and add to it the charred refuse I formerly described, in the proportion of one-fifth, and no other ingredient will be required. Intermix them well, then place one crock over the bottom hole of the pot, cast a little rough soil upon it, and no other drainage will be necessary. A moderate-sized pot should be employed; the great growers for the London markets use what they term large 32s. When this is completed, supply them with water, keep down insects by the usual means, and your Cayenne Pepper may be said to be grown. It may be ripened in some seasons under hand-glasses in the open borders, but the produce is comparatively scanty.

By following the course above detailed, I have enjoyed home-made Cayenne Pepper for seven years, and I esteem it a great luxury. *Pharo.*

Home Correspondence.

British Song Birds.—Within the last 8 years I have been an occasional contributor; and the anecdotes I have forwarded to you from time to time in connection with certain feathered "pets" of mine, have, it would seem, afforded much gratification to your readers—so much indeed, that I have had repeated private applications and requests to give, through your columns, the result of my experience (some 25 years) in rearing and choosing our most favourite songsters, domestic and migratory. I have, moreover, been particularly requested to enter upon the subject of an aviary, its proper proportions, mode of fitting up, method of warming, &c. Now, as my collection has amounted to 366, at one and the same time; and as I have myself, *in propriâ personâ*, attended to all their little wants and ailments, and ministered to all their little harmless pleasures, deriving therefrom feelings of delight known only to an enthusiastic admirer of Nature's handy-work, I will, if you please, record in your Paper, weekly, and as briefly as may be, the result of an experience which can hardly fail to please as well as profit. It has been said, that "Truth is strange, stranger than Fiction." So I shall make it appear; for the more literally I adhere to truth, the more extraordinary will be found the particulars I shall have to communicate. On your wishes being made known, I will hold myself at your disposal. *William Kidd, Oct. 7.* [We are all expectation.]

Victoria Regia.—Thinking that possibly information with respect to plants of this celebrated Water-lily, grown in different parts of the country, may prove interesting to some of your readers, I beg to forward the following particulars of the plant in the possession of my employer. This plant was sent to Mr. Spode from Chatsworth in June last, in a small box; the leaves measured then about 4 inches in diameter. It was kept in a large tub till the 30th of the following month, July, when it was planted out in a tank measuring 24 feet by 21 feet. The leaves then were about 6 or 7 inches in diameter. The plant has since progressed favourably, and appeared very healthy. The tank is now quite filled with leaves, two of the largest of which measure 4 feet 1 inch in diameter; and this morning I discovered the first flower-bud, exactly 10 weeks from the day on which the Victoria was planted in its tank. There are now 13 leaves on the plant fully developed, and two others partially expanded. For the last 10 days the leaves have not varied much in size, several of them having grown to 3 feet 11 inches to 4 feet in diameter. The temperature of the water has been kept at about 85°. *George Bolas, gardener to J. Spode, Esq., Armitage-park, Rugeley, Staffordshire.*

Chara vulgaris.—Will you inform me what is the best method of eradicating this plant in an open reservoir where the water is used for domestic purposes? Is the plant poisonous? and, if so, can the water be used with impunity? Will it poison the water? A reference to a work in which it is described will also oblige. *A Water Drinker.* [Chara has a bad reputation, and is *said* to be at the bottom of the malaria of the Campagna. It is described in all works on the wild plants of this country.]

Mr. Cuthill's Treatise on the Potato, Asparagus, &c.—Will you allow me to add my testimony to the excellency of the plans published by Mr. Cuthill in his pamphlet for the growing of vegetables, but particularly for the growing of Potatoes and Asparagus. I do not know that Mr. Cuthill's mode of growing early Potatoes is a novel one, or of his own invention; and I believe

it is not; but I care not who was the inventor, so that the plan be a good one, and that it is so I have no doubt whatever. For example, my parish clerk, who is also a jobbing gardener, informs me that he has pursued the same plan for years, and with complete success; but it is possible that he might have obtained it from Mr. Cuthill himself, who some years back resided within four miles of this place. The system is simple and easy to be worked, and by it Potatoes may be produced for the table or market much finer and earlier than by any other plan I know. But with respect to the growing of Asparagus, I can state from my own experience that Mr. Cuthill's plan is, I think, quite perfect. I myself have practised it for about 13 years, and with surprising success. For example, 13 years since I took possession of a bed then exactly 30 years old, as the aged owner of it informed me; he likewise advised me to dig it up, as he said it was quite worn out. But I like experiments upon everything nearly, so I determined o try my hand on the old Asparagus bed, and thus I at once put the bed under the diet and regimen prescribed by Mr. Cuthill in his pamphlet; and the result was, that my old bed very soon became much better than a new one; year after year it kept improving, until, although the bed was only 30 feet by 4 feet, I could "cut grass" a fortnight or more earlier than my neighbours, continue cutting also longer than they did, cut almost daily, and my grass, I think—indeed, I know it is—equal to any in this part of the country; and the bed is as good and prolific as ever, although it is upwards of 40, that is, 43 years old. The plan is so easy to be worked and so simple, that any common servant, or any gentleman who can use a tool—and every one ought to use one, if he would study his health and happiness—may, with the greatest ease, put it into practice, and thus, with little labour and less trouble, have as much fine, large, and delicious Asparagus as he pleases; that is, if he takes care that his cook does not spoil it in the boiling, as most cooks do, and all other vegetables they lay violent hands on. Nor let it be understood that I am writing this account in favour of Mr. Cuthill himself, for I know nothing whatever about him, except that I sometimes read some sensible articles of his in your Paper, and that I approve of his pamphlet; or except, let me add, that I have a little fellow feeling for him, because I see in his method of growing garden vegetables the same principle that I myself have adopted for the growing of corn, and of which I have taken some pains to explain to others through the medium of the *Agricultural Gazette*. That principle consists in properly cultivating the soil, considering the nature of each kind of vegetable to be grown in it, and, like the Chinese, to give each plant its proper food. By this means Mr. Cuthill's vegetables are so fine, and are first in the market. *G. Wilkins.*

The Thrips here having caused great trouble and some loss, I can understand the anxiety many of your readers evince to obtain information as to the best means of destroying it, and therefore I send you our experience on the subject. As it made its appearance on a large collection of Indian Azaleas, which it almost destroyed, we tried repeated smoking with tobacco without any success; but we afterwards found that dipping them over head in very strong tobacco-water, and then placing them in the sun, repeating the operation after a few days, killed every insect; but this can only be done when the plants are small. Having mentioned the subject to Mr. Henderson, of Brechin, and told him that I had seen a large and very valuable collection of Dahlias destroyed, he said that he could give me a receipt which would kill this or almost any other insect that attacked plants. It was as follows:—To 1½ gallon of soft water, add ½ lb. of black soft soap and ½ pint of turpentine; this he assured me was the remedy he employed, and that it was in no respect injurious to any plant to which he had applied it. *J. R. Pearson, Chilwell Nurseries.*

Ice Pits at Cawnpore in the East Indies.—I hope that I shall be able to induce you to break through your rule of not asking your correspondents to reply to communications made to them consequent on what they may have written in your journal; some little feeling of pity may be excited by my mentioning that we scarcely ever, with the appliances of thermantidotes and tatti's, know what it is to have our rooms at a lower temperature than 85°, whilst outside, in the sun, the mercury rises to 140°, and in the shade to 100° and 106°; but to my subject. At page 21 of your volume for 1849, a very excellent article appeared, by Mr. Beaton, gardener to Sir W. Middleton, regarding an ice stack; and my present object is to ask his advice and opinion upon our pits in use out here. I will premise the difference in our ice itself and the mode of collecting it at this station of Cawnpore, and then put down the construction and size of the pits in which it is stored. Ice is collected from the beginning of November to about the middle of February; the field is of about 20 acres, divided into numerous beds, about 12 feet by 6, and sunk a couple of feet below the general level; a layer of straw, 2 or 3 inches thick, is spread over the bottom, and on it, in the evening, are placed small unglazed pans, previously well greased, or else the ice adheres so strongly that the endeavour to get it off breaks the pan, and at all times we are obliged to wait until the sun is sufficiently powerful to melt the ice in contact with the pans; these are 6 inches broad, and about 1½ inch deep, sloping at the sides; they are about three quarters filled with water; and if ice has formed during the night a gong is beaten about 4 o'clock in the morning, to call the coolies from the neighbouring villages—about 1200 are required. As soon as there is sufficient heat they get out the ice with an iron hook, about 6 inches long, and collect it in large baskets, in which it is conveyed to what are called the receiving-pits, which are about 20 feet deep, and 30 by 20 long; here it is raked, and all the straw, &c., with which it is intermingled got out. As soon as about 1000 lbs. are collected in these, on the same day, if sufficient has been made, it is taken into the storing pits, where it is well rammed down, but no salt used, as I have seen recommended in your Paper. On nights when all the water in the pans becomes frozen about 3000 lbs. are made; sometimes as little as 100 lbs.; and this is the smallest quantity it is worth while to collect. After the season is completed, the ice is carefully covered over and the doors closed. If a large quantity has been made, say from 22,000 to 26,000 lbs, we commence issuing on 1st of April, otherwise not till 1st or 15th of May. Officers who take shares send their servants in the evening, and the pits are opened about 1 A.M., The issue occupies about two hours; the ice is cut out and measured in small tubs holding 2, 4, 6, 8, or 10 lbs., according as each share may be. You will suppose that the ice is generally very thin, seldom half an inch thick, and when rammed down appears more like snow than ice. Now for the size of the pits. They are 30 feet deep, the diameter at bottom 24 feet, and at the top 27½ feet; at the bottom, 1 foot from the sides, a brick wall 1 foot high is built, on the top of which a sort of wooden coping is fixed, into which are inserted poles about 1½ foot apart; to these again cross pieces are fixed, and then laced up to the top with a kind of basket work, and the space between these poles and the sides of the pit is filled up with sugar-cane leaves, &c.; a second row of poles, about 1 foot nearer the centre of the pit, is then fixed and interlaced in a similar manner, and the interstice filled also with sugar-cane leaves, &c.; on the inside of this huge kind of basket a cloth is fastened stuffed with Grass, &c. The bottom of the pit is formed by beams of wood stretching across, and filled in with brushwood. To effect a good drainage the melted ice is carrried off by a copper pipe to a well dug outside, by which it is drawn up; at the top of the pit a space of about 3 feet broad is left by which to get round; a mud wall, 6 feet high, is then built, on which a thatched roof is placed; a further space of 3 feet is then left, and a second mud wall, with another thatched roof, carried up, and the space between the two walls filled in with straw or some other material. The doorway is on the south-west side and opens by a kind of passage open to the east; a kind of ventilation has been attempted, but is seldom in use. It is at the top of the conical roof; but there are no openings at the side; the wastage amounts to from two-thirds to three-sixths of the whole collected, and in some situations even to five-sixths. I shall feel deeply grateful to Mr. Beaton if he can suggest any remedy for this lamentable state of things. The ice is too precious a commodity to try experiments with, or I should have made one of the ice-houses mentioned by Mr. Beaton. I must again apologise for intruding, and trust you will assist me (and by doing so you will be conferring a favour on all the residents in Upper India) by pointing out any way by which the enormous loss from melting may be lessened, and informing me whether in your opinion an experimental ice-stack might be ventured on in a climate like this. Any suggestions should be accompanied by details. *John Eliot, Light Bengal Artillery, and Secretary, Cawnpore, &c.*

Pots for Layering Roses &c.—The accompanying is a sketch of a pot I have had made for laying Roses, &c., in.



There are two openings opposite each other, with a notch on one side of each to hold the branch, on the right of one opening, and the left of the other. These pots may be raised on stakes, and fixed with wires to enable the amateur to propagate any favourite standard Rose, and cultivate it on its own roots, which insures against loss of the particular kind; few Roses on their own foundations being destroyed by our winters, although budded varieties frequently perish. I have not seen any similar pots, and believe the idea to be new, but it may not be so. Why should not common pots be the same size, or almost equal, at the top and bottom? It would give more space for the roots of plants, without requiring more standing room. *Falcon.* [Obviously for this reason, that you could not so readily turn the plants out without disturbing the ball.]

Rabbits.—I would advise your correspondent, who enquires about rabbits, to try galvanised wire netting, about 3½ feet high; this will prevent the incursions of which he complains. As to his traps being incapable of holding them, if he is anxious of obtaining good steel traps, he should apply to a first-rate maker of traps. *Constant Reader.*

Diseases of Plants.—At p. 579, mention is made of the disease called hypertrophy, having occurred at Kew, in some species of Pleroma. Two varieties, but particularly elegans, have been affected here. We had it among other plants from a provincial nursery; it was then in good health in an 8-inch pot. Immediately on receiving it I shifted it into a 12-inch pot, in soil composed of turfy loam and peat well incorporated with sand and clean broken crocks to keep it open. The plant was placed in a stove; all went on well for a time, it made good roots and flourished. While we had sunny days no plant could succeed better; ultimately we had gloomy weather and cold nights. The atmosphere of the house fell several degrees; one day it would range from 75° to 80° by sun heat, the next from 60° to 65°. The house became cold and damp, and the heating apparatus being out of order, I was unable to have a fire to raise the temperature; Nature could not withstand such irregular treatment. Looking at the Pleroma one day, I observed it had a strange appearance; the main shoots exhibited dirty white or fawn-coloured callosities, which extended themselves along the laterals and midribs of the leaves. I took a part off and examined it; it appeared full of water. I first imagined that the plant had been watered too much, but when I turned it out of the pot there was no indication of that; the fibres possessed the healthy appearance which the roots of all plants ought to possess; the coldness of the house and too much dampness caused me to give it a change of treatment; having a dung frame at work, I plunged it in the manure, whose temperature was about 65° or 70°; I kept the frame quite close, sprinkling with water about 10 o'clock in the morning when the sun was out, and shading from about 11 until 3 in the afternoon. In three days the callosity began to get less, changing to brown, and then becoming a white fungus or mildew, resembling that often to be seen on beer casks in cellars. The leaves which were attacked became yellow, and in about 10 days fell all off. The plant is now looking tolerably healthy, and is quite free from any callosity or mildew. The disease appears to be caused by mal-treatment. The plant was attacked in a cold damp house, but when it was removed to a more genial atmosphere, it soon recovered; too much water floating about the house, with too little heat, and that irregular, seems to lie at the root of the evil. The only sure remedy is a warm, sweet, healthy atmosphere, and effectual drainage; but I do not call placing a few broken crocks at the bottom of the pot, and the filling up with finely-sifted soil deprived of all its fibrous matter, effectual drainage; this is the bane of pot culture, from which more plants look and are unhealthy, and die in one year, than from any other cause. How many plants might have been alive now, and doing the cultivator credit, but for this cause! Under such circumstances, can we wonder when we hear of over-watering, crocks filled with soil, causing stagnation, &c.? The roots cannot perform their functions; they rot, the plant becomes sickly, and dies; but let a plant have one-third broken crocks and rough charcoal, then a layer of moss or turf, to keep the soil from the crocks; let the soil be broken with a spade or hand, some clean crocks, charcoal, and sand, well incorporated but not sifted, and a good drainage (allowing all surplus water to pass off) will be effected. No moss or fungus can grow on soil so arranged, and I never saw a plant in good health where these existed. *D. J. N.*

Societies.

Entomological, *Oct.* 7.—G. R. Waterhouse, Esq., President, in the chair. Amongst the donations was a small collection of insects from Hong Kong, sent by J. C. Bowring, Esq., including specimens illustrating the transformations of a most remarkable Lepidopterous insect, which is parasitic upon the Fulgora candelaria, and which, in the larva state, is densely clothed with a white waxy secretion, like some of the Coccidæ. The President announced that a new Part of the Transactions was ready. Mr. Stevens exhibited some very beautiful insects, just arrived from South America, collected by Mr. Bates on the banks of the river Amazon, 1500 miles from its mouth. Specimens of a new British moth, Ilithyia acuella, from Deal, were exhibited by Mr. Shepherd, and a hermaphrodite, Arctia Caja, by F. Bond, Esq. Mr. Gould exhibited specimens of the 7-spotted Lady-bird, and of the larva of Arctia menthastri, found impaled alive on the spines of Gorse bushes, in Inverness-shire; and as this locality is too far north for the strikes (by which it has generally been supposed that insects found in such positions have been impaled), it is evident that these insects must have been thus fixed by some other animal or bird with whose habits we are at present unacquainted. Captain Parry exhibited the cocoon or case of Goliathus Drurii, inclosing the perfect beetle, which had continued alive for some time after its arrival in this country. The cocoon is oval and very thin, being formed of fine agglutinated particles of sand. Mr. Westwood exhibited the larvæ of Aposte capucina and Lymexylon navale, communicated by Sir T. S. Pasley, from Pembroke dockyard; and Mr. Douglas, a specimen of Hypera Rumicis, a small species of weevil, which he had reared from a beautiful open net-work cocoon, which was subsequently devoured by the perfect insect. A note was read from Mr. E. Newman on the different modes adopted by different species of bees, in order to reach the honey in the flowers of the common Snapdragon. Megachile centuncularis creeps with its back downwards into the flower, by which means its ventral surface becomes coated with pollen, which the bee uses in the economy of its nest. One species of humble bee (Bombus) enters the flower with its back upwards, whilst another species of Bombus invariably bites a hole through the tubular base of the corolla. The fact that a bee never revisits a second time a flower which it has already deprived of its sweets, was also noticed. Other bees, however, visit such flowers; but immediately on discovering that they have been already rifled of their sweets, they fly off with an angry kind of hum.

Miscellaneous.

New Method of Grafting Fruit Trees.—M. Vard has made known a new method of grafting, purporting to be discovered by himself. The operation, which is performed in the spring, is as follows; a shoot of the previous year, having one or two eyes, is taken and shaved into a longish cylindrical form, immediately below the lower eye; a hole, 2 or 3 inches deep, and as large as the graft, is then bored in the stock; the graft is placed in this hole, and is driven in until it fits it exactly, leaving no space between itself and the stock. If this is done, the libers will be in closer contact, and the joining of the graft more sure. The place from which the graft was cut is covered with grafting mixture, and the operation is finished. The commission which have enquired into this matter, have come to the conclusion, that M. Vard cannot claim to be the inventor of this method. They find it mentioned in a treatise on grafting, by André Thouin, published in 1822, under the name of the plug-graft, which, according to the author, was used by the Romans in grafting their Olives and Vines, and is mentioned by Terence, the agricultural writer of those days. The commission have endeavoured to ascertain whether this plan of grafting is likely to be of any importance. M. Vard says it may be used with advantage; 1st, in filling up with branches spaces left in pyramids; 2d, in introducing on lateral branches fruit-spurs, if they, and where they, are absent. As to the first of these uses, the commission have remarked that the grafts of last spring resemble fruiting branches more than common branches. They think that this is owing to the almost horizontal position of the graft upon the stock, the ascent of the sap of which is consequently obstructed, and they decidedly prefer Richard's side grafting, heel-grafting, or spur-grafting, whenever this is possible, if the object aimed at is the filling up the spaces left in pyramids. With regard to the second advantage attributed to this method, the commission think that it is real, and important. The plug-graft is easy of application, requiring no ligature, is quickly inserted, and is by no means unsightly. These advantages the commission think will cause the present plan to be preferred to others now in use, when the object is to obtain fruit spurs from branches which have them not. *Revue Horticole.*

Summer Grafting.—M. Loiseau employs for cleft and crown grafting in April, May, and June, eyes which, at the base of the shoots, buds, or branches of the preceding year, have not been developed. After the end of June, when the young shoots have become a little hard, they may, after their leaves are cut off, be grafted just as the same branches would be grafted in the following spring. If the shoots are still too tender it is as well to varnish them with grafting wax. M. Loiseau made in this way, from the month of May to September, more than 150 plants both from seeds and from stones, and he did not lose more than one-fifth, although his experiments were made on a very dry soil, and no care was taken to protect the grafts from being destroyed by birds, or by the dryness produced by the great heat of the months of June and July. He even succeeded in cleft-grafting an Apricot in July. In May, 2 out of 15 grafts failed; in June, 3 out of 12; in July 3 out of 15; in August 0 out of 12. It may be as well to remark, that a tree cleft-grafted in May, June, and even early in July, very nearly overtakes that grafted in the spring, and there is very little difference between the two at the end of the year. Moreover the cleft graft, if made in summer, begins to grow after a week, whilst the bud does not begin to grow till the end of a fortnight. The cleft graft has also this advantage over the bud—that the former does not require the bark to be separated, indeed the less sap there is in this graft the better. *Comptes Rendus.*

Vegetable Tallow.—"A very light fat so called by foreigners, of which candles are made in China. This substance has the advantage over animal tallow, that the candles made from it neither melt nor smell. The tallow is obtained from a tree called Kau-Shu, which grows over nearly the whole of the low land of China, and the fruits of which (Kintze), resembling a white Bean after the shell has been removed, furnish on pressure two products, one liquid like oil, the other hard like tallow. I have never met with the oil in commerce; the tallow, on the contrary, is an important article of commerce in China, and varies in goodness; that produced in the neighbourhood of Canton is neither so hard nor so white as that from the province Chejang. Ningpo is the right place to buy at; the price, 8 to 9 dollars per picul (133⅓ English pounds)." Osbeck saw the Tallow-tree in 1750-52. According to him, the tree was called O-ka-o, is only 6 feet high, and grows in the neighbourhood of water. M. Liljewalch mentions, in a letter to Prof. Berlin, that it is not impossible, considering that the tallow produced in North China is harder, and also that the harvest takes place there in October, whilst in Southern China the fruit is already ripe in June and July, that two different kinds of the Tallow-tree are cultivated. Osbeck, who visited only the southern part of China, would, according to this, have seen a different Tallow-tree from that seen by Liljewalch. However, the difference of the tallow may be explained by the different position of the land, and also by the different modes of preparation. *J. B. Von Borck, in the Chemical Gazette.*

Willison's Rose Nursery, Whitby.—Early one morning in July (and the morning, as Mr. Paul says, is "the fittest time for these rambles") I paid a visit to Mr. Willison's Rose Nursery, which is situated about a mile to the eastward of Whitby, and known by the name of "New Gardens," in which we have another instance, among many, of the impropriety of designating any place by the term *new*. These gardens are now nearly 200 years old, as appears from the following inscription on a stone originally built in the wall: "I Sr Hvgh Cholmeley Kt and Barronet and Elizabeth my Deare Wife (Davghter to Sr Will: Twisden of Great Peckham in ye Covnty of Kent Kt and Barronet) bvilt this Wall and planted this Orchard Anno Domini 1652." Under these lines is a shield bearing the arms of both families empaled, with the word *Cholmeley* near the Chomeley arms on the dexter side, and the word *Twisden* near the Twisden arms on the sinister side. Beneath the shield are these two lines:

"Our handy worke like to ye frutefull tree
Bless thou, O Lord; let it not blasted bee."

The garden was cultivated almost exclusively for vegetables and horticultural produce until the year 1812, when a part of the ground was appropriated and converted into a Botanic Garden, Mr. Alexander Willison, the present lessee, being appointed the Curator. The collection of botanical plants was never considerable, but included several very rare specimens. About the year 1828, the botanical department was discontinued for lack of support. Shortly afterwards, Mr. William Willison, the son of the lessee, began to cultivate Roses, and paid considerable attention to the raising of seedlings. At this time it was the only Rose-nursery in the north; in fact, I believe this was the only nursery in England where Roses were cultivated for sale to any extent, unless it was Mr. Rivers, who began some time about the same period. The soil is of alluvial loam, tolerably stiff, and of considerable depth. There are about 700 varieties in cultivation at this nursery, comprising all the newest and best Roses grown, besides a great number of very fine seedlings. The Roses appear to thrive the best here cultivated as "pillar Roses," trained to tall pillars, and when in full bloom have a very fine effect. There are very few standard Roses in the nursery, except those cultivated for sale. A great number of the China, Noisette, and other fine Roses do not bloom well in this locality except under glass; the bloom-buds rarely expand. I will therefore enumerate a few good Roses that appeared to bloom here in perfection. *Ayrshire:* Ruga, flesh; Queen Victoria (Willison's), rosy lilac, blooming in graceful clusters. *Multiflora:* Model (Willison), purple, a beautiful Ranunculus-like flower. *Hybrid Sweet Briers:* A great number of double and semi-double varieties. *Moss Roses:* Celina, crimson; Curled Crested (Willison), fine red. *French:* Œillet parfait, striped; Queen (Willison), dark-shaded maroon; Prince of Wales (Burgess); George Glenny (Burgess). There were several other fine Roses of Burgess's, but the above were of superior character. Boula de Nanteuil, crimson purple, superb. *Hybrid China:* General Kleber, deep crimson; Comtesse de Lacepède, pale blush; Triomphe de la Guerre, lilac rose, fine, a splendid pillar Rose, and blooms profusely here. *Alba:* Madame Legras, fine white. *Hybrid Bourbons:* Mottled Great Western (Willison), very fine, and more double than Great Western; Mrs. Ellis, fine pink; Paul Perras, shaded rose; Coup de Hébé, bright rose; Belle de St. Cyr, bright rose. *Hybrid Perpetuals:* these were not so finely in bloom as I have seen them—the most striking were Baron Prevost, pale rose; Géant des Batailles, brilliant crimson—this is an excellent Rose for the north, it is a free bloomer, and opens well; Robin Hood, cherry red, and Comtesse Duchatel. *Bourbon:* Acidalie, the finest blush white; Paul Joseph, crimson purple, inconstant in this locality; Souvenir de la Malmaison, pale flesh, and superb, but this Rose pushes rather too early in spring for this locality, and consequently often gets much cut with the cold north-east winds to which we are subject; Souchet, crimson; Madame Angelina, rich cream, fawn centre. *China:* Mrs. Bosanquet, pale flesh; Marjolin du Luxembourg, deep crimson; Milk-maid (Willison), blush, fine wax-like bud. *Tea-scented:* Vicomtesse Decazes, deep yellow, ex.; Devoniensis, creamy white, fine; Elise Sauvage, yellow buff centre, appeared to bloom very freely against the wall in these gardens; Niphetos, pure white. *Noisette:* Hardy, fine; Solfaterre, bright sulphur: very few Noisettes bloom well here; Cloth of Gold and Lamarque were tolerably fine against a wall with a south aspect; also several beautiful plants in fine bloom of Smith's Yellow, or rather, as I understood, a freak of that variety, which always blooms full in the centre, the original variety generally presenting a gawky centre in this locality. There were several seedlings of Mr. Willison's of considerable merit, which have not yet been let out; among which I particularly noticed, La Exquisite, d p., a nice full flower, of tolerable size; Ephraim Holding, a very compact flower, but I scarce know to which class it most properly belongs. Margaret Jane, h.c.: fine pinky Rose, a beautiful full and compact flower, the most perfect gem in these gardens; Victory, h.p., a nice full globular Rose, but we have many of the same style of flower; Globosa, h.b., crimson purple, very fragrant, and a profuse bloomer; Marchioness of Normanby, h.p., fine pink, and a very perfect flower. There is nothing very striking in the management of these gardens, having been designed more for the convenience of propagating and cultivating the Roses for sale than mere effect. Several of Mr. Willison's seedlings have been sent to the Worton Cottage Meetings; but were so much injured in the transit as to render the blooms unfit to report upon. *Beck's Florist and Garden Miscellany for October.*

The Kamtchatka Rhododendron; (Rhododendron Kamtchaticus.)—For this great rarity and exquisitely beautiful shrub we are indebted to Mr. Loddiges, whose predecessors raised it from seed about 20 years ago. It appears to be of slow growth, as the plant is now only about 10 inches high, forming a compact bush. Mr. Loddiges finds it perfectly hardy, but it is best kept under a north wall. It is admirably adapted for rock work in a shady situation. According to Pallas this charming plant grows abundantly near the sea of Ochotsk, in the peninsula of Kamtchatka, and in Bhering's Island in muddy mountainous places. There it begins to blossom from the end of July, grows vigorously to the end of August, and ripens its seeds about the end of September. The root, he says, is woody, dry, as thick as a quill, and forms creeping runners. From this arise a great many leafy stems, which every here and there break into flower. The leaves are close together, alternate, sessile, somewhat ovate, tapering downwards, somewhat 5-nerved, rather sharp-pointed, perfectly entire, and fringed with very perceptible hairs. The peduncles are 2 or 3 inches long, closely surrounded by small leaves, besides which there are generally about two ovate sessile leaves; they are 2-flowered, or occasionally 1-3-flowered, and very hairy. The flowers are nodding, and deep purple. The sepals leafy, 3-nerved, two being nearer to each other than to the others. The corolla is irregular, rotate, with a very short funnel-shaped tube, and a deeply 5-lobed limb; the segments lanceolate, downy at the throat, unequal, the three uppermost rather the smallest, and less deeply divided, spotted with crimson at the base, standing up like a hood, the two lower very much spreading and spotless. The stamens, which arise from the bottom of the flower, are 10, curved downwards, the upper shortest, the lower twice as long as the others, not so long as the corolla, with ovate, double, deep purple anthers. (Fl. Rossica, vol. i., p. 40.) To the locality given by Gmelin and Pallas, Ledebour adds the following: Mount Marekan according to Turczaninoff, the country of the Tschuktskes in the Bay of St. Lawrence, Kamtchatka and Unalashka. Sir W. Hooker gives Banks's Island and Port Edgcombe, on the north-west coast of North America. It is, therefore, clear that it belongs to climates far more rigorous than our own, and with much worse summers. And this is the key to its cultivation. Like the R. Chamæcistus, it is unable to endure the drier air and brighter summer sky of England; but shrinks from our heats, and withers beneath such evaporation as leaves undergo in this climate. Hence the wisdom of the treatment which consists in keeping such plants in a cold pit closed up all day, and uncovered all night. Mr. Loddiges' cultivators made nothing of it till they put it under a north wall where Liverworts and such soft flabby plants delight to dwell. We do not believe that any botanist would have thought of calling this a Rhododendron had not Linnæus set the example by including the Chamæcistus in that genus. Its great leafy calyx, flat corolla divided almost to the base, and nearly equally spreading although very unequal stamens, are quite at variance with Rhododendron. Neither has it the scurfs or stellate hairs observable, we believe, in all the genuine species in which hairs are ever found. On the contrary, the hairs are always simple, in which respect it agrees with the Chinese Azaleas, to which it is more nearly related than to Rhododendrons, but from which its corolla, almost divided into separate petals, sufficiently divides it. To this may be added, the singular gland at the end of the leaves, a nearer approach to which is to be found in the scaly Azalea (A. squamata) than in any Rhododendron we have examined.—*Paxton's Flower Garden.*

Plant Sales.—The entire stock of the Kamtchatka Rhodotham, in all 61 lots, of from one to four plants each, was brought to the hammer yesterday by Mr. Stevens. They fetched from 1*l.* to 1*l.* 10*s.* per lot. Also 60 lots of Orchids, which realised the following prices: Cattleya marginata, 1*l.* 6*s.* to 5*l.* 5*s.*; other Cattleyas from 1*l.* 4*s.* to 4*l.* 8*s.*; Miltonia cuneata, from 1*l.* 10*s.* to 3*l.* 12*s.* 6*d.*; other Miltonias, from 1*l.* to 1*l.* 5*s.*; an orange-flowered Lælia, from 1*l.* 4*s.* to 2*l.* 10*s.*; a Huntleya, from 15*s.* to 18*s.*; and an Odontoglossum 1*l.*

Calendar of Operations.

(For the ensuing week.)

PLANT DEPARTMENT.

Conservatory.—Use fire heat as little as possible, and only in conjunction with a free circulation of air. Thin out and regulate the pendent shoots of climbers, so as to admit the light to the plants below. As many of these beautiful plants are now ceasing to flower, their shoots may be freely thinned; but it is not necessary to make the wires bare and naked all at once, as a few may be retained to give a more cheerful appearance to the house during winter, without depriving the plants of light; and in spring, just before they begin to break, they may be pruned more closely. The shoots which are to be left during winter should be thoroughly cleared of insects. Flower House.—The house in which the principal display of flowering plants is made, should be kept sufficiently warm, to prevent any injury to those plants which have been brought forward in heat, avoiding draughts of cold air; but allowing sufficient ventilation to prevent damp condensing about the flowers. The necessary amount of air should be given by partially opening every side ventilator, and every moveable sash, also, unless in rainy weather. This is much better than admitting sweeping volumes of cold

air by opening only a few of the ventilators to a greater extent. Pits and Frames.—Forcing of plants into flower will now occupy a portion of these ranges, where a considerable display is required during the two last months of the year. In all cases let the excitement be very gradual at first, and by means of bottom heat keep the roots a little in advance of the tops. If the Hyacinths were potted at the time and in the manner recommended, they will now have filled the pots with roots, and a portion of them may be taken up and plunged where there is a slight bottom heat; but unless wanted very early, let it be very moderate, and accompanied by a free admission of top air. Encourage Mignonette with manure water, and remove any flowers which can be spared, to give greater strength to the plants.

FORCING DEPARTMENT.

Pineries.—Where the plants are now swelling their fruit, let the temperature be well kept up. Where the succession plants are grown, a gradual hardening process should be adopted, not suddenly to check or prevent their growth, but to reduce its rate by gradually lowering the night temperature, and admitting as much air during the day as the strength of sunlight will allow. The heat, however, during this month should not be allowed to fall below 60° in the morning. Plants swelling their fruit may still, with advantage, be supplied with liquid manure. Vineries.—In applying fire heat to drive damp out of those houses where ripe Grapes are hanging, let it always be accompanied by air, or it will defeat the end aimed at; and even then it must be very moderate, or the Grapes will soon begin to shrivel: it is a nice point to steer between the two extremes, but if it be desired to preserve the fruit in good condition till January or February, no care or trouble must be considered too much. If any Vines have been prepared in pots or boxes for early forcing, a portion of them should now be pruned and well washed; at the same time any exhausted soil from the surface should be scraped off, and replaced by a top-dressing of rich loam and dung. The plants should then be introduced into a forcing-house or pit, with a temperature of about 50°. This must be gradually increased at the rate of 3° or 4° in a week. If the pots can be plunged in a bed about 15° hotter than the temperature of the house, it will be a decided advantage, as the roots will be thereby kept in advance of the tops. Let the plants be syringed once or twice every fine day; and if a quantity of fermenting material can be introduced, the exhalation arising therefrom will considerably assist the development of the buds. Peach-houses.—The later forced houses will now be ready for cleaning and retraining, in the manner formerly described. This work should be done as soon as possible, that it may not interfere with the out-of-doors training, which should be commenced next month. Forcing Pits.—Rhubarb, Seakale, and Asparagus should now be in progress. The two former may be managed very well in any place possessing the characteristics of a Mushroom-house, namely, moderate warmth and exclusion of light. For Asparagus, a pit or bed should be prepared, furnished with bottom heat by dung or hot-water pipes. Light and air are necessary to this crop to render it fit for use. Nothing can be more absurd than blanching it, by which its flavour as well as its appearance is destroyed.

FLOWER GARDEN AND SHRUBBERIES.

Very little can be added to former Calendars, in reference to this department, except that the general taking up of choice half-hardy plants should be proceeded with. There are thousands of plants, which, if taken up and potted in autumn, would, if they survived, prove invaluable in the following season, from their producing a greater amount of bloom than young plants; but few have much room for keeping them during winter, in suitable places. Geraniums are amongst the most useful of the flower-garden plants which deserve this care, and are, perhaps, the most easily managed. Unless very large specimens are wanted for next year, let the sides of the plants be pruned in, so that the pots may stand close together. All flowers should be removed; but, with the exception of side pruning, every healthy leaf should be preserved, until the plants are established in the new soil, after which they may be cut down to any convenient height. If the soil is moist at the time of potting, Geraniums, Crassulas, Mesembryanthemums, and other succulents, should have no water till they have commenced to root; it is by the abuse of this agent that hundreds of plants are killed. After potting, set them on the north side of a wall, where they will have some shelter from cold winds, as well as that afforded them from the sun by the wall. To ward off sudden frost during night, place some clean poles sloping against the wall, to support a sheet of canvas. In such a situation they will soon recover; and when they appear to be making a new effort to grow, let them be placed in cool Vineries, Peach-houses, or frames, from which the frost is just excluded.

FLORISTS' FLOWERS.

Dahlias.—The late severe gales have made sad havoc with these noble autumnal flowers. The plants should be gone over, and the broken branches pruned away, gathering any pods of seed which it is desirable to save. Should the weather prove open, they will contribute still to the gaiety of the flower garden. Precautionary measures however should be taken to prevent the frost (should it come suddenly on), injuring the crowns of the roots, by drawing the soil carefully round. Look after the weak and late blooming seedlings; they are often the best. Auriculas may now be placed in their frames, allowing abundance of air, either by placing bricks under the corners, if of wood; or by keeping the slides open in the sides of the frames, if of brick. The lights should be kept over the plants when heavy drenching rain is falling. Should any of the plants show a flower stem, which they will sometimes do, it will be requisite to destroy the pips. This should be done by removing them as well as the foot-stalks, but by no means should the stalk be broken over, as it will sometimes rot, and by so doing carry disease into the heart of the plant. Carnations and Picotees.—Continue potting off, as the layers are ready. Beware of too much moisture. Nothing is so bad as damp for these very hardy plants, at this season of the year. Hollyhocks.—Do not delay making the necessary plantation, either plant singly on soil well enriched; if in rows, they should stand at least 6 feet asunder. Very fine varieties have been exhibited in Regent-street during the season; and for a first-rate selection, our readers may consult the report thereon.

KITCHEN GARDEN.

Let the autumn-sown Onions, Cabbages, Cauliflowers, and Lettuces, be protected from the ravages of snails, by dusting them with lime and soot. The smallest of the Cauliflowers not planted in hand-lights should be planted in a cold frame, where they can be protected from frost. Cold frames and covers for them should be immediately prepared and filled with Endive and Lettuce for winter and early spring. Let the ground beneath the frames be well drained, and a layer of coal-ashes placed below the soil, which will help to keep it dry, and prevent the upward progress of slugs, &c. A soil consisting of charred loam and leaf-mould, which should be moderately dry and free from insects, is best for this purpose. The plants should be lifted from the borders with good balls, and transferred to the frame, taking care not to break or injure the leaves. The latest crop of Cabbage Lettuce, intended to stand during winter, and come in for early spring use, should be planted in the driest, warmest, and most sheltered border, as it is an object of no small importance to secure a supply of this favourite salad. In very severe weather they may be protected by Fir boughs. For the protection of winter salads, as Endives, Lettuces, and late Radishes, and for preserving Cauliflower plants during winter, light wooden shutters will exclude frost better than glass sashes and wet mats; and as they are much less expensive, are in every way preferable. Light can be admitted by tilting the shutters at the back during rainy weather, and by removing them entirely when it is dry without being frosty.

State of the Weather near London, for the week ending Oct. 10, 1850, as observed at the Horticultural Garden, Chiswick.

Oct.	Moon's Age	Barometer. Max.	Barometer. Min.	Temperature. Of the Air. Max.	Of the Air. Min.	Of the Air. Mean	Of the Earth. 1 foot deep.	Of the Earth. 2 feet deep.	Wind.	Rain.
Friday .. 4	29	29.886	29.798	60	33	46.5	53	54½	S.W	.00
Satur. .. 5	●	29.771	29.734	61	28	44.5	52	54½	W.	.00
Sunday . 6	1	29.746	29.427	59	44	51.5	51	54	S.W.	.15
Monday 7	2	29.544	29.377	59	42	50.5	52	53½	S.W.	.00
Tues. .. 8	3	29.779	29.557	60	31	45 5	51½	53½	S.W.	.00
Wed. .. 9	4	29.980	29.891	56	32	44.0	51	53	S.W.	.02
Thurs .. 10	5	30.037	29.933	56	37	46.5	50	53	N.	.06
Average....		29.817	29.674	58.7	35.3	47.0	51.5	53.7		.23

Oct. 4—Foggy; very fine; partially overcast.
— 5—Foggy; very fine; clear; frosty at night.
— 6—Foggy; very fine; rain at night.
— 7—Fine; boisterous; clear and boisterous at night.
— 8—Clear; fine; clear and cold.
— 9—Cloudless, but with slight low fog; very fine; lightning.
— 10—Clear; very fine; clear; rain at night.
Mean temperature of the week, 6 deg. below the average.

State of the Weather at Chiswick during the last 24 years, for the ensuing week, ending Oct. 19, 1850.

Oct.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds. N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 13	60.3	42.1	51.2	12	0.33 in.	3	4	2	—	6	4	3	2
Mon. 14	59.6	45.6	52.6	11	0.50	1	3	2	1	7	2	3	5
Tues 15	58.2	41.3	49 7	10	1.04	1	2	2	1	7	2	3	6
Wed. 16	58.5	42.6	50.6	11	0.52	—	2	4	1	3	4	7	3
Thurs. 17	57.9	42.8	50.4	8	0.18	1	1	4	—	2	6	6	4
Friday 18	58.0	42.5	50.2	12	0.85	1	2	1	1	4	4	9	2
Satur. 19	59.7	39.5	49.6	10	0.14	—	2	2	3	3	4	6	4

The highest temperature during the above period occurred on the 14th 1834—therm. 71 deg.; and the lowest on the 19th, 1843—therm 22 deg.

Notices to Correspondents.

Back Numbers of the Gardeners' Chronicle: The publisher begs to say that the following may be had. Any subscriber who will forward postage stamps equivalent to as many numbers as are required, will have them sent free by post. The volume for 1847, price 30*s.*, and volume for 1848, price 30*s.* 6*d.*, can still be had. The volume for 1849 is now ready, price 30*s.* The volumes of former years are out of print.

1841—1, 8, 13, 14, 15, 16, 17, 18, 20, 22, 23, 24, 26, 27, 28, 29, 30, 31, 32, 34, 45, 46, 47, 48, 51.

1842—1, 4, 6, 8, 10, 11, 16, 18, 20, 31, 32, 42, 45, 50, 51, 52.

1843—13, 16, 17, 18, 20, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 36, 37, 40, 41, 42, 48, 49, 50, 52.

1844—All except 33, 36, 37, 46, 50.

1845—1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 13, 14, 15, 17, 18, 19, 20, 21, 23, 24, 25, 27, 28, 31, 39, 40, 41, 42, 43, 44, 45, 50, 51, 52.

1846—4, 5, 6, 10, 11, 12, 13, 14, 15, 16, 17, 18, 20, 22, 23, 24, 26, 27, 42, 43, 46, 48, 49.

1847—1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 12, 13, 14, 16, 19, 20, 21, 22, 27, 28, 29, 32, 33, 36, 37, 41, 42, 43, 44, 45, 46, 47, 48, 51, 52.

1848—1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 30, 33, 34, 36, 37, 39, 40, 41, 44, 45, 47, 48, 51, 52, 53.

1849—All except 46, 47, 49, 52.

Bees: *Anna.* You had better apply to Mr. Milton, 10, Great Marylebone-street, London. *Y.*

British Association: *Henry.* The reports are published annually, and we presume may be purchased through the booksellers.

Broccoli Fungus; *Lyston.* The Broccoli leaf is infested with Cystopus candidus, Lév., of which you will find a full account in the Journal of the Horticultural Society of London.

Creepers; *D and N.* Aristolochia Sipho will, we imagine, answer your purpose.‡

Dahlias: *C Q.* They come from Mexico. Their roots are perennial. Read Phillips' "Flora Historica."

Dibleton: *J M.* Much obliged, but the matter is merely of local interest. The remark about the chimney-pieces reminds us of the man who maintained that a child could not be 10 years old, because to his certain knowledge its frock was only six months old.

Diseased Pear Leaves: *W.* We have always found a little Acarus in the spots on the Pear leaves, which are very common, and believe that they are due to the presence of the insect. As the Acarus burrows into the leaf it is very difficult to suggest anything for its removal. Early syringing might possibly be of use, for the removal of this and other little pests.

Fences: *W K.* Privet, Holly, Yew, if not too high; for a dwarfer kind, Tree Box; for one dwarfer still, Cotoneaster microphylla. A low fence might be made of Savin, by clipping it regularly.

Fruit Trees: *Thomas.* For your south wall, the Royal George, Grosse Mig onne, Noblesse, Bellegarde, and Late Admirable Peaches; the Elruge, Violette Hâtive, and Impératrice Nectarines; and the Large Early Apricot. For the east aspect, Royal and Moorpark Apricots, Greengage Plum; May Duke and Elton Cherries; Glout Morceau and Passe Colmar Pears. North aspect, three Morello Cherries, two Kentish do., Orleans Plum, Jargonelle Pear.‖—*E T C.* You may substitute the Stanwick Nectarine for the Noblesse, if you can at present obtain it. Of the others, you would best procure one-year-old trained trees. The Vines you propose will do, the Cannon-hall being planted at the warmest end of the house. For south wall, the Large Early and Royal Apricots; Noblesse, Royal George, and Bellegarde Peaches; and the Violette Hâtive Nectarine.‖—*M J B.* Four dessert and eight kitchen Apples for espaliers: Dessert—Golden Reinette, Ribston Pippin, Court of Wick, and Scarlet Nonpareil. Kitchen Apples—Hawthornden, Keswick Codlin, Blenheim Pippin, Bedfordshire Foundling, Beauty of Kent, Dumelow's Seedling, Rymer, and Mère de Ménage.‖

Greenhouse: *Country Parson.* We find nothing of importance in your plan which requires criticism; quite the contrary. Employ two 4-inch pipes, the upper for the flow, the lower for the return. For so small a house you will have heat enough without passing the dining-room door; at that point we should return the pipe. As Yorkshire stone seems to be plentiful with you, we should use it for the shelf, and support it on 4-inch brickwork. Plant your Vines outside the front wall. Get a Chasselas Musqué, in order to vary the sameness of so many White Muscadines. The hollow space under c may be made useful either for forcing Rhubarb, Seakale, &c., if kept damp; or for preserving such roots as Dahlias, if kept dry. We prefer the slope in pencil to that in ink.

Heating: *W K.* There is a full account of Polmaise heating in the Journal of the Horticultural Society, vol. ii., part 1; and very numerous sketches and plans in our volumes for 1846, 1847, and 1848. The cheapest apparatus is the common brick flue, which, *well built, well managed,* and *kept clean,* is as good as any other. Polmaise answers perfectly well, when properly constructed, and when a sufficient heating surface is provided.

Insects: *Tim.* If you *will* allow your trees to be infested with the mussel scale, you *must* expect the fruit to be covered with the same vermin. There is no means of cleaning it except by scrubbing it two or three times with *hot* water.—*T C.* 1, Pimpla manifestator; 2, Dioctria œlandica; 3, Alomyia Victor; 4, Pompilus exaltatus; 5, Ichneumon raptorius; 6, Alomyia semiflava; 7, Allantus solitarius; 8, Allantus ater; 9, Helophilus pendulus; 10, Helophilus bortorum. We must request our correspondents to confine their queries to the objects of the *Gardeners' Chronicle,* as most of the insects now, and on several previous occasions, sent by "T. C.," have no connection therewith. *W.*

Manures: *H B.* Bed-chamber slops, urine, &c., if allowed to stand for a few weeks, are good liquid manure for Chrysanthemums, Camellias, and pot plants in general, when manure is wanted. But it is far better to soak in them leaves, cinder dust, charcoal powder, and similar materials, and to use the mixture.

Morphology: *Morningside.* A very complete example of a common occurrence. Usually but one sepal assumes the leafy state.

Names of Fruits: *Micklewell.* 1, Beurré Rance; 2, Beurré Diel; 3, Passe Colmar; 4, if you compare the wood and leaves you will doubtless find the former yellow and the latter oval agreeing with those of the Passe Colmar; 5, Old Colmar.‖—*A C.* 1, 3, Passe Colmar; 2, appears to be Flemish Beauty; 5, something worthless; 6, decayed, so that it cannot be determined whether it is the Kilwinning or common Calebasse.‖—*J C.* 1, Lechfriande? 2, Glout Morceau; 3, Beurré Diel; 5, appears to be Knight's Monarch; 6, White Doyenné; 7, perhaps Passe Colmar, imperfect from a late blossom; 9, Winter Nelis; 10, Comte de Lamy; 11, Easter Beurré; 12, Henri Quatre. Apple No. 1, Court-pendu Plat.‖

Names of Plants: *J D.* Blitum virgatum.—*Curious.* We have seen the plant before, and remarked its distinctness from C. crenatus. We believe it is not yet named. It does not appear in the recent enumeration by Prince Joseph of Salm Dyck of the plants of the order.—*W S.* Ceanothus azureus; it is a greenhouse plant, or at least is scarcely hardy. Take up the Tigridias now; dry the roots thoroughly, and keep them through the winter dry, and where frost cannot reach them. —*G M.* Diplotaxis tenuifolia, Valantia cruciata, and some Campanula, not to be determined by such a specimen, which has no radical leaves.—*Diss.* Alva, or rather Ulva marina, is the common Zostera. *M. J. B.*—*Vitis.* 1, 3, and 5, Lastrea spinulosa; 2, Polystichum aculeatum; 4, Asplenium Filix-fœmina; 6, Osmunda regalis; 7, Asplenium lanceolatum. The latter and A. Adiantum nigrum are continued as two distinct species in the new edition of "British Flora." *S.*—*W W F.* Hymenophyllum Wilsonii. *S.*—*Oulton.* The Dari seed is Durroo, the corn of a kind of Grass called Andropogon Sorghum aliàs Holcus Sorghum. There are many varieties of it. You cannot cultivate it profitably in England. —*Todd.* 1, Epidendrum cochleatum; 2, Liparis longipes.—*Micklewell.* Next week.

Rats: *W P P.* Oil of Rhodium will attract rats. Is that what you want to know?

Seeds: *B.* Send your friend in Bombay all sorts of the newer flower and vegetable seeds except such as come to us from India itself. All sorts of Californian, Mexican, and New Holland plants are acceptable there.

Shrubs: *A J B.* Tree Box will possibly suit your purpose.‡

Sewage: *W S.* R. Phillips, Esq., Museum of Œconomic Geology, Jermyn-street.

Tolls and Tan: *A B.* Tan is not manure, and, we suspect, liable to toll. You should consult your solicitor.

Victoria: *W T.* We decline acquiescing in the change of *V. regia* into *V. reginæ,* or *V. amazonica,* for reasons which will be given in Paxton's "Flower Garden," when Sir W. Hooker's illustrations of the plant shall have appeared.

Walnut Grafting: *A Constant R.* This can only be performed in the spring. In ample time for next year we will tell you what is known about the operation.

Vines: *Vitis.* We see no objection to your planting in the border inside the pit by the back wall, and training down the sashes. The roots will not be too far from the glass; we imagine you will have heat enough from a well-constructed flue to carry out early forcing.‡

SEEDLING FLOWERS.

Dahlias: *N G.* Your "Fancy," No. 13, is a full flower, of good average form, large and showy—an essential quality in this class of Dahlias. The colours are similar to those of Master G. Clayton; but in other respects it is much superior to that variety. No. 17 (carmine) is neither novel nor good.*

MR. J. C. NESBIT, F.C.S., F.G.S., Consulting and Analytical Chemist, Laboratories, 38, Kennington-lane, London.—PRIVATE INSTRUCTIONS in Chemical Analysis, and the most approved methods of making ARTIFICIAL MANURES. Analyses of Soils, Manures, Minerals, &c., performed as usual, on moderate terms.

GUANO AND OTHER MANURES FOR WHEAT SOWING.—On Sale, Guano (finest Peruvian), Superphosphate of Lime, made from Bone, Bone-dust and half-inch, Dried and Prepared Night-soil, Urate, Gypsum, &c. Also Foreign and English Linseed Cake of the best quality.—Apply to MARK FOTHERGILL, 204 A, Upper Thames-street, London.

PERUVIAN GUANO.—As Agents of the Peruvian Government for the importation and sale of this valuable MANURE, we think it right, for the protection of consumers and respectable dealers, to apprise them that the adulteration of the article is still extensively practised, and to recommend them to apply either to ourselves, to our agents, Messrs. GIBBS, BRIGHT, and Co., of Liverpool and Bristol, or to dealers of established character, in whose honesty and fair dealing they can place implicit confidence. ANTONY GIBBS and SONS.

MANURES.—The following Manures are manufactured at Mr. LAWES's Factory, Deptford Creek:

Clover Manure, per ton	£11	0	0
Turnip Manure, do.	7	0	0
Superphosphate of Lime	7	0	0
Sulphuric Acid and Coprolites	5	0	0

Office, 69, King William-street, City, London.

N.B. Peruvian Guano, guaranteed to contain 16 per cent. of Ammonia, 9*l.* 15*s.* per ton; and for 5 tons or more, 9*l.* 10*s.* per ton, in dock. Sulphate of Ammonia, &c.

THE LONDON MANURE COMPANY beg to offer as under:

LONDON MANURE COMPANY'S WHEAT MANURE FOR AUTUMN SOWING.
CONCENTRATED URATE. SUPERPHOSPHATE OF LIME.
PERUVIAN GUANO. SULPHATE OF AMMONIA.
FISHERY AND AGRICULTURAL SALT, GYPSUM, and every artificial Manure; also a constant supply of English and Foreign LINSEED CAKE of the best quality.

The London Manure Company will guarantee the Guano they supply to be free from the slightest adulteration.

Bridge-street, Blackfriars. EDWARD PURSER, Secretary.

STEPHENSON AND Co., 61, Gracechurch-street, London, and 17, New Park-street, Southwark, Inventors and Manufacturers of the Improved CONICAL and DOUBLE CYLINDRICAL BOILERS, respectfully solicit the attention of scientific Horticulturists to their much improved method of applying the Tank System to Pineries, Propagating Houses, &c., by which atmospheric heat as well as bottom-heat is secured to any required degree, without the aid of pipes or flues. S. and Co. have also to state that at the request of numerous friends they are now making their Boilers of Iron, as well as Copper, by which the cost is reduced. These Boilers, which are now so well known, scarcely require description, but to those who have not seen them in operation, prospectuses will be forwarded, as well as reference of the highest authority; or they may be seen at most of the Nobility's seats and principal Nurseries throughout the kingdom.

S. and Co. beg to inform the Trade that at their Manufactory, 17, New Park-street, every article required for the construction of Horticultural Buildings, as well as for heating them, may be obtained upon the most advantageous terms.

Conservatories, &c., of Iron or Wood, erected upon the most ornamental designs. Balconies, Palisading, Field and Garden Fences, Wire-work, &c.

WARMING.

HOT-WATER APPARATUS, with improved Boilers, requiring no brickwork, and arranged to continue in action from 12 to 16 hours without attention, adapted for Churches, Chapels, Conservatories, and every description of Building, supplied and erected on the most reasonable terms.

Also the THERMANTERION, an apparatus which warms without injuring the air, and recommends itself on account of its simplicity, durability, efficiency, and economy, especially adapted for Churches, Chapels, Halls, or Buildings, only used occasionally. — Apply to SPILLER and TAYLER, Engineers, Battersea.

CHEAP AND DURABLE ROOFING.

BY HER MAJESTY'S ROYAL LETTERS PATENT.

F. M'NEILL AND Co., of Lamb's-buildings, Bunhill-row, London, the Manufacturers and only Patentees of

THE ASPHALTED FELT FOR ROOFING

Houses, Farm Buildings, Shedding, Workshops, and for Garden purposes, to protect Plants from Frost.

At the Great National Agricultural Shows, it is this Felt which has been exhibited and obtained TWO SILVER MEDAL PRIZES, and is the Felt SOLELY patronised and adopted by

HER MAJESTY'S WOODS AND FORESTS,
HONOURABLE BOARD OF ORDNANCE,
HONOURABLE EAST INDIA COMPANY,
HONOURABLE COMMISSIONERS OF CUSTOMS,
HER MAJESTY'S ESTATE, ISLE OF WIGHT,
ROYAL BOTANIC GARDENS, REGENT'S PARK,

And on the Estates of the Dukes of Sutherland, Norfolk, Rutland, Newcastle, Northumberland, Buccleuch (at Richmond), the late Earl Spencer, and most of the Nobility and Gentry, and at the ROYAL AGRICULTURAL SOCIETY'S HOUSE, Hanover-square.

It is half the price of any other description of Roofing, and effects a great saving of Timber in the construction of Roofs. Made to any length by 32 inches wide.

PRICE ONE PENNY PER SQUARE FOOT.

*** Samples, with Directions for its Use, and Testimonials of seven years' experience, with references to Noblemen, Gentlemen, Architects, and Builders, sent free to any part of the town or country, and orders by post executed.

☞ The Public is cautioned that the only Works in London or Great Britain where the above Roofing is made, are

F. M'NEILL AND CO.'S

Patent Felt Manufactory, Lamb's-buildings, Bunhill-row, London, where roofs covered with the Felt may be seen.

The new Vice-Chancellor's Courts, at the entrance to Westminster Hall, were roofed with F. M'NEILL and Co.'s Felt about two years since, under the Surveyorship of Chas. Barry, Esq., R.A. Her Majesty's Commissioners of Woods and Forests are so satisfied with the result that they have ordered the Committee Rooms at the Houses of Parliament to be roofed with their Felt. Quantity altogether used, 24,000 feet.

NOTE.—Consumers sending direct to the Factory can be supplied in lengths best suited to their Roofs, so that they pay for no more than they require.

Every information afforded on the construction of Roofs, or any proposed particular application of the Felt.

DROITWICH UNION.

SCHOOLMASTER AND SCHOOLMISTRESS WANTED.—NOTICE is hereby Given, that the Guardians of Droitwich Union will, on WEDNESDAY, the 16th day of October next, at their Board Meeting, proceed to the Election of a SCHOOLMASTER and SCHOOLMISTRESS, for the Droitwich Union Workhouse School. Candidates must not be less than 25 years of age, and will be expected to be not only competent to instruct the children in the elements of those branches of learning which are taught in the school, but also to be thoroughly versed in the principles of industrial training, as approved and recommended by the Committee of Council on Education, and practically acquainted with the mode of inculcating the same. The parties appointed must be able to pass the examination of her Majesty's Inspector of Schools, and the Election will be subject to the approval of the Poor-law Board.

Salaries proportioned to the competency of the teachers elected, which will be tested by examination, will be given of not less than 35*l.* per annum, together with such rations as the house affords, and washing, for the Schoolmaster; and of not less than 25*l.* per annum, together with such rations as the house affords, and washing, for the Schoolmistress, if respectively duly qualified.

Candidates are requested to send in, free of expense, their applications in their own handwriting, with Testimonials addressed to "The Clerk to the Guardians of the Droitwich Union, Droitwich," and superscribed "Application for the Office of Schoolmaster," or "Schoolmistress" (as the case may be) on or before Tuesday, the 15th day of October next.

No applicant need attend before the Board unless officially written to for that purpose.

By order of the Board. HENRY BEARCROFT.

Board Room, September 25.

HOW TO KEEP A HORSE FOR LESS THAN ONE SHILLING PER DAY.

"Do you bruise the Oats you give your horses?" "No."

"Then you lose one bushel out of every three, and your cattle do not half so well."

MARY WEDLAKE AND CO.'S OAT-BRUISING MILLS. Superior Chaff Engines, simple in construction, doing from 50 to 500 bushels daily, and more. Almost all brewers and coachmasters in London use these implements.

118, Fenchurch-street, London. A pamphlet on the above, by sending 12 postage stamps. Chaff-cutters, Linseed, Bean, and Malt Mills.

BY HER MAJESTY'S ROYAL LETTERS PATENT.

PATENT HOTHOUSE WORKS, KING'S ROAD, CHELSEA.

EDENCH invites the attention of Gentlemen about to erect Hothouses, &c., to the vast superiority in every respect possessed by his PATENT HOUSES, which he will warrant superior in every respect to any others. Good Glass from 16 to 21 oz. per foot, 1 foot wide, 3 feet long, furnished, and the Houses, when completed, charged from 1*s.* 3*d.* to 1*s.* 6*d.* per superficial foot, according to size and quantity; on one principle the roof is formed without wood or putty, and on another principle with wood rafters, and the glass put in with putty. Patent Sashes, requiring no paint, from 7*d.* to 9*d.* per foot. HEATING BY HOT WATER.

LIGHT, CHEAP, AND DURABLE ROOFING.

CROGGON'S PATENT ASPHALTE ROOFING FELT is perfectly impervious to rain, snow, and frost, and has been tested by a long and extensive experience in all climates. Saves half the timber required for slates; can be laid on with great facility by farm servants, or unpractised persons. Price 1*d.* per square foot.

CROGGON'S PATENT NON-CONDUCTING FELT, for Steam Boilers and Pipes, saves 25 per cent. of fuel.

Samples and Testimonials sent by post, on application to CROGGON and Co., 2, Dowgate-hill, London.

The Agricultural Gazette.

SATURDAY, OCTOBER 12, 1850.

MEETINGS FOR THE TWO FOLLOWING WEEKS

THURSDAY, Oct. 17—Agricultural Imp. Society of Ireland.
THURSDAY, — 24—Agricultural Imp. Society of Ireland.

THAT farmers are seldom travellers, and that travellers, properly so-called, are as seldom well-informed in agricultural matters, must surely be the reason why we know so little of the farming capabilities of the various countries of Europe. This ignorance is to be regretted, as we are persuaded that if possessed of more correct information respecting foreign agriculture, there would be less alarm in the minds of farmers respecting their prospects, than at present unhappily prevails. To make good this assertion we will briefly give the description of Russian agriculture as we received it from an intelligent Russian gentleman, himself a farmer, near Riga, and who has lately visited England for the purpose of inspecting our farming operations.

In the immediate neighbourhood of Riga, Clover is generally grown between a crop of Rye and Oats, but further into the country Clover and rotations are alike unknown. White crops are taken one after another until the land is tired; and we were informed that this wretched system may be regarded as a not overdrawn picture of Russian farming. In the duchy of Courland, adjoining Riga, there is a great extent of land so poor that it is not enough to lay the land down to Grass to bring it round—it is actually left for 15 or 20 years, or until it is covered with brushwood, which is stubbed up and burnt. The land will then yield two or three crops of corn, and is again abandoned to brushwood.

Turnip crops are grown but sparingly, and the great objection to Potatoes is, that as they are not ready to be removed until the end of September, the season for sowing Rye is lost. No kind of out-door work can be done in the winter, as the snow will often lie 5 or 6 feet deep for weeks. The consequence of this is, that all animals, sheep not excepted, must be kept in the house the whole winter. And as for housing the corn it is only in early situations that a small portion of the crop can be got into the barns. The rest is set up 12 sheaves together, and allowed to remain in the fields. Threshing is kept going as vigorously as possible, and as soon as the small portion secured at harvest is threshed out another lot is dug from beneath the snow, dried by artificial heat, and threshed immediately. Another portion is then got in from the fields, dried in the same way, and threshed. In this way the month of January is often spent before the whole is secured. It will be easily imagined in what sort of a condition the grain will be, after such treatment, and what nice fodder the straw will make.

Labour is cheaper than with us, farm labourers receiving about 12*l.* per annum; but as our informant said that he was obliged to employ 15 men on a two-hundred acre farm, which five English labourers might have managed after *their* fashion, the English farmer may be almost said to have the advantage even here.

It is unnecessary for us to point out the superior social position an Englishman occupies, but we think it ought to still some of the murmurs in which our labourers sometimes indulge to be told that all the interior of Russia is cultivated by serfs or slaves, over whom their master has almost unlimited power. These serfs cultivate the estates of their owners, and in general receive no wages, but are allowed to work two days in the week for themselves. A male serf is worth 120*l.*, a woman rather less. Very little Wheat is grown except in southern Russia, and the only market at which it can be sold to any extent is Odessa, on the Black Sea. To this place the corn is carried in bullock carts over a country nearly destitute of roads, for upwards of 200 miles. Just fancy the farmers of Northumberland or Devonshire being obliged to carry the produce of their farms to London for sale. The carts which the Russian employs for bringing his corn to Odessa are home made, and put together without any iron in wheels, axles, or any part about them. When the seaport is reached, corn, bullocks, and cart are all sold, and the farmer walks home again; his journey of 200 miles to the market town occupying 8 or 10 weeks.

It is not our intention to undervalue the difficulties, either past or prospective, under which the English farmer may suffer, but it may be well to tell him that his brethren in other parts of the world have, in some respects, still greater difficulties to contend with.

It is very much to be desired that more correct information could be obtained respecting the agriculture of Europe than we at present possess. Such information would be both valuable and interesting. The late French Government published one or two works on the subject—properly qualified individuals having been employed to report on the agriculture of Germany and the adjoining countries. Our Government is a source to which we are so little accustomed to look for assistance in such matters that we can only recommend it to the serious consideration of our agricultural societies. There could be no reason why a prize offered for such a subject should not be open to foreigners as well as Englishmen.

As this is the season when farmers purchase ARTIFICIAL MANURES for top-dressing autumn-sown corn, it may be well to reiterate the caution we have often urged respecting what they buy in the name of guano. It appears, from a newspaper paragraph, that at least *double* the quantity of the guano imported has been *sold*. This is a very serious picture of the extent to which adulteration must be carried, and supplies a very intelligible reason for the bad crops of Turnips occasionally seen. For the loss caused by adulteration is not to be estimated by the difference between the money paid and the actual value of the article bought; we must take into account the far more serious loss of crop which has arisen from its use.

We have remarked, on previous occasions, that farmers have themselves most to blame in the matter; they prefer the so-called guano at 7*l.* to the genuine at 10*l.* If they would consider for a moment they might easily ascertain the almost certainty that the low priced article is much the more costly of the two. The Peruvian guano, from the hands of the agents of the Peruvian Government, is the only article that can be depended on, and as the price this season has been 10*l.*, the *stuff* sold at 7*l.* may be almost anything the consciences of the parties selling it will allow them to make it. Having once begun to adulterate with sand, chalk, and such like, it is difficult to judge of the compost to which genuine guano will be converted in its passage from the higher to the lower price. But the evil would not be so serious as it is at present, were the whole of the low priced guano derived from the Peruvian. Patagonia supplies considerable quantities of a very inferior guano, which can easily be purchased at

prices varying from 5*l.* and upwards; and it holds out other inducements besides its price to the manufacturer of cheap guano, namely, it is very wet, and is of a dark brown colour. A large quantity of dry rubbish can be added before it is of such a consistency as to be capable of application to the land, and its dark brown colour disguises such an amount of chalk as it would be impossible to add to the light-coloured Peruvian. It is from this Patagonian guano, then, that much of the trash sold under this name is derived.

Now, farmers may easily protect themselves, as we have often already told them. Let them deal with men of established character, and ask for the best article. Let them keep a sample of the article, attested by the dealer, and in the event of the crop exciting suspicion, a very simple and cheap chemical examination will afford an unerring guide to its real value; and will satisfactorily guide a jury in an action for damage, as has already been proved in many instances. As an example of the benefit to be derived from chemical analysis, Professor Anderson states, that out of 30 guanos which have passed under his eye, there were only nine whose purchase he would have recommended, the remaining 21 being "either very inferior or positively adulterated. This is bad enough; but it is easy to see that it does not give an accurate idea of the proportion of good and bad guano to be met with in commerce, as the possessor of an adulterated guano takes very good care to keep as clear of the chemist as he possibly can."

As far as has been ascertained, the top-dressing of autumn-sown corn ought always to contain as large a quantity of soluble phosphoric acid as possible, and some such substance as Rape-cake or *shoddy* (the refuse of woollen manufactures), both of which are capable of yielding ammonia by their decomposition. It would be advisable to apply this top-dressing at two different periods, say at the time of sowing, and again early in February, in order, as far as possible, to avoid the risk of loss from rain-water.

The yearly decrease of the supply of guano has led to the establishment of several very extensive manufactures for supplying a substitute, and we expect that at no very distant date the English farmer will derive from this source top-dressings and artificial manures suitable to the various crops. The use of bones prepared the way for guano, this prepared the farmer for using artificial manures, and if he can only obtain an honest article, it is impossible to estimate the extent to which they will be used.

TABLE OF COMPARATIVE VALUE OF MANURES.

		Water per cent.	Azote in 100 of matter.		Quality according to state.		Equivalent according to state.		Remarks.
			Dry.	Wet.	Dry.	Wet.	Dry.	Wet.	
1	Farm-yarm dung	79.3	1 95	0.41	100	100	100	100	Average of Bechelbron.
2	Dung from an inn yard (horse dung)	60.6	2.08	0.79	107	107	94	51	From south of France.
3	Dung-water	99.6	1.54	0.06	78	2	127	68	Washed out by rain.
4	Wheat straw	19.3	0.30	0.24	15	60	650	167	Fresh from Alsace.
5	Wheat stubble	5.3	0.43	0.41	22	102.5	453	98	
6	Oat straw	21.0	0.36	0.28	18	70	542	143	
7	Barley straw	11 0	0.26	0 23	13	57.5	750	174	} Of Alsace.
8	Pea straw	8 5	1.95	1.79	100	447.5	100	22	
9	Wheat chaff	7.6	0.94	0.85	48	212 5	207	47	
10	Withered leaves of Mangold Wurzel	88 9	4.50	0 50	230	125	43	80	
11	" " Carrots	70.9	2 90	0.85	150	202 5	66	47	
12	" " Potatoes	76.0	2 30	0.55	117	137.5	85	73	
13	Clover roots	9.7	1.77	1.61	90	402.5	110	25	Dried in the air.
14	Solid dung of the cow	85 9	2.3	0.32	117	80	84	125	
15	Urine of the cow	88.3	3 8	0.44	194	110	51	91	
16	Solid dung of the horse	75 3	2 21	0 55	113	137.5	88	73	
17	Urine of the horse	79.1	12 5	2.61	641	652.5	15.5	15 5	
18	Pigs' dung	81 4	3.37	0.63	173	157 3	58	63	
19	Sheep's dung	63 0	2.99	1.11	153	277.5	65	36	
20	Pigeons' dung	9.6	9.02	8.30	462	2075	21.5	5	
21	Urine of public vaults	96.0	17 56	16.83	900	4213	11	2¾	
22	Guano imported into England	19.6	6.2	5 0	323	1247	31.5	8.0	
23	Oilcake of Linseed	13.4	6.0	5 20	307	1300	33	8	
24	" Cole or Rape	10 5	5.5	4 92	282	1230	35	8	
25	Fresh bones	30 0	...	5.31	...	1326	...	7.5	
26	Woollen rags	11.3	20.26	17.98	1039	4495	9.5	2.5	
27	Coal soot	15.6	1.69	1 35	81	375.5	122	30	
28	Wood soot	5 5	1.31	1.15	67	287.5	149	35	

We may also judge of the value of manure by its tendency to ferment or decompose; and this tendency is in the following order, provided the animals have been receiving the same kind of azotised food (grains, roots, Linseed, or oilcake): first, the hog; second, the horse; third, the sheep; and fourth, the ox.

No chemical action, tending to the destruction of the material of which a living plant is composed, takes place during the life of the plant; external agents have no destructive effect upon them during this period; but as soon as the principle of life is gone, chemical action instantly takes place, producing decomposition, fermentation, putrefaction—a complete destruction of the form, and, at last, a "total disappearance, not a vestige being left to testify their former existence."

In this decomposition the woody part (carbon) loses its solid form; by uniting with the oxygen of the air becomes gaseous, forming, with the oxygen, carbonic acid gas, and is discharged into the atmosphere. As vegetable and animal matters, when they are decomposed, are converted either into a liquid or a gas, we should endeavour to prevent its escape out of, or beyond our power of applying it; we should, therefore, endeavour to direct the liquid so formed into a tank, bottling it up as it were for our use, and pour it over a heap of earthy compost or manure to make the mass ferment before it is used. The gas, as it escapes, should also have a something to detain it, or it will be lost to us. The ammoniacal salts, gaseous and liquid, of which these exhalations and filtrations consist have, however, great affinity for clayey earth, so that we can easily form a receiver of earth to hold it till we want to use it; this receiver is easiest made by bedding the dunghill and covering it over with earth before it ferments; the gas having a greater affinity for the earth, &c., than for the atmosphere, will thus take up its resting-place amongst it, so that we may have it in our power of raising it amongst the soil we cultivate.

The extractive matter in manure of any kind is the only part of it which is available to the growth of plants, hence the loss which the farmer sustains by letting the drainings of the court yard and feeding houses run to waste. All the urine from the feeding houses as well as from the stable, and the drainings from the yard, should be conducted to a cistern from whence it may be pumped upon the dunghill compost, midden, or on earth, which should be made near the cistern for this purpose.

The result of unrestrained chemical action in the dunghill is most evident. In the fermentation of the dunghill, when allowed to go on to the greatest extent, more than one-fourth of it is destroyed, being formed into carbonic acid gas, the residue being a carbonaceous matter in a very minute state of division, which may form a soluble compound with the oxygen of the air or with water; the blackness of the dung is owing to the carbon; the change, therefore, which takes place in the dungheap forms soluble substances—carbonic acid gas, carburetted hydrogen, and ammonia; part of these go off into the air and part into the stagnant pool, or runs to the brook.

Professor Kovite, from his experiments on manure at the Royal Academy at Morglin, in Prussia, found that fresh dung lost 26.7 per cent. in 81 days, 35.6 in 254 days, 37.5 in 384 days, 52.8 in 493 days; the loss is in a much greater proportion during the first stages of its decomposition than in the latter part of it. The dunghill may be termed the farmer's laboratory, in which he prepares the materials for the growth of his future crop, and his success as a farmer will mainly depend on the result produced in this laboratory; if he in this department of his business produces the articles which his crops require, and if they are properly applied, he may confidently anticipate an abundant return.

PHILOSOPHY OF THE DUNGHILL.—No. II.

(*Continued from page 635.*)

The most valuable matter is the animal excrements, and, as we have before stated, the relative value of animal excrements depends on the food which the animal consumes; that from straw-fed stock is very inferior in azote, while that from fattening stock (fed on roots, grain, Linseed, and oilcake) is rich in azote, and makes the most powerful manure. The straw of all the leguminous plants (Beans, Peas, and Vetches) are all highly azotised, and are most valuable articles either as food or as litter. Knowing the quantity of azote in the food and in the litter we use, we can approach near to the quantity of azote in the manure produced; see Table below. And taking this as our datum, we can get at the value of our manure.

All substances which contain azote have a great tendency to ferment. The vegetable substance which undergoes the most rapid decomposition has most azote in its composition; thus the leaves and residue of Cabbage, Mangold Wurzel, Swedes, Turnips, Carrots, and Potatoes, have azote in a high degree, and these undergo a rapid decomposition, giving out carbonic acid and hydrogen gas, and forming ammonia; moist straw decomposes very slowly, unless some substance containing azote be mixed with it, such as urine or liquid manure.

The following Table is an extract from Boussingault's "Rural Economy," p. 391:

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The extractive matter in manure of any kind is the only part of it which is available to the growth of plants, hence the loss which the farmer sustains by letting the drainings of the court yard and feeding houses run to waste. All the urine from the feeding houses as well as from the stable, and the drainings from the yard, should be conducted to a cistern from whence it may be pumped upon the dunghill compost, midden, or on earth, which should be made near the cistern for this purpose.

The result of unrestrained chemical action in the dunghill is most evident. In the fermentation of the dunghill, when allowed to go on to the greatest extent, more than one-fourth of it is destroyed, being formed into carbonic acid gas, the residue being a carbonaceous matter in a very minute state of division, which may form a soluble compound with the oxygen of the air or with water; the blackness of the dung is owing to the carbon; the change, therefore, which takes place in the dungheap forms soluble substances—carbonic acid gas, carburetted hydrogen, and ammonia; part of these go off into the air and part into the stagnant pool, or runs to the brook.

Professor Kovite, from his experiments on manure at the Royal Academy at Morglin, in Prussia, found that fresh dung lost 26.7 per cent. in 81 days, 35.6 in 254 days, 37.5 in 384 days, 52.8 in 493 days; the loss is in a much greater proportion during the first stages of its decomposition than in the latter part of it. The dunghill may be termed the farmer's laboratory, in which he prepares the materials for the growth of his future crop, and his success as a farmer will mainly depend on the result produced in this laboratory; if he in this department of his business produces the articles which his crops require, and if they are properly applied, he may confidently anticipate an abundant return.

Animal excrement undergoing an entire decomposition loses 1½ per cent. of its azote, and 9-10ths of its weight; therefore the sensible fermentation must be stopped before it gets to such a degree as to discharge its azote and reduce its weight. As the dung of the hog, the horse, and the sheep rapidly ferments, the best means to prevent loss from them is to bed the compost dunghill and cover it over with some earthy matter, and by carting over the compost hill to firm it, and thus prevent its rapid fermentation.

The ground on which the dunghill or compost midden is prepared should be level, and the materials of which it is to be composed should be regularly carted over it, so as to spread that which tends rapidly to ferment under a covering of earth or other matter, which does not rapidly ferment. The bottom of this permanent place for preparing the manure must be impervious, to prevent the liquid from sinking into the ground; it must therefore run into an open receiver on the two sides of the heap, so that it can at all times be scooped out and thrown upon the heap at very little expense. Earthy matter can be thrown down about these two receivers and mixed with the liquid, and then spread over the surface of the dungheap; every different kind of dung or other matter should be spread regularly and equally over the whole surface, and the carting over the surface will consolidate the mass and prevent violent fermentation; this and the repeated application of the liquid will keep it moist, and the carting over it will keep it firm, and the air being excluded from it fermentation will, to a great degree, be prevented.

About a month before we require to use the manure it should be carefully turned over, shaking out the dung and mixing the earthy matter well, and making the whole as loose and light as if we were to make a Cucumber bed of it; this will generate a sensible fermentation, which can, however, be regulated by the application of liquid from the reservoir, or by the application of earth or salt, which will imbibe the volatile matter that may be formed during this process. We must bear in mind that the outside of the heap ferments more readily than the middle of it, as it has a more ready access to the air.

The dunghill may be any thickness when we are merely storing it, accumulating the mass, and wishing to prevent fermentation; indeed the thicker it is the less will it ferment; but when we turn it over with a view of getting it to ferment to such a degree as we wish, then it must be only of a certain thickness—not more than 3 feet, as the air cannot pass through more than this depth to give it oxygen to set it fermenting.

The dung or exerements of animals should, if possible, be protected from the rain or weather; there should be a covered shed over the dunghill or compost midden, so as to enable us to regulate the state of its fermentation, and preserve the decoction of it from running to waste. *J. M.*

(*To be continued.*)

Home Correspondence.

Dung-heap Covers.—In compliance with the request of your correspondent "T. W. T." (and many others who have written to me), that I should, through the medium of your columns, publish some practical particulars respecting my mode of roofing middens, their size, &c. &c., for the information of the farming community, I beg to say I shall have much pleasure in so doing, desirous as I am, that every agriculturist, whether tenant or landlord, should benefit by plans from which I have myself received such practical beneficial advantage; whilst, at the same time, I would not advise any person partially to adopt them, unless he is prepared fully to carry them out in their entirety. I have at present two roofed midden steads (others in preparation), one is at the lower extremity of a parallelogram yard; on one side of this yard are cow-houses, on the other a straw house, threshing machine, and cart sheds; the midden, as said, is at the bottom of the yard, and at right angles with it; it is 56 feet long, and 22 feet wide, and is inclosed by a water-tight wall, 13 feet high at the lower side and both ends. The gable of the cow-house incloses part of the upper side, or that next the yard, the rest of this side is open to the yard, for the admission and abstraction of the manure. It has four raised roofs thus ΛΛΛΛ resting on the wall, and against the gable of the cow-house; having a zinc gutter in each valley, to carry off the rain water. The roofs are composed of the necessary wooden rafters, which are sheathed with three-quarter inch boards, and over this M'Neill's felt, which, when nailed on with half-inch tacks, receives two good coats of boiled coal tar, mixed with a sufficient quantity of red ochre, to give it a brown colour. The bottom of the midden stead is dished, and water tight, with an inclination to the liquid manure tank, at the lower end of the midden. The other roofed midden stead stands in the centre of an adjoining parallelogram yard. At the upper end of this yard stands the outer shed of the threshing machine. The two sides and lower end are slated sheds, for fat cattle and young stock, opening into the yard. This midden stead, as said, stands in the centre of the yard, with a cart road round it; it is 48 feet long, and 20 wide. It is walled 4 feet high from the surface of the yard on both sides, and one end; the other end is open for taking away the manure. On the cross of this wall are cast-iron pillars 6 feet high, sup-

porting a double oblong roof of the same materials as the other, with a zinc gutter in the valley, and all round the eaves, to carry off the rain water. All the buildings surrounding the yards are also guttered at the eaves for the same purpose. The bottom of this midden stead is also dished, and water tight, inclining likewise to the same tank as the other. In the tank is a hand pump, the nozzle of which is at a sufficient elevation to deliver the liquid on the surface of the manure in each midden, which is done every Saturday, or oftener, by means of leaden pipes, fixed into a trough at the nozzle of the pump. The litter from the stables and milch cow houses is daily deposited in the midden steads, and the urine is conveyed to the tank, by means of tiled drains, and also the urine, soap-suds &c., from the farm servant's cottages. In addition to this, the Grass mowings of the lawn, which the cattle will not eat, the clippings and scourings of the hedges and ditches, ashes, sawdust, and in short every kind of rubbish, is layered on the heaps, which are never disturbed until the manure is required for use. Our fat cattle are never tied up in the sheds, and which are not pitted; the manure in them only removed when it becomes inconveniently high. Our grazing cattle have the advantage of sheltering sheds in the fields, to protect them in winter from the inclemency of the weather, and in summer from a burning sun and tormenting flies; and from them, which are regularly littered, we procure good manure. The stack-yard has a permanent roof of the same materials as the middens, supported by cast-iron pillars, the corn recumbent on a timber frame work, placed on capped stone pillars, to prevent the access of vermin. My manure tanks are capacious, and were sunk 15 years since, when little, if anything, was said of the efficacy of tanks. I only wish they were at a lower elevation, in order to admit of the midden steads and cattle sheds being also sunk lower. Although I consider the processes I have endeavoured to detail are in advance of anything I have either seen or heard of, I am still very far from thinking they are not capable of amelioration—so much are agricultural improvements yet in the rear of other operations, which do not so vitally concern the public weal. *James Robertson Walker, Gilgarran, Whitehaven, October* 1.

Chloride of Lime a Prevention for Smut in Wheat.—I beg to send you, for the information of the numerous class of readers of the *Gazette*, an account of an experiment lately instituted at the Botanic Gardens of the Royal Dublin Society, for the purpose of ascertaining the value of chloride of lime, first proposed by me as a prevention of smut in Wheat. From some microscopic examination of the two kinds of smut with which our grain crops are liable to be attacked, and from the bleaching properties of chloride of lime, coupled with its alkalinity and deodorising power, I was induced to believe that this substance would be peculiarly efficacious as a dressing for Wheat, and other corn seed, previous to its being sown—an expectation which, I am happy to say, experiment has fully justified. In last spring I procured 4 lbs. of very fine white Wheat seed, 1 lb. of which I laid aside, not having subjected it to any preparatory process. The remaining 3 lbs. I then mixed intimately with a large quantity of smut or bunt—the sporidia of the Uredo caries—in sufficient quantity to colour the entire a light brown. This I divided into three equal parts, which, with the preceding parcel of clean seed, made four parcels of 1 lb. each. One pound of the infected seed I then steeped for two hours in a saturated solution of chloride of lime, and, after pouring off the solution, sifted some fine sand over it to dry it, and thus render it easily sown. The mixed portion of the infected seed I treated in the manner so strongly recommended by the French commissioners, viz., steeping the seed for two hours in a saturated solution of sulphate of soda, and drying with quicklime sifted over it. The third parcel of infected seed was not subjected to any further treatment. The four parcels of seed were then, on the 8th of March last, sown in four similar plots of ground; they all appeared above ground on the 1st of April, and, the crop being fully ripe, it was cut on the 5th September. The result of the experiment, which was apparent even while the crop was standing, I beg leave now to lay before you:—Plot No. 1, sown with 1 lb. of clean, undressed Wheat seed; No. 2, 1 lb. of infected seed steeped in solution of chloride of lime; No. 3, 1 lb. of infected seed steeped in solution of sulphate of soda, and dried with quicklime; and No. 4, 1 lb. of infected seed, undressed. One pound of the ears of the produce of each plot, cut close off, was counted, and the number of the sound and smutted ears recorded. In the same manner the number of straws in 1 lb., deprived of the ears, was ascertained. The following are the numbers of each:

Plot.	Total No. of Ears in 1 lb.	No. of Sound Ears in 1 lb.	No. of Smutted Ears in 1 lb.	No. of Straws in 1 lb.
No. 1.	336	336	—	234
No. 2.	364	362	2	268
No. 3.	632	352	220	278
No. 4.	702	362	340	380

Among the numerous deductions which the foregoing estimation warrants, one is quite obvious — that the chloride of lime dressing is far more efficacious, as a preventive of smut or bunt in Wheat, than the dressing so highly recommended by the French commissioners, insuring not only the grain from the attacks of the fungus, but preventing the deterioration of the straw which this Uredo appears also to occasion. I purpose next year to repeat this experiment, with a view to determine not only the efficacy of the chloride of lime compared with the dressings in common use, but to test its power in destroying that other pest of our cereal crops—the Uredo segetum. *W. Edward Steele, M.D., 15, Hatch-street, Dublin.*

Ought Farm-yard Manure to be decomposed before led to the Field?—"We may be allowed to express our surprise that such a question should have been raised in the present day, and still more that the affirmative answer should have been disputed by agriculturists of distinguished merit." (Boussingault.) The great diversity of opinion that still exists on this important subject may now, for the most part, be traced to the want of experience, or to the injudicious application of the dung at a time when its beneficial effects are impeded by known causes. I find my statement, in a late number of the *Gazette*, has been assailed, and, indeed, ridiculed by Mr. W. E. Gill, and powerfully upheld by "J. D." in the following page. I beg to inform your former correspondent that my remarks are fully corroborated by extended observation and experience on thoroughdrained land. I will admit that by a proper preservation of our farm-yard manure, and by fermentation—by permitting it to decompose under cover, and by adding to it from time to time those substances that fix the ammonia, we get the richest manure ever at the farmer's command. "But recent manure loses weight by lying in the farm-yard. The moisture evaporates, and volatile matters escape by fermentation. By the time that the straw is half rotten, this loss amounts to one-fourth of the whole weight, while the bulk is diminished one-half. If allowed to lie still longer the loss increases, till at length it may approach to one-half of the whole, leaving a weight of dung little greater than that of the food and straw which have been consumed. The weight of common mixed farm-yard dung, therefore, obtained from 10 cwt. of dry food and straw, at different periods, may be thus stated approximately: 10 cwt. of dry food and straw yield of recent dung, 23 to 25 cwt.; at the end of six weeks, 21 cwt.; after eight weeks, 20 cwt.; when half rotten, 15 to 17 cwt.; when fully rotten, 10 to 13 cwt. These quantities are supposed to be obtained in the common open farm-yards, with the ordinary slow process of fermentation." (Johnston's Lectures.) This loss is one great drawback to the present method of decomposing our dung in the open yards. We may easily check the volatility of the ammonia, but a great waste of the soluble parts of our dung cannot without difficulty be prevented. The food of the plant must become soluble before it can enter the spongeolets of the roots. To attain this end fermentation is necessary, therefore it must be sufficiently accelerated to supply the requirements of the crop. The tenacious supersaturated clay, on which your correspondent delights to dwell, would, in all probability, impede the decomposition of the dung, and so counteract its beneficial effects. Experience has fully proved that the decomposition of good unfermented farm-yard dung will progress enough speedily, in well-drained clay soils, to support the demand of the plants; and by the aid of its mechanical action will supersede dung in any other state. Here we are following Nature's laws, the infallibility of which we dare not doubt. It is so ordered that the constituents of which our plants are composed shall be slowly liberated, to support the growing demand of the plants, that nothing may be lost. With fresh as with other dung it will be most efficacious to the crop for which it is applied when led on at a proper season. No definite rules can easily be laid down as an unerring guide in this difficult part of farming practice. But this I may safely say—for those plants that have a speedy growth and early maturity, it is necessary that the decomposition of the dung in the soil should have progressed sufficiently to yield a ready supply of food to the growing plant. I wish it to be understood that the manure which I am here advocating is not that strawy material your correspondent would have us believe, but contains an abundance of phosphates, and a large supply of nitrogen in the shape of urea, uric acid, mucus, &c., which by their speedy decomposition will yield ammonia to the plants. "Care must be taken to bury it well in the furrow, when the dung will of itself ferment and communicate its heat to the soil, whilst the straw will render it light and penetrable to the gases engendered. By means of the ammonia which it produces, it acts strongly upon the insoluble mould which these soils often contain, and produces several effects, of which one of the principal is to bring into action the nutritious portions of the soil which it before contained, and which decomposed manure produces in but a very imperfect degree. On the other hand, little benefit and sometimes even inconvenience is derived from undecomposed manure on light poor lands, which contain but little moisture, and consequently require all that could be communicated to them by the manure." (Von Thaer.) Theory and experience alike demonstrates that the most economical, expedient, and profitable way of applying dung to thorough drained viscous clay land, is in an unfermented state. *George Summers, Stoke Wake, Dorset.*

Flax.—In what publications can I get the best account of the culture and after management and preparation of Flax, where both seed and fibre are objects to be attended to? The Flax Improvement Society of Ireland have introduced many improvements, have they not? Do their publications give a full account of the best process; and where are they to be had, and who is the Secretary of the the Society? In Loudon's Agriculture, he says, "Of late an invention has been made by Lee, of Middlesex, by which, with the aid of soft soap and machinery, the fibre is more completely separated than by steeping, and uninjured by that process. When Flax is to be separated by this new process, the cultivator has only to pull it in handfuls, dry it, bind it into sheaves or faggots, and put it up in stacks like corn till wanted by the manufacturer;" and in the next page, "Lee's method of breaking Flax and hemp without dew retting was invented in 1810, and was the first step towards a great improvement br ought nearer perfection by the new patent machines of Messrs. Hill and Bundy," and he gives a figure of the machine (1825 edition). Is, then, steeping dispensed with in the most approved management of Flax, and are these machines in use? *J. F.* [Schenk's method of steeping Flax, in which warm water is used, and the process effected in 50 to 60 hours is, the likeliest improvement upon the old plan. All requisite information will be had on application to the secretary, directing to J. M'Adam, jun., Esq., at Belfast. A visit to Belfast would be the likeliest method of gaining information.]

Clay Lands.—The fallowing of lands was very extensively followed by the ancients, in order to refresh and recruit the land by a year's rest, after it had carried crops for a certain time. It has been practised in our island from time immemorial, and at this day it forms the foundation of all profitable agriculture. On the description of lands not fitted for green crops, there are not wanting many theoretical, and some very eminent practical men, who contend that fallows may be abolished altogether; but they only show their ignorance, and evince their total unacquaintance with the stubborn soils that require that operation. No mode of cultivation yet discovered can supersede the necessity of the pulverisation and cleaning effected by fallowing, or reduce the soils at the proper time to a fit state for any plant known to us, except by a summer's working. It may be deferred or omitted, in one course of cropping, by the substitution of leguminous or half cleansing, or smothering crops. But it must again recur, and often with little benefit obtained by omission, especially in the case of the poorer and more stubborn clays. Frequent draining has been mentioned as likely to effect a radical change in clay soils, and to fit them for green crops; but the total subtraction of water may destroy the viscous tenacity necessary for crops, especially to Wheat and Beans. And any case of alteration yet effected may have arisen from a new constitutional alliance of the soil, or from the clay approximating to loam. The conversion of Wheat clay lands, properly so called, into green crop soils, even of the most difficult kind, is yet a problem in which are given all the modes and means known to us to produce a green crop, or any other crop, with equal general advantages to the land and to the cultivator. Much, or most of the aversion entertained against the summer fallowing of land, by prejudiced and hasty observers, arises from the unskilful and slovenly manner in which it is often performed. There is a most painful difference, certainly, between a well cleaned and thriving green crop, and a summer fallow of clods and weeds. But the same degree of skill that produced the former is able, with the same attention, to remove the latter; and there is not, in the whole course of modern cultivation, a more pleasing sight than a well-formed summer fallow in the end of the season, the impossibility of producing a crop upon it being always understood. But no farmer who knows his business will incur the loss or reproach of bad fallowing of land, and thus throw the blame on the system instead of the performance. A very considerable part of the clay land in England is lying in ridges of a crooked serpentine form, of unequal breadths at the ends, and often terminate in a point in the middle of the field. The working of the land in consequence becomes very awkward, and many attempts have been made to straighten the ridges—and in some cases successfully, from the ridges not being very crooked or very high; but in very many cases, with great damage, from the contrary circumstances of height and shape. By reason of long continued gathering of the ridges in the olden mode of cultivation, the subsoil is convex as well as the upper soil, and when the newly-made ridges took a crossing or slanting direction over these convexities, the water lodged in the hollows, and reduced the full half of the land to a state of mortar. Much loss was in many cases sustained, and the failures had the usual effect of deterring other attempts where the same obstacles did not exist. It has been recommended to make a complete alteration at once, by a levelling with the spade, removing the too high subsoil to the lower places, and then replacing the top soil. But this expense would in many cases exceed the value of the land, and has been little used. Where the ridges are not very high and very crooked the performance is easily effected by the plough and the harrow filling up the hollow places; and, in extreme cases, a very safe method consists in making with the plough a narrow ridge of 4 or 5 feet in breadth in the old deep furrows, and increasing it in width every following course of fallowing, till it rises and fills the hollows, and levels the high ridges, when new ridges may be drawn as nearly as possible in the direction of the old ones, and then the water will obtain a gradual flow. This method may be reckoned slow, but it is the safest and the most economical yet practised, being wholly done by the common plough. *D.*

New Wheat Drill: gluten a specific mark of Wheat, &c.—I thank you for giving publicity to the account I sent you of my drill, as it will in part answer several inquiries made to me concerning it, although I did not write sufficiently explicit to satisfy the whole. The drill

is 84 inches wide from wheel to wheel, and it requires on stiff land two horses, but on light land one horse will do very well, or in other words it is worked like the common drills in use. My invention is machinery which drops the grains of seed one by one in the rows as the drill moves on, or it will drop more than one as required; but unlike my thin-seeding friend, Mr. Mechi, who drops, 10, 15, and even 20 grains in one place, my drill, when worked for me, drops but one seed at a time, and nothing shall induce me to put in more, and by which means on an average I drill almost a peck an acre of Wheat and Barley, or if I aimed at great accuracy, so as to obtain an extraordinary crop of Wheat, I should put in about six quarts of seed. I know you prefer six pecks, that is, 48 quarts an acre; and a speaker at Mechi's gathering said he required at least 96 quarts. I hope free-trade will annihilate this waste, and I think education joined to free trade will accomplish this desirable object in a few years. Around *me* the delusion is vanishing away fast: I have reduced the seed with many, full a bushel an acre. The more I read and reflect upon your last the more it puzzles me. For more than 30 years have I applied my mind to the subject that it treats of, during which time I have conversed with many persons. I have read many authorities, I have made as many experiments as my humble means and abilities would enable me, and seen as many; and I have at farmers' clubs and Literary and Mechanics' institutions delivered lectures, and all have proved to my mind that the quantity of gluten in Wheat is a specific mark of Wheat; and that it is so I stake my reputation against Sir G. Mackenzie's and Mr. Lawes's "facts" to the contrary. I have in our union workhouse and in my parish for the last 10 or 12 years made observations and experiments on the food for infants, and the *facts* I have obtained are so convincing to me that I have had serious thoughts of drawing the attention of the poor-law board and the Government to them. They are completely against your authorities. I will give you two recent cases in our own parish, or within the last year; two women had infants, and one of them had no milk, and one was ordered by the parish surgeon not to suckle her infant she being in a bad state of health, through poverty. I saw the infants, neither of which was astrong child. I asked the mothers to feed them as I directed, and one of them, whose child was very weak and sickly, consented, but the other refused, saying that she gave it beautifully white bread, and if it were the will of the Lord that the child should die I could not save it. The last funeral I had was that poor infant's. The other child is now as fat and healthy as any child in my parish. Life and death here therefore, I am satisfied, depended chiefly on the difference of the bread the two infants were fed with: and I could give you many other examples; in fact, you have my permission to publish what I now state, namely, that in poor houses thousands of children perish annually, not from bad nursing so much as from not having given to them a sufficiency of gluten in their food. The same rule, also, refers to labourers; give them bread full of gluten and they will be strong and healthy, but not otherwise: modern bread is worthless. Nor are Sir. G. Mackenzie and Mr. Lawes more correct in reference to the *kinds* of Wheat. I stake my reputation that different kinds of Wheat grown in the same field side by side will possess different quantities of gluten in them. You have my permission to publish this also. I am sure all *scientific* men will likewise agree with me here. I have proved it over and over again, and can prove it now with three kinds of Wheat grown side by side this last year. *G. Wilkins.* [We did not deny that Wheat was distinguished among other grain by containing a large proportion of gluten—but we did deny that Egyptian Wheat or any other "species" of Wheat could be distinguished from among the others by comparing its proportion of gluten with that of the others. The proportion of gluten is not a "specific" mark of Wheats. They differ in this particular not according to species so much as according to circumstances of growth.]

Productiveness of the Peruvian Barley.—I dibbled this year one peck in an acre of ground; the produce has been 22 bushels, the weight per bushel is 64lbs.—the bread made from it is superior to that of common Barley bread, and not darker than some of the red Wheats would yield, after the bran has been removed. In flavour and appearance it might be mistaken for dark Wheaten bread. Do you think that if the Peruvian Barley had been sown thicker, or broadcast, it would have produced a larger crop? Twenty-two bushels an *acre* is a small produce, although it may appear a tolerable yield, from the small quantity of seed sown. The seed was dibbled about six inches apart, two or three grains in a hole. The land in which it was sown was tolerably strong land, immediately adjoining the Peruvian Barley; in the same field I sowed less than a bushel of black Barley; it produced at the rate of 60 bushels per acre, but the bread made from it is very dark. *X. Y.*

The Pasture near my house is completely overrun with, I have no doubt, the cockchafer—or Melolontha vulgaris. These insects appear to be in their second or third year, as far as I can understand from a book describing and delineating the several stages of their existence. There are spots in the field where, what with the grubs and the birds who banquet upon them, the Grass is entirely killed; and on moving the withered blades, considerable numbers of these animalculæ present themselves; and turn up the sward where you will, in apparently the healthiest parts, they appear to be almost as numerous. Three of my most intelligent farmers know not what advice to give me, besides claying and cropping. A writer, whose work I accidentally possess, informs me that the most effectual means discovered of destroying my enemies, some 20 years ago, were attacking them in muck heaps, &c., and catching them on the wing. I am, as you may suppose, anxious to know if some more practicable preventive of their depredations may not have been devised by later naturalists suitable to my case. *K.*

Railways.—I perceive in this month's "Civil Engineer's Journal," an extract from the *Agricultural Gazette* on Farm Buildings, wherein an allusion is made to the application of railways and machinery. That you may know agriculturists are looking in the right direction, I beg to inform you I am just completing an entire new steading at Lymm, Cheshire, for Thomas Ridgway, Esq., where all you have stated respecting railways for agricultural purposes is carried out. In this instance, a railway is formed at the back of the barns and a range of buildings, the stacks standing on frames, as usual, over a double line of rails. There is a frame on wheels placed on the outside of the barn, which holds corn in the straw; this is threshed out, first being thrown direct into the feeding board of the threshing machine. When the frame is relieved of its load, it is run under the other frames, which are wedged up—the wedges are knocked away and the fixed frame with its load rests upon the one on wheels; to this is attached a rope from the steam engine, and the stack is bodily moved to the feeding board. The stacks are placed under skeleton sheds, thus securing the grain from wet, when being harvested—saving the expense of thatching—the loss of grain by removal—the expense of carting from the stacks to the barn, and there unloading into the bay of the barn; also the expense of removal from the bay to the machine. It is calculated that on the outlay for the sheds and rails a per centage of 10 per cent. is obtained, after making the proper allowances for wear and tear. The security from weather during harvest is moreover obtained, which is a most important consideration in such a wet county as Cheshire. Railways are laid through the bullock sheds, and the food supplied direct from trucks, one man feeding 70 or 80 bullocks in about an hour. The principle of the threshing machine is original; it is small, compact, and effective. The steam engine is applied for a multiplicity of purposes, and pumping the water into a tank above forming the roof of the engine shed. A sufficient fall is obtained to supply the whole of the premises, house, &c. In the dairy it produces a fountain in summer—in winter, warm water is supplied in pipes to the dairy, and to a whole range of poultry houses—in the latter for inducing early incubation; it is also carried by similar means round a shed used for sprouting Potatoes, by which means the Potatoes are taken to market three weeks earlier than they would be by the common process. This is a long established fact in Cheshire, even by the process of sprouting by a primitive process common in the county. The grinding of Beans, bruising of Oats, cutting of chaff, &c., is carried on in a room over the barn and adjoining the granary, and when the food is required for the cattle it is mixed in this room and let fall through a trap into a truck and conveyed direct to the cattle sheds. *G. A. Dean, Agricultural Architect and Engineer.*

Societies.

North Lancashire, *Sept.* 11: *The Economy of Preparing and Applying Farm-yard Manures, especially in a liquid form.*

Mr. W. J. Garnett said: The reason why the Council of the Society selected this subject was that they considered it a very important one—very important to practical men, and very important to scientific men, to take into their consideration, and also to enable them by their experiments and examination of the matter, to lay it before practical men, for them to make the most of it, to perfect it, and to carry it out on their own farms. Now, in the consideration of this subject the Council had thought it a very important one, inasmuch as it was not only important in its results to agriculturists, but there was a great diversity of opinion prevailing, among all classes of farmers, as to the best modes of preserving and keeping farm-yard manure, and the best modes of using it and laying it on the ground. Some maintained that the solid part was better laid under cover, while others maintained that it was better in the open air. Some maintained with regard to the liquid that it should be used early, while others maintained that it should be kept some time in tanks before being used. There was also a diversity of opinion as to the most economical mode of laying it upon the ground, and all these questions raised so many questions for practical men to consider, that the Council thought they could not bring before the notice of the Society generally any better subject for discussion than this—relating to the manures of the farm both in a liquid and in a solid state. He was in hopes, for one, that the discussion which would take place that day would not be confined entirely to the economy of farm-yard manure, but that it would be extended to the several modes of preparing and making use of liquid manure and the manure of towns. He had a notion himself that there was an immense fund of fertilising properties in these manures now allowed to run to waste in the sewage of towns, and which they and the cleverest men in the land were at their wit's end to know what to do with. He could not help thinking that there was some mode of converting these manures, which are now nothing but a nuisance through the length and breadth of the land, to the benefit of the farmer.—Professor Way said he would first of all come to the question, What is farm-yard manure? Now supposing they had a native forest of trees—in the west of America, for instance—they had them growing year after year, shedding their leaves annually, and the soil growing over them; and it did not require much logic to find out that these trees, which had first begun with saplings, must have increased enormously till they formed the immense amount of timber which was to be found in these forests. That a great amount of the subsistence of these trees came from the air was quite manifest, for without its aid the soil could not furnish the immense amount of timber found in these forests. In ordinary agriculture they planted seeds, the seeds came into plants, and by and by they had a crop, which crop they took off the land to the farmstead. Supposing the crop to be a Turnip crop, then that crop was consumed in the farm-yard, and at the same time a certain amount of manure and a certain amount of beef and mutton was produced. The beef and mutton were taken off the farm and sold at the market, and they could not doubt that the quantity of manure by which the beef and mutton were produced was maintained; so that a large proportion of the substance which produced plants was never carried away to the market, but went out in the shape of manure. Obviously, in practical agriculture, the object was to return all that to the soil which had not been used in the production of beef and mutton. They ought to divide their crops—supposing, for instance, a Turnip crop—into two, namely, that which produced the beef and mutton and that which produced a second crop. The economy of manure was to add everything to the soil which had not been used in the production of meat. Now in the use of the different substances which came off the field where the Turnips were grown, and which were not for the production of meat, they were not able always to return the manure immediately to the soil; and the question was, how it could be preserved with the least charge. There were two or three forms of feeding which were now questions of dispute. There was the old system of farm-yard feeding, where the manure was exposed to the rain, and where every shower which came down from the heavens washed through the farm-yard, carrying off the black liquid to a neighbouring pond. Then, there were the covered yards, in which the cattle were penned, but not tied up; and there was the box-feeding system, where the cattle were fed on certain pieces of ground in which their manure was deposited, and which, with layers of straw, was made into compact, solid manure. This practice—namely, the practice of box-feeding—was not much prevalent in this county, but was an exceedingly good practice, and turned out to good advantage in some counties in England, especially in Norfolk, where, as they would know, the farming was very good. He should like, before the proceedings terminated, to hear some gentlemen express their opinions as to whether manures should be fermented or not fermented, as that comprised the whole of the question of box feeding. The question was, whether the manure should be exposed to the rain or not, and whether the liquid manure should be applied as such, or incorporated with solid manure so as to carry it more easily to the field. He should be very happy, as he had said before, to answer any questions which might be put to him, and he believed that that was the best mode of eliciting information. He would not detain them further on this point, than by saying that every exposure of the manure to the air—every fermentation of manure, caused loss. The nuisance which they smelled from the dung-heap, or the sewers in towns, was just as much an indication of loss to the farmer, as it was of loss of health to the residents of the town or farm-yard. There could be no such thing as smell without a loss of matter, and that matter was the most valuable manure that could be lost by the farmers. Our noses were proper criterions for the loss of manure, as, in proportion as we had strong smells, so in proportion was the farmer losing his manure. They would see, then, that the fermentation of manures was always attended with a loss of valuable fertilising matter, and the only question therefore was, whether the advantage of highly fertilised manures, in the rapid production of root crops—particularly of Turnips, which came rapidly into play—the only question was, whether that did not more than counterbalance the loss. The question was, the laying down of 10 loads of fermented manure, with a speedy crop, against 10 loads of unfermented manure and a later crop; and not 10 loads of fermented manure against 10 loads of unfermented manure. Till the mechanical means of applying liquid manure to the soil was better understood and brought into greater perfection, they could not expect that the use of the liquid would be much extended. It was very well known that upon heavy lands the manure, by being carried in carts, if of any weight, did some injury to the land by the wheels of the carts and the horses' feet trampling down the soil. He would now beg to be allowed to call attention to an experiment which he had brought with him, which involved a great deal; but he was afraid that at present they would not be able quite to understand it. The tube which was fixed beneath him was a glass tube, simply with a pipe at the bottom. Into this tube a quantity of soil was placed—what the soil was he did not know, because he himself had not produced it; but it was an exceedingly fine soil, because it took some time for the liquid which was placed at the top to penetrate it. The object of this experiment was to show that when strong liquid manure from the stable or the cow-yard passed through soil, and was allowed to filter from it, that liquid would no longer be manure, but would be principally water. Those things which gave the smell and the colour to the manure would be retained in the soil—showing the adaptation of the soil to unite with the component parts of the manure, and the liquid will pass out perfectly clear. It was certainly a fact that they might filter the nasty looking liquid through the soil, and the soil would be endued through its retaining qualities with the whole of the noxious ingredients of the manure. What he would point out in this was, that in the use of liquid manures there was no reason why they should be limited to particular seasons of the year. It had been generally considered that to apply liquid manure with any chance of success we must apply it to a crop of Italian Rye-grass, Clover, or something of that kind; but his belief was, that if they threw the liquid manure on the soil the rains or drains would not carry away the matter (which really was the producing quality), but virtually that would be left upon the soil, so that they might lay by a store for any plant in the soil at any time of the year, and there would be no kind of loss. (Applause.) Thus they might throw a liquid manure upon the soil any time that might suit their own convenience. He thought that this fact would make a change in the use of liquid manure, and would lead to its more extensive application. In feeding in the winter, the quantity of this kind of manure produced was very great, and unless the tank was very large it would be impossible for them to deal with it. If, however, his axiom were correct, that the soil had the power of making use of the solid materials of the liquid manure, no matter what time of the year they put it upon the land—but of course using the judgment necessary in the putting of it on, so that it would not be done at a time when it would absolutely injure the land in its mechanical texture—if his axiom were correct, they might put it on at any time, and the soil would receive the benefit. He had published a paper lately in the Journal of the Royal Agricultural Society of England, showing that no matter what time the manure was applied to the soil, the results would be the same, and the animal matter necessary to the production of the crop—the salts of ammonia, the salts of potash and magnesia, and all that which they considered valuable as manure, were retained by the soil, and the water was filtered away. If they put in this manure a quantity of the salts of ammonia or guano, they would find that the liquid would run away entirely free from these compounds. He should like any of the gentlemen present to give their experience as to the use of liquid manure, and particularly to direct their attention to any cases where liquid manure had been applied to the soil instead of being applied to the crop.—Mr. E. G. Melling, of Preston, read the following paper: The following remarks are intended to apply to the general character of the farms in the district comprehended by this Society, which are mostly small holdings as compared with other counties in England, and the occupants of which would scarcely be justified in incurring the expense of force [pumps, hose, and other costly materials which modern science has introduced. The arrangement of most of the old farm steadings is very inconvenient for the retention of liquid manure, and, in consequence, a great expense is involved in putting down tanks and the requisite drains. In erecting new buildings, care should be taken to avoid this. If the site of the steading is on undulating ground, much advantage may be

taken of the circumstance by placing the tank in such a situation that no pump will be required. A pipe or drain, with a tap, should run from the bottom of the tank and come out at some lower level, where a cart could stand for the purpose of being filled; or canvas hose might be attached to irrigate the field in which the drain may terminate. By this means a large proportion of time and labour would be saved; the expense of keeping pumps in repair avoided; and the more solid deposits at the bottom of the tank would be carried away at the same time. As to the best method of constructing the tank, very few specific recommendations can be given—the nature of the substratum, situation, and other circumstances, preventing the adoption of anything like a uniform plan. In my experience I have always found that the best crop was grown with the strongest liquid, and in no instance has it been necessary to dilute it with water; therefore care should be taken to make the tanks perfectly water-tight, for on this the success of the whole system depends. If clay be at hand, the bottom, top, and sides, should all be puddled; but if clay cannot be got, the whole of the inside should be cemented. The drain pipes should also be cemented or puddled; in short, every endeavour should be made to exclude water both from the tank and its connections. The mouth of the drain receiving the liquid from the shippon or stable should be guarded with a grating, to prevent the ingress of straws; and immediately underneath should be a chamber in which the liquid might temporarily lodge, and deposit any solid matter that might be washed in with it, before passing on to the tank. This chamber should be regularly cleaned out when full, which can easily be done by raising the grate. A little attention to this will prevent the large tank from being filled with matter that cannot be pumped out. The size of the tank must be regulated by the number of stock kept upon the farm. I consider it useless to apply liquid manure during the frosty months of November, December, January, and February; and for this reason the tank should be made sufficiently large to contain four months' produce at once. According to a calculation I have made, and which I believe will be found near enough for practical purposes, one cow during that time will make 300 gallons; therefore the size of tank required will be—

	Gallons.	Cubic measure. Ft.	In.	Cost. £	s.	d.
For 1 Cow	300	3	7⅕.....	1	19	0
5 „	1500	6	3	5	16	10
10 „	3000	7	10	8	9	1
15 „	4500	9	0	11	11	8
20 „	6000	9	10½.....	13	3	8

We now come to consider the best time for the application of liquid manure, and the different crops upon which it is most advantageously used. On Grass land at no time of the year has it so great an effect upon vegetation as in the months of March and April, when Nature is making her first efforts to throw off her winter garb. Every means should be used to store up as much as possible for this important time. For young Grass seeds liquid manure stands unrivalled, when judiciously applied, bringing them into early maturity at a time of the year when other food is becoming scarce. It enabled me this year to commence cutting the first crop of Italian Rye-grass and Clover on the 25th of April, although the spring was very late, the land heavy clay, and only partially drained; the second on the 5th of July; and the third on the 27th of August. The total length of the Grass cut was 7 feet. Part of the field I tried with night-soil; but it was not near so good a crop as that to which liquid had been applied. The latter was carried on twice, before and after the first crop was taken off, at the rate of 14 tons per acre each time. This may appear a large quantity, but the land was very poor, and my intention was to improve it. If the land had been thoroughly drained, and in a position to do full justice to the manure, I have no doubt half the quantity would have been sufficient. If the manure is of full strength when applied, a little more care is necessary. A dull, damp day should be chosen, and the land should not be trampled on after being dressed. On old meadow land and pasture it also answers well. The former will be ready for cutting a fortnight or three weeks sooner than if manured with the best farm-yard manure. And the latter the cattle eat with avidity, showing a great partiality for the Grass grown with this manure. On the Turnip crop it may be used in various ways. If the weather is very dry (like the last spring) at the time of sowing, after the manure is spread in the drills, run the drag over it, cover up immediately, then sow, and the plants will come up healthy and strong, bidding defiance to insects, let the weather be ever so dry. On the management of farm-yard manure much has been said, and I am not aware that I can advance anything new. To save the best and richest portion, the manure should be protected by being covered in. The different kinds should be evenly spread over the surface of the midden, so that the heating nature of the horse-dung may be counteracted by that of the cow. When turned, it will then become thoroughly incorporated. A covered middenstead in the hands of a sloven will be a greater evil than the present system. The manure will be spoiled from over-heating, and will become fire-fanged, if not actually in a blaze. By the addition of a layer of sand or earth this may be avoided, and the valuable ammonia retained. Notwithstanding the pretensions of the various artificial manures recently introduced, we must always look to the farm-yard for the only grand specific for restoring to a poor field that health of which the unskilful hand of man may have robbed it. In this way the enterprising tenant will be partly enabled to meet low prices, by having at home the means of growing the greatest amount of produce at the least possible expense.

(*To be continued.*)

Farm Memoranda.

Small Farm.—A letter from Miss Martineau to the Master of the Guiltcross Workhouse has been published, describing the result of a plan of cultivation and cow-keeping originally suggested to her by him, by means of which she has been enabled to maintain two cows on about an acre and a quarter of land. Miss Martineau sets out an account of the difficulty and expense of procuring butter, cream, eggs, ham, bacon, fowls, &c., at her residence at Ambleside, and of the ridicule created by her attempt to raise articles of this sort on her little bit of ground, by the aid of a labourer and his wife despatched from Norfolk. She then proceeds as follows: "In planning the turning up of my ground for spade cultivation, I went on the supposition of keeping only one cow; and for seven months we kept only one. But I considered the inconvenience of the cow being dry for three months out of the 12; and that there was room in the stable for a second, and little more trouble in keeping two than one; and a pretty certain market among my neighbours for whatever butter and milk I might have to sell. So I bought a 'spring calver,' and we find that we very nearly maintain them both on little more than three-quarters of an acre of Grass, and less than half an acre of garden. The second cow pays her way by her manure and milk. Our first consideration was the manure. It is as true with relation to our smaller concerns as to a greater, that 'the more manure, the more green crops—the more green crops the more stock, the more stock the more manure.' There are two tanks, well flagged and cemented, well closed, so that not a drop can ooze out. One is connected with the house, and the other with the cottage and cow-house, receiving all their drainage of every kind. A barrel on wheels stands at the back door to receive all the slops, soap-suds, cabbage-water, &c., and this liquid manure is wheeled away, and applied where it is wanted. There is a compost pit at the back of the kitchen garden; and a compost heap behind some young trees at the bottom of the field. What with the clippings, and weedings, and sweepings, and nothing being wasted, the pit being kept clean, and the cow-house swept twice a day, we have abundance of manure (without buying any whatever), which accounts for the abundance of our crops thus far. One instance of my servant's passion for economy amused me so much that it seems worth telling you. Early one morning, returning from my walk, I looked in upon the pig, just when his breakfast was approaching in another direction. I said to Robert, 'I think piggy looks very well, only that he wants a washing.' 'Yes, ma'am,' said Robert, 'that will be to-morrow. To morrow is washing day, and the suds will wash the pig first, and then be as good, and better, for manure; and then the soap serves three times over.' Our available ground is of pasture, 3 roods 28 perches; and of tilled ground, 1 rood 15 perches. There are, besides, about 26 perches of Grass in the little plantation, orchard, and slope, which yield some fresh Grass when mowed in summer. I shall turn up a little more ground this spring, in order to provide completely for the maintenance of two cows, though I cannot encroach much more upon the Grass, on account of the views from the windows. But for this we should give our cows no Grass or hay, which are the most expensive kinds of food. Our soil is good; neither very rich nor very light; lying at varying depths upon limestone. Much of our newly-dug portion was full of stones. Our neighbours advise us to cover them up again, but we judged differently. I thought we might as well make drains of the new pathways we must have; so, by deep digging, we obtained drains, and the large stones were thus disposed of. Some more were carted out to mend the roads, and when my servant was in despair at there being yet more, it occurred to him to dig out good earth from corners of the plantation and supply its place with stones. He actually dug pits breast deep for the purpose. His digging for crops was not less than two spits deep, dug straight down, and the whole was richly manured. The ground being ready, our method is this:—In August we sow Cabbage seed, and by the end of September we begin to set out the young plants, about 400 per week, for six weeks, to secure a succession. We set them in rows, the plants being 11 inches apart, and the rows a yard apart. In March and April we sow Swedes and Beets in alternate rows, between the rows of Cabbages. By the time we begin to cut the Cabbages, the Turnips and Beets are past the danger of the fly, and may be thinned—the removal of the Cabbages letting in air and sunshine. We also keep a portion of ground for Belgian Carrots, which afford excellent cow food. We succeeded less with these this year than with our other crops, from their not being sufficiently thinned. But we had 25 stone of them, and four or five carrots per day were very acceptable to the cows. By the end of March the cows can get a bite in the pasture, and the mowings of Grass in the orchard, &c., are brought to them fresh. While the pasture is shut up for hay the Cabbages begin to ripen. They weigh from 4 lbs. to 12 lbs., and each cow eats about 18 per day. This is their food from June to November, with such grazing as they get after our hay-making, and a handful or two per day of Indian meal, scalded and given with their Grass. The pasture having been well manured in the winter and wonderfully retrieved by good care, yielded more than a ton and a half of the finest hay. This year, I think, I shall try for a second crop, as we have abundance of manure. But last year I had half the pasture hurdled off, and the cows let out for some time every fine day to graze, the one half for one fortnight, and the other the next. By the time Grass and Cabbages were done, we had laid in less than we hope to produce this year, but a fair amount of crops—for the cows 1½ ton of hay, 25 stone of Belgian Carrots, and at least 10 cwt. of Swedes and Beet. We laid out too much of our ground for household vegetables, having had a surplus after the following supply:—Fine green Peas—from the 12th of June till the middle of September; Peas, Lettuces, Radishes, Spinach, Turnips and Carrots, and Onions, enough for the whole winter; 5 or 6 stone of early Potatoes, Vegetable Marrow, a few Cucumbers, abundance of Cauliflowers, Broccoli and Cabbages, and plenty of Rhubarb and Gooseberries. A Strawberry bed is laid out, too, and we are to have plenty of Apples and Pears and Cherries and Damsons hereafter. We used enough green vegetables for a family of five persons for the whole summer and autumn. The average yield of the cows is about 10 quarts per day each, *i.e.*, about 4 lbs. of butter per week. The skimmed milk is eagerly bought, being as good as I used to buy for new milk. The butter-milk improves our bread and cakes very much, and the pig has what we do not use. The cows give 16 quarts per day for some time after calving, and are dry about three months before. One cow calved in October, and we sold the calf (a cow calf) for a guinea at the end of a fortnight. The same cow is to calve again in September, and the other in May, and thus a continued supply of milk is provided for. We kill two pigs in a year, and selling half each time, get our hams and as much bacon as we want for little or nothing. What we have to buy is three barrels of Indian meal in a year (at an average of 16*s.* each), some of which we use ourselves for puddings and cakes, and which goes far towards feeding the fowls; a few trusses of Wheat-straw after harvest (when it is cheapest), to chop and mix with the cows' boiled Turnip food in winter, a few pennyworths of grains per week, and two or three loads of Turnips after Midsummer, and perhaps a little (but very little) hay. As I consider that the cows maintain the man, this expenditure is all that I have to make in return for our large supply of vegetables, pork, bacon and hams, eggs, and a few fowls, our gardening and the keeping of the whole ground in high order, and, moreover, through the good nature of my excellent servant, our window cleaning and coal-shifting. The cow-house is, as I said, swept out (into the entrance of the tank) twice a day; and it is whitewashed twice a year. The cows are rubbed down daily, and kept almost as sleek as horses. Both are now in much finer condition than when they came. They were rather restless for a few weeks, after first coming from the fell; but they seem now perfectly happy, and when out in the field they return to the stable of their own accord to avoid rains, heat, or flies. Their food in winter is each a stone of Turnips three times a day; the Turnips being shred, and boiled with chopped Wheat-straw, a little hay, a handful of salt, and a double handful of Indian meal, or somewhat more of bran. They may have, beside, to amuse themselves with, a few raw Turnips, and two or three handfuls of hay per day."

Miscellaneous.

Grand Cattle Show at Modbury.—There will be a fine show of cattle at Modbury, on the 15th day of November next, when upwards of 80*l.* will be awarded as prizes; and, in addition, we understand that Mr. William E. Rendle, the Seed Merchant of Plymouth, heads the list with a silver cup, value 5*l.* It will be altogether a noble show, and we anticipate a great gathering of the yeomen of the West.

Notices to Correspondents.

Asphalte: *W B M F.* Take 5 or 6 bushels of broken flints, about ½ inch size. If 5 bushels, add 1 bushel of gravel stones, all the dirt carefully sifted out; spread on a wooden board with side ledges, pour gas tar on little by little, turning over the stones with a shovel until every stone is wet with tar, but leaving no surplus tar. It cannot be too often turned. Add 1 bushel sharp sand, or enough to make the mixture of the consistence of thick pudding, turning it over as before. Lime may be mixed with the sand if thoroughly slaked and powdered, but not otherwise. The ground on which the mixture it to be laid should be carefully levelled; then lay on the mixture from 3 to 6 inches thick; spread a little sand over it, to prevent it sticking to the roller, and roll it down with a heavy iron roller. Where tar may ooze up to the surface, spread a little sand to absorb it. If too much sand is used, or any not wetted by tar, a hole is the consequence. It should not be used for a month, and should be rolled every day until hard. It is impenetrable, and costs at most 1*s.* per yard square, tar being 6*s.* or 7*s.* per barrel of 15 gallons, and broken flints 1½*d.* or 2*d.* per bushel. *J. P. B.*

Beans, &c.: *Rector.* The winter Bean may be drilled or dibbled now. Your 34 acres of good Grass land might keep a dairy of 12 cows, besides rearing three or four young beasts and a few pigs. One man should do all the work.

Boarding, &c.: *J H S. For Bullocks*: The boards must be 4 inches wide, 2½ inches thick, 2 inch openings. *For Sheep and Pigs:* 3 inches wide, 1½ inch thick, 1½ inch openings. Cross pieces to which the planks are nailed about 2 feet apart. The planks may be rather thinner and narrower, but my experience tells me they are better as above; because there is a great strain with heavy bullocks. I have at present, on boards, 60 calves (1½ inch openings), 30 bullocks, 150 pigs, 100 sheep. There is no mistake about the success of the operation; of course, as in all modes, there are some drawbacks. Oak or hard wood is preferable to Fir. I find immense advantage from cooking the fine cut straw, with a little hay and meal, giving it hot to the animals—more of this anon. The time will come when straw will be appreciated as food. *J. Mechi.*

Bog Drains: *K V R.* You had better be satisfied to do the thing slowly. Let the deep main drains be frequent, and let the land lie for a couple of years, and thereafter put in the cross drains, with collared pipe tiles, 4 or 5 feet deep, and you may fill up with broken stones to within 30 inches of the surface, more for the purpose of getting rid of the stones than for anything else. After draining plough it or dig it up in ridge, chopping it well; apply as much earthy compost over it as you can; and sow Rape broadcast over it.

Drains: *W M H* asks, "What is the smallest regular inclination at which a tile pipe drain has been laid and found to keep itself clear; either with or without a constant stream of water running through it?"

Egyptian Wheat: *Recent Subscriber.* Rev. G. Wilkins, Wix, near Manningtree, Essex.

Grasses: *D.* Too late for this week; meanwhile we may say all that is necessary is, that your *seedsman* should be able to recognise the sorts by the names we gave; and, no doubt he can.

Grass: *E D.* Guano is better than superphosphate for top dressing Grass land in spring. That is, containing a greater number of things, it is most likely to contain those which your land wants. It is to be had genuine by purchasing of the importers, or inquiring of them.—Black Barley is spoken highly of. We would prefer the Chevalier. Stubble Turnips after Barley or any other grain crop are rarely of much value. The heaviest and best green crop you can get after corn stubble is Rye, sown immediately, and cut in April and May following.

Kohl Rabi: *Sussex.* It is very hardy, and will stand the frost better than the Turnip.

Lime: *W M H.* We should prefer lime at 4*d.* to 5*d.* a bushel to chalk at 6*s.* a ton, both on the ground.

Marl *versus* Chalk: *W M H.* Your question does not admit of an answer, because it is not the carbonate of lime alone which is useful. Supposing the rest to be useless, or only so far useful as to balance the extra expense of the extra bulk of material. Thus it is easy to see that an equal value of marl must contain 25 per cent. of carbonate of lime to be equally efficient with pure chalk—supposing the former to be delivered on the ground at one-fourth of the price. Cherry marl is not always preferred to that which is whiter, and appears to contain a larger proportion of carbonate of lime.

Oilcake: *G E* wants to know how he may best use it in feeding pigs. It will not make good bacon. Break it down and

soak it. It will fall abroad in the water, and may be given as bran is, along with the wash.

Poultry: *Thorpe.* Your case is an unpromising one. The fowls are doubtless half blind, and must be crammed to keep them alive, and their heads washed with warm water, containing some astringent, say green tea. Rue, either in a decoction or the green leaves, may be administered internally. The disease is not a new or rare one. We *guess* there is something wrong about your fowl-house. See that it is wind and water tight, and have it *thoroughly* white-washed—floor, perches, nests, wall, ceiling, and everything. None of the poultry books are expensive. Buy two or three, and compare their merits.—*R.* Chickens between three weeks and a month old, must, in October, be expected to be liable to sneezing and gasping. If the autumn continues fine, you may rear them with attention, warm housing, and high feeding. We can recommend no better treatment. It would have been wiser to give the hen duck's eggs when you allowed her to sit so late in the season. *D.*

Seed Wheat. We are willing to vouch for any truth belonging to the practice of farming, whether published in our advertising columns or not, that comes within the scope of our personal knowledge; and we have no hesitation in recommending Mr. Beman's varieties of Wheat this day advertised. Mr. Beman occupies a large extent of well farmed land in North Gloucestershire, and has long paid particular attention to the subject of seed Wheat; and we so far know the varieties named, especially the white one, as to be confident in their excellence as seed.

Spade Labour: *Inquirer.* You may read O. O. Roberts on Agricultural Economy as the Antidote to Agricultural Distress, and Mr. Yule's pamphlet on Spade Husbandry, published in Dublin.

Steaming Apparatus: *S F.* One of the best steaming apparatus is that manufactured by Richmond, of Salford. It is of various prices. Apply to him. We see in the Exeter Implement Catalogue the names of H. Carson, Warminster; W. C. Cambridge, Langton Iron-works; Cathay, Bristol, and many others (you should get the Catalogue); any of whom could probably make a cheap and efficient steamer.

Weight of Sheep: *W A, Newport.* The carcass weight of a well-fed two-year-old wether sheep, that now weighs, fasting, 250 lbs., would be probably 32 to 34 lbs. a quarter.

Winter Beans: *Cox.* There is nothing in the *latitude* of Yorkshire to injure them, but the *altitude* of many a place in that county may unfit it. They are hardly so productive in general as spring Beans, but ripen earlier, and in that way are superior in many obvious respects. Sow now or any time this month 6 pecks per acre, in rows 2 feet apart.

Markets.

COVENT GARDEN, Oct. 12.

Vegetables are abundantly supplied, and Hothouse Grapes and Pine-apples are plentiful, especially the former. Peaches are less abundant. Oranges and Lemons though scarcer are sufficient for the demand. Plums and Pears are still received from the Continent. Filberts are dearer. Carrots and Turnips may be had at 3d. to 6d. a bunch. Potatoes are good and cheap. Lettuces and other salading are sufficient for the demand. Mushrooms are scarce, as are also French Beans. Cut Flowers consist of Heaths, Pelargoniums, Asters, Fuchsias, Mignonette, Dahlias, Verbenas, Bignonia venusta, Stephanotis floribunda, Heliotropes, Calceolaria viscosissima, Japan Lilies, and Roses.

FRUITS.

Pine-apples, per lb., 3s to 5s
Grapes, hothouse, p. lb., 1s to 3s
— Portugal, p. lb., 8d to 1s
Peaches, per doz., 3s to 10s
Melons, each, 1s to 3s
Plums, p. punnet, 1s to 1s 6d
Pears, per doz., 1s to 3s
— per half sieve, 6s to 15s
Apples, dessert, p. bush, 4s to 8s
— kitchen, do., 1s 6d to 3s 6d
Lemons, per doz., 1s to 2s
Oranges, per doz., 2s to 3s
— per 100, 8s to 24s
Almonds, per peck, 6s
— sweet, per lb., 2s to 3s
Walnuts, p. 100, 1s to 2s
— p. bush., 12s to 24s
Nuts, Barcelona, p. bush., 20s to 22s
— Brazil, p. bsh., 12s to 14s
Filberts, per 100 lbs., 40s to 50s

VEGETABLES.

French Beans, p. sieve, 3s to 4s
Cabbages, per doz., 6d to 1s
Greens, p. doz. bunches, 3s to 4s
Cauliflowers, p. doz., 2s to 4s
Sorrel, p. hf. sieve, 6d to 9d
Potatoes, per ton, 50s to 80s
— per cwt., 2s 6d to 4s
— per bush., 1s 6d to 2s 6d
Turnips, p. 12 bun., 2s 6d to 3s 6d
Red Beet, per doz., 1s to 2s
Cucumbers, p. doz., 1s to 6s
Leeks, per bunch, 1d to 2d
Celery, p. bundle, 1s to 1s 6d
Carrots, per doz., 3s to 5s
Tomatoes, p. punnet, 1s. to 1s6d
Spinach, p. half sieve, 1s 6d to 3s
Onions, p. bunch, 2d to 6d
— Spanish, p. doz., 1s 6d to 4s
Shallots, per lb., 6d to 8d
Garlic, per lb., 4d to 8d
Artichokes, p. doz., 2s to 4s
Vegetable Marrows, per doz., 6d to 1s 6d
Lettuce, Cab., p. sc., 1s to 1s 6d
— Cos, p. score, 6d to 1s 6d
Endive, per score, 1s to 1s 6d
Small Salads, p. punn, 2d to 3d
Horse Radish, p. bdl., 1s to 4s
Mushrooms, p. pot., 1s 6d to 2s 6d
— per bushel, 5s to 7s
Fennel, per bunch, 2d to 3d
Savory, per bunch, 2d to 3d
Thyme, per bunch, 2d to 3d
Parsley, p. doz. bun., 1s to 2s
— Roots, p. bdle., 9d to 1s
Marjoram, per bunch, 2d to 4d
Mint, per bunch, 2d
Watercress, p. 12 bunch., 6d to 9d

COAL MARKET.—Friday, Oct. 11.

Holywell, 15s.; Carr's Hartley, 16s.; Wallsend Riddell, 15s.; Wallsend Braddyll's Hetton, 16s.; Wallsend Haswell, 16s. 9d.; Wallsend Hetton, 16s. 9d.; Wallsend Lambton, 16s. 3d.; Wallsend Tees, 16s. 6d.—Ships at market, 214.

HAY.—Per Load of 36 Trusses.

Smithfield, Oct. 10.

Prime Meadow Hay	70s to 76s		Clover	70s to 80s	
Inferior ditto... ...	60	66	Second cut	60	70
Rowen	55	60	Straw	22	25
New Hay	—	—		J. Cooper.	

Whitechapel, Oct. 10.

Fine Old Hay ...	68s to 72s		New Clover	75s to 80s	
Inferior ditto ...	—	—	Inferior ditto... ...	—	—
New Hay	65	68	Straw	22	26
Old Clover	78	84			

HOPS.—Friday, Oct. 11.

Messrs. Pattenden and Smith report that the demand continues good for all new Hops, at late prices. Duty 220,000*l.* to 225,000*l.*

SMITHFIELD, Monday, Oct. 7.

The supply of Beasts is large; notwithstanding there is a brisk trade for the best descriptions, and nearly 4s. is reached in a few instances. There are a few more Sheep; trade is active at about the rates of Monday last. The demand for Calves is small, and it is exceedingly difficult to maintain Friday's quotations. From Holland and Germany we have 678 Beasts, 4250 Sheep, 143 Calves, and 290 Pigs; from Scotland, 10 Beasts; and 3100 from the northern and midland counties.

Per st. of 8 lbs.—	s	d	s	d
Best Scots, Herefords, &c. ...	3	8 to 3	10	
Best Short-horns	3	4 —	3	8
2d quality Beasts	2	6 —	3	0
Best Downs and Half-breds ...	4	0 —	4	2
Ditto Shorn	—	...	—	...

Per st. of 8 lbs.—	s	d	s	d
Best Long-wools .	3	6 to	3	8
Ditto Shorn	—	...	—	...
Ewes & 2d quality	2	10 —	3	4
Ditto Shorn	—	...	—	...
Lambs	—	...	—	...
Calves	2	4 —	3	8
Pigs	3	0 —	4	4

Beasts, 4261; Sheep and Lambs, 27,340; Calves, 253; Pigs, 540.

Friday, Oct. 11.

The number of Sheep is large, but choice qualities are scarce, and consequently dearer. Second-rate sell slowly at about Monday's prices. The supply of Sheep is considerable for the time of year. Trade is dull and Monday's quotations are with difficulty maintained. A few choice Calves make 3s. 8d., but other kinds are sold very low. From Holland and Germany there are 411 Beasts, 1490 Sheep, 169 Calves, and 10 Pigs; 400 Beasts from the northern and midland counties; and 82 Milch Cows from the home counties.

Per st. of 8 lbs.—	s	d	s	d
Best Scots, Herefords, &c. ...	3	8 to 4	0	
Best Short-horns	3	4 —	3	8
2d quality Beasts	2	6 —	3	0
Best Downs and Half-breds ...	4	0 —	4	2
Ditto Shorn	—	...	—	...

Per st. of 8 lbs.—	s	d	s	d
Best Long-wools .	3	6 to	3	8
Ditto Shorn	—	...	—	...
Ewes & 2d quality	2	8 —	3	4
Ditto Shorn	—	...	—	...
Lambs	—	...	—	...
Calves	2	6 —	3	8
Pigs	3	0 —	4	4

Beasts, 1089; Sheep and Lambs, 6900; Calves, 370; Pigs, 510

MARK LANE.

Monday, Oct. 7.—The supply of English Wheat at market this morning, by land carriage samples from the near counties, was smaller than of late, and the quality and condition decidedly inferior to that of the preceding week. Selected parcels realised the rates of Monday last, but quotations must be reduced 1s. to 2s. per qr. for secondary and inferior qualities. In foreign Wheat a limited amount of business was transacted, at rates barely 1s. lower than those current on this day se'nnight. Choice qualities of malting Barley being scarce, such readily command full prices; but in some instances other descriptions declined 1s. per qr. Old foreign Barley was taken off in retail for grinding purposes, at former prices. Although the receipts of Oats from abroad during the week have been upon a less liberal scale than of late, it was found impossible to establish any advance; really good old horse corn was saleable at the extreme quotations of Monday last; but although the light and inferior new Irish were offered on easier terms, they found no favour with the dealers. Beans and maple Peas fully supported previous rates. White English Peas did not bring so much money, most of the samples being unfit for the splitters' use.

Per Imperial Quarter.	s.	s.		s.	s.
Wheat, Essex, Kent, & Suffolk ...	White	44—48	Red	40—42	
— — fine selected runs ...	ditto	46—49	Red	—	
— — Talavera		48—50			
— Norfolk, Lincoln, & York...	White	—	Red	36—42	
— Foreign		34—50			
Barley, grind. & distil., 22s to 24s...	Chev.	26—29	Malting	24—26	
— Foreign....	Grinding and distilling	21—25	Malting	20—24	
Oats, Essex and Suffolk		15—18			
— Scotch and Lincolnshire ...	Potato	20—23	Feed ...	19—21	
— Irish	Potato	16—20	Feed ...	15—17	
— Foreign.....	Poland and Brew	18—22	Feed ...	16—18	
Rye		26—28	Foreign	22—24	
Rye-meal, foreign.....	per ton	—			
Beans, Mazagan	25s to 28s..... Tick	26—28	Harrow	28—30	
— Pigeon	28s — 32s... Wind.	—	Longpod	—	
— Foreign	Small	24—32	Egyptian	20—22	
Peas, white, Essex and Kent.....	Boilers	30—34	Suffolk...	34—36	
— Maple.....	30s to 32s ..... Grey	26—28	Foreign	25—30	
Maize	White	26—30	Yellow...	25—30	
Flour, best marks, delivered...	per sack	37—40			
— Suffolk	ditto	32—35	Norfolk	32—35	
— Foreign	per barrel	22—25	Per sack	31—35	

Friday, Oct. 11.—The arrivals of Wheat since Monday have been small, and moderate of all other articles. This morning's market was fairly attended, and there appeared an increased disposition on the part of the millers to purchase foreign Wheat and Flour, but the firmness of holders rendered the transactions limited. English remains unaltered in value.—Spring corn of all descriptions is firm, with the exception of secondary English Barley, which is very unsaleable.—Business in floating cargoes is not active, and rather lower prices have been submitted to.—The Wheat trade has continued depressed during the past week throughout the kingdom, and a further decline, varying from 1s. to 2s. per qr. is pretty general. In a few of the inland markets held yesterday and on Wednesday increased firmness was observable, and previous prices were fully maintained. Flour has participated in the depression to the extent of 6d. to 1s. per sack upon foreign and country marks. Spring corn generally has supported its former value. Koningsburg, 5th: White Wheat has declined 1s. to 2s. per qr., red 6d. to 1s.; supplies of spring corn small; Peas, 26s., f.o.b. Dantzic, 5th: Factors being disinclined to submit to the reduction required by purchasers, little business has been done.

Arrivals this week.

	Wheat. Qrs.	Barley. Qrs.	Oats. Qrs.	Flour.
English ...	3590	810	1140	820 sacks
Irish	—	—	5770	
Foreign ...	11240	2030	1710	— brls.

Imperial Averages.	Wheat.	Barley.	Oats.	Rye.	Beans.	Peas
Aug. 31.....	43s 6d	22s 4d	17s 9d	23s 4d	28s 11d	20s 11d
Sept. 7.....	43 2	23 6	17 11	25 4	28 9	27 10
— 14.....	42 10	23 9	17 4	26 10	29 7	28 9
— 21.....	42 7	24 10	17 1	26 4	29 5	29 5
— 28.....	42 8	24 8	16 10	26 4	29 5	30 0
Oct. 5.....	42 2	24 5	16 8	26 7	29 6	31 3
Aggreg. Aver.	42 10	23 10	17 3	25 10	29 3	29 0
Duties on Foreign Grain	1 0	1 0	1 0	1 0	1 0	1 0

Fluctuations in the last six weeks' Corn Averages.

Prices.	Aug. 31.	Sept. 7.	Sept. 14.	Sept. 21.	Sept. 28.	Oct. 5.
43s 6d	—	...	...	...	...	...
43 2	...	—	...	...	...	...
42 10	...	...	—	...	...	...
42 8	...	...	...	—	...	...
42 7	...	...	...	...	—	...
42 2	...	...	...	...	...	—

SEEDS.—Oct. 7.

Canary, per qr.	52s to 60s	Coriander, per cwt.	17s — 21s
Caraway, per cwt.	29 — 33	Mustard, white, p. bush.	4 — 6
Hempseed, per qr.	34 — 35	— brown do.	7 — 10
Linseed, foreign, do.	37 — 44	Rape, per last	24*l.* — 26*l.*
Clover, red, p. cwt...	—	Cakes, Lindseed, p. 1000	8*l.* 15s
— — foreign, do.	—	— — foreign, p ton,	6*l.* 15s
— white, do.	—	— Rape, foreign, do.,	3*l.* 17s
— — foreign, do.	—	Tares, per bush...	3s 0d—5s 6d

Liverpool, Friday, Oct. 4.—During the last three days the receipts of Irish produce into this port have been very inconsiderable, and we have none coastwise for insertion to-day. Though we have few buyers at our Corn Exchange this morning, and only a moderate business passing in any description of Wheat, there is a decided return to greater firmness; we therefore repeat the full prices of Tuesday for all foreign Wheats, and in some instances a small advance is practicable upon the reduced currency recently accepted ex-ship; new Irish Wheats, on the contrary still tend a little downwards. There continues a good demand for Indian Corn to export to Ireland, up to 28s. for yellow American, of which few parcels remain on offer; prime white has become very scarce, is much inquired for, and would bring an advance.——Tuesday, Oct. 8, —At our Corn Exchange this morning English and foreign Wheat was held with unabated firmness at the currency of this day se'nnight, which have been very reluctantly complied with on the part of buyers. Although in Barley, Beans, and Peas little business was apparent, prices remained unvaried. Malt, upon a moderate demand, was steady in value. Oats merely sustained the rates of Tuesday last. The present prices are: Wheat, English red, per 70 lbs., 5s. 6d. to 6s. 0d.; white, 6s 0d. to 6s. 3d. Barley, Scotch and Irish, per 60 lbs., 2s. 10d, to 3s. 2d. Malt, English, per qr. pale, 49s. to 55s. Oats, English and Scotch, per 45 lbs., 2s. 9d. to 3s. 0d. Beans, English, per qr., 28s. to 32s. Peas, do. do., 31s. to 33s.

SHEET GLASS.

JAMES PHILLIPS and Co., 116, Bishopsgate-street-without, beg to inform Nurserymen and others, that they have on sale about 10,000 Feet of SHEET GLASS of various sizes, 16 ounces to the foot, at 12s. 6d. per box of 100 feet. Box charged, but full price allowed when returned.

GLASS FOR CONSERVATORIES, GREENHOUSES, FRAMES, &c.

JAMES PHILLIPS and Co. are supplying SHEET GLASS, 16 ounces to the foot, in boxes of 100 feet each, at the following prices for cash:

Sizes. Inches.					Inches.			Per foot.	Per 100 feet.	
					Under 6	by 4	at	1½d.	is £0	12 6
From 6	,,	4	,,		7	,, 5	,,	2d.	,, 0	16 6
7	,,	5	,,		8	,, 6	,,	2½d.	,, 0	18 6
8	,,	6	,,		10	,, 8	,,	2½d.	,, 1	0 6
10	,,	8	,,		12	,, 9	,,	2¾d.	,, 1	2 11

Larger sizes, not exceeding 40 inches long.

16 oz. from 3d. to 3½d. per square foot, according to size.
21 oz. ,, 3½d. 5d. ,, ,, ,,
26 oz. ,, 3¾d. 7½d. ,, ,, ,,

Packed in Crates of about 250 feet each, and in sizes of about 40 in. by 30.

HARTLEY'S PATENT ROUGH PLATE, packed in boxes of 50 feet each:

6 by 4 and 6½ by 4½ ... 10s. 6d. | 7 by 5 and 7½ by 5½ ... 12s. 0d.
8 by 6. ,, 8½ by 6½ ... 13 6 | 9 by 7 ,, 10 by 8 ... 15 0

Well worth the attention of Nurserymen and Market Gardeners.

GLASS TILES AND SLATES made to any size or pattern.
HALLIMAN'S REGISTERED FRUIT PROTECTORS, from 6d. to 1s. each.
MILK PANS, from 2s. to 6s. each.
PROPAGATING AND BEE GLASSES, from 2d. each.
WASP TRAPS, 3s. 6d. per dozen.
LACTOMETERS, for trying the quality of Milk, 7s. 6d. each.
STANDS, for Pianofortes, 1s. each.

Glass Shades for Ornaments. Parian Marble. Wax and Alabaster Ornaments. Lamp Shades and Glasses. Patent and British Plate. Ornamental and Stained Glass; and every article in the Trade.

JAMES PHILLIPS and Co., 116, BISHOPSGATE-STREET WITHOUT, LONDON.

GLASS WATER PIPES.

MESSRS. COATHUPES and Co., Glass Manufacturers, Bristol and Nailsea, Somerset, continue to supply GLASS PIPES for the conveyance of water, &c., in lengths of from 3 to 7 feet, and from ½-inch to 4-inch bores; they provide also the necessary joints, which enable them to stand very considerable pressure.

GLASS FOR CONSERVATORIES, GREENHOUSES, PIT-FRAMES; AND PLATE GLASS FOR DWELLINGS.

THOMAS MILLINGTON begs to hand the sizes of a large quantity of SHEET GLASS, packed in 100 feet boxes of various sizes. In all cases, unless the whole box is taken of either size, extra must be charged as specified.

13s. 6d. per box; or 2d. per foot if less than one box be taken:

6	inches	by 4	inches.	6½ inches	by 5 inches
6	,,	by 4½	,,	6½ ,,	by 5½ ,,
6½	,,	by 4	,,	6 ,,	by 6 ,,
6½	,,	by 4½	,,	6½ ,,	by 6 ,,
6	,,	by 5	,,	6½ ,,	by 6½ ,,
6	,,	by 5½	,,		

15s. per box; or 2½d. per foot if less than one box be taken:

7	inches	by 4	inches	7½ inches	by 5½ inches
7	,,	by 4½	,,	7 ,,	by 6½ ,,
7	,,	by 5	,,	7½ ,,	by 6 ,,
7½	,,	by 5	,,	7½ ,,	by 6½ ,,
7	,,	by 5½	,,	8 ,,	by 6 ,,

17s. 6d. per box; or 2½d. per foot if less than one box be taken:

9	inches	by 7	inches	10 inches	by 8 inches
8	,,	by 8	,,	10 ,,	by 9 ,,
9	,,	by 8	,,	10 ,,	by 10 ,,
9	,,	by 9	,,		

20s. per box; or 2¾d. per foot if less than one box be taken:

11	inches	by 8	inches	13 inches	by 9 inches
12	,,	by 8	,,	12 ,,	by 10 ,,
12	,,	by 9	,,	14 ,,	by 10 ,,

Boxes charged 1s. each extra.

T. M.'s Stock of small Glass is so large, that he thinks he can pledge himself to execute orders to any extent.

Glass cut to any other size required, in either 16 oz., 21 oz., 26 oz., or 32 oz.

PATENT ROUGH PLATE GLASS.

T. Millington's Patent Rough Plate Cast, perfectly flat and uniform, the best manufactured. A small sample will be sent, upon application, to prove it.

Cut to order in Panes.

	⅛ in. thick.	¼ in. thick.
	0s. 6d.	0s. 11d.
Not above 15 inches long	0 8	1 1
Above 15 inches and not above 35 ...	0 9½	1 3
,, 35 ,, ,, 50 ...	1 0	1 3
,, 50 ,, ,, 75 ...	1 3	1 4
,, 75 ,, ,, 100 ...	...	1 6
100 inches and above	...	...

This is not the article that some of the trade decry.

Hartley's Patent Rough Plate, also, supplied in any quantity, which is rather cheaper.

In Squares cut in the sizes ordered.	Per Foot.
Under 8 by 6	0s. 4d.
8 by 6 and under 10 by 8	0 4½
10 by 8 ,, 14 by 10	0 5
14 by 10 ,, 1½ ft., or sizes not exceeding 20 ins. long	0 5½
1½ ft. ,, 3 ,, ,, 30 ,,	0 6
3 ,, 4 ,, ,, 30 ,,	0 6½
3 ,, 4 ,, ,, 35 ,,	0 7
4 ,, 5 ,, ,, 40 ,,	0 7½
5 ,, 6 ,, ,, 45 ,,	0 8
6 ,, 8 ,, ,, 50 ,,	0 9
8 ,, 10 ,, ,, 60 ,,	.....
10 ,, 12 ,, ,, 70 ,,	.....
12 ,, 15 ,, ,,	.....

GLASS FOR CONSERVATORIES, HORTICULTURAL PURPOSES, GLASS PANTILES, SLATES, &c.



MILK PANS 2s. to 6s. each, Hand-frames, Tiles, and Slates; Propagating and Bee Glasses from 2d. each; Cucumber Tubes, 1d. per inch; Peach Glasses, 10d. each; Wasp Traps, 3s. per dozen; Pastry Slabs, Glass Plates, in wooden frames, for butter and pastry, &c.; Hyacinth Glasses and Dishes, Shades for Ornaments, Fish Globes, Plate and Window Glass of every description, and Lamp Shades. Lactometers for trying the quality of Milk, 4 tubes, 7s. 6d.; 6 tubes, 10s. Self-registering Thermometers for Greenhouses, Horticultural Glass, &c.

THOMAS MILLINGTON, GLASS, COLOUR, AND PAINT MANUFACTURER, 87, BISHOPSGATE-STREET WITHOUT, LONDON.

HATTON NURSERY, NEAR HOUNSLOW, MIDDLESEX.
TO NOBLEMEN, GENTLEMEN, NURSERYMEN, FLORISTS, AND OTHERS.

20,000 Scarlet and other Rhododendrons, 20,000 Ghent and other Azaleas, 2000 Andromedas, 6000 Kalmias, 2000 Hardy Heaths, 1000 Daphne Cneorum, 3000 Cedar of Lebanon, 1 to 4 feet, in pots, 300 Pæonia arborea; also a large quantity of Seedlings of sorts.

MESSRS. PROTHEROE AND MORRIS are directed, by the Executors of the late Mr. John Ronalds, to offer to an unreserved sale by Auction, on the premises, Hatton Nursery, near Hounslow, Middlesex, about 1½ mile from the Feltham Station, on MONDAY, October 14, and following day, at 11 o'clock, the whole of the valuable NURSERY STOCK, consisting of a large and rich assortment of American Plants, Evergreens, and Deciduous Shrubs, comprising Laurels, Irish Yews, Pinus of sorts; Spruce, Scotch, and Larch Firs; Lime, Alder, Ash, Plane, a large quantity of Quick, three fine specimens of Cedrus Deodara, 8 to 10 feet, &c.—May be viewed prior to the sale. Catalogues had (6d each, returnable to purchasers) on the premises; of the principal Seedsmen in London; and of the Auctioneers, Leytonstone, Essex.

A LARGE AND IMPORTANT SALE OF EVERGREENS.
TO NOBLEMEN, GENTLEMEN, NURSERYMEN, AND OTHERS.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. J. Smith to submit to an unreserved Sale by Auction, on the premises, Dalston Nursery, Middlesex, on THURSDAY, October 17th, and following day, at 12 o'clock precisely, the whole of the valuable EVERGREENS, comprising fine-grown plants of variegated Hollies, Aucuba, Box, Laurestinus, Laurels, Phillyreas, Scarlet Aubutus, Bay, Rhododendrons, Andromeda floribunda, Azaleas, Lilac, Ivies, Brooms, and Clematis in pots, together with the remaining Greenhouse Plants. May be viewed, and Catalogues had, one week prior to the sale (6d each, returnable to purchasers) on the premises; of the principal seedsmen in London; and of the Auctioneers, Leytonstone, Essex.

BRENTFORD, MIDDLESEX.
To Noblemen, Gentlemen, Nurserymen, Market Gardeners, and Public Companies engaged in Planting.

MESSRS PROTHEROE AND MORRIS are directed, by the Executors of the late Mr. J. Ronalds, to submit to public competition by Auction, on the premises, the Butts and Toolands Nurseries, on MONDAY, October 21, and eight following days, at 11 for 12 o'clock precisely each day, in consequence of the number of Lots, without the slightest reservation, the whole of the valuable NURSERY STOCK, riding over 30 acres, which is particularly worthy the attention of Noblemen and Gentlemen laying out their Grounds, as well as the Trade, for its excellence, and comprise several thousand Fruit Trees of the leading and approved varieties, a large quantity of Forest Trees, Ornamental and Deciduous Shrubs, together with a rich assortment of Evergreens.—May be viewed prior to the sale, and Catalogues had, on the premises, of the principal Seedsmen, and of the Auctioneers, American Nursery, Leytonstone, Essex.

IMPORTANT TO SEEDSMEN, NURSERYMEN, and Others.

MESSRS. PROTHEROE AND MORRIS have received instructions from the Assignees of Mr. CHARLES BUNYARD (a bankrupt), to offer to public competition, by Auction, on the premises (Nash and Hicks's Warehouse, Horsleydown), on THURSDAY, October 31, at 11 o'clock, the whole of the valuable SEEDS and IMPLEMENTS IN TRADE, viz., Sacks, Bags, Weights, Scales, and Measures; a capital Winnowing Machine, Nests of Seed Drawers, &c.—May be viewed, and Catalogues had of Wm. Whitmore, Esq., Official Assignee, Basinghall-street; of Messrs. Marten Thomas and Holland, Solicitors, Mincing-lane, London; of the principal Seedsmen in London; and of the Auctioneers, American Nursery, Leytonstone, Essex.

JAVA ORCHIDS.

MR. J. C. STEVENS begs to announce that he has just received notice of the arrival of a consignment of most rare and valuable ORCHIDS, in perfect health, including the following choice species: Saccolabium Blumei majus, Vanda tricolor, Vanda suavis, Spathoglottis plicata, Cœlogynes, &c. A more detailed advertisement will appear in the next Number of this Paper, and the day of Sale announced.
38, King-street, Covent-garden, Oct. 12.

RARE AND NEW ORCHIDS FROM THE INTERIOR OF NEW GRENADA.
AN IMPORTATION DESERVING ATTENTION.

MR. J. C. STEVENS has the honour to announce that he will sell by Auction, at his Great Room, 38, King-street, Covent-garden, on MONDAY, the 21st October, at 12 for 1 o'clock, an importation of Rare and Valuable ORCHIDS, just arrived by the last West Indian steamer. Collected in the interior of New Grenada, by Mr. Schlim, traveller to Mr. Linden. Amongst the many varieties contained in this collection may be mentioned, Uropedium Lindenii, the most extraordinary Orchid known, the flowers measuring from 24 to 30 inches in diameter; Odontoglossum hastilabium, and several new and brilliant species; Sobralia dichotoma, and four new species; Eriopsis rutidobulbon, with gigantic bulbs, the stems growing 2 feet high, covered with from 40 to 60 beautiful flowers; Cycnoches barbatum; a new and beautiful Myanthus; two new and pretty Houlletias; a new genus, bearing large and splendid flowers; another very remarkable new genus; Burlingtonia Granadensis; a new Trichopilia; an Angulos, with beautiful orange-coloured flowers; and several new Oncidiums, Stanhopeas, Warreas, Brassavolas, Mormodes, Epidendrums, &c., to which will be added several fine specimens of Anguloa Cloweaii and Ruckerii, Odontoglossum citrosmum var. roseum, Oncidium papilio majus, Epidendrum bicornutum, Cattleya Mossiæ, and many other favourite species.—May be viewed on the morning of sale and Catalogues had.

FULHAM ROAD.
TO GENTLEMEN, NURSERYMEN, AND OTHERS.

MR D. A. RAMSAY has been favoured with instructions from Mr. J. Shearman, to submit to public competition, on TUESDAY, October 15 and two following days, at 12 o'clock (his lease having expired), on the premises, near Queen's Elm, Fulham-road, Brompton, a portion of the valuable NURSERY STOCK, comprising Standard and Dwarf-trained Peaches, Nectarines, &c., a large quantity of fine Evergreens, Deciduous Shrubs, Ornamental Trees, &c. A choice assortment of Standard and Dwarf Roses, &c. May be viewed prior to the Sale. Catalogues may be had on the premises; of the principal Seedsmen; and of the Auctioneer, Brompton Nursery, Fulham-road, London.

ABSOLUTE SALE OF AMERICAN PLANTS, EVERGREENS, AND OTHER NURSERY STOCK.

MR. D. A. RAMSAY will sell by Auction, at the Brompton Auction Ground, Fulham-road, Brompton (one mile from Hyde-park Corner), on TUESDAY, October 29, and following day, at 12 o'clock, 2000 Scarlet and other Rhododendrons, Azaleas, Andromeda, Ledum, &c.; 1000 Standard, Dwarf, and Pillar Roses, Standard and Dwarf-trained Fruit-trees; 1000 Victoria and other Rhubarb Roots, Fig-trees, Strong Grape Vines; about 5000 Evergreens, 3000 Ornamental Trees, Deciduous Shrubs, &c.—May be viewed prior to Sale, and Catalogues had at the principal Seed Shops, and of the Auctioneer, Brompton Nursery, Fulham-road, London.

TO GENTLEMEN PLANTING.

MR. WILDE is instructed to Sell by Auction, on TUESDAY and WEDNESDAY, October 15th and 16th, all the fine and healthy Stock of FOREST TREES (the property of Mr. Bell, who is declining business), on his Nursery Grounds, adjoining the New Church, Lakenham. The Stock consists of Larch, Spanish Chestnut, Hazel, Scotch, True Highland Pine, Spruce, Silver, Ash, Beech, Elm, Birch, Oak, Holly, Yews, Common and Portugal Laurels, several hundred thousand Whitethorn, with a general assortment of Forest and Ornamental Trees. Catalogues will be ready five days prior to the Sale.

MR. J. J. FOSTER, of the Edgware Nurseries, will offer to public competition, at the London Auction Mart, Bartholomew-lane, on TUESDAY next, October 15, a quantity of Fruit Trees, fine Evergreens, Ornamental Shrubs, and some beautiful Stand ard and Dwarf Roses.—Catalogues to be had of the Auctioneer, Edgware; at 24, Mark-lane; and the Mart.

MR. HASLAM begs to inform the Public, that in consequence of the late arrival of the Ghent steamer, this week, the large consignment of CAMELLIAS, LILIUMS, &c., will not be Sold till FRIDAY, Oct. 18th, at the Auction Mart; at which time, also, will be sold a large quantity of Roses, Dutch Bulbs, &c.—Catalogues at the Mart, and South Essex Nurseries, Epping.

"VICTORIA NURSERY," NEW HILLINGDON, NEAR UXBRIDGE.

MR. H. MORTEN will sell by Auction, on the Premises, as above, on TUESDAY, WEDNESDAY, and THURSDAY, the 15th, 16th, and 17th of October, 1850, at 10 for 11 o'clock each day, by order of the Trustees, under a Deed of Assigoment for the benefit of the Creditors of Mr. William Bright, the VALUABLE NURSERY STOCK, comprising about 500 Wall-trained Apricot, Peach, Nectarine, Plum, Cherry, and Pear Trees; 1500 Stake-trained Dwarf and Standard Fruit Trees, 600 Standard Cherries, 600 Standard Roses, 300 Hemlock Spruce, 3300 Hollies, 1500 Common Laurels, 100 Standard Rhododendrons, 1000 Variegated Box, 90 very fine Cedars of Lebanon; 2000 yards of Box Edging, 200 very fine Portugal Laurels, 400 small ditto, 80 Scarlet Thorns, 850 Striped Hollies, 300 fine common Laurels, 1500 Laurustinus, 50 American Arbor-vitæ, 1000 Dwarf Rhododendrons, 200 China Arbor-vitæ and others, 150 Red Cedars, 100 Azaleas, 75 Large Yews, 800 common Yews, and a quantity of other Stock. The Stock can with confidence be recommended, being in very fine condition, and must be sold without the least reserve.

The LEASE of the substantial and convenient DWELLING HOUSE, with the Greenhouse, Forcing Pits, and Nursery Ground, will be offered for sale on the first day, previous to the sale of the stock.

May be viewed any time previous to the Sale (Sundays excepted).

Catalogues may be had (seven days prior to the Sale) on the Premises; of Messrs. RICHES and WOODBRIDGE, Solicitors, Uxbridge; and at the offices of the Auctioneer, Uxbridge, Middlesex.

HACKNEY.—TO NURSEYMEN AND OTHERS.

MR. LEREW will Sell by Auction, on the premises of the late Mr. R. STREET, Wells-street, Hackney, on TUESDAY, October 15, at 11 for 12 o'clock, without reserve, the valuable Stock in Trade of that old-established Nursery, comprising fine Aucubas, Laurels, Rhododendrons, Azaleas, Hollies, Laurustinus, Evergreens, Ivies, Shrubs, Fruit Trees, 7000 Greenhouse Plants, 42 large standing Pear Trees, Lights, Frames, and Glasses; Waggon, Carts, Chaise, Horses, Pony, &c.—To be viewed two days prior to the Sale, and Catalogues had, on the premises; of Mr. Street, 111, Goswell-road; and of the Auctioneer, 2, Cardington-street, Hampstead-road, near the Euston-square station.

CHERTSEY, SURREY.
TO GENTLEMEN, NURSERYMEN, AND OTHERS.

MR. WATERER will sell by Auction, on MONDAY, October 28, and following day, at 11 o'clock, by order of the Proprietor, at Brox, about two miles from the town of Chertsey, and one mile from the Addestone Station, a valuable NURSERY STOCK, comprising 75,000 Fruit, Forest, and other Trees, Evergreen and other Shrubs, including Spruce and Larch Firs, Birch, Horse Chestnut, Turkey Oak and Holly, Common, Wood, and Portugal Laurels, Arbutus, Laurestinus and Laburnums, Standard, Dwarf, and Climbing Roses, Honeysuckles, Irish Ivy, Daphnes, Clematis and Aucubas, Pears, Peaches, Apricots, and Nectarines, Plum, Pear, and other Stocks, Rhododendrons, Azaleas, Kalmias, and other American Plants, Ornamental and other Flowering Shrubs, 800,000 Bedded and Seedling Quick, and other Stock, the whole of which are in a safe moving condition.—May be viewed one week previous to the sale, by applying to Mr. GEORGE GRAY, Brox; and Catalogues had on the premises, and of Mr. WATERER, Auctioneer, Land and Timber Surveyor, Chertsey, Surrey.

TO NOBLEMEN, GENTLEMEN, NURSERYMEN, AND OTHERS.

SUNNINGDALE AMERICAN NURSERY, near Sunninghill, Berks, two miles from Virginia Water, two miles from Sunninghill Wells, and half a mile from Shrub's Hill.

MR. WATERER will Sell by Auction, on MONDAY, November 4, 1850, and following days, at 11 for 12 o'clock precisely, part of the extensive and valuable NURSERY STOCK of Mr. James Walker; consisting of 25,000 blooming Rhododendrons; Kalmias and Azaleas for Forcing, and many large ornamental Plants; a large quantity of Choice Evergreens and Flowering Shrubs, Dwarf Roses, and Honeysuckles, Standard and Dwarf-trained Apples, Pears, Cherries, Plums, Peaches, Apricots, and Nectarines, of the most approved sorts, Common and Portugal Laurels of all sizes, Birch, Ash, and Oak, Purple and Common Beech, Spruce, Larch, Scotch and Balm of Gilead Firs, of all sizes, a large quantity of Quick, from 3 to 5 years old, and a great variety of other Nursery Stock, well worth the attention of Nurserymen and others, about planting, being in a safe moving condition. N B.—The above is the produce of Seven Acres, and will be sold without reserve, as the Lease expires at Midsummer, 1851.—May be viewed one week previous to the Sale, and Catalogues had on the premises; of Mr. CHARLWOOD, Seedsman, Covent-garden; and of Mr. WATERER, Auctioneer, Chertsey, Surrey, who will forward them on application, by post, enclosing six postage-stamps.

NURSERY STOCK TO BE SOLD.

TO BE SOLD, a great Bargain, the STOCK OF A NURSERY, situate within three miles of one of the first seaports in the Kingdom, comprising a general collection of Fruit and Ornamental Trees, Evergreens, American Plants, &c., there being hardly any Forest Trees. Also Five Hot and Greenhouses, and their contents of choice plants; the whole Nursery occupying about 12½ acres. The Rental, with Dwelling House, &c., very light. The proprietor would leave most of the money on approved security, and will give most satisfactory reasons for disposing of the Stock.—Address J. H. W., *Gardeners' Chronicle* Office, with real name and address.

TO BE LET, and entered on immediately, BECKLEY NURSERY, with Cottage, Yard, Barn, Sheds, and Garden, together with two small Tenements, and Gardens adjoining, and about Five Acres of Nursery and other Land, partly tithe-free. The Tenant will be required to take the Shrubs and Plants at a valuation.—For further particulars, apply to Mrs. OGG, at the Nursery, Beckley, Christchurch, Hants.

FARMS TO LET, WITH IMMEDIATE POSSESSION.

MR. HURLEY, FARM AGENT and VALUER, begs to urge Farmers and Others, requiring either Large or Small FARMS, to make known their wants immediately to him, as he has upwards of FIFTY FARMS, Arable and Meadow, of the first description, from 60 to 600 acres, adapted to every kind of Farming, and rents to meet the times, in Surrey, Cambs, Sussex, Essex, Berks, Bucks, Kent, and Middlesex.—All applications (accompanied by two stamps) addressed to the Auctioneer, 62, Nelson-square, Blackfriars-road, London, will meet with instant attention.—Proprietors having Farms to Let are solicited to insert the same in Mr. HURLEY'S Register.

The FOLLOWING DESIRABLE FARMS are submitted in addition to MR. HURLEY'S last Published List, to which he begs to refer attention, namely:

A VERY EXCELLENT FARM known as "Rookwood Hall," situate in Essex, comprising TWO HUNDRED and EIGHTY ACRES of sound Turnip, Wheat, and Barley Land, Forty Meadow, with capital Residence and Outbuildings.—Rent and tithes moderate.

Also, a SMALL MEADOW FARM of SIXTY ACRES, with very capital House and Buildings, Orchards, &c., situate near Bristol, and a Station on the Exeter Railway.

Likewise, a good FARM of TWO HUNDRED ACRES, 45 Meadow, good Premises, near the Hatfield Station, Herts.

Also, a CAPITAL FARM of FIVE HUNDRED and THIRTY ACRES, in Berks, 74 Meadow, 74 Down Pasture, remainder Arable, with excellent Premises.—Rent, tithe free, 315*l.* a-year. Near the Great Western Railway.

Another in the same County, nearly FIVE HUNDRED ACRES, considered the best Farm in Berks; near a Station on the Great Western Railway.

And lastly, another of FOUR HUNDRED ACRES, same County, and near to the Pangbourne Station on the Great Western Railway.

Rents of each to meet the times. Apply for terms and to treat (inclosing two stamps), to Mr. HURLEY'S offices, 62, Nelson-square, Blackfriars-road, London.

PARTNERSHIP WANTED, in the NURSERY and SEED TRADES.—The Advertiser, a young Man, of business habits, is desirous of taking a share in a business where his personal superintendence and a moderate capital can be made available, and make him a suitable return; or a moderate business would be taken wholly. Persons who are desirous of either personal or pecuniary assistance will find this an eligible opportunity. Full particulars, with real name, addressed to A. B., Mr. W. Hill's Horticultural Works, Greenwich, will have prompt and immediate attention.
This Advertisement will not be repeated.

REMOVAL OF SMITHFIELD MARKET.—Excellent LAIRAGE for CATTLE and SHEEP, at the subjoined low rates, is provided at the ISLINGTON CATTLE MARKET.

LAIRAGE.

Cattle, 3*d.* per head, for one or any number of nights.
Sheep, 6*d.* per score; if at Grass, 1*s.* per score.
Fodder of the best quality on the most moderate terms.
An ample supply of Water.

The accommodation is spacious and extensive, the Sheds covering many acres of ground.

Cattle from a distance may be consigned to the Lairs direct, and upon notice being given by letter, addressed to "the Superintendent of the Islington Cattle Market, Islington, London," will be met at the railway or wharfs, will be provided for at the Lairs, and safely handed over to the Salesman or other parties for whom they may be intended. Foreigners buying cattle in England, and requiring to place them where they may be carefully taken care of until they shall have completed their purchases, or are ready to embark, will find the accommodation offered most desirable and economical.

GLASS FOR CONSERVATORIES, &c.

HETLEY AND Co. supply 16-oz. Sheet Glass of British Manufacture, at prices varying from 2*d.* to 3 . per square foot, for the usual sizes required, many thousand feet of which are kept ready packed for immediate delivery. Lists of Prices and estimates forwarded on application, for PATENT ROUGH PLATE, THICK CROWN GLASS, GLASS TILES and SLATES, WATER-PIPES, PROPAGATING GLASSES, GLASS MILK PANS, PATENT PLATE-GLASS, ORNAMENTAL WINDOW GLASS, and GLASS SHADES, to JAMES HETLEY and Co., 35, Soho-square, London.
See the *Gardeners' Chronicle* first Saturday in each month.

MITCHELL'S MINERAL BLACK PAINT.—This antiseptic Paint is intended for Park Fencing, and for all farming purposes; it is particularly adapted, by its prevention of dry rot in timber and repellance of damp, for Barns, Stables, Outhouses, Weather Boarding, Hop-poles; also for Carts, Waggons, &c., particularly the Wheels, and for Iron Hurdles, Iron Railings, and all Wood or Iron Work in exposed situations. For Brick Walls it is highly serviceable as a preventive of damp, and also for Walls intended for Fruit Trees, as, besides preserving the Wall, it increases the heat in all situations exposed to the sun, and prevents the harbouring of insects. It is also an excellent covering for Canvas, or Cart Tilts, Roofing, &c. Sold in casks containing from 1 cwt. to any quantity, at 17*s.* 6*d.* per cwt., quite ready for use, by JAMES PHILLIPS and Co. (the sole agents), 116, Bishopsgate-street Without, London.

THE BIRMINGHAM CATTLE SHOW, 1850.—The CERTIFICATES of ENTRY, for CATTLE, SHEEP, PIGS, and POULTRY, are now ready, and, with the PRIZE LISTS, may be had on application to the Honorary Secretary. Intending Exhibitors are particularly requested to mention the nature of the Stock for which they require Certificates. The entries close on SATURDAY, the 16th of November.

The Show will be held in the BINGLEY EXHIBITION HALL, BROAD-STREET. T. B. WRIGHT, Honorary Secretary.
Union-street, Birmingham, Oct. 12.

POULTRY.—PURE COCHIN CHINA, SUSSEX FOWLS, CROSS-BRED JUNGLE, AND GAME FOWLS, bred by the Zoological Society.—For prices apply to Mr. MILLER, Superintendent, at the Gardens, Regent's Park, London.

COCHIN CHINA FOWLS.—FOR SALE, a few choice full grown Chickens, bred from imported birds.—Apply to JAMES MANNISTER, Pit Place, Grays, Essex. The Gravesend steamers call at Graye pier.

RHEUMATISM.—A WONDERFUL CURE OF WHICH DISEASE HAS BEEN EFFECTED BY HOLLOWAY'S OINTMENT AND PILLS.—Mr. DONALD MCKELLAR, of Murrumbidgee, in New South Wales, states, that a man of about 50 years of age, employed by John Peter, Esq., Justice of the Peace in that Colony, suffered for 12 months from an attack of Rheumatism, brought on by exposure to Wet and Cold; he was so painfully afflicted, that his body was bent nearly double. In this deplorable condition, he commenced using HOLLOWAY'S Ointment and Pills, and so speedy was the cure effected by them, that it seemed to those who had witnessed his sufferings, little less than a miracle.—Sold by all Druggists, and at Professor HOLLOWAY'S Establishment, 244, Strand, London.

Re-issue, Part I., on First October, to be continued Monthly.

In Parts, 2s. 6d. each, Super Royal 8vo.

A

CYCLOPEDIA OF AGRICULTURE,

PRACTICAL AND SCIENTIFIC;

IN WHICH

THE THEORY, THE ART, AND THE BUSINESS OF FARMING,

IN ALL THEIR DEPARTMENTS, ARE THOROUGHLY AND PRACTICALLY TREATED.

BY UPWARDS OF FIFTY OF THE MOST EMINENT FARMERS, LAND AGENTS, AND SCIENTIFIC MEN OF THE DAY.

EDITED BY JOHN C. MORTON,

EDITOR OF 'THE AGRICULTURAL GAZETTE.'

With above One Thousand Illustrations on Wood and Steel.

The object of this Work is to present to the Agricultural Reader the whole of the truth immediately connected with his profession, so far as it is known to the men most familiar with the sciences it involves, the methods it employs, and the risks it incurs. For this purpose, every topic requiring discussion has been placed in the hands of those with whom it has been a matter of personal experience and study.

Agriculture is so extensive a subject, that no one writer can speak from personal knowledge on all its departments; and it is a subject so variable with circumstances, and therefore so liable to misrepresentation, that no other kind of knowledge is worth communicating. Many previous attempts have been made to condense in one Work all existing information on Agricultural affairs; but the Authors, or Editors, however skilful in recording their own experience, and however successful there, have never had equal success in conveying the experience of others. The Agriculturist, in daily contact with Nature, requires the assistance of those who have had personal acquaintance with her laws and requirements; writers retailing an experience at second hand upon these points, can neither be accurate nor full enough for his purpose.

In offering, therefore, to the Agriculturists of Great Britain a Cyclopedia of Agriculture, Practical and Scientific, intended to be a Standard Book of reference on all the subjects of which it treats, we should greatly mistake the exigencies of the times did we present a mere compilation of bygone information, which, however interesting in itself, can be of little real use to the practical man.

The only way in which the knowledge of his art can be brought down to the present day; its various methods—detailed with accuracy for his information; and the explanations given of their success or failure which the now more perfect Theory of Agriculture has furnished; is to place every department of the wide subject in the hands of those who have made it their especial study.

To accomplish this desirable object has been the great aim of the Editor and Publishers of the Cyclopedia of Agriculture; and for this purpose the assistance of our most distinguished agricultural writers has been engaged. Each separate topic will be discussed by its own student, in order that the whole may be presented as perfectly as possible. The reader will therefore receive no mere compilation of other works—he will, in every section of the subject, be instructed by the man who has made it his especial study. Thus, even in the 'Calendar of Farm Operations,' which might, perhaps harmlessly, have been a mere abstract of previous publications on farm practice, the successive sentences have been penned by those who have themselves carried out the processes described, or the instructions suggested: and in that one appendage to the Work, the details of farm operations are given as actually practised in twenty different counties of Scotland and England, by more than twenty of our most successful farmers and cultivators.

As regards the body of the Work, the names of its writers—a list of which is appended—are sufficient guarantee for the practical value of the performance. A Work on the Theory and Art of Agriculture, of which the several departments are undertaken by such contributors, may well command confidence.

Illustrations on wood and steel, of Farm Buildings, Insects, Plants, cultivated and uncultivated, Agricultural Machines, Implements and Operations, &c., will be given wherever it is presumed they can be useful.

A LIST OF THE WRITERS.

THEORY OF AGRICULTURE.

Its BOTANY, fully Illustrated by Wood Engravings—John Lindley, Ph.D., F.R.S. Diseases of Plants—Rev. M. J. Berkeley, M.A., F.L.S., King's Cliffe, Wansford.

Its CHEMISTRY—Lyon Playfair, Ph.D., F.R.S.; John Thomas Way, Consulting Chemist to the Roy. Agricult. Soc. of England.

Its ENTOMOLOGY, including Descriptions and Illustrations of the Insects which injure or benefit Crops, and affect Carne—John Curtis, F.L.S., Author of 'The British Entomology,' &c.

Its GEOLOGY—John Morton, F.G.S., Whitfield, Gloucestershire; Joshua Trimmer, F.G.S., of the National Geol. Survey.

Its HISTORY and GENERAL PHILOSOPHY—C. Wren Hoskyns, B.A.

ART OF AGRICULTURE.

The EDUCATION of its Practitioners—C. Wren Hoskyns, B.A.

Its PECULIARITIES, in England, Scotland, Ireland, and Flanders—Ph. Pusey, M.P.; Rev. W. Hickey, M.A., Thatcham Newbury, Berkshire; John Haxton, Tenant of Drumnod, Cupar-Fife; T. G. J. van den Bosch, Holland.

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DOMESTIC ANIMALS and their Management: Comparative Anatomy, Diseases, &c.; the Horse, its Breeds and Management—W. C. Spooner, Veterinary Surgeon, Southampton. The Ox, its Breeds and Management; the Sheep, its Breeds and Management—Messrs. James Caird, Wigtonshire; J. A. Clarke, Lincolnshire; Colonel Le Couteur, Jersey; H. Strafford, Editor of the *Short-Horn Herd-Book*; G. Turner, Devonshire; E. F. Welles, Worcestershire; John Wilson, Berwickshire; and A. T. Wilson, Lammermuir. The Hog, its Breeds and Management—John Hannam, Yorkshire. The Dog, Rabbit, Pigeon, Goat, Ass—H. D. Richardson, Dublin. The Alpaca—W. Walton. The Bee—J. Wighton, Costessy Hall, Norfolk. Poultry—Rev. E. S. Dixon, M.A., Intwood-with-Keswick, Norfolk.

The DAIRY—Messrs. Haxton, Fifeshire; Palin, Cheshire; Stallard, Leicestershire; Tucker, Dorsetshire.

CULTIVATED PLANTS, including Crops, Grasses, and Trees—Messrs. Robert Baker, Land Agent and Tenant, Essex; J. A. Clarke, Lincolnshire; Hewitt Davis, Land Agent, London; J. H. Dickson, Flax-dresser and Agent, London; William Gorrie, Farm Manager and Factor, Mid-Lothian; John and Jas. Grigor, of the Norwich and Forres Nurseries; John Haxton, Fife; J. C. Morton; J. M. Paine, Surrey; Hugh Raynbird, Land Agent, Hampshire; William Roach, Gloucestershire; James Smeed, Kent; Robert Thomson, of the Horticultural Society's Gardens, Chiswick; John Towers, Surrey; T. Tucker, Dorsetshire.

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AGRICULTURAL SOCIETIES—J. C. Morton.

AGRICULTURAL STATISTICS—J. C. Morton.

EFFECT of CLIMATE on the ART, R. Russell, Tenant of Kilwhiss, Cupar-Fife.

DOMESTIC ECONOMY—Bread, Beer, Cider, Meat, &c.—J. Towers, Surrey; William Ewart, Newcastle-on-Tyne.

BUSINESS OF FARMING.

RELATION of LANDLORD and TENANT—C. Wren Hoskyns, B.A.; John Gray, Agent for the Greenwich Hospital Estates; J. Dean, Land Agent; John Morton, Land Agent; J. C. Morton.

RELATION of TENANT and LABOURER—J. Ilderton Burn, of the Labourer's Friend Society; Rev. W. Hickey, M.A.; A. Somerville, Manchester (late of Berwickshire); J. C. Morton.

INVESTMENT of CAPITAL—J. C. Morton.

FARM ACCOUNTS—Thomas C. Morton, Accountant, Manchester.

MARKETS, SALES, &c.—J. Haxton, Fifeshire

LAWS RELATING to AGRICULTURE—J. G. Ball, Solicitor, Stroud; J. Bright, M.P., Rochdale; C. Wren Hoskyns, B.A.

BLACKIE AND SON:

QUEEN STREET, GLASGOW; SOUTH COLLEGE STREET, EDINBURGH; AND WARWICK SQUARE, LONDON.

AND ALL BOOKSELLERS.

SMITHFIELD CATTLE SHOW.

NOTICE.—THE PRINTED FORMS OF CERTIFICATES to be filled up for STOCK and IMPLEMENTS intended to be exhibited at the forthcoming Show in December next can now be obtained of the Honorary Secretary. All such Certificates must be returned, properly filled up, on or before **Saturday, the 16th of November.**

In applying for the Forms for Stock, it is necessary to state the Number of the Class or Classes, as there is a separate Form for each Class.

Prize Sheets and all information can be obtained on application to B. T. Brandreth Gibbs, Hon. Sec., corner of Half-Moon-street, Piccadilly, London.

SEED WHEAT—TWO QUITE NEW VARIETIES.

MR. ROBERT BEMAN, of Moreton-in-the Marsh, Gloucestershire, who has been a Seed Wheat Grower for upwards of 30 years, upon a very large scale, has great pleasure in informing his numerous old customers, and agriculturists in general, that he has this season Two magnificent New Varieties of unprecedented productive and good malting qualities, which have been produced each from a single grain, planted five years since, selected from two parcels of Foreign Wheat, samples of which may be seen in the ear and grain on the stand of Mr. Charles Dadge, of Longdon Villa, near Tewkesbury, his agent, at either Worcester, Tewkesbury, or Cheltenham Markets; or Mr. Blyzard, Gloucester; or forwarded by the grower upon pre-paid application, enclosing six postage stamps.

No. 1, he calls PRIMA DONNA.—Straw white; Grain red. Price 4*l.* per quarter.

No. 2, DONNA MARIA.—Red grain and Straw. Price 4*l.* per quarter.

N B.—R. B. is clearly of opinion that those persons who plant the above will counteract the effect of free trade by the abundance of produce, and recommends, from the luxuriance of growth, their being thinly planted.

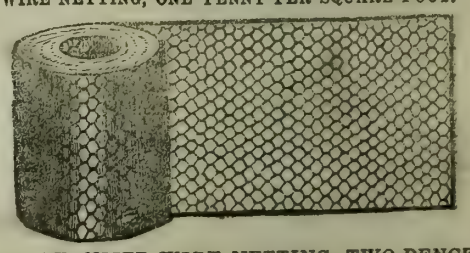
R. B. was also the grower of the following varieties this year, viz, Whitfield White, Red Straw White, White Cluster, Golden Cluster, Red American Spaldings, and Browick Red. Price of each, 52*s.* per quarter; delivered upon either the Great Western, North Western, or Midland Railways, free of carriage, in new sacks, 1*s.* 6*d.* each. Prepaid orders from unknown applicants, enclosing Post-office order or a satisfactory reference, will receive immediate attention.

This Advertisement will not be repeated.

A LARGE STOCK OF SILVERED PLATE GLASS for Mirrors, also Crown and Sheet Glass in Crates and Squares for Dwelling and Hothouse Glazing, at WILLIAM PERKS Junior, and Co.'s, Glass and Lead Warehouse, 52, Dale-end, Birmingham.

DEPOT FOR HARTLEY'S PATENT ROUGH PLATE GLASS.

WIRE NETTING, ONE PENNY PER SQUARE FOOT.



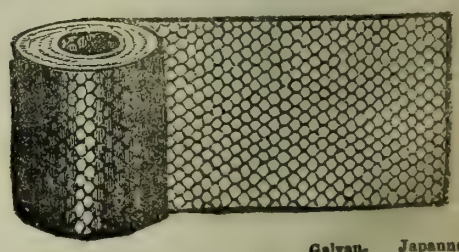
GALVANISED WIRE NETTING, TWO-PENCE PER SQUARE FOOT.—This article requires no painting, the atmosphere not having the slightest action on it. It was exhibited at the late Metropolitan Cattle Show, and was highly eulogised both for its utility and pretty appearance, and acknowledged to be the cheapest and best article ever produced. It forms a light and durable fence against the depredations of hares, rabbits, and cats, and is peculiarly adapted for Aviaries, Pheasantries, and to secure poultry; and by the galvanised requiring no paint, it answers admirably for training all kinds of creeping plants. Large quantities always kept in stock, of 18, 24, 36, and 48 inches wide; it can, however, be made to any dimensions desired. Patterns forwarded free of expense.

12 inches wide	3*d.* per yard.		30 inches wide	7½*d.* per yard.	
18 ,, ,,	4½*d.* ,,		36 ,, ,,	9*d.* ,,	
14 ,, ,,	6*d.* ,,		48 ,, ,,	1*s.* ,,	

Galvanised do., 1*d.* per foot extra.

Extra strong Imperial Wire Sheep Netting, 3 feet, 1*s.* 6*d.* per running yard; if galvanised, 2*s.* Also every description of Wire Nursery and Fireguards. Wire House-lanterns and Shades, Fly-proof Dish Covers, Meat Safes, &c.; Window Blinds, 1*s.* 10*d.* per square foot, with bolts complete, in mahogany frames; Gothic Garden Bordering, 6*d.* per running foot; Flower Trainers, from 3*d.* each; Garden Arches, 20*s.* each. Flower Stands, from 3*s.* 9*d.* each; Galvanised Tying Wire for plants and trees, Dahlia Rods, and every description of Wire-work; Weaving, for the use of paper-makers, millers, &c.—At the Manufactory of Thomas Henry Fox, 44, Skinner-street, Snow-hill, London.

GALVANISED WIRE GAME NETTING.—7*d.* per yard, 2 feet wide.



		Galvanised.	Japanned Iron.
2-inch mesh, light, 24-inch wide	...	7*d.* per yd.	5*d.* per yd.
2-inch ,, strong ,,	...	9 ,,	6½ ,,
2-inch ,, extra strong ,,	...	12 ,,	9 ,,
1½-inch ,, light ,,	...	8 ,,	6 ,,
1½-inch ,, strong ,,	...	10 ,,	8 ,,
1½-inch ,, extra strong ,,	...	14 ,,	11 ,,

All the above can be made any width at proportionate prices. If the upper half is a coarse mesh, it will reduce the price one-fourth. Galvanised sparrow-proof netting for pheasantries, 3*d.* per square foot. Patterns forwarded post-free.

Manufactured by BARNARD and BISHOP, Market-place, Norwich, and delivered free of expense in London, Peterborough, Hull, or Newcastle.

Printed by William Bradbury, of No. 13, Upper Woburn-place, in the Parish of St. Pancras, and Frederick Mullett Evans, of No. 7, Church-row, Stoke Newington, both in the County of Middlesex, Printers, at their office in Lombard-street, in the Precinct of Whitefriars, in the City of London; and published by them at the Office, No. 5, Charles-street, in the parish of St. Paul's, Covent-garden, in the said county, where all Advertisements and Communications are to be addressed to the Editor.—Saturday, October 12, 1850.

THE GARDENERS' CHRONICLE
AND
AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 42—1850.] SATURDAY, OCTOBER 19. [PRICE 6*d.*

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NOW SENDING OUT.

BECK'S PELARGONIUMS.—The TWO GUINEA COLLECTIONS of Twelve Plants have amongst them RUBY, SARAH, and DORCAS, seedlings not sent out before, but often exhibited in our winning collections. The set may be had in exchange for a post-office order on Brentford, in favour of JOHN DOBSON; package and carriage to London included. They are in 3-inch pots, and wanting an immediate shifting. Catalogues may be had on prepaid application, enclosing one postage stamp.—Worton Cottage, Isleworth.

JOHN B. SMITH begs most respectfully to inform the Nobility, Gentry, and the Trade that his stock of AZALEA INDICAS are very fine this season, and well set for bloom, and comprise several new and striking novelties. The new yellow varieties of Rhododendrons are very strong and fine, as also Rhododendrons in general, Camellias, Roses, Liliums, &c., all offered at the very lowest ebb of price; Catalogues of which may be had by inclosing a postage stamp.
Norbiton Nursery, Kingston, Oct. 19.

NEW SEEDLING STRAWBERRY—MYATT'S "SURPRISE."—This is a variety raised from the British Queen, which it resembles, though of a more robust habit, and a very free bearer, producing a greater abundance of those large angular-shaped Strawberries than any other variety, and finishing off the last fruit of a good size, price 50*s.* per 100.
Also Myatt's Eleanor, 5*s.* British Queen, Globe, Mammoth, Comte de Paris, Hooper's Seedling, Keens' Seedling, Swanston's Seedling, Elton Pine, 3*s.* 6*d.* Fertilised Hautbois, 5*s.* Cuthill's Black Prince, 10*s.* 6*d.* per 100. Kitley's Goliah, 3*s.* 6*d.* per doz., or 20*s.* per 100.—Manor Farm, Deptford.

MESSRS. STANDISH AND NOBLE'S new descriptive CATALOGUE OF SELECT HARDY ORNAMENTAL PLANTS is just published, and may be had for four postage stamps. Besides a Treatise on the cultivation of American Plants, it contains a Plate and Description of the Funebral Cypress, Notices of Cephalotaxis Fortunii, Cryptomeria japonica, Quercus sclerophylla and inversa, Viburnum plicatum and macrocephalum, with many recent introductions from the north of China, quite new to English gardens.
Messrs. S. and N. take this opportunity of stating that they give Designs for Laying out New Grounds and Plans for Improvements; also Estimates for all kinds of Planting, whether ornamental or economic.—Bagshot Nurseries, Oct. 19.

NEW SEEDLING GERANIUM.

RUNDLE'S BEAUTY OF MONTPELLIER has been Purchased by the following Nurserymen:—Messrs. Henderson and Co., Pine-apple-place; Messrs. E. G. Henderson and Co., St. John's Wood; Mr. Charles Turner, Royal Nursery, Slough; Messrs. Bass and Brown, Sudbury; Mr. Keynes, Salisbury; Mr. W. Cock, Chiswick; Mr. B. N. Cant, Colchester; Mr. W. Bragg, Slough; Mr. Wm. Ivery, Peckham, Surrey; and most of the other leading Nurserymen in the kingdom.
Strong Plants now sending out, 20s. each, one-third off to the trade, with one added to every three.
Apply to WILLIAM E. RENDLE & Co.,
NURSERYMEN, PLYMOUTH.

KITLEY'S "GOLIAH" STRAWBERRY.

ROBERT WHIBLEY is supplying fine plants at a very reduced price for cash, viz., 2*s.* per dozen or 10*s.* per 100. Also select CHRYSANTHEMUMS in great variety, blooming plants, in 5-inch pots, from 6*s.* per dozen. Lists can be had.
Chester Nursery, Kennington, near London.

HOYLE'S NEW GERANIUMS AND MAYLE'S NEW FUCHSIAS.

MESSRS. MAYLE AND CO. have a few extra strong cut down plants of Mr. Hoyle's new GERANIUMS, sent out by them last autumn and spring of 1850, at 10*l.*; present price for the set of eight, 3*l.*, smaller plants 2*l.* Mayle's seven new FUCHSIAS (warranted the best ever raised), including Champion and Hebe, sent out in June last, for 5*l.*; present price 2*l.* Circulars can be had.
12 extra fine GERANIUMS, 30*s.*
12 best new CINERARIAS, 21*s.*
STANDARD ROSES, extra sorts, 21*s.* per dozen.
CHRYSANTHEMUMS, 50 varieties, 8*s.* per dozen.
Monument-lane Nursery, Edgbaston, Birmingham.

TO BE SOLD, A GREENHOUSE, Quite New Length 12 feet by 7, by 9 feet high. To be seen at 7, City-terrace, City-road, Londnn.

TRUE DOUBLE ROMAN NARCISSUS, 3*s.* per dozen. The most fragrant and earliest flowering of all the Narcissus. ROBERT HALL begs to advise the arrival of his Annual Importation of the above-named BULBS, in fine healthy condition. Also, fine Dutch HYACINTHS 6*s.* per dozen, or 3 dozen for 15*s.* Crocus, Jonquils, Tulips, &c., at his Foreign Warehouse, 63, South Audley-street, Grosvenor-square, facing the Chapel. Priced Catalogues may be had by post, and postage stamps taken in payment.

TESTIMONIAL TO MR. MUNRO, late Gardener to the Horticultural Society of London.—At a Preliminary Meeting, held at the Roebuck Inn, Turnham Green, September 30th, 1850; Mr. Glendinning, Mr. Thompson, Mr. Cock, Mr. Edmonds, Mr. Gordon, Mr. Caie, Mr. Ayres, and Mr. Ivison being present, Mr. GLENDINNING was called to preside. Mr. Caie was then elected Secretary, and Mr. Edmonds Treasurer.
It was then Resolved, That a subscription not exceeding Half-a-crown for each person should be entered into for the purpose of presenting Mr. MUNRO with a suitable Testimonial of esteem, on his retiring from the superintendence of the Horticultural Society's Garden, which appointment he held for upwards of Thirty years.
Persons desirous of contributing are requested to forward their subscriptions to the Treasurer, Mr. Charles Edmonds, Chiswick House, Chiswick, Middlesex.
It was also Resolved, That the Subscription List be closed on Saturday, November 16th, 1850.
*** Post office orders payable at Turnham Green.

SUPERB NEW SEEDLING PICOTEE AND CARNATION.

JOHN SCHOFIELD AND SON beg to inform their friends, and florists generally, that they are now sending out the following fine Picotee and Carnation, viz., "LADY HARWOOD," H. Purple Picotee, and "KNOWSTHORPE PET," S. Biz. Carnation. Price per pair, 10*s.* 6*d.*, or Four Pairs for 30*s.* The above have been submitted to the meeting, at Worton Cottage, and spoken of in the highest terms. See report, vide *Gardeners' Chronicle*, August 24th, and Florist for September. Also, Mr. Wood's opinion in the Midland Florist for this month. They are confidently recommended as First-class flowers, and a decided acquisition in their class.
J. S. and Son can also supply the following in strong plants.
12 pairs Picotees or Carnations, First-class Flowers, 20*s.* to 30*s.*
12 ditto ditto Carnations, Second-class 6*s.* to 12*s.*
12 Pairs of First-class Pinks, 6*s.* to 12*s.*
12 Finest Show Pansies, 6*s.*, 10*s.*, and 15*s.*
A Catalogue of the above may be had on application.
Pansy Seed from Show Flowers, 2*s.* 6*d.* per packet.
Very select Calceolaria Seed, 2*s.* 6*d.* „
Knowsthorpe, near Leeds, Yorkshire.

TO SEEDSMEN, &c.

ABRAHAM HARDY AND SON, SEED-GROWERS, Maldon, Essex, beg to offer to the trade their Wholesale Priced Catalogue of Vegetable and Flower Seeds. Also Early Seed Potatoes of 1850, grown under their own especial care.
Post-free on application.—Oct. 19.

PELARGONIUM, FOQUETT'S MAGNIFICENT.

CHARLES DIMMICK has now ready strong plants of the above well-established in pots, and requiring an immediate shift, for 7*s.* 6*d.* each; or 30*s.* for six to the trade.
Terms, cash.—Ryde, Isle of Wight, Oct. 19.

CUTHILL'S BLACK PRINCE STRAWBERRY.
Now sending out, price 10*s.* per 100.
Also, PRACTICAL INSTRUCTIONS FOR THE CULTIVATION OF THE POTATO, containing the Competition Essay for the Prize of 1000 francs, offered by the Belgian Government.
Also, Instructions on the Management of Asparagus, Seakale, Rhubarb, Vegetable Marrow, Scarlet Runner, Strawberry, Melon, Cucumber, Chicory and Lamb Lettuce as Salads; the Lisianthus Russellianus, the Tree Mignonette, the Destruction of Woodlice and Green fly; and Peat Charcoal as Manure.
By JAMES CUTHILL, Horticulturist, Camberwell.
London: Printed for the Author, and sold by him, price 2*s.*, or by post 2*s.* 4*d.* Sold also at Hamiltons and Co., 33, Paternoster-row.

PLANTS FOR BLOOMING IN THE CONSERVATORY IN WINTER OR EARLY SPRING.

MESSRS. J. AND J. FRASER, NURSERYMEN, Lea Bridge-road, Essex, beg to offer the following, finely set with bloom-buds, at the undermentioned moderate prices:

AZALEA INDICA, in fine sorts	18*s.* to 30*s.*	per doz.
EPACRIS and ERICAS, ditto	18*s.* to 24*s.*	„
RHODODENDRONS, ditto	9*s.* to 18*s.*	„
KALMIA LATIFOLIA	12*s.* to 18*s.*	„
HARDY AZALEAS, including fine Belgian varieties	9*s.* to 18*s.*	„
MOSS AND PROVENCE ROSES	12*s.*	„
LILACS, GUELDRE ROSES, DEUTZIAS, WEIGELA ROSEA, &c.	12*s.*	„

The above are all beautifully grown, and well established in pots, and are fit for immediate forcing. Remittances respectfully requested from unknown correspondents.

HUNTINGDON NURSERIES.

MRS. WOOD, in returning her sincere thanks for the kind patronage she has received in the Nursery, Seed, and Flower Trades, begs to announce that she has retired from the same, in favour of her Nephew, Mr. JOHN INGRAM, by whom for some years past the Business has been superintended, and for whom she earnestly solicits a continuance of that support which for upwards of a century has been accorded to her late husband's family. All debts owing to and from Mrs. WOOD will be received and paid at the Nurseries, Huntingdon; and it is respectfully requested that all post-office orders be made payable to SUSAN WOOD.
JOHN INGRAM, in succeeding to the above business, most respectfully informs the planting and horticultural public, that nothing shall be wanting on his part to merit a continuance of the favours for so many years liberally bestowed on his predecessors. The stock comprises an immense quantity of Fruit, Forest, and Ornamental Trees, Evergreens, Roses, &c., as well as a large collection of Stove, Greenhouse, and Bedding Plants, with every description of Florists' Flowers, of all of which Catalogues may be had on application. Seeds for the supply of the Kitchen and Flower Gardens are grown on the premises, the detached character of these Nurseries affording excellent facilities for keeping the varieties pure and distinct.
A few stocks, containing fine dormant buds, of the STANWICK NECTARINE to be sold at 21*s.* each. Very fine well-rooted SPRUCE FIRS, 2 to 3 feet, 30*s.*; 3 to 4 feet, 35*s.* per 1000.
Huntingdon is situated on the main trunk of the Great Northern Railway, which will afford a cheap and rapid transit both north and south.
N.B. The business will in future be carried on under the firm of "WOOD and INGRAM."

NEW SEEDLING PANSIES—"COMMANDER IN-CHIEF" AND "PRINCE ARTHUR."

YOUELL AND CO. beg to announce they are now prepared to execute orders for the above first-rate PANSIES, which they guarantee will give the highest satisfaction.
"COMMANDER-IN-CHIEF" was exhibited at the Worton Cottage Meeting of May 29th, under the initials of "T. T.," and the following opinion is given in "Beck's Florist" of July last: "No. 2, Yellow ground, bronzy purple top petals, lower ones margined with the same colour, bold eye, showing to great advantage: *a fine flower for Exhibition.*"
The following opinion of this fine flower is also given in the *Gardeners' Chronicle*, of June 20th, under the initials of "Y. Y." "No 2, Rich yellow ground, top petals dark maroon, lower petals margined with the same colour—eye good; a full-sized and fine flower."
"PRINCE ARTHUR," white ground, top petals rich dark purple, lower ones margined with the same colour, eye good—flowers large and of great substance.
This was exhibited with "Commander-in-Chief" at the Worton Cottage Meeting, and obtained the following opinion: "No 38, Style of Optimus, and a considerable improvement upon it, having more ground colour."
Strong plants of the above 5*s.* each per post free if required; and one over to the Trade when three are ordered.
Royal Nursery, Great Yarmouth, Oct. 19.

J. AND J. FAIRBAIRN having an immense Stock of remarkably fine FRUIT TREES, trained and untrained, consisting of Peaches, Nectarines, Apricots, Pears, Plums and Cherries, in a large assortment of the most approved kinds; also a very large stock of ornamental Forest Trees, Flowering Shrubs, and Evergreens, on land they are anxious to clear, are induced respectfully to solicit the attention of Gentlemen planting to an inspection of the same, which they intend to offer at such prices for cash as they hope will insure their liberal orders.
J. and J. F. also beg leave to solicit the attention of Gentlemen wishing to furnish Greenhouses, Conservatories, &c., to their stock of Cape Heaths, Epacrises, Chinese Azaleas, Boronias, &c., which is unusually large and fine this season, to which they will affix the most moderate prices, to induce the favour of extensive orders.
Nurseries, Clapham, near London, Oct. 19.

THE PRICE CURRENTS (Nos. 40 and 41) of LOUIS VAN HOUTTE, NURSERYMAN, Ghent, Belgium, are to be had of Mr. GEORGE RAHN, 52, Mark-lane, London.
LOUIS VAN HOUTTE begs especial attention to the following: Achimenes, Alstrœmeria brasiliensis, chilensis, Errembaultii, odorata rosea; Seedling Gloxinias (and among them Gl. Marie Van Houtte, the best in the trade, which obtained, last summer, first medals at the Brussels and Antwerp shows); splendid seedlings of Sparaxis, Tropæolum azureum, fine roots; Camassia esculenta, very fine varieties of Gladioluses, and the well-known Gl. Gandavensis, in quantity; the true Lilium japonicum (not L. Brownii), Lilium lancifolium roseum corymbiflorum, L. Szowitsianum, testaceum; fine Anemones and Ranunculus of the celebrated collection of Madame Quetel, &c. Æchmea miniata, Æschynanthus Teysmanii, Conoclinium Ianthinum, Hoya Sieboldii, Pharus scab. vittatus, the splendid Rogiera cordata, Drymis Winterii, Petunia Meleagris (very fine), Siphocampylus amœnus (quite new), seedling Antirrhinums, very fine collection of new Daisies, Dianthus Delaby, Epimedium violaceum atroviolaceum, new Lobelias, Cercis japonica, and Morus Kæmpferi, in fine plants, both from Dr. Siebold's recent introduction; Pyrus japonica rosea and atrosanguinea, also from Dr. Von Siebold; Azalea indica, and the new collection of Ghent Azaleas (hardy), of which L. VAN HOUTTE bought the entire stock; the well-known VAN HOUTTE'S Calceolarias (Seeds), all the new Chrysanthemums, Coniferous Plants, fine Salisburias from seed, Ferns of every description, the new Fuchsias from M. Linden (distinct species), the very curious and beautiful Stanhopea ecornuta, large collection of Palms, an extremely fine collection of the best varieties of Ghent Herbaceous Pæonies, the celebrated Rhododendron Vervaeniauum flore pleno (in fine bushy plants), the novelties in Roses, &c. &c.
N.B.—The Camellia Catalogue is in preparation.
The usual discount to the trade.—PLANTS IN LONDON FREE.

TO GENTLEMEN PLANTING FRUITS, AND TO THE TRADE IN GENERAL.

JOHN BELL, having disposed of his Nursery Business, begs to offer the remainder of his fine healthy Stock of FRUIT TREES, at the following low prices, having only a short time to clear the Ground:

	Per Doz.	Per 100.
APPLES.	£0 4*s.*	£1 10*s.*
Dwarf Plants	0 9	3 0
Standards	0 15	5 0
Espaliers		
PEARS.		
Dwarf Plants	0 6	2 0
Standards	0 12	4 0
Pyramidal, fine bushy	0 12	4 0
Espaliers	0 18	6 0
PLUMS.		
Dwarf Plants	0 6	2 0
Standards	0 12	4 0
Espaliers	0 18	6 0
CHERRIES.		
Dwarf Plants	0 6	2 0
Standards	0 12	4 0
Espaliers	0 18	6 0
APRICOTS, PEACHES, AND NECTARINES.		
Dwarf Maiden Plants	0 9	3 0
„ Trained	1 0	7 0
Standard Trained	2 2	
Figs, of sorts	0 9	3 0
Gooseberries, 100 varieties	0 2	0 12
Currants, black, white, and red	0 2	0 12
Fine Standard Roses	0 12	4 0
Half „ „	0 9	3 0
Dwarf worked, 6 to 12 inches	0 6	2 0

Catalogues will be sent by inclosing one penny stamp to J. BELL'S, 3, Exchange-street, Norwich.
A remittance requested from unknown correspondents.
Strong 4-year-ol Whitethorn, 2*s.* 6*d.* per 1000, in large quantities.

FIRST CLASS CRIMSON BIZARRE CARNATION.

WOOD'S "SOUTH LONDON," which was awarded a First Class Certificate at the Royal South London Show in 1849, and received the highest encomiums from the floricultural press at the time, is now ready for sending out. Being above the average size, it will be found a first-rate flower for showing in collections, as well as single blooms. Price, 10*s.* per pair, postage free.

Also WOOD'S "MR. HERBERT," a first class heavy-edged purple Picotee, at 5*s.* per pair, postage free.

Cash with orders from unknown correspondents is respectfully requested.—WOOD and INGRAM, Nurseries, Huntingdon.

TILEY'S VIOLA ARBOREA, OR PERPETUAL TREE VIOLET.—VIOLA ARBOREA, or the PERPETUAL TREE VIOLET (true).—In answer to numerous inquiries for the above, and great satisfaction given by the plants sent out last season by EDWARD TILEY, he begs to state that he has this year a fine stock of the above beautiful DOUBLE VIOLET now to dispose of, which he can highly recommend, this being the proper time for making beds or potting. They are beautifully scented; the blooms are as large as the double blue Hepatica; they bloom freely from August till the end of May, and are perfectly hardy. Twelve of these plants grown in pots will scent a large greenhouse; and a small bed, 9 feet long by 3 feet wide, will be sufficient to furnish a family with bouquets the whole of the winter and the spring. They should be planted in rather a dry situation and a loose soil, as the Violet will thrive and bloom finer than in wet or clay borders.

E. T. has been informed by the gentleman that introduced it into this country, that he has seen them growing in the thickets of Persia to the height of 4 feet, with large bushy heads to them, and hundreds of blooms on them at the same time. Large bushy plants, 6*s.* per dozen; smaller ditto, 3*s.* per dozen; or 1*l.* per hundred.

Also he has a fine stock of that splendid YELLOW VIOLET, or VIOLA LUTEA, which has been so much admired at the London exhibitions. In colour it is equal to the Crocus. Strong bushy plants 2*s* 6*d.* each; or smaller ditto, 1*s.* 6*d.* each.

KITLEY'S GOLIAH STRAWBERRY.—Strong well-rooted plants at 3*s.* per dozen.

True BATH COS LETTUCE SEED, 1*s.* per packet.

Extra fine SWEET WILLIAM SEED, saved from 24 distinct varieties, 1*s.* per packet.

ANTIRRHINUM SEED from all the best varieties, 1*s.* per packet.

WINTER CUCUMBER.—Lord Kenyon's Favourite, 2*s.* 6*d.* per packet.

The whole or any quantity of the above will be sent, postage and package free, to any part, on receipt of a Post-office order, or the amount in penny postage stamps.

Sold by EDWARD TILEY, Nurseryman, Seedsman, and Florist, 16, Pulteney-bridge, Bath.

RENDLE'S NURSERY, PLYMOUTH, Established 1786.

WILLIAM E. RENDLE AND CO. have this season A LARGE SURPLUS STOCK of many sorts of FOREST TREES and SHRUBS. For prices see the *Gardeners' Chronicle*, October 12, 1850.

Our Autumnal Catalogue of Forest Trees, Shrubs, and Fruit Trees, is just published, and can be had for one penny stamp.

Apply to WILLIAM E. RENDLE AND CO.,
NURSERYMEN, PLYMOUTH.

FRUIT TREES.

THOMAS RIVERS begs to submit to the Public a SYNOPSIS of his FRUIT TREE CULTURE. The names of varieties, with descriptions and prices, are given in his Descriptive Catalogue of Fruits, published in October, 1849, sent post free for four postage stamps. A Supplement to this will shortly be issued.

APPLES.—Standards for Orchards, and Pyramids and Dwarfs, on Crab Stocks; Pyramids and Dwarfs, and Dwarfs Trained, for Gardens, on Paradise Stocks.

APRICOTS.—Dwarfs, Dwarfs Trained, Standards, Standards Trained, and Dwarf Bushes in pots for culture under glass.

CHERRIES.—Standards for Orchards, Dwarfs, and Dwarfs Trained on the common wild Cherry stock, Dwarfs for Bushes or for potting for culture under glass, Dwarfs in pots, and Dwarfs Trained on the Cerasus Mahaleb stock.

CURRANTS.—Bushes and Pyramids.

FIGS.—Dwarf Bushes in a bearing state in pots.

GOOSEBERRIES.—Bushes, 80 large Lancashire varieties, 20 small high-flavoured ditto.

GRAPES.—Vines, from eyes, in pots, for Vineries and Hothouses, fine and well ripened under glass; Ditto hardy kinds for walls, also from eyes growing in the open quarters; plants fine, 7 to 8 feet in height.

MEDLARS.—Standards, Dwarfs, and Pyramids.

NECTARINES AND PEACHES.—Dwarfs, Dwarfs trained, Standards, Standards trained, and Dwarf Bushes in pots in a bearing state for culture under glass.

NUTS AND FILBERTS.—Dwarfs and Standards for garden culture, grafted on the Spanish Hazel Nut. These form very prolific trees.

PEARS.—Standards for Orchards, Pyramids, Dwarfs, and Dwarfs trained on Pear stocks; Pyramids from one to six years old, 1*s.* 6*d.* to 3*s.* 6*d.* and 5*s.* each; the two latter descriptions capable of bearing a good crop the first summer after planting. Dwarf Bushes for potting and Dwarfs trained for espaliers or walls on Quince stocks. Many acres are devoted exclusively to the culture of Pears. A few varieties can be had grafted on the Hawthorn and Mountain Ash, but they cannot be recommended.

PLUMS.—Standards for Orchards, Standards trained, Pyramids, Dwarfs and Dwarfs trained for espaliers or walls. The Pyramids are nearly all in a bearing state, so as to be able to give fruit the first summer after planting. Dwarf Bushes in a bearing state, and Dwarf Bushes in pots for culture under glass, grafted on the Sloe (Prunus spinosa).

QUINCES.—Standards of the common, and Pyramids of the large Portugal Quince, the finest and most abundant bearer, even when young, of all the Quinces.

RASPBERRIES.—Canes of all the select varieties.

STRAWBERRIES.—Plants of all the varieties worthy of cultivation.

MULBERRIES.—Standards and Dwarfs. Some fine Standards can be supplied 35 to 40 years old. These are 6 to 7 feet high, perfectly straight, and measure from 8 to 16 inches in girth 5 feet from the ground. They have all been removed within three years, and will transplant with safety.

THE MINIATURE FRUIT GARDEN; or, the Culture of Pyramidal Fruit Trees. Third edition. Sent free per post for 24 postage stamps. Shortly will be published THE ORCHARD HOUSE; or, the Culture of Fruit Trees in Pots Under Glass. By THOS. RIVERS.—Sawbridgeworth, Herts, Oct 19.

BAKER'S PHEASANTRY, Beaufort-street, King's-road, Chelsea, by special appointment to her Majesty and H. R. H. Prince Albert.—ORNAMENTAL WATER FOWL, consisting of black and white swans, Egyptian, Canada, China, barnacle, brent, and laughing geese, shieldrakes, pintail, widgeon, summer and winter teal, gadwall, Labrador, shovellers, gold-eyed and dun divers, Carolina ducks, &c., domesticated and pinioned; also Spanish, Cochin China, Malay, Poland, Surrey, and Dorking fowls; white, Japan, pied, and common pea-fowl, and pure China pigs; and at 3, Half-moon-passage, Gracechurch-street, London.

JOHN HARRISON, NURSERYMAN, Darlington and York, having a great stock of that beautiful, delicious, and very early STRAWBERRY, "CUTHILL'S BLACK PRINCE," begs to offer fine strong plants at 7*s.* 6*d.* per 100, or 60*s.* per 1000. Also the undernamed Fruit Trees, Shrubs and Plants. All orders to be addressed to the Nursery, Darlington.

Fastolff Raspberries, 7*s.* 6*d.* per 100, or 60*s.* per 1000.
Raby Castle or Victoria Currants, 12*s.* per 100, or 5*l.* p. 1000.
Champagne Red ditto, 8*s* per 100, or 60*s.* per 1000.
Common Red Currant, 5*s.* per 100, or 40*s.* per 1000.
The "Bang-up," fine large Black Currant, the best in cultivation, 10*s.* per 100, or 80*s.* per 1000.
Common Black Currant, 5*s*, per 100, or 40*s.* per 1000.
Aston Red Gooseberries, 8*s.* per 100, or 70*s.* per 1000.
Rhubarb, Victoria, fine, 35*s.* per 100, or 15*l.* per 1000. [per 100
" Royal Albert, fine plants, 12*s.* per dozen, or 80*s.*
" Linnæus, fine, 12*s.* per dozen, or 80*s.* per 100.
Bay Laurels, 1 to 2½ feet, 25*s.* to 50*s.* per 1000.
Rhododendron ponticum, 1 to 1½ and 2 feet, 20*s.* to 40*s.* p. 100.
Laurustinus, 9 inches to 1 foot, fine, 20*s.* to 30*s.* per 100.
Berberry aquifolia and Dulcis, 1 to 2 feet, 15*s.* to 20*s.* per 100.

ROSES FOR STOCKS.

Blush, China, 1 to 1½ foot, 10*s.* to 15*s.* per 100.
Manettii, 10*s.* 6*d.* to 20*s.* per 100.
Celina, the best stock for strong soils, 10*s.* to 20*s.* per 100.
Boursault, 8*s.* to 12*s.* 6*d.* per 100.
Standard Roses, in 100 fine varieties, 7*l.* to 10*l.* per 100.
Dwarfs ditto, in 100 fine varieties, 6*l.* per 100.
Dwarfs, Mixed for Borders, 1*l.* 10*s.* to 2*l.* per 100.

Phlox omniflora, 20*s.* per 100.
Delphinium Barlowii, 50*s* per 100.
Superb Double Hollyhocks, 9*s.* to 18*s.* per dozen.
Carnations and Picotees, all the choice new show varieties, from 1*s.* to 10*s.* 6*d.* per pair (See Catalogue).
Chrysanthemums, all the best new varieties, 9*s.* to 18*s.* p. doz.
Dahlias, Ground and Pot Roots in every choice variety.
Pansies, all the new and best varieties, such as Frances Cycole, Juventa, Miss Edwards, Helen, Disraeli, Lucy Neal, Addison, Duke of Norfolk, Example, Jenny Lind, Mrs. Beck, Mrs. Bragg, Gem, Androcles, Clio, Cypress, Charmer, Hero, Duchess of Norfolk, Queen, Alexis, Cracker, Almanzer, Fire King, Achilles, &c., 18*s.* per doz., own selection; purchaser's selection, 24*s.* per doz.
Pansy seed, saved from all the choicest varieties, 2*s.* 6*d.* per packet of 200 seeds.

Catalogues of Roses, Carnations, Picotees, Pansies, Greenhouse and Stove Plants, Forest Trees and Shrubs, &c., may be had on application.—Darlington Nursery, Oct. 19.

TO NOBLEMEN, GENTLEMEN, AND PUBLIC COMPANIES.

C. LODDIGES AND SONS beg most respectfully to inform the above, that in consequence of the land upon which their celebrated Arboretum is planted being required for building purposes, they are determined to offer the STOCK at such a reduction in price (for cash only) as cannot fail to attract the attention of all who are engaged in extensive ornamental planting. The trees are of the finest description, and range from 6 to 10 feet high.

	Named. Per doz.	Unnamed. Per 100.
ACER (Maple), of from 40 to 50 species...	4*s.* 0*d.*	25*s.* 0*d.*
ÆSCULUS (Horse-Chestnut), 30 species	4 0	25 0
" rubicunda (true scarlet) ...	6 0	
ALNUS (Alder), 25 species	4 0	25 0
AMYGDALUS (Almond)	4 0	25 0
BETULA (Birch), 30 species	4 0	25 0
CORNUS (Dogwood)	4 0	25 0
CORYLUS (Nut)	4 0	25 0
COTONEASTER	4 0	25 0
CRATÆGUS (Thorn), from 80 to 90 sp.	4 0	25 0
CYTISUS	4 0	25 0
FRAXINUS (Ash), 40 to 50 species ...	4 0	25 0
MESPILUS	4 0	25 0
POPULUS (Poplar), 25 species	4 0	25 0
PRUNUS (Plum), 50 species	4 0	25 0
PYRUS (Pear), 50 to 60 species	4 0	25 0
QUERCUS (Oak), 30 to 40 species ...	12 0	
RIBES (Currant), 50 species	4 0	25 0
ROBINIA (Acacia), 30 species	4 0	25 0
SALIX (Willow), 150 species	4 0	25 0
SORBUS (Mountain Ash)	4 0	25 0
SPIRÆA	4 0	25 0
TILIA (Lime)	4 0	25 0
ULMUS (Elm), 35 species	4 0	25 0
Fine Trees selected from the above, for rough planting, 10*l.* per 1000.		
Smaller genera, at equally low prices.		
RHODODENDRON ponticum and vars., 3 to 4 feet across	10 0	
AZALEA pontica, ditto ditto	10 0	
" Ghent and other varieties ...	18 0	

N.B. Packing will be charged as low as possible. Post-office orders made payable either in London or Hackney.
Hackney, Oct. 19.

NEW FANCY GERANIUMS.

EDWARD GEORGE HENDERSON, Wellington-road Nursery, St. John's Wood, London, begs to announce that he is now prepared to send out the following new and beautiful FANCY GERANIUMS, raised by him, and proved in 1850. For description see *Gardeners' Chronicle* of October 5th, or Catalogue, which may be had, free, on application.

BLACK PRINCE, 10*s.* 6*d.* — PRIMA DONNA, 10*s.* 6*d.*
EXQUISITE, 10*s.* 6*d.* — PRINCE ALBERT, 10*s.* 6*d.*
MARION, 10*s.* 6*d.* — REINES DES FLEURS, 10*s.* 6*d.*

Also, NEW PELARGONIUMS.

CORA, 7*s.* 6*d.* — PRINCESS ROYAL, 10*s.* 6*d.*
FIREBALL, 10*s.* 6*d.* — STANDARD BEARER, 10*s.* 6*d.*

E. G. H. will also be ready, in November, to send out the following set of new CINERARIAS, with the exception of the two varieties marked thus *, which cannot be sent out before the spring; and as the stock of those beautiful varieties will be limited, purchasers of the set will be first supplied.

AMY ROBSART, 7*s.* 6*d.*, lilac rose, self, dark disk, fine form.
CLARA MOWBRAY, 7*s.* 6*d.*, ruby carmine, with black disk, large flower, and novel colour.
DELICATA, 7*s.* 6*d.*; white and bright lilac, equally divided; dwarf habit, and an abundant bloomer.
EFFIE DEANS, 7*s.* 6*d.*; white, deeply edged with dark purple, dark disk, good habit.
FAIRY QUEEN, 7*s.* 6*d.*; white ground, with an edging of light rose; large flower and good habit.
*LADY HUME CAMPBELL, 10*s.* 6*d.*; the purest ground we have ever seen, with a bright purple blue; excellent form and habit; a first-rate flower.
*MADAME SONTAG, 10*s.* 6*d.*; beautiful clear white, with deep edging of porcelain blue, dark disk, dwarf and excellent habit, fine form.
MARGARETTA, 7*s.* 6*d.*; dark blue purple self, moderate size, well arranged flower, and a free bloomer.
LADY ARAMINTA, 7*s.* 6*d.* (gratis to purchasers of the set), blue, with a circle of violet crimson round the disk; dwarf habit, and a well-arranged flower.

TO GARDENERS, &c.

GUTTA PERCHA TUBING for Watering Gardens, spreading Liquid Manure, &c., may be had joined up to any length. Waterproof Soles for Boots and Shoes. Thread for tying up Plants. Gutta Percha Canvas suitable for nailing up Trees, &c.—Manufactured by THE GUTTA PERCHA COMPANY PATENTEES, 18, Wharf-road, City-road, London.

NURSERIES, CHESHUNT, HERTS.

A. PAUL AND SON respectfully inform their Customers and the Public in general, that their New and Descriptive CATALOGUES of Roses and Hardy Ornamental Flowering Trees and Shrubs are now ready. Applications, enclosing two stamps for the Rose, and one for the Tree Catalogue, will be immediately attended to.

LATE SEEDLING GOOSEBERRY, "NEGRO BOY."

Two-year plants, 5*s.* each; one-year do., 3*s.* 6*d.*

JOHN WILLISON can supply the above splendid GOOSEBERRY, which has been tested by hundreds with the best varieties. Two dishes were shown at Whitby on the 24th Sept. last, for which an extra prize was awarded. The following extracts are selected from the editors' opinions.

Gardeners' Chronicle, Sept. 15, 1849.—"*J. W.* Late seedling Gooseberry, dark red, rich flavour, and would doubtless be good for preserving. It retained its flavour during carriage better than is generally found to be the case with Gooseberries."

Midland Florist for October.—"Willison's Negro Boy Gooseberry. We have this day (Sept. 18) received specimens of the above fruit; though not large, yet the lateness of its season renders it a valuable acquisition for the dessert. The specimens were perfectly smooth, of fine flavour, and a very dark colour; in fact, as they lay in the box, packed in cotton wool, they looked more like Damsons than Gooseberries."

Gardeners' and Farmers' Journal.—"*J. W.* We pronounce this winter Gooseberry excellent, and, for so late in the season, of an exquisite flavour."

STRAWBERRIES.—A few of the best varieties, viz., Cuthill's Black Prince, 10*s.* 6*d.* per 100; Kitley's Goliah, 10*s.* 6*d.*; Myatt's Eleanor, 5*s.*; British Queen, 3*s.* 6*d.*; Keens' Seedling, 3*s.*; Elton Pine, 3*s.*; Swainston do., 3*s.*

RHUBARB.—Victoria, 6*s.* per dozen; Royal Albert and Linnæus, 8*s.* per dozen.

The usual discount to the trade. All orders made payable to JOHN WILLISON, Flowergate, Whitby.

PLANTING SEASON.—NURSERY GROUNDS, RED LODGE, NORTH STONEHAM, NEAR SOUTHAMPTON.—An unlimited supply of every description of FOREST, FRUIT, AND ORNAMENTAL TREES, AMERICAN PLANTS, AND FLOWERING SHRUBS, may be procured from these extensive grounds, at the most reasonable prices, printed Catalogues of which may be had of the proprietor, WM. ROGERS, Sen., NURSERYMAN AND CONTRACTING PLANTER.

Transplanted Forest Trees, 1 to 2 feet, adapted for extensive Forest or Coppice Planting, usually sold by the thousand; and also of a large size, for Ornamental Planting, or immediate effect, from 3 to 12 feet, the prices varying from 25*s.* to 5*l.* p. 100.

Ash, Beech, Birch, 15*s.* to 30*s.* per 1000; Spanish Chestnut, 20*s.*, 30*s.*, and 40*s.*; Larch Fir, 7*s.* 6*d.* to 20*s.*; Spruce, 20*s.*, 30*s.*, and 40*s.*; Scotch, 10*s.*, 15*s.*, and 20*s.*; Pinaster, 10*s.*, 15*s.*, and 20*s.*; Sea Pine, adapted for exposure to the sea, 15*s.*, 25*s.*, and 40*s.*; Mahonia, for cover, 40*s.* to 80*s.*; Hazel, 15*s.*, 20*s.*, and 35*s.*; English Oak, 15*s.*, 20*s.*, and 40*s.*; Poplar, 20*s.*, 30*s.*, and 40*s.*; Quicks, 5*s.*, 7*s.* 6*d.*, and 10*s.*

Planting contracted for to any extent from 5*l.* to 20*l.* p. acre.

ORNAMENTAL TREES AND SHRUBS.

Rhododendron ponticum, 2 to 6 inches, 20*s.*, 40*s.*, and 80*s.* per 1000; 1 foot, single stems, fit for working, 10*s.* per 100; 1½ to 2 feet, strong, 20*s.* to 40*s.* per 100, fit for planting out at once to cover; 4 to 6 feet, single stems, for working the beautiful scarlet and other fine kinds, 50*s.* per 100. Tree Rhododendrons may thus become as generally cultivated as Tree Roses. Scarlet Rhododendrons, 18*s.* per dozen; hybrid scarlet, lilac, and white, with large handsome trusses of flowers, 4 to 6 inches, 25*s.*; 1 foot, 40*s.* per 100; Kalmia latifolia, 2 to 4 inches, 8*s.* to 12*s.* 6*d.* per 100; 1 to 2 feet, blooming buds, 50*s.* per 100; 2 to 3 feet, fine, 75*s.* per 100; Epigæa repens, 50*s.* per 100; and all other American plants at equally low prices.

Dwarf Rose Stocks for working, 8*s.* per 100; Single Camellias, 25*s.*, 40*s.*, and 50*s.* per 100, fit for working; Double Camellias, of sorts, on own roots, 6 to 9 inches, 12*s.* per dozen; Pinus (Abies) Douglasi, from seed, 6 to 9 inches, 10*l.* per 100 or 30*s.* per dozen; Arbutus, 12 inches, 8*s.* per 100; 1½ foot, 20*s.* per 100; 2 feet, 30*s.* per 100; Laurel, 8*s.* to 20*s.* per 100; Laurustinus, bedded, 40*s.* per 1000, 8*s.* per 100; Variegated Holly, 1 foot, 25*s.* per 100; Clematis azurea grandiflora, 6*s.* per dozen, 42*s.* per 100; Deutzia scabra, 2 feet, 12*s.* 6*d.* per 100; Common China Rose, 12*s.* 6*d.* per 100; Tree Roses of the most select kinds, 5*l.* per 100; Dwarf Roses, 50 sorts, named, 50*s.* per 100; Double White, Double Red, and New Crimson Thorns, 40*s.* per 100, 6*s.* per dozen; Large Dutch Honeysuckles, 12*s.* 6*d.* per 100; Giant Irish Ivy, 8*s.* per 100.

The prices are for wholesale, if ordered in less quantities a higher price will be charged. All orders above 5*l.* carriage paid to London.

American purchasers will find great advantages in procuring their supplies from these grounds, from their proximity to the Docks whence the American steam-packets take their departure, thus saving the delay and expenses of Land Carriage.

SLATE WORKS, ISLEWORTH, MIDDLESEX.

EDWARD BECK Manufactures in Slate a variety of articles for Horticultural purposes, all of which may be seen in use at Worton Cottage, on application to the Gardener, Sundays excepted. Priced lists of plant tubs and boxes forwarded on application.

DOUBLE PANSY "COMPACTUM."

A. DODS has a fine healthy stock of the above beautiful novelty which he is now sending out at 5*s.* each, or seven for 30*s.*—Rose Hill, Brighton, Oct. 19.

FIRST CLASS SEEDLING PANSIES.

JAMES NEILSON, AUCTIONEER and FLORIST, Falkirk, begs respectfully to intimate to the lovers of the PANSY, that he will send out his celebrated Seedling Pansies by the end of October, viz., JEROME, NORAH, and BOULANGER. The following is a description of the Flowers:

JEROME has a creamy-white ground colour, beautifully laced with a light blue lilac-purple on the three under petals, with upper petals the same as the lacing, and a striking large bold dark centre; form and substance first-rate, and was awarded the First Class Certificate by the Scottish Pansy Society.

NORAH has a pure white ground, most superbly laced with blue purple, fine dark centre, edges smooth, and form perfect, and is most decidedly the thickest Pansy with a white ground in cultivation; and can never be much improved upon, as it is the perfection of the Pansy.

BOULANGER has a golden yellow ground of the richest colour imaginable, and laced with a brown purple; has a large conspicuous dark centre, with edges smooth and form perfect; and, if the expression may be used, with substance thick as leather.

The above three flowers will be an acquisition to any collection whatever; indeed, as much so as "Magnificent" was when sent out by J. N., and is still to this day.

Plants of the above will be sent post free to any part of the United Kingdom at 5*s.* each, with the usual discount to the trade only, when more than three plants are taken. "Boulanger" will not be sent out till Spring. Remittances from unknown correspondents payable at the Post-office, Falkirk.

Falkirk, Oct. 19.

WATERER'S DESCRIPTIVE CATALOGUE OF AMERICAN PLANTS, &c.

HOSEA WATERER begs to announce his new descriptive CATALOGUE OF AMERICAN PLANTS, CONIFERS, ROSES, &c., is just published, and may be had by enclosing two stamps for postage to HOSEA WATERER, Knap Hill Nursery, Woking, Surrey.

☞ Everybody who has any idea of planting the ensuing autumn should possess themselves of this Catalogue.

AMERICAN PLANTS.

JOHN WATERER'S CATALOGUE OF AMERICAN PLANTS, ROSES, CONIFERS, &c., is now published, and may be had gratis on application. It describes the colours of every Rhododendron worthy of cultivation, thus affording purchasers every facility in making selections.

American Nursery, Bagshot, Surrey.

GEORGE JACKMAN, NURSERYMAN, Woking, Surrey, 1¼ mile from the Woking Station of the South-Western Railway, begs to announce that he has just published a new and complete CATALOGUE of his American Plants, Ornamental Evergreens and Flowering Shrubs, Standard and Dwarf Roses, Fruit and Forest Trees, &c., which may be had gratis on application.

RHODODENDRON CINNAMOMUM var. CUNNINGHAMI.

MESSRS. GEORGE CUNNINGHAM AND SON are now prepared to send out plants of the above-named splendid RHODODENDRON. It is figured in the August Number of "Paxton's Flower-Garden; by John Lindley and Joseph Paxton." And for a description of its merits and origin, the advertisers refer the public to that periodical. The price is 21*s.* each, with the usual discount to the trade.

Oak Vale Nursery, Liverpool, Oct. 19.

BASS AND BROWN'S AUTUMN CATALOGUE is now ready. It contains Descriptive Priced Lists of Superb Seedling and other Ranunculi, Gladioli, Early and Double Tulips; also Priced Assortments of Choice Imported Dutch Hyacinths, Narcissus, Iris, Jonquils, Crocus, the Lancifolium and other Lilies, with a great variety of other bulbs and dry roots. The latter part contains Descriptive Lists of Choice and Select Roses, a few New and other desirable Evergreen and Flowering Shrubs, Hardy Climbing and Hardy Herbaceous Plants, Prize Gooseberries, and other choice fruits, &c.

A separate List of Geraniums and other new and select plants at reduced prices. Catalogues forwarded, prepaid, for two penny stamps.

Our Foreign Bulbs have arrived in fine condition.

Seed and Horticultural Establishment, Sudbury, Suffolk.

FOREIGN BULBOUS ROOTS.

WM. HAMILTON, SEEDSMAN, &c., 156, Cheapside, London, begs to state that his Priced Catalogue of the above is now ready, and may be had gratis on application.

HYACINTHS in colours, named, for pots or glasses, 6*s.*, 9*s.*, and 12*s.* per dozen; in mixtures, 3*s.* per dozen. MIXED DUTCH CROCUS, 1*s.* 6*d.* per 100. TULIPS for early forcing, 1*s.* per dozen. SNOWDROPS, 2*s.* 6*d.* per 100. NARCISSUS, 4*d.* to 6*d.* each. GLADIOLUS, IXIAS, IRIS, RANUNCULUS, ANEMONES, and a large assortment of other Roots, the prices of which will be found in his Catalogue.

W. H.'s Improved Supporter for Hyacinths, &c., 6*d* each.

*** Not to be equalled by any now offered to the public.

Address—156, Cheapside, London.

HYACINTHS AND OTHER ROOTS.

RENDLE'S NEW PRICED CATALOGUE OF BULBOUS ROOTS

Is just published, and can be had on application, gratis. It contains a DESCRIPTIVE *List of all the best Hyacinths, Tulips, Iris, Ranunculus, Anemones, Crocus, Liliums, Gladiolus, Ixia, &c., with some excellent* CULTURAL ADVICE *as to the best method of growing them. It will be found of great service to all growers.*

The "Collections of Seeds" sent out by us having given such universal satisfaction, we have been induced to offer the following "Collections of Roots," which we are certain will please every purchaser.

For the List of Roots contained in the Collections, see our new Book Catalogue.

COLLECTIONS OF BULBS.	£	*s.*	*d.*
No. 1 Collection, all the most approved sorts ...	3	0	0
No. 2 Collection, containing smaller quantities ...	2	0	0
No. 3 Collection, for a small Garden	1	0	0

For details of Collections, see Catalogue.

100 Hyacinths in 100 very fine sorts. Purchaser's selection	3	0	0
100 Hyacinths in 50 fine sorts. Purchaser's selection	2	10	0
50 Hyacinths in 50 superior sorts ditto ...	1	10	0
50 Hyacinths in 25 superior sorts ditto ...	1	5	0
24 Hyacinths in 12 superior varieties ditto ...	0	12	0
12 Hyacinths in 12 superior varieties ditto ...	0	6	0

Where the selection of Hyacinths is left to W. E. R. and Co., they request to be informed whether they are intended for water, pots, or the open ground; also whether single or double Hyacinths are preferred. When the choice is left to them they generally send about two-thirds double, and one-third single, which gives a greater variety. Purchasers may rely upon really good sorts being selected when the choice is left to ourselves, and we will guarantee to give them satisfaction.

For Catalogues, and further information, apply to WILLIAM E. RENDLE AND Co., Seed Merchants, Plymouth.

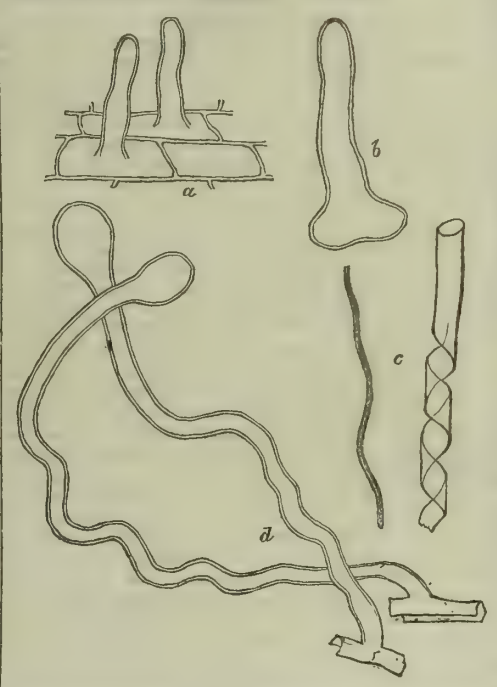
N.B. Our Hyacinths and other roots have just arrived from Holland in excellent condition.

The Gardeners' Chronicle.

SATURDAY, OCTOBER 19, 1850.

IT is an established fact in vegetable physiology that the principal part of the NUTRIMENT OF PLANTS is absorbed by the tips of the roots. In some plants, however, where the exigencies of a quick supply of moisture are great, and the number of roots small, or where moisture is to be derived from the surrounding atmosphere, a further provision is made of a coating of hairs, which multiply almost in an infinite degree the absorbing surface. DE CANDOLLE indeed says that hairs are not found either upon true roots, except at the moment of germination, nor upon any portion of the stem that is formed under ground, nor upon any part that grows under water. The roots of many Orchids, Epiphytal and terrestrial, however, are an exception; a fact pointed out by LINK, in his Remarks on the Structure of Orchideæ, read before the Berlin Academy in February 1850, as also by IRMISCH, in his elaborate treatise on bulbous and tuberous Monocotyledons, and they exist on the tuber-like bodies so common in terrestrial Orchids as well as on the real roots. We find similar hairs on the aërial roots of Ivy, on Cauliflowers, on Grasses, as *Piptatherum multiflorum*, the common Maize, &c.; and in our three species of *Drosera*, where the simple roots which contain abundant starch granules and perform the office of the thickened roots of some Orchids, are constantly submerged and so coated with flocci as to present an aspect similar to that of *Chorda tomentosa*. It is probable that the presence of hairs on roots is a very frequent phenomenon, though only recently observed, and one which must be of great importance in the economy of plants.

As far as we have seen at present the hairs are always without partitions. Two forms occur; one in which the internal wall is apparently altogether simple, and another where a spiral structure is evident either through the whole or a portion only of the thread. In *Cranichis muscosa* and *monophylla* we have observed two kinds of hairs, the one larger and either simple or consisting (in part) of a broad spiral lamina; the other much smaller, darker, and simple. In *Monadenia rufa* irregular granular bodies are scattered over the threads, which may, however, possibly be extraneous. As the matter seems to have been but little noticed, we subjoin a sketch of the hairs on the roots of *Drosera anglica*, *Cranichis muscosa*, and some species of *Eria*, from the gardens of the Horticultural Society. In every case they arise directly from the external cells, of which they seem to be a mere dilatation. *M. J. B.*



a, hairs in a species of *Eria* springing directly from the external cells of the aerial roots; *b*, a hair with the cell from which it sprang—in this case smaller than the others—separated by pressure from the rest of the tissue; *c*, two kinds of hairs on roots of *Cranichis muscosa*,—in *Cranichis monophylla* we have not observed the larger hairs to have a spiral structure; *d*, hairs of *Drosera anglica*.

LIKE everything else connected with the POTATO DISEASE, the question of whether TOMBELLE-LOMBAS' plan of cutting off the mildewed haulm at the period *when the flowers are beginning to form fruit*, is advantageous or not, has given rise to the most opposite opinions. Some maintain the excellence of the practice; others find no advantage in it. We shall not attempt, on the present occasion, to reconcile conflicting statements, or to show how imperfectly the Belgian directions have been in some cases observed; we shall merely describe what happened in a case within our personal knowledge.

In the beginning of April last a few Potatoes, of a seedling Kidney Potato, were received from Mr. W. STENT, of Stockworth, as a variety of great excellence, but not very early. They were immediately planted in heavy, well-drained, kitchen-garden land, without manure. In the beginning of August they were in flower. The flowers were nearly all removed. In the midst of August the leaves were extensively spotted, and, with the haulm, became offensive to the smell. After remaining in this condition three or four days, the whole were cut down with a *sharp knife*, so as not to disturb the roots. About 4 inches of earth were then thrown over the the ground, and the whole was rolled down firmly. Near the end of September the crop was dug. The Potatoes were excellent in quality, perfectly ripe, fully formed; and, out of a bushel and a half, not above a score were bad ones. The produce was at the rate of a bushel a perch.

The smallness of the crop does not appear to have been caused by the operation; but is to be accounted for in the following manner. In the first place, the length of the haulm of the new variety having been unknown, the Potatoes were planted at twice the proper distance. Secondly, several of the sets never came up, so that there were large gaps in the plot of ground. It is not improbable that the crop, if planted at a proper distance from set to set, would have been twice as great.

We own that this experiment, to say nothing of some others on record, leads us very forcibly to the conclusion that the Potato crop does not sustain material damage from the loss of the haulm, *if it is not removed till the berries are beginning to swell*; and also that the method of cutting it off, slightly earthing up the ground, and then rolling it *well*, is one of the best that has been proposed for arresting the progress of the disease.

ALTHOUGH we have not much knowledge of the plants belonging to Mr. LINDEN, which are about to be sold by auction, we are able to state that among the collection are many fine things. The *Uroped* alone is one of the most extraordinary of known Orchids, having tails to the flowers more than two feet long; *Sobralia dichotoma* is by far the finest of that genus. *Eriopsis biloba*, called in the catalogue by its second name of *rutidobulbon*, is a good plant, and rare. Some drawings that accompany the plants appear to represent charming species, in the way of *Houlletia*, *Myanthus*, *Odontoglossum*, and *Oncidium*; and also a new white-flowered genus, unlike anything yet known to botanists. The present opportunity is a capital one for securing novelties for the exhibitions in 1851 and 1852.

HOW TO MISMANAGE A GARDEN.

CHAPTER XI.—Tools may be made use of, as well as anything else, to show mismanagement; indeed, it may be taken as a rule that one of the best possible ways to turn out the worst possible work is to make a bad use of implements.

The approach of the great season for digging and trenching, and cutting and pruning, and felling, makes it desirable that no more time should elapse without the great rules for doing the worst with garden-tools being made intelligible to the meanest apprehension.

As to the pruning-knife: in the first place, take care it is always blunt; there are many advantages in bluntness. If sharp, it may cut your fingers; if blunt, it won't be so likely. Then, a blunt knife suits a clumsy hand; for some dexterity is required in using a keen edge, and none is needed with a dull one. You may hack with the one, and that takes time, and gives you an opportunity of considering how your cut is to be placed; but you must be decided with the other, for the knife once put in action, the cut is inevitable; and a bad manager cannot be expected to know how or where to cut without trying three or four times before he makes up his mind.

A blunt knife shows that a man has, at some time or other, been using it; but if it is always sharp, a suspicious master may fancy it is only kept for show. Besides, it gives him a chance of showing that he knows how to sharpen a knife; and it is certainly remarkable how a mismanager sets about that. You will see him rubbing away upon the whetstone, always drawing the blade backwards and polishing the sides with wonderful care. He knows better than to draw the edge towards him; or to keep that which is to cut in contact with the stone. He will tell you that if he does so he will rub off the edge, *in course*.

As knives are intended for use, a clever chap will use his pruner for as many purposes as he can turn his hand to; a weed-grubber, a cheese-toaster, a pot-scraper, a wire-cutter, are all instruments for which the pruning-knife may answer; and if, afterwards, it cannot be made to prune, at all events it has been made to grub, and toast, and scrape, and cut wire.

Then again, you should never have your knife about you; it is absurd to expect that a gardener should always carry a pruning-knife; no doubt he always wants it; but that is not to the purpose; it may do well enough for good managers, but a bad manager scorns such carefulness. The bad manager always carries his pruning-knife in his great-coat pocket, or in his jacket pocket; for this very good reason that, as he generally leaves his great coat at home, and very often takes his jacket off when he goes to work, he is sure not to have a knife when he wants one. Thus he has the chance of a gossip with his wife or somebody else when he goes to look for it. Old-fashioned gardeners prefer keeping their pruning-knife in their breeches; be

cause, as they seldom work without that garment, they are certain not to leave their knife behind them. But who would be so ungenteel as to carry a knife in his inexpressibles? Good managers may if they like, but a man of spirit, and a genius into the bargain, scorns such vulgarity and old maidishness.

What has been recommended for the pruning-knife should also be followed with other tools. If you have a mattock, be sure that it is put by blunt with wear, so that when you want it you must wait till it is fresh pointed. In this way labourers get a bit of a holiday, and you yourself have time to consider well how the mattock is to be used. In like manner your rakes should always have their teeth out, your spades be broken at the corners, and your scythes unset. As to scythes indeed, if they *must* be used, be sure to have no scythe stones, and no wipers; never roll the Grass before mowing; never sweep it clean of stones that chance to be there; but, on the contrary, hack the Grass, and score it well; break the scythe edges, damn the stones, and take great care to blame everybody but yourself. No doubt it *is* shameful that the Grass should be tough, that the children should throw gravel on it, that worm-casts should blunt the edge of the scythes; the worst of all is, that there is no help for such things. Good managers may provide against them if they like; but you will, no doubt, think with all other bad managers, that it is much easier to swear at them.

I was going to give you some advice about digging; but, upon the whole, I think you have enough for this turn. *Κῆπουρος.*

THE PHILOSOPHY OF FORCING.

A distinguishing feature in modern horticulture is the fact that principle is permitted to guide practice. To such must be attributed the rapid advances in every department of gardening, which the last quarter of a century has witnessed. There is a very startling fact for that now happily almost obsolete class of men, who treat horticultural literature with disdain, and scientific deduction, bearing upon their art, as mere toys for the scientific, in the circumstance that with the growth of garden literature, with the circulation and interchange of opinions, by means of the *Gardeners' Chronicle* and other periodical journals, simultaneously have spread better systems of cultivation, and more extensive knowledge of the capabilities of plants. By their aid a new fact becomes the progenitor of others. An idea conceived in one part of the kingdom, no matter how remote, is subject to the scrutiny of thousands of readers; its merits are tested and analysed, its real advantage or defects are soon ascertained, and the results become the property of all who watch the progress of the art and philosophy of gardening.

The dissemination of principles is the peculiar province of the literature of any science. He who would learn practice from them, to the exclusion of that physical exertion which perfection in any art or science ever demands as a tribute from those who would attain perfection, would most assuredly reap disappointment.

I propose to glance at the physiological and other principles upon which successful forcing must ever depend; and, by way of commencing at the beginning, it may not be amiss to define what really is the horticultural signification of the word forcing. Every plant requiring artificial heat cannot be considered as being forced, even though fruit should be the ultimate object. The imitation of a tropical climate must not be considered forcing. The latter I define to be the production of fruit or flowers at unnatural seasons, by natural agents artificially applied. And although the mere cultivation of tropical fruits involve much that is common to forcing, it cannot be considered as identical.

Adopting then the definition as given above, we shall find that the whole series of operations commenced in bringing about the ultimate desired result, may with propriety be divided into two distinct classes. The one I shall term the *preparatory* process, the other the *developing* process.

It is a law in all organic combination of matter, whether simply organic or animal, that each process in its development is dependent for its healthy action upon some *previous* process in the chain of progressive life of the individual. It is evident that by tracing this principle in its retrograde aspect, we ultimately arrive at the source of human penetration — a first cause. With this, the present inquiry has nothing to do. The principle being established I shall proceed, keeping it in view only as it bears upon the subject under discussion. And looking at it in its various aspects, the whole paraphernalia of mechanical operations involved in the routine of a forcing campaign is presented to us. Healthy roots, root pruning, luxuriant wood, laterals, summer pruning, in fact every operation which has the remotest influence on the constitutional or incidental vigour of the plant operated on, becomes a matter for grave inquiry. In the present state of physiology—admired though it may be—we know little of the action of external influences upon the vital principle of plants. We know nothing of its nature but by its effects. There can be no question but that the study of the influence which external circumstances exert upon the vital principle of plants is as important in the higher branches —aye and the simpler too—of horticulture, as that of the relation between the body and the mind of man is to the metaphysician and the human physiologist. But hitherto we have only regarded it with concern, in proportion to the effects produced. We must go beyond this. The rapid advance of scientific attainments amongst those who have the best opportunity of making observations, and of profiting by them, assures me that we shall do so. The progress of mental attainments may not inappropriately be likened to the physical accumulation of a snow-ball—the more it accumulates the more rapidly does it accumulate. Let any one look back from the present horticultural eminence obtained by our best gardeners, and what may they not expect of the future? *G. L.*

BRITISH SONG BIRDS.

It will be essentially necessary, before entering in detail on the proposed "Treatise of British Song Birds," to make a few preliminary observations closely connected with the subject. It is worthy of note, that there is scarcely a family, high or low, rich or poor, whether residing in town or in country, in which some one species of our feathered songsters is not to be found domiciled. From boyhood, nay almost from infancy, upwards, there exists in most of us an innate propensity to keep a bird. There is "companionship" in the very thought—a feeling of comfort, essentially English. How very many of us there are who can vouch for this fact! It becomes, however, a matter for serious consideration how these little prisoners are treated, when placed in confinement, and committed to our tender care and keeping, without the possibility of assisting themselves. With some, indeed, it is a question whether it be strictly lawful to keep birds at all, in confinement. The question, certainly, does admit of disputation; but allowing it to be lawful, there is at least entailed on us a serious and an indispensable duty to make them forget, so far as kindness can do so, their privation of liberty. This *I* have ever studied to do; and, in most instances, I would fain believe, successfully. I regret however to say, that my observation has led to the discovery of many acts of barbarous cruelty practised on these innocent creatures; arising, let us hope, not so much from an unfeeling heart as from a culpable want of due consideration to their necessities. Many people are apt to imagine, while viewing the occasional activity and sprightliness of their little caged favourites, and while listening to the melody of their tiny voices, that they are in the enjoyment of perfect health and happiness. They take this for granted. Many birds, however, though they sing, are still very far from being happy. There is a plaintive note as well as a joyous note. My ear could detect either, in an instant. Some birds convey the state of their feelings by a remarkably singular note, a note which is totally different at other times. I have known a bird warble delightfully, but ominously, a few minutes only before his decease. Like the swan, he has sung most sweetly at his death. As the strain ceased, he fell lifeless from his perch. His heart had burst. On looking into the cage, I have found my suspicions verified. From neglect, either Dicky's food has been exhausted, or his water, from carelessness, has been inaccessible. That "last" eloquent song of his, was a bitter reproach to his hard-hearted master or mistress!

I cannot help thinking, and I wish to be very emphatic on the point, that no persons should ever attempt to keep birds, or allow their children to do so, without their being what I call naturally fond of them, and, at the same time, themselves of a kindly disposition. To entrust birds to the care of a thoughtless child, a servant, or an indifferent person, in one's absence from home, unless under very particular circumstances, is to yield them up to almost certain destruction. Servants either cram their troughs full of food (sufficient to last a week) with a view to save trouble, or, by never changing their water, they allow it to become corrupt. In the former case, the hull of the seed which is eaten, falling on the top of the residue, prevents the birds obtaining a fresh supply; whilst, in the latter, the birds become poisoned by putridity. I am sorry to say, adults are frequently quite as much in fault as children in this matter; too often more so; for birds are not unfrequently killed by children through an excess of attention, having many things ministered to them quite unsuited to their animal economy. They are also taken out of their cages to be nursed and "petted"—a horrible practice; when the heat of the hand and undue pressure on their body causes their death.* Why, let me ask, should we be thus thoughtlessly, thus continually cruel; when five minutes of our time every morning will, in many cases, be amply sufficient to make our favourites both comfortable and happy?

These little creatures, if we would narrowly watch them, possess the most singular attractions, exhibit the most romantic attachments. Not a movement of their master or their mistress escapes their observation. They may be taught, easily taught, by affectionate care, to come out of their cages when called for, or to set on the finger and sing when requested. A simple movement of the head, or expression of the eye, will accomplish this; whilst the reward of a bit of hard-boiled egg, or a morsel of loaf sugar, will speedily cement an intimacy terminable only by death: the attachment of birds knows no other limit. I have verified this, times out of number; and have by me, at the present moment, a little army of "pets," who, having paid the debt of Nature, are now carefully and lovingly embalmed in glass cases—mementoes of many by-gone happy hours. I have rarely found, during a long experience of 25 years, any great difficulty in taming a bird, or, indeed, an animal of any kind. Instinct, on some occasions very closely bordering on reason, unerringly teaches the lower order of animals to discriminate who are their friends, and who are their enemies. This is demonstrable by the extraordinary familiarity, apart from all fear, which some birds and other animals exhibit when in the presence of their masters or mistresses, on whose fingers I have known birds to sit and sing with the most perfect confidence.

I was much struck the other evening, whilst visiting the Cyclorama, in the Regent's-park, to observe, mounted on a stand, a large and very ferocious macaw; who, having been evidently subjected to a succession of annoyances from tormenting visitors, was ever on the alert to fasten on the first victim that should fall in his power. Unlucky wight! The ferocity of the animal was the subject of general remark. Whilst passing through the same room, in the after part of the evening, I saw the said macaw caressing the face of a gentleman with the fondest marks of affection, insinuating his head inside the gentleman's waistcoat, and giving other most extravagant tokens of regard. It was his master!

Apropos of these little endearments. I remember, some years since, holding an argument with an "unbeliever" about the power I possessed of taming animals. I pretended, indeed, to no particular gift or mode of fascination; simply kindness. Mesmerism, at that time, slumbered; and we were in the habit of recognising effects without being able accurately to divine their causes. Science has, since, rapidly progressed; and we now view matters through a different, a clearer glass. *Mais révenons à nos oiseaux*, or rather *à nos poissons*. I offered my sceptical friend to procure a glass bowl, and to place in it a number of fish; undertaking to tame every one of them so effectually, within a fortnight, that they should one and all recognise me. This satisfied him, and he promised, if I succeeded, he would acknowledge my power. That was kind of him—very. To work I went. Thirteen sprightly minnows were introduced into a glass bowl, and I myself changed their water regularly every morning; removing them in a closely-meshed net, and tenderly replacing them when the bowl was again ready for their reception. It is not necessary to enter into particulars here, how I accomplished my purpose. A second Cæsar—"Veni, vidi, vici!" I was indeed "a Triton among the minnows." Within the prescribed time, every one of my finny friends had made my acquaintance; coming to the top of the water whenever I placed my head over the bowl, leaping some distance out of the water in the exuberance of their delight, and positively listening to me attentively whilst I whistled to them a lively air. More than this: when I placed one of my fingers in the bowl, each graceful inhabitant swam affectionately round it; rubbing his sides against it, and evidencing a degree of pleasure hardly credible unless witnessed. I converted the infidel, it is true; but I shortly afterwards lost the society of my little friends. They perished during the heat of that same summer. *William Kidd, New-road, Hammersmith.*

* A few months since, while making some purchases at the shop of a bird fancier, a ragged urchin rushed in and asked for a "penny bird." In exchange for his penny, he received a cock sparrow. Shortly afterwards a little girl entered, with scarcely sufficient clothes on to cover her person; her demand was for a "halfpenny bird." There was handed to her a hen sparrow. From the exquisitely-savage feeling of delight with which both birds were clutched by their respective purchasers, it would require little of the spirit of divination to enable one to predict their fate—torment, doubtless, and starvation; but they were "only sparrows!"

BRITISH ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE.

A paper was read by Dr. Lankester, from Mr. George Read, on *Ropy Bread*.—The author stated that the condition of bread called ropiness consisted in a change in the bread during its preparation, by which it becomes materially altered in its character, and instead of being readily broken, is tenacious and adhesive, and can be drawn into ropes without breaking. This disease of the bread, as it was called, appeared especially in London in 1846, and was not an unfrequent occurrence at all times. This condition of the bread is communicable from one batch to another, and the tendency to its production in a bakehouse can only be got rid of by thorough ventilation, washing the walls with chloride of lime, and planing away the surface of all wood with which the bread comes in contact during the process of its preparation. Bakers attribute it to various causes—to German yeast, bad flour, wet harvests, &c., but it frequently comes on when none of these circumstances exist to account for it. It is principally during the summer months that this disease is most prevalent in bread. In winter it never occurs. I also find that close bread, such as that made by housekeepers (which is seldom perfectly fermented), and that which is not sufficiently baked, turns more speedily ropy than well fermented and well baked bread, and that bread made from gleaned Wheat that has become damp by laying in the field soon turns ropy. The first change which the bread undergoes is a peculiar sweetness; and when the disease is very active, the whole substance of the loaves becomes as sweet as any common sweet cake. After this the bread rapidly decomposes, becoming, firstly, a tenacious kind of gummy or glutinous mass, giving out a fetid smell, and when made with Dutch dried yeast, the smell of the yeast is most particularly developed. A person in the west of England, whose

bread was very much affected with the disease states, "that in three days it was like a mass of slime." On examining some specimens of diseased bread with a powerful microscope, the author found that the whole of the cellular portion of it was destroyed, and its appearance was that of a peculiarly white luminous substance, somewhat resembling the granules of starch. In one or two of the specimens examined, and which had been dried by the baker in order to be enabled to sell it for pigs' food, and had afterwards been placed by him in an outhouse, it was found to be completely covered with fungi, every terminating stem having a fine well-formed fruit, somewhat resembling an Apple, and which appeared, from one of them that had burst, to be full of seed, so small as not to be visible to the naked eye. It was the opinion of some of the scientific gentlemen who were consulted that these seeds are carried about by the atmosphere of the place, and serve to propagate their species in whatever substance is fitted to receive them. This may, in some measure, account for the bread getting from bad to worse, and also for the singular fact that flour, which will produce ropy bread in a bakehouse where the disease has become established, if taken to another bakehouse that is free from it, and manufactured, will not be at all affected with the disease. Before closing this paper, there are two or three other points which I consider it necessary to mention, which is, that some old bakers state that the disease is more prevalent in bread after wet harvests than at any other time, and some of them consider the disease in the year 1846 to have been in a great measure caused by the releasing from bond a large quantity of damaged corn, through the cessation of the Corn law at that time. The state of the atmosphere and the yeast have each their share in producing the disease. — A discussion ensued on the reading of this paper. Many members were aware of the existence of the disease. One gentleman attributed it to a peculiar form of fermentation, in which the ordinary changes which take place during the baking of bread did not take place. He thought the fungus a result of this fermentation. Mr. Peach had often seen bread in this condition, and thought it arose from imperfect baking. It was more common after wet summers, and he had observed that it was much more frequent in the west of England than in Scotland.

Tuesday, *August* 6.—In the Mathematical Section a paper was read *On a Tissue Woven by Caterpillars*, by Mr. J. Dennistoun.—In the early part of this century there lived at Munich a retired officer, Lieut. Hebenstrait, who amused himself by experiments on the means of giving consistency to the gossamer produced by caterpillars, which is occasionally seen blown about in flakes over the fields in Germany, and he was at one time sanguine of rendering it available as a material for ladies' dress. It is said that his plan was to prepare a paste of Lettuce or other leaves beat up with butter, and, after spreading it thinly over a smooth surface of stone or wood on an inclined plane, he placed at the lower end a number of chenilles or caterpillars of the proper species. These animals gradually ascended the incline, devouring the paste, and depositing as they proceed a sort of tissue until the whole surface was uniformly covered with it. He is reported to have produced open work designs by drawing the pattern with a hair pencil dipped in olive oil before the animals begin to work. These I never saw, but I have seen one veil on which were some letters exactly resembling a watermark on paper, the secret of which I do not know. The inventor pursued his experiments with great secrecy, in the hope of turning his invention to valuable account; but finding this impracticable, it appears that he produced but very few specimens, which are now preserved in various museums on the Continent. I have seen two besides my own, which I procured at Munich, in 1837, after having advertised for it several months. The objections to using this tissue seem to be chiefly its exceedingly flimsy quality, and its very adhesive properties, which render its management and preservation extremely difficult, attaching itself closely even to the smoothest surfaces, from which it can be separated only by the breath. My veil is about 42 inches by 24 inches. One of 26½ inches by 17 inches is said to have weighed only 1½ grain. Another containing 9 square feet is mentioned as weighing 4⅓ grains, while the same surface of silk gauze weighed 137 grains, and of fine lace 262½ grains. It would seem that the art was in some degree known at an earlier period, and occasionally practised in convents, where coloured drawings on small bits of it are said to have been made. I have seen in all four of these on the Continent, and two or three on which impressions from copper plate had been taken,—always of sacred subjects. One of the drawings is in my possession, about 7 inches by 5 inches, executed apparently in the last century, and I have seen one dated about 1770. This beautiful tissue was unfolded to the Section by Mr. Dennistoun and Sir D. Brewster. It was rather more transparent than the finest lace veil, but it floated about with every slight current in the air of the Section-room, after a manner quite its own.

In the Geological Section, Prof. Parlatore, of Florence, communicated an account of the discovery of fossil plants, apparently carboniferous (Pecopteris arborescens and Annularia longifolia), in the Verrucano, a sandstone rock, inferior to the real Oxfordian limestone, and hitherto considered unfossiliferous; they were found by Prof. Meneghini and Prof. Paolo Savi, of Pisa.

VILLAGE EXCURSIONS.—Letter III.

I have found it difficult to keep my promise of giving your readers details for the management of village excursions. On reconsidering what I had intended to send you, it appeared to me far too minute. I have therefore condensed my materials, and shall merely glance at some of the topics I had intended to discuss more fully.

Cheap excursion trains are admirably adapted for enabling many persons to see a little more of the world than they otherwise could; and thousands are availing themselves of the opportunity. In the miscellaneous crowds congregated on these occasions, some persons are found to end the day, if they do not entirely pass it, in a way which inclines us to believe they had far better have staid at home. It is when some particular plan of proceeding has been properly organized, that the best results are to be expected from this modern method of seeking recreation. Since I sent you my first letter, I have been present, on two separate occasions, when excursion parties have proceeded to Ipswich from towns at a distance, directed by programmes which had been previously issued to regulate the proceedings of the day. What I am about to advise respecting village excursions cannot be equally applicable to parties proceeding from towns; but it may be worth considering whether these may not also be so arranged as to offer an occasional opportunity for encouraging, through the means of social intercourse which they afford, mutual good will between all parties, as well as agreeable and instructive modes of recreation.

In setting forth the *agenda* to be taken into consideration for the due organization of a village excursion, first of all, a locality should be selected which possesses features of a different description from those with which the labourers are familiar. A visit to a town, or a trip to the sea-side, where they are beyond the smell of salt water, may be suggested. It is very important to secure the co-operation of some persons, who are friendly to such proceedings, residing near the locality to be visited. They will make arrangements which it would be otherwise difficult or impossible to complete, and secure an apartment where the women can take off their bonnets and rest themselves, for some of them will be sure to get over-fatigued. In our excursions, we have always been more highly favoured than most parties are likely to be, by the amount of trouble which has been bestowed upon us; but I am persuaded there are few districts in England where there may not be found some one heartily willing to respond to such a call, even if it were to be made through the local papers.

In forming a village party, nominate a good "nucleus" from among the labourers. The members of a benefit club, or some other laudable society, are likely to afford the best opportunity. These may be invited to double or treble their numbers from among the residents in the village, it being understood that each will respectively be responsible for the good conduct of whomsoever he may nominate. A few of the rougher diamonds may thus be incorporated, and, being put upon their best behaviour, will very likely find out there are more satisfactory methods of enjoying life than those to which they have been accustomed. A general invitation to the farmers and others, with due respect to the numbers of which the party is to consist, will secure the countenance of most of those who are likely to be pleased, either "with themselves" or with those whom they see happy about them. A village party of 200 or 300 thus constituted, appears to me perfectly manageable; but if a much larger number are to be conducted through a town, there might be great risk of some of them becoming regardless of the prescribed arrangements; and, without active coadjutors, inconveniences or irregularities might be the result.

The price fixed for the tickets should be understood to cover all the expenses of the excursion. There should be no extra charges for refreshment or sight-seeing. The expenses should either be fully met by the money raised upon the tickets, or (as I would advise) partly defrayed from a fund raised for the purpose. The labourer, at least, should feel perfectly satisfied that he has received more than his money's worth. It is good policy to circulate an account of what the day's expenses have been, so that every one may see how the money has been spent. All unnecessary expense should be carefully avoided, with due respect to a liberal disposal of the funds. People get tired of costly excursions; and what is a mere trifle to one person on such occasions, is often a serious matter to another. Whatever may savour too much of the patron, and too little of the companion, should be avoided. A few donations will keep down the cost of the tickets, which should be the same to every one, as well as the fare to be provided. No extras should be allowed for gentlemen and ladies!

It may be suggestive to those who may be rather sceptical on the score of expense, if I here insert the items of the charges incurred this year for the excursion to which you have directed the attention of your readers.

	£	s.	d.
To carriage, by waggon, cart, tumbril, or other conveyance, from Hitcham to Stowmarket	0	0	0
N.B. Some of the farmers kindly lent their waggons, and those who used them subscribed about 2*d.* apiece to pay the drivers for their trouble and expenses.			
Railroad, Stowmarket to Ipswich	7	10	0
Steamboat, Ipswich to Landguard-fort	5	0	0
8 stone of flour, home-made up (with the requisite ingredients) into plum-cakes	1	8	0½
The rest of the provisions, procured from Ipswich, consisted of—			
8 stone of best bread	0	14	8
Carried forward	£14	12	8½
Brought forward	14	12	8½
32½ lbs. of cheese	1	0	4
6 pints of butter	0	6	6
Barrel of ale (less 3 gallons not wanted)	1	13	0
Concentrated lemonade, at wholesale price	0	10	0
A few extras to parties helping	0	12	0
Printing notices and tickets	0	12	0
Total expenses to be met	£19	6	6½

Part of the cakes were consumed on board, and the whole was just enough for a frugal repast on the green sward by the sea-shore. Two large baskets of shrimps were presented by two friends; ice cream sufficient for every one to have a taste was manufactured on the spot; two dozen of ginger wine allowed of a mouthful, to qualify the unwonted sensations produced by the ice; a large bag of nuts and walnuts was emptied, in a scramble, to settle the wine. For all which excesses I felt myself no way responsible, as they were extemporised by kind friends who had joined us from Ipswich with their own stock of provisions. We all shared alike in the pic-nic, and thus a few crumbs of superior plum-cake were obtained in barter for our more ordinary fare.

It must not be forgotten that we lingered one minute too long, and thus missed the train which would have brought us back unhungered, and without additional calls upon the commissariat. In our dilemma we were tossed from the horn on which we had fallen, into the grounds of one of the friends who had accompanied us. Here we were regaled with enough to stay the stoutest appetite till midnight; but for these exceedings, also, I felt no way responsible. If the party met with more than they had bargained for, I will venture to say it was not more than what our friends considered their good behaviour had deserved. As those who treated us so considerately can appreciate the feelings they have awakened in the agricultural labourer, I shall not shame them by recording the very words (more than once or twice repeated) in which those feelings have been expressed to me. "If Mr. H. did not sometimes take us out to a distance from home, we should not have known that there were such gentlemen in the world as * * *." *J. S. Henslow.*

GARDENING IN HOLLAND.—No. V.

If I was somewhat disappointed in the Orchids in the Leyden Garden, there were two houses of Ferns that amply made amends, for their beauty and health ran concurrently. Amongst them I was particularly struck with a noble Angiopteris erecta. It is a magnificent thing—as were the plants of Goniophlebium Reinwartii, and Marattia sylvatica. I have long ago said no garden establishment ought to be without Orchids; and I now say that none ought to be destitute of Ferns. I consider the degree of excellence in a gardening establishment is tested by the presence or absence—by the ill or perfect culture of these two families. A garden without them is like a king without a crown, or a church without tower or steeple. All young cultivators are captivated with Geraniums, Chinese Azaleas, and such plants as have colour and a repetition of the same forms; but as the love of gardening increases, and the mind becomes more expanded, he gradually seeks diversity of form; he would cease to make colour and uniformity the points of perfection, but would revel in the inexhaustible variety that Nature, with an all-abounding hand, has so liberally surrounded us with. Again, those who merely culture Geraniums, can extract but little pleasure from them for more than half the year, and in the winter when flowers are denied us from without, least of all; but our houses of succulents, Orchids, and Ferns, are of all enduring interest. Let me not be mistaken; I would not have my garden without Geraniums and all common flowers, but if I had but one house, as is the case with many of my friends, it should not be devoted to Pelargoniums, for a mixed selection of Cape and New Holland plants, with a shelf for Pelargoniums, would afford infinitely more pleasure than a greenhouse, where the one genus (and a very small portion of that) is paramount.

Heaths are not generally well managed upon the Continent. In France, they tell us the sun is too scorching, and the air too dry to grow them perfectly; but, surely, these causes would not pertain to Holland; yet I nowhere saw them as our growers have them. The set at Leyden is the best I had met with, and in the best order. They were sunk in the open border, a board being placed in the front to support the plunging materials. This the more delicate growers demurred against; and another cause of failure appeared to be the want of attention to the repotting them at the precise time when they required it. Amongst the greenhouse plants, I was much gratified to see a number of Proteas and Dryandras, plants that have greatly diminished within the last 25 years at home. All the greenhouse plants were plunged in the manner described for Heaths, and there is a very good collection of them—small plants, and well looking.

The plants without doors must next claim our attention, and here I found a great number, and better arranged than I was prepared for. Botanic gardens are not usually made so as to become of interest to casual observers, but for botanists only. Here, however, is an exception, for the plan is such as to satisfy each class.

I will now briefly describe the garden. It consists of little more than 2 acres; is bounded on one side by the canal I had the evening before been transported upon on the other sides the town would have been visible but for a good screen of shrubs and trees. This belt of trees is at one or two places broken, to admit views of

the church and the water, but at other places excludes the distance, and keeps the eye upon the arrangement of the plants below.

The front of each part of the outward and inner shrubbery is occupied with a regular set of herbaceous plants, illustrating De Candolle's system of botany; and, in addition to this, at one part is found a scientific arrangement of plants used in medicine. This part of the gardens reflects the highest credit upon those who superintend it, for the specimens are well grown and named correctly, generally, except where a specimen has been lost, and some adventitious plant been allowed to occupy its place; but this was of rare occurrence. The Grasses, though not numerous, were very interesting, on account of the good selection of species. I here saw the Spelt Wheat in blossom, and a variety of black Barley, very dwarf and in two rays, that was said to have been obtained from Siberia; the latter was new to me, but not likely to be of value for agricultural purposes. There was a whole bed of Liguria japonica, whose shining heart-shaped leaves were very conspicuous. The whole length of the winding walks was edged with turf, which met into the Grass upon which the Aloes were placed which were noticed at the entrance. It is a pity that Grass should have been used, for it is never so treated as to form a velvet carpet, as with us, although for the Continent this was as good as any I had seen. The planning of this garden is decidedly English, as exemplified in the curved walks, and also in the attempt to alter the levels, this latter being considered "a high crime and misdemeanour" amongst Dutch gardeners. In my gardening matters I had more difficulty on this subject than on any other, for they declared if a foot of level was altered, the water would occupy it; and if a foot were added to the elevation, that nothing would grow, on account of the drought. So wedded are we to those practices we have been accustomed to (they have grown with our growth), that we cannot believe that any other system can be right. Before quitting this valuable and well-looked-after garden, I will briefly notice a few of the specimens in the open ground that attracted my notice.

There is the largest specimen of Weeping Beech, of the variety we raise by grafting, that I have ever seen. It must be 35 feet high, and some of its branches springing from 20 feet, curve gracefully to the very ground. From this specimen I perceived that it might, at certain places, be made very effective. Here also is the largest and best formed tree of Pyrus salicifolia that I had seen; when grown fully in this manner, it is well calculated to produce a light on trees of ordinary kinds that would from situation be commonly dark. I must not omit the notice of a very handsome Salisburia biloba, at least 60 feet high, and 2 feet diameter of stem, at 4 from the ground. It is still in a good growing state.

Here, also, is a Paulovnia imperialis 25 feet high; it has for four years shown its blossum buds; but they are formed too late in the season to expand. The tree is worth growing, nevertheless. Against a wall the Bignonia grandiflora was growing and flowering profusely, and near it, on the border, were two varieties of Belladonna Lilies in flower, a full month earlier than they expand in Canterbury.

I enquired if any trees existed that had been planted by eminent botanists, and was told that the Fraxinus ornus, planted by Boerhaave, had been blown down about two years ago, but that a Lonicera, set by Linnæus, still existed; it had a stem 1 foot diameter, which had been strapped up, and possessed no interest except from im who planted it.

Two very handsome Pistacia lentiscus were grown in large tubs, and some Pomegranates, with curiously twisted stems of large size, riveted my attention. In days gone by, tricks of all kinds were performed upon plants to produce an unnatural growth; and I cannot doubt but that the singular appearance of the Pomegranates was occasioned by twining two or three stems together. I left this garden with a feeling of veneration for its founders, and a high respect for those under whose direction it is at present conducted.

I have noticed that in the planning, an eye has been given to the English mode of laying out a garden. I may here note, that there are many indications of change of style in the smaller villa gardens; but, in general, it consists of an attempt to engraft our mode of making beds upon the skeletons of their straight canals of water, and avenues of trees; and as might be anticipated, not with the happiest results. I saw many places where better things might have been done by throwing the canals or ditches into lakes, and thus raising some portions of the borders; but, then, turf is essential for this kind of gardening, and with a few exceptions, a Dutch gentleman will not expend labour upon cutting a lawn—it must produce at least one crop of hay annually.

Notwithstanding that the country is so flat, I in no instance saw this defect compensated for by grouping different sorts of trees and shrubs that grow different heights, so as to effect by trees what was denied by the surface. Another serious drawback to the making a good garden is, that stone or gravel is not to be found wherewith to form the walks. They must then either remain in sand or be paved with bricks, as are the general roads—either but a poor substitute for our good binding and well-coloured gravel. But, in spite of all this, I saw very many places that, if committed to an English landscape gardener, might have been very materially improved.

I must here conclude my notices on the gardens and gardening of Holland—brief and imperfect as they necessarily are—I yet hope they will be found of interest to some of your readers, who estimate truthful impressions of what was seen and felt, rather than the more elaborate effort cooked up, from imagination, with literary skill, till it becomes smooth and polished as Parian marble. I have notes also upon pictures and museums, &c., but they belong more properly to other journals. *W. Masters, Exotic Nursery, Canterbury.*

Home Correspondence.

Cure for the Vine Mildew.—I have here under my charge a rather large late Vinery, with a fair crop of fruit of average quality, and I believe that in the month of July last there was not a single bunch of Grapes in the house upon which mildew could not be found; a great number of the leaves was likewise attacked, and also the bark of the young shoots. Such being the case, my first thought was to apply sulphur, about the efficacy of which I had little doubt; but still I did not like the idea of marring the beauty of the berries, and rendering the fruit disgusting in the eyes of my employer, long before he would see it at table. While reflecting on this, and knowing sulphur to be both volatile and indestructible, it occurred to me that the best and most simple mode of applying it would be by exhalation from the flues. In the evening, therefore, when the house was closed, I caused the flues to be made pretty hot, wetted them well, and then sprinkled the sulphur on them. In a few minutes the house was filled with warm steam, strongly impregnated with sulphur. I watched the operation, until I saw that the cold surface of the berries had condensed so large a quantity of the steam, that a heavy dew upon them was perceptible. This at once arrested the progress of the mildew, and within the course of a few days I had the satisfaction of observing a change in its colour, from its natural whiteness to a dark brown. Since that time, the only parts where it has again appeared, has been upon the newly expanded leaves of the lateral shoots, few, if any, of which have escaped it; this has given me repeated opportunities of testing the experiment, and in each case a similar result has followed. Of course I need not inform any gardener that great care is necessary in this operation, it being well known that the leaves of Vines, as well as of other plants, are susceptible of receiving great injury from an immoderate quantity of volatilised sulphur. I wish to add that should any of your readers feel disposed to favour me with a visit, I shall feel very happy in showing them the fruit alluded to, with the still visible spots left by the mildew upon the berries. *W. Sherwood, gr. to J. R. Mills, Esq., Englefield Green, Surrey.*

Hadoes.—I lately saw some roots which were brought from the West Indies, called "Hadoes." They are much appreciated in soups, and I was informed that they may be grown in England. Will any of your intelligent readers, who may be acquainted with the plants, kindly give a botanical and general description of them in your next *Chronicle*, with the mode of their cultivation, and a recipe for their use in cookery? *φιλος.* [These are Eddoes, the corms of Colocasia; acrid until boiled in two or three waters, and then eatable like Turnips or Potatoes.]

South Australian Potatoes.—At this time, when the Potato disease is occupying so much attention in England and on the Continent, the following paragraph (from the *Adelaide Advertiser* of May 30, 1850), relative to the very astonishing yield of Potatoes grown upon my brother's estate at Balliparinga, South Australia, may be deemed interesting, both in a commercial and scientific sense. I will secure you specimens of the Potato (2 lbs. each) from the ground. *J. Bailey Denton, Gravely, Stevenage, Herts.*

"We have reported the arrival of the Breeze from Rapid Bay, with Wheat and Potatoes. Of the latter were 151 bags shipped by Mr. Denton, which have been promptly sold at 6*l.* per ton, being of excellent quality. Samples of this very superior crop lie on the table of the Exchange, weighing 2 lbs. each, accompanied by a small bag of the soil on which they have been grown. There are some features of considerable interest connected with this shipment, seeing the importance to the community of an adequate supply of good Potatoes. The product of the above district is most abundant, and the quality is good, there being no tendency to rankness, or hollowness, in tubers of the extraordinary size exhibited as above. A large assortment of bad, and, in some instances, of deleterious Potatoes finds sale in Adelaide, and the sure stimulus to improvement in an article become essential to Englishmen is successful competition, and this will, we trust, be found on the Rapid Bay Potato fields."

[Since the above was in type we have received the following from Mr. Denton.] I sent you on Thursday last an extract from a South Australian paper, referring to some Potatoes grown by my brother at Balliparinga Rapid Bay, thinking you would deem the fact of a crop of several acres being uniformly so remarkably fine in quality, quantity, and size (and my private letters fully confirm the fact), as of some import in considering the question whether the Potato will cease to be a vegetable of European culture. For my own part I have watched with considerable interest the changes to which the Potato has been liable, and have read all that I have met with on the subject, and my experience (which extends to many descriptions of experiment) satisfies me that the distemper is merely casual, and arises from atmospheric influences, having more or less effect according to the length of time for which they prevail, and always commencing with the upper growth. This has been signally proved to be the case this year. All my Potatoes, both in my garden and on my farm, became in the middle of August suddenly black in their foliage and stalks (which more rapidly withered than in any year previously), and I feared the entire loss of my crop. Those in my garden I ordered to be taken up instantly, and I have lost about 1 bushel in 17; those in my farm were necessarily obliged to be left until after the corn harvest; they have now been raised nearly a month, and I do not find 1 bushel bad in 300. If I had judged from appearance, and the experience of past years, I could not have expected one-fourth to be good. And this has been the case generally throughout England and the western part of Europe. I found at Antwerp that about the same time my Potatoes showed blackened tops, the price suddenly rose in the market 1 fr. 25 cents per bushel, and a fortnight after the price at the same place was even lower than it was before the rise; and this was the case throughout Belgium and Holland. They say the quantity and quality of the crop were never better than they have proved to be. I do not pretend to be a chemist or a philosopher, and these facts make me regard all I have read and tried as nought. Here we find a very wide breadth of land in this country and on the Continent producing tubers as free from disease as they were 10 years back from beneath an upper growth so blighted in appearance that it was questionable with many whether the crop would be worth gathering; while at our antipodes the produce from seed derived from England (though of several years' seasoning to the country), is such, that I believe for quantity, quality, and size, never has any better been grown in any country in the world. *J. B. D.*

Champion of England Pea.—It may be useful to know that this Pea succeeds admirably as an autumnal cropper. I sowed a quart, by way of experiment, on the 7th of last July; I commenced sending them to market on the 21st of September, and I have sent them every week since. The crop, quality, and size, equalled—I may say exceeded—the same kind of Peas which I grew in the summer months, and far surpassed all other varieties sown at the same time on adjoining ground. *John Briscoe, Upton, near Birkenhead.*

Portugal Cabbage.—I once more beg leave to differ with you as to the statement that the Couve tronchuda does not heart; I again assure you that it does heart with me, not loosely, but as firmly as any York Cabbage in Britain. I will with pleasure send you some hearts of it, to convince you of the validity of my assertion. If you or any amateur gardener, however, wish for a small portion of the seed of either the tall or dwarf tronchuda, I will be most happy to inclose a paper or papers of each root. We do not cultivate this excellent vegetable for the midribs alone, as we do not consider them to be as good as Seakale, as has been often stated. But, decidedly, there is no species of Brassica can in any degree compare with it for delicacy and flavour when served up with rounds of beef, hams, bacon, or *profil de cochon. Mediensis, Ireland.* [We should certainly be much obliged by a specimen of this Couve tronchuda.]

Fall of Rain at Chiswick and Uckfield.—Such a great discrepancy exists between the quantity of rain fallen at Chiswick and Uckfield during the present year, that I am induced to forward a copy of my register to September 30, 1850, and also the average monthly fall of rain in this locality since the year 1842.

	Chiswick. 1850.	Uckfield. 1850.	Uckfield. Average of eight years.
January	1.43	1.47	2.32
February	.95	2.47	2.33
March	.13	.18	1.18
April	1.79	3.27	2.07
May	1.84	2.78	2.22
June	1.40	2.03	1.63
July	2.68	2.44	1.64
August	.97	2.37	2.63
September	2.35	2.62	1.99
October	...	...	3.95
November	...	...	2.66
December	...	...	1.96
	13.54	19.63	26.58

In Sussex, therefore, instead of there having been a deficiency of rain, the amount fallen has already exceeded the average by 1.62 inch, which being, however, so near the annual quantity, it appears reasonable to suppose that the fall of rain during the months of October, November and December, will not much, if at all, exceed the average. *C. L. Prince, Uckfield, Sussex, Oct. 14.*

Ripe Fruit without Leaves.—Peaches and Nectarines have produced ripe and well swelled fruit here, on shoots without any leaves above or at the fruit, and in some instances the wood was quite dead down to the fruit, some of the shoots had remained green, but without any appearance of leaves. The produce was as fine as that on any part of the tree, where leaves were growing above or at the fruit. The anomaly may in some measure be owing to the trees not bearing a full crop. Sufficient proof is offered, however, that fruit has the power in some instances of ripening without the assistance of leaves. *J. Dowell, Amington-hall, Oct. 16.*

[We do not perceive in what this proof resides.]

Browallia Jamesonii.—Has any one succeeded in inducing this plant to flower freely? When it first bloomed and was figured in the periodicals, great things were anticipated of it, but after trying it both in the greenhouse and in an intermediate house, I have been unable to obtain a single flower. I have treated it both liberally and on the cramping system with equal ill-

success, and I fear most persons are similarly disappointed, as I have never observed it mentioned as forming an exhibition plant. *N. W. G,*

Rockwork.—I observe that many of your correspondents are troubling you at all times about rockwork, not knowing how to go about it, from not reflecting that rockwork is like any other part of a garden—a picture—just as true pictures are as often rough landscapes as representations of more regular objects; but, as rockwork, like water, is as it were another element from garden beds, so ought its difference to be distinctly marked. Loudon's directions for rockwork are bad; it is quite wrong to see a Fern growing out of a glacier half its size, and so on, which must be the case where the Alps are imitated. The best place for rockwork is in water, or round it, in which case the shape of the water must not be regular, nor must any part of it be double the breadth of the rockwork. If the rockwork is in the water, this last may be regular, best round, with a broad moulded edging of stone or brick; and round this again a gravel path. This arrangement will allow all the water and rock plants to be seen together, and will save so much excavation in the pond. With regard to building it up, it must be in layers, as broken and various in thickness as you like; and large stones may stand comparatively isolated. A triangular mass in a round pond does best, the three angles very varied. No jet of water can be admitted in any rock-work. No water of regular shape or small size ought to be on Grass. *T. A. V.*

Summer Pruning the Vine.—When I questioned the propriety of Mr. Lovell's remarks upon growing the Vine "without stopping," he pitied my temperament, because it was active; I feel that I am privileged to pity his, because it is lymphatic. In your Number for August 3d, I asked for his routine; and surely sufficient time has elapsed to prove the practicability of his system, had he attempted it; but I doubt it. He says, both "Lumbricus" and myself have misinterpreted his meaning. I asked for his system, in order to prevent mistakes; but I suppose he has only a knowledge of the principle, and not the practical result of its application, which is contrary to his statement. In page 486 he remarks, "We practise certain systems, and then endeavour to establish a principle for so doing." Now, it is obvious that he has departed from that course in this instance, or my questions would not have so long remained unanswered. It may be a secret (perhaps worth knowing), but why stretch our imagination, and then leave it to recoil, uninformed, prejudiced, and distrustful. Give us indubitable proof that you have grown better Grapes without "stopping," than your predecessors have with stopping, and your talents will be praised. Give us your method, that we may also profit thereby, but lead us not from practice (the results of which are certain), by physiological conundrums, whose basis is your authority. Give us facts, that we may judge for ourselves; if we then attempt your suggestion and fail to realise such facts, you may then justly say of us, "those half formed witlings are numerous in our isles." *T., Southampton.*

Wintering Seed Potatoes.—When at Mistley-hall, in the autumn of 1830 or 1831, I stored away a few bushels of early round Potatoes; they were laid on the wooden floor of a fruit-room about 6 inches thick. When they began to sprout, an idea struck me that, if they were potted, they would come in earlier than if the shoots were pulled off them. The foreman, therefore, got orders to pot them. Upwards of 1000 small pots, called 60's or 4-inch pots, were used for the purpose, placing a tuber in each pot. They were removed to a cold glass house, where they received no water. Some time early in March they were turned out along the bottom of the south walls of a 4-acre garden. I had a large garden pot put down beside every plant, to cover the latter with, should frost come on. The result was a large and plentiful crop of very early Potatoes, at a time when they were fetching half-a-crown a pound in Covent Garden. I also gained prizes for early Potatoes at the Ipswich Show, for two or three years. Since the above period I have not allowed an eye to be picked off a seed Potato, and ever since I have been here (11 years), I have practised the plan of not allowing a Potato to grow during winter, but, on the contrary, I keep them dry and cool, and plant them shoots and all entire. In 1847 I sent 1200 lbs. to Covent-garden Market before the 19th of June; the money fetched was within a few shillings of 30*l.*, for the produce of 30 rods of ground. I have proved that by properly wintering the York Late White, and other late sorts, they can be ripened at least five or six weeks earlier than usual. A Potato wintered on my plan is strong and healthy, compared with one that has been allowed to expend its substance in producing useless growths. *James Cuthill, Camberwell.*

Fry's Sulphurator.—A description is given in last week's paper of a machine invented by Mr. Epps of Maidstone, for the diffusing of sulphur amongst Hop-plants, &c., effected with mildew. As my machine is mentioned, perhaps you will allow me to state, that shortly after I had the honour of first introducing my invention to your notice for horticultural purposes, I received a letter from Mr. Epps, requesting me to send him immediately the sulphuring machine which I exhibited at the Horticultural Society's Rooms on the 6th of August. Knowing Mr. Epps to be an extensive Heath grower, and thinking he had the mildew amongst his Heaths, to serve him I forwarded one as desired, begging that he would give me the benefit of his opinion of the contrivance, should he approve of it; but from that time to this I have not heard from him, neither had I the slightest idea that he intended to take advantage of my invention until I was informed that he had improved and registered the same. I have only to add, that the machine which I introduced was improved by myself and an ingenious mechanic soon after two or three of the original ones were manufactured, and the public will soon have an opportunity of judging of their respective merits. *George Fry.* [We have only to observe that Mr. Epps' machine is most essentially different from that which was exhibited some time since by Mr. Fry.]

Societies.

Horticultural Exhibitions in America.—We learn from a Montreal paper, that at the horticultural meeting lately held at Montreal, Dahlias were shown in great quantities, and very fine. "They were exhibited in patterns, in bouquets, in single stands, and mixed with other flowers." Various Verbenas, Asters, and Petunias, were also present, and there was a large number of Pansies. "The latter, as well as the Asters, had been made up in a number of designs." Cockscombs were remarkable for their "size and strength. One in particular had a stem nearly 2 feet high, and the comb must have been 10 or 11 inches in breadth." There were several plants of the red and yellow variety of this flower. Among vegetables there were Cabbages, Cauliflowers, Tomatoes, Beets, Turnips, Turnip Cabbages, &c.; and among Fruits: Grapes, Peaches, Plums, Apples, Pears, Melons, Cucumbers and Pumpkins.

The *Toronto British Colonist*, of Sept. 24, informs us that at the late agricultural exhibition held at Toronto, the following gardening produce was exhibited, viz.: Apples, Pears, Plums, Peaches (open air), Grapes (hot-house), Grapes (open air), Pumpkins, Squashes, Tomatoes, Broccoli, Cabbage, Carrots, white Celery, red Celery, Egg Plants, Blood Beets, white Onions, yellow Onions, red Onions, Salsify, white Turnips, white Beans, Dahlias, collections of Greenhouse Plants, Canadian Coffee, Water Melon, and Musk Melon.

Garden Memoranda.

Mr. Rivers' Nursery, Sawbridgeworth, Herts.—Few nurseries afford so much information on matters relating to general gardening as that of Mr. Rivers. An ardent lover of improvement in every branch of the business, he is continually trying experiments, the results of which are always interesting, and often highly instructive. Within the last few years he has erected several glass houses, in which not only utility, but cheapness of construction have been the objects aimed at. Some of these houses have only a Beech-hedge for the ends and back wall, in which stakes are placed for the support of the roof, while the fronts (not more than 2 feet in height) are left open. Under these circumstances a constant circulation of air is kept up throughout the interior of the house in which, although glazed with sheet glass of the cheapest and most common description, no scorching or burning ever takes place. One of these houses contained dwarf fruit-bearing trees of some of the finer kinds of Pears in pots; Coe's Golden Drop Plum, with its fruit inclosed in gauze bags, in which it will hang on the tree till December, or even later; and also a new Plum, named Reine Claude de Bavay, having a fine flavour resembling that of the Green Gage, but stated to ripen its fruit at least a month later than that variety, to which it will form a good succession. In the same house were likewise dwarf Apricots and Peaches, &c., all of which appeared to be in a thriving state, and the Peaches were producing excellent fruit. In other houses of a cheap kind, but closed at the back and front, &c., Vines were ripening good crops up the rafters, while Figs planted out on the dry border beneath and pegged down close to the soil, were covered with fruit in different stages of development. On the back border (for these houses have all a narrow sunk path up the middle, with a border on either hand) were Peaches and Figs, &c., in pots, in which they are intended to be kept permanently, and in a healthy fruit-bearing condition, by means of a system of root pruning and feeding with liquid manure. In another of these houses, but of a close and warm description, the culture of Orchids has been attempted with every prospect of success. We say prospect, because the plants are recently imported ones, and have been but lately placed in the house. The heating is effected by means of one of the brick Arnott stoves, figured at p. 51 of our vol. for 1846, it answers perfectly, being capable of supplying, as may be required, either a dry or a moist heat. In another part of the nursery where there is a warm bank, containing naturally an excellent Vine soil (very light sandy loam requiring no manure), Mr. Rivers is about to erect a series of these cheap glass houses, in which he intends to grow Grapes for Covent-garden market. One house is all but up, and the Vines are planted for others 18 inches apart. It is intended only to fruit every alternate Vine each season. Contiguous to this spot were Vines scrambling over a bank of stones facing the south-east; among them was a new sort called Prolific Sweetwater, whose size of bunch and berry would recommend it to a better situation. It was stated to set well, and was ripening fruit under a hand-light. Among pillar Grapes, of which Mr. Rivers has a great number, one called the purple Fontainbleau claims especial attention; for we will be mistaken if it does not prove a valuable cottager's Grape. It grows freely in the open air, and bears abundantly. The specimen in question had about 50 large bunches on it, which no doubt would have ripened had they had the assistance of a wall. Its fruit is said to ripen before that of the Burgundy. A few examples of this Grape have been sold, we believe, under the name of Muscat de Fontainbleau. Mr. Rivers possesses another acquisition, in the shape of what is called the large-fruited Monthly Raspberry; but this latter is somewhat better known. It produces fruit from the lateral branches which it puts forth from every joint, and in this respect, as well as in others, it differs from the Double-bearing Raspberry. Quantities of it are reported to have been sold in France lately, under the English name of Marvel of the Four Seasons. On a pathway in front of one of the glass houses, were some fine young plants in pots of the celebrated Stanwick Nectarine. They were grafted on the Peach stock. As regards Plum stocks, it has been found that this Nectarine will "take" on the Damas Noir, but not on the Muscle Plum. While on the subject of Plums, the following fact may, perhaps, be worth recording. Some years ago Mr. R. raised a seedling or two from the Précoce de Tours, and among them was one which was afterwards named Early Prolific. This latter has withstood the frost of the 3d of May this year, and has borne a heavy crop, while 200 other kinds of Plums, equally favourably circumstanced, have all failed. Near the Plums was a small plantation of the true Portugal Quince, which is the best of all the Quinces; and elsewhere, planted among Gooseberry bushes, were Cosford Nuts, worked on the clean stems of seedlings, standard high. In this state they occupy little room, are perfectly free from suckers, and produce, for the size of their heads, heavy crops. We also remarked the Double-flowering Furze, and the white and cream-coloured Brooms, worked standard high on the purple Laburnum. Many fine autumnal Roses were in bloom, and some account of these will form the subject of another article. *Sept.* 23.

Miscellaneous.

Varieties of the Ruby lipped Cattleya.—These magnificent varieties of the Ruby-lipped Cattleya are quite new, and at present among the rarities of horticulture. For the white one we are indebted to the noble collection at Syon; for the blotched sort to J. J. Blandy, Esq., of Reading. The Ruby-lipped Cattleya is that on which the genus was founded. It was first sent to Europe by Mr. Swainson, who discovered it in Brazil and used its stems as a kind of "dunnage" to set fast certain chip boxes of Lichens, &c., which he transmitted to Sir William (then Mr.) Hooker. Where he gathered it we are not informed, but we learn something precise on the subject from Mr. Gardner. This lamented botanist found it on the edge of a precipice on the eastern side of the Pedro Bonita Mountain, about 15 miles from Rio Janeiro, where it grew along with Vellozias, the Mackay Zygopetalum and Dipladenes ("Journ. of Hort. Soc.," vol. i. p. 196); and also on the Gavea, or Topsail Mountain, so called from its square shape, and well known to English sailors by the name of Lord Hood's Nose; "Travels in Brazil," p. 28. This plant has a pale lilac tint with a very broad rich stain of ruby red over-spreading all the front half of the lip except the very edge. Since that time large importations have been made from the Caraccas and New Grenada of a Cattleya with pinker flowers, of much larger size, the veins of whose lip alone were crimson, while the spaces between were yellowish or white, or both; some of them had crimson veins run together. Upon these specimens Sir William Hooker proposed to establish a new species, to which he gave the name of Mossiæ; and it must be owned that the peculiarities of the Caraccas plants seemed sufficient to justify that conclusion. We are however obliged to say, after a most careful comparison of large numbers of this Cattleya Mossiæ, that we can find no distinctive characters in it except size and colour. It would be useless to attempt an enumeration of the varieties that exist of this plant, unless for the purposes of a florist. We therefore merely present those now figured with the names of the White Ruby-lipped Cattleya (C. labiata candida) and the Blotched (C. l. picta.) The following account of the climate in which Cattleya labiata grows, furnishes cultivators with hints which they will readily apply to practice. "At this elevation (2000 feet) the climate is very much cooler than it is at Rio. In the months of May and June the thermometer has been known to be as low as 32° just before day-break: the lowest at which I observed it myself was one morning at the end of May, when, at 8 o'clock A. M., it indicated 39°. The highest to which it rose during the six months I resided there, was in the end of February, when, one day, it indicated 84° at noon. The hot season is also the season of rains, and it is then that the mass of the Orchids, and almost every other tribe of plants, come into flower. From these facts cultivators ought to take a lesson in the cultivation of the productions of this and of similar regions. If the difference of temperature between the season of wet and that of flowering be so great in the state of nature, it must be obvious that to grow them well, artificially, a somewhat similar state of things ought to be observed. The greater part of the Orchids which are sent to England from the Organ Mountains grow in the region of the above temperature, the elevation being from 3000 to 3500 feet above the level of the sea. In the account which I shall presently give of my visit to the summit of those mountains, which is more than double that elevation, I shall have occasion to mention several species which may be cultivated in a much cooler temperature.

Another reason why no general rule can be laid down for the cultivation of these plants, is, the great variety of soil and situation which they affect in their native country; some, like Zygopetalum Mackaii, are terrestrial, and grow in open exposed places; others, like Warrea tricolor, are also terrestrial, but grow in the deep virgin forests; some, like Zygopetalum maxillare, are only found to inhabit a particular tree, while others are found indiscriminately on all kinds of trees, on rocks, and even on the ground; some, like Lælia cinnabarina, grow in moist places on exposed rocks; while others, like Cyrtopera Woodfordii, grow in a similar soil, but in shaded places; some, like Maxillaria picta, grow on the most dry and exposed rocks; while others, like Grobya Amherstiæ, grow also on dry rocks, but generally in the shade." *Gardner in Journal of Hort. Soc.*, i. 277.—*Paxton's Flower Garden, October.*

Misseltoe.—We understand that this parasite has been introduced to Ireland by John Oldham, Esq., of Mansfield. This gentleman furnished seeds to Mrs. Houghton, of Bunin House, Carlow, by whom they have been raised, and with whom the plant is now flourishing.

Calendar of Operations.

(For the ensuing week.)

PLANT DEPARTMENT.

Let immediate attention be paid to the collecting of a good stock of the most useful soils within reach. By getting them into the compost-yard at this season, opportunity is afforded of turning and exposing them to the action of the atmosphere during winter, and thus taking advantage of the frost to destroy the insects with which fresh soil naturally abounds. In collecting turf, it is a good plan to cut it during the next two months, and allow it to lie with the grassy side downwards until it has been penetrated by the first frosts, by which all insects will be driven out or destroyed. Before the turf is cut, the herbage should be mown off it as closely as possible; the clods should not be cut more than from 3 to 5 inches thick, as the part nearest the surface contains the greatest proportion of vegetable fibre, and from having been more freely exposed to the ameliorating influences of the atmosphere, is in better order for early use.

FORCING DEPARTMENT.

Pineries.—Keep a constant eye to the bottom-heat, as at no season is it more liable to vary, and at no season is it more essential to prevent such variations, especially with fruit in progress. To assist in maintaining an equable state of heat and moisture about the roots during winter, it is a good plan to surface the bed with a couple of inches thick of half spent tan or leaves taken from a pit where they have heated and are partially decomposed. This mulching will in a great measure do away with the necessity of watering the roots of Pine plants during the dark months. Let the quantity of water introduced be very much restricted, as the consequent evaporation, if produced in excess, is liable to condense and run into the hearts of the plants. This evil may be prevented, in a great measure, by due attention to ventilation, and by keeping the laps between the glass clean, as the excessive vapour will be then carried off. Where dung linings are used for Pine frames, a covering of mats will be necessary in severe weather; and as these tend to prevent any escape by means of the laps, a little air should remain on all night. Vineries.—Once more we mention the propriety of adopting some efficient mode of protecting Vinery borders from autumnal rains, and the cold produced by consequent evaporation. However well drained the borders may be, and however porous the constituent materials may be, the continual wetting and partial drying of the soil, besides keeping the roots miserably cold and wet, will so injure the mechanical texture of the soil that it will cease to part so freely with its surplus water, and must depend more and more upon evaporation, which will of course draw in similar proportion upon the natural or acquired warmth of the border. Proceed vigorously with the pruning and cleaning of the Vines from which the fruit is cut, and at the same time let any needful painting or other repairs be done, that the houses may have an orderly and finished appearance, and likewise be in perfect readiness for their next year's campaign. By getting this work speedily out of hand, they may be made immediately available for sheltering Chrysanthemums, Geraniums taken up from the flower garden, and other similar plants, which merely require to be protected from the frost.

FLOWER GARDEN AND SHRUBBERIES.

Dahlias, if so far injured by frost as to be no longer ornamental, may be cut down, preparatory to their being taken up in a few days' time. Tigridias and other summer bulbs may be taken up and laid in a cool dry shed, till they will part easily from their haulm. Salvia patens should be taken up and potted, or planted in a frame of moderately dry soil, where it will keep without any trouble, except that of excluding the frost. Flower Beds.—Now that the summer flowering half-hardy plants are removed, make the best amends in your power by drawing upon the reserve garden. All the important beds should be filled with dwarf evergreen shrubs, or spring-flowering plants, as Hepaticas, Primroses, Polyanthus, Alpine Auriculas, Wallflowers, &c. These will supply the beds with foliage, and in spring the flowers of the latter will considerably assist the display produced by the Crocus and other bulbs already planted.

FLORISTS' FLOWERS.

What with wind and frost, Dahlias in situations, unless extremely sheltered, have got their *quietus*. Where the tops are blackened, it will be advisable to lift the roots, leaving a considerable quantity of the top on, and placing them upright in a shed or outhouse for a week or two, when the stems may be cut a few inches from the crowns, and the roots put into their final winter quarters; a good dry cellar is an excellent place for them. If our advice has been taken, all Carnation and Picotee layers should be off and potted. Seedlings for flowering next season should be looked to, the beds cleaned, and surface loosened; spindles should be removed. The best bed for Tulips should now be ready, if properly attended to, and the collection to be planted thereon is worth the trouble; cover it with mats, so that a "dry bed" may be insured for the bulbs when committed to the earth. The previous directions given for Auriculas, Polyanthuses, Pinks, &c., should be strictly attended to.

HARDY FRUIT GARDEN.

Planting and root pruning of fruit trees, where necessary, should now be in progress, to the exclusion of all other work of secondary importance, that as much as possible of this work may be completed before severe weather sets in. Those planted on this side of Christmas have a decided advantage over those moved at a later period; their roots require a very short season of repose, especially if assisted by a little mulching on the surface of the ground, and are in action long before the tops evince the slightest evidence of activity. With regard to soil, the errors most commonly committed are in making it too deep or too good. For Apples, Pears, and all stone fruits, good loam is all that is necessary; it may be mixed with sand or burned clay, if the loam is too tenacious; and if the whole, or at least a portion of it, has been charred, it will thereby be considerably improved. When any additional stimulus is necessary, it can be supplied in the shape of mulching or liquid manure. The depth of soil should never exceed 12 or 18 inches; and if the bottom is not naturally impervious, it should be made so by artificial means. Where the situation is very damp, let the border for the choicer fruit trees—as Apricots, Peaches, and Nectarines—be made entirely above the ordinary level, as it is well worth while to sacrifice a foot of the height of the wall, if by doing so the remaining portion is rendered more useful. We form platforms of rubble 6 to 9 inches in thickness, and concrete the surface of it before depositing the soil. This impervious bottom prevents the roots from getting down into the subsoil, and keeps the trees healthy and fruitful.

KITCHEN GARDEN.

Proceed with the final earthing of Celery with all possible despatch, as the season is too far advanced to admit of longer delay. The same remark applies to Cardoons, the earthing of which should be completed, if possible, by the end of this month. If of the autumn Broccoli or Cauliflowers there is a considerable quantity of heads ready for use, a part of them should be taken up and laid in under the shade of a north wall, where they will be retarded, and may be protected by some covering in severe weather. Carrots are now nearly as large as they will be, and, unless in sandy soils, they had better be taken up now, to prevent their being spoiled by worms.

State of the Weather near London, for the week ending Oct. 17, 1850, as observed at the Horticultural Garden, Chiswick.

Oct.	Moon's Age.	Barometer.		Temperature. Of the Air.			Of the Earth.		Wind.	Rain.
		Max.	Min.	Max.	Min.	Mean	1 foot deep.	2 feet deep.		
Friday.. 11	6	30.153	29.915	51	34	42.5	50	52	N.	.02
Satur.. 12	7	30.357	30.241	53	27	40.0	48	52	N.	.00
Sunday . 13	)	30.305	30.151	49	39	44.0	48	51	W.	.00
Monday 14	9	30.091	29.933	50	35	42.5	48	50½	S.W.	.00
Tues. .. 15	10	30.069	30.030	54	24	39.0	49	51	N.	.00
Wed. .. 16	11	30.076	30.046	60	30	45.0	47	50	W.	.00
Thurs .. 17	12	30.057	30.042	60	34	47.0	47	50	S.W.	.00
Average....		30.158	39.051	53.8	31.8	42.8	48.1	50.9		.02

Oct. 11—Windy; stormy showers; clear at night.
— 12—Clear; very fine; clear; frosty.
— 13—Overcast; cloudy and cold; overcast.
— 14—Overcast throughout; cloudy.
— 15—Very fine; with bright sun; clear; sharp frost.
— 16—Frosty; clear and fine; slight frost.
— 17—Light clouds; very fine throughout.
Mean temperature of the week, 8½ deg. below the average.

State of the Weather at Chiswick during the last 24 years, for the ensuing week, ending Oct. 26, 1850.

Oct.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds. N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 20	59.3	40.6	50.1	12	0.34 in.	1	3	—	3	4	6	6	1
Mon. 21	58.5	39.1	48.8	10	0.61	1	3	1	3	4	4	8	—
Tues 22	58.4	44.3	51.4	16	0.50	—	—	3	1	5	9	4	2
Wed. 23	57.9	41.0	49.5	16	0.44	2	1	—	2	4	7	7	1
Thurs. 24	56.3	40.7	48.5	11	0.83	1	1	1	—	7	8	4	2
Friday 25	55.8	38.5	47.6	10	0.72	4	1	3	3	4	3	3	3
Satur. 26	54.7	38.6	46.6	9	0.52	5	2	1	1	4	6	3	2

The highest temperature during the above period occurred on the 21st, 1826—therm. 72 deg.; and the lowest on the 21st, 1842—therm. 20 deg.

Notices to Correspondents.

Annuals: *W G.* They will be all the better for being thinned out a little. It will tend to keep them from damping off during winter.‡

Apple Stocks: *J B.* Your seedlings are not so fit for stocks as the Crab, and have no resemblance to the Paradise. Whether they will produce good fruit or not, if allowed to grow without grafting, will depend upon the value of the varieties from which the seeds were saved. From the seed of the Ribston Pippin you may get a very good Apple, though it will not be a Ribston Pippin.‡

Araucaria imbricata: *Sub.* It may be transplanted now. Nothing besides the inverted turf should be added in the shape of manure.‡

Asparagus: *K C B.* We strongly advise you to procure Cuthill's pamphlet, and to follow the directions given in it. You may plant now; but not much later, unless you take the spring. You must not think of cutting Asparagus the first year after planting. Plant evergreens now; add a little superphosphate of lime to the water with which they are puddled. Unripe Melons will not ripen artificially.

Books: *A Constant Sub.* The first edition of Donn's Catalogue was prepared by James Donn, curator of the Botanic Garden, Cambridge; the last by Peter Don. We cannot spare time for bibliographical researches.—*J Kelly.* The "Manse Garden" may answer your purpose. We do not give prices or publishers' names.

Botanic Garden, Cambridge: *Sub.* We do not know.

Canterbury Bells: *J S.* Such double flowers are very common.‡

Chemistry: *J N.* Enter yourself a student in some school of experimental chemistry, such as the Birkbeck Laboratory in University College. But your want of education almost unfits you.

Fences: *E F L.* If you cut down your Beech fence, it is not very certain that it will come up again.

Grapes: *T Jones.* Shanking always denotes either that the crop is heavier than the Vines can bear, or that the roots are unable to feed the crop. Your Black Hamburghs are attacked with rust—a skin disease produced by cold winds, fingering, greasing with the hair, over-sulphuring, or any such cause. The white Grape appears to be the Syrian, only suitable for a late Vinery, for which plenty of artificial heat can be afforded. The Cannon Hall has a Muscat flavour, the Syrian has not.—*W T.* A pound of Grapes weighs as much as a pound of wool or a pound of air, viz., 16 ounces.

Heating: *D H W.* You should have two rows of 4-inch pipes for air heat in your Orchid and plant houses, if the latter is to be a stove, or one row in the latter if a greenhouse. What do you want the bottom heat for? It is impossible to advise upon such meagre data as you furnish.

Insects: *A B.* If you will send us specimens of the insects of whose depredations you complain, we will endeavour to assist you.

Mildew: *T B N.* See an article on this subject in our "Home Correspondence" of to-day's paper.‡

Moss on Apple Trees: *Inquirer.* Deep draining is the most effectual remedy; by this means only we have seen a thick coating of moss thrown off from fruit-trees in two years after performing the operation.‖

Names of Fruits: *A Lady, Winchester.* 1, Cadin; 10, 18, Golden Reinette; 11, Dumelow's Seedling; 13, Blenheim Pippin; 15, Orange Pippin; 16, Winter Pearmain; 17, Ribston Pippin. These are worth keeping; 2, 3, 9, 12 are not, especially the three last.‖—*G S.* Bishop's Thumb.‖

Names of Plants: *Micklewell.* We are quite unacquainted with the Begonia; 5, Melampodium, perhaps divaricatum; the Ipomœa is not determinable in its present state; it seems to be related to I. pedata. *Pro phasianis gratias agimus.* You must for the present be content with the names of your Lycopods as you now have them; for on account of the many closely allied species (?) of the section to which these garden forms belong, and it being a question whether they are all described, we find it impossible to decide with anything like certainty from the descriptions of authors; it can only be done by examining their original specimens—a matter of no easy accomplishment; but we promise not to let the subject rest. The one found on "a rock in the Vallée du Tete Noir" is no doubt Lycopodium helveticum of Linnæus. No. 1 may be regarded for the present as the L. denticulatum; 2, as L. Schottianum; 3, as L. apodum.—*Erzeroum.* 466, Centranthus longiflorus; 66, Valeriana tuberosa; 605, Thesium.—*A B C.* 1, Sarcanthus rostratus; 2, Sarcanthus teretifolius; 3, Vanda multiflora.—*J Weeks.* Juniperus Bermundiana.—*D J.* Acer rubrum and Abies alba.—*A B C.* 1, some Cinchonaceous plant; 2, Gnidia simplex; 3, some Diosma; 4, Diosma hirsuta; 5, some Pimelea; 6, some Cupressus or Juniper. We cannot waste time in determining the names of such things as these without flowers or fruit.—*M G P B.* Andropogon Sorghum; it will not thrive in the open air in England.—*J P.* 1, some Casuarina; 2, Spiræa rotundifolia; 3, looks like Anagallis tenella; there are no flowers.—*G W.* Bolbophyllum odoratissimum. Is it sweet-scented?

Netting: *Reader.* There can be no doubt that netting similar to that sent would prove a suitable spring covering for wall trees. Tanning it will serve to make it more durable.‡

Pears: *Inquirer.* The Pears you mention ripen generally in the following order: 1, Jargonelle, Orange Bergamot; 2, Dunmore, Jersey Gratioli; 3, Autumn Bergamot, Marie Louise, Beurré de Capiaumont, Brown Beurré, Gansel's Bergamot, Louise Bonne (of Jersey), Althorp Crassane, Duchesse d'Angoulême; 4, Beurré Diel, Crassane, Hacon's Incomparable; 5, Glout Morceau, d'Auch or Colmer, Knight's Monarch, Passe Colmar, Beurré d'Aremberg, Winter Nelis; 6, Chaumontel, Ne plus Meuris, Winter Bon Chrétien; 7, Easter Beurré, or Bergamotte de la Pentecôte; 8, Beurré Rance.‖

Raspberries: *Lincoln.* They may be transplanted now.‡

Strawberries: *J W B.* If you will have the goodness to refer to the account published at p. 483, you will find that all the information you ask for was given, except the distance of the plants, which is immaterial.

Vines: *A Constant Sub.* Your Grapes are shanking. Something is the matter with the roots, or else the Vines are overcropped. Nothing grows well under Elms, &c.; Privet, Holly, Yew, and tree Box thrive best.

Vine Culture for Cottagers: *C R.* We misunderstood you. What has been already published we cannot republish; but we will insert the new matter if you desire it.

Vine Mildew: *H St.* Your plan may be a good one, but it is a troublesome round-about way of doing what is better done by the direct and simple means of employing flowers of sulphur.

Victoria: *W B.* The plant was permitted by her present Majesty to bear her name. The rest of your inquiry is unintelligible.

Misc: *An Irish Sub.* The answers you have received through the Irish paper are very good answers. We cannot mend them. The agricultural inquiries are gone to the Editor of the *Agricultural Gazette.* Hybrid Roses from cuttings are as good as if budded, if your soil is not too cold.—*D M G.* Pray send to the publisher, who will give you the information.—*J W H.* We regret it; but we really cannot answer inquiries privately. Your plants will take no harm from the paint. The trees you name are tender near Manchester. All are well known in English Gardens, where mere curiosities are cultivated. Jasminum Sambac may be bought in any great nursery. We fear you can get rid of eels by no other means than by emptying your reservoir, and picking them out of the mud. Even then they will get in again.

Erratum. The memoranda concerning the pot for layering Roses, figured at 646, was inadvertenly signed "Falcon," instead of "W." It should have been the latter.

SEEDLING FLOWERS.

Antirrhinums: *H B.* 5 and 7 are the best. The others though pretty are more common.*—*J B K.* All handsome; but none of them are better than kinds already in cultivation.*

Fuchsias: *M.* "Champion of England," as far as we can judge from a single bloom, is a good dark variety. The tube is small, the sepals expand well, and the corolla is of a good colour, but the flower altogether is somewhat coarse.*

Gaillardia: *Y Z.* Undistinguishable from G. picta.*

Pelargoniums, &c. *G G G.* Smashed to pieces in coming through the post. They should have been packed in a tin box.*

Pentstemons: *Anon.* Showy and all worth growing where gay flowers are wanted in quantity; but none of them are superior to kinds possessing the same colours now in cultivation.*

Petunias: *J B K.* The clouded flower with the light throat is the best. The rest are common.*

Verbena: *W C.* Purple with a light eye; a nice variety.*

MANURES.—The following Manures are manufactured at Mr. LAWES's Factory, Deptford Creek:

Clover Manure, per ton	£11	0	0
Turnip Manure, do.	7	0	0
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N.B. Peruvian Guano, guaranteed to contain 16 per cent. of Ammonia, 9*l.* 15*s.* per ton; and for 5 tons or more, 9*l.* 10*s.* per ton, in dock. Sulphate of Ammonia, &c.

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FISHERY AND AGRICULTURAL SALT, GYPSUM, and every artificial Manure; also a constant supply of English and Foreign LINSEED CAKE of the best quality.

The London Manure Company will guarantee the Guano they supply to be free from the slightest adulteration.

Bridge-street, Blackfriars. EDWARD PURSER, Secretary.

STEPHENSON AND CO., 61, Gracechurch-street, London, and 17, New Park-street, Southwark, Inventors and Manufacturers of the Improved CONICAL and DOUBLE CYLINDRICAL BOILERS, respectfully solicit the attention of scientific Horticulturists to their much improved method of applying the Tank System to Pineries, Propagating Houses, &c., by which atmospheric heat as well as bottom-heat is secured to any required degree, without the aid of pipes or flues. S. and Co. have also to state that at the request of numerous friends they are now making their Boilers of Iron, as well as Copper, by which the cost is reduced. These Boilers, which are now so well known, scarcely require description, but to those who have not seen them in operation, prospectuses will be forwarded, as well as reference of the highest authority; or they may be seen at most of the Nobility's seats and principal Nurseries throughout the kingdom.

S. and Co. beg to inform the Trade that at their Manufactory, 17, New Park-street, every article required for the construction of Horticultural Buildings, as well as for heating them, may be obtained upon the most advantageous terms.

Conservatories, &c., of Iron or Wood, erected upon the most ornamental designs. Balconies, Palisading, Field and Garden Fences, Wire-work, &c.

BY HER MAJESTY'S ROYAL LETTERS PATENT.

PATENT HOTHOUSE WORKS, KING'S ROAD, CHELSEA.

E. DENCH invites the attention of Gentlemen about to erect Hothouses, &c., to the vast superiority in every respect possessed by his PATENT HOUSES, which he will warrant superior in every respect to any others. Good Glass from 16 to 21 oz. per foot, 1 foot wide, 3 feet long, furnished, and the Houses, when completed, charged from 1*s.* 3*d.* to 1*s.* 6*d.* per superficial foot, according to size and quantity; on one principle the roof is formed without wood or putty, and on another principle with wood rafters, and the glass put in with putty. Patent Sashes, requiring no paint, from 7*d.* to 9*d.* per foot. HEATING BY HOT WATER.

THE CONICAL BOILERS INVENTED BY JOHN ROGERS, Esq., are supplied and fixed by JOHN SHEWEN, ironmonger, Sevenoaks. Also all kinds of Hot Water Apparatus. For Churches and Public Buildings, Mr. SHEWEN should be consulted, his Warm Air Apparatus being safer, more efficient, and more durable than any other.

DR. S. NEWINGTON'S AGRICULTURAL INVENTIONS.—An Illustrated Catalogue, together with a Lecture on the Seeding of Grain, and the after cultivation of the crops, sent gratis, on application to Messrs. DUFAUR and Co., 21, Red-lion-square, London.

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This Company having been in active operation for several years, is ready to undertake Works under the Government Loan, or by fixed or annual charges under its Act of Parliament

Further particulars and references may be obtained at the offices. THOMAS MAY, Secretary.

SMITHFIELD CATTLE SHOW.

NOTICE.—THE PRINTED FORMS OF CERTIFICATES to be filled up for STOCK and IMPLEMENTS intended to be exhibited at the forthcoming Show in December next can now be obtained of the Honorary Secretary. All such Certificates must be returned, properly filled up, on or before **Saturday, the 16th of November.**

In applying for the Forms for Stock, it is necessary to state the Number of the Class or Classes, as there is a separate Form for each Class.

Prize Sheets and all information can be obtained on application to B. T. BRANDRETH GIBBS, Hon. Sec., corner of Half-Moon-street, Piccadilly, London.

PURE WATER raised to any height from a small stream, where a fall can be obtained, by FREEMAN ROE and HANSON'S IMPROVED RAM; less waste, by two-thirds, than those ordinarily in use. Portable Steam Engines for Agricultural purposes, Threshing Machines, Deep-well Pumps, Water-wheels, Baths, Hot-water Apparatus, and Fountains. Towns supplied with Gas or Water. Drawings and Estimates made.—FREEMAN ROE and HANSON, Hydraulic and Gas Engineers: Office, 70, Strand, London.

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CROGGON'S PATENT ASPHALTE ROOFING FELT is perfectly impervious to rain, snow, and frost, and has been tested by a long and extensive experience in all climates. Saves half the timber required for slates; can be laid on with great facility by farm servants, or unpractised persons. Price 1*d.* per square foot.

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THE BIRMINGHAM CATTLE SHOW, 1850.—The CERTIFICATES of ENTRY, for CATTLE, SHEEP, PIGS, and POULTRY, are now ready, and, with the PRIZE LISTS, may be had on application to the Honorary Secretary. Intending Exhibitors are particularly requested to mention the nature of the Stock for which they require Certificates. The entries close on SATURDAY, the 16th of November.

The Show will be held in the BINGLEY EXHIBITION HALL, BROAD-STREET. T. B. WRIGHT, Honorary Secretary.

Union-street, Birmingham, Oct. 19.

IMPORTANT NOTICE.—EMIGRANTS are informed MARY WEDLAKE and CO. have from time to time supplied the first settlers to Swan River, Port Natal, and all the Australian Colonies, with AGRICULTURAL IMPLEMENTS; they beg an inspection of their stock, at 118, Fenchurch-street, near the Blackwall Railway. N.B. Persons becoming purchasers may have the benefit of an introduction to parties known to the firm at either of the above-named places.

AGRICULTURE.—A Gentleman, who has made Farming his pursuit, and who occupies between 400 and 500 acres of stock land in a southern county, is desirous of RECEIVING into his family a YOUNG GENTLEMAN who wishes to acquire a knowledge of the practical working of a Farm.—Address A. B., Mr. Steel, Spring-gardens, London.

AGRICULTURAL EDUCATION.—The Steward upon a large estate, in the South of England, has a vacancy for a well educated youth to be instructed in farming and general business. For particulars, address X. V., Office of this Paper.

DR. S. NEWINGTON'S IMPLEMENTS OF AGRICULTURE.—These Implements have been invented to introduce an improved system of cultivation, and a more scientific method of depositing the seed. A Prospectus and Lecture on the different methods may be obtained (gratis) by applying to Messrs. DUFAUR and Co., Agricultural Depôt, 21, Red Lion-square, London.

SEED-WHEAT, GIRLING'S KESSINGLAND.—A new variety of Red Wheat with White Chaff, of good quality, long and stiff in the straw, and very productive, may be had of ROBERT RAYNBIRD, Hengrave, near Bury St. Edmund's. Price, delivered to Bury Station, 50*s.* per quarter. Sacks, 1*s.* 6*d.* each. Orders, enclosing a remittance, or satisfactory reference, will have prompt attention.

Hengrave, October 19.

GREEN AND HOTHOUSES made by Machinery, warranted best materials, glazed 16-oz. sheet glass, of a large size, with glass at both ends and one door, painted three coats of best oil-colour, and delivered to any Railway or Wharf in London.

Lean-to.				Unglazed.			Span-roofed, glass all round.						
							Glazed.			Unglazed.			
ft.	ft.	£	*s*	*d*	£	*s*	*d*	£	*s*	*d*	£	*s*	*d*	Height in front, 3 feet 6 in. wood and glass; 3 feet 6 in. brickwork.
12	by 8	15	10	0	10	0	0	18	6	0	11	15	0	
15	— 10	22	10	0	14	5	0	25	10	0	16	9	0	
18	— 12	28	10	0	18	0	0	32	14	0	20	12	6	
21	— 12	32	10	0	20	0	0	37	8	0	23	2	0	
24	— 13	44	0	0	25	12	6	49	12	0	29	2	0	
27	— 14	51	4	0	29	17	0	58	5	0	33	15	0	
30	— 15	61	17	0	36	2	0	69	14	0	40	9	0	
35	— 16	73	4	0	42	14	0	82	7	0	47	15	0	
40	— 17	85	7	0	49	15	9	95	17	0	55	12	0	
45	— 17	93	15	0	54	13	9	105	10	0	61	12	0	
50	— 18	108	10	0	63	6	0	121	13	6	70	19	0	
55	— 18	115	16	0	67	11	0	130	4	0	75	19	0	
60	— 18	124	13	0	72	14	3	140	8	0	82	8	0	

These Greenhouses are prepared in such a manner that any country carpenter can fix them with ease. A plan is sent free for the brickwork, &c.

Estimates for erecting and heating the above, on application. Lists of prices for Sash-doors, &c., post-free on application.

J. LEWIS, Horticultural Works, Stamford-hill, Middlesex.

EXHIBITION OF 1851.—NOTICE TO EXHIBITORS is hereby given, that Her Majesty's Commissioners have fixed the 31st of October, as the LAST DAY for RECEIVING APPLICATIONS FOR SPACE from the different LOCAL COMMITTEES of the United Kingdom, the Isle of Man, and the Channel Islands. Intending exhibitors failing to give due and sufficient notice to the nearest Local Committee, cannot be assured that their claims for space will receive any consideration. (Signed) M. D. WYATT, Secretary.

PIMLICO SLATE WORKS.—Cisterns, Filters, Milk and Salting vessels, Corn and Flour Chests, Sinks, Dairy and Larder Shelves, Malting and other Flooring, Skirting, Refrigerators, Garden Edging, Flower Boxes, Pine pit Linings, Hot-bed Frames, moveable Cattle Sheds, Coping, Drain Stones and Traps, Steps and Risers, Balcony Landings, Roofing Slates, ridge roll and flap; Waste Slate for drains, Sun Dials, Fountains, and all descriptions of plain Slate Work in Town, or direct from Mr. MAGNUS'S Works in North Wales.

ENAMELLED SLATE Chimney-pieces, Billiard Tables, Console and other Table Tops, Mural Tablets, &c., in imitation of marble, surpassing the choicest marbles in beauty and durability, at less than half the cost of the commonest descriptions. Price Lists forwarded on application to Mr. MAGNUS, 39 and 40, Upper Belgrave-place, London.

The Agricultural Gazette.

SATURDAY, OCTOBER 19, 1850.

MEETINGS FOR THE TWO FOLLOWING WEEKS.
THURSDAY, Oct. 24—Agricultural Imp. Society of Ireland.
THURSDAY, — 31—Agricultural Imp. Society of Ireland.

ONE of the most interesting of the recent contributions to AGRICULTURAL LITERATURE that we have seen, is the pamphlet lately published by Mr. MILNE, of Milnegraden, Berwickshire,* on the farm practice of certain localities in England. It commences with an excellent criticism on a passage from Lord KAMES' "*Gentleman Farmer*," which, in its chapter on the "Imperfections of Husbandry," asserts that to be made acquainted with the *errors* of our neighbours is the highway to good farming.

"Notwithstanding my high respect for Lord KAMES," says Mr. MILNE, "I venture to say, that no maxim can be more unsound. If you wish to reconcile a man to an inferior or slovenly system, in any department of industry, all that is necessary is to exhibit to him the example of neighbours worse than himself. If, on the contrary, you wish to stimulate him to improvement, tell him of cases in which persons of the same line or profession are following a better system than him, with advantage and credit; and you will in most cases awaken a feeling, call it rivalry or imitation, which will lead him to correct his errors and enter on a superior course."

And so an ample vindication, if one were needed, is made out, of the usefulness both of example farms, and of reports of good farming, wherever it occurs, for the instruction of those who cannot personally visit the localities.

The instances selected for report by Mr. MILNE occur in Sussex, Dorset, and Gloucestershire. The order in which they are described is, certainly, the order of their merit as examples: Mr. RIGDEN'S farm, near Brighton, being placed first—as that of an intelligent occupying tenant of land, who has long made large profits in his business, and Mr. HUXTABLE'S next as the head quarters whence many an energetic remonstrance and exhortation on farm practice has of late years received the attention of the whole agricultural body. The third case is referred to, rather than described, Mr. MILNE not having had an opportunity of visiting it personally; and it is, accordingly, neither so fully nor so accurately reported as the others. We shall confine our attention for the present to the report of the Sussex farm. And to those who have looked with suspicion on statements of high farming in Wigtonshire, it may be interesting to see how a gentleman, "whose feelings and opinions in reference to the present state of agriculture, are shown by his attendance at Protection meetings, both in his own county and in London," is endeavouring to meet the difficulties which low prices have thrown in his way. The following particulars are condensed from the pamphlet:—

"THE FARM OF HOVE, NEAR BRIGHTON—740 ACRES.—Mr. RIGDEN has a lease—its duration being 14 years. The average produce of his farm, before he entered, was 28 bushels per acre of Wheat, which is 2 bushels more than the average of the county. It has yielded, under his management, usually 36 bushels. The rotation, previously to his occupation, was six-shift, by which two-sixths of the land was in Grass, one-sixth in green crop, and the other three-sixths in corn. The rotation which he follows is a four-shift, by which he has half of his land every year under green crops, and the other half in corn, chiefly Wheat. The farm is situated about a mile to the west of Brighton, and slopes to the sea. But he derives no advantage from sea-weed, as there is little or none thrown up on this part of the coast. The general surface of the farm faces the S.W., and is exposed to the full blast of the gales which blow from that quarter. Mr. RIGDEN has been in the occupation of his farm for nine years. The following Table, made up from the accounts of the year ending Martinmas, 1849, shows the chief items of expenditure and receipt:

YEARLY EXPENDITURE.

Rent		£1300
Taxes		150
Tradesmen's bills		353
Sundries (including insurance, losses, &c.) ...		100
Wages to labourers and servants		1690
Stable-yard dung, purchased ...	£593	
Night soil	50	686
Guano, bone-dust, &c.	43	
Brewery grains, for feeding cows		100
Seed account		150
		£4529

"The yearly receipts include—Wheat sold, Barley sold, stock and wool sold, milk from 21 cows, straw sold; Potatoes on 50 acres, sold on ground; Clover, Tares, and Rye, sold as green meat; hay and Oats sold, pigs sold. The value of the total produce, on an average of the last two or three years, Mr. RIGDEN estimates at 9*l.* per acre. Some of the land is made to bear three crops in two years, thus—Tares, Rape, and Rye are sown in the autumn, which are cut or fed off in April. The ground is thereafter ploughed up, to be planted with Potatoes, Turnips, or Mangolds in May, and in autumn Wheat is sown.

Acres.		Average produce per Acre.	Average price got in 1848–9.
Acres.			
350 in corn.	250 in Wheat.	36 bushels.	44*s.* 6*d.* per qr.
	40 " Barley.	40 "	32*s.* do.
	60 " Oats.	60 to 80 do.	
110 in root crops.	20 " Mang. Wurzel.	30 tons.	
	12 " white Turnips.	20 do.	
	12 " Swedes.		
	6 " Carrots.		
	50 " Potatoes.	150 to 300 bushels.	12*l.* to 15*l.* per acre.
	10 " Cabbages.		
240 in Clover, &c.	50 " Clover.	2 tons.	
	50 Rye-grass and mixed.		
	20 Sainfoin.		
	30 hay.		
	10 Lucerne.		
	50 Tares followed by Rape.		
	30 Peas.		
40 in permanent pasture.			
740			

"Mr. RIGDEN observes, 'My Oats and Barley generally follow Wheat. I am aware this system is open to objection; but as a general rule on the South Downs, we cannot grow good Barley after Turnips. Our custom is to plough the Wheat stubble as soon as possible after harvest, and to plough again when we sow the Barley about the end of March or beginning of April. The land in my occupation is better calculated for Wheat than Barley.' In regard to the soil on the farm, it is, generally speaking, light, and so porous, that, though there are no drains in it, the water seldom stands after the heaviest rains. The stock kept on the

* Report of a visit to the farms of Mr. RIGDEN, Sussex; Rev. Mr. HUXTABLE, Dorset; and Mr. MORTON, Gloucestershire; with remarks on Agricultural Improvement, by DAVID MILNE, Esq., of Milnegraden. Read to a meeting of the East of Berwickshire Farmers' Club. Warder Office, High-street, Berwick-upon-Tweed.

farm is as follows: 350 Southdown ewes, 20 Southdown rams, 150 teggs, or female lambs, a year old, 21 milk cows, 12 heifers of different ages, 28 farm horses, and pigs and poultry a few. The amount of capital expended by Mr. Rigden on his farm is about 12,000*l.*, in explanation of which I may observe, that—1. He had to pay a considerable sum at his entry for what are called 'Mendments,' and 'Half mendments.' [A very complete system of tenant-right in fact.] 2. Almost the whole farm has been subsoiled. 3. Another expensive operation was liming or chalking. 4. Mr. Rigden spared no pains or expense in forming a superior flock of Southdowns. He has 'given as much as 70 guineas for the use of a ram. This (he said) will explain the high price which I obtain for my ewes. The common price last year in this county was from 25*s.* to 30*s.* The prices which I realised were as follows:

150 Wether lambs, sold at an average,	20*s.*	£150	0 0
55 Ewe do.	21*s.*	57	15 0
20 Ram do.	70*s.*	70	0 0
10 Older rams	15*l.*	150	0 0
120 Ewes	3*l.*	360	0 0
385		£787	15 0'

"5. From the nature of the implements employed on the farm, it appears that, under that head also, a very large outlay occurred."

Mr. Milne then proceeds with a very full and detailed statement of the management of the stock upon the farm—the sheep, cows, pigs, farm-horses; and of the mode of culture, specifying implements of husbandry—labour and its wages—seed, quantity and mode of sowing—manure applied, kind and quantity—preparation of the land, and reaping of the crops. And every point requiring detailed remark is amply reported. We have not space for such a complete description as is desirable—those interested in the subject should procure the pamphlet for themselves—but we must find room for the paragraph on the manures employed on this farm. It is obtained from the following sources:

"1. Farm-yard dung, composed of straw and Pea haulm, which has been litter for cows and horses, and for the sheep in the straw yards. 2. Liquid manure, collected in a tank, into which it flows from the byres, stables, and piggeries. This tank is $10 \times 8 \times 1\frac{1}{2}$ feet. The liquid is pumped into a barrel on a cart. 3. Stable-yard dung, purchased in Brighton, and of which, last year, Mr. R. got 982 long waggon loads. 4. Night-soil, procured from Brighton, and of which last year there were 935 loads. 5. A small quantity of guano and bone-dust and lime, purchased.

"The liquid manure from the tank is used in two ways. After the Clover or Lucerne is cut, a quantity is spread over the land by means of a barrel. When not used in this way, it is applied by being poured over the dung-heap. The land receives a good deal of manure also from the sheep folded on it. The night-soil would of itself be too strong to be applied. It is, therefore, made into a compost with earth, burnt clay, weeds, &c. Mr. Rigden occasionally gets ammoniacal water from a neighbouring gas-work, which he spreads on his pastures; but he does not like it. It makes the Grass grow very rapidly; but he thinks that it causes the coarse Grasses to prevail. He purchases soot also, which he applies to his young Wheat at the rate of 40 bushels per acre. There are about 3 tons in each of his long waggons, so that he brings to his farm 2946 tons of stable dung, and 2805 tons of night-soil," at a cost, according to the previous statement, of nearly 1*l.* per acre, over his land.

Now, though it appears from the above statement that nearly 2000*l.* a year, on the average of the last two or three years, have been cleared off the land, or 16*l.* per cent. on the capital employed, we are not going to argue in favour of the system adopted, on account of any result in figures or words, which it appears to furnish. It is not so much because Mr. Rigden has adopted any particular rotation, or practised any particular scheme of farm management, that his example will be useful—but because he has furnished an instance of the way in which energy and resolution, when seconded by the ability which ample capital confers, are able to develop the resources of the land so as to balance the evil of adverse circumstances. Of course the word "ample," as regards capital, merely describes the *relation* which obtains between its amount and the farm's extent: and there are few occupying tenants but might, if they wished, furnish themselves with capital as "ample" as that which Mr. Rigden invests, by reducing the amount of their holdings. We may depend upon it that upon the relation between the means of the farmer and the extent of land he aims at farming, depends the question of profit or loss in agriculture: and "high farming," as Lord Stanley has told us at Bury, and Mr. Rigden shows us at Brighton, is the only way to meet low prices.

PHILOSOPHY OF THE DUNGHILL.—No. III.

(*Continued from page 650.*)

Application of Manure.—If we consider the nature of the roots of plants, we shall be better able to understand how we should apply our manure to the land, so that the plants may receive the greatest advantage from it. The mouths of plants which take their nourishment from the soil are at the extremity of fine silken rootlets (called spongioles by botanists); these suck in the moisture containing the nourishment they receive from the active soil, these small spongioles spread over the whole cultivated space between the rows of plants, however wide or distant they may be, in search of the food which the plants require. But roots extend in depth, as well as horizontally; and the depth to which they are restricted is just the depth to which the soil is cultivated, and to which the influence of the sun and air extend, and has made the soil active. This being the case, we have another instrument in our power to increase the field for the roots to feed on, by perfectly draining, subsoil ploughing, and deep cultivation of the soil. Before the land is properly prepared for receiving the seed, we must always keep in view that the depth to which the roots of plants are enabled to go in search of food is just the depth of the active soil.

When dead animal or vegetable matter, and the excrements of animals are left on the surface of the earth, owing to the affinity which the oxygen of the air has for all dead substances, their destruction is the result, decomposing them into their original elements; each of these again takes that place in nature from whence it was originally abstracted. And this fact should instruct us that no animal or vegetable matter or animal excrements should be left on the surface of the earth for a single day without being covered with earth; the affinity which the substances resulting from the decomposition of the dead matter has for the earth will thus prevent them from rising above the surface.

The object of the farmer, in applying manure to his land, is either to repair the injury which has been done to it by the preceding crops, or to increase the productiveness of the soil.—The mode which Nature adopts to produce her crops and increase the productiveness of the soil, is by letting the crop die and decompose on the ground which produced it, and this goes on year after year, each crop furnishing food for the crop that is to follow; in this way the soil has organic matter in it in every stage of decay from the first to the last stage of decomposition.

We shall find the produce to be in proportion to the quantity of soluble matter in the soil fitted for the nourishment of the plants cultivated, and for this reason there should always be a store of nutriment in the soil for its crops to draw upon, being convinced that whenever this account is overdrawn the land becomes in a state of bankruptcy, and so does its occupier.

We ought, therefore, always to apply more manure to our crops than they require, to give more of the materials of the crop to the soil than the crop draws from it; in this way we increase the productiveness of the soil—there is always a large active capital in the soil ready to be drawn upon under every circumstance.

To be able to apply the manure properly we should not only know the kind and quantity of the materials required by the different plants we grow, but also the requirement of the soil, viz., the slowness or rapidity with which the land permits the decay of manure, to enable us at all times not only to keep up but to increase its productiveness; we should therefore keep in mind that manure is decomposed much sooner in a loose silicious sandy soil than in a clayey loam, that the same quantity applied to a sandy soil will produce its effects in a much shorter period than in a clay soil or clayey loam, and that the more rapidly the manure is decomposed the greater is the result produced.

The cereal plants, when producing seed, are much injured by the application of rank or fresh organic manure; their stems and leaves grow close together, are too luxuriant, and become feeble and unable to retain an upright position, too much nourishment and want of air make them plethoric, but the weight of our root crops we believe to be in proportion to the amount of organic matter in a decomposing state in the soil for the plant to assimilate the nutriment which they require; and we have found the crops of Wheat which follow the roots are in proportion to the state of culture in which the land is left after the root crops are withdrawn from it.

The time which the manure takes to be completely decomposed into soluble and gaseous products is a subject of the greatest importance to the farmer. This does not depend entirely on the nature of the materials of which the manure is composed, but also on the nature of the soil to which it is applied, and to the heat and moisture of our climate. The manure which, during a single season in the soil, is completely decomposed into soluble or gaseous products, will, of course, exert the whole of its nutritious influence on the first crop, leaving no valuable residue in the soil for the following year; but this is never the case with farm-yard manure.

From the reasons previously given, we apply manure every second year when the land comes in course for a crop of roots; and if it takes six or eight or ten years to complete the decomposition of the manure, then we have three, four, or five portions of manure, in as many stages of decomposition, furnishing the necessary supply of nutritive food for the plants we cultivate; the manure in every stage of its decomposition, and the humus or carbonaceous residue of it may act not only as a sponge to imbibe and transmit ammonia, &c., but it may also have a mechanical effect on the soil, so that the next application of manure to the improved soil will have an increased effect.

I think it may be safely estimated, that of the manure applied to land 40 to 50 per cent. is consumed the first year, 25 to 30 the second, 15 to 20 the third, and from 10 to 15 the fourth year, and that the influence of it may be felt for five or six years.

We never apply manure to any crop that produces seed; we invariably apply it to fodder crops—those crops which produce food for stock, and which we call dung-producing crops; which, by their consumption, increase the elements of an additional supply of rich manure for the reproduction of the same kind of crop.

But we must remember that manure will remain in the soil in an inactive state unless it is minutely divided and evenly spread over the land and immediately ploughed into the soil, and repeatedly cultivated so as to separate its parts and mix it intimately in the soil; for it is from the action of the air, moisture, and heat on it which makes it decompose, and fits it for the nutrition of plants.

Whatever inorganic matter the plants receive, Nature supplies it in very minute doses; nitre, soda, ammonia, and so on, are given in small doses, diluted with rain-water. Of these, ammonia is so minutely divided that chemists cannot measure its quantity; in the rain-water they merely find a trace of it. Now, as this is the way Nature adopts, we should also adopt the same system.

Half decomposed manure should be ploughed deeply into strong or clayey soil before Christmas, or early in the spring, that it may be well mixed with the actual soil; the roots have thus a greater field in which to find the matters which they are to assimilate, and which we have supplied in the manure, and it being well mixed is easily found, and rapid growth is the result; the roots thus occupy every portion of the active soil, however deep it may be, if within the influence of the sun and air; they are then able to resist the greatest drought as well as the severest and often repeated frost in the spring; there is, therefore, no check to the growth of the plant when the seed is forming (which is the case when the active soil is only 3 or 4 inches deep), as the roots receive their nourishment from a depth beyond the influence of the great changes in the weather.

Manure applied to land in good condition, which gives out its nutritive or fertilising matter slowly, is the best; but on poor land there ought to be the application of that manure which rapidly decomposes, and thus rapidly gives up its fertilising matter from the first, and it must supply food to the plant from its sprouting, and continue it unremittingly till the plant has produced its seed ripe for harvesting.

Poor sandy soils contain little carbon, hence the application of a large quantity of vegetable and animal manure is required, this being more lasting than artificial manure.

The principal object of the farmer, in the application of manure to his crops, is to put them into vigorous growth, to carry them through the first stages of their infancy, to strengthen their roots to go in search of food, which they will find in deeply cultivated soil. *J. M.*

THE MASTER AND THE SERVANT.

A Village Lecture.

During last winter there were, as you know, a number of evening lectures delivered in this room on a variety of interesting subjects, which aimed at providing amusement as much as at communicating information. I believe they succeeded in yielding both—but the amusement they afforded was their object at least as much as the instruction they communicated. Now I wish at the very outset of this lecture to forewarn any who may have come here for an hour's mere recreation that they are sure to be disappointed, for that my present subject does not enable me to aim at furnishing amusement at all. It admits of no illustrations able to excite a smile or a laugh—of very few that will even induce your surprise—but though it should fail to amuse you, it is not the less interesting on that account. I assure you that it well deserves the earnest consideration of every one of us, and I venture to say that it will receive the earnest consideration of every one here—whether man or boy—who has a manly spirit in him. For nothing can more properly claim the thoughtful regards of a man, than this, which affects the welfare of so large a number of his fellows.

Of course it needs to be impartially and intelligently, in order to be usefully, set before you. It needs one who is neither master nor servant (only no such being exists), or one who is both—to award to both with fairness their respective shares, when considering the relationship between them. And it needs one who possesses a knowledge of men and things perhaps greater than any one man does possess, to give the subject that complete consideration which it deserves. I am well aware that the present will be a very imperfect attempt, both because prejudice may hinder me from judging correctly, and because ignorance will keep many an important consideration out of sight. But I think that you too will admit that each of you, whether master or servant, are also liable to be prejudiced in favour of the particular ideas you have hitherto held on the subject. So let us all admit that we are apt to be wrong; and we shall be the more likely to let the rubbing against one another of our respective ideas ultimately set us right.

Now I must, in the first place, specify the exact nature of the topic on which I have to address you. The relationship between master and servant includes the whole moral aspect of the bargain by which a man's labour is exchanged for money; and so it suggests a discussion of the duties on either side which such a

bargain creates. And I might speak of penurious masters and of idle servants; of the eye service which is industrious only in the presence of its employer, and of the cruelty which has been known before now to grind the condition of a servant down to that of a slave. And a sermon might be preached on the relative duties of the two parties from those verses as a text, "Servants be obedient to them that are your masters—not with eye-service, as men-pleasers, but with *good-will* doing service, as to God and not to man. And ye masters do the same things unto them, forbearing threatening." But this is a branch of the subject I shall not enter upon at all. It is not of the due performance of the bargain when once made—a thing on which every one knows his duty, and every honest man will *do* it—but of the nature of the bargain before it is made that I have to speak.

Again, the subject includes the whole history of this bargain; and I might refer to patriarchal times when servants were for the most part bound to the head of the household, by custom if not by affection, receiving support as one of the family, for his labour, rather than wages, as having been hired; or to after times, when the superior nation for the time alone was really free, and made slaves of all the others; or to a later period still, when the distinction, even in this country and in this place, between master and servant, was almost as great as that between master and slave. But the discussion of all this, even if I were able for it, must be considered curious rather than useful, and it forms no part of my plan.

The subject also includes a consideration of the actually existing nature of the relationship between master and servant in different countries of the world; and I might speak of civilised nations, among whom the horrors of undisguised slavery are still permitted, and of others where so much of that system still prevails as binds the servant to the land, which he cannot leave but with the permission of its owner, to whom he pays service on Mondays, Tuesdays, and Wednesdays, for the plot of ground which he is allowed to cultivate for himself on Thursdays, Fridays, and Saturdays. This is the state of things in Russia and other parts of eastern Europe now; it degrades the servant to the position of goods and chattels, which pass from owner to owner with every sale of the property.

Our subject also includes the relationship between master and servant among all the different trades and professions in our own country; and I might speak of trades unions and of strikes—of legislative interference between the employers and the employed—of the Ten Hours Bill, and so on. But none of this forms part of my plan. I shall confine myself to the present time and to our own country, and from among all the trades and professions which find occupation within it—to that of the agricultural labourer alone. I propose to describe his condition in different parts of the country; I propose to point out the modes by which alone, as I believe, it can be improved; and I propose to show how his condition, and that of agriculture itself in any district are connected.

Do you think that by thus limiting the subject I have reduced its importance so as to render it unworthy of an hour's consideration? Just consider: there are in England and Scotland 31,000,000 of acres of cultivable land, employing in their cultivation about 2,000,000 of men, on whom, including themselves, a population of six or seven millions are dependent for support. Is the welfare of this large section of the population so trifling a matter? And how much of that welfare hinges upon the nature of the relationship between master and servant you can easily imagine. Take any one of this immense number, and consider that his whole maintenance depends on this matter; that from six to eight out of every 12 of his conscious hours are spent directly, and all the others indirectly, under the influence of this matter; and you must admit its importance. Let any young man here think that in the 30 years he may yet live, there are 260,000 hours, that, taking on an average 8 of every 24 of these hours, and deducting Sundays, he may have 75,000 hours of labour before him; surely he will agree with me that it is his interest to consider a subject which, were it earnestly studied, might throw some light on his prospects for that long future, and point out methods by which his condition during all that time may be bettered. Let us then give the subject the attention which it deserves. I shall first endeavour to describe the condition of the agricultural labourer in different parts of the country. This I shall do as shortly as possible.

Almost all over Scotland and the northernmost counties of England, the labourers are paid in great measure in kind, receiving their wages in Oatmeal and milk and Potatoes as well as money. Thus the unmarried servant in Fifeshire receives 8 cwt. of Oatmeal — about 2½ lbs. a day, half a gallon of milk daily, and about 10 or 12 cwt. of Potatoes a year, with from 12*l.* to 18*l.* a year, and lodging free, either in a room set apart for himself and others in the farm-buildings, or with one or other of the families employed on the farms. The married servants in Northumberland and elsewhere in the north are provided with cottages and small gardens on the farm rent free, and their wages are so far paid in kind as to avoid the necessity of going to market for such articles as Oatmeal, Potatoes, cheese, bacon, milk, and so on. And notwithstanding what economists say about money being the only proper medium of exchange for labour, as for other things, the custom of paying labourers in *kind* works well both for masters and servants. In times when grain sells high, the payment of the farm servant will cost his master more than the ordinary rate of wages at the time; but, on the other hand, in times of great depression the terms, being the same, are in his favour, because he would have to sell nearly double the produce to enable him to pay his labourers in cash. Now let me tell you what a married Northumberland farm servant receives per annum. He has 36 bushels of Oats, 24 of Barley, 12 of Peas, 3 of Wheat, 3 of Rye, 36 to 40 of Potatoes, 24 lbs. of wool, for his wife and daughters spin this wool and knit for him his stockings and so on; he has also a cow's keep for the year, a cottage and garden free, and the hauling of all his coals; and, lastly, he has 4*l.* in money. Altogether, according to present prices, these amount to about 36*l.* in the year. Besides this, he is bound to supply a woman servant whenever the farmer requires one, as at harvest time and Turnip-hoeing, receiving as her wages 1*s.* a day at harvest, and 10*d.* a day at other times. The other females of his family receive 1*s.* a day *generally*, and 2*s.* 6*d.* a day at harvest time, for in that county the women are as skilful with the sickle as the men. The food of the labourer of Scotland, as you probably all know, consists chiefly of Oatmeal-porridge with milk for breakfast, and their bread is made (at least in Northumberland) chiefly of Barley and Peas-meal mixed. Now, were this mode of paying labourers adopted in any of the southern counties, though people probably would not get a more wholesome food than this, yet of course the kinds and proportions of grain would have to be regulated by the tastes and habits of the people. The grain given to the servant is always to be of the best that the farm produces, and one-fourth part of the quantities stipulated for are paid in advance at the beginning of each quarter. It is sent by the farmer to the neighbouring mill and ground at the wholesale charges into the different sorts of meal, and thus the intermediate profits of retail dealers, meal sellers, and bakers, are saved to the consumer, and the corn which would cost the farmer 16*l.* to pay his servant is more valuable to the latter than 20*l.* paid in money wages would be, to be spent in stones of flour or quartern loaves at the end of every week.*

Now I would suggest to masters and to labourers here whether the more general adoption of payments in kind to those who are engaged from year to year would not be for their mutual benefit. It is plain that one obvious benefit arises out of it besides that of having a store of wholesome food always at command, and that is, the absence of all temptation which the receipt of weekly wages and the need of resorting to the village shop or the neighbouring town to buy provisions hold out of spending some part of the money in the ale-house, which ought to provide for the wants of the family. And that it suits the people well I can prove by a list of men working on a farm in Northumberland, at the date of my information, with the periods during which they have been at the same place: George Cranston has lived with his present master 25 years; Alexander Tunnah, 12; John Redpath, 1; Samuel Ewart, 30; Andrew Gray, 9; Andrew Elliott, 14; T. Robson, 4; J. Cranston, 20; Andrew Young, 12; Ed. Davison, 15; G. Chirnside, 10; J. Middlemas, 3; Thos. Fullerton, 18. That looks as if there were mutual satisfaction; and if you should have thought that the receiving so small a portion of money as only 4*l.* a year must work ill, I have to tell you that these men left 105*l.* 15*s.* 8*d.* of their wages in the hands of their master at the last quarterly pay-day, having no immediate use for the money. Besides you know many of these families will not have need for all the stores they receive, and the farmers will always give them market value for what they do not need. Now I do think that this presents to us a very satisfactory state of things as between master and servant. "Look into one of our north country cottages of a winter's evening," says Mr. Grey, of Dilstone, "and you will probably see assembled the family group round the cheerful coal fire; the female sewing or knitting; the father, perhaps, making or mending shoes, an art which almost all acquire, and one of the younger ones reading for the amusement of the whole circle; and contrast this with the condition of young men employed as farm servants in one of the southern counties, who, being paid board wages, club together to have their comfortless meal cooked in a neighbouring cottage, with no house to call their home, left to sleep in an outhouse or a hay-loft, subject to the contamination of idle companions, with no parent's eye to watch their actions, and no parent's voice to warn them of their errors and say which situation is best calculated to promote domestic comfort, family affection, and moral rectitude."

As we come towards the south things do not generally improve in this respect. Labourers receive weekly wages; the shepherd, perhaps, and the carter or headman on a farm may receive a cottage rent free; but the others hire for themselves. The following were the wages received by able-bodied workmen in different counties last May. I obtained them from different employers in each county:

Yorkshire, 10*s.* to 12*s.* weekly; Cottage rent, 50*s.* to 60*s.* a year.
Derbyshire and Notts, 10*s.*; Cottage rent, 3*l.* to 5*l.*
Cheshire, about 8*s.*; Cottage rent, 4*l.*
North Lancashire, 10*s.* to 12*s.*; Cottage rent, 4*l.* and even 6*l.*
South Lancashire, 9*s.* to 10*s.* weekly.
In Norfolk and Suffolk, 7*s.* to 8*s.* a week; Cottages from 50*s.* to 70*s.* a year.
In Worcestershire, 7*s.* to 9*s.*; and here the custom prevails of giving beer or cider to farm servants, half a gallon a day in most places.

In Herefordshire the wages are 7*s.* or 8*s.* a week, In our own county, 7*s.*, 8*s.*, 9*s.*, and 10*s.* a week in different places, with, in some places, two or three quarts of beer daily. Go further south still, and we have on the eastern side of the island, in Essex, from 8*s.* to 10*s.* a week; Surrey and Kent, 9*s.* to 10*s.*; Sussex, 8*s.* to 10*s.*, and on our own side of the island, in Somerset, Wilts, and Dorset, the three counties where labour is worst paid in the kingdom, we have the weekly wage from 6*s.* to 8*s.* a week, with cottage-rent to pay out of it, amounting to from 1*s.* to 1*s.* 6*d.* a week.

Now we shall consider the cause of all these differences presently. Meanwhile if any one is indignant at the idea of an able-bodied man with his family having to live on 6*s.* a week, I ask him to cross the Channel with me into Ireland, where he will find men rejoicing to find employment at 7*d.* a day! My friends, there may be distress among us in individual cases here and there; but we are well off compared with the greater part of the island, and we are well off indeed compared with Ireland. I have *seen* families living there under cover such as I would not think enough for my Potatoes or Mangold Wurzel. Two pairs of crossed sticks set up in the Potato field, with a ridge pole to connect them at top, and covered by the haulm from which the day's dinner has just been dug, is the roof under which many an Irish family is living now. Aye, a drear and cheerless life is that of many an agricultural labourer. Poets have praised its peacefulness; but death and the grave too have been praised for this. The realities of life on 6*s.* a week or less have not been experienced by those who pretend this praise. The dreariest blank for retrospect, no anticipation of a better temporal future, and a constant present of half satisfied bodily wants, make up the life of many a labouring man; and though so low as this, he fears a lower still, for the period of his employment is as fickle as the wind; his health may leave him, and then the workhouse awaits him. This is a true picture in many a district of his condition; but what a contrast it presents to that of the Northumberland labourer already alluded to.

Now what are the causes of these differences? How shall we bring all to the condition of the best among them? Let us consider this question for a while. Shall we urge our farmers to pay higher wages? Shall the landlords tell them, unless you pay your men more money per week you shall be no tenants of mine? This seems a direct and immediate remedy for the evil. Ah! but I can say, with perfect confidence in my accuracy, that such a scheme must fail. This is not the way to meet the mischief. The value of labour is beyond our direct control. *We* cannot fix it; it fixes itself. And just as the price of English Wheat or of American cotton rises or falls according to the proportion between the quantity wanted and the quantity offered in the market, between the demands of the purchaser and the supplies of the seller, so the value of labour rises or falls according to the proportion between the men wanting employment and the employers wanting men. Set a railroad working close by, which should take off half our men, and wages would rise for the remainder; as surely as, supposing you to lay down all your ploughland to Grass, wages would fall. Anything which increases employment increases the value of labour, and anything which diminishes the one diminishes the other also. The thing is unavoidable—it is a necessary and inevitable consequence; and there is no use in crying out against it, or attempting to improve our circumstances irrespectively of it. *Force* a farmer to pay more wages than the natural rate according to the supply of labour in the market, and you diminish his ability to employ labour at all. There is a certain proportion of the produce of the land which, when turned into money, must be reinvested in the labour necessary for the production of the next crop. If that proportion has to be divided among a greater number of men there will be the less for each; if among a smaller number, each will have the more. Take the case of Ireland, where 10*d.* a day are first-rate wages. Suppose I go over there and take a farm. There is a certain population upon it, who must find support upon the land. If I abruptly raise the rate of wages among that large number of people to the rate of more favoured districts I shall have absorbed all the produce of the land to pay for the current crop, and I shall have nothing left either for my own maintenance or theirs for another year. Hard-hearted farmers of Somerset, Wilts, and Dorset-shires! Why they are as good-natured and willing to benefit their neighbours as those of Northumberland. It is not *their* fault that wages are low. If with their agricultural population wages were to be forcibly raised to those of the northern country they would be ruined; and what is more to our present purpose, the *business of farming* would be ruined, by which alone any wages at all are provided.

Farming must be profitable to be kept agoing; the more profitable it is the more energetically will people engage in it—the greater will be the demand for labour, and the higher will its value rise in the market. This is the way in which the rate of wages may be influenced, if you please; but never let us think that they can be raised by main force, or by the mere carrying out of a resolution. They are a growth—we may sow the seeds of the plant, and what these are we shall consider presently—but we cannot call it full grown into existence at once. If we do, it will die all the sooner for our pains, and we shall find that it has exhausted the soil from which it drew its nourishment.

There is no such thing then as a duty to pay higher wages, because at the existing rates people are very

* See Mr. Grey of Dilston's paper in Vol. 2 of the English Agricultural Society's Journal, whose description and whose words I have generally taken.

badly off. I have a good deal yet to say upon this. The wages paid for labour, excepting where kept back by fraud, involve no question of duty at all. They are the simple commercial result arising out of the demand for and the supply of the article of which they are thus the value.

You may have heard of Louis Blanc, a Frenchman, whose doctrine on the subject of labour produced the last attempt at revolution in France—the bloody fight at Paris in June 1848. He regards it—and it is the very essence of what is called Socialism in this country—as a *duty* to pay high wages; and it is not too much to say that it was this doctrine which produced all the bloodshed to which I have referred. He is for reducing men to the condition of children, and for elevating a representative government as the common father; and of the latter he would require food and employment and protection for the family, according, not to the ability but the necessity of its members. Those who need it most shall have the most. He that hath *not*, to him shall be given. That is Louis Blanc's opinion. He forgets that the interest of self preservation implanted within each of us is generally so sufficient for its purpose, and that the law of neighbourly kindness is so able to supplement its deficiencies. He has forgotten that by putting these aside he necessarily checks the growth of that robust manhood, on the one hand, and of that social benevolence, on the other, which they naturally tend to cherish. Let us beware how, in any means for benefiting our neighbours, our efforts tend to weaken those natural safeguards of society infinitely more powerful than anything that can be artificially substituted for them, which exist in the conscience and moral constitution of man, and to the encouragement and influence of which our efforts ought to be almost exclusively directed.

Yes, I have heard of a scheme for benefiting the labouring classes. It was put forth by one who I have no doubt is a really benevolent man. He proposed that a subscription should be set a-going for pensioning off 8 or 10 or 20 of the aged and decayed members of the body in our different country districts, and placing them beyond the fear of the bleak old age of a pauper life. What could sound more sweetly to a kindly disposition! My friends, I conscientiously believe that in few other ways could a thousand pounds be spent more mischievously or more injuriously for the interests of the labourers themselves than this. The gentleman to whom I allude would find that not merely in the proportion but far beyond the proportion in which he provided these retreats for decayed labourers would there be decayed labourers seeking admission; and thus there would be more poverty and distress among us than ever. They would act simply as premiums upon that thoughtlessness and improvidence to which so much of poverty is owing. This may sound harshly to you; but I believe it to be the truth. The necessities of life—the thorns and the briars of the "cursed" ground, as some people think them—are the greatest motive to effort; and they are thus in reality the greatest motive to that on which, by the very constitution of our being, personal happiness depends; and if any one be relieved of them otherwise than by his own prolonged and successful endeavour, not only is his own comfort none the greater, but that of others also who, expecting similar fortune, will neglect to provide for themselves.

Remember, it is not to assistance rendered in cases of extraordinary visitation that I am objecting. I would have free hospitals for the diseased in body and free asylums for the diseased in mind multiplied in the land; but it is the pension list of all whose helplessness come in the ordinary course of nature that is injurious. Men, able to foresee the period of want, should have provided against it. You say they could not. Well then, I reply, all our benevolence ought to be exerted in removing the obstacles from their way—not in supplying their need, but in enabling them to provide for themselves. Whether the omission of people to provide for themselves has arisen from real inability, or from idleness and dissipation, our efforts ought to be directed rather to uprooting the mischievous cause than to the removal of its effects as they arise. Dr. Chalmers has well pointed out how it was the Highest Wisdom whose all-powerful benevolence—when Christ was on earth—was so often put forth to remove bodily affliction, and so seldom to satisfy the ordinary bodily wants, which could have been foreseen and provided for.

It is really true, however hard it may sound, that to cherish the dependent is to destroy independence. Pauperism will not be cured, it will be encouraged, by systematically supplying its wants. Treat it in this way and you shall find it one of those things which cannot be satisfied, but are continually crying, "Give! Give!" And if any one wants to remove poverty from any district, I believe that he will best attain his end by exerting himself for those who are still among the self maintaining. We should make it as true of material things as it is of spiritual things, "To him that *hath* shall be given, and from him that hath not shall be taken away even that which he hath." Masters should treat their servants not according to their need but according to their merits. Pay your men according to their need, and you shall soon have them needy enough. But pay honour to skill and ability and trustworthiness, and labourers will strive after them. Let the best labourer always have the best wages, whether he be married or not, whether he have a family or not, whether he have other means of support or not. And just so as regards allotments. Let the largest piece be offered not to the poorest man, but to him who is best able to cultivate it, who being the nearest to the field, or having the smallest garden already, will have most time to spare upon it—who having growing children will have most labour to apply to it. If poverty and not ability is to be our guide in allotting these small farms, they will have a pauperising rather than a strengthening tendency.

It is greatly to be desired that our young men should come to understand that it is upon their own exertions they must depend for rising, or even for maintaining their position; and this they will best find out by seeing that it is not the helpless who share our strongest sympathies, but those who are getting on in the world. The labouring man must depend upon himself for success, simply because he will find all other support to be as a broken reed. Do you think that if the rich would share their wealth with the poor it would be a good thing? Do you think that if the whole property of the country were divided equally among its population they would be benefited? I do not believe one in ten of the very poorest would for a single year be the better off for it. "The wealth of this kingdom depends not upon its property but upon its incomes;" and where would *they* be then? Did you ever think how small a quantity of real property is needed to furnish incomes to the many through whose hands it successively passed? Why, if all the gold in the country were equally divided there would not be a sovereign apiece for us. Were the wealth of England dependent on its capital, upon its actually realised property alone, it would be a pauper country.* Talk of the great value of the soil! Let me tell you that a larger sum of money is spent every year by the people in the gin-shops than the whole annual rental of the land amounts to: 50,000,000*l.* a year are spent on spirituous liquors. The knowledge of this extraordinary fact may suggest to you a method of improving the condition of the labouring classes, if you please; but never think that the rich will help the poor by each in his own neighbourhood sharing his wealth equally with his neighbours. To do this would be to injure them; it would be to stop all employment; and labour ceasing, except that of each man for himself, who would carry on the great manufactures of iron, clothing, and other things which have now become necessary to our very existence? You may depend upon it that upon the present unequal distribution of wealth depends the comfort and the welfare of the labouring classes. It is not by the direct assistance of the rich that they can permanently benefit; it is each for himself must work the matter out. And let us not think that to advocate this is to encourage selfishness, and to isolate men, and to destroy the sympathy which binds each to his fellow. For another truth has yet to be told. *M. S.*

(To be continued.)

* See an excellent leading article in a late Number of the *Daily News*.

Home Correspondence.

Allotments.—I quite agree with your correspondent in the last number of the *Gazette*, that the comfort and respectability of the agricultural labourer is in every way to be encouraged, but I altogether differ from him in thinking a rood of ground, a cow, and pigs, tends to that effect; the ground, &c., *cannot* be properly cultivated and looked after without depriving his employer of the fair day's work to which he is entitled for a fair day's wage; and most practical farmers know of certain objections to their labourers keeping pigs, to which I need not more fully allude: it is quite an Irish system, which I regret to say is introduced into England by philanthropists who themselves do not employ any number of labourers, or who merely farm for amusement. I have now some labourers who have allotments, but never again will I take a man who has land of his own to cultivate in addition to that of his employer. *A Practical Farmer.* [We cannot avoid saying, that though occupying about 300 acres of land, and employing about 700*l.* or 800*l.* worth of labour per annum, we have no hesitation in saying, that the allotment system is not in the least injurious to us. All our men have allotments varying from 40 to 80 perches of land].

Steam Ploughing.—Observing that some interest is excited amongst your correspondents by the idea of steam ploughing, allow me to suggest that it seems doubtful whether steam (applied directly) can ever be made sufficiently portable for the purpose. As "An Old Farmer" in a late Number observes, "power without ponderosity" is requisite. I happen to have some acquaintance with a patented invention which seems to realise this desideratum to some extent; I allude to the application of compressed air as a motive power. I have seen a heavy carriage, with several persons on it, driven along a road by this power at a smart trot. The inventor, like many others, had not capital to give it a fair trial. The advantages of this means of applying steam or other power to agriculture would be these. Supposing a farmer had a stationary steam-engine, or a water wheel for threshing and other operations, at any odd times when not required for other purposes, spare power might be employed to compress air into a main receiver, where it would always be ready to draw off into the locomotive ploughing machine. The air locomotive would not have to convey the weight of water, fuel, fire-bars, &c., necessary for a steam-engine, but only a moderate sized air receiver. Supposing a farmer had no water-power, and that steam was considered too expensive, he might then have a windmill which should compress air into a large stationary receiver whenever the weather suited, night or day. When he required either to thresh, cut chaff, or plough (supposing a ploughing machine invented), he would only have to draw off the requisite quantity of compressed air to work whatever machinery he desired to drive. The great advantage of this power seems to be that it is never wasted; when the work is done it has not to be blown off and lost, together with the fire; as soon as your work is done, however short a time you may have used it, you have only to turn a cock, and the remainder of the air in your receiver is ready for another time. A cheap but inconstant power like the wind, or the rise and fall of the tide, may thus be stored up for use. The cylinders full of compressed air, after they had raised and lowered the piston of the engine, would be available for winnowing the corn, or any other purpose for which a current of air was requisite. In the experiments I allude to, when the compressed air was allowed to escape from the receiver, the absorption of heat, as the air expanded, was so rapid that water thrown amongst it fell in lumps of ice! Should any of your readers feel an interest in the subject, I could, I believe, put them in communication with the patentee of an invention which I have long thought might be made available for agricultural purposes either as a fixed or as a locomotive power. *T. T.*

Raising Water for Irrigation.—It would be of great value to me to be able to raise water from a river only 2 feet, for the purpose of irrigation or water-meadows. You will conclude from this that the stream is very sluggish and the fall trifling; you must also know that I cannot put in a dam or weir. However, the stream is considerable in quantity, subject to rise and fall considerably in floods or in drought; but the thing wanted is to have the command of water when too low to overflow naturally. I have some idea that a wheel might be fixed on a floating stage anchored, or otherwise secured, so as to rise or fall with the water; and that either by buckets attached to the same shaft or by pumps a sufficient quantity might be raised by the stream acting on the floats of the wheel, as in an undershot mill-wheel. Has any reader of the *Agricultural Gazette* personal experience of any such plan, or could he put me in the way of consulting a competent person on the subject? *T. T.*

Markets.—It is to be regretted that we have no means of readily ascertaining the increase of the quantities of stock or grain sold in each month. I find from the Smithfield returns for June and August, the only perfect months for which I have returns, the following:

June (four weeks)...	1850,	Beasts	15,607
" "	1848	"	15,149
" "	1850,	Sheep	122,504
" "	1848	"	103,280
August (four weeks)	1850,	Beasts	14,164
" "	1848	"	13,760
" "	1850,	Sheep	126,380
" "	1848	"	102,580

I doubt if this increase could be shown throughout the year; and even if it could, it does not prove any great increase in the consumption of meat from low prices, taking into consideration the increase of the population of London, and the greater facilities than formerly of carrying animals to London. To be sure, one butcher boasted, "that his brother had never made so much profit since he wore a blue apron as last year." His retail price did not fall in proportion to the Smithfield price. We have no sufficient means to compare the amount of meat sold in each year in the chief markets of England. Again, it would be important if we could have the total amount of Wheat sold in the different markets of England in each month, with the quantity sold in the corresponding month of two preceding years. About March last, I think, the Chancellor of the Exchequer stated, that 10,000,000 qrs. of Wheat had been sold more than at the corresponding period last year. This was a most important fact, showing increased consumption. But how advantageous it would be if every month the *Gazette* enabled us to make a similar comparison respecting consumption with the present and two former years. I find when I sell at a low price that the price I get goes to the inspector of corn returns. When a high price is given, I am told the factor desires it should not be named by the seller, and no return is made of it. This contributes to cheap buying. *Hampshire.*

Dairy Stock.—Various engagements from home have prevented me till this week from seeing your four last numbers of the *Agricultural Gazette*. This is the sole reason of not noticing before this the remarks of "Buffer" in No. 37, page 588. I have re-examined the account. "Buffer" is evidently bewildered amongst the figures of the dairy stock account, extracted from my report on Lancashire farming. He says he should "very much like to see a fair statement of the real average value of a cow per annum." Now, I can assure him that the account in question is strictly one of that nature, being the *bona fide* result of my brother's milk stock at Bamford-hall, near Rochdale. I should be very sorry to insert any hypothetical statement in a work in which I have endeavoured, in all cases, to exhibit the results of practice. The stock kept were the improved Yorkshire short-horns, well fed, and well taken care of. The land has had a good dressing of lime on one part, and of bone manure on the other part. The meadow land was in the highest state of fertility from the quantity of provender purchased, and all the dung applied to it. The meadows were pastured on fine days in the spring till the 1st of May, when they were shut up. In seven weeks a heavy crop of hay was ready to cut. Butter sold from 13*d.* to 15*d.* per lb.; new milk 2½*d.* in summer, and 3*d.* in winter; skimmed milk 1*d.* in summer, and 1½*d.* in winter; butter-milk,

1*d.* per quart. When the seasons were bad, and of course dairy produce not so plentiful, the prices were higher. In 1838, 1839, and 1840, we had cold wet seasons. There were fewer cows kept and less produce sold, but the amount of money made per cow was much the same as in the preceding years. This arose from the prices being higher; but these years were, notwithstanding, the least profitable, because provender was high priced, and more had to be given to the cows to keep the supply of milk, &c., as steady as possible. On an average 12 quarts of new milk produced a pound of butter; consequently near 12 quarts of skimmed milk and butter-milk was sold for every pound of butter, and this in addition to the new milk sold. For instance in 1833 about 84,630 quarts of new milk, skimmed milk, and butter-milk was sold from 28 cows. This will be 3022 quarts from each cow, and 8 quarts per day on an average. It must be recollected here that if any cow fell from her milk too early, from any cause, she was sold, and a fresh calver bought in her place. This will raise the average quantity per cow above what would be the case were the same cows kept over from one season to another. On an average 11 cows were changed every year. This is the system adopted by all the best milk farmers around the manufacturing towns of South Lancashire. I could have given an account for nearly 20 years running [our readers would, we are sure, be uncommonly obliged if you would], but I selected a period including good and bad seasons. I could have given more particulars, but the extra number of figures would only have bewildered "Buffer" still more. I could also have given an account of my own dairy stock kept at Spont Bank, near Bury, and the results, but not so particular in the detail. I kept a stock of Ayrshire cows; the average annual value of produce was about 24*l.*; my farm was a mixed arable and dairy farm; the milk and butter sold in Bury; from my Ayrshire cows 9 quarts of milk would produce 1 lb. of butter. *W. Rothwell, Winwick.*

The proper Management of Water-meadows is a point of first-rate importance, yet it is singular how little accurate knowledge is found among farmers on that subject. I have always understood that it is quite essential to keep up frequent alternations of wet and dry. I was therefore not a little surprised, on looking over a publication of the celebrated William Smith on the subject, to find him directing the water to be kept running over the same spot continually, from October to March, with the exception of two or three sunshiny days. This he states to be the practice in the famous Wiltshire water-meadows—as far as I can understand his not very perspicuous style of writing. I should be very glad to learn from any of your correspondents what is the practice in Wiltshire at the present day. A full description of the management from an experienced hand would, I think, be acceptable to many of your agricultural readers. *Expertus.*

Societies.

NORTH LANCASHIRE, *Sept.* 11: *(continued from p.* 653.*) The Economy of Preparing and Applying Farm-yard Manures, especially in a liquid form.*

The CHAIRMAN said he should like to ask Professor Way one question: Which would be the best time of applying solid manure to a farm? Some people advocated its being applied immediately after the hay had been got off, while some did not advocate its application till autumn or November. Now would it be better to apply it on meadow and pasture land in the autumn or earlier?—Professor WAY: I should advocate its application at once after the hay had been got off.—Mr. GARNETT asked if Mr. Way considered that it was desirable to keep the manure a long time in the tank, or to merely pass it through the tank, and then put it into the ground? Was it better fermented or not? He knew there was a great diversity of opinion upon the subject, and he should much like to have Mr. Way's opinion. He thought he had seen it expressed in print, though he was not quite sure, as Mr. Huxtable's opinion that the unfermented manure was comparatively worthless. He might be mistaken on that point, but he thought that was the expression.—Professor WAY said the question was a very deep one, and it would not become him to answer it at present with any amount of decisiveness. Some experiments, he might say, had been made lately with clay soil, which were very peculiar, and showed that they should approach the subject with considerable diffidence and modesty. If they would take three portions of urine and leave it first in an untouched state, then mixed with sand of its own weight, and again with its own weight of pure clay, they would find that the first one to become putrid and to stink was the one mixed with sand; the next was that portion which had not been mixed at all; but for months and months that which had been mixed with clay remained in a pure state. Supposing the plants feed only in one way, then they must either exist upon the soil with the manure in a fermented state, or with it in an unfermented state. If they put fresh manure, liquid manure especially, into the clay, they prevented that manure from fermenting, and the question would then be, whether it would ever become available to the plant for food, and as yet the question of fermented or unfermented manures was not at all settled. But supposing it were true that the clay had the power of preventing the fermentation, then they were wrong in their view of the way in which the plants took their food, for it could not become food, if, after going into the clay, it did not ferment. On the other hand, when they found fresh manure mixed in a loamy soil, it rapidly fermented if not very dry, and this accounted for his saying they could not decide the question till it had been tried. The practice of feeding sheep on stiff soils had always been objected to, because such soils became poached by the sheep treading upon it. The application of the manure in a fermented state was the most expeditious plan to get an immediate effect, but if they had time he would by all means recommend them to put in the manure in an unfermented state. The unfermented state was decidedly the most economical.—Mr. FORT asked what would be the effect if they mixed the manure with a large quantity of vegetable matter and applied it to the soil?—Professor WAY said that in an ordinary loamy soil it had been tried with a good deal of vegetable matter, and he thought the fermentation took place most rapidly.—Mr. GARNETT: Is the practical result of your answer to my question, then, that the liquid manure may be put in safely in the new state on lighter soils, whereas on clay soils it is rather dangerous?—Professor WAY: I should think so.—Mr. JACKSON asked if they were to understand that the clay prevented, or only retarded, the fermentation of the manure?—Professor WAY said, the experiments which had been tried seemed to him to indicate, if they would take it with that proviso—they seemed to him to indicate that the fermentation of manures, and especially of liquid manure, was retarded when applied upon clay soils, while, by its application upon loamy soils, the fermentation was considerably increased.—Mr. GORNALL then read the following: "I have been a strong advocate for, and participated to some extent in, the advantages derived from the preservation and use of liquid manure for the last 16 years. I have also had another motive in view, viz., a sanatory one. Its preservation takes away a great nuisance from the farm-yard, by having drains laid from the shippon doors, and it adds very much to the comfort and health of the animals, as well as all parties connected with the farm; and further, I consider its value not yet fully known. I have only had a small tank, until the last year, so that in the depth of winter I was obliged to take the liquid out every three weeks or month. I have mostly applied it to my meadows, excepting on one occasion during winter, when the meadows were exceedingly soft from excessive wet weather, I took a quantity on to an Oat stubble, upon which I had a crop of Beans the following year, and notwithstanding the liquid was applied in the depth of winter, it made the crop infinitely of more value than any other portion of the field, although the land was of very uniform quality. I have always found that liquid manure applied to the land in our neighbourhood in the months of November, December, January, February, and March, did not do so much good as in April and May; but I consider that in earlier districts it may be applied a month sooner in the season. In 1847 my landlords rebuilt nearly all my farm buildings, which are now both extensive and convenient, and in 1849 I prevailed on them to make me a new liquid manure tank, in consequence of the old one being much too small. It is built of stone and arched over, and will hold 14,526 gallons, and at 10 lbs. the gallon will be equal to 64 tons, 16 cwt. 3 qrs. The cost to my landlords was about 22*l.* 10*s.*, including the excavation. It is 42 feet 4 inches long, 9 feet 4 inches wide, and 6 feet deep. I, as a tenant, carted all the materials at my own cost, which I consider is the duty of any tenant under similar circumstances; they amounted to about 10*l.* 7*s.*, and for which I calculate I am amply repaid this, the first year, by the extra supply of valuable manure afforded to my meadow lands. It is water-tight, and has to contain what is made from 23 milk cows, one bull, seven heifers, and two piggeries. The liquid manure is quite pure. Last spring I covered eight acres of meadow, and had a very good crop of hay. I applied it in April and May. I feel particularly obliged to my landlords, the Messrs. Rothwell, for their liberality in erecting me suitable farm conveniences, and earnestly hope that all landlords in the county will join their tenants in forming tanks; and I would strongly urge them to make them sufficiently large, as I feel quite convinced that after vegetation has commenced in the months of March, April, and May, the liquid may be much more economically and profitably applied than during any other season. At the same time I do not doubt, where proper convenience may be had for diluting it, that it may be suitably used after Grass has been cut, during any of the summer or autumn months."—Capt. HARRISON had been making a calculation that upon a small farm of about 20 acres there was a loss through the want of the proper receptacles, by the manure running away (not into the turnpike or high road, but into the cart road) of somewhere about 12*l.* a year.—Mr. CHAFFER asked Professor Way whether, where the liquid was drained away into a tank, it was worth the expense of covering over.—Professor WAY said that was not a fair question, for this reason—that he was not supposed to know what the expense would be. As a principle, he should say by all means cover it over, and if they must dilute their heap with it, they should do it at their discretion when they liked, and not let the heavens do it for them when they liked.—Mr. HINDE said he would merely detail to them five years' experience of the use of liquid manure tanks. About five years ago he built his first tank, and he had been in the continual habit of using liquid manure since. He applied it to the land at all seasons; but he certainly preferred applying it to meadow and pasture land in the spring of the year. The first tank he obtained being too small, he was necessitated to empty it whenever it became full; and if this fact was any corroboration of the remarks of Mr. Way, he might say that he had put the liquid upon a clay pasture in the month of November, and at the time he laid it on he had some impression that it would be washed away by the rains into the furrows. He had never expected any result from it; and yet, contrary to his anticipations, there was a manifest improvement in the following year in the land, which before had been in a wretched state. The soil retained its improved condition, he might say, for three years; and in taking strangers over the land, and asking them to stop at those furrows where they could see any change, they did not stop till they came upon that part where the liquid manure had been spread. In applying the liquid to a Turnip crop, he laid it on the moment he perceived it coming out of the ground; and the way in which he applied it was by a sort of conveyance constructed on a small cask, with which he could pour the liquid upon two rows at once. With this cask he could go over 2½ or 3 statute acres in a day, with merely having a boy employed in putting in the liquid. In applying the manure to the Turnip crop at the moment he perceived it coming out of the ground, he found that he almost entirely prevented the fly; and when a shower of rain washed the manure down to the rootlets, it was surprising with what vigour they came on. Some time ago, some portion of a crop of Turnips was omitted to be manured with the liquid, and the fly went away with about two-thirds of that crop, while that which had been manured was not touched. Mr. Hinde then instanced a place where upwards of 500 cows were kept upon a farm of 400 statute acres, and that farm was entirely manured with the produce from the cows, and the wash from a neighbouring distillery. The gentleman occupying that farm cultivated the worst of land; and the whole of it, being irrigated by this manure, was rapidly improving, and would eventually answer very well. To a crop of Italian Rye-grass, and many other things, he was perfectly convinced that the liquid was the life and soul of manure. Mr. Hinde had had experience of the deodorised cesspool manure. He differed with Mr. Smith in throwing into the tubular sewer everything that he could, but by all means he would have the tubular sewers to collect the wash from the houses, and then he would deodorise it. He had since adopted a plan for the deodorisation of the manure, with the assistance of a friend, and he believed there would be a perfect model of it upon the show ground on Thursday. The charcoal which he had used in deodorising was merely the remains of a fire that had taken place in Lancaster some time since, and which he had purchased for the purpose, and he used the bog earth very highly dried, which he found would answer. If they riddled their ashes, and applied a little lime, that would be deodorised quite sufficiently for the purpose; but the peat charcoal was, he believed, a *sine qua non* for the purpose. He had adopted the plan of deodorising the manure for about 18 months, and he found it took all the offensiveness completely away. He had had some Turnips growing in drills which had been manured with the deodorised manure. He had got his man to throw the manure over the crop as much as he could, and these Turnips were decidedly the best of a bad crop. One lot was sown with farm-yard manure, and a portion of deodorised manure, and another lot was sown without the deodorised manure, and the first lot was certainly the best. Mr. Hinde then alluded to the immense saving which might be made by the application of the sewage of towns for manuring the land, as well as the great benefit it would be to the health of the inhabitants.—Mr. LAYCOCK said he had had some little experience, and could furnish the meeting with some observations upon the practice of box-feeding, upon the application of liquid manure, and upon the various subjects which had been brought before the meeting. He thought Professor Way had opened his remarks with box-feeding in contra-distinction to the other modes of feeding. He must say that, as far as economy and saving went, the practice of feeding in boxes was the best. In box-feeding they had the manure covered and saved for a space of five or six months, and the pressure from the constant treading of the animals produced such a firmness that the escape of ammonia or other gases was entirely prevented. The animals, by a little attention being paid to them, might be kept perfectly clean. He might here take occasion to notice that it had been objected to the system of box-feeding, that the animals could not be kept clean in boxes; but he had satisfactorily proved to himself, by three years' experience, that they could be kept clean. It required some little attention to keep the animals clean, but they could be kept perfectly sweet. With regard to the system itself, it was highly important, in the first instance, that the boxes must be properly constructed. They must be made water tight, and there must be no drains from them. A gentleman, talking to him the other day on the box-feeding system, had asked him if he had his boxes well drained, and he might say that draining would be to destroy the very principle of the box system. As he had already said, they must have the boxes, in the first place, water tight, and then they must have a space of about 10 feet square. An area of 10 feet was quite sufficient for one animal to live in from five to six months, but the animal ought to be properly attended to—brushed and curried every morning. He could assure those present that last winter he had from 16 to 18 animals put up in this fashion, and only employed a boy, at about 5*s.* per week, to attend to them. They were fed in the ordinary way, curried once a day, and the place was properly kept in order, which at once did away with the question of expense. The next point he should come to was the quantity of the manure, and as to whether it should be applied fresh from the boxes. That was a matter which entirely depended upon the object for which they wanted the manure. If they required it to produce an immediate effect, then they should have it fermented, and if they wanted it to lay upon the soil some time, and plough it in, it would be better to lay it on fresh from the boxes. If he wanted to sow the seed at the same time as he applied the manure, he would have it carted out from the boxes perhaps two or three weeks before it was to be laid on, so as to allow for its fermentation in the soil, but if he did not want it to produce its effect all at once, he should certainly prefer that it should be carted out of the boxes and ploughed into the soil fresh. With respect to the application of liquid manure, having the boxes open materially lessened the difficulty of getting the manure. Now he thought it very desirable that every farmer should possess upon his farm a liquid manure tank, and one large enough to retain the whole of the liquid manure from all the animals he kept. His experience had led him to make this observation, that to lay the liquid on Grass land was the most economical mode of applying it. It had been objected that the expense of carting the liquid manure was so considerable that it was not worth the labour. Now that depended entirely on the value of the liquid manure, and if Professor Way would tell them the relative value of the liquid manure as compared with a ton of solid manure, that would at once set the question at rest. There was no difficulty in carting the solid manure to any distance upon their farms, and if the liquid was not of sufficient value to cart to any great distance, they could retain it for application upon the land nearer to their farms. But he would contend that there was no difficulty in carting the manure in a liquid state from the tank to the most distant part of their farms, though whether it was worth while to do so was a question which could only be set at rest by knowing the relative value of the liquid and solid manures. A remark had been made by one gentleman during the discussion, that the landlords should provide liquid manure tanks for all their tenants. Now he entertained a different opinion, and thought that it was not exceedingly desirable that the landlords should rush into this expense and lay down tanks all at once, but they should first have meetings such as these, to discuss the value of liquid manure and similar subjects before they came at once to a conclusion. If every landlord in the kingdom were to put down a tank to each one of his farms in the course of twelve months, not one-half of them would be properly used, and it was the proper application of these appliances that made them so useful. He should like to ask their worthy President how many applications he had had from his tenantry for liquid manure tanks, and he would venture to say that those applications had been very few indeed. This proved that the value of liquid manure was not generally known. Though he was quite convinced, from three or four years' experience, that nothing could be so desirable as to set the liquid manure tanks upon a farm, still it would be very objectionable to lay them down, when their use was not properly understood and appreciated. On a farm of about 140 acres, he had had, during the last year, between 20 and 30 cattle fed, and yet he would venture to say, that there had not been more liquid exposed upon it, except by a shower of rain, than now appeared upon the bench where he was standing. The refuse from the houses might be taken into the tanks with the most simple contrivance possible, and then carted on to Grass-land, especially on Italian Rye-grass, with the greatest benefit, provided it was put on immediately after the cutting. He should recommend himself that the liquid manure should be put upon the land on the night of the day on which it was cut; that as it was cut day by day, the liquid should be applied. By that means they would find that the land would be kept in heart, and they would get three crops where they only got one.—Mr. GARNETT said he was sure they were all much indebted to Mr. Laycock, and the other gentlemen who had addressed them that day; and he would make one observation with regard to the advantage spoken to by Mr. Laycock in preserving the manure by feeding the cattle in boxes. That was admitted on all sides to be very good for bullocks and heifers; but he doubted very much, and, in fact, it would be impossible to keep all the milch cows that were kept in this part of the county, and, indeed, over the greater part of Lancashire, on that system of feeding. Perhaps Mr. Laycock would be aware that the cattle kept by the tenant farmers in this county were chiefly milch cows; and he (Mr. Garnett) did not know whether the box-feeding of cattle extended to them or not, but he apprehended that it would be impossible always in this county to keep milch cows in boxes. It was necessary in the spring to turn them out at certain times, day and night, and in winter to keep them up at nights, in the shippon or cow-house. He would ask Mr. Laycock whether the box-feeding system extended to milch cows, or only bullocks and heifers?—Mr. LAYCOCK said it was principally bullocks that were fed upon that system.—Mr. GARNETT continued: That being admitted, and their keeping in this part of the county milch cows chiefly, to preserve the liquid manure they must have tanks. The next question was, how to get that liquid manure kept in the tanks, and how to get it upon the land in the cheapest possible way. Mr. Gornall had mentioned a box put into a cart for conveying the manure to the soil, and that was a very good plan, because the cart, if a mere water-cart, would be kept many months doing nothing, and would suffer in consequence. In this county there were many hills and valleys, and the farm-steads stood upon the slopes of those hills, so that in that case they should consider the most economical mode of laying the liquid upon the soil. He had paid some little attention to discover which was the best mode, and he thought that the most economical would be, to have piping for

the liquid to run through, and a force-pump or a common pump to force it down upon the meadows, and apply it to the land. A boy would guide the pipe wherever it was necessary. He had two or three specimens with him of gutta percha piping, which he believed was a most valuable invention for this purpose. The piece of piping he held in his hand was a portion of one he had used for six or eight months, and he had kept a portion of it in the tank, in order to test the probability of its being injured by the liquid manure. He found that so far it was not injured in the slightest degree, and his belief was that the liquid would not affect the gutta percha piping, but he had a notion that it would last for a very long time. The piping which he then held was about an inch in diameter, and cost about 2*s.* a yard. There was a very simple method of joining it together, so that they could have it in lengths of 20 or 30 yards. There was also another kind of piping—a hose covered with gutta percha inside and out. He had never tried that, but was told that it acted very well. It was about an inch in diameter, coated on the inside with gutta percha, and cost 6*d.* a foot, or 1*s.* 6*d.* a yard. Hose of the same diameter, coated on both sides, cost 7*d.* a foot; that 2 inches in diameter cost 10*d.* a foot, and coated on both sides, 11½*d.* He thought this was a very valuable and important discovery, and it enabled them to lay on the liquid manure whenever they liked with perfect ease, and with a very trifling expense. He would now wish to make a few remarks on the subject of sewage manure. He had with him two packages of charcoal which had been sent to him by Mr. Yarrow, acting under Mr. Jasper Rogers's patent for making peat charcoal. These packages had been sent through the post-office, adding another to the extraordinary list of articles which had been transmitted through that medium, namely sewage manure deodorised by charcoal. This charcoal had been made of peat, and one package was mixed with a portion of foul sewage manure; but the charcoal operated in completely deodorising the manure, and rendered it so that persons could take it away in their pockets. With the unlimited supply of peat which we had in this county, they had really within their reach a fertiliser which ought to make the land most luxuriant. In this county there was a most immense population living on a very small area, and indeed they could not go for 10 miles without coming on some town, and yet they were at a loss to know what to do with the sewage manure produced. At present people were throwing it away, and getting rid of it in whatever manner they could, whereas if they could only convert the peat which existed in the county into charcoal they could deodorise it and make it useful upon the land. This appeared to him the most important discovery that had been made for some time with regard to farming.—Mr. Wilson Patten, M.P., said he had not taken any part in the discussion to-day, and was not going to do so, except to make a remark on one or two things which had fallen from a gentleman present. His object in rising was to propose that they should pass a vote of thanks to Professor Way, Mr. Laycock, and other gentlemen who had favoured them with the result of their experience. Before, however, he did this, he would say, that considering the short time in which the principle of preserving the liquid manure in tanks had been in vogue, he thought Mr. Laycock did not do justice to the farmers, but endeavoured to throw cold water upon them when he asserted that the farmers did not appreciate liquid manure tanks. Now he believed that the contrary was the fact; and he could only say that within the last fortnight he had himself been applied to by seven of his tenants for liquid manure tanks, and at their earnest solicitation he had given orders for seven tanks to be laid down.—(Loud applause.) That was a convincing proof that if the landlords would form these tanks the tenants would appreciate them. He had made a tour in the south of England, in the course of last spring, to look at the manure tanks, and to see how the liquid manure was applied, and in what state it was applied to the land with the greatest benefit. There had been a question raised just now as to whether it should be applied in a fermented state or not, and he must say that he had seen it applied with greatest benefit in a fermented state or Italian Rye-grass, and on Grass lands. On a farm, near London the occupier had a hole in the tank through which he introduced dead animals into the liquid—such as dead dogs and cats, and everything that could induce its fermentation, so anxious was he to get it fermented, and gain a rapid putridity. As soon as the Italian Rye-grass was got off he applied it to the land, and that individual, to his (Mr. P's.) knowledge was now about to cut his seventh crop of Rye-grass since the commencement of the spring. The land was of an inferior nature, being clay mixed with flint, and he was certain he was right when he said the party was now about to cut his seventh crop of Rye-grass since the commencement of the spring.—*Abridged from Preston Chronicle.*

Calendar of Operations.

OCTOBER.

An Essex Farm, *Oct.* 15.—We have finished sowing Tares, and the early sown ones are just coming up well, as we find always the case when they are put in when the land is dry and just skimmed; in ploughing, it does not answer to plough deep on this heavy land. We have also finished sowing Winter Beans; this is the second year they have been tried here, and have given much satisfaction, more particularly this year; they have yielded more than a quarter per acre over the Long-pods, and, coming early, you can get a crop of white Turnips or Rape after them, and either fed off by sheep, with the addition of a little corn or oilcake, is not the worst preparation for Wheat that is practised. The Turnips are now being taken up; Swedes are a bad crop, eaten up by a nasty black grub, as many as five or six in some of them, and mildewed into the bargain; the white ones are somewhat better but not good; they want more wet than we have had in Essex this summer. There is much complaint of the Wheat threshed about here; it does not yield nearly so well as expected. One field that has been well done for some years and looked like 6 quarters an acre up to the beginning of July, hardly reached 4 quarters; the sheep are now picking over the stubbles, and folded at night on some of the Bean land intended for Wheat. The ram has been with the ewes a month now, as we like to have the lambs drop early; they never get up a month lost in the spring. *E. X., near Braintree, Essex.*

Notices to Correspondents.

Act of Parliament: *W S.* Inquiry has been made for you.

Bailiff: *E T.* You may advantageously combine the offices of bailiff and gardener, where the farm is 100 acres only. We speak from experience.

Fingers and Toes, &c.: *Pen.* An unhealthy and stunted growth, owing to the absence of right food for the plant, or the occurrence of an ungenial season during growth. Potato shaws may be added to the dung-heap; they generally are burned in the field. About smear for sheep—your question has been sent into Scotland. About pickles for Wheat, see p. 10 of our vol. for 1849. We use ½ lb. of sulphate of copper per sack, dissolved in water enough to wet every grain of Wheat. They will be dry in half an hour and ready for drilling.

Grass: *Cor.* Alopecurus agrestis. Diligence in the cultivation of a fallow crop, such as Turnips, ought to clean the land of it. Winter Beans are grown already in many parts of Yorkshire

Grass Lands: *M A.* If the land is drained, you cannot do better than apply 2 quarters of fine bone-dust per acre now.

Guano: *R V.* Keep it till the spring. You may make a compost of gas-lime and earth for the bottom of your dung-heap with safety. It is not safe to mix lime and salt to put with dung. Lime alone is bad enough; by letting it act on salt it sets free a still more caustic agent, which will not suffer ammonia to unite with any acid, or assume any fixed form whatever.—We know of no difference between the Grass and the Turnip plant sufficient to point out any difference in the right method of draining the land on which they respectively grow.

Mange: *J L.* Sulphur in powder, ½ oz.; palm oil, 2 oz.; mercurial ointment, ½ oz. Mix well together, and well rub in every second or third day. *W. C. S.*

Manures, &c.: *G S.* You had better litter your cattle with the haulm of the Mustard: and probably you would find in the long run that a careful management of the manure derived from the consumption of Turnips and oilcake will be as cheap a method of fertilising your land as any. If your analysis is correct, the land must be *very* stiff, for 19 per cent. of alumina is a very great proportion. In that case you would improve your land greatly by burning a good deal of the soil. *Good* guano is a cheap manure.

Oilcake: *H T.* You may give the cows a cake per day, that is about 2 lbs. apiece. Break it, and put it in water, where it will, in a day or so, fall abroad; then throw it over the chopped hay. The oilcake will probably affect the milk; "grains" would not.

Peat Charcoal: *M A.* We are not aware at what price Mr. Rogers offers it; but if there be no other hindrance you need be in no fear of any patent (!) hindering your making it.

Sheep-feeding: *M A.* Sir J. S. Menteath's method consists in the use of sheds, 7 feet wide, 5 feet high, 15 feet long; the flooring to be placed on wheels. These sheds would cost 4*l* each and shelter 20 sheep (they cannot be a large breed to allow of that). Plans are given at page 28, vol. 11, Quarterly Journal of Agriculture. We are not aware that this is more than a suggestion: we do not know if it has been tried. It seems a fair subject for experiment.

Straw of Beans: *R W, jun.* If the Beans are cut before the leaves are black, it will make good fodder; but if allowed to become dead ripe in the field, it will be worthless except for litter.

Trifolium incarnatum: *W D C.* It should have been sown immediately after harvest, when it would have been ready in June of next year. It is too late to sow Italian Rye-grass. Vetches should be manured; Rye need not. Common Clover cannot be sown now with any probability of success.

Turnips: *A B B.* They will form useful shoots in spring—but at the expense of the root. We will endeavour to furnish the series of which you speak in our next volume. But the "Gorham and Exeter" warfare, which rages in our bucolics, will not be settled by any addition to the many who are already speaking loud enough in the imperative mood.

Winter Beans: *C.* If the land be clean sow now without manure, if you have not farm-yard manure, and apply 3 cwt. of guano per acre in March, before horse-hoeing.

Erratum: *C L.* Many thanks for your memorandum. The passage in a Leading Article, at pp. 635 and 634, which speaks of the propriety of mixing charcoal dust with urine, must not be taken to imply that there is ammonia ready formed in fresh urine, which would otherwise be immediately lost. Ammonia is the product of the putrefaction which soon takes place in the urine; and the propriety of adding charcoal dust to the fresh liquid depends on the advantage of retaining the volatile products of that decay from its earliest stages.

Markets.

COVENT GARDEN, Oct. 19.

Vegetables are abundantly supplied, and Hothouse Grapes and Pine-apples are plentiful. Peaches are less abundant. Oranges and Lemons though scarcer are sufficient for the demand. Plums and Pears are still received from the Continent. Filberts are dearer. Carrots and Turnips may be had at 3d. to 6d. a bunch. Potatoes are good and cheap. Lettuces and other salading are sufficient for the demand. Mushrooms are scarce, as are also French Beans. Cut Flowers consist of Heaths, Pelargoniums, Asters, Fuchsias, Mignonette, Dahlias, Verbenas, Bignonia venusta, Stephanotis floribunda, Heliotropes, Calceolaria viscosissima, Japan Lilies, and Roses.

FRUITS.

Pine-apples, per lb., 3s to 5s	Oranges, per doz., 2s to 3s
Grapes, hothouse, p. lb., 1s to 3s	— per 100, 8s to 24s
— Portugal, p. lb., 8d to 1s	Almonds, per peck, 6s
Peaches, per doz., 3s to 10s	— sweet, per lb., 2s to 3s
Melons, each, 1s to 3s	Walnuts, p. 100, 1s to 2s
Plums, p. punnet, 1s to 1s 6d	— p. bush., 12s to 24s
Pears, per doz., 1s to 3s	Nuts, Barcelona, p. bush., 20s to 22s
— per half sieve, 6s to 15s	— Brazil, p. bsh., 12s to 14s
Apples, dessert, p. bush, 4s to 8s	Filberts, per 100 lbs., 40s to 50s
— kitchen, do., 1s 6d to 6s 6d	
Lemons, per doz., 1s to 2s	

VEGETABLES.

French Beans, p. sieve, 3s to 4s	Garlic, per lb., 4d to 8d
Cabbages, per doz., 6d to 1s	Artichokes, p. doz., 2s to 4s
Greens, p. doz. bunches, 3s to 4s	Vegetable Marrows, per doz., 6d to 1s 6d
Cauliflowers, p. doz., 2s to 4s	Lettuce, Cab., p. sc., 1s to 1s 6d
Sorrel, p. hf. sieve, 6d to 9d	— Cos, p. score, 6d to 1s 6d
Potatoes, per ton, 50s to 80s	Endive, per score, 1s to 1s 6d
— per cwt., 2s 6d to 4s	Small Salads, p. punn, 2d to 3d
— per bush., 1s 6d to 2s 6d	Horse Radish, p. bdl., 1s to 4s
Turnips, p. 12 bun., 2s 6d to 3s 6d	Mushrooms, p. pot., 1s 6d to 2s 6d
Red Beet, per doz., 1s to 2s	— per bushel, 5s to 7s
Cucumbers, p. doz., 1s to 6s	Fennel, per bunch, 2d to 3d
Leeks, per bunch, 1d to 2d	Savory, per bunch, 2d to 3d
Celery, p. bundle, 1s to 1s 6d	Thyme, per bunch, 2d to 3d
Carrots, per doz., 3s to 5s	Parsley, p. doz. bun., 1s to 2s
Tomatoes, p. punnet, 1s to 1s 6d	— Roots, p. bdle., 9d to 1s
Spinach, p. half sieve, 1s 6d to 3s	Marjoram, per bunch, 2d to 4d
Onions, p. bunch, 2d to 6d	Mint, per bunch, 2d
— Spanish, p. doz., 1s 6d to 4s	Watercress, p. 12 bunch., 6d to 9d
Shallots, per lb., 6d to 8d	

COAL MARKET.—Friday, Oct. 18.

Holywell, 16s.; Eden Main, 15s. 9d.; Tanfield Moor, 12s. 6d.; Wallsend Haswell, 16s. 9d.; Wallsend Stewarts, 16s. 9d.; Wallsend Tees, 16s. 9d.—Ships at market, 72.

HAY.—Per Load of 36 Trusses.

Smithfield, Oct. 17.

Prime Meadow Hay	72s to 78s	Clover	70s to 80s
Inferior ditto... ...	63 70	Second cut	63 70
Rowen	— 60	Straw	23 27
New Hay	— —		J. Cooper.

The supply short and trade brisk.

Cumberland Market, Oct. 17.

Prime Meadow Hay	72s to 77s	Inferior	65s to 72s
Inferior ditto... ...	55 65	New Clover	— —
New Hay	— —	Straw	24 28
Old Clover	78 84		Joshua Baker.

Whitechapel, Oct. 17.

Fine Old Hay ...	70s to 74s	New Clover	75s to 80s
Inferior ditto ...	— —	Inferior ditto... ...	— —
New Hay	63 70	Straw	22 26
Old Clover	78 84		

HOPS.—Friday, Oct. 18.

Messrs. Pattenden and Smith report that at Weyhill Fair about 6446 pockets of Hops were pitched, and nearly the whole sold, at prices varying from 4*l.* to 7*l.* 7*s.* per cwt. A large trade was also done in Weald of Kent and Sussex Hops by sample. The market here is firm at full as much money. Duty, 225,000*l.* to 230,000*l.*

SMITHFIELD, Monday, Oct. 14.

The supply of Beasts is unusually large; however, we are still deficient of good quality, and, in consequence, the best kinds are not much lower. Several inferior remain unsold. We have also an increased supply of Sheep and a small demand. Trade is slow, at a reduction of about 2d. per 8 lbs. Calves are not too plentiful, and late rates are pretty well maintained. From Holland and Germany we have 1127 Beasts, 4150 Sheep, 141 Calves, and 300 Pigs.

Per st. of 8 lbs.—s d	s d	Per st. of 8 lbs.—s d	s d
Best Scots, Herefords, &c. ... 3 6	to 3 10	Best Long-wools . 3 4	to 3 8
Best Short-horns 3 4	— 3 8	Ditto Shorn	— ...
2d quality Beasts 2 4	— 3 0	Ewes & 2d quality 2 8	— 3 0
Best Downs and Half-breds ... 3 10	— 4 0	Ditto Shorn	— ...
Ditto Shorn	— ...	Lambs	— ...
		Calves 2 8	— 3 8
		Pigs 3 0	— 4 4

Beasts, 5463; Sheep and Lambs, 29,140; Calves, 214; Pigs, 600.

Friday, Oct. 18.

The number of Beasts is again very large, and trade extremely dull. Inferior qualities are scarcely saleable, even at the low price quoted; but there is not so much difference in the price of choice descriptions. Although the number of Sheep is not excessive, it is larger than the demand; consequently Monday's quotations are barely supported. We are moderately supplied with Calves; trade is, however, bad, and prices are rather lower. From Holland and Germany there are 483 Beasts, 950 Sheep, 214 Calves, and 16 Pigs; about 350 Beasts from the northern and midland counties; and 98 Milch Cows from the home counties.

Best Scots, Herefords, &c. ... 3 6	to 3 10	Best Long-wools . 3 4	to 3 6
Best Short-horns 3 4	— 3 8	Ditto Shorn	— ...
2d quality Beasts 2 2	— 3 0	Ewes & 2d quality 2 10	— 3 0
Best Downs and Half-breds ... 3 8	— 4 0	Ditto Shorn	— ...
Ditto Shorn	— ...	Lambs	— ...
		Calves 2 4	— 3 6
		Pigs 2 8	— 4 0

Beasts, 1156; Sheep and Lambs, 5490; Calves, 366; Pigs, 490.

MARK LANE.

Monday, Oct. 14.—The supply of English Wheat this morning from the neighbouring counties was small, and taken freely on the terms of this day se'nnight. The arrival from abroad amounts to 33,585 qrs., of which 9685 qrs. are from Dantzic and 6133 qrs. from Rostock; millers abstain from purchasing, excepting where holders are prepared to make a considerable sacrifice; sales have consequently been limited.—Fine malting and foreign Barley is fully as dear, but inferior qualities of English are very difficult of disposal.—Our quotations for Beans are supported.—Peas of all sorts are the turn lower.—Fine Oats meet a good inquiry, but inferior new are very unsaleable, excepting at a slight reduction.

Per Imperial Quarter.	s. s.		s. s.
Wheat, Essex, Kent, & Suffolk ...White	43—46	Red	38—45
— — fine selected runs ...ditto	44—48	Red	—42
— — Talavera	46—52		
— Norfolk, Lincoln, & York...White	—	Red	—
— Foreign	34—50		
Barley, grind. & distil., 22s to 23s...Chev	26—29	Malting	24—26
— Foreign....Grinding and distilling	17—23	Malting	20—24
Oats, Essex and Suffolk	—		
— Scotch and Lincolnshire ...Potato	20—23	Feed ...	19—21
— Irish .....Potato	16—21	Feed ...	15—17
— Foreign.....Poland and Brew	18—22	Feed ...	16—18
Rye	26—29	Foreign	—
Rye-meal, foreign.....per ton	—		
Beans, Mazagan .....25s to 27s.....Tick	26—28	Harrow	26—28
— Pigeon .....28s — 32s ...Winds	—	Longpod	—
— Foreign ..... Small	24—34	Egyptian	22—23
Peas, white, Essex and Kent.....Boilers	30—34	Suffolk...	32—35
— Maple.... .31s to 33s .....Grey	29—30	Foreign	26—33
Maize ..... White	25—28	Yellow...	24—28
Flour, best marks, delivered... per sack	36—40		
— Suffolk ..... ditto	29—36	Norfolk	29—36
— Foreign .....per barrel	21—24	Per sack	30—34

Arrivals in the Port of London last Week.

Flour, 12014 sks — — brls	Wheat. Qrs.	Barley. Qrs.	Malt. Qrs.	Oats. Qrs.	Beans. Qrs.	Peas Qrs.
English	5606	1776	2210	1558	512	852
Irish.....	—	—	114	9881	—	—
Foreign	33585	6637	—	15933	3612	1471

Friday, Oct. 18.—The arrivals of English grain this week have been moderate, those of foreign considerable, and have a depressing influence upon our market, rendering it difficult to effect sales of either Wheat, Barley, or Oats, unless at a slight concession in prices, although there appeared rather an increased inquiry for Wheat.—We observe no alteration in the value of Beans or Peas.—Flour is a slow sale, but not cheaper.—Some transactions have taken place during the week in floating cargoes of Odessa Wheat, at 37s. to 39s., and Galatz Maize at 29s. 6d. per qr.

Arrivals this week.

	Wheat. Qrs.	Barley. Qrs.	Oats. Qrs.	Flour.
English ...	2230	1490	1340	2560 sacks
Irish	—	—	4580	
Foreign ...	17200	13520	23690	— brls.

Imperial Averages.	Wheat.	Barley.	Oats.	Rye.	Beans.	Peas.
Sept. 7.....	43s 2d	23s 0d	17s 11d	25s 4d	28s 9d	27s 10d
— 14.....	42 10	23 9	17 4	26 10	29 7	28 9
— 21.....	42 7	24 10	17 1	26 4	29 5	29 5
— 28.....	42 8	24 8	16 10	26 4	29 5	30 0
Oct. 5.....	42 2	24 5	16 8	26 7	29 6	31 3
— 12.....	41 2	24 2	17 1	25 8	29 6	29 7
Aggreg. Aver.	42 5	24 2	17 2	26 2	29 4	29 6
Duties on Foreign Grain	1 0	1 0	1 0	1 0	1 0	1 0

Fluctuations in the last six weeks' Corn Averages.

Prices.	Sept. 7.	Sept. 14.	Sept. 21.	Sept. 28.	Oct. 5.	Oct. 12.
43s 2d		...	...	...	...	...
42 10	...		...	...	...	...
42 8	...	...		...	...	...
42 7	...	...	...		...	...
42 2	...	...	...	...		...
41 2	...	...	...	...	...	

Liverpool, Friday, Oct. 11.—We have been rather scantily supplied with grain, Flour, and Oatmeal, coastwise and from Ireland, since Monday last, and the import of foreign grain consists of 6756 qrs. of Wheat only; of American Flour, however, we have a further good arrival, and a fair quantity from France. At our market to-day transactions in English and foreign Wheat were upon a limited scale, but holders remaining firm, the genaral currency of Tuesday remains unvaried. Barley, Malt, Beans, and Peas moved rather slowly to consumers, at late prices. Oats not plentiful, and quite as dear as on Tuesday. In Oatmeal no variation. Indian Corn, being still in good request for Irish account, fully supported the amendment of yesterday.——Tuesday, Oct. 15.—There have been fair supplies of Oats and Oatmeal from Ireland since Tuesday last, but they are still small of Wheat and Flour. The trade during the week has been steady, with firm prices generally. The principal alteration in value has been an advance of 6d. to 1s. per qr. on Indian Corn. At this morning's market we had a fair attendance of buyers, and a moderate extent of business in Wheat and Flour. Full prices were obtained for foreign Wheat, and Irish new was fully 1d. per bushel dearer. Flour supported late rates. There was no change in the value of Oats, but Oatmeal was 3d. per 240 lbs. cheaper. Barley, Beans, and Peas were in limited request. The week's advance of 6d. to 1s. per qr. on Indian Corn was maintained to-day, but only two or three small purchases of best American yellow transpired at 29s. per 480 lbs.

GRAY, ORMSON, AND BROWN,

DANVERS STREET, CHELSEA,

Respectfully solicit the attention of the Nobility and Gentry to their superior manner of Erecting and Heating every description of Building connected with Horticulture. They have much pleasure in giving the following testimonial referring to the range of houses shown below.



Peach House, 30 by 16 feet. | Vinery, 30 by 16 feet. | Stove, 45 by 20 ft. | Greenhouse, 45 by 20 ft. | Vinery, 30 by 16 ft. | Vinery, 30 by 16 ft.

[Erected for John Shaw Leigh, Esq., Luton Hoo.]

Extract of a Letter from Mr. Fraser.—"I have much pleasure in expressing my entire satisfaction with the range of houses you erected here. I may also state that my honoured employer, John Shaw Leigh, Esq., is perfectly satisfied. I have no hesitation in stating, that to the best of my knowledge, there is not a more complete range of glass in the country, as regards both building and heating. I may add that they are admired by every Gardener who has seen them. I shall have much pleasure in answering any references you may please to direct.

(Signed.) "James Fraser, Gardener, Luton Hoo Park."

BRENTFORD, MIDDLESEX.

To Noblemen, Gentlemen, Nurserymen, Market Gardeners, and Public Companies engaged in Planting.

MESSRS. PROTHEROE AND MORRIS are directed, by the Executors of the late Mr. J. Ronalds, to submit to public competition by Auction, on the premises, the Butts and Toolands Nurseries, on MONDAY, October 21, and eight following days, at 11 for 12 o'clock precisely each day, in consequence of the number of Lots, without the slightest reservation, the whole of the valuable NURSERY STOCK, riding over 30 acres, which is particularly worthy the attention of Noblemen and Gentlemen laying out their Grounds, as well as the Trade, for its excellence, and comprise several thousand Fruit Trees of the leading and approved varieties, a large quantity of Forest Trees, Ornamental and Deciduous Shrubs, together with a rich assortment of Evergreens.—May be viewed prior to the sale, and Catalogues had, on the premises, of the principal Seedsmen, and of the Auctioneers, American Nursery, Leytonstone, Essex.

IMPORTANT TO SEEDSMEN, NURSERYMEN, and Others.

MESSRS. PROTHEROE AND MORRIS have received instructions from the Assignees of Mr. Charles Bunyard (a bankrupt), to offer to public competition, by Auction, on the premises (Nash and Hicks's Warehouse, Horsleydown), on THURSDAY, October 31, at 11 o'clock, the whole of the valuable SEEDS and IMPLEMENTS IN TRADE, viz., Sacks, Bags, Weights, Scales, and Measures; a capital Winnowing Machine, Nests of Seed Drawers, &c.—May be viewed, and Catalogues had of Wm. Whitmore, Esq., Official Assignee, Basinghall-street; of Messrs. Marten Thomas and Holland, Solicitors, Mincing-lane, London; of the principal Seedsmen in London; and of the Auctioneers, American Nursery, Leytonstone, Essex.

CHERTSEY, SURREY.

TO GENTLEMEN, NURSERYMEN, AND OTHERS.

MR. WATERER will sell by Auction, on MONDAY, October 28, and following day, at 11 o'clock, by order of the Proprietor, at Brox, about two miles from the town of Chertsey, and one mile from the Addlestone Station, a valuable NURSERY STOCK, comprising 75,000 Fruit, Forest, and other Trees, Evergreen and other Shrubs, including Spruce and Larch Firs, Birch, Horse Chestnut, Turkey Oak and Holly, Common, Wood, and Portugal Laurels, Arbutus, Lauristinus and Laburnums, Standard, Dwarf, and Climbing Roses, Honeysuckles, Irish Ivy, Daphnes, Clematis and Aucubas, Pears, Peaches, Apricots, and Nectarines, Plum, Pear, and other Stocks, Rhododendrons, Azaleas, Kalmias, and other American Plants, Ornamental and other Flowering Shrubs, 300,000 Bedded and Seedling Quick, and other Stock, the whole of which are in a safe moving condition.—May be viewed one week previous to the sale, by applying to Mr. George Gray, Brox; and Catalogues had on the premises, and of Mr. Waterer, Auctioneer, Land and Timber Surveyor, Chertsey, Surrey.

TO NOBLEMEN, GENTLEMEN, NURSERYMEN, AND OTHERS.

SUNNINGDALE AMERICAN NURSERY, near Sunninghill, Berks, two miles from Virginia Water, two miles from Sunninghill Wells, and half a mile from Shrub's Hill.

MR. WATERER will Sell by Auction, on MONDAY, November 4, 1850, and following days, at 11 for 12 o'clock precisely, part of the extensive and valuable NURSERY STOCK of Mr. James Walker; consisting of 25,000 blooming Rhododendrons; Kalmias and Azaleas for Forcing, and many large ornamental Plants; a large quantity of Choice Evergreens and Flowering Shrubs, Dwarf Roses, and Honeysuckles, Standard and Dwarf-trained Apples, Pears, Cherries, Plums, Peaches, Apricots, and Nectarines, of the most approved sorts, Common and Portugal Laurels of all sizes, Birch, Ash, and Oak, Purple and Common Beech, Spruce, Larch, Scotch and Balm of Gilead Firs, of all sizes, a large quantity of Quick, from 3 to 5 years old, and a great variety of other Nursery Stock, well worth the attention of Nurserymen and others, about planting, being in a safe moving condition. N.B.—The above is the produce of Seven Acres, and will be sold without reserve, as the Lease expires at Midsummer, 1851.—May be viewed one week previous to the Sale, and Catalogues had on the premises; of Mr. Charlwood, Seedsman, Covent-garden; and of Mr. Waterer, Auctioneer, Chertsey, Surrey, who will forward them on application, by post, enclosing six postage-stamps.

IMPORTANT AND EXTENSIVE SALE OF NURSERY PLANTS ON ABOUT SIX ACRES.

MR. T. BAXTER is directed to sell by Auction, on TUESDAY, October 29, 1850, and following day, on Bromley Hill Nursery, on the London side of Bromley, Kent, the very superior and well-rooted STOCK OF PLANTS, including about 4000 Common and Portugal Laurels, 4000 Green and Worked Hollies, variegated and other Box, Arbor Vitæ, Yews, Cedars, Arbutus, 4000 Spruce, Scotch, and other Firs, and Forest Trees of every description. 20,000 fine strong Quick, Mulberry, Walnut, Trained Peaches, &c. Valuable and well-budded Camellias, Rhododendrons, and other flowering shrubs and plants. N.B. A lengthened time will be given to clear off the lots. May be viewed seven days preceding the sale, and Catalogues had at the Auction Mart, Bartholomew-lane, London, and at place of sale, &c.

MR. WILLIAM HASLAM begs to announce that he has received instructions from Messrs. Attolander and Co., of Boskoy's, Holland, to Sell on THURSDAY, October 24, and following day, at the Auction Mart, an extensive importation of FRUIT TREES, consisting of trained Peaches, Nectarines, Plums, Apricots, Pears, &c.; also Standard Fruit Trees in great variety, Gooseberries, &c.; Flowering Shrubs, comprising Andromeda, Rhododendrons, Berberis, &c.; also, on each day, a case of Dutch Bulbs.—Catalogues may be had at the Mart, and of the Auctioneer, South Essex Nurseries, Epping.

FIVE HUNDRED CAMELLIAS, TWO HUNDRED ROSES, AZALEAS, LILIUMS, CHRYSANTHEMUMS, TULIPS, IRISES, RHODODENDRONS, AND DUTCH BULBS.

MR. HASLAM will sell choice Specimens of the above on TUESDAY, October 22, and WEDNESDAY, October 23.—Catalogues may be had at the Mart, and of the Auctioneer, &c., Epping, Essex.

RARE AND NEW ORCHIDS FROM THE INTERIOR OF NEW GRANADA.

AN IMPORTATION DESERVING ATTENTION.

MR. J. C. STEVENS has the honour to announce that he will Sell by Auction, at his Great Room, 38, King-street, Covent Garden, on TUESDAY, October 22d at 12 for 1 o'clock, AN IMPORTATION OF RARE AND VALUABLE ORCHIDS, just arrived by the last West India steamer, collected in the interior of New Granada, by Mr. Schlim, traveller to Mr. Linden. Amongst the many rarities contained in this collection may be mentioned Uropedium Lindenii, the most extraordinary Orchid known, the flowers measuring from 24 to 30 inches in length; Odontoglossum hastilabium, and several new and brilliant species; Sobralia dichotama and four new species; Eriopsis rutidobulbon, with gigantic bulbs, the stems growing 2 feet high, covered with from 40 to 60 beautiful flowers; Cycnoches barbatum; a new and beautiful Myanthus; two new and pretty Houlletias; a new genus, bearing large splendid flowers; another very remarkable new genus; Burlingtonia Grenadensis; a new Trichopilia; an Anguloa with beautiful orange-coloured flowers, and several new Oncidiums, Stanhopeas, Warreas, Brassavolas, Mormodes, Epidendrums, &c. To which will be added, several fine specimens of Anguloa Clowesii and Ruckerii, Odontoglossum citrosmum—var. roseum, Oncidium papilio majus, Epidendrum bicornutum, Cattleya Mossiæ, and many other favourite species.—May be viewed on the morning of sale and catalogues had.

TO AMATEUR FLORISTS AND GENTLEMEN ENGAGED IN PLANTING.—SPECIMEN GREENHOUSE AND STOVE PLANTS, STANDARD ROSES, HARDY CONIFERS, &c.

MR. J. C. STEVENS will Sell by Auction, at his Great Room, 38, King-street, Covent-garden, on FRIDAY, October 25, at 12 for 1 o'clock, a Choice Assortment of GREENHOUSE AND STOVE PLANTS, including specimen plants of Azaleas, well set with bloom-buds, Ericas, Camellias, Rhododendrons, Corræas, Pimeleas, Ixoras, &c. Also a selection of the best sorts of Standard Roses, Bourbons and Hybrid Perpetuals; and a collection of Hardy Conifers, consisting of Araucaria imbricata, Cedus deodara, Cryptomeria japonica, Cupressus torulosa, Pinus Gerardiana, Abies Khutrow, &c.—May be viewed on the day prior and morning of sale, and Catalogues had.

JAVA ORCHIDS—JUST RECEIVED FROM MESSRS. ROLLISSON'S COLLECTOR.

MR. J. C. STEVENS begs to announce for Sale, by Auction, at his Great Room, 38, King-street, Covent Garden, on TUESDAY, October 29, at 12 for 1 o'clock, an Importation of most RARE AND VALUABLE ORCHIDS from Java, just arrived in Wardian cases, in perfect health; it consists of upwards of 60 fine specimen plants of the beautiful and rare Saccolabium Blumei majus, fine plants of the true Vanda suavis (collected in flower, to ensure their being the correct species), several plants of a new and handsome flowering Aerides (very fragrant, intermediate between virens and quinquevulnerum), fine specimen plants of Vanda tricolor (the best variety, also collected in flower), and a few plants of the new and beautiful Spatoglottis plicata of Blume, red and white species.—May be viewed on the morning of Sale, and Catalogues had of Mr. J. C. Stevens, 38, King-street, Covent Garden, London.

TO CAPITALISTS, ELIGIBLE BUILDING SPECULATION.

TO BE SOLD, 33 acres of LAND, contiguous to a rising sea-port and market town in a western county, adjoining a turnpike-road, with extensive frontage upon which 10 houses of respectable character are already built on leases of 60 and 99 years. There is ample space for considerably extending the town in this direction, and the land being at present let as market gardens, renders it not only an excellent opportunity for speculation by retailing it in lots for building purposes, but also a safe investment of capital. The freehold ground rents of the above 10 houses also for sale.—Apply by letter, directed (prepaid) to S. L., Box 100, Post-office, Gloucester. N. B. A Railway passes very near the property.

TO MARKET GARDENERS, NURSERYMEN, AND FLORISTS.

MR. W. T. ATWOOD has received instructions to LET, with immediate possession, the following eligible property, Chiswick-lane, near the Roebuck Inn, on the high road from Brentford to London, and about 4½ miles from London, GARDEN GROUND, containing about 10 Acres, the greater part being walled, and stocked with Fruit Trees and Vines, with a good 8-roomed house, and very convenient Trade Buildings. The Land is well stocked with good bearing Fruit Trees, and cropped with the best kinds of Gooseberry and Currant Bushes, all in full bearing. Proposed Rent and Taxes easy. A moderate valuation of the Under Crops will be required, and the Tenant may have the opportunity of treating with the Landlord for a future Term of holding upon Lease. For further Particulars apply, by letter, to Mr. W. T. Atwood, Auctioneer, Land Agent, and Valuer, Mortlake, Surrey; or, by person, at the Rainbow Hotel, King-street, Covent Garden, on Saturdays from 10 till 1 o'clock, at which place Mr. Atwood meets for the convenience of transacting business. Mr. Atwood has several other Concerns to LET in the Parish of Fulham.

TO SMALL CAPITALISTS, BUILDERS, NURSERYMEN, MARKET-GARDENERS, AND OTHERS.

ELIGIBLE OPPORTUNITY.

TO BE LET, from 30 to 40 acres of LAND (old Pasture to be broken up), on long leases, in suitable lots for any of the above purposes, about one mile from a rising sea-port and market town adjoining a turnpike-road, with extensive frontage. For further particulars, apply by letter, prepaid, to S. L., Box 100, Post-office, Gloucester. N.B. Near a railway station.

PRIORY NURSERY, LARK-HALL LANE, SOUTH LAMBETH.

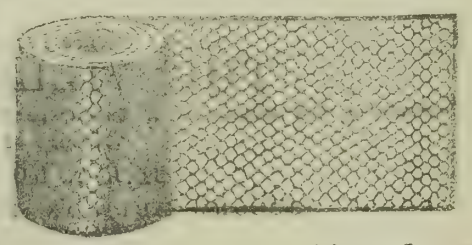
TO BE LET, for a term of 52 years, the above NURSERY, with a Cottage on the ground; the whole contains four substantial-built Greenhouses, with several Pits and Frames; also a fine assortment of Plants for the ensuing season. A small capital only required, and may be taken with or without the stock. For further particulars, enquire of Mr. Broadbridge, on the Premises.

TO BE LET, with immediate possession, a light land FARM, desirably situate within two miles of a first-class Station of the Great Northern Railway, and within an hour's ride of London; house and premises excellent.—For particulars address, by letter (post-paid), to Mr. Jackson, Estate Agent, Hertford.

TO BE LET, for a term of years, part of the well known FARM OF HALVERSTON, with suitable Farmhouse and Offices attached thereto, situated near the market town of Kilcullen, in the county of Kildare, 25 miles from Dublin, and the property of the late Peter Purcell. The Farm, which is now in the most perfect order, consists of about 250 statute acres of good Tillage and Grass Lands, and 150 acres more can be procured, if necessary. It is three miles from the Curragh and six from the Newbridge Stations, on the Great Southern and Western Railway, and the high road from Dublin passes through it. It is in a ring fence, with suitable offices for accommodating 100 head of Stock in the centre, and a well placed manure pit, and numerous farm roads, would enable the owner to continue the same system of good farming with ease which had been so long the study of the late proprietor. The labourers all live on or near the farm, and there is a police station on the premises; but as labour is plentiful, the district is peaceable, and the rates are low.—Full particulars can be had on application, either by advertisement or otherwise, to Edward Bullen, Esq, 41, Upper Sackville-street, Dublin, by whom every information will be given.

TO BE LET, Furnished or Unfurnished, a small compact COTTAGE RESIDENCE, with or without a convenient lot of small Pasture and Arable Fields, together about 25 acres, situated 7 miles from a county town, and 2 miles from a railway station.—Address, A. Z., Office of this Paper.

GALVANISED WIRE GAME NETTING.—7*d.* per yard, 2 feet wide.



	Galvanised.	Japanned Iron.
2-inch mesh, light, 24-inch wide ...	7*d.* per yd.	5*d.* per yd.
2-inch " strong " ...	9 "	6½ "
2-inch " extra strong " ...	12 "	9 "
1½-inch " light " ...	8 "	6 "
1½-inch " strong " ...	10 "	8 "
1½-inch " extra strong " ...	14 "	11 "

All the above can be made any width at proportionate prices. If the upper half is a coarse mesh, it will reduce the price one-fourth. Galvanised sparrow-proof netting for pheasantries, 3*d.* per square foot. Patterns forwarded post-free.

Manufactured by BARNARD and BISHOP, Market-place, Norwich, and delivered free of expense in London, Peterborough, Hull, or Newcastle.

MITCHELL'S MINERAL BLACK PAINT.—This antiseptic Paint is intended for Park Fencing, and for all farming purposes; it is particularly adapted, by its prevention of dry rot in timber and repellance of damp, for Barns, Stables, Outhouses, Weather Boarding, Hop-poles; also for Carts, Waggons, &c., particularly the Wheels, and for Iron Hurdles, Iron Railings, and all Wood or Iron Work in exposed situations. For Brick Walls it is highly serviceable as a preventive of damp, and also for Walls intended for Fruit Trees, as, besides preserving the Wall, it increases the heat in all situations exposed to the sun, and prevents the harbouring of insects. It is also an excellent covering for Canvas, or Cart Tilts, Roofing, &c. Sold in casks containing from 1 cwt. to any quantity, at 17*s.* 6*d.* per cwt., quite ready for use, by James Phillips and Co. (the sole agents), 116, Bishopsgate-street Without, London.

THE HIPPOPOTAMUS, presented to the Zoological Society by the Viceroy of Egypt, is exhibited daily at their Gardens in the Regent's-park, from 11 to 4 o'clock. Visitors desirous of seeing the animal in the water are recommended to go early. Admission 1*s.*; on Mondays, 6*d.*

PUNCH'S POCKET-BOOK
FOR 1851,

WILL BE PUBLISHED ON THE FIRST OF NOVEMBER.

With Illustrations by JOHN LEECH and RICHARD DOYLE.

Price 2*s.* 6*d.* in roan tuck.

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This day is published, price 3*s.* 6*d.* in cloth boards,

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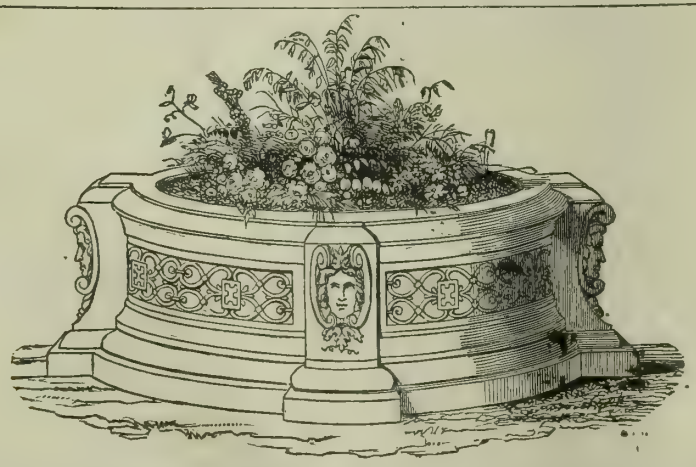
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AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 43—1850.] SATURDAY, OCTOBER 26. [PRICE 6*d.*

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Planting contracted for to any extent from 5*l.* to 20*l.* per acre.

ORNAMENTAL TREES AND SHRUBS.

Rhododendron ponticum, 2 to 6 inches, 20*s.*, 40*s.*, and 80*s.* per 1000; 1 foot, single stems, fit for working, 10*s* per 100; 1½ to 2 feet, strong, 20*s.* to 40*s.* per 100, fit for planting out at once to cover; 4 to 6 feet, single stems, for working the beautiful scarlet and other fine kinds, 50*s.* per 100. Tree Rhododendrons may thus become as generally cultivated as Tree Roses. Scarlet Rhododendrons, 18*s.* per dozen; hybrid scarlet, lilac, and white, with large handsome trusses of flowers 4 to 6 inches, 25*s.*; 1 foot, 40*s.* per 100; Kalmia latifolia, 2 to 4 inches, 8*s.* to 12*s.* 6*d.* per 100; 1 to 2 feet, blooming buds, 50*s.* per 100; 2 to 3 feet, fine, 75*s.* per 100; Epigæa repens, 50*s.* per 100; and all other American plants at equally low prices.
Dwarf Rose Stocks for working, 8*s.* per 100; Single Camellias, 25*s.*, 40*s.*, and 50*s.* per 100, fit for working; Double Camellias, of sorts, on own roots, 6 to 9 inches, 12*s.* per dozen; Pinus (Abies) Douglasi, from seed, 6 to 9 inches, 10*l.* per 100 or 30*s.* per dozen; Arbutus, 12 inches, 8*s.* per 100; 1½ foot, 20*s.* per 100; 2 feet, 30*s.* per 100; Laurel, 8*s.* to 20*s.* per 100; Laurustinus, bedded, 40*s.* per 1000, 8*s.* per 100; Variegated Holly, 1 foot, 25*s.* per 100; Clematis azurea grandiflora, 6*s.* per dozen, 42*s.* per 100; Deutzia scabra, 2 feet, 12*s.* 6*d.* per 100; Common China Rose, 12*s.* 6*d.* per 100; Tree Roses of the most select kinds, 5*l.* per 100; Dwarf Roses, 50 sorts, named, 50*s.* per 100; Double White, Double Red, and New Crimson Thorns, 40*s.* per 100, 6*s.* per dozen; Large Dutch Honeysuckles, 12*s.* 6*d.* per 100; Giant Irish Ivy, 8*s.* per 100.
The prices are for wholesale, if ordered in less quantities a higher price will be charged. All orders above 5*l.* carriage paid to London.
American purchasers will find great advantages in procuring their supplies from these grounds, from their proximity to the Docks whence the American steam-packets take their departure, thus saving the delay and expenses of Land Carriage.

WM. FOSTER, Nurseryman, Seedsman, and Florist, Stroud, Gloucestershire, has a large stock of good transplanted LARCH of various sizes to offer; prices will be given on application, with samples if required.

N.B. W. F. has a choice selection of Fruit trees for walls, orchards, &c. Also Seeds, &c.

FOR SALE, 250 PINE PLANTS, the property of a Gentleman; consisting of 100 Fruiting Plants, 20 in Fruit, 100 successions, and about 50 Crowns and Suckers. The greater part are Black Jamaicas, are in excellent condition, and perfectly clean.—For particulars apply to R. Mackay, Stoke Newington London.

WOODLANDS NURSERY, MARESFIELD, NEAR UCKFIELD SUSSEX.

THE PLANTING SEASON being near at hand, WM. WOOD and SON respectfully inform their friends that their stock of ROSES is this season more extensive than ever. In addition to the above, the Nursery abounds in every description of SEEDLING AND TRANSPLANTED FOREST TREES; also American, Evergreen, and Flowering Shrubs, Ornamental and Fruit Trees, &c., &c., well worthy the attention of gentlemen planting.

Catalogues will be sent free on application.

TRUE DOUBLE ROMAN NARCISSUS, 3s. per dozen. The most fragrant and earliest flowering of all the Narcissus. ROBERT HALL begs to advise the arrival of his Annual Importation of the above-named BULBS, in fine healthy condition. Also, fine Dutch HYACINTHS 6s. per dozen, or 3 dozen for 15s. Crocus, Jonquils, Tulips, &c., at his Foreign Warehouse, 63, South Audley-street, Grosvenor-square, facing the Chapel. Priced Catalogues may be had by post, and postage stamps taken in payment.

HYACINTHS AND OTHER ROOTS.

RENDLE'S NEW PRICED CATALOGUE OF BULBOUS ROOTS

Is just published, and can be had on application, gratis. It contains a DESCRIPTIVE *List of all the best Hyacinths, Tulips, Iris, Ranunculus, Anemones, Crocus, Liliums, Gladiolus, Ixia, &c, with some excellent* CULTURAL ADVICE *as to the best method of growing them. It will be found of great service to all growers.*

The "Collections of Seeds" sent out by us having given such universal satisfaction, we have been induced to offer the following "Collections of Roots," which we are certain will please every purchaser.

For the List of Roots contained in the Collections, see our new Book Catalogue.

COLLECTIONS OF BULBS.	£	s.	d.
No. 1 Collection, all the most approved sorts ...	3	0	0
No. 2 Collection, containing smaller quantities ...	2	0	0
No. 3 Collection, for a small Garden	1	0	0

For details of Collections, see Catalogue.

100 Hyacinths in 100 very fine sorts, Purchaser's selection	3	0	0
100 Hyacinths in 50 fine sorts, Purchaser's selection	2	10	0
50 Hyacinths in 50 superior sorts ditto ...	1	10	0
50 Hyacinths in 25 superior sorts ditto ...	1	5	0
24 Hyacinths in 12 superior varieties ditto ...	0	12	0
12 Hyacinths in 12 superior varieties ditto ...	0	6	0

Where the selection of Hyacinths is left to W. E. R. and Co., they request to be informed whether they are intended for water, pots, or the open ground; also whether single or double Hyacinths are preferred. When the choice is left to them they generally send about two-thirds double, and one-third single, which gives a greater variety. Purchasers may rely upon really good sorts being selected when the choice is left to ourselves, and we will guarantee to give them satisfaction.

For Catalogues, and further information, apply to WILLIAM E. RENDLE and Co., Seed Merchants, Plymouth.

N.B. Our Hyacinths and other roots have just arrived from Holland in excellent condition.

FIRST CLASS CRIMSON BIZARRE CARNATION.

WOOD'S "SOUTH LONDON," which was awarded a First Class Certificate at the Royal South London Show in 1849, and received the highest encomiums from the floricultural press at the time, is now ready for sending out. Being above the average size, it will be found a first-rate flower for showing in collections, as well as single blooms. Price, 10s. per pair, postage free.

Also WOOD'S "MR. HERBERT," a first class heavy-edged purple Picotee, at 5s. per pair, postage free.

Cash with orders from unknown correspondents is respectfully requested.—WOOD and INGRAM, Nurseries, Huntingdon.

NEW GERANIUMS, CINERARIAS, &c.

BENJAMIN R. CANT, St. John-street Nursery, Colchester, begs to offer strong, handsome, healthy plants of the undermentioned, feeling confident they will give entire satisfaction.

GERANIUM, Magnificent (Foquett's) ...	each	7s.	6d.
" Gipsy Bride (Foster's)		7	6
" Field Marshal (Symons')		7	6
" Prince of Orange (Hoyle's)		7	6
" Crusader (Hoyle's)		2	6
" Brilliant (Topping's)		2	6
FANCY GERANIUMS, Alboni (Henderson's) ...		2	6
" " Hero of Surrey (Gaines') ...		2	6

CINERARIAS.

Annie (Henderson)	each	1s.	0d	Lady Gertrude (Henderson)	each	2s.	0d
Adela Villiers, do. ...		3	6	Matilda, do.		1	0
Angelique, do.		2	0	Nymph, do.		2	0
Bessy, do.		2	0	Othello (Mackie's) ...		2	6
Carlotta Grisi, do. ...		2	6	Speciosa (Henderson), ...		1	0
Delight, do.		2	0	Sanspareil (Kendall) ...		2	0
Eleanor, do.		1	0	Wellington (Henderson)		2	0
Emperor, do.		2	0	Wedding Ring, do. ...		2	0
Flora M'Ivor, do. ...		2	6				

Calceolaria grandis (small)	each	2s.	6d.
Escallonia macrantha (small)		5	0
Hoya bella		2	6
Mitraria coccinea	from 1s. 6d. to	2	6

The usual discount to the Trade.

N.B. Having a very large stock of Geraniums "Field Marshal" and "Prince of Orange," B. R. C. is induced to offer them to the Trade at 2l. 10s. per dozen.

Carriage paid to London and Norwich and all intermediate stations on the Eastern Counties and Eastern Union Railways.

TO BE SOLD.—From 5000 to 6000 Seedling Walnut-trees, 15 to 30 inches in height, and about 1000 Common China Rose-trees, of this year's growth.—For price inquire, pre-paid, to Mr. William Coles, Duke's Head Inn, Romsey, Hants.

TO BE DISPOSED OF, A NURSERY and SEED BUSINESS, eligibly situated in a highly increasing neighbourhood, with an unexpired Lease of 22 years. Any person commanding a capital between 200*l.* and 300*l.* will find this an opportunity seldom to be met with.—For further particulars apply by letter to H. B., at the Office of this Paper.

MESSRS. J. AND H. BROWN inform the nobility and gentry they supply large or small quantities of fine Evergreens, Ornamental Shrubs, Superior Fruit Trees, &c., to furnish New Walks, Gardens, and Pleasure Grounds. Also Choice Plants for New Conservatories, &c. Packages forwarded to any part of the United Kingdom or the Continent.

	s.	d.
Fine Dwarf and Standard Trained Peaches, Nectarines, Apricots, Plums, Pears, and Cherries. The best and most approved sorts of these respective kinds, true to name, each, 2s 6d., or per dozen	24	0
Untrained or Maiden Ditto, 1s. 6d. each, or per dozen ..	15	0
Apples, Dwarfs and Standards of best sorts, per dozen...	15	0
Fine Gooseberries, Currants, and Raspberries, per dozen	3	0
Fine Figs, Medlars, Walnuts, and Mulberries, each ...	2	0
Strong Vines from eyes and layers, in pots, per dozen ...	15	0
Filberts, new thin shelled and red skinned, per dozen...	3	0
Strawberries, all the varieties by the dozen or 100.		

CHOICE AMERICAN PLANTS.

Andromeda floribunda, fine blooming plants, per dozen	18	0
25 Azaleas, new hardy Belgian varieties, on their own roots, with flower-buds, one of a sort, by name ...	20	0
25 American Azaleas, ditto ditto	15	0
6 Andromedas, of sorts, including floribunda ...	8	0
6 Kalmias and Ledums, one of a sort, by name ...	6	0
12 Hardy Heaths, of sorts, ditto	8	0
25 Hardy American Shrubs, one of a sort by name ...	10	6
12 Rhododendrons, including scarlet, white, and rose, hardy varieties	12	0
New Hardy Yellow Rhododendrons, each, 7s. 6d. to ...	10	6
Fine Hardy Scarlet Rhododendrons, 2 feet, per doz. ...	10	0
Fine Seedling Rhododendrons, 1 foot, hardy hybrid vars., per 100	20	0
Evergreen Oaks and Berberis, in varieties, per 100 ...	7	0
Cedar of Lebanon, 3 feet, well grown in pots, per doz....	10	0
6 Fine Hardy Magnolias, one of a sort, by name ...	10	6
50 Dwarf Roses, on their own roots, by name ...	18	0
12 Tea-scented Roses, one of a sort, by name, in pots...	3	0
Standard and half-standard Roses, per dozen, 12s. and	15	0
Moss Roses, per 100	25	0
New Crimson Moss Rose, per dozen	6	0
Bourbon Roses, and Geant des Batailles, in pots, per dozen	10	6
Scotch Roses, one of a sort, per dozen	6	0
Double White and Purple Primula Sinensis, each ...	1	6
12 Greenhouse Azaleas, one of a sort, blooming plants	25	0
12 Choice Camellias, by name, ditto ditto ...	30	0
50 Superior Greenhouse Plants, one of a sort, by name...	45	0
24 Choice Ericas, one of a sort, by name	15	0
12 Orchidaceous Plants, choice species, and good plants	30	0
12 Newest Chrysanthemums, distinct varieties ...	8	0
12 New Dwarf Liliputian Chrysanthemums, ditto ...	10	0
Fine New Yellow Picotees and Carnations of best show sorts, with names, per pair	2	0
Pinks, very best show sorts, by name, per dozen pair	12	0
Violets: Arborea, Russian, and Neapolitan, per doz.	4	0
Tree Pæony arborea, fine vars., strong plants, per doz.	12	0
Fancy and other Geraniums, best sorts, per dozen ...	9	0
Passifloras, Jasminums, and Clematis, of sorts, each	1	6
Cryptomeria japonica and 6 choice Pinus, for ...	10	0
Hyacinths, Crocus, Tulips, Lilies, and all kinds of Dutch roots for forcing, &c.		

Albion Nursery, Stoke Newington, London, Oct. 26.

BASS AND BROWN'S DESCRIPTIVE PRICED CATALOGUE of CHOICE FLOWER ROOTS, SELECT ROSES AND SHRUBS, HARDY CLIMBING AND HERBACEOUS PLANTS, PRIZE GOOSEBERRIES, &c., sent by post on application. Our DUTCH BULBS have arrived in fine condition. The following selections are offered:

	s.	d.
HYACINTHS IMPORTED, with printed instructions, for pots, ground, or glasses, 50 varieties, in very choice assortment	35	0
25 do., 15s. to 25s.; 12 do. 6s. to	15	0
RANUNCULUSES, free by post, with printed instructions for culture: 100 roots in 100 very fine varieties, from superb seedlings and others ...	70	0
50 roots, in 50 superb seedling varieties	40	0
25 ditto 25 ditto ditto	22	6
50 ditto 50 fine varieties	15	0
Finest mixed, per 100, 10s.; fine mixed, 5s, (6s. free by post).		
ANEMONES.—100 superb named double varieties ...	34	0
50 ditto, 18s.; 25 ditto	10	0
Finest mixed, per 100, 10s. 6d.; fine mixed, per 100	7	6
Fine mixed, single, per lb.	4	0
GLADIOLL.—50 splendid early and late varieties ...	50	0
25 ditto, 30s.; 12 ditto	17	6
12 splendid early varieties, 10s. 6d.; 12 fine ditto ...	6	0
Fine mixed early hybrids, per dozen	3	0
Colvillii, 3s. 6d. per dozen; Colvilli rubrum, 7s. 6d. per dozen; C. superbum, 5s per dozen; Gandavensis, 5s. per dozen; Pecittacinus, 1s. 6d. per dozen; P. sanguineus, 7s. 6d. per dozen; Insignis, 18s per dozen.		
EARLY TULIPS.—30 roots, in 30 fine varieties ...	10	0
60 roots, in 30 ditto, 18s; 90 roots, in 30 ditto ...	26	0
20 roots, in 20 fine varieties	7	0
40 ditto, in 20 ditto, 12s. 6d.; 60 ditto, in 20 ditto ...	17	0
Very fine mixed varieties, per dozen	2	0
DOUBLE TULIPS.—12 roots of 12 fine varieties ...	4	0
24 ditto, in 12 varieties, 7s. 6d.; 36 ditto, in 12 varieties	10	6
LATE TULIPS.—50 choice varieties, 50s.; 25 ditto ...	30	0
Finest mixed, 15s. per 100; fine mixed, per 100 ...	6	0
IRIS.—30 splendid English varieties	12	6
20 ditto, 9s.; 12 ditto	6	0
Very fine, without names, mixed, per 100	15	0
12 fine German varieties, 9s.; mixed, per doz. ...	5	0
CROCUS.—100 roots of each of 13 showy varieties ...	28	0
50 roots of each, 15s.; separate varieties, p. 100, 2s. to	3	0
NARCISSUS, JONQUILS, and all other roots in great variety, at low prices. (See Catalogue.)		
SELECT PLANTS.		
HARDY HERBACEOUS PLANTS.—100 showy varieties	30	0
50 ditto, 17s. 6d.; 25 ditto, 10s. 6d.; 12 ditto ...	6	0
100 superior and new varieties	50	0
50 ditto, 30s.; 25 ditto, 17s. 6d.; 12 ditto	9	0
25 varieties, best adapted for rockwork, 12s.; 12 for	7	6
ANTIRRHINUMS.—12 fine and showy varieties ...	6	0
12 superior and new varieties (Wooller's, &c.) ...	10	0
CHRYSANTHEMUMS, fine plants for flowering.—12 splendid new varieties	15	0
60 best varieties, including the above	40	0
40 ditto, 30s.; 25 fine vars., 17s. 6d.; 12 ditto ...	9	0
CAMELLIAS.—12 fine varieties, well set with buds ...	30	0
INDIAN AZALEAS.—12 very fine varieties, 18s.; 6 do.	10	0
CAPE HEATHS.—12 fine early flowering varieties ...	12	0
HARDY AZALEAS.—12 splendid distinct varieties ...	15	0
Fine mixed, 9s. per doz.; large yellow, per doz. ...	9	0
ROSES in extensive variety. (See Catalogue.)		
PÆONIES.—Herbaceous varieties, mixed, per doz. ...	6	0
" arborea papaveracea, each	2	6
RIBES.—6 fine flowering varieties	5	0
HARDY SHRUBS.—12 new and select varieties ...	15	0

Goods free to London, and, for long carriage, extra articles presented. Remittances requested from unknown correspondents. Post-office orders payable to Stephen Brown, or to Bass and Brown, Seed and Horticultural Establishment, Sudbury, Suffolk.

REWARD.—ALEXANDER RUSSELL, supposed to assume the name of James Alexander, a gentleman's Gardener, formerly in the employ of George Robins, Esq.; then in the service of E. Braude, Esq., of Turnham Green; then with Lord Lonsdale, of Barnes, Surrey; and latterly with B. Lumley, Esq., "The Chancellors," Hammersmith. The said Alexander Russell is a native of Scotland, speaks with a broad accent, is about 55 years of age, 5 feet 6 or 7 inches in height, round shoulders, sandy whiskers, and a downcast look. Any person giving information as to his place of residence, if living, or place of burial, if dead, will be handsomely rewarded. Apply personally, or by letter addressed to H. F., Mr. Luff's, Bootmaker, Kew, Surrey.

TO GENTLEMEN PLANTING FRUITS, AND TO THE TRADE IN GENERAL.

JOHN BELL, having disposed of his Nursery Business, begs to offer the remainder of his fine healthy Stock of FRUIT TREES, at the following low prices, having only a short time to clear the Ground:

	Per Doz.	Per 100.
APPLES.		
Dwarf Plants	£0 4s.	£1 10s.
Standards	0 9	3 0
Espaliers	0 15	5 0
PEARS.		
Dwarf Plants	0 6	2 0
Standards	0 12	4 0
Pyramidal, fine bushy	0 12	4 0
Espaliers	0 18	6 0
PLUMS.		
Dwarf Plants	0 6	2 0
Standards	0 12	4 0
Espaliers	0 18	6 0
CHERRIES.		
Dwarf Plants	0 6	2 0
Standards	0 12	4 0
Espaliers	0 18	6 0
Dwarf Maiden Plants	0 9	3 0
" Trained	1 0	7 0
Standard Trained...	2 2	
Figs, of sorts	0 9	3 0
Gooseberries, 100 varieties	0 2	0 12
Currants, black, white, and red ...	0 2	0 12
Fine Standard Roses	0 12	4 0
Half " "	0 9	3 0
Dwarf worked, 6 to 12 inches	0 6	2 0

Catalogues will be sent by inclosing one penny stamp J. Bell's, 3, Exchange-street, Norwich.

A remittance requested from unknown correspondents.

Strong 4-year-old Whitethorn, 2s. 6d. per 1000, in large quantities.

TILEY'S VIOLA ARBOREA, OR PERPETUAL TREE VIOLET.—Viola Arborea, or the Perpetual Tree Violet (true).—In answer to numerous inquiries for the above, and great satisfaction given by the plants sent out last season by Edward Tiley, he begs to state that he has this year a fine stock of the above beautiful DOUBLE VIOLET now to dispose of, which he can highly recommend, this being the proper time for making beds or potting. They are beautifully scented; the blooms are as large as the double blue Hepatica; they bloom freely from August till the end of May, and are perfectly hardy. Twelve of these plants grown in pots will scent a large greenhouse; and a small bed, 9 feet long by 3 feet wide, will be sufficient to furnish a family with bouquets the whole of the winter and the spring. They should be planted in rather a dry situation and a loose soil, as the Violet will thrive and bloom finer than in wet or clay borders.

E. T. has been informed by the gentleman that introduced it into this country, that he has seen them growing in the thickets of Persia to the height of 4 feet, with large bushy heads to them, and hundreds of blooms on them at the same time. Large bushy plants, 6s. per dozen; smaller ditto, 3s. per dozen; or 1l. per hundred.

Also he has a fine stock of that splendid YELLOW VIOLET, or VIOLA LUTEA, which has been so much admired at the London exhibitions. In colour it is equal to the Crocus. Strong bushy plants 2s. 6d. each; or smaller ditto, 1s. 6d. each.

KITLEY'S GOLIAH STRAWBERRY.—Strong well-rooted plants at 3s. per dozen.

True BATH COS LETTUCE SEED, 1s. per packet.

Extra fine SWEET WILLIAM SEED, saved from 24 distinct varieties, 1s. per packet.

ANTIRRHINUM SEED from all the best varieties, 1s. per packet.

WINTER CUCUMBER.—Lord Kenyon's Favourite, 2s. 6d. per packet.

The whole or any quantity of the above will be sent, postage and package free, to any part, on receipt of a Post-office order, or the amount in penny postage stamps.

Sold by Edward Tiley, Nurseryman, Seedsman, and Florist, 14, Abbey Church-yard, Bath.

TO NOBLEMEN, GENTLEMEN, AND PLANTERS IN GENERAL.

WILLIAM YOUNG, Nurseryman and Contracting Planter, begs to inform persons engaged in Planting, that his extensive Stock of FOREST TREES, EVERGREENS, and HARDY ORNAMENTAL TREES and SHRUBS, is this season finer than it has been for many years past. The Forest Trees consist of strong bedded Alder, Ash, Beech, Birch, Spanish Chestnut, Hazel, Red-heart Willow, Scotch and Larch Firs, &c., all 2 to 3 and 3 to 4 feet high. A large quantity of English Oak, from 3 to 8 feet high, very fine.

The Evergreens comprise large Spruce, Silver, Weymouth, Scotch and Larch Firs, from 6 to 12 feet, well grown, and will remove with safety; common and Portugal Laurels, Green Hollies, American, Chinese, and Siberian Arbor-Vitæ; Pinus maritima, austriaca, and other Evergreens in great abundance. About 500 Quercus sessiliflora or Fir Oak, about 6 feet in the stem, with fine heads; will remove with safety; they are well adapted for avenues or park scenery.

Gentlemen planting new places or improving their estates will do well to apply to Mr. Y., as he has had considerable experience in planting in all its branches, and from the quantity of large Evergreens he grows is enabled to contract to any extent at a very reasonable rate.

Mr. Y. has also a very fine collection of Coniferous plants, from 2 to 4 feet, and large specimens, consisting of Cedars Deodara and Lebanon; Araucaria imbricata, Cryptomeria japonica, Taxodium sempervirens, Pinus insignis, Abies Douglasii, &c., of which he would invite a personal inspection.

His priced Catalogue is now ready, and can be had, on application, for two postage stamps.

An immense quantity of strong bedded Whitethorn or Quick for Fencing and Mahonia aquifolium, or American Berberry, for cover, which will be sold cheap if taken in quantity.

Milford Nurseries, near Godalming, two miles from the Godalming Station of the South-Western Railway, where conveyances can always be obtained.

TO SMALL CAPITALISTS, BUILDERS, NURSERYMEN, MARKET-GARDENERS, AND OTHERS.

ELIGIBLE OPPORTUNITY.

TO BE LET, from 30 to 40 acres of LAND (old Pasture to be broken up), on long leases, in suitable lots for any of the above purposes, about one mile from a rising seaport and market town adjoining a turnpike-road, with extensive frontage. For further particulars, apply by letter, prepaid, to S. L., Box 100, Post-office, Gloucester. N.B. Near a railway station.

NEW SEEDLING STRAWBERRY—MYATT'S "SURPRISE."—This is a variety raised from the British Queen, which it resembles, though of a more robust habit, and a very free bearer, producing a greater abundance of those large angular-shaped Strawberries than any other variety, and finishing off the last fruit of a good size, price 50*s.* per 100.

Also Myatt's Eleanor, 5*s.* British Queen, Globe, Mammoth, Comte de Paris, Hooper's Seedling, Keens' Seedling, Swanston's Seedling, Elton Pine, 3*s.* 6*d.* Fertilised Hautbois, 5*s.* Cuthill's Black Prince, 10*s.* 6*d.* per 100. Kitley's Goliah, 3*s.* 6*d.* per doz., or 20*s.* per 100.—Manor Farm, Deptford.

LARGE SURPLUS STOCK OF FOREST TREES, SHRUBS, &c., NOW ON SALE AT RENDLE'S NURSERY, PLYMOUTH. ESTABLISHED 1786.

WILLIAM E. RENDLE AND CO., PLYMOUTH, *have a large SURPLUS STOCK of the following TREES and SHRUBS; and as the ground is required for other purposes, they will be sold at the following low prices:*

*** CARRIAGE FREE (See below.)

THORNS OR QUICK.—10,000 fine transplanted Thorns, from 12 to 15 inches high, for 3*l.* 10,000 one-year old Seedlings, at 1*s.* 6*d.* per 1000.

LARCH FIRS.—We have a very large stock of fine stuff, about 3 feet in height; the price will only be 18*s.* per 1000 if 5000 are taken.

TURKEY OAKS.—Fine, handsome, well-selected trees, well transplanted, 80*s.* per 1000, worth at least 20*s.* per 100.

BERBERIS AQUIFOLIUM.—A large quantity of fine stuff, 18 inches, 16*s.* per 100. This is a fine Shrub for underwood.

SCOTCH FIR.—Large stock of fine stuff, 24 to 30 inches in height, 18*s.* per 1000, if 5000 are taken.

PINUS AUSTRIACA.—We have an extensive stock of this valuable tree, of the finest possible growth, 12 to 18 inches, fine and stout, 35*s.* per 1000.

RHUBARB: MITCHELL'S ROYAL ALBERT, *the earliest of all.*—We have more than a thousand strong roots, 15*s.* per dozen. *These will produce abundantly next Spring,* if planted now.

RHUBARB: MYATT'S VICTORIA, very strong roots, 15*s.* per dozen; smaller ditto, 9*s.* per dozen. YOUELL'S TOBOLSK, 3*s.* per dozen.

RASPBERRIES: RENDLE'S LARGE BEEHIVE.—This is a large handsome variety, very prolific, delicious flavour, and has given the most complete satisfaction to all. Strong Canes, 20*s.* per 100; 3*s.* per dozen.

YOUELL'S FASTOLFF, 10*s.* per 100.

STRAWBERRIES: KITLEY'S GOLIAH, 3*s.* 6*d.* per dozen; 20*s.* per 100. CUTHILL'S BLACK PRINCE, 2*s.* per dozen; 10*s.* per 100. *All the following excellent sorts at* 3*s.* 6*d.* per 100: Myatt's Eliza, Mammoth, British Queen, Globe, Prolific, Victoria, Cooper's Seedling, Elton, Keens' Seedling, Cole's Prolific, Deptford Pine, and Roseberry.

SEAKALE AND ASPARAGUS in large quantities, very reasonable.

BEST DOUBLE RUSSIAN MATS, 5*l.* per 100.

BLACK NAPLES CURRANTS, very superior to the old sort, 6*s.* per doz.

GOOSEBERRIES.—Some of the best known, 30*s.* per 100.

ARBUTUS.—Fine plants in pots, 12 to 18 inches, 5*s.* per dozen.

ILEX OAK.—Fine plants, *in pots,* 18 to 24 inches, 5*s.* per dozen, worth 10*s.* per dozen.

CEDRUS DEODARA.—Fine stock of nice young seedling plants, two years old, in pots, 6*s.* per dozen.

Our Autumnal Catalogue of Forest Trees, Shrubs, and Fruit Trees can be obtained for one penny stamp.

All orders above 5*l.* will be delivered CARRIAGE FREE to any Station on the Great Western, Bristol and Exeter, or South Devon Railways; or to Cork, Dublin, or Belfast. Steamers from this port to Cork, Dublin, and Belfast twice a week.

The South Devon Railway is now open to Plymouth; the station being within one minute's walk from our Counting-house.

FIRST ORDERS WILL HAVE THE PREFERENCE. ALL ORDERS WILL BE EXECUTED IN STRICT ROTATION.

WILLIAM E. RENDLE and Co., Nurserymen, Plymouth. Established 1786.

The Gardeners' Chronicle.

SATURDAY, OCTOBER 26, 1850.

STRANGE as are many of the effects produced in plants by parasitic fungi, none perhaps is more so than the enormous development of the different parts of Indian Corn when attacked by the MAIZE SMUT. It is not quite certain that the peculiar disease described by SCHWEINITZ is identical with the European malady, but from specimens received from South Carolina we believe it to be so, and if this be the case the excrescences are sometimes as much as 2 feet long. Be this however as it may, the protuberances in the common Maize smut are sufficiently surprising. Every part of the plant is liable to be attacked. The stem, upper leaves, and especially the bracts, become immensely swollen under the attacks of this malady, and the ovaries, ovules, and male blossoms are not exempt. BONAFOUS records a case in which even the filiform pistils were swollen to the thickness of a Wheat stalk.

The parts affected are at first white or tinged with red, smooth, and juicy; the cellular tissue becomes greatly increased in volume, and is soon traversed by dark irregular radiating lines, consisting of mycelium and spores in different stages of development. The structure is in this state easily made out, the parasite being composed of short, irregular, and, sometimes knotted, colourless threads, springing up in the intercellular passages, or within the cells themselves, and gradually giving rise to globose or slightly elliptic spores, which are minutely echinulate, and exhibit frequently a regular globose nucleus, but sometimes appear nearly uniform under the highest magnifying power. These spores are about twice as large, in linear measure, as those of the common Oat-smut. The smut-balls, at a certain stage of growth, pour out, when torn or ruptured, a large quantity of black fluid, which has a peculiar disagreeable somewhat pungent smell, and contains spores, decomposed cells, and fragments of mycelium. At length, when the abundant moisture is absorbed, or discharged by some lateral aperture, the spores, remaining within the dry skinny envelope, present a dusty mass mixed with irregular threads, which consist of the withered vascular and cellular tissues of the parts which were originally interposed between the portions immediately infested with the fungus. If the smutty mass remains long in a moist state, it is itself subject to be infested with species of Mucor and other moulds.

In some parts of France and Italy whole fields are destroyed by this gigantic pest, and nothing can exceed the disgusting dust where a crop is highly infected. We have seen no British specimen before the one of which we have given a representation, which was sent to us from Little Canford, and was the only one in a fine crop of about half an acre. In this case the disease is confined principally to the lower bracts, causing them to swell from the size of a nut to that of an Apple. On one of the bracts two tubercles project from the under surface, as large as, and shaped like a Filbert, though the rest of the tissue is quite sound. Some of the ovaries, also, are affected, though the greater part of the spike shows no symptoms of the disease; in one case either an ovary or axillary bud has swollen to such a degree as to burst its corresponding bract.

The anthers of Maize have not at present been observed to be attacked by this disease, but M. AYMEN speaks of apparently another malady to which they are subject, and which causes them to swell immensely, and to give out at last a brown or black dust. Under these circumstances the female spikes are never attacked, and perfect their seeds from impregnation with the sound pollen of other plants.

We have not figured the general appearance of a plant affected with *Ustilago Maydis*, in consequence of the large space which it occupies; but the accompanying cut represents highly magnified views of the nascent mycelium and the more or less perfect spores. *M. J. B.*



THE approach of winter brings, as usual, many inquiries as to the manner of LAYING OUT GARDENS. One correspondent wants to know what to do with half an acre; another is perplexed with his dozen. Should a tree be placed here? Shall an opening be made there? Would a rockery look well in that corner? Where can I stow away my Roses? How shall I carry a walk round a square piece of ground? A thousand such questions arise, but they are put in vain to those who are not on the spot to advise; for it may be taken as a general truth, that mere details of arrangement can never be settled except upon personal inspection, and a full knowledge of all the circumstances that may aid or injure a given operation, either in winter or summer. Plans on paper are useful as guides, but beyond an indication of the general nature of a design, they are worthless. A strict adherence to a plan on paper has wholly ruined the effect of many a place which the genius of the landscape-gardener, applied upon the ground, would have rendered charming. Hence it is of the first importance that everybody should make himself acquainted with those general principles, or truths, which long experience has shown that we must observe, if pleasing or picturesque gardening is the object.

It is, therefore, with much satisfaction that we can point to a well-timed and excellent little work by Mr. KEMP,* in which is collected with care, and arranged with clearness, almost every thing that it is necessary to understand in deciding upon the arrangement of garden ground. How much it is wanted is evident when we look at the hideous deformities that surround us—from the Cockney ruins of Mr. A., and the crinkum crankums of Mrs. B., to the wretched fountains (?) in Trafalgar-square, and the disgraceful ugliness of Victoria Park. Mr. KEMP may, we believe, be taken as an expounder of the views entertained by Mr. PAXTON on this subject; for he was long employed at Chatsworth, and had the management under him of those great operations in Toxteth Park and at Birkenhead, which are among the very few public parks that an Englishman can point to without shame for his country.

One advantage which we are glad to perceive that Mr. KEMP's book affords the reader, is the precision with which he directs *how* work is to be done, and *how* effects are or are not to be produced. It is easy enough for gentlemen with a wave of the hand, and a *sic volo sic jubeo* gesture, to command this to be put in one place, and that to be carried out in another; but they would find their ideas materially expanded, and their expectations greatly rationalised, if they would take the trouble to make themselves, in the first instance, acquainted with possibilities, and with the means that are available for bringing about results. In this respect Mr. KEMP will be found a safe and useful guide. For example, the following remarks upon grouping plants, a principle admirable in itself, but carried to a ridiculous extent by a late landscape gardener, puts this part of the subject in the only point of view in which it deserves to be considered.

"To produce strong and striking effects in a garden, there must be not merely a tolerably varied collection of plants, well mixed up together, and disposed so as to give variety and contrast, but *groups of particular kinds* should be planted in prominent places, that occasional broader masses of a peculiar form or colour may be obtained. From three to six or even eight specimens of some showy kinds may thus be planted in an irregular group, at any jutting point in a bed, or on some swell of a mound, and will create a very striking impression by their foliage or flowers. They should be placed near enough to each other to grow into a thicket, without injury to any of the plants, that only one dense mass of heads, and none of the individual stems may be seen, and that the effect may be more like what one immense specimen would yield.

"This system of arrangement, combining the advantages of massing plants of one sort, without any of its evils, is well worthy of being more freely pursued than it is at present. A group of pink or crimson Rhododendrons of one kind, that will bloom all at once; of *Berberis aquifolium*, for both flowers and fruit; of the red-flowering Currant, which is all the gayer for appearing so early; of Laburnums, the English and Scotch varieties being mixed; of common Lilacs; of the *Cydonia japonica*, with only about three plants; of yellow or mixed Azaleas; of any bright or dark-flowering sort of Rose; of *Daphne laureolus*, for its form and scent; or even of common Dogwoods, which are particularly attractive in autumn, when the leaves begin to change colour, and are well fitted for clothing small islands; of Tamarisk, overhanging the steep face of a mound; of Broom, in the more open part of an outside plantation; of Savin, Heath, or *Cotoneaster microphylla*, or *Gaultheria shallon*, where a tuft of dwarf plants is wanted; and, not to multiply examples further, of any variegated, or pale green, or silvery-leaved variety that does not grow too large;—will add a novel and most inviting feature to a garden, and make it very conspicuous at particular seasons.

"For the still lower tribe of plants, and even for annuals, the plan is fully as suitable. Every one is now aware what splendid displays are created by the various kinds of half-hardy plants with which gardens may be decorated in masses during summer. Some things, in fact, which would, when solitary, be almost contemptible, acquire a marked showiness if collected into a group. And many annuals, that are straggling and poor as individual objects, become, in broad patches (which is the best way of growing them), highly ornamental and handsome."

So again, in directing how artificial embankments can be best executed, we have some highly judicious advice, of which the public hardly suspects the importance.

"In shaping," says Mr. KEMP, "the outlines of any raised masses of earth, a correct and practised eye will be the safest guide. Nevertheless, it may be remarked that all the more prominent and higher points should also be the fullest, and the roundest, and the steepest, while the retiring parts can be scooped out and sloped back into a kind of hollow basin. This is the shape almost universally found on the face of natural hills, where fulness and precipitancy are the common attendants of the more

* "How to Lay Out a Small Garden;" intended as a Guide to Amateurs in Choosing, Forming, or Improving a Place (from a Quarter of an Acre to 30 Acres in extent), with reference to both design and execution. By EDWARD KEMP, Landscape Gardener, Birkenhead-park. London: BRADBURY and EVANS, 11, Bouverie-street.

forward projections, but are seldom or never seen in the recesses. The reverse of all this, in gardening, is among the worst features that can be introduced. Concavity should be rigidly adhered to in all the receding portions of mounds.

"Undulation of surface is as important in most mounds as freedom of outline, only this should be proportioned to the scale on which they are formed. Such mounds as can be at all fitly introduced into small gardens, will, from their limited extent, admit of only very trifling undulations, or they will thereby become all the more artificial instead of natural, and be simply absurd. For a varied and irregular ground outline, however, consistency demands some little variation and play in the surface line; and a bank that is slightly undulated will look much less formal and unnatural.

"In conformity with the shaping of the ground line or face of a bank, its retiring or narrowest parts should be the lowest, while the fullest parts are also the highest. And if, as is most proper and beautiful, a straight line drawn through the face of the bank, parallel with the back, or taking its general direction, would leave no two of the different swells or bays at *exactly* the same distance from it; so a similar horizontal line should show the like irregularity. Even 2 or 3 inches of difference in all the various hollows or elevations of surface will have a powerful effect in carrying off every kind of dulness, and imparting a graceful freedom. Should a bank be tolerably broad, there may be partial undulations across as well as along its surface in the wider parts. Then, the front swells should be made roundish, and fall away to hollows connected with the depressions in the narrower parts, rising again to a more flattened elevation towards the back. Or, for variety, the back part may be kept highest, and slope away into the same hollow as before, treating the projecting front as a flattened arm of the general mass.

"What I have thus described, in terms which might lead to the supposition that considerable variations of surface were contemplated, refers simply to such as can be compassed on a comparatively small bank, and on a scale of inches in change of height rather than feet. Nothing need be less beautiful because it is small; and the rules of taste embrace the least as well as the greatest things. Nor will there be a seeming pretension about the adaptation of such rules as this, in reference to the smallest mounds."

Let us hope that the appearance of this little work will be the commencement of an entire reformation in the decoration of middle class gardens and pleasure-grounds; and that there also we may find the taste and judgment which have rendered some English Palatial gardens the admiration of everybody; for nothing can be more true than the author's assertion, that *the rules of taste embrace the least as well as the greatest things*.

Those who wish for plans and more detailed instructions upon such a subject, will find them in abundance in Loudon's *Suburban Gardener*, of which we perceive that a new and greatly improved edition has been just published, under the name of the *Villa Gardener*, with between 300 and 400 plans and designs for gardens of all sorts and sizes.

As enquiries for the Stanwick Nectarine are now becoming numerous, it is desirable to state that in the course of the winter a considerable number of young trees, propagated by Mr. Rivers, will be sold by auction, of which due notice will be given in ample time. *None will be sold by private contract.*

HOW TO MISMANAGE A GARDEN.

Chapter XII.—Groundwork will now tax your ingenuity. People may think that the mere act of moving ground is one which is beyond the skill of anybody to manage badly. Be assured that this is a great mistake. Amateurs are particularly clever at making a mess of groundwork, and some young and green gardeners are not far behind them. Certainly, if gardening is an amusement, the ways of such gentlemen are sufficiently ludicrous.

In the first place, buy the lowest priced tools you can find; cheap ironmongers may be found in most places. Tools are expensive articles, and it should be an object to diminish expenses, especially such as are out of sight. As tools are to be used, not looked at, you will exercise your taste in picking the nicest looking articles you can find. Uncommonly pretty things, light and handy looking, are turned out, for the use of amateur emigrants and gentlemen gardeners. A knife fashioned out of iron hoop looks quite as well as one of steel. A mattock of cast-iron will hardly be known from one of the best temper until you come to use it. Wheelbarrows of clean white wood, when painted, are even lighter and prettier than those of Ash, and Oak, and Elm, ever so cleverly combined; you may buy the first for half a sovereign, you may have to pay a guinea for the last. The practical advantage of cheap tools is far too evident to require much illustration. Some soon wear out; and then you can buy more; others bend, and that makes a job for the blacksmith; most of them lose their handles after a few weeks' wear, and the wheelwright may get something by rehandling them; a good many break, and there's an end of them. In this manner a clever mismanager will contrive to want a fresh outfit of tools at least every season.

Russia mats should always be looked after where they can be had for less than cost price. Plenty are in the market at half the expense which people charge who are called honest only because they deal fairly, taking a just tradesman's profit, and giving their customers what is worth the money. A bad manager has nothing to do with such folks; in Russia mats, especially, he may make a capital bargain, if he looks sharp. It is not very long since a sagacious gentleman who builds barges obtained from a friend a hundred of these mats for 4*l.*, when the market price was 5*l.*; they were put into use in October, and in December they were wheeled to the rubbish heap. By the time the four pounds worth of mats was rotted down, the gardener had a cheap lot of manure very nearly as valuable as saw-dust.

Having provided yourself with cheap implements, then look out for cheap labour. Cut your men down to the lowest farthing they will work for; perhaps you may in that way make up for any loss sustained among the tools. Don't inquire whether a man is accustomed to ground work; everybody can dig, and trench, and use a mattock, or wheel a load of earth. Should some conceited acquaintance doubt the fact, settle it by a bet; match a tailor or a shopman with a rough labourer, and you will soon see who's the best. You may offer five to one upon the tailor; he can talk twice as well as a navvy; for his tongue is as smooth as his hands.

When you have mustered your men, if they are stout labourers, teach them how to do their work; if they are of the street class, leave them to themselves. A labourer will do his work as he has been accustomed to do it, and as is most convenient to himself; the others are ten times as clever, and will hit upon new ways of their own; in fact, they will perform the work as well almost as you could do it yourself. Of course the inspirations of genius are, in manual labour, worth all the practice and experience in the world. A clever printer will make stockings much better than a Nottingham weaver. If you will but interfere with men who are accustomed to garden labour, and leave to themselves those who are strangers to it, you will, in a few days, or even hours, find your operations as satisfactory as the most zealous bad manager could desire. Suppose, for instance, you have a square of ground to trench, an old experienced labourer will divide it into two parts, and wheel his first trench from the first half upon the corresponding end of the second half; in that way he saves wheeling, and expects to have earth enough with which to fill his last trench, when he reaches it at the end of the job. Can anything be more like good management, or common sense? But your object is bad management; and as for common sense, why, that is not required by a man of talent; therefore you should wheel your first trench to the other end of the ground, and work across the piece, instead of halving it, as the old labourer does. Should the land be soft, and you have cheap barrows, and the weather is wet, you will find this method a most surprising advantage. If to this you will add the scamping system, the nature of which, in trenching, any sharp country fellow can explain on the ground, better than any writer on paper, you may consider yourself perfect in this part of the art of bad management. Κήπουρος.

BRITISH SONG BIRDS.

No. II.—Presuming, as we have said, that all persons keeping birds are naturally and devotedly fond of them, and that they will ever make it their study to render them happy in a state of confinement, our early consideration will be how to build them a fitting Palace, and endow it with some of the sweets of freedom—a task not so difficult as might, by some, be imagined.

There are certain birds, to whom cages, when properly constructed, are more acceptable than the range of a large room; their natural habits being reserved, and solitude their delight. These I shall speak of at a more fitting season. However, the generality of birds prefer a commonwealth, and live in perfect amity when congregated—each individual being allowed, for the most part, to have his own way; though, by the bye, not always "his own way of having it;" a distinction, reader, pr'ythee mark, with some considerable difference attached to it.

There can be no possible objection, under certain circumstances, for granivorous and insectivorous (hard-billed and soft-billed) birds being associated together in the same aviary; but as this, for certain reasons presently to be given, can only be during the summer months, or from May to August, it will be necessary so to construct an aviary as to make it available for two distinct habitations—a summer residence, and a home for the winter. The one will then be assigned, during the inclement season, to the hardy or seed birds; whilst the other will be appropriated solely to the more tender, or soft-billed birds. These last, without having their dwelling kept at a temperature of equable warmth, would infallibly perish. This is worthy of particular attention, for many a valuable bird has been lost in a single night by a sudden change in the temperature.

A due regard must be paid to the proper regulation of the fire. Excessive heat is perhaps as fatal in its consequences as extreme cold; the lungs of these delicate creatures being sensitive to an extraordinary degree. Having little muscular strength in the winter, they are unable to fight against disease; and an attack of sudden sickness is beyond their power of mastery. When once a bird is "struck" in this way, nothing but a miracle can save him. If indeed he were to survive, he would never recover; and if he were valued only for his song, not another note would he be heard to utter! Soft-billed birds, the "warblers" especially, are difficult to rear through the winter. It requires many years' practice, and patience almost unheard of, to enable one to treat them successfully; and I much doubt whether, after all, they are, everything considered, worth the anxiety and trouble bestowed on them by amateurs. Regular "dealers" in these birds will have nothing to do with them in the winter. They are wise. Thus much however may be said—if you succeed in saving only two or three really fine birds, the recompense is great.

When I first stored my aviary, I placed in it an extraordinary number of small birds, including nearly every species, hard-billed as well as soft-billed. Being ignorant at the outset of the peculiar constitution of each, and their power to resist cold, I tried a rather hazardous experiment by allowing the more tender to hybernate, or try to do so, with the more robust; carefully noting how long they would exist in a state of health, without the aid of artificial warmth. It is only by these practical experiments that one can arrive at a perfect knowledge of facts. This experiment was a costly one, but it afforded me an excellent insight into what I much desired to know. I observed, not only that the tender birds drooped as the weather became gradually colder, but that their tempers and dispositions were visibly affected thereby, undergoing a remarkable change. They were sulky, fractious, quarrelsome, and tyrannical, by turns; and many of them, even in the agonies of death, left traces of their malevolence behind them. Nor did any of the survivors, after I removed them into warmer quarters, ever recover their original sprightliness and vivacity. Their plumage, too, was neglected; their voices were "wiry" and inharmonious; and their *pérsonnel* "shabby." They lost all the trimness belonging to their natural state, and seemed, to speak expressively, ashamed of themselves. When the spring came round, I felt it no more than due to my poor invalids (on whom, by the way, I had lavished my fondest care and attention during their stay in the "sick ward") to make them all the reparation in my power. I gave them their liberty. A flight across the waters of the Mediterranean in the ensuing autumn, and a six months' sojourn on the shores of Africa, would, I have little doubt, reinstate them fully in health; and it is more than probable, that the very same birds revisited my garden, and other their usual haunts before they originally took their leave, during the following spring.

Having thus accurately ascertained what might properly be termed "hardy," and what "tender" birds, I at once and for ever settled in my own mind the proper course of action in these matters. At the latter end of August, there must be a complete change of inmates; and the second or inner aviary must be got ready for the special accommodation of the "warblers." The room being warmed by a stove, can of course be kept at one regulated heat; and, with proper care and attention, very little loss of life may be anticipated through the winter. This, however, will mainly depend upon a strict attention being paid to proper diet, as I shall hereafter more particularly mention; for on migratory birds it is impossible to bestow too much care.*

The trouble these delicate little creatures occasion is immense. It is therefore but little more expensive, and no more difficult, to keep a large than it would be to keep a small number of them. Moreover, by so doing, you have a good chance of rearing some first-rate birds. If well tended, they will sing both through the winter and the spring; and if you choose so far to humour their fancy as to light up their *salon* at night, as I did, and use yourself to sit with them, they will amply repay you with a joyous, a "right merrie" song. Candle-light warblers are my especial fancy. I have had numbers of them; and such birds! Some amateurs would have walked a distance of 10 miles to have listened to them. But their race, alas! is run; the memory of them alone remains!

These little fellows throw all the powers of their soul into their "evening performances;" rarely venturing beyond a certain key-note, which may be justly characterised as harmonious. It is worthy of remark, that their vocal efforts never clash; on the contrary, every

* On the various phænomena attending the "agitation" of these birds, when in confinement, and which takes place twice a year—a most remarkable freak of Nature; I shall treat in its proper place.

chorister's voice blends with that of his brother musician, and produces the happiest effect—the accompaniments being at all times deliciously sweet. *William Kidd, New-road, Hammersmith.*

THE CULTURE OF THE VINE A HELPMATE TO THE CULTURE OF THE MIND; OR, TWO BIRDS KILLED WITH ONE STONE.*

[FOR COTTAGERS.]

CULTURE OF THE MIND.

No. I.—The preface, my friends, shall be short, and my introduction shorter; for my wishes will be fulfilled should I succeed in showing that the Vine is useful as well as ornamental, and the care bestowed on its culture equally beneficial to body and mind. Furthermore, I hope that after you have digested for yourselves my remarks, you will be able to discover the plan, object, and use of them.

The margin adds grace to the stream. The less said the soonest mended. A wink to the wise is better than a nudge to the foolish.

First, then, let us consider where the Vine naturally grows in its greatest perfection, and what conduces to that perfection of growth; and I think the question will be sufficiently answered for our purpose by broadly stating that the Vine flourishes best in a hot climate, and originally came from the East; also that it loves a mountainous district.

Art is a distillation of Nature, by which its spirit is concentrated above proof.

This will lead us at once to suppose that the sun plays the greatest part in the business. Well! as we cannot move England nearer the sun, we must try and make the most of its rays. How, then, do these act so beneficially on the Vine? In two different ways; first, on the part above the ground; secondly, on those through the medium of the earth below.

Abuse is the child of plenty, prudence of poverty.

How to increase the effect of the sun's rays on the branches.

Thus God's goodness fills the world with knowledge, which the reflecting mind of man gathers and applies.

Now, as regards the heat of the sun on the branches, we find that whatever intercepts or stops it, receives or reflects the heat which would have been scattered over a wider space; moreover, we know that the Vine is a trailing plant, and requires support, therefore if trained against a wall, it obtains more heat and the necessary support.

A brick wall is considered the best on account of its porous, dry, and absorbent nature; a black colour will also yet more increase the heat; as it absorbs all the rays and reflects none. Since however cottages are not usually built for Vines, but Vines used to cover and ornament cottages; since also probably your cottage is already built; neither would you like to put your house into mourning; therefore we must needs bend to circumstances; however I only tell you what I think to be perfection, in order that you may get as near it as may be.

Kings most people would be; if they by wishing could be. Happy is the man whose circumstances are adapted to his wants, but thrice happy is he who adapts his wants to his circumstances.

ASPECT.—To resume (as authors say when they have been writing beside the mark), everybody understands that the position of the wall with respect to the compass; or in other words, its aspect, is important. From the foregoing observations, perhaps you will be inclined to think that the south must be the best aspect, but is nothing to be considered besides heat? I believe that wind and rain will be found to be very hurtful to Vines; therefore the most heat, together with the least exposure, is the best rule. The east is certainly the driest, and Vines in this situation get soonest rid of the night dews; and it is a good aspect. But generally speaking, the south-east most beneficially and to the greatest degree combines heat and dryness; and therefore this aspect may be considered the best for Vines. The further we go to the south and west, the more protection is needed from wind and rain; although a western wall if thoroughly well protected, will get the autumnal sun in its greatest power. East by north, round by the south to the western point, will include all the points of the compass, in which Grapes will ripen in this climate. *C. A.*

As man is made to look upwards, so ought his aim to be higher and higher still.

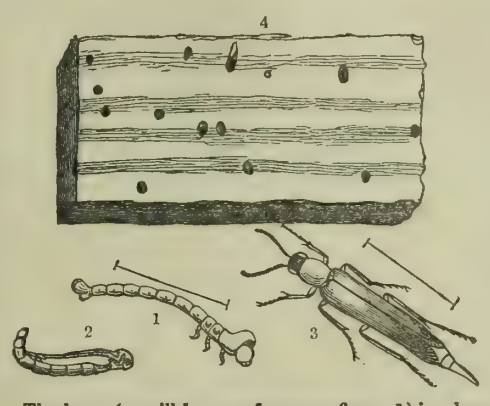
In making your pudding don't forget the plums, in boiling the water.

ENTOMOLOGY.

LYMEXYLON NAVALE.

In our volume for last year (p. 388) we described and figured two small animals, which commit serious depredations on the submarine wooden structures of Fir, Beech, and Oak in our dockyards, &c., one of which had previously been scarcely known as an English species. In a previous Number we also described another insect, Sirex gigas, which is occasionally equally injurious to Fir timber inland. In the former article mention was incidentally made of the Lymexylon navale, which had proved very injurious to Oak timber in the royal dockyards of Sweden. Of this last mentioned insect, although long reputed to be a native of this country, the only known British specimen was taken by Mr. H. Griesbach, in Windsor forest, in July, 1829. The capture of this specimen, which was a female, is recorded by Mr. J. F. Stephens in his "Illustrations" (Mandibulata, vol. v., p. 62), the insect being stated to have been taken out of an Oak. Mr. G. R. Waterhouse, however, who was present on the occasion, informs us that it was upon the bark, running with much activity, that the insect was caught, which does not militate against the possibility of the insect having flown from timber brought up the river Thames to Windsor. The last named gentleman has, however, further informed us that, on another occasion, whilst digging into the body of an old Oak tree in the same forest, he met with a larva which, from his description, we have no hesitation in regarding as that of Lymexylon navale, thus establishing its indigenous nature.

About the middle of the month of June last we received from a correspondent, "T. S. P.," at Pembroke dock-yard, some larvæ which we immediately recognised as those of this species, which at that time were "destroying (to use the words of our corresqondent) the Italian Oak thick stuff, (the technical name for planks about 4 inches thick in store at that port.) They were not seen when the wood arrived and was tested, but their ravages are becoming serious." They were found busy in wood delivered in 1846, which led our correspondent to suppose with justice that they had been bred here.



The larva (as will be seen from our figure 1) is a long, very thin, cylindrical, white, fleshy grub, like a worm with a corneous head, the first segment of the body produced into a sort of hood over the head, three pairs of short jointed legs, and the terminal segment of the body swollen. They measure, when full grown, about three quarters of an inch in length, and are then transformed into a pupa (fig. 2), with a long body, and the wing cases and legs lying at rest upon the breast, our figure representing the animal lying on its back. The perfect insects are developed about the middle of July, our correspondent having informed us that at that period they were appearing by thousands in the Pembroke dockyard. They have been long known for their destructive habits on ship timber, and hence the specific name given to them of navale, by Linnæus, who was employed by the King of Sweden to investigate their habits on the occasion of their appearing in great numbers and committing much damage in the royal dockyards of Sweden.

They belong to the order Coleoptera, but the family into which they enter is doubtful. In the introduction to the modern classification of insects they are formed with the genus Hylecætus into a separate family Lymexylonidæ. They vary in length from one-sixth to rather more than half an inch in length; the male is black, with the inner base of the elytra, legs, and abdomen dirty orange coloured; the female is larger and brighter coloured, with the thorax reddish, the head, margin, and apex of the elytra and wings dusky black, the antennæ brownish black, and the legs pale fulvous.

As the period when the insect arrives at the perfect state is well known, we are able to apply effective measures for the protection of timber from its attacks, or the destruction of the insects when they have already attacked the wood. Linnæus suggested that the timber should be submerged at the time of the appearance of the perfect insects, which would of course drown those just disclosed from the pupa, and which would be weak and easily killed, in case the timber contained any such—whilst it would also prevent the insect, if developed elsewhere, from depositing its eggs in the submerged timber.

Our correspondent at Pembroke informs us that the wood infested with the insects has been put into the steam-kilns there, which has been attended with the best effects. These steam-kilns are long boxes made steam tight, into which the wood is placed, and then shut in with double doors, and wedged tight. The steam is generated in boilers, and conveyed into the trunks by pipes, the wood remaining in about 8 or 10 hours, to be thoroughly soaked, and not less than eight, after the steam is well up and the trunk ready. Italian and English Oaks, 10 inches thick, require the above time; Mahogany and Teak not so long. About 10 hours was found sufficient for the destruction of the larvæ of the Lymexylon. The wood is steamed for the purpose of making it bend round the bows and stems of the ships building, as it becomes pliable by the process when put on directly after it comes out. If left without being then used, it requires to be steamed again. This plan for the destruction of the insect is evidently preferable to that suggested by Linnæus, although it of course does not prevent the Lymexylon, if developed elsewhere, from depositing its eggs in the timber after it has become cold. *J. O. W.*

VILLA AND SUBURBAN GARDENING.

THE importance of keeping up a succession of bloom during winter and spring, is felt by every amateur whose garden possesses a greenhouse; and to point out such plants as are of easy culture, and, at the same time, acceptable to a light purse, has been my object in many of these papers. Epacrises now consist of numerous varieties, of great diversity of colour and habit, and they are all procurable at a small cost; in fact, 20*s.* will purchase a tolerably good collection. They form, when out of bloom, interesting evergreen bushes. The foliage is singularly beautiful and diversified. The constitution of the plant is hardy, resisting, without injury, several degrees of frost.

A great point in the management of the Epacris, so as to get a good bloom, is never to stop the young shoots when in a growing state; because it is chiefly upon these that the flowers are produced. E. miniata, for example, should be cut back after it has done blooming in summer; and when it begins to grow it should be repotted, and the ball slightly reduced. When the operation of potting is over, place it in a close frame, or pit, until it is again in a growing state; admit air by degrees, and when fully hardened to enable it to sustain exposure, place it in a shady position, such as the north side of a hedge. Supply it with water, and occasionally, a little liquid manure, so that the growth may be promoted with all possible rapidity. Towards autumn, expose it to the full sun, in order that its wood may be perfectly ripened, and the bloom-buds set. It should then, as winter approaches, be housed in a greenhouse; and if permitted to flower in that situation, few plants will present a more lovely aspect. The beauty of this variety of Epacris will greatly depend upon the absence of stakes. Allow it to follow its natural growth; to twist it into a wire hurdle is to destroy its beauty completely. All the varieties of Epacris require little support, if properly managed, and the fewer stakes seen in the plant, the better.

All the varieties of Epacris may be grown in good peat, with a little silver sand intermixed with it. In potting, take care that the pots are effectually drained. The potting season is when the plants have done flowering, when the size of the plant should be reduced, as circumstances may suggest. *Pharo.*

BRITISH ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE.

In the NATURAL HISTORY SECTION, Dr. HUGH CLEGHORN made a communication *On the Grass-cloth (Chu Ina) of India.* He stated that several species of plants belonging to the order Urticaceæ were employed in Hindostan for the purpose of yielding fibres used in the manufacture of textile fabrics. He exhibited several articles of dress very white and light, which were made from the fibres of an Urticaceous plant, the Bohmeria nivea, and known in India as Grass-cloth.—Dr. D. Maclagan inquired if the fibres of this plant had been examined microscopically, as he had found that on being used for rubbing the glasses of optical instruments it scratched them. Should it become generally used in this country, care must be taken to avoid its application to delicate objects.—Mr. Gourlie, of Glasgow, stated that we knew very little of the raw material of many of the fabrics from other parts of the world. We were for a long time ignorant of the materials from which Manilla handkerchiefs were made. It was said to be the fibres of the leaf of the Pine-apple, but we had not succeeded in manufacturing them in this country.—Dr. Lankester remarked on the importance of an increase of our knowledge of those forms of plants which were capable of yielding materials for manufacture. Although the exhibition of raw materials had been deprecated by some in the coming Exhibition of 1851, he believed that it might be made one of the most important and valuable features of the Exhibition.—Dr. Royle said that it had been long doubtful what plant yielded the grass-cloth of India, and now that we knew the plant, it would undoubtedly lead to its further employment. There were many other fabrics in India of which we knew nothing of the materials. He thought that one of the most important branches of the Exhibition of 1851, for the manufacturers of this country, was that of raw materials. Every pains should be taken to obtain the name and history of every species of plant which yielded any substance useful in the arts, manufactures, or medicine.

On an Acarus and a Vibrio that attack Grasses; by JAMES HARDY, Esq.—Our indigenous Grasses frequently become diseased by the attacks of small animals, and the author described some forms that had not hitherto been discovered. In the beginning of July his attention was directed to Holcus lanatus (Meadow Soft Grass), in which many of the panicles were blighted. The causes of this were two. In the one case the base of the shoot was either dissevered from the stem or was becoming pubescent where in contiguity with it, and occasionally channels were eroded in the inveloping integuments, which were sometimes strewed with hard

* At the request of the author we reprint a portion of this communication which appeared at p. 645, he not having intended it for publication in its then state.

granules, apparently excrementitious. These were produced by an active yellow maggot, which the author suspected belonged to a Chlorops. In the second set of examples the panicles were quite soft and debilitated, and the branchlets were matted together by some action that had entirely exhausted them. On a close inspection several small, white, spherical, glassy bodies were perceived sticking amongst the florets, and closely invested by them. On extracting one of these it was found to be a soft turgid animal, evidently an Acarus, but differing from most species of this genus in being to outward appearance destitute of legs. This creature is about half a line in length. The author then proceeded to give a detailed account of its structure. Although in the latter stages of its growth no legs are perceptible, the author had abundant opportunities of observing the young immediately after being hatched, when they were found to possess six very serviceable legs. The Acari are most abundant near the summit of the panicle, but they sometimes occupy the base only The stem of the Grass seems the principal object of their attack, and the drooping of the panicle the result of the arrest of the ascending sap, which they use for their own nourishment. The author had observed this creature on Holcus mollis, also on Aira cæspitosa. He proposed to call the species Acarus graminisugus. The author had also observed a new Vibrio. This was observed on the sheep's Fescue Grass (Festuca ovina), and some other Grasses of the sea coast. They are affected with several purple knots or swellings, which, on being opened, appear as if filled with bluish or purplish granules, but on closer examination a little white annelide was observed coiled up in channels winding amongst the granules. These were the Vibriones. Some of the knots contained only one, others half a dozen of these creatures. They are white, almost transparent, very minute, just visible to the eye, slender, pointed at each end. This Vibrio differs from the one described by M. Bauer, and which produces the ear-cockles or bunt in Wheat. The author, therefore, proposes to call the species Vibrio graminis. It is by no means unfrequent amongst the short Grasses on the sea coast, and occurs likewise inland on arid pastures.

Dr. Lankester read the report of the committee appointed to draw up Tables for the Registration of the Periodical Phenomena of Plants and Animals. The report stated that only two of the many tables issued had been returned, one from James Hendy, Esq., of Penmansheil, by Cockburnspath, the other from Matthew Moggridge, Esq., of Swansea. The committee urged upon all who had received their tables, and who had made only a few observations, to return them, as even a few accurate observations, when collated with others, would be of importance. Several correspondents of the *Gardeners' Chronicle* were supplied with registration papers, but none of these have been yet returned.

Home Correspondence.

Select Plums.—The Reine Claude de Bavay, mentioned in your report of Mr. Rivers's nursery, is a very desirable Plum, but certainly not equal to the Green-gage in flavour. I lately had an opportunity of examining specimens of this Plum which had been grown in France. These were more oval-shaped than the Green-gage, and the colour was a dark yellowish green. The flesh was not very juicy, and wanted that briskness which makes the Green-gage so much liked; this, however, might in some degree be ascribed to the long journey and bad packing. Its season appears to be the beginning of October, as the fruit I saw arrived in England about the 10th. Two other Plums new to me have also come under my observation this season. These are chiefly valuable for their size, which is enormous, each of them being larger than the white Magnum Bonum, and similar in shape, but of a dark purple colour. One is supposed to be the "Queen Mother;" the other is a seedling, said, although no doubt mistakenly, to have been raised from an Apricot stone. I strongly recommend to Plum growers the variety called "Kirke's" in the Horticultural Society's Fruit Catalogue, which is the best purple Plum I am acquainted with. It is of good size, very handsome, and of excellent flavour. The Royal Hative is also a capital sort; so likewise is the Reine Claude Violette. These three, with the Precoce de Tours for earliness, and the Ickworth Imperatrice for lateness, are all the purple dessert Plums that any one need cultivate. Of light-coloured Plums, the Washington, Jefferson, Green-gage, Reine Claude de Bavay, and Golden Drop are the best; and the above 10 sorts will be found amply sufficient for the supply of any gentleman's family. For culinary purposes, the Early Orleans, Goliath, Denyer's Victoria, and white Magnum Bonum may be recommended. The last named makes an admirable preserve—equal to Apricot. There are better Plums than Denyer's Victoria, but I include it on account of the hardiness of its blossoms, which withstand cold better than those of most other kinds. For preserves and tarts late in the season, the Shropshire Damson and the Winesour should be grown. *J. B. W.*

Frozen Land.—Mr. Glenny, in his "Hand-Book to the Flower-garden," &c., in his Calendar for January (first page, and bottom of first column), recommends burying frozen earth, and covering it with the subsoil. Is not this horticultural heresy? Will it not preserve this buried ice, and thus make the under-soil chill for most of the year? Such has been the result of a trial of this plan in the midst of a plot of Carrots. A farmer in this neighbourhood once ploughed in an inch depth of snow. The land was wet in spring, when the contiguous fields were dry, and the crop was principally of strong growing weeds. The Barley would not grow. *Enquirer.* [Frozen materials should not be buried. Earth should not be dug or ploughed till it is thawed.]

Lawns and Cockchaffer Grubs.—At page 652 a bitter complaint is made respecting the ravages of the larva of Melolontha vulgaris, or cockchaffer grub, and the writer concludes by expressing an anxiety to know whether any practicable preventive of their depredations has lately been discovered. As my lawns have suffered greatly during the last two autumns from the same cause, and more particularly during the present one, I have been consulting authorities on the subject; but I have been obliged to come to the same opinion with Loudon, expressed many years ago, that the grubs must be left to the crows and rooks, and the perfect insect be gathered by hand. The larvæ are so tenacious of life that they seem to be little affected by the application of decoctions of green Walnut shells, lime water, or even corrosive sublimate. Tobacco water will kill them, and so will salt and water; but the latter, if sufficiently strong to destroy the insect life, will destroy vegetation also, and the former is too costly a remedy. A little work on the "ver blanc," or cockchaffer grub, and its ravages, was published in Paris by M. Vibert more than 20 years ago, and sent to Loudon by Mr. Calvert, of the Trianon Nursery. This pamphlet gave rise to long notices on the subject from Calvert, Swainson, Main, and Loudon himself, in the "Gardeners' Magazine" for 1828, all very interesting, but all arriving at the same conclusion, that the destruction of the larvæ to any great extent was all but impossible. M. Soulange Bodin, a French gentleman, offered 400 francs as a reward to any person who could find the means of destroying the larvæ. In my case, birds of all kinds by day, and hedgehogs by night, have very sensibly thinned their hosts, but much of the turf is left in a state almost beyond recovery. *W. T., Coventry.*

French and English Vegetable Markets.—Having just been in Paris, I was surprised to observe that green Peas were plentiful, and immensely large Cauliflowers abundant. Upon passing through Covent-garden, I saw no green Peas, and comparatively poor Cauliflowers. Now, to what is this owing? The drought and summer heats of Paris, so far from being favourable to green Peas, are decidedly adverse; at least, I find that even in England summer sown Peas in my sandy soil perish from mildew. *G. S., Bromley.*

Oncidium flexuosum.—I have a fine flower-spike of this Oncid bearing 168 blossoms. On one of the branches are two flowers, with two lips (on one the second lip is reversed), and the sepals, petals, and the other parts of the flowers doubled; I have never observed this before—is it an uncommon occurrence? *T. D. H.*

New Grape.—I have sent, for your opinion, a bunch of my seedling Grape, off the same Vine as the bunch I sent last year (see p. 602, 1849). It is a Black Hamburgh, crossed with the Muscat of Alexandria. I thought you would like to see it again, as I think it is rather better coloured than it was last year; it was grown in a Vinery without the least fire-heat whatever. Do you think the Black Muscat would be a proper name for it? [There is one already so called.] I have sent a few large berries from another bunch, that you may see how large it grows [3¼ inches in circumference]. I have also sent three of the leaves, in order that you may ascertain their shape and size. *J. E. L.* [Bunch long, tapering, and shouldered. Berries large, oval, nearly round when well grown; some quite as black as well coloured Hamburghs, others somewhat grizzly on the same bunch, but all possessing a rich Muscat flavour. Leaves very large, a foot or more across, deeply 3-lobed, nearly smooth above, pubescent beneath; ribs and leaf-stalk rough. A variety highly deserving of cultivation. Much the best novelty that we have seen for a long time. It is capital.]

Miss Cooper's "Rural Hours."—I do not remember to have seen in the *Chronicle* any notice of a work which, I think, would suit the taste of many, if not all your readers; I mean "Rural Hours," by Miss Cooper, the daughter of Mr. F. Cooper, the American novelist. It is in the form of a diary of the year 1848, something in the manner of the diary of a naturalist, recording day by day, in a most pleasing, unaffected style, the changes of the seasons, the arrival, habits, &c., of the birds, the growth and blossoming of the trees and flowers, and, in short, noting with an observant eye every thing relating to the natural history of the part of America in which the authoress resides. To her American readers this locality is doubtless well known; but to those in England it would add greatly to the interest of the book to have had a few more particulars of the situation, which we are led to infer is somewhere south of Lake Seneca, in the State of New York. Miss Cooper has occasionally introduced other subjects, which she has treated in a manner which proves her to be a lady of an enlarged and highly cultivated mind and well read in English and foreign literature. Although, evidently a good patriot, and much attached to her own country, she can yet perceive faults, and point them out in such a manner as one would hope might tend to convince the Americans that they are not quite perfect. If Miss Cooper would go on and give us a more complete insight into the manners and customs of American life, I feel convinced she would produce a work which would be much appreciated in England. I must, however, make one remark on a point on which much may be said on both sides. Miss Cooper complains of the harsh and unpoetical names given to plants; but she forgets that the botanical names at once enable her English readers to know to what plants she refers, whereas Partridgeberry, and sundry other American local names which she gives, convey no idea of what the plant is of which she is speaking. She seems herself to admit this, by giving a few of the botanical names in the latter part of the work. The same may be said in respect to the names of the birds. If these few remarks lead to your perusal of this work and your recommendation of it, I am sure all lovers of natural history will feel obliged to you. *A. M.* [As to the fair authoress's comments upon nomenclature, we cannot say that they indicate much acquaintance with the subject to which they refer.]

Cure for the "Onion Grub."—It may interest some of your readers to know that an application of nitrate of soda will kill this pest. I used it in the proportion of ½ lb. to 1 gallon of water, and applied 8 gallons to a bed of 10 yards in length. It stayed the progress of the disease, and the crop was healthy and good in every respect. *A. Williams, Camphill, Ripon.*

Oxalis crenata.—In the *Gardeners' Chronicle*, of April 14, 1849, there appeared a brief notice of a paper read, on the 11th of the same month, before the Society of Arts, and furnished by Baron Suarée, who therein gave the results of his experiments in the culture of the Oxalis crenata. Travelling lately through Belgium I received from M. de Bellemain, a fellow traveller, some details which fully corroborate the statements of Baron Suarée as to the acreable produce, &c., of this vegetable. Commissioners were appointed last year, by the National Assembly, to report upon the communication of M. de Bellemain relative to its culture and uses, and they reported to the following effect:—The Oxalis had been cultivated in Brittany during many years, by M. de Bellemain, on light soil, treated as to manure and tilth as for Potatoes, and the produce has been (the same as that obtained by Baron Suarée) 200 hectolitres per hectare, or 4 tons to the English acre—no very formidable rival to the Potato in respect of weight, being, in the commissioners' judgment, two-thirds of the produce of the same extent of land under Potatoes. The quantity of flour (*fécale*) yielded by the Oxalis was in a still lesser ratio to that afforded by the Potato (the investigation, however, was incompletely conducted); but, on the other hand, the nonfeculent portion of the Oxalis appeared to be less fibrous, and, therefore, more digestible as food than the corresponding portion of the Potato. The reporters pronounce then that what the Potato gains in amount of flour or starch, is counterbalanced in the Oxalis by its superior nutritiousness; in what degree can only be justly estimated by a long series of experiments. Some bread cakes were made of wheaten flour, and the tubers of the Oxalis steamed, with the skins unpeeled, and mixed in the ratio of seven parts to nine; and this bread—without entering into an exact analysis—proved to be whiter and lighter than that of first quality Paris bread. The Oxalis crenata, like the Potato, is suited to many culinary purposes.—If the report stopped here, we should not be disposed to let the Oxalis crenata enter into the lists with the Potato (supposing that the latter shall be one day re-established in health); but we are assured that the haulms of the former, unlike those of the latter (which are positively noxious), are not only innocuous, but capable of yielding a very palatable and wholesome beverage. Moreover, the stalks are so abundant and succulent that they have yielded 400 hectolitres of fermented beverage, resembling the *squaw* manufactured in Russia, without diminishing the produce of the tubers. This certainly staggers me not a little, as it is opposed to the received principles of vegetable physiology. But let the report be heard to its conclusion. This beverage would be highly precious in those localities where the water is bad, and where the people cannot afford a better sort of drink. The expense of manufacturing the beverage, of which M. Bellemain produced some two years old, is merely that of the time and labour occupied in expressing the juice from the herbaceous stems. The commissioners conclude that M. Bellemain has performed infinite service to his country, by bringing the edible portion of the Oxalis to perfection, and giving it a right to rank with the Potato, or else immediately next to it as an esculent, and in developing its new properties, as a material for the easy manufacturing of an agreeable and wholesome drink. Such is a condensed statement of the commissioners' report, which states that M. de B. has published a pamphlet on the culture and uses of the vegetable in question. The tubers should be planted in April; the smallest answer perfectly well for seed; they should be 3 feet apart or more in every direction, to allow full growth to the stems and foliage. *M. D.*

Browallia Jamesonii.—I, like many of your correspondents, must complain of the great difficulty that exists in inducing this plant to flower. *T. D. H.*

The Purple Elm.—Amongst the beautiful trees lately introduced, which are calculated to improve the park-like scenery of the country, so pleasing to all except the farmer, who has to cultivate the timber-incumbered fields, I know none which will produce a more striking effect than the purple Elm. Though a tree of easy propagation and quick growth, it is but little known at present, though it is now three or four years since it was brought to this country. It is so

decided a purple variety, that the young shoots are deeply stained with the colouring matter of the leaves. The Ulmus viminalis, now an old variety, is too much neglected. On account of its slender shoots and small leaves, people are apt to imagine that it is small and insignificant, whilst, in truth, it is apparently a tree of medium size, if not of the proportions of the rest of the family. Nothing can be more beautiful than a large tree of this Elm, as it continues of the same dense habit as when young, the foliage seldom being larger than the finger nail. *J. R. Pearson, Nottingham.*

Fruit Queries.—Will any of your readers be kind enough to give me advice on the following subjects. I have two Cherry trees, the "Black Eagle," and the "Bigarreau," which blossom and show fruit, but, at a very early stage, it becomes yellow, and drops off. The trees are very healthy and in good old garden ground, one against an east, the other a west wall. I have also Vines in a greenhouse very healthy, with very fine wood and leaves, which produce a few and very bad bunches of Grapes. The soil was made for them about 10 years ago, and there is a gravel walk over it. There is a workhouse union in my parish, which has many fine extensive walls of every aspect, but they are useless, because the inmates steal the fruit. Can you suggest anything to be planted against them, which would not be enticing to them? *P.*

Epps' Sulphurator.—I am surprised to find in the *Gardeners' Chronicle* of last week, that Mr. Fry complains of my taking advantage of his ideas and invention for diffusing sulphur, the construction of his machine for this purpose being so entirely different from that of mine. In the latter part of August last I wrote to Mr. Fry for one of his machines, for the purpose of diffusing sulphur upon the Hop plants in this neighbourhood, which were seriously attacked with the mildew, and I regret to say that I found it of little or no use, as I could scarcely throw the sulphur 6 inches from the mouth of the machine, and this in a very irregular and clotted manner. This machine is almost a fac-simile of "Brown's Fumigator," the sulphur-box, with perforated holes at the bottom, being placed directly over the casing of the fan-blower. The sulphur is forced through these holes by means of a revolving wire inside the box worked by the wheels which drive the fan-blower, and immediately falls upon the fans, the sulphur revolving with them, and eventually falling to the bottom of the fan case, from which it is blown in a very imperfect and clotted manner, with but little force. Seeing this difficulty, and being anxious to relieve the Hop and Grape growers of this district from the serious destruction occasioned by the mildew, with the assistance of a friend of mine, a practical engineer, I constructed the one described in your leading article of the 12th inst., which effectually diffuses the sulphur in an even state into the air passage before the blast, produced by a powerful fan-blower, constructed on approved principles, and throwing a continual cloud several feet from the mouth of the machine with great force, so that it enters the most minute parts of the plant, where the disease is frequently seated. This apparatus will enable the horticulturists, as well as the agriculturists, with little expense, to remedy any attack of the mildew upon their crops, however extensive. I claim the exclusive right of this invention for England and France; it will shortly be before the public, and I shall have much pleasure in leaving it in their hands to judge of its merits; and if any other contrivance can be employed that will more effectually accomplish the desired end, I shall with the public duly appreciate it. I beg to assure Mr. Fry that I have had no intention whatever to copy or make use of his ideas or invention, and I think I have clearly shown, that my apparatus is most essentially different from his. *W. J. Epps, Bower Nursery, Maidstone.*

Societies.

Botanical, of London, *Oct.* 11.—A. Henfrey, Esq., V.P., in the Chair. Several donations were announced, and two new corresponding members elected. Mr. D. Oliver, jun., exhibited specimens of Naias flexilis, of Rostkof, discovered in a pond near Roundstone, Connemara, Ireland, in August last. Mr. D. Stock communicated a paper "On the Botany of Bungay, Suffolk."

Garden Memoranda.

Mr. Rivers' Nursery, Sawbridgeworth, Herts.—In mentioning some autumnal Roses remarkable for their tendency to flower freely, it will be best to give the names of those only that are this day (Oct. 22), in full bloom; for owing to the long period of dry weather, only those that are really and truly "perpetual Roses," are now flowering. In this category the Bourbon Roses, with some few exceptions, have the palm, for they are still covered with blossoms and blossom buds. The most conspicuous among them are the following. Du Petit Thouars: this Rose, brilliant in colour as the Gloire de Rosaméne, with large and very double flowers, has never ceased to give abundance of blossoms from June to this day, and many young dwarf standards have still from 12 to 20 flowers and flower buds in every stage of development. Comice de Seine et Marne, a pretty cherry-coloured Rose, is also in great beauty. Edouard Desfosses, a rose-coloured variety, and Emile Courtier, are also in perfection. George Cuvier and Henri Lecoq, two very fine carmine Roses, and Justine, of the same group, as regards colour, with large beautifully-shaped flowers, are all like Rose bushes in June and July, rather than in October, so numerous and brilliant is their appearance. Le Grenadier and Raymond, two splendid crimson Roses, and Menoux, of a deep carmine, are as prolific in flowers as any of the colour; and Madame, Augustine, or Therese Margat—the three are one—a very beautiful rose-coloured Bourbon, is most conspicuous in a large bed; for every tree—they are dwarf standards—is a bouquet of flowers. Among the Bourbon Roses, with light-coloured blossoms, none approach Souvenir de la Malmaison, still studded with its large and magnificent flowers; Madame Angelina, although not a very vigorous grower, is still finely in bloom, and the Queen of the Bourbons is literally covered with flowers and buds. The above are not pointed out as novelties, for they are all Bourbon Roses of some years' standing, and they are all, what is so eligible in gardening, cheap and good.

The Hybrid Perpetual Roses have suffered much by this droughty season; generally they rival the Bourbons, but at this moment there are but few in full beauty. In this select few is Géant des Batailles, still giving abundance of its brilliant glowing flowers, and Duc d'Alençon also finely in bloom. Baronne Prévost, with its very large rose-coloured, and Jacques Lafitte, with large and very double flowers, of a deeper rosy tint, are both in full beauty; the former always blooms in perfection, the latter only in dry seasons. Cymedor, a charming brilliant crimson Rose, is now in a good state; this variety is only beautiful in autumn, for in summer it seems to shrink from the bright glare of the sun. In most seasons there are many other Roses of this family in high condition at this season, but not so now; we have therefore thought it better to confine ourselves to those remarkable for having withstood this untoward autumn. The China Rose, Mrs. Bosanquet, is most remarkable for its abundant autumnal blooming, and is now covered with its pale, flesh-coloured, wax-like flowers.

Miscellaneous.

Cultivation of Potatoes.—Having for many years in succession successfully grown Potatoes for private use, I send an account of my mode of procedure, thinking that the same principles which guided me in their cultivation in the garden may be applicable to their more extended cultivation in the field. The system will probably be best understood by treating it in the following order, viz.:—1st. The seed Potatoes; their selection, keeping, and preparing for planting. 2d. The manure; its preparation. 3d. The kind of ground selected, and its preparation for planting. 4th. The planting and after treatment. First.—The seed Potatoes were invariably selected at the digging of the crop. Such only were then picked out as were true to their kind, of a fair average size, quite sound, and well matured. These were dried in the sun stored in small casks, and covered with dry ashes, and the casks were kept in a cool and dry place throughout the winter. In this way they are equally well secured against the severest frosts, and from the generation of heat by stowing away too large quantities together in a damp state. Towards the latter end of February, before the temperature of the season was sufficiently raised to produce a natural growth, the seed Potatoes were cut into pieces, each set containing two eyes, and the cut parts of these sets were then thoroughly dried by exposure to a draught of mild air for about a fortnight, repeatedly turning them over during this period. When this was well done, the sets rarely failed in sending up one or two shoots. One shoot is probably better than two; but two eyes were always left in each set, from an apprehension that if it had one only, that one might occasionally fail. Second.—The manure for the Potatoes, and for the general crops of the garden, was a compost, of which a large heap was made every year. A deep pit was dug, into which was put all the refuse vegetable matters of the garden. This pit was emptied once a year, and its vegetable earth formed the basis of the intended pile. If this earth was considered insufficient to absorb all the liquid matter of the manure to be laid on it, more earth of some kind was added to make the lowest stratum sufficient for the purpose. From time to time, quantities of fresh stable manure were spread regularly over the vegetable earth, and if these were not wet enough, they were made so by watering, in order to insure a regular fermentation of the whole. As soon as a sufficient quantity of fermented manure was accumulated, the contents of one or two middens were laid uniformly over it. Then a layer of well-burnt lime, fresh from the kiln, was added, in the proportion of one load to four or five of all other matters. And the final covering was a good coating of sea sand. When the lime was all slacked, which it would be in about a fortnight, the whole heap was turned and well mixed during the operation. In a month or two after the pile was again turned and mixed. This was the compost. Some salt was occasionally added to it. It was sweet, free from insects and grubs, and an excellent manure for all the crops of the garden. No wireworms were ever seen in the ground after its use, although these generally occurred after the application to it of new stable and other undecomposed manures. Third.—The ground preferred for the Potato crop was that which contained most vegetable earth, and which was naturally drained, friable, and exposed to the sun. The appropriation of it for this purpose was always made in October. Whenever the weather proved to be dry in this month (all the operations were performed in dry weather), the compost was wheeled on the ground, spread regularly thereon, turned in, and carefully mixed with the soil in turning. If the ground proved to be in the least stiff, there was put on it an extra quantity of sea sand, which was turned in with the manure. In the first favourable time in the succeeding month of November or December, the ground was ridged for the winter. In the ensuing February or March, the ridges were levelled, and the ground turned preparatory to planting. Fourth.—The Potato sets were always planted, if practicable, before they had naturally vegetated, and in order to effect this, early planting became indispensable. This work was generally performed in February and March. The cuttings were put into clean furrows, without manure, at a depth of 3 inches, and at a distance from each other in the rows, varying from 12 to 15 inches, according to the size of kind planted. The rows were made from 2 to 3 feet apart, varying them also—but within these limits—according to the size of the variety put in. As to the after treatment, as soon as the shoots began to make their appearance, the first dry day was seized to turn the ground lightly between the rows, in order to destroy the first crop of weeds. Subsequently, but during the early progress of the Potato shoots, the ground was twice lightly turned between the rows, and about 1 inch of earth was, at each turning, landed up against the stalks. The crop was then suffered to come to maturity. It never failed to turn out well in weight and quality. The first object of this system was to obtain as perfect seed Potatoes as possible for planting, from a conviction that these were essential to the production of good and sound crops, which, it was thought, were not regularly attainable by planting Chats, frosted Potatoes, and such as have been exhausted by premature growth. The Potato, doubtless, like all other bodies that have life, possesses a certain period of vitality; as this period approaches to a close in any variety continually propagated by the root, it becomes gradually a shy bearer, and then manifests other infirmities of age before it disappears; and as it has been unduly pampered with stimulating food throughout its career, it acquires in time, especially as age advances, the diseases incident to such a course of life. It would appear from these circumstances, that a great additional improvement in the cultivation of Potatoes for food, would, in all probability, arise, from the entire abandonment, as soon as practicable, of the use of the old varieties for sets, and the gradual substitution, until it becomes universal, of sets from new varieties, raised by careful cultivators, from the seed of the ripe berry. Another object of the system was to renew the strength of the ground by thoroughly mixing with it a well-prepared compost, instead of following the common practice of laying in the furrows, at planting, new stable manure, which, besides producing wireworms, unduly stimulates the growth of the haulm at the expense of the root. It was also conjectured that the application of undecomposed manures to the sets, brings diseases on their products; and some occurrences tended to strengthen, if not confirm, this conjecture. The Potato, as most cultivators of it must have observed, grows well in old pasture ground filled with small roots, in the land of old Furze crofts filled with decayed thorns, and in other equally light vegetable soils, through which its delicate tubers may readily penetrate, expand, and find appropriate nourishment. Hence the object sought in the extended preparation of the soil, and in the peculiar mode of manuring it; namely, to bring it into a condition as well adapted as possible to the observed requirements of the plant. Potatoes will also burrow up towards the surface, where they are not impeded from increasing in number and size by the weight of the earth above them, and where they can obtain the genial heat of the sun in perfecting their farinaceous matter. Hence the object of shallow planting, and hence also the motive for not landing up, in the ordinary way, much earth against the haulm. The object for planting cuttings was, by limiting the number of shoots from each set, to admit the sun and air freely to every plant, and to the surface of the ground, and the placing of the rows wide apart had the same object in view. There was another motive for planting cuttings; namely, to obtain a moderate number of fair-sized Potatoes from each set, instead of a numerous progeny of small ones—the ordinary result of putting in whole Potatoes. The common practice is injurious in another point of view; the whole Potato sends off a numerous offspring of shoots, which after wet, succeeded by heat, and further stimulated by new manure, covers the entire surface of the ground, intercepts the genial influence of the sun, checks the circulation of air below the stems, and produces a vigorous top growth at the expense of the root. If, it may now be confidently added, frosty nights in August, such as have occurred for several years past, should find the Potato plants in this state of exuberant growth, the consequences are not difficult to foretell—the destruction of the haulm, the non-production of farina in the immature root, and thence the inevitable tendency to early decay. *A Subscriber, Manchester, in the Economist of Oct.* 19.

Duty on Potato Flour.—An importation having taken place from abroad of farina, or Potato flour, the importer requested that it might be regarded in the same manner as wheaten flour, and delivered at the duty of 4½*d.* per cwt.; but as the article appears to be not only serviceable for food, but also as an important material in a manufacturing process, it was decided to be liable to the *ad valorem* duty of 10 per cent. as a manufactured article, and ordered to be charged accordingly. *Economist, Oct.* 19.

Calendar of Operations.

(For the ensuing week.)

PLANT DEPARTMENT.

TAKE advantage of the present season, when potting and similar operations are almost suspended, to wash carefully all plants which are or have recently been infested with insects, with soft soap dissolved in warm water, as the gummy matter by which the eggs of many of these pests are attached to the branches is thereby loosened, and they are more easily removed. The latter part of the business should be managed by syringing the plants with water at a temperature of about 120° or 130°, which will also destroy any living insects which may be lurking about them. Much more good is done by carefully cleaning plants in this way, at this season, than many are aware of. Let any necessary pruning, especially amongst creepers, be done before the cleaning commences, as it is injudicious to waste time in cleaning shoots which are afterwards to be cut away. Have all dirty pots washed and their surface soil loosened, and examine carefully any of which the surface has a green or sodden appearance, which is an evident sign that water has been too liberally used, or that the drainage is inefficient; if the latter, it should be immediately examined and rectified, as considerable damage is soon done at this season, when the soil gets in an unhealthy state. Many of the greenhouse Geraniums, and other plants of similar texture, which are in the course of preparation for next spring and summer, will require repotting. In this do not allow the time of year to be any impediment, as nothing in the successful cultivation of such plants is more indispensable during their period of growth than shifting them into larger pots before their roots become too much matted. Greater care in watering is necessary after repotting at this season. In the Heathery, the plants must be carefully watched and dusted with sulphur upon the first appearance of mildew. Keep these plants as hardy as possible by a free circulation of air, and by removing the lights every fine mild day. The stock of plants usually denominated "forcing"-or winter-flowering plants should be carefully examined, and compared with the estimated wants during the next five months, that any deficiency may be supplied in the most eligible manner. Lifting and potting of hardy shrubs, as Rhododendrons, Lilacs, &c., may still be done; but it is advisable not to use these too early, as their blossoms are finer and more lasting when they are not forced until very nearly their natural period of blooming. Amongst the plants which it is not yet too late to procure a stock of, we may particularly mention Tea-scented, China, Moss, and Provins Roses; Belgian and other Azaleas, with Anna Boleyne Pinks, Perpetual Carnations, tree and Neapolitan Violets in pots, Lily of the Valley, &c. These must be brought forward in successional lots by placing them in situations somewhat warmer than those in which the main store is preserved. The most congenial of all forcing pits is a bed of leaves, the heat in which is maintained by means of a hot-water pipe passing beneath them. By plunging the plants in such a medium their roots are kept in advance of the tops, and plenty of air can be given, thus preventing the lanky etiolated appearance so commonly seen in forced plants. While upon the subject of plants for forcing, we may mention a few, which, though admirably adapted for the purpose, are not so generally in use as they deserve to be; amongst these are the Magnolias, conspicua Soulangeana, Hammondi, and their congeners; Laburnums, Ribes atrosanguinea, and Wistaria sinensis, grown as standards; double Peach, and double Cherry; Weigela rosea, Jasminum nudiflorum, tree Pæonies, and Forsythia viridissima.

FORCING DEPARTMENT.

PINERIES.—We now look forward to every day dawning duller and later than its predecessor, and as the power of the sun declines, so also must our artificial temperatures be somewhat decreased, and in exact accordance with the latter must the amount of moisture be regulated. Till our hothouses are furnished with hygrometers of a simple construction, this matter must still be managed according to the best of our judgment, aided by practical experience. Take care that the quantity of moisture is not so excessive as to condense in quantity upon the glass, &c., close up the laps, or run down into the hearts of the plants. To prevent this, the evaporating trough should be more sparingly filled, and the open tanks closed with moveable tops, giving you the power to confine the vapour or permit its escape. In fine clear weather, when a greater quantity of air can be admitted, the amount of moisture should also be slightly increased. Watering should be done with great care, and syringing is only admissible on the mornings of very fine days. It should be done with a very fine rose, and driven, not into the plants, but into the atmosphere of the house or pit with such force that they may receive it in the shape of very fine dew. VINERIES.—In the anxiety to keep those houses containing fruit sufficiently dry, be careful to avoid the extreme, even in that direction. If the houses are kept too dry by fire heat, the berries will shrivel, an evil nearly as bad, with regard to some kinds, as decay, the result of opposite management. It is easy to comprehend what is wanted, viz., a dry but not an arid atmosphere; but to regulate it to this nicety requires more care and judgment than is generally found, except in a very experienced practical gardener. Let all spare time be now devoted to cleaning the sashes of the different structures, pits and frames included, from the dust and dirt accumulated upon them during the summer. Nothing conduces more to the health and well being of their occupants than the free admission of light.

FLOWER GARDEN AND SHRUBBERIES.

PITS AND FRAMES.—Cuttings which are only partially rooted should be kept warm, and as close and moist as is possible, without running into the dangerous extreme of damp. The additional warmth and moisture here recommended is to encourage them to make a little growth, both at top and bottom, before they are hardened off; and that more time may be afforded for the latter purpose, the former should be effected with all consistent speed. Cuttings which were propagated earlier, and are now fairly rooted, should be gradually hardened, that they may retain their health and strength during winter, in a comparatively cool temperature; this should be managed by keeping them quite cool at night, and by exposing them fully in all dry open weather, when not too cold; taking care to exclude frost from the more tender plants, both by night and day. During the hardening process, the very little water that is necessary should be supplied in the morning; and as increase of size is not the object aimed at, but sturdiness of plant, growing points should be stopped, and all flower-buds carefully removed. Aphides or other insects must be destroyed: and, upon the first signs of mildew, the plants so affected should be syringed on a dry morning, and dusted over with flowers of sulphur.

FLORISTS' FLOWERS.

Occasionally we have blooms or pips of Auriculas sent for our inspection, giving evidence of the mildness of the season; should these blooms come from what is termed a heart stem, they will, if plucked about the centre, often cause the lower part to decay. We have more than once cautioned our readers on this head, and we do so the more earnestly as we lost a valuable seedling last season owing to the stem having been eaten through by a snail; the stem gradually decayed till disease was engendered in the heart, and death was the consequence. Seedlings of this years' sowing will require looking to. If any fibres are out of the ground, cover them with fine soil, or make a cleft in the soil and insert them. CARNATIONS AND PICOTEES, which have been closed in frames during the past week, in order that they might strike fresh root, may have air, and gradually more and more daily till thoroughly exposed. TULIPS.—Plant Tulips immediately. Let the centre of the bed be highest; seven rows in each bed. The bulbs should be planted about 4 inches deep, and 5 inches from each other. It is advisable to cover each bulb with washed river sand previous to finally covering with soil. DAHLIAS.—Their "glory is departed," only, we hope (by taking care of the roots, and stowing them in a rather dry place), that they will gladden us again another season with their noble flowers.

KITCHEN GARDEN.

Let Cauliflowers, under handlights, have all the air possible, protecting them only from frost, rain, and very cold winds. The lights should be quite closed during severe weather only, and the tops should be tilted in wet; but during fine mild weather they should be lifted off and set on bricks, to keep them clean. Watch closely for slugs, and check their ravages by timely applications of soot. A little finely sifted clean coal ashes is an excellent thing for covering the surface of the soil between young plants of any kind, as our slimy friends have an insuperable objection to crawl over it. The same remarks apply to the Endive and Lettuce planted in frames for winter use. Let dead or decaying leaves be carefully removed, and the surface of the soil loosened, to allow the free action of the atmosphere. It is an excellent, but by no means a common practice, to plant Garlic and Shallots in autumn; the advantage is in their commencing to root immediately, and continuing to grow below-ground in all favourable weather during winter, while their tops are not emitted till the usual time in spring. We have often dwelt on the importance of this point as a general principle, viz., affording the roots of a plant an opportunity of getting in advance of the tops.

State of the Weather near London, for the week ending Oct. 24, 1850, as observed at the Horticultural Garden, Chiswick.

Oct.	Moon's Age	Barometer. Max.	Barometer. Min.	Temperature. Of the Air. Max.	Min.	Mean	Of the Earth. 1 foot deep.	2 feet deep.	Wind.	Rain.
Friday.. 18	13	30.105	30.058	63	44	53.5	48	50	W.	.00
Satur.. 19	14	29.957	29.901	59	37	48.0	49	50	W.	.00
Sunday . 20	15	29.892	29.856	55	35	45.0	49½	50½	N.W.	.00
Monday 21	16	30.028	29.917	52	33	42.5	49	51	N.E.	.00
Tues. .. 22	17	30.110	29.777	52	34	43 0	47	50½	N.	.11
Wed. .. 23	18	29.308	29.165	48	38	43.0	47	49½	N.	.46
Thurs .. 24	19	29.311	29.217	41	35	38.0	46½	49½	E.	.21
Average....		29.816	29.668	52.8	36.5	44.7	48.0	50.1		.78

Oct. 18—Foggy; very fine; slightly clouded.
— 19—Fine; overcast; fine.
— 20—Fine; cloudy; fine at night; extraordinarily large halo round the moon.
— 21—Fine but cold; clear.
— 22—Clear; fine with bright sun in forenoon; cloudy; overcast; rain.
— 23—Heavy rain throughout; overcast.
— 24—Densely and uniformly overcast; rain.
Mean temperature of the week, 5 deg. below the average.

State of the Weather at Chiswick during the last 24 years, for the ensuing week, ending Nov. 2, 1850.

Oct. and Nov.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds. N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 27	54.8	40.7	47.7	18	0.80 in.	2	5	2	—	4	3	6	2
Mon. 28	54.0	38.7	46 3	10	1.06	—	5	2	—	4	7	2	4
Tues 29	54.2	40.8	47 5	10	0.42	2	3	3	1	6	7	1	1
Wed. 30	54.9	40.2	47 6	10	0.50	3	3	1	3	3	9	1	1
Thurs. 31	53.1	39.8	46.5	13	0.88	—	2	2	2	—	10	5	3
Friday 1	54.3	38.4	46 4	13	0.38	2	1	4	1	3	4	7	2
Satur. 2	54.0	39.3	46.7	10	0.49	1	2	5	2	2	8.	2	1

The highest temperature during the above period occurred on the 29th and 30th, 1833—therm. 67 deg.; and the lowest on the 29th, 1842—therm. 23 deg.

Notices to Correspondents.

BOOKS: *A Young Gardener.* Buy a good catalogue; Donn's or Loudon's. As to the soil, you will learn more by six months' practice than by seven years' reading. For that you may, however, consult Sweet's "Hothouse and Greenhouse Cultivator," or Mackintosh's "Flower Garden."—*New Sub.* We never recommend dealers. See the Advertisement in last week's Number—front page.‡

CAYENNE PEPPER: *G T* says "attention has been drawn to the cultivation of the Capsicum, and to its superior quality when made into Cayenne pepper, compared with the foreign article. It is grown here for the use of a large establishment, but great difficulty is experienced in the grinding process, as the pepper adheres so much to the mill as to make it quite a laborious job." Perhaps some of our readers will favour him with a better system of management.

FRAMES: *J C M.* It is immaterial at what angle you pitch the roof of your frame, provided it has slope enough to prevent drip.‡

KENNEDYA: *C C.* Your leaves are infested with myriads of the white scale insect. Burn the plant, the earth, and the pot immediately, or you will have the whole house infested. We never before saw such an instance of neglect. In such a case no palliative can be applied successfully.

LAWNS: *W C.* You cannot destroy Plantain and Yarrow, any more than other weeds, by manure or top-dressing. Any application that would kill them would kill the Grass. The shortest and cheapest, and only effectual plan, is to weed them out with a spud. There is no help for it.—*J M.* We must give you the same reply to your inquiry about Mouse-ear. In your case, however, after removing it, sift some fine rich soil over the place, and add good Grass seeds.

MONEY: *A Young Gardener.* Two hundred pounds! why, it is a fortune, if you are wise, prudent, economical, and industrious. Ask you master to get it invested in some safe place where you can have interest and be sure to receive back your principal without deduction. The funds are now so high that you had better take some other security.

NAMES OF FRUITS: *Cavanensis.* 2, Beurré Diel, Nov., Dec.; 3, St. Germain, Dec.; 5, Black Achan, Nov.; 6 or 9, Beurré Rance, Feb., Mar.; 7, Doyenné Blanc, Oct., Nov.; 8, Easter Beurré, Feb., Mar.; 10, Bishop's Thumb, Nov.; 4, Winter Nelis, Nov., Dec.; 12, Neill, Nov.; 27, 30, Brown Beurré, Oct.; 31, Glout Morceau, Dec.; 24, Crassane, Dec.; 33, leaf like that of Gansel's Bergamot. In your climate all those that ripen after November should have a south aspect, if you can afford it. The latest best deserve and most require it. For the 8 feet high walls you mentioned, the following Pears will be suitable:—South aspect: Glout Morceau, Passe Colmar, Easter Beurré, Beurré Rance. East aspect: Marie Louise, Winter Nelis, Seckel, Louise Bonne (of Jersey), Thompson's, Suffolk Thorn. West aspect: Jargonelle, Beurré Bosc, Knight's Monarch, Glout Morceau, Passe Colmar, Eyewood, Broom Park, Old Colmar, Ne plus Meuris, Easter Beurré. North aspect: Jargonelle, Comte de Lamy, Flemish Beauty; also the Catillac and Bezi d'Heri for stewing. No riders.‖—*G E.* 1, Bedfordshire Foundling; 2, 3, King of the Pippins; 4, 5, Blenheim Pippin; 6, Court-pendu Plat; 7, 14, Tower of Glammis; 9, Ribston Pippin; 10, Golden Harvey; 11, 13, Beauty of Kent; 12, Wyken Pippin; 18, Alfriston; 20, Hall Door.‖—*T M B.* 4, Passe Colmar; 5, Glout Morceau; 6, Winter Nelis; 7, 8, Beurré Rance.‖—*F Curzon.* 1, Easter Beurré; 3, 4, Old Colmar.—*W Sprague.* 1, Beurré Diel; 2, White Doyenné; 3, Napoleon; 5, Winter Nelis; 6, Grey Doyenné.‖—*R Tongue.* The specimen you had at Exeter is probably correctly named the Moxhay Pippin; a sort so named has been long known in Devonshire.‖—*F W.* The Grape from Naples appears to be the Black Frontignan. It is not quite so round, but that is probably owing to its being a small bunch, produced, as you state, from a recently planted Vine.‖—*Autumnus.* The three varieties from pips of the same Apple, a Nonpareil, were of very different qualities. No. 1, conical, *pale*, flesh white, pleasant. No. 2, small, conical, somewhat angular, *red*, flesh tough, very astringent. No. 3, small, ovate, not angular, flesh both acid and astringent. The Apple accompanying these is the Trumpington, or Eve Apple of some.‖

NAMES OF PLANTS: *J G.* We cannot name plants without both leaves and flowers. You have only sent the latter of your Cereus, which looks like an unpublished species now in flower near London; but may be very different.—*J Trotter.* It is merely the Oak-leaved, or various-leaved, Hornbeam, a variety of the same nature as the fern-leaved Beech, the Gooseberry-leaved Alder, and the like.—*Gamma.* Not Cinnamon, but Cassia. It requires a good stove heat.—*Vitis.* Pteris serrulata. *S.*—*W B.* The Latin for Water Lily is Nymphæa.—*Ignoramus.* The Syringa is Philadelphus coronarius.—*R E, Livonia.* The Cape Gooseberry is called by botanists Physalis edulis; its fruit is harmless, and is liked by some persons. It is best treated as an annual, which should be raised from seed in a hotbed in the spring, so as to get it forward, and then be planted in the open ground as soon as frosts are gone. Possibly it may bear a Devonshire winter, but it is tender near London.—*X Y Z.* 4, Malope malacoides, a hardy annual; 5, Kaulfussia amelloides; 10, Rudbeckia laciniata; 2, Senecio Cineraria, *alias* Cineraria maritima; 6, Aster rubricaulis; 9, Scutellaria Columnæ; 8, Dracocephalum virginianum; 3, Cytisus biflorus; 7, Achimenes rosea, not fit for a bedding plant; 1, Heimia salicifolia. — *Todd.* These are not determinable; single wretched flowers, with no leaves, no stem, no intimation of habit, or of native country, can only be named if they chance to be accidentally recognised; we regret to say we have no Œdipus at our command.—*W B P.* We cannot undertake to name leaves without flowers.‡

PEACHES WITHOUT LEAVES: *T D.* We did not doubt that you had accidentally obtained Peaches without leaves beyond the fruit; but that is very different from obtaining them without any leaves whatever.

POTATOES: *R M J.* Raw Potatoes cannot properly be called poisonous. The deleterious matter resides in the leaves and "plums," or fruit. What little exists in the Potato itself is in the skin which is peeled off.

VERONICA LINDLEYANA: *A M.* It is nearly hardy.

VINE BORDER: *R D.* Cover it with stable litter.

MISC: *Enquirer.* Couve Tronchuda will not bear frost, and should be consumed now. Plant the Potatoes 18 inches from row to row, and 9 inches in the rows. We by no means recommend earth to be buried when frozen; it will certainly chill the soil for a long time afterwards.—*R S.* Something is possibly wrong with the root of your Mandevilla; in similar situations it usually flowers freely. We would not cut it down; see that the roots are right, and give it another trial. No use can be made of the fruit of the Snowberry, except giving it to pheasants. No use can be made of the fruit of Lycium barbatum, nor of that of the Sumach; the latter is poisonous. Jute, we believe, is a substance of the nature of Hemp.‡

SEEDLING FLOWERS.

FUCHSIA: *Cavanensis.* Box and flowers crushed to pieces in coming through the post.*

GLOXINIA: *W G.* Not equal to many of the light kinds now grown.*

DAHLIAS: *G M M'I.* Your seedling is of a colour in which we abound. A crimson to be valuable must be very superior in form. Yours is only middling in that respect.*—*E T.* A large showy yellow; but the petals are too long, and the flower is generally too coarse to be useful for the purposes of exhibition.*

SMITHFIELD CATTLE SHOW.

NOTICE.—THE PRINTED FORMS OF CERTIFICATES to be filled up for STOCK and IMPLEMENTS intended to be exhibited at the forthcoming Show in December next can now be obtained of the Honorary Secretary. All such Certificates must be returned, properly filled up, on or before **Saturday, the 16th of November.**

In applying for the Forms for Stock, it is necessary to state the Number of the Class or Classes, as there is a separate Form for each Class.

Prize Sheets and all information can be obtained on application to B. T. BRANDRETH GIBBS, Hon. Sec., corner of Half-Moon-street, Piccadilly, London.

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The Agricultural Gazette.

SATURDAY, OCTOBER 26, 1850.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

THURSDAY, Oct. 31—Agricultural Imp. Society of Ireland.
WEDNESDAY, Nov. 6—Agricultural Society of England.
THURSDAY, — 7—Agricultural Imp. Society of Ireland.

AGRICULTURE is being thoroughly looked into. "*Times* commissioners" are darting about the country; amateur ARTHUR YOUNGS are feeding the rural journals with farming "notes" made on their railway routes; and it is not at all surprising just now to see one's-self or one's farm management in Roman type in the papers. Perhaps this public scrutiny may exert a salutary influence upon many agriculturists: where anything is grossly amiss it will be rectified from the fear of exposure—

"If there's a hole in a' your coats,
I rede ye tent it;
A chiel's amang ye takin' notes,
An' faith, he'll prent it."

Such investigations into the state of the agricultural districts are of weighty importance; for very many reasons. They show the causes which have impelled one district farther ahead than another in the march of improvement. They inform the cultivators of a certain soil in one locality of a hitherto unknown but excellent practice pursued upon the same soil in another locality, and thus extensively diffuse good points of husbandry. They show what systems and methods and conditions ought to be guarded against, and which should be embraced and adopted. By exhibiting the universal farm practice as it exists at the present period, they show what things are inconsistent with the fundamental principles of agriculture; and by publishing the effects of climate, tenure, &c., upon the land and its cultivation, and of the breeds of cattle, &c., upon the profits of the farmer, they constitute a fund from which new principles may be drawn. By some persons it is thought that, from a skilful comparison and digestion of the items comprised in the aggregated and complete representations of district cultivation for all Great Britain, the most correct code of rural laws and principles might be constructed. The value of such information was felt by the Board of Agriculture, when, half a century ago, they planned and executed a variety of agricultural county "surveys;" the same feeling has animated the Royal Agricultural Society in its present prosecution of county "reports;" and the public periodicals abound with descriptions of local and general husbandry, because the pressure of the times demands a thorough examination and revision of farms and farming in every point. While much may be learnt by comparing the present husbandry of different localities, an historical comparison of the different accounts will be no less valuable. This shall now be shown by an example.

As regards the county of Lincoln, celebrated for its agricultural achievements, the survey of ARTHUR YOUNG at the close of last century, Mr. PUSEY'S paper on the agricultural improvements of Lincolnshire, seven years ago, and a statement of the agriculture at the present period, when compared together, will discover the nature and amount of the progress that has been made. The "wolds" of that county are a range of chalk hills, stretching south-eastward from the Humber for 45 miles, with an average width of about 6 miles. The advancement of husbandry upon these dry uplands parallels the improvement on the wet Fens. In the middle of last century these hills were a succession of rabbit warrens from south to north. Fifty years ago the surface had been so far improved that many thousands of acres of open field were subdivided by inclosures, and the four-field system of cropping had established itself over large breadths of land. But, still, warrens overspread a wide tract of the loftier hills, and the surface was covered with Gorse for many miles. Among the scattered remarks of ARTHUR YOUNG—who printed his notes and memoranda instead of combining them into a description, and states them under the heads soil, rent, tenure, rotations, &c., instead of districts—occur the following: "From Louth to Caistor, 18 miles, 10 of it are warrens, chiefly silvers (rabbits); rent, 2*s.* an acre." Again, "the wold land about Louth, to the west and south-west, is good; very generally a dry, friable, loamy sand, on a flinty loam, and, under that, chalk everywhere: this is the soil on the warrens between Gayton and Fathwell, which I passed, and I was much hurt at seeing such land so applied. I exclaimed to Mr. CLOUGH, on seeing it; he replied, 'Oh! it is good for nothing but rabbits; what would you do with such poor land 2 or 3 miles from the farms?' When men have long been accustomed to see rabbits on such deserts, and hear only that they are good for nothing else, they come to think with their neighbours, let the absurdity be what it may. But here are no leases, and therefore can be few permanent improvements. These silver-grey rabbits answered better when their skins sold high. The friable surface loam is various. There is much excellent, and also some rich pasture and upland meadow on it, and of all degrees of quality; and, on the sides of the hills, great spaces covered with rushes, from springs, but not a draining idea, except of paltry grips that are all in vain. But to drain well demands leases." Turning northward, he observes, "The tract of wold north of Louth exhibits a great variety of excellent soil—all calcareous, friable, sandy loams, on a chalk bottom—dry enough to feed Turnips, and much good enough for Wheat. The red chalks are particularly good, being almost without exception excellent for Turnips and Barley. At Thorresly warren the vales are red, and Nettles are among the spontaneous growth. Nettles and rabbits together! Toward the northern extremity of this chalk range, he says, "Near Brocklesby, &c., there are large tracts of excellent land under Gorse; and at Cabnum and Swallow I passed through the same for miles. It is a beautiful plant to a fox-hunter. Lord YARBOROUGH keeps a pack of hounds; if he has a fall, I hope it will be into a Furze-bush; he is too good to be hurt much, but a decent pricking might be beneficial to the country." Inclosure, however, since that time, has extended its fences in every direction, and all the open fields have disappeared; a great part having been enclosed within the last 30 years. The Gorse has been grubbed, the rough sward burned, and all the warrens, with one or two exceptions, have been brought into good cultivation. None of the ground has been left as sheep-walks in its primitive vegetation of Heath and Fern, like the Downs of the southern counties; but the highest points are all in tillage, and the whole length of the wolds is intersected by neat White-thorn hedges—the solitary Furze-bush appearing only where the plantation border, or a road-side offer an uncultivated space.

"This high range," writes Mr. PUSEY in 1843, "equal in extent to the county of Bedford, is now a pattern of neat fences and good farming; while the present Lord YARBOROUGH remembers when, in riding from Spilsby, the southern point of the wolds, to his seat at Brocklesby, in sight of the Humber, he met but two fences." He gives an enthusiastic narrative of his tour: "On a sunny morning in November, 1842, farm succeeded farm, each appearing to be cultivated by the owner for example—not, as was really the case, by a tenant for profit; and so for miles we passed on through fields of Turnips, without a blank or a weed, on which thousands after thousands of long-wooled sheep were feeding in netted folds; and so large as well as regular were the Turnips in the narrow rows, that the lower halves which remained in the ground,

when the upper part had been consumed, seemed to pave these sheep-folds. Every stubble-field was clean and bright; all the hedges kept low, and neatly trimmed; every farm-house well built, with spacious courts, and surrounded by such rows of high, long, saddle-backed ricks, as showed that the land did not forget to return in August what it had received from the fold in December, since the number of these farm-houses, which might always be seen at one view, proved that the size of the farms would not account for the extent of the rick-yards. Yet this land, so loaded with roots and with corn, showed no mark of natural fertility."

Referring to his first view, in 1842, of Lord Yarborough's estate, then comparatively unknown, its fine farm buildings, on which 150,000*l.* had been expended, its 30,000 acres of good Turnip land, divided by clipped hedges of thorn, where Young saw miles of Gorse, and of course thousands of rabbits, he says, "I thought I had made the discovery of a domain equal in the spirit, magnitude, and rapidity of its improvement to the well-known estate of Holkham; and having seen it again last October—though, in consequence I suppose of the weather, the Turnips did not look so well as before—I think so still. Mr. Young was informed by the late Lord Yarborough that his wold land then let for 5*s.* an acre. I may state that, tithe-free, it is now worth *five times that amount:* and great as is the change on the Brocklesby estate, it is not greater than the general change of the chalk hills. The first step was, of course, grubbing the Furze; paring and burning the rough peaty Grass—the latter costing a guinea per acre. Then there was brought a heavy dressing of chalk, 80 cubic yards to the acre, costing at the time 66*s.*; last, followed 60 bushels of bones, for bones were cheap in those days, and a bushel cost but 1*s.* 3*d.*, making another item of nearly 4*l.* I am told that the wolds have been chalked twice over; and that, without chalking, the Turnips are destroyed by the excrescence called 'fingers and toes;' but even the first outlay of the tenant amounted to more than 8*l.* per acre. And here I must state that this large sum of 8*l.* per acre, or 8000*l.* on a farm of 1000 acres, has been expended on the farms at Brocklesby (according to the practice of Lincolnshire), only through well-merited confidence in the owner. Nor has the spirited outlay on the part of the farmers been without its return. The parish of Limber, 4000 acres, was formerly let to four tenants, at 125*l.* each, or 2*s.* 6*d.* an acre, and all four became bankrupts. It has been inclosed, is now well farmed, and at the present rent the tenants are doing well. In some instances, considerable fortunes have been made. The three points of ordinary chalk-farming in Lincolnshire are, first, thorough chalking of the land, repeated when the first covering of chalk is worn out; secondly, liming the whole of the Turnip crop at 12 or 16 bushels per acre, to which farmers are often bound by their agreements; thirdly, keeping always in winter a large number of horned cattle in the yard, which, being fed on oil-cake, convert the straw into excellent dung."

Fifty years ago (viz., 1799), the rental of the wold district was about 9*s.* per acre; now it is probably 25*s.*; and many thousands of acres have been improved from the value of 3*l.* and 10*l.*, to that of 30*l.* per acre, and large tracts have been improved within a few years from 10*s.* to 30*s.* per acre rental. As the soil has to be "made" and maintained by the art and capital of the farmer, the amount of produce is very variable—depending mainly upon the treatment which the soil receives. The yield fluctuates from 2½ to 7 quarters of Wheat per acre; and the general opinion seems to fix the average of the whole district at about 4 quarters. With high management, 7 or 8 quarters per acre of Barley, and Oats of good weight, 9 or 10 quarters per acre, are frequently obtained. When Young made his survey, the produce was estimated at 2 or 3 quarters per acre of Wheat, 4 quarters of Barley, and 5 quarters of Oats. The two crops upon which the success of wold farming depends, are Turnips and seeds, the whole of the former, and most part of the latter, being consumed on the land by sheep. The corn crops are Wheat, Oats, Barley. In Young's time the common rotation at Limber was—1, Pare and burn for Turnips; 2, Oats or Barley; 3, Oats or Barley; 4, 5, 6, 7, seeds; 8, Peas or Oats. He writes, "For some miles on the wolds, about Louth, they are very good farmers; indeed, in respect to course, the following singular one is common; 1, Turnips; 2. Barley. They assured me that this land, though of 15*s.* an acre, would not do to add Clover and Wheat. And upon their poorest soils, another that has merit. 1, Fallow; 2, Oats; 3, Fallow; 4. Oats; 5, 6, Seeds. Upon my objecting to so much fallow on light land, Mr. Cluff, of Gayton, assured me, that upon these distant parts of their farms, they could not get Turnips without so much dung as would not answer to carry, nearly so well as to lay it on their better lands; that in this way they could get 6, 7, or 8 quarters of Oats, which answered much better than any other way of managing." Forty-four years after this, Mr. Pusey is found to remark, "Another feature of Lincolnshire farming is, that not only is the whole farm in field, but that, however large the farm, *all the fields are treated equally well;* while, on other parts of the chalk hills (in the southern counties), an outlying field may be used for 20 years without any manure, because it is too distant from the yard for the carriage of dung, and lighter manures are not bought for it." The four-course system extensively prevails, but cannot be denominated the "wold system," as over a great part of the district the Barley is found to have too strong a straw after Turnips, thus injuring the young Clover, and the farmers therefore practise a five-field course: 1, Turnips; 2, Oats; 3, Wheat; 4, seeds; 5, Wheat; whilst, particularly in the northern parts, is an alternating four and five-course rotation; the five-course arising from grazing the seeds two years. The usual practice is to apply all the farm-yard manure to the root crop; but many farmers manure the seeds instead. This dung is made by beasts in the yards, fed on straw and oilcake—the average cost of the Linseed cake being certainly not less than 20*s.* per acre annually. Only a few Swedes are grown, and but few roots are drawn off the land. Crushed bones, from 8 to 16 or 20 bushels an acre, are invariably sown with the Turnips; and guano, Rape-cake, &c. &c., in large quantities are used in addition.

Little enquiry need be made as to the state of the drainage: the porous chalk rock drains its thin covering of light soil perfectly; except in some of the valleys, and midway on the dip of the hills, where the land is often wet with springs. The rushes witnessed by Young in such situations have ceased to vegetate, owing to the construction of all the under-drains required. The loftier farms do not need an egress for the downfall water so much as an impervious bed to hold drink for the stock. All the great improvements have been accomplished without the security of a lease; but a system of tenant-right universally prevails, founded upon the ancient custom of the country, and fixed in each case by valuers. Seven years are allowed for the entire exhaustion of marling, claying, chalking, and similar investments of the tenant's capital. Landlords here are generally faithful in discharging their obligations to the tenantry; the buildings are usually commodious, and the farms have been held by the same families upon the bond of "a mutual understanding," with all the certainty conferred by a legal contract. With their smaller occupiers, the labourers, however, the case is, for the most part, different; these they have driven far from their places of employment into crowded freehold villages, with a view of escaping the pressure of the Poor's-rate. Work is plentiful, wages 9*s.* or 10*s.* a week; and piece-work is being done in almost every season. Allotments are thinly scattered; pigs universally kept. From the foregoing particulars some facts may be gathered as to the causes of superiority in the culture of chalk soil. *I. A. C.*

THE MASTER AND THE SERVANT.

A Village Lecture.

(*Concluded from p.* 668.)

It is not possible, I believe, to urge too strongly what I have already said, but it is quite possible to do mischief by leaving out another aspect of the matter which requires to be dealt with also. And there are some who speak so harshly—as I may seem to have done—on the best way to improve the condition of the labouring class, whose doctrines differ from the whole truth on that subject as much by deficiency as those of Louis Blanc do by contrast. They omit from their speculation a reality which *will* make itself known, whether it be neglected or not—that though the duty of paying higher wages does not exist, the duties of Neighbour are binding upon all of us as much as those of master upon some, and those of servants upon others. And it is by the due performance of these duties, I believe, that those seeds will be sown from which the growth of higher wages and improved circumstances may be expected.

The whole truth, as regards master and servant, presents these two aspects; and while in the one it exhibits to us two honest men who are actuated by no other sentiment than that sense of justice which claims its due—exchanging with one another labour for money according to the market value of the former—in the other it presents to us these same men as equals in a far higher sense than that in which they are respectively master and servant—as *neighbours* claiming mutual sympathy, and the expression of that sympathy to the extent of their respective abilities.

Now I have already detained you so long that I must not refer at any great length to the ways in which intelligent neighbourly kindness will show itself. It is not, I am sure, by requiring or by paying wages beyond the natural amount; and it is not by the indiscriminate relief of distress, whatever its cause. The *mode* of paying wages is, however, a consideration deserving our attention. Piecework, the only way in which due credit is given to the ability of the man, is a far better way, whenever it is possible, than work at day's wages. And I would submit, both to the masters and the labourers present, whether it might not be a good thing for both to adopt the practice of paying wages in *kind* to a greater extent than it now is done—whether the advantage on the side of the labourer in dear times, and on the side of the master in cheap times, united with the advantage to both of avoiding the expense attending the exchanging of the produce in the first place for money, and of the money in the second place back again to produce, does not result in a benefit on the whole to both parties.

Another point in which the subject admits of influence by a kindly and intelligent disposition, lies in the fact already alluded to, that wages depend on the proportion which obtains between the employment found and the number of people wanting it. I believe that the one may be increased, and the other diminished with advantage to both parties. I believe, for instance, that even at present prices a good deal of our second-rate Grass lands would pay better if broken up, and a good deal of land now farmed with but little labour would pay better if farmed with more; and I also believe that to emigrate to Australia, or New Zealand, or America, is beneficial to any labouring man who can muster the means to pay his passage. The one would increase labour, the other would diminish labourers, and thus wages would naturally rise.

Mr. Bravender, of Cirencester, tells us in a paper he published lately in the "Journal of the English Agricultural Society," that according to his calculations—and he is a good authority—every acre of down land broken up would increase the labour now spent on it six-fold, and would pay the occupier 1*s.* over and above the ordinary profit on the increased capital he must spend. Every acre of light sandy pasture would, in like manner, pay him 8*s.* 6*d.* a year, while its labour was increased four-fold; every acre of stiff clay pasture would pay 4*s.* a year and increase labour eight-fold, and of good Grass land 4*s.* or 5*s.* a year, while its labour would be doubled. If 4,000,000 of acres of land now in second-rate Grass were broken up, the employment they now give to 43,000 men would be increased so as to maintain a body of 170,000 men. The country would benefit at the same time by more food, and the landlord by more rent. Then again as to high farming, in place of low farming, were the capital invested in arable land to be 12*l.* an acre, instead of 6*l.* or 7*l.* as it now generally is, I believe that the farmer would profit more, and I am sure the labourer would do so too. If I had 1000*l.* to start farming with, I would spread it thickly over a small farm rather than thinly over a large one. If I had but 10 hands I would not freight a ship which required 20. No doubt she would much more rapidly carry the goods I wish to export; but then storms might come, and I could not manage her. It is my interest to take a smaller vessel and man her thoroughly, that so I may take advantage rapidly of any change of weather, and that so I may be able to work her safely when she is in danger. Besides I can have the smaller vessel for less money. Just so with the farmer; it is his interest to take the smaller farm with the smaller rent, and man it well. He will find himself better able to carry on a thorough cultivation, and he will be able to work it with more safety and profit in difficult times. There is an immediate and close connection between the style of farming in a country and the condition of the labourer. Go where there is nothing but dairy farms held from year to year, and you will be sure to find wages low. Go where arable cultivation prevails—where the land being let on lease has secured its occupation by men of capital and intelligence, and you will find its labourers better off. Compare Somersetshire on the one hand, with Northumberland on the other—Grass lands and poor wages—with good arable farming and a well conditioned peasantry. By seeking for profitable modes of employing labour, then, much good can be done to labourers by those who are at the same time doing good to themselves, and it is in this way that machinery benefits the labourer—it increases the profits of farming, and so enables farmers to cultivate their land more energetically and more laboriously; but this is a wide subject, and I must not discuss it now.

And landlords are able to benefit labourers not only indirectly, by adopting such a mode of managing their estates as shall induce an intelligent and energetic tenantry to settle on their property, but also directly in a variety of ways. I may refer, for instance, to their setting agoing the allotment system as unquestionably of great benefit to labouring people. It is quite a different thing this from the small farm system. I do not believe that labourers would benefit by the land being all divided out into small farms. I would indeed have farms of every size; a series from 10 acres up to that of largest size. No where should there be an interval so great as that a man determined to rise might not succeed. I would have the ladder up which a man should climb as he improved his condition—with plenty of "rounds" in it, and those near enough together to allow of an ascent as easy as possible; the platform of the middle classes should be accessible from that of the lower classes by ladders enough—but that is a very different thing from lowering the platforms themselves. I would have the majority of farms from 200 to 500 acres, not from 20 to 50; but then there should be

some of 20 and 50 and 70 and 100 and so on, up which a man with improving means might rise. And then again I need not say how landlords might improve the condition of their poorer neighbours by improving the condition of their cottages—a matter on which, I have no doubt, many a labouring man here would wish me to enlarge. They are, indeed, in many instances, a shame and a disgrace to the country; and so long as but one room exists in which a whole family lives by night and by day, how can the head of that family—desirous of it as he may be—hope to see his children improve either morally or materially upon the condition he himself now occupies. But I have not time to speak further on this.

Then again, to diminish the number of our labourers—to induce some of them to emigrate may be a good thing. I am well aware that emigrate as we may, our numbers will increase just up to that stage at which the standard of comfort obtains with which the majority are contented, and constant emigration may not be a perfect cure for low wages. Yet I believe that we shall often do better to consider and act upon the merits of individual cases, than to stop and think how our conduct influences whole masses of people. And if I thought any young man would benefit himself or his friends by going to some of the colonies, I would advise him to do so; for if I thought my own station and that of my friends would be improved I would go myself. And I do believe that many of you would do much better in America or Australia than you can do here. We shall have in a few days in our library works descriptive of the different colonies, giving accounts of the value of produce, of employment in each, and the cost of travelling to each, and so on; and I strongly advise you to study them closely.

And now I come to the most influential way of all, as I believe, in which neighbours can benefit one another, and that is by urging and assisting one another in the adoption of all possible methods of improving the mind. Wages may increase, and the means of comfort increase, but unless labourers at the same time rise in the scale of moral and intellectual excellence, I assure them they will be but little benefited. If by the education of children we could only implant the aim at a higher standard of life—the aim at intellectual pleasures—they would endeavour so as to attain them. And it really is wonderful the amount which small savings amount to in a short time. In a single year I told you 50,000,000*l.* are spent by the people in spirituous liquors. Now, can anyone doubt that if all that money had been rather thrown into the sea the country would on the whole have been better. I am not going to read a teetotal lecture, but I cannot hide from myself or from you the fact that three-fourths of all the people in our gaols, our unions, and our mad-houses, are sent there by intoxicating drinks. Well then, but supposing that instead of being thrown into the sea, it had been spent on school-rooms and emigrant-ships!——You may depend upon it that it is by their own savings—it is out of their own exertions—that the condition of the labourer is to be improved—the thing can be but little influenced by any one else. And when they shall come to see their true interests, and where their efforts should be made, this will appear. The employment of an intelligent economy by the labouring man is likely to work an amazing improvement in his circumstances. But on this I must not enlarge. I hope for an opportunity hereafter of addressing you on the subject of benefit societies and savings' banks.

But I cannot avoid saying a word or two on the importance of right school education. My friends, it is an unquestionable fact that there is but one truth which is all-powerful for our improvement whether morally or materially—but one tree whose leaves are for the healing of the nations: and these are revealed to us in our Bibles. And if any parents here, desire to see their children better off than they are themselves, let them send them to the Sunday-school, and urge upon them attention to the lessons they receive there. But there are other truths also, truths which are of immense importance, and of these also I would urge the necessity. Education, religious, moral, intellectual, is really the most desirable thing going. Do you think that those children who are left in dirt and recklessness to spend their time, as best they may, upon our road sides, are not being educated; they are being as surely led into a path, and urged along it, for that is all the word means, as those who go to school; but the path they are travelling leads to poverty here, and misery hereafter. It is the *right* education of the mind, and of the affections, that is the desirable thing.

There are labourers living in some parts of this country, and of Ireland, whose existence is almost entirely one of the body; their minds are a blank. Oh! what a pitifully vegetative life they lead. They are surrounded by glorious sights and pleasant sounds in everything around them; but they know it not. All the wonderfully numerous and abundant sources of pleasure which a God of mercy has placed us in the midst of, are shut to them. Having eyes, they see not; having ears, they hear not. Every intelligent man deplores their condition; but they do not perceive it themselves. And if any one says that that is an answer to my whole complaint; if any one says that because the people are sleeping quietly, though they are in the midst of wretchedness, they should not be awakened; if any one says that I have not described their condition, so much as the misery which would be consequent upon its circumstances, if they could be imposed upon others, for that I am supposing them to be possessed of sensibilities, which, as they are the result of education, they do *not* possess. I say, misery may be none the less real, because it is unfelt; and he who is the most alive to the inferiority of the moral and mental status of any class, is the best advocate on their behalf. What does this objection amount to? I am aware that the idea of a dreary blank in connection with the life of a horse or a dog, ought not to excite our pity, because these animals are incapable of anything better, and fulfil the highest purposes of their existence, notwithstanding. But will any one reason, from the less to the greater, across the tremendous gulph which here intervenes. The brute creation are always at their best, for they are guided by instinct from the beginning; but the mind of man was created for education. And looking at the degraded condition of our poor in the alleys of our towns, or on the bleak moors of Ireland—will any one pronounce the pity expressed to be absurd, because the sensual and vegetative life it deplores is insensible to its own degradation? Sensibility might be conferred upon the lowest. For he has eyes, though he sees not, and ears, though now he be deaf. And the education we advocate will awaken the dormant powers of which he is possessed.

Now, if what I have said to-night should enable any young man to see that there is a road possible for him by which he may climb his way upwards to influence and respect. If it should induce any one to start vigorously to work upon this ascent, by adopting every means to improve and correct his mind, and intelligently to economise his means. If it should strengthen and nerve his resolution to overcome. Ah! it is not to subdue the will—it is to strengthen the will and direct it aright upon the right things that is wanted; take the poor of Ireland, and you have the most subdued will in the world, and thus it is that they are contented to live listlessly in their wretchedness. If, again, what I have said should strengthen in any who have the means the desire to encourage those who are evidently doing their best for themselves—what a capital thing it would be! And let no one think that the single impulse of an energetic exhortation will do the thing. My friends, I will tell you a truth. In this, as in other things, you cannot get on but by God's assistance. "To him that hath shall be given," means just this—that whatever the step we have just successfully achieved—we shall, in the very act of laborious and successful effort, have acquired, by God's blessing, the strength and the resolution, more easily to take the next. And there is no need to despair of rising, even in this country, where the difficulties certainly are greater than in some other parts of the world.

Remember, each one of you, that as you hope to succeed, you must trust to no one but yourself. Accept, eagerly, the offer of mental improvement wherever you get it; and give assistance in this way wherever you can. It is in the success of individual effort, however, after self improvement, that we must look for the improvement of the whole body.

People are apt to forget this; and they are fond of talking of the relations in which different classes stand to each other, and they are apt to attribute all the ills of society to the faults which they find here. And pauperism, according to them, is so prevalent because of the faulty relation in which the moneyed classes stand to the labouring classes; and a hundred evils are laid at the door of those who would preserve a class of non-electors, and exclude our intelligent workmen from the class who choose our members of Parliament. And if only the relations were corrected in which different classes stand to one another—the rich to the poor—the landowner to the farmer—the capitalist to the labourer—the manufacturer to the tradesman and the consumer—all would be right. Now I admit most fully the great importance of all these relations being put upon a right footing. I admit the great importance of holding and of propagating right notions on political subjects such as these. I would do away as much as possible with those distinctions between classes which only make them foolishly distrustful of one another. I should be glad if the choice of our law-makers were more in the hands of the working people of this country than it is. I would in this as in other respects aim at destroying, or rather at outgrowing, that exclusiveness which gives rise to class differences and class interests, where national interests alone deserve consideration. I believe that class distinctions will gradually in a great measure disappear, and that all men will by-and-by be regarded with respect, as some are already, in proportion not to their wealth or their power, or anything else that is merely temporary about them, but in proportion to the worth of their immortal part. But let no one think that by settling the *relations* of the different classes in society he will put everything to right. Government may be related to subjects, taxers to the taxed, those who make the laws to those who obey them, capitalists may be related to labourers, masters to servants, with absolute justice, and yet society may tumble to pieces, and anarchy result out of it all, as it has done with monarchies, and empires, and republics, enough before now. The millennium of happiness for which we look, will not be the creation of politicians, whatever the instrument, whether a reform bill or a charter, by which they expect to accomplish it. It is not by the correction of mere relations that everything is to be put right. Masons know this well enough. The curve, as has been well said, may be turned most truly, and brick laid to brick most perfectly, the relations of the parts may be absolutely correct, and yet remove the centering and the arch shall tumble. The fault was not in the relations of the parts, but in their *individual quality*. The bricks had not been burned properly, or the materials used had not sufficient strength, and no skill in putting them together could make up for that. Just so in human society; the work of improvement must proceed in individuals, before it will show itself in nations. The requisite standard of quality must exist in the individual pieces, before the skill of the politician can erect out of them the perfect arch—firm, useful, and elegant—to which a well regulated state of society may be compared. Millennium must come in the hearts of individuals before it will show itself in the condition of nations. No doubt there is a good time coming, good materially, as well as morally and intellectually, for prophets as well as poets tell us that. But let us not think that it is to be the surprising consequence of some new discovery, which is all at once to remodel the face of society. It will be but the latter end of a process which has long since begun. The *time* of it will not come upon us all at once; whatever its period, it will not arrive until each of the intervening minutes, with all its efforts and results, has passed us by. And neither will the *goodness* of it come upon us by surprise. The standard of excellence which shall then prevail, will have been achieved by the successive experience of all the intervening stages. Like all other growths, the result will be produced by the continual addition of atoms, and the man who has crushed an evil habit in himself, or done a single act for the real benefit of his neighbour, may be more truly said to have helped on that good time, for which all mankind are looking, than the whole race of political speechifyers. For it is just as *each* of us improves, that *all* of us improve; it is just as individuals rise, that the whole body will rise, in the scale of excellence and happiness.

That is the great lesson for each one of us to keep in mind. Our individuality on the one hand, and our relations to society on the other. Our companionships and our friendships, distract our attention from the one, and our innate selfishness makes us apt to forget the other; but each of us must remember, that in a most tremendous sense, he is solitary among men, beyond all human aid, depending on himself alone, standing or falling for ever, according to his own will and conduct, with no possibility of help, from friends or relations, or those who now surround him, and now appear so near. And he must also remember that he is one of a body of persons, bound together by strong sympathies, on whom mutual influence is not only a possible, but an unavoidable thing; a body which, in virtue of these sympathies and this influence, rises or falls in the scale of excellence, with every step in advance or retreat of every one of its members. Personal individuality, and social relationships! the right way to connect the two is to labour after self-improvement, for the sake of being useful. And I declare:—The young man, whether he be gentleman or labourer, who is rising up into life with no thought but for himself, and no desire but for the attainment of comfort and station, and respect for himself, does not deserve the life or the position which God has given him. And if that shall be his motive through life, he will find at the close of it that he has made a lost venture, that it has turned out one great failure, fruitless of good to others, fruitless of good to himself—so true is it that the end and object of selfishness is really attainable only by disinterested and unselfish behaviour—as Job found, who regained his wealth when he prayed for his friends.

Let us remember our individuality, then, and act so as to preserve our self-respect, and to attain the respect of others; and let us remember our brotherhood also, and whether it take the form of friendship for our neighbours, or patriotism for our country, or philanthropy towards all mankind, let us always do all in our power to recognise and to strengthen the sympathies and mutual interests that are at the foundation of that social happiness which politicians pretend is at their command, but over which, in reality, they have so little power for good. *M. S.*

STEAM-POWER AND THE HOMESTEAD.

Let us enter the homestead. As we proceed thither I will read to you the words inscribed on my test papers, by which I am to ascertain the propriety of any application of machine power. 1st, that the abundant introduction of machinery to a human practice, instead of displacing, should have a tendency to employ more hands; and 2dly, that the steam-engine should accomplish a maximum amount of effect by a minimum expenditure of power.

Here we are in the homestead; and there you see various excellent pieces of mechanism in full operation—specimens of workmanship such as an English mechanic alone can produce. There you see going on corn threshing, Linseed crushing, Beans splitting, Oats bruising, Barley grinding, sacks lifting, chaff cutting, &c. As was anticipated, you here see the human hand profitably employed, not displaced. Now-a-days there need be no hesitation on this point; lately, a gentleman, who on an infertile heath has undoubtedly caused at least four blades of Grass to grow where but one grew before, has recorded that his bailiff, who lived on the farm before this sort of machinery was introduced, told him he used to have 6*d.* change out of 2*l.*, for a week's labour on that very farm; whereas, we may now justly infer this gentleman seldom sees a 6*d.* returned out of four times that sum, paid for a week's labour.

Now, as Mr. Hoskyns has well pointed out, the use of the true or highest order of mechanical movement is the prime cause of the efficiency and celerity of these

machines. You know well what the old vertical hay or chaff-cutting engine could accomplish in an hour, but you see a machine intended to perform a similar operation, when endowed with the highest order of mechanical movement, cutting with ease 1000 bushels in an hour. The magic lies not in the keenness of edge of that knife, for it probably is not sharper than it was in ancient days; no, if there be magic, it is in the movement. However, let us proceed. There is nothing to be said against these machines, but everything in their favour; instead of discharging man from employment they have tended to furnish him with it. See, there is my old friend, the steam engine, has just completed his day's work Let us go and see the result of his day's labours. You observe this is a six-horse-power engine; and here is the sum of his day's work. "If you look to the right," as the showman has it, you will observe a body of straw as big as a hay-stack; that illustrates the power required. If you look to the left, you will see a heap of corn and chaff as big as a hay-cock; this represents the result.

Now, this unsatisfactory result in threshing cannot have arisen from any defect in the steam engine; it has exhibited its great and unflinching power, as that stack testifies; moreover it has developed every important characteristic I have before called your attention to. It has consumed an inexpensive coal food; the continuous circular movement has prevailed throughout its working; it has shown that its six horses united into one have proved themselves equal to 8 or 10 horses disunited in body, and working without unanimity in action. It has called into employment a number of hands, and kept them moving with an alacrity quite unknown in the days of the ancient flail. All these good points it has testified; yet the result is not "enough for the money."

Now, does the defect rest with the farmer? Let us see. I first send one-half or more of those men and boys to the field to bring "more grist to the mill;" this heap of corn and chaff I have conveyed to a position above the threshing machine. I have a hopper or conductor which leads towards the drum. I set the engine to work afresh, and run the whole of this corn and chaff through in two hours or less. The first operation occupied 8 or 10 hours; this only two hours. From this proceeding I discern that the fault rests with the farmer. Judging from the time occupied by any method of proceeding, I assume that if 10 or 12 inches in length of straw were attached to the ear of corn, it would not have required more than half the time or cost one half the money which the first method demanded. But it is neither desirable nor necessary to seek to abridge the time and thereby incur expense in this matter of threshing. When threshing is required by the farmer, the engine may as well work a whole day as a half day; 20 or 30 quarters of corn would be as much as most farmers require, or desire for sale daily; consequently, if this were the sum required, what description of engine would be needed to extract this quantity (the ears of corn and a few inches of straw only being presented)? Why, a comparatively inexpensive two-horse-power engine would suffice for the threshing and other labour on 99 homesteads out of 100 throughout the country; but this is said on the supposition that certain conditions to which I shall advert will be complied with.

Let us reflect whether it be wise to thresh all this straw. Would it be wise to pass the entire Walnut tree through a machine to get the nuts off the extremities of the branches? Then is it wiser to thresh 5 feet of straw just to get 50 kernels of corn from the ear at its end? That we may have the sum total of the difficulty before our eyes to reflect upon and consider, I had better briefly sketch a picture of the whole system of straw-getting and straw-threshing, as it has been, and still is, pursued on our land. Here is my summary of the respective processes: mowing, reaping or bagging, collecting, binding, stooking or shocking, weathering, carting by snatch and catch, helter-skelter, forking, pitching, loading, binding, unloading, unforking, unpitching, stacking, thatching, unthatching, unstacking, loading, unloading, pitching, unpitching, restacking, then threshing, forking, pitching, and so on, until the straw be consumed, and laboriously recarted back to the field in another form.

Now, will any man take upon himself to say that these methods of dealing with straw and corn cannot or will not be improved upon, and the greatest part of the entire time and labour employed thereon abridged? That the processes cannot be much abridged under the present system of farming, I believe; but if any one shall assert that it will not be wonderfully, yet, by simple expedients altered and the labour lightened, when we shall come to steam farming, from such a gentleman's opinion I shall only now say I dissent, and pass on, with this brief observation; viz., that every step in farming should be taken for the express purpose of facilitating or rendering easy the approach to the next, and that in the matter of corn getting, it should be pursued for the express purpose of preventing labour and expense in corn threshing.

But I give up this point at present of getting the ears of corn only and leaving the straw behind, because I can predict, with certainty, that if we shall but adopt that method which alone is adapted to bring out the profit and power of the steam-engine in field operations, the obtaining the heads of corn and leaving the heels behind will follow as a natural consequence.

At first I did intend showing what simple conditions were requisite to be fulfilled, for the purpose of taking the ears only from a standing crop of Wheat, and how to maintain that crop in an erect position, to accomplish this desired result; but I shall defer doing so, or describing the construction of a temporary harvesting apparatus, until we shall reach its proper position in the field.

Let us at once proceed to the field; for it is evident that any future great agricultural improvement must originate there. What is it we shall have to investigate? It is a farm of 300 acres of land; the raw material to be manufactured nearly occupies 14,000,000 of square feet, its thickness being only a few inches. *C. B., Heacham, Norfolk.*

Home Correspondence.

Fresh and Fermented Dung.—There is a passage in the letter of your correspondent, "J. M.," "Philosophy of the Dunghill, No. 1," which if left unexplained would necessarily tend to confirm the agriculturist in the most prejudicial notions in regard to the treatment of his farm-yard manures. The passage is this: "It must also be borne in mind that fresh dung does not contain the same quantity of ammonia as it contains when it is in a certain stage of fermentation. 'The urine of a sow when fresh contains only 1 per cent. of ammonia, while it contains nearly 3 per cent. when it is fermented.' (Sprengel.) And when it was mixed with its own weight of water before it was fermented, it contained more than 8 per cent." The reader will naturally infer from these remarks that in the writer's opinion fermented manures are richer in that most valuable fertilizer—ammonia, than fresh manures. The fact I apprehend to be simply this: At the instant of deposit, neither solid nor liquid manure contains ammonia; so soon, however, as exposed to the atmosphere, a "change" commences, which when very active, as in warm weather, we call "fermentation;" and this "change" is the disengagement, amongst other elements, of nitrogen and its simultaneous combination with hydrogen to form the gaseous compound of nitrogen and hydrogen called "ammonia," a very volatile gas, which, if not immediately laid hold of, would pass into the atmosphere. Now water absorbs (lays hold of) a considerable quantity of this gas, and the water in urine will consequently arrest a certain amount, "nearly 3 per cent;" but that such quantity is only a fraction of the whole product in fermenting urine is apparent from the fact that the addition of its own weight of water enabled it to arrest more than 8 per cent. I apprehend this must have been the writer's meaning; if he intended to convey the idea that fermentation produced one atom of ammonia from the atmosphere, or from any source other than the nitrogen contained in the fermenting substance itself, he expressed an opinion opposed by all theory and known facts. The practical deductions I take to be these—never allow your manures to ferment if you can help it, and if you cannot bury them from time to time within the soil, where, especially if it be clayey, the whole of the fertilising elements set free by decay will be absorbed and stored up as plant food; cover such as are solid with layers of earth (and gypsum when you can get it cheap), and dilute such as are liquid with as much water as you practically can. The enormous waste of ammonia and carbonic acid (the two main articles of plant food), from the usual treatment of farm-yard manure, results partly from the notion that it is not manageable until the straw is rotted, but chiefly from the mistaken idea that it is not the right sort of stuff until it has undergone fermentation. If knowledge be the offspring of necessity, present prices will compel the abandonment of both these notions, and we shall find out that by using for litter nothing but haulm and cut straw, and of these the smallest possible quantity, the contents of our yards and boxes may from time to time be put into the soil, and thereby the necessity be obviated for preventing the destructive effects of fermentation and decay by layers of earth and gypsum. Let us always bear in mind that it is the fermentation which takes place within the soil, and that only which is turned to account, a fact we are apt to overlook or disbelieve, merely because the process is spread over some 50 acres instead of some 50 square yards. The amount of carbon which, consumed within the veins of an ox, will keep the animal warm and comfortable for the winter, consumed within the space of a few hours would feed a fire to roast him by; so the accumulated products of the farm-yard, if not previously consumed by slow degrees, as mostly happens placed in a compact heap will get into a glorious state of hot fermentation, almost warm enough to roast an ox; but if instead the cattle droppings and litter had been from time to time put into the soil, the whole amount of warmth which their combustion, that is their decay or rotting, was capable of producing would have been expended, like the carbon within the ox, in warming the soil, and the whole of the ammonia and other fertilising products of their decay been faithfully stored up as food for the ensuing crops. The series commenced by "J. M.," promises to be valuable, especially if it help, as I trust it may, to abolish the "dunghill" altogether. *P.*

Agricultural Education.—It was written by Columella, an author on rural affairs who lived about the time of the Christian era, that three requisites were necessary to the due performance of agriculture, the knowledge of doing it, the means of performing, and the will to execute the essential parts to the full and proper extent. And this observation, among many others, yet holds the entire strength of its force, and applies to the present performance of the art of agriculture, as when it was put forth by the Roman writer. It may be impossible to say which of the three requisites now mentioned is the most valuable for the specified purpose. The knowledge is very properly placed first in the list, as without it no application ever can succeed, and it must be either intuitive or acquired. Then the means must support the knowledge, or the latter will be wholly useless. And the will to make the exertion of the knowledge and the means, must be prompt and vigorous, energetic and resolute, or the two first acquisitions will resolve into inertness, and completely stagnate. The knowledge of any art is acquired by performing it, and it is advanced by the experience and observations of the actors, who enjoy the means of daily performance to afford matter of cogitation and reflection. An early education in the routine craft of any art, ineffaceably stamps the tender mind with the marks of early impressions, which become dogmas and prejudices, and are seldom or never removed. Imitations practised and persevered in from early youth become established in the habits and nature, in the gestures of the body, and in the tones of the voice, and lastly in the intellect itself. The mind is cast into a mould of dogmas, originality is cramped and destroyed, the conceptions are impressed from without, instead of rising from within, and the mind becomes a wholly passive recipient, instead of an active exponent. This lamentable effect is produced by showing to the tender mind the operations of the art in which it is to be employed, before the ground of the intellect has been occupied by any other cultivation. On the other hand, the professional art should not be entered by any votary, till the curriculum has been finished of a liberal education, and then brought to bear on the individual performances, provided with every weapon both for attack and defence, and completely armed at every point. Knowledge is never destroyed by use, but is rather augmented and perfected. Very much of the comparatively backward state of agriculture may be laid to the charge of the defective education of its practitioners. It amounts to little more than a careful inculcation of dogmas and prejudices upon the ductile mind of youth, which any subsequent portion of education is wholly unable to remove or enlighten. The current of transmission is deepened and widened by constant wear, and the settled force prevents and overwhelms any new excavation that may be attempted in its neighbourhood. Several of the chiefest improvements in agriculture have come from sources very alien to the strict profession of the art. These minds view the object in the clear light, perceive the wants, and are able to suggest the remedies. The means of performance must be ample and sufficient to dissipate any opposing forces that may offer resistance. The present outlay is not the consideration to be entertained, but the ultimate object of the undertaking, which must be carefully calculated, and safely estimated. And the will must be in attendance, to provide the necessary action, energy, and resolutions, which must not allow the purpose to be diverted, nor the undertaking to be in piecemeal performed. *J. D.*

Grass Seeds.—At page 638 you give an enumeration of the Grasses required to lay down land for permanent pasture: all very good; but really the scientific names you have given your Grasses have altogether puzzled me. I do not know one of them, having in my youth been worked hard, and not having had the advantage of schooling. I know red Clover, white Clover, Suckling, Cock's-foot, Rye-grass, hay seeds, Cock-grass, and some others. Take a peck of Rye-grass, 2 of hay seeds, 8 lbs. of red Clover, the same or more of white and Suckling; half-a-peck of Cock's-foot on the hay seeds may afford sufficient of that, and perhaps *some* of those mentioned in your list; cultivate the ground well, get a good tilth, and make it level; sow your seeds at Midsummer, *without a crop*, and turn any stock in when the seeds grow [the following year, we suppose]; do not mow before the third or fourth year; you may, and I should think *will*, have as good an herbage as with the Latin-named sorts. I have had to do with all this for near 40 years, but after sowing them could never learn their Latin names. I forgot one, the Trifolium incarnatum I think it is; we are in the dark about him, as I believe he will grow where neither of the Clovers will, produce wonderfully, and be more nutritive than any of them. *D., Woolwich.*

[It only needed that your *seeds-man* should know the Latin; but we will repeat our prescription, or rather Lawson's, with the Latin names translated: Alopecurus pratensis, or Meadow Foxtail, 1 lb.; Avena flavescens, or yellowish Oat Grass, 1 lb.; Dactylis glomerata, or Rough Cocksfoot, 2 lbs.; Festuca duriuscula, Hard Fescue, 2 lbs.; F. heterophylla, various leaved Fescue, 1 lb.; F. rubra, Creeping Fescue, 2 lbs.; Lolium italicum, Italian Rye-grass, 3 lbs.; L. perenne, Perennial do., 5 lbs.; Poa nemoralis, Wood Meadow Grass, 2 lbs.; P. pratensis, Smooth-stalked Do., 1 lb.; Medicago lupulina, Yellow Clover, 1 lb.; Trifolium pratensis perenne, Perennial Red Clover, 3 lbs.; T. repens, White Clover, 4 lbs.]

On Thorn Hedges.—Experience has now very fully established the superiority of the common Whitethorn for the purpose of forming hedges as the fences of a farm. The Sloe is very backward in growth, and the Beech wants the prickle, which forms the value of the Thorn as a warning to animals to beware of the touch. In some peculiar soils and situations the Beech thrives better than the Thorn, but is far from being so generally useful. Thorns are raised in nurseries from the

"haws" or natural seed of the plant. The young Quicksets are generally twice transplanted before the time of four years, when they are ready to be planted in the line of the intended fences. For this purpose there must be selected the strongest and healthiest plants, which must be cut to the length of 4 to 6 inches, and laid in the ground with the thickest end downwards. A straight line being placed in the direction of the intended fence, the Grass turf of the common size is raised by the spade, laid along the line in an inverted position, forming a straight fence in front, and sloped backward to the surface of the ground. On this slope the Thorn sets are placed in the number of three to 1 foot of space, with the root end almost touching the surface, and the upper end pointing to the top of the inverted turf. A quantity of earth is thrown over the Quicksets, which is taken from the front of the line of fence, forming a hollow ground in the case of dry land, and shaped into a ditch in wet grounds, afterwards filled with stones and covered with earth. The shoots from the upper end of the sets form the line of fence, and the roots proceed from the under end, spread along the surface, and find a ready and most nourishing food from the decay of the grassy herbage which constitutes the best manure that has yet been discovered. The making of new fences may be done from November to March, but best in the early winter; and so soon as the line is finished a fence must be placed on both sides, in order to effectually protect the young Quicks from depredation. The best materials are sawn rails, which in two bars or stakes can be placed before and behind the line of Quicks, and, with some little repair, will last till the fence be reared. Dead fences are to be avoided, as the contact of decaying wood is injurious to living vegetation. The shoots will protrude in the early spring, and when the weeds are strong they must be pulled away by the hand, so as to give room to the growth of the Quicks, but pared away by hoe or spade so as not to expose the tender rootlets to the scorching suns, which, in a southerly exposure of the fence, are often very injurious to the growth of the hedge. If possible, the line of Quicks should be averted from the south. Deficiencies or gaps in the regular line of the Quicksets must be promptly supplied by the insertion of fresh sets, or by pulling across the gaps the strong shoots from each side of the vacancy, and fixing them in that position by means of hooked stakes driven into the ground. From these positions vertical shoots will arise and completely fill the gap. During the second year the same treatment is employed, pulling away by hand the large weeds, so as to give room to the growth of the Thorns, and to allow the feathered spreading of the branches, which prevents the too much upward growth, and making the hedge open below. At the same time the bank of earth must not be broken by spade or hoe to admit drought to the roots of the plants. In the third year the hedge may need no mending, as the Quicks will be raised above their growth. Thorns most generally form a fence in a period of time not exceeding eight years. During that time no mangling and cutting by shears and scutchers need be done; during the first two or three years any very tall shoot may be lopped that rises too high above the general height, and also any side shoot that extends unduly to the line of fence. But beyond these two not very frequent requirements, no cutting must be done, for whenever an incision is made, a multitude of buds protrude, and form a tufted besom of shoots and branches. This a very great deformity in an upward vegetation, and exhausts the efforts of Nature in an unseemly production. The above method must be done every year till the hedge be full grown to the height of 5 or 6 feet, and the height will be regular and uniform, if the proper attention has been employed. A slight yearly scutching will keep the hedge in the proper form, merely by lopping the proud excrescences in the height or in the sides, and never touching the main body of the hedge, which is much more pleasant to behold in the moderate wildness of Nature's luxuriance than in the uniform state of rounded sameness produced by the shears of a gardener. The overquantity must be checked, and the general growth let alone. In this condition the hedge will remain till the natural period is run of its existence—till Nature is exhausted, and must be supplanted by a new plantation. In that case a new foundation must be chosen, as new sets never thrive on old grounds. This fact settles on the rotation of crops. The chief attention in raising fences of Thorn is the protection of the young state of the Quicksets against depredation. The trespass of sheep is most particularly injurious; the prickles of the Thorn catch and retain the wool, which contains some certain quality that is very hurtful to vegetation. No gaps or weak places must be allowed in any fences where cattle will search for and find a passage. A paling of two bars must secure the deficiency, and means must be employed to remedy the wants, by putting into it, as before mentioned, the shoots from each and fixing them there, while the hedge is young and pliable. This prevention is very simple and very easily effected. Hedges generally fail or become weak at the sides of gateways. It is very precautionary to make a few yards of stone wall at both sides of the entrance into a field, with the face in the line of fence, the interior of the wall filled with earth, and the Quicksets inserted between the rows of stones in three tiers upwards from the ground. This method has been seen to erect a very strong hedge close to the post of the gate. The growth of hedges should be stopped above the height of 6 feet, as great heights lodge much snow in such countries, and injure by their shade the crops on the adjoining lands. The shelter to animals that cannot be afforded by the height of 6 feet must be provided by shelter sheds erected in convenient places, and by standing in a subdivision fence. A front into each field will serve two purposes from one foundation. These sheds are equally useful against the storms of winter and the heats of summer. *J. D.*

A Smear for Sheep.—Ten Scotch pints Archangel tar, 28 lbs. butter, for 50 sheep. Melt the butter, and mix it well with the tar, adding a gallon of milk to make it work better when laid on the sheep. A good hand will smear 25 sheep in a day of 10 hours. The price of the materials vary very much, but the cost per sheep is generally estimated at 3*d.* or 3½*d.* Being the best preventive and cure for scab, smearing is only practised on mountain sheep, being also considered a considerable protection from cold and wet; though there is no doubt that smeared sheep lose condition at the time, and, as the wool, though heavier, is of much less value than white per lb., it is now much out of fashion. *For Bathing.*— One wine-glassful spirit of tar, 1 lb. soft soap, ½ lb. Tobacco leaf, for 20 sheep. Make a decoction of the Tobacco; mix this with as much water as will afford a quart to each sheep. An over dose of the spirit being dangerous, put a glass of this into each quart as required, shaking the vessel well before running it on the sheep. A man will bathe 60 sheep per day, with the assistance of a boy to pour on the mixture. Cost per sheep about 1½*d.* This kills all vermin, and is also a good cure for scab. When properly done, the wool is white. Principally practised on mountain sheep. For the last three years I have used a mixture called "Turpentine Bath," prepared by Mr. S. Brown, Haddington. Ten pounds of this mixed with 2½ gallons of warm water will bathe 20 sheep. Price per head generally about 2½*d.* It is applied in the same way as the last. I believe that butter and turpentine are the principal ingredients. It keeps the wool very white, and is perfectly safe. *Dipping.*—This is almost universally used among Lowland flocks. Nearly every country druggist professes to have a receipt of his own, which of course is the best, cheapest, and safest yet discovered. The principal ingredients in all are arsenic and soft soap, and the price per head is ½*d.* or ¼*d.* Two stout men with proper vessels, will dip 300 or 400 per day easily. These mixtures generally kill vermin well, but as far as I know, are of no use in cases of scab. Perhaps the cheapest bath is 1 lb. of arsenic for 120 sheep disolved in water, arsenic costing 6*d.* or 8*d.* per lb. It kills vermin, but does not improve the wool.—I observe that one of your correspondent's queries is regarding the cause of "fingers and toes" in Turnips. Though unasked, I have taken the liberty of directing your notice to a fact connected with this disease. Very likely you have heard it already, but as I do not remember to have seen it noticed in any agricultural work, I mention it. Wherever the soil has been ploughed wet, or poached in any way, there fingers and toes are almost sure to make their appearance in the following crop. My attention was first directed to this by a friend; and I have this autumn, what appears to me a clear proof of its truth on my own farm. Instead of Oats after Grass, from peculiar circumstances I was obliged last year to sow Turnips on part of a field. This year the whole field is under Turnips, which are remarkably good and quite free from disease, except that part of the headland which was used as a road when last year's crop was carted off, and which was much poached and cut up. On this part there is much disease, though the rest of the headland is quite free from it. I do not see any traces of it, even on the ends of drills next the diseased part. Whatever the cause of this disease may be, there can be no doubt that the only cure hitherto discovered is lime. The Turnip crop in the east of Scotland is much damaged by it this year; indeed it appears to be spreading more and more every year. *A Lammermuir Farmer.*

Agriculture has long been lame, but being well bandaged and well fed, like an old stager, she has been enabled to go on limping at a slow pace. But being now left to her own unaided efforts, it is feared by many that she will not be able to proceed, as she is sadly jostled by foreign rivals; and as the public require her to quicken her speed and keep pace with the times, it is greatly feared that she will soon drop down and die. However, as "the knowledge of the disease is half a cure," I propose that the cause of her lameness be examined into; and though only an illiterate farmer of the old school, who has never had a college education, or been honoured with the appendage of V.S. to my name, I will venture to make a few plain remarks, as to the cause of lameness, and the means likely to effect a cure, or at least to afford some relief. This I do in hopes that some V.S., or learned D.D., may investigate the dark subject, and throw the light of science upon it. Being only an illiterate blunderer, I will leave it to others to give a lucid explanation of the nature of the disease, and merely say that it appears to me to be the consequence of improper treatment and want of energy, rather than any constitutional defect. So without further apology for my inadequacy, I proceed in the thankless, and possibly offensive duty, of pointing out the errors which I and my brother practitioners have been guilty of, and the more agreeable duty of offering some hints for improvement. One of the chief errors seems to me to be the practice of following contentedly the practice of our sires, and grandsires, instead of trying to imporve upon them. Now when we look around and see the wonderful improvements and innovations in other concerns, we may fairly judge that agriculture is also capable of being advanced by similar improvements and inventions. What they may be, or to what extent they may be carried, I will not presume to say; but I see we must launch out into a new system of agriculture. We must have new and more liberal leases; for it is a folly to think that we can contend with foreign rivals while we are bound hand and foot, and loaded with a weight of game, and war-time rents; we must have freedom for the exercise of all our energies. Instead of common crops full of weeds, we must aim at uncommon ones, both in kind, quantity, and quality, without a weed to rob them of a particle of nourishment. We must not proceed with ploughing wet land, as we used to do, but we must either make it dry, or sow it down to Grass. Indeed we must not suffer even Grass land to remain undrained, if it be possible to drain it at any remunerative cost. Neither must we suffer any water, whether it be clear or enriched, to run waste, as it so commonly does; it is an invaluable element, and must be applied not only to irrigation, by which the moory mountain and the deep-drained morass may be converted, as in some few cases they have been, into most fertile meadows; but it must also be applied to every other available purpose, wherever it can be profitably applied, as it may be in most districts. We must also enlist all the other elements of nature and all the investigations of science, together with the energies of practice into our service. By such means, agriculture, aided by peace-time rents, and multiplied labour at reduced wages, may be advanced to the requirements of the times, and the speed of modern progress. If these remarks be deemed worthy of a place in the *Agricultural Gazette*, they will probably be succeeded by others on the subject. *O. F.*

Miscellaneous.

On the Nutrition of Plants. By Prof Magnus. (*Continued from p.* 605.)—In addition to these experiments, which in the advanced autumnal state of the season were necessarily interrupted, the author has also endeavoured to ascertain by experiments how far the vegetable and animal refuse, which is added to the soil to increase its fertility, effects this by the mineral matters which it contains only, or whether the organic constituents also play an essential part in it. He set out with the consideration that, if a soil upon which it is known that a particular plant is capable of becoming perfectly developed, is in a condition to bring forth the same plant of equal strength after all the organic constituents which it contained have been completely removed, this would be a proof that the latter exert no influence upon vegetation. For the purpose of determining how far this is the case, a quantity of soil, which according to the statement of the owner was adapted to the cultivation of Barley without further manuring, was heated in a covered crucible to perfect redness, and retained in this state for an hour. On cooling, the mass was of a black colour, from the carbon left on the decomposition of the organic constituents. To remove this, a portion of this black earth was heated in a current of oxygen until it contained no more combustible matter. After having been heated to redness in the oxygen, the earth was of a red colour. Some Barley was placed both in the earth which had not, and in that which had been heated to redness, and still contained carbon, as also in that which had been perfectly freed from all organic constituents, each being placed in a porcelain or glass vessel. The season of the year was somewhat advanced, for this was done in the month of June; but the plants sprang up rapidly, and became developed in all the three vessels in exactly the same manner. After a period of growth of about 10 weeks' duration, they attained a height of somewhat more than 15 inches, and all were furnished with ears, which, however, did not contain more than four perfectly-developed grains. It is evident, from this uniform development, that the small quantities of organic remains existing in the ordinary soil, when not recently manured, exert scarcely any perceptible influence upon vegetation. For the sake of comparison, some of the same Barley was simultaneously placed in some garden soil which had been manured the preceding year; it was kept in a porcelain flower-pot, which was placed near those mentioned in the preceding experiment. In this earth the vegetation was more vigorous, and the haulm much stronger than in the common soil. The plants certainly did not attain a greater height than in the former, and the ears contained only five grains; but the entire plant was more foliaceous and luxuriant. Possibly the garden soil contained the mineral ingredients required by the Barley in a more readily assimilable form than the common soil, and this was the cause of its great fertility; still the idea urges itself upon us, that the organic substances it contains cannot have remained without influence. To determine accurately if and how far this has been the case, the author endeavoured to manure the soil without bringing the manure into contact with it, hence in such a manner that this could only exert its action at a distance. For this purpose, a quantity of the common soil, which had been heated in a current of oxygen, was introduced into a glass, which was placed in a zinc vessel, and the latter hermetically closed by a tall bell-glass, eight grains of Barley having been previously placed in the soil. Beneath the bell-glass, but separated from the soil, was a quantity of freshly-manured garden soil. To be certain that the oxygen requisite for vegetation was present in sufficient

quantity, half a cubic foot of atmospheric air was drawn through the apparatus daily by means of an aspirator. But to allow of the influence of the manure being more distinctly perceived, this atmospheric air, before entering the globe, was freed from all ammonia and carbonic acid. Care was also taken to water the plants during their growth with distilled water, which was free from carbonic acid, and could be placed under the bell-glass without coming into contact with the external air. Two others, exactly like these, were placed by the side of this apparatus, which was located opposite a window situated towards the sun. One of them also contained some of the common soil which had been heated to redness in oxygen, whilst the other was furnished with the same soil which had not been heated to redness, and contained all its organic constituents. There was none of the manured garden soil in either apparatus. The Barley was placed under all the three glasses in the latter days of June, from 8 to 10 grains beneath each. Within the first 14 days no difference could be perceived in the development of the plants; but, from this time, those under the first glass differed very strikingly from the two others in which the garden mould was absent. In about three weeks the growth of the two latter was completed; the plants were between 7 and 11 inches in height: individual ones even attained a height of 17 inches, and sent forth a third or fourth leaf, but became at last white and withered; whilst, on the other hand, the plants under the first glass, which at this time were but little in advance of them, continued to grow. At the end of about eight weeks, ears began to form upon them, the number of grains in which varied from two to eight; and they had then attained a height of from 24 to 28 inches, so that they were much bent in the bell-glass. They had also sent forth numerous shoots. They altogether acquired a much stronger ap pearance than those plants which had been sown in th,e same soil, and had grown without being covered up whilst those sown under the bell-glass with the garden soil remained far behind them. The grains however were not developed, but were all sterile. It is evident, from these experiments, that manure exerts an action, even when it is by no means in contact with the soil. Theodore de Saussure made a similar experiment. H eallowed Sweet Peas to grow under a bell-glass, in the upper part of which a vessel containing manure was fixed, and also observed that the manure exerted an advantageous influence upon their growth. It might however be objected to Saussure's experiment, that he did not allow the plants to growth in earth, but in water, and only watched their development during 10 days. But during this first period of development the plant still obtains enough nourishment from its own seed-grain, so that fallacy might readily ensue. In the above-mentioned experiment, however, the result is so striking as to admit of no doubt. It might be supposed that the garden soil might have acted here merely by restoring the carbonic acid and ammonia previously removed from the air, which came into contact with the plants, and that if these had been present in the air, they would not have exerted any influence. The author regrets that the advanced autumnal season of the year did not permit the removal of this objection by comparative experiments. However, the general aspect and development of the plants under the bell-glass, where there was also garden soil, was so much stronger than in those which were developed in the same soil without being covered, that the result must be equally favourable when the air is not previously freed from these matters. But as the manure exerts so decided an action at a distance, hence, by its organic constituents only, we are compelled to admit that these constituents produce the same result in the ordinarily-used manure.—*Monatsbericht, der Akademie der Wissensch.*, zu Berlin, Feb. 1850, pp. 60-71. *Chemical Gazette.*

Calendar of Operations.

OCTOBER.

Bedfordshire Farm, *Oct.* 21.—The principal operation of the farm has lately been Wheat sowing, nearly all of which has been drilled at the rate of 6 pecks per acre. The first sown has appeared above ground, but the latter sown will require a good shower to make it braird regularly, as the land has become dry. We shall soon commence storing Mangold Wurzels, which will be succeeded by Wheat. Some of our neighbours have already stored their Mangold Wurzels, but there is reason to suppose they would have increased in weight during the past fortnight, and perhaps would have been more likely to keep better when fully matured. We have carted out the green dung from the yards at intervals, and have laid it upon the Wheat stubble, which comes in turn for Mangold Wurzel next year. It is generally agreed upon that there is a better chance for green crops when the land is manured in the autumn or winter, rather than immediately before the seed is sown in summer. The forward Turnips are nearly all consumed here now, and some of the stock has been turned to Swedes. Thirty-five cattle have been tied up to fat. They are nearly all kept upon prepared food. When first put up, they received very little corn, but the quantity is progressively increased at intervals. The fatting sheep on Turnips receive a small portion of cake along with chaff. A pound of Beans is generally reckoned equal to a pound of oil-cake, for feeding purposes; but on light Turnip soils, oil-cake consumed on them, instead of Beans, answers better for the succeeding crop. The dairy cows have a little hay at night now to assist them with the Grass, which is neither so plentiful now, nor of such quality as during summer. Store beasts are still kept entirely on their pastures; but fatting cattle cannot maintain their condition without some other assistance. Most graziers begin giving a few pounds of cake per beast, after the middle or end of September. The late Turnips have made great progress during the past month; there will be some very good crops, should the weather remain open another month. Potatoes are keeping pretty well; we know of none which have required turning as yet. *R. V.*

East Lincolnshire Farm, *Oct* 18.—We are now enjoying a most favourable season for Wheat sowing, which was this week begun, and now progresses rapidly, the land being in fine order. The drill performs from 10 to 12 acres a day—10 being about the average in this country—and we work four harrows (iron) with three horses abreast to each. Our quantity of seed per acre is 9 pecks, which sounds large in these times of thin-seeding; but, on the Wolds, which are much exposed to the weather, it is not too much: for dressing the seed we use "Down's Farmer's Friend," which was last year found to answer. With regard to Turnips, th y have with us done very well this year; though this report do s not we think apply very generally to the neighbourhood, at least as compared with last year. We have 600 lambs just gone on them, having sold 250 old ewes, buying an equal number of lambs to j in those of our own breeding. Last year the distemper was so bad in the ewes, and so many losses occurred, that this year it is perhaps safer not to breed from them, but to have the option of doing so next year with another lot. We have commenced threshing this years' crop, and the sample, though not equal to last year's, appears better than was expected; we certainly had as fine a harvest time as is remembered for some years. Sheep were rather a better trade at our October Caistor fair; the present dry weather is in their favour. *H. E.*

Notices to Correspondents.

Act of Parliament: *W J.* The act for rating the landlords of small tenements can at once be brought into operation in any parish where the inhabitants resolve upon it at a vestry meeting called for the purpose; and being once brought into operation it must continue for three years.

Address: Will Mr. Donald, C.E., be kind enough to favour us with his address.—*A Reader.* We regret to say that "D.S.E." (Mr. E. Dias Santos) died some months ago. Your letter will be returned if you will give your address.

Books: *Constant Sub.* Professor Low on Landed Property is the best book on estate management we know.

Dorking Fowls: *X X X.* These birds may have either single or double combs, and yet be "correct," *i e.*, qualified to appear at a poultry exhibition. We ourselves prefer the speckled and any dark breed of Dorkings to have a large, flat, *single* comb, as indicating purity of blood, and would admit no others into our poultry-court as stock. The white Dorkings, especially the smaller families of them, most frequently have double combs. *D.*

Mangold Wurzel Leaves: *Constant Sub.* We only know Mr. Huxtable's experience, as given at page 624, col. *c.*

Manures: *Gamma.* Salt and soot are as well sown after one another as previously mixed. We are not aware that they will materially act upon one another. Rape is allowed to stand through winter sometimes, and eaten in spring.

Poultry Clubs and Exhibitions: It is wished to collect information respecting all those which are held in Great Britain and Ireland; and secretaries and other parties connected with these meetings will confer a favour by forwarding to the Editor what their rules are, when and where their shows take place, and any other particulars which those gentlemen will have the kindness to communicate. *D.*

Salt: *Enquirer.* It is said to whiten and strengthen the straw. Apply 2 cwt. per acre over the Wheat plant in wet weather in April.

Smear for Sheep: *Pen.* See Home Correspondence.

Markets.

COVENT GARDEN, Oct. 26.

Vegetables are abundantly supplied, and Hothouse Grapes and Pine-apples are plentiful. Melting Peaches are over, but some Michaelmas ones may still be had. Oranges and Lemons though scarcer are sufficient for the demand. Plums and Pears are still received from the Continent, but the former less plentifully. Filberts are dearer. Carrots and Turnips are good in quality, and so are Potatoes. Lettuces and other salading are sufficient for the demand. Mushrooms are scarce. Cut Flowers consist of Heaths, Pelargoniums, Asters, Fuchsias, Mignonette, Dahlias, Verbenas, Bignonia venusta, Stephanotis floribunda, Heliotropes, Calceolaria viscosissima, Japan Lilies, and Roses.

FRUITS.

Pine-apples, per lb., 3s to 5s	Oranges, per doz., 2s to 3s
Grapes, hothouse, p. lb., 1s to 3s	— per 100, 8s to 24s
— Portugal, p. lb., 8d to 1s	Pommegranates, each, 3d to 6d
Peaches, per doz., 3s to 10s	Almonds, per peck, 6s
Melons, each, 1s to 3s	— sweet, per lb., 2s to 3s
Plums, p. punnet, 1s to 2s 6d	Walnuts, p. 100, 1s to 2s
Pears, per doz., 1s to 3s	— p. bush., 12s to 24s
— per half sieve, 6s to 15s	Nuts, Barcelona, p. bush., 20s to 22s
Apples, dessert, p. bush, 4s to 8s	— Brazil, p. bsh., 12s to 14s
— kitchen, do, 1s 6d to 3s 6d	Filberts, per 100 lbs., 40s to 50s
Lemons, per doz., 1s to 2s	

VEGETABLES.

Scarlet Runners, p. half sieve, 1s to 1s 6d	Shallots, per lb., 6d to 8d
Brussels Sprouts, do., 1s to 1s 6d	Garlic, per lb., 4d to 8d
Cabbages, per doz., 6d to 1s	Artichokes, p. doz., 2s to 3s
Greens, p. doz. bun., 1s 6d to 2s 6d	Vegetable Marrows, per doz., 6d to 1s 6d
Cauliflowers, p. doz., 1s to 4s	Lettuce, Cabbage, p. score, 1s
Sorrel, p. hf. sieve, 6d to 9d	— Cos, p. score, 6d to 1s 6d
Potatoes, per ton, 50s to 80s	Endive, per score, 1s to 1s 6d
— per cwt., 2s 6d to 4s	Small Salads, p. punn, 2d to 3d
— per bush., 1s 6d to 2s 6d	Horse Radish, p. bdl., 1s to 4s
Turnips, p. 12 bundles, 1s to 2s	Mushrooms, p. pot., 1s to 1s 6d
Red Beet, per doz., 6d to 1s	— per bushel, 5s to 7s
Cucumbers, p. doz., 4d to 1s	Fennel, per bunch, 2d to 3d
Radishes, per doz., 1s to 1s 6d	Savory, per bunch, 2d to 3d
Leeks, per bunch, 1d to 2d	Thyme, per bunch, 2d to 3d
Celery, p. bundle, 9d to 1s 6d	Parsley, p. doz. bun., 1s to 2s
Carrots, per doz., 2s to 5s	— Roots, p. bdle., 9d to 1s
Tomatoes, p. punnet, 6d to 1s	Marjoram, per bunch, 2d to 4d
Spinach, p. half sieve, 6d to 1s	Mint, per bunch, 2d
Onions, p. bunch, 2d to 3d	Watercress, p. 12 bunch., 6d to 9d
— Spanish, p. doz., 1s 6d to 4s	

ENGLISH TIMBER AND BARK.—Oct. 26.

	Round Timber, Per Load.	Plank, Per Foot Cube.	Inch Board, Per Foot Superf.
Oak	£5 10 0 to £7 10 0	3s. 0d. to 5s. 0d.	0s. 4½d. to 0s. 6d.
Ash	4 0 0 — 6 0 0	2 6 — 3 0	0 3 — 0 4
Elm	3 0 0 — 4 0 0	1 6 — 2 0	0 2 — 0 3½
Beech	2 10 0 — 3 10 0	1 3 — 2 3	0 2 — 0 2½
Lime	3 0 0 — 4 0 0	2 0 — 2 6	0 3 — 0 4½

For Bark the demand continues very languid, and little business has been transacted. The price per load of 45 cwt. is from 12*l.* to 13*l.* 10*s.* J. S.

COAL MARKET.—Friday, Oct. 25.

Holywell, 16s.; Eden Main, 15s. 9d.; West Hartley, 15s.; Wallsend Riddell, 15s.; Wallsend Haswell, 16s. 6d.; Wallsend Stewarts, 16s. 6d.; Wallsend Tees, 16s. 6d.—Ships at market, 99.

HAY.—Per Load of 36 Trusses.

Smithfield, Oct. 24.

Prime Meadow Hay	72s to 78s	Clover	65s to 80s
Inferior ditto	65 70	Second cut	63 70
Rowen	60 63	Straw	23 28
New Hay	— —		J. Cooper.

Cumberland Market, Oct. 24.

Prime Meadow Hay	75s to 78s	Inferior	65s to 72s
Inferior ditto	55 65	New Clover	— —
New Hay	— —	Straw	24 28
Old Clover	78 84		Joshua Baker.

Whitechapel, Oct. 24.

Fine Old Hay ...	68s to 72s	New Clover	72s to 78s
Inferior ditto ...	— —	Inferior ditto	— —
New Hay	65 68	Straw	21 25
Old Clover	75 80		

SMITHFIELD, Monday, Oct. 21.

The number of Beasts is again very large, and trade dull. A few choice qualities being scarce, still make a fair price. Many inferior remain unsold. The supply of Sheep is rather smaller than of late, but quite equal to the demand. Prices are a shade lower. It is d fficult to effect a clearance of the Calves, although the supply is not very great. Our foreign supply consists of 1628 Beasts, 5170 Sheep, 166 Calves, and 200 Pigs.

Per st. of 8 lbs.—	s d	s d	Per st. of 8 lbs.—	s d	s d
Best Scots, Herefords, &c.	3 6	to 3 8	Best Long-wools	3 4	to 3 6
Best Short-horns	3 4	— 3 6	Ditto Shorn	...	— ...
2d quality Beasts	2 4	— 2 10	Ewes & 2d quality	2 8	— 3 0
Best Downs and Half-breds	3 8	— 4 0	Ditto Shorn	...	— ...
Ditto Shorn	... ...	— ...	Lambs	...	— ...
			Calves	... ...	2 4 — 3 6
			Pigs	... ...	3 0 — 4 0

Beasts, 5400; Sheep and Lambs, 24,120; Calves, 213; Pigs, 500.

Friday, Oct. 25.

We have but a few English Beasts at market, and those of middling quality. Trade is exceedingly dull, and although we retain Monday's quotations, there is very little business transacted. The number of Sheep is not large; a fair supply, however, for the time of year. The demand is so small they cannot all be disposed of. The supply of Calves is moderate; there is very little improvement in the trade, and we cannot quote higher than on Monday. The foreign supply consists of 513 Beasts, 870 Sheep, 148 Calves, and 45 Pigs. There are 95 Milch Cows from the home counties.

Best Scots, Herefords, &c.	3 6	to 3 8	Best Long-wools	3 4	to 3 6
Best Short-horns	3 4	— 3 6	Ditto Shorn	...	— ...
2d quality Beasts	2 4	— 2 10	Ewes & 2d quality	2 8	— 3 0
Best Downs and Half-breds	3 8	— 4 0	Ditto Shorn	...	— ...
Ditto Shorn	... ...	— ...	Lambs	...	— ...
			Calves	... ...	2 4 — 3 6
			Pigs	... ...	3 0 — 4 0

Beasts, 1118; Sheep and Lambs, 4630; Calves, 317; Pigs, 580.

HOPS.—Friday, Oct. 25.

Messrs. Pattenden and Smith report that the market continues the same, and fine coloured Hops are scarce. Duty, 230,000*l.*

POTATOES.—Southwark, Oct. 21.

The Committee report that the arrivals though limited have been quite equal to the demand, which has been dull. The following are this day's quotations: York Regents, per ton, 70s. to 80s.; Scotch do., 60s. to 65s.; Lincolnshire Shaws, 60s. to 65s.; Rhenish whites, 60s. to 70s.

MARK LANE.

Monday, Oct. 21.—The supply of Wheat from Essex, Kent, and Suffolk this morning was small, which enabled factors to realise the rates of this day se'nnight. The arrivals of foreign continuing to be considerable, buyers generally refrained from purchasing, being unable to succeed at lower prices.—Barley, except the finest malting, is a heavy sale.—No alteration in Beans.—Peas must be written 1s. per qr. cheaper.—Last week's prices for Oats are tolerably maintained, except for lower kinds of Irish, which are 6d. per qr. cheaper.

Per Imperial Quarter.	s. s.		s. s.
Wheat, Essex, Kent, & Suffolk ... White	43—46	Red	38—45
— — fine selected runs ... ditto	43—48	Red	—42
— — Talavera	46—52		
— Norfolk, Lincoln, & York ... White	—	Red	—
— Foreign	34—50		
Barley, grind. & distil., 22s to 23s ... Chev.	26—29	Malting	24—26
— Foreign.... Grinding and distilling	17—23	Malting	20—24
Oats, Essex and Suffolk	—		
— Scotch and Lincolnshire ... Potato	20—23	Feed ...	19—21
— Irish ..... Potato	16—21	Feed ...	15—17
— Foreign..... Poland and Brew	18—22	Feed ...	16—18
Rye	26—29	Foreign	—
Rye-meal, foreign..... per ton	—		
Beans, Mazagan ..... 25s to 27s..... Tick	26—28	Harrow	26—28
— Pigeon ..... 28s — 32s ... Winds	—	Longpod	—
— Foreign ..... Small	24—34	Egyptian	22—23
Peas, white, Essex and Kent..... Boilers	30—33	Suffolk...	32—34
— Maple.... 31s to 32s ..... Grey	27—29	Foreign	26—34
Maize ..... White	25—28	Yellow...	24—28
Flour, best marks, delivered... per sack	36—40		
— Suffolk ..... ditto	29—36	Norfolk	29—36
— Foreign ..... per barrel	18—24	Per sack	30—34

Friday, Oct. 25.—This morning's market was moderately attended, and the arrivals of Wheat from abroad having been good, millers were careless of buying at our extreme quotations. English may be considered the same as on Monday. —Spring corn of all kinds is a heavy retail sale at late rates. Galatz Maize has realised 31s. The value of Flour is unaltered, but secondary descriptions of sour are more difficult of disposal.

Arrivals this week.

	Wheat. Qrs.	Barley. Qrs.	Oats. Qrs.	Flour.
English ...	3410	2590	880	1890 sacks
Irish	—	—	10620	
Foreign ...	12530	120	6630	— brls.

Imperial Averages.	Wheat.	Barley.	Oats.	Rye.	Beans.	Peas.
Sept. 14	42s 10d	23s 9d	17s 4d	26s 10d	29s 7d	28s 9d
— 21	42 7	24 10	17 1	26 4	29 5	29 5
— 28	42 8	24 8	16 10	26 4	29 5	20 0
Oct. 5	42 2	24 5	16 8	26 7	29 6	21 3
— 12	41 2	24 2	17 1	25 8	29 6	39 7
— 19	39 10	24 2	16 7	26 7	29 7	29 5
Aggreg. Aver.	41 10	24 4	16 11	26 5	29 6	29 9
Duties on Foreign Grain	1 0	1 0	1 0	1 0	1 0	1 0

Fluctuations in the last six weeks' Corn Averages.

Prices.	Sept. 14.	Sept. 21.	Sept. 28.	Oct. 5.	Oct. 12.	Oct. 19.
43s 2d—		...	...	...	...	...
42 10	...	...	...	...	...	...
42 8	...		...	...	...	...
42 7	...	...	...		...	...
42 2	...	...	...	...		...
41 2	...	...	...	...	...	

Liverpool, Friday, Oct. 18.—In place of the short arrivals this week we had a good general display of samples from granary at our market to-day, and upon a rather limited number of buyers somewhat less animation was observable in most departments of the trade. In English, Irish, or foreign Wheat therefore the operations were upon a moderate scale only; sellers, however, remained firm, and in partial cases realised upon superior qualities 1d. per 70 lbs. over the current rates of Tuesday. Barley, Malt, Beans, and Peas, continue unaltered. Although in Oats no change was apparent, a very choice parcel of Limerick obtained 1d. per 45 lbs. Oatmeal firm, and prime new the turn dearer. Indian Corn, commanding a steady demand, maintained late rates.——Tuesday, Oct. 22.—There was but a moderate attendance of country buyers at our Corn Exchange this morning, and trade by no means active; however, some descriptions were 1d. per 70 lbs. higher than on Tuesday last. Malting Barley was 1s. per qr. cheaper, but in grinding samples, or in Malt, no change was apparent. Beans, though not taken freely, were held steadily at former rates. Peas dull and rather cheaper. Present prices: Wheat, English red, per 70 lbs., 5s. 9d. to 6s. 3d.; white, 6s. 0d. to 6s. 6d. Barley, Scotch and Irish, per 60 lbs., 2s. 10d. to 3s. 2d. Malt, English, per qr. pale, 49s. to 55s. Oats, English and Scotch, per 45 lbs., 2s. 9d. to 3s. 0d. Beans, English, per qr., 28s. to 32s. Peas, do. do., 31s. to 33s.

GLASS FOR CONSERVATORIES, GREENHOUSES, FRAMES, &c.

JAMES PHILLIPS AND Co., 116, Bishopsgate-street Without, are supplying SHEET GLASS, packed in 100 feet boxes, at the following *Reduced Prices*. A reduction on 1000 feet.

SMALL SQUARES.

Sizes.—Inches.	Per 100 feet.—£. s. d.
6 by 4, 6½ by 4½, 6 by 5, 6 by 5½	0 13 0
7 by 4, 7 by 4½, 8½ by 4, 8 by 4½, and not exceeding 8 by 6	0 15 0
9 by 7, 9½ by 7½, 10 by 8, 10 by 9, 10 by 10	0 17 6
12 by 9, 12 by 10, 14 by 12, 14 by 10, 16 by 10	1 0 0

LARGER SIZES, not exceeding 40 inches long.

16 oz. from 3*d.* to 3½*d.* per square foot, according to size.
21 oz. „ 3½*d.* 5*d.* „ „ „
26 oz. „ 3½*d.* 7½*d.* „ „ „
Packed in Crates of about 250 feet each, and in sizes of about 40 in. by 30.

HARTLEY'S PATENT ROUGH PLATE, packed in boxes of 50 feet each:

6 by 4 and 6½ by 4½ ... 12*s.* 0*d.* | 8 by 6 and 8½ by 6½ ... 15*s.* 0*d.*
7 by 5 „ 7½ by 5½ ... 13 6 | 9 by 7 „ 10 by 8 ... 16 6

GLASS TILES.

Rough Plate.		Sheet.	
⅛ in. thick, each ...	0*s.* 10*d.*	16 oz., each	0*s.* 6*d.*
¼ „ „ ...	1 3	21 „	0 8
⅜ „ „ ...	1 7	26 „	0 10
½ „ „ ...	2 0	32 „	1 0

GLASS SLATES.

Size.	ROUGH PLATE. ¼ inch thick	½ inch thick.	⅝ inch thick.	¾ inch thick.	SHEET. 16 oz.	21 oz.	26 oz.	32 oz.
	s. d.	*s. d.*	*s. d.*	*s. d.*	*s. d.*	*s. d.*	*s. d.*	*s. d.*
24 by 12	1 6	2 0	2 8	5 0	0 11	1 3	1 9	2 0
20 by 14	1 5½	1 11	2 7	4 10	0 10½	1 2½	1 8½	1 11
22 by 12	1 5	1 10	2 6	4 8	0 10	1 2	1 8	1 10
20 by 10	1 1½	1 6	2 0	3 8	0 8½	1 0	1 5	1 6

ROUGH PLATE GLASS.

	¼ in. *s. d.*	⅜ in. *s. d.*	½ in. *s. d.*	¾ in. *s. d.*	1 in. *s. d.*	1½ *s. d.*	1½ *s. d.*
Not above 15 inches long.....	0 11	1 0	1 6	3 0	4 6	5 3	6 0
Above 15 in. and not above 35	1 1	1 2	1 8	3 6	5 3	6 0	7 0
„ 35 „ „ 75	1 3	1 4	1 11	0 0	6 0	7 0	8 0

HALLIMAN'S REGISTERED FRUIT PROTECTORS, from 6*d.* to 1*s.* each.
MILK PANS, from 2*s.* to 6*s.* each.
PROPAGATING AND BEE GLASSES, from 2*d.* each.
WASP TRAPS, 3*s.* 6*d.* per dozen.
LACTOMETERS, for trying the quality of Milk, 7*s.* 6*d.* each.
STANDS, for Pianofortes, 1*s.* each.
Glass Shades for Ornaments, Parian Marble, Wax and Alabaster Ornaments. Lamp Shades and Glasses, Patent and British Plate. Ornamental and Stained Glass; and every article in the Trade.
N.B. All packages charged, but full price allowed if returned free of expense.

GLASS WATER PIPES.

MESSRS. COATHUPES AND Co., GLASS MANUFACTURERS, Bristol and Nailsea, Somerset, continue to supply GLASS PIPES for the conveyance of water, &c., in lengths of from 3 to 7 feet, and from ½ an inch to 4-inch bores; they provide also the necessary joints, which enable them to stand very considerable pressure.

A LARGE STOCK OF SILVERED PLATE GLASS for Mirrors, also Crown and Sheet Glass in Crates and Squares for Dwelling and Hothouse Glazing, at WILLIAM PERKS Junior, and Co.'s, Glass and Lead Warehouse, 52, Dale-end, Birmingham.
DEPOT FOR HARTLEY'S PATENT ROUGH PLATE GLASS

GLASS FOR CONSERVATORIES, &c.

HETLEY AND Co. supply 16-oz. Sheet Glass of British Manufacture, at prices varying from 2*d.* to 2½*d.* per square foot, for the usual sizes required, many thousand feet of which are kept ready packed for immediate delivery. Lists of Prices and estimates forwarded on application, for PATENT ROUGH PLATE, THICK CROWN GLASS, GLASS TILES and SLATES, WATER-PIPES, PROPAGATING GLASSES, GLASS MILK PANS, PATENT PLATE-GLASS, ORNAMENTAL WINDOW GLASS, and GLASS SHADES, to JAMES HETLEY and Co., 35, Soho-square, London.
See the *Gardeners' Chronicle* first Saturday in each month.

HORTICULTURAL BUILDING AND HEATING BY HOT WATER.
WARRANTED BEST MATERIALS AND WORKMANSHIP AT THE LOWEST POSSIBLE PRICES.



J. WEEKS AND CO., King's-road, Chelsea, Horticultural Architects, Hothouse Builders, and Hot-water Apparatus Manufacturers. The Nobility and Gentry about to erect Horticultural buildings, or fix Hot-water Apparatus, will find at our Hothouse Works, King's-road, Chelsea, an extensive variety of Hothouses, Greenhouses, Conservatories, Pits, &c., erected, and in full operation, combining all modern improvements, so that a lady or gentleman can select the description of House best adapted for every required purpose.
THE HOT-WATER APPARATUSES (which are efficient and economical), are particularly worthy of attention, and are erected in all the Houses, Pits, &c., for both Top and Bottom Heat, and in constant operation in the Stoves.
The splendid collection of Stove and Greenhouse Plants are in the highest state of cultivation, and for sale at very low prices. Also a fine collection of Strong Grape Vines in pots from eyes, all the best sorts.
Plans, Models, and Estimates of Horticultural Buildings, also Catalogues of Plants, Vines Seeds, &c., forwarded on application.—J. WEEKS and Co., King's-road, Chelsea, London.

HAMMERSMITH—TO HORTICULTURISTS & FLORISTS.

TO BE LET, on Lease, with immediate possession, a well stocked and very eligible Garden Ground, consisting of upwards of 2 acres, enclosed with high walls abutting on the high road at Hammersmith, with a convenient Cottage and Shop, Greenhouses, Forcing Frames, &c.; well adapted in every respect for an active Market Gardener and Florist.—Further particulars, and to view, apply to Mr. GOMME, Auctioneer and Surveyor, Hammersmith.

GLASS FOR CONSERVATORIES, GREENHOUSES, PIT-FRAMES; AND PLATE GLASS FOR DWELLINGS.

THOMAS MILLINGTON begs to hand the sizes of a large quantity of SHEET GLASS, packed in 100 feet boxes of various sizes. In all cases, unless the whole box is taken of either size, extra must be charged as specified.

13*s.* 6*d.* per box; or 2*d.* per foot if less than one box be taken:

6 inches by 4 inches. | 6½ inches by 5 inches
6 „ by 4½ „ | 6½ „ by 5½ „
6½ „ by 4 „ | 6 „ by 6 „
6½ „ by 4½ „ | 6½ „ by 6 „
6 „ by 5 „ | 6½ „ by 6½ „
6 „ by 5½ „

15*s.* per box; or 2½*d.* per foot if less than one box be taken:

7 inches by 4 inches | 7½ inches by 5½ inches
7 „ by 4½ „ | 7 „ by 6½ „
7 „ by 5 „ | 7½ „ by 6 „
7½ „ by 5 „ | 7½ „ by 6½ „
7 „ by 5½ „ | 8 „ by 6 „

17*s.* 6*d.* per box; or 2½*d.* per foot if less than one box be taken:

9 inches by 7 inches | 10 inches by 8 inches
8 „ by 8 „ | 10 „ by 9 „
9 „ by 8 „ | 10 „ by 10 „
9 „ by 9 „

20*s.* per box; or 2¾*d.* per foot if less than one box be taken:

11 inches by 8 inches | 13 inches by 9 inches
12 „ by 8 „ | 12 „ by 10 „
12 „ by 9 „ | 14 „ by 10 „

Boxes charged 1*s.* each extra.

T. M.'s Stock of small Glass is so large, that he thinks he can pledge himself to execute orders to any extent.
Glass cut to any other size required, in either 16 oz., 21 oz., 26 oz., or 32 oz.

PATENT ROUGH PLATE GLASS.

T. MILLINGTON'S Patent Rough Plate Cast, perfectly flat and uniform, the best manufactured. A small sample will be sent, upon application, to prove it.

CUT TO ORDER IN PANES.

	¼ in. thick.	½ in. thick.
Not above 15 inches long	0*s.* 6*d.*	0*s.* 11*d.*
Above 15 inches and not above 35 ...	0 8	1 1
„ 35 „ „ 50 ...	0 9½	1 3
„ 50 „ „ 75 ...	1 0	1 3
„ 75 „ „ 100 ...	1 3	1 4
100 inches and above	...	1 6

This is not the article that some of the trade decry.
HARTLEY'S Patent Rough Plate, also, supplied in any quantity, which is rather cheaper.

IN SQUARES CUT IN THE SIZES ORDERED.	Per Foot.
Under 8 by 6	0*s.* 4½*d.*
8 by 6 and under 10 by 8	0 4½
10 by 8 „ 14 by 10	0 5
14 by 10 „ 1¼ ft., or sizes not exceeding 20 ins. long	0 5½
1¼ ft. „ 3 „ „ 30 „	0 6
3 „ 4 „ „ 30 „	0 6½
4 „ 5 „ „ 35 „	0 7
5 „ 6 „ „ 40 „	0 7½
6 „ 8 „ „ 45 „	0 8
8 „ 10 „ „ 50 „	0 9
10 „ 12 „ „ 60 „	.....
12 „ 15 „ „ 70 „	.....

GLASS FOR CONSERVATORIES, HORTICULTURAL PURPOSES, GLASS PANTILES, SLATES, &c.



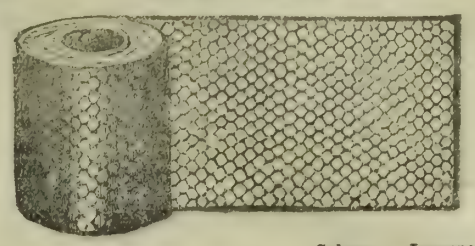
MILK PANS 2*s.* to 6*s.* each, Hand-frames, Tiles, and Slates; Propagating and Bee Glasses from 2*d.* each; Cucumber Tubes, 1*d.* per inch; Peach Glasses, 10*d.* each; Wasp Traps, 3*s.* per dozen; Pastry Slabs, Glass Plates, in wooden frames, for butter and pastry, &c.; Hyacinth Glasses and Dishes, Shades for Ornaments, Fish Globes, Plate and Window Glass of every description, and Lamp Shades. Lactometers for trying the quality of Milk, 4 tubes, 7*s.* 6*d.*; 6 tubes, 10*s.* Self-registering Thermometers for Greenhouses, Horticultural Glass, &c.
THOMAS MILLINGTON. GLASS, COLOUR, AND PAINT MANUFACTURER, 87, BISHOPSGATE-STREET WITHOUT LONDON.

DIXON'S NEW (REGISTERED) VENTILATOR—This Ventilator is much neater and more simple than any hitherto invented, can be made of any shape or size, and can be as easily cleaned as any other part of a window. It does not interfere with the blinds, or opening of the windows, and if accidentally broken can be repaired by any glazier at the cost of a single pane of glass. Models can be seen, and every information obtained, by applying to the London agents, JAMES PHILLIPS and Co., 116, Bishopsgate-street, Without.
Dixon v. *Bessell.*—*Alderman Wilson said, "It was a very clever invention, and he thought Mr. Dixon ought at least to have seven years' protection instead of three," and fined the defendant* 60*l.*, *and* 10*l.*, *costs, for an infringement of the Registered design.*—*Oct.* 1, 1850.

MAGNUS'S ENAMELLED SLATE is handsomer and more durable than the choicest Marbles, is less than half the cost of the commonest, and is PATRONISED by her MAJESTY and PRINCE ALBERT, the Nobility, Clergy, Architects of Eminence, Engineers, Builders, Railway Contractors, and the Public generally. It is suitable for Chimney-pieces, Pier-table tops, Vases, Ink-trays, and ornaments of various descriptions, Billiard-tables, Baths, Wash-stand, and Dressing-table Trays, Door Furniture, Candelabra, Columns, Monuments, Head Stones, Mural Tablets, Pilasters, Plinths, Fonts, Grand Staircases, Balusters, &c., and is made to represent not only the marbles in ordinary use but all the more costly descriptions, as Porphyry, Rose Granite, Broccatella, Brescia, Lapis Lazuli, Malachite, and Florentine Mosaics, and has obtained the Medal from the Society of Arts. Bored Chimney-pieces, from 25*s.* upwards. Price lists sent on application to Mr. MAGNUS, PIMLICO SLATE WORKS, 39 and 40, Upper Belgrave-place, London.
*** Roofing and Plain Slate work, of all descriptions, at low prices.

FRY AND ALSOP'S IMPROVED SULPHURATOR and FUMIGATOR.—A Portable Machine for Diffusing Sulphur amongst Plants affected with Mildew, such as Vines, Wall-trees, Heaths, Peas, &c.
This Machine has been improved by F. and A. making it less complicated and more perfect in effective, and they flatter themselves that nothing can be brought into notice to compete with it for usefulness and simplicity of construction.
Extract.—"No garden can be complete in its arrangements without it."—*Gardener's Magazine of Botany and Florists' Guide*, Oct 1850.
Orders sent for the above to FRY and ALSOP, Lee, Kent, will meet with prompt attention.
Manufactured also for agricultural purposes.—Oct. 26.

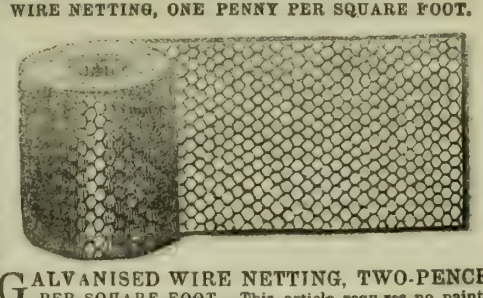
GALVANISED WIRE GAME NETTING.—7*d.* per yard, 2 feet wide.



	Galvanised.	Japanned Iron.
2-inch mesh, light, 24-inch wide ...	7*d.* per yd.	5*d.* per yd.
2-inch „ strong „ ...	9 „	6½ „
2-inch „ extra strong „ ...	12 „	9 „
1½-inch „ light „ ...	8 „	6 „
1½-inch „ strong „ ...	10 „	8 „
1½-inch „ extra strong „ ...	14 „	11 „

All the above can be made any width at proportionate prices. If the upper half is a coarse mesh, it will reduce the price one-fourth. Galvanised sparrow-proof netting for pheasantries, 3*d.* per square foot. Patterns forwarded post-free.
Manufactured by BARNARD and BISHOP, Market-place, Norwich, and delivered free of expense in London, Peterborough, Hull, or Newcastle.

WIRE NETTING, ONE PENNY PER SQUARE FOOT.



GALVANISED WIRE NETTING, TWO-PENCE PER SQUARE FOOT.—This article requires no painting, the atmosphere not having the slightest action on it. It was exhibited at the late Metropolitan Cattle Show, and was highly eulogised both for its utility and pretty appearance, and acknowledged to be the cheapest and best article ever produced. It forms a light and durable fence against the depredations of hares, rabbits, and cats, and is peculiarly adapted for Aviaries, Pheasantries, and to secure poultry; and by the galvanised requiring no paint, it answers admirably for training all kinds of creeping plants. Large quantities always kept in stock, of 18, 24, 36, and 48 inches wide; it can, however, be made to any dimensions desired. Patterns forwarded free of expense.

12 inches wide	3*d.* per yard.	30 inches wide	7½*d.* per yard.
18 „ „	4½*d.* „	36 „ „	9*d.* „
24 „ „	6*d.* „	48 „ „	1*s.* „

Galvanised do., 1*d.* per foot extra.
Extra strong Imperial Wire Sheep Netting, 3 feet, 1*s.* 6*d.* per running yard; if galvanised, 2*s.* Also every description of Wire Nursery and Fireguards. Wire House-lanterns and Shades, Fly-proof Dish Covers, Meat Safes, &c.; Window Blinds, 1*s.* 10*d.* per square foot, with bolts complete, in mahogany frames; Gothic Garden Bordering, 6*d.* per running foot; Flower Trainers, from 3*d.* each; Garden Arches, 20*s.* each. Flower Stands, from 3*s.* 9*d.* each; Galvanised Tying Wire for plants and trees, Dahlia Rods, and every description of Wire-work; Weaving, for the use of paper-makers, millers, &c.—At the Manufactory of THOMAS HENRY FOX, 44, Skinner-street, Snow-hill, London.

DR. S. NEWINGTON'S IMPLEMENTS OF AGRICULTURE.—These Implements have been invented to introduce an improved system of cultivation, and a more scientific method of depositing the seed. A Prospectus and Lecture on the different methods may be obtained (gratis) by applying to Messrs. DUFAUR and Co., Agricultural Depôt, 21, Red Lion-square, London.

PARTNERSHIP.—An eligible opportunity offers for a young Man who thoroughly understands the growth of plants for the London markets, and who can command from 300*l.* to 400*l*; or, such a person as described, who would prefer to advance a sum of money on security and good interest, without the risk of Partnership, and have the management of the business, at a salary, will be liberally treated with. References of the highest respectability can be given.—Further particulars may be obtained on application to Mr. FIELD, 4, Coleman-street, London.

THE HIPPOPOTAMUS, presented to the Zoological Society by the Viceroy of Egypt, is exhibited daily at their Gardens in the Regent's-park, from 11 to 4 o'clock. Visitors desirous of seeing the animal in the water are recommended to go early. Admission 1*s.*; on Mondays, 6*d.*

ALLSOPP'S EAST INDIA PALE AND OTHER BURTON ALES.—The Ales of this season's brewings are now ready for delivery. For further information apply to SAMUEL ALLSOPP and SONS, Burton-on-Trent; or their Stores at 61, King William-street, City; Cook-street, Liverpool; High-street, Birmingham; and The Exchange, Manchester.

THE TEETH.—How often do we find the human face divine disfigured by neglecting the chiefest of its ornaments, and the breath made disagreeable to companions by non-attention to the Teeth! Though perfect in their structure and composition, to keep them in a pure and healthy state requires some little trouble; and if those who are blessed with well-formed Teeth knew how soon decay steals into the mouth, making unsightly what otherwise are delightful to admire, and designated unhealthiness by the impurity of the breath, they would spare no expense to chase away these fatal blemishes. But although most ladies are careful, and even particular in these delicate matters, yet few are sufficiently aware of the imperative necessity of avoiding all noxious or mineral substances of an acrid nature, and of which the greater part of the cheap Tooth Powders of the present day are composed. It is highly satisfactory to point out Messrs. Rowlands' Odonto, or Pearl Dentrifice, as a preparation free from all injurious elements, and eminently calculated to embellish and preserve the dental structure, to impart a grateful fragrance to the breath, and to embellish and perpetuate the graces of the mouth.—*Ladies' Gazette of Fashion.*

ROWLAND'S ODONTO

Is a white powder compounded of the choicest and most *recherché* ingredients of the oriental herbal, of inestimable value in preserving and beautifying the Teeth, strengthening the Gums, and in rendering the breath sweet and pure. Price 2*s.* 9*d.* per box.—Sold by A. ROWLAND and SONS, 20, Hatton-garden, London, and by Chemists and Perfumers.

IMPORTANT TO SEEDSMEN, NURSERYMEN, and Others.

MESSRS. PROTHEROE AND MORRIS have received instructions from the Assignees of Mr. Charles Bunyard (a bankrupt), to offer to public competition, by Auction, on the premises (Nash and Hicks's Warehouse, Horsleydown), on THURSDAY, October 31, at 11 o'clock, the whole of the valuable SEEDS and IMPLEMENTS IN TRADE, viz., Sacks, Bags, Weights, Scales, and Measures; a capital Winnowing Machine, Nests of Seed Drawers &c..—May be viewed, and Catalogues had of Wm. Whitmore, Esq., Official Assignee, Basinghall-street; of Messrs. Morten Thomas and Holland, Solicitors, Mincing-lane, London; of the principal Seedsmen in London; and of the Auctioneers, American Nursery, Leytonstone, Essex.

BRENTFORD, MIDDLESEX.

TO NOBLEMEN, GENTLEMEN, NURSERYMEN, MARKET-GARDENERS AND PUBLIC COMPANIES, ENGAGED IN PLANTING.

MESSRS. PROTHEROE AND MORRIS are directed by the Executors of the late Mr. J. Ronalds, to offer to public competition by Auction, on the premises (the Twolands Nurseries, Brentford End), on MONDAY, Oct. 28, and two following days, without any reserve, the whole of the VALUABLE NURSERY STOCK, riding over 30 acres, which is particularly worthy the attention of Noblemen and Gentlemen laying out their grounds, as well as the Trade, for its excellence; and comprises several thousand Fruit Trees of the leading and approved varieties, a large quantity of Forest Trees, Ornamental and Deciduous Shrubs, with a rich assortment of Evergreens.—May be viewed, and Catalogues had, at 1s. each (returnable to purchasers), on the Premises; of the principal Seedsmen in London; and of the Auctioneers, American Nursery, Leytonstone, Essex.

HORNSEY ROAD.—TO NOBLEMEN, GENTLEMEN, NURSERYMEN, FLORISTS, AND OTHERS.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. W. J. Pamplin to submit to public competition by Auction, on the premises, Paradise Nursery, Hornsey-road, Islington, on MONDAY, November 18th, and following day, a part of the valuable NURSERY STOCK, comprising fine Evergreens, &c.; also choice Greenhouse Plants, consisting of Double Camellias, beautifully set with bloom buds, 18 inches to 6 feet, Azalea indica, Epacris, Ericas of all the leading varieties, Chrysanthemums, &c.—May be viewed prior to the sale; Catalogues had (6d. each, returnable to purchasers) on the premises; of the principal Seedsmen in London; of the Auctioneers, American Nursery, Leytonstone, Essex.

N.B. The Nursery to be Let, with immediate possession. The remaining Stock may be taken at valuation, if required.

NEW AND RARE ORCHIDS FROM NEW GRANADA.

MR. J. C. STEVENS respectfully begs to notify, that Mr. Linden's Orchids HAVING NOW ARRIVED, he has fixed the Sale of them to take place at his Great Room, 38, King-street, Covent-garden, on MONDAY next, 28th inst., at 1 o'clock precisely,—38, King-street, Covent-garden, Oct. 26.

JAVA ORCHIDS—JUST RECEIVED FROM MESSRS. ROLLISSON'S COLLECTOR.

MR. J. C. STEVENS begs to announce for Sale, by Auction, at his Great Room, 38 King-street, Covent Garden, on TUESDAY, October 29, at 12 for 1 o'clock, an Importation of most RARE AND VALUABLE ORCHIDS from Java, just arrived in Wardian cases, in perfect health; it consists of upwards of 60 fine specimen plants of the beautiful and rare Saccolabium Blumei majus, fine plants of the true Vanda suavis (collected in flower, to ensure their being the correct species), several plants of a new and handsome flowering Aerides (very fragrant, intermediate between virens and quinquevulnerum), fine specimen plants of Vanda tricolor (the best variety, also collected in flower), and a few plants of the new and beautiful Spathoglottis plicata of Blume, red and white species.—May be viewed on the morning of Sale, and Catalogues had of Mr. J. C. Stevens, 38, King-street, Covent Garden, London.

1000 CAMELLIAS, WELL SET WITH BLOOM, FROM MR. AUG. VAN GEERT, OF GHENT.

MR. J. C. STEVENS will sell by Auction, at his Great Room, 38, King-street, Covent-garden, on FRIDAY, November 1st, at 12 o'clock, 1000 CAMELLIAS, well set with bloom buds, from 1½ to 4 feet, consisting of many Double Whites and other favourite sorts, and a few plants of the fine Camellia Mathotiana, the largest and best red known.—May be viewed on the morning of sale, and Catalogues had of Mr. J. C. Stevens, 38, King-street, Covent-garden, London.

CHERTSEY, SURREY.

TO GENTLEMEN, NURSERYMEN, AND OTHERS.

MR. WATERER will sell by Auction, on MONDAY, October 28, and following day, at 11 o'clock, by order of the Proprietor, at Brox, about two miles from the town of Chertsey, and one mile from the Addlestone Station, a valuable NURSERY STOCK, comprising 75,000 Fruit, Forest, and other Trees, Evergreen and other Shrubs, including Spruce and Larch Firs, Birch, Horse Chestnut, Turkey Oak and Holly, Common, Wood, and Portugal Laurels, Arbutus, Laurestinus and Laburnums, Standard, Dwarf, and Climbing Roses, Honeysuckles, Irish Ivy, Daphnes, Clematis and Aucubas, Pears, Peaches, Apricots, and Nectarines, Plum, Pear, and other Stocks, Rhododendrons, Azaleas, Kalmias, and other American Plants, Ornamental and other Flowering Shrubs, 800,000 Bedded and Seedling Quick, and other Stock, the whole of which are in a safe moving condition.— May be viewed one week previous to the sale, by applying to Mr. George Gray, Brox; and Catalogues had on the premises, and of Mr. Waterer, Auctioneer, Land and Timber Surveyor, Chertsey, Surrey.

TO NOBLEMEN, GENTLEMEN, NURSERYMEN, AND OTHERS.

SUNNINGDALE AMERICAN NURSERY, near Sunninghill, Berks, two miles from Virginia Water, two miles from Sunninghill Wells, and half a mile from Shrub's Hill.

MR. WATERER will Sell by Auction, on MONDAY, November 4, 1850, and following days, at 11 for 12 o'clock precisely, part of the extensive and valuable NURSERY STOCK of Mr. James Walker; consisting of 25,000 blooming Rhododendrons; Kalmias and Azaleas for Forcing, and many large ornamental Plants; a large quantity of Choice Evergreens and Flowering Shrubs, Dwarf Roses, and Honeysuckles, Standard and Dwarf-trained Apples, Pears, Cherries, Plums, Peaches, Apricots, and Nectarines, of the most approved sorts, Common and Portugal Laurels of all sizes, Birch, Ash, and Oak, Purple and Common Beech, Spruce, Larch, Scotch and Balm of Gilead Firs, of all sizes, a large quantity of Quick, from 3 to 5 years old, and a great variety of other Nursery Stock, well worth the attention of Nurserymen and others, about planting, being in a safe moving condition. N.B.—The above is the produce of Seven Acres, and will be sold without reserve, as the Lease expires at Midsummer, 1851.—May be viewed one week previous to the Sale, and Catalogues had on the premises; of Mr. Chablwood, Seedsman, Covent-garden; and of Mr. Waterer, Auctioneer, Chertsey, Surrey, who will forward them on application, by post, enclosing six postage-stamps.

POOLE NURSERY, 1 mile from Poole, on the Parkstone-road.

IMPORTANT SALE OF NURSERY STOCK.

MR. NICHOLL has received instructions to sell by Auction, on the ground, the whole of the Stock of Evergreens, Ornamental and Flowering Shrubs, Fruit and Forest Trees, without the least reserve, on THURSDAY, November 7th, 1850. The Stock of Shrubs comprises Laurels, Arbor-vitæ, Red Cedar, Evergreen and Scarlet Oaks, Berberis, Hemlock, Spruce, Azaleas, Ericas, Box, Roses, Dwarf and Standard, &c. The Forest Trees are about 20,000 Oaks, 3 to 6 feet high, 10,000 Scotch, 20,000 Spruce, 500,000 four-year old strong Quick Thorns, Elms, Beech, Birch, Acacia, and Hornbeams; a fine collection of Pinus, &c. The Fruit Trees are Filbert, Apple, Pear, Plum, and Cherry. The above will be found particularly worthy the attention of gentlemen planting; as the whole stock is beautifully grown, with a large mass of fibrous roots, and the soil of the Poole Nursery being remarkably light and poor, the trees are sure to thrive luxuriantly when removed. Sale to commence at 12 for 1 o'clock precisely. As it is intended if possible to sell the whole in one day, punctuality is respectfully solicited. Catalogues sent on application to the Auctioneer, Poole, upon enclosing two penny stamps for the payment of postage.

IMPORTANT AND EXTENSIVE SALE OF NURSERY PLANTS, ON ABOUT SIX ACRES.

MR. T. BAXTER is directed to sell by Auction, on TUESDAY, October 29th, and following day, at Bromley-hill Nursery, on the London side of Bromley, Kent, the very superior and well-rooted Stock of Plants, including about 4000 Common and Portugal Laurels, 4600 Green and Worked Hollies, Variegated and Green Box, Arbor-vitæs, Yews, Cedars, Arbutus, 4000 Spruce, Scotch, and other Firs, and Forest Trees of every description, 20,000 fine Quick, Mulberries, trained Peaches, Nectarines, and Apricots; valuable and well-budded Camellias, Rhododendrons, and other Flowering Shrubs and Plants. N.B. A lengthened time will be given to clear off the Lots.—May be viewed seven days preceding the sale, and Catalogues had at the Auction Mart, London, at the place of sale. &c.

ABSOLUTE SALE OF AMERICAN PLANTS, EVERGREENS, AND OTHER NURSERY STOCK.

MR. D. A. RAMSAY will sell by Auction, at the Brompton Auction Ground, Fulham-road, Brompton (one mile from Hyde-park Corner), on TUESDAY, October 29, and following day, at 12 o'clock, 2000 Scarlet and other Rhododendrons, Azaleas, Andromeda, Ledum, &c.; 1000 Standard, Dwarf, and Pillar Roses, Standard and Dwarf-trained Fruit-trees; 1000 Victoria and other Rhubarb Roots, Fig-trees, Strong Grape Vines; about 5000 Evergreens, 3000 Ornamental Trees, Deciduous Shrubs, &c.—May be viewed prior to Sale, and Catalogues had at the principal Seed Shops, and of the Auctioneer, Brompton Nursery, Fulham-road, London.

IMPORTANT SALE OF CAMELLIAS, LILIUMS, RHODODENDRONS, &c., FROM AN EXTENSIVE GROWER AT GHENT.

MR. HASLAM will sell as above, on FRIDAY, November 1st, at the Auction Mart. Also, at the same time, about 250 Standard Roses, from the South Essex Nurseries.

FARMS TO LET, WITH IMMEDIATE POSSESSION.

MR. HURLEY, Farm Agent and Valuer, begs to urge Farmers and others requiring either Large or Small FARMS, to make known their wants immediately to him, as he has upwards of FIFTY FARMS, Arable and Meadow, of the first description, from Sixty to Six Hundred Acres, adapted to every kind of Farming, and rents to meet the times, in Surrey, Cambs, Sussex, Essex, Berks, Bucks, Kent, and Middlesex.—All applications (accompanied by two stamps) addressed to the Auctioneer, 62, Nelson-square, London, will meet instant attention.—Proprietors having Farms to Let are solicited to insert the same in Mr. H.'s Register.

The FOLLOWING DESIRABLE FARMS are submitted in addition to Mr. Hurley's last Published List, to which he begs to refer attention, namely—

A VERY EXCELLENT FARM known as "Rookwood Hall," situate in Essex, comprising TWO HUNDRED and EIGHTY ACRES of sound Turnip, Wheat, and Barley Land, Forty Meadow, with capital Residence and Outbuildings.—Rent and tithes moderate.

Also, a CAPITAL FARM of FIVE HUNDRED and THIRTY ACRES, in Berks, Seventy-four Meadow, Seventy-four Down Pasture, remainder Arable, with excellent Premises.—Rent, tithe free, 315*l.* a year.—Near the Great Western Railway.

Another in the same County, nearly FIVE HUNDRED ACRES, considered the best Farm in Berks; near a Station on the Great Western Railway.

And another of FOUR HUNDRED ACRES, same County, and near to the Pangbourne Station on the Great Western Railway.

Also a very CAPITAL FARM in Kent, of TWO HUNDRED and SIX ACRES, Good Meadow and Arable Land, in excellent condition, good House and Premises. Rent, 130*l.* a-year; tithe free.

Also a very SUPERIOR FARM in Sussex, with excellent House and Buildings, and about FOUR HUNDRED and TEN ACRES of good sound Corn, Root, and Meadow Land. Rent (tithe free) 330*l.*

Also TWO FARMS in Kent, adjoining, to be had together or separate, consisting of TWO HUNDRED and NINETY-SIX, and ONE HUNDRED and THIRTY-NINE ACRES; one nearly all Meadow Land, and the other nearly equally divided; good Premises, &c. Rent and tithes low.

Another CAPITAL FARM in Essex, of ONE HUNDRED and THIRTY-SIX ACRES, Arable, excellent Corn and Turnip Land; good Premises. Rent, 1*l.* per acre; tithe, 5*s.*

Likewise TWO other FARMS, on Lease, near Romford, Essex, 12 miles from London, to be let together or separate, consisting of TWO HUNDRED and SIXTY-FIVE ACRES, 39 Meadow; good Premises, Rent, 510*l.*; tithe, 120*l.*; rates low.

And lastly, several SMALL FARMS, from TWENTY-FIVE to NINETY ACRES, to be let in counties near London.

Rents of each to meet the times. Apply for terms and to treat (inclosing four postage stamps), to Mr. Hurley's Agricultural Agency Office, 62, Nelson-square, Blackfriars-road, London.

TO CAPITALISTS, ELIGIBLE BUILDING SPECULATION.

TO BE SOLD, 33 acres of LAND, contiguous to a rising sea-port and market town in a western county, adjoining a turnpike-road, with extensive frontage upon which 10 houses of respectable character are already built on leases of 60 and 99 years. There is ample space for considerably extending the town in this direction, and the land being at present let as market gardens, renders it not only an excellent opportunity for speculation by retailing it in lots for building purposes, but also a safe investment of capital. The freehold ground rents of the above 10 houses also for sale.—Apply by letter, directed (prepaid) to S. L., Box 100, Post-office, Gloucester. N. B. A Railway passes very near the property.

EXHIBITION, 1851.—AUTHENTIC VIEW OF THE BUILDING, as approved by her Majesty's Commissioners. Numerous unauthorised and incorrect views having appeared, the AUTHENTIC VIEW is this day published, beautifully engraved on steel, nearly 2 feet in length, showing the real size and proportions of the Building, with all its architectural details complete. Price 3*d.*, with description; post free, on roller, 10 stamps.

London: G. Berger, Holywell-street, Strand; and all Booksellers.

PUNCH'S POCKET-BOOK for 1851, will be Published on the 1st of November. With illustrations by John Leech and Richard Doyle. Price 2*s.* 6*d.* in roan tuck.

Punch Office, 85, Fleet-street, and at all Booksellers and Railway Stations.

COMPLETION OF DAVID COPPERFIELD.

On the 31st inst., will be published, price Two Shillings, Nos. 19 and 20 of

DAVID COPPERFIELD THE YOUNGER, OF BLUNDERSTONE ROOKERY. By Charles Dickens. With Illustrations by Hablot K. Browne.

*** The complete volume will be published early in November, price 21*s.* cloth, or 24*s.* 6*d.* half-bound in morocco.

Bradbury & Evans, 11, Bouverie-street.

This day is published, price 2*s.*,

THE ENCUMBERED ESTATES OF IRELAND; a Series of Letters, reprinted in a collected form from the "The Daily News."

London: Bradbury and Evans, 11, Bouverie-street.

A MORNING IN SPITALFIELDS.

THE LADIES' COMPANION, for October 26, contains Part I. of the above, beautifully illustrated.—Also, The Sorrows of Gentility, Chap. X.—Letters of Mrs. Scott and Mrs. Montagu, No. VII.—The Hunnybuns at the Sea-side, Part IV.—Work, Dress, and Fashions, with numerous Illustrations.—Household Hints, and Receipts, by Miss Acton, &c. &c.

Part X. will be published on the 31st inst., price 1*s.* 2*d.*

Office, 11, Bouverie-street.

BY THE AUTHOR OF "VANITY FAIR."

On the 31st instant will be published, price 1*s.*, No. 22 of

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By W. M. THACKERAY, Author of "The Great Hoggarty Diamond," &c. &c. With Illustrations on Steel and Wood by the Author. Volume First is ready, price 13*s.* in cloth

This work will be completed in Two Volumes.

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THE BOOK OF THE FARM. By Henry Stephens, F.R.S.E. A New Edition, in 2 vols, royal 8vo, with Eleven Illustrations on Steel by Landseer and others; and upwards of 500 Engravings on Wood by Branston. To be completed in November.

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SIR HENRY STEWART'S PLANTER'S GUIDE. A New Edition, being the Third, enlarged, with the Author's last Additions and Corrections. In 8vo, price 21*s.* cloth.

William Blackwood and Sons, Edinburgh and London.

JOHNSON'S GARDENERS' ALMANACK.—This Almanack, conducted by George W. Johnson, Esq., Editor of "The Cottage Gardener" and "Cottage Gardeners' Dictionary," aided by some of the best Gardeners of the day, will be Published, as usual, on the 21st of November, by the Stationers' Company, Stationers' Hall, London.

YARMOUTH BLOATERS.—GENUINE AND OF THE FINEST QUALITY.

Yarmouth has for centuries been justly celebrated for its well-known "Yarmouth Bloaters," the delicacy of which, when obtained in their genuine state, requires no comment. Such an opportunity is now offered; and they can be forwarded to any part of the kingdom (on receipt of a post-office order), at 10*s.* per 100, or 6*s.* per 50 (package included).—All orders to be addressed to Mr. Frederick Broughton Youell, Church-square, Great Yarmouth.

Printed by William Bradbury, of No. 13 Upper Woburn-place, in the Parish of St. Pancras, and Frederick Mullett Evans, of No. 7, Church-row, Stoke Newington, both in the County of Middlesex, Printers, at their office in Lombard-street, in the Precinct of Whitefriars, in the City of London; and published by them at the Office, No. 5, Charles-street, in the parish of St. Paul's, Covent-garden, in the said county, where all Advertisements and Communications are to be addressed to the Editor.—Saturday, October 26, 1850.

THE GARDENERS' CHRONICLE
AND
AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 44—1850.] SATURDAY, NOVEMBER 2. [PRICE 6*d.*

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WM. FOSTER, NURSERYMAN, SEEDSMAN, and FLORIST, Stroud, Gloucestershire, has a large stock of good transplanted LARCH of various sizes to offer; prices will be given on application, with samples if required.

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BECK'S PELARGONIUMS.—The TWO GUINEA COLLECTIONS of Twelve Plants have amongst them RUBY, SARAH, and DORCAS, seedlings not sent out before, but often exhibited in our winning collections. The set may be had in exchange for a post-office order on Brentford, in favour of JOHN DOBSON; package and carriage to London included. They are in 3-inch pots, and wanting an immediate shifting. Catalogues may be had on prepaid application, enclosing one postage stamp.—Worton Cottage, Isleworth.

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WILLIAM E. RENDLE AND CO. have this season A LARGE SURPLUS STOCK of many sorts of FOREST TREES and SHRUBS. For prices see the *Gardeners' Chronicle*, October 19, 1850.

Our Autumnal Catalogue of Forest Trees, Shrubs, and Fruit Trees, is just published, and can be had for one penny stamp.

Apply to WILLIAM E. RENDLE AND CO.,
NURSERYMEN, PLYMOUTH.

PLANTS FOR BLOOMING IN THE CONSERVATORY IN WINTER OR EARLY SPRING.

MESSRS. J. AND J. FRASER, NURSERYMEN, Lea Bridge-road, Essex, beg to offer the following, finely set with bloom-buds, at the undermentioned moderate prices:

AZALEA INDICA, in fine sorts	...	18*s.* to 30*s.* per doz.
EPACRIS and ERICAS, ditto	...	18*s.* to 24*s.* ,,
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KALMIA LATIFOLIA	...	12*s.* to 18*s.* ,,
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MOSS AND PROVENCE ROSES	...	12*s.* ,,
LILACS, GUELDRE ROSES, DEUTZIAS, WEIGELA ROSEA, &c.	...	12*s.* ,,

The above are all beautifully grown, and well established in pots, and are fit for immediate forcing. Remittances respectfully requested from unknown correspondents.

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CAREY TYSO, FLORIST and SEEDSMAN, Wallingford, Berkshire, will forward his CATALOGUE OF FLORISTS' FLOWERS to any address on receipt of two postage stamps; and his Treatise, "The Ranunculus: How to Grow it," on receipt of eight stamps.

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HART AND NICKLIN, FLORISTS, Guildford, respectfully offer the undernamed PLANTS, strong and healthy, all of which are well known, and established in character:

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S. HALE wishes to dispose of the Stock of his three SUPERB SEEDLING DAHLIAS, which have been very successfully exhibited during the past season, and are well known to the London growers, each of them having taken First-class Certificates.

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BETULA (Birch), 30 species	4 0	25 0
CORNUS (Dogwood)	4 0	25 0
CORYLUS (Nut)	4 0	25 0
COTONEASTER	4 0	25 0
CRATÆGUS (Thorn), from 80 to 90 sp.	4 0	25 0
CYTISUS	4 0	25 0
FRAXINUS (Ash), 40 to 50 species ...	4 0	25 0
MESPILUS	4 0	25 0
POPULUS (Poplar), 25 species	4 0	25 0
PRUNUS (Plum), 50 species	4 0	25 0
PYRUS (Pear), 50 to 60 species	4 0	25 0
QUERCUS (Oak), 30 to 40 species ...	12 0	
RIBES (Currant), 50 species	4 0	25 0
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,, Ghent and other varieties ...	18 0	

N.B. Packing will be charged as low as possible. Post-office orders made payable either in London or Hackney.

Hackney, Nov. 2.

TILEY'S VIOLA ARBOREA, OR PERPETUAL TREE VIOLET.—VIOLA ARBOREA, or the PERPETUAL TREE VIOLET (true).—In answer to numerous inquiries for the above, and great satisfaction given by the plants sent out last season by EDWARD TILEY, he begs to state that he has this year a fine stock of the above beautiful DOUBLE VIOLET now to dispose of, which he can highly recommend, this being the proper time for making beds or potting. They are beautifully scented; the blooms are as large as the double blue Hepatica; they bloom freely from August till the end of May, and are perfectly hardy. Twelve of these plants grown in pots will scent a large greenhouse; and a small bed, 9 feet long by 3 feet wide, will be sufficient to furnish a family with bouquets the whole of the winter and the spring. They should be planted in rather a dry situation and a loose soil, as the Violet will thrive and bloom finer than in wet or clay borders.

E. T. has been informed by the gentleman that introduced it into this country, that he has seen them growing in the thickets of Persia to the height of 4 feet, with large bushy heads to them, and hundreds of blooms on them at the same time. Large bushy plants, 6*s.* per dozen; smaller ditto, 3*s.* per dozen; or 1*l.* per hundred.

Also he has a fine stock of that splendid YELLOW VIOLET, or VIOLA LUTEA, which has been so much admired at the London exhibitions. In colour it is equal to the Crocus. Strong bushy plants 2*s.* 6*d.* each; or smaller ditto, 1*s.* 6*d.* each.

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The whole or any quantity of the above will be sent, postage and package free, to any part, on receipt of a Post-office order, or the amount in penny postage stamps.

Sold by EDWARD TILEY, Nurseryman, Seedsman, and Florist, 14, Abbey Church-yard, Bath.

TO GARDENERS, RAILWAY CONTRACTORS, FARMERS, AND OTHERS.

FOR SALE, about an Acre of very fine clean three years' old QUICK.—May be viewed upon application to Mr. VINCE, Hounslow Heath, and for further particulars apply to Messrs. KING and SON, Estate Agents, &c., Brentford.

FOR SALE, TWO HANDSOME ORANGE TREES, in Fruit, from 7 to 8 feet high; one the "Malta Blood Orange," the other the "Malta Egg Orange;" also a quantity of choice Geraniums and various other plants.—Apply at 13, Henstridge-place, St. John's-wood, London.

PLANTING SEASON.

WILLIAM URQUHART AND SONS, Dundee, respectfully announce that their PRICED LIST OF SEEDLING AND TRANSPLANTED FOREST TREES, SHRUBS, AND PLANTS, is now ready, and may be had, on application.

FOREIGN BULBOUS ROOTS.

WM. HAMILTON, SEEDSMAN, &c., 156, Cheapside, London, begs to state that his Priced Catalogue of the above is now ready, and may be had gratis on application.

HYACINTHS in colours, named, for pots or glasses, 6*s.*, 9*s.*, and 12*s.* per dozen; in mixtures, 3*s.* per dozen. MIXED DUTCH CROCUS, 1*s.* 6*d.* per 100. TULIPS for early forcing, 1*s.* per dozen. SNOWDROPS, 2*s.* 6*d.* per 100. NARCISSUS, 4*d.* to 6*d.* each. GLADIOLUS, IXIAS, IRIS, RANUNCULUS, ANEMONES, and a large assortment of other Roots, the prices of which will be found in his Catalogue.

W. H.'s Improved Supporter for Hyacinths, &c., 6*d.* each.

*** Not to be equalled by any now offered to the public.

Address—156, Cheapside, London.

MESSRS. STANDISH AND NOBLE have to offer the following very desirable plants:

AZALEA INDICA, "GLORY OF SUNNING-HILL."—In general appearance this plant, when in bloom, reminds one of Nerium splendens, producing large double rose-like flowers of the richest pink; good plants, 3*s.* 6*d.* to 10*s.* 6*d.* each.

CRYPTOMERIA JAPONICA SEEDLINGS.

2 years	18*s.* per doz., or 105*s.* per 100.
3 years	30*s.* ,, 210*s.* ,,
1 foot 6 inches to 2 feet 6 inches high,	60*s.* per dozen.
2 feet 6 inches to 3 feet 6 inches high,	90*s.* ,,
3 feet 6 inches to 4 feet 6 inches high,	126*s.* ,,

And larger plants in proportion.

The whole of the above, with the exception of the one and two years seedlings, were planted into the open border last spring, are fine robust specimens, and fit for immediate planting.

CRYPTOMERIA JAPONICA, var. NANA, a very singular dwarf variety, 10*s.* 6*d.* to 21*s.*

CUPRESSUS FUNEBRIS, or WEEPING CYPRESS. (North of China.)

6 inches high, 10*s.* 6*d.* each; 12 to 15 inches, 21*s.* each.

These plants are from the open border—robust specimens fit for immediate planting.

15 ins. to 24 ins., 31*s.* 6*d.* each; 24 ins. to 30 ins., 42*s.* each.

CUPRESSUS GOVENIANA. (California.)

6 to 9 inches, 7*s.* 6*d.* each; 9 to 15 inches, 10*s.* 6*d.* each.

15 to 24 inches, 21*s.* each; 2 to 3 feet, 31*s.* 6*d.*

CUPRESSUS LAMBERTIANA, 2 feet, 3*s.* 6*d.* each.

CUPRESSUS THURIFERA, var. ELEGANS, perfectly hardy. 1 foot to 2 feet high, 3*s.* 6*d.* to 5*s.* each.

CEPHALOTAXUS FORTUNII, strong plants, 31*s.* 6*d.* each. For description, see "Botanical Magazine," by Sir W. Hooker.

FORSYTHIA VIRIDISSIMA.

1 foot 6 inches to 2 feet	1*s.* 6*d.* to 2*s.* 0*d.* each.
2 feet to 3 feet	,, 2*s.* 6*d.* ,,
3 feet to 4 feet	3*s.* 6*d.* ,, 5*s.* 0*d.* ,,

Fine bushy plants from open border fit for immediate planting.

JASMINUM NUDIFLORUM ... ... 1*s.* 0*d.* each.

Flowering plants ... ... 3*s.* 6*d.* ,,

This is a very desirable winter flowering hardy plant, producing a profusion of flowers of the richest yellow from December to February.

QUERCUS SCLEROPHYLLA. (North of China.) This is undoubtedly the most remarkable of all evergreen Oaks, having foliage as large as the Spanish Chestnut, and more than twice the substance. Strong seedling plants, 42*s.* each.

QUERCUS INVERSA. (North of China.) Also evergreen, with smooth entire leaves, having remarkably large male inflorescence. Seedlings, 42*s.*

FORTUNE'S YELLOW ROSE, a distinct species, admired by all who have seen it. It would be impossible to describe the combination or richness of the bronze and yellow tints which the flowers present. It is an excellent pillar Rose, and its foliage is distinct. It blooms freely, and in general habit resembles Ruga.

TAXODIUM SEMPERVIRENS.

1 foot to 1 foot 6 inches ...	... 2*s.* to 2*s.* 6*d.* each.
1 foot 6 inches to 2 feet 6 inches	... 3*s.* 6*d.* to 5*s.* ,,
3 to 4 feet	... 7*s.* 6*d.* to 10*s.* 6*d.* ,,

Larger in proportion.

VIBURNUM PLICATUM. (North of China). A noble shrub, producing in great profusion large globular heads of flowers of the purest white. Strong plants, 21*s.* each.

WEIGELA ROSEA.

6 inches high	1*s.* 0*d.* each.
1 foot to 1 foot 6 inches	1*s.* 6*d.* to 2*s.* 6*d.* each.
1 foot 6 inches to 2 feet	3*s.* 6*d.* to 5*s.* 0*d.* ,,

These last are fine bushy flowering plants.

Selections of the finest Autumnal Flowering Roses.

Standards	15*s.* 0*d.* per dozen.
Half Standards	12*s.* 0*d.* ,,

N.B.—We have a large quantity of very fine common Laurels, from 2 feet to 6 feet high; also Spruce Fir, from 2 feet to 4 feet high; which, with Catalogues of all kinds of Nursery Stock, can be sold very cheap, particulars of which can be had on application.

Bagshot Nursery, Nov. 2.

HENRY LITTLE, King's Road, Chelsea, Florist, Nursery and Seedsman to Her Majesty the Queen, begs to offer a splendid Stock of Standard and Dwarf-trained and untrained FRUIT TREES of the best varieties; also a large quantity of Aucubas, Laurels, large green Hollies, Standard and Dwarf Roses, variegated Hollies, Privets, Euonymus, Box, &c., &c., at unusually low prices, the ground being required immediately for building purposes. The finest Hyacinths, with names, 6s. and 9s. per dozen. Crocus, yellow, blue, and white, 2s. per 100; and all other varieties at the lowest prices.

GAINES' SUPERB SEEDLING FANCY GERANIUMS for 1851, which he can recommend as being New, Distinct, and Free Bloomers. GAINES' CREOLE.—Upper petals nearly black, with white edge; lower petals the same; 10s. 6d. GAINES' DIANTHEFLORA.—Upper petals crimson, edged with white; lower do. white, with distinct spot in each; 10s. 6d. GAINES' VENUS.—Pure white, with large dark spot in the upper petals; 10s. 6d. GAINES' GENERAL JUNG.—Crimson edged with white, white centre; 10s. 6d. GAINES' QUEEN OF THE ISLES.—Pure white, with large cherry spot in each of the petals; 15s. GAINES' DESIRABLE.—Lilac pink, edged with white; 10s. 6d. GAINES' UNIQUE.—Beautiful lake, edged with white; centre pure white; 10s. 6d. GAINES' EXCELSA.—Upper petals maroon, edged with white; lower do. pink, with rose spot; 10s. 6d. GAINES' FLORIBUNDA.—Crimson purple, edged with pink; ligh centre; 10s. 6d. GAINES' CIRCULARITY.—Dark crimson, perfectly round, with a belt of pure white round each petal; 15s.

GAINES' SUPERB SEEDLING SHOW GERANIUMS.

GAINES' AFFGHAN.—Large rosy pink, with dark blotch on the upper petals, edged with rose; centre pure white; 31s. 6d. GAINES' MOUNT HECLA.—Brilliant scarlet, crimson spot; white centre; 31s. 6d. GAINES' ANTIOPE.—Upper petals crimson, edged with pink; lower do. pink, white centre; 31s. 6d. GAINES' SURPRISE.—Upper petals rose, with dark spot, shaded with orange; under do. rose, white centre; 21s. GAINES' VULCAN.—Fine rose, with dark spot in the upper petals; very large trusser; 21s. GAINES' DAZZLE.—Orange scarlet, black spot in the upper petals; white centre; 31s. 6d. GAINES' INVINCIBLE.—Upper petals rose, with dark spot shaded with orange; lower do. bright rose, white centre; 21s. GAINES' PURPUREA.—Good purple, with large regular spot in the upper petals; 21s. GAINES' PROMETHEUS.—Bright orange red; 21s. GAINES' ADONIS.—Beautiful rose, with orange crimson spot; white in the centre; 21s. COCK'S MARS.—Upper petals crimson, with large dark crimson spot; lower do. dark rose; 21s.

A General List can be obtained by applying at the Nursery, Surrey-lane, Battersea.

NEW GERANIUMS, CINERARIAS, &c.

BENJAMIN R. CANT, St. John-street Nursery, Colchester, begs to offer strong, handsome, healthy plants of the undermentioned, feeling confident they will give entire satisfaction.

GERANIUM, Magnificent (Foquett's)	...	each	7s. 6d.
,, Gipsy Bride (Foster's)	...	...	7 6
,, Field Marshal (Symons')	...	...	7 6
,, Prince of Orange (Hoyle's)	...	...	7 6
,, Crusader (Hoyle's)	...	...	2 6
,, Brilliant (Topping's)	...	...	2 6
FANCY GERANIUMS, Albonii (Henderson's)	...		2 6
,, ,, Hero of Surrey (Gaines')	...		2 6

CINERARIAS.

Annie (Henderson)	each 1s. 0d	Lady Gertrude (Henderson)	each 2s. 0d
Adela Villiers, do.	... 3 6	Matilda, do.	... 1 0
Angelique, do.	... 2 0	Nymph, do.	... 2 0
Carlotta Grisi, do.	... 2 6	Othello (Mackie's)	... 2 6
Delight, do.	... 2 0	Speciosa (Henderson)	... 1 0
Eleanor, do.	... 1 0	Sanspareil (Kendall)	... 2 0
Emperor, do.	... 2 0	Wellington (Henderson)	2 0
Flora M'Ivor, do.	... 2 6	Wedding Ring, do.	... 2 0
Calceolaria grandis (small)		... ... each	2s. 6d.
Escallonia macrantha (small)		... ...	5 0
Hoya bella		... ...	2 6
Mitraria coccinea		from 1s. 6d. to	2 6

The usual discount to the Trade.

N.B. Having a very large stock of Geraniums "Field Marshal" and "Prince of Orange," B. R. C. is induced to offer them to the Trade at 2l. 10s. per dozen.

Carriage paid to London and Norwich and all intermediate stations on the Eastern Counties and Eastern Union Railways.

PLANTING SEASON.—NURSERY GROUNDS, RED LODGE, NORTH STONEHAM, NEAR SOUTHAMPTON.—An unlimited supply of every description of FOREST, FRUIT, AND ORNAMENTAL TREES, AMERICAN PLANTS, AND FLOWERING SHRUBS, may be procured from these extensive grounds, at the most reasonable prices, printed Catalogues of which may be had of the proprietor, WM. ROGERS, Sen., Nurseryman and Contracting Planter.

Transplanted Forest Trees, 1 to 2 feet, adapted for extensive Forest or Coppice Planting, usually sold by the thousand; and also of a large size, for Ornamental Planting, or immediate effect, from 3 to 12 feet, the prices varying from 25s. to 5l. p. 100.

Ash, Beech, Birch, 15s. to 30s. per 1000; Spanish Chestnut, 20s., 30s., and 40s.; Larch Fir, 7s. 6d. to 20s.; Spruce, 20s., 30s., and 40s.; Scotch, 10s., 15s., and 20s.; Pinaster, 10s., 15s., and 20s.; Sea Pine, adapted for exposure to the sea, 15s., 25s., and 40s.; Mahonia, for cover, 40s. to 80s.; Hazel, 15s., 20s., and 35s.; English Oak, 15s., 20s., and 40s.; Poplar, 20s., 30s., and 40s.; Quicks, 5s., 7s. 6d., and 10s.

Planting contracted for to any extent from 5l. to 20l. per acre.

ORNAMENTAL TREES AND SHRUBS.

Rhododendron ponticum, 2 to 6 inches, 20s., 40s., and 80s. per 1000; 1 foot, single stems, fit for working, 10s. per 100; 1½ to 2 feet, strong, 20s. to 40s. per 100, fit for planting out at once to cover; 4 to 6 feet, single stems, for working the beautiful scarlet and other fine kinds, 50s. per 100. Tree Rhododendrons may thus become as generally cultivated as Tree Roses. Scarlet Rhododendrons, 18s. per dozen; hybrid scarlet, lilac, and white, with large handsome trusses of flowers, 4 to 6 inches, 25s.; 1 foot, 40s. per 100; Kalmia latifolia, 2 to 4 inches, 8s. to 12s. 6d. per 100; 1 to 2 feet, blooming buds, 50s. per 100; 2 to 3 feet, fine, 75s. per 100; Epigæa repens, 50s. per 100; and all other American plants at equally low prices.

Dwarf Rose Stocks for working, 8s. per 100; Single Camellias, 25s., 40s., and 50s. per 100, fit for working; Double Camellias, of sorts, on own roots, 6 to 9 inches, 12s. per dozen; Pinus (Abies) Douglasi, from seed, 6 to 9 inches, 10l. per 100 or 80s. per dozen; Arbutus, 12 inches, 8s. per 100; 1½ foot, 20s. per 100; 2 feet, 30s. per 100; Laurel, 8s. to 20s. per 100; Laurustinus, bedded, 40s. per 1000, 8s. per 100; Variegated Holly, 1 foot, 25s. per 100; Clematis azurea grandiflora, 6s. per dozen, 42s. per 100; Deutzia scabra, 2 feet, 12s. 6d. per 100; Common China Rose, 12s. 6d. per 100; Tree Roses of the most select kinds, 5l. per 100; Dwarf Roses, 50 sorts, named, 50s. per 100; Double White, Double Red, and New Crimson Thorns, 40s. per 100, 6s. per dozen; Large Dutch Honeysuckles, 12s. 6d. per 100; Giant Irish Ivy, 8s. per 100.

The prices are for wholesale, if ordered in less quantities a higher price will be charged. All orders above 5l. carriage paid to London.

American purchasers will find great advantages in procuring their supplies from these grounds, from their proximity to the Docks whence the American steam-packets take their departure, thus saving the delay and expenses of Land Carriage.

A FEW CHOICE LATE PEARS.

GANSEL'S LATE BERGAMOT, raised by Mr. Williams, of Pitmaston, bears well as a standard. Season, December. Young trees on the Pear stock 5s. each; double worked on the Quince, 7s. 6d.

WINTER BEURRE (Rivers's).—A new seedling from the Easter Beurré, quite hardy. Season, February and March. On Pear stocks, 5s.; double worked on the Quince, 7s. 6d.

BERGAMOTTE D'ESPERIN.—Season, April and May. On Pear stocks, 2s. 6d.; on Quince, fine pyramids, 3s. 6d.

BEURRE BRETONNEAU.—Season, May and June. On Pear stocks, 5s.; on Quince, 5s.

DOYENNE GOUBAULT.—Season, March. On Pear stocks, 2s. 6d.; on Quince, fine pyramids, 3s. 6d.

SUSETTE DE BAVAY.—Season, March to May. On Pear stocks, 2s. 6d.; on Quince, fine pyramids, 3s. 6d.

JOSEPHINE DE MALINES.—Season, February to May. On Pear stocks, 2s. 6d.; on Quince, fine pyramids, 3s. 6d.

All the above are first-rate melting Pears, and bear well as pyramids.

CANES of the LARGE FRUITED MONTHLY RASPBERRY, now in full bearing, are this season sold at 4s. per dozen; 30s. per hundred.

Thomas Rivers, Nurseries, Sawbridgeworth, Herts.

HERTFORD ROSE NURSERIES.

E. P. FRANCIS'S NEW ROSE CATALOGUE, containing all the newest kinds introduced and worth cultivating, is now ready for delivery, and will be forwarded gratis on application. The Collection this year is very extensive and remarkably fine.

MYATT'S LINNÆUS RHUBARB, strong roots, 12s. per dozen; Myatt's Victoria, 9s. per dozen; and Mitchell's Royal Albert, 12s. per dozen. Extra strong plants of the New Red Currant "Raby Castle," 6s. per dozen, or 45s. per 100; and Fastolff Raspberry, 10s. per 100. With the usual allowance to the Trade. Post-office orders are requested to be made payable to Joseph Myatt, Manor Farm, Deptford, near London.—Nov. 2.

CHOICE FLOWER ROOTS, CHEAP.

Carriage free, as see below.

The finest fresh imported HYACINTHS, ANEMONES, CROCUSES, &c., may be had at much less than the usual prices, as under.

	per doz.—s. d.		per doz.—s. d.
Splendid Hyacinths, by name	6 0	Tulips, Tournsol ...	2 6
Do., colours separate, without names ...	3 0	Do., choice for beds ...	1 9
	per 100	Gladiolus Gandavensis.	7 6
Crocuses, colours separate	2 0	Do., fine mixed	2 6
Do., mixed	1 6	Irises, choice by name...	4 0
Snowdrops, double ...	2 0	Do., fine mixed	2 6
Anemones, splendid dble., by name	20 0	Ixias, fine mixed ...	1 6
Do. do., mixed	7 0		each
Single mixed	5 0	Lilium lancifolium rubrum, 3s. 6d.; album	1 6
Ranunculuses, fine mixed	3 6	Cyclamen of sorts ...	1 6
Do., scarlet Turban ...	3 6	Carnations and Picotees, choice by name ...	1 0
	per doz.	Clove-scented	0 9
Narcissus, double Roman	3 6		per doz.
Do., double white ...	1 6	Hollyhocks, choice dble., with colours marked .	7 6
Do., Pheasant's Eye ...	1 6	Do., mixed	4 0
Jonquils, sweet double .	2 6	Violets, purple tree, each	0 9
Tulips, early Van Thol .	1 0	Do., true yellow... ...	3 6
		Do., Russian Superb ...	0 9

The above are the best sorts in cultivation.

N.B. Parcels of not less than 10s. value are sent carriage free to any station on the Great Western, South Western, or South Eastern Railway, or to any office in London or Bristol.

Address John Sutton and Sons, Reading, Berks.

TO GARDENERS AND OTHERS.

PINE APPLES AND GRAPES.—Wanted, for immediate use, a quantity of good Queen Pine Apples, from 2 lbs. to 3 lbs. each; also a quantity of good Hot-house Grapes. Any person having such fruit to dispose of, at a fair market price, can communicate, by letter, post paid, to J. Adam, 39, New Bond-street, London.

NURSERY STOCK SELLING OFF.

JOHN BELL is now selling to the Trade his stock of FRUIT TREES at the following low prices, having a large quantity, and must clear the ground this winter:

	Per hundred—£. s. d.
Dwarf maiden PEACHES, NECTARINES, and APRICOTS	2 10 0
Dwarf trained PEACHES and NECTARINES ...	7 0 0
Dwarf maiden APPLES	1 5 0
Dwarf trained do.	5 0 0
Standard do.	2 10 0
Dwarf maiden PEARS	1 10 0
Dwarf trained do.	5 0 0
Standard do.	3 10 0
Dwarf maiden PLUMS	1 10 0
Dwarf maiden CHERRIES	1 10 0
Standard do.	2 10 0
FIGS, in eight sorts	2 0 0

The above are of fine growth, and warranted true to name. A sample sent, if required; and Catalogue of sorts may be had by inclosing one penny stamp to John Bell, Nurseryman, Norwich.

Strong 4-year-old Whitethorn, and fine Beech, 1 to 2 feet, at 2s. 6d. per 1000, if taken in large quantities.

THE TRUE LANCASHIRE SHOW GOOSEBERRIES.

Red.	Dwt.	Grs.	*Yellow.*	Dwt.	Grs.
London	27	10	Catherine...	26	4
Companion	25	4	Leader	24	14
Lion's Provider ...	25	0	Dublin	23	13
King Cole...	24	0	Teazer	23	0
Slaughterman ...	23	8	Game Cock	22	2
Wonderful	23	5	Gunner	22	1
Green.			*White.*		
Thumper	23	8	Freedom	25	20
Queen Victoria ...	22	0	Queen of Trumps	24	0
Green Wonderful ...	21	10	Snowball...	22	15
Gretna Green	21	5	Lady Trister	22	10
Random Green ...	21	0	Snowdrop	22	4
Weathercock	20	4	Tally Ho	21	18

The above 24 Gooseberries (taken from the "Gooseberry Register," 1850) are the heaviest grown in England during the last season.

John Holland, Bradshaw Gardens, Middleton, near Manchester, respectfully informs his friends, that he can supply the above 24 strong plants for 12s.; 12 plants for 7s., package, &c., included. Post-office orders to be made payable at Manchester.

Auriculas, Alpines, Polyanthus, Primroses, Carnations, Picotees, Pinks, Pansies, &c. Catalogues on application.

BAKER'S PHEASANTRY, Beaufort-street, King's-road, Chelsea, by special appointment to her Majesty and H.R.H. Prince Albert.—ORNAMENTAL WATER FOWL, consisting of black and white swans, Egyptian, Canada, China, barnacle, brent, and laughing geese, shieldrakes, pintail, widgeon, summer and winter teal, gadwall, Labrador, shovellers, gold-eyed and dun divers, Carolina ducks, &c., domesticated and pinioned; also Spanish, Cochin China, Malay, Poland, Surrey, and Dorking fowls; white, Japan, pied, and common pea-fowl, and pure China pigs; and at 3, Half-moon-passage, Gracechurch-street, London.

TESTIMONIAL TO MR. MUNRO, late Gardener to the Horticultural Society of London.—At a Preliminary Meeting, held at the Roebuck Inn, Turnham Green, September 30th, 1850; Mr. Glendinning, Mr. Thompson, Mr. Cock, Mr. Edmonds, Mr. Gordon, Mr. Caie, Mr. Ayres, and Mr. Ivison being present, Mr. Glendinning was called to preside. Mr. Caie was then elected Secretary, and Mr. Edmonds Treasurer.

It was then Resolved, That a subscription not exceeding Half-a-crown for each person should be entered into for the purpose of presenting Mr. Munro with a suitable Testimonial of esteem, on his retiring from the superintendence of the Horticultural Society's Garden, which appointment he held for upwards of Thirty years.

Persons desirous of contributing are requested to forward their subscriptions to the Treasurer, Mr. Charles Edmonds, Chiswick House, Chiswick, Middlesex.

It was also Resolved, That the Subscription List be closed on Saturday, November 16th, 1850.

*** Post office orders payable at Turnham Green.

JOSEPH TREMBLE, Nurseryman, Seedsman, and Contracting Planter, Penrith, Cumberland, begs to offer BERBERRY AQUIFOLIA, transplanted plants, very fine and stout, 3s. 6d. to 10s. per 100. Berberry Dulcis, 3 years old, 1 year transplanted, very fine and stout plants, 5s. per 100. The above fine dwarf flowering Evergreens are suitable for planting Avenues, Carriage drives, Cover for Game, &c. Special offer in large quantities. Carriage paid to any railway station. Berberry Aquifolia, finest plants, 80s. per 1000. Berberry Dulcis, 40s. per 1000.—J. Tremble offers a general stock on the most reasonable terms.

DIXON'S NEW (REGISTERED) VENTILATOR.—This Ventilator is much neater and more simple than any hitherto invented, can be made of any shape or size, and can be as easily cleaned as any other part of a window. It does not interfere with the blinds, or opening of the windows, and if accidentally broken can be repaired by any glazier at the cost of a single pane of glass. Models can be seen, and every information obtained, by applying to the London agents, James Phillips and Co., 116, Bishopsgate-street, Without.

Dixon v. *Bessell.—Alderman Wilson said, "It was a very clever invention, and he thought Mr. Dixon ought at least to have seven years' protection instead of three," and fined the defendant 60l., and 10l. costs, for an infringement of the Registered design.—Oct.* 1, 1850.

PIMLICO SLATE WORKS.—Cisterns, Filters, Milk and Salting vessels, Corn and Flour Chests, Sinks, Dairy and Larder Shelves, Malting and other Flooring, Skirting, Refrigerators, Garden Edging, Flower Boxes, Pine pit Linings, Hot-bed Frames, moveable Cattle Sheds, Coping, Drain Stones and Traps, Steps and Risers, Balcony Landings, Roofing Slates, ridge roll and flap; Waste Slate for drains, Sun Dials, Fountains, and all descriptions of plain Slate Work in Town, or direct from Mr. Magnus's Works in North Wales.

ENAMELLED SLATE Chimney-pieces, Billiard Tables, Console and other Table Tops, Mural Tablets, &c., in imitation of marble, surpassing the choicest marbles in beauty and durability, at less than half the cost of the commonest descriptions. Price Lists forwarded on application to Mr. Magnus, 39 and 40, Upper Belgrave-place, London.

HARTLEY'S PATENT ROUGH PLATE GLASS.

JAMES PHILLIPS and CO., 116, Bishopsgate-street Without, beg to hand their list of Prices of the above description of GLASS. Cut to order in panes of

8 by 6	and under 10 by 8	at 4½d. per foot.
10 by 8	,, 14 by 10	at 5d. ,,
14 by 10	,, 1½ foot, or sizes not exceeding 20 inches long	at 5½d. ,,
1½ foot	,, 3 feet, or sizes not exceeding 30 inches long ...	at 6d. ,,

PACKED IN BOXES OF 50 feet each.

6 by 4 and 6½ by 4½..... 12s. 0d.	8 by 6 and 8½ by 6½..... 15s. 0d.
7 by 5 and 7½ by 5½..... 13 6	9 by 7 and 9½ by 7½ and 10 by 8 ..... 16 6

Well worth the attention of Nurserymen and Market Gardeners.

ROUGH PLATE GLASS.

	½	⅝	¾	⅞	1 in.	1¼	1½
	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
Not above 15 in. long	0 11	1 0	1 6	3 0	4 6	5 3	6 0
Above 15 in. and not above 35	1 1	1 2	1 8	3 6	5 3	6 0	7 0
,, 35 ,, 75	1 3	1 4	1 10	4 0	6 0	7 0	8 0

GLASS TILES AND SLATES made to any size or pattern.

HALLIMAN'S REGISTERED FRUIT PROTECTORS, from 6d. to 1s. each.

MILK PANS, from 2s. to 6s. each.

PROPAGATING AND BEE GLASSES, from 2d. each.

WASP TRAPS, 3s. 6d. per dozen.

LACTOMETERS, for trying the quality of Milk, 7s. 6d. each.

STANDS, for Pianofortes, 1s. each.

Glass Shades for Ornaments. Parian Marble. Wax and Alabaster Ornaments. Lamp Shades and Glasses. Patent and British Plate. Ornamental and Stained Glass; and every article in the Trade.

From the *Gardeners' Chronicle*, December 8, 1849:

"As for the article substituted for Rough Plate, and which is actually in the market for the purpose of imposing upon gardeners, it is wholly unfit for any horticultural purpose. The best samples of it which we have yet seen is sold by Mr. JAMES PHILLIPS, 116, BISHOPSGATE STREET, LONDON."

GLASS FOR CONSERVATORIES, GREENHOUSES, PIT FRAMES, &c.

HETLEY and CO. are supplying 16-oz. Sheet Glass, of British Manufacture, packed in boxes containing 100 square feet each, at the following REDUCED PRICES for cash. A reduction made on 1000 feet.

Sizes. Inches.					Inches.			Per foot.	Per 100 feet.
					Under 6	by 4	at	1½d. is	£0 12 6
From 6	,,	4	,,		7	,, 5	,,	2d. ,,	0 16 8
7	,,	5	,,		8	,, 6	,,	2½d. ,,	0 18 9
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☞ Everybody who has any idea of planting the ensuing autumn should possess themselves of this Catalogue.

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The Gardeners' Chronicle.

SATURDAY, NOVEMBER 2, 1850.

MEETING FOR THE ENSUING WEEK.

TUESDAY, November 5—Horticultural .....2 P.M.

THE art of striking plants from CUTTINGS is one which mainly depends for success upon preserving the vital fluids from evaporation, until the germ or bud from which a new plant is to spring can become sufficiently organised to maintain an independent life, separate from the branch that bore it. For this reason, we find universally in practice, the employment of hand-glasses, or bell-glasses, the effect of which is to retain, in a state of uniform moisture, the air which surrounds the cuttings; because evaporation cannot go on to an injurious extent, in an atmosphere itself charged with vapour.

Every one who has attempted to propagate plants by cuttings, has, however, found certain practical difficulties in his way. He would easily succeed with Pelargoniums, and Fuchsias, and China Roses; but when he attempted to deal with Apples or Pears in the same manner, he will probably have failed. Among the methods invented from time to time to overcome such difficulties, and to which we need not refer on the present occasion, is one by Prof. DELACROIX, of Besançon, which appears to deserve attention, both for its novelty and ingenuity.

This gentleman states that he, some years since, conceived the idea of insuring the success of cuttings, by putting the lower end in water, and the middle in earth, a circular incision being made between the earth and water. This was not attended with all the advantages he expected, but it led to the discovery of the following plan, which he designates a simple, œconomical, and certain mode of propagation. His process is described in the following words.

"My cutting is placed entirely under-ground, so as to form a subterranean curve, of which the convexity is uppermost, the very middle of the curve being on a level with the surface of the soil. At this middle point there must be a good eye, or a small shoot. In this way the whole length of the cutting is protected by earth, and the smaller end, instead of becoming the seat of dryness, which is always more or less injurious, becomes a passage for absorption. The bud, which, under these circumstances, is the only part exposed to the air, bears, without injury, or rather with advantage, all the causes of excitement.

"Although I did not commence my experiments before the end of June, I have seen quite enough to satisfy me that the method may be of serious advantage.

"Two drills about 3 inches apart were drawn parallel with each other, in a kitchen garden of indifferent quality, situated on a calcareous plain near Besançon. A hundred cuttings of Apples, Pears, Plums, Apricots, Tulip-trees, Roses, &c., almost all of this year's wood, were bent and buried in the manner described, with their ends in the two drills. They were watered a few times, and at this moment every cutting, in the open air, and exposed to the full sunshine, is just as fresh as it was when planted. In most of them, the part exposed to the air (the bud) is the seat of active vegetation, especially in the Pears and Tulip-trees, the buds of which have already made some progress."

This idea seems to be a very good one, and its adoption can hardly fail to increase the chances of successful propagation.

ALL the world, at least all that part of the gardening world which inhabits Great Britain, has heard of a surprising Vine at Hampton Court. Everybody goes to see it at least once in his life; it is a separate and special object in the grounds of the old palace, kept under lock and key, as it well may be, unless its fruit is abandoned to the refreshment of her MAJESTY'S loyal subjects. To account for the immense crops of Grapes borne by this Vine, and for its vigorous old age, it has been stated that its roots are in an ancient sewer, where they find abundance of the rich materials, out of which the Vine prepares sugar and acid, and colour and fragrance, and all that gives deliciousness to its fruit. In 1837 it was reported to have borne 800 lbs. of fruit, upon a roof consisting of 2304 square feet.

It is a mistake however to regard this famous Vine as the most remarkable specimen of the kind in Great Britain. Within a few miles of it may be found one yet more striking. In the royal garden of what once was Cumberland Lodge, near Windsor, there stands a solitary Vinery, sole relic of departed greatness, concerning which we have the following account from an experienced Grape grower who lately visited it.

"We have been astonished, much more than instructed, by the numerous systems which have of late years appeared for Grape growing; when we thought that we had found a roc's egg, something suddenly appeared to dim our vision. The object fled, our faith vanished, and we found ourselves again where we were. One successful cultivator recommended the borders to be concreted beneath, and asphalted above; the first to prevent the roots getting downwards, and the second to carry off the rains. An unsuccessful writer condemned the one as unnatural, and the other as unnecessary; the first, because the drainage would be incomplete, and the second, as obstructing the action of the sun on the border. Another gentleman insisted upon robbing the dog kennel, and feeding Vines upon horseflesh, animal manure being more potent than vegetable. Nevertheless, to our astonishment, an experienced cultivator plants his Vines in his roadway, formed of clinkers, brickbats, and similar rubbish, and ripens most satisfactorily two crops of Grapes in a season. Another gentleman, who set himself up as a great authority, insisted—in fact, wrote a book about it—that good Grapes could only be grown by having their roots cemented in a brick pillar. Mystery after mystery presents itself, and not the least appears when we stumble upon the great Vine at Cumberland Lodge. This monster, loaded with 2000 large bunches of Grapes, as black as Damsons, must surely have had some leviathan 'practical' to cook his border. Let us read its history. Some 50 years ago it was found in a small Cucumber pit. The plant seemed to like its situation, for it soon outgrew this limited abode. It became necessary to extend the shelter; and this has been twice done, until the pit, for it can hardly be called a house, is 138 feet long, and 16 feet wide. Incredible as it may appear, the stem of this Vine measures 2 feet 9 inches in circumference; and when we saw it about a month ago, this immense crop was ripe, the bunches were large, so were the berries; besides, they were black, not brown, and the foliage as vigorous and green as in June. The entire aspect of this house presented a perfect and most instructive whole. There were no brown bunches here and black ones there—no missing at one end of the rafter, and clustering and huddling at the other. It would, in fact, have defied mechanical skill to have distributed the bunches with greater regularity. The size of the bunches, likewise, was nearly uniform—not a shaggy one here and a monster there; for, as we find Stilton cheeses, so these were nearly of one weight and make.

"Now we come to the great problem which is to resolve all this wonderful development—the border; and, by Mr. INGRAM'S kindness, we were permitted to dig several holes, to ascertain its composition, its mechanical construction, and to ponder upon the wisdom and foresight of some great royal gardener. We did for a moment entertain the idea that one of the craft, adorned with a blue apron, bearing mysterious wisdom in his countenance, and practice in his whole deportment, must have been concerned in an undertaking which has produced such marvellous results. We entered upon our task, then, under the impression of revealing to the world a grand secret, and so we shall.——Without difficulty or serious obstruction we readily got through 2 feet of common garden soil; neither encountering a brickbat nor a clinker, a horse's leg nor a bullock's head. There was no evidence of compound manures or simple quackery; the ground was as natural as if it had remained untouched since the Deluge; for immediately beneath this 2 feet of ordinary soil we came upon blue clay!—with a portion of sand intermixed with it. Such clay, indeed, as we should be glad to run against, were we about to form a pond and in want of puddle!!"

It is 12 years since we saw this plant, but it then promised to become all that it is now described to be; the circumstances under which it grew are fresh in our recollection, and entirely confirm our correspondent's description; a mass of the gravel and clay over which it grows is before us, and is too hard to be broken by the hands; a sample of its beautiful fruit was exhibited at the last meeting of the Horticultural Society in Regent-street, and wholly answered to the character just given of it.

Here, then, a Vine, whose roots are not in a sewer or any such place, but in ordinary garden ground, resting on a coarse hard gravelly clay, covers about the same space as its celebrated rival, and bears twice as many Grapes, of the highest excellence. Surely we have in this a striking example of the folly of spending large sums in preparing vast borders out of costly materials, of which the Vine has no real need. No doubt the Vine border at Cumberland Lodge was prepared originally from good materials, such as our predecessors thought suitable to its nature; and that amount of preparation was necessary, in order to enable it to establish itself securely in the earth. But for this a small quantity of materials was sufficient; and, once established in soil that it likes, the Vine needs little further care. Its chief desire is to have a WARM, LIGHT, DRY, SHALLOW border, and that is precisely what it gets at Cumberland Lodge.

VILLAGE EXCURSIONS, &c.—LETTER IV.

MY last letter has pretty well exhausted what I have to advise concerning village excursions, and I shall now conclude with a few words of caution to those who may be inclined to promote them. We cannot expect, in country places, that any innovation will be universally approved. Previous to proof positive, *à priori* conclusions are very commonly self-discouraging to many of our village reasoners. Even conviction is slow in manifesting itself after undeniable evidence has been produced, and in some cases it cannot be persuaded to manifest itself at all. Certain natures, kindly disposed in some respects, seem strongly predetermined to regard the agricultural labourer as a being who ought to be retained in a condition as little dissimilar from that of a serviceable automaton as can be contrived for him. All schemes, educational, recreational, or however tending to elevate him in the social scale, are positively distasteful to some of the employers of labour, whom, nevertheless, we are bound to recognise as worthy men, not wilfully opposed to the comforts of those beneath them. Honest blind prejudice will be found to form one class of impediment to carrying out village excursions so freely and fully as we might desire to see them. Some, again, with less excusable unreasonableness, will be found objecting to join in these excursions because they are not sufficiently select, and would rather have them organised as if we were proceeding to the Canterbury settlement. But the plan which I have suggested does not admit of any one being lightly excluded who has been selected by those who may be nominated to form the nucleus of the party. No doubt there will often be some one or other whom we had rather leave behind; but if sufficient guarantee is given that he will not be suffered to make himself offensive, it is far better that he should be allowed to join, even at the risk of losing some half-dozen patrons and patronesses, who can at any time indulge themselves without the dreaded disgrace of being found in the same train or in the same boat with those whose presence they consider so objectionable. But, after all, these little stumbling-blocks to unanimity need not vex us. It would be found impossible to please every body, even if popularity were our aim in these adventures. There are certain possible inconveniences of more serious consequence than either the frowns or the sneers of dissatisfied objectors; and against these it will be necessary to take proper precautions, unless we happen to possess a larger share of equanimity (not to say apathy), than some of us may care to enjoy. It may rain heavily all day; now, although country folks care less for rain than even soldiers on parade, yet if our arrangements have only been made for squaring with the supposition that it must inevitably prove fine,

such embarrassment may follow as will cause the excursion to prove a failure.

In a town there are the more obvious expedients of museums and manufactories to be visited, under shelter; and short addresses or half lectures may assist in filling up the time. When these resources fail (or even when they do not), there will generally be some one or other able to sing, whether sentimentally or facetiously need not signify. A little dancing, if occasion require, may be suggested; and as for music, I most heartily advise all who take an interest in the social enjoyment of our villagers to agitate their respective unions for the establishment of a workhouse band. The master of our Cosford union was, I believe, the first to organise a band of about a dozen of the orphan boys residing in the house; and the plan has now extended to a few other establishments. Their music is far beyond what might have been expected; and it has given quite a different tone of feeling to the place. It is also a very useful accessory at village *fêtes* and festivities, cricket-matches, and school-children assemblages. This band has accompanied us in our excursions; and we have also been favoured with the company of a "man that could not get warm," whose shakings and lamentations excited the risible muscles of some who know how to be serious in due seasons. Should neither music or dancing avail sufficiently to while away a rainy day, perhaps leap-frog or something else that will suggest itself at the moment, to those who are well disposed towards seeing country people happy in their own way.

Although I am aware these proceedings have been considered, by *à priori* objectionists, likely to "unsettle the labourer," my own experience has proved to me that we all get up the morning after our excursions already shaken into our respective positions and occupations, as completely as if we had been only dreaming of the previous day's adventures. We may possibly greet each other with an additional smile, and a somewhat kindlier feeling than when we met two days before. My testimony will weigh little with a farmer, in comparison with that furnished him by a brother farmer. Now one such (I might say more than one), has assured me that his men have worked most cheerfully, and to the full as steadily, after our excursions as ever they did before. They have afforded subject for conversation for many a day, and so far from engendering anything like a feeling of discontent, the effect has been the reverse.

If you require me to continue these letters, you must append an &c., to their present superscription. I consider the matter referred to in the article and pamphlet you have sent me, of very deep interest to our agricultural population. I will think the matter over, and though I hardly consider myself to possess sufficient experience on directly educational schemes to make my testimony of much value, I will freely give you my opinion, and you must decide for yourself whether you think it fit for the pages of the *Gardeners' Chronicle*. *J. S. Henslow.* [We sincerely trust that our excellent correspondent will favour us with many more communications on such a subject as he has selected.]

ENTOMOLOGY.

The Pine-bud Tortrix.

The various species of the genus Pinus are too important in an economic point of view, independent of the interest which attaches to them from their great use as ornamental trees, not to render the economy of the different insects which attack them worthy of attention, with a view to preventing or diminishing the mischief which they produce, and unfortunately the number of different insects which feed upon this tribe of trees is very considerable, several of which are already described in our pages. In our volume for 1845, p. 456, was described the Hylobius abietis, which gnaws the young shoots, stripping the stems of their bark. In 1846, p. 740, the Hylurgus piniperda was described, which burrows into the main shoots of various Conifers, especially preferring the Scotch Fir; and in 1844, pp. 796 and 831, are described some curious minute aphis-like insects, which derive their nourishment by sucking the juices of the young shoots of the Spruce Fir.

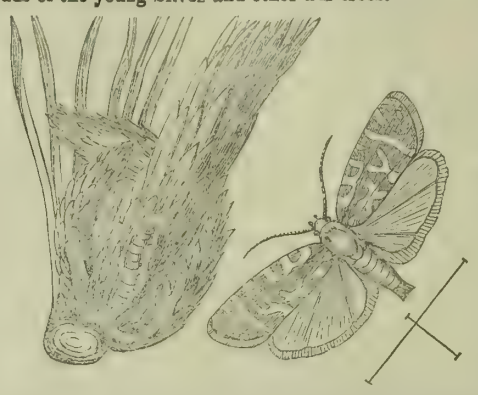
At the end of the month of May last we observed various species of Pinus, growing in the ornamental grounds of the Horticultural Society at Chiswick, to be attacked by the larvæ of a small lepidopterous insect. This insect, which is the Tortrix (Orthotænia) Turionana, ordinarily attacks the Scotch Pine (Pinus sylvestris), and the black Austrian Pine (Pinus nigricans); but we observed it upon Pinus insignis, ponderosa, and Llaveana, the first named of which was especially more subjected to its ravages.

The larvæ are hatched from the eggs deposited by the females in July, in the course of 10 or 12 days, when they immediately penetrate into the bud, the centre of which they destroy, and descending through the heart of the bud to its base they then attack the adjoining buds; in the same manner not only destroying the central shoot, and thus preventing the straight and elegant growth of the branches, but also killing the side buds, and even penetrating into the turpentine tubercles with which some of these Firs abound. By the end of October the caterpillar is feasting on the interior of the largest middle bud, beginning below that which was formed for the following year, in which it spends the winter, renewing its ravages in the spring.

The larva is of a dark, glossy, purplish-brown colour, with the head, and a transverse patch on the first segment following the head, black; it has three pairs of articulated legs attached in pairs to the first three segments of the body, the fourth and fifth segments are legless, each of the four following segments has a pair of fleshy prolegs, and there is another pair of the same kind of legs attached to the terminal segment of the body.

The caterpillar is full grown about the end of June, when it descends to the lower part of the burrow which it has formed in the bud, and is there transformed into a shining chestnut-brown chrysalis, which, like those of most internal-feeding species, has the head furnished with a small point between the eyes, and the segments of the abdomen armed with double rows of very fine points directed backwards, enabling the insect to move itself about in its retreat.

The perfect insect makes its appearance at the middle of July, and is one of our most beautiful species of Tortricidæ. It is likewise far from common in our collections, owing probably to the few Fir plantations of any extent accessible to collectors. It is the Phalæna (Tinea) Turionana of Linnæus, and the Orthotænia Turionana of Curtis and Stephens, and it varies in the expanse of its fore wings from half-an-inch to 11 lines; the fore wings are of a bright, fulvous orange colour, with about four irregular transverse anastomosing silvery streaks, and a simple one on the hinder margin, some of them bifid on the costa, which has one or two small silvery dots; the extreme hind margin is also silvery, with a very slender blackish line at the base of the fringes, which are pale; the hind wings are dusky leaden coloured. When at rest it sits with its wings closed on the trunks of the Fir trees. The female shortly afterwards lays her eggs on the points of the buds of the young Silver and other Fir trees.



Although the attacks of this insect on the different species of Pinus is rarely of sufficient extent to effect the destruction of the trees, yet they are injured in their growth, particularly when the heart bud of the leading shoot, which forms the continuation of the stem, is destroyed; and when, consequently, the straight growth of the tree is prevented. Kollar suggests that nothing more can be done towards the destruction of this insect than destroying the turpentine tumours, particularly about the end of October, while the caterpillars are in them, or cutting off and burning every shoot infected with them. The latter method may be avoided, and the shoot saved, if the resinous tubercle is destroyed before the caterpillar penetrates through it into the alburnum of the tree. If this be delayed until the summer, nothing is easier than the destruction of the insect in the pupa state, at the end of June, since the buds which contain the insects are at once perceived by their drooping and dying state; on breaking these off, the brown active chrysalis is seen at the bottom of the injured part, and children may be easily trained to cleanse such trees as are grown as ornamental shrubs. If this be attended to, and the chrysalids destroyed, the injury from a next year's brood of caterpillars will, of course, be prevented.

The figures represent the perfect moth magnified, the cross lines indicating the natural size, together with a twig of the Fir, consisting of three buds, all of which are destroyed by the boring of the caterpillar seen within the central one. *J. O. W.*

VILLA AND SUBURBAN GARDENING.

The beauty and interest which a garden affords depend greatly upon the disposition of its individual parts, even the arranging and planting of a single bed require experienced taste, in order to produce effective display. Take, for example, a Rose bed; imagine the kinds to be indiscriminately mixed, and no attention to have been paid to their respective heights, and the effect produced by such a medley assemblage will be immediately felt by any person possessing taste, and accustomed to observation. Let us further suppose such a bed to be circular, and the effect will be as bad as it well could be, unless the object aimed at was to represent wild nature. The taller plants should have been placed in the centre, and the others arranged so as gradually to fall to the outer rim. This arrangement would advance us a step; but let us proceed further, and dispose of the trees in zones or circles. In this way we give the bed the expression of design. For be it clearly understood that we are discussing gardening in an artificial sense. Now let us go a little further still, and consider whether there be not yet room for improvement; suppose we plant one colour in the centre circle, and so change each circle until we reach the outer one. By such a classification we add colour as well as design; but imagine the colours to be so arranged that another important feature is produced, viz., contrast, and the picture becomes still further improved, though not yet finished. Would not an edging render the whole more complete? The beauty and brilliancy of the Rose would be singularly improved, and relieved by an evergreen margin. This would in some measure help as it were to lift the group from the earth, and place it nearer the eye. This edging may be of Ivy or Cotoneaster microphylla or Pernettya mucronata, or in fact any low dwarf evergreen shrub kept shorn into a formal rim.

In the above I have shown how much beauty may be exhibited even in a circular bed, by the exercise of a little taste and forethought; but these simple principles are by no means confined to a Rose bed; they can be carried out in every matter relating to the arrangement of a garden, so that unity and comprehensiveness of design may characterise the whole. When a contrary state of things prevail, delight vanishes, confusion takes the place of order, disgust that of pleasure; and instead of the most charming of all pursuits, contributing to relieve the man of business from the oppressions and satieties of mind usually resulting from close application, he abandons the whole in utter dismay and hopelessness. *Pharo.*

BRITISH SONG BIRDS.

No. III.—Mechanical Aviaries.—There have been, from time to time, a number of experiments made by the curious, to see if birds would live in mechanical aviaries; many and various are, and have been, the cruelties practised in consequence. By mechanical aviaries, I mean an extensive space fitted up with fanciful *papier maché* ornaments, and erections of painted wood, in the form of artificial houses, cottages, &c.; with trees, wind-mills, water-mills, fountains of real water, flowing brooks, rivulets, and other similar adjuncts; the *ensemble* intended to convey to the beholder the idea of a rural landscape.

The arrangement and disposal of these objects has, to the eye, a very pictorial effect; and when the sails of the wind-mill are at work, and the water is seen flowing from the mill above, meandering in its progress through the valleys beneath, the effects are curious, the illusion is complete. When, however, "song birds" are introduced into the back-ground, to assist the artist in animating his landscape, and expected to be "happy" in a "Deserted Village" like this, where there is nothing to be found at all assimilating with their natural habits, the whole affair becomes farcical in the extreme, realising the old adage most felicitously—that "there is but one step from the sublime to the ridiculous." As well might the mighty King of Brobdignag have laid himself down on a bed at Lilliput, stretched himself out at full length, and expected to have slept soundly without being comfortably tucked up. Strangely indeed must things be out of tune, when a carpenter usurps the place of a winged chorister, and plays "first fiddle" in an aviary!

These mechanical aviaries are, for the most part, attached to the rear of a room on the ground floor of a house or mansion; and are viewed by throwing up a window, which, when raised, discloses the whole mimic scene. The space allotted to the unhappy feathered tribe doomed to inhabit these miniature villages, when beyond the limit of the spectator's observation, is cruelly small, and altogether ill-adapted for their comfort; nor can their existence under such circumstances be of long duration. The whole disposition of the place and its objects is unnatural—Nature being entirely sacrificed for (so called) effect. If such conceits as these must be perpetrated, be it so; but, then, spare no expense in making the "acting" inhabitants comfortable and happy "behind the scenes," as well as "before the curtain." *Verbum sat.*

A very large picturesque aviary, precisely similar to the one I have been describing, was, some years since, to be seen, by favour, in the neighbourhood of one of our fashionable squares at the west. It was erected by an aged, wealthy gentleman, since deceased. Fame, with her trumpet tongue, had brought my aviary under his notice; and enquiring the whereabouts of my house of business in town, he paid me a complimentary visit.

Some days subsequently, my new acquaintance called, by appointment, with an ample carriage-load of gay folk at my rural villa—to view what they termed "the Exhibition." While walking through the rooms, the old gentleman and his retinue expressed, and I firmly believe experienced, the utmost astonishment and bewilderment at what they saw; and seemed amazed at the cleanliness and method observable throughout the building.

Of course I talked to them, as is my wont when speaking about my pets, in a frank and most expressive manner, detailing the little endearments of my feathered family, and dwelling impressively on their attachments, recognitions, friendships, tricks, and little manœuvres to win my favour; not failing to catalogue also their faults, jealousies, and tempers, &c.; dwelling on these latter, however, as lightly as might be.

All this was *de trop*, evidently quite beyond the comprehension of my visitors. The ladies in particular—with one memorable exception*—seemed to regard me

* On this particular occasion was beautifully illustrated the remark of one of our good old writers—"As by the friction of two pieces of ice heat may be extracted, so in the coldest bosom may dwell a warmth that only waits for some favourable circumstance to bring it into action." I could but lament, to think how soon the bright spark kindled might be extinguished by "strange fire!"

as a remarkable phenomenon; indeed, I confess I felt myself such, while in their company. The lady I have just adverted to deserves, however, honourable mention. She evidently possessed a "soul," for she listened attentively, patiently, I may add affectionately, to my little story throughout; becoming every moment more and more interested. Between myself and my readers, I could have found it in my very heart to have given this fair specimen of humanity one of my choicest birds, had it been *comme il faut* on so short an acquaintance. But as it was not, I merely gave her an expressive look, signifying I would if I dared. My look was understood; my wish thoroughly comprehended. A sweet smile ratified the fact. Let me add, I have never seen her since.

"Is it possible," mused I, after my visitors had departed, "that such people as these can be fond of birds? Or can they indeed be said to possess any of the finer feelings of our nature? If so, 'tis passing strange." But now for my return-visit to the west-end aviary.

I paid my visit late in the autumn. Sir John Shoulder-knot, in the absence of the family, ushered me into an elegantly-furnished chamber; and on presenting my card of entrée, the window was thrown up, disclosing a very pretty romantic village, constructed just in the manner already detailed. My remarks on what I saw, shall be brief.

Observing only one or two very miserable looking birds in the foreground of the picture, I anxiously turned round to enquire the cause. Sir John informed me, that since the inclement weather had set in, most of the birds, having no fire or artificial warmth near their habitation, had perished from the cold. He added, "I do not think, Sir, the few which are left will live long." Nor did I. The hand of death was visibly about to close their eyes for ever!

I hesitated not to speak my mind fully upon the cruelty of this neglect; and intimated to the man in plush, a desire to have my remarks faithfully reported. The rejoinder was short and pithy: "Master says, Sir, if they die, they die; if they live, they live."

Not long after this, I heard that the whole had perished, and that the wealthy owner of the romantic village had been recently seen in the classic neighbourhood of the Seven Dials (preparatory, doubtless, to a refit), bargaining for a robin, a chaffinch, and a hedge-sparrow, whose fate, alas! might too surely be foretold.

I have introduced this episode, in connection with the general subject, in the hope that, when it meets the eye of other similar bird-fanciers—very many such I fear there are—it may carry conviction with it. Every man and every woman, no doubt, do "think" at some period of their lives. I have, therefore, merely supplied the "materials" for their meditation. *Qui capit ille facit. William Kidd, New-road, Hammersmith.*

THE CULTURE OF THE VINE A HELPMATE TO THE CULTURE OF THE MIND; OR, TWO BIRDS KILLED WITH ONE STONE.

[FOR COTTAGERS.]

No. II.—How best to fasten fruit trees to a wall; an offshoot of the subject.

A bosom friend saved from becoming a public spectacle in its old age.

With regard to the fastening of Vines I with a great respect for scarlet waistcoats, and with a hope of sparing the pang of nailing them to walls, to serve as princely homes for Grape-consuming insects, would recommend a plan, though perhaps more laborious and expensive at first, will certainly save labour and money in the end.

Let the industrious and improving read and do it, the idle and old ways may pass on. Strain painted wire (No. 13), over the wall, at about ¼ of an inch from it, and 1 foot from each other by means of stay-nails; (that is, flat pieces of iron about 3 inches long, and ½ of an inch broad, sharpened at one end, and having a hole drilled through at the other); one of these should be used every 2 feet in distance, the wire passing through the hole, and being fastened at either end. The wire can be strained either in an upright position, or lengthways, as most convenient. The Vine rods can be fastened to these by bass; the smaller branches by twigs stretched across. Another, perhaps, cheaper plan is to drive sufficiently large headed nails, or stay-nails (with holes sufficiently large to allow the fastening used to pass through) into the wall, at the required distances.

No harbour, no rats; no rats, no cats.

Under the waistcoat system, I should have here recommended frequent lime-washing, to keep the wall free from insects, but this, I think, will now be found unnecessary.

How to supply the want of heat to the roots of Vines.

In the next place, we have to reflect how we can supply the heat that is required to the parts of the Vine under the ground (viz., the roots) and though it be of equal importance, it is not usually enough attended to. To effect this we must force the roots as near the surface as possible. We must also insure good drainage; for the temperature of the soil will vary as the moisture. Remove the water, and air, heated by the sun, will take its place. We shall find these two points fully established as necessary, if we apply to, as our test, the nature of those circumstances under which the Vine most flourishes. Thus, we before stated, that it loves to grow on the steep sides of mountains; and, indeed, in many rocky districts, the cultivators are in the habit of carrying up soil in baskets in which to plant the young Vine; so that it cannot strike deep on account of the underlying rock; and the drainage is very rapid. No season, I am convinced, will be found in which there is not a sufficient amount of solar heat to ripen Grapes, if we could overcome the bad effect of the cold winds and rain. *C. A.*

As folly goes out, wisdom comes in.

THE WINDOW GARDENS OF LONDON.

EITHER amateur gardeners are become more skilful, the London atmosphere much clearer, or the speculations of byegone days were fallacious, for during a recent stroll from Belgravia to Temple-bar the appearance of the numerous balcony gardens (and they are become quite a feature in the street scenery of the great metropolis) was directly opposite to what one would infer if he had lived in the country all his life, and formed his opinions from what he had read of the soot-loaded air of London. The plants for the greater part were in luxuriant health. Scarlet Geraniums with leaves of a tint that would not have disgraced the window-sill of a villa at Hampstead; and mingled with them were trusses of flowers in every way beautiful; and I could not admire them without mentally ruminating upon the amount of gratification which their owners must derive from the possession of such objects in localities where there is so little to remind one of the green fields and flowery banks, of sunny skies and summer rambles.

Foremost as a window plant in the closer streets is the trailing Lysimachia nummularia (Money-wort) of our English meadows, and a very pretty and graceful adjunct to a London, or indeed any balcony, it certainly is. In Essex-street, leading from the Strand, is a window garden of more than ordinary magnitude. Lysimachias, Geraniums, Chrysanthemums, and numerous other plants, were rambling with a luxuriance quite incompatible with the ordinary ideas of a floral display in London. And in almost every street, however apparently unsuited for gardening operations, windows full of healthy plants are sure to gratify the eye of the pedestrian.

There is one circumstance upon which I must beg to become critical. I know I touch upon a delicate point, yet I feel assured that those numerous window gardeners who read the *Gardeners' Chronicle* will take the little bit of criticism in the same spirit as it is given. I allude to the red pots, which offend the eye at every turn, and materially detract from the otherwise pleasurable sensations conveyed by the healthy plants occupying them. Not satisfied with the self colour of the pots (in itself quite bad enough) their possessors anoint them with some pigment of a fiery red colour, quite distressing to look at. I am somewhat puzzled to account for a seeming anomaly in this respect, which I observed at a mansion, I think, in Belgrave-square. At the first floor windows were some plants rejoicing in all the pride of newly coloured red pots, and in that immediately above them some neatly executed vases, in imitation of stone, were the receptacles of some plants in every way similar to those in scarlet livery. The contrast was so marked that I could not but pause to admire the one, and to notice how exceedingly the other suffered by the comparison. *George Lovell.*

TRADE MEMORANDA.

MR. WILLIAM BENDALL, of Stockbridge, has just favoured Mr. Small, Nurseryman, Colnbrook, with an extensive order. Was there not a person with some such name lately in Winchester jail?

Home Correspondence.

Plums.—I have long been a cultivator of fruits, and have seen them in many sites and soils, in every part of England, and in many on the Continent, and I now feel more than ever the extreme caution required in publishing an opinion of the merits or demerits of any particular variety. Such were my reflections on reading the article at p. 678, headed "Select Plums." Your correspondent, "J. B. W.," received fruit of the Reine Claude de Bavay on the 10th inst., after a journey from France: and proceeds to give his opinion of it. Now this is at least more than a fortnight after its perfect maturity here; for in England, South of Trent, it ripens as nearly as possible, allowing for the variation of our seasons, from the middle to the end of September; and when fully ripe and slightly shrivelled at the stalk, it is brimfull of a rich, sugary, refreshing juice. In my opinion it is more grateful to the palate than the Green-gage, which, when fully ripe, fatigues the taste with its lusciousness. I ate some fruit of the Reine Claude de Bavay from my tree, I think about the 15th inst.; they had lost their juice, and were not good. The Queen Mother Plum, as you well know, is a small Plum, good enough, but not worthy of much notice. Kirk's Plum is really good. The Precoce de Tours, one of our least hardy Plums, I have some pleasant recollections of; three very large standard trees, planted by my great grandfather, used in my boyhood to bear once in four or five years a tolerably good crop, worth gathering to send to market; in other seasons only a very thin sprinkling. In these seasons of scarcity we, the boys, had the privilege of shaking the trees and appropriating the Plums to ourselves. What "jolly" seasons they were, and how often they came! This Plum is indeed only fit for a wall. The Early Prolific, mentioned at p. 663, is a seedling raised from it with smooth instead of downy shoots as that has, and with blossoms so hardy as to withstand nine degrees of frost on the 3d of last May, which killed every thing besides, among fruit. The trees are standards. Its fruit is perhaps a little longer than those of its parent, it is more juicy, and brisk in flavour; in shape and appearance much like it. It is indeed a Precoce de Tours *hardenized.* Why should not we gardeners make a word? There is another seedling from the same parentage like the above, now common in the nurseries; for both have been in being nearly 20 years, called the Early Favourite. This has downy shoots, is a trifle earlier, of higher flavour, but not so hardy. "J. B. W." should tell us where he lives, and whether he cultivates the Plums he mentions as standards, or against walls, as such information satisfies readers and prevents many enquiries. Your correspondent has omitted to mention two very valuable and very hardy late Plums, Coes Late Red, and St. Martin's Zwetsche, a yellow Plum of excellent quality and most profuse bearer, as a standard or pyramid. *R.*

Peach Stocks.—About 10 years ago I planted, by way of experiment, a Grosse Mignonne Peach in the middle of a small pit, and trained it right and left to a trellis a foot from the glass. As it increased in growth I kept giving it more room, and it progressed tolerably well; but I never felt satisfied with it. In one year, however (1847), I gathered 8 dozen of fine fruit from it, in July and August; but with that exception it never produced more than a few dozen, until this year, when I had 10 dozen well set and stoned on it. In July, however, when the swelling process was going on, it died, just before the crop was ripe. The cause of death was, the stock being one mass of gum and canker. I never perceived the stock to be affected before this season. It was either a Peach or Nectarine stock, as I ascertained by a sucker which sprang up from a surface root. Gardeners should beware of the kind of "stocks" such trees are "worked" on. Why not bud them on the old Mussel Plum, as formerly, which is clear and bright as glass. In the "Theory of Horticulture," p. 239, you say, concerning stocks, "It is sometimes desirable to increase the hardiness of a variety, and grafting or budding appears to produce this effect to a certain extent; not, indeed, by the stock communicating to the scion any of its own power of resisting cold, but by the stock being better suited to the soil of latitudes colder than that from which the scion comes, and consequently requiring a lower bottom-heat to arouse its excitability." Mr. Knight, indeed, denies this fact, because "the root which Nature gives to each seedling plant must be well, if not best, calculated to support it;" and it is so, under the circumstances in which the species was first created, but without this addition. The paragraph in inverted commas is specious only, not just. Probably in Persia, the native country of the Peach, that species, or its wild type the Almond, is the best stock for the former fruit, because the temperature of the earth is that in which it was created to grow; but in a climate like that of England, the temperature of whose soil is so much lower than that of Persia, the Plum on which the Peach takes freely, is a "hardy native, and suited to such soil, and its roots are aroused from their winter sleep, by an amount of warmth unsuited to the Peach. And experience in this case completely confirms what theory teaches; for, although there may be a few healthy trees in this country growing upon Almond stocks, it is perfectly certain that the greater part of those which have been planted have failed; while in the warm soil of France and Italy, it is the stock on which most of all the old trees have been budded." The above quotation is sufficient to show what stock a gardener should prefer, and what stock a nurseryman should reject. *W. Brown, Merevale Hall.*

Liverpool Parks.—In justice to Mr. Milner, by whom Mr. Paxton's plans for the Prince's Park, Liverpool, were executed, I beg to correct a mistake in the leading article of last week's *Chronicle*, where the superintendence of the work at that park has been ascribed to me. The only park here with which I can claim any connexion is the Birkenhead Park, designed by Mr. Paxton, and formed by me, under his inspection. *Edward Kemp, Birkenhead Park, Oct.* 28.

Names of Seeds.—I have been considerably struck by the letter of your correspondent "D., Woolwich," on the subject of Grass seeds (p. 684, *c*), in which he complains that he cannot understand the Latin names of the Grasses recommended by you. On the other hand, he sends a list of names which he does understand, some of which it is probable that we all apply in a similar manner, namely, red and white Clover, Cocksfoot, and Rye-grass; but what does he mean by "suckling," "hay seeds," and "Cock-grass?" Surely these local names are quite as puzzling as the scientific names given by you. Local names must always be ambiguous, for I have found that the same name is applied in different districts to different plants; and it

is, probably, quite unnecessary to add, that the same plant has usually several local names. How, then, is the inquirer in one district to understand an answer if it is conveyed in local names alone? He may very possibly be led to sow the seeds of Grasses quite different from those recommended. The only mode by which certainty can be attained is, that of which your correspondent complains, namely, the use of the scientific names of the plants which are known to all good seedsmen, to whom alone any wise man will apply for his seed. You have given the list again, and added what you justly call, "the Latin names translated;" and I put it to your correspondent to say if he is any the wiser for that translation. He will understand the few of them which are not really translations, but substitutions of universally-known English names for the scientific ones, but surely the others are quite as likely to be unknown to him as the Latin terms themselves. Where a real English name exists I think that it ought to be used, but can see no use in requiring people to learn a name translated into English which will be understood only by those few who have learned it, whilst the Latin or scientific name is intelligible to all seedsmen who understand their trade throughout the world. Allow me, in conclusion, most strongly to recommend your correspondents to avoid the use of local terms in their communications. You will remember, and so will most of your readers, very numerous instances of ambiguity caused by their use. All who have not the means of learning a scientific or generally used English name for that about which they write, should send a specimen to you for your determination, in order that the true name may be inserted in their communications. *C. C. B.*

The Plum as a Pyramidal Tree.—For some few years I have amused myself by forming my Plum trees into pyramids, feeling convinced that no other mode of cultivating our hardy fruits is so eligible for small gardens. I was induced to take extra pains, on account of observing that our neighbours the French, so famous in their cultivation of pyramids, failed to a certain extent with the Plum; as their trees, I observed, on being pruned to that shape made too vigorous shoots, and were inclined to gum. They do not know the value of root-pruning, and will not listen to it; I do, and therefore felt some hope of success. At first I commenced to root-prune once in two or three years, but I soon found that was not enough, for the Plum makes roots so rapidly that it is difficult to check it; I have now, therefore, for the last three years root-pruned annually, early in autumn. My success is perfect; this I have generally done in September, soon after gathering the fruit, but this year not having any fruit, and awakened by your article on "Summer Root-Pruning," given in *Gardeners' Chronicle* in July, I operated on them in August; the trees almost immediately went to rest, and are now pictures of forthcoming fruitfulness. The operation is so simple, that any one may exercise it without any fear of failure. Let me attempt to describe it; and yet how irksome it is to have to employ so many words about what one can tell and do in a few minutes. Open a circular trench, 18 inches deep (for the Plum does not root deeply) round by one tree 18 inches from its stem; for the first two or three years this distance will be enough; increase the diameter of the circle as years roll on, but very slowly, not more than from 1 to 2 inches in a year, and cut off every root and fibre with a sharp knife. This operation may be likened to the manner in which old folks talk of the way in which they used to cut the hair of poor workhouse boys, viz., place a basin on the boy's head and trim off the hair round its rim—in short, the "workhouse cut;" then when your roots are so trimmed, introduce a spade under one side of the tree and heave it over, so as not to leave a single tap root. Fill in the mould; if the weather is dry give the tree a soaking of water, and it is finished. If your soil is poor, give a top-dressing of manure, to be washed in by winter rains. The following summer pinch off the ends, in June, of any shoots that seem inclined to push more than 4 inches, and thin those out with the knife that are too crowded; the result will be a handsome and highly prolific pyramidal tree. Plums are not yet half appreciated; for, owing to the introduction of many new and good varieties, they are in season from July till November, for the dessert and for the kitchen. *T. R.*

Stent's Kidney Potato.—Alluding to your account of my seedling, given at p. 659, I beg to protest against the plan pursued by you in its cultivation; and my reason for so doing is the result of my own practical experience with the same kind of Potato for the last three years. I, however, perfectly agree with you, that no one can determine what is the best plan to adopt with the Potato, under various circumstances, the accounts from practical men being so conflicting. I planted this year half an acre with my seedling, on ground which had been well manured in autumn, and had been laid up rough through the winter. The sets were all planted whole—a point of great importance, and they had not been allowed to sprout before they were planted. It was late before they made their appearance above ground, but every plant grew well, and possessed a healthy appearance, until the beginning of September, when the leaf became spotted, and showed marks of disease. Past experience having convinced me that the plan of removing the tops does not prevent the progress of disease, but that it tends greatly to diminish the size of the crop, I allowed them to grow until they were quite ripe, which was about the 24th September, when I commenced digging them, and I am happy to state that I have a very abundant produce, though not so large as on previous years, and it is nearly clean of disease, at least not more than half a bushel is at all affected out of 4½ tons, from half an acre of ground; and, as regards quality, they are not to be surpassed by any other kind in the kingdom. The reports of several respectable gentlemen in this neighbourhood, whom I supplied with a few sets in spring, perfectly confirm the above statement, and they are of opinion that my seedling only requires to be known to be generally cultivated. *W. Stent, Stockworth.*

Fry's Sulphurator.—I have no desire to occupy your pages with useless controversy, that savours only of party interest, from which no public good can be derived; but, in justice to myself, I deem it necessary to state that when my friend Mr. Epps wrote to me for my machine, he did not mention for what purpose he intended it to be applied; had he stated that his object was to diffuse sulphur amongst the Hop plants, I should have informed him that for that purpose it was of little use. I have previously mentioned that the machine sent to Mr. Epps was a copy of the original one which I first introduced; six only of these were made, when improvements suggested themselves. Mr. Epps states, with reference to the one he received from me, that it was of little or no use, throwing the sulphur scarcely 6 inches, and that in a very imperfect and clotted condition. Now, this is a mistake, which I am prepared to prove, as I happen to have in my possession one of these now discarded machines. With it I can throw the sulphur 2 feet, in a finely diffused state, by simply reducing any lumps that might be found in it, and using it perfectly dry; and I advisedly assert that whatever machine may be employed, this important point must not be overlooked, as the least humidity will cause the particles of sulphur to adhere, and impede the perfect action of the machine. Having had occasion to apply sulphur rather extensively this season to various crops, for the purpose of destroying mildew, I was led to believe that a far more efficient mode might be adopted than that hitherto used either by myself or any one else, and the result was the production of the machine sent to Mr. Epps. I however soon found, by experience, that although I could use my first contrivance advantageously, in some cases it was not adapted for general purposes. This was no sooner discovered than improvements suggested themselves, and these improvements not only enabled me to dispense with a considerable portion of the machinery, but, independently of this, rendered the contrivance perfectly effective in its operation; so much so, indeed, that the second-size machine, weighing under 3½ lbs., will throw sulphur from 6 to 10 feet with ease. This has been attested in many of the leading establishments near the metropolis, by some of our best gardeners; and, as I stated before, I now leave the public to judge of the respective merits or demerits of the two machines. *George Fry, Manor House, Lee.*

Foreign Correspondence.

Churra Poonji, Khasiah Hills, *Aug.* 28, 1850.—My friend Major Jenkins, of Assam, is exceedingly anxious to promote the interests of science, and of Mr. Simons, the apothecary to his station (Goahatty), by recommending the latter person, and circulating his prospectus.* Of Major Jenkins and his eminent services, you probably know well. His avocations prevent his doing all he would wish, and he has appointed Mr. Simons a sort of deputy. The latter is a most meritorious and intelligent man, a very worthy one, too, I am assured on all hands; and to any one willing to patronise him with a small order, he would, I am sure, give all the attention and plants he promises. He is further remarkably neat-handed and orderly, and dries plants exceedingly well. It is quite incredible how few Europeans there are in India who have any zeal for such matters. Major Jenkins is one of those few; nor in the broad Company's dominions is there any one who has more zealously and effectually rendered assistance to every one who has called on him, for full 15 years past. I have now been for two months in these hills, working with my friend and old schoolfellow, Dr. Thomson, who occupies part of his furlough in India, and will return with me to Europe early in the ensuing year. He has been working quietly and steadily for now 10 years past, and I find him one of the soundest and best instructed botanists I ever met with; well read, and more or less versed in all departments, and with bundles of MS. descriptions of live plants drawn up with the greatest care and exactness, and which will prove of inestimable value, including as they do upwards of 1000 species, especially Acanthaceæ, Cucurbitaceæ, and other difficult orders. He has botanised over the plains and hills of N. W. India, Thibet, Affghanistan, Cashmere, and spent three months with me in Sikkim; accompanied me here, and as we hope to visit Chittagong, Arracan, Ceylon, and the Sonderbunds before we return, Thomson's botanical experience will be little short of Griffith's. His N. W. collections have just gone home to England in 28 chests, most beautiful specimens, and in perfect order, with many duplicates. The variety and beauty of this flora is quite astonishing, and we have so much to do in noting and examining the many new genera and ill-understood old ones, that the work is too much for one individual to do properly. The jungles on the plains are inaccessible (for malaria). During the rains we are confined to the hills, and mere excursions to the Terai of a few hours. The latter, too, is so under water that the flora is much poorer than we expected, and elevations of 2000 and 5000 feet are probably by far the richest in number and curiosity of species. Luxuriance is confined to the flanks of the hills facing the plains of Assam and Sylhet, and to the gulleys leading up thence. The hill-tops are naked of much trees, and grassy, producing a very European vegetation. Orchideæ are by far the most remarkable natural family, and will probably form fully one-tenth of the Phænogamous flora. Grasses are the largest family. I gathered 50 species in one afternoon, in a seven miles walk, at 4500 and 5000 feet elevation; only three of them naturalised; almost all were tropical genera. We dissect and describe everything we possibly can, but put far more into spirits, especially curious tissues, fruits, &c., the flowers of Orchideæ, of which we shall have a fine collection, at your service I need not say. We look about for monsters, of which I saw a most extraordinary and suggestive one in Calcutta, a double Dendrobium. By the way the alternation of the placentæ with the stigmata which you quote as objectionable to the ordinary view of Orchideæ structure is surely very common, and not alone in Monocotyledonous plants. I have a beautiful Melanthaceous genus, in which I have traced and drawn this modification, and which will, I think, explain it clearly. I am astonished to find the ovary of the common Scindapsus quite erroneously described, and that its structure is opposed to the description of the whole order, or sub-order, whether classed with Aroideæ or not; there are two branched parietal placentæ projected into the cavity of the ovarium, with many ovules in each, just like Didymocarpus, in short; at least it is so in five species. I have, however, a very similar congener (not Pothos) in which the ovules are few and basilar. Commelyneæ are very curious; I find the ovules, when two, always superposed, and always orthotropal; Griffith describes them as anatropal; and he is also in error in supposing the position of the cells of the ovarium to be abnormal; in Cyanotus it is so only in appearance. Amongst Scitamineæ I have some most curious plants, one with a one-celled ovarium, and parietal placentæ with three or four anatropal ovules; there are no traces of more cells at any stage. The whole order, I should think, wants revision; and all the species should be examined, if not drawn fresh. Impatiens is a splendid genus here, and from a careful examination of Hydroceras, and many species with four lateral sepals, I am convinced that Roeper's theory is the right. I have now examined nearly 40 species, with the same result. After all, I look on the appearance which the back-piece presents, of being formed of two petals, with a green sepal adnate behind, as the most anomalous looking point in its structure; such a view is, however, untenable with any hypothesis, or with fact. The position of the flowers of Hydrocera is quite proper in the young state, and becomes resupinate afterwards. We have three Parnassias here; and I must really beg respectfully to remonstrate against the classing them away from Saxifrageæ, and especially with Hypericineæ, with which they have scarcely a character in foliation or floration in common. Nor can I appreciate Griffith's allying them to Villarsia; in short, as you will say, I can appreciate no view but that I adopt. Here I have found another species of Helvingia, which I still think a reduced Aralia. Why does Griffith deny stipules to Bucklandia? (I believe he does.) They are identical with those of Leea and other plants. I know no tree that would be a greater ornament at home. The Khasya Pine is quite different from P. longifolia, and in habit a perfect resemblance of Scotch Fir. We have also the Yew here and two Podocarpi. Sabia and Cardiopteris are the two most remarkable plants I ever examined. By the way, you still hold your opinion of the peristome of Mosses being whorls of leaves. The Calyptra I know is, and I made a great many analyses of these points 10 years ago, at sea; it may be a convolute leaf, or many leaves with a valvate vernation or plicate one. But what I wanted to ask was, whether you ever examined Quekett's specimen—what he gave me had not a seta at all, nor any traces of pistillum, bulb, or vaginula. The supposed seta was a shoot, as was to have been expected from the way it was produced. I have often tried to coax Mosses into monsters in vain. I showed Quekett's specimen to Wilson, who knows it to be no monster of a seta, and detected it indeed at once, before I spoke.

* We referred to this at p. 610 of the present year's volume, and it has been since advertised in our columns. We should say that a more favourable opportunity of importing Assam and Khasiah Orchids can never occur. The list with which Dr. Hooker has favoured us contains several plants not named in Mr. Simons's first catalogue, and fresh additions must be made frequently.

Reviews.

The Sugar Planter's Manual, being a Treatise on the Art of obtaining Sugar from the Sugar-cane. By W. J. Evans, M.D., 8vo, pp. 244. London, 1847.

The Practical Sugar Planter: a complete Account of the Cultivation and Manufacture of the Sugar Cane. By Leonard Wray. 8vo, pp. 415. London, 1848.

The Manufacture of Sugar in the Colonies and at Home, chemically considered. By John Scoffern, M.B., 8vo, pp. 160. London, 1849.

Copies of Report and Correspondence on the subject of Dr. John Scoffern's Patent for Refining Sugar, presented to Parliament, 14th August, 1850. Folio, pp. 18.

When several books are published nearly at the same

time upon any art, it is generally evidence that considerable improvements and changes are being effected in it, or at all events that it is exciting a good deal of interest amongst those practically engaged in carrying it on. All this is certainly the case at the present time in respect to the manufacture of sugar, which for a long series of years had been conducted in the West Indies in the same unvarying and imperfect mode, but which, within the last dozen years, has attracted the very serious and earnest attention and study of those most interested in it—an effect partly produced by the gradual improvement of sugar manufacture in other countries, and partly caused by the very low and depressed state of West India produce generally.

In 1842 the Governor of Jamaica, the Earl of Elgin, anxious to promote the welfare of the country committed to his charge, offered a prize of 100*l.* for the best essay on the cultivation of the Sugar-cane. This produced eight essays on the subject, and Mr. Thomas Henney, whose essay received the prize, states in the very commencement, "I am of opinion that the unprofitableness of most sugar estates, of which the proprietors justly complain, is in a great measure attributable to the imperfect manner in which the system of cultivation is carried into operation, and the too little attention paid to the all important subject of the economy of manure." These essays hardly go into the manufacture of sugar, their chief object being the cultivation of the cane, but Mr. Henney observes, that notwithstanding the imperfect condition of the manufacture, and the numerous attempts which have been made to improve it; yet that during the 25 years over which his experience extended no real improvement had been effected in the process.

Sugar is manufactured in different parts of the world, chiefly from four plants—the Sugar-cane, Maple, Beet, and Palm. The mode in which the process is carried on, of course varies a good deal, but there is at the same time also a considerable degree of similarity, inasmuch as in all cases the formation of saccharine matter in plants depends on the same physiological and chemical conditions, and the separation of the sugar from the impurities, or rather the other vegetable secretions with which it is associated, is in all cases attended with the same difficulties; dependant on the very nature of the sugar itself, and the peculiar qualities of the substances with which it is mixed in the juices of the plant. There are three points especially of interest and deserving attention in the manufacture of sugar, and at present we shall wholly confine our remarks to the sugar of the cane; these are, firstly, the formation of sugar in the plant, secondly its extraction, and thirdly its purification—including under this latter head not merely the manufacture of muscovado or raw sugar from the cane juice, but likewise its purification by the refiner, and the manufacture of white or loaf sugar.

The object of the sugar planter is, to obtain the largest possible quantity of saccharine juice, at the least possible cost, from a given number of cane plants. That this is not done may be learnt from a very slight consideration of the modes of culture employed, and the manner in which the various operations of the sugar farm are carried on. Mr. L. Wray even goes so far as to designate the whole system as an "entangled mass of mischievous practices, encouraged and supported by self-interest, old custom, and deeply rooted prejudices." It is unnecessary for us to say anything, however, on the mere practical and mechanical arrangements of the sugar plantations, such as drainage, irrigation, use of ploughs, choice, care, and management of cattle, &c.; the consideration of these matters, though doubtless all important, as regards the profits of the sugar manufacture, and the interests of the holders of West India estates, would lead us too far from the main question now before us. In planting Sugar-canes, as in most similar agricultural operations, the first thing is to break up, cleanse, and pulverise the soil. Rows of holes, 2 feet distant from each other, and three or more feet apart, are then dug about 10 inches deep; one or two cuttings or joints of Sugar-cane are placed at the bottom of each hole, and then covered with about an inch of mould; the hole not being filled up again to the surface, so as to leave the cutting covered with soil, at the bottom of a small cup-shaped cavity or basin. Shoots are put forth in about a fortnight, and the earth is gradually filled into the hole, as the young plants grow. During the formation of the canes, the earth is from time to time loosened and weeded, and when the canes are judged to be ripe, or to contain the greatest quantity of saccharine matter, they are cut and carried to the mill. From the roots and stools of the canes, which remain in the soil, a number of suckers soon spring up, which are termed rattoons; these are not so large as the first crop of canes, and diminish in size and value each succeeding year. By properly manuring the plants, and constantly loosening the soil about their roots, a good crop of rattoons may be had from the same plants for a number of successive years; but as they always gradually deteriorate, it is the custom to plant with fresh cane joints, every year in rotation, that part of the farm which has been longest yielding rattoons.

The quantity of sugar formed by the canes or rattoons varies not only with the kind of cane, the nature of the soil, the climate, and the greater or less degree of care bestowed on its cultivation, but likewise on many other minor circumstances; the average proportion is stated to be nearly 18 per cent., and the quantity of juice contained in the cane is about 90 per cent. Practically, however, a very much smaller quantity is obtained, because from the imperfect machinery employed, and the incomplete manner in which the cane is pressed, not more than from 50 to 60 per cent. of juice is usually procured; frequently indeed it is as low as 36. In the better mills they obtained from 70 to 75 per cent.

The sugar farmer has, in fact, two opposite objects in view in the cultivation of the cane; he wants his plants to grow fast and luxuriantly, and at the same time he wants to prevent them from vegetating *too* rapidly. If the canes grow quickly and rankly, a good deal of the sugar formed will be consumed, serving as food for the plant itself; and, besides, the rank luxuriance of the leaves, by forming a thick mass of vegetation, checks the access of air and light, and consequently prevents the canes from ripening. Accordingly, as soon as the plants are beginning to grow too rapidly, they are *trashed*, a certain number of leaves being stripped off; this checks their growth, and, if properly done and judiciously timed, effects the object in view; but if, as is often the case, it is ignorantly and indiscriminately done, more harm than good must result. In many cases the canes are planted too thickly, they grow up weak and thin, and, as a remedy, they are "heavily trashed;" thus they are deprived of the very organs designed for the elaboration of organic matter at a period when those organs are especially necessary.

Very great uncertainty appears to exist as to the best time for cutting the canes, and the period required for their ripening. The planting season varies a great deal in different places, depending in many cases on the setting in of the rainy season; but where artificial irrigation is possible the canes may be planted at all periods of the year. A good and complete series of experiments on this subject, well designed and carefully executed, would be of very great value. It is certain, however, that the different varieties of the cane, cultivated on different soils, and exposed to dissimilar seasons, will require very various times to ripen, and that the cutting time must be made to depend entirely on these different circumstances.

A healthy plant, growing freely and supplied with abundance of food, elaborates organic matter from the gaseous substances existing in the surrounding air; it forms leaves and woody matter; but besides these it has another and a very important function to perform—provision must be made for the next year's plants. In the case of annuals this is done by the formation of seed; growing points or embryos are generated, surrounded with a small but sufficient store of suitable organic food, and enclosed in a shell or husk. In trees or plants which live more than one year there is besides this yet another mode in which the life of the plant is carried on. At the close of the growing season buds are formed; these closely resemble seeds; they are growing points, properly protected, and supplied with a suitable store of organic food. The substance usually formed for this purpose by plants is starch, but in some cases sugar is deposited instead of starch; of this we have an excellent example in the Sugar-cane. Sugar, then, is formed in the cane during its season of growth, and deposited in the stem as a store of food for the future buds. During the first few weeks of the season no sugar can be deposited, because it is all employed by the plant in the formation and development of new leaves and stem; but as soon as the first vigour of vegetation is moderated, though the formation of sugar still continues, it ceases to be so employed, and is then deposited in the cells of the stem, in those parts where it will be most serviceable to the buds and other points of future growth. It is evident from even a slight consideration of the economy of vegetation that the store of sweet matter thus collected and preserved in the cells of the Sugar-cane must differ very materially from the thin, watery sap from which it is elaborated; one very important distinction depends on the larger quantity of azotised matter which the latter contains. It necessarily follows that, in cutting the cane when it is perfectly ripe, a larger proportion of saccharine juice will be obtained, in proportion to the quantity of mere cane-sap, than at any previous period of growth; and it is highly desirable, for several reasons, to procure the sweet juice as pure as possible. Dr. Evans very justly remarks on this point: "How essential is it, therefore, to attend to these circumstances, and rather suit the crop time to the cane, than, as is too frequently the case at present, suit the cane to the crop time." The loss occasioned by cutting unripe canes is not merely that of the sugar which would have been formed, if they had been left to ripen, but also that a quantity of foreign matter is introduced with the crude sap, which renders the subsequent purification of the sugar more difficult, and occasions, as we shall presently show, an absolute loss in the sugar already formed by the plant.

In crushing the Sugar-canes in the mill, there is, however, always another object in view besides the mere extraction of the juice, namely, the preservation of the megass (as the fibrous woody residue is termed), which is dried, and then constitutes the chief fuel employed in the subsequent evaporation of the juice. In consequence of this, the sugar-maker is anxious not to crush the canes too thoroughly, as the value of the fuel would be thus injured, and he is rather content to lose nearly half the sugar for the sake of the combustible residue. It is hardly necessary for us to make any observation on this part of the process; it speaks for itself; but we may remark that the sugar thus sacrificed contributes very little to the value of the fuel; because, from the large quantity of moisture left in the megass, it is dried slowly and with difficulty, and generally undergoes more or less putrefaction or decay.

Miscellaneous.

Plant Sales.—The kind of prices which Mr. Linden's Orchids, mentioned at p. 659, realised, are as follows:—Uropedium Lindenii fetched from 2*l.* 6*s.* to 9*l.*; Sobralia dichotoma, from 2*l.* to 2*l.* 17*s.* 6*d.*; Eriopsis biloba, from 1*l.* to 3*l.* 5*s.*; "new genus resembling Houlletia," from 11*s.* to 2*l.* 12*s.* 6*d.*; Myanthus, sp., from 1*l.* 8*s.* to 2*l.* 12*s.* 6*d.*; Odontoglossum citrosmum, from 2*l.* 4*s.* to 4*l.* 5*s.*; other Odontoglossums, from 1*l.* to 5*l.* 10*s.*; Oncidium, sp., from 1*l.* to 1*l.* 10*s.*; Cycnoches barbatum, from 16*s.* to 2*l.* 2*s.*; "new genus, or Paphinia," sp., from 1*l.* 1*s.* to 2*l.* 12*s.* 6*d.*; Anguloa Ruckerii, from 1*l.* 18*s.* to 3*l.*; Warrea, sp., from 1*l.* 10*s.* to 1*l.* 16*s.*; Stanhopea, sp., 10*s.*; other lots, in all 194, fetched from 11*s.* to 30*s.* per lot.

Poisonous Effects from Zinc.—It is now some time since it was proposed by M. Leclaire to use oxide of zinc as a substitute for white-lead, with a view to avoiding the dangerous effects of the latter on the workmen. There could be little doubt that, in point of salubrity, oxide of zinc was an improvement on carbonate of lead; but it was still a matter worth determining to what extent the oxide of zinc was itself free from objection, and whether or not some precautions were necessary regarding its use. M. Flandin endeavoured to determine this experimentally. He rubbed animals over with ointments of oxide of zinc, of carbonate of lead, and sulphate of lead; and whilst he found that the two last always produced poisonous effects, he observed that the animals rubbed over with the oxide of zinc continued to enjoy their usual health. The following facts however show that the innocuousness of oxide of zinc must not be admitted so decidedly as Flandin supposes:—A man, aged 42, a labourer, entered, on 19th April, the Hôpital Beaujon, with all the symptoms of metallic colic. He had been employed for the 15 previous days at a white colour manufactory, along with five other other workmen, in barrelling oxide of zinc, and in repairing casks which had contained that substance, during which operation they were exposed to an atmosphere loaded with the powder of the oxide. From the commencement of their work he and his comrades experienced colic and a repugnance to food, and the wine and brandy which they took to excite their appetite were disgusting to them, and did not remove the clammy taste which they had constantly in their mouths. This man could not continue long at work. After 10 days of this employment, he was seized with vomiting, severe colic, accompanied by constipation, which persisted and increased in intensity so much, that he rolled on the floor in agony.—The iron wire employed for securing the corks of champagne is sent in bundles of 1 to 10 kilogrammes to workmen called *tordeurs*, who by a dexterous manœuvre cut and twist from 10 to 20 threads of wire at a time. These wires are then made up in packets of 1 kilogramme, and after being beaten with a bit of wood to make them even, are packed in bundles. Although this sort of work had been followed by the same workmen from 8 to 15 years, under very bad hygienic circumstances as regards ventilation, they never had experienced any evil effects from it till the beginning of January 1850, when the so-called galvanised wire (which is iron wire covered with a layer of zinc) was substituted for the common iron wire; and soon after the workmen began to complain of the taste as of a sweetish powder in the throat, an incessant tendency to cough and spit, shiverings and general mal-aise. The whole of the people employed in this branch of industry—two youths, two women, and two men—were affected by symptoms which were referable to zinc. Four had symptoms of general depression, with sore throat, swelling and ulceration of the tonsils, inflammation of the palate, white pellicles on the gums, salivation, fetid breath, colic and diarrhœa. In one the colic and diarrhœa were the only symptoms observed; in another the colic was accompanied by nausea, tenesmus, and obstinate constipation. The wires with which they worked had been made hurriedly and carelessly, and were covered with a dusty powder, which escaped abundantly during the twisting, and especially the beating of the wires. This powder consisted of zinc, oxide and carbonate of zinc, alloy of zinc and iron, iron and oxide of iron. It contained no trace of lead. These symptoms seem to have subsided readily, without treatment, on abandoning the occupation. With one exception, all the work-people returned to their work in from three to six days. That the symptoms were due to the exposure to the dust, appears from the circumstance, that in 15 days more the same work-people, in the same hygienic circumstances, resumed the same work, with the same galvanised iron, but free from all dust, and none of the phænomena, which were formerly observed, manifested themselves.—*Gaz. Med. de Paris*, 1st June, 1850.—*Chemical Gazette.*

Calendar of Operations.

(For the ensuing week.)

PLANT DEPARTMENT.

Chrysanthemums, Scarlet Geraniums, Cactus truncatus, early Camellias, Cinerarias, &c., ought now to be making a fine display in the conservatory; and to

ensure a continuance of this as long as possible, let them be freely supplied with water, and occasionally with weak liquid manure. Let careful consideration be given to the proper management of the stock of winter flowering plants, so as to secure an unvarying display, during the whole time in which they are most required; to accomplish which, the stock should be divided into a number of successions, and introduced at proper intervals. We do not by this recommend any one to try to make as few plants as possible serve the purpose; for we consider that no pains should be spared to make the display at all times as great and as good as the resources of the place will permit. But the thing should be managed so systematically, that the different periods shall be as much as possible on a par with each other.

Pits and Frames.—More careful attention will be daily necessary in these, to preserve the plants from the effects of cold and damp. Examine the plants frequently, and remove all decaying leaves or other impurities. Let them have every ray of light which our gradually shortening days will afford them; and whenever the weather will permit, let the sashes be removed. Even when it is too damp to admit of this, a free circulation of air should be ensured, by tilting the lights; which should always be done on the leeward side.

FORCING DEPARTMENT.

Pineries.—Do not allow the cold weather to seal up the ventilators of these houses; the admission of air must, of course, be gradually reduced in accordance with the advancing season, but this is a very different matter to almost discontinuing it. We make it a rule to give our night and day plants some portion of air, independent of that which obtains ingress through the laps. Let water be very sparingly used this dull weather, but have an eye to those plants which stand near the flues or hot-water pipes, as they are liable to get dry before their neighbours. Vineries.—All the houses from which the fruit is cut will by this time be converted into greenhouses; the Vines require to be kept cool and dry, and the plants want very nearly the same treatment; frost, however, must be carefully excluded. While the plants are in these temporary dormitories, particular care should be taken to keep them perfectly clean and free from insects of all descriptions, or these latter will leave broods behind them, which will be very troublesome another season. If possible, avoid putting plants into those houses in which the fruit is still hanging; but if necessitated to do so, let them be of such kinds as require the smallest quantity of water during winter, such as Crassulas, scarlet Geraniums, or semi-succulent plants, Cacti and other succulents, with young Vines in pots, Fuchsias, and various bulbous and tuberous-rooted plants in a state of repose. As the leaves of the Vines ripen, let them be removed; pinching them off at the apex of the leaf, and leaving the foot-stalk to fall off when its own time comes.

FLOWER GARDEN AND SHRUBBERIES.

If the perfect neatness usually expected in this department is rendered less imperative at this season, either by the temporary absence of the family, or by their permission, a very considerable saving of labour may be effected by cleaning the walks only, and allowing the leaves on the turf and amongst the shrubs to lay undisturbed till they have all fallen, when they may be cleared away from the turf at one operation, and those amongst the shrubs may be buried by slightly digging over the surface of the ground, thereby giving it a dressed appearance, and improving the condition of the shrubs by placing the decaying leaves in immediate contiguity with the roots. Another advantage in allowing one cleaning to suffice is that much injury to the turf is thereby prevented, for nothing damages it more than continually sweeping or trampling upon it when wet or frozen. The time saved by the course here proposed may be very advantageously employed in progressing as fast as possible with any new work which may be in hand in any department. It must be borne in mind, also, that a flower garden with empty beds, however clean and neat, has a very bleak, chilling appearance, and falls far short of the idea of a pleasure-ground, according to an English taste. Such a state of things is inexcusable, as sufficient shrubs may be kept, in a very small space of ground, to make the garden during winter cheerful, if not supremely beautiful. We adverted to this subject some time back, but not so fully as it deserved; and we hope that those who have not already done what is necessary, will lose no time in accomplishing it. It is not of course to be expected that the beds can all be filled with flowering plants; but they may with nice dwarf bushy plants of handsome evergreens.

KITCHEN GARDEN.

If the texture of the soil is very tenacious, all treading upon the ground should be scrupulously avoided while it is wet, as it is impossible to preserve it free and open, if it is compressed at such a time. The object should be to render it as pervious as possible to the winter frosts; for which purpose advantage should be taken of favourable weather, to manure and trench all vacant ground, leaving the soil as rough and loose as possible. Where any full-grown Broccoli, Savoys, &c., are occupying the ground which it is desirable to trench, they may be taken up, and laid in with their heads pointing to the north, on any spare piece of ground. Scotch Kale, Cabbage, or Brussels Sprouts, may be similarly removed, observing, however, to plant these in their original upright position, for the sake of their sprouts.

State of the Weather near London, for the week ending Oct. 31, 1850, as observed at the Horticultural Garden, Chiswick.

Oct.	Moon's Age.	Barometer. Max.	Barometer. Min.	Temperature. Of the Air. Max.	Min.	Mean	Of the Earth. 1 foot deep.	2 feet deep.	Wind.	Rain.
Friday.. 25	20	29.506	29.410	46	30	38.0	46	49	N.E.	.00
Satur.. 26	21	29.801	29.624	48	23	35.0	46	48	N.E.	.00
Sunday . 27	22	29.906	29.745	49	37	43.0	44½	48	W.	.26
Monday 28	23	29.419	29.313	52	29	40.5	45	47½	W.	.02
Tues. .. 29	24	29.638	29.475	49	24	36.5	45	48	N.	.00
Wed. .. 30	25	29.692	29.682	50	36	43.0	43	47	S.W.	.04
Thurs .. 31	26	29.938	29.872	56	37	46.5	44	47½	W.	.08
Average....		29.700	29.558	50.0	30.8	40.4	44.6	47.8		.40

Oct. 25—Densely overcast; cloudy; slight frost.
" 26—Fine; cloudy and fine; clear and frosty.
" 27—Frosty; clear; fine; rain.
" 28—Rain; fine; clear; slight frost.
" 29—Clear; fine; clear and frosty.
" 30—Frosty; rain; clear.
" 31—Overcast; fine.

Mean temperature of the week, 7 deg. below the average.

State of the Weather at Chiswick during the last 24 years, for the ensuing week, ending Nov. 9, 1850.

Nov.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds. N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 3	53.4	38.7	46.1	12	0.82 in.	1	2	7	1	5	4	6	1
Mon. 4	50.7	36.5	43.6	11	0.44	2	3	4	2	3	5	3	2
Tues 5	52.6	38.9	45.8	11	0.23	3	2	1	4	4	8	1	2
Wed. 6	53.0	41.2	47.1	12	0.76	1	2	1	2	5	10	2	1
Thurs. 7	52.0	37.5	44.8	14	1.02	1	1	2	3	4	8	3	3
Friday 8	50.6	35.7	43.2	12	0.38	1	2	1	2	2	9	3	4
Satur. 9	50.9	35.7	43.3	10	0.24	1	1	3	1	4	7	3	4

The highest temperature during the above period occurred on the 6th 1834—therm. 63 deg.; and the lowest on the 3d, 1845—therm 20 deg.

Notices to Correspondents.

To our Correspondents.—May we beg it to be understood that *we cannot answer inquiries privately through the post.* We are ready to give reasonable information through our columns, but we cannot consent to the labour of writing letters.

Back Numbers of the Gardeners' Chronicle: The publisher begs to say that the following may be had. Any subscriber who will forward postage stamps equivalent to as many numbers as are required, will have them sent free by post. The volume for 1847, price 30*s.*, and volume for 1848, price 30*s.* 6*d.*, can still be had. The volume for 1849 is now ready, price 30*s.* The volumes of former years are out of print.

1841—1, 8, 13, 14, 15, 16, 17, 18, 20, 22, 23, 24, 26, 27, 28, 29, 30, 31, 32, 34, 45, 46, 47, 48, 51.

1842—1, 2, 4, 6, 8, 11, 13, 14, 15, 16, 17, 18, 19, 20, 23, 24, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52.

1843—All except 19, 21.

1844—All.

1845—1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 13, 14, 15, 17, 18, 19, 20, 21, 23, 24, 25, 27, 28, 31, 39, 40, 41, 42, 43, 44, 45, 50, 51, 52.

1846—4, 5, 6, 10, 11, 12, 13, 14, 15, 16, 17, 18, 20, 22, 23, 24, 26, 27, 42, 43, 46, 48, 49.

1847—1, 2, 3, 4, 5, 6, 8, 9, 10, 13, 14, 16, 19, 20, 21, 22, 27, 28, 29, 32, 33, 36, 37, 41, 42, 43, 44, 45, 46, 47, 48, 51, 52.

1848—2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 30, 33, 34, 36, 37, 39, 40, 41, 44, 45, 47, 51, 52, 53.

1849—All except 46, 47, 48, 49, 52.

Back Numbers: Full price will be given for Nos. 48, 49, 50—1848; and 46, 47, and 49—1849.

Bees: *A Constant Sub.* The present is the best time to remove your bees. Having prepared the new apiary for their reception, so that there may be no occasion to disturb the stocks when once placed therein, select a cold dry afternoon, and just before dusk stop the entrance of the hives with cotton-wool, pulled out loosely, so as to admit the air through it. See there are no other means of escape for the bees; if any, stop with cotton-wool, and, if necessary, secure the hives to their boards. They will carry safely and best on a hand-barrow, though at this time of the year there will be little risk in using a light spring-cart. Having placed all your hives in their new situation, gently remove the cotton from the entrances, but leave it on the boards. The distance you name is favourable; and, if the above directions are followed with dexterity and coolness, there is little doubt of your perfect success. *Y.*

Bird's Hydrostatic Water Purifier: In reply to many enquiries that have been addressed to us, we can now say that we have had several weeks' personal acquaintance with the action of this instrument, and that it appears to us to be admirably contrived for filtering water perfectly. It is small, cheap, and attended with no other trouble than that of letting the water run for the first day or two. That is absolutely necessary in order to bring it into working order; but it is not necessary that during this time it should be employed as a filter. It is merely necessary that a stream of water should pass through it.

Bulbs: *A Devonian.* The letter to which you refer has not reached us. You should pack the bulbs in dry sand, inclosed in a coarse bag, or in a thin wooden box, kept out of the hold and away from the steam-engine. A cabin is the best place. The seeds should be put into a coarse canvas bag, and slung in a cabin. If you put them into a tin case they will certainly perish. You will not succeed, under any circumstances, in sending Magnolia seeds or Acorns to Australia. They will not keep. Better fill a Ward's case with small seedling plants. Fir seeds may survive if treated as we suggest—not otherwise.

Cape Gardening: *Acorington.* Send your friend, at Graham's Town, Melons, Vegetable Marrows, large Gourds, Vines or Grape-stones, Plum-stones, Portugal Cabbage, and any tender annual flowers you can procure.

Conifers: *C F P.* We would advise you to procure the two last Numbers of the Journal of the Horticultural Society, in which you will find a very carefully prepared list of these plants, together with their synonyms. The real Juniperus chinensis is a bush, hardy near London, though often reputed tender. Under that name is sold Juniperus excelsa. Your best plan will be to send up specimens of the plants in your possession, and then we can name them for you. Juniperus chinensis is the plant often brought from China in a stunted state as a vegetable monster. We can hardly suppose that Escallonia macrantha will be hardy in Durham; but we have no experience with it as yet. The coming winter, if severe, will settle the point. If you try the experiment of its hardiness, let us advise you to plant it out in June under a north wall, or in some place where it is effectually screened from sun during winter.

Cucumbers: *Alpha.* Cuthill's Black Spine is reported to be one of the best, both for early forcing and general purposes. ‡

Guano: *F S H.* You may use it with great advantage to Pines, Vines, and all such plants. It is best administered when mixed largely with water.

Insects: *W G.* The animals found in the water, in which guano bags had been put, are the rat-tailed larvæ or grubs of a two-winged fly (Helophilus pendulus) like a bee, which are generally found in cesspools, ditches, &c. *W.*—*A B.* The Apple twigs sent are infested, to a surprising extent, with a species of aphis quite different from the Apple blight or American aphis. The directions given in our last week's Number, p. 680, should be followed. *W.*—*C H.* Mr. Samuel Stevens, Natural History Agent, of No. 24, Bloomsbury-street, will supply what you want. *W.*—*J D.* Your Vines are infested with the common thrips. Our Number for October 12 contains a notice of successful remedies against it. See p. 646. *W.*—*G T.* The insects found upon the desks and amongst the books in your counting-house are a species of Ptinus (Pt. hololeucus), lately imported in great numbers with hides from Russia. We do not know upon what analogous substance it and its larvæ feed in this country, where it has rapidly propagated. *W.*—*T C.* We are always willing and anxious to assist our correspondents in their researches, even where they do not absolutely fall within the immediate range of the subjects of the *Gardeners' Chronicle;* but then we have a right to expect that our correspondents should take a reasonable share in the labour, either by bestowing a due amount of care in collecting and preparing the specimens sent for our opinion, or by attempting their investigation and examining their structures—the only means of acquiring a real knowledge of the subject. It is unreasonable to expect that we should undertake naming boxes full of Ichneumons, Muscæ, &c., in the worst possible state, and containing flies of different families sent with the same number.—*W.* — *Thanks.* 1 is the common ground beetle (Carabus violaceus); 2, the dor beetle (Geotrupes stercorarius); 3, the Turnip flea-beetle (Haltica nemorum). *W.*

Ixias: *Reader.* Pot them now, or it may be done in early spring, in a mixture of peat, loam, and sand, and place them in a cold frame.‡

Japan Lilies: *M W K.* As soon as the bulbs are sufficiently matured, which will be known by the decay of the leaves and stems, they had better be repotted; not that this is of importance at present, but it will economise space, and prevent the operation being neglected until after they have made fresh roots. The soil in which they have been growing ought to be entirely removed from the bulbs, and the latter divided as may be thought proper, for there will always be found about the crown of the parent some small bulbs, which may be placed in 4-inch pots. If the ripening has been complete, the roots will not be troublesome; but if not, there will be found a quantity of fresh roots remaining. When such is the case, leave them to themselves for some time longer; never pot while it is necessary to cut or break the stronger roots, but strip your fingers through them, in order to remove those that are decayed. The pots should be just sufficiently large to receive the bulb and strong roots adhering to it; give a moderate watering, to settle the soil, and place them in a greenhouse or cool pit. They will require no further attention until the season begins to excite vegetation, when they must be regularly attended to. Water as soon as you see signs of growth, but sparingly until they have made leaves, &c., to draw up and give off moisture.‡

Names of Fruits: *John Abell.* 1, Doyenné Gris; 3, Crassane; 4, Glout Morceau; 5, Passe Colmar; 7, Autumn Bergamot; 9, 14, 50, Brown Beurré; 12, Seckel; 13, White Doyenné; 10, 12, Golden Reinette; 13, 24, Blenheim Pippin; 17, Ribston Pippin; 19, Scarlet Crofton; 21, French Crab; 22, 26, White Russet; 23, Beauty of Kent; 25, Wormsley Pippin; 51, Urbaniste; 54, Alexander; 55, Hollandbury; 60, King of the Pippins; 63, Cat's Head. You may now remove young Pear-trees. If you thin the trees and enrich the soil, your Pears will not be so apt to crack. ‖—*S B.* 1, Doyenné Blanc; 2, Beurré de Capiaumont; 3, Passe Colmar; 4, Princesse d'Orange; 7, Seckel; 8, Beurré Diel; 9, Duchesse d'Angoulême. ‖—*D B, Bath.* The Golden Russet. ‖—*H R S.* Doyenné Blanc. ‖—*L C K.* The White Muscat of Alexandria. ‖—*C K.* The "Tottenham-park Muscat" is a white Grape, not distinguishable from the White Muscat of Alexandria. ‖—*G L.* Your seedling Pear is not equal to many others which ripen at the same time. ‖—*C R.* Your Pear is the Flemish Beauty, a fine specimen, but has been allowed to remain too long on the tree. It forms an exception to the general rule for gathering Pears, that of waiting till they part from the spur by merely lifting up without pulling. You must take the one in question much earlier, even before it acquires its crimson tinge. ‖

Names of Plants: *J D.* Athyrium Filix-fœmina. *S.*—*G W.* C. fuliginosa, no doubt.—*J Wilson.* Acropera Loddigesii.—*Subscriber.* We do not recognise your "Smoke Plant." It is either not in flower or the flowers have fallen off. Does it emit smoke on pressure? It looks like a bit of some Parietaria or Pilea.—*An Enquirer.* 6, Achania Malvaviscus; 4, A morsel of Strelitzia juncea (?); 2, Lantana Cammara; 3, perhaps a bit of the leaf of the Date Palm; 1, Crassula tetragona (?); 5 (?). It is quite impossible to name fragments like these, without flowers.—*R E.* 1, Achimenes Skinneri, variety; B. 2, A. pedunculata, dark variety; D. 4, A. longiflora major; 5, A. misera; 3, apparently a variety of A. hirsuta, but out of flower when received. ¶—*X W.* 1, Maxillaria concava; 2, Max. rhombea.—*W W S.* Victoria regia.

Norfolk Beaufins: *J G.* Pick them of an even size. Put them into a *slow* oven side by side, leaving a space between each. Lay over them an iron plate, which will press them down. Shut up the oven, and leave them to bake very slowly. When fit for removal they will be flat, as you see them in the windows.

Paxton's Cottagers' Calendar may be had at the Office of this Paper, or of any bookseller, price 3*d.*, or 5*s.* for 25 copies for distribution amongst cottage tenantry.

Studding and Wiring Walls: *O.* Use eyed studs and galvanised wire stretched horizontally. Let the studs be built in the wall, and they should be forked at the ends to prevent the possibility of their being drawn out. They should be placed 3 feet apart in every second course of bricks. Let the wire be passed through the eyes of the studs, and screwed tightly at either end of the wall to keep it straight. Nothing but the eye of the stud should project beyond the face of the wall, and the wire should not be further from the latter than ‡ or ⅜ of an inch, just far enough from it to allow a tie to be easily passed between the wire and the wall ‡

Tropæolums: *Maria.* T. Lobbianum blooms in winter. If you examine it carefully, you will probably discover flower-buds on your plant now. Pot T. tricolorum when the "bulbs" show signs of growth. A mixture of loam, leaf-mould, and sand will suit them. ‡

Vine Border: *E F L.* If you do not intend to force the Vines, we should think that wooden shutters, without manure, would be sufficient covering for your border.‡

Misc.: *W Salcombe.* We are not acquainted with Riley's New Burdock Spinach. ‖—*P C C.* Fresh pig-dung from the sty may answer for Onions; but it is not so suitable as rotten dung. Dig it in a little deeper than you would the latter. As regards Asparagus, you cannot perhaps do better than follow Mr. Cuthill's directions on the subject, given at p. 611 of the current year's volume. ‡—*J J R.* Moss will answer your purpose.

SEEDLING FLOWERS.

Fuchsia: *Cavanensis.* Apparently not different from F. cylindriea.*

Salvia: *W C.* A pretty small growing scarlet Sage, which will be found useful for many purposes for which the stronger kinds would be unsuitable.*

*** As usual, many communications have been received too late, and others are unavoidably detained till the necessary inquiries can be made. We must also beg for the indulgence of those numerous correspondents, the insertion of whose interesting contributions is still delayed.

ARTIFICIAL MANURES. — PRIVATE INSTRUCTIONS in Chemical Analysis and the most approved methods of making Artificial Manures are given by J. C. NESBIT, F.C.S., F.G.S., at the Laboratories, Scientific School, 38, Kennington-lane, London.

Analyses of Soils, Manures, Minerals, &c., performed as usual, on moderate terms.

IMPORTANT NOTICE.— EMIGRANTS are informed MARY WEDLAKE and CO. have from time to time supplied the first settlers to Swan River, Port Natal, and all the Australian Colonies, with AGRICULTURAL IMPLEMENTS; they beg an inspection of their stock, at 118, Fenchurch-street, near the Blackwall Railway. N.B. Persons becoming purchasers may have the benefit of an introduction to parties known to the firm at either of the above-named places.

MESSRS. NESBIT'S CHEMICAL AND AGRICULTURAL SCHOOL, 38, Kennington-lane, London.—A sound practical knowledge of Analytical and Agricultural Chemistry, Geology, Surveying, Levelling, Railway Engineering, &c., may be obtained in Messrs. NESBIT'S Academy, in addition to a good modern education.

Mr. NESBIT'S works on Arithmetic, Mensuration, Gauging, Land Surveying, English Parsing, &c., are published by LONGMAN and Co., and may be had of all Booksellers.

MANURES.—The following Manures are manufactured at Mr. LAWES'S Factory, Deptford Creek:

Clover Manure, per ton	£11 0 0
Turnip Manure, do.	7 0 0
Superphosphate of Lime	7 0 0
Sulphuric Acid and Coprolites	5 0 0

Office, 69, King William-street, City, London.

N.B. Peruvian Guano, guaranteed to contain 16 per cent. of Ammonia, 9*l.* 15*s.* per ton; and for 5 tons or more, 9*l.* 10*s.* per ton, in dock. Sulphate of Ammonia, &c.

THE LONDON MANURE COMPANY beg to offer as under:

LONDON MANURE COMPANY'S WHEAT MANURE FOR AUTUMN SOWING.
CONCENTRATED URATE. SUPERPHOSPHATE OF LIME.
PERUVIAN GUANO. SULPHATE OF AMMONIA.
FISHERY AND AGRICULTURAL SALT, GYPSUM, and every artificial Manure; also a constant supply of English and Foreign LINSEED CAKE of the best quality.

The London Manure Company will guarantee the Guano they supply to be free from the slightest adulteration.

Bridge-street, Blackfriars. EDWARD PURSER, Secretary.

THE CONICAL BOILERS INVENTED BY JOHN ROGERS, Esq., are supplied and fixed by JOHN SHEWEN, ironmonger, Sevenoaks. Also all kinds of Hot Water Apparatus. For Churches and Public Buildings, Mr. SHEWEN should be consulted, his Warm Air Apparatus being safer, more efficient, and more durable than any other.

DR. S. NEWINGTON'S AGRICULTURAL INVENTIONS.—An Illustrated Catalogue, together with a Lecture on the Seeding of Grain, and the after cultivation of the crops, sent gratis, on application to Messrs. DUFAUR and Co., 21, Red-lion-square, London.

SMITHFIELD CATTLE SHOW.

NOTICE.—THE PRINTED FORMS OF CERTIFICATES to be filled up for STOCK and IMPLEMENTS intended to be exhibited at the forthcoming Show in December next can now be obtained of the Honorary Secretary. All such Certificates must be returned, properly filled up, on or before **Saturday, the 16th of November.**

In applying for the Forms for Stock, it is necessary to state the Number of the Class or Classes, as there is a separate Form for each Class.

Prize Sheets and all information can be obtained on application to B. T. BRANDRETH GIBBS, Hon. Sec., corner of Half-Moon-street, Piccadilly, London.

THE BIRMINGHAM CATTLE SHOW, 1850.—The CERTIFICATES of ENTRY, for CATTLE, SHEEP, PIGS, and POULTRY, are now ready, and, with the PRIZE LISTS, may be had on application to the Honorary Secretary. Intending Exhibitors are particularly requested to mention the nature of the Stock for which they require Certificates. The entries close on SATURDAY, the 16th of November.

The Show will be held in the BINGLEY EXHIBITION HALL, BROAD-STREET. T. B. WRIGHT, Honorary Secretary.

Union-street, Birmingham, Nov. 2.

PURE WATER raised to any height from a small stream, where a fall can be obtained, by FREEMAN ROE and HANSON'S IMPROVED RAM; less waste, by two-thirds, than those ordinarily in use. Portable Steam Engines for Agricultural purposes, Threshing Machines, Deep-well Pumps, Water-wheels, Baths, Hot-water Apparatus, and Fountains. Towns supplied with Gas or Water. Drawings and Estimates made.—FREEMAN ROE and HANSON, Hydraulic and Gas Engineers: Office, 70, Strand, London.

BY HER MAJESTY'S ROYAL LETTERS PATENT.

PATENT HOTHOUSE WORKS, KING'S ROAD, CHELSEA.

E. DENCH invites the attention of Gentlemen about to erect Hothouses, &c., to the vast superiority in every respect possessed by his PATENT HOUSES, which he will warrant superior in every respect to any others. Good Glass from 16 to 21 oz. per foot, 1 foot wide, 3 feet long, furnished, and the Houses, when completed, charged from 1*s.* 3*d.* to 1*s.* 6*d.* per superficial foot, according to size and quantity; on one principle the roof is formed without wood or putty, and on another principle with wood rafters, and the glass put in with putty. Patent Sashes, requiring no paint, from 7*d.* to 9*d.* per foot. HEATING BY HOT WATER.

STEPHENSON AND Co., 61, Gracechurch-street, London, and 17, New Park-street, Southwark, Inventors and Manufacturers of the Improved CONICAL and DOUBLE CYLINDRICAL BOILERS, respectfully solicit the attention of scientific Horticulturists to their much improved method of applying the Tank System to Pineries, Propagating Houses, &c., by which atmospheric heat as well as bottom-heat is secured to any required degree, without the aid of pipes or flues. S. and Co. have also to state that at the request of numerous friends they are now making their Boilers of Iron, as well as Copper, by which the cost is reduced. These Boilers, which are now so well known, scarcely require description, but to those who have not seen them in operation, prospectuses will be forwarded, as well as reference of the highest authority; or they may be seen at most of the Nobility's seats and principal Nurseries throughout the kingdom.

S. and Co. beg to inform the Trade that at their Manufactory, 17, New Park-street, every article required for the construction of Horticultural Buildings, as well as for heating them, may be obtained upon the most advantageous terms.

Conservatories, &c., of Iron or Wood, erected upon the most ornamental designs. Balconies, Palisading, Field and Garden Fences, Wire-work, &c.

AGRICULTURAL EDUCATION. — The Steward upon a large estate, in the South of England, has a vacancy for a well educated youth to be instructed in farming and general business. For particulars, address X. Y., Office of this Paper.

LIGHT, CHEAP, AND DURABLE ROOFING.

CROGGON'S PATENT ASPHALTE ROOFING FELT is perfectly impervious to rain, snow, and frost, and has been tested by a long and extensive experience in all climates. Saves half the timber required for slates; can be laid on with great facility by farm servants, or unpractised persons. Price 1*d.* per square foot.

CROGGON'S PATENT NON-CONDUCTING FELT, for Steam Boilers and Pipes, saves 25 per cent. of fuel.

Samples and Testimonials sent by post, on application to CROGGON and Co., 2, Dowgate-hill, London.

The Agricultural Gazette.

SATURDAY, NOVEMBER 2, 1850.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

WEDNESDAY, Nov. 6—Agricultural Society of England.
THURSDAY, — 7—Agricultural Imp. Society of Ireland.
THURSDAY, — 14—Agricultural Imp. Society of Ireland.

CHARCOAL is one of the most intractable substances; it will not dissolve in pure water, like many matters which the soil contains; it will not dissolve in rain water, *i. e.*, in carbonic acid water, as more than one-half of the soil will do; it will not dissolve in alkaline solutions, as all the rest of the soil will do. A dressing of flint could not be more useless and worthless for any influence on the land or its crops, than a dressing of charcoal is, for its direct and personal effect. Both might influence the texture of the soil, beneficially or injuriously, as the case might be: neither could furnish of themselves anything capable of absorption by plants as food. But there is a striking contrast between the two, nevertheless. Flint is useless in itself, and has no power over such things as may be useful. Charcoal is useless in itself, but has that power in a very remarkable degree; and it is in virtue of this power, and not in virtue of any contribution which itself might be supposed to afford to the wants of vegetation, that its remarkable fertilising properties exist. Thus it will absorb and retain large quantities of different gases: many times its own volume of ammonia, of carbonic acid gas, of sulphuretted hydrogen, and so on. And charged with them it will, as it becomes wetted in the land, give them out again to the roots of plants.

Mr. JASPER ROGERS, whether those who read his enthusiastic praises of his *protegé* may have been led by them to think that in itself it is a fertiliser, or not, has done good service by calling attention to its conservative influence over that of which we are every day suffering loss. It does not add to our wealth or our fertility one bit, but it is a strong box in which this fertility and the agricultural wealth dependant upon it may be retained, and their liability to waste restrained. It is a good thing to add to the soil, because the fertilising gases which the air contains may, by it, be more effectually captured for use by plants; and it is a capital thing to add to our dungheaps, because the fertilising gases which they evolve, and which run to waste, to the injury both of health and pocket may, by it, be retained for use by plants in the fields. It is in this way, and not for the atoms or particles of which it is itself made up, that it is useful. It differs from the soda ash and Peruvian guano and prepared bones and British guano, in comparison with which Mr. YARROW* tries to make it present a favourable contrast—in this very important particular, that they are all the food of plants, which charcoal is not—it is a collector of food, but otherwise it is useless.

Nevertheless in its real office it is most useful, and, as we have said, Mr. ROGERS deserves well of the country, notwithstanding the somewhat magniloquent style in which he has endeavoured to convince it of the service he would do it. Farmers will do well to use this charcoal, and let no one be afraid of any patent being in the way of its use.

We do not happen to farm near a peat bog. It is an unfortunate thing for us—for Mr. ROGERS is right in speaking of peat as a source of great agricultural and national wealth. But if we were, and had a right of turbary, we should make this charcoal and use it, too, without the leave of any one. We do not know the process Mr. ROGERS has adopted—but we know of processes in practice long before he wrote on the subject: and we do not know of his particular method of using peat in dung-heaps: it may be ingenious, and may deserve the monopoly which a patent gives; but we know of methods which have been in use for many a year before the date of his. And no one, we repeat, need fear there are not ways of using charcoal, whatever source it come from, on a farm, without running risk of infringing any sound patent whatever.

We recommend any who hold such fears to look up and read what has already been published in our volumes on the subject. See especially in that for 1844, pp. 8, 69, 71, 184, 295, 319, 362, 466, 467, 505, 720. See also the papers in the 5th and 7th volumes of the English Agricultural Society's Journal.

* Peat Charcoal, &c., &c., by T. A. YARROW, C.E. JOHN KENNEDY, Portman-place, Maida-hill, London.

"MUCK IS THE MOTHER OF MEAL."—It is not to uphold the truth of the old proverb, as still obtaining in our own country, that we aim at now, but to compare the circumstances of our own farmers with those of farmers in other countries, and to ask the important question—Is "muck the mother of meal" in America as in England? Of late years we have heard so much of the benefit which our countrymen receive who cross the Atlantic, to inundate our markets with corn from the immense forests and savannahs of the new world, that one would almost believe that the mother of meal was better cared for, and more prolific in America, than in England, if not a different personage altogether. It may be useful, therefore, if we invite the attention of our readers to a muck and meal review of American agriculture.

Taking a general view of American agriculture, notwithstanding the corn exporting resources of that country, her farmers, instead of being able to send corn to England, would have some difficulty in supplying the wants of their own people and those of fresh settlers, were it not from the fact that they have a never-failing supply of unexhausted soil always at hand to fall back upon. The virgin soil of the forest and savannah may not unaptly be called the dunghill of the American farmer, for in it he finds that supply of food for the growth of corn which the English farmer finds in his straw-yard. The elements of food consumed by corn are in both cases similar, so that both farmers are equally dependant upon the respective sources from which they derive it, and "muck is the mother of meal" in America as in England, although differently husbanded. The peculiar character of JONATHAN'S dunghill, however, requires a little further exposition in order to convey a proper idea of its economy, for the forest and savannah soon disappear before the industry of the colonist—not so the mother of meal.

In taking a more detailed, but still general review, we find between the rude beginnings of the settler, and the consummation of American farming, *three* stages in the progress of improvement, which we shall briefly glance at.

1. In England we always commence our system by manuring our fallow lands; but in America we have to substitute the forest for the fallow crop—one by no means profitable or easy harvested. When the soil, however, is once broken up, it generally contains an extra quantity of vegetable matter, sufficient to supply food for several crops in succession, and such are accordingly removed from it. But although it does contain this excess, unless decomposition is assisted by burning or otherwise, it is seldom that the wants of plants are properly supplied, owing to its inert state for the first season, so that the second and third crops are frequently, if not invariably, better than the first. Sometimes, again, when burning is resorted to, too much straw is obtained—more than can support itself, and great losses are consequently sustained. After the lands are broken up, they are cropped with corn so long as the crops are remunerative; and when they fail of being so, the exhausted soil is laid down to Grass, while the fresh plots annually broken up by the settler fill up the blank in the arable acres required for cropping.

2. The second stage commences when allotments are wholly broken up, and when the first lands laid down to Grass are consequently brought under a second succession of corn crops, and ultimately laid down a second time to Grass: and when the next Grass lands undergo similar treatment, and so on.

3. The third and last stage, and that which approximates the nearest to the practice of the mother country, is when the different provinces begin to fill up with the growth of society, and an increased demand is consequently made upon the soil in the immediate neighbourhood of towns for all products of the farm, more especially those of heavy transport, such as green crops, dairy produce, &c.; a demand which gives rise to the same economy of manure and labour as is practised in England.

Such is the progress of American agriculture, and although there may be exceptions, yet these must be few; for the different practices imposed upon parties are arbitrary in their character, and cannot wholly be got over by them; as, for instance, although the allotment of the settler chances to be contiguous to a large town, and the transition from one stage to another consequently more short than if he were situated at a distance, yet the different stages must be gone over independently of this, before he can attain to that system of husbandry which is his ultimate aim, and which confers upon him the greatest amount of profit with the least amount of toil.

Now, in reviewing the different steps in the ladder of American agriculture, together with the working of the *three* systems and interests of parties consequent thereon, it will readily be perceived that the position of the American farmer is by no means so flattering as some would have us believe, when compared with that of the English as a competitor in the English market.

In the first stage the settler, on his arrival at the forest, is generally short of cash—a condition which is true, whether he is from the old world or the new; and if he is able to purchase a cow to give milk to his family, and a horse to perform the carting, and join the cow in the plough, it is the utmost he can do in the way of live stock, so that he is necessitated to push the unexhausted soil to the utmost to get over difficulties greater and more embarrassing perhaps than the liquidation of the debts which hang over his allotment. And even in cases where a moderate amount of capital is at command, a different system cannot be adopted with profit, for the want of consumers generally on the one hand, and the competition of the other two classes ahead in the progress of improvement, on the other. At a large expense of drudgery the settler is compelled, as it were, to undersell them in corn, but he cannot compete with them in the other products of the farm, owing to the peculiar character of his dunghill, or practice. And even in the growth of corn he experiences many serious disadvantages, especially when compared with the third class, and still more so with the English farmer; for, granting that he has the richest soil naturally, it being the least exhausted from over-cropping, he does not derive the full benefit of its natural fertility, because the practice which the rude state of the country and his own pecuniary circumstances arbitrarily prescribe, does not confer upon him the maximum amount of produce which it is capable of yielding under different treatment, so that, although the maximum may be 48 bushels per acre, yet the average may only be 30, while the practice entails upon him the expense of breaking up fresh lands annually from their original state, at an expense of about 5*l.* per acre on an average, in order to get a fresh supply of manure from his dunghill.

The second stage, again, is just the old out-field system of the mother country—a system expensive because profitless, as some of our readers can no doubt certify from experience. It is, however, doubly so in America where the expense of labour is double that which it is in England, and more than double in the marketing of corn for export. The position of the American farmer, however, upon the whole, is better, because he has got over the life and death struggle of a colony, and is beginning to gather independence as he approaches towards the third stage; both his live stock and stack-yard have been gradually increasing, so that he is now beginning to dispose of a cow to a new settler, and a fat beast to the butcher, besides lots of dairy produce and poultry. He grows less corn, but more of the other class of products proportionable to his labour and arable acres; and as settler after settler arrives, and his own family grows up, the American laird of the third stage makes his appearance with a still greater abundance of both classes of products.

Again, the primitive settler sometimes enjoys the happiness of the last stage, but as often bequeaths it to his successor. If he has four sons they do not remain long with him after they are grown up, as they often do in England; two may go into the manufacturing and commercial interests when boys, one becomes a settler in the interior of the country at 20, and the fourth may remain at home with his father, and in order to avoid the subdivision of the lands; upon his shoulders devolves the payment of his brothers' portions. So that life is as keen a struggle for bread in the new world as in the old, and farmers are equally loud in their complaints about bad times and low prices. No doubt there is an abundance of corn and every kind of agricultural produce, but only consequent upon an amount of labour and toil, of which farmers in the mother country know comparatively little, especially as regards the produce of corn. The erroneous conclusion, that the new world yields its increase at a less amount of labour and manure than the old, can only be arrived at by farmers who shut their eyes altogether upon practice, for our readers may rely upon the fact, that such conclusions were never realised by either English, Irish, or Scotch emigrant, who have sought a home in the forest of America. A very different reception awaits him on the confines of the forest. Were not such the case it would never have been said that "parties brought up in commercial and manufacturing towns are ill adapted for a colony." The fact that many farmers possessing capital have returned from America, after surveying the prospects of American agriculture, and embraced farming at home as the more profitable of the two, is proof practical on the subject as to profits and labour. Owing to the diversity of practice the interests of the three parties are as much against each other as that of all is against the interest of the English farmer. The farmers of the first class are interested in cheap cattle and everything they require to purchase until their farms are properly stocked, when they merge into the second class. The farmers of the second class, again, and also of the third, are interested in high priced corn, cattle, and agricultural produce in general, on the one hand, and cheap labour on the other; but the first class keeps the market full of the one, and empty of the other, so that they experience the opposite of what they want, viz., *cheap corn* and *dear labour*. The farmers of the third class could grow more corn and cattle were it not for the low price of cattle kept down by those of the second class (who are still struggling under greater difficulties and are consequently more necessitated to work hard and sell at a low price), as well as by the low price of corn, together with the expense of labour, and the distances from places of export and the English market. Were it not for such facts, grumbling about bad times would never be heard of; but when twice the price of English labour is paid, and only one-third of the English price of butcher-meat received, how can an Anglo-American keep from grumbling, and how can he grow corn for the English market cheaper than the English farmer could, seeing he has the broad Atlantic between him and Mark-lane, and it may be several hundred miles of rough road into the bargain? And if he cannot, how can we be undersold by the principal American corn growers of the first class, who are situated some hundred miles further into the interior of the country?

Practical farmers are generally fond of experiment, and therefore if any dissent from our conclusions, they may try an experiment of a few years across the Atlantic, and report on results. Some of our readers may probably think that if they are to be called upon to pay their labourers' wages and tradesmen's accounts twice—5*l.* per acre for a first manuring, with an extra expense of marketing on the one hand, and only receive on the other one-third of the present prices for fat stock, or 18 bushels less per acre, as the produce of corn, with only present prices, it is useless to propose the journey to them. Try it who like—if such are the conditions of the case, we prefer casting our lot among those who shall continue to farm at home! *B.*

GREEN MANURES.

[The following correspondence has lately been published by Mr. Nesbit of the Scientific and Agricultural School, Kennington; on the relation, as fertilisers, between a green crop wholly returned to the soil, and the excrements of the cattle fed upon it.]

"Firstly: It is well established that animals, in breathing, give back more to the air than they derive from it. They receive nitrogen and oxygen, and return them again, plus a certain excess of nitrogen, carbonic acid, and aqueous vapour. Animals also transmit to the air much in insensible and sensible perspiration.

"Secondly: The experiments of Boussingault and others have shown that the liquid and solid excrements of animals weigh less than the food from which they have been derived, and that, as regards the food, excretæ are deficient in *nitrogen*, carbon, and hydrogen.

"Thirdly: It is well known that animals consume a considerable portion of the farinaceous and oleaginous portions of their food for the production of *animal heat*, and that the greater portion of the excess is laid up in the form of fat; and that of the nitrogenous portion, part is consumed by the voluntary and involuntary motions of the muscles, and part forms fresh flesh for the growing animal. Of the inorganic matters of the food, a portion is required for the formation of bone. It is, therefore, quite clear that there must be much less manuring matter in the excrements than in the food, of which they are merely the unconsumed remains—*the ashes*.

"Fourthly: It is known that animal and vegetable substances are composed of the same original elements; that all animal particles have first had vegetable life; and though the proximate changes and combinations of their aliments are almost innumerable, yet that the results of the ultimate decomposition of animal and vegetable matters in contact with air are the same.

"Fifthly: To sum up: if, as it has been proved, the excretæ of animals weigh less than the food they have eaten; if there is a diminution of the most valuable of the ingredients in passing through the animal; and if, in their ultimate decomposition, the food and the excretæ give the same products, it follows that the products of the decomposition of the original food will be greatest in quantity and richest in quality; but practical experiments are, in this instance, so easily made, that I should be wrong if I omitted to mention some of the numerous facts which experimentally prove the truth of my assertions. Mr. W. Trumper, of Dorney, near Windsor, Mr. Oakley, of Rochester, and others, have forwarded me the results of trials made on their respective farms. Mr. Trumper, in a field of Rape, part fed off by sheep, and the other ploughed-in, found in the succeeding Wheat crop a difference of a quarter per acre in favour of ploughing-in. I insert letters from some other gentlemen who have also found favourable results."

"Letter I.

"My dear Sir—In reply to your letter I am instructed to say, that the members of the Farmers' Moon Club, in the neighbourhood of Rochester, Kent, unanimously agree that vegetable manures are peculiarly fructifying, and that, taking the case of a fallow or other field, being all previously of the same tilth, and sown with Rape for feeding, and divided into three divisions, one of which shall be fed off with sheep, without any extra food to the Rape, the second division ploughed in, and the third division fed off with oil-cake or corn; that the worst corn succeeding the Rape will be on the first division, the next best on the second, and the best on the third. Thus all speak in favour of green crops for manure.—Yours truly, John Oakley, Old Broad-street, August 10, 1849."

"Letter II.

"My dear Sir—I regret I was not at home to answer your inquiry sooner, having been in Yorkshire the last fortnight; however, I hasten to send you the required information. In the spring of 1846 I had more Turnips than my stock could consume; I, therefore, thought that it was reasonable, that if the crop was broken to pieces, and ploughed in, the grain crop that followed would derive as much benefit as if eaten by sheep. I therefore did so with one acre on the first week in February, and with another upon the fourth week in March. Part of the rest of the field was eaten on the land, and part being newly ploughed up land, the whole crop was drawn off. On the land where the Turnips (White Rounds) were broken and ploughed in on the last week in February, the produce was 84 bushels per acre of Hopetown Oats. Where the Turnips were broken and ploughed in on the fourth week in March, the produce was 74½ bushels per acre. Where eaten on the land by sheep, 70½ bushels per acre; and on the newly-ploughed up land the whole of the crop drawn off, 41 bushels of Wheat. I hope that this will be satisfactory; if not, I will make it so.—I am, yours faithfully, Peter Love, Naseby, May 15, 1849."

"Letter III.

"Dear Sir—I have just seen Mr. Underwood, who was a neighbour of mine 18 years ago, but is removed to a distance. He says he has practised ploughing-in a few acres of Turnips, almost every year for upwards of 20 years, and considers three sacks of Barley per acre quite within bounds, as the increase from ploughing-in over feeding-off. The Clover is much better; but he has not observed the Wheat sufficiently to say what the difference is. He estimates an average acre of white Turnips to be worth 30*s.* more to chop and plough-in any time before they begin to run to seed (say February out), than to feed off. I inspected a field of Wheat, this week, belonging to John Gurdon, Esq., which was white Turnips three years back; a part were ploughed in, and the rest fed off with sheep, and half-a-pound of oil-cake per day each given to them. The Wheat, where the Turnips were ploughed in, is decidedly better than the rest; I think three bushels per acre. Mr. Hudson, the steward, told me the Barley was quite a foot higher than the rest of the field, and three sacks per acre, if not more, better. The Clover was all fed off, and no notice taken; nor would anything more have been thought about it, had not the Wheat looked so much better than the rest all the spring. The Turnips were about three-quarters of a plant, but regular; the sheep went down with the epidemic, and were sold, leaving about two acres of Turnips to feed; and rather than purchase any more stock, they were ploughed in. As I told you at the club, I am generally a buyer of Turnips; but the obstinacy of my neighbour, Mr. Underwood, who refused to take 20*s.* per acre for his to feed off (for the sake of convenience to me) when almost every body else were giving theirs away, attracted my attention to the after crop; and I can, in two instances, confirm his statements. Notwithstanding, if 1½ cwt. of Swedes (I think a ton of Swede Turnips will make 14 lbs. of mutton, from experiments I have tried) and 2 cwt. of white Turnips will make 1 lb. of mutton, and we can grow 21 tons of the former and 26 or 28 of the latter, it must be more profitable to feed at 5*d.* per lb. for the mutton than to plough in at 20*s.* or 40*s.* per acre in the corn crop. I have been unwell, and could not see the parties, or I should have answered your note before.—Yours, &c.—Thos. Hawkins, Assington Moors, June 15, 1849."

"It may be necessary to say, that in ploughing-in a green crop for manure, great care is necessary in choosing a suitable time, and that it be not allowed, by too long growth, to become fibrous, so as to delay its decomposition in the soil. For Turnips, February or early in March is quite late enough, and the best effect is seen where they have been touched by the frost.

"It is scarcely needful to say that the arguments advanced do not apply to sheep fed on Turnips with oil-cake, unless an amount of oil-cake equivalent to that consumed by the sheep in one instance were ploughed-in with the Turnips in the other.

"In conclusion, I reiterate that my object has been, not to prove that ploughing-in is profitable, in comparison with feeding-off, but rather to elicit a principle which, if once known and understood, may, on many occasions, as when stock is dear, and green crops abundant, be brought into beneficial and profitable practice. *J. C. Nesbit, Scientific and Agricultural School.*"

ANIMAL HEAT.

Many works and letters have been published on agricultural chemistry, farming operations, draining, irrigation, and other subjects relative to the tillage of the soil; but one of great importance having escaped the notice of those scientific men who have within these last few years thrown so much light upon the subject, I will, in as concise a manner as possible, endeavour to point out the cause and effect of animal heat.

Life cannot exist without heat, for in cold-blooded animals and even fishes their bodies will always be 2° or 3° warmer than the medium in which they live. Heat may be produced by friction, as is done by the Indians in rubbing two pieces of wood together to light a fire, or by the chemical process of carbon and oxygen mixing with each other and forming carbonic acid gas. Carbon, in this way, is a great source of heat, and is the principal chemical ingredient of all fuel, used in fires, lamps, and candles. Twenty-one per cent. of the air we breathe is oxygen, and without it no animal can live, and the union of carbon and oxygen is the cause of animal heat. All kinds of food consumed by the animal creation must contain carbon in proportion to the temperature of the climate in which they live, and their appetites will direct them to select the food neces-

sary for their sustenance. The organs of digestion are exquisitely arranged, for when the food is introduced into the stomach it is by the action of the gastric juice (which is secreted from the lining of the stomach) reduced to a pulp and removed to the liver, where it is purified, and then conveyed through the lungs, where the carbon is open to the action of the air that is breathed, and being converted by the oxygen into carbonic acid it produces heat, and is conveyed by the blood to every part of the body. At each inspiration an animal imbibes a certain quantity of oxygen from the atmosphere (which is composed of 79 parts of nitrogen, and 21 of oxygen), and must meet with a proportionate quantity of carbon to maintain life. Animal and vegetable food contain carbon in different proportions; that of fat bacon or pork as much as 80 per cent.; this may be easily imagined when we consider that candles are made from fat. After lighting the wick the atmosphere supplies it with oxygen, and in uniting with each other they produce light and heat. If the extinguisher be placed over it the light goes out, for nothing can burn without oxygen, and an animal kept 10 minutes without air will die.

The quantity of oxygen that is breathed regulates the appetites which are to supply the systems with carbon sufficient to keep the blood always at the same temperature; for, from the authority of the best authors, and the practice of many scientific men, the heat of the blood in a man in Lapland is 98°, the same as at Calcutta or any other place on the face of the globe. In England the appetite is greater in winter than in summer, for one-eighth more oxygen is inhaled in the former than in the latter season; for the same air that fills a bladder of 80 cubic inches with air in winter will fill one of 100 cubic inches in summer. The heat expands it. In summer we breathe less oxygen than in winter, for the warmer the season the thinner the atmosphere, and the organs of digestion are in a great measure regulated by the season and the climate. In this we see a wise provision, the blood of animals being always at the same degree of heat. A man travelling towards the Equator cannot inhale so much oxygen, consequently he loses his appetite, and does not keep up so great a fire within him; on the other hand, another moving towards the North Pole will become voracious, as the condensed atmosphere will require so large a quantity of carbon to maintain the standard degree of heat. Persons living in the East Indies, or any other hot climates, exist upon fruits or food not containing more than 12 per cent. of carbon; those in the Arctic regions will eat at one meal 5 lbs. of blubber, or any fat meat, and drink train oil or brandy in proportion. Under the equator animals will eat less, and bear hunger for a long time, but in a cold climate hunger will soon cause death. According to Liebig, an adult in taking moderate exercise consumes in one day $13\frac{9}{10}$ oz. of carbon, and the conversion of $13\frac{9}{10}$ oz. of carbon into carbonic acid, will require 37 oz. of oxygen, and that animals differ in the temperature of the blood in proportion to the respiration and size of their bodies; for instance, the heat of a child is 102°, and an adult 98°; in birds it is from 104° to 105°, and in animals from 98° to 100°. From this it appears that a child, whose respiration is quicker than in a man, requires food more frequently; a bird deprived of its food will die on the third day, and a serpent being sluggish in its breathing will live three months or more without food. I have stated that fishes are warmer than the element in which they live, but although they are generally under water they are not without air; the finny tribes are all provided with a bladder containing air, and according to the expansion of the vessel that contains it, they rise to the surface or sink to the bottom; no doubt the small quantity of air contains a sufficient quantity of oxygen, which, uniting with the carbon found in their food, will produce heat, making them from 2° to 3° warmer than the water. The pulse and breathing may be compared to the weight and pendulum of a clock, for one regulates the other. Great exertion will cause quick breathing and a palpitation of the heart, and it may be imagined that it may raise the temperature of the blood; but such is not the case, for science and observation will show that animals are protected against excessive heat. In a steam-engine its speed or power is regulated by its furnace, and as the water becomes more rarefied, the strokes of the piston become more frequent; but when it arrives at a certain power, the pressure from within opens a safety-valve and liberates the extra quantity of steam. In animals a quick pulse and quick breathing may produce more heat, but to keep the circulation always at the same temperature, our skins are provided with pores, which open like safety-valves to let off the heat by means of perspiration.

It is here necessary to observe that dogs and some other animals never sweat, but when running the tongue is protruded, and perspiration is secreted from that member, and the mucous membrane of the mouth. It has been supposed that in racers, hunters, &c., the decrease of fat is attributable to perspiration; but it appears to be from another cause. The quick breathing of a galloping horse may have the same effect upon his fat as the blacksmith's bellows have upon the coal; the coal (which is carbon), by receiving a strong current of oxygen from the bellows, is soon reduced to cinders, and the fat (which is also carbon), is reduced by the oxygen that is breathed. Carbon, hydogen, nitrogen, oxygen, and sulphur, are the ingredients of fibrine, gluten, and casein, which constitute blood, and being conveyed by the arteries to every part of the body, and having deposited the fibrine, which is the chief ingredient in muscle, and its carbon, which is the chief ingredient in fat, it is returned by the veins and undergoes another chemical change.

Fat animals can live longer without food than those in low condition; a fat pig was once overwhelmed in a slip of earth and lived 160 days without food, "and was found to have lost 100 lbs. in a month." Trans. Linn. Soc. vol. xi. p. 400. In an animal kept without food the oxygen will apply to the fat for carbon to keep up the heat of the body; after that it will go to the muscles and leave them soft and weak; lastly, it will attack the brain and there cause delirium and death. The appetites of animals may be increased by a bracing air and exercise; but the quieter they are kept the faster they will feed, provided the sheds, cow-houses, or boxes, are kept at a moderate temperature. Nature has provided the brute creation with clothing sufficient to support life in the climate for which they were ordained; but, to prepare cattle for the butcher, abundance of suitable provender, quietness, and warmth, are essentially necessary for so large a formation of fat. Welsh sheep, hares, and other animals living on the hills, and in a state of nature, never carry fat. Small and crowded cow-sheds are not so well adapted for feeding as those of larger and reasonable dimensions; a shed with a current of air from without will impede the feeding, therefore the stalls open at the back are objectionable. I have seen a building of this kind, and the progress of the cattle was scarcely perceptible, until it was closed with sacking to the height of 6 or 7 feet from the ground; the cold atmosphere then passed through the ascending air, and was warmed before it reached the animals below, and they fed twice as fast. It would here be well to adopt the system as followed in the cheese-rooms of large dairy countries, to have the roofs of the cow-sheds or feeding-boxes lathed and plastered, and the space between them and the tiles filled with saw-dust, to keep the warmth at a moderate temperature. Saw-dust being a non-conductor of heat, in winter it will prevent the snow (on the roof) absorbing it from within, and in summer the interior will be quite cool; while the tiles exposed to a burning sun will be so hot, that it may be painful to hold a hand upon it. By these means great savings may be effected, and, ere long, I hope to see in your *Gazette* a detailed account of the advantages derived from a moderately warm feeding-house, over a bleak and cold one. *J. C. H., Croft Farm, Bridgnorth.*

Home Correspondence.

Fresh Air and Cleanliness are most essential to the health of mankind, and there is no difficulty in distinguishing the inhabitant of a densely crowded town from the agricultural labourer. The former has all the appearance of breathing a vitiated atmosphere, and the countenance of the latter speaks of inhaling purer air. The artisan who lives in an ill ventilated house, situated in a badly drained and narrow street, may have more food, in point of quantity, and may not so often go supperless to bed; but as to quality, there is a question whether the rural brother is not better off, though his wages are small. In London, and many other large cities, the stuff that is consumed by human beings, under the denomination of animal food, is revolting to think of over dinner; and diseased carcases sold to sausage-makers, converted into pies, boiled down into broths, well seasoned as potted meat, and thus disguised, supplied to the public, are enough to bring down upon us all the plagues of Egypt, and of every other country under the sun. No animal, intended for slaughter, should be permitted to enter through the gates of the metropolis. It is folly to talk of the expense of carrying meat from the suburbs, when such losses are sustained by goading the poor animals to that scene of cruelty and abomination—Smithfield Market, a positive disgrace to a civilised country. Scanty clothing, want of firing, and bad food, have much to do with low fevers, typhus, and cholera. Although every imaginable evil is attributed to imperfect drainage, and no doubt much mischief accrues from this cause, yet there are other things to be complained of equally injurious to mankind, and not without a remedy. Filth lying about the door-ways of houses, and open sewers in the neighbourhood, are the results of neglect on the part of the landlords and tenants; and common decency should be enforced by law, where a sense of duty has not sufficient weight on individuals to induce them to act right. The working classes, from their poverty, cannot protect themselves, and select houses in localities free from such nuisances. It is therefore incumbent upon those who have influence, wealth, and authority, to tender their assistance, and lighten the hardships they endure, by passing their lives amongst perpetual disease. To undertake half measures as a sanatory precaution, is like cutting a piece off the bottom of a garment, and sewing it on to the top, by way of increasing its length and breadth. To do one thing and leave the other undone is a mockery. To construct splendid sewers to carry off the liquid refuse from the haunts of men, and at the same time to allow the sale of unwholesome meat and vegetables is an anomaly so palpable as to excite the astonishment of all classes, particularly when there is a remedy at hand, which, so far from being an additional burthen to salesmen and butchers, would be a positive saving. Let four great markets be established between 5 and 10 miles from the heart of the metropolis, near the railroads, where animals can be accommodated and slaughtered without the barbarity now practised in galling and mangling their unfortunate bodies, and rendering their flesh unwholesome. We throw away thousands in vain speculations, with the hope of obtaining an exorbitant interest for money, which, from its nature must be fictitious, and can only be viewed in the light of a gambling transaction, terminating in the ruin of those who foolishly suppose that, when the legitimate securities of the country only give $3\frac{1}{2}$ per cent., they can insure 7 or 8 by investing their cash in a scheme which offers an unnatural gain. Such have been the extraordinary expectations from the railroads, where extravagance on the part of the management was quite enough to condemn them. The formation of receptacles for housing and killing sheep, oxen, and pigs, intended for the London market, under the direction of practical men, who could be depended upon to digest well their plans before laying a single stone, would become a most popular investment for cash and pay a fair interest. The population of the great Babylon would feel how much their comfort and convenience depended upon the project being carried out in a judicious and satisfactory manner. It is quite in vain to state the most startling facts with the hope of rousing the public to action even in self defence. Mere accident will probably bring about that which every one wishes, but few will take the trouble of inquiring into, although the most convincing evidence is laid before them. However, it cannot be too often repeated, that one-half of the population of London and all large towns are positively living upon impure food; a description of dogs' meat dressed up for the occasion and well spiced, which in this smoking, chewing, and dram-drinking age, a vitiated palate cannot discover, but an impaired constitution can and does. A little quiet agitation on the subject of the sale of improper food may be of use to the present and rising generations, if it induces the authorities to have meat destroyed, which is approaching putrefaction, and to consign vegetables in a state of fermentation to the dung-heap, instead of the saucepan. Half the stomach and bowel complaints proceed not so much from atmospheric changes as from eating bad food, temptingly prepared to entrap the unwary. Bread, beer, and spirits must be considered on some future day. Let me hope some persons will assist in exposing the mischievous system of buying and selling unsound food. *Falcon.*

On High Farming.—I am induced to say a few words upon this subject, from the observations made at a recent agricultural meeting by a reverend gentleman, a contributor occasionally to the *Gazette*, and a most excellent man and clergyman. He mentions a field of his that has been high farmed, and this I know to be true, having watched his operations with much interest, that has not yielded more than $1\frac{1}{2}$ quarter per acre of Wheat this last harvest, from blight; this is no doubt true from the appearance of the crop before reaped. Now I will just make a few remarks on what I consider the cause of this blight. This land, good land and in high condition, was Clover, and fed off by sheep with plenty of corn and roots. I believe this would be excellent treatment for the generality of the poor land in this part, but under the circumstances stated above I believe it to be erroneous; Wheat is a most delicate plant, and will not bear coming into contact with strong manure; if this land had been cut first and fed after, I have no doubt that there would have been a good crop of Wheat. This is well understood in the Isle of Thanet, the best land I know. The farmers there avoid applying any active manure directly to the Wheat crop, but put it upon the Clover ley, or what is still better give it to the roots, be they Mangold Wurzel or Turnips or anything else; it is impossible to give them an over dose, and I think I may challenge any one to say that he ever knew unkind Wheat after roots, particularly Mangold Wurzel. *E. X., near Braintree, Essex.*

Liquid Manure.—The plan suggested in your leading article of condensing the good properties of liquid manure by immersing bags full of peat charcoal, would I am sure be ineffectual. Charcoal possesses two properties, the first is the power of condensing great quantities of any gas, as ammonia, which comes in contact with it—it is this which constitutes its deodorising power. Charcoal has also the property of clarifying any liquor passed through it. It readily parts with the gas it absorbs,—for instance if it contain as much ammonia as it was capable of holding, and was in that state immersed in water, the ammonia would be dissolved out. If therefore liquid manure was passed through the charcoal, the ammonia it could condense would *only* be the portion that was dissolved in the small quantity of water retained in its pores. The liquid would be to some extent deprived of its colour by the removal of the colouring matter suspended, but not a fraction of the really valuable *soluble* matter would be removed. By immersing the charcoal, the only benefit would be the removal of that portion of the liquid retained in its pores, no difference would be made in what was left. *Celt.*

Education.—I quite agree with the opinion expressed by your correspondents, on the policy of promoting the education of the people generally. All parties must admit, that in the march of improvement the schoolmaster must lead the way; so that we gain the end we are seeking, it matters little how it is done; but we should be careful who we take as teachers of chemistry, &c. We have land agents writing class books for agricultural students, in which we are told that water contains 8 lbs. of hydrogen, and 1 lb. of oxygen, and another person, if I mistake not a druggist, who gives us his own analysis of soil, &c., and at the same time

tells us that nitric acid or aquafortis is composed of the same elements as water, but with two equivalents of oxygen instead of one; and public lecturers telling us that oxygen is sour, and that it will not support animal life. [Who do you refer to here?] We should be cautious of such teachers. It should, I think, be taught at the school, where a museum might be established to illustrate the principles of the sciences, as well as a collection of the vegetables cultivated in, and of plants indigenous to the district. A piece of land to cultivate the different kinds of Grasses upon might be added. Of the importance of this last, I received a good illustration the other day: a farmer told me he would sow no more Timothy Grass (Phleum pratense), for it was nothing but Couch (Triticum repens); and this from a gentleman who has received a better education than the majority of farmers in this district. Such a state of things require no comment. The scheme that I have here proposed requires no great outlay, the members of the class, and the boys of the school, might do nearly all for themselves. The support of the farmers is wanting, or rather it is necessary they should give it their countenance; without that it will never succeed. *J. Stollard, Ipstones, Staffordshire.*

Farm Accounts.—It is rather surprising that we have never seen any opinion expressed by competent persons, as to the comparative merits of the systems of keeping farm accounts, published by the Royal Agricultural Society, and in the "Cyclopædia of Agriculture." I wish some gentlemen would give us their opinions upon the above methods, for I am about to begin farming, and should like to commence with the most approved system. *E. F.*

Mangold Wurzel.—I shall be obliged for any information respecting the cause of a mixed stock and a number of runaway plants resulting from a true stock of seed, carefully saved from the long yellow Mangold Wurzel. On examination, the produce is in the following proportions, viz., 27 long yellow or the true, 18 long red, 13 yellow Globe, and 8 runaway. It was sown the early part of April on a piece of strong land, well manured with 4 cwt. of Peruvian guano to the acre. Would the runaways be caused by the dryness of the season, or how can it be accounted for? No long red had been grown near the roots from which the seed was saved; but some yellow Globe were growing for seed at the same time, at a good distance, on the same field. *B. T.* [Either the seed cannot have been true, or there must have been neighbouring plants of the other varieties.]

Long Dung and Short Dung.—Mr. George Summers has, it appears, been discussing one thing and I another. He says, "I wish it to be understood that the manure which I am here advocating is not that strawy material your correspondent would have us believe, but contains an abundance of phosphates, and a large supply of nitrogen in the shape of urea, uric acid, mucus, &c., which, by their speedy decomposition, will yield ammonia to the plants." Then it follows as a matter of course that such dung must be "speedily" used, else its "speedy decomposition will yield ammonia," and short dung will, after all, be the natural result. The question then occurs, how are farmers to stock their accumulated farm-yard manure, which contains an abundance of phosphates, urea, mucus, and other nitrogenous matter, so that it shall not undergo "speedy decomposition, yielding ammonia," &c., before it is removed to the field. I consider this to be a grave practical question, and deserves Mr. George Summers' best attention. *W. E. Gill, Truro.*

On Steaming Bones, &c.—I live near a town from which I can obtain supplies of fresh bones from the butchers, and stale bones from other sources. I intend to erect a small apparatus to extract the grease for the soap makers, and afterwards steam out the gelatine for my pigs, bearing the bone earth for the drill, &c. Now I shall be obliged by your informing me what pressure of steam is necessary to effect my object, and the length of time the bones ought to be subjected to that pressure. For some time past (I may say years), I have puzzled my brain for a power to supersede horse labour to a great extent (for we can never entirely do without that), in the labours of the field and barn. Steam in its present form is inadmissible, from its being expensive and cumbrous, and wants a great deal to eat and drink, to say nothing of the danger from fire, and an occasional burst. My present idea is on the principle of the pendulum for perpendicular, and the balance wheel for horizontal work. Take the pendulum for example. On either side of the pendulum, place an artificial magnet, to be worked by a battery in the same way as the one I remember seeing in the Polytechnic or Adelaide Gallery some years ago. By connecting one magnet at a time alternately with the battery, I think a powerful machine may be constructed. The magnet I saw was capable of supporting a great weight, and suggested my present plan. I shall look in the next number of the *Gazette*, to the "Notices," &c., for your advice and opinion. *G. W. B.* [The atomic theory indicates the quantity of magnetic energy capable of being generated, through an electro-magnetic apparatus, by the decomposition of a given weight of metal; and we believe it is in very rare cases indeed that the cost of metal will not exceed that of the coal consumed, in the production of an equal amount of power by means of a steam engine. Magnetic power has already been applied, but in a more economical manner than you suggest.]

Allotments.—I have often heard, in conversation, the objections of "A Practical Farmer" urged against the allotment system; but the boldness to reduce such objections to print is new to me. The insinuation that a poor man cannot be honest because he may wish to better his condition by keeping a pig, a cow, or by the cultivation of a rood of ground, is a libel upon the character of the English labourer. The objection to a poor man keeping a pig would hold just as well against keeping his own offspring. If a man would purloin food for his pig, he would purloin for his children: and if he be given to pilfering, he will do so, pig or no pig. I have always found the accumulation of property amongst the poor increase their regard for the property of others; but I fear if farmers generally had the covetous disposition evinced by "A Practical Farmer," our peasantry would be but little better than northern serfs. I do not doubt but that many a dishonest man is possessed of a pig; but I do deny that the possession of a pig ever made a man dishonest. *R. G.*

Societies.

HIGHLAND AND AGRICULTURAL, *October* 23:—*The best varieties of Wheat to sow; quantities of each; and comparative advantages of drilling, dibbling, or sowing broadcast.*—Mr. HOPE, Fentonbarns, said: The cultivation of Wheat is not the least important branch even of Scottish agriculture. In the best arable districts Wheat forms the staple crop, being the most valuable of all the cereals, and the one to which the farmer chiefly looks to obtain the means to pay his rent. This is the case throughout the Lothians, Fife, Berwickshire, and a great part of Roxburghshire, and in the Carses of Gowrie, Falkirk, and Sirling; while even from the northern counties, such as Inverness and Ross-shire, the Wheat sent to Mark Lane ranks high in the market of the metropolis of the world. The Wheats at present sown in East Lothian are Hunter's, Hopetoun, Fenton, and Red-straw White; all white Wheats. Almost the only variety of red Wheat grown to any extent, is Spalding's Prolific. There are, however, a number of other kinds, both red and white, which have for a time enjoyed public favour, or which are yet new, that are cultivated on a limited scale, such as Woolly-eared, Chiddam, Pearl, Brodie's, Gregorian, Trumper's Mummy Wheat, amongst the white varieties; and Blood-red, Lammas-red, and Creeping Wheat, amongst the red kinds. The Red-chaffed White, which is a distinct variety from the Red-straw White, is coming into notice, but, perhaps, both are too new to the district to be classed amongst the Wheats that have a permanent place in public estimation. The other Wheats, such as Heckling's Prolific and Whittington's, were as extensively sown immediately after their introduction, though speedily abandoned as worthless, but not before occasioning great loss to those who had sown them.

Hunter's Wheat is fully entitled to the honour of being first particularly noticed, from having been for the last half century the favourite with the majority of farmers in the Lothians, perhaps in Scotland, though it is curious it has never made its way in England. Most of you must be aware that it was picked up on the roadside at Coldingham Moor, by the late Mr. Hunter, of Tynefield, near Dunbar, and that it was to that gentleman it owes its name and fame. I need scarcely enter into any description of a Wheat so universally known and appreciated, further than to say that it is a white Wheat, though in some seasons many of the grains are very high coloured, clear, and flinty, which might make those unacquainted with it imagine it was mixed with red. The straw is of moderate length, the ear medium-sized, the chaff smooth and thin, but with a short sharp awn, and that the pickles are neither too closely nor too widely set. It possesses a hardy constitution, withstands well the winter's frosts, tillers freely in spring, and is as little liable to disease as any variety I am acquainted with. For more than a dozen of years it formed the standard by which I tried all other varieties, and though I have ceased to sow it for the last six years, for a reason I will soon explain to you, yet it still continues unquestionably the favourite Wheat with the great majority of farmers in the Lothians. I have tried against Hunter's various English Wheats, such as Taunton Dean, Tall Cluster and Dwarf Cluster, Kent White, and other varieties without any distinctive name; but though they sometimes grew much finer quality the first year after they were imported, they rarely yielded so much grain, and always rapidly deteriorated. The Chiddam and Pearl Wheats, though fine in quality, never yielded within a quarter per acre as compared with Hunter's.

Hopetoun Wheat was propagated and brought into notice by my friend, Mr. Patrick Shirreff, formerly of Mungoeswells, now farming in Wales, to whom the agriculturists of the kingdom are also indebted for the valuable Hopetoun Oat. It was raised from a head found by the late Mr. Reid, of Drem. It is a smooth-chaffed white Wheat, with a large head, and tall stiff straw. It has a magnificent appearance when growing, and consequently sometimes disappoints sanguine growers. It has been extensively sown both in Scotland and England during the last 10 years, and certainly, on the whole, does not appear to be losing favour. I have not grown it much myself, though I have occasionally sown a field of it, and at other times a part, in order to compare it with Hunter's. I never found it to exceed Hunter's in quantity or value, though it always came very close to it in both, which is more than I can say of many other varieties.

Fenton Wheat was propagated by my father, from three heads grown from one root, which were accidentally found, in 1835, flourishing in an old quarry, situated 200 or 300 yards south from the village of West Fenton. It was growing on the top of a heap of stone rubbish, and what attracted my father's attention was the shortness and stiffness of the straw. At the time I set this down to the poverty of the soil from whence it drew its support, and I thought it neither more nor less than Hunter's Wheat. Experience, however, soon showed me that it was a perfectly distinct variety. I think the heads of the Fenton Wheat are larger than the Hunter's, and that it comes into ear a few days earlier; the grains, also, are rather more closely set; the straw is much firmer and shorter, and with the peculiarity of being different lengths from the same stem, which causes the sheaf to be a mass of heads, from the band upwards. It should be cut when the grains are soft, otherwise the appearance of the sample is impaired; but when cut green it has the clear and flinty look characteristic of Hunter's, so that it is scarcely possible to tell the one sample from the other. I confess, the quality is more easily affected by the weather than some other kinds, as, when stacked damp, the grain gets dull and dingy. It is, however, by far the most prolific white Wheat that I ever tried, whether sown in autumn or spring. It is far from being a great crop in appearance; judging it when growing, or even after it is cut, you are apt to think little of it, and it is rarely that you feel satisfied, or that its superiority is manifested until it is put into the sacks. The weight of straw per acre is frequently as great as that of crops a foot taller. I have found from several experiments that the weight of the straw averages about one-fourth more than the weight of the grain, which is just about the ordinary proportion of other kinds of Wheat. What I esteem its chief qualifications, is its strength of straw; if *it* is lodged, most other kinds would be useless. It is, therefore, well adapted for high farming, which is happily now the order of the day, most farmers having discovered, that if manure is dear, land is still dearer, with its accompanying expenses. Six years ago, I sowed a 24-acre field, one half Hunter's Wheat, and the other half Fenton, the difference in favour of Fenton was fully two quarters an acre, from Hunter's being completely laid; since then, I have entirely confined myself to the growing of Fenton, except an occasional acre or two of any new well recommended variety. Had it not been that it would have looked like puffing what may be considered my own variety, I would have given you the results of some experiments in growing Fenton Wheat, in comparison with Hunter's and some other approved kinds. Should I have, in the judgment of any, already exposed myself to the charge of favouritism, I beg to assure them that I am quite unconscious of it; and that nobody would rejoice more than myself, were any new variety to be found that would supersede for general cultivation, all those at present known. I cannot conclude my notice of the Wheats I have found most suitable, without again alluding to Spalding's Red, which was introduced into Scotland some years ago from Norfolk. I ought to mention that it is the only variety of Wheat that in my experience has beat Fenton in quantity, though the money value per acre was rather in favour of the latter. On the whole, then, I have no hesitation in commending for general cultivation, on ordinary soils, Hunter's, Hopetoun, Fenton, for white Wheats, and Spalding's Red as the best red I know. With regard to the proper quantity of seed to sow, this depends so much on the quality and condition of the land, even on the size of the grains and the manner of depositing the seed, and above all, on the period at which it is sown, that it is in my humble opinion nothing less than absurd to attempt to fix any general rule. I may state, however, my own practice. When the land is fine and dry I drill from 8 to 9 pecks the Scotch acre, up to about the 20th of this month; after that I increase it to 10 pecks, and if sown in December to about 11. In spring I sow as nearly as possible 12 pecks or 3 bushels per Scotch acre. I am unable to say anything satisfactory regarding dibbling, never having tried it but on a very small scale, and then with very indifferent success, perhaps from my want of knowledge. I drill the greater part of my grain. Last year I had about 250 Scotch acres in white crop, of which 40 acres were sown with the machine broadcast, and upwards of 200 acres were drilled. I drill on purpose to get rid of annuals, and also to check that pest of my neighbourhood, wild Oats. Hitherto I have usually hand-hoed the whole of it, and I have often seen in spring when part only of a field was hoed, that in a few days, it assumed a darker and more growing appearance than the piece that was still to do, and once when the field was rather long in being finished, the earliest hoed maintained its superiority till the last. I have known that it is said, a turn of the harrows will have the same effect on broadcast Wheat. I have even seen very thin Wheat beneficially harrowed, in order to make it thrive, but this merely shows the benefit of stirring the surface. And surely the hoe can be applied with greater precision and effect to a drilled crop, then a pair of harrows to one sown broadcast. I do not think that it matters much to the yield of the crop, whether you drill or sow broadcast, unless you also hoe, and I have no doubt but that sometimes when there is an abundance of plants a turn of the harrows might be equally beneficial to both. I do not count much on the saving of seed by drilling, as the broadcast sowing-machine now in universal use deposits the seed as evenly and correctly as the best drills. Some weeks ago I ordered one of Garrett's drills and his horse-hoe to suit. The cup principle being, in my estimation, much superior to the plan of the Scotch drills, and the driver having a far greater command over the implement, the work will be better done, and the horse-hoe used with greater freedom. In this machine (but it is the only one) the Scotch have, in my humble opinion, sacrificed correctness of principle and efficiency of execution to a miserable economy. I would conclude by remarking that it has been supposed, from Wheat being the most valuable of our cultivated grains, that therefore it was the most exhausting to the land. So far as my experience goes, I am inclined to think this supposition erroneous—Wheat is much longer on the ground, and consequently must draw more of its support from the atmosphere than the other crops—at all events, I find that I have always better crops after Wheat than after Barley; and why 8 or 10 quarters of Oats should not exhaust an acre of land more than 4 or 5 quarters of Wheat, I cannot understand. If I am correct, you must see the absurdity of clauses in leases restricting the number of acres that shall be under Wheat. It is essentially a condition that the landlord imposes upon himself to receive less rent than he might otherwise do. It is true these clauses are generally intended to operate only during the last years of a lease, and it may be inferred that they only injure the farmer, but whatever impairs his pocket speedily tells on that of the landlord.

Mr. PATTERSON, Cowie, Stirling, said: The part assigned to me in this meeting is to read a brief statement of the experience and practice of the district of the Carse of Stirling, on the subject of this day's discussion. Allow me, however, previous to entering on the various topics included in that subject, to premise that the soil of the district referred to is a stiff alluvial clay—that the general preparation for Wheat has been, and still is, a bare summer fallow—that although Turnips are grown on every farm, and on some farms over the whole extent of their fallow brake, yet the proportion is so small, that it forms the exception, and bare fallow the rule, and to which soil, under such treatment, my remarks will apply.

1st. *To the best varieties of Wheat.*—Among the many varieties lately introduced the following four claim special notice, as having stood the test longest and been most extensively sown in the district, viz., Hunter's Hopetoun, Red-chaffed White and Oxford Prize, each possessing its own peculiar characteristics, receiving attention in proportion as the soils on which they are to be sown are fitted for their culture. Hunter's is a long strawed Wheat, and on rich soils somewhat apt to lodge; the sample is of a fine flinty staple, and much valued by the baker. Hopetoun is also a long strawed Wheat, yields fully better than Hunter's, but the grain is of a softer staple, and more subject to disease while growing. Red-chaffed White is a short strawed Wheat, grows generally a full crop, yields well, and requires to be cut green, as it sheds readily; the sample is very fine, and is also in much request among bakers. Oxford Prize is a short strawed woolly-eared Wheat, yields largely, but in damp seasons is particularly liable to be damaged by the weather. These, then, constitute the principal varieties grown, but the greatest demand in the Stirling market of late has been for Hunter's and Red-chaff, both by bakers and growers, which warrants the inference that they are the best varieties to cultivate in the district, and if there is any difference, it is in favour of the Red-chaffed.

2. *Quantities to Sow.*—The quantity sown is from 8 to 12 pecks per Scotch acre. Our sowing season extends from the last week in September till the middle of November, and in proportion as the sowing is early, and the soil in good condition, we give the lesser quantity—or later and damp, we give the greater quantity; if at any time we pass the middle of November, 14 or 15 pecks are sown, as the case may be; and when Wheat is sown after green crops, 2 or 3 pecks more seed is allowed than after fallow—seldom, however, exceeding 16.

3. *As to the comparative advantages of Drilling, Dibbling, and Sowing Broadcast.*—The dibbling of Wheat has never been practised in this district, so far as I am aware. A mode of drilling was introduced by the late Mr. Murray, of Polmaise, and practised by him the few last years of his life. He attached a seed-box to the common plough, and ploughed the seed in, in rows, in every furrow—covering to the depth of 3 inches, or thereby—the particular results of which I have not been able to ascertain. In October, 1843, I had prepared, for Wheat sowing, a piece of land which had grown a crop of Beans; wet weather had set in before it was sown, and I did not get on it again until December; part of the seed was then drilled in on Mr. Murray's plan, and the rest ribbed, and I could perceive no difference in the crop between the two modes of sowing. I did not follow the drilling farther, as it was attended with additional trouble and expense; this expense, however, may be lessened by using drill-sowing machines, and I have the satisfaction to learn that such a machine has been introduced into the district through the Messrs. Drummond, of the Agricultural Museum, and which has been in operation this week on the farm of Steuarthall, in the neighbourhood of Stirling, in the presence of several practical farmers and others interested in agriculture, who were highly satisfied with its work. The common practice is to make up the land four or five weeks previous to sowing, then sow broadcast and harrow. The mode of preparing land for Wheat which prevailed at one time was to give farm-yard manure to the fallow, with or without lime. Since the introduction of draining, this has been abandoned, as the crop, after such treatment, ran too much to straw. One thing, however, has followed, and which has been the principal difficulty we have had to contend with in the cultivation of Wheat; that where the land has been well fallowed, heavily limed, and not consolidated by wet or otherwise, previous to, or immediately after sowing, the plants are apt to die out during winter, particularly on the more easy soils. Various expedients have been resorted to to obviate this, and with varied success; the seed has been sown broadcast, and then ploughed in with a light furrow; it has been grubbed in with a heavy grubber, but neither of the plans has fully succeeded; the substitution of Turnip for bare fallow, in certain cases, has been approved of as producing the desired result. In the autumn of 1842, which was very dry, after making up the fallow in the usual way, part of it had been limed, I ribbed from 12 to 14 inches wide; sowed broadcast, and harrowed; the other part got Rape dust instead of lime, and was then sown broadcast; the portion that was ribbed stood the winter very well, and was a good crop; the other lost the greater part of the plants, and produced very indifferently. The system I now follow is to have the land made up about the beginning of August, in such a way as it may be sown, but if the weather is suitable plough it again about the end of September, about 14 days before sowing, to consolidate the land, and raise a clod to protect the plants during winter; if that cannot be attained, and if I consider the land not sufficiently compressed, or not enough of cover for the seed, I rib it as before described; this plan has the advantage of affording a sufficient cover for the seed, without breaking down the clod, or reducing it to too fine a tilth by repeated harrowings, and the plants stand the winter better by having a firmer hold of the soil. The question very naturally presents itself here—Why is the drilling of cereal crops not more practised as a system? To this it may be replied, that it is still deemed problematical, whether or not any of the benefits which accrue to the drilling of such crops on light soils would follow on the clays, and may, in a great measure, have prevented its extended adoption.

Mr. Scott, Craiglockhart, said: In regard to the questions submitted to the present meeting, I will offer a few observations:

1. As to the best varieties of Wheat to sow, these may vary in different localities. On my own farm I have tried various kinds, Hunter's, Hopetoun, Chiddam, Taunton Dean, Hicklings, Uxbridge Talavera, Red-chaffed, Red-strawed, Fenton, Pearl, and some others; but after repeated trials, I have found that on land in good condition for autumn sowing, Fenton is most profitable, next to which probably Red-strawed; the Red-chaffed is a short-strawed Wheat, which stands well up, but it is very liable to shake, and the straw breaks very much in threshing. For spring sowing, what has succeeded best with me is a variety of Talavera, and next to it Uxbridge; but the variety of Talavera which I have this season is the greatest crop I ever reaped of either spring or autumn sown; it was sown on the 12th of March and reaped on the 7th of September.
2. As to quantity to sow per acre. I have heard various quantities recommended, from two-tenths of a bushel to 4 bushels per acre. I have never tried dibbling, but for drilling or sowing broadcast after green crops, I have generally found it most profitable to give what some may consider rather a liberal quantity of seed, beginning in the early part of the season, that is the end of September or beginning of October, with 2 bushels, and increasing as the season advances, to 3 bushels per imperial acre, but I have seldom seen it advisable to sow Wheat in December or January; if it cannot be got us before the beginning of December, it is better to postpone the sowing till February, after which period, fully 3 bushels per imperial acre should be allowed, as thick sowing greatly promotes the early ripening of the grain, whereas, if too thin sown both the straw and grain will have a tendency to be coarse and inferior in quality. With regard to any advantage to be derived from drilling, I have generally found that on land which is perfectly clean, fully as great a crop will be obtained from sowing broadcast as from drilling, but if the land is dirty or subject to annual weeds, drilling is a decided advantage, by allowing the ground to be hoed in spring; with regard to dibbling, as before stated, I have had no experience, but I observe in the last Number of the Journal of Agriculture, a report of experiments made by Mr. Hay, of Whitrigg, in Roxburghshire, the two first of which is a comparative trial between dibbling and sowing broadcast, which shows that whilst the gross produce of Wheat, straw, and chaff is the same in both cases, about 4 bushels per acre of more grain is obtained from the dibbled portion. The quality of the dibbled Wheat is, however, decidedly inferior; it not only containing a greater quantity of light Wheat, but the good grain weighed only 59 lbs. per bushel, whilst the grain from the broadcast portion, weighed 62 lbs. per bushel. Therefore if the difference in value of the grain be taken into consideration it is doubtful if any advantage was gained by dibbling. I may observe that in the report an error has been made which may probably be a misprint; the produce of ¼ of an acre of each is thus stated:

Broadcast, 11 bushels 0 tenths, good Wheat 62 lbs. per bushel.
0 „ 1½ „ of light.

11 „ 1½ „ equal per acre to 5 qrs. 4 6-10ths bushels.

Dibbled, 11 bushels 9½ tenths, good Wheat, 59 lbs. per bush.
0 „ 2½ „ of light.

12 „ 2 „ equal per acre to 8 qrs. 6 8-10ths bushels.

Which should have been 6 qrs. 0 8-10ths bushels.

In both of these experiments, the seed was sown on the same day, the 28th September. The broadcast at the rate of 1½ bushel per acre, and the dibbled at the rate of half a bushel per acre, but the broadcast was reaped on the 19th of August, and the dibbled on the 26th, being a difference of seven days, a matter of some importance in a late season, and which, with the inferior quality of the grain, corroborates the opinion I had previously formed as to the result that might be expected from thin sowing. In the same report Mr. Hay states that he sowed a field of Wheat on the 26th of August, at the rate of nearly 2 bushels of seed per acre, which proved to be too thick, and that it did not turn out so well as expected, the head being small, but it was reaped on the 13th of August, and weighed 63 lbs. per bushel, being six days earlier, and 1 lb. per bushel heavier than what was sown with 1½ bushel of seed; however, this cannot be considered as a comparative trial, having been so much earlier sown; had it been sown with 1½ bushel per acre, and that sown on the 28th of September with 2 bushels, it would have been a better proportion of seed; but I should think it doubtful if at any time it be prudent to sow Wheat so very early as the month of August, as the plant has a great tendency to get too far advanced before winter, and run to straw with a small head—to use an old local phrase, to be "winter-proud and bum-bee headed."

Mr. Finnie, Swanston, said: I will briefly state the results of two experiments I made with different varieties of Wheat:

In the autumn of 1836, farmers were much impressed with the idea that some of the English Wheats could be introduced with advantage, and participating in the same feeling, I was induced to make a comparative trial of those of them most in vogue, with a selection obtained in the Edinburgh market of Scotch Wheats, but which, unfortunately, the day I did so, I found to consist principally of Hunter's more or less pure. The autumn was most unfavourable for the raising of the Potatoes, and the wet weather immediately setting in, these two causes had led me almost to despair of sowing the field with Wheat that season. A favourable opportunity presented itself on the 21st of December, and upon a portion where the soil was most inferior, I sowed the following kinds; they were all cut the third week of the succeeding September, after a certain extent of land was measured off, in order to decide their respective productiveness. The following results were obtained:—

	Weight per Bushel.—bush. lbs.
No. 1—Wheat selected in the Edinburgh market having no particular name, but very much resembling Hunter's—gave ...	6 60
„ 2—Said to be a pure sample of Hunter's Wheat	7 61
„ 3—Uxbridge White Wheat	7 61
„ 4—Smooth-eared White	7 60
„ 5—Carrington White	6 58
„ 6—Heckland's Wheat	10 58
„ 7—Red Essex	9 59
„ 8—Smooth-eared Red	9 61
„ 9—Blood Red	7 58
„ 10—Selected in Edinburgh Market, being a good sample of Hunter's	8 61

I sent a bushel of each to be manufactured into flour, and obtained the following return:—

No.	Weight of each Bushel of Wheat.	Produce in Fine flour.	Produce in Third Flour.	Produce in Bran.	Total produce. Fine Flour. Third Flour. Bran.
	st. lbs.	st. lbs.	st. lbs.	st. lbs.	st. lbs.
1	4 3	3 1	0 4½	0 10½	4 2
2	4 3	3 2	0 4	0 9½	4 1½
3	4 4	3 1	0 5½	0 10½	4 3
4	4 3	2 12½	0 4½	0 13	4 2
5	4 1½	2 12½	0 4	0 11½	3 13½
6	4 1	2 11½	0 5	0 11½	4 0
7	4 2	3 0	0 4	0 11	4 1
8	4 3½	3 1	0 4½	0 11	4 2½
9	4 0½	2 12	0 5½	0 10½	3 13½
10	4 4½	3 2½	0 4½	0 10½	4 3½

From the foregoing table—first, as regards the acreable produce—the four most productive varieties stand thus:—

1. Heckland's. 2. Smooth-eared Red Wheat. 3. Red Essex. 4. Hunter's.

But, then, as regards the weight per bushel, and productiveness in flour, their position is reverse, viz.:—

1. Hunter's. 2. Smooth-eared. 3. Red Essex. 4. Heckland's.

If satisfied with that experiment, one might have been able to conclude that the succeeding year they were safe in sowing Heckland's, the Smooth-eared, or Red Essex, in preference to Hunter's; but I found each successive year prove the contrary, and that, upon an average of seasons, Hunter's gave the most profitable crop. My idea, whether right or wrong, was, that the late period of the season, when the different kinds were sown, gave, in that particular one, the balance in favour of those that proved most prolific. My impression is, that in a very late season some English variety will suit best; but when the seed-time can be got over by the month of November, a Scotch variety is fully more to be relied upon for general sowing in Scotland. For many years, therefore, I kept by Hunter's, as the most remunerative on my farm. I afterwards became acquainted with the merits of the Hopetoun, and ultimately found it to be even preferable to Hunter's Wheat, as it gave more straw, and fully as much produce in grain, and evidently of as good quality. In 1845 I made another comparative trial with the following, and the order in which I now state them were their productiveness:—

1. Fenton. 2. Taunton Dean. 3. Red Wheat. 4. Hopetoun. 5. Pearl. 6. A mixture of them all. 7. Chiddam. 8. A white Wheat recently introduced from England, and much recommended.

The soil upon which this experiment was made was rather of a loamy character, and very liable to give over-luxuriance in straw. After years, however, brought me to the following conclusion:—That, except upon the land upon my farm liable to lodge, Hopetoun—on an average of years—was most remunerative; but the Fenton better suited where the soil was likely to cause the crop to run much to straw. I have repeatedly sown the Red-chaff, Red-straw, and many others, which have been found to answer well on other farms; but in the meantime I am disposed to adhere to the two kinds I have referred to. The portion of my farm where Wheat may be cultivated varies from 450 to 600 feet above the level of the sea, and the soil upon it, generally speaking, of medium quality.

The next point embraced in this day's discussion is the quantity of seed necessary to sow. This must be regulated entirely according to the nature of the soil, climate, season of the year when sown, and condition of the land, and may vary, according to circumstances, from 6 pecks to 16 pecks per Scotch acre. I have found, upon my farm, if sown broadcast, 3 bushels, or 12 pecks—if the seed time happens in the end of September, or in the month of October—is equivalent to 4 bushels in those of November and December; and that old Wheat admits of being sown much thinner than new, and, when drilled, less is required than when sown broadcast, and that summer fallow land will do with a half less than after Potatoes, Beans, or Turnips; and the very condition of the grain affects the quantity that ought to be sown. In short, no specific quantity can well be stated; it is one of those parts of farm management which must be determined by the skill and observation of the agriculturist. The last point I would touch upon is the comparative advantages of drilling, dibbling, or sowing broadcast. I would therefore say, on all land having a large proportion of clay, or even with a moderate proportion, and when the furrow after the last ploughing leaves a sufficien bed and covering for the seed, nothing will succeed better than by sowing broadcast. On the other hand, when the land is so loose as not to leave a well raised up furrow for the seed, drilling is the next best to adopt, and if, as sometimes happens, continued rains prevent the drilling machine from working properly, the land may be ribbed by the common paring plough, or by a machine for the purpose, or even the seed ploughed in by a light furrow. The pressure now in use which follows three ploughs forming a bed for the seed, is a good preparation, but then in rainy weather that operation can be but imperfectly performed. In short, it just comes to this, the farmer is the creature of circumstances, his knowledge must be acquired in the field, and must either adopt one or other of these operations, keeping in view, in the first place, to deposit the seed at a sufficient depth, and secondly to consolidate the light land as much as possible.

Mr. Walker Rannie, jun., Inchyra, sent the following paper:

The varieties of white Wheat chiefly grown in the Carse of Gowrie are the Red-chaffed, Uxbridge, Hunter, Hopetoun, and Fenton. I might enumerate several additional kinds, occasionally introduced from England, such as the Talavera, Chiddam, &c.; these, however, after a few years' trial, have been generally abandoned as unsuited to our climate. The Red-chaffed is a very fine Wheat, and is best suited for land which throws up much straw; its defects are want of bulk for the generality of soils, getting thin on the ground towards harvest, susceptibility of injury from shake, and a liability to blight in certain seasons. The Uxbridge produces a fine sample, and plenty of straw; it has been grown here for several years and continues to give satisfaction. The Hunter Wheat was long held in estimation, being not only hardy but fine in quality, and well-liked by bakers; it is now in great measure discontinued, its place being taken by varieties considered more productive. Of all the varieties I have enumerated, the Hopetoun and Fenton are at present most in repute. The Hopetoun produces a good sample and plenty of straw, and, in this latter respect, is superior to the others. However, from its being subject to the attacks of the fly, it does not often realise, on being threshed out, the expectations which its bulk, when growing, would indicate. My experience at present would clearly give the preference to the Fenton Wheat, as being better adapted than any of the others to this district, where want of straw is not a usual complaint; from repeated comparative trials I should say that it exceeds the Hopetoun in produce by 1 quarter per acre—the reason of its superior grain-producing property is, that it seems to be more capable of resisting the depredations of the fly, which frequently does immense injury. I have heard it remarked that in the Fenton Wheat a shorter time elapses between the bursting of the ear, and the period of its being full shot, than in the other kinds, and consequently that the fly has not the same opportunity of doing hurt. Red Wheats are not extensively grown here. I have lately introduced Spalding Red, and find it very prolific both as to straw and grain, and well suited for secondary land. The bearded variety, known by the name of April Wheat, I am in the custom of growing; its early ripening habits cause it in many cases to be substituted for a Barley crop. It succeeds best when sown about the middle of April. The proper quantities of seed is a subject upon which a great variety of opinion exists. Believing, as I do, that we err in sowing too thick, I sow my fallow with two bushels, and Wheat after crop, with three bushels per Scotch acre, and these quantities I find sufficient, if the land is drained and in good condition. I consider the best time for sowing fallow Wheat to be from the 18th till the end of September, and Wheat after crop, during the whole of the following month. It is rarely that Wheat can be advantageously sown after October, unless upon very dry soils. The dibbling of Wheat is unknown in this district, neither has drilling hitherto been much practised—the broadcast system being almost universal. As I grow Wheat on a considerable extent of light dry loam, I am in the habit of using an implement called a presser, which follows the ploughs when ploughing the seed furrow, and makes a rut of from 4 to 5 inches in depth between each furrow slice; this I find to be an excellent plan, as it insures the seed being put in at an equal depth, and prevents any being lost. It also consolidates the land, and to a certain degree counteracts the injurious action of the frost and sun, in throwing out the young plants during spring. In short, I consider that this method, when carefully gone about, is little inferior to the drill.—**Mr. Dickson, Saughton Mains, said:** My practice is to sow my Wheat in the months of October and November. The quantity of seed I sow is from 2 to 2½ bushels per imperial acre, commencing with 2 bushels, and, as it gets later in the season, increasing the quantity to 2½ bushels; it is all put in with the drill machine, which I consider much the best mode of sowing Wheat. Indeed, I am surprised that there should be any difference of opinion on this subject, as the drill places the Wheat in the precise position and depth that the sower chooses. I can easily understand that there may be a difference of opinion in regard to the distance between the drills; but this can also be regulated to any width that may be desired. I consider broadcast sowing a great waste of seed, and an unsatisfactory mode of sowing, one portion of the seed being left on the surface, and another portion buried too deep; so that the braird comes up unequally. Next to drilling, I approve of the use of the presser before sowing, which leaves an equal depth of seed-bed for the Wheat; but the presser is attended with this disadvantage, that the Wheat so sown cannot be hoed in spring, which I hold to be of the greatest importance to the successful cultivation of the Wheat crop. I believe every farmer has observed the great advantage which any autumn-sown or planted garden crop derives from the first spring hoeing; for instance, early Cabbages: and he can easily understand that autumn-sown Wheat, being placed in similar circumstances, will be equally benefited. The hoeing of Wheat is very generally practised in many counties of England, but to a very limited extent in Scotland; and having practised it myself for several years, and found my crop greatly improved by it, I would impress on others the propriety of giving it a fair trial, and I have not the least doubt they will find the same result as myself.

Review.

Opinions on Practical Agriculture in the Hundred of Wirral, Cheshire. By the Wirral Agricultural Improvement Society. J. Cross, Stamp Office, Birkenhead.

This is an interesting and useful pamphlet. It contains the resolutions and conclusions of a Farmer's Club on such subjects as Draining, Fencing, Rotations of Crops, Manure, Autumn Seedings, Storing of Roots, Cattle Feeding, Milch Cows, Horses, Farm Servants, Spring Seeding, Clover and Grass Seeding, Root Crops, Hay-making, Harvest, Implements, and Farm Accounts. What could be a better table of contents for an agricultural work? And the different topics are clearly and intelligently discussed, so that the whole performance is one which, while it reflects great credit on the district whose practice it criticises or describes, is at the same time well calculated to benefit readers in other parts of the country. We select a passage appropriate to the present season.

Autumn Seeding.—"Wheat is allowed by all farmers to be their staple product, and in this district it is, in

conjunction with the proceeds of the dairy, their sheet-anchor; and the best means of getting a large quantity of it should be their constant study, for nothing can make up on a farm for the failure of this valuable crop; therefore we propose to review shortly the different preparations for it.

"There is no doubt that on suitable land the best preparation for Wheat is Potatoes [This, however, is an opinion which, in many other parts of the country, will be stoutly disputed]; one great benefit derived from this crop is, that it effectually cleans the ground when properly attended to, which is one of the greatest objects to be attained in good husbandry. But as only a small part of the land intended for Wheat can, under the most favourable circumstances, be planted with this root, and by its great failure of late years, that quantity is considerably reduced, it is, therefore, necessary to consider what are the other preparations best suited for it; and before we enter into that, it is as well to state that there is in the Hundred a small portion of light land, every acre of which should always be covered with crops of some kind; and roots of every description are excellent, and the best preparations for Wheat. But the greater part of the district consists of heavy land, and the Society does not consider it by any means a settled question, that it is advantageous to grow on such land a great breadth of Turnips, though a most valuable root, and a very good preparation for Wheat in some seasons, and after which it is frequently sown, and advisedly so; but the low price of grain for cattle-feeding, caused by "free-trade," makes it doubtful whether it is not better to buy some of it for them, rather than grow so many Turnips. Indeed, so far, the conclusion is unavoidable, that on the wet and undrained land, and occasionally on the drained portion when it becomes dirty, the most economical and only sure plan is to have a naked fallow; which, in such cases, is the best preparation for Wheat. To do this, the land should be broken up to the full depth you intend to go, immediately after Wheat sowing is finished, or as early in the autumn as you can, ploughed into small butts to expose plenty of surface, and keep the land dry; and as the great object of this expensive process is to clean the land, no opportunity should be lost of working it well through the summer, when the weather is hot and dry.

"Lea Wheat having had several trials in the neighbourhood, and the majority of cases having proved a failure, it cannot be recommended as a general practice; but when it is tried, a dressing of lime, or about three loads of gas lime, or four bushels of common salt, ploughed in per statute acre, will have the best effect; and if sown upon one furrow, it ought to be run over with a land-presser, drawn by one strong horse, and following two ploughs; but, as a general rule, a summer's fallow, a crop of Beans, Vetches, or root crop, should follow a ley before Wheat is sown.

"Wheat will answer well after Beans, provided the land is clean, but otherwise it ought not to be sown; it will also answer very well on heavy land, after Vetches, which in many cases is a better preparation than Turnips, as the land can be cleaned after they are mown, and the Wheat put in, in good time.

"When Wheat is sown after fallow on wet undrained land, and there is any quantity to be done, it is best to begin the end of September, or beginning of October, as it is seldom the weather will allow you to continue long without hindrance. Many prefer ploughing Wheat in on a fallow, and all think it should be put in as soon after it is ploughed as possible; but this cannot be done always; and when such is the case, it has been found best to leave two rounds in every rein [What is a rein?] unploughed till the day the Wheat is sown; if wet weather intervenes between the ploughing and seeding, the reins get into very bad condition, and cannot be worked so early by some days as when left unploughed, neither will it cover the seed so well; this applies to other land equally as much as fallows. All Wheat on heavy land should be in, if possible, by the end of November; if any remains undone after the middle of December, it had much better be left till February, as great risk is run by sowing it in the middle of winter, and nothing as regards time in its growth is gained by it. On light land it is not so particular; but even on that, February is a better month than January.

"Change of seed every year from a different part of the country is strongly advised; long experience has proved the benefit of it, and a strong illustration of the case occurred to one of the members of this Society last season. He sowed some Wheat the second year only in a field of his, and, by its side, a sack of exactly the same description of Wheat, originally from the same stock, but fresh from a distance that year, and the difference in favour of the crop from the sack of new Wheat was very remarkable, and convincing that a yearly change is beneficial.

"With regard to the best kinds of Wheat for the district, and, at the same time, to suit the markets, the best yet found out for profit are, for rich land the Waterloo white Wheat, and Spalding's Prolific, a red kind, for the poorer descriptions. The quantities of seed must vary very much with circumstances; there is no doubt that less seed than is usually sown would sometimes answer, but Wheat is a crop the farmer cannot afford to run unnecessary risk with, and the Society does not advise much under two measures for the earliest, and more than that for the latest sown.

"Drilling has answered very well where it has been tried, the rows at about seven inches apart, and on light land it secures a better root than broadcast; it requires less seed, and sows it very regularly. Ribbing is a system approved by some, but it has not yet been much tried."

Calendar of Operations.

OCTOBER.

AN ESSEX FARM, *Oct.* 21.—The horses have been employed this last week ploughing up Bean land for Wheat, and it does beautifully. We have sown a few acres of slit land (that is, summer fallowed), and no land could dress better; it looks more like a garden bed than a ploughed field. Wheat sowing is now becoming general in this part, except with some old practical men, who say that Wheat will not do well unless the land is pasty, and turns over in ploughing, just like a brick when turned out of the mould. The fact is, that there is not a chance of putting Wheat in otherwise, one season out of twenty on the heavy land in this neighbourhood; therefore, as a man's life is but three score and ten, he cannot judge whether a good seed-bed is best for Wheat or not, and is apt to stick to his forefathers' prejudices. We have begun this week to take up Mangold; they are a much better crop than Turnips—I may say quite an average crop, and the Globes are much superior to the long red ones; this is so every year, according to my observation, and all cattle like them best; but neither one nor the other should be given to any breeding stock, more particularly sows, as they cause abortion. We have this year tried a new implement (Bentall's broadshare) to break up the stubble, and find it the best of anything we have seen for that purpose; with it no land need be foul, as you may begin directly after harvest, and go over most of your stubble in a few weeks. It does 4 acres a day, with three horses. This gives the annual weeds a chance to vegetate before winter, and you the chance to kill them, and prevent their spoiling your crop next year. *E. X., near Braintree, Essex.*

Notices to Correspondents.

ACCOUNTS: *E F.* We have published your question in the Home Correspondence section of the Paper.

BEANS: *Constant Reader.* We should prefer Beans with a little Linseed to anything else. And Beans alone, with Turnips, for sheep, we should prefer to oilcake.

BLACK BARLEY: *J P.* Sow early in spring—*i. e.*, late in February.

BOOKS: *London Cowfeeder.* The best works on diseases of the cow are "White Cattle Medicine," latest edition, and "Cattle," by Wm. Youatt. *W. C. S.*

DRAINS: *R G Thomas.* A flat tile, too large for the bottom of the drain, and tilted up against the side of it, will leave as permanent a conduit for the water beneath it as the mole-plough would, but not more so. Your pond into which the drains run must be kept dry, by having a pervious bottom, or by artificial means, such as a windmill, and perhaps a steam-engine, or it will not act.

GRASS SEEDS: *Tiverton.* You had better sow them with a thin seeding of Barley—not with Rape, to be eaten down with sheep. The best Carrots ever we grew were from 3 cwt. per acre of Peruvian guano, sown broadcast on land which had been sown with Italian Rye-grass in the previous corn crop, and dug in in February. Sow the manure a fortnight before the seed—the latter to be drilled on the flat in rows 18 inches apart.

KOHL RABI: *Old Subscriber.* You may leave them in the land, and pull them as wanted.

MR. RIGDEN'S FARM: *A Canny Scot.* Your letter shall appear next week, with Mr. Wilson's admirable critique on Mr. Milner's pamphlet.

NOISE OF THRESHING MACHINE: *R G.* We are not learned in the law. A nuisance forms, we believe, good ground for an action for damages against its promoters; but what the legal definition of a nuisance is we do not know.

SOOT AND SALT: *Curate.* Thirty bushels of soot and 2 cwt. of salt is a good dressing for an acre, *i. e.*, about 3 or 4 oz. of the former and less than 1 oz. of the latter per square yard.

WEIGHT OF ROOTS: *L B S.* A ton of Mangold Wurzel will probably weigh 19, 18, and 16 cwt. in March, April, and May of next spring, respectively. Both Swedes and Mangold Wurzel grow now as rapidly as at any time; but we have had all ours (1500 tons) harvested already; because the risk of injuring the land by hauling in wet weather is too great. About Turkeys next week.

Markets.

COVENT GARDEN, Nov. 2.

Vegetables are abundantly supplied, and Hothouse Grapes and Pine-apples are plentiful. Melting Peaches are over, but some Michaelmas ones may still be had. Oranges and Lemons though scarcer are sufficient for the demand. Plums and Pears are still received from the Continent, but the former less plentifully. Filberts are dearer. Carrots and Turnips are good in quality, and so are Potatoes. Lettuces and other salading are sufficient for the demand. Mushrooms are scarce. Cut Flowers consist of Heaths, Pelargoniums, Asters, Fuchsias, Mignonette, Dahlias, Verbenas, Bignonia venusta, Stephanotis floribunda, Heliotropes, and Roses.

FRUITS.

Pine-apples, per lb., 3s to 5s	Oranges, per doz., 2s to 3s
Grapes, hothouse, p. lb., 1s to 3s	— per 100, 8s to 24s
— Portugal, p. lb., 8d to 1s	Pommegranates, each, 3d to 6d
Peaches, per doz., 3s to 10s	Almonds, per peck, 6s
Melons, each, 1s to 3s	— sweet, per lb., 2s to 3s
Plums, p. punnet, 1s to 2s 6d	Walnuts, p. 100, 1s to 2s
Pears, per doz., 1s to 3s	— p. bush., 12s to 24s
— per half sieve, 6s to 15s	Nuts, Barcelona, p. bush., 20s to 22s
Apples, dessert, p. bsh, 3s 6d to 8s	— Brazil, p. bsh., 12s to 14s
— kitchen, do., 3s 6d to 6s	Filberts, per 100 lbs., 60s to 65s
Lemons, per doz., 1s to 2s	

VEGETABLES.

Scarlet Runners, p. half sieve, 1s to 1s 6d	Shallots, per lb., 6d to 8d
Brussels Sprouts, do., 1s to 1s 6d	Garlic, per lb., 4d to 8d
Cabbages, per doz., 6d to 1s	Artichokes, p. doz., 2s to 3s
Greens, p. doz. bun., 1s 6d to 2s 6d	Vegetable Marrows, per doz., 6d to 1s 6d
Cauliflowers, p. doz., 1s to 4s	Lettuce, Cabbage, p. score, 1s
Sorrel, p. hf. sieve, 6d to 9d	— Cos, p. score, 6d to 1s 6d
Potatoes, per ton, 50s to 80s	Endive, per score, 1s to 1s 6d
— per cwt., 2s 6d to 4s	Small Salads, p. punn, 2d to 3d
— per bush., 1s 6d to 2s 6d	Horse Radish, p. bdl., 1s to 4s
Turnips, p. 12 bundles, 1s to 2s	Mushrooms, p. pot., 1s to 1s 6d
Red Beet, per doz., 6d to 1s	— per bushel, 5s to 7s
Cucumbers, p. doz., 4d to 1s	Fennel, per bunch, 2d to 3d
Radishes, per doz., 1s to 1s 6d	Savory, per bunch, 2d to 3d
Leeks, per bunch, 1d to 2d	Thyme, per bunch, 2d to 3d
Celery, p. bundle, 9d to 1s 6d	Parsley, p. doz. bun., 1s to 2s
Carrots, per doz., 2s to 5s	— Roots, p. bdle., 9d to 1s
Tomatoes, p. punnet, 6d to 1s	Marjoram, per bunch, 2d to 4d
Spinach, p. half sieve, 6d to 1s	Mint, per bunch, 2d
Onions, p. bunch, 2d to 3d	Watercress, p. 12 bunch., 6d to 9d
— Spanish, p. doz., 1s 6d to 4s	

HAY.—Per Load of 36 Trusses.

SMITHFIELD, Oct. 31.

Prime Meadow Hay	70s to 76s	Clover	65s to 80s
Inferior ditto	63 68	Second cut	68 72
Rowen	60 65	Straw	23 27
New Hay	— —		J. COOPER.

CUMBERLAND MARKET, Oct. 31.

Prime Meadow Hay	74s to 78s	Inferior	65s to 72s
Inferior ditto	50 65	New Clover	— —
New Hay	— —	Straw	24 30
Old Clover	78 84		JOSHUA BAKER.

COAL MARKET.—FRIDAY, Nov. 1.

Eden Main, 15s. 6d.; West Hartley, 14s. 6d.; Wallsend Riddell, 15s.; Wallsend Haswell, 16s. 6d.; Wallsend Hetton, 14s.—Ships at market, 43.

SMITHFIELD, MONDAY, Oct. 28.

Although there is a considerable falling off in the supply of Beasts, the number is still large, and the demand small; consequently prices cannot be quoted on the average higher. A clearance cannot be effected of inferior qualities. The supply of Sheep is nearly as large as on Monday last; however, some of the choicest descriptions make rather more money. The number of Calves is quite adequate to the demand. Our foreign supply consists of 1391 Beasts, 5050 Sheep, 130 Calves, and 200 Pigs.

Per st. of 8 lbs.—s d s d		Per st. of 8 lbs.—s d s d	
Best Scots, Herefords, &c. ...	3 6 to 3 8	Best Long-wools .	3 4 to 3 8
Best Short-horns	3 4 — 3 6	Ditto Shorn	— ...
2d quality Beasts	2 4 — 3 0	Ewes & 2d quality	2 8 — 3 2
Best Downs and Half-breds ...	3 10 — 4 2	Ditto Shorn	— ...
Ditto Shorn	— ...	Lambs	— ...
		Calves	2 4 — 3 6
		Pigs	2 8 — 4 0

Beasts, 4579; Sheep and Lambs, 25,450; Calves, 130; Pigs, 600.

FRIDAY, Nov. 1.

We have only a moderate supply of Beasts, but the demand is so small that it is difficult to dispose of any except the choicest kinds. The supply of Sheep is not large, but quite sufficient for the trade; indeed, on the average prices are lower. There are very few buyers for Calves; although the the number is small, prices are no better. The foreign supply consists of 477 Beasts, 1380 Sheep, 153 Calves, and 80 Pigs. The number of Milch Cows is 85.

Best Scots, Herefords, &c. ...	3 4 to 3 8	Best Long-wools .	3 4 to 3 6
Best Short-horns	3 2 — 3 6	Ditto Shorn	— ...
2d quality Beasts	2 4 — 2 10	Ewes & 2d quality	2 4 — 3 0
Best Downs and Half-breds ...	3 8 — 4 0	Ditto Shorn	— ...
Ditto Shorn	— ...	Lambs	— ...
		Calves	2 4 — 3 6
		Pigs	2 6 — 3 8

Beasts, 962; Sheep and Lambs, 4390; Calves, 265; Pigs, 580.

HOPS.—FRIDAY, Nov. 1.

Messrs. PATTENDEN and SMITH report that the market is very firm, in consequence of the duty being likely to fall very considerably under the late estimate. It is now 220,000*l.* to 225,000*l.*

POTATOES.—SOUTHWARK, Oct. 28.

The Committee report that the arrivals coastwise during the past week have been very limited, but we are so well supplied by rail, that it is with difficulty the following prices are obtained:—York Regents, per ton, 70s. to 80s.; Perth do., 60s. to 65s.; Fifeshire do., 55s. to 60s.; Wisbeach and Cambridgeshire do., 60s. to 65s; foreign whites, 50s. to 55s.

MARK LANE.

MONDAY, OCT. 28.—The supply of English Wheat by land-carriage samples this morning was small, which enabled factors to realise it on the terms of last week. Foreign was in moderate demand only, but we observe no alteration in its value.—Fine English and foreign Barley maintains our quotations.—Beans must be written 1s., and Peas of all sorts 1s. to 2s. per qr. cheaper.—The Oat trade is not brisk; old English and foreign support last week's rates; new Irish, however, must be written 6d. to 1s. per qr. lower.

PER IMPERIAL QUARTER.	s. s.		s. s.
Wheat, Essex, Kent, & Suffolk ...White	43—46	Red	38—45
— — fine selected runs ...ditto	43—48	Red	—42
— — Talavera	46—52		
— Norfolk, Lincoln, & York...White	—	Red	—
— Foreign	34—50		
Barley, grind. & distil., 22s to 23s...Chev.	26—29	Malting	24—26
— Foreign....Grinding and distilling	17—23	Malting	20—24
Oats, Essex and Suffolk	—		
— Scotch and Lincolnshire ...Potato	20—23	Feed ...	19—21
— Irish .....Potato	16—20	Feed ...	14—17
— Foreign.....Poland and Brew	18—22	Feed ...	15—18
Rye	26—28	Foreign	—
Rye-meal, foreign.....per ton	—		
Beans, Mazagan .....25s to 27s.....Tick	26—28	Harrow	26—28
— Pigeon .....—s —s...Winds	—	Longpod	—
— Foreign .....Small	24—34	Egyptian	22—23
Peas, white, Essex and Kent.....Boilers	28—30	Suffolk...	30—32
— Maple.... .30s to 31s .....Grey	26—28	Foreign	25—32
Maize ..... White	25—28	Yellow...	24—28
Flour, best marks, delivered... per sack	36—40		
— Suffolk ..... ditto	29—36	Norfolk	29—36
— Foreign .....per barrel	18—24	Per sack	29—34

FRIDAY, Nov. 1.—The arrivals of English corn since Monday have been moderate, but we continue well supplied with foreign, particularly Wheat, and the attendance at market being small, it was difficult to clear these cargoes without a slight decline.—Fine malting Barley is in great request, and commands extreme prices.—Beans are unaltered in value.—There is a heavy sale for white Peas, and soft Danish are purchaseable at 27s. to 28s. per qr.—The Oat trade is firm, and prices unaltered.—Flour is rather a sluggish sale, but without alteration in price.

IMPERIAL AVERAGES.	WHEAT.	BARLEY.	OATS.	RYE.	BEANS.	PEAS.
Sept. 21.....	42s 7d	24s 10d	17s 1d	26s 4d	29s 5d	29s 5d
— 28.....	42 8	24 8	16 10	26 4	29 5	29 0
Oct. 5.....	42 2	24 5	16 8	26 7	29 6	29 3
— 12.....	41 2	24 2	17 1	25 8	29 6	29 7
— 19.....	39 10	24 2	16 7	26 7	29 7	29 5
— 26.....	39 9	24 0	16 8	25 1	28 10	30 6
Aggreg. Aver.	41 4	24 5	16 10	26 1	29 4	30 0
Duties on Foreign Grain	1 0	1 0	1 0	1 0	1 0	1 0

Fluctuations in the last six weeks' Corn Averages.

PRICES.	SEPT. 21.	SEPT. 28.	OCT. 5.	OCT. 12.	OCT. 19.	OCT. 26.
42s 8d	...	...	...	...	...	...
42 7	—	...	...	...	...	...
42 2	...	...	...	...	...	...
41 2	...	...	...	...	...	...
39 10	...	...	...	...	...	...
39 9	...	...	...	...	...	...

LIVERPOOL, FRIDAY, OCT. 25.—At our market to-day English and foreign Wheat of all descriptions met an extremely slow demand, only a few parcels having been disposed of, and those on rather easier terms. Irish new Wheat being scarce, remained unaltered in value. All kinds of American Flour are in fair request to-day, at the full rates of Tuesday last. French Flour goes off freely at full prices. Barley, Beans, and Peas having been taken sparingly to-day, were the turn cheaper. In Malt no variation. Oats and Oatmeal, upon a moderate demand, maintained our last currency. Although we had less business doing in Indian Corn than before, holders were firm at our last quotations.——TUESDAY, OCT. 29.—Notwithstanding the extent of our supplies, which are very large, the trade has shown tolerable steadiness during the week, and very little variation has occurred in the quotations. There was a thin attendance at our market this morning, and the trade was dull throughout. No alteration was made in the value of Wheat, or of any article. The best feature in the trade's favour was the little disposition to sell Flour, after so large an arrival, by taking lower rates; it is mostly going into store.

GLASS FOR CONSERVATORIES, GREENHOUSES, PIT-FRAMES; AND PLATE GLASS FOR DWELLINGS.

THOMAS MILLINGTON begs to hand the sizes of a large quantity of SHEET GLASS, packed in 100 feet boxes of various sizes. In all cases, unless the whole box is taken of either size, extra must be charged as specified.

13*s.* 6*d.* per box; or 2*d.* per foot if less than one box be taken:

6	inches by 4	inches.	6½	inches by 5	inches
6	,, by 4½	,,	6½	,, by 5½	,,
6½	,, by 4	,,	6	,, by 6	,,
6½	,, by 4½	,,	6½	,, by 6	,,
6	,, by 5	,,	6½	,, by 6½	,,
6	,, by 5½	,,			

15*s.* per box; or 2½*d.* per foot if less than one box be taken:

7	inches by 4	inches	7½	inches by 5½	inches
7	,, by 4½	,,	7	,, by 6½	,,
7	,, by 5	,,	7½	,, by 6	,,
7½	,, by 5	,,	7½	,, by 6½	,,
7	,, by 5½	,,	8	,, by 6	,,

17*s.* 6*d.* per box; or 2½*d.* per foot if less than one box be taken:

9	inches by 7	inches	10	inches by 8	inches
8	,, by 8	,,	10	,, by 9	,,
9	,, by 8	,,	10	,, by 10	,,
9	,, by 9	,,			

20*s.* per box; or 2⅔*d.* per foot if less than one box be taken:

11	inches by 8	inches	13	inches by 9	inches
12	,, by 8	,,	12	,, by 10	,,
12	,, by 9	,,	14	,, by 10	,,

Boxes charged 1*s.* each extra.

T. M.'s Stock of small Glass is so large, that he thinks he can pledge himself to execute orders to any extent.

Glass cut to any other size required, in either 16 oz., 21 oz., 26 oz., or 32 oz.

PATENT ROUGH PLATE GLASS.

T. MILLINGTON'S Patent Rough Plate Cast, perfectly flat and uniform, the best manufactured. A small sample will be sent, upon application, to prove it.

CUT TO ORDER IN PANES.

	⅛ in. thick.	¼ in. thick.
	0*s.* 6*d.*	0*s.* 11*d.*
Not above 15 inches long	0 8	1 1
Above 15 inches and not above 35 ...	0 9½	1 3
,, 35 ,, ,, 50 ...	1 0	1 3
,, 50 ,, ,, 75 ...	1 3	1 4
,, 75 ,, ,, 100 ...	...	1 6
100 inches and above		

This is not the article that some of the trade decry.

HARTLEY'S Patent Rough Plate, also, supplied in any quantity, which is rather cheaper.

IN SQUARES CUT IN THE SIZES ORDERED.	Per Foot.
Under 8 by 6	0*s.* 4*d.*
8 by 6 and under 10 by 8	0 4½
10 by 8 ,, 14 by 10	0 5
14 by 10 ,, 1½ ft., or sizes not exceeding 20 ins. long	0 5½
1½ ft. ,, 3 ,, ,, 30 ,,	0 6
3 ,, 4 ,, ,, 30 ,,	0 6½
4 ,, 5 ,, ,, 35 ,,	0 7
5 ,, 6 ,, ,, 40 ,,	0 7½
6 ,, 8 ,, ,, 45 ,,	0 8
8 ,, 10 ,, ,, 50 ,,	0 9
10 ,, 12 ,, ,, 60 ,,	.....
12 ,, 15 ,, ,, 70 ,,	.....

GLASS FOR CONSERVATORIES, HORTICULTURAL PURPOSES, GLASS PANTILES, SLATES, &c.



MILK PANS 2*s.* to 6*s.* each, Hand-frames, Tiles, and Slates; Propagating and Bee Glasses from 2*d.* each; Cucumber Tubes, 1*d.* per inch; Peach Glasses, 10*d.* each; Wasp Traps, 3*s.* per dozen; Pastry Slabs, Glass Plates, in wooden frames, for butter and pastry, &c.; Hyacinth Glasses and Dishes, Shades for Ornaments, Fish Globes, Plate and Window Glass of every description, and Lamp Shades. Lactometers for trying the quality of Milk, 4 tubes, 7*s.* 6*d.*; 6 tubes, 10*s.* Self-registering Thermometers for Greenhouses, Horticultural Glass, &c.

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JAMES PHILLIPS and Co. (the sole agents), 116, Bishopsgate-street Without, London.

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THIS MACHINE CAN BE APPLIED WHEREVER A FALL OF WATER OF A FEW FEET CAN BE OBTAINED; and its cheapness and durability, with the fact that upwards of 500 of them erected in England and other countries by Messrs. EASTON and AMOS have now been at work many years, afford ample proof of its great value and efficiency.

Estimates of the expense of the Machine, Pipes for the conveyance of Water, Tanks, and Reservoirs, may be had on application to Messrs. EASTON and AMOS, CONSULTING ENGINEERS to the ROYAL AGRICULTURAL SOCIETY, at their office in Orange-street, Trafalgar-square, or at the Works in the Grove, Southwark, London.

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HENRY FREEMAN, HOTHOUSE BUILDER and HOT WATER APPARATUS MANUFACTURER, Triangle, Hackney, London, begs to solicit the attention of the gentry to his low prices for cash: Good substantial built Greenhouses, fixed complete, 42 feet long, 13 feet wide, 90*l.*; 21 feet long, 13 feet wide, 50*l.*; 12½ feet long, 10 feet wide, 30*l.* A large assortment of Conservatories, Hothouses, Pits, Melon and Cucumber Boxes, iron Handlights, Summer-houses, Seats, &c. Estimates for any branch in the above line, either in wood or iron, or for park fencing.

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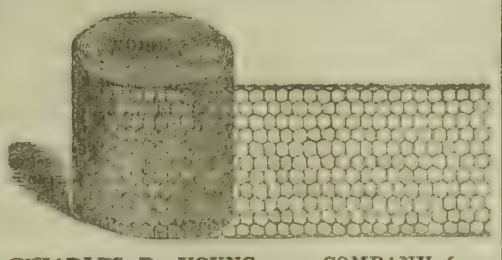
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This Company having been in active operation for several years, is ready to undertake Works under the Government Loan, or by fixed or annual charges under its Act of Parliament.

Further particulars and references may be obtained at the offices. THOMAS MAY, Secretary.

PLOUGHING SEASON.—THE TWO GUINEA PLOUGH! Cheapest in the world. Made to suit the times. Warranted. The Wedlake Chaff-cutter, surpassed by none; warranted to stand 20 years and upwards. The Grass Mowing Machine; the New Dibbler, outdoing all others; the Metallic Churn and American ditto. Very liberal discount for cash to meet the times.—118, Fenchurch-street, Mark-lane. Actual manufacturers.

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MANUFACTURERS OF IRON AND WIRE WORK, &c.,

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32, ST. ENOCH SQUARE, GLASGOW;

1, CASTLE BUILDINGS, DERBY SQUARE, LIVERPOOL;

beg respectfully to call the attention of Landed Proprietors and others to their strong Wire-Net Fence, for excluding Hares and Rabbits from Gardens, young Plantations, Nurseries, &c.

This Net was exhibited at the Show of the Highland and Agricultural Society of Scotland, held lately at Inverness, where its Efficiency, Great Strength, and Exceeding Cheapness attracted general attention, and had awarded from the Judges the Society's Silver Medals, with high commendations.

The immense damage done by Hares and Rabbits in Gardens and Young Plantations is often so great, that in the course of a year or two it will amount to more than the entire cost of protecting them with this Net. It is so durable, that when Plantations are sufficiently advanced to be independent of its protection, it can be removed to other exposed situations with the greatest facility, by any labourer. As a Fence against Hares and Rabbits, it is of itself quite sufficient, having only to be unrolled and attached, with small wire sent for that purpose, to wooden stakes driven into the ground, about every six or seven feet apart. It is, besides, peculiarly adapted for rendering Hedges, Paling, or other existing Fences, *completely impervious* to such vermin; and by being cut up into small pieces of three or more feet, as required, it forms a most efficient guard, at little expense, for individual Plants and Shrubs.

PRICES.—18 ins. high, 9*d.*; 24 ins., 1*s.*; 30 ins., 1*s.* 3*d.*; and 36 ins., 1*s.* 6*d.* per lineal yard.

Or a web of 100 yards, 18 ins. wide, will cost	..	£3 15 0
Do. of 100 yards, 24 ins. wide	..	5 0 0
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If more or less than a web is required, it would be charged at the same rate per yard.

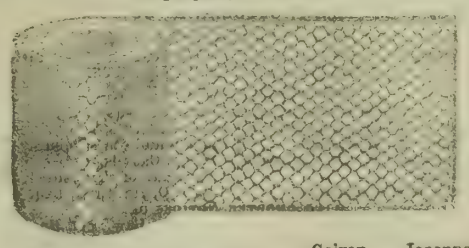
This Netting is also admirably adapted for Pheasantries and Poultry-yards, and is charged at the same rate. As carriage has, in many instances, been an obstacle to parties at a distance requiring this Net, C. D. Y. and Co. have made arrangements by which they will undertake to deliver it at any of the principal ports of Scotland, England, and Ireland, for One Halfpenny per lineal yard.

C. D. YOUNG and Co. cannot give a better idea of the great strength of their Premium Wire Netting than by stating that the weight of one yard of their 24-inch at 1*s.* is equal to 2½ yards of another article in the market, the same width, at 9*d.* per yard. Samples for inspection sent free of expense.

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Workmen sent to all parts of Scotland, England, and Ireland.

GALVANISED WIRE GAME NETTING.—7*d.* per yard, 2 feet wide.



	Galvanised.	Japanned Iron.
2-inch mesh, light, 24-inch wide ...	7*d.* per yd.	5*d.* per yd.
2-inch ,, strong ,, ...	9 ,,	6½ ,,
2-inch ,, extra strong ,, ...	12 ,,	9 ,,
1½-inch ,, light ,, ...	8 ,,	6 ,,
1½-inch ,, strong ,, ...	10 ,,	8 ,,
1½-inch ,, extra strong ,, ...	14 ,,	11 ,,

All the above can be made any width at proportionate prices. If the upper half is a coarse mesh, it will reduce the price one-fourth. Galvanised sparrow-proof netting for pheasantries, 3*d.* per square foot. Patterns forwarded post-free.

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THE HOT-WATER APPARATUSES (which are efficient and economical), are particularly worthy of attention, and are erected in all the Houses, Pits, &c., for both Top and Bottom Heat, and in constant operation in the Stoves.

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THE HIPPOPOTAMUS, presented to the Zoological Society by the Viceroy of Egypt, is exhibited daily at their Gardens in the Regent's-park, from 11 to 4 o'clock. Visitors desirous of seeing the animal in the water are recommended to go early. Admission 1*s.*; on Mondays, 6*d.*

INTERESTING FACT.—The following singular and authentic case of restoration of the human hair is worthy of observation, more particularly as it relates to an article of high and universal repute during the last half century. "Mr. A. Hermann, of Queen-street, Soho, had been quite bald for some time past, and had tried various preparations for the recovery of his hair, but without any beneficial result. He was then induced to try the effects of 'Rowland's Macassar Oil,' and after daily applying it for about two months, he, much to his gratification, had his hair quite restored, and now possesses a beautiful head of hair. This fact speaks too strongly for itself to require comment."—*Bell's Weekly Messenger.*

ROWLAND'S MACASSAR OIL.—The unprecedented success of this discovery in restoring, preserving, and beautifying the Human Hair, is too well known and appreciated to need comment. For Children it is especially recommended as forming the basis of a Beautiful Head of Hair, and rendering the use of the fine-comb unnecessary. Price 3*s.* 6*d.*—7*s.*—Family Bottles (equal to 4 small), 10*s.* 6*d.*, and double that size, 21*s.* per bottle.

*** Each bottle of the genuine article has the words ROWLAND'S MACASSAR OIL engraved in two lines on the Wrapper; and on the back of the Wrapper nearly 1500 times, containing 29,028 letters.

Sold by A. ROWLAND and SONS, 20, Hatton Garden, London; and by Chemists and Perfumers.

CAUTION.

NIGHT LIGHTS.—PATENT ALBERT NIGHT LIGHTS (Patented 30th January, 1844), CHILDS' NIGHT LIGHTS (Registered 20th September, 1843) are sold by all Grocers and Wax Chandlers throughout the country, at 6*d.* per box. The sale of the above, amounting at the present time to many tons weekly, shows that they meet with the approbation of the public; any description of them is therefore unnecessary. The object of this advertisement is, to request purchasers to *examine the name on the boxes*, so as to insure their getting what they intend.

Night Lights are liable not to last the time that they profess (frequently going out an hour or two after lighting); to be affected by the temperature of the room they are burnt in; to be injured by keeping any length of time, and to have an unpleasant smell. The manufacturers consider that, by use of materials secured to them by several patents, and by long experience in the manufacture, that they have overcome these difficulties; and they therefore beg, that should any attempted substitutes be recommended, they may be carefully compared as to all the above particulars.

N.B.—The wine-glass-shaped Lamp, on which is stamped 'Clarke's Patent," is that recommended for the Albert Lights.

PRICE'S PATENT CANDLE COMPANY, Belmont, Vauxhall.

THE SECRET ART OF DISCOVERING CHARACTER FROM HANDWRITING is still practised by MR. ELLISON with astonishing success. His startling revelations of the mental and moral qualities, talents, and defects of his applicants fills the four pages of a sheet of paper, the style of description differing from anything yet attempted. Test this by sending any specimen of the writing of yourself or of those in whom you are interested (inclosing 15 postage stamps), addressed to Mr. ELLISON, Professor of Graphiology, 151, Strand, London.

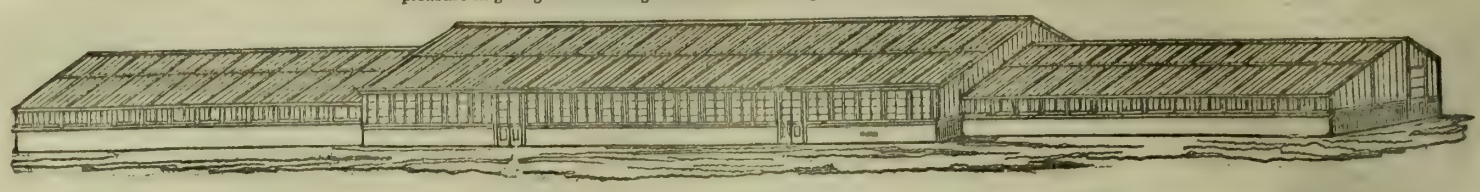
FRY AND ALSOP'S IMPROVED SULPHURATOR and FUMIGATOR.—A Portable Machine for Diffusing Sulphur amongst Plants affected with Mildew, such as Vines, Wall-trees, Heaths, Peas, &c. This Machine has been improved by F. and A. making it less complicated and more perfectly effective, and they flatter themselves that nothing can be brought into notice to compete with it for usefulness and simplicity of construction. Extract.—"No garden can be complete in its arrangements without it."—*Gardener's Magazine of Botany and Florists' Guide*, Oct. 1850. Orders sent for the above to FRY and ALSOP, Lee, Kent, will meet with prompt attention. Manufactured also for agricultural purposes.—Nov. 2.

DEAFNESS.—New Discovery.—THE ORGANIC VIBRATOR; an extraordinary, powerful, small, newly-invented instrument, for deafness, entirely different from all others, to surpass anything of the kind that has been, or probably ever can be, produced. It is modelled to the ear, so that it rests within, without projecting. Being of the same colour as the skin, it is not perceptible. Enables deaf persons to enjoy general conversation, to hear distinctly at church and at public assemblies. The unpleasant sensation of singing noises in the ears is entirely removed, and it affords all the assistance that possibly could be desired. Invaluable newly-invented Spectacles, Powerful Telescopes, Opera and Race Glasses; also a curious, very small, powerful Waistcoat Pocket Glass, only the size of a Walnut, to discern objects at the distance of four or five miles.—S. and B. SOLOMONS, Aurists and Opticians, 39, Albemarle-street, Piccadilly, London.

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DANVERS STREET, CHELSEA,

Respectfully solicit the attention of the Nobility and Gentry to their superior manner of Erecting and Heating every description of Building connected with Horticulture. They have much pleasure in giving the following testimonial referring to the range of houses shown below.



Peach House, 30 by 16 feet. | Vinery, 30 by 16 feet. | Stove, 45 by 20 ft. | Greenhouse, 45 by 20 ft. | Vinery, 30 by 16 ft. | Vinery, 30 by 16 ft.

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Extract of a Letter from Mr. Fraser.—"I have much pleasure in expressing my entire satisfaction with the range of houses you erected here. I may also state that my honoured employer, John Shaw Leigh, Esq., is perfectly satisfied. I have no hesitation in stating, that to the best of my knowledge, there is not a more complete range of glass in the country, as regards both building and heating. I may add that they are admired by every Gardener who has seen them. I shall have much pleasure in answering any references you may please to direct.

(Signed.) "James Fraser, Gardener, Luton Hoo Park."

TO GENTLEMEN, FLORISTS, AND OTHERS.

MESSRS. PROTHEROE and MORRIS will sell by Auction, at the Mart, Bartholomew-lane, Bank, on THURSDAY, November 7th, and following day, at 12 o'clock each day, a first class collection of DUTCH BULBS, consisting of the finest double and single Hyacinths, Narcissus, Jonquils, Crocus, Tulips, Ranunculuses, Anemones, &c.; with an assortment of Standard and Dwarf Roses, comprising Hybrid Perpetuals, Bourbons, Chinas, &c.; selected American Plants, and Ornamental Trees.—May be viewed the morning of sale Catalogues may be had at the Auction Mart, and of the Auctioneers, American Nursery, Leytonstone, Essex.

PLANTING SEASON.

MESSRS. PROTHEROE and MORRIS are instructed by Mr. J. Smith to offer to public Auction, on the premises, Dalston Nursery, Middlesex, on MONDAY, November 11th, and three following days, at 11 o'clock, the whole of the valuable NURSERY STOCK, consisting of very fine Evergreens; Fruit Trees, comprising all the acknowledged and approved varieties, Ornamental and Forest Trees, Deciduous Shrubs, &c.—May be viewed prior to the sale. Catalogues may be had (6*d.* each, returnable to purchasers), on the premises; of the principal Seedsmen in London; and of the Auctioneers, American Nursery, Leytonstone, Essex.

HORNSEY ROAD.—TO NOBLEMEN, GENTLEMEN, NURSERYMEN, FLORISTS, AND OTHERS.

MESSRS. PROTHEROE and MORRIS are instructed by Mr. W. J. Pamplin to submit to public competition by Auction, on the premises, Paradise Nursery, Hornsey-road, Islington, on MONDAY, November 18th, and following day, a part of the valuable NURSERY STOCK, comprising fine Evergreens, &c.; also choice Greenhouse Plants, consisting of Double Camellias, beautifully set with bloom buds, 18 inches to 6 feet, Azalea indica, Epacris, Ericas of all the leading varieties, Chrysanthemums, &c.—May be viewed prior to the sale; Catalogues had (6*d.* each, returnable to purchasers) on the premises; of the principal Seedsmen in London; of the Auctioneers, American Nursery, Leytonstone, Essex.

N.B. The Nursery to be Let, with immediate possession. The remaining Stock may be taken at valuation, if required.

CAMELLIAS, AZALEAS, HEATHS, AND OTHER GREENHOUSE PLANTS OF LARGE SIZE, 450 STANDARD ROSES, DIELYTRA SPECTABILIS, AND A CASE OF BULBS FROM ALGOA BAY, &c.

MR. J. C. STEVENS will Sell by Auction, at his Great Room, 38, King-street, Covent-garden, on FRIDAY, 8th November, at 12 for 1 o'clock, SPECIMEN PLANTS of a Gentleman who is giving up growing for Exhibition, consisting of Camellias, some handsome double Whites of very large size and well set with bloom, and other favourite varieties; fine specimen Heaths of the best sorts, Azaleas, Acacias, Corræas, &c.; also 450 Standard Roses, chiefly autumnal flowering varieties, &c. &c.—May be viewed on the day prior and morning of Sale, and Catalogues had.

POOLE NURSERY, 1 mile from Poole, on the Parkstone-road.
IMPORTANT SALE OF NURSERY STOCK.

MR. NICHOLL has received instructions to sell by Auction, on the ground, the whole of the Stock of Evergreens, Ornamental and Flowering Shrubs, Fruit and Forest Trees, without the least reserve, on THURSDAY, November 7th, 1850. The Stock of Shrubs comprises Laurels, Arbor-vitæ, Red Cedar, Evergreen and Scarlet Oaks, Berberis, Hemlock, Spruce, Azaleas, Ericas, Box, Roses, Dwarf and Standard, &c. The Forest Trees are about 20,000 Oaks, 3 to 6 feet high, 10,000 Scotch, 20,000 Spruce, 500,000 four-year old strong Quick Thorns, Elms, Beech, Birch, Acacia, and Hornbeams; a fine collection of Pinus, &c. The Fruit Trees are Filbert, Apple, Pear, Plum, and Cherry. The above will be found particularly worthy the attention of gentlemen planting; as the whole stock is beautifully grown, with a large mass of fibrous roots, and the soil of the Poole Nursery being remarkably light and poor, the trees are sure to thrive luxuriantly when removed. Sale to commence at 12 for 1 o'clock precisely. As it is intended if possible to sell the whole in one day, punctuality is respectfully solicited. Catalogues sent on application to the Auctioneer, Poole, upon enclosing two penny stamps for the payment of postage.

TO NOBLEMEN, GENTLEMEN, NURSERYMEN, AND OTHERS.

SUNNINGDALE AMERICAN NURSERY, near Sunninghill, Berks, two miles from Virginia Water, two miles from Sunninghill Wells, and half a mile from Shrub's Hill.

MR. WATERER will Sell by Auction, on MONDAY, November 4, 1850, and following days, at 11 for 12 o'clock precisely, part of the extensive and valuable NURSERY STOCK of Mr. James Walker; consisting of 25,000 blooming Rhododendrons; Kalmias and Azaleas for Forcing, and many large ornamental Plants; a large quantity of Choice Evergreens and Flowering Shrubs, Dwarf Roses, and Honeysuckles, Standard and Dwarf-trained Apples, Pears, Cherries, Plums, Peaches, Apricots, and Nectarines, of the most approved sorts, Common and Portugal Laurels of all sizes, Birch, Ash, and Oak, Purple and Common Beech, Spruce, Larch, Scotch and Balm of Gilead Firs, of all sizes, a large quantity of Quick, from 3 to 5 years old, and a great variety of other Nursery Stock, well worth the attention of Nurserymen and others, about planting, being in a safe moving condition. N.B.—The above is the produce of Seven Acres, and will be sold without reserve, as the Lease expires at Midsummer, 1851.—May be viewed one week previous to the Sale, and Catalogues had on the premises; of Mr. Charlwood, Seedsman, Covent-garden; and of Mr. Waterer, Auctioneer, Chertsey, Surrey, who will forward them on application, by post, enclosing six postage-stamps.

FIRST ANNUAL SALE OF ROSES, GROWN AT THE SOUTH ESSEX NURSERIES.

MR. HASLAM begs to announce, that on FRIDAY next, November 8, he will Sell by Auction, at the Mart, a large collection of ROSES, Standard and Dwarf, in the best varieties of Bourbon, Hybrid Perpetual, Hybrid China, Moss, Noisette, &c. Also 15 fine specimens of 8 feet Weepers, comprising Sempervirens, Ayrshire, Boursalts, and Noisettes. Climbing ditto, in pots for pillars, trellises, &c., warranted true to name, and minutely described in Catalogues, to be had at the Mart, and of the Auctioneer, South Essex Nurseries, Epping. Also at the same time about 100 fine Double Camellias, and a few Dutch Bulbs, of the most popular varieties.

HAMMERSMITH.
TO HORTICULTURISTS AND FLORISTS.

TO BE LET, on Lease, with immediate possession, a well-stocked and very eligible GARDEN GROUND, consisting of upwards of 2 acres, enclosed with high walls, abutting on the high road, at Hammersmith, with a convenient Cottage and small Shop, Greenhouses, Forcing Frames, &c., well adapted in every respect for an active Market-gardener and Florist. Further particulars and to view apply to Mr. Gomme, Auctioneer and Surveyor, Hammersmith.

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LIEBIG'S AGRICULTURAL CHEMISTRY, 8vo, 10*s.* 6*d.*

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JOHNSON'S GARDENERS' ALMANACK.—This Almanack, conducted by George W. Johnson, Esq., Editor of "The Cottage Gardener" and "Cottage Gardeners' Dictionary," aided by some of the best Gardeners of the day, will be Published, as usual, on the 21st of November, by the Stationers' Company, Stationers' Hall, London.

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Printed by William Bradbury, of No. 13 Upper Woburn-place, in the Parish of St. Pancras, and Frederick Mullett Evans, of No. 7, Church-row, Stoke Newington, both in the County of Middlesex, Printers, at their office in Lombard-street, in the Precinct of Whitefriars, in the City of London; and published by them at the Office, No. 5, Charles-street, in the parish of St. Paul's, Covent-garden, in the said county, where all Advertisements and Communications are to be addressed to the Editor.—Saturday, November 2, 1850.

THE GARDENERS' CHRONICLE AND AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 45—1850.] SATURDAY, NOVEMBER 9. [PRICE 6*d.*

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EDWARD DENYER is now prepared to send out his new Descriptive CATALOGUE of Roses, Fruit Trees, Evergreens, Shrubs, Ornamental Trees, &c., which will be forwarded, by enclosing two penny stamps to his Nursery, Loughborough-road, Brixton. E. DENYER informs his friends that he has no Seed-shop in London.

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Messrs. S. and N. take this opportunity of stating that they give Designs for Laying out New Grounds and Plans for Improvements; also Estimates for all kinds of Planting, whether ornamental or economic.—Bagshot Nurseries, Nov. 9.

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" Field Marshal (Symons')	...	...	7 6
" Prince of Orange (Hoyle's)	...	...	7 6
" Crusader (Hoyle's)	...	...	2 6
" Brilliant (Topping's)	...	...	2 6
FANCY GERANIUMS, Alboni (Henderson's)		...	2 6
" " Hero of Surrey (Gaines')		...	2 6

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Eleanor, do.	...	1 0	Wellington (Henderson)		2 0
Emperor, do.	...	2 0	Wedding Ring, do.	...	2 0
Flora M'Ivor, do.	...	2 6			

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Package included in the above prices. Plants will be given over in proportion to the extent of the order, to compensate for carriage. It is respectfully requested that all orders be accompanied with a Post-office order, made payable at Burnley.

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GOOSEBERRIES of the finest sorts, by name, selected for size, combined with flavour, 5*s.* per dozen.

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Apples, Pears, Cherries, Plums, Peaches, Nectarines, and Apricots of the newest and most approved kinds, selected from the gardens of the London Horticultural Society, and warranted true to name, can be supplied in maiden and trained trees of the finest quality, and forward for bearing.

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YOUELL and CO. beg to announce they are now prepared to execute orders for the above first-rate PANSIES, which they guarantee will give the highest satisfaction.

"COMMANDER-IN-CHIEF" was exhibited at the Worton Cottage Meeting of May 29th, under the initials of "T. T.," and the following opinion is given in "Beck's Florist" of July last: "No. 2, Yellow ground, bronzy purple top petals, lower ones margined with the same colour, bold eye, showing to great advantage: *a fine flower for Exhibition.*"

The following opinion of this fine flower is also given in the *Gardeners' Chronicle*, of June 20th, under the initials of "Y. Y." "No 2, Rich yellow ground, top petals dark maroon, lower petals margined with the same colour—eye good; a full-sized and fine flower."

"PRINCE ARTHUR," white ground, top petals rich dark purple, lower ones margined with the same colour, eye good—flowers large and of great substance.

This was exhibited with "Commander-in-Chief" at the Worton Cottage Meeting, and obtained the following opinion: "No 38, Style of Optimus, and a considerable improvement upon it, having more ground colour."

Strong plants of the above 5*s.* each, in pots, or per post free if required, and one over to the Trade when three are ordered.

THE FINEST CARNATIONS, PICOTEES, AND PINKS.

YOUELL and CO.'S Extensive and Celebrated Collection of the above are this season unusually strong and healthy, and are ready for sending out, in fine well-rooted plants, to any part of the United Kingdom, or for exportation, at the following prices:

25 pairs of finest first-rate show varieties of Carnations and Picotees	£5	0	0
12 pairs do. do. do.	2	10	0
25 pairs of very fine show varieties of do. do. ...	3	0	0
12 do. do. do. do. do. 1*l.* 4*s.* to	1	10	0
Fine mixed border ditto—per dozen pairs	0	12	0
True or Clove—per pair	0	2	0

PINKS, finest first-class show flowers, 12*s.* to 18*s.* per dozen pairs.

PANSIES, the finest first-class show flowers, comprising all those exhibited in the winning stands at the Metropolitan Exhibitions, 10*s.* to 18*s.* per dozen, per post free.

CAMELLIAS of the newest and best kinds, with flower buds, 30*s.* per dozen.

FANCY GERANIUMS, any of the following fine varieties, 12*s.* per dozen, viz.: Alboni, Anais, Statiaski, Yetmanianum grandiflorum, Jehu, Mazeppa Superb, Beauty of Winchester, Virgil, Delicata, Magnifica, Reine des Francais, Nosegay, and Decora.

CINERARIAS, best new kinds, 12*s.* to 18*s.* per dozen.

ERICAS, of the best autumn, winter, and spring-flowering kinds, 6*s.* to 9*s.* per dozen.

EPACRIS, ditto ditto, 9*s.* to 12*s.* per dozen.

CORRÆA speciosa major, Cooperii, bicolor, &c., in fine bushy plants, for winter flowering, 12*s.* per dozen.

MITRARIA COCCINEA, a splendid hardy shrub, with large scarlet flowers, fine bushy plants, 18*s.* per dozen.

ROSES, Standards, Half Standards, and Dwarfs, of the finest kinds in cultivation, 12*s.* to 15*s.* per dozen.

Royal Nursery, Great Yarmouth.

THE "BLACK NORFOLK TURKEY," and the "BLACK BOTANY BAY DUCK."—The Advertiser has for Sale a few pairs of the above, at 21*s.* per pair. The Turkeys are early birds of this season, and of the purest breed. The Botany Bay Ducks are very rare (quite as hardy as the common kinds), of a beautiful glossy jet black, the male birds having two or three white feathers on the breast. The flesh is far more delicate and superior to any of the genus. This species possess the extraordinary character of laying a majority of eggs perfectly black. Also one pair for Sale of a cross between this and the Aylesbury breed, being perfectly black, with conspicuous white breasts. Price 31*s.* 6*d.* the pair.

Orders, accompanied by post-office orders or reference, addressed to Isaac Brunning, North End, Great Yarmouth, will receive prompt attention.

TO SEEDSMEN AND FLORISTS.

ALFRED TOPF, Erfurt (Prussia), respectfully announces that his new Catalogue of German Flower and Miscellaneous other Seeds, is now ready, and may be had, postage-free, on application to H. Henkel, 24, Guildford-street, Russell-square, London.

MITCHELL'S ROYAL ALBERT RHUBARB has proved itself to be the earliest, finest flavoured, and most productive kind, as well as the best for early forcing, ever yet grown. Strong roots, 1*s.* each. Also Myatt's Linnæus, 1*s.*; and Victoria, 9*d.*; with usual allowance to the trade. Post-office orders are requested to be made payable to William Mitchell, Enfield Highway, Post-office, Enfield, Middlesex.

LATE SEEDLING GOOSEBERRY, "NEGRO BOY."

Two-year plants, 5*s.* each; one-year do., 3*s.* 6*d.*

JOHN WILLISON can supply the above splendid GOOSEBERRY, which has been tested by hundreds with the best varieties. Two dishes were shown at Whitby on the 24th Sept. last, for which an extra prize was awarded. The following extracts are selected from the editors' opinions.

Gardeners' Chronicle, Sept. 15, 1849.—"*J. W.* Late seedling Gooseberry, dark red, rich flavour, and would doubtless be good for preserving. It retained its flavour during carriage better than is generally found to be the case with Gooseberries."

Midland Florist for October.—"Willison's Negro Boy Gooseberry. We have this day (Sept. 18) received specimens of the above fruit; though not large, yet the lateness of its season renders it a valuable acquisition for the dessert. The specimens were perfectly smooth, of fine flavour, and a very dark colour; in fact, as they lay in the box, packed in cotton wool, they looked more like Damsons than Gooseberries."

Gardeners' and Farmers' Journal.—"*J. W.* We pronounce this winter Gooseberry excellent, and, for so late in the season, of an exquisite flavour."

STRAWBERRIES.—A few of the best varieties, viz., Cuthill's Black Prince, 10*s.* 6*d.* per 100; Kitley's Goliah, 10*s.* 6*d.*; Myatt's Eleanor, 5*s.*; British Queen, 3*s.* 6*d.*; Keens' Seedling, 3*s.*; Elton Pine, 3*s.*; Swainston do., 3*s.*

RHUBARB. — Victoria, 6*s.* per dozen; Royal Albert and Linnæus, 8*s.* per dozen.

The usual discount to the trade. All orders made payable to John Willison, Flowergate, Whitby.

TO NOBLEMEN, GENTLEMEN, AND PUBLIC COMPANIES.

C. LODDIGES and SONS beg most respectfully to inform the above, that in consequence of the land upon which their celebrated Arboretum is planted being required for building purposes, they are determined to offer the STOCK at such a reduction in price (for cash only) as cannot fail to attract the attention of all who are engaged in extensive ornamental planting. The trees are of the finest description, and range from 6 to 10 feet high.

	Named. Per doz.	Unnamed. Per 100.
ACER (Maple), of from 40 to 50 species...	4*s.* 0*d.*	25*s.* 0*d.*
ÆSCULUS (Horse-Chestnut), 30 species	4 0	25 0
" rubicunda (true scarlet) ...	6 0	
ALNUS (Alder), 25 species	4 0	25 0
AMYGDALUS (Almond)	4 0	25 0
BETULA (Birch), 30 species	4 0	25 0
CORNUS (Dogwood)	4 0	25 0
CORYLUS (Nut)	4 0	25 0
COTONEASTER	4 0	25 0
CRATÆGUS (Thorn), from 80 to 90 sp.	4 0	25 0
CYTISUS	4 0	25 0
FRAXINUS (Ash), 40 to 50 species ...	4 0	25 0
MESPILUS	4 0	25 0
POPULUS (Poplar), 25 species	4 0	25 0
PRUNUS (Plum), 50 species	4 0	25 0
PYRUS (Pear), 50 to 60 species	4 0	25 0
QUERCUS (Oak), 30 to 40 species ...	12 0	
RIBES (Currant), 50 species	4 0	25 0
ROBINIA (Acacia), 30 species	4 0	25 0
SALIX (Willow), 150 species	4 0	25 0
SORBUS (Mountain Ash)	4 0	25 0
SPIRÆA	4 0	25 0
TILIA (Lime)	4 0	25 0
ULMUS (Elm), 35 species	4 0	25 0

Fine Trees selected from the above, for rough planting, 10*l.* per 1000.
Smaller genera, at equally low prices.

RHODODENDRON ponticum and vars., 3 to 4 feet across	10	0
AZALEA pontica, ditto ditto	10	0
Ghent and other varieties ...	18	0

N.B." Packing will be charged as low as possible. Post-office orders made payable either in London or Hackney.
Hackney, Nov. 9.

PINE-APPLE PLANTS.

J. WEEKS and CO. having about 20 very fine, clean, and well-grown fruiting PINE PLANTS, and 20 very fine Successions, consisting of Providence, Queens, and others, they offer the lot for 5*l.*, which is about one-third their value.—King's-road Nursery, Chelsea.

NURSERY STOCK SELLING OFF.

JOHN BELL is now selling to the Trade his stock of FRUIT TREES at the following low prices, having a large quantity, and must clear the ground this winter:

	Per hundred—£.	*s.*	*d.*
Dwarf maiden PEACHES, NECTARINES, and APRICOTS	2	10	0
Dwarf trained PEACHES and NECTARINES ...	7	0	0
Dwarf maiden APPLES	1	5	0
Dwarf trained do.	5	0	0
Standard do.	2	10	0
Dwarf maiden PEARS	1	10	0
Dwarf trained do.	5	0	0
Standard do.	3	10	0
Dwarf maiden PLUMS	1	10	0
Dwarf maiden CHERRIES	1	10	0
Standard do.	2	10	0
FIGS, in eight sorts	2	0	0

The above are of fine growth, and warranted true to name. A sample sent, if required; and Catalogue of sorts may be had by inclosing one penny stamp to John Bell, Nurseryman, Norwich.

Strong 4-year-old Whitethorn, and fine Beech, 1 to 2 feet, at 2*s.* 6*d.* per 1000, if taken in large quantities.

TO GENTLEMEN ENGAGED IN PLANTING.

ARTHUR MACKIE begs to call the attention of parties engaged in planting to the subjoined list of FOREST TREES, which will be found worthy of attention. The soil of the Nursery is a light loam, and well suited to produce fibres. The rate of carriage is very moderate by the Railway to London, Peterborough, Ipswich, and Colchester; and, in the case of large orders, a liberal allowance in Trees will be made to compensate for carriage.

TRANSPLANTED FOREST TREES.

	Per 100—*s.*	*d.*	Per 1000—*s.*	*d.*
Ash, 2 to 3 ft.	— 15	0		
Do. 3 to 4 ft.	— 20	0		
Do. 4 to 5 ft.	— 25	0		
Do. 5 to 6 ft.	— 30	0		
Do., Mountain, 4 to 6 ft.	— 60	0		
Beech, bedded, 2 to 3 ft.	— 10	0		
If 50,000 of this size are taken, they will be charged at 8*s.* per 1000.				
Do., strong for fencing, twice transp., 3 to 4 ft. ...	— 20	0		
Do. do. do. 4 to 5 ft. ...	— 40	0		
Do. do. do. 5 to 6 ft. ...	— 60	0		
Birch, 2 to 3 ft.	— 25	0		
Do. 3 to 4 ft, ...	— 30	0		
Elm, Wych, 1 to 2 ft.	— 20	0		
Do. do. 2 to 3 ft.	— 27	0		
Do. do. 3 to 4 ft.	— 30	0		
Do., English, or narrow-leaved Hertford, 2 to 3 ft. ...	— 20	0		
Do. do. do. 3 to 4 ft. ...	— 30	0		
Do., Hertfordshire and Chichester, 3 to 5 ft....	12	0		
Do. do. do. 4 to 6 ft....	17	6		
Do. do. do. 5 to 6 ft....	20	0		
Do. do. do. 6 to 8 ft....	35	0		
Do. do. do. 8 to 10 ft....	60	0		
Fir, Larch, 1 year, bedded	— 7	6		
Do. do. 2 to 3 ft.	— 20	0		
Do. do. 3 to 4 ft.	— 25	0		
Do., Scotch Redwood, or Highland Pine, 9 to 12 ft...	— 10	0		
Do. do. do. twice transp., 1 to 2 ft...	— 15	0		
Where 20,000 or more are taken, this size will be charged at 12*s.* per 1000.				
Do. do. do. do. 1½ to 2 ft. selected ...	— 20	0		
Do., Austrian Pine, 1½ ft.	7	6		
Do., Pineaster, 1½ to 2 ft.	7	6		
Do., Laricio, 1½ ft.	7	6		
Do., Spruce, bedded ... ... 5*s.* to ...	— 10	0		
Do. do. 1 to 1½ ft.	— 20	0		
Do. do. 1½ to 2 ft.	— 25	0		
Do., Silver, 6 to 9 ins.	— 15	0		
Do. do. 9 to 12 ins.	— 25	0		
Do. do. 1 to 1½ ft.	— 35	0		
Do., Weymouth Pine, 2 ft.	— 80	0		
Do., Balm of Gilead, 1 to 2 ft.	— 50	0		
Hazel, 1 to 2 ft.	— 20	0		
Do. 2 to 3 ft.	— 25	0		
Hornbeam, 2 to 3 ft.	— 20	0		
Do. 3 to 4 ft.	— 30	0		
Laurels, 2 to 4 ft., for cover	50	0		
Limes, 3 to 4 ft.	15	0	—100	0
Do. 5 to 6 ft.	25	0	—160	0
Do. 6 to 8 ft.	50	0		
Maple, 3 to 4 ft.	— 30	0		
Oak, 2 to 3 ft.	— 25	0		
Do. 3 to 4 ft.	— 40	0		
Do. 4 to 5 ft.	10	0		
Do. 5 to 7 ft., twice transplanted ... 15*s.* to	20	0		
Do. not selected, 3 to 6 ft.	— 25	0		
Where 5000 or more of this size are taken, they will be charged as above. They will be taken up as they stand, and are well suited for planting where hares abound.				
Do., Levant, 1 to 2 ft.	6	0	— 30	0
Do. do. 2 to 3 ft.	8	0	— 50	0
Do. do. 3 to 4 ft.	10	0	— 80	0
Do. do. 5 to 7 ft.	17	6	— 90	0
Do. do. 6 to 9 ft.	25	0	—200	0
Poplar, black, Italian, Canada black, English, and viridis, twice transplanted, 5 to 6 ft. ...	10	0	— 70	6
Do. do. 6 to 7 ft.	15	0	—100	0
Do. do. 7 to 10 ft.	20	0		
Do., Lombardy, 2 to 3 ft.	— 30	0		
Do. do. 3 to 4 ft.	— 40	0		
Do. do. 4 to 5 ft.	10	0	— 60	0
Do. do. 5 to 6 ft.	16	0		
Do. do. 6 to 8 ft.	30	0		
Do., Ontario, 4 to 5 ft.	8	0		
Do. do. 5 to 6 ft.	15	0		
Red Cedars, 2 to 3 ft.	50	0		
Willow, Cœrulean and Bedford, 3 to 4 ft.	— 30	0		
Do. do. do. 4 to 5 ft.	— 35	0		
Black Sallow (Salix cuprea), 4 to 6 ft.	— 40	0		
Whitethorn, very strong	— 7	6		
Do., good	— 6	0		
Do., bedded	— 5	0		

The Nursery, Norwich.

GEORGE JACKMAN, Nurseryman, Woking, Surrey, 1¼ mile from the Woking Station of the South-Western Railway, begs to announce that he has just published a new and complete CATALOGUE of his American Plants, Ornamental Evergreens and Flowering Shrubs, Standard and Dwarf Roses, Fruit and Forest Trees, &c., which may be had gratis on application.

TO NOBLEMEN, GENTLEMEN, AND PLANTERS IN GENERAL.

WILLIAM YOUNG, Nurseryman and Contracting Planter, begs to inform persons engaged in Planting, that his extensive Stock of FOREST TREES, EVERGREENS, and HARDY ORNAMENTAL TREES and SHRUBS, is this season finer than it has been for many years past. The Forest Trees consist of strong bedded Alder, Ash, Beech, Birch, Spanish Chestnut, Hazel, Red-heart Willow, Scotch and Larch Firs, &c., all 2 to 3 and 3 to 4 feet high. A large quantity of English Oak, from 3 to 8 feet high, very fine.

The Evergreens comprise large Spruce, Silver, Weymouth, Scotch and Larch Firs, from 6 to 12 feet, well grown, and will remove with safety; common and Portugal Laurels, Green Hollies, American, Chinese, and Siberian Arbor-Vitæ; Pinus maritima, austriaca, and other Evergreens in great abundance. About 500 Quercus sessiliflora or Fir Oak, about 6 feet in the stem, with fine heads; will remove with safety; they are well adapted for avenues or park scenery.

Gentlemen planting new places or improving their estates will do well to apply to Mr. Y., as he has had considerable experience in planting in all its branches, and from the quantity of large Evergreens he grows is enabled to contract to any extent at a very reasonable rate.

Mr. Y. has also a very fine collection of Coniferous plants, from 2 to 4 feet, and large specimens, consisting of Cedars Deodara and Lebanon; Araucaria imbricata, Cryptomeria japonica, Taxodium sempervirens, Pinus insignis, Abies Douglasii, &c., of which he would invite a personal inspection.

His priced Catalogue is now ready, and can be had, on application, for two postage stamps.

An immense quantity of strong bedded Whitethorn or Quick for Fencing; and Mahonia aquifolium, or American Berberry, for cover, which will be sold cheap if taken in quantity.

Milford Nurseries, near Godalming, two miles from the Godalming Station of the South-Western Railway, where conveyances can always be obtained.

MUNRO TESTIMONIAL.—At a Meeting of the Committee, held on the 4th of November, for conducting the above Testimonial, it was resolved: "That the time for receiving Subscriptions be extended to the 1st of December, in order to afford all desirous of contributing an opportunity of doing so, when it will finally close." Post-office orders made payable at Turnham-green, to Mr. CHARLES EDMONDS, Chiswick House, Chiswick, Middlesex.

LARCH AND SCOTCH FIRS.

W. H. ROGERS has a quantity of the above to Dispose of, at a very moderate price. The Larch averages from 1½ to 2½ feet in height, and the Scotch 12 to 18 inches; both sorts are strongly grown and well rooted. Every other description of Nursery Stock can be supplied in large and small quantities, and low in price.

Address, W. H. ROGERS, Nurseryman, 130, High-street, Southampton.

BASS AND BROWN'S DESCRIPTIVE PRICED CATALOGUE of CHOICE FLOWER ROOTS, SELECT ROSES AND SHRUBS, HARDY CLIMBING, AND HERBACEOUS PLANTS, PRIZE GOOSEBERRIES &c., sent by post on application. Our DUTCH BULBS have arrived in fine condition. The following selections are offered:

	s.	d.
HYACINTHS IMPORTED, with printed instructions, for pots, ground, or glasses, 50 varieties, in very choice assortment	35	0
25 do., 15s. to 25s.; 12 do. 6s. to	15	0
RANUNCULUSES, free by post, with printed instructions for culture: 100 roots in 100 very fine varieties, from superb seedlings and others ...	70	0
50 roots, in 50 superb seedling varieties	40	0
25 ditto 25 ditto ditto	22	6
50 ditto 50 fine varieties	15	0
Finest mixed, per 100, 10s.; fine mixed, 5s. (6s. free by post).		
ANEMONES.—100 superb named double varieties ...	34	0
50 ditto, 18s.; 25 ditto	10	0
Finest mixed, per 100, 10s. 6d.; fine mixed, per 100	7	6
Fine mixed, single, per lb.	4	0
GLADIOLI.—50 splendid early and late varieties ...	50	0
25 ditto, 30s.; 12 ditto	17	6
12 splendid early varieties, 10s. 6d.; 12 fine ditto ...	6	0
Fine mixed early hybrids, per dozen	3	0
Colvillii, 3s. 6d. per dozen; Colvilli rubrum, 7s. 6d. per dozen; C. superbum, 5s per dozen; Gandavensis, 5s. per dozen; Pscittacinus, 1s. 6d. per dozen; P. sanguineus, 7s. 6d. per dozen; Insignis, 18s. per dozen.		
EARLY TULIPS.—30 roots, in 30 fine varieties ...	10	0
60 roots, in 30 ditto, 18s; 90 roots, in 30 ditto ...	26	0
20 roots, in 20 fine varieties	7	0
40 ditto, in 20 ditto, 12s. 6d.; 60 ditto, in 20 ditto ...	17	0
Very fine mixed varieties, per dozen	2	0
DOUBLE TULIPS.—12 roots of 12 fine varieties ...	4	0
24 ditto, in 12 varieties, 7s. 6d.; 36 ditto, in 12 varieties	10	6
LATE TULIPS.—50 choice varieties, 50s.; 25 ditto ...	30	0
Finest mixed, 15s. per 100; fine mixed, per 100 ...	6	0
IRIS.—30 splendid English varieties	12	6
20 ditto, 9s.; 12 ditto	6	0
Very fine, without names, mixed, per 100	15	0
12 fine German varieties, 9s.; mixed, per doz. ...	5	0
CROCUS.—100 roots of each of 13 showy varieties ...	28	0
50 roots of each, 15s.; separate varieties, p. 100, 2s. to	3	0
NARCISSUS, JONQUILS, and all other roots in great variety, at low prices. (See Catalogue.)		

SELECT PLANTS.

HARDY HERBACEOUS PLANTS.—100 showy varieties	30	0
50 ditto, 17s. 6d.; 25 ditto, 10s. 6d.; 12 ditto ...	6	0
100 superior and new varieties	50	0
50 ditto, 30s.; 25 ditto, 17s. 6d.; 12 ditto	9	0
25 varieties, best adapted for rockwork, 12s.; 12 for	7	6
ANTIRRHINUMS.—12 fine and showy varieties ...	6	0
12 superior and new varieties (Wooller's, &c.) ...	10	0
CHRYSANTHEMUMS, fine plants for flowering.—12 splendid new varieties	15	0
60 best varieties, including the above	40	0
40 ditto, 30s.; 25 fine vars., 17s. 6d.; 12 ditto ...	9	0
CAMELLIAS.—12 fine varieties, well set with buds ...	30	0
INDIAN AZALEAS.—12 very fine varieties, 18s.; 6 do.	10	0
CAPE HEATHS.—12 fine early flowering varieties ...	12	0
HARDY AZALEAS.—12 splendid distinct varieties ...	15	0
Fine mixed, 9s. per doz.; large yellow, per doz. ...	9	0
ROSES in extensive variety. (See Catalogue.)		
PÆONIES.—Herbaceous varieties, mixed, per doz. ...	6	0
,, arborea papaveracea, each	2	6
RIBES.—6 fine flowering varieties	5	0
HARDY SHRUBS.—12 new and select varieties ...	15	0

Goods free to London, and, for long carriage, extra articles presented. Remittances requested from unknown correspondents. Post-office orders payable to STEPHEN BROWN, or to BASS and BROWN, Seed and Horticultural Establishment, Sudbury, Suffolk.

PLANTS FOR BLOOMING IN THE CONSERVATORY IN WINTER OR EARLY SPRING.

MESSRS. J. AND J. FRASER, NURSERYMEN, Lea Bridge-road, Essex, beg to offer the following, finely set with bloom-buds, at the undermentioned moderate prices:

AZALEA INDICA, in fine sorts ...	18s. to 30s.	per doz.
EPACRIS and ERICAS, ditto ...	18s. to 24s.	,,
RHODODENDRONS, ditto	9s. to 18s.	,,
KALMIA LATIFOLIA...	12s. to 18s.	,,
HARDY AZALEAS, including fine Belgian varieties	9s. to 18s.	,,
MOSS AND PROVENCE ROSES ...	12s.	,,
LILACS, GUELDRE ROSES, DEUTZIAS, WEIGELA ROSEA, &c. ...	12s.	,,

The above are all beautifully grown, and well established in pots, and are fit for immediate forcing. Remittances respectfully requested from unknown correspondents.

CUTHILL'S "BLACK SPINE" and SNOW'S PRIZE CUCUMBERS at 1s. each packet; also his early Scarlet-flesh Melon, 1s. CUTHILL'S Pamphlet of 56 pages, containing the Belgian Prize Essay on the best way of producing Potatoes; with 12 more articles on fruits and vegetables, among which are Asparagus, Rhuburb, and Sea-kale. The pamphlet has been very favourably reviewed by Dr. Lindley and others. Price 2s., or by post, 2s. 4d. The trade supplied with the Cucumbers.—JAMES CUTHILL, Denmark-hill, Camberwell, London.

The Gardeners' Chronicle.

SATURDAY, NOVEMBER 9, 1850.

WE read in the *Athenæum*, that "At length the inhabitants of the south side of London are to have their PUBLIC PARK. The shooting grounds and premises, so well known as the Red House, nearly opposite to Chelsea Hospital, have been purchased by Government for, it is said, 11,000*l.*,—subject to the possession by the occupier of the grounds until the end of next year. Of the new bridge to be erected across the Thames in connexion with this park, the works are to be commenced immediately. The arches are to be of iron, like Vauxhall Bridge. By this way the distance from Kensington Gardens to Battersea Park will be little more than a mile and a half; and the densely populated district of Chelsea will lie between two of the amplest green spaces in London. The location of the new park on the river is a novelty and an advantage. The bank will no doubt be planted; and we shall thus secure at least one sylvan view from the decks of ascending and descending vessels in the midst of our thousand wharves and piers and warehouses of goods, as an inheritance of beauty to the people for ever." We wish it may not turn out an inheritance of ugliness, for we cannot but remember that similar expectations were entertained some years since, when Victoria Park was created; and we now perceive how they have been fulfilled.

Although well known to the inhabitants of Bethnal Green and Spitalfields, we suspect that few persons not living in those districts or their neighbourhood, have ever seen this Victoria Park. Had it been in the West-end of London, the manner in which it has been executed would have excited universal indignation; for although it has cost a very large sum of money, yet, as a specimen of English taste, it is a national disgrace. But the poor people, for whose use it is intended, are too thankful for an open space of any kind in which they can breathe freely, to be critical about its appearance. A few hundred acres of land, unencumbered by building, are in themselves a blessing, even though not a tree nor a blade of Grass be there.

We learn from the reports of the Commissioners of Woods and Forests, that the cost of Victoria-park, up to the end of last June, had been as under:

	Purchase of Site, &c.	Works of Formation.
Up to 1847... ...	£87,298 3 1	£30,521 0 0
In 1848... ...	——	10,034 13 0
In 1849... ...	——	3,194 3 5
In 1850... ...	577 9 1	319 1 0
	£87,875 12 2	£44,068 17 5

In round numbers the purchase of the ground has amounted to 88,000*l.*, and the cost of forming it into a park has been 44,000*l.* Upon the former we have no remarks to offer; but the latter calls for very serious comment. Forty-four thousand pounds is a large sum to expend upon 290 naked acres of land, and, under the most unfavourable circumstances, is capable of producing beautiful results. With such a fund the most level surface may be broken into picturesque forms, charming vistas may be produced, water may be lavishly introduced, even in Spitalfields thriving plantations may be rapidly established, and beautiful vegetation may in a few years be made to decorate the scene.

This is what the public expected when Victoria Park was formed, and ample means were voted by Parliament for the purpose; for it was intended that such an opportunity of showing what taste and skill can effect, in providing recreation and enjoyment for the poor, should be turned to the best account. It would appear, however, that anything was considered good enough for the east of London; and, accordingly, an image of deformity has been set up there to which, we suspect, there is no parallel in Europe. A park bearing the name of the QUEEN might surely have been expected to be an example of all that is graceful and exalted in landscape gardening; the persons employed by the Woods and Forests have spared no pains to render it mean and despicable, and they have succeeded perfectly.

Let the reader conceive an undulating space of 290 acres, entered by a lodge which can be compared to nothing better than a modern ruin built in some Cockney garden, of half vitrified bricks, and then made habitable by a country bricklayer. Having entered, let him imagine a road bending through the place till it finds its exit at the opposite side, another unfinished road, overgrown with Grass leading to the left, a few others curving in different directions; unmeaning masses of little miserable trees and shrubs, evidently the sweepings of some neglected nursery ground, and a great piece of water on the right, having in its middle an island looking more like an old naval cocked hat than anything we can call to mind, and he will have as good an idea of Victoria Park as we have the skill to convey. Beyond this there is nothing, except a frightful pagoda perched at one end of the frightful island, and the beginning of a foot bridge to connect that paradise with the mainland, which bridge consists of three or four rotten planks resting on struts, and impassable by anybody less surefooted than an Irish hodman. That is Victoria Park, that is what the country has paid 44,000*l.* for; that is what the inventive genius of the agents of the Woods and Forests has last offered to the public, as a sample of English landscape gardening. Ye shades of BROWN, of GILPIN, of REPTON, arise and denounce the perpetrators of this national offence!

With whom the blame may really rest, we know not; nor do we desire to inquire. The mischief is done, the money is spent, and, we suppose, we must rest content with our bargain. But if Victoria-park is ruined, there is still time to save that of Battersea. If Victoria-park has cost five times as much as would have been required to create a little paradise, the votes for Battersea have still to undergo the scrutiny of the House of Commons. As to the new cemeteries which are about to be formed, there is time also to rescue them from the fate of Victoria-park; and we most earnestly hope that Government will never again intrust these important works to persons who are not only wholly destitute of good taste, and profoundly ignorant of the nature of trees, or the soils to which they are adapted, or of the effects which they may be made to produce, but are even unacquainted with the mode of selecting them in nurseries, and of putting them into the ground; who seem, in short, to understand nothing except the art of obtaining the worst possible result at the largest possible expense.

THE French have obtained what they call a double bearing Elton Strawberry, concerning which we find the following account.

"Considerable interest has lately been excited amongst gardeners with respect to a new Strawberry, discovered by M. CRÉMONT, in the neighbourhood of Paris, and which, in addition to the other qualities which distinguish it from the form to which it belongs, possesses the property of bearing twice a year. It was discovered by M. CRÉMONT in a bed of seedling Elton Strawberries in the year 1847. The large quantity, beauty, and excellent quality of the fruit of this variety, induced the National Horticultural Society, to which it had been sent for inspection, to name a committee for the purpose of examining the plant with greater attention, and of ascertaining whether the advantages attributed to it by M. CRÉMONT had or had not any real existence.

"The committee, consisting of MM. CHÉREAU, ANGRAND, JAMIN, BARBOT, MILLERET, and ANDRY, accordingly proceeded to M. CRÉMONT's garden on the 4th of April last, and after seeing nearly 800 plants in pots, some in a Pine stove, others in the open ground under hand-glasses, unanimously declared that M. CRÉMONT's variety ought, for its early ripeness, beauty, and excellence, to be placed at the head of American Strawberries. The committee not having at that time any opportunity of confirming its double-bearing quality, revisited M. CRÉMONT's garden early in the following July, when they found the Strawberry still in full fructification. Several plants which had in April produced an abundant crop of fruit in the Pine stove had been placed out in borders, that their runners might be developed. Not only were these plants covered with fine ripe fruit and numerous flowers, but many of their early runners were bearing, and showed by their flowers and buds that they would do so for some time to come.

"The committee reported favourably of the Strawberry, and thought its discovery important enough to merit a special medal, which they have recommended to be awarded to M. CRÉMONT. In order, however, that all doubt may be removed as to the double-bearing property of this variety of the Elton Strawberry, 2 or 3 years of observation and experiment are still required. Those who wish to examine this subject for themselves can obtain plants from M. CRÉMONT, at Sarcelles, in the department of Seine et Oise, or more easily from M. COURTAIS-GERARD, seed merchant, 34, Quai de la Mégisserie, Paris."

Now the acquisition of a Strawberry of this kind is in itself worthy of notice; but what we more particularly desire to draw attention to is the manner in which our neighbours set about ascertaining whether a new fruit really deserves recommendation. The specimens, when exhibited, having attracted attention, what was done? a medal, or warranty of excellence, for it may be so called, immediately given them? Not at all; a committee is appointed to visit the Strawberry ground and verify the statements of the grower. The committee go to the ground, not once, but twice, and then again report in favour of the grower. Nevertheless French scruples are not satisfied, and it is declared that two or three years of observation and experiment are required to settle the true value of this fruit. All that the committee do, after all, amounts to a recommendation, not a declaration, in favour of the grower.

Is nothing of this sort practicable in Great Britain? Cannot we find some guard against the impositions which are daily practised under the name of novelty? We suspect that the countenances of some of our ingenious brethren would undergo rather con-

siderable change, if their seedlings, and inventions, and new things had to pass through such an ordeal. Circumstances and social habits would render some modification of the French Committee system necessary; but an approach might be made to it near enough to answer the more essential purposes.

GARDENS IN THE NORTH OF ENGLAND, SCOTLAND, AND IRELAND.

I SEND you a few observations on gardens, during a short excursion I made to the north of England, Scotland, and Ireland. At Derby I went to the Arboretum, which I had seen when it was first laid out. How singular that such a magnificent and wise example as that afforded by the donation of Mr. Strutt, has not been followed! I think the late Lord Holland (always first when the liberty or happiness of the people was concerned), dedicated his Alameda at Ampthill to the inhabitants, before Mr. Strutt gave his garden to Derby. Since the original plan was completed, some parties (a committee, I believe), have made a handsome addition of some six acres to the original arboretum, and there is a good house erected at one end where parties have tea, &c. Loudon, I think, laid out the grounds, if heaping up little irregular wavy banks all of one sameness, and planting them higgledy-piggledy with trees, together with two straight walks, and one wavy walk, be called laying out. Even the gardens at Chiswick appear creditable, when compared with those at Derby; but there is one principal fault; the trees are planted much too close to each other; there are some splendid specimens of Oaks and Thorns, already growing one into another, and in a year or two the whole will be a mass of confusion. The planter seems to have had no notion as to what 10 or 15 years would do, and to have planted his trees, not with any idea that he was planting an arboretum which was to show each specimen tree, but to have grouped the trees together, as in a shrubbery, or a cockney garden, to make an immediate effect; however, there is plenty of room in the additional 6 acres; and it is not too late; with Mr. Barron's (Elvaston Castle) skill and knowledge, trees three times the size of those in the Arboretum might be safely moved, and it will be well to take out every other one of the large trees and plant them elsewhere, otherwise the Arboretum will be a mass of confusion, or half the trees must be cut down. The smoke of the town appears to affect the growth of the trees, and I should think the climate is prejudicial; many shrubs seem to have died, and except in the coarser-growing and hardier trees, I saw little luxuriant growth. Indeed, the climate did not appear so favourable to vegetation as much further north, where I now write (Crief).

I was glad to find that the gift was duly appreciated, and that the gardens are often thronged. It is entirely an arboretum, for with the exception of a clump or two of Roses there were no flowers, and yet there are printed exhortations not to pluck flowers, in different parts of the grounds, just as if the flowers were in existence. I think this want made the garden dull; and if it is too expensive to have flowers, this might be managed as is done at Frankfort, where the public gardens are given up to a seedsman, on condition that he grows, in well arranged beds, fine annuals, such as Sweet Peas, Stocks, Asters, &c., he having the seeds for his pains; and thus a succession of flowers is kept at no cost—an arrangement worthy of a town of merchants.

From Derby I made an attempt to see Elvaston Castle, but in vain; and yet I tried more than one way. The gardens are hermetically closed against all comers; this was mortifying, as the description given in the *Gardeners' Chronicle* had made all amateurs anxious to inspect the large trees transplanted by Mr. Barron, and also to see the grounds, with the wildernesses of evergreens. It was almost unfair to put such a tempting description in your Paper, seeing that there is no means of obtaining admission to the reality. The story goes that even the Duke of Devonshire went as a gardener; however, be that as it may, my application (though very humble) was refused in more than one quarter. I really think Mr. Barron should, in some outworks (accessible to all) transplant some four or five large trees, so that one might see how far the marvels told of his success are realised.

At Chatsworth the gardens are shown at all times, but the great conservatory only on a special application to Mr. Paxton or his Grace. My principal object was to see the Orchidaceous plants, the collection containing some magnificent specimens; perhaps the finest are a very large plant of Ansellia africana and one of Dendrobium chrysanthum, but I had not much time to make any very minute observations. The collection is very large, and on the whole the plants appeared well grown and clean, but still I did not think the style of culture approached those in the collections of Mr. Rucker, Mr. Warner, and Mr. Hanbury, being those I have principally been in the habit of seeing. There are some fine Pitcher-plants, but these I understood have been recently purchased. The Palms looked well, and produced a grand effect in the great conservatory, soon, however, to be rivalled by Mr. Paxton's still grander building in Hyde-park. With the exception of the Palms, the house was rather disappointing; the borders are filled with not very interesting plants, which cluster up and prevent one from seeing the whole effect of the Palms. I cannot help thinking that, either the undergrowth should be entirely cleared away, or that the space should be filled up with smaller and more gay flowering shrubs; the house is deficient in large creepers; a Bougainvillea and Mandevilla suaveolens, and some of the grand Bignonias, would tell well, festooning from the lofty gallery, which at present is only partially covered. I should mention a magnificent specimen of Renanthera coccinea, which had two large flower spikes, and two or three others coming on; it flowers here, I was told, every year, being kept dry and well exposed to the light and sun. *Dodman.*

(To be continued.)

THE CULTURE OF THE VINE A HELPMATE TO THE CULTURE OF THE MIND;

OR, TWO BIRDS KILLED WITH ONE STONE.

[FOR COTTAGERS.]—No. III.

CULTURE OF THE MIND.

ON SOIL.—A light sandy loam, on a bottom of stone or gravel, is the most suitable naturally to its growth. If this is not to be had, perhaps we are better without it, for we can easily supply what probably will do better. In such a case, therefore, I would advise that a border, about 8 feet quare and 2 feet deep, should be dug, and paved, if possible, or, in a stiff clay, puddled. But if you cannot do this, place a few large flat stones or bricks, closely fitted, immediately under the Vine, to give its roots a lateral or sidling direction. A pipe-drain should then be put in the whole length: the greater the fall the better. This border should be filled up with dry rubbish of every description—of tiles, stones, broken bricks, old mortar, pottery, oyster-shells, road-scrapings, and earth burnt with wood. When the water from the roof is not carried off by pipes, I think it would be highly advantageous that the top of the border should be paved as far at least as 3 feet from the wall; as I have little doubt that the constant dropping of water in one place tends to injure the larger roots which are not feeders, but only channels of food; since I have known branches to be completely rotted through from this cause. I have also observed Vines to flourish remarkably well under pavements, which I am inclined to believe is owing to their retaining the heat so well, and to the dryness thus afforded to the roots, which, on removing the pavement, will be found to be clinging to it.

Nothing, if possible, should be planted on the border; at any rate, it should be kept perfectly free from weeds and fallen leaves, and as much sun and air be allowed to get to it as possible.

EXPERIMENTS.—Perhaps if either a trench of manure were made on the outside of the border (though I do not recommend this when close to your dwelling, for, if it brought health and vigour to your Vine, it would certainly bring sickness to you and your family), it would increase the temperature of it, or a channel of water from whence the small roots might always get a supply, without the soil becoming damp and close.

MANURES.—To be mixed with the soil when made for the border; the best are whole bones, charcoal, hoofs of cattle; also cuttings of leather, woollen rags, feathers, hair, &c.

LIQUID.—If the goodwife does any washing, apply the soap-suds on a summer's evening in drills, and rake the soil over. If the goodman kill a pig, do the same with the blood. Soot-water also; one quart of soot to 12 of water; drainings of dung-heaps, &c.

TOP-DRESSING.—All prunings, leaves, weeds, &c., should be put into a heap to rot, or, what is better, charred in a fire which is kept slowly burning, by being smothered with soil, by which means all seeds, insects, &c., are got rid of, and is in such a state as to afford immediate food to the plant. Apply it as a top-dressing in November.

Never waste any vegetable matter, for what has once been vegetable is ready to become so again, and a person might as well expect abundance of water, after no rain, in a well which he is constantly exhausting, as plants to flourish when the vegetable matter, of which so large a part is formed, has been extracted and never given back to the soil. *C. A., October* 15.

Riches, like muck, are of no use unless spread.

A wise man scorneth nothing be it never so small or homely.

Every little makes a mickle; every mickle makes a muckle.

Manure, like money, must be heaped little by little before it can be used to any effect.

Always taking out of the meal-tub, and never putting in, soon comes to the bottom—as poor Richard says.

As self-evident an axiom as the nose is part of the face, or that knowledge is not practice.

BRITISH SONG BIRDS.

No. IV.—Having given good and sufficient reasons why we do not advocate "Mechanical Aviaries," which, at best, are but toys; we will now turn our attention to the erection of a substantial and proper Palatial residence—fit, in every respect, for the reception of Birds of Song.

As many amateurs may be situated precisely as I was, as regards the position of their house, I will describe, as accurately as may be, the manner in which I proceeded. My aviary, first erected at Kennington, was a substantial building of wood, and at the rear of the house. From the limited size of my garden, as to width, I so contrived that the back-door on the ground-floor opened immediately from the house into the aviary; so that, in wet weather, constant access might be had, to and fro, without incurring the risk of taking cold.

Immediately between the back door and the aviary, was a small room, or recess,* with a covered roof, wherein was fixed the stove intended to warm the bird-rooms in the winter. I could thus have entrance to the back garden, either through the side door of the small room (opening on the left into the garden), or I could walk through the entire length of the aviary, if necessary, making my exit through the door at the extreme end.

Since I removed from Kennington to Hammersmith, the original aviary has been partly re-constructed, and placed in quite a different position. It is now at the bottom of the garden (which is 120 feet long and 34 feet wide); and the front windows face my dwelling-house. This is a remarkable improvement every way. It has also been divided into two distinct portions, each complete in itself.

The second portion, for warmth in winter (there being no convenience for a chimney at the bottom of the garden), has been erected immediately contiguous to my house; whilst the other, assigned to the hardy birds only, who require no fire during the winter, remains exposed, like any other building.

The proper length of a detached aviary is 15 feet; width, 9 feet; height, 11 or 12 feet. Of course, if two aviaries united in one be required, the proportions will be just, or nearly, double, as regards the length; with a glass door, and a latticed-wire partition across the centre.

In the winter, the lattice-wire should be covered over with green baize, and all draught excluded, as far as is practicable. The ceiling should, of course, be flat, and the roof shelving from the front backwards. The latter should be covered with zinc, and a gutter of the same material should be made to convey the water from one corner of the roof, at the back, downwards into the ground.

The building should be entirely of wood. There should be three windows in the centre of the front, equally divided, and boarded above and below; also two windows at one end of the aviary, equally divided, and boarded above and below: at the opposite end, a glass door of entrance; immediately over which there should be a double window, opening outwards on hinges. To protect it, and to prevent the escape of the birds, a moderately close net work of galvanised wire should be nailed on, from the inside. The birds will then get plenty of fresh air, and be able to introduce themselves to their brethren in a state of freedom, who will assemble in numbers on the adjoining trees and branches to join them in their song. My garden has always been the resort of multitudes of these song birds; and the harmony during the seasons of spring and summer, not excepting the piping of the thrushes and blackbirds in the winter months, has been delightful.

One of the panes at the opposite end of the aviary should also be made to open outwards, with hinges; and the interior lined with wire-work, whereby free ventilation will be secured. This is important. The back of the aviary should be entirely of wood, by which means it will be more readily kept warm and snug. The front should be painted white, with at least three coats. It should afterwards be ornamented with double cross-barred lattice-work, painted green; not too close, but arranged with a due regard to relief or effect.

Between each window, and at the extreme ends of the windows, should be upright fluted pillars of wood, which, though really hollow, appear when viewed from a distance, perfectly solid, and important withal. These pillars should be strongly painted in green, excepting the plinths, which should be white; the facia, of stone colour; and the ornaments running round the top of the building, of a Vandyke pattern, painted green. Thus much as regards the general directions for the erection of the building. The internal arrangements we shall discuss anon.

With respect to the "look-out" of the little musicians; this requires some judgment. There can be no doubt that they are most in their element (during confinement) when in the immediate neighbourhood of trees, shrubs, flowers, and plants. It will be desirable, therefore, to render the aviary as umbrageous as possible; and to have it overarched, at all events in the summer season, with drooping foliage. An Ivy plant would greatly assist in this matter, and a Honeysuckle; also some fine Cubas, which would soon grow bushy, and look very handsome on either side. A Palm and a Sycamore tree would also be of rapid growth. The more secluded—except at the front, which must be kept more open—the better, on every account. It attracts the wild birds, and tempts them to take up their quarters with you; thus strengthening your own or-

* I erected this little ante-room for the express purpose of placing a stove in it, inasmuch as there was no other place where I could have broken into a chimney; nor could I have had a chimney elsewhere, without occasioning a nuisance to my neighbours, in the matter of smoke.

chestra, and improving the taste of the respective performers; for we must ever concede, after all, that Nature is the best teacher.

Round all the windows, on the outside, a miniature balcony should be affixed, in which might be placed pots of Geraniums, Calceolarias, Sweet Williams, Pinks, Sweet Peas, and other varieties. These, when properly bestowed (not too crowded), show off your birds to great advantage; for while they sit singing on their perches at the window, their plumage and action will be distinctly visible between the flowers, from one extremity of the garden to the other. *William Kidd, New-road, Hammersmith.*

HINTS FOR THE CULTIVATION OF BABIANAS, GLADIOLI, IXIAS, SPARAXIS, TRITONIAS, &c., &c.

In the Open Borders.—In September, or at the latest in October, prepare your beds or borders by well digging them a spit deep, burying a stratum of good rotten manure at the bottom. The surface soil should be rendered open by mixing sand with it, and being well broken in the digging; plant the bulbs in clumps or rows, from 2½ to 6 inches deep (depending on size of root and sort), taking care to cover them 1 inch deep with sand previous to recovering with the mould. After the roots are planted rake the ground well, giving it a southern inclination if possible, keep it free from weeds and stir it occasionally with a small fork, which accelerates their growth; in case of very severe frost, cover the surface of the ground 2 or 3 inches deep with dry litter or sea sand. The different varieties will flower from May till August.

Pot Culture, either for Flowering in the Pots or turning out in the Borders early in the Spring.—In the month of October examine the roots and separate the offsets from them, put them in light turfy loam and sand with good drainage, putting a layer of well rotted cow-dung at the bottom of the pots, the strong growing varieties of Gladioli are to be planted in. Prepare a bed of dry old tan and litter from the stable, and place a frame on it, in which plunge the pots, the Gladioli at the back, and Ixias, Sparaxis, Tritonias, Babianas, Oxalis, and Lachenalias, &c., in gradation to the front; give plenty of air in fine weather, and withhold water until the bulbs have made root and the leaves appear, and it must then be carefully given when there is no danger of frost. Should the winter prove very severe, bank the frame up well with dung or litter, and cover the lights with straw or bass mats. Under this management the Sparaxis will flower in April, the Ixias, Babianas, Gladioli and Tritonias succeeding one another. After the flowering is past continue the watering, to perfect the growth of the bulbs, and gradually withhold it as the leaves die away and they ripen. Bag the roots, place them on a dry shelf, and they will be ready to replant the following season. *B. Saunders, St. Heliers, Jersey.*

VILLA AND SUBURBAN GARDENING.

After having followed implicitly the instructions I have occasionally given, some of my amateur friends, who cultivate plants in pots, have been much puzzled and disheartened from their want of success. The best peat that Wimbledon affords has been carefully selected. The most approved sand of Surrey has been obtained. Every attention to drainage has been paid; and the system of potting, which has appeared in these columns, has been adopted; but the plants looked sickly and stunted, and no apparent reason for such an unhealthy hue could be adduced: air and water being regularly supplied, when circumstances permitted. Nevertheless, Heaths and New Holland plants existed only as miserable objects of compassion. In one the interest attaching to such pursuits became diminished, another got disheartened, and a third began to cultivate such plants only as required little skill or attention. New supplies of plants had been from time to time obtained, but the same appearance presented itself. Their healthy vigour was replaced by the sickly complexion of the old stocks. When by accident I called upon one of my friends just in the midst of his gardening amusements, in truth, watering his plants, and lamenting his hospital of invalids, with a mournful countenance and a perplexed mind, I was instantly appealed to, with a view to unravel the mystery. "Proceed," I observed, "with your operations, while I look over your plants;" when presently my ears, not my eyes, discovered the evil genius which presided over his favourites. This was the action of a pump at the end of his little greenhouse. Here he was drawing water from the bowels of the earth, hard and cold, and pouring it immediately on the roots of his plants. Now, I have no doubt, that although this has been frequently discussed, the vile practice is still in active operation in other places, besides my friend's. Plants, like animals, require care in feeding. It does not follow that because a man in a harvest field may drop down dead from the effects of drinking cold water, that a plant so treated will do the same; but its death, although slower, is, perhaps, as certain to arrive. Now, it may be laid down as a rule to be adhered to strictly, that water, or liquid manure, when given to plants, under every condition, should be a few degrees warmer than the temperature of the soil in which they are growing. The roots are thereby in some measure cherished and stimulated, not chilled and checked.

With regard to the hardness of the water, I shall offer no opinion founded upon other analysis than that of the feel of the hand, by which most people can readily detect it. Having the care of a large collection of plants, and suffering to some extent from the want of rain-water, I was induced to follow the recommendation of an authority who maintained that if such water was warmed no injury would result from its use. I instituted several experiments on the matter; some was warmed, some boiled, and partially cooled again. These were applied to some Heaths, in the same house, with those to which rain-water was exclusively administered. In the course of three months the effect was quite apparent. The surface of the soil, where the hard water was applied, became, when wet, slimy, and when dry, covered with a cake; while no such effect was produced with pure rain-water, which the plants appeared to enjoy, and under which they grew away vigorously. *Pharo.*

Home Correspondence.

Gleanings about Water Lilies.—To those who may be about to erect structures for the growth of the magnificent Victoria Regia, any scrap of information will be acceptable. Calling some time since at the gardens of — Spode, Esq., Augmering Park, Staffordshire, I found a newly erected house occupied by a plant of this queen of the waters in perfect health. It had, as I was informed by Mr. Bolus, the gardener, been planted only 10 weeks; even then its gigantic leaves were exhibiting the rim, which is only perfected in plants of good health, and the first flower-bud was approaching the surface.* Mr. Bolus very obligingly gave me the following particulars, relative to its culture. In deference to the prevailing opinion, that bottom-heat was necessary, provision for a good command of it was provided, by running several pipes through the bottom of the tank, in addition to a small one resting on a ledge about 6 inches below the surface of the water, and passing quite round the reservoir. When the Lily was fresh planted, the means of supplying bottom-heat was brought into play, but the plant refused to make any satisfactory progress, the leaves rotting before they had attained any considerable size. Pondering upon the probable cause, Mr. Bolus, by way of ascertaining what an opposite mode of treatment would effect, discontinued the use of the bottom pipes, using only the small one on the top, before alluded to. In a few days a perceptible change for the better was apparent, and so rapidly did the plant progress that bottom-heat has never since been applied. By the use of the small surface pipe the water, at 1 foot below the surface, can be kept at 80°, and by the aid of solar influence, as was the case on the occasion of my visit, a thermometer at the depth mentioned indicated 86°. There is much to hope that from this magnificent flower and some of its hardier allies, many beautiful hardy hybrids will be produced. Calling, I think in August, at the gardens of — Drummond, Esq., Aubrey-park, near Dorking, in Surrey, Mr. Morse, the gardener, pointed out to me, in a tank in the open air, a plant of Nymphæa cœrulea in excellent health, where it stood the winter. I believe he also mentioned that it had bloomed. By its side, growing luxuriantly, was Limnocharis Humboldtii. That these plants, usually grown in the stove, should exist satisfactorily in the open air, subjected to our winters, affords much matter for speculation and experiment. In hardy water plants our collections are but scantily supplied. A wide and untrodden field is opened to the hybridiser. It is hoped that those who have the opportunity will make the most of it. Those who take an interest in plants when strolling through the garden of Hampton Court, may have noticed in the water there a large plant of Water Lily protected by a wire net. I learned from Mr. Johnson, the gardener, that he discovered the plant growing in the Thames, and struck with its beauty removed it to its present situation. Its leaves are very much larger than the common white Water Lily of our ponds, and its flowers, which are twice as large, are produced in abundance quite down to the autumn. Would not this hybridise with the Victoria regia? *G. L.*

Vine Borders.—I am surprised to find so many gardens still adopting the old-fashioned plan of covering Vine borders with stable manure at this season of the year. Such treatment wastes the manure, sours the borders, and induces shanking. I fork up my borders, in the latter end of October, in fine dry fresh weather, although the roots are close to the surface; still I like three inches of the soil to be forked up, which obviates sourness, and refreshes the ground. It is a mistake to imagine that frost will injure the roots of Vines, when there are two inches of earth on the top of them. When I begin to force, I cover the borders with warm dung, in order to assist the roots. This is absolutely necessary (although very seldom done in Scotland), or the Vines will break weakly, and will be long in regaining their strength. My Vines are in the very best of health; and at the present time I am cutting bunches of Black Hamburgh, from three to four pounds weight, and with berries four inches in circumference. I am of opinion, that if gardeners generally adopted my system of forking up their Vine borders, there would be fewer unsightly Vines in the country. *T. W., Motherwell.*

Stent's Kidney Potato is not a seedling. I and many of my neighbours have grown it for six years, both in Lincolnshire and Yorkshire; it is called the Lapstone Kidney. I believe it was raised by the late James Carr Cottingham, about seven or eight years ago; it is one of the best second early Potatoes grown. I hope that Mr. Stent, as a professional agriculturist, will see the utility of calling things by their right names; for rechristenings always tend to produce a confused nomenclature. I agree with you with respect to the removing the haulm from Potatoes as soon as disease appears. I have done so for the last three years, but instead of cutting it off I pull it up, at the same time placing one foot on each side of the row, which prevents the Potatoes from being pulled up with the haulm, and I then roll them with a light roller. I left some without removing the haulm, and when they were taken up about one-fourth of them were diseased, while those from which the haulm was removed were hardly diseased at all, and the crop was equally productive. *S. Lapstone, Nov. 2.*

Silkworms and Home Production of Silk.—Allow me to offer a public tribute of grateful respect to the memory of a lady lately deceased, whose letter to the Agricultural Society, published in your Paper of August 17, 1844, induced me to attempt the growth of silk in this country. Few may be aware of the untiring energy with which Mrs. Whitby prosecuted her industrial project. Few may have given the subject more than a transient thought, but from some years' experience, I find the only difficulty is in raising a sufficient supply of food, which time and good cultivation may overcome. If, however, the late frosts and variable climate of England generally should prove an obstacle to the profitable cultivation of the Morus multicaulis, and other varieties of Mulberry, which thrive so well in South Hants, none such presents itself in our eastern colonies. Already a company is formed in Guernsey, and many private individuals are trying to carry out the growth of silk. May their success do honour to the memory of the Christian spirit, which devoted itself in the cause of national industry. *A Subscriber.*

Premature Decay in Growing Larch Trees.—A friend having occasion to cut down a few Larch trees in an old plantation, was surprised at finding several of them more or less rotten at the core. Utterly unable to account for this, he proceeded to try if the defect extended to other trees in different parts of the plantation, and the result was, that out of every six trees he felled one was diseased at the heart. The plantation in question is on a declivity; the soil is sandy, admirably adapted to the growth of Larch, as well as most trees, particularly evergreens. The Larch trees in this wood are 50 years old and upwards—fine, well-grown trees; they do not seem to stand too thickly together; for, notwithstanding the loss of their lower branches, they are many of them 2 feet through, some feet from the butt. Can you give me any idea of the cause of this disease? The specimen I have enclosed is remarkable as being from a tree which is the only one in which, apparently, the disease has not commenced at the core, which was perfectly sound, at least to the superficial observer. In all others the core was evidently the first part affected. I shall be glad to have your opinion on this curious circumstance, which has completely baffled the woodmen of this neighbourhood. *Henry Cooper Royle.* [This is a case of what is called the rot in Larch. The mischief is done by a dry-rot fungus. The cause has not been satisfactorily explained.]

Seedling Russian Violets.—A gardener named Schakell, in the immediate neighbourhood of this city, has been fortunate in raising a seedling from the old favourite, the Russian Violet, which is a decided improvement on the parent; of much more robust growth, equally hardy, a profuse bloomer, larger and deeper coloured flowers, on very long footstalks. He requested me some little time ago to bring it to your notice, that a favourable report from you might make it generally known, and obtain for it a widely extended sale; I forebore, however, until I saw it in cultivation, which I have now had an opportunity, in comparison with the old variety and with the same cultivation; have found it infinitely superior on all the points I specified in the commencement of my note, and have no doubt that it will entirely supersede its parent, and that your recommendation of it will prove very satisfactory to the lovers of that fragrant flower, and ensure to the grower a full remuneration. I enclose two or three blossoms, which will show you the size of the flower and the length of the footstalk, though I fear they will arrive too dry to form any judgment of its other merits. They were gathered in the dark from a plant in my garden, and a more unlikely spot for good cultivation can scarcely be imagined. *N. U. N., Bath.* [These are certainly very fine Violets, and we must add, that our correspondent, a gentleman of fortune, is as good an authority as could be taken]

Monstrous Pine-apple.—In cutting a black Jamaica Pine-apple the other day, I found to my astonishment that the crown, which was a fine one, was showing fruit. Is this a common occurrence? [No.] *F. Ward, Stratford-on-Avon, Warwickshire.*

Galvanised Wire for Fruit Trees.—I have been recommended to adopt galvanised iron wire for training fruit trees on, and would deem it a favour if any one would give me the following information: 1st. Has it been generally approved of? 2d. Is there any objection to it? 3d. Is it better than nailing the trees to the walls? 4th. What would be the average duration of it, if properly put up. *J. H., Dunglass.*

Bird's Water Purifier.—I shall feel obliged to any readers of your Paper, who can give me any information as to the merits of Bird's Syphon Water Purifier; also

* The readers of the *Chronicle* are aware that it has since flowered.

for any remarks on the advantages and disadvantages of the syphon, as a raiser of water, the material it should be made of, &c. *M. J.* [We must refer our correspondent to our own experience, as recorded at p. 696, col. *b*.]

Foreign Correspondence.

Churra Poonji, Khasiah Hills, *Aug.* 28, 1850.—I was greatly pleased with your remarks on the influence of hot-house growth, &c., on the colours &c., of plants in the *Gard. Chron.*, but do not quite follow them in nature. I am sure that we not only spoil colours but organs by a choking system of cultivation; and yet both here and in Sikkim our richest coloured flowers are produced in the deepest woods, expand and die, though the sun often does not appear for one minute for 10, 15, and even 26 days in succession! Free air, of course, they have plenty, and a moderate temperature. The colours of the Dendrobia and Cœlogynes and Vandas are as bright at home as here, from the sunless climate common to both localities: whereas I suppose your South-American, Mexican, &c., Orchids, are far better supplied with sun-light in their native woods than in England, and hence degenerate. Here 500 inches (41 feet and more) of rain fall annually; 130 fell last month alone, 35 have fallen in 24 hours, and 10 a-day for 16 days in succession. I have compared the rain gauges, and used both my own, too, (a 2-inch and a 5-inch), and it is a true bill. The temperature of Churra is very uniform during the summer months; 60° to 80°, and for days together, 64° to 70° have been the extremes of this month. Often, however, when the mists clear, the temperature rises to 82° in a few minutes; and in some parts of the station (altitude 4000 feet), hot gusts of air from the gulleys and plains below are driven across the station, and raise the thermometer 6° or 8° in a few seconds. Hence here, as in all hill stations, I find the mean always too high, if taken from the maximum and minimum thermometers. Very transient strong heat in the day (of 10° above the average), and lasting but for a few minutes, is a common phenomenon; but there is no check to this by a temporary extreme of cold in the night; for the 12 hours of day the thermometer will range between 68° and 70° for 11 of them, and rise to 82° during the 12th. At night it is invariably between 64° and 66°. The maximum and minimum thermometers give the mean of 64° and 82° for that of the 24 hours; the mean of the whole 24 hours is, of course, widely different. I quite agree with you that we have no known means of ascertaining either the amount of heat a plant requires or gets. I bury a thermometer 2 feet deep wherever I go; its fluctuations are never diurnal; one-tenth, or so, every three days, is perhaps the average extreme. I thus get very closely the decrements of temperature for small elevations, and some data for bottom-heat. The mean temperature of the air I have never attained at any depth down to 11 feet; and the idea that it is to be had at a few feet in the tropics is quite erroneous. The temperature of the plant (*i. e.*, of its juices) is, I find, materially dependent on that of the soil at its spongioles; and a good large unripe Shaddock on the tree will maintain the same temperature (in the plains of India) with the thermometer in the air at mid-day at 110° and at midnight at 68°; the black bulb in the sun at 150°, and radiating thermometer at night at 58°, with plants and fruits, I need not say, fully exposed to all their vicissitudes. I wish I could say that I could detect the smallest influence on vegetation in diminished atmospheric pressure. I know that Baron Humboldt assumes it, and you I think assent, if not consent; but a comparison of Arctic vegetation with that of elevations of 17,000 feet, where literally 15 inches of pressure are removed, shows no difference in the characters or habits of such plants as are common to both regions; it certainly induces no peculiarity of vegetation, or there would be a character common to the Alpines of India and of America which the temperate and Arctic regions should not share; but though the Alpine floras of these tropical regions widely differ from each other, they are both Arctic floras in the greatest degree, generically. Again, the Cardamine hirsuta, or Capsella, or other plain plants of the cold weather in India, are identical with the same species of the Alpine summer. What variations are due to elevation appear in no way amenable to any laws of diminished pressure; and I could illustrate this I think far more satisfactorily by examples taken from the temporary effects of diminished pressure on man, which are of so very short a duration, and from those of domestic and wild animals. I have failed to appreciate the slightest effect of diminished pressure on vegetation, direct, of course, I mean. Heat, evaporation, &c., are the active causes dependent on pressure in a great degree, and the mechanical composition of the soil is another—not the chemical, that I can discover, except in a few notorious instances. *J. D. Hooker.*

Societies.

Horticultural, *Nov.* 5.—E. Brande, Esq., in the chair. J. Knowles, Esq., of Trafford Bank House, near Manchester, sent a great rarity, in the shape of a Burlingtonia, from Demerara. It was in a rustic basket, whose sides were covered by its numerous pendent, dense spikes of beautiful white blossoms. A Banksian Medal was awarded it.—Messrs. Veitch produced a small example of a new Cœlogyne, called maculata, one of those charming terrestrial Orchids, which inhabit the mountains of India; also a handsome specimen of the true Calanthe vestita, for which a worthless variety, without the red eye, is sometimes sold, and a small bit of a Leschenaultia, from Swan River. A certificate of merit was awarded for the Calanthe.—Mr. Hamp, gr. to J. Thorne, Esq., sent Hippeastrum aulicum, and a nice exhibition of Epiphyllum truncatum, and its varieties, for which a Banksian Medal was awarded.—The great headed Pimelea (P. macrocephala), a robust stiff-growing kind, was exhibited in a small state, by Messrs. Henderson, of Pine Apple Place; and a seedling Pentstemon, white streaked with pink, called Salteri, by Mr. Salter, of Hammersmith.

Some good Fruit was exhibited. Mr. Bray, gr. to E. Lousada, Esq., Sidmouth, Devonshire, received a Banksian Medal for a handsome Providence Pine-apple, weighing 11 lbs. A similar award was also made to Mr. Ingram, gr. to her Majesty at Frogmore, for two finely-swelled fruit of the smooth-leaved Cayenne Pine, weighing respectively 7 lbs. 8 oz. and 7 lbs. 3 oz.—Queens, for which a Certificate of Merit was awarded, were furnished by Mr. Watson, gr. to Mrs. Tredwell, of Norwood; their weights were respectively 4 lbs. 14 oz., 4 lbs. 4 oz., and 3 lbs. 12 oz.—Mr. Slowe, gr. to R. W. Baker, Esq., had a Providence weighing 9 lbs., and a bunch of Red Hamburgh (or possibly Black Hamburgh badly coloured) weighing 4 lbs. 4 oz. This enormous bunch was perfectly formed in all respects, quite ripe, and well deserved the Certificate of Merit which was awarded it.—Three admirable bunches of West's St. Peter's Grape, weighing 1 lb. 14 oz., 1 lb. 8 oz., and 1 lb. 5 oz., were furnished by Mr. Martin, gr. to Sir H. Fleetwood, Bart., of Hill-house, Windsor Forest; the same grower also sent three unripe bunches of Muscat of Alexandria, weighing respectively 1 lb. 15 oz., 1 lb. 7 oz., and 1 lb. 5 oz. A Banksian Medal was awarded for the West's St. Peter's.—Mr. Forsyth, gr. to Viscount Barrington, exhibited three bunches of Muscat of Alexandria, the peculiarity about which was that they had been ripened in the temperature of a greenhouse. The heaviest bunch weighed 1 lb. 3 oz.; though not so fine as if they had been ripened under more advantageous circumstances: they were, nevertheless, fair eatable Grapes. A large basketful of the same variety of Grape, possessing a colour like that of Coe's Golden Drop Plum, came from Mr. Davis, of Oak Hill, East Barnet, to whom a certificate of merit was awarded; and Mr. Turner, gr. to W. Blake, Esq., of Danesbury, sent examples of Black Hamburgh Grapes, ripe and sweet from the open wall. It was stated that they were part of 156 bunches ripened by the same Vine this year. Specimens of Marie Louise, and of Van Mons Leon le Clerc Pears were furnished by Mr. Davis, of Oak Hill. The latter is a large handsome Pear, said to be equal in flavour to the Marie Louise. Nothing is known as yet of its capabilities as a standard; but it was stated that it will not grow on the Quince stock. A certificate of merit was awarded for the last named fruit. French Crab Apples, the produce of 1849, were exhibited, in good condition, by Mr. Milne, gr. to the Earl of Clare, Mount Shannon, Ireland. A dish of Matchless Marrow Peas, sent as a proof of the power of sulphur in destroying mildew, was shown by Mr. Fry, gr. to Mrs. Dent, of Manor House, Lee, Kent. Mr. Fry stated, that at one period of their growth they were seriously attacked with mildew; sulphur was then applied, which arrested its progress, and the Peas have since grown most luxuriantly, producing a fair crop, considering the badness of the season, and the low temperature to which they have been subjected, 3° of frost having been endured by them. Among miscellaneous subjects was a number of drawings of various kinds of flowers and fruit executed on rice paper, from Mrs. Dickens of Hereford-square, Old Brompton. These were satisfactory examples of the style of art to which they belong, and attracted the attention of the ladies present. From the Garden of the Society came the handsome Dendrobium Gibsoni, Stanhopea graveolens, Epidendrum fragrans, the Musk-scented Angelonia (A. moschata), Ipomœa ficifolia, a gay plant at this season of the year, the greenish white trumpet-flowered Solandra lævis, the old-fashioned Salvia pulchella, which has lately been sold under the false name of S. elegans, three Cape Heaths, the charming pale violet blossomed Lyperia pinnatifida, a plant which is nearly always in flower; the handsome and very curious hybrid Veronica Andersonii, some Chrysanthemums, and other plants, together with fruit of the Marie Louise Pear from a wall, and the following vegetables: Oxalis Deppei, one of those Mexican Wood-Sorrels, whose large fleshy fangs or roots form an inferior, but, under some circumstances, a useful accessory to the table. It was mentioned that the French use the leaves as Sorrel, which they say have "a mild flavour, and are easily cooked." Green Winter Roman Lettuce (Laitue Romaine Verte d'Hiver), a new variety of Cos Lettuce received from M. Vilmorin, of Paris. Its chief merit consists in its hardiness, which is stated to be about equal to that of the brown Cos, which is objectionable on account of its colour.

After the meeting had commenced, some very fine Muscat Grapes were produced by the gardener of a gentleman living, we believe, near Chertsey; but as no entry had been made of them, and no memorandum was left by the exhibitor, we can report no further respecting them.

Linnean, *Nov.* 5.—The President in the chair. The Secretary read a list of works and specimens that had been presented since the last meeting in June. Amongst the last was a collection of fruits from the East Indies, by J. S. Ralfs Esq., consisting of some rare and very fine specimens. A collection of plants from the herbarium of the late Mr. Griffith, from the Honourable East India Company. A small collection of plants from the river Clarence, collected by Mr. Epps, and presented by Mr. Henry Sowerby. A single specimen of Primula imperialis, also of a rare species of Viola from Java, collected by M. Junghuhns, and presented by M. de Vriese. A bust of the Baron Benjamin Delessert, from his brother M. François Delessert. W. Saunders exhibited specimens of Cyclamen hederifolium, found near Hastings. A paper was read from Captain Champion, on some new species of the family Ternströmiaceæ, found at Hong Kong. Amongst these he described three new species of Camellia, a new species of Eurya, and some species belonging to two new genera, Pentaphyla, and Ixioanthes; also a new species of the genus Cleyera. Some of these plants possessed very beautiful flowers, and gave out a delicious fragrance, and were well adapted for culture in England. Mr. Westwood described two new species of Cerapterus, belonging to the family of Paussidæ from New South Wales. Robert Ellis Esq., and W. H. Hallett, Esq., were elected Fellows.

Entomological, *November* 4. — The President in the chair. Mr. Stevens exhibited several cocoons of a species of Bombyx, from Columbia, some of which contained two perfect chrysalids. Mr. Shepherd exhibited a curious specimen of Nonagria crassicornis, the wings on one side being male and on the opposite side female, and the body and antennæ being male. Mr. Stevens also exhibited a very interesting box of specimens illustrating the natural history of numerous species of Australian insects, and several interesting Coleoptera, including the Agasma semicrudum, recently described by Mr. Newman as of doubtful affinities, but which Mr. Westwood stated to be nearly allied to such Heteromerous genera as Cistela, Ditylus, Dryops, &c.—Mr. J. F. Stephens exhibited a unique British specimen of Lycus aurora, taken in Perthshire by Mr. Weaver; also specimens of a new British Tinea (T. ochracea of Tengstrom), found in ants' nests.—The President read a series of queries on the habits of various British insects, forwarded to the Society by M. Blisson, and exhibited a specimen of the rare Sphinx Celerio, from Ipswich, communicated by Mr. Geo. Ransome. Mr. F. Bond read a notice of various Lepidoptera, the larvæ of which feed on the common Ivy, including Triphœna orbona and Ianthina, Mormo maura, Ourapteryx sambucaria, Alcis repandaria, Tortrix Rosana, &c.; and also exhibited specimens of various moths from Ventnor, Isle of Wight, including Agrotis lunigera and Depressaria cuprella. Mr. W. F. Evans presented some specimens of musquitoes from Great Slave Lake, captured on the 28th June last, by one of the expeditions in search of Sir John Franklin. An article by Mr. James Eames was read on a black-headed maggot, which destroys crops of Clover by eating the hearts of the plants. A paper was also read by W. W. Saunders, Esq., F.L.S., containing descriptions of various remarkable large corn beetles from Australasia, accompanied by two plates, presented to the Society by the author. Also a memoir by Mr. C. Hewitson, Esq., on some beautiful new species of exotic butterflies, accompanied by a plate, also presented to the Society by the author; and, likewise, a paper by Mr. Westwood, containing descriptions of new species of Evaniidæ, being a supplement to his memoir on that family, published in the Society's Transactions.

Review.

The Sugar Planter's Manual, being a Treatise on the Art of obtaining Sugar from the Sugar-cane. By W. J. Evans, M.D., 8vo, pp. 244. London, 1847.

The Practical Sugar Planter; a complete Account of the Cultivation and Manufacture of the Sugar Cane. By Leonard Wray. 8vo, pp. 415. London, 1848.

The Manufacture of Sugar in the Colonies and at Home, chemically considered. By John Scoffern, M.B., 8vo, pp. 160. London, 1849.

Copies of Report and Correspondence on the subject of Dr. John Scoffern's Patent for Refining Sugar, presented to Parliament, 14th August, 1850. Folio, pp. 18.

From what has been said respecting the cultivation of the Sugar-cane, it is plain that great loss is occasioned by want of due attention to the time and mode of cutting; instead of endeavouring to obtain the largest quantity of pure saccharine juice, the planter has his attention drawn aside to other objects, and has to make that, which should be his first care, dependent on other considerations, such as weather, fuel, manure, &c.

By employing the dried megass or crushed canes as fuel, two very serious evils are occasioned, not merely, as we have already stated, does the Sugar manufacturer lose from one-quarter to nearly half the Sugar which his canes contain, because he crushes them imperfectly, fearing to injure their value as fuel if he thoroughly presses them; but he likewise becomes dependent on the weather in a manner that one would hardly, at first, have thought of. As soon as the cane juice is obtained it must be at once heated, and evaporation commenced, or fermentation will take place and the Sugar will be lost; hence the mill is not set at work for the extraction of the juice, when the weather is showery, because then the megass could not be dried, and there would not be fuel to heat the juice! This arrangement can only be

carried on in fine dry weather, when a few hours' exposure to the hot sun is sufficient to render the megass dry enough to burn. Speaking of this most wasteful practice, Mr. Wray says, "Often from 50 to 80 acres of canes are fit to cut, and even a portion spoiling, when rain sets in, and effectually prevents the cane trash being dried; consequently the mill must be stopped, however disastrous the delay may be. Sometimes the planter keeps a number of men working near the mill-yard on purpose to house the trash in case of a sudden shower. A bright sun is shining, of which he takes advantage to spread out his trash; a cloud threatens, and in a moment all hands are called; a few drops fall, and the cloud passes off; it is a false alarm, and the people retire to their employments. Again another cloud, and another gathering, only to disperse as before, for the cloud has passed. But once again it threatens; a few drops fall; all hands are called in haste; they run from every point, but, alas! too late. Every sugar-boiler, every domestic even is pressed into service, but all in vain; the rain comes down in torrents, and in a few moments the trash is as thoroughly soaked as if it had been steeped in a pond. As a few days' sun are required to repair this mischief, the mill stops; the cane-cutters are put to other work, the manufacture is suspended, and injury in many respects done to the estate." It seems hardly possible to imagine a more ill-arranged system of things than this; but, if it is almost surprising that the manufacture of sugar can be profitably carried on in such a slovenly and imperfect manner, our surprise must be increased when we remember that all this may be easily prevented by the importation of fuel, and by adopting such other expedients as may render the sugar-manufacturer independent of megass as fuel. The real obstacle would appear to be, not the difficulty of providing him with cheap and abundant fuel, but rather the prejudice in favour of old custom, which makes him regard the method of his predecessors, however inconvenient and expensive, as incapable of improvement, and leads him to consider all alterations as necessarily leading to loss and ruin.

Though, generally speaking, a large quantity of the sweet juice of the cane is lost in the manner above mentioned, the pressers sometimes, anxious to obtain as much fluid as they can from the cane, press the lower part as well as the green tops, together with the ripe part of the cane. This, which appears to be chiefly done in the case of contract work, is a most mischievous custom; it is even worse than pressing together ripe and unripe canes, but it leads to the same evil consequences. The lower part of the cane contains a good deal of sap, it is true, but it is generally more or less decayed and worm-eaten, contains very little sugar, and is usually sour; the juice, therefore, which it yields in the mill, so far from being of any value, or adding to the produce of sugar, serves merely to adulterate it, and increase the labour of purifying it, rendering it even more prone to change and spoil than it naturally is. The juice of the green tops, though perhaps not already in a state of incipient decomposition, like that of the lower part of the canes, contains very little sugar, and a large quantity of impurity. It may be laid down as a general rule that the purer the cane juice is, and the more sugar it contains, the easier will be the manufacture of sugar from it, and the less loss will it sustain in the process of evaporation and concentration. It has been already stated that the average quantity of sugar in cane juice is about 18 per cent., but in mills where only ripe cane is crushed, and where some care is bestowed in its selection and management, juice containing fully 22 per cent. of sugar is obtained, and it has occasionally been procured containing as much as 25 per cent., or one quarter of its weight, of sugar.

In the ordinary mode of manufacturing sugar, those physiological principles on which the formation and secretion of sugar depend are often recklessly set aside; a result of prejudice, ignorance, and the want of a little consideration. It is doubtless true that a great many of the evils which tend to depress this very important branch of colonial manufacture, arise out of the manner in which the sugar estates are too often managed, or rather mismanaged; the arbitrary power of the agent or attorney being quite independent of the real interest of the estate, and indeed very often leading him to do the worst possible things; a fact which is rendered still more fatal in its results, because it is no one's interest to point out the evils, or suggest a remedy to those most concerned, and best able to correct such abuses. Some of these effects are well exposed by Dr. Evans and Mr. Wray.

The juice of the sugar cane is a solution of sugar, in water, containing a small and variable quantity of other organic substances, which usually does not amount to more than about one hundredth part of the weight of the sugar itself. These substances are necessarily regarded as impurities by the sugar manufacturer, their rapid and complete separation is the chief object which he has in view; and, in fact, the whole operation of sugar-boiling may be said chiefly to depend on the separation of the azotised matters which the cane juice naturally contains. Remembering the object for which sugar is formed by the cane, namely, to assist in the future growth of the plant, and bearing in mind that before cane sugar can contribute to the growth of a plant, it must undergo a certain chemical change and pass into the state of grape or uncrystallisable sugar, it is not difficult to perceive the office of the azotised matters which the cane juice contains. Referring again to the composition of a seed, we see that in it a quantity of starch is deposited, to serve as food for the future embryo plant; but as a plant is unable to feed upon that substance in its ordinary and insoluble form, means must also be provided to ensure the conversion of this insoluble starch into soluble grape sugar, &c., at the proper time, when the seed begins to germinate. These kinds of changes are always effected in plants by the presence and agency of azotised matter. It is the peculiar office of those singular substances, gluten and albumen, to cause the conversion of the various forms of organic matter into each other; and it is always found that when any substance is elaborated and stored up by a plant for future use, if the matter so deposited is in an insoluble or inactive state, a portion of either gluten or albumen is formed at the same time, ready to act as a ferment whenever it may be required, and able with facility to bring the non-azotised substances with which it is associated, into a soluble and active condition.

The chemical nature of gluten and albumen, for they closely resemble each other in some respects, is very remarkable; it may be very well studied in the germination of a seed. The starch which the seed contains is brought into a soluble state by the action of the diastase or decomposing azotised matter which is associated with it. So long as the seed is dry, and the ingress of air is prevented, the azotised matters remain perfectly quiescent, and are unable to act on the starch; when, however, the seed is placed in those conditions which are favourable to germination, the seed becomes softened, air gets admitted, the azotised matter is oxidised and begins to change, and then acquires the power in turn of acting on the starch, in the manner of a ferment, and causing its conversion into soluble matters fit for the nourishment of the young plant. In all cases, however, where azotised and non-azotised organic matters are associated together, no change can take place, without the influence of atmospheric oxygen. The formation of Raisins and similar dried fruits illustrates this fact well. Grapes contains sugar and azotised matter, but so long as the latter is protected from the action of the air, it undergoes no change; when the Grapes are crushed, and thin juice comes in contact with the air, the azotised matter immediately begins to decompose, and the whole juice is soon in a state of fermentation. So long as the skin remains entire, the azotised matter is inactive; the fruit may be dried, but no chemical change takes place. Fruits of all kinds are injured and begin to decompose, as soon as they are bruised, or their skin punctured. This effect is mainly caused by the influence of atmospheric oxygen on the gluten and albumen which they contain.

Now precisely similar effects may be observed in the juice of the Sugar-cane; so long as the azotised matters which the cane contains are protected from the action of the air, they remain inactive, and undergo no change. As soon as the juice is expressed, by passing through the mill, the soluble azotised matters which exist in the cane, are brought in contact with the air, oxidation commences, and they are directly able to act on the sugar, inducing a kind of fermentation, and, consequently, causing the destruction of a portion of the sugar which the juice contains. In speaking of the composition of cane-juice, and the quantity of sugar obtained from it, we sometimes find it stated that it yields so much crystallisable sugar, and so much molasses, or uncrystallisable sugar; it is important to bear in mind, however, that the whole of the sugar formed by the cane, and which exists in fresh cane-juice, as it runs from the mill, is in the state of pure cane or crystallisable sugar; the molasses obtained during the evaporation of the juice, is not uncrystallisable sugar which originally existed in the cane-juice, but is entirely formed during that process, and results from the destruction of a proportionate quantity of crystallisable sugar, consequent on the presence of "ferment," exposure to too high a temperature, and other defects in the manufacture.

It is obvious, then, that the sugar-boiler should be well acquainted with the nature and properties of the azotised matters of the Sugar-cane, and should know the manner in which different substances act upon them, especially in increasing or diminishing their tendency to change. It is to be regretted that upon this very important point, the information placed before them is for the most part very defective. Mr. Wray, for instance, who has entered into considerable details respecting the concentration of its syrup, has evidently but a very imperfect knowledge of the chemical nature of these substances; and this renders all his subsequent reasonings and theoretical deductions of comparatively little value. Thus he confounds together under one name, gluten and albumen, observing that the planter will be pleased to learn that they are "one and the same substance;" a statement which necessarily leads him into a variety of difficulties, as he has subsequently to explain the coagulation of vegetable albumen by heat, which is a very simple and intelligible effect, as being the precipitation of gluten, in consequence of the expulsion by heat of some volatile acid which previously held it in solution. It is enough to mention this error, and to add that the author speaks throughout of gluten containing nitrogen in the form of ammonia, which may be expelled from it in various ways, to show that we must not expect much chemical assistance from him, in explaining the operations or removing the difficulties of the sugar manufacturer. When gluten, or albumen either, decomposes, ammonia is formed as one of the products of its decomposition; nitrogen is a necessary constituent of both these substances, but they cannot contain ammonia. When scientific terms are incorrectly employed in the explanation of any subject, their use does more harm than good.

The fresh juice of the Sugar-cane is, as may readily be supposed, extremely liable to undergo chemical decomposition, and there are several distinct changes or modifications which may take place; all in the first instance depending on the presence of decomposing azotised matter. The first of these changes is the viscous fermentation, a portion of the sugar passing into a kind of gum, the juice becoming turbid and ropy, whilst at the same time it loses its sweetness. This change seldom proceeds long alone, before a second fermentation is also brought on; this is either the lactic, or the vinous and acetous fermentation; the one resulting in the formation of lactic acid, the other in that of vinegar or acetic acid; but in either case the resulting acid is formed at the expense of the sugar of the juice. The cane juice is either allowed to run from the mill into a cistern or cold receiver to settle, or as is, in fact, generally the case, it is at once run into the clarifier, a large flat circular copper, holding from 300 to 500 gallons of juice. In this the juice is rapidly heated to about 140°, when a small quantity of slaked lime, or milk of lime, is added. The exact time of adding it, the mode in which it is added, and the quantity used, is very variable; it depends in part on the quality of the juice, and the sugar-boiler judges for each operation how much lime will be required. The whole is then well stirred up, brought nearly to the boiling point, when the fire is extinguished; a thick scum forms on the surface, a quantity of impurities subsides, the liquid becomes clear, and is then drawn off into the principal copper or boiler.

In these preliminary purifying operations, a number of different objects have to be attained; not merely are various insoluble substances which the juice always contains to be separated, but at the same time various other vegetable principles, previously in a soluble form, are to be rendered insoluble and precipitated. As may be expected, from the mode in which the juice is obtained, it always has a small portion of the woody fibre and cellular tissue of the cane diffused throughout it; a portion of this subsides when it is allowed to remain in the cold receiver, previously to being run into the clarifiers; but the juice can never be wholly cleared by standing; and, besides, it is desirable to bring it to the clarifiers as quickly as possible, so as to prevent the chance of loss from the commencement of fermentation. If these substances were the only impurities contained in the juice, they might certainly be removed by filtration, but they are in fact only of secondary importance, as compared with the azotised matters which are in a soluble form, and the decomposition of which would be considerably accelerated by any operation that would cause the juice to be more fully exposed to the atmosphere. It is of the first importance to proceed with the purification and evaporation of the cane juice as rapidly as possible, not merely because the longer the juice is suffered to remain exposed to the air the greater danger is there of its being injured; but also because, as the crushing of the canes goes on, the mill continues to supply a large quantity of juice, and it is therefore necessary that the receiver and clarifier should be quickly emptied, in order to make room for the fresh juice as fast as it is pressed out. The sugar-boiler in the first place endeavours to separate the azotised substances, because they are the most important impurity of the juice, and because their precipitation causes the immediate separation of all the other impurities, which are mechanically suspended in the cane juice; they act in fact like the clarifying liquid, or finings, used in the manufacture of wine.

Miscellaneous.

Locusts in Savoy.—On the 25th of June in the present year some locusts appeared in Savoy; they were at that time without wings, or, in other words, in the larva state, which tends to confirm the observations of certain gentlemen, who assert they saw them in small numbers last year. The larvæ observed towards the end of June covered the right bank of the Isère, about 500 yards from the village of Po, near the town of St. Pierre d'Albigny. They advanced slowly, and spread over the gravel and rugged stones of the bank, swimming across the pools and water-courses which they encountered. They remained here about three weeks; they then underwent their last transformation, and acquired wings; they subsequently dispersed after a severe storm which occurred on the 22d of July. On the 2d of August some were picked up at Chambéry, and on the 4th they were found even at Aix. On the 26th of July, when MM. Génin and Bonjeau first observed them, they were nearly all winged; there were but few larvæ. They were dispersed over the right bank of the Isère, covering a space of from 3000 to 4000 yards long by about 500 wide. The earth passed over by them was strewed with their excrements, which, in form and colour, resembled grains of corn. A chemical analysis of the excrements showed them to be composed of the woody matter of the plants over which the insects had passed. The damage done is fortunately not great; it is estimated by MM. Génin and Bonjeau at one-half of the marsh plants, one-hundredth part of Maize seed, and one-twentieth of the leaves of the same plant; other plants suffered little. The locust appears to be the Œdipoda migratoria; it has not been known to have visited Savoy before. The specimens of it to be found in the Museum of Natural History of Savoy were obtained from Algiers.—*Comptes Rendus.*

Grape Mildew.—With respect to the memoir of Dr. Marie (published in the "Comptes Rendus" for last September, and translated at our p. 613), on the disease which attacks Grapes, M. Guérin-Méneville observes that it is incorrect to suppose that the species of fungus which grows upon several different plants (Pansies, Rose-trees, Sainfoins, Sinapis, Polygonum, Vines, &c.), is in every case one and the same individual. According to the observations of the latter gentleman, made for a period of years in the south of France, the fungi which attack certain plants and mildew them are not in every case identical. He has had occasion to study a disease of Sainfoin, completely analogous to that of the Vine, but it was found to be caused by Oidium erysiphoides (Fries), which is different from O. leuconium and O. Tuckeri. M. Guérin-Méneville never saw O. erysiphoides on Grapes, although some beds of diseased Sainfoin were in contact with rows of Grapes. M. Marie adds to the list of plants attacked by O. leuconium previously given by him, the following: Plantago major, Scandix pecten, Polygonum aviculare, Ranunculus philonotis, Lamium album, L. purpureum, Ballota nigra, Sinapis nigra, Erysimum officinale, Thlaspi Bursa-pastoris, Pisum sativum, Tragopogon porrifolium, Cucurbita Pepo, Cucumis sativus, Acer Pseudo-Platanus.—*Comptes Rendus.*

Calendar of Operations.

(For the ensuing week.)

PLANT DEPARTMENT.

Orchidaceous Plants.—To assist such of these plants as have completed their growth in going quietly to rest, the atmosphere of the house should be kept gradually cooler; or perhaps it will generally be more convenient to remove them to a cooler house. A situation something like that in which Cactuses are wintered will be very suitable, taking care, however, never to allow the temperature to fall below 45° for general species. Some few will endure a lower temperature uninjured, but these are exceptions. At the same time excess of damp must be studiously avoided by carefulness in watering, and by admitting sufficient air to dry up and expel the superabundant moisture. Let the roof-sashes be made perfectly clean, that the rays of light may be impeded as little as possible; but while the house is under cool treatment in winter it is not advisable to allow the tender species to hang too near the glass, as the temperature there is more liable to variation, and the foliage of the evergreen varieties is often injured thereby. Let drip be carefully guarded against, for if it fall upon the roots of the plants, it will injure, if not destroy them; or it will excite them into growth, which is scarcely less objectionable. Dendrobiums, Renantheras, Cœlogynes, &c., should now be removed to a cool dry house, to prepare them for flowering. Any plants which are unfortunately producing young growths out of their natural season should be placed at the warmer end of the house, but the temperature even there must be very moderate, as the object is not to stimulate them, but merely to keep them in such a state of gradual progression as shall prevent their perishing.

FORCING DEPARTMENT.

Pineries.—Furnishing bottom-heat by means of hot water has made the management of Pines during winter so simple a matter, that a very brief space will suffice to give all the necessary directions. The moderate bottom-heat required to keep them in a gentle growing state, and top-heat, laden with any required degree of moisture, and sufficient to allow of the free admission of air, are given with equal facility. The amount of moisture raised within the pit must never be very great at this season, and the slightest excess in this respect must be carefully guarded against during dull or foggy weather. Where dung, leaves, and tan are still the materials employed to furnish the necessary amount of top or bottom-heat, the impossibility of suddenly increasing or decreasing its power, according to the particular requirement of the weather, render it a necessary precaution to keep up a stronger heat than is generally wanted, and to moderate it in warm weather by a freer admission of air, that there may be less difficulty in keeping up the temperature when a sudden change takes place. In pits where such means are used, air, by back ventilation, must at all times be more liberally furnished, to allow the exhalations to escape. When there is evidence of a decline in the bottom temperature, let a little fresh tan be pushed in amongst the pots, and even over their rims. In such cases it is often necessary to remove a portion of the old surfacing material, before the new is put in. These matters must be done by very careful workmen, without going amongst the plants, that the leaves be not damaged; for nothing is more injurious to the health and appearance of the plants than mutilating their foliage.

Forcing Pits.—Insure a sufficient supply of Rhubarb, Seakale, and Asparagus, by introducing successions at regular intervals, according to the supply required, and the quantity of plants to meet it. In selecting Seakale plants, take those first which showed the earliest indication of ripeness, by casting their foliage. If a frame or pit with glass lights can be spared for Asparagus, it is much more tender and delicate than when grown in a dark place; they should, therefore, when their shoots appear above ground, have all the light and air possible. We force this favourite vegetable in frames, which, during summer, are occupied by Melons. The bottom-heat, produced by hot-water pipes, is turned on very moderately at first, and afterwards gradually increased, after the roots are fairly in motion. A portion of the stock of these three vegetables should be mulched over with some decayed litter as soon as possible, that the natural warmth of the earth may be retained, and the roots thus kept in action; and also that they may be lifted at any time, as the mulching will prevent the ground being frozen.

FLOWER GARDEN AND SHRUBBERIES.

All possible advantage should be taken of the few shrubs which flower during winter, such as Laurustinus, Erica carnea, Polygala Chamæbuxus, Menziesia, and others. The display may be materially assisted by a judicious selection of variegated plants, the gold and silver tints of which contrast prettily with the general dark green, and at a short distance they may easily be mistaken for flowering plants. Early flowering herbaceous plants may be planted near the outsides, and still nearer to the edge belts or patches of Hyacinths, Tulips, Crocus, and other bulbs may be planted. We presume the reserve garden contains, amongst other useful stuff, a nice stock of Wallflowers, Primroses of various colours, &c.; these should be made the most of. The bulbs should be planted very near the outside, and when in patches the places should be marked with stout pegs made of Oak lath; these precautions will render them less liable to be disturbed when the operations of digging or forking, planting or removing, are going on. In addition to the above, we make use of a choice selection of hardy evergreen shrubs, such as Rhododendron ponticum, Pernettya mucronata, Gaultheria, Tree Box, &c. These are removed with good balls of earth, and in spring are returned to their places in the reserve garden. In addition, we take care to have a constant succession coming on of various sizes, so that when any of them are grown too large for the purpose they are finally planted out in appropriate clumps.

FLORISTS' FLOWERS.

The florist's labours are now becoming comparatively light. Tulips safely bedded; Dahlias out of the ground, properly labelled; Carnations and Picotees potted off, and in their winter quarters; Auriculas and Polyanthuses taken equal care of; Pansies and Pinks planted in the situations where they are to bloom, with others in pots as a reserve for any casualties which may occur in the winter; all this would be the result of the amateur's labours, if attention has been paid to our repeated cautions. We hope such is the case, and we must further observe that now regular attention must be paid to plants in pots; the labour is not much; it is regularity that is principally required in looking after their necessities. For instance, it is possible that the drainage of an Auricula pot may be defective; this, if not immediately seen to, will endanger the health of the plant. Another may be immediately under "a drip;" this is a serious matter, and must be remedied; whilst Pinks or Carnations may be taken by wireworms, which, if not caught, may make sad havoc. In fact, every day brings with it its cares and attentions. We must not forget to add that the soil should be well manured and trenched where the Dahlias have grown. This will be highly beneficial, and should not be lost sight of. The stakes, as well as the sticks used as supports, both for them and Carnations, should be repainted before stowing away.

KITCHEN GARDEN.

If Cardoons and Celery have made any growth since they were earthed up, they may be gone over again, and a little more soil drawn up round the collars of the plants, to assist in blanching them, and in preserving them more effectually from the frost. In bad weather, the labourers may be usefully employed in manufacturing birch-brooms, baskets, &c., cleaning out seeds, and sorting and storing roots. Give frequent attention to the Potatoes in pits and heaps, and remove immediately any which show symptoms of decay. In fine warm weather, it is well to open the heaps, and allow the pure air to circulate freely amongst them.

HARDY FRUIT GARDEN.

We may reasonably suppose, that there are no very pressing operations in the kitchen garden just now, since the root crops are all gathered, except the Parsnips and Leeks, and there are no crops to be sown or planted, excepting the Potatoes; presuming also that the crops of Celery, Brassicas, &c., are all properly earthed up, it allows of a very considerable force being directed to the important operations, which require performing in the fruit-garden. The wall-trees are generally considered most important, and of these we will speak first. The operation of training is performed with greater ease and comfort, and, consequently, with much saving of time, if commenced early in the season, so that the best weather may be devoted to it. The first operation is to loosen the trees from the walls, and, if it be admissible, the latter should have a coat of colour, that all insects and their embryo may be smothered; otherwise they may, at least, be well washed with clean water from an engine. If nails and shreds are used, let the former be made hot, and dipped into linseed oil, for the double purpose of destroying insects, and preventing rust; and let the best of the old shreds be boiled, washed, and dried, previously to being re-used. Those who intend to apply the method of using fixed studs, and tying the trees to them with bass matting, will of course take this opportunity of doing so. Where the common nails and shreds have been long used, it will be necessary to rake out and re-point all the joints; the studs are then to be fixed in at suitable distances, and the wall is ready for retraining. At the same time, let diseased trees and inferior varieties be removed, and after carefully preparing their stations let better, plants from other parts of the garden, or young trees from the nursery, be planted in their stead. By carrying on these operations together, a larger number of labourers may be usefully employed, thus keeping the force together. The handier men will of course be selected for that part of the work which requires the greatest care and dexterity. Previous to the trees being retrained, they should be washed over with the following mixture, to destroy any insects with which they may be infected. To one gallon of water, add a quarter of a pound of soft soap, and half a pound of sulphur, with sufficient lime and soot to give it the colour and consistence of lead-coloured paint. For Pear trees infected with scales, some tobacco liquid should be added to the mixture, which should be laid on quite hot.

State of the Weather near London, for the week ending Nov. 7, 1850, as observed at the Horticultural Garden, Chiswick.

Nov.	Moon's Age	Barometer. Max.	Barometer. Min.	Temperature. Of the Air. Max.	Of the Air. Min.	Of the Air. Mean	Of the Earth. 1 foot deep.	Of the Earth. 2 feet deep.	Wind.	Rain.
Friday .. 1	27	29.985	29.915	60	50	55.0	46	47	S.W.	.07
Satur. .. 2	28	29.997	29.926	60	36	48.0	48	48	S.W.	.00
Sunday . 3	29	30.159	30.037	58	42	50.0	49	49	S.W.	.02
Monday 4	0	30.007	29.865	56	38	47.0	49	49	W.	.05
Tues. .. 5	1	30.030	29.960	56	42	49.0	48½	49	S.W.	.00
Wed. .. 6	2	30.100	30.061	57	36	46.5	48	49	W.	.00
Thurs .. 7	3	30.113	29.932	58	46	52.0	48	49	S.W.	.02
Average....		30.055	29.956	57.8	41.4	49.6	48.1	48.5		.16

Nov. 1—Rain; cloudy and mild throughout.
— 2—Fine; cloudy and warm; clear and very fine.
— 3—Fine; slightly clouded and very fine; lightning at night.
— 4—Boisterous with rain; fine; clear.
— 5—Cloudy; fine; clear at night.
— 6—Fine; very fine; clear.
— 7—Hazy; very fine; overcast.
Mean temperature of the week, 4 deg. above the average.

State of the Weather at Chiswick during the last 24 years, for the ensuing week, ending Nov. 16, 1850.

Nov.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds. N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 10	51.0	36.4	43.7	11	0.23 in.	2	2	1	4	5	7	1	2
Mon. 11	51.1	37.3	44.2	13	0.76	1	3	4	1	5	8	2	1
Tues 12	52.1	35.9	44.1	11	0.40	1	3	3	1	3	6	6	1
Wed. 13	51.3	36.7	44.0	15	0.66	2	5	3	1	5	3	3	2
Thurs. 14	49.4	36.0	42.7	13	0.67	4	2	2	4	2	5	3	2
Friday 15	49.3	36.6	42.9	12	0.32	2	4	3	2	4	7	1	1
Satur. 16	49.1	34.5	41.8	9	0.41	4	3	1	2	4	5	3	1

The highest temperature during the above period occurred on the 12th, 1834—therm. 63 deg.; and the lowest on the 15th, 1848—therm. 18 deg.

Notices to Correspondents.

Arboretum: *G.* We believe that Messrs. Whitley and Osborn, of Fulham, can supply any plant named in your list. Their prices are reasonable.

Books: *J R M.* Bevan on the Honey Bee.

Bulbs: *W F S.* We know no one better able to supply you with bulbs than Mr. Bernard Saunders, of St. Helier's, Jersey. The favourable climate of that island gives him facilities which cannot be found in England.

Dahlias: *J C.* After taking them from the ground, cut the stems rather close in and place the roots crown downwards for a few days, in order to drain the water from them. When dry, put them away in a cellar, or under the stage of a greenhouse. In spring they may be divided into as many parts as there are "breaks." With a view to ascertain the number of eyes, place the roots in heat for ten days or a fortnight before you divide them.‡

Gas: *Z Z.* Do not attempt to use gas in a greenhouse. It is expensive and dangerous, and ruins the plants. Use coke, or coal, or some such fuel.

Gravelling Walks: *A B.* Shell gravel never binds well if laid on thickly. It should be spread thinly, and evenly raked and well rolled. It is better to give two thin dressings in the year than one thick one.‡

Japan Lilies: *Amateur.* You had best plant them in flower-pots. Keep them during winter in a cold frame, and transplant them to the open border in spring.‡

Moss on Lawns: *Reader.* You cannot, perhaps, do better than follow the directions for its extirpation, given at p. 439 of our volume for 1848 ‡

Names of Fruits: *W H I.* 1, Beurré de Capiaumont; 2, Passe Colmar; 3, Ne Plus Meuris; 5, Seckel; 6, Belle et Bonne; 7, Winter Pearmain. Some of the best Plums for standards are the Royale Hâtive, Greengage, Washington, Kirke's, Jefferson, Reine Claude, Violette, and Coe's Golden Drop. Cherries: Mayduke, Knight's Early Black, Elton, Bigarreau, Late Duke, and Florence.‖—*G E.* 1, 8, Passe Colmar, 2, Beurré de Capiaumont; 3, Beurré d'Aremberg; 4, Napoleon; 5, Winter Nelis; 6, Easter Beurré; 7, Glout Morceau; 9, Beurré Rance.‖—*J Everiss.* Your Pear when received was considerably decayed. It is probably some Perry Pear, unknown to us.‖—*G Bennett.* 1, Chaumontel; 2, Beurré Rance; 3, Ne Plus Meuris; 4, 7, 9, Glout Morceau; 5, Marie Louise; 6, 10, Beurré Diel; 8, Easter Beurré; 11, Passe Colmar; 12, Louise Bonne (of Jersey); 16, Brown Beurré; 17, Knight's False Monarch, regraft it; 18, Beurré d'Aremberg; 19, Vicar of Wakefield; 20, St. Germain.‖

Names of Plants: *Henry.* We are sorry to disappoint you, but we really *cannot* undertake to name pieces of leaves, or leaves without flowers. 2 is Cotoneaster microphylla, we suppose.—*Keith.* Clethra alnifolia.—*Vitis.* Lastrea spinulosa. *S.*—We are obliged again to request that correspondents will not send us plants to be named unless they are in flower. We are happy to pay any reasonable attention to the requests that are made to us; but there must be a limit to the time which can be devoted to this or any other department of our office. We therefore beg "U. X.," and a "Young Gardener," to receive this as a reply to their inquiries.—*Chas F P.* We will examine them, and report next week.

Nursery Catalogues: The Editor would be glad to receive these from as many nurserymen as chance to see the present notice, unless they have already forwarded them.

Paulownia Imperialis: *Addio.* Although hardy this does not flower in England—apparently from a deficiency of summer heat. It grows too fast, but as it becomes older may be better behaved.

Pelargonium Leaves: *Lover of Flowers.* They are affected by the "spot," a disease caused by cold and damp.‡

Roses: *H.* We do not perceive anything unusual in the bud with which you have favoured us. It appears to be the same as other double Roses.

Salt Hill Dahlia Show: *S W B.* We confess the oversight. Can you assist us in rectifying the error?

Misc: *J P.* There are no varieties of Humea elegans.‡—*Tamworth.* It is of no consequence whether you pick off the yellow leaves in autumn from Peach and Nectarine trees or not. It is a good plan to paint over the trees in spring with the wash recommended by Mr. Paxton. It is in no way injurious to the trees.‡—*E F L.* Much obliged, but we do not at present want the Numbers. "Paul on the Rose" you can procure through any bookseller.

SEEDLING FLOWERS.

Pansies: *A W W.* It has a good dark eye, and is otherwise promising. It should be grown again.*

Pelargoniums: *X Y Z.* An improvement on Luceum roseum.*

DR. S. NEWINGTON'S IMPLEMENTS OF AGRICULTURE.—These Implements have been invented to introduce an improved system of cultivation, and a more scientific method of depositing the seed. A Prospectus and Lecture on the different methods may be obtained (gratis) by applying to Messrs. DUFAUR and Co., Agricultural Depôt, 21, Red Lion-square, London.

SMITHFIELD CATTLE SHOW.

NOTICE.—THE PRINTED FORMS OF CERTIFICATES to be filled up for STOCK and IMPLEMENTS intended to be exhibited at the forthcoming Show in December next can now be obtained of the Honorary Secretary. All such Certificates must be returned, properly filled up, on or before **Saturday, the 16th of November.**

In applying for the Forms for Stock, it is necessary to state the Number of the Class or Classes, as there is a separate Form for each Class.

Prize Sheets and all information can be obtained on application to B. T. BRANDRETH GIBBS, Hon. Sec., corner of Half-Moon-street, Piccadilly, London.

MANURES.—The following Manures are manufactured at Mr. LAWES'S Factory, Deptford Creek:

Clover Manure, per ton	£11	0	0
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DENCH invites the attention of Gentlemen about to erect Hothouses, &c., to the vast superiority in every respect possessed by his PATENT HOUSES, which he will warrant superior in every respect to any others. Good Glass from 16 to 21 oz. per foot, 1 foot wide, 3 feet long, furnished, and the Houses, when completed, charged from 1*s.* 3*d.* to 1*s.* 6*d.* per superficial foot, according to size and quantity; on one principle the roof is formed without wood or putty, and on another principle with wood rafters, and the glass put in with putty. Patent Sashes, requiring no paint, from 7*d.* to 9*d.* per foot. HEATING BY HOT WATER.

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The Agricultural Gazette.

SATURDAY, NOVEMBER 9, 1850.

MEETINGS FOR THE TWO FOLLOWING WEEKS.
THURSDAY, Nov. 14—Agricultural Imp. Society of Ireland.
THURSDAY, — 21—Agricultural Imp. Society of Ireland.

WE have to remind our readers of the two great December AGRICULTURAL MEETINGS—that of the Smithfield Club, which has so long been influential for good upon the breeding and feeding of cattle in this country, and that of Birmingham, which last year entered upon a similar course of usefulness for the Midland Counties. The former exhibition will take place, as usual, in the Baker-street Bazaar; the latter, in the new Bingley Exhibition Hall, a permanent building erected for this and other similar public purposes. Those who intend to exhibit must, before this day week, have furnished the secretaries of the two societies with certificates regarding the age and nature of their stock, forms for which are to be had on application to MR. GIBBS, at the corner of Half-moon-street, Piccadilly, for the Smithfield Club, and of MR. WRIGHT, Union-street, Birmingham, for the Birmingham show. Those who desire that their stock should compete only with others of a similar breed, will prefer the latter; those who are disposed to support the only opportunity which remains for competition between the breeds, may prefer the former. There is, however, little need that we should claim for so time-honoured an institution as the Smithfield Club the support of agriculturists; its popularity is not likely to fail; and we would therefore the more anxiously impress upon them the usefulness of helping to establish the Midland Counties Exhibition at Birmingham. It is much to be desired that those who have the means of adding to its attractiveness, will not fail to apply to MR. WRIGHT for forms of certificates for Cattle, Sheep, Pigs, or Poultry, during the ensuing week.

IN a late Number of our Paper we took occasion to remark on the failure of the attempts hitherto made to apply the LIQUID MANURE OF THE FARM in an economical and beneficial manner. We have since had occasion to inspect a large farm, provided with a manure tank, thus giving an excellent opportunity of observing the practical value of this and other schemes, which were to work such a revolution in modern farming.

The farm-buildings, to which we refer, have been erected at the cost of 8000*l.*, and are, we believe, some of the handsomest and most complete in Great Britain. A steam threshing-machine, with stones for crushing corn, was at full work when we visited the farm. The fold-yards and cattle-sheds were the picture of comfort and cleanliness; plenty of clean straw and a good supply of water in each. Indeed, the only objectionable part of the whole arrangement, according to the tenant, was the stable for the cart-horses. It was slate-roofed, without loft or ceiling, and we were informed by the farmer that he found it impossible to keep his horses in health, the stable was so chilly, notwithstanding it contained nearly 20 horses. The first winter the stables were used, 12 horses went blind, and we remarked that the whole of them had very rough, staring coats.*

We observed also that, though provided with a boiler, &c., the Turnips for the cattle were not steamed—they were not even cut. That the tenant was amply provided with capital and means, as well as intelligence, enough to have adopted these modern improvements, if they had been found profitable, we are perfectly certain. Are we then to conclude from their non-adoption that, in this respect also, the improved arrangements for cattle-feeding are more expensive, but not more effectual than those commonly used? Or are we to believe that here, also, habit has been more powerful than reason?

Another thing that struck us particularly was the method adopted of draining the farm buildings. Each fold-yard *sloped* to one corner, where there was a drain, leading to a main conduit, connected with small drains from all the stables and cow-houses, and terminating in a manure tank, capable of containing some thousand gallons. We found, upon inquiry, that the manure tank, as far as its original construction was concerned, was useless. After careful and anxious trial the carriage of the liquid manure on to the land was found to be so costly, and the benefits produced so small, that *it was now carted on to the nearest dunghill.* We have far more faith in such a result, as deduced from the extensive practice of a farmer, than we have in the theories of men who are more ready to teach others than capable of practising what they teach. Nothing can be further from our intention than to undervalue the importance of saving the liquid manure of our farms; and the common plan of allowing the liquid excrement to run into the pond where the animals drink, must be held to be an abomination and a disgrace. But is there no medium between the wastefulness of the one plan, and the costly saving of the other? In certain situations, where a great number of cows are kept, producing more liquid than can be absorbed in boxes, a manure tank may be useful.

But the farmer was also provided with a hay cutter, worked by the steam-engine. This also we found had been disused since the first year; the tenant informing us, greatly to our surprise, that when he used it, an additional man, costing 30*l.* per annum, was required, an outlay which more than counterbalanced any saving that might be effected.

The tenant reported favourably of the plan of crushing the Oats for the horses, a smaller quantity being required.

Our visit afforded matter for serious reflection. The multitude of suggestions for the advancement of agriculture which have made their appearance within the last few years, show that public opinion on these matters is in a very unsettled, as well as in a very anxious state. The greediness with which nearly all these suggestions have been more or less adopted into practice, is perhaps the most striking part of the subject; it shows either that farmers are improving in intelligence, or that they are moved by a pressure unknown in previous times, or perhaps both these causes are in action. Whether or not, in no previous portion of the history of agriculture has there been such a straining after improvements as we have witnessed within the last few years. It is therefore to be regretted that either many of these so-called improvements have turned out upon trial to be the reverse of what they promised to be, and the disappointment resulting from their failure will consequently render many less willing to adopt what may hereafter be discovered to be really valuable; or that tenants have not yet given them that full and perfect trial which might be claimed for them.

To a certain extent there is no doubt but that a manure tank, an apparatus for cooking food for cattle, and a hay-cutter may be useful. It is the over-estimate which their advocates have formed of their value that we complain of—it is their abuse and not their use that we find fault with.

In many instances the persons who urge the immediate adoption of these improvements resemble a child with a toy; they are everything for the moment, to be at once flung aside at the suggestion of something new. In this way more than one matter has passed from the recollection of these agricultural improvers. For instance, we never hear the subsoil plough spoken of now, though we entertain the highest opinion of its value when judiciously used. In like manner many really useful suggestions have been forgotten, through the disappointment which followed the extravagant idea of their value entertained by those who originated them.

The latest form which this search after novelties has taken, is the cover for the manure heaps. It would certainly be useful to provide such accommodation, but is a cover for the dungheap the first requisite of the present day? For instance, before providing such a building, would it not be advisable to provide permanent sheds for corn and hay? The plain practical utility of such a suggestion has, we fear, little charms for the advocates of covered dunghills. Plans of farm buildings have already been published with the latter duly marked, but we have never yet seen a hint of the former, though we certainly think that shelter for corn ricks is a much more important matter than a cover for the dunghill. *C*

* The result may have been owing to the previous habit of treatment to which the cattle had been accustomed. Our stable is pantiled "without loft or ceiling," and we have had 11 horses in perfect health for many years in it.

THE WARP LANDS OF LINCOLNSHIRE.

SOME years ago the public regarded this county as a foggy, flat expanse of wet marshes and miry fens; a land of cramps and agues, tenanted by wild ducks and decoy-men, and for ever discordantly vocal with the cries of plucked geese. Latterly, however, by reason of railways and the press, both the travelling and reading portions of the agricultural world have discovered that Lincolnshire has Heath and Wold hills as well as damp and dead-level lowlands; that it is also healthy and well cultivated; light has dispersed the thick cloud which hung over this part. Its farmers have risen into the first class for the magnitude and diversity of their enterprises, having defended so large a portion of their county from the sea, which is on a higher level, and executed stupendous works of drainage; having converted the very stone of the bleak hill ranges into rich corn-bearing earth, and hid the barrenness of their northern plains under a coating of most fruitful soil. But though they have subdued so much that was aggressive, and tamed so much that was intractable and profitless, there are still some districts of land in North Lincolnshire lying almost beyond their powers of amelioration, utterly worthless and incapable of production. To the north of Gainsborough, several miles east of the river Trent, may still be found wild "commons" and "warrens," in some localities so barren as to produce nothing but white Moss, in others partially belted with plantations and surrounded by patches of Turnips and Barley. Light-blowing yellow sand may be seen drifted into heaps after a gale; and hundreds of acres of this dry loose soil now lie in bare heaps or Fern-clad patches. Sometimes the higher portions of such a moorland will be completely matted by Mosses and Heath, rough with larger vegetation, such as tufts of black Rushes and bunches of Furze, the lower parts boggy, with water-courses and stagnant plashes. The few half-starved beasts and sheep which graze on it in summer must have great difficulty, both in traversing its tangled heath and boggy rivulets, and in finding provender. It is a sudden blow to the feelings of an agriculturist when he enters upon one of these dreary moors, lying, as they mostly do, between the well-tilled limestone, &c., on the east and the fertile warp land on the west, the sudden contrast from either approach is between prolific exuberant cultivation and a blasted scene of blankness and sterility. I crossed one of the warrens on my way to the warp district. It

was a wide bleak flat waste (though on a much higher level than the land I was going to view), without trees or bushes, and covered with black Ling. It was in the spring; and I had a far view over many hundreds of acres fed by black rabbits, the surface clad with Ling and dead Fern, the peaty sand hanging over the crests of the cuttings on the road-side like festoons of soot, and the whole region seeming as if scorched and scathed by fire. In the hollows of the low portion of the common were shallow runnels of water discoloured by the red running sand; I wanted only a stork to spread his wings here for flight and "pack up his legs like a fishing-rod," as described by "C. W. H." on his continental tour, to fancy myself out of the far-famed Lincolnshire, and travelling towards Berlin. But reaching the brow of the hill—the lias hill stretching northward from Gainsborough to the Humber—and facing the west, I looked down upon the great warp valley. From the foot of the hill a dull flat extended for a mile or two to the bank of the broad-flowing and sinuous Trent; and beyond this, stretching out for many miles, was the "Isle of Axholme," an immense plain luxuriant with pasture and rows of clustering foliage among its dark arable fields. Long lines of drains intersected the landscape, and bright angular spaces shone here and there where distant warping works were in progress.

The base upon which the warp soil rests is of peat and sand; for the process of warping consists not in running out permanent embankments into the water of the wide river or Humber estuary, and by such encroachments taking possession of soil deposited upon their bed, but in raising temporary embankments far inland from the stream, and abandoning the enclosure for a time to the will of the tides, the alluvium being thrown down upon the surface of land which has generally been already under cultivation. A strong, deep, and fruitful mould is thus imported and self-spread upon the broad level region of weak land. The foundation of sand belongs to the new red sandstone formation—gypseous rock and red marl appearing at Gainsborough, and occurring below the escarpment of the hill which ranges northward hence to the Humber, bounding the flat of sand, &c., at a few miles distance east from the Trent, and a ridge of the same beds rises a few miles on the western side of the river, in the Isle of Axholme. Upon the intermediate level of low sand once flourished a thick forest, now subterranean. Oak, Fir, Yew, and other trees, nuts, Acorns, Fir-apples, &c., are here found in great quantity. The trunks, branches, and stems lie prostrate, but the roots are in the attitude of growth, and the most delicate and intricate fibres of the roots extending from them into the sand forbid the supposition of their having been drifted here. Yet the surface upon which they grew is below the level of low-water mark in the Trent. Inundation appears to have overthrown these woods, and the tides and freshes formed a river channel at about the present course of the Trent. The timber and foliage decayed into peat, and this bed became covered with mud in the vicinity of the river channel, which is now found as a soapy blue clay. A portion of this clay, immediately adjoining the river, has more recently been overspread by alluvium or natural warp deposited by the overflowing waters, which of course became clearer of muddy particles, as they ran further inland, where no sediment has been left. That portion of the peat furthest from the stream, receiving no deposit, had no pressure to consolidate it; and bog plants vegetated in it, accumulating at last into a loose watery quagmire, several yards in depth. It is upon this peat that the warping is principally done. In that part of the plain which lies east of the Trent (about 15 miles in length by two to four in breadth, and to which this description chiefly refers), there is a belt of bare sand separating the peat from the front of the hill range before-mentioned; and this sand has in many localities drifted by the winds, forming hillocks upon the edge of the peat, and hiding beneath them the black trunks and roots of the ancient forest.

Descending into this district I crossed these beds in the following order of succession, on my way to the Trent bank:

EAST.

NORTH.	Hill of lias, limestone, and clay. Springs pouring down upon the flat of sand, peat, &c.
	Sand, light, loose, and either wet or hilly.
	Peat not yet warped. In some places are sand-hills too elevated for the process.
	Artificial warp, on a somewhat higher level than the peat. The stratum is 2, 3, or more feet thick upon peat and sand.
	Strong soil, being the buttery clay cropping out. The land slopes gently up the river.
	Natural warp, apparently on a dead level, but in reality varying several feet in elevation, being lower wherever bends of the river made the current strong, and higher where the flow was feeble.
	River Trent, 150 yards wide. Discharges northward.

WEST.

As respects the state of this tract previous to the warping, the sand land I could judge of by the remaining waste, which in the peaty places was producing nothing but Rushes, while the rest was golden with yellow-flowered Gorse; and of the peat I heard particulars, showing that, from the effects of drainage, the canty patches of it yet left are no adequate criterion of what it formerly was. The surface crust of vegetation was sufficiently solid to bear men walking upon it: this once cut through, a semi-fluid or pulpy mass was found, 6, 8, 10, or 12 feet in depth. Upon this bed of decaying vegetable matter (the plants becoming distinguishable as it was dried), floated the upper stratum of firmer peat, like as on the Irish red bogs, or the quaking Chat-moss, Ling, "Shar," or saw-edged Grass, Sedge, Water-flags, and Reeds many feet high grew upon the rotten soil, which was "graved" for peats—these being dried for fuel on the sand-hills, where waggons and horses could venture. When the work of reclaiming commenced, the moor boiled up along the bottom of the new cut drains; and, when the warping water was admitted from the river, rose up (like the "Floating Island" in Derwent Lake) and formed a dam before it. Men were employed to traverse the flooding tide in boats, and cut the swimming mass to pieces, which subsided when the water beneath was thus let out. It sunk into a thin band under the augmenting soil of mud, and has been found, in some places, compressed quite hard with the weight.

The process consists in admitting the tide at high water to deposit the warp with which it is loaded, and permitting it to run off again as the tide falls. A sluice is first erected in the Trent bank, a canal cut 1, 2, 3, or even 4 miles to the land intended for the improvement, and banks 3 or 4 to 6 or 7 feet high raised round the fields; then by using many tides, and properly directing the in-flowing flood-water over the surface, a mass of new soil is equably laid upon the former ground to the thickness of 2 or 3 feet. The effect is, therefore, very different from that of irrigation, for it is not the water that works the effect, but the mud; the business of warping ceasing in winter and in fresh water floods, as the warp is best and most plentiful during the driest seasons and longest droughts. Arthur Young, the first describer of the system, says, "It is not to manure the soil, but to create it. What the land is, intended to be warped, is not of the smallest consequence; a bog, clay, sand, peat, or a barn floor, all one, as the warp raises it in one summer from 6 to 16 inches thick; and in hollows or low places, 2, 3, or 4 feet, so as to leave the whole piece level. Thus a soil of any depth you please is formed, which consists of mud of a vast fertility, though containing not much besides sand; but a sand unique." He adds a note by a commissioner employed in warping, as follows—"Warp leaves one-eighth of an inch every tide, on an average; and these layers do not mix in an uniform mass, but remain in leaves distinct. The water must run perfectly off, that the surface may incrust; and if the canal is not empty, the tide has not the effect." It has not been customary to warp a whole farm or estate at once; but two or three fields (when the land has been previously under culture), are thrown together and embanked as one "compartment." This process may, therefore, be said to have occupied a place in the course of management until the whole farm has been thus treated. When once done, it is done for ever; but much of the land that was warped at the first onset being too hurriedly finished, is now too low, and is being flooded a second time. Some of the deeper peat has also subsided so considerably as to injure the drainage of the warp upon it, and several feet of soil have to be again floated upon the surface. Young makes the following statement: "Mr. Wilson's idea of warping is very just; to exhaust the low lands in favour of the hills, then to warp 6 inches deep to exhaust that to make the hills; then to warp again; and by thus doing to keep the warp land in the highest order, and at the same time work a great improvement to all the higher grounds." Warping successively was at first practised by some, but experience has shown that it cannot be profitably done. An intelligent warp farmer said to me on the tour being now described, nothing makes Twitch (Couch) grow like letting in the water; hence Mr. ——, mentioned by Young, got his new warp land full of Twitch; then warped a second time, then got more Twitch, &c., and soon made a muddle of it, and lost his money.

As I passed across what had been not long ago a watery morass, everything seemed to indicate a fruitful soil and prosperous cultivation. The sides of the ditches showed in section 2 or 3 feet of rich alluvial loam resting upon compressed peat; and while the upper well-drained soil exhibited its fertility in the bright green rows of healthy thick-set Wheat, which adorned the surface of nearly every second field, the black subsoil manifested its vegetative properties by the rank Reeds that shot thickly up along the ditch bottoms. Whitethorn hedges fenced many of the grounds; and around the comfortable farmsteads were plantations of Poplar, Ash, Birch, Beech, Lime, Chestnut, and Sycamore, as well as the water-loving Willow and Alder. The former presence of abundant moisture was testified only by the sickly or dead Larches and Spruce-Firs, which thrive upon the new earth until their roots strike the underlying moor, and then famish upon the poisonous food that wet mass contains.

Passing through one of the many Dutch-looking hamlets which cluster under the Trent bank—the tidal waters leaning against this barrier, and at intervals of some years occasionally overtopping it—I arrived at the mouth of one of the large warping drains. Here was a sluice, consisting of two flood-gates, pointing to the river so as to exclude the tides, unless held open for the purpose of admitting them. As the drain was then employed in warping a plot, the tides were suffered to play in and out at pleasure; the water is not held forcibly upon the land; for if so, the drain would silt up, and besides this, the back-doors that would be requisite to hold back the water could not be raised up with the head of water against them, and thus alternate tides would be lost. Keeping along the drain bank towards the works, I saw the water returning, as the Trent tide was ebbing; it was not clear, but of a drab muddy colour, having left only a portion of its sediment behind. It was curious to observe the rich clayey lands divided at intervals by small banks of sand like the fences of a rabbit-warren; the soil on one side of the bank being often 1 or 2 feet higher than on the other. A walk of about 2 miles brought me to the warping works, where 50 acres in one compartment were undergoing the process. And here it was still more singular to see horses and labourers at work with ploughs and other implements on one side of a fence, and a muddy-looking inland harbour on the other, whilst a little way off was a field just newly warped, its wet salt surface cut about with grips and glistening brightly in the sunlight through a tall "bullfinch" hedge. Good Wheat crops spread verdantly around; and Beans just "breaking cover" appeared in many fields and on the steep silty sides of the drain embankments. The compartment was not yet completely warped, part still remaining as dingy moor bearing Sedge and Bulrushes, and barren sand clad scantily with Heath and Furze. The greater portion was under water, shoals and flats of slime appearing here and there, clothed in spots with vegetation. A salt-marsh is here formed upon an inland tract of peaty sand, so there being a change of vegetation while it so remains, from arenaceous and bog plants to those that live upon the sea-shore. The spikey light-green "Water-grass" which shows itself upon the wet warp dies directly the water is shut off, so that then (as my informant says), "it may be pulled up easily like wool off the back of a rotten sheep." This new marsh land is then reclaimed by drainage, and good natural herbage and Clovers make their appearance, together with innumerable weeds never known before. As indicative of the *duality* of this region—being both moorland and marsh at one time—the snipe, who quits the marshes in the early spring, and seeks the sandy uplands, was still here; ascending high in the air, and curving downward again with quivering wings, so as to make that melancholy bleat which has here earned him the title of "the moor-lamb." The compartment was rectangular, and the warp water entering at one corner was carried along one side and end by a canal which, at the furthest corner, was connected with the delph out of which the material for the bank was thrown. By this arrangement the ulterior portions become first warped, so that the water should not have to be conducted over the higher ground to the lower. When the distant parts are sufficiently elevated, openings are cut in the side of the canal just mentioned, and by small cuts and guiding crests the whole surface receives an equal deposit. When the neap tides (which are not taken in), commence, the land is looked over, and channels or inlets made to the lowest places. From the methods here employed for insuring an uniform deposition of warp, perhaps much might be gathered respecting the laws of tidal action in forming sand-banks and deltas; great foresight and continual care are required in causing an even surface in a warping-field; might not the means there used be of advantage in more expanded areas while embanking from the ocean? When the operation is perfected, open drains or grips are dug at frequent intervals in the new soil, so that by the assistance of rains the salt may be washed out of it; and the warping-drain now becomes a main outlet for the drainage water, the self-acting sluice-doors at the outfall holding out the Trent tides, and emitting the land water at every ebb. I may here remark that an extraordinary difference in the quality and value of warp land arises from the degree of excellence of its drainage. This may depend in a great measure upon the height to which the land is raised, and the porous or impervious character of the stratum which it covers. This fact is another foot-hold for those who affirm that the tillers of the wide alluvial plains of Britain may vastly augment the productiveness of their soil, even of the most garden-like mould.

How many thousands of acres of alluvium in Lincolnshire, Somersetshire, Lancashire, North Britain, rich though they be, are being equalled, nay surpassed, in bushel produce by the lately waste hostile and flinty downs, mainly because subsoil drainage and aeration, so marvellously fecundatory on sloping lands, has not been well carried out in these low-lying and dead-level districts. The outfall is inefficient; but a good outfall is within reach. There are hardly any of the alluvial flats but might gain a fall of three or more feet by a better system of district drainage, by an improvement of the main arteries, inland and chief rivers to seaward. High-country farmers visiting the lowlands are invariably surprised and disappointed when they learn the actual yield of the crop; their reason calculating that the produce here will be as much greater than their own as the mellow loam they behold excels in apparent fertility the dry sand or brick clay they have left. Will not a completer drainage still further warm and fructify these moist lands? If speedy drying and stagnant soaking, though only to a small extent, make most important variations in the producing power of different spots of the same soil, may not these conditions cause the same inequalities in different districts of the like soil?

The first crop on the warp is Clover and other Grass

seeds; then Beans, then Wheat, yielding from 30 to 36 bushels per acre; then "line" or Flax, followed by Wheat, by which time the land being foul will need fallowing. Near to the Trent side Potatoes are grown; on the richest grounds alternating with Wheat. The cost price of the land now spoken of was from 2*l.* to 2*l.* 10*s.* per acre; and the expense of warping, including the digging of the main canal, building of the sluice, throwing up ramparts round the lands, conducting the process, &c., was about 18*l.* per acre. The owner and occupier, whose extensive artificially-improved estate I viewed, is of opinion that the warp lands are much overvalued; and that when Wheat is at 60*s.* per qr. the rental here ought to be 2*l.* per acre. Closer to the river, where Potatoes are planted because of ready shipment, and on the natural warps where Wheat and Potatoes (8 to 10 tons per acre), are the common rotation, the rent of course is very much higher.

How many fortunes have been realised by landlords? how many tenant farmers have reaped a comfortable livelihood? how many labourers have been nurtured and fed? how large a proportion of the community have shared the teeming products? how much disease has been cleansed faom the atmosphere? how many acres by the margin of the Severn, Thames, and other streams, may yet be benefited—by means of warping? With these interrogations I close a somewhat desultory paper. *I. A. C., Oct.* 21.

Home Correspondence.

Allotments.—With respect to allotments, I wish to state that I let, on the part of my father, about 18½ acres of land in allotments to labourers and others in the parish. The rent varies from 1*l.* to 3*l.* an acre free of tax. The allotments are anxiously sought after. Many, I believe, find it worth their while to hire assistance when pressed for time. Those who work for my father will ask leave occasionally, but very rarely, to be absent for the purpose of devoting a day or two's labour to their allotments. I believe the system works well. The difficulty is to make the men derive the profit they ought to derive from their land. The rents are paid with punctuality. One or two tenants hang fire, as it were, for a few weeks, but usually pay at last. In four years and a half I think I have only once had occasion to seize a crop for rent. On two occasions I have ejected tenants for misconduct. One I have since readmitted. My bailiff receives the rents, and superintends the allotments. I forbid the tenants to put more than half their plot of ground into Wheat or Potatoes. Their mode of culture, with some few exceptions, is slovenly and imperfect, but I think improvement has commenced. It is a great thing when men begin to do their duty by their land, not because they are drilled into it, but because they see it is their own interest so to do. The latter principle of action at least argues the exercise of reflection and foresight. It is something for the mind to be roused into wholesome action. It may then be led to better things than even thrifty industry and perseverance. I think the little sphere of action furnished by an allotment rouses and stimulates the poor man's mind, and I would even say tends to soften his heart. He, too, as he looks upon his little plots of Potatoes, Onions, Carrots, &c., in various stages of growth chequering his humble domain, he too has something he can call his own—something to work for, to watch over, to love—as well as the wealthy farmer, who, mounted on his sleek cob, surveys his 50 acres of ruddy Wheat, and listens to the lowing of his score of oxen in the neighbouring meadow. Too many of our poorer labourers may be said, as regards their inward being, to be in a state of sour stagnation. To them returning morning and night, and the revolving seasons, bring but little hope, but little change. If allotments can be let without loss to the owner of the soil, and this is the fact in my case—if they can be hired by the labourers without damage to those for whom they labour—and this I fully believe—then the considerations just recited must have their weight with the humane and thoughtful. These remarks may be too desultory and too deficient in precision for insertion in your columns, but you are welcome to make any use of them you may think fit. I inclose the rules, from which please to omit my name and parish. The arguments of political economists against allotments are, no doubt, of weight; but, I think, can be rebutted. Remedies are not to be discarded because some evil accompanies the good resulting from them. *E.* [The following are the rules:

1. Each allotment to be let for twelve months, at the expiration of which, possession shall be given up, if required, after three months' notice.
2. The rent to be paid half-yearly, to
on the first after Michaelmas-day, and
the first after Lady-day.
3. No occupier of the allotment to be allowed to exchange, or underlet his allotment, or any portion of it, or to use any other than spade husbandry.
4. No occupier to trespass upon, or injure in any manner, another's land or produce.
5. Each occupier must keep his part of the fence, and drain, and also of the road within the field, in proper order.
6. Any occupier who shall fail to conform strictly to the foregoing regulations, or who shall mismanage his land, or who shall be convicted of any offence against the laws of his country, or who shall be guilty of drunkenness, or other immoral or irregular conduct, shall be subject to have his land taken from him immediately, and to forfeit his crop.]

On Bones of Animals Dying under Mortification.—In the last number of the "Quarterly Review, p. 483," is the following passage, "a pailful of water, suitably impregnated with salts, is speedily sucked up by the root of a growing tree immersed in it. Food or poison may thus be artificially administered to plants, and timber is thus hardened in France, and even stained while living of divers brilliant hues." This sentence confirms me in an opinion I have adopted, that plants may be rendered poisonous from growing on diseased matter. And I bring forward the following case as an illustration of it. A neighbour had two horses die from mortification and three or four sheep, the whole of which he had burned in a large pile of ashes; after the decomposition of the flesh, he had the bones pounded with hammers and all mixed together again and drilled for Turnips. In the part of the field where this compost was used the plant was most luxuriant; at the time of consuming them, the farmer folded his best tegs there, with the view of forcing them forward; first one died, then another, and a third, in three consecutive days: after which the shepherd drove them all to water, where they drank most plentifully; this brought on a violent scouring, and in his opinion saved the whole flock. His sheep were perfectly healthy before; and again after they were removed from these noxious Turnips. He first suspected they were poisoned by some malicious person, as he fancied he observed something like arsenic on opening them: bnt afterwards he came to a decided opinion, from seeing bits of the bones hanging on to the roots of the plants, that the whole mischief arose from their growing on the food of animals dying in a state of mortification. Most of his neighbours ridiculed this conceit, but the writer of this is justly convinced the farmer's opinion is correct, and the passage quoted from the "Quarterly Review," he thinks strengthens his belief. Upon my mentioning these circumstances to a worthy friend, he told me, last year he had the misfortune to lose several cows, and as many as 15 sheep, with two or three horses, and that he had buried their carcases in a large mound of earth, and spread the decomposed mass over a field whereon he had a magnificent crop of Wheat; he was not a little startled at my telling him I should be more grieved than surprised if he, and all his neighbours died of cholera within a year! What is the view taken by the editor of the *Gazette*, or of any competent person who may read this suggestion, and will take the trouble to answer the question? *J. D.*

Peat Charcoal, as manufactured by the Irish Amelioration Society, is now selling in London at 70*s.* per ton, and in Dublin free on board vessels, at 35*s.* These prices, however, are not finally fixed, so that little reliance can be placed upon them. It formerly sold in this capital at 50*s.*, but the Society have advanced it to 70*s.*, and they contemplate a further advance to 1*s.* 6*d.* per bushel, or between 4*l.* and 5*l.* per ton! Which is neither more nor less than extravagance. When every other product of commerce is coming down in price, here we have an Irish thing advancing, and for no other reason than that the Society cannot supply its customers. We have placed ourselves in communication with the Irish Amelioration Society, and have told it this, and it dare not deny it. For what, may we ask, did the Society receive its Charter, bearing date the 26th of January, 1849? "For the purpose of employing the peasantry of Ireland," thousands of whom are now starving for the want of employment, a pest in every province of the kingdom. If the patentee could manufacture peat charcoal 50*s.* when bread was so much higher than at present and confer upon his unhappy country such a blessing, what ought the Society to do now? We do not wish however to expatiate on this head; a hint we hope is sufficient. "It's an ill wind that blows nobody good," and we hope the extravagant prices of the Society will blow the patentee plenty of applications for licences in the United Kingdom, by landlords possessing peat-bog, who have it in their power to correct the evil complained of. A licence has been taken out in Lancashire, peat is being cut in that province, and we hope in the course of a month to hear of success attending the enterprise of the licentiate. *B.* [We should like to understand the necessity of a license to make peat charcoal.]

Mr. Milne's Reports.—I am a constant reader of your Paper, and though I cannot agree to the opinions sometimes expressed by you, on the subject of the present depressed state of agriculture, I have great confidence in your love of fair play. In the agricultural department of your Paper, under date 19th Oct., 1850, I find a very favourable review of a pamphlet, lately published by Mr. Milne, Milnegraden, Berwickshire, and read to a meeting of the East Berwickshire Farmers' Club. As to the diligence and ability displayed in that pamphlet I have never heard but one opinion. But as to the inferences drawn from it by Mr. Milne and you, some have great doubts. The design of the author of that pamphlet is to show that high farming, if not a remedy, is at least a palliative for the present sufferings of the farmer. But you, sir, go further than this, and assert that Mr. Rigden has "furnished an instance of the way in which energy and resolution, when seconded by the ability which ample capital confers, are able to develop the resources of the land so as to balance the evil of adverse circumstances." As regards the case of Mr. Rigden this may be true, but all are not placed in such favourable circumstances. On this side the border we have farms equally well managed, equally highly farmed, equally productive, which will not yield a profit to the farmer; and the reason is perfectly obvious, because the rent and the price of manure are nearly double. But I do not wish to occupy your time in repeating what is so much better stated in the extract of the speeches at the meeting of the East Berwickshire Farmers' Club. That extract is from a respectable Edinburgh paper, and as you have published part of Mr. Milne's observations, I think you are in fairness bound to refer to the remarks made in reply by Mr. Wilson, of which Mr. Milne himself declared that they "were worth more than the document which called them forth." These statements seem to me to show that, as regards Scotland, high farming will not pay at present prices, unless half the rent is thrown off, a sacrifice involving ruin to great part of the landowners, and which must inevitably produce a social revolution, such as Britain has never yet seen. *A Canny Scot.*

Societies.

ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

The Council resumed their sittings, after the usual autumn recess, on Wednesday last, the 6th of November, when a monthly meeting was held at the house of the Society, in Hanover-square. The chair was occupied by Mr. Raymond Barker, V.P.; and there were also present, Lord Portman, Lord Southampton, Hon. H. W. Wilson, Colonel Austen, Mr. Barnet, Mr. Beasley, Mr. Burke, Colonel Challoner, Mr. Garrett, Mr. Fisher Hobbs, Mr. Kinder, Mr. Milward, Mr. Shaw (of London), Professor Simonds, Mr. Simpson, Mr. Thompson (of Moat Hall), Professor Way, and Mr. Jonas Webb. The names of 44 candidates for election at the next meeting were read.

Finances.—Colonel Challoner, chairman of the Finance Committee, presented the report on the accounts of the Society to the end of the previous month; from which it appeared, that on the 31st of October, the current cash-balance, in the hands of the Bankers, was 927*l.* Colonel Challoner having reported, on the part of the Committee, the closing of the country meeting account at Exeter, the Council passed a vote of their best thanks to Messrs. Sanders and Co., who had so kindly accepted the appointment of local bankers to the Society, during the period of its Exeter meeting, and who had with so much courtesy and exactness transacted the Society's financial business on that occasion.

Lectures.—The Council decided that it would be advisable this year to postpone the lectures usually delivered to the members, on the occasion of their December meeting, to a more advanced period of the session, when a greater number of the members could more conveniently attend their delivery. Professors Way and Simonds expressed their readiness to obey the call of the Council, whenever it was thought that their services would best tend to promote the objects of the Society, and the convenience of its members.

Pavilion Dinner.—The Hon. R. H. Clive, M.P., and Mr. Shaw, the stewards of the Pavilion dinner, at Exeter, having communicated to the Council, the inconvenience arising from persons being admitted into the Pavilion, at the time the arrangements for the dinner were in progress, it was resolved, on the motion of Lord Portman, "That, at future country meetings of the Society, steps be taken to prevent the admission of any party into the Pavilion, during the preparations for the dinner, without express permission from the stewards of that department."

Judges.—Lord Portman, Mr. Shaw, Col. Challoner, and Mr. Fisher Hobbs, having expressed to the Council their views on the desirableness of a still further improvement on the present mode of nominating, selecting, and appointing the judges for the country meetings of the Society, it was carried, on the motion of Mr. Thompson, that the whole question should be referred to a special committee, consisting of the following gentlemen, who should be requested to report their recommendations to the Council, viz.: Mr. Thompson, Mr. Shaw, Mr. Fisher Hobbs, Mr. Garrett, Col. Challoner, Mr. Jonas Webb, Lord Portman, Hon. Capt. Pelham, M.P., Mr. Hamond, Sir M. W. Ridley, Bart., Mr. Hudson, of Castleacre, and Mr. Jonas.

Cattle-Yard Shedding.—On the motion of Mr. Fisher Hobbs, seconded by the Hon. H. W. Wilson, it was resolved that previously to the conclusion of the contract for the cattle-yard of next year, Mr. Manning, the Society's contractor of works, be requested to furnish estimates of the additional expense that would be incurred by rendering the covering of the cattle-sheds impervious to rain.

Implement Exhibition of 1851.—Mr. W. W. Nicholson, of Newark, transmitted to the Council a copy of the letter he had received from the Executive Committee of the Royal Commission for the Exhibition of 1851, in which he was informed, "that the Agricultural Implement Department would be entrusted to the Agricultural Society of England." The Council instructed the Secretary of the Society to communicate with the Executive Committee on this subject, pointing out to them their misconception of the arrangements under this head, and calling their attention to that portion of the Report of the Council to the General Meeting of the Society in May last, in which the distinct arrangements of the Society with the Royal Commissioners were announced; namely—

"The Council have accepted the invitation of the Royal Commission for the Exhibition of the Works of Industry of all Nations in 1851, to hold a Show of Cattle in Hyde Park in that year; but finding that the Royal Commission have included in the arrangements for their own Exhibition a department for agricultural implements, the Council, with a view of not interfering with this department of the Royal Exhibition, have resolved to omit the implement portion of the Society's Show in 1851, and to confine their exertions entirely to their Show of Cattle, as invited by the

"Royal Commission, and to take every means to render that "Show interesting as an exhibition of Breeding Stock."

FABRICATED REPORTS.—The Secretary laid before the Council his correspondence with the editor of one of the morning papers, who had incautiously, and without authority, given insertion to the fabricated report of a pretended meeting of the Council, assumed to have been held on the 24th of October, which had been extensively copied into other papers throughout the country, and had thus been the means of misrepresenting the Council and its actual proceedings. The editor, in justification, stated that the report in question had been received from one of the class of persons known as "Penny-a-liners," who were in the habit of supplying miscellaneous information to the public papers.

VETERINARY SCIENCE.—On the motion of Lord PORTMAN, seconded by Mr. Thompson, it was resolved that Mr. Fisher Hobbs, Mr. Jonas Webb, Colonel Challoner, Lord Portman, and Mr. Shaw, of London, be appointed a Committee, "to confer with the Governors of the Royal Veterinary College, during the week of the ensuing December meeting, to consider the best arrangements for carrying out their mutual object to to promote the extended application of Veterinary science to cattle, sheep, and pigs."

SMITHFIELD CLUB SHOW.—Mr. BRANDRETH GIBBS reminded those members of Council who intended to be exhibitors at the ensuing Christmas show of the Smithfield Club, that the last day for making the required entries, would be Saturday the 16th of November.

COTTAGES.—The DUKE of BEDFORD presented to the Council, for the library of the Society, a copy of an enlarged publication of the plans for Agricultural Cottages, communicated by His Grace to the Earl of Chichester, and published in the Journal of the Society. The Council accepted this present with a vote of their best thanks.

The best thanks of the Council were ordered for the numerous presents and miscellaneous communications then laid before them, and reserved for further discussion at the weekly meeting on the 11th of December.

The Council then adjourned to their monthly meeting on Wednesday the 4th of December next.

Farmers' Clubs.

EAST OF BERWICKSHIRE, *Oct.* 14: *Mr. Milne's Report on English Farming.*—Mr CUNNINGHAM, previous to seeing Mr. Milne's printed report, had visited the farms of Myremill and Auchness, in Ayrshire. At Myremill he found all that was at Auchness, and a good deal more. Indeed, the only thing he saw at Auchness worthy of remark, was the large breadth of Potatoes. The Italian Grasses were there very luxuriant, but exceedingly foul. He was led to believe the district was favourable to green crops; but the Turnips which he saw were not superior to those in our own district. It was the preservation and application of the manure, and the feeding of the stock, which principally attracted his attention. In reference to these particulars we make the following extracts from Mr. Cunningham's report. "Having, in June last, seen the system of stall-feeding as carried out at Auchness and Myremill, and believing this to be the leading feature and foundation of the whole improved mode of culture, I have prepared some plans and probable estimates of the expense of obtaining the necessary accommodation, which I now beg to submit to the consideration of the meeting.

1. As regards the extent of accommodation, I believe that as a general rule for feeding off alone, there should be a stall for every 4 acres of the farm. This would require for a farm of 400 acres 100 stalls; and, supposing that the system adopted at Myremill and other places were followed out, of feeding off two casts in the year, this gives accommodation for feeding off 200 cattle per annum. In building a new set of farm offices for this system, the arrangement would be different from the present, and perhaps much improved; but we proceed upon the idea that there exists a certain amount of accommodation, and not more than is actually required for the manufacturing of the crop, and the housing of the stock and implements of husbandry usually required—and if farmers are to breed and rear cattle until ready to be fed off, they will require all the courts, sheds, &c., they at present possess, and the feeding houses must be a new appendage altogether. The plans produced are made out with this view, and to build and finish these in a substantial and satisfactory manner, will cost at the rate of 5*l.* for each animal, exclusive of cartage, which, in ordinary situations, will cost 1*l.* 10*s.* additional. These erections are supposed to consist of stone walls, foreign timbers, roofs, &c., and slated. The floor laid with square flooring tiles, upon a bed of concrete, and having suitable channels for conveying off the urine, &c. The roof lathed, and this as also the walls to be plastered. A close and uniform floor and smooth surfaces throughout the building is considered essential for the thorough ventilation, purity of the air, and health of the animals within; and when it is considered that the number of 60 or 70 are located under one roof, it appears prudent to take every precaution to insure the thorough ventilation of the building. As yet, I have not seen any of these places so thoroughly ventilated as could be wished, and great variety of opinion exists as to the best mode of accomplishing it. One leading feature, however, must be the admission of an abundant supply of pure air from without, and the abstraction of the vitiated air from within. I propose, in the plans shown, to admit the air by pipes and gratings in the feeding passages, with additional pipes in the walls, and to place a trough or box along the apex of the ceiling, pierced with small holes, and this to terminate in a chimney within the flue of the boiler, thereby rarifying the air, and assisting materially in keeping up the circulation required.

"2. The collection of the liquid manure in tanks is indispensable, and these I would recommend to be built of a circular form, instead of an oblong square, as at Myremill, and lined with brick, and coated with cement. This form gives the largest area at least expense of walls; and further, should the new mode of distributing the liquid manure be adopted by means of forcing pumps and pipes, it is indispensable that an apparatus be applied to stir up the more solid parts, so as to send forth, in an equal form, the entire contents through the pipes, and the circular form is the most suitable for effecting this by the aid of machinery. A supply of water is also required to give the animals, washing out troughs, and flushing the gutters, and to dilute the manure, all of which should be conducted by pipes into the troughs and tanks. The question of converting the whole manure of the farm into a liquid state, may not receive the sanction and approval of many agriculturists; of its efficiency, applied in this form, I cannot give an opinion; and as the mode has only recently been adopted in this country, it would be hazardous to pronounce upon its utility. I have made a calculation of the expense, and if other points are as satisfactory, I doubt not but it will one day be generally adopted. In order to bring the matter of expense to a test, we shall suppose a farm of 400 acres, and 100 acres of this in root crops, and supposing 70 acres of these consumed in the offices, and 25 tons per acre as a medium crop, gives ... 1750 tons.
50 acres of Italian Rye-grass, cut thrice, 20 tons per acre ... ... 1000 ,,
200 acres of corn, straw of do., 1½ ton per acre ... 300 ,,
And an addition of one-third at least of water equal to 1000 ,,
Say ... ... 4000 ,,

Now this may be all sent through pipes by means of the steam-engine working five hours in the week upon an average for 52 weeks—260 hours.

The engine power I estimate at 2*s.* per hour	£26
Four men employed, say 3*d.* per hour	13
Interest on pipes and tear and wear	30
Do. on tanks, say	6
	£75

Compare this with the filling, carting to the fields, turning, filling, and carting out again, and spreading of say 3000 tons—1000 tons may be assumed to be lost by evaporation—I think it would not be over-estimating if I put it down at 1*s.* per ton. This is exactly double—150*l.* There is another consideration, and not the least important. By getting the manure applied in this manner, it lessens the amount of labour in May and June, when the Turnip crops are being got in, and which is generally the season of greatest exertion to get finished in time. Any arrangement that can tend to equalise the labour of the farm would unquestionably be a decided advantage. Mr. Cunningham then entered at considerable length into the details of estimates and plans which he had made of the expenses and accommodation required for carrying out the new systems of feeding cattle, and collecting and distributing liquid manure. He estimated the expense of the whole apparatus for collecting and distributing the manure over a 400 acre farm at 1*l.* 10*s.* per acre; and the expense of building feeding byres on the new system, reduced to the standard of acres at 1*l.* 5*s.* per acre, or 300*l.* for 60 head of cattle. The expense of building feeding-boxes he estimated at nearly 10*l.* per animal, and the expense of altering and fitting up present sheds and stalls at 1*l.* 13*s.* per animal. Mr. Cunningham had also visited the farm of Mr. Littledale in Cheshire, whose cattle are constantly fed in the house, summer and winter. The principal features of his system were the size and airiness of the buildings, and his mode of feeding, which was nearly the same as at the Ayrshire farms.

Mr. NISBET, of Rumbleton, upon being called upon by the Chairman, said he had tried the liquid manure system, not by means of pipes, but by casks mounted on carts, and had found himself amply repaid. He generally did his hay crop with about 4 tons per acre, and as soon as cut, he went over it again for a second crop, which was of immense advantage. He had also tried it on lea after two years Grass, with a like favourable result. His tank for collecting the manure contained 45 tons, and was 20 feet by 10 and by 8, the cost of it having been 25*l.* In reply to a question from the Chairman, Mr. Nisbet said he had tried Garrett's horse-hoe, for two years, and had by its use effected a considerable saving in seed, had an early harvest, saved a little land, and had immense advantage in having his land kept clean. Last year, out of 60 acres he had left 10 acres unhoed, and the quickens taken off these 10 acres were six times the quantity taken off the 50 which had been hoed. The cost of the hoe was 19*l.* By using two sets of horses, Mr. Nisbet could hoe 20 acres a-day, at a cost of 10*d.* an acre. His drills were 10 inches, and he drilled along the furrow. He found no difficulty in using the machine, but the fore-steerage could not be dispensed with. The person guiding it had only to direct this, and it kept it all right.—Mr. WILSON, of Edington Mains, was then called on by the Chairman, and spoke as follows:

Mr. Chairman and Gentlemen,—The report which we are now met to discuss bears upon the face of it, that it was upon my motion, seconded by our esteemed president (whose absence to-day is, on every account, so deeply to be regretted), that it was printed and circulated among us for our mature consideration. On that occasion, I expressed it as my opinion that we were much indebted to Mr. Milne for the great pains he had been at in preparing such a statement for our use; and now that I have considered it with care, I am glad to say it is still my opinion, that it is fitted, in several respects, to be useful to us, though there are many of its conclusions from which I entirely dissent. I see a good many mistakes, which, if they had been committed by a practical farmer, would have deserved to be pointedly animadverted upon; but knowing as I do that Mr. Milne is not, and does not profess to be, a practical farmer, it would be unreasonable and unfair not to make ample allowance for the disadvantage under which his observations and inquiries have been conducted. The report bears to be a description of three cases of successful farming in the south of England. Now, as it is stated upon the authority of the persons referred to, that they obtain a fair return from the business as severally conducted by them, I do not mean in the least to call in question the matter of fact, but simply to ascertain, if I can, to what it is that their success is mainly owing. Let us then consider a little the first instance of successful farming submitted to our notice. Now it is evident that this is most strictly a suburban farm, and that its management must of necessity differ essentially from that of land in rural districts. If it is to be compared with Scottish husbandry at all, it must be with farms similarly situated. Now, it so happens that I have by me a detailed statement of the whole expenditure on the one side, and of the whole produce upon the other, upon a farm of 400 imperial acres, situated five miles from Edinburgh. I refer to the farm of Woolmet, and quote from a statement published in "Blackwood's Magazine," for January last. I have here nothing to do with the purpose for which the statement was then published, but simply avail myself of it now, as affording me an opportunity of comparing an example of farming in the vicinity of Edinburgh with that described to us by Mr. Milne in the vicinity of Brighton. A glance at these two statements, while showing that the system of management pursued is in fact substantially the same, affords at the same time some most startling discrepancies. The Lothian farmer pays for his land 72*s.*, while the Sussex tenant has his, apparently of as good a quality, for 35*s.*; the price of manure in Edinburgh seems to be just about double what it is in Brighton—Mr. Gibson's gross outlay for foreign manure being 610*l.* for his 400 acres, against Mr. Rigden's 686*l.* for 740 acres; the prices paid for labour by the former are higher than by the latter; the distance which manure and produce have to be carted is five miles in the one case, and but one in the other. They both have the advantage of a lease, but Mr. Rigden's is greatly more favourable for the tenant, allowing him more discretion in the cropping of his farm than is almost ever the case in Scotland, although it seems amply sufficient to secure the landlord against deterioration of the land; and then by the usage of the district, Mr. Rigden has, under the name of "Mendments," security for the realising of a considerable portion of his capital at the termination of his lease, which is unknown with us. It appears further that Mr. Gibson employs fewer horses in proportion to his carriage and mileage than Mr. Rigden; that his general expenses are less than Mr. Rigden's by nearly 20*s.* per acre; that the capital with which he carries on his business is also smaller by no less than 7*l.* 10*s.* per acre; and yet that his gross produce is greater by 1*l.* per acre. Let it be observed further, that the comparison now instituted is betwixt farms situated respectively five miles and one mile from a city. If I had taken farms within one mile of Edinburgh, where the average rent is 5*l.* 12*s.* per imperial acre, it is evident that this single item of additional rent paid by the Scotch farmer (amounting, on 740 acres, to some 2800*l.*), greatly more than absorbs the whole surplus in Mr. Rigden's statements; and that, upon the whole, if it be deemed proper that we should take a lesson from suburban farmers, it would be greatly more advantageous to pay a visit to Woolmet than to Hove. The next case cited is that of the Rev. Mr. Huxtable, Sutton Waldron, Dorsetshire. Now, whatever may be thought of the propriety of a minister of the gospel entangling himself with secular business to the extent which Mr. Huxtable has done, I cannot but admire the motive which seems mainly to have influenced him in the outset of his agricultural career, viz., to furnish employment to the farm-labourers of his own parish. Though this case is a very different one from that just mentioned, it is evident that here also the business of farming is carried on under advantages not possessed by us. For, though situated in a rural district, we see that those things which constitute what may be called the raw material of our business, viz., land and labour, are there obtained at a rate very different from those paid by ourselves. It appears that Mr. Huxtable's land costs him from 15*s.* to 18*s.* per acre, and that the ordinary wages of able-bodied labourers, in Dorsetshire, range from 6*s.* 6*d.* to 8*s.* per week. Now, though we are told that this land is of a very inferior description, it appears that, under Mr. Huxtable's management, it yields crops not, in the main, inferior to the two others; for in comparing the statements given in the report of the average produce of the three farms, it appears that Mr. Huxtable's average of Wheat exceeds Mr. Morton's, and equals Mr. Rigden's; that his Barley exceeds Mr. Rigden's by 10 bushels per acre; and that his root crops are not greatly inferior to either of the others. Now, I would just like to ask, where in all Scotland can you get land at 15*s.* per acre, capable, *under any management*, of yielding from 30 to 36 bushels of Wheat, or 25 tons of Mangolds per acre? Indeed, in reading the report, I have been very greatly struck with the difference of the rent in England and amongst ourselves, and still more with the excessive disproportion betwixt the rent of land and the value of its produce over the arable lands of Scotland. I must also beg leave to express my deliberate conviction, that until this disproportion is fairly adjusted, it is vain to talk of further outlay and improvements, or to expect that things can long continue as they are. In regard to the farm of Whitfield, which is the third one alluded to in the report, the statement is so meagre that we have not materials for comparing it properly either with the two former, or with the modes practised by ourselves. It appears that Mr. Morton conducts his business in a more economical manner than the two others, particularly as regards the number of men and horses with which he works his farm. His produce of Wheat per acre is less than that of either of the others, viz., 30 bushels, and his root crops being given in the lump, cannot be exactly compared with theirs. His rent, however, is much greater, being (public burdens included), 50*s.* per acre. Indeed, it appears, that when a Scotchman strays into England, his capabilities of paying rent are reckoned upon, and he is amerced accordingly. In comparing our own practice with that described to us in this report, one of the prominent things wherein it would appear that we are greatly deficient is the almost universal absence amongst us of any provision for preserving and applying the liquid manure of our homesteads, &c. Whatever may be done by individuals, I am quite aware of the fact, that generally over this district, this valuable portion of the manure produced upon our farms, is almost entirely lost. While I make this admission, let it be understood that this waste does not arise either from disbelief in the value of the article itself, or from ignorance of the expedients which have been tried or suggested for its application, but simply from the persuasion that they are either too cumbrous or costly to be safely adopted. And so, notwithstanding all that I have seen or heard upon this subject, I am still of opinion that that important problem of the profitable application of liquid manure has yet to be solved. It is urged by the advocates of box-feeding, that the end is secured by this system, as the whole urine is said to be absorbed by the litter. Others have recently spoken strongly of the advantages of using peat charcoal for the same purpose, and then carting it upon the land. We have heard also, to-day, a most interesting account of the plan adopted at Myremill for accomplishing the same end, by means of pipes and a powerful force-pump, worked by a steam-engine. This process I have had an opportunity of witnessing myself in August last, and, like Mr. Cunningham and his friends, I was certainly most intensely interested and gratified by what I saw at Myremill. Mr. Nisbet, too, has told us, that for several years he has applied this manure in the way he has described, and, as he believes, with a profit. Be it observed, however, that while he states expressly that his Oats and Grass appeared to be better when thus manured, that he has not had recourse to weighing or measuring, so as to be able to set the cost and the profit against each other. I can understand, too, how, on such a scale as Mr. Nisbet describes, when all that is attempted is just to save the liquid manure not absorbed by the litter, it may be possible to get such an amount of liquid applied to the land near a homestead, by taking advantage of chance times of the odd horse and boy usually employed for carting Turnips and similar work; and so, without seriously interfering with the regular labour of the farm. So that, while I do not presume to say that any or all of these plans will not succeed, I just repeat that they have not yet been so accurately and fully tested, as to warrant any prudent farmer in asking his landlord to enable him to try them on a large scale. Even Mr. Kennedy (of Myremill), who has gone into his peculiar plan on such an extensive scale, spoke of it with a modesty and caution which I greatly admired. He, of course, thinks that he will succeed; but does not pretend that this is yet conclusively established. The management of the live stock upon these farms has appeared to Mr. Milne superior to ours in several respects, which he has particularised. In part, I admit this to be true. The system of fattening cattle in boxes, rather than in open yards is, I believe, worthy of trial, and has, indeed, been already tried to some extent among ourselves. My own experiments have hitherto been on a small scale, but still I was so satisfied with the result as to have asked and obtained from my landlord the means of trying it more fully. Last winter I had two bullocks put up in this way, and certainly the progress was decidedly more rapid than that of their fellows kept in the open yard. I am also now convinced that Mr. Huxtable's statement of the small quantity of Turnips on which he can fatten a bullock is strictly correct. Had I met with it a year ago, I must say that it would have appeared to me incredible, and I do not wonder that others so regard it still. I shall, however tell you my reasons for believing that his plan of inducing his cattle to eat a large daily allowance of chopped straw promotes their growth, and yet makes fewer Turnips suffice. Last spring

being apprehensive that my Turnips were to be done before my cattle were fit for the market, I was induced to purchase a straw cutter, and after trying my cattle with a daily mess of chopped straw, moistened with cold water, in which a little Linseed-meal was steeped, I was gratified by finding that half the quantity of Turnips which they formerly consumed quite satisfied their appetite, and that their improvement was rather more rapid than before. After seeing this, I was able by reflecting on past observation, to account for this in a way quite satisfactory to myself. I have observed, for example, that when beasts, especially if they are in rather poor condition, are put upon full Turnips, they will consume a greater quantity without any proportionate increase; and that even for months, their bowels will be so relaxed as to amount to something like constant diarrhœa,—the explanation of which seems to be that when they eat a larger quantity of food, such as Turnips, than their system can assimilate, that the surplus does positive harm, and is worse than wasted. On the other hand, I have several times noticed that when I have reserved a heifer or two for breeding, and kept them in the straw yard with only a single daily feed of Turnips, that they have for a considerable time made greater progress than those that were on full Turnips. Indeed, Sir, I look upon this as the most important point brought before us in this report, and that we shall all find it for our advantage to copy Mr. Huxtable's practice in this particular. The sheep husbandry here described, I cannot regard as better than our own. It seems to me that Mr. Rigden keeps his flock at greater expense and trouble than we do, and yet if you set aside what arises from his ram-breeding, his results are inferior to those obtained by many persons around me. His wedder lambs are sold in August at 20*s.* each, and the wool of his ewes averages 4*s.* a head, while from a flock of 350 ewes he only weans 400 lambs, which we all should consider a very poor crop indeed. In regard to fattening sheep, I can quite believe that their absolute increase is greater when fed in covered pens than in the open field, but then it is done at a greatly increased expense In fact, the enormous cartage implied in first bringing the whole Turnips on our farms to the homestead, and then re-carrying the manure a-field, would dislocate our whole existing arrangements, and involve a complete revolution in our management. The expense of all this, as compared with our present plan of sending our shepherd with his flock, nets, and stakes, into a field of Turnips, and consuming such a portion as we deem suitable on the ground where they grow, must be very great indeed. By the plan of folding, too, the manure is as equally distributed as by any other, and on light soils the treading of the sheep consolidates the land better and cheaper than any roller yet invented. A good deal is said in the report about the manner in which we keep our farm horses, which is alleged to be more expensive than in various instances quoted both in England and Scotland. Now, I am satisfied that there is a double fallacy here. In the first place, it is assumed that, after deducting the wages of the ploughman from 100*l.* (the sum stated as the annual expense consequent upon the keeping of each pair of horses), the whole balance is expended in their food. Now, I have always understood that, when this estimate is referred to, it is meant to cover not these two items merely, but also the interest upon the price of the horses, harness, and implements, their annual tear and wear, and the risk of loss. When these are taken into account, and allowance made for the altered price of corn and hay, I believe it will be found that our horses are kept very economically. I admit, however, that it is decidedly better to keep our horses on cut Clover, or similar food in summer, than to pasture them, as is very usually done. And then, in the second place, even though it be true that our horses consume more corn than is given in other districts, we get through our work with fewer of them. There is one part of Mr. Rigden's practice which I consider worthy of our imitation. It is stated that he applies the greater part of the manure in autumn to his crops which are to be sown in spring. I have recently been trying this myself, and know that others have done the same, and think that it may be extended with advantage. In connection with this, I wish to notice an error into which Mr. Milne has fallen, in contrasting the quantity of manure applied on these farms, which he describes, with the allowance usually given here. After stating that the manure is applied directly for every crop, and in quantities amounting in the aggregate to 12 tons per acre per annum on the whole farm, it is estimated that our gross allowance is only from 4 to 5 tons, and that we usually manure for the Turnip crop only. Now Mr. Milne has overlooked the fact, that, while we cart our manure only for the Turnip crop, yet as a large portion of that crop is usually consumed on the ground, and as our Grass is depastured, we in reality manure directly for at least three crops in each rotation. Besides, I believe that the quantity applied to the Turnip crop is on our best managed farms greater than is stated. As select farms are used for comparison on the one side, it is but fair that the same thing be done on the other. I had almost omitted to notice that part of the report where a strong statement is made in connection with the total removal of subdivision fences on these English farms. Now, when the smallness of the fields in some parts of England is considered, and the enormous mounds, with all their accompaniments of large timber, brushwood, and weeds, by which they are surrounded, I can quite understand that a wholesale removal of these is a most necessary preliminary to profitable culture; but when fields range from 20 to 50 acres, and the fences consist of a simple line of Thorns, I am not prepared to recommend their removal. While our present system of husbandry is continued, I believe them to be positively beneficial to our live stock, and not injurious to crops, unless where hedegrow trees are present. And now I think I have gone over what appeared most important in this report of Mr. Milne's. I had intended to allude to some other points, but I feel that I have already occupied too much of the time of the meeting, and I am almost ashamed at the undue length of my observations, when I see around me so many of my neighbours, to whom I frankly and cheerfully confess myself inferior both in judgment and experience. (Mr. Wilson then sat down amid great applause.)

Mr. Milne said: The admirable statements made by Mr. Wilson were worth far more than the document which had called them forth.

If his report had done nothing more than elicit these remarks, he thought he had done the Club good service in having been the means of putting them in the possession of so much valuable information. The first part of Mr. Wilson's address had reference to a comparison of the farming of England with the farming of Scotland. It never was his (Mr. Milne's) object to say that the farming of England was superior to that of Scotland in its general results. On the contrary, it would be found that he bore testimony to the superiority of Scotch husbandry, and had suggested some reasons for the higher rents and greater produce obtained by Scotch farmers. While fully concurring with Mr. Wilson that the results of the farm management he had reported on were, in these respects, not greater than had been produced by many Scotch farms, he was yet certain that there were practices pursued on them different from those in common use in Scotland; he had merely described these practices, and he left it for the Berwickshire farmers to determine whether or not they were superior. Mr. Milne then alluded to such parts of these practices as had received the approval of Mr. Wilson in his comments on the report, viz., the mixture of food (by chopping straw to mix with Turnips), autumn manuring, the house-feeding of horses in summer as well as winter, and the box-feeding of cattle. He also referred to those points on which Mr. Wilson had expressed a doubtful or unfavourable opinion. Mr. Wilson's objection to the feeding of sheep in the homestead all the year round, on account of the expense of carting food to them, and manure from them to the fields, applied with equal force to the feeding at the homestead of horses and cattle, in regard to which Mr. Wilson had expressed a favourable opinion. With regard to the removal of the fences from Berwickshire farms, it was a mistake to suppose he had recommended it. With reference to the feeding of cattle, he might mention, that an experienced and intelligent farmer in this district, a member of the Club, had told him a few days ago, that he had fed six oxen in his sheds last summer on cut Clover, and other six of the same age and breed on pasture; and that he was satisfied, notwithstanding the greater expense of the first mentioned plan, that it was much more profitable. It was proper also that it should be known, with reference to Mr. Nisbet's testimony, on the subject of liquid manuring, that he had commenced the practice at first on a small scale; and that having become convinced of its expediency, he had, at his own expense without any assistance from his landlord, erected a stone and lime reservoir, arched over with bricks, and procured all the apparatus connected with it. This showed the strength of his conviction. In conclusion, he was glad to find that the general opinion was, that his pamphlet contained suggestions not altogether without value, and it would give him still further pleasure to find that these suggestions were improved upon and adopted. Having expressed a wish that the chairman would embody his idea of the discussion in a practical resolution, and having again returned thanks for the favourable hearing which he had obtained, Mr. Milne sat down amid great applause.

The following were adopted as the resolutions of the meeting:—"After hearing the above discussion, the meeting are of opinion, that there are several parts of the systems mentioned in Mr. Milne's report which appear to be deserving of a careful but cautious trial, or to be more extensively carried out than they have hitherto been in this district, but that it would not be expedient, or generally practicable, to follow the whole system of high farming therein reported, particularly as it has been shown that equal results have been brought out by the application of much less capital than is stated to be employed in the cases reported. One of the most important of the points contained in the report is the feeding of cattle. The meeting would approve of the more general adoption of feeding in boxes, the trials that have already been made in this district having proved successful, and also because the practice can be adopted with facility and at moderate expense by converting the present buildings into proper accommodation for that purpose. This system has been gradually coming into operation for some years, by the diminishing of the size of the yards, and increasing the size, warmth, and comfort of the sheds, and covering the feeding troughs in the yards. This plan appears to the meeting to be more worthy of adoption, as the cheapest and best means of preserving the manure, both liquid and solid. In the feeding of cattle it seems desirable to induce them to eat a larger quantity of straw than their inclination would lead them to, when it is newly given to them in racks in the usual way; and this can be effectually done by chopping the straw and moistening it with a mucilage prepared by steeping Linseed-meal in cold water, and not to give the full quantity of Turnips the animals would be inclined to eat; by this means they feed more readily, and of course a greater number may be kept. The soiling of cattle in the house in summer, to a certain extent, may also be desirable. It is the opinion of the meeting that nothing has been shown to warrant any essential departure from the present mode of the management of sheep followed in this district. In the feeding of horses, it appears to the meeting that soiling in the house or yards in summer, is preferable to grazing in the field. In reference to the statement in Mr. Milne's report, that horses are kept at a greater expense here than elsewhere, it is the opinion of the meeting that this is not the case, particularly when it is considered that in this district the work of the farm is performed with fewer horses in proportion to the acreage than those instances with which it has been contrasted. The sum of 100*l.* referred to by Mr. Milne as the common estimate of the expense of keeping a pair of horses in Berwickshire, includes not only the wages of the ploughmen and food for the horses, but also the interest of the money expended in the purchase of them, the harness and other implements, which they are to work, the annual cost of keeping them in repairs, and the deterioration in value of the horses, from increase of age, &c. When these items are taken into account, and allowance made for the diminished price of provender, the estimate will be found to be as moderate as any of these cases described by Mr. Milne. A favourable opinion is entertained by the meeting of Mr. Rigden's practice of autumn manuring to a certain extent. The meeting cannot approve of the substitution of wattles for fences of the large and open fields of this district; but in an agricultural point of view, would recommend the diminution of hedgerow trees. The meeting again acknowledge the obligation the Club owes to Mr. Milne for the trouble he has taken in drawing up his report, and for the zeal he has shown in bringing before it the most recent systems for discussion." Dr. Hood, of Whitecross, then proposed a vote of thanks to the Chairman for his conduct in the chair, which was carried with much applause, and the meeting separated.

Newcastle, *Oct.* 5: *The Steam Engine in its Application to Agriculture.*—Mr. Laws alluded to the application of steam-power to the drainage of the soil (whereby, in the more southern counties of the island, thousands of acres have been reclaimed), and to the purposes of irrigation. He then treated of ploughing by steam, and came to the conclusion that team labour was not in any danger of being set aside by the steam-engine. He thought, however, that with light engines and carriages, cheap branch lines, running through our agricultural districts, carrying coal, lime, and manure to the farmer, and transporting corn, green crops, milk, &c., to the towns, would prove remunerative. We give the latter part of the paper in full:—

"Threshing is the principal farming purpose to which steam power is applied in this neighbourhood; and it fortunately happens that its application to barn-work is very simple, and easily accomplished. The steam-engine for such purposes differs but little or none from the usual construction; although certainly what is called the overhead crank engine is the one most generally employed, as it costs less, is simpler in its parts and fittings, and is easier managed than the beam engine, all of which advantages are of consequence to the farmer. The non-condensing is generally preferred to the condensing engine, on account of requiring less water, and for the reasons I have already given in favour of the crank engine. The non-condensing certainly consumes a little more fuel than the condensing engine; yet, upon the whole, it is the most suitable for farm purposes; and if well made and managed, a four-horse power engine will not consume more than 1 cwt. of common coals in the hour; and, during that time [Qu. day,] it will thresh from 25 to 30 bolls of Wheat, according to the yield, and Oats and Barley in proportion. I am of opinion that where steam power has been applied in this district, in the majority of cases the steam-engine and machinery has been erected upon too extensive a scale; for, in its present form and proportions, it is only upon the largest farms that it can be beneficially employed. Here I think our millwrights are wrong; because a well made horse-machine is quite competent to thresh the crop, even upon a moderately large farm; and to erect an engine of six or seven horse-power upon any farm not employing more than three draughts, and not fattening cattle, is preposterous in the extreme. In such a case, even setting aside the expense, the boiler requires as much fuel to raise the steam as to thresh the crop, besides demanding more hands to attend the machinery than can generally be spared upon such a farm. Indeed, the advantage of steam power is very questionable upon any farm not working more than three pairs of horses, unless fattening stock are kept upon it. In such a case a steam-engine is a most valuable acquisition, as it not only threshes the crop, but affords the means of crushing and grinding inferior grain, pulse, &c., and, if required, cutting hay and straw for fodder. The spare steam may also, when needed, be used for cooking or preparing the food for horses and cattle. I am quite aware many of you will consider the latter operations as not of much consequence, but I must also recollect that there are many agriculturists who do attach much value to them, and my object is merely to point out the most suitable means of performing such operations, leaving the adoption of them to such as have the means and will to carry them out. But to proceed—I will pass over a large farm, because, if situated in this cold district, no doubt exists of the superiority of steam in preference to horse-power for threshing; and take the case of one working three pairs of horses, and feeding off in the house a dozen cattle or so, besides dairy stock and pigs. We will also take it for granted that a considerable quantity of inferior and refuse grain, Peas, &c., is used for the fattening of cattle and pigs, besides cut hay and straw for the remainder of the stock. Upon such a farm the engine need not be more than three-horse power. Indeed, if well managed it may be less, and yet perfectly sufficient for the purposes to which we wish to apply it. The threshing machine ought to be simple, and as lightly constructed as is consistent with durability. One rake is sufficient, and is less liable to entangle the straw than when two are used. It ought also to be furnished with elevators for carrying away the threshed corn into a chamber apart from the barn, and immediately above the dressing machine, which ought also to be driven by the engine, along with or separate from the threshing mill, at the pleasure of the manager. The threshing mill is generally driven by gearing, and the subordinate machines by means of straps running on fast and loose pulleys, so as to be set in motion or stopped while the engine is at work. The engine will have a 6-inch cylinder and 18-inch stroke, making about 70 strokes per minute. The boiler will be about 2 feet 9 inches diameter, and 12 feet long; or if used for steaming food for cattle, it may be preferable to use two boilers, each about 9 or 10 feet long, and 2 feet in diameter. They ought to be constructed so as to be used independently of each other; and although they will cost a little more than a single large one, will, in the end, effect a considerable saving in fuel, by obviating the necessity of using the large boiler when wanted for steaming, or when little work is to be done. The engine ought to have what is technically called lap and lead of the slide, so as to use the steam expansively and effect a still further economy in fuel, and the full working pressure ought never to exceed 45 lbs. per square inch. Such a machine will thresh from 16 to 24 bushels in the hour, according to the yield, and will thoroughly separate the corn from the straw, and carry the threshed corn into the clean chamber, there to lie until the threshing is finished. The dressing may then commence, which is better than carrying them on simultaneously, as a better sample can be thus obtained, owing to the greater regularity of the feed and blast. The cost of such a machine and engine, including dressing machine and elevators, ought not to exceed 120*l.* at the outside; the interest upon which, together with the wear and tear, may be taken as amounting to 7*l.* 10*s.* The hands required will be as follows: A man to attend the engine and machinery, another to feed the machine, two girls to hand up the sheaves, and two women to take away the straw; in all, six hands. The expense will be as under: Beginning at 6 o'clock in the morning, allowing half an hour at 8 o'clock for breakfast, and a quarter at 10, finishing at noon; in all five hours and a quarter. The expense will be as under, setting aside interest upon the prime cost:

	s.	*d.*
Man attending engine and machine, at 2*s.* per day ...	1	0
Man feeding machine	1	0
Two girls handing the sheaves, &c., at 6*d.*	0	6
Two women taking away the straw, at 10*d.*	0	10
Fuel for the engine (cwt. per hour), including raising the steam, 7 cwt., and carriage, at 3*s.* 6*d.* per ton	1	3
Oil, tallow, &c., for engine and machinery	0	3
	4	10

The quantity threshed in the above time would be about 90 bushels, costing in round numbers rather more than a half-penny per bushel. The dressing of the corn fit for market, requiring a man and a boy to attend the machinery, take away the sacks, &c. (time required about two hours or two hours and a half, according to circumstances), would stand as under. The engine might be grinding or crushing grain at the same time and with the same hands.

	s.	*d.*
Wages of man attending machinery	0	6
Wages of boy assisting ditto	0	1½
Fuel required for the engine, oil, &c., about	0	3½
	0	11

Or less than a farthing per bushel. Stated cost of threshing and dressing 90 bushels of Wheat, 5*s.* 9*d.*; or under 1*d.* per bushel. Now let us see what the above would cost by horse-power. To thresh the above quantity would require four good horses and driver, besides an extra hand to clear away the threshed corn. The cost of the machinery would be about 60*l.*; the interest upon which, together with the wear and tear, would amount to about 4*l.* 10*s.* in the year. The cost of threshing 100 bushels of Wheat would be as under:

	s.	*d.*
Man to feed in the threshing mill, at 2*s.* per day ...	1	0
Boy to drive, at 8*d.* per day	0	4
Two girls to hand up the sheaves, at 6*d.* per day ...	0	6
Two women to take away the straw, at 10*d.* per day	0	10
Four horses, at 1*s.* 3*d.* each	5	0
Oil, &c.	0	1½
Per 100 bushels	7	9½

To dress this corn as it is generally done, putting it once slowly through the machine, as in the former case, will require as follows:

	s.	*d.*
Man to measure up the corn	0	6
Two women to turn the machine...	0	2½
Woman to hold the sacks	0	2½
Girl to feed in	0	1½
Total cost of threshing and dressing 100 bushels ...	8	10

Showing a balance in favour of steam power of 3*s.* 1*d.*, or in other words effecting a saving of 35 per cent. But, as I have already said, it is not from the threshing that the full benefit of steam power is to be derived; inasmuch as, when applied to crushing and grinding grain for home use, it is found immeasurably superior to horse-power, affording, as it does, the means of using up the whole of the farmer's inferior corn. In fact, since such corn can now scarcely meet with a buyer in the market, the farmer is almost necessitated to use it at home, and afterwards sell it in the form of beef or pork. It may not be amiss to mention that common millstones answer best for the above purpose, when all things are taken into consideration. The same saving in favour of steam *versus* horse power applies equally to the chaff cutter. Whether cutting hay or straw is of real service, would be presumptuous in me to say—as even amongst the gentlemen here assembled scarcely two opinions will be found alike; all that I can do is simply to point out the best and cheapest method of performing such an operation—and I again say the steam-engine will effect it much cheaper than either horse-power or human labour. Amongst

the miscellaneous purposes to which steam can be applied, I have already mentioned the conveyance of liquid manure and the prepsring of food for cattle. In addition to those there are many subordinate machines to which it may form the motive power, such as pumps for supplying the homestead with water, churns, and such like; and, however trivial these may appear to people who have not seen and do not heed them, still they are useful in their proper station, and I am accordingly bound to give them a place in the present paper. I must not omit to state that the spare steam from the engine can be most economically used for heating purposes, and for drying corn.—Mr. William Stephenson gave the Club the benefit of his experience. It was 18 years, he said, since he first put up his steam engine, which is of eight horse-power; and all its power was required to thresh his corn. He put up a steam-engine because his horses were so fatigued after threshing that they could do no more work that day. He found no difficulty in the working of the engine; for any farm-servant of ordinary intelligence could learn how to manage it in a week. The cost of keeping it in order had not exceeded 20*s.* a year during all the time that it had been in use. The original cost was 150*l.* The saving effected he estimated at 50 per cent. He was, he believed, from 80*l.* to 100*l.* annually into pocket by his engine. The difference between a horse threshing-machine and steam, he estimated at one-half in favour of the latter. He used it also for various other purposes, such as crushing corn, &c. But no farmer, not having more than three pair of horses, would be justified in putting up an engine, but if a tenant had 200 acres in tillage it would answer his purpose to have an engine; although, certainly, these were not tempting times, the prospects of agriculture being gloomy; but it was to be hoped that they would improve. His friend Mr. Burnett, who had used an engine for 20 years, applying it to all purposes, could speak to the value of steam power.—Mr. Nicholas Burnett said he found great benefit from the use of his engine. He applied it to various purposes. When going it was employed to turn the winnowing machine. It did everything, in fact, that it could be made to do. It did not plough, certainly; but notwithstanding what his young friend had said, he hoped the time was coming when the land would partly be ploughed by steam. He remembered, 14 years ago, going to see a steam-engine plough Lucker Moss. It did not answer, certainly; and the engine was there yet, sticking in the bog, and, while all the world was on the move, it was making no progress; being bound to the soil, he supposed, by some sort of mortgage. It was, however, an unfortunate locality for such an experiment, the land being mid-leg deep in moss.

Miscellaneous.

The Birmingham Cattle Show.—The second annual exhibition of fat cattle, sheep, pigs, and poultry, will be held at Birmingham on the 10th, 11th, 12th, and 13th of December next. It is announced by advertisement in another column that the entries for the several classes close on the 16th of November, and intending exhibitors are invited to make immediate application for the necessary certificates, stating, at the same time, the nature and number of the stock for which they are required. The show will, this year, be held in the Bingley Exhibition Hall—a large and handsome building, now nearly completed, in Broad-street, and which will also be available for other exhibitions. The building covers upwards of an acre of land, and will afford very complete accommodation for the stock. In this respect, indeed, the promoters of the Birmingham Show will probably now possess unequalled advantages. His Royal Highness the Prince Albert is the patron, and a most liberal supporter of the Exhibition, having last year forwarded a donation of 50*l.*, and entered stock for competition in several classes. Lord Hatherton is the president, the mayor of Birmingham being vice-president; and the co-operation of the principal landowners in the Midland Counties has been obtained. We are informed that the show of stock this year will exceed that of 1849, both in number and quality. The poultry show is also attracting very great attention, and will, it is expected, be the largest and most interesting ever held in England.

Farming without Ploughing or Fallowing.—Within the last few days I made a small tour through a portion of Essex, and on my way passed the Colnes. The Wheats were looking pretty well, and I doubt not will produce an average crop, although the late weather has considerably laid some of the heavier sorts. I was, however, Sir, much pleased with a piece of experimental farming that has now been carried on for seven years by Mr. J. D. Piper, of Colne Engaine. This gentleman long since had a conviction that Wheat would flourish best in solid soils, and that on ground which was comparatively undisturbed, this crop might be grown for many successive years without fallowing. He determined to try the experiment, and has now grown on the same piece of land six *successive* crops of *Wheat* without on any occasion allowing a plough to turn over a single sod. The soil, in fact, has not been disturbed by plough, spade, or any other implement; the only thing used has been a hoe, and this has not been employed to loosen the soil, but merely to remove the surface weeds. The course has been to reap the Wheat with a short stubble, and to let them remain in the ground; to hoe off the surface weeds and burn them; and then to dibble in seed between the old stubbles to the extent of a peck and a half per acre, the rows being one foot apart. The average product of the last five years' Wheat crops under this system of farming has been *ten coombs and two bushels per acre.* At the present moment there is standing upon this same piece of undisturbed land, the sixth successive crop of Wheat, and truly it is a noble piece of corn, the straw being remarkably good, and the ears very large, full, and heavy—the crop will be at least 11 coombs per acre. [There was only 10 coombs and one bushel this year. J. D. Piper.] Many farmers would suppose that the land must be very foul; this, however, is not the case—there is scarcely a weed to be seen. I ascertained that Mr. Piper expended in labour about 4*l.* 10*s.* per acre, but notwithstanding this heavy outlay, and all other charges of rent, tithe, a top dressing of 60 bushels of soot per acre, &c., &c., the clear profit on an acre amounted to *six guineas*—not a bad return, considering that the corn was sold in free trade times, for I am now alluding to the crop of 1849. These facts may seem strange; they are, however, true, and any one who doubts them may visit the spot and have them abundantly demonstrated.—*Agricola, in the Ipswich Express.*

Notices to Correspondents.

Agricultural Engineering: *R Abbott.* Probably as good a way as you can adopt would be to write to some of those gentlemen whose papers on the subject of agricultural buildings have been considered worthy of publication in their journal by the English Agricultural Society.

Analysis: *J N M.* We do not know the "Manual of Qualitative Analysis" by R. Galloway.

Capital: *E T.* We have no doubt that the "10*l.*" authorities are right, and that those who would spend 500*l.* only on 110 acres of land—90 acres being arable—would be likely to lose their money. If a specification of the capital be required, you must be content to wait for a week or two.

Chicory: *Innishannon.* On a deeply-tilled, well manured, and clean, adhesive loam,, with a good surface tilth, sow 4 lbs. of seed per acre, in rows 12 inches apart, about the third week of May. Clean and hoe the land in summer. Pull in October; clean the roots, chop them up into dice, dry them in a malt kiln, and sell them.

Mr. Neilson's Railway: *X Y Z.* We have made inquiries.

Poultry Disease: *S X* should read the "Miscellanies" and "Notices to Correspondents," which have been lately given on this subject. We can add nothing further. We have administered a teaspoon-full of cod-liver oil, with a pinch of Cayenne in it, with apparent benefit; but cannot prescribe it as an infallible specific. *Combs: X X X.* By "flat" is meant *single,* in contradistinction to double, or *rose* combs—a difference which cannot long perplex our correspondent. Sketch No. 1 sent is an upright single; No. 2 is a drooping single comb. Sometimes when a bird is moulting, or out of health, an upright single comb will for a time become drooping and flaccid. In Spanish fowls, the cocks mostly have it upright, and the hens drooping; both have what we call flat combs. *Turkeys: L B S.* The best food for fattening them is Barley-meal mixed stiff with *milk,* if it can be spared; if not, with water. Last year's birds are excellent for table, if properly fed, kept, and cooked. If the calves' house is very dark and close, it will not do to fat turkeys in; their pen should be airy, as well as dry and quiet. What a pity it is that ladies and gentlemen making these inquiries do not confide their real names, instead of bewildering us in a medley alphabet of initials or foolish pseudonyms. *D.*

Straw: *J B H.* An ox will eat 8 or 10 lbs. of straw chaff daily, supposing him to have abundance of Turnips.—A pig of 12 score will eat 6 or 7 lbs. of meal daily, in addition to boiled Turnips.

Misc.: *Samuel Woolfield.* Will you favour us with your address. It was omitted in the letter.

Markets.

COVENT GARDEN, Nov. 9.

Vegetables are abundantly supplied, and Hothouse Grapes and Pine-apples are plentiful. Peaches are over. Oranges and Lemons though scarcer are sufficient for the demand. Plums and Pears are still received from the Continent. Filberts are dearer. Carrots and Turnips are good in quality, and so are Potatoes. Lettuces and other salading are sufficient for the demand. Mushrooms are dearer. Cut Flowers consist of Heaths, Pelargoniums, Camellias, Fuchsias, Mignonette, Verbenas, Dahlias, Bignonia venusta, Stephanotis floribunda, Heliotropes, and Roses.

FRUITS.

Pine-apples, per lb., 4s to 6s	Lemons, per doz., 1s to 2s
Grapes, hothouse, p. lb., 2s to 5s	Pommegranates, each, 3d to 6d
— Portugal, p. lb., 8d to 1s	Almonds, per peck, 6s
Plums, p. punnet, 1s to 2s 6d	— sweet, per lb., 2s to 3s
Pears, per doz., 1s to 3s	Walnuts, p. 100, 1s to 2s
— per half sieve, 6s to 15s	— p. bush., 12s to 24s
Apples, dessert, p. bsh, 3s 6d to 8s	Nuts, Barcelona, p. bush., 20s to 22s
— kitchen, do., 3s 6d to 6s	— Brazil, p. bsh., 12s to 14s
Oranges, per doz., 9d to 2s	Filberts, per 100 lbs., 60s to 65s
— per 100, 6s to 10s	

VEGETABLES.

Brussels Sprouts, per hf. sieve, 1s 6d to 2s	Shallots, per lb., 6d to 8d
Cabbages, per doz., 6d to 1s	Garlic, per lb., 4d to 8d
Greens, p. doz. bun., 1s 6d to 2s 6d	Artichokes, Jerusalem, p. half sieve, 1s 6d to 2s
Cauliflowers, p. doz., 1s to 4s	Lettuce, Cabbage, p. score, 1s
Sorrel, p. hf. sieve, 6d to 9d	— Cos, p. score, 6d to 1s 6d
Potatoes, per ton, 50s to 80s	Endive, per score, 1s to 1s 6d
— per cwt., 2s 6d to 4s	Small Salads, p. punn, 2d to 3d
— per bush., 1s 6d to 2s 6d	Horse Radish, p. bdl., 1s to 4s
Turnips, p. 12 bundles, 1s to 2s	Mushrooms, p. pot., 1s to 2s 6d
Red Beet, per doz., 6d to 1s	— per bushel, 5s to 7s
Cucumbers, each, 6d to 1s	Fennel, per bunch, 2d to 3d
Radishes, per doz., 1s to 1s 6d	Savory, per bunch, 2d to 3d
Leeks, per bunch, 1d to 2d	Thyme, per bunch, 2d to 3d
Celery, p. bundle, 9d to 1s 6d	Parsley, p. doz. bun., 1s to 2s
Carrots, per doz., 2s to 5s	— Roots, p. bdle., 9d to 1s
Tomatoes, p. punnet, 6d to 1s	Marjoram, per bunch, 2d to 4d
Spinach, p. half sieve, 6d to 1s	Mint, per bunch, 2d
Onions, p. bunch, 4d to 6d	Watercress, p. 12 bunch., 6d to 9d
— Spanish, p. doz., 1s 6d to 4s	

HAY.—Per Load of 36 Trusses.

SMITHFIELD, Nov. 7.

Prime Meadow Hay	72s to 80s		Clover	65s to 80s	
Inferior ditto... ...	63	70	Second cut	63	70
Rowen	60	65	Straw	23	27
New Hay	—	—		J. Cooper.	

Supply short.

CUMBERLAND MARKET, Nov. 7.

Prime Meadow Hay	70s to 76s		Inferior	65s to 72s	
Inferior ditto... ...	50	65	New Clover	—	—
New Hay	—	—	Straw	24	28
Old Clover	78	84		Joshua Baker.	

WHITECHAPEL, Nov. 7.

Fine Old Hay ...	68s to 72s		New Clover	75s to 80s	
Inferior ditto ...	—	—	Inferior ditto... ...	—	—
New Hay	65	70	Straw	22	25
Old Clover	80	84			

SMITHFIELD, Monday, Nov. 4.

Good Beasts are very scarce, and consequently readily disposed of, in some instances rather above our top quotations; but the trade generally is very bad, and inferior qualities are sold as low as ever. The number of Sheep is not large, but it far exceeds the demand; several remain unsold, and many realise very low prices. Trade is a little more brisk for Calves, the number being small. Our foreign supply consists of 1109 Beasts, 5710 Sheep, 88 Calves, and 40 Pigs.

Per st. of 8 lbs.—	s	d	s	d
Best Scots, Herefords, &c. ...	3	6 to 3	8	
Best Short-horns	3	4 — 3	6	
2d quality Beasts	2	4 — 2	10	
Best Downs and Half-breds ...	3	8 — 4	0	
Ditto Shorn	—	...		

Per st. of 8 lbs.—	s	d	s	d
Best Long-wools .	3	2 to 3	4	
Ditto Shorn	—	...		
Ewes & 2d quality	2	8 — 3	0	
Ditto Shorn	—	...		
Lambs	—	...		
Calves	2	8 — 3	8	
Pigs	2	8 — 4	0	

Beasts, 4304; Sheep and Lambs, 28,080; Calves, 118; Pigs, 350.

Friday, Nov. 8.

The number of Beasts is a fair average, but the qualities continue middling. There is a demand for the choicest kinds, but only very few of other kinds are disposed of. Our quotations remain unaltered from Monday. The supply of Sheep is very small, the demand is equally so, consequently prices are no better. Trade is cheerful for Calves. We have from Germany and Holland 332 Beasts, 490 Sheep, 110 Calves, and 85 Pigs. 300 Beasts from the midland, and 86 Milch Cows from the home counties.

Best Scots, Herefords, &c. ...	3	6 to 3	8
Best Short-horns	3	4 — 3	6
2d quality Beasts	2	4 — 2	10
Best Downs and Half-breds ...	3	8 — 4	0
Ditto Shorn	—	...	

Best Long-wools .	3	2 to 3	4
Ditto Shorn	—	...	
Ewes & 2d quality	2	8 — 3	0
Ditto Shorn	—	...	
Lambs	—	...	
Calves	2	8 — 3	8
Pigs	2	8 — 3	8

COAL MARKET.—Friday, Nov. 8.

Holywell, 15s. 6d.; Eden Main, 15s.; Tanfield Moor, 12s. 9d.; Wallsend Riddell, 14s. 6d.; Wallsend Haswell, 16s. 3d.; Wallsend Stewart's, 16s.: Wallsend Tees, 16s.—Ships at market, 171.

POTATOES.—Southwark, Nov. 4.

The Committee report that the arrivals from Yorkshire and Scotland, though not large are equal to the demand, which is dull, and it is with difficulty last week's prices are maintained. We have had very few foreign Potatoes this season, and none the last week. Present prices:—York Regents, per ton, 70s. to 80s.; Perth and Montrose do., 60s. to 65s; Fife do., 50s. to 60s.; Wisbeach and Lincolnshire do., 60s. to 65s.

MARK LANE.

Monday, Nov. 4.—The supply of English Wheat by landcarriage samples from Essex, Kent, and Suffolk, this morning was small, and the condition much worse than of late; the whole, however, was disposed of on the terms of this day se'nnight. Foreign, of which the arrivals continue considerable, met with a retail inquiry at our quotations.—Barley of all kinds fully supports the rates of last week.—In the value of Beans we observe no alteration.—Foreign white Peas must be written 2s. per qr. lower; other descriptions are unaltered in price.—The Oat trade is firm, with the exception of New Irish, which are difficult of disposal.—Foreign and country Flour continues to be held at late rates, but the sale is rather heavy.

Per Imperial Quarter.	s.	s.		s.	s.
Wheat, Essex, Kent, & Suffolk ... White	43—46		Red	38—45	
— — fine selected runs ... ditto	43—48		Red	—42	
— — Talavera	46—52				
— Norfolk, Lincoln, & York... White	—		Red	—	
— Foreign	34—50				
Barley, grind. & distil., 22s to 23s... Chev.	26—29		Malting	24—26	
— Foreign.... Grinding and distilling	17—23		Malting	20—24	
Oats, Essex and Suffolk	—				
— Scotch and Lincolnshire ... Potato	20—23		Feed ...	19—21	
— Irish ..... Potato	16—20		Feed ...	14—17	
— Foreign..... Poland and Brew	18—22		Feed ...	15—18	
Rye	26—28		Foreign	—	
Rye-meal, foreign..... per ton	—				
Beans, Mazagan ..... 25s to 27s..... Tick	26—28		Harrow	26—28	
— Pigeon ..... 27s — 32s ... Winds	—		Longpod	—	
— Foreign ..... Small	24—34		Egyptian	22—23	
Peas, white, Essex and Kent..... Boilers	26—28		Suffolk...	27—30	
— Maple.... ,30s to 31s ..... Grey	26—28		Foreign	25—32	
Maize ..... White	25—28		Yellow ...	24—28	
Flour, best marks, delivered... per sack	36—40				
— Suffolk ..... ditto	29—36		Norfolk	29—36	
— Foreign ..... per barrel	18—24		Per sack	29—34	

Arrivals in the Port of London last Week.

Flour, 17397 sks	Wheat.	Barley.	Malt.	Oats.	Beans.	Peas
— — brls	Qrs.	Qrs.	Qrs.	Qrs.	Qrs.	Qrs.
English	3188	3399	3704	524	599	781
Irish.....	—	—	135	14584	—	—
Foreign	22278	9033	—	9639	3612	8538

day have been moderate, but we continue well supplied with

Friday, Nov. 8.—The arrivals of grain and Flour since Monday have been small, but this morning's market being badly attended, business in Wheat was exceedingly limited, prices of either English or foreign are consequently nominal. Barley, Beans, and Peas maintain our quotations.—Oats, particularly fine old, are the turn dearer.—Flour is held firmly, but sales are restricted. Some business has been done in floating cargoes of Odessa Wheat, at a decline of 1s. per qr., say 35s. 6d. to 36s. per pr. Galatz Maize brought 31s. per qr.

Arrivals this week.

	Wheat. Qrs.	Barley. Qrs.	Oats. Qrs.	Flour.
English ...	1580	1430	1280	790 sacks
Irish	—	—	7750	
Foreign ...	2210	—	3990	— brls.

Imperial Averages.	Wheat.	Barley.	Oats.	Rye.	Beans.	Peas.
Sept. 28.....	42*s* 8*d*	24*s* 8*d*	16*s* 10*d*	26*s* 4*d*	29*s* 5*d*	30*s* 0*d*
Oct. 5	42 2	24 5	16 8	26 7	29 6	31 3
— 12.....	41 2	24 2	17 1	25 8	29 6	29 7
— 19.....	39 10	24 2	16 7	26 7	29 7	29 5
— 26.....	39 9	24 0	16 8	25 1	28 10	30 6
Nov. 2.....	40 2	24 1	17 3	23 6	29 1	29 2
Aggreg. Aver.	40 11	24 3	16 10	25 8	29 4	30 0
Duties on Foreign Grain	1 0	1 0	1 0	1 0	1 0	1 0

Fluctuations in the last six weeks' Corn Averages.

Prices.	Sept. 28.	Oct. 5.	Oct. 12.	Oct. 19.	Oct. 26.	Nov. 2.
42*s* 8*d*	—	...	...	...	...	...
42 2	...		...	...	...	...
41 2	...	...		...	...	...
40 2	...	...	...		...	...
39 10	...	...	...	...		...
39 9	...	...	...	...	...	

SEEDS.—Nov. 4.

Canary, per qr.	46s to 50s	Coriander, per cwt.	14s — 21s
Caraway, per cwt.	29 — 33	Mustard, white, p. bush.	4 — 6
Hempseed, per qr.	34 — 35	— brown do.	7 — 10
Linseed, foreign, do.	37 — 44	Rape, per last	24*l.*—26*l.*
Clover, red, p. cwt.	— —	Cakes, Lindseed, p. 1000	8*l.* 15*s*
— — foreign, do.	— —	— — foreign, p. ton	6*l.* 15*s*
— white, do.	— —	— Rape, foreign, do.	3*l.* 17*s*
— — foreign, do.	— —	Tares, per bush.	3*s* 0*d*—5*s* 6*d*

Liverpool, Friday, Nov. 1.—At our market this morning there was a very thin attendance, and we had a slow demand for Wheat, but there was no alteration made in the value of old and new; the latter is still scarce. Flour finds buyers in quantity, and prices are supported; any pressing seller is quickly relieved at a fair value. Oats and Oatmeal were each rather dearer. Barley, Beans, and Peas supported late rates. Indian Corn was quiet to-day, but it would be difficult to buy at less money than on Tuesday; the top value of the best American yellow is 30s. per 480 lbs.——Tuesday, Nov. 5.—Having an abundant show of Wheat at this day's market, and the millers extremely inactive, we experienced a very slow sale for all descriptions of English, Irish, and foreign, and if anything varied prices are slightly easier; sellers in general, however, refusing to accept lower terms, we are scarcely justified in reducing our quotations below the currency of Tuesday last. Flour continued to command a lively and extensive sale, at the rates of this day se'nnight. Malting Barley and Malt receded 1s. per qr., grinding Barley remained unvaried, Beans and Peas, meeting little inquiry, were rather lower in value, and Oats and Oatmeal, upon a moderate demand, fully supported previous rates. Indian Corn, attracting less attention than of late, has declined 6d. per qr.

GLASS FOR CONSERVATORIES, GREENHOUSES, FRAMES, &c.

JAMES PHILLIPS AND Co., 116, Bishopsgate-street Without, are supplying SHEET GLASS, packed in 100 feet boxes, at the following *Reduced Prices*. A reduction on 1000 feet.

SMALL SQUARES.

Sizes.—Inches.	Per 100 feet.—£.	s.	d.
6 by 4, 6½ by 4½, 6 by 5, 6 by 5½	0	13	0
7 by 4, 7 by 4½, 8½ by 4, 8 by 4½, and not exceeding 8 by 6	0	15	0
9 by 7, 9½ by 7½, 10 by 8, 10 by 9, 10 by 10	0	17	6
12 by 9, 12 by 10, 14 by 12, 14 by 10, 16 by 10	1	0	0

LARGER SIZES, not exceeding 40 inches long.

16 oz. from 3*d.* to 3½*d.* per square foot, according to size.
21 oz. „ 3½*d.* 5*d.* „ „
26 oz. „ 3½*d.* 7½*d.* „ „

Packed in Crates of about 250 feet each, and in sizes of about 40 in. by 30.

HARTLEY'S PATENT ROUGH PLATE, packed in boxes of 50 feet each:

6 by 4 and 6½ by 4½ ... 12*s.* 0*d.* | 8 by 6 and 8½ by 6½ ... 15*s.* 0*d.*
7 by 5 „ 7½ by 5½ ... 13 6 | 9 by 7 „ 10 by 8 ... 16 6

GLASS TILES.

	Rough Plate.		Sheet.	
⅛ in. thick, each ...	0*s.* 10*d.*	16 oz., each	0*s.*	6*d.*
¼ „ „ ...	1 3	21 „	0	8
⅜ „ „ ...	1 7	26 „	0	10
½ „ „ ...	2 0	32 „	1	0

GLASS SLATES.

Size.	ROUGH PLATE. ⅜ inch thick	½ inch thick.	⅝ inch thick.	¾ inch thick.	SHEET. 16 oz.	21 oz.	26 oz.	32 oz.
	s. *d.*	*s.* *d.*	*s.* *d.*	*s.* *d.*	*s.* *d.*	*s.* *d.*	*s.* *d.*	*s.* *d.*
24 by 12	1 6	2 0	2 8	5 0	0 11	1 3	1 9	2 0
20 by 14	1 5½	1 11	2 7	4 10	0 10½	1 2½	1 8½	1 11
22 by 12	1 5	1 10	2 6	4 8	0 10	1 2	1 8	1 10
20 by 10	1 1½	1 6	2 0	3 8	0 8½	1 0	1 5	1 6

ROUGH PLATE GLASS.

	¼ in.	⅜ in.	½ in.	¾ in.	1 in.	1¼	1½
	s. *d.*	*s.* *d.*	*s.* *d.*	*s.* *d.*	*s.* *d.*	*s.* *d.*	*s.* *d.*
Not above 15 inches long.....	0 11	1 0	1 6	3 0	4 6	5 3	6 0
Above 15 in. and not above 35	1 1	1 2	1 8	3 6	5 3	6 0	7 0
„ 35 „ „ 75	1 3	1 4	2 0	4 0	6 0	7 0	8 0

HALLIMAN'S REGISTERED FRUIT PROTECTORS, from 6*d.* to 1*s.* each.
MILK PANS, from 2*s.* to 6*s.* each.
PROPAGATING AND BEE GLASSES, from 2*d.* each.
WASP TRAPS, 3*s.* 6*d.* per dozen.
LACTOMETERS, for trying the quality of Milk, 7*s.* 6*d.* each.
STANDS, for Pianofortes, 1*s.* each.

Glass Shades for Ornaments. Parian Marble. Wax and Alabaster Ornaments. Lamp Shades and Glasses. Patent and British Plate. Ornamental and Stained Glass; and every article in the Trade.

N.B. All packages charged, but full price allowed if returned free of expense.

GLASS FOR CONSERVATORIES, GREENHOUSES, PIT-FRAMES; AND PLATE GLASS FOR DWELLINGS.

THOMAS MILLINGTON begs to hand the sizes of a large quantity of SHEET GLASS, packed in 100 feet boxes of various sizes. In all cases, unless the whole box is taken of either size, extra must be charged as specified.

13*s.* 6*d.* per box; or 2*d.* per foot if less than one box be taken:

6 inches by 4 inches.		6½ inches by 5 inches	
6 „ by 4½ „		6½ „ by 5½ „	
6½ „ by 4 „		6 „ by 6 „	
6½ „ by 4½ „		6½ „ by 6 „	
6 „ by 5 „		6½ „ by 6½ „	
6 „ by 5½ „			

15*s.* per box; or 2½*d.* per foot if less than one box be taken:

7 inches by 4 inches		7½ inches by 5½ inches	
7 „ by 4½ „		7 „ by 6½ „	
7 „ by 5 „		7½ „ by 6 „	
7½ „ by 5 „		7½ „ by 6½ „	
7 „ by 5½ „		8 „ by 6 „	

17*s.* 6*d.* per box; or 2½*d.* per foot if less than one box be taken:

9 inches by 7 inches		9 inches by 9 inches	
8 „ by 8 „		10 „ by 9 „	
9 „ by 8 „		10 „ by 10 „	

20*s.* per box; or 2¾*d.* per foot if less than one box be taken:

11 inches by 8 inches		13 inches by 9 inches	
12 „ by 8 „		12 „ by 10 „	
12 „ by 9 „		14 „ by 10 „	

Boxes charged 1*s.* each extra.

T. M.'s Stock of small Glass is so large, that he thinks he can pledge himself to execute orders to any extent.

Glass cut to any other size required, in either 16 oz., 21 oz., 26 oz., or 32 oz.

PATENT ROUGH PLATE GLASS.

T. MILLINGTON'S Patent Rough Plate Cast, perfectly flat and uniform, the best manufactured. A small sample will be sent, upon application, to prove it.

CUT TO ORDER IN PANES.

	⅜ in. thick.	½ in. thick.
Not above 15 inches long	0*s.* 6*d.*	0*s.* 11*d.*
Above 15 inches and not above 35 ...	0 8	1 1
„ 35 „ „ 50 ...	0 9½	1 3
„ 50 „ „ 75 ...	1 0	1 3
„ 75 „ „ 100 ...	1 3	1 4
100 inches and above	...	1 6

MILK PANS 2*s.* to 6*s.* each, Hand-frames, Tiles, and Slates; Propagating and Bee Glasses from 2*d.* each; Cucumber Tubes, 1*d.* per inch; Peach Glasses, 10*d.* each; Wasp Traps, 3*s.* per dozen; Pastry Slabs, Glass Plates, in wooden frames, for butter and pastry, &c.; Hyacinth Glasses and Dishes, Shades for Ornaments, Fish Globes, Plate and Window Glass of every description, and Lamp Shades. Lactometers for trying the quality of Milk, 4 tubes, 7*s.* 6*d.*; 6 tubes, 10*s.* Self-registering Thermometers for Greenhouses, Horticultural Glass, &c.

THOMAS MILLINGTON, GLASS, COLOUR, AND PAINT MANUFACTURER, 87, BISHOPSGATE-STREET WITHOUT, LONDON.

GLASS FOR CONSERVATORIES, &c.

HETLEY AND Co. supply 16-oz. Sheet Glass of British Manufacture, at prices varying from 2*d.* to 3*d.* per square foot, for the usual sizes required, many thousand feet of which are kept ready packed for immediate delivery. Lists of Prices and estimates forwarded on application, for PATENT ROUGH PLATE, THICK CROWN GLASS, GLASS TILES and SLATES, WATER-PIPES, PROPAGATING GLASSES, GLASS MILK PANS, PATENT PLATE-GLASS, ORNAMENTAL WINDOW GLASS, and GLASS SHADES, to JAMES HETLEY and Co., 35, Soho-square, London.

See the *Gardeners' Chronicle* first Saturday in each month.

GLASS WATER PIPES.

MESSRS. COATHUPES AND Co., GLASS MANUFACTURERS, Bristol and Nailsea, Somerset, continue to supply GLASS PIPES for the conveyance of water, &c., in lengths of from 3 to 7 feet, and from ½ an inch to 4-inch bores; they provide also the necessary joints, which enable them to stand very considerable pressure.

A LARGE STOCK OF SILVERED PLATE GLASS

for Mirrors, also Crown and Sheet Glass in Crates and Squares for Dwelling and Hothouse Glazing, at WILLIAM PERKS Junior, and Co.'s, Glass and Lead Warehouse, 52, Dale-end, Birmingham.

DEPOT FOR HARTLEY'S PATENT ROUGH PLATE GLASS.

MITCHELL'S MINERAL BLACK PAINT.

—This antiseptic Paint is intended for Park Fencing, and for all farming purposes; it is particularly adapted, by its prevention of dry rot in timber and repellance of damp, for Barns, Stables, Outhouses, Weather Boarding, Hop-poles; also for Carts, Waggons, &c., particularly the Wheels, and for Iron Hurdles, Iron Railings, and all Wood or Iron Work in exposed situations. For Brick Walls it is highly serviceable as a preventive of damp, and also for Walls intended for Fruit Trees, as, besides preserving the Wall, it increases the heat in all situations exposed to the sun, and prevents the harbouring of insects. It is also an excellent covering for Canvas, or Cart Tilts, Roofing, &c. Sold in casks containing from 1 cwt. to any quantity, at 17*s.* 6*d.* per cwt., quite ready for use, by

JAMES PHILLIPS and Co. (the sole agents), 116, Bishopsgate-street Without, London.

DIXON'S NEW (REGISTERED) VENTILATOR.

—This Ventilator is much neater and more simple than any hitherto invented, can be made of any shape or size, and can be as easily cleaned as any other part of a window. It does not interfere with the blinds, or opening of the windows, and if accidentally broken can be repaired by any glazier at the cost of a single pane of glass. Models can be seen, and every information obtained, by applying to the London agents, JAMES PHILLIPS and Co., 116, Bishopsgate-street, Without.

Dixon v. *Bessell.—Alderman Wilson said, "It was a very clever invention, and he thought Mr. Dixon ought at least to have seven years' protection instead of three," and fined the defendant 60l., and 10l. costs, for an infringement of the Registered design.—Oct.* 1, 1850.

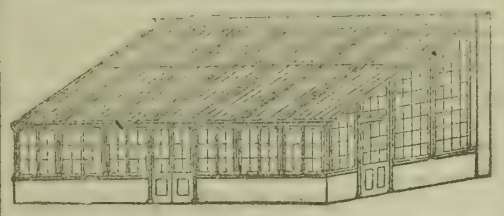
GREENHOUSES.

HENRY FREEMAN, HOTHOUSE BUILDER and HOT WATER APPARATUS MANUFACTURER, Triangle, Hackney, London, begs to solicit the attention of the gentry to his low prices for cash: Good substantial built Greenhouses, fixed complete, 42 feet long, 13 feet wide, 90*l.*: 21 feet long, 13 feet wide, 50*l.*; 12½ feet long, 10 feet wide, 30*l.* A large assortment of Conservatories, Hothouses, Pits, Melon and Cucumber Boxes, iron Handlights, Summer-houses, Seats, &c. Estimates for any branch in the above line, either in wood or iron, or for park fencing.

GREENHOUSE AND CONSERVATORY BUILDING ESTABLISHMENT, HOT-WATER APPARATUS MANUFACTORY, KENSALL-GREEN, HARROW-ROAD, LONDON.

JOHN TAYLOR begs most respectfully to call the attention of the Nobility, Gentry, and Gardeners, to the very superior manner in which he erects all kinds of Greenhouses, Conservatories, Forcing Pits, &c., and all other buildings for Horticultural purposes, combining all the most modern improvements with elegance and utility. His manner of heating Horticultural Buildings, Churches, Chapels, Public Buildings, Entrance Halls, &c., has received the greatest approbation from the Nobility and Gentry by whom he has been extensively engaged.

HORTICULTURAL BUILDING AND HEATING BY HOT WATER.
WARRANTED BEST MATERIALS AND WORKMANSHIP AT THE LOWEST POSSIBLE PRICES.



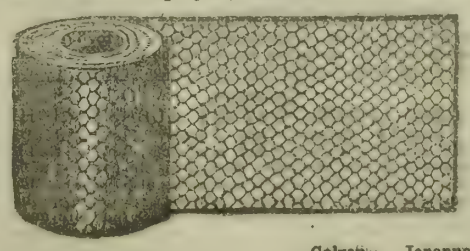
J. WEEKS AND CO., King's-road, Chelsea, Horticultural Architects, Hothouse Builders, and Hot-water Apparatus Manufacturers. The Nobility and Gentry about to erect Horticultural buildings, or fix Hot-water Apparatus, will find at our Hothouse Works, King's-road, Chelsea, an extensive variety of Hothouses, Greenhouses, Conservatories, Pits, &c., erected, and in full operation, combining all modern improvements, so that a lady or gentleman can select the description of House best adapted for every required purpose.

THE HOT-WATER APPARATUSES (which are efficient and economical), are particularly worthy of attention, and are erected in all the Houses, Pits, &c., for both Top and Bottom Heat, and in constant operation in the Stoves.

The splendid collection of Stove and Greenhouse Plants are in the highest state of cultivation, and for sale at very low prices. Also a fine collection of Strong Grape Vines in pots from eyes, all the best sorts.

Plans, Models, and Estimates of Horticultural Buildings, also Catalogues of Plants, Vines, Seeds, &c., forwarded on application.—J. WEEKS and Co., King's-road, Chelsea, London.

GALVANISED WIRE GAME NETTING.—7*d.* per yard, 2 feet wide.

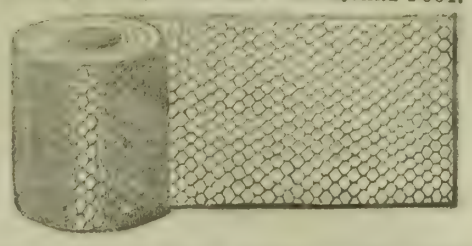


	Galvanised.	Japanned Iron.
2-inch mesh, light, 24-inch wide ...	7*d.* per yd.	5*d.* per yd.
2-inch „ strong „ ...	9 „	6½ „
2-inch „ extra strong „ ...	12 „	9 „
1½-inch „ light „ ...	8 „	6 „
1½-inch „ strong „ ...	10 „	8 „
1½-inch „ extra strong „ ...	14 „	11 „

All the above can be made any width at proportionate prices. If the upper half is a coarse mesh, it will reduce the price one-fourth. Galvanised sparrow-proof netting for pheasantries, 3*d.* per square foot. Patterns forwarded post-free.

Manufactured by BARNARD and BISHOP, Market-place, Norwich, and delivered free of expense in London, Peterborough, Hull, or Newcastle.

WIRE NETTING, ONE PENNY PER SQUARE FOOT.



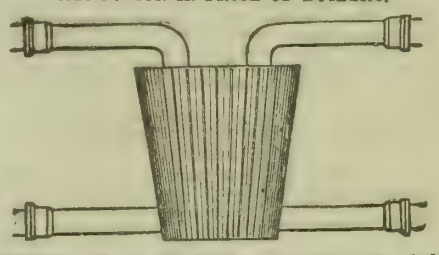
GALVANISED WIRE NETTING, TWO-PENCE PER SQUARE FOOT.—This article requires no painting, the atmosphere not having the slightest action on it. It was exhibited at the late Metropolitan Cattle Show, and was highly eulogised both for its utility and pretty appearance, and acknowledged to be the cheapest and best article ever produced. It forms a light and durable fence against the depredations of hares, rabbits, and cats, and is peculiarly adapted for Aviaries, Pheasantries, and to secure poultry; and by the galvanised requiring no paint, it answers admirably for training all kinds of creeping plants. Large quantities always kept in stock, of 18, 24, 36, and 48 inches wide; it can, however, be made to any dimensions desired. Patterns forwarded free of expense.

12 inches wide	3*d.* per yard.	30 inches wide	7½*d.* per yard.
18 „ „	4½*d.* „	36 „ „	9*d.* „
14 „ „	6*d.* „	48 „ „	1*s.* „

Galvanised do., 1*d.* per foot extra.

Extra strong Imperial Wire Sheep Netting, 3 feet, 1*s.* 6*d.* per running yard; if galvanised, 2*s.* Also every description of Wire Nursery and Fireguards. Wire House-lanterns and Shades, Fly-proof Dish Covers, Meat Safes, &c.; Window Blinds, 1*s.* 10*d.* per square foot, with bolts complete, in mahogany frames; Gothic Garden Bordering, 6*d.* per running foot; Flower Trainers, from 3*d.* each; Garden Arches, 20*s.* each. Flower Stands, from 3*s.* 9*d.* each; Galvanised Tying Wire for plants and trees, Dahlia Rods, and every description of Wire-work; Weaving, for the use of paper-makers, millers, &c.—At the Manufactory of THOMAS HENRY FOX, 44, Skinner-street, Snow-hill, London.

REDUCTION IN PRICE OF BOILERS.



BURBIDGE AND HEALY beg respectfully to inform their Friends, in consequence of the present reduced price of iron, they are enabled to make a considerable reduction in the price of their Boilers. The price will be, now:

10 in.	will warm	50 ft.	4 in.	pipe	... £1	15 0
12 in.	do.	75 ft.	4 in.	do.	... 2	5 0
14 in.	do.	100 ft.	4 in.	do.	... 2	15 0
16 in.	do.	150 ft.	4 in.	do.	... 3	10 0
18 in.	do.	250 ft.	4 in.	do.	... 4	10 0
21 in.	do.	350 ft.	4 in.	do.	... 5	10 0
24 in.	do.	450 ft.	4 in.	do.	... 7	0 0

NEW PATTERN BOILERS.

25 in.	will warm	600 ft.	4 in.	pipe	... 11	10 0
30 in.	do.	[illegible]		do.	... 15	15 0
36 in.	do.	1500 ft.	4 in.	do.	... 25	0 0

All Boilers with double arms, up to 18 in., 5*s.* extra; to 24 in., 10*s.* extra; all above the same price.

130, Fleet-street, London, Nov. 9.

PURE CHINA PIGS.

—A few of these beautiful and prolific animals to be sold Cheap. Immediate application necessary, to E. S., Fair Mead Lodge, High Beech, near Woodford, Essex. To save trouble, price 1*l.* 1*s.* each.

CHEAP AND DURABLE ROOFING.

BY HER MAJESTY'S ROYAL LETTERS PATENT.

F. M'NEILL AND Co., of Lamb's-buildings, Bunhill-row, London, the Manufacturers and only Patentees of THE ASPHALTED FELT FOR ROOFING Houses, Farm Buildings, Shedding, Workshops, and for Garden purposes, to protect Plants from Frost.

At the Great National Agricultural Shows, it is this Felt which has been exhibited and obtained TWO SILVER MEDAL PRIZES, and is the Felt SOLELY patronised and adopted by

HER MAJESTY'S WOODS AND FORESTS,
HONOURABLE BOARD OF ORDNANCE,
HONOURABLE EAST INDIA COMPANY,
HONOURABLE COMMISSIONERS OF CUSTOMS,
HER MAJESTY'S ESTATE, ISLE OF WIGHT,
ROYAL BOTANIC GARDENS, REGENT'S PARK,

And on the Estates of the Dukes of Sutherland, Norfolk, Rutland, Newcastle, Northumberland, Buccleuch (at Richmond), the late Earl Spencer, and most of the Nobility and Gentry, and at the ROYAL AGRICULTURAL SOCIETY'S HOUSE, Hanover-square.

It is half the price of any other description of Roofing, and effects a great saving of Timber in the construction of Roofs. Made to any length by 32 inches wide.

PRICE ONE PENNY PER SQUARE FOOT.

*** Samples, with Directions for its Use, and Testimonials of seven years' experience, with references to Noblemen, Gentlemen, Architects, and Builders, sent free to any part of the town or country, and orders by post executed.

☞ The Public is cautioned that the only Works in London or Great Britain where the above Roofing is made, are

F. M'NEILL AND CO.'S

Patent Felt Manufactory, Lamb's-buildings, Bunhill-row, London, where roofs covered with the Felt may be seen.

The new Vice-Chancellor's Courts, at the entrance to Westminster Hall, were roofed with F. M'NEILL and Co.'s Felt about two years since, under the Surveyorship of Chas. Barry, Esq., R.A. Her Majesty's Commissioners of Woods and Forests are so satisfied with the result that they have ordered the Committee Rooms at the Houses of Parliament to be roofed with their Felt. Quantity altogether used, 24,000 feet.

NOTE.—Consumers sending direct to the Factory can be supplied in lengths best suited to their Roofs, so that they pay for no more than they require.

Every information afforded on the construction of Roofs, or any proposed particular application of the Felt.

TO GENTLEMEN, FLORISTS, AND OTHERS.

MESSRS. PROTHEROE AND MORRIS will sell by Auction, at the Mart, Bartholomew-lane, on FRIDAY, November 15th, 1850, at 12 o'clock, a First-Class Collection of DUTCH BULBS, consisting of the finest double and single Hyacinths, Narcissus, Jonquils, Crocus, Tulips, Ranunculus, Anemones, &c.; also Standard and Dwarf ROSES, comprising Hybrids, Perpetuals, Bourbons, Chinas, &c., together with a selected assortment of fine American Plants, and Ornamental Trees.—On view the morning of Sale; Catalogues had at the Mart, and of the Auctioneers, American Nursery, Leytonstone.

IMPORTANT TO SEEDSMEN, NURSERYMEN, AND OTHERS.

MESSRS. PROTHEROE AND MORRIS have received instructions from Messrs. HAY, ANDERSON, and SANGSTER, to offer to public competition, by Auction, on the premises, Nursery Warehouse, Bird-street, West-square, Lambeth (in consequence of one of the partners retiring from the business), on THURSDAY, November 21st, 1850, at 11 o'clock, a large portion of their valuable Stock of SEEDS, viz., Peas, Turnip, Cabbage, Onion, Mangold Wurzel, &c.; also a large Timber erection, Tile-roof, &c.; a capital 6-inch wheel Cart.—May be viewed, and Catalogues had of Messrs. HAY, SANGSTER, and Co., Newington Butts; of the principal Seedsmen in London; and of the Auctioneers, American Nursery, Leytonstone, Essex.

PLANTING SEASON.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. J. Smith to offer to public Auction, on the premises, Dalston Nursery, Middlesex, on MONDAY, November 11th, and three following days, at 11 o'clock, the whole of the valuable NURSERY STOCK, consisting of very fine Evergreens; Fruit Trees, comprising all the acknowledged and approved varieties, Ornamental and Forest Trees, Deciduous Shrubs, &c.—May be viewed prior to the sale. Catalogues may be had (6*d.* each, returnable to purchasers), on the premises; of the principal Seedsmen in London; and of the Auctioneers, American Nursery, Leytonstone, Essex.

HORNSEY ROAD.—TO NOBLEMEN, GENTLEMEN, NURSERYMEN, FLORISTS, AND OTHERS.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. W. J. Pamplin to submit to public competition by Auction, on the premises, Paradise Nursery, Hornsey-road, Islington, on MONDAY, November 18th, and following day, a part of the valuable NURSERY STOCK, comprising fine Evergreens, &c.; also choice Greenhouse Plants, consisting of Double Camellias, beautifully set with bloom buds, 18 inches to 6 feet, Azalea indica, Epacris, Ericas of all the leading varieties, Chrysanthemums, &c.—May be viewed prior to the sale; Catalogues had (6*d.* each, returnable to purchasers) on the premises; of the principal Seedsmen in London; of the Auctioneers, American Nursery, Leytonstone, Essex.

N.B. The Nursery to be Let, with immediate possession. The remaining Stock may be taken at valuation, if required.

FULHAM ROAD.

MR. D. A. RAMSAY has received instructions from Mr. J. Shearman to submit to public competition on the premises, opposite Chelsea Park, Fulham-road, Brompton, on MONDAY, November 18, at 11 o'clock, on account of the number of lots (his lease having nearly expired), a further portion of the VALUABLE NURSERY STOCK, comprising Standard and Dwarf-trained Peaches, Nectarines, and other Fruit Trees, Evergreens, Deciduous Shrubs, Ornamental Trees, Standard and Dwarf Roses, &c.—May be viewed prior to Sale. Catalogues may be had on the premises, of the principal Seedsmen, and of the Auctioneer, Brompton Auction Ground, Fulham road, Brompton, near London.

KING'S-ROAD, CHELSEA.—IMPORTANT SALE. TO NURSERYMEN, BUILDERS, AND OTHERS.

MR. D. A. RAMSAY will sell by Auction, on the premises, King's-road, Chelsea (opposite Cremorne Gardens), on TUESDAY, November 26, and following day, at 12 o'clock, without reserve (by order of Messrs. W. Dennis and Co.), to clear about 5 acres of ground, required for building purposes, the SECOND PORTION of the NURSERY STOCK, including some uncleared Lots, consisting of about 1500 fine bushy and extra large Aucuba, Hollies, Laurels, Box, Laurestinus, &c.; the collection of Prize Gooseberries, fine Fruit-bearing and other Mulberries, Standard, Dwarf, and Pillar Roses, fine specimen Rhododendrons, Ficus, and Hoyas, extra large Ivies, Jasmines, and other climbing plants, &c.—May be viewed prior to sale. Catalogues had on the premises; of the principal Seedsmen; at the White Horse, Covent-garden Market; and of the Auctioneer, Brompton Nursery, Fulham-road, Brompton, near London.

MR. HASLAM begs to inform the Public, that his first annual sale of ROSES is unavoidably postponed till TUESDAY, November 12, and two following days, when he will offer at the Auction Mart, an extensive Collection of Standard, Dwarf, Climbing, and Weeping Roses, in about 100 varieties. Also a choice assortment of Double Hollyhocks, selected from the stock of Messrs. Chater and Son; Camellias, and Dutch Bulbs, &c. Mr. H. will sell the following week, November 19, and following day, an extensive importation of Camellias, Orange Trees, &c., at the above place.—Particulars in future advertisements.

FARMS TO BE LET, WITH IMMEDIATE POSSESSION.

MR. HURLEY, FARM AGENT, &c., begs to solicit Farmers and others requiring really good FARMS, to make early application to him, as he has upwards of Fifty Farms, of every kind and size, arable and meadow, and rents to meet the times. Mr. HURLEY also begs the favour of those proprietors having such to let, to insert the same upon his Register, gratis. All applications, accompanied with four stamps, addressed to the Agricultural Agency Offices, 62, Nelson-square, Blackfriars-road, London, will meet prompt attention.

The following additional Farms are submitted, since Mr. HURLEY'S last published list of October 26, to which attention is referred—a capital Farm of 550 acres, good sound heavy land, with a fair proportion of Turnip Land, situate in Essex, three miles from water carriage, excellent dwelling-house and buildings. Rent, &c., very moderate. To be let solely from the death of the tenant.—Two Farms in Surrey, of 400 and 170 acres respectively; good houses, &c. Rents low; the latter tithe-free.—A Farm in Kent, of 220 acres, chiefly arable. Rent 135*l.*; tithe 30*l.*—An excellent Farm, of 600 acres, in Surrey. Rent 370*l.*; rates and tithes low.—Two good Farms, near Windsor, of 160 and 90 acres respectively.—A superior Farm in Essex, 18 miles from town, and four from the Harlow station, of 100 acres, equally divided, most excellent residence and buildings, and Land not to be surpassed for growing Wheat, &c.—An excellent Stock and Turnip Farm in Herts, 26 miles from London, of 526 acres; excellent residence and buildings. Rent 18*s.* per acre.

This day is published, price 5*s.*, Third Edition,

DEAFNESS PRACTICALLY ILLUSTRATED; being an Exposition of original Views as to the Nature, Causes, and Treatment of Diseases of the Ear. By JAMES YEARSLEY, Esq., Surgeon to the Metropolitan Ear Infirmary, Sackville-street. This Edition contains two new chapters:—1st, on the Pathological Connexions of the Throat and Ear (Throat Deafness); 2nd, on the Author's discovery of treating Deafness by the application of the Hydrated Cotton or Artificial Tympanum.—JOHN CHURCHILL, Princes-street, Soho: SAMUEL HIGHLEY, 32, Fleet-street, and all Booksellers.

DUTCH FLOWERING BULBS.

J. CARTER, SEEDSMAN AND FLORIST, No. 238, High Holborn, London, begs to recommend the following choice Bulbs for planting in November and December, but the earlier the better.—12 or 25 roots may be had at the rate per 100, &c.

	s.	*d.*
Hyacinths, 24 varieties	15	0
12 do. for pots or water	7	6
12 do. extra fine	18	0
50 in 25 var. for borders	25	0
fine mixed ... per 100	20	0
ditto ditto p. doz.	3	0
Narcissus, 12 in 6 sorts ,,	5	0
6 do. in 6 do.	2	6
early double Roman ,,	3	0
early Paper White ,,	3	0
Jonquils, large double ,,	2	6
sweet scented ... ,,	1	6
Campernels ... ,,	1	0
Crocus, largest yellow, per 100	2	0
very good ditto ,,	1	0
in separate colours ,,	2	0
250 in 50 sorts	6	6
75 in 25 newest do. ...	4	6
very fine mixed, per 100	1	6
Tulips, 50 early, named	10	0
early Van Thol, doz.	1	0
ditto ditto per 100	7	0
50 fine double, named	10	0
double Van Thol, doz.	1	0
ditto ditto per 100	7	0
ex. fine doub. mxd. ,,	10	0
ditto ditto late ..... ,,	10	0
good ditto ditto ,,	5	0
100 Parrot, 4 vars. ,,	10	0
fine mixed Parrot, doz.	1	0
ditto per 100	7	0
Florentine, ... per doz.	2	6
ditto per 100	20	0
Iris, 50 Spanish, named	5	0
25 new do. do.	6	0
12 new English, p. doz.	5	0
Anemones, 50 finest doub. named	12	6
fine double mixed p. 100	6	0
,, new single ,,	4	0
Anemones, double scarlet, p. doz.	2	6
double blue ... ,,	2	6
double rose ... ,,	2	6
25 new Anemone Hortensis	8	0
12 do. do. ...	4	0
Ranunculus, 100 finest varieties	25	0
100 in 20 vars.	15	0
extra fine mixed, p. 100	7	0
fine mixed ... ,,	3	6
mxd. Turban, 8 var. ,,	5	0
Lilies, white, ... p. doz.	2	6
orange ... ... ,,	2	6
scarlet ... ... ,,	5	0
superb ... ... ,,	15	0
speciosum, red ... each	3	6
,, white ,,	2	6
Winter Aconites, p. 100	3	6
Snowdrop ... ... ,,	2	0
Amaryllis lutea, p. doz.	2	6
formosissima ... ,,	5	6
purpurea, each 2*s.* ,,	20	0
Josephiniana ... each	12	0
6 greenhouse species ,,	20	0
Gladiolus cardinalis, p. doz.	3	6
gandavensis, splendid, p. doz.	6	0
Queen Victoria ,,	6	0
12 new varieties	22	6
Irish Pavonia ... p. doz.	2	6
Ixia, 30 in 6 varieties ...	5	0
fine mixed ... p. doz.	1	6
Sparaxis, 12 in 4 varieties	2	6
newest seedling, p. doz.	2	6
Tigridia Pavonia ,,	2	0
conchiflora ... ,,	3	0
superba ... ... ,,	4	0
Watsonia pyramidalis ,,	5	0

BEES.—Wanted, in the neighbourhood of London, a Taylor's Double-bar Hive, and an improved Nutt's Hive, with strong well stored Stocks.—Address, with particulars and price, J. H., at the Office of this Paper.

FARM IN SUFFOLK.

MESSRS. HUMPHREYS AND WALLEN are instructed to LET ON LEASE a capital FARM of 480 Acres, of which 180 are Pasture, and the remainder good Corn and Turnip Land, together with excellent House and Homestead. The situation is six miles from Ipswich, with a Wharf on the Orwell, whereby corn can be delivered in London at 1*s* a quarter, and Manures, &c., obtained at little cost.—Apply to Messrs. HUMPHREYS and WALLEN, Land Agents, 68, Old Broad-street, London, and Romford, Essex.

TO BE DISPOSED OF, A NURSERY AND SEED BUSINESS, eligibly situated in a highly increasing neighbourhood, with an unexpired Lease of 22 years. Any person commanding a capital between 200*l.* and 300*l* will find this an opportunity seldom to be met with.—For further particulars apply by letter to H. B., at the Office of this Paper.

NEWS, NEWS, NEWS.—The best, cheapest, and largest Newspaper in the World.—LLOYD'S WEEKLY LONDON NEWSPAPER contains 60 large columns of the latest intelligence from all parts of the Globe, price only Threepence, postage free. Send Three Postage Stamps to E. LLOYD, 12, Salisbury-square, London, and receive one copy as a sample

MAGNUS'S ENAMELLED SLATE is handsomer and more durable than the choicest Marbles, is less than half the cost of the commonest, and is PATRONISED by her MAJESTY and PRINCE ALBERT, the Nobility, Clergy, Architects of Eminence, Engineers, Builders, Railway Contractors, and the Public generally. It is suitable for Chimney-pieces, Pier-table tops, Vases, Ink-trays, and ornaments of various descriptions, Billiard-tables, Baths, Wash-stand, and Dressing-table Trays, Door Furniture, Candelabra, Columns, Monuments, Head Stones, Mural Tablets, Pilasters, Plinths, Fonts, Grand Staircases, Balusters, &c., and is made to represent not only the marbles in ordinary use but all the more costly descriptions, as Porphyry, Rose Granite, Broccatella, Brescia, Lapis Lazuli, Malachite, and Florentine Mosaics, and has obtained the Medal from the Society of Arts. Bored Chimney-pieces, from 25*s.* upwards. Price lists sent on application to Mr. MAGNUS, PIMLICO SLATE WORKS, 39 and 40, Upper Belgrave-place, London.

*** Roofing and Plain Slate work, of all descriptions, at low prices.

LIGHT, CHEAP, AND DURABLE ROOFING.

CROGGON'S PATENT ASPHALTE ROOFING FELT is perfectly impervious to rain, snow, and frost, and has been tested by a long and extensive experience in all climates. Saves half the timber required for slates; can be laid on with great facility by farm servants, or unpractised persons. Price 1*d.* per square foot.

CROGGON'S PATENT NON-CONDUCTING FELT, for Steam Boilers and Pipes, saves 25 per cent. of fuel.

Samples and Testimonials sent by post, on application to CROGGON and Co., 2, Dowgate-hill, London.

THE HIPPOPOTAMUS, presented to the Zoological Society by the Viceroy of Egypt, is exhibited daily at their Gardens in the Regent's-park, from 11 to 4 o'clock. Visitors desirous of seeing the animal in the water are recommended to go early. Admission 1*s.*; on Mondays, 6*d.*

CAUTION.

NIGHT LIGHTS.—PATENT ALBERT NIGHT LIGHTS (Patented 30th January, 1844), CHILDS' NIGHT LIGHTS (Registered 20th September, 1843) are sold by all Grocers and Wax Chandlers throughout the country, at 6*d.* per box. The sale of the above, amounting at the present time to many tons weekly, shows that they meet with the approbation of the public; any description of them is therefore unnecessary. The object of this advertisement is, to request purchasers to *examine the name on the boxes*, so as to insure their getting what they intend.

Night Lights are liable not to last the time that they profess (frequently going out an hour or two after lighting); to be affected by the temperature of the room they are burnt in; to be injured by keeping any length of time, and to have an unpleasant smell. The manufacturers consider that, by use of materials secured to them by several patents, and by long experience in the manufacture, that they have overcome these difficulties; and they therefore beg, that should any attempted substitutes be recommended, they may be carefully compared as to all the above particulars.

N.B.—The wine-glass-shaped Lamp, on which is stamped "Clarke's Patent," is that recommended for the Albert Lights.

PRICE'S PATENT CANDLE COMPANY, Belmont, Vauxhall.

THE BIRMINGHAM CATTLE SHOW, 1850.—CLOSING OF ENTRIES.

The CERTIFICATES of ENTRY, for CATTLE, SHEEP, PIGS, and POULTRY, and copies of the PRIZE LISTS, may be had on application to the Honorary Secretary. Intending Exhibitors are particularly requested to mention the nature of the Stock for which they require Certificates. The entries close on SATURDAY NEXT, the 16th of November.

The Show will be held in the BINGLEY EXHIBITION HALL, BROAD-STREET. T. B. WRIGHT, Honorary Secretary.

Union-street, Birmingham, Nov. 9.

This day is published, price 2*s.*,

THE ENCUMBERED ESTATES OF IRELAND; a Series of Letters, reprinted in a collected form from "THE DAILY NEWS."

London: BRADBURY and EVANS, 11, Bouverie-street.

This day is published, price 3*s.* 6*d.*, in cloth,

HOW TO LAY OUT A SMALL GARDEN. Intended as a Guide to Amateurs in Choosing, Forming, or Improving a Place (from a Quarter of an Acre to 30 Acres in extent) with reference to both Design and Execution. By EDWARD KEMP, Landscape Gardener, Birkenhead Park.

Also by the same Author, price 2*s.*, in cloth,

THE HAND-BOOK OF GARDENING; expressly intended for persons possessing and fond of cultivating a garden of moderate size. A New Edition, revised, and greatly enlarged.

London: BRADBURY and EVANS, 11, Bouverie-street.

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THE MOTHER'S RECOMPENSE; a Sequel to "Home Influence." By GRACE AGUILAR, Author of "Woman's Friendship," "The Vale of Cedars," &c.

London: GROOMBRIDGE and SONS, 5, Paternoster-row.

Just Published, price 1*s.*, or, post free, 18 stamps,

GLENNY'S GARDEN ALMANAC & FLORISTS' DIRECTORY for 1851. Containing: Directions for the Management of an Amateur's Garden during the Year; Lists of the best Show Flowers, Fruits, Plants, and Vegetables; Valuable Hints to Lady Gardeners; and other useful information.

Second edition, price 2*s.* 6*d.*, cloth,

GARDENING FOR CHILDREN. Edited by the Rev. C. A. JOHNS, B.A., author of "Botanical Rambles, &c.

Also, by the same author, price 1*s.*,

AMNEMON THE FORGETFUL, AND EUSTATHES THE CONSTANT.

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London: C. COX, 12, King William-street, Strand.

This day is published, price 2*s.*,

OBSERVATIONS ON THE RECLAMATION OF WASTE LANDS AND THEIR CULTIVATION BY CROFT HUSBANDRY; Considered with a View to the Productive Employment of Destitute Labourers, Paupers, and Criminals.

By WILLIAM PULTENEY ALISON, M.D., F.R.S.E., &c., Professor of the Practice of Medicine in the University of Edinburgh, and First Physician to Her Majesty for Scotland.

WILLIAM BLACKWOOD and SONS, Edinburgh and London.

Of whom may be had, by the same Author,

OBSERVATIONS ON THE EPIDEMIC FEVER OF 1843 in SCOTLAND, and its Connection with the Destitute Condition of the Poor. 1*s.* 6*d.*

OBSERVATIONS ON THE FAMINE OF 1846-7 in the HIGHLANDS of SCOTLAND and in IRELAND, as illustrating the Connection of the principle of Population with the Management of the Poor. 1*s.* 6*d.*

Now ready, No. I., price Three-halfpence (to be continued weekly), THE

COTTAGE GARDENER'S DICTIONARY; Edited by G. W. JOHNSON, Esq., Editor of "The Cottage Gardener," &c.; assisted by Beaton, Errington, Fish, Appleby, &c. The Work will be completed in about 45 weekly Numbers, forming a handsome volume of 800 pages.

London: WM. S. ORR and Co., Amen-corner, Paternoster-row.

PRICE FOURPENCE, OF ANY BOOKSELLER.

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JOURNAL OF ENGLISH AND FOREIGN LITERATURE, SCIENCE, AND THE FINE ARTS.

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Foreign Correspondence.—Switzerland: Swiss Association for the Advancement of Science—Bavaria: Opening of the Triumphal Arch at Munich.

Our Weekly Gossip.—English Manufacturers and the Industrial Exhibition—Catalogues of Public Libraries—British Museum—Prizes for Literary Work—New Public Park—National Emigration—Cheap Trips across the Atlantic—The Collection of Animals in the Gardens of Zoological Society.

Fine Arts.—Leonardi da Vinci in the Print Room of the British Museum—Description of New Statues by Mr. Powers, the American Sculptor—Santarelli's 'La Forza.'

Fine-Art Gossip.—Pictures Collected by the Marquis of Hertford—French Exhibition of Works of Art.

Music and the Drama.—Characteristics of Meyerbeer—The Grand National Concerts—Haymarket Theatre (Mr. Macready's Farewell Engagements)—Sadler's Wells—Olympic

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Order the Athenæum of any Bookseller.

Printed by WILLIAM BRADBURY, of No. 13 Upper Woburn-place, in the Parish of St. Pancras, and FREDERICK MULLETT EVANS, of No. 7, Church-row, Stoke Newington, both in the County of Middlesex, Printers, at their office in Lombard-street, in the Precinct of Whitefriars, in the City of London; and published by them at the Office, No. 5, Charles-street, in the parish of St. Paul's, Covent-garden, in the said county, where all Advertisements and Communications are to be ADDRESSED TO THE EDITOR.—SATURDAY, NOVEMBER 9, 1850.

THE GARDENERS' CHRONICLE
AND
AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 46—1850.] SATURDAY, NOVEMBER 16. [PRICE 6*d.*

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WATERER'S DESCRIPTIVE CATALOGUE OF AMERICAN PLANTS, &c.

HOSEA WATERER begs to announce his new descriptive CATALOGUE OF AMERICAN PLANTS, CONIFERS, ROSES, &c., is just published, and may be had by enclosing two stamps for postage to HOSEA WATERER, Knap Hill Nursery, Woking, Surrey.

☞ Everybody who has any idea of planting the ensuing autumn should possess themselves of this Catalogue.

AMERICAN PLANTS.

JOHN WATERER'S CATALOGUE OF AMERICAN PLANTS, ROSES, CONIFERS, &c., is now published, and may be had gratis on application. It describes the colours of every Rhododendron worthy of cultivation, thus affording purchasers every facility in making selections.

American Nursery, Bagshot, Surrey.

NOW SENDING OUT.

BECK'S PELARGONIUMS.—The TWO GUINEA COLLECTIONS of Twelve Plants have amongst them RUBY, SARAH, and DORCAS, seedlings not sent out before, but often exhibited in our winning collections. The set may be had in exchange for a post-office order on Brentford, in favour of JOHN DOBSON; package and carriage to London included. They are in 3-inch pots, and wanting an immediate shifting. Catalogues may be had on prepaid application, enclosing one postage stamp.—Worton Cottage, Isleworth.

RENDLE'S NURSERY, PLYMOUTH, Established 1788.

WILLIAM E. RENDLE AND CO. have this season A LARGE SURPLUS STOCK of many sorts of FOREST TREES and SHRUBS. For prices see the *Gardeners' Chronicle*, November 9, 1850.

Our Autumnal Catalogue of Forest Trees, Shrubs and Fruit Trees, is just published, and can be had for one penny stamp.

Apply to WILLIAM E. RENDLE AND CO.,
NURSERYMEN, PLYMOUTH.

EDWARD DENYER is now prepared to send out his new Descriptive CATALOGUE of Roses, Fruit Trees, Evergreens, Shrubs, Ornamental Trees, &c., which will be forwarded, by enclosing two penny stamps to his Nursery, Loughborough-road, Brixton. E. DENYER informs his friends that he has no Seed-shop in London.

MYATT'S LINNÆUS RHUBARB, strong roots, 12*s.* per dozen; Myatt's Victoria, 9*s.* per dozen; and Mitchell's Royal Albert, 12*s.* per dozen. Extra strong plants of the New Red Currant "Raby Castle," 6*s.* per dozen, or 45*s* per 100; and Fastolff Raspberry, 10*s.* per 100. With the usual allowance to the Trade. Post-office orders are requested to be made payable to JOSEPH MYATT, Manor Farm, Deptford, near London.—Nov. 16.

GEORGE JACKMAN, NURSERYMAN, Woking, Surrey, 1¼ mile from the Woking Station of the South-Western Railway, beg's to announce that he has just published a new and complete CATALOGUE of his American Plants, Ornamental Evergreens and Flowering Shrubs, Standard and Dwarf Roses, Fruit and Forest Trees, &c., which may be had gratis on application.

2500 MYATT'S VICTORIA RHUBARB ROOTS.

THE above must be sold, in consequence of the Leeds Main Sewer going through part of the Grounds of JOHN SCHOFIELD AND SON, Knowsthrope, near Leeds. Large roots, 6*s.* per dozen, or 2*l.* 5*s.* per 100, for cash only.

MITCHELL'S ROYAL ALBERT RHUBARB has proved itself to be the earliest, finest flavoured, and most productive kind, as well as the best for early forcing, ever yet grown. Strong roots, 12*s.* per dozen. Also Myatt's Linnæus, 12*s.* per dozen; and Victoria, 9*s.* per dozen; with usual allowance to the trade. Post-office orders are requested to be made payable to WILLIAM MITCHELL, Enfield Highway, Post-office, Enfield, Middlesex.

BASS AND BROWN'S AUTUMN CATALOGUE is now ready. It contains Descriptive Priced Lists of Superb Seedling and other Ranunculi, Gladioli, Early and Double Tulips; also Priced Assortments of Choice Imported Dutch Hyacinths, Narcissus, Iris, Jonquils, Crocus, the Lancifolium and other Lilies, with a great variety of other bulbs and dry roots. The latter part contains Descriptive Lists of Choice and Select Roses, a few New and other desirable Evergreen and Flowering Shrubs, Hardy Climbing and Hardy Herbaceous Plants, Prize Gooseberries, and other choice fruits, &c.

A separate List of Geraniums and other new and select plants at reduced prices. Catalogues forwarded, prepaid, for two penny stamps.

Our Foreign Bulbs have arrived in fine condition.

Seed and Horticultural Establishment, Sudbury, Suffolk.

MESSRS. STANDISH AND NOBLE'S new descriptive CATALOGUE OF SELECT HARDY ORNAMENTAL PLANTS is just published, and may be had for four postage stamps. Besides a Treatise on the cultivation of American Plants, it contains a Plate and Description of the Funebral Cypress, Notices of Cephalotaxis Fortunii, Cryptomeria japonica, Quercus sclerophylla and inversa, Viburnum plicatum and macrocephalum, with many recent introductions from the north of China, quite new to English gardens.

Messrs. S. and N. take this opportunity of stating that they give Designs for Laying out New Grounds and Plans for Improvements; also Estimates for all kinds of Planting, whether ornamental or economic.—Bagshot Nurseries, Nov. 16.

DUTCH FLOWERING BULBS.

J. CARTER, SEEDSMAN AND FLORIST, No. 238, High Holborn, London, begs to recommend the following choice Bulbs for planting in November and December, but the earlier the better.—12 or 25 roots may be had at the rate per 100, &c.

	s.	*d.*
Hyacinths, 24 varieties ...	15	0
12 do. for pots or water	7	6
12 do. extra fine	18	0
50 in 25 var. for borders	25	0
fine mixed ... per 100	20	0
ditto ditto p. doz.	3	0
Narcissus, 12 in 6 sorts ,,	5	0
6 do. in 6 do.	2	6
early double Roman ,,	3	0
early Paper White ,,	3	0
Jonquils, large double ,,	2	6
sweet scented ... ,,	1	6
Campernels ... ,,	1	0
Crocus, largest yellow, per 100	2	0
very good ditto ,,	1	0
in separate colours ,,	2	0
250 in 50 sorts	6	6
75 in 25 newest do. ...	4	6
very fine mixed, per 100	1	6
Tulips, 50 early, named	10	0
early Van Thol, doz.	1	0
ditto ditto per 100	7	0
50 fine double, named	10	0
double Van Thol, doz.	1	0
ditto ditto per 100	7	0
ex. fine doub. mxd. ,,	10	0
ditto ditto late..... ,,	10	0
good ditto ditto ,,	5	0
100 Parrot, 4 vars., ,,	10	0
fine mixed Parrot, doz.	1	0
ditto per 100	7	0
Florentine, ... per doz.	2	6
ditto per 100	20	0
Iris, 50 Spanish, named	5	0
25 new do. do.	3	0
12 new English, p. doz.	5	0
Anemones, 50 finest doub. named 12	6	
fine double mixed p. 100	6	0
,, new single ,,	4	0

	s.	*d.*
Anemones, double scarlet, p. doz.	2	6
double blue ... ,,	2	0
double rose ... ,,	2	9
25 new Anemone Hortensis	8	6
12 do. do. ...	4	e
Ranunculus, 100 finest varieties	25	0
100 in 20 vars.	15	0
extra fine mixed, p. 100	7	0
fine mixed ... ,,	3	6
mxd. Turban, 8 var. ,,	5	0
Lilies, white, ... p. doz.	2	6
orange ... ... ,,	2	6
scarlet ... ... ,,	5	0
superb ... ... ,,	15	0
speciosum, red ... each	3	6
,, white ,,	2	6
Winter Aconites, p. 100	3	6
Snowdrops ... ... ,,	2	0
Amaryllis lutea, p. doz.	2	6
formosissima ... ,,	5	6
purpurea, each 2*s.* ,,	20	0
Josephiniana ... each	12	0
6 greenhouse species ,,	20	0
Gladiolus cardinalis, p. doz.	3	6
gandavensis, splendid, p. doz.	6	0
Queen Victoria ,,	6	0
12 new varieties	22	6
Irish Pavonia ... p. doz.	2	6
Ixia, 30 in 6 varieties ...	5	0
fine mixed ... p. doz.	1	6
Sparaxis, 12 in 4 varieties	2	6
newest seedling, p. doz.	2	6
Tigridia Pavonia ,,	2	0
conchiflora ... ,,	3	0
superba ... ... ,,	4	0
Watsonia pyramidalis ,,	5	0

*** A Catalogue of all kinds of Kitchen Garden Seeds will be published in due time. Early Peas, Beans, &c., for present sowing, may be had with the Bulbs. CARTER'S Victoria Marrow Pea equal, if not superior, to any other in cultivation for later crops, 1*s.* 6*d.* per quart.

TO BE SOLD IMMEDIATELY, 200 STRONG, HEALTHY, FRUITING PINE PLANTS, about 100 of them now showing Fruit, which will be ripe in May next; also 100 strong Succession Pine Plants, most of them fit to bear Fruit in 1851, from 2 lbs. to 3 lbs. in weight; also some fine strong Pine Suckers, all of them warranted clean, being the entire stock of a gentleman who is giving up Pine growing. They will be sold in lots to suit purchasers.

JOHN REID would be happy to engage with any lady or gentleman in want of a practical and experienced Gardener. The most satisfactory references can be given. For particulars apply to JOHN REID, Rheola, near Neath.

TILEY'S VIOLA ARBOREA, OR PERPETUAL TREE VIOLET.—VIOLA ARBOREA, or the PERPETUAL TREE VIOLET (true).—In answer to numerous inquiries for the above, and great satisfaction given by the plants sent out last season by EDWARD TILEY, he begs to state that he has this year a fine stock of the above beautiful DOUBLE VIOLET now to dispose of, which he can highly recommend, this being the proper time for making beds or potting. They are beautifully scented; the blooms are as large as the double blue Hepatica; they bloom freely from August till the end of May, and are perfectly hardy. Twelve of these plants grown in pots will scent a large greenhouse; and a small bed, 9 feet long by 3 feet wide, will be sufficient to furnish a family with bouquets the whole of the winter and the spring. They should be planted in rather a dry situation and a loose soil, as the Violet will thrive and bloom finer than in wet or clay borders.

E. T. has been informed by the gentleman that introduced it into this country, that he has seen them growing in the thickets of Persia to the height of 4 feet, with large bushy heads to them, and hundreds of blooms on them at the same time. Large bushy plants, 6*s.* per dozen; smaller ditto, 3*s.* per dozen; or 1*l.* per hundred.

Also he has a fine stock of that splendid YELLOW VIOLET, or VIOLA LUTEA, which has been so much admired at the London exhibitions. In colour it is equal to the Crocus. Strong bushy plants 2*s.* 6*d.* each; or smaller ditto, 1*s.* 6*d.* each.

KITLEY'S GOLIAH STRAWBERRY.—Strong well-rooted plants at 3*s.* per dozen.

True BATH COS LETTUCE SEED, 1*s.* per packet.

Extra fine SWEET WILLIAM SEED, saved from 24 distinct varieties, 1*s.* per packet.

ANTIRRHINUM SEED from all the best varieties, 1*s.* per packet.

WINTER CUCUMBER.—Lord Kenyon's Favourite, 2*s.* 6*d.* per packet.

The whole or any quantity of the above will be sent, postage and package free, to any part, on receipt of a Post-office order, or the amount in penny postage stamps.

Sold by EDWARD TILEY, Nurseryman, Seedsman, and Florist, 14, Abbey Church-yard, Bath.

FOREIGN BULBOUS ROOTS.

WM. HAMILTON, SEEDSMAN, &c., 156, Cheapside, London, begs to state that his Priced Catalogue of the above is now ready, and may be had gratis on application.

HYACINTHS in colours, named, for pots or glasses, 6*s.*, 9*s.*, and 12*s.* per dozen; in mixtures, 3*s.* per dozen. MIXED DUTCH CROCUS, 1*s.* 6*d.* per 100. TULIPS for early forcing, 1*s.* per dozen. SNOWDROPS, 2*s.* 6*d.* per 100. NARCISSUS, 4*d.* to 6*d* each. GLADIOLUS, IXIAS, IRIS, RANUNCULUS, ANEMONES, and a large assortment of other Roots, the prices of which will be found in his Catalogue.

W. H.'s Improved Supporter for Hyacinths, &c., 6*d.* each.

*** Not to be equalled by any now offered to the public.

Address—156 Cheapside, London.

MESSRS. J. AND H. BROWN offer the following desirable plants and Choice Fruit Trees.

	s	*d*
Fine Dwarf and Standard Trained Peaches, Nectarines, Apricots, Plums, Pears, and Cherries. The best and most approved sorts of these respective kinds, true to name, each, 2*s.* 6*d.*, or per dozen	24	0
Untrained or Maiden Ditto, 1*s.* 6*d.* each, or per dozen ...	15	0
Apples, Dwarfs and Standards of best sorts, per dozen...	15	0
Fine Gooseberries, Currants, and Raspberries, per dozen	3	0
Fine Figs, Medlars, Walnuts, and Mulberries, each ...	2	0
Strong Vines from eyes and layers, in pots, per dozen ...	15	0
Filberts, new thin shelled and red skinned, per dozen...	3	0
Andromeda floribunda, fine blooming plants, per dozen	18	0
25 Azaleas, new hardy Belgian varieties, on their own roots, with flower-buds, one of a sort, by name ...	20	0
25 American Azaleas, ditto ditto	15	0
6 Andromedas, of sorts, including floribunda ...	8	0
6 Kalmias and Ledums, one of a sort, by name ...	6	0
12 Hardy Heaths, of sorts, ditto	8	0
25 Hardy American Shrubs, one of a sort by name, ...	10	6
12 Rhododendrons, including scarlet, white, and rose, hardy varieties	12	0
New Hardy Yellow Rhododendrons, each, 7*s.* 6*d.* to ...	10	6
Fine Hardy Scarlet Rhododendrons, 2 feet, per doz. ...	10	0
Fine Rhododendrons, 1 foot, hardy hybrid vars., per 100	20	0
Cryptomeria japonica and 6 choice Pinus for ...	10	0
Cedar of Lebanon, 3 feet, well grown in pots, per doz....	10	0
6 Fine Hardy Magnolias, one of a sort, by name ...	10	6
Glycine sinensis, extra fine, in pots, 15 to 30 feet each...	3	6
50 Dwarf Roses, on their own roots, by name ...	16	0
12 Choice tea-scented Roses, in pots, for forcing ...	9	0
Standard and half-standard Roses, per dozen, 12*s.* and	15	0
Moss Roses, per 100	25	0
New Crimson Moss Rose, per dozen	6	0
Scotch Roses, one of a sort, per dozen	6	0
Double White and Purple Primula Sinensis, each ...	1	6
12 Greenhouse Azaleas, one of a sort, blooming plants	25	0
12 Choice Camellias, by name, ditto ditto ...	30	0
50 Superior Greenhouse Plants, one of a sort, by name...	45	0
24 Choice Ericas, one of a sort, by name	15	0
12 Orchidaceous Plants, choice species, and good plants	30	0
12 Newest Chrysanthemums, distinct varieties ...	8	0
12 New Dwarf Liliputian Chrysanthemums, ditto	10	0
Fine New Yellow Picotees and Carnations of best show sorts, with names, per pair	2	0
Pinks, very best show sorts, by name, per dozen pair	12	0
Violets: Arborea, Russian, and Neapolitan, per doz.	4	0
25 Choice Hardy Herbaceous Plants, named	7	6
Rhubarb, Seakale and new Giant Asparagus plants supplied.		
New Camellia seeds, just imported from China, 24 for	2	6

Albion Nursery, Stoke Newington, London, Nov. 16.

FORRES NURSERIES.—The Subscribers have for Sale an over-stock of LARCH, Native Highland and Foreign PINE PLANTS, of various ages, healthy, well-topped, and of the best description; also a full stock of FOREST and FRUIT TREES, and SHRUBS, at greatly reduced prices. All the premiums hitherto awarded by the Highland and Agricultural Society of Scotland for the cultivation of the true Native Highland Pine have been received by the Subscribers. Priced Lists will be furnished on application, and the Trade supplied at the wholesale rate.—JOHN GRIGOR & Co., Nurseries, Forres.

ARAUCARIA IMBRICATA.

JAMES CHARTRES, SEEDSMAN, 74, King William-street, City, London, has just received a large quantity of SEED of the above valuable Plant, which he can offer at 5*s.* per lb., averaging about 160 Seeds.

J. C. takes this opportunity to state that at his Establishment will be found a choice Collection of DUTCH FLOWER ROOTS, and Seeds of every description, at the lowest remunerating prices. Catalogues can be had on application.—Nov. 16

RUSSIAN VIOLETS.

R. SHACKELL, in offering his two superior new Violets, "RUSSIAN SUPERB," and "WHITE RUSSIAN" (of which all the Floricultural Publications have spoken in the highest terms), begs to call the attention of Amateur and other Cultivators, to the following reduced prices, at which he can now sell these favourite flowers:—Extra strong blooming plants, "Russian Superb," 12*s.* per doz.; small ditto, such as could be sent by post, 9*s.* per doz.; "White Russian," 6*s.* per doz. Any parties can have a bouquet of each, postage free, by enclosing 12 postage stamps. R. S. has eight other varieties at 3*s.* per doz.

"SIR,—Blooms of your 'Russian Superb,' and a large White Seedling Violet, both seedlings of your raising, were safely received this morning. Having grown a few plants of the 'Russian Superb' myself this season, I have no hesitation in informing you I consider it by far the best hardy Violet cultivated. It blooms most profusely through seven months of the year. The blooms are very large, of a fine blue colour, and most exquisitely fragrant; and as the habit of the plant is strong and good, it must supersede the old varieties. It is well known the Neapolitan requires the shelter of a frame to bloom it in perfection; your present seedlings will enable every one to enjoy the luxury of these charming flowers, without the aid of glass, through the winter months. The 'White Seedling' appears equally in advance of the old kinds, both in size, colour, and fragrance, and is equally to be recommended. As no lover of these flowers ought to be without them, I hope the public will patronise these pets of yours, for they are really good things. — I remain, Sir, yours very truly, JOHN SPENCER, Bowood Park, Nov. 13."

"MR. ROBERT SHACKELL, Locksbrook Nursery, Bath."

Locksbrook Nursery, Bath, Nov. 16.

FRUIT TREES.

R. GLENDINNING possesses a large stock of all the most valuable kinds, which have been proved as such in the Garden of the Horticultural Society of London, in a perfectly healthy condition, fit for immediate planting, adapted either for walls or espaliers, standards and half standards, trained and untrained, all correct to name, the nomenclature of the Horticultural Society being strictly adhered to.—Catalogues may be had on application.—Chiswick Nursery.

MESSRS. KNIGHT AND PERRY feel themselves called upon to offer their most grateful acknowledgments for the confidence with which their numerous Patrons have recurred to them when in want of GARDENERS, and beg most respectfully to state that the scrutiny and vigilance they have always employed in selecting good and clever men (to which the almost invariable satisfaction that has so long attended their recommendations is mainly attributable), is, if possible, increased now; and that the steps they take to arrive correctly at the private as well as the professional character of those they send out as Gardeners, Foresters, Bailiffs, &c., induce them to engage, unhesitatingly, to furnish first-rate men in these capacities whenever called on to do so.

Exotic Nursery, King's-road, Chelsea, London.

TO PLANT GROWERS.

GREENHOUSE PLANTS.—The Advertiser would be glad to purchase a few handsome SPECIMENS of moderate size. Any one having plants of this character (New Holland ones preferred), will oblige by forwarding exact description and price to W., Box 60, Post-office, Manchester.

"GEM OF THE GROVE," DAHLIA.

J. SODEN AND SON beg to offer the above New DAHLIA to the trade in fine ground roots, at 3*l.* 10*s.* each. Colour, maroon of the richest and darkest shade, very double, symmetrical, and full; medium size, always true, full centre, and constant in every respect, first-rate habit; height 4 feet. It has been successfully exhibited, and obtained 7 first-class Certificates, including the Royal South London.

Remittances will be required from unknown correspondents. Orders taken at Hurst and M'Mullen's, 6, Leadenhall-street; and at the Grove Nurseries, Middle Barton, near Woodstock.

Nov. 16.

J. HENCHMAN begs to inform the trade that he has a large stock of very healthy Seedling CEDRUS DEODARA in pots, 4 to 5 inches, at from 8*l.* to 10*l.* per 1000.

Edmonton, Nov. 16.

SPECIMEN PLANTS.—The Surplus Stock of an Amateur, about 36 large plants, comprising Azaleas, Ericas, Kalosanthes, New Holland Plants, &c. &c.; the owner not having sufficient room for them, they will be sold at a moderate price.—Apply to R. Hook, 2, South Island Place, Clapham-road, Surrey.

SEED POTATOES FOR SALE.—The undersigned begs to offer the following sorts, warranted free from disease.

True Ash-leaved Kidney, per bushel of 70 lbs.	...	9*s.* 0*d.*
Haigh's Seedling do.	do.	... 9 0
Scotch Seedling Round do.	do.	... 4 6

Sacks included.

Delivered at the nearest railway station, on receipt of post-office order for the amount.

THOMAS SIMPSON, Oak-tree Inn, Leeming-lane, Bedale, York.

HILL'S COURT NURSERY, EXETER, within 3 minutes' walk of the London Inn, and 10 of the Railway station.—The FORD OAK, the hardiest of all evergreens, was originally raised at this Nursery, and there are at present upwards of 500 Plants in pots, from 3 to 10 feet high. Also a very large collection of LUCOMBE OAK, varying from 3 to 15 feet high, and of superior growth. To be sold at a great reduction in price.—All letters to be addressed to Mr. JOHN NOTT, at the Nursery, and Post-office orders payable to him. Dated HILL'S COURT NURSERY, November 10, 1850.

TO BE DISPOSED OF, a Nursery and Seed Business in the neighbourhood of Croydon, about 7 acres of Nursery-ground, with five Greenhouses, three ranges of Pits, and good Dwelling House. The Nursery is stocked with a general collection of Trees, Shrubs, &c. To be taken at a valuation. Apply to R. C., at Messrs. Noble, Cooper, and Bolton's, 152, Fleet-street, London.

GLASS FOR CONSERVATORIES, GREENHOUSES, PIT-FRAMES; AND PLATE GLASS FOR DWELLINGS.

THOMAS MILLINGTON begs to hand the sizes of a large quantity of SHEET GLASS, packed in 100 feet boxes of various sizes. In all cases, unless the whole box is taken of either size, extra must be charged as specified.

12*s.* 6*d.* per box; or 2*d.* per foot if less than one box be taken:

6 inches	by 4 inches.	6½ inches	by 5 inches
6 ,,	by 4½ ,,	6½ ,,	by 5½ ,,
6½ ,,	by 4 ,,	6 ,,	by 6 ,,
6½ ,,	by 4½ ,,	6½ ,,	by 6 ,,
6 ,,	by 5 ,,	6½ ,,	by 6½ ,,
6 ,,	by 5½ ,,		

15*s.* per box; or 2¼*d.* per foot if less than one box be taken:

7 inches	by 4 inches	7½ inches	by 5½ inches
7 ,,	by 4½ ,,	7 ,,	by 6½ ,,
7 ,,	by 5 ,,	7½ ,,	by 6 ,,
7½ ,,	by 5 ,,	7½ ,,	by 6½ ,,
7 ,,	by 5½ ,,	8 ,,	by 6 ,,

17*s.* 6*d.* per box; or 2½*d.* per foot if less than one box be taken:

9 inches	by 7 inches	9 inches	by 9 inches
8 ,,	by 8 ,,	10 ,,	by 9 ,,
9 ,,	by 8 ,,	10 ,,	by 10 ,,

20*s.* per box; or 2¾*d.* per foot if less than one box be taken:

11 inches	by 8 inches	13 inches	by 9 inches
12 ,,	by 8 ,,	12 ,,	by 10 ,,
12 ,,	by 9 ,,	14 ,,	by 10 ,,

Boxes charged 1*s.* each extra.

T. M.'s Stock of small Glass is so large, that he thinks he can pledge himself to execute orders to any extent.

Glass cut to any other size required, in either 16 oz., 21 oz., 26 oz., or 32 oz.

PATENT ROUGH PLATE GLASS.

T. MILLINGTON'S Patent Rough Plate Cast, perfectly flat and uniform, the best manufactured. A small sample will be sent, upon application, to prove it.

CUT TO ORDER IN PANES.

	⅛ in. thick.	¼ in. thick.
Not above 15 inches long	0*s.* 6*d.*	0*s.* 11*d.*
Above 15 inches and not above 35 ...	0 8	1 1
,, 35 ,, ,, 50 ...	0 9½	1 3
,, 50 ,, ,, 75 ...	1 0	1 3
,, 75 ,, ,, 100 ...	1 3	1 4
100 inches and above	...	1 6

MILK PANS 2*s.* to 6*s.* each, Hand-frames, Tiles, and Slates; Propagating and Bee Glasses from 2*d.* each; Cucumber Tubes, 1*d.* per inch; Peach Glasses, 10*d.* each; Wasp Traps, 8*s.* per dozen; Pastry Slabs, Glass Plates, in wooden frames, for butter and pastry, &c.; Hyacinth Glasses and Dishes, Shades for Ornaments, Fish Globes, Plate and Window Glass of every description, and Lamp Shades. Lactometers for trying the quality of Milk, 4 tubes, 7*s.* 6*d.*; 6 tubes, 10*s.* Self-registering Thermometers for Greenhouses, Horticultural Glass, &c.

THOMAS MILLINGTON, GLASS, COLOUR, AND PAINT MANUFACTURER, 87, BISHOPSGATE-STREET WITHOUT, LONDON.

HARTLEY'S PATENT ROUGH PLATE GLASS.

JAMES PHILLIPS AND CO., 116, Bishopsgate-street Without, beg to hand their list of Prices of the above description of GLASS. Cut to order in panes of

8 by 6	and under	10 by 8	at 4½*d.* per foot.
10 by 8	,,	14 by 10	at 5*d.* ,,
14 by 10	,,	1½ foot, or sizes not exceeding 20 inches long	at 5½*d.* ,,
1½ foot	,,	3 feet, or sizes not exceeding 30 inches long ...	at 6*d.* ,,

PACKED IN BOXES of 50 feet each.

6 by 4 and 6½ by 4½ ..... 12*s.* 0*d.*	8 by 6 and 8½ by 6½ ..... 15*s.* 0*d.*
7 by 5 and 7½ by 5½ 13 6	9 by 7 and 9½ by 7½ and 10 by 8 ..... 16 6

Well worth the attention of Nurserymen and Market Gardeners.

ROUGH PLATE GLASS.

	⅛	⅜	¼	⅝	1 in.	1¼	1½
	s. d.	*s. d.*	*s. d.*	*s. d.*	*s. d.*	*s. d.*	*s. d.*
Not above 15 in. long	0 11	1 0	1 6	3 0	4 6	5 3	6 0
Above 15 in. and not above 35	1 1	1 2	1 8	3 6	5 3	6 0	7 0
,, 35 ,, 75	1 3	1 4	1 10	4 0	6 0	7 0	8 0

GLASS TILES AND SLATES made to any size or pattern.

HALLIMAN'S REGISTERED FRUIT PROTECTORS, from 6*d.* to 1*s* each.

MILK PANS, from 2*s.* to 6*s.* each.

PROPAGATING AND BEE GLASSES, from 2*d.* each.

WASP TRAPS, 3*s.* 6*d.* per dozen.

LACTOMETERS, for trying the quality of Milk, 7*s.* 6*d.* each.

STANDS, for Pianofortes, 1*s.* each.

Glass Shades for Ornaments. Parian Marble. Wax and Alabaster Ornaments. Lamp Shades and Glasses. Patent and British Plate. Ornamental and Stained Glass; and every article in the Trade.

From the *Gardeners' Chronicle*, December 8, 1849:

"As for the article substituted for Rough Plate, and which is actually in the market for the purpose of imposing upon gardeners, it is wholly unfit for any horticultural purpose. The best samples of it which we have yet seen is sold by Mr. JAMES PHILLIPS, 116, BISHOPSGATE STREET, LONDON."

GLASS FOR CONSERVATORIES, &c.

HETLEY AND Co. supply 16-oz. Sheet Glass of British Manufacture, at prices varying from 2*d.* to 3*d.* per square foot, for the usual sizes required, many thousand feet of which are kept ready packed for immediate delivery. Lists of Prices and estimates forwarded on application, for PATENT ROUGH PLATE, THICK CROWN GLASS, GLASS TILES and SLATES, WATER-PIPES, PROPAGATING GLASSES, GLASS MILK PANS, PATENT PLATE-GLASS, ORNAMENTAL WINDOW GLASS, and GLASS SHADES, to JAMES HETLEY and Co., 35, Soho-square, London.

See the *Gardeners' Chronicle* first Saturday in each month.

PIMLICO SLATE WORKS.—Cisterns, Filters, Milk and Salting vessels, Corn and Flour Chests, Sinks, Dairy and Larder Shelves, Malting and other Flooring, Skirting, Refrigerators, Garden Edging, Flower Boxes, Pine pit Linings, Hot-bed Frames, moveable Cattle Sheds, Coping, Drain Stones and Traps, Steps and Risers, Balcony Landings, Roofing Slates, ridge roll and flap; Waste Slate for drains, Sun Dials, Fountains, and all descriptions of plain Slate Work in Town, or direct from Mr. MAGNUS'S Works in North Wales.

ENAMELLED SLATE Chimney-pieces, Billiard Tables, Console and other Table Tops, Mural Tablets, &c., in imitation of marble, surpassing the choicest marbles in beauty and durability, at less than half the cost of the commonest descriptions. Price Lists forwarded on application to Mr. MAGNUS, 39 and 40, Upper Belgrave-place, London.

BAKER'S PHEASANTRY, Beaufort-street, King's-road, Chelsea, by special appointment to her Majesty and H. R. H. Prince Albert.—ORNAMENTAL WATER FOWL, consisting of black and white swans, Egyptian, Canada, China, barnacle, brent, and laughing geese, shieldrakes, pintail, widgeon, summer and winter teal, gadwall, Labrador, shovellers, gold-eyed and dun divers, Carolina ducks, &c., domesticated and pinioned; also Spanish, Cochin China, Malay, Poland, Surrey, and Dorking fowls; white, Japan, pied, and common pea-fowl, and pure China pigs; and at 3, Half-moon-passage, Gracechurch-street, London.

DIXON'S NEW (REGISTERED) VENTILATOR.—This Ventilator is much neater and more simple than any hitherto invented, can be made of any shape or size, and can be as easily cleaned as any other part of a window. It does not interfere with the blinds, or opening of the windows, and if accidentally broken can be repaired by any glazier at the cost of a single pane of glass. Models can be seen, and every information obtained, by applying to the London agents, JAMES PHILLIPS and Co., 116, Bishopsgate-street Without.

Dixon v. *Bessell.—Alderman Wilson said, "It was a very clever invention, and he thought Mr. Dixon ought at least to have seven years' protection instead of three," and fined the defendant 60l., and 10l. costs, for an infringement of the Registered design.—Oct.* 1, 1850.

STEPHENSON AND Co., 61, Gracechurch-street, London, and 17, New Park-street, Southwark, Inventors and Manufacturers of the Improved CONICAL and DOUBLE CYLINDRICAL BOILERS, respectfully solicit the attention of scientific Horticulturists to their much improved method of applying the Tank System to Pineries, Propagating Houses, &c., by which atmospheric heat as well as bottom-heat is secured to any required degree, without the aid of pipes or flues. S. and Co. have also to state that at the request of numerous friends they are now making their Boilers of Iron, as well as Copper, by which the cost is reduced. These Boilers, which are now so well known, scarcely require description, but to those who have not seen them in operation, prospectuses will be forwarded, as well as reference of the highest authority; or they may be seen at most of the Nobility's seats and principal Nurseries throughout the kingdom.

S. and Co. beg to inform the Trade that at their Manufactory, 17, New Park-street, every article required for the construction of Horticultural Buildings, as well as for heating them, may be obtained upon the most advantageous terms.

Conservatories, &c., of Iron or Wood, erected upon the most ornamental designs. Balconies, Palisading, Field and Garden Fences, Wire-work, &c.

TO NOBLEMEN and GENTLEMEN who require a plentiful and CONSTANT SUPPLY of PURE WATER to their Country Mansions.

Messrs. EASTON and AMOS beg to offer their improved PATENT HYDRAULIC RAM, which is perfectly self-acting, and without manual labour is capable of lifting water to 30 times the height of the waterfall by which it is worked.

THIS MACHINE CAN BE APPLIED WHEREVER A FALL OF WATER OF A FEW FEET CAN BE OBTAINED; and its cheapness and durability, with the fact that upwards of 500 of them erected in England and other countries by Messrs. EASTON and AMOS have now been at work many years, afford ample proof of its great value and efficiency.

Estimates of the expense of the Machine, Pipes for the conveyance of Water, Tanks, and Reservoirs, may be had on application to Messrs. EASTON and AMOS, CONSULTING ENGINEERS to the ROYAL AGRICULTURAL SOCIETY, at their office in Orange-street, Trafalgar-square, or at the Works in the Grove, Southwark, London.

GREEN AND HOTHOUSES made by Machinery, warranted best materials, glazed 16-oz. sheet glass, of a large size, with glass at both ends and one door, painted three coats of best oil-colour, and delivered to any Railway or Wharf in London.

Lean-to.				Unglazed.			Span-roofed, glass all round. Glazed.			Unglazed.			Height in front, 3 feet 6 in., wood and glass; 3 feet 6 in. brickwork.
ft.	ft.	£	*s*	*d*	£	*s*	*d*	£	*s*	*d*	£	*s*	*d*	
12	by 8	15	10	0	10	0	0	18	6	0	11	15	0	
15	— 10	22	10	0	14	5	0	25	10	0	16	9	0	
18	— 12	28	10	0	18	0	0	32	14	0	20	12	6	
21	— 12	32	10	0	20	0	0	37	8	0	23	2	0	
24	— 13	44	0	0	25	12	6	49	12	0	29	2	0	
27	— 14	51	4	0	29	17	0	58	5	0	33	15	0	
30	— 15	61	17	0	36	2	0	69	14	0	40	9	0	
35	— 16	73	4	0	42	14	0	82	7	0	47	15	0	
40	— 17	85	7	0	49	15	9	95	17	0	55	12	0	
45	— 17	93	15	0	54	13	9	105	10	0	61	12	0	
50	— 18	108	10	0	63	6	0	121	13	6	70	19	0	
55	— 18	115	16	0	67	11	0	130	4	0	75	19	0	
60	— 18	124	13	0	72	14	3	140	8	0	82	8	0	

These Greenhouses are prepared in such a manner that any country carpenter can fix them with ease. A plan is sent free for the brickwork, &c.

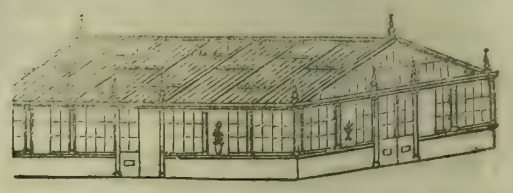
Estimates for erecting and heating the above, on application. Lists of prices for Sash-doors, &c., post-free on application.

J. LEWIS, Horticultural Works, Stamford-hill, Middlesex.

GREENHOUSES.

HENRY FREEMAN, HOTHOUSE BUILDER and HOT WATER APPARATUS MANUFACTURER, Triangle, Hackney, London, begs to solicit the attention of the gentry to his low prices for cash: Good substantial built Greenhouses, fixed complete, 42 feet long, 13 feet wide, 20*l.*; 21 feet long, 13 feet wide, 50*l.*; 12½ feet long, 10 feet wide, 30*l.* A large assortment of Conservatories, Hothouses, Pits, Melon and Cucumber Boxes, Iron Handlights, Summer-houses, Seats, &c. Estimates for any branch in the above line, either in wood or iron, or for park fencing.

HORTICULTURAL BUILDING AND HEATING BY HOT WATER.
WARRANTED BEST MATERIALS AND WORKMANSHIP AT THE LOWEST POSSIBLE PRICES.



J. WEEKS AND CO., King's-road, Chelsea, Horticultural Architects, Hothouse Builders, and Hot-water Apparatus Manufacturers. The Nobility and Gentry about to erect Horticultural buildings, or fix Hot-water Apparatus, will find at our Hothouse Works, King's-road, Chelsea, an extensive variety of Hothouses, Greenhouses, Conservatories, Pits, &c., erected, and in full operation, combining all modern improvements, so that a lady or gentleman can select the description of House best adapted for every required purpose.

THE HOT-WATER APPARATUSES (which are efficient and economical), are particularly worthy of attention, and are erected in all the Houses, Pits, &c., for both Top and Bottom Heat, and in constant operation in the Stoves.

The splendid collection of Stove and Greenhouse Plants are in the highest state of cultivation, and for sale at very low prices. Also a fine collection of Strong Grape Vines in pots from eyes, all the best sorts.

Plans, Models, and Estimates of Horticultural Buildings, also Catalogues of Plants, Vines, Seeds, &c., forwarded on application.—J. WEEKS and Co., King's-road, Chelsea, London.

PURE WATER raised to any height from a small stream, where a fall can be obtained, by FREEMAN ROE and HANSON'S IMPROVED RAM; less waste, by two-thirds, than those ordinarily in use. Portable Steam Engines for Agricultural purposes, Threshing Machines, Deep-well Pumps, Water-wheels, Baths, Hot-water Apparatus, and Fountains. Towns supplied with Gas or Water. Drawings and Estimates made.—FREEMAN ROE and HANSON, Hydraulic and Gas Engineers: Office, 70, Strand, London.

RABBIT NETS, SHEEP NETS, FISHING NETS.—Long Hare and Rabbit Nets, on Cords, 50 to 100 yards long, for catching Rabbits, Shooting, &c., dipped in Kyan's Preparation to prevent decay. Strong New Zealand Cord, or Cocoa-nut Fibre, Sheep Nets, 4½*d.* per yard, 4 feet wide. All kinds of Fishing Nets, for Home Use or Exportation, made by Machinery.

A. RICHARDSON, 21, Tonbridge-place, New-road, London.

WATERPROOF CAPES AND COATS.—Large-sized Waterproof Capes to effectually keep a man from wet while stooping down, 3*s.* each; 3000 second-hand London Police Capes, fresh dressed, 18*s.* per dozen, for farm servants; India-rubber Coats, 7*s.* 6*d.* to 10*s.*; large Driving Aprons, with straps, 12*s.* each; Horses' Loin Cloths, with straps, 7*s.* for Shaft Horses, and 9*s.* 6*d.* for Trace Horses. Tarpaulings, dressed with India-rubber, for Carts, Waggons, &c.: 1*l.* for Millers' Carts, and 26*s.* for Waggons, or 2*s.* per square yard when made up. Roofing Felt 1*d.* per square foot. Packing Canvas, &c.—R. RICHARDSON, 21, Tonbridge-place, New-road, London.

SUBSTITUTE FOR GARDEN MATS, TARPAULING, &c.—THICK SHEETING, dressed with a composition, admitting light to Plants and excluding frost, 6*d.* per square yard; or 1*s.* per yard two yards wide. This is recommended for covering Greenhouses, Pits, and Frames; for fumigating Cloth, preserving Blossom of Fruit, and also for shading in summer. It will outlast two Mats, keep out more cold, give light (which is so desirable), and is nearly the same price as Mat. Also Tarpauling, two yards wide, 1*s.* per yard, or half the width 7*d.* per yard.

N.B.—Strong Canvas Frame Cover, 2*s.* per yard two yards wide. Patent Felt, 1*d.* per square foot.

ROBERT RICHARDSON, Net, Tent, and Tarpauling Maker, 21, Tonbridge-place, New-road, London.

WIRE FENCING, painted, an effectual Fence against Hares, Rabbits, Sheep, Cats, Dogs, Deer, &c., also for enclosing Pheasants, Fowls, &c.; for heightening existing walls, fences, &c. and as a protection against petty thieves. 15 inches high, 3*d.* per yard; 18 inches, 3½*d.*; 2 feet, 4½*d*; 3 feet, 6¾*d.*; 4 feet, 9*d.*; and 6 feet, 1*s.* per yard; less than 2 inch mesh. Being worked in oil, it will not rust when painted, and will last twice as long before it requires repainting as any other kind of wirework that is made. Also, Sparrow-proof Wirework, 2*d.* per square foot; Wirework, 4 inch mesh, ½*d.* per square foot. Wirework to order. Numerous testimonials of approval.

R. RICHARDSON, 21, Tonbridge-place, New-road, London.

N.B. As this wire, kept painted, would last 20 years, farmers and others may, at a small expense, preserve their crops from hares and rabbits.

TO NOBLEMEN, GENTLEMEN, AND PUBLIC COMPANIES.

C. LODDIGES AND SONS beg most respectfully to inform the above, that in consequence of the land upon which their celebrated Arboretum is planted being required for building purposes, they are determined to offer the STOCK at such a reduction in price (for cash only) as cannot fail to attract the attention of all who are engaged in extensive ornamental planting. The trees are of the finest description, and range from 6 to 10 feet high.

	Named. Per doz.	Unnamed. Per 100.
ACER (Maple), of from 40 to 50 species...	4s. 0d.	25s. 0d.
ÆSCULUS (Horse-Chestnut), 30 species	4 0	25 0
,, rubicunda (true scarlet) ...	6 0	
ALNUS (Alder), 26 species	4 0	25 0
AMYGDALUS (Almond)	4 0	25 0
BETULA (Birch), 30 species	4 0	25 0
CORNUS (Dogwood)	4 0	25 0
CORYLUS (Nut)	4 0	25 0
COTONEASTER	4 0	25 0
CRATÆGUS (Thorn), from 80 to 90 sp.	4 0	25 0
CYTISUS	4 0	25 0
FRAXINUS (Ash), 40 to 50 species ...	4 0	25 0
MESPILUS	4 0	25 0
POPULUS (Poplar), 25 species	4 0	25 0
PRUNUS (Plum), 50 species	4 0	25 0
PYRUS (Pear), 50 to 60 species	4 0	25 0
QUERCUS (Oak), 30 to 40 species ...	12 0	
RIBES (Currant), 50 species	4 0	25 0
ROBINIA (Acacia), 30 species	4 0	25 0
SALIX (Willow), 150 species	4 0	25 0
SORBUS (Mountain Ash)	4 0	25 0
SPIRÆA	4 0	25 0
TILIA (Lime)	4 0	25 0
ULMUS (Elm), 35 species	4 0	25 0
Fine Trees selected from the above, for rough planting, 10l. per 1000.		
Smaller genera, at equally low prices.		
RHODODENDRON ponticum and vars., 3 to 4 feet across	10 0	
AZALEA pontica, ditto ditto	10 0	
,, Ghent and other varieties ...	18 0	

N.B. Packing will be charged as low as possible. Post-office orders made payable either in London or Hackney.
Hackney, Nov. 16.

LATE SEEDLING GOOSEBERRY, "NEGRO BOY."
Two-year plants, 5s. each; one-year do., 3s. 6d.

JOHN WILLISON can supply the above splendid GOOSEBERRY, which has been tested by hundreds with the best varieties. Two dishes were shown at Whitby on the 24th Sept. last, for which an extra prize was awarded. The following extracts are selected from the editors' opinions.

Gardeners' Chronicle, Sept. 15, 1849.—"*J. W.* Late seedling Gooseberry, dark red, rich flavour, and would doubtless be good for preserving. It retained its flavour during carriage better than is generally found to be the case with Gooseberries."

Midland Florist for October.—"Willison's Negro Boy Gooseberry. We have this day (Sept. 18) received specimens of the above fruit; though not large, yet the lateness of its season renders it a valuable acquisition for the dessert. The specimens were perfectly smooth, of fine flavour, and a very dark colour; in fact, as they lay in the box, packed in cotton wool, they looked more like Damsons than Gooseberries."

Gardeners' and Farmers' Journal.—"*J. W.* We pronounce this winter Gooseberry excellent, and, for so late in the season, of an exquisite flavour."

STRAWBERRIES.—A few of the best varieties, viz., Cuthill's Black Prince, 10s. 6d. per 100; Kitley's Goliah, 10s. 6d.; Myatt's Eleanor, 5s.; British Queen, 3s. 6d.; Keens' Seedling, 3s.; Elton Pine, 3s.; Swainston do., 3s.

RHUBARB.—Victoria, 6s. per dozen; Royal Albert and Linnæus, 8s. per dozen.

The usual discount to the trade. All orders made payable to JOHN WILLISON, Flowergate, Whitby.

The Gardeners' Chronicle.

SATURDAY, NOVEMBER 16, 1850.

MEETINGS FOR THE ENSUING WEEK.

MONDAY,	Nov.	18	Chemical ... 8 P.M. Statistical ... 8 P.M. British Architects ... 8 P.M.
TUESDAY,	—	19	Linnean ... 8 P.M. Civil Engineers ... 8 P.M. Pathological ... 8 P.M.
WEDNESDAY,	—	20	Society of Arts ... 8 P.M. Geological ... 8½ P.M.
THURSDAY,	—	21	Antiquarian ... 8 P.M. Royal ... 8½ P.M.
FRIDAY,	—	22	Philological ... 8 P.M.
SATURDAY,	—	23	Royal Botanic ... 3½ P.M. Medical ... 8 P.M.

OUR readers will remember the statement lately made concerning the great VINE at Cumberland Lodge; and an allusion then made to concreted borders. By the latter it was not intended to disparage the method, which is excellent in some situations, although needless in others; had it been otherwise we should nevertheless have found no cause to regret having raised the question, seeing that it has produced the following excellent letter from Mr. FLEMING.

"In a leading article, at page 691, allusion is made to concreting Vine borders below, to prevent the roots from going into an unsuitable subsoil, and as this is a favourite plan of mine, and has been extensively adopted here, not only for Vines, but for many other kinds of fruit, on a soil where they did not flourish, I am anxious to say a few words on its merits, lest it should be classed among the 'unnatural and unnecessary' systems, which your correspondent mentions.

"At the conclusion of the article, you correctly state, that the Vine's chief desire is a warm, light, dry, shallow border; in short, similar to the soil in its natural state, in many parts of the country; and particularly in the neighbourhood of the two famous Vines mentioned in the same paper, where the Vine flourishes so well, as in the case of that at Cumberland Lodge, as to render having recourse to artificial borders unnecessary.

"Mr. WILMOT'S Vines grow in a strong, rather clayey mixture, and there are some dung linings near, from which they receive much nutriment; but he has found them do well planted in any part of his grounds. Mr. PATRICK, at Stoke Park, near Slough, gets fine Muscats from a Vine planted in the back path of a house, and that without any other preparation than merely digging or picking a hole, for it is a hard dry bottom, putting the plant in, and watering it. These facts merely prove that a hard clay, as at Cumberland Lodge, is not a bad bottom for Vines, any more than is the compound of flint, chalk, and clay at Stoke Park. But, if the drainage in these cases had not been perfect—how would the matter have stood? The subsoil, although in some cases of a clayey nature, and in others a hard conglomeration of gravel, chalk, and flint, is full of natural fissures, which quickly drain the soil, and admit the roots to their sides, where they cling with their thousands of minute points, ready to absorb the nutriment carried down by rains; under which circumstances, the more rain the more food for the Vines, and without any souring or stagnation of the soil. It is scarcely necessary to say that in other parts of the country, the Vine has to contend with damp retentive soils, which, even when drained, are not favourable to the production of well-coloured or highly flavoured Grapes; and gardeners are compelled to have recourse to various means of remedying such evils, some of which methods, it is true, are both expensive and unnatural. I shall only treat now of the plan which we have adopted here, and with which, after nine years' experience, we are perfectly satisfied. Had the Vines done well on our soil, there would of course have been no necessity for going to the expense of forming a prepared bottom to keep the roots out of the subsoil, but the reverse of this was the case; we adopted the plan of concreting, which we find to be the cheapest and most effectual, and the material can easily be procured in any part of the kingdom. The mode of preparing it, and the quantities of gravel and lime, are stated in former numbers of the *Chronicle*.

"Any of your readers who may be under the necessity of making artificial bottoms for their Vine borders, will do well to consider the following circumstance, which lately came under our notice. In one of our houses which has been planted eight years, the black Grapes have not coloured well this season; and as the border was well made, and rested upon well prepared concrete, having a declivity to throw off the wet quickly, we were much disappointed. We opened the ground in front of the border, and the cause of the Grapes not colouring was immediately discovered; the roots had got into the drain, and across it into the subsoil beyond the concrete. Now if any proof was wanted to show that our subsoil is unfavourable to the production of good Grapes, here was one. The Vine will grow in almost any soil, but it will not produce good Grapes, in some situations, even when drained; and the only thing to do in such cases, is to prevent the roots from going into it, and to make the border of the best material within reach. In making any more new borders, I have determined to allow the Vines only a few feet to grow in the first year, and frequently to break off the points of the leading roots, to cause them to fill the border with fibres as they advance. Additions shall be made by a little at a time, and the result will be shorter-jointed wood, and compact bunches of well swelled fruit. After the border is finished, and the Vines have filled it with roots, we shall assist them when necessary by liquid manure, and top-dressings of light rich mixtures, which should be applied in the autumn; at the same time removing the soil from the front and ends of the border down to the concrete, and shortening back all roots which are going over the edge. The late autumn and winter rains should be kept from penetrating the border; the cheapest way of doing this is to lay a few dry leaves over the surface, and then thatch with straw, or cover with a tar cloth. Concreting the surface has been abandoned, not because the fruit obtained during its use was not equally good, but on account of its appearance in summer, and the effect produced on it by frost in winter, which rendered it necessary to cover it with as much litter as would have protected the roots from cold and wet, without the assistance of concrete.

"I have now, I believe, gone into all the matter of the concreting alluded to by your correspondent; and I hope that the authors of the other systems mentioned by him will come forward and defend the practices they have recommended, wherever they feel they are right, and candidly confess where they were wrong. A little discussion upon Vine culture, after the long silence that has been observed on the subject, will be both entertaining and instructive. With regard to large Vines, they are easily obtained. Give them plenty of room—a house to one Vine to begin with, and enlarge this, and extend the border as required, and they will soon become large enough; but avoid early forcing and heavy cropping for at least the first 10 years. Were this done the large Vines at Hampton Court and Cumberland Lodge, fine as they certainly are, would no longer appear so wonderful. Where a family has to be supplied with a succession of Grapes it would be inconvenient to have very large Vines; but we are beginning to allow only one to a house, instead of one to a rafter. It is natural to a Vine to cover a large space, and the more room that is given to it the stronger and more lasting will it be, and the greater the quantity of fruit which it will bear without injury."

In these observations we entirely concur; and we recommend them to the attentive perusal of all Grape growers, young or old. As to the Cumberland-lodge case, it would not be incorrect to say that the border there rests upon natural concrete; so hard and impenetrable is the subsoil upon which lies the light material in which the roots are found. It is the more necessary to point this out, because we find correspondents inquiring whether Vines may not be planted in borders consisting *entirely of clay*. We had hoped that all gardeners were by this time aware that mere clay is one of the most unfit of materials for any purposes of cultivation whatsoever. When it is largely mixed with friable or porous matter, such as cinders, lime rubbish, charcoal, straw, sticks, stones, broken bricks, and similar materials, it acquires highly valuable qualities, but as mere clay it is perhaps the worst material known to cultivators.

A CORRESPONDENT asked us lately whether WALNUT TREES could be grafted, and how? Two or three similar inquiries having been since made, we are led to suppose that the question is one of general interest; as indeed it well may be, considering the frequent and very general failure of the Walnut crop in this country, owing to the varieties in cultivation not being hardy enough to ripen fruit properly in our cold summers. We, therefore, at once lay before our readers what is known or conjectured upon this subject, instead of delaying till the spring, when it may be forgotten or thrust aside by other topics.

There is a general opinion in this country that the Walnut tree cannot be grafted. English nurserymen sell seedlings only, which vary from plant to plant, in the period of their ripening and in the quality of their fruit; in their timber alone is there any uniformity. Nevertheless there is no great difficulty in performing the operation of grafting; and therefore buyers are justified in expecting varieties of this nut to be offered to their choice in the same way as Apples or stone fruit. There is no sufficient reason why thin-shelled, early, late, large, and small Walnuts should not be propagated with the same certainty as Ribston Pippins and Codlings. In fact, they are so propagated in the Continental nurseries, where they may be bought like other fruit trees. The French distinguish among others the *Mésange*, or Tomtit nut, so called because the shell is so thin that this bird pierces it to get at the kernel; the *Late*, which never flowers till frosts are over; the *Noix de Jauge*, a large coarse sort well known in this country as the French Walnut; the *Long-fruited*, of excellent quality, and a great bearer; and the *Cluster*, so called because its nuts hang in bunches 15 or 20 together; besides which, they have a *prolific* sort which bears in the second year, and which they call *Præparturiens*. This last was produced in 1837 by M. ANDRÉ LEROY, the well-known nurseryman of Angers. We should think it would be a fair speculation to procure from some respectable continental dealer a supply of grafted Walnut trees for sale here. Care however would have to be taken that they are really grafted; for we perceive that seedlings of the *prolific* variety above alluded to are this year offered by M. LEROY himself at 4*l*. per thousand!

We believe that the first person who succeeded in this country in grafting the Walnut was the late Mr. KNIGHT, who described his method in the following manner.

"The fluid which the seeds of the Walnut-tree contain, when that is fully prepared to germinate in the spring, and which was deposited within it for the purpose of affording nutriment to the seminal buds, or plumule, in the preceding autumn, is sweet, as in a great many other kinds of seeds: but during germination this becomes, in the seed of the Walnut-tree, bitter and acrid. Similar changes take place in the sap which is deposited, for analogous purposes, in the bark and wood of the Walnut-tree, during the germination of its buds; and I was led by the discoveries of M. Dutrochet to infer the probability, that the sap during, and subsequent to, its chemical changes, might acquire new and more extensive vital powers. I therefore resolved to suffer the buds of my grafts, and those of the stocks, to which I proposed to apply them, to unfold, and

to grow during a week or ten days; then to destroy all the young shoots and foliage, and to graft at a subsequent period. A very severe frost in the morning of the 7th of May saved me the trouble of destroying the young shoots; but it deranged my experiment, by killing much of the slender annual wood, which I proposed to use for grafts; so that I found some difficulty in choosing proper grafts. The swelling of the small, and previously almost invisible, buds, within a few days enabled me to distinguish the living wood from that which had been killed by the frost, and the stocks were grafted upon the 18th of May. My grafter had more than once been previously employed by me to graft Walnut-trees in various ways, and never having in any degree succeeded, he did not seem at all pleased with the task assigned him, and very confidently foretold that every graft would die: and I subsequently found that he had insured, to some extent, the truth of his prophesy, by having applied grafts which were actually dead. The whole number employed was 28, and out of these 22 grew well; generally very vigorously, many producing shoots of nearly a yard long, and of very great strength; and the length of the longest shoot exceeding a yard and 5 inches. The grafts were attached to the young (annual) wood of stocks, which were between 5 and 8 feet high; and in all cases they were placed to stand astride the stocks, one division being in some instances introduced between the bark and the wood; and both divisions being, in others, fitted to the wood or bark in the ordinary way. Both modes of operating were equally successful. In each of these methods of grafting it is advantageous to pare away almost all the wood of both the divisions of the grafts; and therefore the wide dimensions of the medulla in the young shoots of the Walnut-tree do not present any inconvenience to the grafter.

"No difficulties will henceforth, I conclude, occur in propagating varieties of Walnuts by grafting; and I am much inclined to believe, that different species and varieties of Oaks may be successfully grafted by the same mode of management."

The French graft the Walnut in a variety of ways, especially preferring ring-grafting. They find it necessary, however, that the sap should be in full flow, whatever the method they employ. Their way of ring-grafting is this. When the sap is running freely they remove from the scion a ring of bark on which there is a good bud; and it is immediately transferred to the stock, from which a similar ring has been taken; of course the ring must be divided on the side away from the eye, in order to get it round the stock. When it is properly fitted, the lips of the wound and the edges of the ring being accurately adjusted, the whole is secured with grafting wax, prepared by melting together $\frac{5}{8}$ of pitch, $\frac{1}{8}$ resin, $\frac{1}{8}$ yellow wax, $\frac{1}{8}$ tallow, with the addition of as much fine brick-dust as will give it consistence; it is used as hot as the finger can readily bear it. This sort of graft is never tied. In this way the French succeed in grafting old trees which have been headed back; but they, in such cases, operate upon the shoots which such trees throw up from the pollarded head.

In addition to these modes we would suggest the trial of herbaceous grafting, the best of all in theory, and by far the best in practice also, where circumstances admit of its application. But, perhaps, some of our correspondents have had practical experience in this matter, in which case, we dare say, they will favour us with the result.

GARDENS IN THE NORTH OF ENGLAND, SCOTLAND, AND IRELAND.—No. II.

The new rockwork at Chatsworth is very well executed—perhaps no made rockwork could be better, especially the cascade falling from the highest point. The parterre gardening does not seem to be very choice nor much attended to: this is a defect, I think, in so vast a place, and when so much is spent on the gardens. All which is attempted should be perfect. I observed one bed of a variety of the China Rose (Barclayana), which I believe is little known: it is very handsome and a free bloomer. I remarked also a sort of edging to one of the fountains a kind of hedge of the Turkey Oak, kept low (about 2 feet from the ground.) The foliage was very rich, and it seemed admirably adapted for the purpose; the gardener told me it was renewed every five or six years by planting Acorns to produce young plants.

I say nothing about the house for the Victoria Regia, as it has been so lately described in the *Gardeners' Chronicle*.

Mr. Alcard, whose collection of Orchidaceous plants, near London, was well known, has built, near Chatsworth, a beautiful mansion, attached to which is a handsome conservatory, and permission to see this was very kindly granted. The collection of Orchids has not yet been removed here. The most remarkable thing was a wall or fence at the back of the conservatory, which is very high. There was placed, about 2 inches from the wall, a zinc wire netting, filled up with common moss, and in this were planted various kinds of hothouse Ferns, Lycopodiums, and a few Orchidaceous plants, though it is not probable that it will be possible to cultivate well here the more delicate kinds; yet there were good plants of Stanhopeas, and a Vanda Roxburghii in flower.

I do not think I ever saw a more beautiful and interesting mode of growing Ferns; and, if it were not for the fear that the large mass of wet moss would be a very tempting harbour for various kinds of insects, I should say that no Orchidaceous house should be without the walls so ornamented; that is, where there are such things as back walls and lean-to houses, which I hope will soon cease to exist, in these days of cheap glass and cheap warming.

At Edinburgh I visited the Botanic Garden, which is open to the public; it is well laid out, and surrounded by masses of beautiful evergreen and other trees. When the *Gardeners' Chronicle* first started, I made some observations as to what a botanic garden should consist of, and you promised you would take up the subject, but you have not yet done so. The subject is important, and I am sure there is room for improvement. Hitherto, I never saw one which was of much use, especially as regards the stove and greenhouse department, in which there is never any systematic arrangement, and they generally are little else than a mass of ill-grown plants. And as regards the stove and greenhouses in the Edinburgh Botanic Garden, I do not think these are exceptions. There was a small collection of Orchidaceous plants, not very well grown; these were in a house with I believe a northern aspect; as far as I could judge, they are not much cared for, and I suspect not in all cases rightly named. There was a good plant of Zygopetalon maxillare in flower.

The rules for admission to the houses are not so liberal as at Kew, they being open to the public only one day in a week, and as my visit was not on that day, I flattened my nose for some time at the window of one of the houses, in vain trying to coax one of the men to open the door to take a request to the Curator for permission to see the houses. Luckily meeting a gentleman who appeared acquainted with the garden, I sent in my name, and got leave to go over the houses. Mr. M'Nab should pay a visit to Kew, and then probably he would make more liberal rules for seeing his plants. I should mention that on my way to Edinburgh I stopped at Newcastle for the purpose of seeing the Orchidaceous plants of the indefatigable collector, Mr. Wailes. Although he does not attempt to grow many large specimens, so as to rival the great collections which appear at the Chiswick and Regent's-park Shows, he seems to have one or more specimens of everything that is good, and many rare or new: he is in the receipt of new plants from all quarters. It occurred to me that more heat, light, and air, would be an improvement in his mode of growing his plants; but I am quite aware it is not for me, a mere tyro, to seem to teach so experienced a cultivator, yet, I suspect that the true mode of growth of all, except such as come from a very temperate climate, is from March to grow them in as much light, air, moisture, and heat, as can be managed (guarding against the sun scorching) and so to get the growth of most of the plants completed by the end of August, and thereby to be enabled to give them a long rest. In the different collections I have seen on my tour I think that this is not sufficiently attended to.

Nothing could be more princely than the gardens at Dalkeith, both in the fruit and the flower department. I observed a mode of training the Peaches in the Peach-house which appears excellent as regards economy of space, especially in the growth of trees on the back wall. I had not time to take an accurate note of this, but it would be worth your while to get a description, which will, I think, be useful to your readers. The wood appeared in excellent order; the kitchen and flower gardens extend over about 20 acres. The collection of stove and greenhouse plants was extensive and in excellent order. The collection of Orchidaceous plants is also very large—I believe one of the largest, if not the largest private collection in this country. The plants appeared to be well grown, and to have had plenty of light, though, as I have before observed, I think even these would have been better if they had been grown during the summer in more heat. My observations particularly apply to Saccolabiums, Vandas, and Aerides, but I am aware this is *questio vexata*, and that skilful growers prefer in all cases a low temperature. The gardens here, as at Chatsworth, are shown with the greatest liberality. There appeared on the hot walls a very tolerable crop of Pears, but I did not ascertain what were the kinds which succeeded best in that climate. *Dodman.*

VILLA AND SUBURBAN GARDENING.

Those who garden in a small way, will now be put to great inconvenience in attempting to save those plants from frost that have rendered their gardens gay during the past season. Such as have pits, greenhouses, and other contrivances artificially heated will, doubtless, have better and safer means of protection than those who possess nothing of the kind. It is an error to suppose, however, that the majority of tender ornamental flower-garden plants require heated buildings to protect them from frost—thousands of such plants may be kept perfectly secure without the aid of brick or wood frames and glazed lights. But there are a few particulars regarding this subject, that must be especially explained.

Plants that are intended for next year's decoration in the flower garden, and where no structures exist combining stability accompanied with the means of supplying artificial warmth, require preparation for a state of dormancy, which is the main point to be attended to; growth is not required, indeed such would be highly injurious. The necessary preparation consists in the hardening of the shoots; a perfectly ripened shoot, from which the sap is in a great measure expelled, never suffers from frost like one full of juice and with a superfluity of soft spongy foliage. Specimens which have been growing in the open border will, of course, be in such a condition. The getting rid of the redundant foliage, and maturing the soft stems, are the chief objects to be effected, and in this, as I have already stated, lies the only chance of their being wintered alive. If the pit is constructed merely of turf, in the usual form, with an inclination to the south, the sides being 15 inches thick, the plants, when dug out of the beds, should be dried for a few days in the sun, in order to check their vigour; a ball of soil being retained around the root; it is not necessary that the plants should be potted; when they have undergone this preparation a quantity of dry sandy soil should be in readiness, and this, intermixed with an equal portion of sifted coal ashes, will form a good material in which again to plant them, in the pit. When planting is completed, be careful in exposing them on all dry days, and diligent in protecting them during wet weather, for on this hinges your success. Temporary frames covered with asphalte may be readily removed and replaced over the plants as the nature of the weather demands; during intense frost an additional covering of straw or litter will be required. Should the plants get drenched with wet, and frost succeed, no protection can save them; more particularly, if severe weather continues for any length of time. Getting them in the first place to part with a large portion of their watery nature, partially denuding them of their rank foliage, placing them in the dry material above recommended, and keeping them protected from wet, will secure and fortify them against immediate injury from frost. Under such conditions they may be kept securely covered for weeks together, without receiving serious damage; and by gradual exposure, as the spring advances, they will begin to exhibit signs of growth, so that when the period of planting out arrives, they may be transplanted with safety, and will suffer less from exposure than plants taken from greenhouses. *Pharo.*

BRITISH SONG BIRDS.

No. V.—We have now to consider minutely the essentials necessary for fitting up the interior of an aviary; for on the completeness or otherwise of the internal arrangements, do the comfort and happiness of your birds depend.

First, of the flooring. My flooring was of wood, laid on sleepers, and elevated some considerable distance from the ground. The unsuitableness, however, of a wooden flooring, has recently been rendered apparent by the total destruction of all my feathered family by an army of rats, who, at midnight—assassin-like—made their way through the floor, and conveyed away their innocent victims one by one from off their perches.

For full particulars of this murderous onslaught, reference can be made to the *Gardeners' Chronicle* of January 12 in the present year, p. 22. In the same Paper, bearing date February 9, page 87, will also be found vividly recorded the reception I gave the enemy, ending in their total annihilation. I had a grand cause for quarrel, and I amply revenged myself. If ever revenge was lawfully sweet, it was then.

I should recommend that the flooring be of thick tiles, about 12 inches square each, and made of brick earth.* This would effectually prevent the entrance of vermin. The walls all round the room should be cased with floor-cloth, of a white marble vein, with a black pattern on it, in the form of a large diamond. This looks remarkably well, both in summer and in winter; and it can be readily cleaned with a sponge and warm water.

In each of the four corners of the room, about 12 inches from the windows, a square upright pole, 9 feet long and $1\frac{1}{4}$ inch thick, should be let into the floor, and carefully secured by nailing the feet to the ground. To steady these, at their summit, round perches of sufficient lengths, and of a quarter of an inch in thickness, should be nailed, one upon the top of each. This will form a kind of rail all round the room, leaving the centre open, so as not to interfere with the grand fountain which will be in the middle. On these lofty perches the birds will, for the most part, roost. Indeed, in the winter, they will always use them for roosting on. The cause is evident. Being immediately below the ceiling, and not exposed to draught, they will sit warmly, cosily, snugly—defying the most severe frosts.

Through the four square upright poles, round perches, 4 inches long, and of half an inch calibre, should be inserted, at a distance of 5 inches apart, every alternate perch being let in transversely. This arrangement will prevent the plumage of the birds

* A correspondent under the signature of "X. Y. Z., Hants," says, in the *Gardeners' Chronicle* of February 5, p 70, "Every one who has read Mr. Kidd's lamentable narrative of the destruction, by rats, of his beautiful and unique aviary, will deeply sympathise with him. The loss is not only great to himself but to all who love nature. * * * If Mr. Kidd had laid down a bed of shingle or rough gravel from 6 to 10 inches in depth beneath the floor of his aviary, no rat could have reached him. They cannot burrow in shingle. I have tried it beneath the floor of a barn here, and it has effectually kept this vermin out."

being unnecessarily dirtied by those which are sitting the one immediately over the other, as they will do in the day time, when they are singing. Another rail of round perches, a quarter of an inch thick, should run all round the windows; they should be about 5 ins. from, and immediately level with, the bottom of the lower panes. The birds, by this plan, will be readily and constantly seen from the dwelling-house, and the variety of their colours will be shown to great advantage. The beauty of the latter will be materially enhanced by reflection and refraction in the looking-glasses, of which I shall presently speak.

At the back of the aviary, 5 inches distant from the wall, a long round perch, half an inch thick, must run from end to end. All the perches must be painted over four times at least, in the best green colour, and be thoroughly dry before they are fit for use. Round the ceiling there should be a neat moulded cornice; and a narrow skirting-board, painted stone colour, all round the bottom of the room.

The door of entrance, which should be of glass, must be at one end of the aviary, and must open outwards; over it the double window before spoken of, also opening outwards. Just within the glass door should be constructed a three-sided mahogany frame-work or partition, 14 inches deep, having a painted shelving top of wood. The front should form a door opening inwards. This partition should be faced with closely-meshed galvanised iron wire, and the door of it never opened until after the outer door has been closed, and *vice versa*. By adopting this precaution none of the inmates can escape.

The next thing to be considered is the fountain. This should be of zinc, and its circumference about 18 inches, with a turnover lip, and sides gradually shelving downwards to the depth of about 4 inches. The position of the fountain should be immediately in the centre of the room. To carry off the superfluous water, a waste pipe should pass through the wooden support of the fountain and under the floor; a second pipe, similarly introduced, would carry off the foul water every morning, by the withdrawal of the plug attached to the bottom of the basin.

The same aperture that conveys away the waste-pipe will also admit the pipe which is to supply the water; which last must be forced up by high pressure, and regulated in its ascent by a moveable jet. To accomplish this, a large zinc cistern must be fixed immediately over the aviary, on the outside; and it must be kept constantly filled with spring water.*

To prevent the possibility of any of the birds being accidentally drowned, and to afford them no facilities for acts of "self-destruction," pieces of coral, stone, or crystal rock, should be introduced into the water. On these they will stand in security; and, placing themselves immediately under the descending shower, they will lave themselves in the limpid stream, at least twice every day, retiring from "the bath" in a perfect ecstacy of delight.

The birds having performed their ablutions, which they do in the most perfect order, will now necessarily require to make their toilet; and here let me tell my reader, if he has never yet witnessed this sight, he has a rare treat to come. The "ceremony" observed on such occasions is worthy of royalty itself; but I shall have to dilate on this hereafter, when I speak of the "habits" of the feathered choir.

In furnishing them "Aids for Reflection," I should recommend three looking-glasses, each 3 feet long by 4 inches wide. These should be mounted in narrow frames of flat oak, and nailed to the back of the aviary—just above or nearly level with the long perches. They should be 12 inches apart. The introduction of these glasses will afford a never-ending source of amusement to all parties concerned, and will ensure "respectability of appearance" at least, among all the inhabitants.

The "hoppers," or food troughs, for the seed-birds, are made of mahogany, on the principle of a rack; having a moveable slide of transparent glass in front, and a cover or lid with hinges, lifting up at the top, to receive the seed. All along the front of these "hoppers" is a projecting rail, on which the birds sit while eating, and, underneath, four round holes, through which they put their heads to get their seed. As the latter is being cracked, and eaten, the hull falls to the ground, and a fresh supply descends from above—the apparatus itself being self-supplying.

Four of these "hoppers" should be suspended on the wall, between and on each side of the looking-glasses. They should be regularly emptied and cleaned out twice every month, as a quantity of dust, &c., is apt to collect in them, thereby spoiling the food. If kept half filled only, this will prevent waste. They are procurable, I should add, of almost any London dealer in birds.

The pans for the food of the soft-billed birds must be kept always on the ground. I should advise their being made of glass, or china, and of a square form.

The floor of the room should be cleansed *daily*; and always kept well supplied with small and pebbly gravel (well dried), and old mortar well bruised. *William Kidd, New-road, Hammersmith.*

THE CULTURE OF THE VINE A HELPMATE TO THE CULTURE OF THE MIND; OR, TWO BIRDS KILLED WITH ONE STONE.

[FOR COTTAGERS.]

No. III.—On Raising and Management of Vines.—If, my friends, you have carefully read, conned, turned over, and digested the contents of the foregoing papers, we will proceed to another branch of our subject. Now, since climate and soil do so much for the cultivator in the countries best suited to the growth of the Vine, we must try and excel them as much in our management.

Culture of the Mind.

As soil and climate are favourable, so does the produce increase. And so does man's wit and energy decrease.

I will first begin with a few general rules.

In pruning always cut upwards, and in a somewhat sloping direction.

Always leave an inch of blank wood above a bud, and let the cut be made on the side opposite the bud.

Sores always smart; and old wounds, if not cut away and smoothed over, are always rankling.

In cutting out an old branch, prune it even with the limb from which it grows, in order that the wound may quickly heal.

A rule extraneous but useful.

Never prune in frosty weather, or when a frost may be expected. Never prune in the months of March, April, or May. Let the general pruning in autumn take place as soon after the beginning of October as the gathering of the fruit will allow. Never prune when in a rage, lest you should cut your finger.

I will here add a scale by which the fruit may be calculated which a Vine ought to bear.

A man who gets into debt may be likened to an over-fruited Vine, or worked-out ground, for he has forestalled the fruit of his labour, and will either cheat his creditors by death, or must retrench to recover his former position. Greediness brings its own punishment.

The quantity of fruit a Vine ought to bear is best calculated by the circumference of the stem. No Vine should bear fruit till its girth near the ground measures three inches, when it may ripen 5 lbs.; and for every half inch increase of size 5 lbs. may be added. Thus, if you raise a Vine from a cutting you must not be impatient or greedy; for every pound's weight of Grapes a Vine is suffered to bear before it attains the size of 3 inches round the stem, 10 lbs. will be lost eventually. Therefore at every autumnal pruning the number of rods and buds (allowing a bunch of Grapes to each bud 1 lb. in weight), should be reckoned in reference to the measurement of the stem. Let one of the lads try his newly acquired skill in figures on this calculation some evening when he has returned from the national school.

On Raising Vines from Cuttings.—Vines are best raised from cuttings. Choose, at the autumnal pruning, shoots of that year, ripe (that is brown and hard), moderate in size, and short-jointed. Cut them off so as to leave a thin slice of old wood at the bottom. Then shorten them to two buds, not reckoning the bottom one. Dig the ground to the depth of 18 inches, make the earth fine, and if the soil be stiff, take two-thirds of it away, and supply its place with light rich mould, or road-scrapings. Make a hole with a stick; put in the cutting about 3 inches deep, and press the soil lightly round it.

A good education when young, and a good start, are better than an increased patrimony.

Cuttings should be put in in a well-sheltered spot, and where not too much sun comes. The soil should be kept moist, for which purpose soap-suds will do as well as any other liquid manure.—*C. A., Nov.* 5.

Fears of disappointment are oft the best stimulus for an enterprising mind.

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* The plumber who makes the cistern will, or ought to, thoroughly understand how to make the fountain "play."

Home Correspondence.

Fern Cases.—I was much pleased lately with some Fern cases (some being miniature greenhouses, some mere bell-glasses) placed on a landing in a house. Mentioning them, I was requested to ask about their management, and received the following answer. "Do not imagine it a difficult thing to have fine cases of plants. The soil is the first point; get good peat, with plenty of white sand in it, and mix with it about a third part rotten leaf mould; a bottom of the case must be well drained with small stones, &c. Water plentifully when the plants are first planted, but never after till you see by certain signs that it is wanted. The cases vary in price, a zinc worker and glazier might build one very cheap; it should be a small greenhouse, with one door to shut very close—hermetical sealing is quite unnecessary. The usual temperature of a sitting room is quite sufficient, or even of an entrance hall. Do not anticipate difficulties, and if you succeed you will be much pleased." The largest cases which I saw were perhaps 3 feet long, the interior was laid out in the form of a Lilliputian rockery. *Edgar Montagu, Lustleigh, Newton, Devon.*

Heating: Polmaise: Vineries.—I am about to erect a Vinery 16 feet by 30 feet, with a lean-to roof. Will you kindly tell me what angle you consider best for the roof? and, next, what is the best mode of heating? My gardener and I say "Polmaise," and he has had considerable experience elsewhere. I have one small house heated by hot water; another by the old flue; and two pits, 24 feet by 10 feet each, by one Polmaise apparatus; by means of lids we can regulate the bottom and top heat of both, and get any amount required. The floor of the apparatus is 6 feet 3 inches below the floor of the houses. In my new house I think of going deeper. Now, there is an ominous silence about Polmaise, and as though it did not answer; there may be objections that I know nothing of; with me vegetation is very healthy, and the flavour of the fruit—Strawberries, Melons, Tomatoes—remarkably good; we grow the latter as bushes, in pots, and have fruit 12 inches in circumference. Some say they cannot get up the heat with Polmaise; with a small apparatus and little coal, we can get up and maintain stove heat. I wish to know what real objection there is to it before I commit myself further? In the construction of the roof, I think of using no putty, as it becomes loose in a few years; but I shall glaze on rafters 18 inches apart, putting a strip of India-rubber down the edge, then the glass; on this another strip of India-rubber, and screw on a strip of wood above all. Instead of overlapping, the glass will "butt," with a thin strip of India-rubber between the edges. I think of ventilating with sliding sashes, back and front; these will run, not in a groove which holds wet and rubbish, but on a strip, with a groove in the sash. The alternate ones will open, with one action. Now, here I wish to ask your advice: my gardener says we should have alternate sashes on the roof to slide down, for sometimes with a cold northerly wind, though the Vines might require air, he should be afraid to open the back lights. Will you kindly give me your opinion on this point? With the roof to open, may not the perpendicular lights at the back be fixed? *E. G. B.* [If Polmaise succeeds with you, by all means persevere in its use. The slope of the roof is immaterial; 35° is a good angle. No doubt it is very inconvenient to be obliged to open the back lights of a Vinery in cold north winds, if the growth is not almost over.]

Æchmea fulgens.—What is the best mode of treating this plant after it has flowered? Mr. Appleby, in some botanical periodical, recommends cutting down the plant, to encourage the suckers. I observed at Chatsworth very large specimens of this plant with very numerous shoots, and the practice there is not to cut down the old plant that has flowered. One which I cut down has produced but one weak shoot; one which I have left is making two or three shoots, and is altogether in a better condition. I should observe, however, that it originally was a stronger specimen than that which was cut down. *Dodman.*

Introduction of Novelties.—I enclose a few seeds, the produce of some found in the crop of a pigeon shot in North America. The plant is very like the common Scarlet-runner Bean, with a dull flower, but the seed vessel is very ornamental, from its bright red colour when advancing to maturity. Might not many interesting plants be thus introduced by the ornithologists during their shooting excursions? *N. S. H., Bury St. Edmund's.*

Cayenne Pepper.—As no one has answered your correspondent's enquiries respecting the best mode of making cayenne pepper, I send you a short way of reducing the pods to powder. The chilies or capsicums must be quite ripe before using them; let them be laid before the fire an hour or two to dry crisp, so that they will easily break by pinching with the finger and thumb, not so near as to burn them. When dry, pound them in an iron mortar, which had better be warmed by the fire also, to insure perfect dryness. The operator must be careful of his eyes and nose, and also to wash his fingers well after the pepper is made. I use a wooden cover over the mortar, but still there will be a quantity of impalpable dust escape, which is very annoying till one gets used to it. Grinding will not do, as the seeds containing so much oil constantly clog a mill, and the pepper cannot even be made so fine as by pounding. By the above method I can make cayenne pepper as fine as Scotch snuff without sifting. The best way is to make a little at a time, enough to last a month or so, as pepper will not be so high in flavour kept long in powder. Chili pods will keep for years, if hung in thick bags in a dry place. *G. R.*—I have not used any Cayenne pepper in my house for many years, but what I have grown and prepared myself. My method is very simple and easy. I lay the Capsicum upon tin plates, or pans (the shape and size is immaterial), and place them before a fire, or on the hot sides of a grate, or a hot hearth, or in some other way, the most convenient to myself at the time, to dry. When crisp, I break the Capsicums down altogether, and then they grind easily and cleanly. In the process, the pulp is dried up, and it grinds freely with the skin, or rind, and seeds. The only attention required in the process, is to watch and see that the colour of the Capsicum is preserved; for if they are suffered to burn, or even to be scorched, the quality is so far injured, if not destroyed. The kinds of Capsicums I grow for this purpose, are the Bird Peppers of the East Indies, and the Hen Peppers of the West Indies, as the most pungent sorts; for taste and strength are everything to the stomach, whilst colour is everything to the eye. The larger kinds of Capsicums may be considered as more ornamental on the plants when growing; but then the fleshy part should be cut out before drying, as it has no strength, and would only add to the quantity, and lessen the quality, in the same proportion. I inclose a small sample from my supply of the present year; it will afford a specimen of its appearance, if not of its quality, for the aromatic flavour may be deteriorated in its transit through the post, but even that might be partly recovered by a little care and attention. *R. W.* [Very good Pepper; but our correspondents should add a little salt to their preparations. Pepper so treated keeps better and tastes better.]

Cyrtoceras reflexum and multiflorum. — Will any one who may have been successful in the cultivation of these two stove plants oblige me with an account of their treatment; I have frequently seen them in different collections, I but never yet saw them approach anything like perfection. *T. E., Oct* 29.

"*Witch Knots*" *in Forest Trees.*—In one of your late numbers we had a woodcut and description of a curious montrosity in a Geranium, which was soon followed by a dissertation on the subject by my friend Mr. Beaton. Such freaks of Nature are not very rare among Geraniums; but my present business is not with them. Nevertheless, the subject reminded me of another curious freak, the cause of which I should be glad to learn from yourself, or some of your contributors, I allude to the buzle or knot, or whatever it may be called, that sometimes appears in forest trees, and at a distance looks like a nest, or number of nests. It is most common in the Birch and wild Cherry, but chiefly in the former; and I have seen it also in the Elm. The country people, in some districts, call them "Witch Knots." I have noticed a tendency of the kind in dwarf bush trained Morello Cherries, though not to a degree to resemble a magpie's nest, as in the Birch. Query the cause, and how accounted for? *Quercus.*

Potatoes.—The following is an account of the produce of two Potatoes, grown by Mr. Stewart, gardener to the Marquis of Londonderry. They were cut into 24 sets, and planted in the first week in May in a drill 12 yards long, with two barrowfuls of manure. They were soiled up once with a garden hoe, but received no other attention. When taken up on Saturday, the 2d inst., the produce was found to be 15 stones 7 lbs., or 217 lbs., all eatable Potatoes, the greater part of which weighed from 1 lb. to 2 lbs. each, and eight of them 14 lbs. All are free from disease, and otherwise excellent for table use. *Michael Burke, Wynyard-park Gardens, Durham.*

Sowing and Protecting Early Peas.—This being the very best time for putting in the first crop of Peas, I would recommend them to be sown on a southern border, and also on a northern aspect, both at the same time. This insures success either in inclement or mild winters, and sometimes both crops are preserved. In open compartments, let the ground be ridged 1 yard wide; sow both on the southern and northern sides of the ridges. In case of long frost and snow, there are ten chances to one that those on the cold side will be protected, whilst those on the sunny side, deprived of snow, will be destroyed by frost. In mild weather dredge soot between them, in order to ward off slugs, &c. Sink a pot or pitcher, greased with good lard and half filled with water, into the earth up to the brim, as soon as the Peas are sown; this will trap all mice, and a cat's skin, neatly stuffed, will frighten the birds. *J. Hardy, Nov.* 4.

Lymexylon navale.—The important fact published in your Paper relating to the reappearance of this insect, will render any remarks upon the economy of this formidable enemy of our dockyards interesting to many of your readers. This beetle appears to have been for a long time known as an inhabitant of the British isles, it having been recorded in 1802 as a native by Stewart in his "Natural History," and a few years after by Dr. Turton. From that time until the appearance of Mr. Curtis's 8th volume of "British Entomology," no record seems to have been made of its appearance. In that work a good figure is given of the female taken by Mr. J. H. Griesbach, in Windsor Forest, on an old Oak tree, in July 1829. To those who are interested in the adaptation of anatomical structure to special purposes, the mouth of this beetle, as exhibited by Mr. Curtis, in the plate referred to (382), affords an admirable example; the jaws being formed for cutting and boring, in an extraordinary manner. The palpi of the male are branched like coral, and hang like tassels on either side of the mouth; those of the female, however, are very simple. This distinction, no doubt, indicates some difference in their economy, which is, probably, at present unknown. As "J. O. W." has taken no notice of the males, are we to infer that he is ignorant of their peculiar structure, and that all the specimens he obtained were females? From the destructive effects of this insect, every point in its economy ought to be thoroughly investigated; if that of the male differs from the habits of the female, possibly the former may be attached to flowers, and thus a decoy might be discovered for them. An allied insect (*Hylecœtus Dermestoides*), with equally curious feelers, is also figured and described by Mr. Curtis, in Vol. 14, pl. 654; this insect attacks old Birch Trees, and was found in some numbers, in 1836, by Mr. T. Desvignes and others, in Sherwood Forest, flying round an old tree at noon. This beetle, however, inhabits the living trees, while the Lymexylon breeds in fallen or dead Oak. "J. O. W." surmises that Mr. Griesbach's specimen might have flown from Oak timber brought up the river; even then the greater probability would be that it flew from British Oak. I consider, however, that this specimen affords much better ground for establishing the species as indigenous, than the mere description of the larva which subsequently convinced "J. O. W." *Alpha.*

Vine Culture.—There is a point in Vine-growing on which I should like the opinion of some of your correspondents. It is, "How long ought Vines to be kept in a state of excitement after the fruit is cut?" Can they, in any instance, be the better for such treatment? At this place there are three Vineries. The first we commenced to force in January; the last got little or no fire-heat. In the first house there were Pines till within the last fortnight, and the Vines have as yet lost very few of their leaves, scarcely any. In the second house, Grapes ripen in August; there have been Pines all summer, but this house is so far different from the former, that instead of taking out the Pines, we turn out the Vines at the time of wintering; but this has not yet been done this autumn. In the last house there is still a quantity of Grapes, but the Vines are getting into "the sear and yellow leaf," while those in the second house are, comparatively speaking, green; evidently because the house has been kept warm. As the fruit is now all cut, is it better to turn out the Vines at once, protecting them in frosty weather, or to leave them until the leaves are ready to drop? My own opinion is, that after the fruit is thoroughly ripe and cut, the sooner Vines are exposed the better, or then, I apprehend, their time for rest is considerably shortened. *Inquirer, Nov* 2.

Rivers' Double-bearing Raspberry.—Having received, two years since, a dozen of Mr. Rivers' new late-bearing Raspberry; this year they have produced an abundant crop of very large and fine fruit, and if this weather continues, I should think the fruit will continue till nearly the end of this month; it is far more prolific than the old double-bearing Raspberry, and the fruit is finer. *Dodman.*

Creepers.—I have lately been presented with some West Indian seeds by a person who was not a botanist; several of them I have raised, and some are now in flower, and amongst others "Clitoria ternatea" (called Blue Creeper). The flowers, both of the blue and white varieties, are quite as fine as those represented as "Clitoria ternatea major" in Paxton's Magazine of Botany, where they are stated to be natives of New Holland, which I cannot but think is a mistake. [It is found in all warm countries.] Ipomœa mutabilis (presented as Blue Convolvulus), I have now in most beautiful blossom; and why it is not more cultivated, I cannot imagine, for it is one of the finest creepers in existence, with pale ultramarine flowers of 3½ inches in diameter. Seven or eight of these open each day, and, contrasted with Ipomœa Horsfalliæ, and I. ficifolia, make a charming sight. Can you tell me what the botanical name of a Cucurbitaceous plant, with yellow flowers, palmate serrated foliage, and very rough fruit, as yet in an unripe state, and about 5 or 6 inches long, is? [Momordica Balsamina.] The seed was given to me as the "Monkey Creeper." I have also the "Crab's-eye Creeper," the "Puppy-eye Creeper," and many others, which, perhaps, you may know by their local names, as well as their botanical. [No.] Some seeds were given with the names "purple cephalics," "white cephalics," "striped cephalics," "yellow cephalic." I presume there are species of Cephaelis. And if you can give me any information as to the true names of those I have mentioned, I should be much obliged. *T. D. H., Hythe, Nov.* 13. [We are unable to furnish the information required.]

Wintering Half Hardy Plants.—I tried the following method last winter, and found it most successful. Having many good plants of Fuchsias, Pelargoniums, Cupheas, &c., which I did not like to lose, and having no proper place to winter them in, I dug a hole under a south wall,* and placed in it a common Cucumber frame, banking up turf† outside to within 2 or 3 inches of the top, and about a foot thick at the bottom, shelving up to nothing above; this kept the plants perfectly during the last severe winter without even a single mat being put on once; and amongst the subjects thus preserved were many scarlet Geraniums put there purposely to try whether they would stand the severity of the winter in this situation as well as those in a house. I found no difference, and I think I may say with truth that I did not lose one. I must state, however, that I kept the lights lifted on all favourable opportunities; the pots rested on bricks, and to this, together with the admittance of fresh air, and keeping the plants almost without water, I attribute the great success that attended my efforts. *E. X., near Braintree, Essex.*

The Smoke Plant.—One of your subscribers asks what is "the Smoke plant?" and he sends you a specimen of it, but so bruised up that you could not recognise it; probably it was a piece of Fumitory, *Fume à Terre* (French), or (Latin) *Fumus Terræ*, the Smoke of the Earth (English). Your correspondent is probably a good observer, and has found that when a sod of Fumaria officinalis is drawn out of the ground, the stalks near the roots have a strong smoky smell, and yield "the smoke" to the name. The branch sent to you being very much crushed adds to the probability that this is the plant, as the Fumitories are exceedingly succulent and easily bruised. The rapidity with which this plant springs up in newly dug rich soil has been thought to be the origin of its name, but the *haut-gout* of the roots and the root-branches is so strong and remarkable as to leave no doubt why the name is given. The experiment of smelling them may be tried, as "Fumitory rank" is a well known and plentiful weed ever since Shakspeare's time. *Richard, Rath Lee, Cork.* [What we received was not a Fumitory.]

The Smoke Plant: Open Fire-places. — In reply to your inquiry, at page 696, I beg to state that the Smoke Plant does emit what looks like smoke on pressure; and this is its chief curiosity. The flowers are very minute, and had, perhaps, fallen off; the plant is not a creeper, but very upright. The lady, who had it sent her from abroad, keeps it in a window, which, probably, makes it sickly. For a window-gardener she is most assiduous and intelligent, and her idea that it might be worth something, as a curiosity, inclined me to make the inquiry, as that would be most important to her. And as I am on a charitable subject (and I rejoice to see your kindness in these respects), could you suggest the best economical fire-place, or open stove for a sitting-room in the institution of which I send a report. The room being united to the rest of the house by a passage, and the rooms in that house being chiefly appropriated to constant invalids, the number of fires needs much supply of air, and we suppose that is the reason the high chimney of this room has been very apt to smoke; the air coming down for the supply. We have accordingly been of late obliged to have a stove; but this is neither so comfortable nor so healthy for invalids as an open fire-place; and needing a new one, and our funds being very low, we are most anxious not to spend money needlessly. We have a very tolerable sized garden attached to this institution for the sake of the sufferers' exercise, in which we are indebted to many of your suggestions for improvement. During the Potato famine we grew quantities of Jerusalem Artichokes; but they are not now much liked there—for what should we sell them in exchange for Potatoes? *A Subscriber.* [The most economical and very best open grates we have seen are an admirable kind manufactured by Mr. Pierce, of Jermyn-street, to whom we advise you to apply. We use them ourselves, and find them faultless.]

Green Ginger.—I am surprised in these times of luxury that this is not grown for the market, seeing that it is one of the principal ingredients of a good currie. I believe it is easily grown in the tan of a Pine stove. Hadjee Allee, (61, Boston-place), who is the celebrated compounder of Indian dishes, lamented, when serving a dinner consisting of a variety of curries given by Colonel Ludlow at the Oriental Club, that he could not do his employer justice or himself credit for want of green Ginger, and green Cocoa nuts. Now the first might be easily and cheaply grown for the London market, one should suppose to the delight of the lovers of currie; the green Cocoa nuts, I suppose, are unattainable, unless indeed the West India mail steamers brought them in addition to the cargoes of Pines. *Dodman.*

Manure for Potatoes.—I see in your Paper (quoted from the *Economist* of October 19), a method of preparing manure for Potatoes, according to which the dung (stable-dung and vegetable compost) was mixed with one-fourth or one-fifth of quick lime. Is not that an excellent way of getting rid of the ammonia, equal to the bleaching system, by exposing it to sun, wind, and rain? *Timothy Clod, Forfarshire.* [Yes. But as ammonia is undoubtedly injurious to the Potato crop the object of the writer is, we presume, to do exactly what you describe.]

Æschynanthus pulcher.—We have a plant here in our stove of this Æschynanthus, growing in a 10-inch pot, and covering a cylindrical wire trellis 3 feet high and 5 feet in circumference, with no less than 460 expanded flowers on it. This is the second time it has favoured us with its beautiful and curious flowers this year, proving it to be not only a first-rate plant for competition, but excellent for the winter garden. *J. M'Pherson, Reswallie, Forfarshire, Nov.* 8.

Conveyance of Water.—Would any of your readers kindly give the result of their experience, as to the best method of bringing water from a spring, one mile distant, with a good fall? Would gutta percha tubing last underground? The water is required for the use of a village containing 500 inhabitants. *Country Curate, Brandon, Nov.* 14.

* It is contrary to the general way, the north side being considered best, but I have found that when the plants in a pit, having a north aspect, once get damp (and they will do so in foggy weather, do what you will) it is almost impossible to get them dry, and then they invariably rot off.

† It is best to put a brick or tile up edgeways against the frame, as this preserves the wood.

Review.

The Sugar Planter's Manual, being a Treatise on the Art of obtaining Sugar from the Sugar-cane. By W. J. Evans, M.D., 8vo, pp. 244. London, 1847.

The Practical Sugar Planter; a complete Account of the Cultivation and Manufacture of the Sugar Cane. By Leonard Wray. 8vo, pp. 415. London, 1848.

The Manufacture of Sugar in the Colonies and at Home, chemically considered. By John Scoffern, M.B., 8vo, pp. 160. London, 1849.

Copies of Report and Correspondence on the subject of Dr. John Scoffern's Patent for Refining Sugar, presented to Parliament, 14th August, 1850. Folio, pp. 18.

There is no part of the manufacture of sugar which stands more in need of chemical aid than the purification of the cane-juice, and the separation of the azotised impurities; it will be interesting to go a little further yet into the details of this part of the subject, as we shall then be better able to show the exact position of the manufacture at the present time, pointing out the difficulties which surround the sugar-boiler, and the remedies which have been proposed to aid him.

Unfortunately the juice of the Sugar-cane does not merely contain one form of azotised matter, which may be precipitated and thrown down in the insoluble form by some simple process, but, on the contrary, it contains at least three; and, besides, these substances are, as is well known, very liable to undergo change and modification, their properties being altered either by spontaneous decomposition or by the action of a variety

of other substances. In its fresh state, cane-juice appears to contain albumen, gluten, and caseine, or some similar substance. The first of these is readily separated from the juice by mere exposure to heat, which coagulates it, and causes it to separate in the solid form as a scum. The gluten appears to be chiefly held in solution by acid matter, and is consequently thrown down by the addition of lime or some other base; but the third azotised matter is not precipitated by either of these means; it remains in the purified cane-juice, and interferes greatly with its evaporation and the manufacture of the sugar. Sugar-boilers are well aware that there are two distinct substances to be separated in the clarifiers, and, indeed, they not unfrequently effect it by two distinct operations; first of all, heating the juice, to cause the coagulation of the albumen, and then adding lime to precipitate the gluten.

There are many practical difficulties which interfere with the use of lime, and which renders its action far from complete and perfect. The desired effect will not be produced unless rather more lime is added than is necessary to combine with the acid matter present in the juice; and, at the same time, an excess of lime is hurtful. Free acid matter causes the subsequent destruction of some of the sugar, and tends to keep a portion of gluten in solution; whilst free lime likewise causes the destruction of sugar, gives the syrup a dark colour, and cannot be easily separated when once in the syrup. Lime does not act thoroughly in purifying cane-juice, unless the mixture is heated up to the boiling point, this perhaps in part depends on the expulsion of ammonia set free by the lime; but the juice must not be permitted actually to boil, because, if it does, the scum of azotised matters precipitated by the action of the lime will be broken up and diffused throughout the liquid again, and could then only be separated with great difficulty, and by very complete filtration. This precipitation of the gluten may be effected by either potash or soda quite as completely as by lime, but the latter is preferred, because the compounds which it forms with most vegetable acids are nearly insoluble, and because the presence of soluble alkaline salts in the clarified juice would greatly interfere with its subsequent concentration; they would tend to diminish the yield of crystalline sugar, and to increase the proportion of molasses. We must confess that the chemical explanations offered by the various authors who have written on the manufacture of sugar, as to the use of lime, and the precise mode in which it acts, are far from satisfactory; after all that has been done, there yet remains a great deal to be explained, and a great deal to be investigated, the explanation of which would probably lead to important improvements in the manufacture.

When the right quantity of lime has been added, and the separation of the scum has been carefully performed, the clarified juice is then transferred to the evaporating vessels. There are generally five of them, through all of which the juice successively passes, entering the first as it comes from the clarifiers, and leaving the fifth as a concentrated syrup. During the whole of this process, the juice is constantly skimmed, to remove the impurities which continue to precipitate and separate in the form of scum. If the object of the manufacturer is to obtain common Muscovado sugar, he carries on the concentration of the syrup until he judges that it is in a state to crystallise, when it is transferred to the coolers, in which it is cooled rapidly, and allowed to crystallise, being stirred about from time to time to aid its granulation. When the syrup is completely cooled, it is found that a portion of the crystallisable sugar has separated in the solid form, whilst the remainder, together with the uncrystallisable sugar, or that which has been injured, with a considerable quantity of impurity, is left in the fluid state; the whole is then allowed to drain, so that the fluid part may run off, constituting the molasses, after which the raw sugar is fit for exportation.

In the crystallisation of the sugar from the syrup the same want of attention to the physical conditions which ought to regulate the process may be observed, as is evident in many other parts of the process. When syrup is cooled very slowly, the sugar crystallises in large and regular crystals; but a great portion of uncrystallisable sugar is enclosed in the cavities which are formed between the crystals. It is found that if the mass of hot syrup is large, and it is left perfectly quiet, so that it may cool very slowly, the resulting sugar is not obtained in a convenient commercial form, or one suitable for the further operation of the refiner; hence it is always the custom to agitate the syrup, so as to disturb the crystallisation, and obtain a small granular crystallisation; when this is properly done the crystallisable sugar separates in regular grains, and it is comparatively easy subsequently to drain off the molasses from it. The sugar makers, however, are not content with agitating the syrup, but also, with the view of saving time, they cool the syrup in large flat cisterns or coolers, so arranged as to be exposed to the cooling influence of a current of fresh air playing over the surface of the syrup, and rapidly chilling it. By so doing it is very probable that they save time, but it is certainly done at the sacrifice of the sugar, which is thus obtained in such a condition that the molasses can only be separated from it with great difficulty. Dr. Evans thus describes this part of the process: "When the mass of sugar and molasses has become sufficiently cooled, it is dug out of the cooler, shovelled into a bucket or some other vessel, carried into the curing house, and there thrown into the hogshead as if it were so much manure, where it remains until the drainage of the molasses is sufficiently complete to admit of its shipment." He remarks respecting the cooling of the syrup: "Had the planter intended to convert the cane-juice into dough or bird-lime, he could scarcely have invented a more successful method of accomplishing his purpose; but, to obtain sugar, a more ill-judged method, or one more defective in principle, could not be employed."

Those vegetable principles which the plant secretes, and which are present in the cane-juice together with the sugar, as it runs from the mill, are but very imperfectly separated from it in all these operations; and the difficulties attending the latter part of the process, and which extend to the labours of the sugar refiner, are in great measure to be traced to the imperfect manner in which the first part of the operation is effected. Even when the separation of the scum in the clarifier has been very complete, and just the right proportion of lime has been added, there yet remains a considerable quantity of azotised matter analogous to caseine, which gradually and partially separates from the syrup during its subsequent concentration in the five evaporating-pans. A great deal of injury is caused to the sugar during the evaporation of the syrup, from the two-fold influence of the impurities which it contains and the high temperature to which it is exposed; this leads to the formation of a large quantity of uncrystallisable sugar, and to the discolouration of the syrup, which gradually darkens in colour as it becomes stronger and richer in saccharine matter. Two very important improvements in the manufacture of sugar took place when the vacuum-pan and the use of animal charcoal were introduced. By the use of the former the manufacturer is enabled to evaporate the syrup at a temperature much below that which would be required in an open evaporator; and thus the evil effects of exposing the syrup to a high temperature are greatly diminished. By the use of animal charcoal as a filtering material, the dark colour of the concentrated syrup is removed, and at the same time that it does this it likewise removes the greater part of the impurities, whether azotised or saline, which remain in the juice; the introduction of this powerful purifying agent is perhaps the greatest step which has yet been made.

The chief desideratum at the present time appears to be an improved mode of removing the azotised matters from the juice, easily applied, rapid in action, and more perfect than the mode now employed. The other difficulties may, for the most part, be met and overcome by the means already at the disposal or within the reach of the sugar boiler; but he has no perfect method of removing at once the whole of the azotised matter which the juice contains. From time to time various schemes have been proposed, but however plausible and complete when tried upon a small scale, they have generally failed when tested in the manufactory, or have been soon abandoned from some practical difficulty as great as that they were originally proposed to remedy. Amongst the substances recommended were oxide of zinc, alum, sulphate of alumina, and sub-acetate of lead; these, and a variety of other substances, were proposed as finings or precipitating agents in the purification of cane-juice, and also in clarifying syrup, as effected by the sugar refiner, the two operations being, in fact, nearly identical. It would be foreign to our object to go into the consideration of these and many similar schemes; we shall merely advert to the use of lead as a purifier, especially in the mode patented and advocated by Dr. Scoffern.

The azotised matters present in the sap or juices of plants, may be very perfectly precipitated by solutions of certain metallic salts, such as corrosive sublimate, and sub-acetate of lead; this fact has been long known, and no doubt would have been practically used, had it not been for the highly poisonous nature of such salts, and the extreme difficulty, not to say impossibility, of completely removing all trace of them from the juice they were employed to clarify, and the consequent chance of rendering the sugar produced poisonous, or, at least, unwholesome. Some years since, in 1839, a patent was taken out by Messrs. Gwynne, for the purification of cane-juice, and refining of syrup, by the use of a solution of sub-acetate of lead; and it was proposed to add a portion of biphosphate of lime to the clarified liquid, for the purpose of separating any lead which might remain in solution, and which, when thus precipitated in an insoluble form, might be removed from the liquid by a second filtration. The practical difficulties appear, however, to have been considerable, and even with the greatest care, the chance of the sugar containing lead was very great.

In Dr. Scoffern's patent, a new mode of precipitating the excess of lead is proposed, the process being based on the fact that a solution of lead may be perfectly precipitated by the action of sulphurous acid gas; and it is stated, that even if a portion of the salt of lead thus formed, should by any chance remain in the sugar, it would be in the state of an insoluble, and therefore perfectly harmless compound. There is no doubt whatever that the impurities in the cane-juice or syrup may be readily and most perfectly precipitated, by the addition of a small quantity of the sub-acetate of lead; and it consequently follows, that if by the use of sulphurous acid gas, the presence of lead in the sugar, or, at least, its presence in a hurtful form, can be guarded against with certainty, the new process must be a very great improvement upon all previous methods. Doubts, however, have been raised respecting the safeness of the process in a sanitary point of view; a great deal of correspondence has taken place on the subject, and the Government, in vindication of the steps which have been taken to caution manufacturers against using the process without good evidence of the prudence of so doing, have published the reports of six scientific men to whom they referred the subject for consideration. The quantity of acetate of lead employed is so small that we may altogether pass over the question, what effect is produced by the acetic acid thus introduced into the syrup, though it is obvious that it must do some harm; the only question of real practical importance is, whether the excess of lead can be separated in so effectual a manner by the patent method, that the process can be used with safety to the public.

The report of the three chemists appointed by Government is a very curious document, and contains several important facts. Previous to examining samples of the patent sugar, they took the precaution of analysing good specimens of the ordinary muscovado sugars of commerce; they found in these minute traces of lead, and also copper. The quantity it is true was very small; but there is no reason that any metallic poison should be suffered to enter into the sugar. They were both no doubt derived from the vessels employed in the manufacture; the use of white-lead, which is very commonly employed to paint the interior surfaces of the metal and other vessels used, is highly objectionable. After examining a number of samples of sugar prepared by Dr. Scoffern's process, the Government reporters state, "It appears from the foregoing details, that the refined sugar, bastards, and treacle, generally acquire a trace of lead from the new process, sufficient to be distinguished by chemical tests. The lead appears to accumulate in the treacle, but in no case that we have had an opportunity of observing, to such an amount as would justify us in pronouncing the treacle poisonous," &c.

This report was then referred to three competent authorities in medical jurisprudence, for their opinion, and they state that the constant use of sugar containing a small quantity of lead; such as they assume from the chemical report sugar thus prepared may contain, "would be likely to prove highly injurious to health; and in the course of a few months might give rise to alarming syptoms of poisoning." It certainly would seem from the evidence of the different persons, both in this country and also in the colonies, who have been employed to examine the products of the patent process, that they do contain decidedly more lead than those made by the old mode. This, however, taken alone, is not to be considered as a condemnation of the patent, because it is stated that if any lead does accidentally escape the filter, and so pass into the sugar or treacle, it will not be in a poisonous form, but as a harmless insoluble sulphite; indeed Dr. Scoffern goes so far as to assert that it is no more injurious than so much chalk. This is in fact purely a medical question, but as far as the chemical evidence goes, it certainly does not bear out the statement that sulphite of lead is "insoluble, and therefore harmless." No doubt it is insoluble in pure water, but on the other hand it is soluble in, and readily acted on by a number of saline solutions; hence it is not reasonable to expect that it should pass through the stomach of an animal without being decomposed, and the lead being brought into a soluble, and consequently active state. The process is highly ingenious, but we greatly fear that the results of the manufacture would be very liable to contain a portion of lead; and we very much question whether the sulphite of lead is a substance which may be taken into the human stomach, day after day, even in minute quantities, with impunity.

Miscellaneous.

Tulip Exhibition for 1851.—The following address to the Tulip growers in the kingdom has been published by E. S. Dodwell, Esq., of Derby:—"Gentlemen,—I beg to address you, and to invite you to a conference on the subject of the Great Tulip Exhibition for 1851, delegated by you, at your late meeting in Manchester, to the society I represent. In regular course, after receipt of your delegation at the hands of your late secretary, Mr. Dixon, I laid the same before the committee of the Horticultural Society here; and I am gratified to state that it was received with warm cordiality, and a motion pledging the committee to give it all possible support, and a gratuitous accommodation in the large hall in which the exhibitions of the society are held, with a donation of 5*l.* to the fund, was unanimously adopted. J. Edwards, Esq., has directed me to place his name on the subscription list for 10*l.*; T. Adams, Esq, 5*l.*; Mr. C. Turner, of the Royal Nursery, Slough, 5*l.*; and my own donation, 5*l.*, completes 30*l.* I mention this merely to claim your attention to what follows. I propose, therefore, as a simple means to this end, the formation of a committee in every city and town, village and floral district, throughout the kingdom. Such committee to communicate with the central committee, to canvass for subscribers, to report the probable number of exhibitors, and generally to suggest such arrangements as may seem most conducive to the success of the exhibition and let but such committees accept their mission heartily and cheerfully, and your work is perfected. Think of the aggregate sum when every lover of flowers in the length and breadth of the kingdom has contributed his (or her, for we love the ladies, and invoke their aid) 5*s.*, 2*s.* 6*d.*, 1*s.* to the fund; and, gentlemen, let me entreat your special attention to the last named sum; think of what is due to humble devotees, think of the pleasure

received and conferred. In days gone past it has been a theme and a glory to remark, 'I took a part in that great battle; I stood to the guns on that bloody day.' Such themes, we hope, are past; but shall not florists, and poor florists, have their theme? Shall they not be permitted to boast, 'I lent my aid to that great work; I helped to achieve that great success?' Surely they may, and surely you, gentlemen of the respective committees, will give them an opportunity so to participate. Remember the work that engages you; remember the result to be produced, the large sum—the aggregation of small sums—the flowers to be brought forward, certain to be the best, and indicating the progress of the Tulip; remember the great meeting, the commingling of ideas, the action of mind upon mind, the radiation of knowledge, the interest and regard created by reciprocal kind offices, the removal of vague ideas and their concomitant distrust; and above all, and beyond all, the sympathetic action acknowledged by the whole community, in the fact each individual enunciates, 'I took part in that great work!' Gentlemen, addressing enthusiasts and devotees, men susceptible of the delights of floriculture, and endued with thought, and energy, and purpose, I cannot doubt your response; and I entreat of you, therefore (my personal ignorance compelling this request), that you will, with the least possible delay, communicate to me your proceedings."—*Daily News.*

Botanic Garden, Sydney.—We learn from the *Sydney Herald* that this garden is advancing rapidly in importance under the skilful management of Mr. Charles Moore. Mr. William M'Leay and Dr. Shanks, deputed to inspect the arrangement of a collection of plants, according to their natural families, have reported to the committee that they were much gratified on their visit by the progress made by Mr. Moore towards his object, and by the neatness and efficiency which were apparent in every department of the garden which they inspected. Among matters of local interest we remark with satisfaction that general colonial interests are not neglected. Too many such gardens become mere appendages to the convenience of a governor, and are of no more public value than his excellency's coach. Under Mr. Moore's superintendence, a considerable number of Vine cuttings received from Germany have taken root, and are intended for distribution. In order to encourage the growth of plants which are valuable for commercial purposes, he has made several distributions of Olive cuttings and plants, and noble trees of some of the best variety of the genus enable him to supply a large quantity of cuttings without injury to the standard plants. In proof of the success which may reasonably be expected to attend the general cultivation of the Olive, he remarks that it is the opinion of highly competent judges that the last year's crop of fruit in this garden was equal both in size and quality to anything they had observed in the south of Europe. Frequent applications are made for Cotton-seed, Sugar-cane, and exotic fruit trees, especially from persons residing in the Moreton Bay district, and as each application has been attended to, there is every probability that the growth of these plants will soon become very general in the northern parts of this colony. Mr. Moore complains, however, of the scarcity of fresh water on the establishment, the supply in dry seasons being limited to a few casks per diem from the Hyde-park fountain, and causing the loss of some rare and beautiful plants. We trust that the Legislative Council will see the necessity of devising some means by which a direct channel for the conveyance of water to the garden may be effected.

Calendar of Operations.

(For the ensuing week.)

PLANT DEPARTMENT.

Particular attention should be paid to securing as much light as possible in all structures containing plants; and where the rafters or roofs are used as trellises for climbers, these should be reduced within convenient bounds, as the growth of nearly all is or ought to be completed, and as the temperature of the houses are now reduced to suit the comparatively dormant state of the plants at this season. In the conservatory those late autumn flowering creepers which were formerly left unpruned, such as Mandevillas and Ipomœas, are now sufficiently ripened for the purpose, but little more should be done after removing the changed leaves than to prune the weakest shoots; their final pruning should be deferred till March or April. If larger and stronger shoots are cut now, they are apt to commence growing, in spite of the moderate temperature, and thus expend the strength which ought to be reserved till spring. The shoots of Maurandyas should be considerably reduced in bulk, as they are affected by the slightest damp during winter. If any of the late growing Passionflowers or other creepers impede the ingress of light, they should on this account be reduced; deferring, however, their final pruning until they are about to commence their new growth in spring. Forcing Plants.—The free admission of light and air is indispensable to these, and especially the latter, in order that the plants may be kept moderately hardy, and thereby better enabled to bear moving about during cold weather.

FORCING DEPARTMENT.

Seakale.—The best of all places for forcing this vegetable is in the Mushroom-house, as the temperature of that is just sufficient, and the very important condition—absence of light, is secured without additional trouble. Where any regard is paid to neatness, convenience, and economy of labour, let the old-fashioned way of forcing Seakale by means of pots and fermented stable litter be abandoned. The pots are expensive, and very liable to be broken; the litter, if not wanted for the linings of dung frames, will make a much better manure by being rotted without fermentation—therefore to use it in that way involves a considerable waste. Again, it is inconvenient to gather the produce, and to see an exposed heap of fermented litter in any part of a gentleman's garden is inconsistent with that perfect neatness included in the high order of management which ought to pervade all such establishments. Where there is not a spare pit with the bottom heat supplied by hot water, the most economical method is to make up a small bed of Oak leaves, strong enough to ensure a bottom heat of about 50°, but not exceeding 55°; a light frame, about 30 inches high, should be placed upon the foundation, and filled with 18 inches of soil, such as is procurable from an old Melon bed. The plants should be taken up with great care, preserving as much as possible of the thick fleshy root, as upon the stored up nutriment concentrated in it the success of the artificial crop very materially depends. The plants should then be watered sufficiently to settle the soil about them, and the frame covered with shutters and mats, to exclude the light. The Seakale forced in this manner is decidedly superior to that produced by the ordinary method, being firmer in texture and shorter in its growth; it is also a much easier matter either to examine its progress or to gather it for use. By planting the roots 4 inches apart, a superficial yard will produce six or eight dishes; and if the roots are preserved after removal, and laid in till spring, by picking off all the buds but one, they make good sets for another season.

FLOWER GARDEN AND SHRUBBERIES.

Amongst the numerous exotic plants used for summer and autumn decoration, there are many which will survive the winter with very slight protection. All such should now be carefully guarded, as they will materially diminish the quantity of plants to be provided for planting out next spring; and for this excellent reason, in making a selection of plants for flower garden purposes, preference should be given to the kinds above referred to. Under this head will fall Gladiolus, Sparaxis, and many other Cape of Good Hope bulbs; with a great variety of deciduous and half deciduous herbaceous plants, such as Antirrhinums, Pentstemons, Salvia patens, Stachys, Lobelia propinqua and others; and also some shrubby and sub-shrubby plants, as Fuchsias, Hydrangeas, and the more tender varieties of tea-scented and other Roses. The material we usually employ for this purpose is decayed tan, or half decomposed leaves, laid over the surface of the soil as a mulching two or three inches thick. Whatever be used for this purpose, it should be such as is least liable to absorb and retain moisture. Many use sawdust or dry leaves for this purpose, and conceal their unsightly appearance by covering with a little soil, but old tan is more convenient, equally serviceable, and forms a very congenial top-dressing in spring. Other plants of a shrubby or sub-shrubby character (as Roses, and the more tender varieties of Pentstemon and Antirrhinum), in addition to a slight mulching for the preservation of the root, require some sort of a shelter to preserve their branches; the neatest material for this purpose is the prunings of evergreens, stuck into the ground round about them, as at a short distance they are not distinguishable from the plants themselves.

KITCHEN GARDEN.

Peas and Beans.—Those who reside in favourable localities, should now make a sowing of these vegetables, with the hopes of obtaining a very early crop. The seeds should be sown on the leeward side of low ridges, the crowns of which will protect the young plants from cold winds, and the hollows between will aid in keeping the soil dry. Some chopped Furze, or other similar material, should be sown along with the seed, to prevent the depredations of mice. A dwarf variety of Pea, such as Bishop's Longpod, will be found very suitable for the purpose; and of Beans, the Dwarf Fan will be found hardy and prolific. There is a chance, in warm dry localities, that these early sowings will produce good crops, a prospect which is sufficient warrant for the expenditure in seed and labour; but in medium or late situations, the chance of success is very small. In the latter case, there is less trouble, and more certainty, by sowing in boxes or turves early in spring, and planting them out with a slight shelter towards the end of March. Cauliflowers should be examined every three or four days, and those which have arrived at maturity, if not required for immediate use, should be lifted when dry, and after tying their leaves together, should be laid in by the heels in a sheltered situation, or hung up in an airy shed, where they will be protected from wet and frost.

State of the Weather near London, for the week ending Nov. 14, 1850, as observed at the Horticultural Garden, Chiswick.

Nov.	Moon's Age.	Barometer. Max.	Barometer. Min.	Temperature. Of the Air. Max.	Of the Air. Min.	Of the Air. Mean	Of the Earth. 1 foot deep.	Of the Earth. 2 feet deep.	Wind.	Rain.
Friday.. 8	4	30.153	29.909	53	29	41.0	48	49	W.	.01
Satur.. 9	5	30.315	30.265	53	50	51.5	47	49	S.W.	.00
Sunday . 10	6	30.248	30.183	58	46	52.0	48	48½	S.W.	.00
Monday 11	7	30.108	29.999	58	48	53.0	49	49½	S.W.	.00
Tues.. 12	8	29.999	29.980	56	26	41 0	49	49½	N.W.	.00
Wed.. 13	9	30.017	29.986	47	24	35.5	48	49½	N W.	.00
Thurs .. 14	10	30.248	30.129	46	19	32.5	46	49	N.E.	.00
Average....		30.155	30.054	53.0	34.5	43.7	47.8	49.1		.01

Nov. 8—Rain; very fine; clear; slight frost at night.
— 9—Fine; very fine; overcast.
— 10—Fine; cloudy; mild at night.
— 11—Exceedingly fine throughout.
— 12—Uniformly overcast; exceedingly fine; clear; frosty.
— 13—Foggy; ove cast; cloudy; frosty.
— 14—Clear and fine; clear and frosty at night.
Mean temperature of the week equal to the average.

State of the Weather at Chiswick during the last 24 years, for the ensuing week, ending Nov. 23, 1850.

Nov.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds. N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 17	49.2	36.0	42.6	12	0.40 in.	3	4	1	1	6	5	2	2
Mon. 18	49.1	35.3	42.2	16	0.41	1	4	1	1	4	7	3	3
Tues 19	49.3	35.9	42 6	13	0.87	1	4	2	2	2	8	3	2
Wed. 20	49.5	3 .6	43.0	8	0.33	—	5	2	—	4	3	6	4
Thurs. 21	49.9	39.3	44.6	16	0.37	4	3	4	2	1	5	4	1
Friday 22	49.4	36.2	42 8	15	0.62	2	2	4	2	2	6	5	1
Satur. 23	48.5	35.8	42.1	9	0.36	—	4	3	1	3	7	3	3

The highest temperature during the above period occurred on the 21st, 1833—therm. 59 deg.; and the lowest on the 18th, 1847—therm 19 deg.

Notices to Correspondents.

To our Correspondents.—May we beg to be understood that *we cannot answrer inquiries privately through the post.* We are ready to give reasonable information through our columns, but we cannot consent to the labour of writing letters.

Araucaria imbricata: *Sub.* It is not particular in regard to soil; sandy peat and loam will suit it perfectly.‡

Back Numbers: Full price will be given for Nos. 49 and 50 for 1848.

Books: *F T R.* "Lindley's Guide to the Orchard and Kitchen Garden" will furnish the information you seek for; or the articles published at pp. 116 and 451 of our volume for 1847 may possibly answer your purpose.‡—*A B.* The "Manse Garden."—*Tudor.* Consult "James's Gardening," in which you will find plenty of such patterns.

Choke Damp: *Fitzwalton.* The subject is, we fear, too foreign to our pages. We will consider whether it will be prudent to open a door to matters not relating to the immediate purpose of the *Gardeners' Chronicle.*

Fruit Trees: *A T K.* In order to have Peach and Nectarine trees, dwarfs or those with tall stems, to bear as soon as possible, you must endeavour to procure some that have been three years trained; but where immediate bearing is not a principal consideration, one year trained trees are preferable. The Breda and Brussels Apricots will bear on a west aspect; and thus you can give a south for the Moorpark. We never recommend dealers.‖

Heating: *A Clergyman.* Polmaise answers perfectly well where it is properly applied to circumstances suitable to it. So much has been said upon the subject that we cannot re-open it, but must refer you to previous volumes, and to the Journal of the Horticultural Society, Vol. II., p. 49, where Mr. Meek gives his own account of it. One of the most common causes of failure is the not allowing a sufficient amount of heating surface. Polmaise heating is like an Arnott's stove: in careful hands, and, when well constructed, it succeeds; in careless hands, or if ill constructed, it fails. Hence the differences of opinion about it.—*A Cockney.* Flues properly constructed are amply sufficient for all ordinary purposes; of course you may blow them up; careless or stupid people may do anything except setting the Thames on fire. All that you have to take care of is, that, in building your flues, the ends can be got at *from the outside of the house,* so as to obviate all difficulty in sweeping them when foul; which should be done every year, after fires are discontinued. Why run it in two lines, one over the other? The best way is to run it in one line on a rise all round the house.

Justicia: *Sub* It is a stove plant, and will do no good with you in a greenhouse ‡

Lawns: *J Jones.* As soon as February is well advanced, lay down your lawn with the following seeds per acre: 1 lb. of Avena flavescens; 6 lbs. of Crested Dog's-tail; 3 or 4 lbs. of Hard Fescue; 20 lbs. of Rye-grass; 6 lbs. of white Clover; and 2 or 3 lbs. of Poa trivialis. If you find this too expensive, reduce the quantity of Avena, Dog's-tail, and Rye-grass; less of all will do if you are in no hurry. This kind of lawn is for regular mowing. Above all things take care that the land is clean, the seeds pure, and the surface perfectly level. ‡

Manures: For most gardening purposes nothing has yet been found equal to good farm-yard manure. But not having a sufficiency of this, you may use guano, at the rate of 5 cwt. per acre, digging it in lightly, taking care to water abundantly afterwards, if very heavy rains do not render that unnecessary. ‖

Names of Fruits: *G G H.* Beurré Bosc. ‖—*F C.* See our Number for Oct. 26, p. 680. ‖

Names of Plants: *O F P.* 1 is the *male* Juniperus excelsa; as to No. 2, as far as can be judged from so very small a specimen, it seems to be J. alpina. J. chinensis is quite distinct from these.—*W and C.* The common Hornbeam.—*X W.* Maxillaria concava has pale, whole-coloured, greenish flowers; M. rhombea has yellow flowers marked with brown; the former has a racemose inflorescence, the latter a one-flowered inflorescence.—*A Sub.* 1, Aster Novæ Angliæ; 2, A. ericoides; 3, A. diffusus.—*A B, Northfleet.* 1, Oncidium unguiculatum; 2, O. ciliatum.—*J N.* Zygopetalum intermedium.

Pears: *Cavanensis.* You will never find the Black Achan worth growing in the South, especially in warm dry seasons. It may prove better than many of the finer kinds in cold wet situations; but you should graft the tree with something better, say Knight's Monarch. Neill is apt to overbear itself. In pruning you must thin and shorten, so as to get a sprinkling of young shoots. Give some manure and water when necessary. The fruit will then come large and not mealy. ‖

Potato Flour: *Ravenswood.* You will find directions for making it in our volume for 1845, pp. 639 and 735.‡

Tobacco Paper: *R S.* We would willingly oblige you, but it is a rule with us never to recommend dealers, and we particularly object to the material itself, which is low-priced and dear.‡

Vines: *P J.* See a Leading Article in to-day's Paper.

Violets: *A Cottager.* These, like Strawberries, are the stronger for having their runners stopped. All varieties are benefited by the operation, provided the old plants are kept in health; but as they do not live long, a supply of runners should always be provided, in order to replace the old plants when their vigour is gone.

Wintering Half-hardy Plants: *Ravenswood.* The finer kinds of Fuchsias, such as Dr. Jephson, Coralina, Giantess, &c., may be safely wintered in a dry cellar which is free from frost. Directions on this subject will be found in "Villa and Suburban Gardening" in another column, and also in an article among our Home Correspondence of to-day.‡

SEEDLING FLOWERS.

Petunias: *J W.* A medium-sized rosy lilac flower, with a yellow eye, closely streaked with dark brown; a nice variety. *

Verbenas: *J G.* Too small in all respects; but this may fairly be attributed to the lateness of the season. It appears to be worthy of another trial.*

THE LONDON MANURE COMPANY beg to offer as under:
LONDON MANURE COMPANY'S WHEAT MANURE FOR AUTUMN SOWING.
CONCENTRATED URATE. SUPERPHOSPHATE OF LIME.
PERUVIAN GUANO. SULPHATE OF AMMONIA.
FISHERY AND AGRICULTURAL SALT, GYPSUM, and every artificial Manure; also a constant supply of English and Foreign LINSEED CAKE of the best quality.
The London Manure Company will guarantee the Guano they supply to be free from the slightest adulteration.
Bridge-street, Blackfriars. EDWARD PURSER, Secretary.

MANURES.—The following Manures are manufactured at Mr. LAWES's Factory, Deptford Creek:

Clover Manure, per ton	...£11 0 0
Turnip Manure, do.	... 7 0 0
Superphosphate of Lime	... 7 0 0
Sulphuric Acid and Coprolites ...	... 5 0 0

Office, 69, King William-street, City, London.
N.B. Peruvian Guano, guaranteed to contain 16 per cent. of Ammonia, 9*l.* 15*s.* per ton; and for 5 tons or more, 9*l.* 10*s.* per ton, in dock. Sulphate of Ammonia, &c.

LAND DRAINING AND IMPROVEMENT COMPANY, 30, Parliament-street, London; and Bedford Circus, Exeter.
This Company having been in active operation for several years, is ready to undertake Works under the Government Loan, or by fixed or annual charges under its Act of Parliament.
Further particulars and references may be obtained at the offices. THOMAS MAY, Secretary.

ARTIFICIAL MANURES.—PRIVATE INSTRUCTIONS in Chemical Analysis and the most approved methods of making Artificial Manures are given by J. C. NESBIT, F.C.S., F.G.S., at the Laboratories, Scientific School, 38, Kennington-lane, London.
Analyses of Soils, Manures, Minerals, &c., performed as usual, on moderate terms.

BY HER MAJESTY'S ROYAL LETTERS PATENT.

PATENT HOTHOUSE WORKS, KING'S ROAD, CHELSEA.
E. DENCH invites the attention of Gentlemen about to erect Hothouses, &c., to the vast superiority in every respect possessed by his PATENT HOUSES, which he will warrant superior in every respect to any others. Good Glass from 16 to 21 oz. per foot, 1 foot wide, 3 feet long, furnished, and the Houses, when completed, charged from 1*s.* 3*d.* to 1*s.* 6*d.* per superficial foot, according to size and quantity; on one principle the roof is formed without wood or putty, and on another principle with wood rafters, and the glass put in with putty. Patent Sashes, requiring no paint, from 7*d.* to 9*d.* per foot. HEATING BY HOT WATER.

THE CONICAL BOILERS INVENTED BY JOHN ROGERS, Esq., are supplied and fixed by JOHN SHEWEN, ironmonger, Sevenoaks. Also all kinds of Hot Water Apparatus. For Churches and Public Buildings, Mr. SHEWEN should be consulted, his Warm Air Apparatus being safer, more efficient, and more durable than any other.

IMPORTANT NOTICE.—EMIGRANTS are informed MARY WEDLAKE and CO. have from time to time supplied the first settlers to Swan River, Port Natal, and all the Australian Colonies, with AGRICULTURAL IMPLEMENTS; they beg an inspection of their stock, at 118, Fenchurch-street, near the Blackwall Railway. N.B. Persons becoming purchasers may have the benefit of an introduction to parties known to the firm at either of the above-named places.

The Agricultural Gazette.

SATURDAY, NOVEMBER 16, 1850.

MEETINGS FOR THE TWO FOLLOWING WEEKS.
THURSDAY, Nov. 21—Agricultural Imp. Society of Ireland.
THURSDAY, — 28—Agricultural Imp. Society of Ireland.

THE letter of "A Practical Farmer," upon the ALLOTMENT SYSTEM, at page 668, deserves a completer answer than it has yet received. His main proposition is, that the possession of a rood of land, a cow, and pigs, will not tend to the comfort and respectability of the agricultural labourer! And this he attempts to prove by asserting that it is incompatible with the due performance of a fair day's work for an employer; that there are certain objections to labourers keeping pigs well known to farmers, which need not be more fully specified; and that the affair is "quite an Irish system," introduced by well-meaning but inexperienced men.

Now, we believe the whole of this argument to be inconclusive; partly because its data are not facts, and partly because its logic is unsound.—The proposition itself is a very proper subject for discussion; and, as put by our correspondent, it implies an admission by him that the condition of the labourer, for itself and quite apart from his relationship to any other class in society, is a matter of very great importance—an assertion which, surely, no one will deny, whatever the inferences which may be fairly deduced from it. Now, consistently with this opinion, we are glad to know that there is many an agency at work among agricultural labourers having their personal benefit for its only end and object. Many are exerting themselves for the advantage of the farm-servant who (it may, perhaps, displease our correspondent to hear) have no immediate aim at the benefit of his employer at all. If the communication of greater skill, greater bodily strength, greater intelligence, greater prudence to the labourer, be for the advantage of his master, it is well; but it is not on this account that they are being urged upon the attention of the former; it is because they will benefit himself that the labourer is being urged to their acquisition. And, so, if "A Practical Farmer" is ready to admit that the condition of the labourer, irrespectively of his relationship to others, is an important subject, he must allow us to determine the value of the allotment system by its influence upon him directly, and not merely by its influence upon his ability as a servant. It is a very desirable thing, certainly, that farmers should have trustworthy and able servants; but it is rather too sweeping a demand upon the benevolence of the country, to require that it should confine itself in its efforts for the latter within just that stage of its proceedings where they cease to be of any value for the former. And we are persuaded, too, that those who incline to such a demand as this, mistake their own case. It will be found far better to push improvement to its utmost in individuals, and in individual classes, and trust to the inevitable laws of human nature for the growth of right relationship, than to work upon these as if they were things capable of direct creation. Let every means which an intelligent benevolence can suggest for trial, and which an intelligent appreciation of self-interest will lead labourers to adopt, be put in exercise to its utmost: if they can thus be improved as men, we may safely depend upon their being also improved as servants; but let the former be our aim, and let us look for the latter as a natural consequence rather than as the immediate object to be aimed at.

We took exception both to the logic and the data of our correspondent's argument. The former is surely at fault when he supposes the respectability and comfort of the labourer to depend entirely on his ability to do a fair day's work for an employer! and the latter we are bold to assert are erroneous throughout. The possession of an allotment is not incompatible with the due performance of a day's work—the honesty of the labourer has not been injured by granting him a larger garden than common—and allotments are neither conacre nor small farms, the only two Irish customs with which they are likely to be confounded. Our correspondent's own experience of the system is of course to be allowed its due influence in the argument: we can only say that employing men in farming to the extent of some hundreds of pounds per annum—a very large proportion of which is paid for as piece-work, we have not found any difficulty or disadvantage arising from the fact that all of them have allotments. Paying them extensively in piece-work wages, we are able most positively to say that they are as able and willing to do a fair day's work as ever they were: and this may be accounted for by the fact that their allotments, if they do add somewhat to their labour, do also very considerably improve their fare, and in that way at the same time their strength. Many of them keep pigs, all of them thresh out their 8 to 10 bushels of Wheat, and we have found no instance of dishonesty arising from either of these causes. But, the objection under this head, at which our correspondent hints, commonly met with as it is, really does appear to be conceived in a truly contemptible spirit. Are men to be for ever treated as children? shall we never be able to deem them worthy of confidence? It is this very distrustfulness to which dishonesty is often attributable; for what principle can grow which is never permitted a trial? But so little real foundation is there for this objection, that a gentleman of our acquaintance, a tenant farmer, well known in Lincolnshire, positively objects to employ men who do not keep their pig. A well-fed able-bodied man, cost what he may, furnishes cheaper labour than the ill-paid and never-trusted servant of some localities. "We can't *afford* to pay our men less than 2*s.* a day," was the remark of a farmer, who seems to have seen farther than our correspondent into the real interests of both masters and servants, as regards this subject.

Lastly, allotments are neither conacre nor small farms; the former are in the occupation of the head tenant, who sublets a piece, manured, for a particular crop during a single year; the latter are the sole dependence of their occupants; while allotments are the, so to speak, constant occupation of their tenants, and they are small enough to be cultivated during such periods of their time as would otherwise be wasted. In this is their merit, that without taking the tenants from their daily labour, they enable them to turn the spare time of themselves and their children to good account. Greater bodily strength, from the fare which they furnish; greater prudence, from the carefulness they inculcate; greater skill, from the garden education which children will obtain in them, are all probable, and in some cases actual, results of allotments of land to labourers; and we are obliged to "A Practical Farmer," for the opportunity he has given us of more fully insisting upon the advantages of the system than we had hitherto done.

THE BIRMINGHAM CATTLE SHOW.

WILL you allow me half-a-dozen lines to notice a remark in the *Gazette* of last week, which may possibly lead to an erroneous impression. In referring to the Smithfield and Birmingham Shows, you state that "those who desire that their stock should compete only with others of a similar breed, will prefer the latter (the Birmingham show); those who are disposed to support the only opportunity which remains for competition between the breeds, may prefer the former" (the Smithfield show). On referring to the prize lists of the Birmingham show you will perceive, that while in the first instance animals of the same breed compete only with each other for the prizes in the respective classes, there is afterwards a competition between the different breeds for the two gold medals which are offered, one for the best ox or steer in the yard, and the other for the best cow or heifer. In the show of last year, one gold medal was awarded to an ox exhibited by his Grace the Duke of Rutland, and the other to a cow exhibited by Mr. Robert Beman, of Moreton-in-the-Marsh; these distinctions being both carried off, at our first show, by short-horns. I may, perhaps, be permitted to add, that many gentlemen of great experience have expressed a very decided opinion in favour of the principle of classification adopted at the Birmingham show. *T. B. Wright, Union-street, Birmingham, Nov.* 11.

HOW TO MEET LOW PRICES OF GRAIN.

CAN our farmers in the present depreciated state of the corn market continue to raise cereal crops under the established routine of culture, and in the usual ratio of production, relatively with other productions of the soil?

Our reply to this question must be in the negative, unless we except any peculiarly favourable circumstances of soil, climate, and unusual skill and ingenuity on the part of the cultivator. But is there then no other system to which the agriculturist can turn his capital and industry, by which he can provide the means of defraying all the pecuniary outgoings of a farm, and realise a fair return for his labour? or, to come more directly to the point at which we aim, can the cultivator depart from the prescribed path of alternate husbandry (white and green crops succeeding each other) which has been established as the most perfect and remunerating, without loss to himself?

The alternate system has so long prevailed, with all its adjuncts of machinery for raising corn and sending it to market with rapidity on favouring opportunities, that the farmer is unwilling to abandon it in any measure. He still adheres to it from habit and predilection, and cannot easily be persuaded that he may depart from the prescribed track—change his course—accommodate his practice to altered circumstances, and instead of abandoning his farm, involving his landlord in embarrassment, and his labourers in pauperism, proceed in a manner which may yield a remunerating return. If a manufacturer finds that the fabrication of one article of his trade is unprofitable, he turns his attention to another branch of industrial labour, and adjusts and applies his machinery—both animate and inanimate—accordingly; and though during the transition period he suffers loss and inconvenience, his energy and perseverance enable him to surmount his difficulties. In this the farmer may see an exemplar worthy of his imitation. Though he cannot grow corn crops with profit, while our ports are open to the admission of foreign grain which can be raised on cheaper terms than the British farmer can produce them under the present burdens upon land, we have a notion that our farmers may even now rear and fatten live stock and produce milk and butter and kitchen vegetables, very beneficially, through the agency of green crops, though they may cease to grow corn, except in proportion commensurate with the wants of their domestic and farm establishments.

We anticipate the objection that the prices of milk, fresh butter, and butcher's meat, &c., cannot be maintained at remunerating rates if bread be extremely cheap. It is popularly believed that Wheat is the standard by which the general articles of agricultural produce rise or fall, and therefore, since there is no prospect of a dear loaf, there can be no just expectation of a good price for the other productions of the soil. Now this is delusive reasoning—in our humble judgment; assuming the prosperity of manufactures and the employment of the people generally, the cheapness of bread occasions an increased demand for milk, butter, meat, and the roots in which the green-grocer trades. If a working family earn more than enough to procure bread, they will expend a great part of the surplus in the purchase of these other articles of food; if, on the contrary, they can barely procure bread, they have no means of buying other agricultural productions—not even butter for their bread, which, under the contrary circumstances, they would "butter on both sides."

We may defy foreigners in general to send us fresh meat, at least such as we can produce. Let any one who has travelled over Belgium, Germany, and France, say if he has seen meat in the best shambles equal to what may be bought every market day in our country towns and villages. While their miserable sheep are kept in foul stables more than a moiety of their time, and without food, and poorly fed at all times, what is to be apprehended from competition with them, or with the carcases of old over-worked tough oxen, and cows of a certain age?

New circumstances demand a remodification of what was an admirable system. It is, we venture to say, a mistake in theory to hold that the principal value of green crops arises from their agency in creating manure for the succeeding cereal crops, which are to be the main dependance of the farmer for realising money. The green or forage crops should, at least in the pre-

sent times, be regarded as more directly remunerative in themselves, inasmuch as live stock fed upon them are the present and prospective sources of profit, in consequence of the general prosperity of the consuming classes. It may be urged that a more extended cultivation of green crops (with a diminished production of corn), will require more labour, and that an increased expenditure for this is out of the farmer's power. We rather question the validity of this objection. When all the labour necessary for the perfect culture of corn —of Wheat more especially—is considered, the hand-hoeing, weeding, reaping, binding (at the season when labour is most dear), threshing, and carrying to market, it occurs to us that no more hands are required in the management of forage crops than in the management of cereal crops.

The want of sufficient straw for fodder, and the dunghill, consequent on the proposed alteration of system, is however a difficulty; but not of a formidable kind. We are assuming that corn will be grown in sufficient quantities to supply the wants of the farmer's establishment—bread and porridge for his whole household, meal for fattening pigs, Oats for his horses, and if to this we add the suggestion that labourers with families should be partly paid, on the Scotch principle and practice, in grain, the total quantity of grain crops required on a farm would be in most cases such as would supply a good deal of straw, sufficient, at least, for the bedding of horses and cattle. In some cases Heath, Rushes, Sedge, Ferns, leaves, &c., are procurable at the cost of labour alone; but is straw or any other litter indispensable if merely considered as a material for creating putrescent manures? In the advanced state of chemical science, have we no sufficient resources in artificial manures so portable and so easily applied? or in the mineral manures with which so many localities abound, and in the rank sewerage of cities and towns, which will, no doubt, be applicable to the soil in a concentrated and portable form, through the length and breadth of the kingdom, before many years shall have passed over our heads? Is the folding of sheep on Turnips, &c., an inconsiderable means of manuring? Are the liquid treasures of the tank of little amount? In truth, the varieties of productions which our farmers could raise are so numerous, that successions, as in gardens, might follow each other continually, without any exhaustion of the powers of the soil, and to the infinite increase of manure, so that even the precious Potato should have an ample share of it, though, for this production, mineral manures (lime in every form) and ashes are the most suitable.

Potatoes.—This is a key note which introduces Irish agriculture to our attention for a moment. If our previous notes have had true tone, they will possess more force when Ireland is the theme—because the climate of that country, generally, renders it far more fit for the culture of green crops than for that of Wheat or Barley, and because the farmers of Ireland, *en masse*, are far less interested in sustaining the high prices of grain than English farmers. This arises chiefly from the following circumstance. In England the farmers till on a great scale; in Ireland on a small scale. A large proportion of the cultivators in the latter country holds from 5 to 20 acres: let us assume that a family there, not deficient in capital or skill, occupy a farm of 10 acres (a common case) of good Wheat land; we believe that the reduction in the value of corn occasions no loss to them. If they consume the corn grown on that little farm, as would be the case if they were in comfortable circumstances, it signifies nothing to them whether Wheat be worth 4*l.* or 40*s.* per quarter—and so of Oats or Barley—on the supposition that their land, cultivated with due regard to successions, produces no more corn than is required for their domestic use. We assume that the rent is paid by the sale of milk, butter, or of pigs, and that the surplus profit is expended in fuel, clothing, candles, salt, &c., and trifling articles of furniture, all of which are purchaseable at a much cheaper rate than when bread was dear. In the case of a tenant of 30 or 50 acres, and upwards, there must always be, according to his station and mode of living, a certain portion of the farm deducted in his calculations for the production of the food consumed by his household, and, therefore, in the debtor and creditor account of the farm, it is a matter of indifference whether the productions of that portion be dear or cheap in the market. The question of prices only becomes important as it regards the market produce of the portion of land over and above that which is required for the maintenance of the farmer's family. The smaller the size of the farm, therefore, the less important is the question to him, and even as regards the surplus quantity of land, whether it be much or little, and it is but little as regards the bulk of Irish farmers, the reductions of rent, of labour, seed, manures, implements, clothing, &c., consequent on the depreciated value of corn, make them really gainers by the present state of things. The farmer on a small scale is not injuriously affected anywhere throughout the United Kingdom by the cheapness of bread if he farms judiciously. With the extensive farmer of arable land, under high farming, the case is very different indeed, and his condition can only be improved by changing his system from corn growing largely to the raising of other market productions, which every well wisher of the people generally would desire to have brought within their reach. Why should not the working man have meat as well as bread?

Believing that two farmers holding 500 acres each would produce more from them, and employ more labourers than one farmer cultivating 1000 acres (and the great farmers are, as we have before intimated, the chief sufferers by the depreciation of corn) we are inclined to wish that farms were generally of smaller size in England to suit men of limited capital who (with three-fourths by the way of that formerly deemed necessary) might pursue such a system as the altered circumstances of the times require, and such as would be sufficiently remunerative.

Why may not our farmers, with their numerous facilities of obtaining manures, cultivate some Rape (Colza, rather) in the strong clay soils for the seed, and hemp, and Flax, to a considerable extent in appropriate soils? When Wheat bore a higher price than now, we have seen Colza cultivated extensively in the North-West of France, in preference to it. The demand for the oil expressed from it is very considerable, and the value of Rape-cake for agricultural purposes is well known. Hemp and Flax are highly remunerative. The Belgian or German farmer of 100 acres will often have 10 acres of Rape (for seed) or Flax for seed and manufacture. Linseed-oil is a treasure to the cattle-feeder; and the farm accounts of the foreigner will show a credit of 150*l.* for those ten acres. Some millions of British capital are annually sent out of the kingdom for Flax to supply the requirements of the linen manufacture; and though any of our farmers may satisfy himself that Flax is easily cultivated and highly remunerative on any good Wheat or Barley soil, he does not cultivate it, "because it is new to him,"—"because he does not understand it." Let landlords relax their stringent covenants regarding its culture, under reasonable requisitions, and let a few farmers combine here and there to bring an intelligent Flax cultivator from the north of Ireland, in spring, to show them how to sow the Flax seed, and in autumn how to pull the crop and prepare it for the market. On an average a crop of Flax will double the value of a crop of Barley, and in no case does Clover succeed better than when sown with the Flax.

It is by no means in a political view that we urge the culture of Flax, but merely as a substitution for some portion of cereal crops. Any attempt to force the substitution of home-grown Flax for Cotton—by means of combination and the excitement of popular feeling against the use of Cotton—would, in our judgment, be absurd, and have the contrary effect from what it is desirable to produce, by leading away the attention of those who are anxious to promote the increased consumption of Flax, from the only true means of attaining their object, viz., by reducing the cost of its production as compared with that of Cotton. There is ample scope for both manufactures. Cotton is more adapted to some purposes than Flax—and Flax might be beneficially substituted for some of the uses to which Cotton is applied.

We only particularise Flax, Hemp, and Rape, as instances of changes that the farmer may make with some advantage to himself. To attempt any detail of what might be effected by raising more abundantly crops not commonly cultivated for cattle and pig feeding—and by calling forth greater powers of vegetation from the soil by more skilful husbandry—which ought not to be unimproved—when everything else is in progressive improvement, would be superfluous. *M. D.*

ON THE CULTIVATION OF WHEAT.—No. I.

After Mr. Hewitt Davis published his opinions on the great advantages to be derived from very thin seeding, I was induced to commence a series of experiments to test fully the merits of his system (being much at variance with the practice of our most eminent agriculturists), well knowing that no single trial could satisfactorily decide the point. With your permission I lay the result of my trials before your readers, as I feel that in times of agricultural depression like the present, anything that may tend to benefit the farmer ought not to be withheld. My experiments were all conducted under my own observation and with perfect fairness, for I had no other object but truth in view. It mattered little to myself, in a certain sense, whether 3 pecks, or 10 pecks of seed Wheat per acre were the proper quantities to sow. *Experiment No.* 1.—October 15, 1844, on a piece of white Clover ley, having been summer eaten with sheep; three slips of land, about 1 rood each, contiguous to each other, were drilled with Wheat, the quantity of seed on each being different, at intervals of 7 inches, a row being left unsown between each plot of land.

	Seed per acre. pecks.	Produce per acre. bush. pk. gal.
No. 1	7	34 3 1
2	5½	34 0 1
3	11	33 3 0

The soil, a good gravelly loam, but not in a very good state of cultivation. *Experiment No.* 2.—Three pieces of land, a row left unsown between each, were drilled at 7 inches apart on the 20th of October, 1845, with Wheat; a different quantity of seed being sown on each plot of land, the result proved as under:

	Seed per acre. pecks.	Produce per acre. bush. pk. gal.
No. 1	7	47 3 0
2	6	45 1 1
3	8½	45 0 0

This trial was made after a good crop of red Clover, eaten on the land by couples, having at the same time much dry food. Soil, a good gravelly loam, in an excellent state of cultivation. *Experiment No.* 3.—On the 8th of October, 1847, about 3 roods of land, lying beside each other, were drilled as before, with my imperial white Wheat in rows at 7 inches, on an old white Clover ley; the quantity of seed per acre differed, as in the foregoing experiments:

	Seed per acre. pecks.	Produce per acre. bush. pk. gal.
No. 1	6	42 3 1
2	9	40 2 0
3	12	40 1 0

The soil in this case differed from the two last, being very loamy, on a dry subsoil; good land, but farmed in an ordinary manner. *Experiment No.* 4.—October 7, 1848, I made the following trial, and sowed two plots of land with less seed per acre than I had done before. These, with another piece, were drilled at intervals of 8 inches.

	Seed per acre. pecks.	Produce per acre. bush. pk. gal.
No. 1	7	50 2 1
2	4	43 0 0
3	3	41 2 1

The land on which this experiment was made is a gravelly loam, and in excellent order. The Wheat was after Clover ley, summer eaten by couples, having in the spring a considerable quantity of dry food thereon. The Wheat was my imperial white. Nos. 2 and 3 suffered much from mildew, and consequently the quality was not so good as the produce of No. 1. *Experiment No.* 5.—October 10, 1849. Two pieces of land beside each other were drilled at intervals of 8 inches, having a row left unsown between each, with my imperial white Wheat.

	Seed per acre. pecks.	Produce per acre. bush. pk. gal.
No. 1	7	40 0 0
2	4	39 2 0

The land on which this trial was made is a fine gravel soil of excellent quality, and was highly farmed; the Wheat being after an excellent crop of red Clover, summer eaten by ewes and lambs, having at the same time much dry food. This experiment differs much from the last; but I state facts, and wish others to draw their own conclusion. This season mildew was very prevalent, but both these pieces of Wheat ripened very kindly. The above experiments seem to show that 6 to 7 pecks of seed will produce more Wheat than 9, 11, or 12 pecks of seed per acre, by an average of 2 bushels; this added to 1 bushel less seed, makes a profit of 3 bushels of Wheat per acre, and is decidedly against very thick sowing. The last trial, however, seems more in favour of thin seeding, but it must be remembered that the land, as before stated, was in an excellent state. These experiments have not proved quite so satisfactory as I could wish; but it would appear that the proper quantity of seed Wheat per acre is somewhere between 4 and 7 pecks, to be drilled on good land in fine condition, and in the early part of October; but it would not be safe to sow less than 7 or 8 pecks on the general average quality and condition of the land in this country. No rule can be laid down as to the proper quantity of seed per acre, as much depends on the nature and condition of the land and time of sowing. I have made several experiments between drilling Wheat at 7 inches apart in the rows and 9½ inches, and found the produce much the same, which has induced me now to drill my Wheat generally at 8 inches, being a very convenient distance. I have not given any account of the different qualities of the grain, neither noticed the weight of straw, as it would have increased the trouble in conducting these experiments, which I found to be great, being connected as they were with many others as to the relative merits of different varieties of Wheat, which I probably may lay before your readers. If more attention was paid to the different sorts of Wheat, a greater benefit would be derived than most farmers imagine. Much more might be written respecting the disadvantages of very thin seeding, but I think enough has been shown to caution those who have doubts on the subject. I must however confess, that the country is indebted to Mr. Hewitt Davis, in drawing the farmers' attention to his system, as it must be admitted that a greater quantity of seed corn than necessary has been sown and wasted. *T. E. Pawlett, in Bell's Weekly Messenger.*

Home Correspondence.

The Great Agricultural Movement in the Growing of Flax.—A company, comprising many of the leading nobility and landowners, is seeking from Government a Royal Charter to give encouragement to agriculturists and farmers to bring into immediate cultivation, at least one hundred thousand acres of land, for the production of Flax-straw; which substance, the promoters of the charter have (by new and peculiar processes never hitherto adopted) the power to convert into a fit state to hold competition with the best Flax imported from foreign nations, without the aid of steeping, kiln-drying, or mill-scutching. The machinery by which the fibre is separated from the stalk, without steeping, is of a very simple and inexpensive kind, requiring no previous knowledge to work it. The unsteeped Flax is uniform in strength, and free from stains, so that all after-processes of manufacturing and bleaching may be conducted with a facility and exactness not hitherto attainable. *T. S.*

High Farming.—At the close of the "leader" in the *Agricultural Gazette* of the 19th ult., the following occurs:—"We may depend upon it that upon the relation between the means of the farmer and the extent of land he aims at farming, depends the profit or loss in agriculture: and high farming, as Lord Stanley has told us at Bury, and Mr. Rigden shows us at Brighton, is the only way to meet low prices." Now it would appear from this that high farming is to be a

panacea for all the ills that free frade is heir to ; but I can illustrate a case that will show the fallibility of such an oracle. I have a pet close near to my house, which has been pretty well farmed for some years ; but as high farming is rather an indefinite term, I venture to say it has been as well cultivated as the heath at Tiptree, the downs at Sutton Waldron, the garden at Wix, or even the ultra high farming at Auchness (minus the sea weed dressings). In the spring of 1849, the field was prepared for Mangold Wurzel, and had a liberal dressing of compost, *i. e.*, farm-yard manure, maiden soil, and road scrapings well mixed. In April the seed was sown, and a good crop (upwards of 30 tons per acre) was the result ; the roots were harvested, and the tops nearly all ploughed in about the middle of November—(there was no perceptible difference in the succeeding crop, where the tops were drawn off or not). On the 5th and 7th of February last, the field was dibbled with about a bushel and a half of Wheat per acre ; the crop looked well until the latter end of July, and was estimated by some neighbours at 40 bushels per acre ; indeed it did look good for that ; the sequel is, I shall be glad to sell it for 20 at 4*s.* 6*d.* per bushel. I can show another case of a close in my occupation, where anything but high farming has been practised, the produce of which is at least 35 per cent. more, and 20 per cent. better quality.—Thus far was written a fortnight ago ; but from a feeling of diffidence in "rushing into print," the paper was burked, and certainly would not now have seen the light, had not "E. X." challenged any one, last week, to say he ever grew "unkind Wheat" after roots, particularly Mangold Wurzel. *Jas. Biggs, Desborough, Nov.* 5.

Farm Accounts.—A correspondent desires an opinion on the system of keeping accounts relative to a farm, as published by the Royal Agricultural Society and in the Cyclopædia of Agriculture. I have seen neither of the above—but being thoroughly acquainted with accounts generally, as employed in many concerns, I venture to give you my opinion as to a mode I should adopt were I a farmer ; and which mode, were it adopted by all, would prevent that fallacious mode of giving statements that are with ease upset by any one conversant with figures. I have never seen any system that sufficiently individualises ; matters are too much "lumped" together, to render any account satisfactory to the minute enquirer. Of course a perfect system cannot be developed in a single letter, but the leading heads may be considered as follows. 1st. Every careful farmer must keep a "cash book" to contain every shilling paid and received. 2d. A "day book," to contain a daily entry of every expense incurred in the cultivation of a farm ; arranged under various heads and applicable to the various fields under cultivation, whether of pasture, corn, green crops, roots, &c., or woods. 3d. "A ledger," to be opened with various headings, viz., every field on the farm, of whatever nature it may be ; also of every character of stock that may be fed or used on the farm, &c. Then each entry or field must be debited with an estimated proportion of the rental, whether arable, pasture, or wood land ; afterwards, with each succeeding expense incurred, as shown by the "day book," from Michaelmas to Michaelmas, also with the tithe, &c., and when the amount of capital employed in the cultivation of each field for the year is known, then with the interest of capital ; this will give the whole debit. The credits must be arrived at by the realised produce of the crop, whether in grain, straw, hay, &c. Stock must be debited for the cost price, interest of money, food per week or month, derived from the growing crops, and consequently the fields growing them credited, in order to arrive at the profit or loss of each undertaking. Should this simple statement meet the views of your correspondent "E. F." page 700, I shall be happy to enter more fully into the subject. *W. F., Gay Bowers, Danbury, Essex.* [And we shall be very happy to hear from you.]

On High Farming.—Under this head a correspondent, "E. X.," in your Number of Nov. 2, challenges any one to say that he ever knew unkind Wheat after roots, particularly Mangold Wurzel. Unkind is an indefinite term, but here it must have reference to blight. I had this year a piece of Wheat some with and some without active manure, part after Clover, part after Potatoes, part after Carrots, and part after Mangold Wurzel—all equally blighted. It was to the eye a most beautiful crop, admired for its cultivation by all who saw it. It may, perhaps, yield 2½ qrs. per acre, just half the estimated crop. I have at least learned one truth, that high farming has its drawbacks. The best farmers have suffered most in this neighbourhood ; one farmer offered 100 acres of Wheat in open market, to any one who would harvest it and leave the straw. *J. C. C., Nov.* 5.

Lime-Ash floors for Straw-houses or bays of Barns.—Having found them to answer perfectly when laid on a level and dry under-surface, and the question being their cost, I have the pleasure of forwarding you the account which my clerk has kept of a floor 20 feet by 21.

	£	*s.*	*d.*
60 bushels foundry ashes	0	5	0
10 sacks of lime	1	0	0
4½ days, 1st mason, at 2*s.* 6*d.*, ...	0	10	7½
4½ days, 2d ditto, at 2*s.*	0	8	6
4½ days, labourer, at 1*s.* 6*d.*	0	6	4½
420 feet (= to 47 yards, at 13*d.*)	2	10	6

This includes all the expence of preparing the under-surface. On November 2d the floor was finished, having occupied 3¾ days in laying ; ½ day, November 5th, was required to level off inequalities of surface, and roll and beat it. This day, November 9th, the floor is so dry, it is fit for the sheaves to be laid on it for threshing the day after to-morrow on the adjoining floor. The foundry ashes cost nothing but carriage ; if a larger space had been executed, the expense per yard would have been less, I imagine. *F. P. B. M., Nov. 9th.*

Hybrids.—Some time ago one of the supposed hybrids, between the common fowl and the guinea fowl, was lent to me, but its appearance at once satisfied me that it was no hybrid. *Sylvanus.*

Rape for Seed.—Can you give me any information on the subject of growing Rape or Colza for seed ? I see that it is grown in several of the eastern counties, and very extensively in Belgium and Germany, in which last country it is considered the most profitable crop of all to the farmer ; more so than Wheat. The present price of Rape seed in England is stated to be between 6*s.* and 7*s.* per bushel, and the produce to vary from 30 to 50 bushels per acre. Now, if this be so, it might be used as a substitute for Wheat at the present moment, and thus furnish an answer to the question so frequently put by the farmer—"What can I grow instead of grain ?" It is hard likewise on the farmer, in these days of free-trade, that the law should prevent him from growing another crop, which is universal in Germany and Belgium ; viz., Tobacco. As long as he was protected, he had no right to grumble, but now that he is thrown into competition with the crops of the whole world, it is the height of injustice to tie up his hands in any way whatever, from using every means in his power to start fairly in the race. *Agricola.*—[The following describes the practice of Rape culture in Flanders ; it is from a forthcoming number of Blackie's "Cyclopedia of Agriculture." "Rapeseed is only cultivated in the most fertile quarters of the middle of Flanders, and in the polders. Commonly, it is planted either after Potatoes or Flax, or after Wheat or Oats, in the following manner :—As soon as the Wheat or Oats are reaped, the stubbles are ploughed four inches deep ; then the ground is harrowed, and the stubbles and weeds are gathered and carried away, or burned upon the land, if they are dry. Thereafter, 10 to 12 cart-loads of manure per acre are laid on the land, which is ploughed under at a depth of 14 to 16 inches ; and at the same time the land is laid in ridges of 8 furrows each, and then left for some days. It is then worked over twice with the heavy harrow ; then again ploughed at a depth of 12 inches. Upon the ridges, then, the land is worked smooth with the subverted harrow, and if the soil is light and dry, it is rolled. At last the Rapeseed plants are *set* towards the end of September, with an implement for the purpose. With this implement, a series of double holes are made, at a distance of about a foot from each other, or else this is done with a very broad spade, whilst the rows keep a distance of more than half a yard. About the middle of November, they dig between the rows, and set up the clods, in order to secure the plants, as much as possible, from wind and frost. Others, who wish as much as possible to save the manual labour, set the plants with the plough. They do all the work as described till the manure is spread over the ground. Then they make with the plough a furrow of about 8 inches deep. A man, following the plough, puts some manure in it with the dung-fork, and is followed by five women, who bear the plants in their arms, which they lay against the right side of the furrows, at intervals of a foot. When the labourer returns with the plough, he covers the roots. In many of the enclosed carses, or polders, where they desire still more to save labour, many farmers do not transplant at all from a seed-bed, but sow the Rapeseed in the land where it is to grow, taking care to thin the plants when they stand too thick. Early in July, the Rapeseed is cut with the sickle, and turned the next day, while the plants are wet with the dew, in order to prevent the loss of seed. After four or five days, it may be dry, if the weather is favourable, and then it is immediately threshed upon a linen cloth in the field, after which the seed is carried to a dry loft. In some districts of Flanders, it is customary to put the Rapeseed in cocks, leave it so for four weeks, and then to thresh it. They do this in order thoroughly to ripen all the seed."]

"*No Business so Ill-conducted as Farming.*"—Such was, some years back, the remark of an old tradesman, who, having by strict attention to his business, become a landowner, had turned his attention to farming. Though at the time I might feel somewhat indignant at the imputation on my class, especially coming from one who knew better how to handle the scales than the plough, I am constrained to acknowledge that observation has, since then, convinced me of its general truthfulness. The absence of regularly kept account-books is alone enough to substantiate the charge. In no other business would a man think of groping in the dark, unable to ascertain the relative cost, profit, or loss on each branch of his business, as the farmer does. If the concern be so large, or the manager so incompetent as to require it, the farmer should employ a book-keeper. If, by his aid, the profit or loss on each department could be correctly ascertained, the expense of such an individual might soon be repaid. Of course he must be a man of a stamp somewhat different from the office-keeping clerk of the tradesman. He must not be a mere house mouse ; he must go into the fields and measure land, calculate the cost, and ascertain the produce. He must gauge, weigh, count, and record the particulars of each kind of produce, so that the farmer may see which crops or practices it is desirable to extend, and which to retract or abandon. He must also be able to prove by his books what is the annual amount of profit or loss on the whole farm. The want of such a system has taxed the farmer with the payment of income tax, when, as is now too generally the case, he has been reaping a loss, instead of a profit, by his business. It would be a good example if some landlords would immediately begin to employ properly qualified clerks to keep their farm accounts, and a patriotic act to publish them, together with the particulars and results of various experiments, which it is more within the province of the landlord than the tenant to make. How many errors have been persisted in from want of clear accounts ! How many beneficial alterations might farmers often have made in their practices, if they had possessed the proofs which such accounts would have supplied ! How often would even clever practical men find that their judgment had deceived them, if they were able to ascertain the amount of cost and produce, of profit and loss on each crop or animal. By way of illustration, I will just mention a case or two. A labourer, who had a single pig, which he had bought, thought it had done "varra weel." He had purchased a great part of its food, and gave an account of the Potatoes it had consumed. These items were added up, and upon valuing the animal according to his and our estimate of its weight and worth, the poor man was surprised to find that he had been feeding a robber ; his pig, which he thought had done so very well, had actually "eaten its head off." In another case, an experienced farmer was so confident that his own crop of broadcast Turnips was heavier than that of his neighbour, in Scotch drill rows of 30 inches apart, that he backed his judgment by a bet. To decide this an average plot in each field was measured and weighed, and to the surprise and mortification of the owner of the broadcast Turnips his crop proved to be the lightest. These facts evidence the importance of keeping accurate accounts, and testing judgment by weight and measure, cost and produce. This subject naturally leads to another, namely, that of agricultural education, on which I propose making a few remarks in another letter. *O. F.*

Hoeing of Wheat.—In the operations of art, we must imitate the processes of Nature, observe her rules, and estimate the results. Labour is useful only when associated and acting with the laws of Nature. The exertions of the mind and the actions of the hand are applied to place substances in the position of beneficial relationship, and matter itself produces the results. The husbandman sows the seeds, and the crop is produced by the voluntary agencies that are exerted in consequence of the positions of the seed in the ground. Much the greater part of practical knowledge is derived from observation and experience, and extended according to circumstances. It is observed that green crop plants, as Turnips, Potatoes, and Beet-root, expose the land during the young growth, and thereby afford an opportunity of killing all the weeds, and pulverising the soil. When this purpose has been effected, the plant reaches maturity, produces a broad foliage, which overspreads and covers the soil, excludes the sun, retains the moisture, and produces a mellow decomposition beneath the shade of the leaves. Much of the benefit which the land receives from the green crop culture, is derived from this source. The low growth of the plants allows the working and cleaning of the land during almost the whole summer, at least far into that season, and, thereby confers the benefits of cleansing and pulverisation. The cereal crops, as Wheat and Barley, quickly rise to height, because Nature directs the maturation of seeds during that year. Any working or cleaning of the land is thereby excluded, and as the produce lies in the ear, and not in the roots, the wide placing of the crop in drills would reduce the quantity returned. The fibrous roots do not pierce and divide the soil, but creep along the surface, and consolidate instead of loosen the land underneath. Nature has most evidently intended the plants for contrary purposes, which have been carefully observed, and studiously adopted. The very great success of drilling green crops extended the idea to cereal plants, and machines have been devised for the purpose of inserting the seeds in narrow rows. The intervals have been tried to be cleaned and pulverised by means of horse and hand hoes, and much benefit has been supposed to be derived from the practice. But, as before observed, the crop soon rises to height, and prevents the labour of cleaning and pulverising, and the weeds are more encouraged than checked by the very partial hoeing that can be done in the early summer. [?] *J. D.*

Ventilation.—There is a plan adopted in many hospitals and workhouses to ventilate the apartments and sick wards which is simple and most effectual ; preserving the rooms from draughts, and yet keeping them sweet without being too cold. Round the ceilings and across, at stated distances, zinc tubes are fixed, connected with each other, and perforated with very small holes, having two or more open ends passing through the outer walls, protected by a shade to prevent the rain beating in. The extremities of the tubes may also be furnished with a cap, to close them up in severe weather, which however is, I understand, never necessary if the tubes are properly constructed according to scale, with reference to the size of the room, and number of inhabitants. The same principle may be applied to stables, cowhouses, &c. It is a cheap method of ventilation, and answers perfectly. *Falcon.*

Mr. Piper's Wheat.—With reference to an extract made from the *Ipswich Express*, relating to the system pursued by Mr. Piper, of Colne Engaine, in Essex, of

growing Wheat year after year on the same ground, without ploughing, which appeared in your Paper of the 9th inst., I should be extremely obliged to that gentleman if he would kindly reply to the following questions.

1. The nature of the soil and subsoil on which the Wheat is grown?
2. The height above the sea?
3. When the corn is dibbled in?
4. What manure, when, and how much per acre he puts on?
5. The cost of manure?
6. Does he harrow the ground after sowing?
7. Is the manure applied at seed time, or in the spring as a top dressing?
8. How often is the ground hoed after the Wheat is up before harvest, and whether with horse or hand hoe?
9. How many acres does he plant in this way?
10. What has been the average of the crops up to the last harvest?

The knowledge of these points may assist others to decide if Mr. Piper's plan is likely to answer as well in other localities, as it is stated it has done on his land. *J. M. Tylden, Milsted, Nov.* 10.

Education.—It is a question, whether a man who has to work for his daily bread may not be over-educated, imbibing false notions of his own importance, which may prove a stumbling-block as he advances towards an age when he must provide for his own wants, independent of his parents. A moderate knowledge of reading, writing, and arithmetic, is quite sufficient for a man whose occupation is to be that of a labourer or artisan. A proper proceeding in the above useful aids in life gives hidden talent an opportunity of shining forth, and raising the possessor to the highest position attainable by real ability, whereas all the cramming of the most persevering schoolmaster will not furnish a dull head with brains, but may impede the owner's progress, by making him vain of his superficial knowledge, thus unfitting him for the laborious station to which he was born, and converting him into a dissatisfied member of society. In our free country, genius will push a man from the lowest to the highest step of the ladder, if properly directed, more surely than skin-deep accomplishments, which although being delightful to meet with, will not preserve an individual from starvation, who has nothing to look to for support but his manual labour. Even in the higher ranks of life we shall soon discover that an expensive college education, resting upon Greek and Latin, must be changed for something more useful, where younger sons have no sinecure places in anticipation. The introduction of railroads and free trade have altered the aspect of things in this country; no man can afford to be idle; there is a kind of equality existing amongst certain classes, which is fast introducing the necessity of men placing their pride of birth in their pockets, and trusting more to honesty of principle and untiring exertion to maintain their position in society. Nominal riches will no longer bear up an individual against the storm which is raging amongst those whose property is involved in difficulties, which low prices increase. *Falcon.*

Farm Accounts.—The simplest and best system of accounts for the farmer is the common ledger. This shows at all times, and at once, the exact state of affairs on the farm, and the exact amount of profit and loss in everything; with the exception of a labour-book, you require no other account book whatever. The labour account book of the Royal Agricultural Society of England is good, but a little alteration in the size and arrangement of columns would make it infinitely better. *J. R. Markby.*

Animal Heat.—I always read the *Agricultural Gazette*, and although no agriculturist, I feel the greatest pleasure and interest in perusing articles generally written with good sound reasoning, and the results of practical men. In last week's *Gazette*, however, you have a correspondent, "J. C. H., Croft Farm, Bridgnorth," who, among other learned theories, gives one on digestion that is perfectly startling. He says, "The organs of digestion are exquisitely arranged, for when the food is introduced into the stomach, it is, by the action of the gastric juice (which is secreted from the lining of the stomach), reduced to a pulp and removed to the liver, where it is purified, and then conveyed through the lungs, &c., &c." What does he mean? God bless us, we are wonderfully made! Does he intend to insinuate that the food passes from the stomach through the liver, into the lungs? Where does it go to then? Fancy a pound of beefsteaks with its alliaceous accompaniments taking that route, or as he further states, an ordinary Arctic meal of 5 lbs. of blubber, with train oil and brandy "à discretion." Dear Mr. Editor, believe me, I have a great respect for you personally; come not in contact with any man if he digests his food in that way—associate only with those who perform that function in the mode described by John Hunter, and other steady physiologists. There is no calculating what new diseases might be generated by this doctrine, and certainly no guessing what remedies would be of use in them. Pray do advise your correspondent to consider what a digestive revolution he is promulgating, and to spare the feelings that every poor man must have, when he eats with a good appetite his frugal meal of bread and bacon. Your *Gazette* is read by all classes, and all should be equally benefited. "A little knowledge is a dangerous thing." *An Ordinary Digester.* [Your witty criticism is too unwilling to admit the possibility of "J. C. H.'s" remarks bearing a construction accordant with the truth. He probably meant to say, that after the food had been reduced to a pulp it was brought under the action of the liver before it was removed to the lungs—the fact being that the absorption of the chyle is effected after its mixture with the bile, by which the nutritious parts of the "pulpy mass" passing out of the stomach are separated from the innutritious; so that the "purification" of the "pulpy food" by means of the liver, previous to its conveyance through certain absorbent vessels and the heart to the lungs, is no fiction.]

Wheat Growing in Ireland.—During my travels through the various parts of England, enjoying the hospitality of English farmers, stewards, and farm bailiffs,* I have had many interesting discussions on Wheat growing, amongst other subjects, and was surprised to find in many cases an objection to the culture of Wheat on land that had previously grown Potatoes, whereas in this country we had always found the best Wheat crops as the successors to Potatoes on what is termed Wheat soils. This great contrast in the success and failure of Wheats in the two countries, so contiguous to each other, I have endeavoured to reconcile as attributable to the following causes. First, having found that Potatoes in England had formerly at least been generally grown on light lands, whereas in Ireland they have been grown on all kinds of land. Secondly, there has been less attention paid to the culture of Potatoes, and general fallowing of the Potato land in England than has been bestowed on land producing other green or fallow crops, whereas in Ireland the Potato culture was that most and other green or fallow crop culture that least attended to; and finally, nature has done for us in many cases what it required art on your part to effect on land which had previously grown Potatoes, namely, by mechanical and chemical means to render light land heavy by compression, and the supply of ingredients in which, for Wheat culture, it is deficient; and hence our deficiency of produce on light lands compared to the produce obtained by you generally speaking; and this suggests another contrast in the success of Wheat culture on Irish soils—between English and Scotch stewards, on the one part, and Irish stewards and Irish farmers on the other. In the case of the first I have almost universally observed through this country crops of Wheat much lighter in quantity and much inferior in quality, compared to those grown by the second. This I attribute to the following causes; the English and Scotch stewards cultivate their lands principally, nay I may say in all cases, by the mere use of the plough and harrow, aided latterly by the grubber. The Irishman ploughs and harrows his lands too, perhaps, not so well, but he makes up for his deficiency in ordinary ploughing by the additional use of the plough, and far better, the spade, by raising the subsoil in the furrows and casting with his shovels the contents of the same over his beds or ridges when the seed is harrowed, ribbed, or drilled in. I have myself made many interesting experiments in this way. Indeed I have gone so far as to redig the furrows in spring, and use their contents as a top dressing on the Wheat, when having got its usual spring hoeing or harrowing; and the increased produce from crops so treated, compared with those on land treated according to what some would call improved English or Scotch farming in Ireland, has often paid from 500 to 600 per cent. interest on the capital expended in such manual or spade labour. I found another advantage in this system, as I have by such means restored to fertility in Clover growing land hitherto considered "Clover sick;" but the greatest advantage in this system of late, especially, was the giving employment to the people "to enable them to support themselves," instead of being caged up in the workhouses, so called, living on other men's industry, whilst learning the way by which they could receive "the wages of sin." *Edward Carroll, Beg Erin, Castlebridge, Gorey, county Wexford.*

Wheat Culture.—As every quack has a nostrum for the improvement of agriculture, allow me to propose mine, and, if convenient, favour us with your opinion of its practicability. The following remarks refer to the cold and wet climate of North Lancashire, but they may be found partially applicable elsewhere. Can we adopt any plan which is likely to materially increase the growth of Wheat? and if so, can it be done profitably? The growth of Wheat is subject to so many unfavourable influences, and in our uncertain climate we can so little calculate upon having favourable weather at critical times, that it is problematical whether manuring the land for Wheat does more harm or good. If we manure with farm-yard manure, and the season proves unfavourable, the plant runs into straw, is beaten down by the wind and rain, and becomes tainted with rust and mildew, and the sample and yield are both indifferent; and, therefore, as bad seasons for Wheat are more frequent than good ones (in Lancashire), the safest plan is to have the land poor rather than too well manured, especially with ammoniacal manures; it is my firm opinion that in the cold season of 1845 every shilling expended in manuring Wheat in this neighbourhood made the crop a shilling worse than if there had been none applied, and the only tolerable sample of Wheat I saw growing that season was in a field which had in it a second crop without any manure. On the other hand, to take an extreme case, I saw a field of 20 acres, which had been thoroughly drained and manured, and the Wheat, up to the beginning of May, was as promising as any field I ever saw, the steward of the estate then remarking to me that the crop would pay the whole cost of draining and manuring, and yet when it was threshed out, it only yielded 1 quarter per acre. But if we could discover a sort of Wheat which produced straw a foot shorter than the usual length, and ears of an inch longer, such a variety would stand all sorts of weather without being beaten down, and we might then safely manure far more highly for Wheat than we can at present, and there would be far less risk of mildew or disease of any kind than there is when the crop is laid as flat as if a garden roller had passed over it—the inquiry will be, where is such a variety to be met with? and the answer at present (I fear) will be, nowhere! But if the skill of some of our horticultural experimentalists were directed to the matter, is there not reason to hope that such a variety might be obtained? If the Royal Agricultural Society could procure such a one by offering a reward of 500*l.* for it, it would be the best spent money that ever passed through their hands. The value of Wheat is about five times that of the same weight of straw, and yet, probably, 95 per cent. of its weight is composed of exactly the same elements—if then we could procure a variety which instead of two tons of straw and one ton of Wheat, would produce a ton and a half of each, the crop would be amazingly increased in value. Is not this possible? and if it be, is it not worth trying for? Certainly the relative weights of straw and grain vary in every parish and every season, more or less; and it seems to be very desirable to increase the former, even if it can be accomplished, at the expense of the latter; and so far am I from desiring (as some people do) to have a Wheat which produces more straw, that I think the endeavour ought to be to discover one which produced only half the straw, in the hope that good cultivation would enable us to produce from it twice the quantity of grain. Piper's Thickset, for instance, is perhaps the shortest strawed Wheat grown in England, but is rather coarse in the grain. Now, if by crossing it with a fine thin-skinned sort we could obtain a variety shorter in the straw than Piper's, and equal in quality to the other, our object would be attained, provided the new sort grew proportionately larger in the head. But may not the tendency to improvement in the size of the head be considerably increased and accelerated by careful management? In the *Gardeners' Chronicle* some years back a correspondent recorded the result of an experiment of the kind, which deserves attention. He took the pod of a garden Bean, in which he found five seeds; he sowed these, and in the produce some of the pods contained five seeds; he sowed these, and some of the pods contained six seeds; he sowed these, and some of the pods contained seven Beans, and thus by careful selection he at last obtained a variety, the pods of which almost all contained seven Beans. Might not a careful selection of large ears of Wheat for seed, continued for some years, produce heads very much larger than the original stock. Has not such careful attention and selection in all instances, both animal and vegetable, produced a marked improvement in the breed or variety? If some expert manipulator would turn his attention to hybridising Wheat instead of Fuchsias, he might probably obtain a variety which would make his fortune as well as that of all the farmers who sowed it. Certainly if I could manage the operation I would not fail to try it every year as long as my life was spared, or till I succeeded in obtaining a variety to my mind; but I fear the stigma is so difficult to get at, as well as the stamens, before flowering, that a person who, like myself, is not much accustomed to such operations, would have little chance of success. Can you give any instructions on the subject? My present plan (for I have been trying it for some years) is to sow two kinds in drills alongside each other, and then sow the produce; by this means I have procured several varieties, but none better than the old ones. Something may be also done by acclimatising, or rather by sowing a Wheat which has been acclimatised in a much warmer country. Some years ago I sowed a fine white Wheat, which was the produce of some Wheat from Australia; that Wheat was in flower in May at Clitheroe, which I attributed to the Wheat having been cultivated some years in a climate where it had grown and ripened in a much shorter time than Wheats do in this country, and that its time of ripening had by this been much accelerated. *T. G.* [The process of hybridising is not so difficult:—care must be taken to remove the stamens from the flower selected for the experiment before the anthers have burst.]

* The term steward in England means land-agent in Ireland, and the term bailiff in England means steward in Ireland, where the term bailiff is one not only of reproach but of execration, no matter how necessary such an officer may be.

Societies.

LENHAM, KENT: *The Hop Fungus.*—DR. PLOMLEY said he felt most happy in being able to state very briefly his observations on fungi generally, but more especially that to which they referred, viz., the Hop fungus or mould. For the last year and a half he had paid great attention to this subject, and he found that in order to understand the nature of the Hop fungus, it was necessary to investigate the whole class of moulds, before any definite and satisfactory conclusion could be arrived at as to its causes and remedy. As far as the farmer was concerned, fungi might be divided into two classes, viz. those which existed in the substance of the plant, and those which lived on the surface: bunt, smut, mildew, &c., were internal moulds; the Hop mould, and also those which attacked Peas, Beans, Turnips, &c., were external or superficial—they did not enter into the substance of the plants upon which they grew. Now, these external moulds could all be destroyed by the application of sulphur. In some experiments which he made last year, with sulphur, on the Hop mould, he found that in but one case out of 20 was the first application effectual, but that it required generally

frequent applications; this year the result of other experiments had been that the application of sulphur to the Grape and other fruit trees might be easily effected, but it was not so easy a matter to apply it to the Hop. The application of sulphur for the cure of mould on trees and shrubs had been known for many years. The Rev. Mr. Berkeley he thought mentioned it in the *Agricultural Gazette* in 1846, and it had been tried all over Europe; and it was but fair to say that its application in these cases had for the most part been attended with satisfactory and beneficial results. The great difficulty he conceived that would be experienced in its application to the Hop plant, would be the great number of applications necessary to keep the fungus in check. In seasons like the past, with a small amount of solar heat, and considerable moisture, the sulphur would probably have to be applied nearly every day, otherwise they could not hope to obtain any benefit, nor to keep the mould under. No one denied the power of sulphur, and he for one believed it to be very efficacious. They should not however be too sanguine. Last year one of the first entomologists of this country, Rev. Mr. Spence, of whom he doubted not they had all heard, writing on the subject of the Hop fly, gave it as his advice, that as the insect originated in the Sloe trees, and migrated from them to the Hop plant, the only remedy to destroy the insects would be to destroy the Sloe trees. Since he (Dr. P.) had turned his attention to the peculiar habits of these insects (which he had done with especial reference to some disputed points in his own profession) he was of opinion that if they deprived these insects of their winter quarter, the Sloe bushes, they would immediately go to the Plum and other allied species of trees. Another naturalist of high repute, who suspected that these insects laid their eggs on the Hop bine and on the Hop poles, strongly recommended that the Hop poles and the Hop plant should be destroyed every year. (Laughter.) He mentioned these as instances to show that what at first sight might appear very plausible, and apparently likely to be attended with good, when examined into and applied, frequently turned out to be a failure. But the occasional mistakes of scientific men ought not to throw a cloud over all their suggestions, many of which were most excellent, and would be found extremely beneficial when applied to agriculture. There was no branch of science which might not be brought to bear on the soil: and although the application of sulphur might turn out to be a failure, yet he would advise them to turn their attention to the subject, and see how far it might be made applicable to their purpose. He trusted that in the observations he had made he had said nothing that would tend to discourage or wound the feelings of those who were interesting themselves in the application of sulphur as a remedy for the Hop mould. He (Dr. P.) believed Mr. Epps' machine to be the most perfect instrument yet invented for applying sulphur, and when conjoined with Mr. Wykeham Martin's apparatus for confining that substance, would be found as efficacious as instruments could be. He had thought it his duty, being called upon by their chairman, to state the result of his observations, and also to tell them what his opinions really were on the matter. He had prepared a large microscopic view of the various stages of the Hop fungus, drawn by Mr. Brett, jun., which had been considered worthy to be sent to the Exhibition of 1851. The uses of these fungi or moulds in the economy of nature were to assist in the decomposition of dead or decaying substances, and that he believed they never made their attacks upon healthy plants at all, but as soon as a plant became in the least unhealthy from whatsoever cause (probably from atmospheric) they then stepped in to begin the duties they had to perform, and that though sulphur would certainly be most efficacious when the mould first showed itself, yet if the morbid state of the plant continued, he was of opinion it could not thus be prevented, except by very frequent, perhaps daily applications. He did not think that the mould spread from plant to plant, the same causes that produced it in one plant produced it also in another, and that the application of sulphur, except constantly or frequently applied, would not prevent the spread of the fungi.—The Chairman then proposed the health of Dr. Plomley, with thanks to him for the very interesting explanation he had given of the Hop fungus, an explanation from which he had derived more information than he should have hoped to obtain from a thousand books on the subject, and which he was sure they would all feel indebted to that gentleman for.

Dr. Plomley, in returning thanks, assured the meeting that he felt the greatest interest in the advancement of agriculture, for the same principles were involved in its practice as in that of his own profession. They had all, said Dr. P., in their several departments to do with matter in some shape or another, and they who understand most of its laws were sure to be the most successful. In whatever department of industry they might be engaged, matter was the raw material supplied to them by nature, from which their crops are obtained, and from which man obtained his wants and gathered his luxuries. They could produce no effect upon this matter, nor even know its capabilities, except they knew the laws which regulated it, an acquaintance with which laws was called science. All the improvements in the manufactures, in fact in all the industrial arts have arisen, from knowledge of the laws of matter, called science. The application of chemical science to the simple and low art of match making has raised it to one of our most profitable manufactures; several thousands of human beings are employed in making lucifer matches, one manufactory alone consuming in their production 400 logs of wood yearly. To science we are indebted for the present eminence and position of all our manufactures, and it is a question whether, by the same science, the farmer might not be able to manufacture food for the people in much greater quantities than he has hitherto done. He (Dr. P.) believed that by the aid of science, by economising time and labour, that it was possible to increase the agricultural produce of this country to a greater extent, indeed it might be increased ten-fold. (This startling announcement was received by cries of "No, no, no, no.") Yes, he would state this to be the minimum of its possible increase. He would tell them why they would increase the amount of their produce, because it appeared to him, they would be obliged to do so. Hitherto they had been able to keep pace with the increase of population pretty well, and population never increased faster than the means of subsistence, but population was now pressing hard upon them, it was increasing with great rapidity, and as a natural consequence the farmer would be compelled to increase the produce of his land. (Hear hear.) Men know not what they can do until they are forced to trial. Some 50 or 60 years ago, we would not manufacture our own iron, because we did not understand the process of smelting, though we possessed the largest mines of iron in the world, and also the limestone necessary for reducing the ore. We obtained our iron from Norway. War came and stopped our supplies, we were obliged immediately to look to our own resources, and by the aid of science, see now the result, more extensive than all the mines of the world put together. Again, by war, the French were cut off from obtaining kelp and barilla, substances essential for the manufacture of soap and glass, they were obliged to resort to the science of chemistry, and by its aid they discovered the process of obtaining soda from common salt (the greatest and most important discovery of this age, and without which our manufactures, notwithstanding the steam-machinery, would not have existed), by this they manufactured soap and glass more readily and at less cost than with barilla and kelp. The same with sugar, when their supplies were cut off they produced it from Beet-root. So it is with farmers, they knew not what they could do until they tried, and this trial must undoubtedly come. The farmer may have some disadvantages, perhaps many, but he has advantages which those of other countries have not. The farmer has to do with living things, and thus he required more science than all the rest put together. Farming claims kindred with the whole range of physical science, and in this country the farmers can command this, for all are willing to assist him, the geologist, the chemist, the botanist, the meteorologist, &c., are all labouring to place their respective sciences at his service, if he would but avail himself of their discoveries. There are thousands of scientific truths at this moment ready for the farmer, the application of which will be to his advantage and to the advantage of the country. Not, said Dr. P., to take up too much time, I will endeavour to concentrate in a few words the means by which the farmer may increase his productions. Let an honourable emulation arise among you—wean yourselves from that tenacious attachment that you now have to the routine practice of your forefathers. Look with less distrust and suspicion, on change and innovation; avail yourselves of the advantages offered to you by science, and look at science as your principal aid, as do the manufacturers; and throw aside that morbid feeling that your own modes of culture are superior to those of others, and imp ovements in agriculture will follow, that will astonish you and all the world beside. It is said that the British farmer lies under great disadvantages; now, he could never see what their disadvantages were. They had the best climate in the world. (No, no, and hear, hear.) They had the best soil in the world for the growth of those plants which produced the most nutritive food. They could not grow cotton, Indian corn, indigo, or tobacco, but they could grow Flax, Wheat, and other cereals, also Turnips and other roots, and grow them far better than they could be grown in any other part of the world. (No, no.) They could and did grow Wheat in greater quantity and of better quality than any other nation. (No, no, and hear, hear.) Better than that grown in the rich valleys of the Mississippi or in southern Russia, or in Spain, or even in Italy. I speak decidedly on this point, having chemically examined the various Wheats, as to their nutritive value, and I say that corn grown in this country is more nutritious than corn grown in any other part of the world, not even excepting that grown in Italy, from which maccaroni is made. It was true that foreign corn did fetch a higher price in the market, than did that of home growth. But why was that; the reason was that foreign Wheat contained more of that non-nutritious stuff, starch, and passed through the mill easier, thus giving a greater advantage to the miller. But the advantage was not confined to the miller, the baker received still greater advantages, for this starch absorbed more water than the flour of this country. So that although foreign corn fetched a higher price in the market on account of the personal advantages of the baker and miller, it was of less nutritive value than that of English growth. And from the experiments he had made on the subject, he could most decidedly tell them that the corn grown in this country was of more real value than that imported from any other country in the world. (Loud cheers.) There were o her advantages which the British farmer possessed over the farmers of other countries. They had roads and railroads for transmitting their produce to the towns with the least possible delay and expense. They had good and liberal landlords; this was a great advantage. The landlords of this country were as a class ever willing to lay out any amount of money, in improvements for their tenants, and that too at a very moderate interest. The farmers of no other country possessed the advantage of their landlord's capital. (Hear, hear.) Then again with regard to the labour, they had their work done at the lowest possible price, and could command hundreds of labourers when required, and discharge them when not wanted. Was not this an advantge which no other country possessed; again, as he had before stated, they had the assistance of all the scientific men of the day, who were willing to assist and encourage them in their arduous and trying occupations, and for himself, he assured them, that he should feel the greatest possible pleasure in rendering his humble abilities to their service. (Cheers.) He said, he thought the English farmers were in a better position than those of other countries, and that they had, with all their disadvantages, advantages which no other country possessed. He advised them not to despair, but put their shoulders to the wheel, and exert themselves to their utmost, not to be led away by political promises, but endeavour to improve the cultivation of their farms. In conclusion, he trusted he should be permitted to propose a toast. It was an old one, one of the olden time:

"The spade, the fleece, and the pail;
May landlords ever flourish, and tenants never fail."

Mr. Geo. Powell said he rose not for the purpose of making any political allusions, or of remarking upon what had fallen from the preceding gentlemen, but rather with the intention to offer a challenge It had been almost said that the agriculturist of this country was inferior to any other class. Now, the exhibition of 1851 was approaching, it was near at hand, and he had not the least hesitation in saying that the agriculturists of this country would there stand in pre-eminence, before those of other nations, while our manufacturers would have everything to learn from the foreigner. (Cheers.)—The Chairman said he was much obliged to Dr. Plomley for the observations he had made, which satisfied him that although he was a scientific man, he knew but little with regard to farming. (Laughter and cheers.) However, he had spoken honestly and conscientiously, and had in his remarks told him (Sir E.) something which he had not known before, viz., that it was not always to the price which an article obtained in the market that they were to look for its real value. In this respect, as in many others, Dr. Plomley's remarks were extremely useful, and he was sure they must all feel deeply indebted to him for them. (Cheers.) The Chairman then proposed "The Press," which was responded to by Mr. Hall and Mr. Phippen. After wishing them all good night and success to their next merry meeting, the Chairman left the room and the party broke up, having spent a most pleasant evening.

Calendar of Operations.

OCTOBER AND NOVEMBER.

Central Yorkshire, *Oct* 31.—After some years' experience of the dairy and sheep farming of Dorsetshire, it has been my luck to emigrate thus far North, and commence a fresh noviciate on the farm of Mr. Hannam, at Kirk Deighton. As the change from Downs and Devons to Leicesters and short-horns is not more striking than the change of system of farm management which the change of locality has presented to my notice, it has struck me that the record, which it is my intention to make of the practices that it is now my especial province to observe and study, may furnish you monthly or weekly, as the case may happen, with a few notes of farm practice and routine work, that may be acceptable for the purpose of comparison with those of other localities, by parties who take an interest in such matters. Having only left my native county about the middle of October, my observations upon the doings of this month are necessarily imperfect and general. Mr. Hannam's farm is about 450 acres, 250 of which are arable and 200 Grass, capable of grazing a bullock of 40 to 50 stones. The Grass land is strictly devoted to feeding cattle, horses being fed in yards in summer, sheep upon seeds and Clover, &c.; and no calves are now bred, or dairy stock kept, except for family use. The depreciation of price of lean and young stock enables the grazier to buy at a lower figure than he can breed. The principal portion of the summer fed cattle are now sold. There are, however, 30 upon the aftermath, and 25 bullocks and heifers are now tied up, and are doing well upon Turnips and chaff *ad libitum*, and 7 lbs. of oilcake each per diem. Forty lean heifers are already bought in, to run over the old pastures, and consume straw in the yards during the winter. These heifers, by being well kept and sheltered, I am told, will come out fat from the pasture very early—say end of July, and frequently fetch a better price than those which are fat later in the summer. *The Sheep Stock* is now upon Turnips, Rape, &c., viz., 112 Leicester ewes and 250 hogs and fat sheep. For the feeding sheep Gardner's cutter is used from the commencement of the season. The ewes have had a month's Rape previous to being put to ram a fortnight ago. About a dozen shearling rams bred by Mr. Hannam have been sold off during the last month at fair prices. *Pigs.*—The stock of pigs is very large, and I need not add also good, as Mr. H.'s repute as a breeder of first-class animals of the celebrated Yorkshire breed is well known. Mr. H. buys foreign Barley to a considerable extent for this stock, as his own Barley is generally of first-rate quality for malting. One thousand bushels of Barley, &c., were consumed last year by pigs, &c., in the manure yards. Sows have finished farrowing for this season, and stores and porkers are now put up to feed upon steamed food, prepared by a very convenient apparatus manufactured by Richmond and Chandler, Manchester. *Arable Land,*—The arable land is of two sorts—one-half thin, hungry, magnesian limestone; the other strong loam and sand. One hundred acres of this has been thoroughly drained by Mr. H.; and several miles of fences have been stubbed and trees eradicated. The enclosures now run from 10 to 20 acres, and have low hedges, which are plashed twice a year. The system adopted is the alternate one of green and grain crop. Upon the limestone the green crop is consumed upon the land with oilcake or grain. Upon the stronger soil a portion of the green crop is mown, and half the Turnips, &c., are consumed in the yards. The whole of the manure made by horses, pigs, and feeding and store cattle consuming roots, corn, and cake, is applied to green crops—Turnips, young seeds, and Clovers; 10 to 16 carts, 2 cwt. of guano, and 2 bushels of dissolved bones, per acre, for Swedes; and 10 carts and 2 cwt. of guano for white Turnips. For grain crops, on the limestone land, 2 cwt. of guano is added for Wheat upon seeds, after the seeds have been depastured; and also for Barley, where Turnips are eaten on the same dressing. On the stronger land, when the green crop is taken off, 3 cwt. of guano is used; and, when consumed on the land, 2 cwt. of guano is used for the next crop of Barley or Wheat. *Work of the Month.*—The weather has been most propitious since harvest for farm work. Six acres of Rye and Tares for early seed for sheep; 2 acres of early Tares for mowing have been sown five or six weeks upon Wheat stubble, and will be followed by white Turnips; 20 acres of stubble for Swedes, Potatoes, &c., have been ploughed thin, harrowed, dragged, and cleaned of Couch Grass in the interval between harvest and seed time. Potatoes have been harvested. The white Potatoes (Regents) are comparatively sound; the red (Irish cups) are much diseased. Wheat sowing is all over. The poor limestone it is usual to sow about this time, and after rain has consolidated the thin arid soil. 60 acres of pastured seeds and Clover stubble have been ploughed and furrow-pressed by four ploughs, made by Busby, and two two-row pressers, by Crosskill, which do the work in a beautiful manner, and shine, especially in comparison with other pressers of village make. This mode of preparing the seed-bed makes an even, level, and solid root-hold for the plant, ensures even germination, and prevents, on light soils, the roots from being turned out by the frost; for this cause it is preferred to drilling. 10 acres of Potato and Rape land have also been sown with Wheat. Six tons of guano have been employed upon the Wheat crop, all being dressed except one field of good land (7 acres) which was seed pasture of great luxuriance, and 2½ bushels of seed per acre have been sown. Very little threshing, except for seed, has been done yet upon the farm, the straw being reserved for winter. The crops here have been much damaged by wind, hence the yield is said to be deficient. Manure-making is now beginning in earnest since cattle have come into the houses. The buildings are all spouted with iron, and no waste from washing occurs, the surplus liquid running into a tank, whence it is pumped over the manure-heap, which consequently never requires turning upon the Couch, or after it is carted out. The excess of liquid is carted out at proper seasons, and when not wanted for this purpose, runs by a drain at the top of the tank into a large shallow pit or excavation, where weeds, earth, and rubbish of all sorts are thrown. In this there is a mass of stubble, weeds, animal matter, sawdust, hedge-clippings, Thistles, Nettles, &c., at present, which, by the action of the liquid upon them, have become since harvest a dark, unctuous, and rich manure. Mr. H. calculates to make at least 100 loads of manure each winter from these waste materials, by the aid of the tank and this catchpit. Seven acres of meadow land and 5 acres of pasture have been manured this season already. Team-work — of which we have this month had, carting Potatoes, Turnips, guano, oilcake, &c.—is done on the single-horse cart system; Crosskill's are used, and pair-horse ploughs only. Boys are employed to plough, and, certainly, under the eye of the foreman and first ploughman (such is the use of first-rate implements) they make most excellent work. All the ploughs being set to one depth and width of furrow, when the ridge is set by the foreman, the work of one plough cannot be distinguished from that of another. A boy 14 years old and a pair of horses is a different cost from two men and four or five horses, which we see in many districts engaged upon the operation. *Labourers.*—It has struck me that the workmen of this county are superior in skill to those we generally meet with in the south. Neatness and quickness in their work (witness ploughing, thatching, stacking, &c.) seems a characteristic; hence their higher rate of wages is not all loss to the northern farmer. Steady hands are well employed here, though wages, I am told, are lower than before recent legislative changes—10*s.* and 11*s.* per week is paid now, where 12*s.* and 14*s.* were usually the wages per week. What will our cider drinkers say to the fact that a dozen male labourers and servants employed on this farm do not spend on the average 3*d.* per week each in ale or other liquor. Nor is any liquor allowed them during work, except in harvest and hay-time, and then only from two to three pints a day. Women are very industrious in field work; they are employed now in barn-work,

pulling and cleaning Turnips, &c.—wages 8*d.* and 10*d.*, and for Potato gathering, 1*s.* per diem. *J. S.*

DORSET FARM, *Nov.* 11.—Since last report we have had very fine weather, and now Wheat sowing is nearly done, and the first sowings are up and looking extremely well. Vetches and other winter green crops are also promising well, and the pastures are still growing, and late Turnips will be a good crop, as well as the early sorts. Our sheep are all eating Turnips, being folded on the ground after two-thirds of the roots are carried off for the cattle. We do not carry off the tops, but cut them off, as well as the fibrous roots, on the land, and the sheep, coming after, eat all up. We have still a little Wheat to sow after Turnips and also after Mangold; but we shall not think ourselves too late if we have in all our winter Wheat this month, and then we shall sow a little spring Wheat after that. We are still storing Mangold, of which we grow about 21 acres; some we put in a house, and the rest lie in a line, about 7 feet wide and as high as they will lie on themselves without any support, and then we cover them with loose straw, and after that thatch them with Wheat-straw, which is tied up as it comes from the machine, which sends the straw out as straight as when it is put in, and saves a good deal of labour in preparing thatch. We have sometimes set up hurdles, 6 feet apart, and stored the Mangold between them, but we have found them keep as well in a single heap, and are also less expensive to secure. We have sometimes had the tops cut off when we took them up, but as they are often cut too close, which causes the root to rot, we have them all twisted off now. Our work is ploughing for Wheat when we have the Turnips off, and ploughing and otherwise preparing the land for next root-crop, and driving out dung and collecting other materials for manure. *G. S.*

LAMMERMUIR SHEEP FARM, *Nov.* 5.—The month of October, though seasonably good, has, especially towards the end, reminded us of the near approach of winter. The bathing of the sheep, which we expect to finish this day, has kept our shepherds very busy during the past fortnight. The bath we use is a preparation of rough turpentine, grease, butter, and some *et ceteras*, the names of which the maker keeps to himself. When poured upon the sheep, it is very much of the consistency and colour of butter-milk. It has this advantage over most bathing and dipping preparations, that, besides killing all vermin, keeping the wool very white, and materially increasing the weight, it does not readily wash off by heavy rains coming immediately after the sheep have been bathed, and before the preparation has had time fully to perform its duties. Our next work will be, putting jackets upon the hogs. As these graze among the ewes, this must be finished before the 22d prox., to prevent all unnecessary disturbance after the tups are put to the ewes at that date. The rams are at present confined in a small inclosure, where they daily receive as many Turnips as they can eat. Our cast sheep are now all disposed of and away. Hill stock, in the Lammermuirs, generally are in excellent condition at this date—above an average, we would say. This is the result of the past fine summer. Our wet hills always graze best in a dry season. Ploughing of Oat-stubbles for Turnips is half finished. Any summer-made manure has been carted to, and spread on these previous to being ploughed. The cows and calving heifers receive Oat-straw at night, and are let out to Grass during the day. The calves are getting Turnips at night. The Oats at present being threshed out, are made into meal for the shepherds, whose wages are paid at this time. *A Lammermuir Farmer.*

Notices to Correspondents.

BONES: *J G.* You must crush them in a mill for the purpose, before adding sulphuric acid; and then a few weeks before using them in the land, lay them down on a floor of clay, surrounded with a clay rim, and wet them thoroughly with water, then pour over them about one-third their weight of sulphuric acid, stir about and put up the heap, and cover it over with dry turf ashes, and leave it for a fortnight, then break down the heap, and mix with the ashes.

CAPITAL: *E T.* See Schemes of Cultivation for Small Farms, at pages 9, 58, 290, 311, 361, 830, in our volume for 1847. The scheme at p. 311 will perhaps the nearest meet your circumstances; the capital indicated is 10*l.* 10*s.* per acre. Fuller, hereafter.

CATTLE: *Constant Reader.* Give them a mouthful of hay the first thing till the Turnips are cut, then give them 40 lbs. of Turnips each. At 10 A.M., give them half their chaff and Linseed, say 4 or 5 lbs. of chaff, with 2 lbs. of Bean-meal, and 1 lb. of Linseed. At 1 P.M, give them 30 lbs. of Turnips, at 4 another quantity of chaff with meal, and at 6 or 7, 40 or 50 lbs. of cut Turnips.

CATTLE ATTACKED WITH DISEASE IN THE LUNGS: *Constant Reader.* Moderate bleeding, powerful blisters to the sides, with setons in the brisket, and strong sedatives internally. The treatment of plero-pneumonia is given in a former Number of this Paper. We are not aware of any work that particularly treats of the disease, but there have been several essays on the disease in the Journal of the Royal Agricultural Society of England. *W. C. S.*

CATTLE PUMPKINS: *An Old Subscriber* has a quantity, and wishes to know how to preserve it from frost, and how to use it as food for cattle or sheep. We are entirely unacquainted with it.

CHURN: *Sylvanus.* The American Churns are made large enough for 20 lbs. of butter, we believe: they are certainly economical of time. The common barrel churn gives as satisfactory an agitation to the cream as any, and for large quantities of butter we should employ it.

COARSE GRASS: *Este.* It will be improved by a heavy dressing of wood-ashes. Salt may be an improvement also, and 2 cwt. per acre wherever the land is heavy, up to 4 or 5 cwt. per acre on light soils, are a reasonable application. Apply these manures in February or March. If you sow Clover seed you must dress the land heavily with some earthen compost first, and harrow heavily. As regards your gravelly subsoil, we suppose the main drain will be safe enough at 5 feet deep, both from elm roots and from slips in the gravel, provided the tiles be laid properly at first.

COMMON LAND: *J F.* Plough one half of it now, and sow it to Oats in spring. Break up the other half in February and March by paring and burning, and you will be able to bring it to a fine enough tilth for Turnips, part of which you may feed off, and part carry for cattle in boxes or stalls to be littered and fed with the Oat straw and them; and so you get at once into the system of alternate husbandry. T. Keir Short has a sixpenny book on the cultivation of Flax. Apply to any bookseller.

DRILL: *W D C.* A number of small drills for sowing either Turnips, corn, or Mangold Wurzel seeds are in existence. They are all upon the principle of the home made drill recommended at page 589, 1849, by Mr. Tuckett.

FARM HORSES: *G S.* Keeping them in stables answers best for ordinary farm work. Where there is a great deal of hauling and night work, as there is on farms near London, to keep them in yards has been found to answer well.

FOOD FOR SHEEP: *A Subscriber.* Peas, Beans, Barley, oilcake, and Oats. Commence with half a pint, or less, of the former, or half a pound of oil-cake, and increase up to as much as 3 quarters of a pound of any of them. They are named in the order of their excellence in our estimation.

GUANO ADVERTISED AT 5*l.* PER TON: *A Subscriber, but not a Farmer.* "Company's Guano (concentrated) 5*l.* per ton; ditto ditto, 2d quality, 3*l.* per ton." All we can say is—Don't buy them.

IMPROVEMENT OF CHALK SOILS: *W C J.* In some localities, to chalk down land is an improvement, in others it is not. And so it is probable that the result is owing to the presence or absence of some element, such as phosphorus, in the chalk added, which could be applied more cheaply otherwise. If your land is very light, and you have a chalk marl at hand, a dressing of that previous to the application of guano might be beneficial. For a crop of Swedes, try guano and superphosphate. Feed them off on thin land with sheep; that is the best plan of improvement.

LIME: *J B B.* Apply about 5 tons of lime shells per imperial acre now, letting them slake first, and then spreading them and ploughing them in with a shallow furrow.

LINSEED: *R M.* Boil 2 lbs. in a gallon of water, and throw it over the hay chaff the cow is to eat. Mr. Rogers' peat-charcoal is to be had in London, we believe; he should advertise if he wishes it sold.

MANURES FOR WHEAT: *R S.* We have to apologise for the delay of this answer. We would add the turf ashes and the Rape-cake in autumn, and apply the guano in spring. 32*s.* per acre will purchase rather more than 2 cwt. of the former and 2 cwt. of the latter per acre, and that is the way in which we should spend it.

MARSH PLANTS: *W D C* We may possibly assist you by publishing your question: Can any one name any edible root, pulse, or Grass which will grow well on a strip of land lying by the side of a river, and frequently overflowed?

MILDEW: *E S Power.* The specimen of Wheat in the straw with which you have favoured us has suffered from the common form of mildew, which is apt to appear on late crops in moist seasons. The only remedies are such good cultivation and early sowing as will hasten harvest time. Anything which tends to a luxuriant growth of straw, such as rich putrescent manures and moist weather, as it delays the ripening of the crop, increases the chance of injury by mildew; anything which hastens harvest time diminishes this chance. It might be well to change the seed; and the application of common salt as a top dressing in spring at the rate of 2 to 3 cwt. per imperial acre, is said to be a good thing.

PEAT CHARCOAL: *A Subscriber.* Apply to any bookseller for Mr. Jasper Rogers' pamphlet. Some of his pamphlets are published by Effingham Wilson, 11, Royal Exchange, London.

PIGEONS: *P T O.* A work on birds, in which domestic pigeons are to be comprised, is likely to be published soon by Mr. Murray. We cannot, of course, forestall here any information that it may contain.

SHIELDRAKES: *Chanticleer.* We do not quite understand what you mean by young shieldrakes in November. There are now the adult birds and the birds of the year, but none which a breeder of water-fowl would call "the young" as your question seems to imply. Chopped mutton or beef in moderation will do them no harm; bullock's liver is often convenient to give to birds which require animal food; but let the gardener's boy try what supply he can afford, by digging for earth-worms and searching for snails.

STEAM BOILER, &c.: *Tyro.* Apply to Messrs. Richmond and Chandler, Salford.

*** Communications reaching town after Wednesday cannot be answered till the following week.

Markets.

COVENT GARDEN, Nov. 16.

Vegetables are abundantly supplied, and so are Hothouse Grapes. Pine-apples are scarcer. Oranges and Lemons are sufficient for the demand. Plums and Pears are still received from the Continent. Filberts are dearer. Carrots and Turnips are good in quality, and so are Potatoes. Lettuces and other salading are sufficient for the demand. Mushrooms are still dear. Cut Flowers consist of Heaths, Pelargoniums, Camellias, Fuchsias, Mignonette, Verbenas, Dahlias, Bignonia venusta, Stephanotis floribunda, Chrysanthemums, and Roses.

FRUITS.

Pine-apples, per lb., 4*s* to 6*s*	Lemons, per doz., 1*s* to 2*s*
Grapes, hothouse, p. lb., 2*s* to 5*s*	Pommegranates, each, 3*d* to 6*d*
— Portugal, p. lb., 8*d* to 1*s*	Almonds, per peck, 6*s*
Plums, p. punnet, 1*s* to 2*s* 6*d*	— sweet, per lb., 2*s* to 3*s*
Pears, per doz., 1*s* to 3*s*	Walnuts, p. 100, 1*s* to 2*s*
— per half sieve, 6*s* to 15*s*	— p. bush., 12*s* to 24*s*
Apples, dessert, p. bsh, 3*s* 6*d* to 8*s*	Nuts, Barcelona, p. bush., 20*s* to 22*s*
— kitchen, do., 3*s* 6*d* to 6*s*	— Brazil, p. bsh., 12*s* to 14*s*
Oranges, per doz., 9*d* to 2*s*	Filberts, per 100 lbs., 60*s* to 65*s*
— per 100, 6*s* to 10*s*	

VEGETABLES.

Brussels Sprouts, per hf. sieve, 1*s* 6*d* to 2*s*	Shallots, per lb., 6*d* to 8*d*
Cabbages, per doz., 6*d* to 1*s*	Garlic, per lb., 4*d* to 8*d*
Greens, p. doz. bun., 1*s* 6*d* to 2*s* 6*d*	Artichokes, Jerusalem, p. half sieve, 1*s* 6*d* to 2*s*
Cauliflowers, p. doz., 1*s* to 4*s*	Lettuce, Cabbage, p. score, 1*s*
Sorrel, p. hf. sieve, 6*d* to 9*d*	— Cos, p. score, 6*d* to 1*s* 6*d*
Potatoes, per ton, 50*s* to 80*s*	Endive, per score, 1*s* to 1*s* 6*d*
— per cwt., 2*s* 6*d* to 4*s*	Small Salads, p. punn, 2*d* to 3*d*
— per bush., 1*s* 6*d* to 2*s* 6*d*	Horse Radish, p. bdl., 1*s* to 4*s*
Turnips, p. 12 bundles, 1*s* to 2*s*	Mushrooms, p. pot., 1*s* to 2*s* 6*d*
Red Beet, per doz., 6*d* to 1*s*	— per bushel, 5*s* to 7*s*
Cucumbers, each, 6*d* to 1*s*	Fennel, per bunch, 2*d* to 3*d*
Radishes, per doz., 1*s* to 1*s* 6*d*	Savory, per bunch, 2*d* to 3*d*
Leeks, per bunch, 1*d* to 2*d*	Thyme, per bunch, 2*d* to 3*d*
Celery, p. bundle, 9*d* to 1*s* 6*d*	Parsley, p. doz. bun., 1*s* to 2*s*
Carrots, per doz., 2*s* to 5*s*	— Roots, p. bdle., 9*d* to 1*s*
Tomatoes, p. punnet, 6*d* to 1*s*	Marjoram, per bunch, 2*d* to 4*d*
Spinach, p. half sieve, 6*d* to 1*s*	Mint, per bunch, 2*d*
Onions, p. bunch, 4*d* to 6*d*	Watercress, p. 12 bunch., 6*d* to 9*d*
— Spanish, p. doz., 1*s* 6*d* to 4*s*	

HOPS.—FRIDAY, Nov. 15.

Messrs. PATTENDEN and SMITH report that fine coloured Hops continue in demand at full prices; inferior sorts not so much sought after.

HAY.—Per Load of 36 Trusses.

SMITHFIELD, Nov. 14.

Prime Meadow Hay	72*s* to 76*s*		Clover	70*s* to 80*s*	
Inferior ditto... ...	60	70	Second cut	63	72
Rowen	55	65	Straw	22	25
New Hay	—	—		J. COOPER.	

CUMBERLAND MARKET, Nov. 14.

Prime Meadow Hay	70*s* to 76*s*		Inferior	65*s* to 72*s*	
Inferior ditto... ...	50	65	New Clover	—	—
New Hay	—	—	Straw	24	28
Old Clover	78	84		JOSHUA BAKER.	

WHITECHAPEL, Nov. 14.

Fine Old Hay ...	68*s* to 72*s*		New Clover	—*s* to —*s*	
Inferior ditto ...	—	—	Inferior ditto... ...	—	—
New Hay	65	68	Straw	22	25
Old Clover	78	84			

SMITHFIELD, MONDAY, Nov. 11.

There is a considerable falling off in the supply of Beasts, and, in consequence, trade is better for all kinds. A few choice things have nearly reached 4*s.* The number of Sheep is very small, so also is the demand; however, on the average, better prices are realised. Trade is better for Calves, the number being small. From Holland and Germany we have 797 Beasts, 4180 Sheep, 96 Calves, and 60 Pigs; from Scotland, 100 Beasts; and 2300 from the northern and midland counties.

Per st. of 8 lbs.—	*s*	*d*	*s*	*d*
Best Scots, Herefords, &c. ...	3	8 to 3	10	
Best Short-horns	3	6 — 3	8	
2d quality Beasts	2	8 — 3	2	
Best Downs and Half-breds ...	3	10 — 4	2	
Ditto Shorn	—	...		

Per st. of 8 lbs.—	*s*	*d*	*s*	*d*
Best Long-wools	3	4 to 3	8	
Ditto Shorn	—	...		
Ewes & 2d quality	2	8 — 3	2	
Ditto Shorn	—	...		
Lambs	—	...		
Calves	2	8 — 3	10	
Pigs	3	0 — 4	0	

Beasts, 3744; Sheep and Lambs, 25,540; Calves, 149; Pigs, 380.

FRIDAY, Nov. 15.

The number of Beasts is a fair average; good ones are fully as much in demand as on Monday; indeed, many of the choicest make 4*s.* A tolerable clearance is effected. The supply of Sheep, although not large, is about as usual this time of year; the demand is not large, and quotations remain unaltered. Calves are a more cheerful trade, and we are enabled to make 4*s.* of a choice one. From Holland and Germany there are 448 Beasts, 850 Sheep, 118 Calves, and 15 Pigs; 350 Beasts from the northern and midland; and 92 Milch Cows from the home counties.

Best Scots, Herefords, &c. ...	3	8 to 4	5	Best Long-wools .	3	6 to 3	8
Best Short-horns	3	6 — 3	8	Ditto Shorn	—	...	
2d quality Beasts	2	8 — 3	2	Ewes & 2d quality	2	8 — 3	2
Best Downs and Half-breds ...	3	10 — 4	2	Ditto Shorn	—	...	
Ditto Shorn	—	...		Lambs	—	...	
				Calves	3	0 — 4	0
				Pigs	3	0 — 4	0

Beasts, 1034; Sheep and Lambs, 4700; Calves, 251; Pigs, 480.

COAL MARKET.—FRIDAY, Nov. 15.

Eden Main, 15*s.* 6*d.*; Wallsend Haswell, 16*s.* 3*d.*; Wallsend Lambton, 16*s.* 9*d.*; Wallsend Stewart's, 16*s.*: Wallsend Tees, 16*s.*—Ships at market, 172.

POTATOES.—SOUTHWARK, Nov. 11.

The Committee report that the market is well supplied from Yorkshire and Scotland, but nothing from the Continent; trade is heavy, which has compelled salesmen to accept of our lowest quotations in some instances, as it is only with some few superior lots the highest quotations have been realised. Present prices:—York Regents, per ton, 70*s.* to 80*s.*; Scotch do., 50*s.* to 60*s.*; Wisbeach and Cambridgeshire do., 60*s.* to 65*s.*

MARK LANE.

MONDAY, Nov. 11.—The supply of English Wheat by landcarriage samples to this morning's market was again small, which enabled factors to realise at the terms of this day se'nnight. Foreign met a more general demand, and a fair business was done at Friday's prices.—Fine malting Barley meets a good inquiry at an improvement of 1*s.* per qr.; late prices are also more freely paid for grinding and foreign qualities.—In the value of Beans there is no alteration.—White Peas are rather more inquired after and the turn dearer; other descriptions are unaltered.—Oats meet an improved demand, at rather better prices.

Per Imperial Quarter.	*s.*	*s.*		*s.*	*s.*
Wheat, Essex, Kent, & Suffolk ... White	43	—46	Red	38	—45
— — fine selected runs ... ditto	43	—48	Red	—	—42
— — Talavera	46	—52			
— Norfolk, Lincoln, & York... White	—		Red	—	
— Foreign	31	—50			
Barley, grind. & distil., 22*s* to 28*s*... Chev.	27	—30	Malting	24	—27
— Foreign.... Grinding and distilling	17	—23	Malting	20	—24
Oats, Essex and Suffolk	—				
— Scotch and Lincolnshire ... Potato	20	—23	Feed ...	19	—21
— Irish ..... Potato	16	—20	Feed ...	14	—17
— Foreign..... Poland and Brew	18	—22	Feed ...	15	—18
Rye	25	—27	Foreign	—	
Rye-meal, foreign..... per ton	—				
Beans, Mazagan ..... 25*s* to 27*s*..... Tick	26	—28	Harrow	26	—28
— Pigeon ..... 27*s* — 32*s* ... Winds	—		Longpod	—	
— Foreign ..... Small	24	—34	Egyptian	22	—23
Peas, white, Essex and Kent..... Boilers	26	—28	Suffolk...	27	—30
— Maple.... 30*s* to 31*s* ..... Grey	26	—28	Foreign	24	—32
Maize ..... White	25	—28	Yellow...	24	—28
Flour, best marks, delivered... per sack	36	—40			
— Suffolk ..... ditto	29	—36	Norfolk	29	—36
— Foreign ..... per barrel	18	—24	Per sack	29	—34

FRIDAY, Nov. 15.—The arrivals of all grain since Monday have been moderate. To-day's market was fairly attended, and more disposition to purchase Wheat was general, at prices which of late were unobtainable.—Malting and distilling Barley is in demand, at an advance of 1*s.* per qr.; grinding the turn dearer.—Peas and Beans are fully as dear.—Oats are a free sale, at an advance of 6*d.* per qr.—Flour meets an improved inquiry at our quotations.—Floating cargoes of Wheat have been less freely taken at late prices, but the demand improved at the close.

ARRIVALS THIS WEEK.

	Wheat. Qrs.	Barley. Qrs.	Oats. Qrs.	Flour.
English ...	2260	2740	720	1930 sacks
Irish	—	—	2950	
Foreign ...	3500	2040	2350	— brls.

Imperial Averages.	Wheat.	Barley.	Oats.	Rye.	Beans.	Peas.
Oct. 5.....	42*s* 2*d*	24*s* 5*d*	16*s* 8*d*	26*s* 7*d*	29*s* 6*d*	31*s* 3*d*
— 12	41 2	24 2	17 1	25 8	29 6	29 7
— 19.....	39 10	24 2	16 7	26 7	29 7	29 5
— 26.....	39 9	24 0	16 8	25 1	28 10	30 6
Nov. 2.....	40 2	24 1	17 3	28 6	29 1	29 2
— 9.....	40 5	24 4	17 0	26 7	29 0	29 11
Aggreg. Aver.	40 7	24 2	16 10	25 8	29 3	30 0
Duties on Foreign Grain	1 0	1 0	1 0	1 0	1 0	1 0

Fluctuations in the last six weeks' Corn Averages.

Prices.	Oct. 5.	Oct. 12.	Oct. 19.	Oct. 26.	Nov. 2.	Nov. 9.
42*s* 2*d*—		...	...	...	...	...
41 2	...		...	...	...	...
40 5	...	...		...	...	
40 2	...	...	...		...	...
39 10	...	...		...	...	...
39 9	...	...	...		...	...

SEEDS.—Nov. 11.

Canary, per qr.....	46*s* to 50*s*	Coriander, per cwt. ...	14*s*— 20*s*
Caraway, per cwt. ...	29 — 33	Mustard, white, p. bush.	4 — 6
Hempseed, per qr. ...	34 — 35	— brown do.	7 — 10
Linseed, foreign, do.	37 — 44	Rape, per last	24*l.*—26*l.*
Clover, red, p. cwt....	— —	Cakes, Lindseed, p. 1000 ...	8*l.* 15*s*
— — foreign, do.	— —	— — foreign, p. ton,	6*l.* 15*s*
— white, do.	— —	— Rape, foreign, do.,	3*l.* 17*s*
— — foreign, do.	— —	Tares, per bush...	3*s* 0*d*—3*s* 6*d*

LIVERPOOL, FRIDAY, Nov. 8.—We have had few arrivals of English, Irish, or foreign grain since our last report; but of Flour, from the American States and Canada, the import is again liberal. At our market this morning the trade for Wheat of all descriptions manifested the same languid appearance as of late; of course the transactions were very inconsiderable, and the last quotations hardly sustained. Flour was the most attractive article of sale, and met a fair demand. Barley, Malt, Beans, and Peas, upon a slow limited scale, remained unaltered in value. Good mealing Oats, being in short supply, were quite as dear as before. Oatmeal in tolerable request at previous rates. Indian Corn commanding more attention to-day, holders were firm, and the decline above-mentioned was partly recovered.——TUESDAY, Nov. 12.—We have again to report a very limited sale for English, Irish, and foreign Wheat of all descriptions, without the least quotable variation from the currency of this day se'nnight. Flour fully maintained late prices. Barley and Malt moved slowly at previous rates, and Beans as well as Peas were rather easier to purchase. Prime new mealing Oats, continuing to meet a fair demand, were 3*d.* per 45 lbs. dearer, all other kinds remaining dull at former rates. Oatmeal in somewhat improved request, good marks of new realising an advance of 3*d.* per load. Indian Corn recovered the decline of Tuesday last. Present prices: Wheat, English red, per 70 lbs., 5*s.* 7*d.* to 6*s.* 3*d.*; white, 6*s.* 0*d.* to 6*s.* 6*d.* Barley, Scotch and Irish, per 60 lbs., 2*s.* 10*d.* to 3*s.* 2*d.* Malt, English, per qr. pale, 50*s.* to 55*s.* Oats, English and Scotch, per 45 lbs., 2*s.* 9*d.* to 3*s.* 0*d.* Beans, English, per qr., 27*s.* to 31*s.* Pease, do. do., 29*s.* to 32*s.*

ROYAL AGRICULTURAL COLLEGE, CIRENCESTER.—The Council of the Royal Agricultural College, at Cirencester, having elected, as their new Principal, the Rev. JOHN SAYER HAYGARTH, M.A., intend, after the ensuing Christmas Vacation, to receive within the walls of the College, Students under 16 years of age. A limited number of Students between the ages of 16 and 20 will be received in a commodious boarding-house in the town of Cirencester, under the immediate superintendence of a resident Master or Professor. The arrangement respecting Out-Students above the age of 20 will remain as heretofore.

It is intended to provide such a system of religious and moral training, as well as of instruction, both agricultural and general, as may be adapted to the various ages of the Students. Further particulars respecting terms, &c., will appear in a few days, or they may be learnt on application to the Principal. Letters to be addressed, Rev. J. S. HAYGARTH, Rodmarton, Cirencester.

ROYAL SOCIETY FOR THE PROMOTION AND IMPROVEMENT OF THE GROWTH OF FLAX IN IRELAND.—The ANNUAL MEETING of the Society will take place on FRIDAY, the 29th inst., at 12 o'clock, to receive the Annual Report of the Committee, to elect Office-bearers for the ensuing year, and to transact such other business as may be brought forward.

(By order) JAMES MACADAM, Jun., Secretary.
Commercial Buildings, Belfast, Nov. 12.

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TO DEALERS IN ARTIFICIAL MANURE.—AGENTS WANTED FOR THE SALE OF IRISH PEAT CHARCOAL.—Letters, post-paid, stating terms, commission, &c., to be addressed to the Secretary of the Irish Amelioration Society, 9, Waterloo-place, Pall Mall, London.

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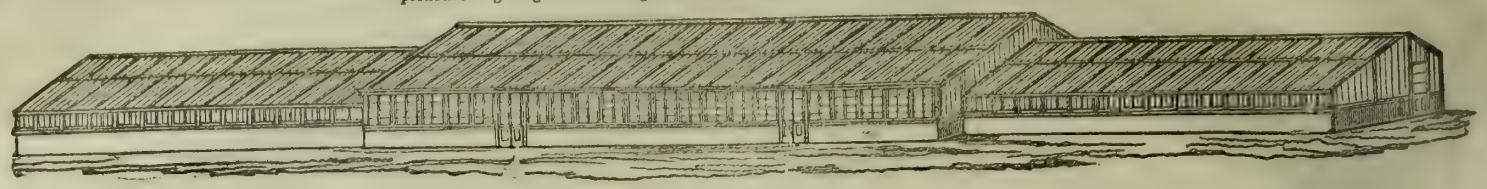
Annual pruning	Planting out, arrangement of trees, &c.	distance, shortening heads, &c.
time, principle of execution, &c.	Pushing eye, spring treatment of dwarf shoots from	saw proper for the purpose
Binding up	Roses, different sorts on the same stock	GRAFTING.
Budding knife	Roses, short list of desirable sorts for budding with a pushing eye	Aphides, to keep down
Budding, time of year, day, time of day, state of the plant, care of buds	Sap-bud, treatment of	Free-growers, remarks on
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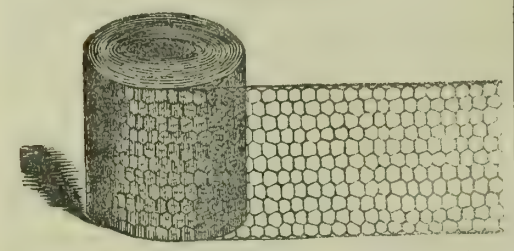
[Erected for John Shaw Leigh, Esq., Luton Hoo.]

Extract of a Letter from Mr. Fraser.—"I have much pleasure in expressing my entire satisfaction with the range of houses you erected here. I may also state that my honoured employer, John Shaw Leigh, Esq., is perfectly satisfied. I have no hesitation in stating, that to the best of my knowledge, there is not a more complete range of glass in the country, as regards both building and heating. I may add that they are admired by every Gardener who has seen them. I shall have much pleasure in answering any references you may please to direct.

(Signed.) "James Fraser, Gardener, Luton Hoo Park."

DR. S. NEWINGTON'S IMPLEMENTS OF AGRICULTURE.—These Implements have been invented to introduce an improved system of cultivation, and a more scientific method of depositing the seed. A Prospectus and Lecture on the different methods may be obtained (gratis) by applying to Messrs. Dufaur and Co., Agricultural Depôt, 21, Red Lion-square, London.

STRONG PREMIUM HARE AND RABBIT PROOF WIRE NETTING.



CHARLES D. YOUNG and COMPANY (late W. and C. YOUNG),
MANUFACTURERS OF IRON AND WIRE WORK, &c.,
22, PARLIAMENT STREET, WESTMINSTER, LONDON;
48, NORTH BRIDGE, EDINBURGH;
32, ST. ENOCH SQUARE, GLASGOW;
1, CASTLE BUILDINGS, DERBY SQUARE, LIVERPOOL;
beg respectfully to call the attention of Landed Proprietors and others to their strong Wire-Net Fence, for excluding Hares and Rabbits from Gardens, young Plantations, Nurseries, &c.

This Net was exhibited at the Show of the Highland and Agricultural Society of Scotland, held lately at Inverness, where its Efficiency, Great Strength, and Exceeding Cheapness attracted general attention, and had awarded from the Judges the Society's Silver Medals, with high commendations.

The immense damage done by Hares and Rabbits in Gardens and Young Plantations is often so great, that in the course of a year or two it will amount to more than the entire cost of protecting them with this Net. It is so durable, that when Plantations are sufficiently advanced to be independent of its protection, it can be removed to other exposed situations with the greatest facility, by any labourer. As a Fence against Hares and Rabbits, it is of itself quite sufficient, having only to be unrolled and attached, with small wire sent for that purpose, to wooden stakes driven into the ground, about every six or seven feet apart. It is, besides, peculiarly adapted for rendering Hedges, Paling, or other existing Fences, *completely impervious* to such vermin; and by being cut up into small pieces of three or more feet, as required, it forms a most efficient guard, at little expense, for individual Plants and Shrubs.

Prices.—18 ins. high, 9*d.*; 24 ins., 1*s.*; 30 ins., 1*s.* 3*d.*; and 36 ins., 1*s.* 6*d.* per lineal yard.

Or a web of 100 yards, 18 ins. wide, will cost	..	£3	15 0
Do. of 100 yards, 24 ins. wide	.. ..	5	0 0
Do. of 100 yards, 30 ins. wide	.. ..	6	5 0
Do. of 100 yards, 36 ins. wide	.. ..	7	10 0

If more or less than a web is required, it would be charged at the same rate per yard.

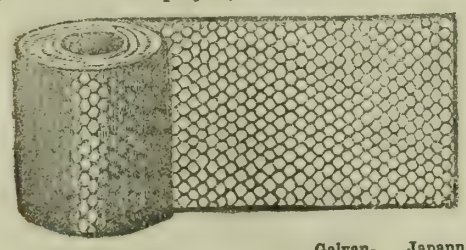
This Netting is also admirably adapted for Pheasantries and Poultry-yards, and is charged at the same rate. As carriage has, in many instances, been an obstacle to parties at a distance requiring this Net, C. D. Y. and Co. have made arrangements by which they will undertake to deliver it at any of the principal ports of Scotland, England, and Ireland, for One Halfpenny per lineal yard.

C. D. Young and Co. cannot give a better idea of the great strength of their Premium Wire Netting than by stating that the weight of one yard of their 24-inch at 1*s.* is equal to 2¼ yards of another article in the market, the same width, at 9*d.* per yard. Samples for inspection sent free of expense.

C. D. Young & Co. manufacture every description of IRON and WIRE WORK required for this and foreign countries.

Workmen sent to all parts of Scotland, England, and Ireland.

GALVANISED WIRE GAME NETTING.—
7*d.* per yard, 2 feet wide.



	Galvanised.	Japanned Iron.
2-inch mesh, light, 24-inch wide ...	7*d.* per yd.	5*d.* per yd.
2-inch " strong " ...	9 "	6½ "
2-inch " extra strong " ...	12 "	9 "
1½-inch " light " ...	8 "	6 "
1½-inch " strong " ...	10 "	8 "
1½-inch " extra strong " ...	14 "	11 "

All the above can be made any width at proportionate prices. If the upper half is a coarse mesh, it will reduce the price one-fourth. Galvanised sparrow-proof netting for pheasantries, 3*d.* per square foot. Patterns forwarded post-free.

Manufactured by BARNARD and BISHOP, Market-place, Norwich, and delivered free of expense in London, Peterborough, Hull, or Newcastle.

HORNSEY ROAD.—TO NOBLEMEN, GENTLEMEN, NURSERYMEN, FLORISTS, AND OTHERS.

MESSRS. PROTHEROE and MORRIS are instructed by Mr. W. J. Pamplin to submit to public competition by Auction, on the premises, Paradise Nursery, Hornsey-road, Islington, on MONDAY, November 18th, and following day, a part of the valuable NURSERY STOCK, comprising fine Evergreens, &c.; also choice Greenhouse Plants, consisting of Double Camellias, beautifully set with bloom buds, 18 inches to 6 feet, Azalea indica, Epacris, Ericas of all the leading varieties, Chrysanthemums, &c.—May be viewed prior to the sale; Catalogues had (6*d.* each, returnable to purchasers) on the premises; of the principal Seedsmen in London; of the Auctioneers, American Nursery, Leytonstone, Essex.

N.B. The Nursery to be Let, with immediate possession. The remaining Stock may be taken at valuation, if required.

IMPORTANT TO SEEDSMEN, NURSERYMEN, AND OTHERS.

MESSRS. PROTHEROE and MORRIS have received instructions from Messrs. Hay, Anderson, and Sangster, to offer to public competition, by Auction, on the premises, Nursery Warehouse, Bird-street, West-square, Lambeth (in consequence of one of the partners retiring from the business), on THURSDAY, November 21st, 1850, at 11 o'clock, a large portion of their valuable Stock of SEEDS, viz., Peas, Turnip, Cabbage, Onion, Mangold Wurzel, &c.; also a large Timber erection, Tile-roof, &c.; a capital 6-inch wheel Cart.—May be viewed, and Catalogues had of Messrs. Hay, Sangster, and Co., Newington Butts; of the principal Seedsmen in London; and of the Auctioneers, American Nursery, Leytonstone, Essex.

TO GENTLEMEN, FLORISTS, AND OTHERS.

MESSRS. PROTHEROE and MORRIS will sell by Auction, at the Mart, Bartholomew-lane, on FRIDAY, November 22, at 12 o'clock, a choice assortment of Fruit and Ornamental Trees, from Messrs. P. and M. Koster, at Boskoop, Holland; also a choice assortment of Dutch Roots, Standard and Dwarf Roses, &c.—May be viewed the morning of Sale. Catalogues may be had at the Mart, and of the Auctioneers, American Nursery, Leytonstone, Essex.

FULHAM ROAD.

MR. D. A. RAMSAY has received instructions from Mr. J. Shearman to submit to public competition on the premises, opposite Chelsea Park, Fulham-road, Brompton, on MONDAY, November 18, at 11 o'clock, on account of the number of lots (his lease having nearly expired), a further portion of the VALUABLE NURSERY STOCK, comprising Standard and Dwarf-trained Peaches, Nectarines, and other Fruit Trees, Evergreens, Deciduous Shrubs, Ornamental Trees, Standard and Dwarf Roses, &c.—May be viewed prior to Sale. Catalogues may be had on the premises, of the principal Seedsmen, and of the Auctioneer, Brompton Auction Ground Fulham-road, Brompton, near London.

MR. HASLAM will sell, at the Auction Mart, on TUESDAY, November 19, and three following days, the STOCK OF A FLORIST RETIRING FROM BUSINESS, consisting of 1000 Roses, 1 and 2 years budded, principally Perpetuals; 1700 pots of Primulas, Violets, Lobelias, Veronicas, Sollyas, Pinks (named), Phloxes, Pansies, Antirrhinums, Linaria, Hepatica (blue), Delphiniums, Ornamental Shrubs, Dutch Bulbs, &c. &c.

CAUTION.

NIGHT LIGHTS.—PATENT ALBERT NIGHT LIGHTS (Patented 30th January, 1844), CHILDS' NIGHT LIGHTS (Registered 20th September, 1843) are sold by all Grocers and Wax Chandlers throughout the country, at 6*d.* per box. The sale of the above, amounting at the present time to many tons weekly, shows that they meet with the approbation of the public; any description of them is therefore unnecessary. The object of this advertisement is, to request purchasers to *examine the name on the boxes*, so as to insure their getting what they intend.

Night Lights are liable not to last the time that they profess (frequently going out an hour or two after lighting); to be affected by the temperature of the room they are burnt in; to be injured by keeping any length of time, and to have an unpleasant smell. The manufacturers consider that, by use of materials secured to them by several patents, and by long experience in the manufacture, that they have overcome these difficulties; and they therefore beg, that should any attempted substitutes be recommended, they may be carefully compared as to all the above particulars.

N.B.—The wine-glass-shaped Lamp, on which is stamped "Clarke's Patent," is that recommended for the Albert Lights.

Price's Patent Candle Company, Belmont, Vauxhall.

THE BLOOD.—Our bodies have been entirely formed, *are now forming, and will continue to be built up during life from the blood. What the sap is to the tree the blood is to the animal frame; and inasmuch as the strength and verdure of a tree are dependant on the moisture derived from the root, the health and vigour of the body are indispensably connected with a pure and free circulation of this important fluid. It is this that must feed the flame of existence; and unless its replenishments are freely and purely communicated, the vital fire becomes clouded, burns dimly, and is ultimately extinguished. The grand object is to keep this precious fluid (the blood) in a pure and healthy state, for without this purity, disease will show itself in some way or other.*

PARR'S LIFE PILLS.

It is universally admitted that this medicine will purify the blood better than any other, and will conquer any disease.

None are genuine unless the words "PARR'S LIFE PILLS" are in White Letters on a Red Ground, on the Government stamp, pasted round each box; also the fac-simile of the signature of the Proprietors, "T. ROBERTS and Co., Crane-court, Fleet-street, London," on the directions.—Sold in boxes at 1*s.* 1½*d.*, 2*s.* 9*d.*, and family packets at 11*s.* each, by all respectable medicine vendors throughout the world.

RENDLE'S PRICE CURRENT, OR GARDEN DIRECTORY FOR 1851.

Stamped as a Newspaper, to go free by post.

On the 20th of November next will be published, by Messrs. Bradbury and Evans, Whitefriars, "RENDLE'S PRICE CURRENT, OR GARDEN DIRECTORY FOR 1851." *It will be stamped as a Newspaper, to go free by post, and will contain 24 folio pages, being precisely the same size as the* "Gardeners' Chronicle and Agricultural Gazette," *including the Newspaper portion.*

It contains a descriptive Catalogue of the best Culinary Vegetables in cultivation, with the time of sowing, height, and other useful particulars, as well as the quantities furnished by William E. Rendle and Co. for their Collections; also a descriptive Catalogue of all the choicest and best varieties of Agricultural Seeds; and an excellent descriptive List of all the newest and choicest Flower Seeds, giving—1st, the hardiness and duration of each variety; 2d, the colour; 3d, the height; and 4th, the time of flowering; with some useful information and advice relating to the proper mode of culture, and the manner of testing the quality of good seeds. It also gives a full detailed list of all the best German Seeds, such as Stocks, Asters, &c., as well as the quantities furnished by William E. Rendle and Co. for their Collections.

It likewise contains A COMPLETE CALENDAR OF OPERATIONS in the Kitchen Garden, for every month in the year, in a concise and useful form; and in addition, A COMPLETE GARDEN ALMANACK FOR 1851, with many useful Notes and Tables relating to Gardens and Gardening Operations. It also contains a short descriptive account of the Gigantic Water Lily or Victoria Regia, as well as Paxton's Palace of Glass, and the Botanic Gardens, Plymouth.

The Proprietors have offered two Prizes of Five Guineas each for the best Essays on the "Cultivation and General Management of a Kitchen-Garden," *and* "On Communicating Heat to Horticultural Buildings," *to be competed for by Gentlemen's Gardeners. For particulars see the Directory.*

The present edition will be found to be very superior to the Catalogue sent out by us last year, and will be of much service to all who have gardens.

Price *Fivepence*, to be had of all Booksellers, or *Sixpence* stamped, to go free by post. To be obtained of every newsagent who supplies the *Gardeners' Chronicle*; through Messrs. Bradbury and Evans, Publishers, Whitefriars, London; or from WILLIAM E. RENDLE and CO.,
Seed Merchants, Plymouth.

Send six penny stamps, and a copy will be sent by return of post. This amount will be returned if desired to all purchasers.

*** *This Catalogue will go free to our Colonies; in fact, to every country where the* "Times" *goes.*

Just published, a New Edition, with 10 Plates and several Diagrams, in imperial 8vo, price 10*s.* 6*d.*, cloth.

THE HORSE'S FOOT; and, How to Keep it Sound. By William Miles, Esq. Seventh Edition, enlarged, with an Appendix on Shoeing in general and Hunters in particular, and a new Preface.

*** Two Casts or Models of Shoes may be had, displaying the kinds of Shoeing described in the work, one shod for general purposes, and the other with leather; price 3*s.* each.

London: Longman, Brown, Green, and Longmans.

This day is published, in demy 8vo, with Woodcuts, price 4*d.*,

STOP THIEF; or, Hints to Housekeepers to Prevent Housebreaking. By George Cruikshank.

London: Published and Printed for the Author by Bradbury and Evans, 11, Bouverie-street.

COMPLETION OF DAVID COPPERFIELD.

This day is published, complete in one volume, 8vo, with 40 illustrations, by H. K. Browne, price 21*s.* cloth, or 24*s.* 6*d.* half-bound morocco,

THE PERSONAL HISTORY OF DAVID COPPERFIELD. By Charles Dickens.

Bradbury and Evans, 11, Bouverie-street.

FAMILIAR THINGS.
A BOOK.
A NEEDLE.
A BOUQUET OF FLOWERS.

THE CATHOLIC QUESTION.—Gilbert's Verbatim Editions of the Pope's Letter; Cardinal Wiseman's Pastoral; Lord John Russell's Letter; Bishop Ullathorne's two Letters to the *Times*; two Letters from the Rev. G. A. Denison; the "New Batch of Bishops," from the *Weekly Dispatch*; Letter from Benjamin Disraeli, Esq., M.P.; Review and Extracts from Ambrose Phillips's Letter to the Earl of Shrewsbury; concluded by a Biography of the Cardinal. All these important documents may be had in one pamphlet, at the extraordinary low price of One Penny; or Postage Free, 3*d.*; or, for very extensive distribution throughout the kingdom, at 7*s.* per 100. Also, uniform, at the same price, complete in one pamphlet, the Bishop of London's Charge and Dr. Cumming's Lecture.

Published by James Gilbert, 49, Paternoster-row, London.
Orders received by all Booksellers, Newsvendors, &c.

Printed by William Bradbury, of No. 13 Upper Woburn-place, in the Parish of St. Pancras, and Frederick Mullett Evans, of No. 7, Church-row, Stoke Newington, both in the County of Middlesex, Printers, at their office in Lombard-street, in the Precinct of Whitefriars, in the City of London; and published by them at the Office, No. 5, Charles-street, in the Parish of St. Paul's, Covent-garden, in the said County, where all Advertisements and Communications are to be addressed to the Editor.—Saturday, November 16, 1850.

THE GARDENERS' CHRONICLE AND AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 48—1850.] SATURDAY, NOVEMBER 30. [PRICE 6*d.*

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WATERER'S DESCRIPTIVE CATALOGUE OF AMERICAN PLANTS, &c.

HOSEA WATERER begs to announce his new descriptive CATALOGUE OF AMERICAN PLANTS, CONIFERS, ROSES, &c., is just published, and may be had by enclosing two stamps for postage to HOSEA WATERER, Knap Hill Nursery, Woking, Surrey.

☞ Everybody who has any idea of planting the ensuing autumn should possess themselves of this Catalogue.

MESSRS. STANDISH AND NOBLE'S new descriptive CATALOGUE OF SELECT HARDY ORNAMENTAL PLANTS is just published, and may be had for four postage stamps. Besides a Treatise on the cultivation of American Plants, it contains a Plate and Description of the Funebral Cypress, Notices of Cephalotaxis Fortunii, Cryptomeria japonica, Quercus sclerophylla and inversa, Viburnum plicatum and macrocephalum, with many recent introductions from the north of China, quite new to English gardens.

Messrs. S. and N. take this opportunity of stating that they give Designs for Laying out New Grounds and Plans for Improvements; also Estimates for all kinds of Planting, whether ornamental or economic.—Bagshot Nurseries, Nov. 30.

RENDLE'S NURSERY, PLYMOUTH, Established 1786.

WILLIAM E. RENDLE AND CO. have this season A LARGE SURPLUS STOCK of many sorts of FOREST TREES and SHRUBS. For prices see the *Gardeners' Chronicle*, November 9, 1850.

Our Autumnal Catalogue of Forest Trees, Shrubs, and Fruit Trees, is just published, and can be had for one penny stamp.

Apply to WILLIAM E. RENDLE AND CO.,
NURSERYMEN, PLYMOUTH.

GEORGE JACKMAN, NURSERYMAN, Woking, Surrey, 1¼ mile from the Woking Station of the South-Western Railway, begs to announce that he has just published a new and complete CATALOGUE of his American Plants, Ornamental Evergreens and Flowering Shrubs, Standard and Dwarf Roses, Fruit and Forest Trees, &c., which may be had gratis on application.

MYATT'S LINNÆUS RHUBARB, strong roots, 12*s.* per dozen; Myatt's Victoria, 9*s.* per dozen; and Mitchell's Royal Albert, 12*s.* per dozen. Extra strong plants of the New Red Currant "Raby Castle," 6*s.* per dozen, or 45*s.* per 100; and Fastolff Raspberry, 10*s.* per 100. With the usual allowance to the Trade. Post-office orders are requested to be made payable to JOSEPH MYATT, Manor Farm, Deptford, near London.—Nov. 30.

MITCHELL'S ROYAL ALBERT RHUBARB has proved itself to be the earliest, finest flavoured, and most productive kind, as well as the best for early forcing, ever yet grown. Strong roots, 12*s.* per dozen. Also Myatt's Linnæus, 12*s.* per dozen; and Victoria, 9*s.* per dozen; with usual allowance to the trade. Post-office orders are requested to be made payable to WILLIAM MITCHELL, Enfield Highway, Post-office, Enfield, Middlesex.

CORNWELL'S VICTORIA RASPBERRIES.

G. CORNWELL is now sending out STRONG CANES of the above at 25*s.* per 100; 3*s.* 6*d.* per dozen. To be had of GEO. CORNWELL, Market Gardener, Barnet, Herts.
N.B.—A quantity of Red and White Currants.

AMERICAN PLANTS.

JOHN WATERER'S CATALOGUE OF AMERICAN PLANTS, ROSES, CONIFERS, &c., is now published, and may be had gratis on application. It describes the colours of every Rhododendron worthy of cultivation, thus affording purchasers every facility in making selections.

American Nursery, Bagshot, Surrey.

"CEDRUS DEODARA" AND "CUPRESSUS TORULOSA ELEGANTISSIMA."

WM. MAULE AND SONS are now prepared to offer, from their large supplies of CEDRUS DEODARA of various sizes, many thousands of fine specimen plants (grown from seed constantly in the open ground and in pots) measuring 3 feet and upwards, unusually fine and bushy, with good leaders, at 60*s.* per dozen; also many thousands of fine plants of CUPRESSUS TORULOSA; the hardy variety Elegantissima in pots, upwards of 2 and 3 feet, at 50*s.* and 75*s.* per hundred; they also abound with good supplies of the Himalaya Conifera generally, together with a large Stock of Scarlet Crimson Himalaya and other hardy Rhododendrons, prices for which will be forwarded on application.

N.B. W. M. and SONS' Lists of prices for Fruit, Forest, Evergreen, and other Trees and Shrubs required at the present planting season, are now ready for distribution, and will be forwarded on application.

References expected from unknown correspondents.
Stapleton-road Nurseries, Bristol.

BASS AND BROWN'S AUTUMN CATALOGUE is now ready. It contains Descriptive Priced Lists of Superb Seedling and other Ranunculi, Gladioli, Early and Double Tulips; also Priced Assortments of Choice Imported Dutch Hyacinths, Narcissus, Iris, Jonquils, Crocus, the Lancifolium and other Lilies, with a great variety of other bulbs and dry roots. The latter part contains Descriptive Lists of Choice and Select Roses, a few New and other desirable Evergreen and Flowering Shrubs, Hardy Climbing and Hardy Herbaceous Plants, Prize Gooseberries, and other choice fruits, &c.

A separate List of Geraniums and other new and select plants at reduced prices. Catalogues forwarded, prepaid, for two penny stamps.

Our Foreign Bulbs have arrived in fine condition.
Seed and Horticultural Establishment, Sudbury, Suffolk.

NEW GARDEN SEEDS.

WILLIAM E. RENDLE AND CO., SEED MERCHANTS, Plymouth, are now prepared to execute orders for NEW PEAS, including the following excellent sorts.

NEW PEAS—GROWTH OF 1850.

Fairbeard's Champ. of England.	Warner's Early Emperor.
Rendle's First Early.	Prince Albert.
Burbridge's Eclipse.	Essex Champion.
Early Kent.	Early Warwick.
Fairbeard's Surprise.	Auvergne.
Bishop's New long-podded.	Isherwood's Railway.

Our "PRICE CURRENT AND GARDEN DIRECTORY" *is now ready, and contains a Descriptive Catalogue of all the best kinds of* KITCHEN GARDEN, AGRICULTURAL, *and* FLOWER SEEDS, *with a complete* CALENDAR OF OPERATIONS *for every month in the year, and a* GARDEN ALMANAC.

The present edition will be found to be very superior to the Catalogue sent out by us last year, and will be of much service to all who have gardens.

Price *Fivepence*, to be had of all Booksellers, or *Sixpence* stamped, to go free by post. To be obtained of every newsagent who supplies the *Gardeners' Chronicle*; through Messrs. Bradbury and Evans, Publishers, Whitefriars, London; or from WILLIAM E. RENDLE and CO.,
Seed Merchants, Plymouth.

Send six penny stamps, and a copy will be sent by return of post. This amount will be returned if desired to all purchasers.

*** *This Catalogue is stamped as a Newspaper, and contains 24 folio pages, being the same size as the* "Gardeners' Chronicle and Agricultural Gazette," *including the Newspaper portion.*

KNIGHT AND PERRY, EXOTIC NURSERY, King's-road, Chelsea, London, deeply grateful for the distinguished patronage so long conferred upon them, beg to intimate that their NEW CULINARY AND FLOWER SEEDS, all of the first quality, are now ready, and they most respectfully solicit a continuance of that support which has been extended to their house for the last 50 years.

For the above—as well as for their AGRICULTURAL SEEDS, to which they pay great attention, Stove, Greenhouse, and Herbaceous Plants, Bulbous Roots, imported annually by themselves from Holland, Conifers and other Hardy Ornamental Trees and Shrubs in great variety, and including many valuable novelties, Grape Vines of all the best sorts, from eyes. Fruit Trees of choice sorts, both trained and untrained, and which are this season of very fine growth—there are lists specially appropriated, and which they respectfully solicit permission to forward.

Exotic Nursery, King's-road, Chelsea, London.

HILL'S COURT NURSERY, EXETER, within 3 minutes' walk of the London Inn, and 10 of the Railway station.—The FORD OAK, the hardiest of all evergreens, was originally raised at this Nursery, and there are at present upwards of 500 Plants in pots, from 3 to 10 feet high. Also a very large collection of LUCOMBE OAK, varying from 3 to 15 feet high, and of superior growth. To be sold at a great reduction in price.—All letters to be addressed to Mr. JOHN NOTT, at the Nursery, and Post-office orders payable to him. Dated HILL'S Court Nursery, November 10, 1850.

RUSSIAN VIOLETS.

R. SHACKELL, in offering his two superior new Violets, "RUSSIAN SUPERB," and "WHITE RUSSIAN" (of which all the Floricultural Publications have spoken in the highest terms), begs to call the attention of Amateur and other Cultivators, to the following reduced prices, at which he can now sell these favourite flowers:—Extra strong blooming plants, "Russian Superb," 12*s.* per doz.; small ditto, such as could be sent by post, 9*s.* per doz.; "White Russian," 6*s.* per doz. Any parties can have a bouquet of each, postage free, by enclosing 12 postage stamps. R. S. has eight other varieties at 3*s.* per doz.

"SIR,—Blooms of your 'Russian Superb,' and a large White Seedling Violet, both seedlings of your raising, were safely received this morning. Having grown a few plants of the 'Russian Superb' myself this season, I have no hesitation in informing you I consider it by far the best hardy Violet cultivated. It blooms most profusely through seven months of the year. The blooms are very large, of a fine blue colour, and most exquisitely fragrant; and as the habit of the plant is strong and good, it must supersede the old varieties. It is well known the Neapolitan requires the shelter of a frame to bloom it in perfection; your present seedlings will enable every one to enjoy the luxury of these charming flowers, without the aid of glass, through the winter months. The 'White Seedling' appears equally in advance of the old kinds, both in size, colour, and fragrance, and is equally to be commended. As no lover of these flowers ought to be without them, I hope the public will patronise these pets of yours, for they are really good things.—I remain, Sir, yours very truly, JOHN SPENCER, Bowood Park, Nov. 13."

"MR. ROBERT SHACKELL, Locksbrook Nursery, Bath."
Locksbrook Nursery, Bath, Nov. 30.

WM. ANDERSON, NURSERY and SEEDSMAN, Dundee, begs to intimate that he has on sale a very extensive stock of Stage AURICULAS and POLYANTHUSES, true to name, comprising many varieties of great merit. Catalogues sent free on application.

Also Viola arborea, white, red, and blue, strong plants, 2*s.* per dozen. Dianthus montana superba, the finest and largest variety of mule Pink, 6*s.*, and extra strong plants 9*s.* per dozen. Hardy Heaths of sorts, 4*s.* a dozen. Laurel Bays, strong bushy plants, 1½ to 2 feet, 8*s.* per 100. Herbaceous plants in great variety, 1*s.* per dozen, 6*s.* per 100.

As W. A.'s Stock of the above articles is very large, the Trade will be supplied on reasonable terms.

PAGE AND CO., SEED MERCHANTS, &c., SOUTHAMPTON.—W. B. PAGE, Jun., has the pleasure of informing the public, that in consequence of his father having transferred to him the entire Seed Trade (reserving to himself the Nursery Department), he has just completed, in addition to the old established Seed Stores, an extensive establishment in Oxford-street, facing the Railway Terminus, adjoining Radley's Hotel, and in the immediate vicinity of the Docks, where Seeds, wholesale and retail, will be offered at the lowest market prices, as well as orders received for Nursery Stock.

PAGE'S PRODIGY PEA (3*s.* 6*d.* per quart), the earliest and most prolific dwarf variety in cultivation, of which we subjoin two Testimonials out of the many received,

PAGE'S GOLIAH PEA, 3*s.* 6*d.* per quart.

"Gentlemen,—I found your Prodigy Pea a very superior dwarf variety, and an abundant bearer. Please send some when you send the Annual Collection of Seeds.
"HENRY WELLS,
"Gardener to the Rt. Hon. Lord Willoughby d'Eresby,
"Grimsthorpe Gardens, Nov. 5, 1850."

"Gentlemen,—Your Prodigy Pea has proved the earliest and most prolific dwarf variety in cultivation, well adapted for growing on Vine or Peach borders, scarcely affording a partial shade. "JAMES DREWETT,
"Gardener to Sir W. Heathcote, Bart., Hunsley Park."

NEW GERANIUMS OF 1849.

GEORGE DAVIES begs to offer the following 10 new GERANIUMS at the exceeding low price of 5*0s.*, package included:—Loveliness (Beck's), Emily (Beck's), Rosalind (Beck's), Nonsuch (Hoyle's), Prince of Orange (Hoyle's), Satisfaction (Hoyle's), Chrisabel (Hoyle's), Magnificent (Foquet's), Gipsy Bride (Foster's), Constance (Foster's). Any of the above can be had separately. As the stock of some of the sorts is rather limited, early orders alone will secure plants.

Also the following 10 for 18*s.*, package included:—Brilliant (Topping's), Cruenta (Beck's), Crusader (Hoyle's), Elegans (Topping's), Princess (Beck's), Centurion (Beck's), Virgin Queen (Arnold's), Rosamond (Beck's), Gustavus (Beck's), Mont Blanc.

CALCEOLARIAS.—Seedlings raised from fine hybridised seed, which G. D. has no doubt will prove equal, if not superior, to any in cultivation. Fine strong plants 6*s.* per doz.

	s.	*d.*		*s.*	*d.*
Allamanda nerifolia	21	0	Franciscea eximia, small	21	0
Cyrtoceras reflexum	2	6	Æchmea fulgens	5	0
,, multiflorum	3	6	Chorisanthus albo-sanguinea	5	0
Clerodendron Bethunianum	21	0	Passiflora elata, superb	5	0
,, macrophylla	3	6	Achimenes gloxiniflora	3	6
Chirita Moonii	2	6	,, Jauregia	5	0
Echites splendens	2	6	,, multiflora	2	6
,, Franciscea	3	6	Stylidium scandens	5	0
Centradenia floribunda	2	0	Statice macrophylla, 3*s.* 6*d.* to	5	0
Gesnera macrantha purpurea	2	6	Gardenia Fortunii	3	6
Gesnera picta	2	6	,, Devoniana	5	0
Hoya Bella	3	6	Daphne Fortunii	3	6
,, imperialis	3	6	Lucula gratissima	2	6
Strophanthus Stanleyana	3	6	Ipomœa Horsfallii	2	6

A reference or Post-office order is respectfully requested from unknown correspondents.

*** This Advertisement will not be repeated.

Green-lane Nursery, West Derby, near Liverpool, Nov. 30.

TILEY'S VIOLA ARBOREA, OR PERPETUAL TREE VIOLET.—VIOLA ARBOREA, or the PERPETUAL TREE VIOLET (true).—In answer to numerous inquiries for the above, and great satisfaction given by the plants sent out last season by EDWARD TILEY, he begs to state that he has this year a fine stock of the above beautiful DOUBLE VIOLET now to dispose of, which he can highly recommend, this being the proper time for making beds or potting. They are beautifully scented; the blooms are as large as the double blue Hepatica; they bloom freely from August till the end of May, and are perfectly hardy. Twelve of these plants grown in pots will scent a large greenhouse; and a small bed, 9 feet long by 3 feet wide, will be sufficient to furnish a family with bouquets the whole of the winter and the spring. They should be planted in rather a dry situation and a loose soil, as the Violet will thrive and bloom finer than in wet or clay borders.

E. T. has been informed by the gentleman that introduced it into this country, that he has seen them growing in the thickets of Persia to the height of 4 feet, with large bushy heads to them, and hundreds of blooms on them at the same time. Large bushy plants, 6*s.* per dozen; smaller ditto, 3*s.* per dozen; or 1*l.* per hundred.

Also he has a fine stock of that splendid YELLOW VIOLET, or VIOLA LUTEA, which has been so much admired at the London exhibitions. In colour it is equal to the Crocus. Strong bushy plants 2*s.* 6*d.* each; or smaller ditto, 1*s.* 6*d.* each.

KITLEY'S GOLIAH STRAWBERRY.—Strong well-rooted plants at 3*s.* per dozen.

True BATH COS LETTUCE SEED, 1*s.* per packet.

Extra fine SWEET WILLIAM SEED, saved from 24 distinct varieties, 1*s.* per packet.

ANTIRRHINUM SEED from all the best varieties, 1*s.* per packet.

WINTER CUCUMBER.—Lord Kenyon's Favourite, 2*s.* 6*d.* per packet.

The whole or any quantity of the above will be sent, postage and package free, to any part, on receipt of a Post-office order, or the amount in penny postage stamps.

Sold by EDWARD TILEY, Nurseryman, Seedsman, and Florist, 14, Abbey Church-yard, Bath.

TO ROSE GROWERS.

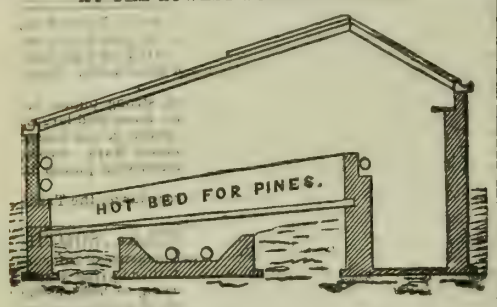
WANTED, a Quantity of well-rooted MOSS, CABBAGE and SPRING ROSE LAYERS; also the same sorts, that have been bedded one year, and fit for present potting.—Direct, if by letter, post paid, stating price per 100, to F. J. Burk, 14, Summerford-grove, Stoke Newington-road, near London.

GREEN AND HOTHOUSES, strong built, at the following low scale of prices:—Lean-to Roofs, 12 feet by 8, 10*l.*; 16 by 8, 15*l.*; 20 by 10, 20*l.*; 20 by 12, 24*l.*; 24 by 12, 28*l.*; and 28 by 12, 32*l.* Greenhouse Garden Lights, and Window Sashes, complete, painted three times, at 9*d.* per foot. A Greenhouse, ready built, for sale, 16 feet by 9.—Plans and particulars sent by addressing a letter to Mr. Smith, 85, White Lion-street, Islington, London.

Estimates given for Hot-Water Apparatus.

HORTICULTURAL BUILDING AND HEATING BY HOT WATER.

WARRANTED BEST MATERIALS AND WORKMANSHIP AT THE LOWEST POSSIBLE PRICES.



J. WEEKS AND CO., King's-road, Chelsea, Horticultural Architects, Hothouse Builders, and Hot-water Apparatus Manufacturers. The Nobility and Gentry about to erect Horticultural buildings, or fix Hot-water Apparatus, will find at our Hothouse Works, King's-road, Chelsea, an extensive variety of Hothouses, Greenhouses, Conservatories, Pits, &c., erected, and in full operation, combining all modern improvements, so that a lady or gentleman can select the description of House best adapted for every required purpose.

THE HOT-WATER APPARATUSES (which are efficient and economical), are particularly worthy of attention, and are erected in all the Houses, Pits, &c., for both Top and Bottom Heat, and in constant operation in the Stoves.

The splendid collection of Stove and Greenhouse Plants are in the highest state of cultivation, and for sale at very low prices. Also a fine collection of Strong Grape Vines in pots from eyes, all the best sorts.

Plans, Models, and Estimates of Horticultural Buildings, also Catalogues of Plants, Vines, Seeds, &c., forwarded on application.—J. Weeks and Co., King's-road, Chelsea, London.

HARTLEY'S PATENT ROUGH PLATE GLASS.

JAMES PHILLIPS AND CO., 116, Bishopsgate-street Without, beg to hand their list of Prices of the above description of GLASS. Cut to order in panes of

8 by 6 and under	10 by 8	at 4½*d.*	per foot.
10 by 8 ,,	14 by 10	at 5*d.*	,,
14 by 10 ,,	1½ foot, or sizes not exceeding 20 inches long	at 5½*d.*	,,
1½ foot ,,	3 feet, or sizes not exceeding 30 inches long ...	at 6*d.*	,,

PACKED IN BOXES of 50 feet each.

6 by 4 and 6½ by 4½.....12*s.* 0*d.*	8 by 6 and 8½ by 6½.....15*s.* 0*d.*
7 by 5 and 7½ by 5½.....13 6	9 by 7 and 9½ by 7½ and 10 by 8.....16 6

Well worth the attention of Nurserymen and Market Gardeners.

ROUGH PLATE GLASS.

	¼	⅜	½	⅝	1 in.	1¼	1½
	s. d	*s. d.*	*s. d.*	*s. d.*	*s. d.*	*s. d.*	*s. d.*
Not above 15 in. long	0 11	1 0	1 6	3 0	4 6	5 3	6 0
Above 15 in. and not above 35	1 1	1 2	1 8	3 6	5 3	6 0	7 0
,, 34 ,, ,, 75	1 3	1 4	1 10	4 0	6 0	7 0	8 0

GLASS TILES AND SLATES made to any size or pattern.
HALLIMAN'S REGISTERED FRUIT PROTECTORS, from 6*d.* to 1*s.* each.
MILK PANS, from 2*s.* to 6*s.* each.
PROPAGATING AND BEE GLASSES, from 2*d.* each.
WASP TRAPS, 3*s.* 6*d.* per dozen.
LACTOMETERS, for trying the quality of Milk, 7*s.* 6*d.* each.
STANDS, for Pianofortes, 1*s.* each.

Glass Shades for Ornaments. Parian Marble. Wax and Alabaster Ornaments. Lamp Shades and Glasses. Patent and British Plate. Ornamental and Stained Glass; and every article in the Trade.

From the *Gardeners' Chronicle*, December 8, 1849:

"As for the article substituted for Rough Plate, and which is actually in the market for the purpose of imposing upon gardeners, it is wholly unfit for any horticultural purpose. The best samples of it which we have yet seen is sold by Mr. JAMES PHILLIPS, 116, BISHOPSGATE STREET, LONDON."

GLASS FOR CONSERVATORIES, &c.

HETLEY AND Co. supply 16-oz. Sheet Glass of British Manufacture, at prices varying from 2*d.* to 3*d.* per square foot, for the usual sizes required, many thousand feet of which are kept ready packed for immediate delivery. Lists of Prices and estimates forwarded on application, for PATENT ROUGH PLATE, THICK CROWN GLASS, GLASS TILES and SLATES, WATER-PIPES, PROPAGATING GLASSES, GLASS MILK PANS, PATENT PLATE-GLASS, ORNAMENTAL WINDOW GLASS, and GLASS SHADES, to James Hetley and Co., 35, Soho-square, London.

See the *Gardeners' Chronicle* first Saturday in each month.

STEPHENSON AND Co., 61, Gracechurch-street, London, and 17, New Park-street, Southwark, Inventors and Manufacturers of the Improved CONICAL and DOUBLE CYLINDRICAL BOILERS, respectfully solicit the attention of scientific Horticulturists to their much improved method of applying the Tank System to Pineries, Propagating Houses, &c., by which atmospheric heat as well as bottom-heat is secured to any required degree, without the aid of pipes or flues. S. and Co. have also to state that at the request of numerous friends they are now making their Boilers of Iron, as well as Copper, by which the cost is reduced. These Boilers, which are now so well known, scarcely require description, but to those who have not seen them in operation, prospectuses will be forwarded, as well as reference of the highest authority; or they may be seen at most of the Nobility's seats and principal Nurseries throughout the kingdom.

S. and Co. beg to inform the Trade that at their Manufactory, 17, New Park-street, every article required for the construction of Horticultural Buildings, as well as for heating them, may be obtained upon the most advantageous terms.

Conservatories, &c., of Iron or Wood, erected upon the most ornamental designs. Balconies, Palisading, Field and Garden Fences, Wire-work, &c.

GLASS FOR CONSERVATORIES, GREENHOUSES, PIT-FRAMES; AND PLATE GLASS FOR DWELLINGS.

THOMAS MILLINGTON begs to hand the sizes of a large quantity of SHEET GLASS, packed in 100 feet boxes of various sizes. In all cases, unless the whole box is taken of either size, extra must be charged as specified.

13*s.* 6*d.* per box; or 2*d.* per foot if less than one box be taken:

6 inches	by 4 inches.	6½ inches	by 5 inches
6 ,,	by 4½ ,,	6½ ,,	by 5½ ,,
6½ ,,	by 4 ,,	6 ,,	by 6 ,,
6½ ,,	by 4½ ,,	6½ ,,	by 6 ,,
6 ,,	by 5 ,,	6½ ,,	by 6½ ,,
6 ,,	by 5½ ,,		

15*s.* per box; or 2½*d.* per foot if less than one box be taken:

7 inches	by 4 inches	7½ inches	by 5½ inches
7 ,,	by 4½ ,,	7 ,,	by 6½ ,,
7 ,,	by 5 ,,	7½ ,,	by 6 ,,
7½ ,,	by 5 ,,	7½ ,,	by 6½ ,,
7 ,,	by 5½ ,,	8 ,,	by 6 ,,

17*s.* 6*d.* per box; or 2½*d.* per foot if less than one box be taken:

9 inches	by 7 inches	9 inches	by 9 inches
8 ,,	by 8 ,,	10 ,,	by 9 ,,
9 ,,	by 8 ,,	10 ,,	by 10 ,,

20*s.* per box; or 2½*d.* per foot if less than one box be taken:

11 inches	by 8 inches	13 inches	by 9 inches
12 ,,	by 8 ,,	12 ,,	by 10 ,,
12 ,,	by 9 ,,	14 ,,	by 10 ,,

Boxes charged 1*s.* each extra.

T. M.'s Stock of small Glass is so large, that he thinks he can pledge himself to execute orders to any extent.

Glass cut to any other size required, in either 16 oz., 21 oz., 26 oz., or 32 oz

PATENT ROUGH PLATE GLASS.

T. Millington's Patent Rough Plate Cast, perfectly flat and uniform, the best manufactured. A small sample will be sent, upon application, to prove it.

CUT TO ORDER IN PANES.

	⅛ in. thick.	¼ in. thick.
Not above 15 inches long	0*s.* 6*d.*	0*s.* 11*d.*
Above 15 inches and not above 35 ...	0 8	1 1
,, 35 ,, ,, 50 ...	0 9½	1 3
,, 50 ,, ,, 75 ...	1 0	1 3
,, 75 ,, ,, 100 ...	1 3	1 4
100 inches and above	...	1 6

MILK PANS 2*s.* to 6*s.* each, Hand-frames, Tiles, and Slates; Propagating and Bee Glasses from 2*d.* each; Cucumber Tubes, 1*d.* per inch; Peach Glasses, 10*d.* each; Wasp Traps, 3*s.* per dozen; Pastry Slabs, Glass Plates, in wooden frames, for butter and pastry, &c.; Hyacinth Glasses and Dishes, Shades for Ornaments, Fish Globes, Plate and Window Glass of every description, and Lamp Shades. Lactometers for trying the quality of Milk, 4 tubes, 7*s.* 6*d.*; 6 tubes, 10*s.* Self-registering Thermometers for Greenhouses, Horticultural Glass, &c.

THOMAS MILLINGTON, GLASS, COLOUR, AND PAINT MANUFACTURER, 87, BISHOPSGATE-STREET WITHOUT, LONDON.

BAKER'S PHEASANTRY, Beaufort-street, King's-road, Chelsea, by special appointment to her Majesty and H. R. H. Prince Albert—ORNAMENTAL WATER FOWL, consisting of black and white swans, Egyptian, Canada, China, barnacle, brent, and laughing geese, shieldrakes, pintail, widgeon, summer and winter teal, gadwall, Labrador, shovellers, gold-eyed and dun divers, Carolina ducks, &c., domesticated and pinioned; also Spanish, Cochin China, Malay, Poland, Surrey, and Dorking fowls; white, Japan, pied, and common pea-fowl, and pure China pigs; and at 3, Half-moon-passage, Gracechurch-street, London.

DIXON'S NEW (REGISTERED) VENTILATOR.—This Ventilator is much neater and more simple than any hitherto invented, can be made of any shape or size, and can be as easily cleaned as any other part of a window. It does not interfere with the blinds, or opening of the windows, and if accidentally broken can be repaired by any glazier at the cost of a single pane of glass. Models can be seen, and every information obtained, by applying to the London agents, James Phillips and Co., 116, Bishopsgate-street Without.

Dixon v. *Bessell.—Alderman Wilson said, "It was a very clever invention, and he thought Mr. Dixon ought at least to have seven years' protection instead of three," and fined the defendant 60l., and 10l. costs, for an infringement of the Registered design.—Oct.* 1, 1850.

THE APPROACHING COLD WEATHER.

THERMOMETERS FOR REGISTERING THE EXTREMES OF HEAT AND COLD, of the best construction, 1*l.* 1*s.* and 18*s.*; of the common construction, 15*s.*, 12*s.* 6*d.*, 10*s.*, 7*s.* 6*d.* Night Thermometers for Registering Cold only, 10*s.*, 7*s.* 6*d.*, 5*s.*, to 2*s.* 6*d.* Thermometers for Baths or Brewing, 12*s.* 6*d.*, 10*s.*, 7*s.* 6*d.*, to 2*s.* 6*d.* Hotbed Thermometers to 4 feet long, 25*s.*, 20*s.*, 17*s.* 6*d.* Steam-pressure Gauges, 2*l.* 5*s.* and 2*l.* 2*s.* Rain Gauges, from 10*s.* Lactometers for showing the Quality of Milk, with instructions for use, 15*s.*, 12*s.* 6*d.*, 10*s.*, 7*s.* 6*d.*, 5*s.* Hydrometers for trying Sulphuric Acid, 10*s.*, 7*s.* 6*d.*, 5*s.* Barometers, Microscopes, Telescopes, Drawing Instruments, &c.

Henry Baker, Instrument Maker to the Board of Admiralty, 90, Hatton-garden, London.

CLARK'S PATENT ELONGATING GALOSH.—The Patent Elongating Gutta Percha Galoshes will be found unrivalled in their advantages over every other Galosh or overshoe. They may be put on or taken off without touching with the hands, or even stooping; and they hold perfectly tight on the foot without requiring any fastening. They are lighter than any other Galosh. The elasticity of the waist makes them very easy in wear. They are not liable to slip on the smoothest flags; even in frosty weather their slipping may easily be prevented by slightly warming the heels and pressing them into sand or other rough material. They are sufficiently open in the uppers not to confine the perspiration of the foot; and having Gutta Percha Soles, they are perfectly waterproof, and well adapted for walking over wet ground.

C. and J. Clark, Patentees, Street, near Glastonbury. Wholesale Agent for London: A. Haymond, 1, Regent-street, City-road; and to be had retail of most respectable Boot and Shoemakers.

FREEHOLD LAND TO BE SOLD, nearly adjoining the Uxbridge-road, a short distance beyond Kensington-gardens, and extending northward to the Harrow-road. The Great Western Railway passes through part of the property, the terminus being distant one mile from it. The property comprises 166 Acres, now held by a tenant from year to year, and is under cultivation as a Grass Farm, having a good House and suitable Outbuildings, but is admirably adapted for Building Ground, Nursery Grounds, or Market Gardens, the land to the south of part of the property lying between it and the Uxbridge-road being already built on, and a good road made through it. There is good Brick Earth on the estate. To be sold in one lot, or in separate lots of not less than 10 acres, at 1000*l.* an acre. If small lots are taken for building purposes, they must be laid out on a plan to be agreed on as to roads, &c., across the entire property, so as not to interfere with the sale of other parts.

For further particulars, apply to Messrs. Lowe, Solicitors, No. 2, Tanfield-court, Inner Temple, London.

THE WIDOW of the late Rev. GEORGE EDWARD HOLLEST, of Frimley, Surrey.

Frimley, Bagshot, November 26, 1850.

An earnest appeal to public benevolence is respectfully submitted by a few friends and neighbours on behalf of the Widow of the late Rev. George Edward Hollest, who, for a period of 18 years, in an exemplary manner, performed the duties of his Church; and was distinguished by his benevolence and charity in the wide district under his charge.

The act of atrocity by which the Rev. Mr. Hollest was suddenly cut off is universally known, but those only who are acquainted with his position are aware that he never had the means of making a provision for his Widow. Under such circumstances, it is hoped that the case of Mrs. Hollest will commend itself to the generous consideration of those who are blessed with the means of alleviating, so far as human sympathy and assistance can alleviate, the distress of a family so fearfully bereft of its natural supporter. The income of Mrs. Hollest does not exceed 40*l.* per annum, and subscriptions are earnestly solicited in aid of these inadequate means.

Subscriptions will be thankfully received by the following Bankers:—

Messrs. Herries, Farquhar, and Co.
— Williams, Deacon, and Co.
— Barclay, Tritton, and Co.
— Coutts and Co.
Messrs. Smith, Payne, and Co.
Sir S. Scott, Bart. and Co., 1, Cavendish-square.
Messrs. Mangles Brothers, Guildford.
— Stephens and Blandy, Reading.

Also, by the following members of the Committee:—

R. R. Bayley, Esq., Mitchett, Frimley, Bagshot.
J. F. Burrell, Esq., Manor-house, Frimley.
Rev. J. H. Clayton, Farnborough, Bagshot.
Rev. John Lawrell, Cove, Bagshot.
Sir Walter Farquhar, Bart., Farnborough Place, Bagshot.
Thomas Longman, Esq., Farnborough-hill, Bagshot.
Captain Charles Edward Mangles, Poyle-park, Farnham, Surrey.

The Committee have the satisfaction to state that Her Majesty the Queen, the Duchess of Gloucester, and the Bishop of Winchester, have sanctioned their exertions by very liberal donations.

A List of Subscriptions will appear in a future Advertisement.

TO MARKET GARDENERS, NURSERYMEN, & OTHERS.

TO BE DISPOSED OF, a LEASE of about Six Acres of MARKET GARDEN GROUND, with growing Crops; a good, new, and substantial Brick House on the ground, at a very low rent, within eight miles of London, in consequence of a death in the family.—For particulars, enquire of T. Barnard, 9, Great Russell-street, Covent-garden, London.

SOMERSETSHIRE.

TO BE LET, and entered upon at Lady-Day next, PRIDDY HILL FARM, situate on the range of the Mendip Hills, about five miles from the City of Wells, containing nearly 300 Acres of Arable Land. The soil is loamy, easily worked, and well adapted to the growth of TURNIPS and GREEN CROPS. The Buildings are extensive and good. There are 10 Acres of GORSE planted on the Farm; and a Machine, erected by Barrett, Exall, and Andrewes, to prepare it for use. The rent and payments are only about 12*s.* an Acre.—Apply to Mr. Joseph Edwards, Land Agent, Hutton, near Wells, Somerset.

APPETITE AND DIGESTION IMPROVED.

LEA AND PERRINS' WORCESTERSHIRE SAUCE imparts the most exquisite relish to Steaks, Chops, and all Roast Meat Gravies, Fish, Game, Soup, Curries, and Salad, and by its tonic and invigorating properties enables the stomach to perfectly digest the food.

The daily use of this aromatic and delicious Sauce is the best safeguard to health.

Sold by the Proprietors, Lea and Perrins, 6, Vere-street, Oxford-street, London, and 68, Broad-street, Worcester; also by Messrs. Barclay and Sons, Messrs. Crosse and Blackwell, and other Oilmen and Merchants, London; and generally by the principal dealers in sauce.

N.B.—To guard against imitations, see that the names of "Lea and Perrins" are upon the label and patent cap of the bottle.

CAUTION.

NIGHT LIGHTS.—PATENT ALBERT NIGHT LIGHTS (Patented 30th January, 1844), CHILDS' NIGHT LIGHTS (Registered 20th September, 1843) are sold by all Grocers and Wax Chandlers throughout the country, at 6*d.* per box. The sale of the above, amounting at the present time to many tons weekly, shows that they meet with the approbation of the public; any description of them is therefore unnecessary. The object of this advertisement is, to request purchasers to *examine the name on the boxes*, so as to insure their getting what they intend.

Night Lights are liable not to last the time that they profess (frequently going out an hour or two after lighting); to be affected by the temperature of the room they are burnt in; to be injured by keeping any length of time, and to have an unpleasant smell. The manufacturers consider that, by use of materials secured to them by several patents, and by long experience in the manufacture, that they have overcome these difficulties; and they therefore beg, that should any attempted substitutes be recommended, they may be carefully compared as to all the above particulars.

N.B.—The wine-glass-shaped Lamp, on which is stamped "Clarke's Patent," is that recommended for the Albert Lights.

Price's Patent Candle Company, Belmont, Vauxhall.

METCALFE'S ALKALINE TOOTH-POWDER will be found to be the best that has yet been produced; it contains no acids, nor anything that can injure the finest enamel; it thoroughly removes the tartar and all impurities, produces that beautiful white appearance so much to be desired, and its fragrant perfume tends to sweeten and purify the breath. M. and Co., from the many years they have been celebrated as Tooth-Brush Makers, have had opportunities (that occur to few) of testing the relative merits of those powders that have been brought before the public. They have now succeeded in procuring the receipt from which the above Powder is prepared, and confidently recommend its universal adoption. Wholesale and retail at Metcalfe, Bingley, and Co.'s, Brush-Makers to H.R.H. Prince Albert, 2*s.* per box. Caution.—The genuine Powder will have the Royal Arms, combined with those of H.R.H. Prince Albert, on the lid of the box, and the signature and address of the firm, thus: "Metcalfe, Bingley, and Co., 130 B, Oxford-street, London."

TOOTHACHE PERMANENTLY CURED by using BRANDE'S ENAMEL for filling decaying Teeth, and rendering them sound and painless. Price 1*s.* Enough for several Teeth. The only substance approved by the medical faculty, as being unattended with pain or danger, and the good effects of which are permanent.

Sold by all Chemists in the United Kingdom. Twenty really authorised Testimonials accompany each box, with full directions for use. Sent free by return of post by J. WILLIS, 24, EAST TEMPLE CHAMBERS, WHITEFRIARS, FLEET-STREET, LONDON, in return for thirteen penny stamps.

CAUTION.—The great success of this preparation has induced numerous unskilful persons to produce spurious imitations, and to copy BRANDE'S ENAMEL advertisements. It is needful, therefore, to guard against such impositions, by seeing that the name of John Willis accompanies each packet.

HOME GROWN SEEDS, CARRIAGE FREE.
NEW GARDEN SEEDS AT LOW PRICES.

JOHN SUTTON AND SONS have now harvested and arranged for sale all their new GARDEN SEEDS, and would especially recommend the under-mentioned for early sowing:

NEW PEAS.	Per Quart—s. d.
Sutton's Early Champion, the forwardest sort known	1 0
Champion of England	0 10
Fairbeard's Surprise	0 9
Auvergne	0 9
Warner's Emperor	0 10
Sutton's Early Goliah	0 10
Early Warwick	0 6
Burbridge's Eclipse	0 9
Prince Albert	0 8
Isherwood Railway	0 9
Early Kent	0 8
Bishop's New Long-podded	1 0

BEANS. Per Quart—s. d.	
Johnson's Wonderful	0 6
Marshall's Prolific	0 6
Earliest Longpod	0 5
New Royal Cluster	0 6
Sion House, forcing	1 4
Newington Wonder, do.	1 4
CAULIFLOWER.	Per oz.
True Walcheren	1 6
Early London White	1 3
CUCUMBER.	Per Packet.
Sion House Improved	1 0
Berkshire Champion	1 0
Victory of Bath	1 0
Cuthill's Black Spine	0 6
EARLY POTATOES.	Per Peck.
True Ash-leaf Kidney	2 6
Soden's Early Oxford	3 0
True Early Ten-weeks	3 6
Sutton's Early Frame	2 6
Grigor's Early Round	2 0
Lawson's Early Globe	2 0
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The Gardeners' Chronicle.

SATURDAY, NOVEMBER 30, 1850.

MEETINGS FOR THE ENSUING WEEK.

MONDAY,	Dec. 2	Entomological	8 P.M.
		Chemical	8 P.M.
		British Architects	8 P.M.
TUESDAY,	— 3	Horticultural	2 P.M.
		Linnean	8 P.M.
		Civil Engineers	8 P.M.
		Pathological	8 P.M.
WEDNESDAY,	— 4	Society of Arts	8 P.M.
		Geological	8½P.M.
THURSDAY,	— 5	Zoological	3 P.M.
		Antiquarian	8 P.M.
		Royal	8½P.M.
SATURDAY,	— 7	Asiatic	2 P.M.
		Royal Botanic	3½P.M.
		Medical	8 P.M.

THE manner in which the races of plants are affected by CLIMATE is one so eminently horticultural that it can hardly be too much illustrated by facts. Even the most minute fixed deviations become worthy of record if they can be shown to be permanent and really to be consequent upon the action of meteorological phænomena. The supply of this class of facts, up to the present time, is so scanty that no theory or rational speculation can be safely founded upon them; and what is worse, they are in many cases apocryphal, to say the least. We should, therefore, be glad to find the intelligent readers of the *Gardeners' Chronicle* disposed to discuss this matter, either at length, or in some of its more limited forms. And in order to raise the question, we venture to bring under their notice the following case.

Mr. HENFREY, in a late number of the "Botanical Gazette," in the course of a consideration of the nature of the species of plants, has the following passage:—"It is stated also that the *first* Apples, Pears, and Peaches taken to Virginia, *produced mere crabs*, but by degrees were converted into excellent kinds, being the stock from which those now commonly grown there have descended; and, what is very striking, these races differ from the races growing in the old world, which furnished the original seeds, varying in a different direction under the different climate." The point to which we would just now draw attention, is that in italics. Mr. HENFREY's authority for this statement is the following passage in CHEVREUL's ingenious essay on "Species." The author's words are these:—"In North America, neither Pear-trees, nor Apple-trees, nor Peach-trees, exist in a wild state, belonging to the species of our own continent. The Europeans, in settling there about three centuries since, carried thither the seeds of these trees; but instead of reproducing our cultivated variety, *they yielded*, at least in Virginia, *in the first generation, trees producing nothing but wild fruit, too austere to be eaten by people accustomed to our cultivated fruits.* The seeds of the American fruits of this first generation, produced trees whose fruit was a little less bad than those of the preceding generation; and finally, from generation to generation, there was a perceptible improvement, but still of such a nature that the fruits last produced are still inferior to our own; and, what is remarkable, those which have improved the most from seed differ from the fruits of Europe in taste and perfume. These facts, which M. POITEAU collected in Virginia five-and-forty years ago, prove the modifications produced by a succession of generations of plants, the issue of a single seed, and at the same time justify my definition of a species. And if it is said that the seeds of the first fruit trees sent to Virginia could not have belonged to varieties possessing qualities of the same excellence as the varieties now cultivated, nevertheless the fact would remain that *fruits gathered in Virginia were absolutely different from those which their ancestors produced at the same time in Europe.*"

The question then which we should like to raise is, *whether we have any certain evidence that the seeds of cultivated fruit trees of high quality revert immediately to the state of wildings*, upon being raised *in a distant colony*. Other important questions are involved in M. CHEVREUL's argument, but it will be most convenient to limit the inquiry for the present to the simple point above described. And we should be thankful to any correspondent who has personal knowledge of what happens in this respect, or who has information, not personal, on which he can rely, if he will communicate it to us for publication. If the statement adopted by M. CHEVREUL is true, then we must have the same instantaneous deterioration of cultivated fruits when the seeds are sown in our colonies at the present day, as is said to have happened three centuries ago. Is this so? can it be so?

IN a recent number of DICKENS's *Household Words*, is an admirable account of the manner in which one of the working clergy surmounted difficulties, at which most men would have been appalled. In a parish, steeped to the lips in poverty, he succeeded in building churches, founding and supporting schools, and introducing reformations of all kinds. The secret of his success was contained in three small words. "I'LL TRY," was the spell with which he worked his wonders. No difficulty deterred him from *trying;* with a resolute mind, good sense and patience, he found that all human obstacles were capable of being removed from his path. He commenced his labours in the midst of want, misery, and ignorance; he ended in a scene of ease, comfort, and intelligence.

Gardening presents, in another way, abundant illustrations of the same truth. Look where we will, the potency of "I'LL TRY," is manifest; it is the *open sesame* of horticulture. To take some recent cases, let us first look at Orchideous epiphytes. It is not a quarter of a century since they were regarded as uncultivable; a friend of ours determined *to try*, and we have already arrived at proposals to grow them for the million. Then we were assured that Cape Heaths could not become every-day objects of greenhouse decoration. The country gardeners were of opinion that the attempt was hopeless; there was a secret in it; it was very well for LEE and KENNEDY; they knew how; but in the country, Heaths would not grow; at last they *tried* in earnest, and the difficulty is forgotten. Roses in pots were pronounced unattainable; and wretched enough were the earliest examples; but men *tried and tried* again, until they have become the glory of the summer. Just now we are informed that Pansies can't be grown and shown in pots; if the growers *try*, and use a little common sense, they will succeed in this as in other things.

A more important matter than nursing a Pansy in a flower-pot is the cultivation of "American plants;" and here again the virtues of "I'll try" become apparent. We are aware that people are to be found in all directions who assert, as Mr. MACPHERSON declares*, that *they have tried them; that all in their part of the country have tried them, and that every one has been disappointed; they will not do with them.*" But when we look a little into the manner in which the trial has been made, we find that it consisted in buying a lot of plants, and putting them into places wholly foreign to their nature and habits. This is well pointed out by the writer whose little book we have just quoted, from which we make the following extract, with a few verbal alterations.

"That *they must have bog and be planted in the shade*, has always been the prevailing opinion; consequently, some cold corner is frequently selected, the soil taken out, perhaps to an unnecessary depth, and the bed filled with rich peat, in which the plants are placed. Here they grow luxuriantly; but soon, in their dark and shady situations lose their blooming properties, the branches of the surrounding trees form a canopy over-head, and the pernicious drip from their leaves renders them sickly, dirty, and meagre; while, perhaps, some of their rougher neighbours, Portugal or common Laurels, gain the ascendancy, and smother their more slow-growing companions. In this case they are soon forgotten, and the American ground is only known by name; it becomes a receptacle of the sweepings of walks, and a harbour for refuse; the gardener takes no interest in the matter, and his master quietly remarks, when he sees the American plants flourishing elsewhere, *that he has tried them and they would not do.* If not planted in such a situation as the one just named, they are perhaps within the reach of the roots of some well-established Limes, or, what is worse, of that robber the Elm, whose depredations the horticultural and agricultural world is well acquainted with. These roots soon turn towards the well-filled granary, and fasten on the rich and far-fetched soil. To hungry invaders like these, the beautiful strangers can offer no resistance. Although able to stand the scorching heat of a meridian sun—to flower almost on the margin of perpetual snow—to flourish luxuriantly in the wild glen, or to brave the tempest on the mountain-top; yet here, under the very eye of man, they perish. No horticultural physician is consulted as to their disease; they are left to their fate; the roots of their powerful foes form a net round the balls of earth they brought with them from the nursery, and suck away the little nourishment remaining there. In other cases a good situation is selected, far removed from overtopping boughs or underground invaders; clumps are formed on a lawn, and the centre of the beds rises *considerably above the level of the surrounding turf, to give what is generally termed effect to the plants.* Here it is expected they must thrive, and for a time all goes on well, till the ground becomes hard, and the fibres of the plants have filled the soil with their hair-like roots. Probably they have bloomed finely, and now make an effort to grow, and provide wood and flower-buds for the following year; only to be accomplished by the aid of a large supply of moisture at their roots. But how is this to be obtained? The months of June and July are very frequently dry, and when rain falls it is in torrents; this cannot benefit plants placed on convex beds, off which the water runs, and stands round the margin in a puddle: the consequence is soon seen by the sickly state of their drooping leaves. The passing shower has merely refreshed the roots at the surface, and, like the cup of TANTALUS, heightened their affliction. They may lift their sapless foliage for a short time; but a few noontide suns prove it to be only the last effort of expiring nature. Their withered leaves rattle in the wind like the parchment label that spake their rank and character, when brought from the nursery, and in this state they are shown, in order to silence and convince unbelievers that they have been tried *and will not do.*"

We need not say that this sort of trying must carry failure along with it. In trying, as in most things, common sense will be found a companion, without which no progress can be made. There is no common sense in the trials which Mr. MACPHERSON so truly describes. What are called American plants are all alike in this respect, that they have extremely fine hair-like roots, containing in themselves no reservoir of moisture, and therefore requiring to be continually surrounded by dampness. In the presence of dryness the roots immediately wither, and never revive. Dampness seems indeed to be more important to them than soil; for we find them growing on the branches of trees, like epiphytes, in climates where the air is unceasingly charged with moisture.

What the gardener has to do, then, in providing for his American plants is, to keep them below the surface of the surrounding ground, so that what rain falls may be retained in it; and to give them a kind of soil which offers little resistance to the passage of hair-like roots. In this lies, as we have stated on many former occasions, the whole art of growing Rhododendrons, Azaleas, and similar plants, in the

* WATERER's System of Growing the Rhododendron, Azalea, Kalmia, &c., by W. B. MACPHERSON. 12mo. SIMPKIN. Pp. 46.

greatest perfection. A man who tries to preserve his soil damp, and to provide a light porous soil, must be an uncommonly dull fellow if he cannot succeed.

The Woking and Bagshot American plants are the world's wonder. The marvellous exhibitions made by Mr. Hosea Waterer and the Bagshot growers have excited much curiosity as to the where and how such results are attained. The place where Mr. Hosea Waterer, the greatest of these cultivators, grows his plants is described with accuracy by Mr. Macpherson as being seated in the midst of a bleak, barren common, without shelter or shade, exposed to the burning heat of summer, and open to the rude blasts of winter, and suffering both from early frosts in autumn and late ones in spring. Even at Midsummer the young shoot is not safe in this ungenial climate. Yet, in such a situation as this, the finest American plants in Europe are grown for sale. Rhododendron *trees* half a century old, Kalmias two yards through, florid Andromedas (*A. floribunda*) scarcely inferior in size, with gorgeous Azaleas, and endless throngs of Heaths and Arbutes, cover acres of this Woking waste. The whole secret of its excellence consists in the soil being soft and never getting dry enough to affect the delicate roots. Constant subsoil moisture, in spite of 4 feet drainage, secures the hardy American plants against everything they have to fear. As for cold, it is their weakest enemy.

That the precise nature of the soil in which they grow is immaterial has been admitted by all the best growers. This was particularly insisted upon by Messrs. Standish and Noble in a pamphlet to which we drew attention some time since. Mr. Macpherson takes the same view.

"The preparation of the ground, he observes, is very simple; in most cases 15 to 18 inches of soil is sufficient, and this may consist of *leaf mould, maiden loam, sandy grit, rotten turf,* or any other light earth *that will allow the water to enter and pass freely to the sponge-like roots,* which it will readily do if the surfaces of the beds are laid flat. Attention should also be paid to plant them so close that in two or three years the branches may overspread the ground in which they grow, as they flourish better when the branches shade their roots; and the flowers produce a finer effect when they mingle their different colours and shades together. The margins of the beds should be well planted with hardy Heaths, Ledums, Vacciniums, and other dwarf-growing plants. Lilium superbum, lanceolatum punctatum, and others of that tribe, will look well in masses between the plants, and will not require removal. For ornamental pieces of water, or planting on the margins of streams, no plant is so well adapted as the Rhododendron. Floating islands can readily be formed of refuse timber made into rafts, on which brushwood or wattle-hurdles should be laid, covered with rushes or flags; the plants being placed on this, to be filled round the balls with leaf-mould is all they require; they can then be drifted to any part of the lake, and will there grow luxuriantly, and soon become a cover for water-fowl and game."

The reader will observe that these are the statements of men of long practice, and admit of no question. Some views of the same kind were expressed by Mr. Forsyth, a very experienced gardener, in our columns a short time since (p. 436). And we would particularly refer the reader to the suggestions there made as to the manner in which proper soil can be most inexpensively made. For the season is at hand when materials can be best collected for preparing such artificial mixtures in readiness for planting in the approaching spring.

GARDENS IN THE NORTH OF ENGLAND, SCOTLAND, AND IRELAND.—No. IV.

Glasgow.—Here there is a botanic garden maintained by the town, but it is too much within the influence of the smoke to flourish; and, I take it, the climate is not very favourable to vegetation, and the Glasgowians are probably too much occupied with their commercial affairs to take much interest in the garden. The houses are large, old, and rambling, and the collection not very interesting; there was a large collection of Orchidaceous plants, and nothing could be more kind and attentive than Mr. Murray, the curator. The plants were not in very good condition; the naming of several appeared doubtful, and the garden is kept up by the 6*d.* entrance fee, and a sale of cut flowers. I believe it is not used by students or for lecturers.

Crossing over to Belfast, nothing could be more striking than the contrast. The Botanic Garden there is in excellent order; the out-door plants arranged systematically, principally in long narrow borders, containing a single row of plants, with a neat Grass path betwixt each, the names conspicuously marked against each plant, and so arranged that as you go down the rows, the names of plants on the left-hand face you, and as you return the names of the plants on the right are facing. Lord Clarendon, when he lately visited these gardens, truly and elegantly observed,—"these borders were like the pages of a living book." I own that till I had seen the Belfast Garden, I had not much faith in the utility of Botanic Gardens. In addition to the borders containing the hardy herbaceous plants and annuals, there is a large collection of hardy shrubs and trees, and also a very complete collection of hardy Ferns and aquatic plants, admirably well arranged. The walks and grounds are beautifully laid out, and the whole kept in excellent order, doing the highest credit to Mr. Ferguson, the curator. There are some good stoves and greenhouses, and also a very tolerable collection of Orchidaceous plants and Ferns, and particularly some good specimens of Cattleya, and Odontoglossum grande, &c., in flower. But both here, at Glasgow, and at Dublin, there are but few of the rarer eastern Orchidaceous plants cultivated. Although too much cannot be said of the beauty and arrangement of these gardens, still the same error has been occasionally committed here as was noticed with respect to the Derby Arboretum; the specimens of rare trees have been planted too close together, and there is the want of a "prophetic eye" in the planter. Mr. Ferguson said this might, to a certain extent, be remedied, and the appearance of nakedness obviated by planting two specimens at the same time, and as they grow removing one of them. I forgot to observe whether he practised what he preached. The admission is open to strangers, and to subscribers and their families, on a small payment, as this is the only means of keeping up the garden. The grounds adjoin those of the beautiful building of the new Queen's College, and it is probable they will be joined to them; and I should hope the students of the college will obtain the advantage of the gardens for study, as at Dublin; the college, however, contributing to the support of the gardens by some small endowment.

Dublin College Garden, though neither so extensive nor so well known as the gardens of Glasnevin, yet is admirably kept, with many very interesting plants, and the Orchidaceous plants well grown: the collection is not large, but there are some fine specimens of good kinds, and it is particularly rich in tropical Ferns. No person should omit seeing this garden: Mr. Bain, in the absence of the curator, Mr. M'Kay (whose "Flora of Ireland" is well known), is very attentive to strangers; and I believe the admission is to all applicants, but I omitted to inquire. In the stove is the great plant of the Dragon-tree which lately flowered, and an account of which has appeared in the *Chronicle;* and there is also a fine specimen of the Skrew Pine. Lectures are delivered at the Garden. *Dodman.*

EXTRACT FROM A MEMOIR ON THE STRUCTURE AND COMPOSITION OF THE SUGAR-CANE.

By M. Payen, "Comptes Rendus," May, 1849.

According to M. Payen, sugar exists in a crystallised state, resembling sugar-candy, in all the thin-sided cylindrical cells which surround the woody bundles and vessels of the Sugar-cane, from the axis of the stem to the second row of the most woody fibres.

"These cells in the ripe Sugar-canes become yellow when washed in pure water and placed in contact with iodine, and the colour is heightened by the application of sulphuric acid, which disunites the cellulose.

"When, however, the azotised matter in the small thin-sided vessels, and also the azotised and woody substances in the cells containing sugar are removed by caustic soda, several curious phenomena are produced under the double reaction of the acid and iodine; the small pitted vessels whilst disuniting become tinged with a light blue.

"The interior of the sugar cells, the part last formed, swells rapidly, and passes to the state in which particles of disunited cellulose are found in hydrated starch. This part then, of course, is coloured deep blue. The azotised corpuscles adhering to this inner layer separate from it, and are distinguished by the peculiar orange colour of the light granular outline which they form parallel to the inner swollen sides of the cell.

"The outer membranes, those first formed, being more compact, are not so much disaggregated; they swell, however, form sinuous folds, and separate at places from the neighbouring cells, but still retain the orange-yellow colour they acquired under the influence of the double chemical action.

"If a thin slice of the Sugar-cane, after being washed in pure water, is acted upon by a solution of caustic soda or potash, all those parts of the tissues which contain woody matter turn yellow, whilst the little pitted vessels and the cuticle become semi-transparent and colourless. This shows that the latter parts contain no woody matter at all.

"The yellow colour thus produced by the alkaline reaction disappears altogether if the parts so coloured be washed with pure water and are then placed in contact with an excess of acetic acid. This acid renders the field of the microsope very brilliant.

"If the action of caustic potash or soda on a thin slice of the cane be heightened by evaporating the alkaline solution nearly to dryness, and the slice be then washed, it will be seen that the woody bundles have been completely separated the one from the other; the same thing happens to the little pitted vessels, which do not occupy the space they did previous to the experiment. All the other parts of the tissue when separating under the action of iodine and concentrated sulphuric acid are coloured indigo blue, whence it appears that they consist of pure cellulose.

"The cellulose of the tissues of younger and less ripe canes can be purified much more quickly and by much weaker reagents. Indeed if a thin slice of the middle of the stem of a green Sugar-cane, only one-third grown, be taken and treated with—1, pure water; 2, a solution of iodine in water and alcohol; and 3, with concentrated sulphuric acid, the epidermis and the cellular tissue lying next under it become coloured with deep orange; the woody fibres become separated, and together with the large pitted vessels (of which there are two in every woody bundle) take and keep an orange-yellow colour; the small pitted vessels turn greenish blue and separate quickly; whilst the sugar cells pass from yellow to green, and then indigo violet, swelling and separating little by little.

"A portion of the lower white part, which was completely enveloped by the sheathing leaves of a young Sugar-cane, and the woody tissue of which was still tender, was subjected to the same reagents. Iodine dissolved in water coloured the whole of its tissues, except the small pitted vessels, yellow; the addition of a drop of sulphuric acid produced a most curious and pretty effect; the outer hairs, yellow on their external cuticle and their internal granular membrane, became violet in the thickness of their swollen sides; the cuticle and epidermis of the stem acquired a deep orange tint, the subjacent cellular tissue was tinged blue in the thickness of all its cells, and the same tint was visible in the small pitted vessels, so that there was a blue cylindrical bundle surrounded by orange-yellow tissue, thus; 1st, there were the large pitted vessels with the 14 or 18 tubes adhering to each of them; then came the fusiform tissue over-lying them; and 3dly, the slightly woody fibres. In the middle of the yellow sides of the latter could be seen the inner layer of recently formed cellulose detaching itself in an irregular swollen blueish ring.

"The cells of tissue still younger than the last had all of them a roundish or elliptical nucleus of delicate azotised tissue, the diameter of which was about one-tenth of that of the cell; a quantity of granules of azotised matter adhered to the inner surface of all the cell walls. Numerous but excessively small grains of starch were visible; successive additions of iodine and sulphuric acid stained the epidermis; the woody bundles and all the azotised bodies permanently deep yellow; all the tubes, vessels, and cells swelled, became dark violet-coloured, and separated from each other; the dissolution soon becoming more complete, the blue sides disappeared, bringing into view the isolated brownish-yellow epidermis and all the orange-yellow azotised corpuscles which adhered to the interior of the destroyed cellular membranes.

"Thin slices of a lateral bud whose leaves were only about an inch in length, when treated in a similar way, exhibited a bright orange-yellow colour in the epidermis of the leaves and the axis, whilst all the rest of the tissues rapidly became violet-coloured whilst being decomposed.

"Lastly, all the stems and leaves of newly-formed shoots contain a great quantity of starch granules. Starch occurs in the stems principally, in the tissues lying immediately beneath the epidermis, and in the cellular tissue containing sugar situate all round the vascular bundles. The leaves also contain large quantities of starchy substances situate in the firm cellular tissue surrounding the vessels of the nervures, and extending from one face of the leaf to the other.

"It has been ascertained by chemical analysis that a green cane contains half as much sugar, 30 per cent. less tissue, and three times as much organic substances and salts as a ripe one. Similar differences would no doubt explain the impossibility of extracting cane sugar with any profit in countries where, in consequence of the coldness of their climates, the cane cannot become sufficiently ripe; for it is certain that organic matters and salts present great obstacles to the crystallisation of sugar.

"The nodes of a Sugar-cane are composed of a compact tissue consisting principally of thick-sided woody fibres, in which the cavities of the cells are, in consequence of their thick sides, small, and where, besides, the cells containing sugar are much smaller and less numerous than elsewhere. It is easy to understand, then, that the quantity of sugar in the nodes themselves is only about half that found in the other parts of the stem.

"Another fact, at first sight remarkable, but which might have been anticipated from the structure of the nodes, is that they contain as much water as all the other parts of the stem put together. This is because the larger quantity of cellulose and woody incrusting matter in some parts is compensated by the smaller quantity of sugar in other parts of the nodes.

ON THE CULTIVATION OF THE PINGUICULA ORCHIOIDES.

By C. D. Bouché, Inspector of the Royal Botanic Garden of Berlin.

The cultivation of bog plants is always attended with more or less of difficulty, as is that of the Pinguicula orchioides, an elegant little plant, whose rather fleshy leaves are spread on the ground, in the form of a rosette, from the centre of which spring, in the course of the summer, several stalks of from 4 to 6 inches in height, bearing single violet-coloured highly ornamental flowers. It is a native of the swamps of the southern states of North America.

The soil on which this plant thrives the best consists, for the most part, of Moss, mixed only with a little of some kind of light earth, rich in humus, peat earth being

the best; and in order that the somewhat slimy foliage may not be soiled by sand, or other extraneous particles, I cover the pot with living Moss (Hypnum). As the roots do not extend far, flat 4-inch pots are large enough; but I put these within other flat pots, 8 to 10 inches in diameter, and I completely fill the interval with living Moss. I put an 8 or 9-inch bell-glass over the whole, and I place underneath it a pan, kept full of water, in order that the pot may constantly imbibe moisture, so as to become saturated. For the summer, the plants are best placed in a pit in the shade, without bottom-heat, with the lights open night and day. In the winter they should have a light situation, close to the glass, in a greenhouse of about 8° of temperature.

In order that the water may not become putrescent and injurious to the plant, the Moss between the pots should be well purified about once a week, by copious aspersions of clean water allowed to run through, and off at the bottom.

Treated in the above manner, some specimens of this charming plant attained, this summer, a diameter of 6 inches, and flowered abundantly.

During the winter the larger leaves die off, whilst smaller ones are formed, closely folded over each other, into a bud of 1 inch, or 1½ in diameter.

The plant is increased by division, as it usually separates naturally, after flowering, into several. The best time for planting is in March, before the larger summer leaves are developed.

NOTES OF A TRAVELLER.—No. XIII.

Chinese Nursery Gardens at Shanghae.—In my last letter I gave you some account of the English gardens at Shanghae, and shall now describe some of the Chinese nursery gardens of that place. At Shanghae, although a place of great trade, few rich men reside; and consequently there are none of those pretty mandarin's gardens which are met with in towns like Ningpo. But its nurseries are places of great interest. About two miles from the south-west corner of the city there is one which is now well known to foreign residents as the "South Garden." It was one of those in which I found many new plants on my first visit to China. When I reached Shanghae this time, I took an early opportunity of paying a visit to the garden, and my old friends to whom it belongs.

"Ah, you have come back;" "Are you well?" "How did the plants get home?" "Were they much admired in England?" were the questions which were rapidly put to me by the old nurseryman and his sons; at the same time they brought a chair, and asked me to sit down under the awning of the cottage. I told them that most of the plants had arrived safely in England, that they had been greatly admired, and that the beautiful Weigela had even attracted the notice of her Majesty the Queen. All these statements, more particularly the last, seemed to give them great pleasure; and they doubtless fancied the Weigela of more value ever afterwards.

This little garden covers about an acre of land, and is surrounded, like many of these places, by a ditch, which is connected with canals through which the tide ebbs and flows twice a day. On entering the gate, the first object which one notices is the gardener's house. It is a rude building of one story, and contains the old couple, two sons with wives, and a large number of young children. The Chinese in the country live always in little colonies of this description. When a son marries, the wife is brought home, and a portion of the building is set apart for their use. Here they live together in the most harmonious manner, and the grand-children, when they grow up and marry, occupy a part of the same buildings, rarely leaving the place of their birth.

Having first accepted the kind invitation to sit down and sip the national beverage in Chinese style, I then led the way into the garden. Here are many of those beautiful plants introduced by the Horticultural Society of London from 1843 to 1846. Amongst some pots at the entrance there were nice plants of the now well known Weigela already noticed, the pretty Indigofera decora, Forsythia viridissima, and a fine white variety of Wistaria sinensis. Round the sides of the ditch just mentioned were many magnificent specimens of Edgeworthia chrysantha, and Gardenia florida Fortuniana, growing in the open ground. Some of the Gardenias were 4 feet high and 15 feet in circumference. When covered with its large Camellia-looking blossoms, it looks extremely handsome, and at all times forms a pretty evergreen bush. In a bed in the middle of the garden, the star-like white variety of Platycodon grandiflorum was in full bloom, and near it another bed of Dielytra spectabilis. Both these looked very handsome, particularly the latter; its large purse-like blooms of a clear red colour, tipped with white, and hanging down gracefully from a curved spike, and its mountan-like leaves render it a most interesting plant, and one which will become a great favourite in English gardens. Several kinds of Roses were growing in pots, and amongst them the new yellow, or salmon-coloured, introduced by the Horticultural Society. This Rose deserves more notice at home than it has yet had; and it will have it, when it is better known and properly treated. It should be planted out at the foot of a wall with a southern or western aspect, and allowed to scramble over it. It grows rapidly; the flowers are of a striking colour, and are produced in great profusion. Nice plants of Viburnum plicatum, and V. macrocephalum, were also noticed, both in pots and also in the open ground.

In this garden there are some young plants of a very interesting species of Palm (Chamærops), which is cultivated largely on the most exposed sides of hills in the provinces of Chekiang and Kiangnan, for the sake of its bracts. They are cut or pulled off at certain seasons of the year, and used in the manufacture of ropes, cables for junks, cloaks and hats for agricultural labourers, and for many other useful purposes. If a plant of this description prove hardy on our English hill-sides it would be a most remarkable object, and there is every probability that it may be so. At all events it is well worth a trial, and for this purpose I sent a case of young plants to Sir Wm. Hooker for the Royal Garden at Kew last year. Even if it should not succeed in the valley of the Thames about London, it might in the south of England—say in Devonshire or Cornwall.

In the centre of the garden I am describing, there is the family tomb—a large mound of earth covered with many pretty flowers. Here the old man's fathers for many generations before him lie buried, and here he will sleep among the flowers he loved in his lifetime.

Amongst shrubs and trees which have been longer known than those I have enumerated, this garden contains a good assortment. There are some beds of Reeves' Spiræa (S. Reevesiana), a beautiful shrub; the Chinese Juniper, Hibiscus syriacus, Glycine sinensis, Lagerstrœmias, Peaches, Plums, and the favourite La-mae (Chimonanthus), with which Chinese ladies decorate their hair.

I had now made the circuit of the garden, and came to the little wooden bridge by which I entered, and to the gardener's house. "Sit down and drink tea," said my kind friends, bringing me another cup of the pure beverage, for which I thanked them, and readily accepted their hospitality. Having rested, I then walked onward to the Moutan Gardens, about three miles farther off. But I must reserve my account of these until my next letter, as I have already made this one, I fear, too long. *R. F.*

THE CULTURE OF THE VINE A HELPMATE TO THE CULTURE OF THE MIND; OR, TWO BIRDS KILLED WITH ONE STONE.

[FOR COTTAGERS.]

Culture of the Mind.

The greatest failures, the bitterest disappointments, and almost all absurdity of conduct, arise from the imitation of those we cannot resemble.

A man thinks he can manage a farm or govern others, when he cannot cultivate a garden or govern himself; but if each man does his duty, whatever it may be, well, he will then show his capacity, and create an opportunity of doing more; but no man in any station can, as perfectly as it may be done, perform his duty therein.

You cannot make a silk purse out of a sow's ear.

No. V.—The exact form of training need not be retained, so long as the principle is observed.

Although I have only hitherto described a vertical stem with horizontal arms, yet this form need not be strictly adhered to, if only the young shoots of one year's growth be trained to bear the next, and so on. For instance, the stem might be vertical and the rods trained horizontally. Or, with a wall of only a few feet in height, the Vine might be trained in the form of a fan; but with the shoots still as horizontal as possible.

Or again, if you have a wall 20 feet high, a gable end or quoin, for instance, you should have two Vines; one to cover the lower 10 feet (for the rods will not ripen their wood to a much greater height), and one with a clean stem of 10 feet before its horizontal arms are formed, to cover the upper part of the wall. But if the surface of the wall be very much broken, and it becomes difficult to pursue this manner of training, it were better, perhaps, to try the spur method (the usual plan adopted), which is this: Fill the wall with wood, and in the autumn cut back all the young wood of the year's growth to two or three buds; and this shortened shoot is called a spur. But even in this case I should recommend a constant removal every two or three years of the wood from which the spurs spring. *C. A.*

BRITISH SONG BIRDS.

No. VII.—Building a house is tedious work. Day after day the operations go on, but with little or no present visible progress. Still, everything must have a beginning; and no house can be properly erected without first laying a foundation. Thus have I acted, in the treatment of my subject; bearing in lively remembrance the notable remark of Mrs. Glass, of immortal memory, than whom I wish no brighter nor better example to imitate.

If I have, perchance, been dry, prolix, and precise in my matter-of-fact directions, it has been with the single view of paving the way for the better enjoyment, hereafter, of the work of our hands. The benefit derivable from an attentive perusal of apparently minor matters of detail, will soon become evident, nor is the "marrow" of our subject even now far distant.

I come now, *pari passu*, to the discussion of "How to store an aviary." This is a matter which requires no little judgment; for if birds, by nature quarrelsome, were admitted indiscriminately to congregate under one roof, the result would be anarchy, confusion,—bloodshed.

The names of the principal intended "settlers," may be given as follows:—Aberdevines, bullfinches, chaffinches, canaries, goldfinches, linnets, redpoles, twites, yellowhammers. The foregoing are hard-billed, granivorous, or seed birds.

The soft-billed, or insectivorous birds, are thrushes, blackcaps, arbour-birds, cole-tits, blue (or Tom) tits, marsh-tits, garden-warblers, hedge-sparrows, nightingales, redstarts, reed-sparrows, stonechats, whinchats, titlarks, woodlarks (no sky-larks must be admitted), whitethroats, wagtails.

From the above list, it will be seen that blackbirds, the ox-eye, robin, and wren, are excluded. The three first are quite inadmissible,—blackbirds being spiteful and malicious; ox-eyes, or joe-bents, murderous assassins.* The latter often feel an inclination to look too closely into the phrenological development of their neighbour's head. There could be no reasonable objection to this, if it were done from a laudable curiosity, and "in a regular way." But their invariable *modus operandi* is,—first to split the skull of their "subject" (*à-la*-woodpecker "tapping");" then to examine its contents; and, finally, to devour it greedily. This remarkable operation, frequently repeated, would, I hardly need say, soon depopulate the aviary.

The robin, or redbreast, must be regarded altogether as an alien—such is the ferocity of his natural disposition. Who would credit this, when viewing him seated aloft, on the highest twig of yonder tall tree; every nerve visibly agitated, and his little throat widely distended; while, in the joyousness of his nature, he is pouring forth the "most eloquent music?" Does he not look a perfect paragon of harmlessness, virtue, and innocence?

Such is he NOT. In him may be traced the unerring principle of Nature; for every specimen of his tribe—in *this* "rule" there are NO "exceptions"—is invariably alike in disposition, tyrannical, despotic, jealous, sanguinarily cruel. When noticing the "habits" of this bird, under its proper head, I shall have much that is interesting to dwell upon—much to record that I have never heard of, nor seen noticed by naturalists. I dearly love the rogue, aye, dearly; but, as a faithful historian, I dare not give him "a false character."

The wren is excluded, because he is a very tender, delicate bird, in confinement; impatient, also, of the constant bustle and excitement inseparable from an aviary. If ANY of this tribe be admitted, let it be two or three willow wrens. They are an exquisitely-formed bird, minutely small, and the most lively of their race.

The excess of numbers should be in favour of goldfinches, linnets, canaries, redpoles, and bullfinches. These birds are "showy" as well as sprightly, and are scarcely ever "mopish" in an aviary. Thus do they, by their activity and playfulness, keep the inmates in a state of constant jollity. *William Kidd, New Road, Hammersmith.*

VILLA AND SUBURBAN GARDENING.

As spring opens upon us, our hearts gladden at the sight of her first floral contributions; and if we could only get the same feelings to jog our memories at other periods of the year, our gardens would not unfrequently yield us much more enjoyment than they usually do. I shall, therefore, on this occasion, remind my readers of a few of those early flowering plants, common, not costly, yet not less beautiful on that account, which, if just looked after at the right season, when they exhibit few attractions, will, in due time, prove acquisitions.

The varieties of common Primroses are easily obtained; and as regards fragrance and simple beauty, few plants are more desirable, for they grow almost in any situation in which they may be placed. Then the Christmas Rose, and winter Aconite, together with the Snowdrops, thrust their heads through the snow, and cheer our hearts, even although the ground may be enshrouded in a white mantle. The well known Pansy (Viola tricolor), if sown in autumn, will add a pleasing variety to any garden, and without the trouble and coddling which the florists' varieties require. Then there is the common Polyanthus, with its hundred kinds, which a packet of seed, at little expense, would produce; and what lover of sweet flowers would be without them?—as well as the Cowslip, and common Wallflower? Again, Old Queen Stocks, as gorgeous flowers, are unsurpassed; and the Gentians and sprightly Hepaticas are humble, but beautiful. Narcissi, of themselves, would make a spring garden gay, though, of late years, they seem to have disappeared almost entirely; and so have the charming little Scillas, which form beautiful beds. These few old and common plants, with little or no attention, might be made to render our gardens beautiful through the earlier months, when little meets the eye, but bare stakes and cheerless borders. The great effort of modern gardeners is the production of a blaze of flowers during the summer and autumn months. In a multitude of cases, the borders and beds are cleared on the first appearance of frost; they are then turned over with the spade, and left in this naked condition, until all apprehensions of spring frosts are gone. Now, it has often occurred to me, that only half the use, and less than half the pleasure of the flower garden is thus afforded us; the extra trouble, and small expense of adding another and a more charming season of floral beauty is within the reach of all who possess a garden. The plants above enumerated, and many more that might be named, would cost nothing compared with the sum which some amateurs expend upon half a dozen favourite florist flowers. The great rage for the latter, indeed, has banished a purer taste from amongst us, and rendered

* There is only one phrenological organ in the head of an ox-eye. It is the organ of "murder." Thus is he predestinated to fulfil his deadly mission, and thus is the truth of the "science" triumphantly confirmed.

our gardens bare of more interesting flowers. Except during the dog days, many of our gardens contain little to induce the individual of refined ideas, or the weakly in constitution, to leave their rooms for the enjoyment of a garden on a mild spring morning. The visitor returns chilled, and with a morbid impression that winter still prevails. None of the spring favourites of early youth are to be seen. All that belongs to the flower garden is cooped up in frames and greenhouses; but then there can be no good reason why the garden should be at least six months of the year in fallow. *Pharo.*

Home Correspondence.

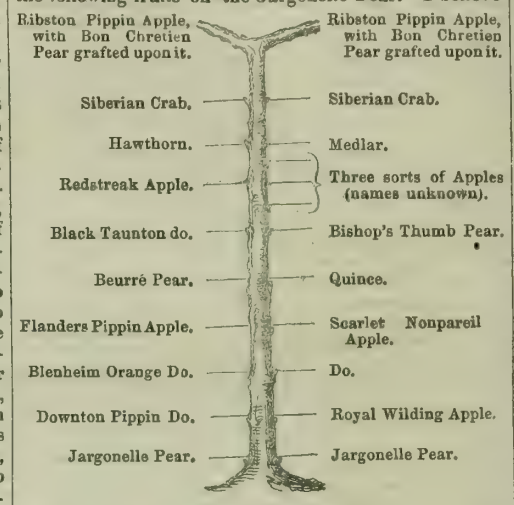
Select Plums.—I have in some degree laid myself open to misapprehension, in the observations I made a few weeks since upon the best sorts of Plums. In saying that the Plums there named are all that a gardener need cultivate, I did not of course mean to exclude new seedlings or imported varieties which I had never seen, and consequently could not know anything about. Mr. Rivers's seedling from the Precoce de Tours may possibly be a great improvement upon its parent, which I recommended because it is the best very early Plum that I am acquainted with—a great desideratum to a gentleman's gardener who has to furnish a certain number of dishes of fruit every day for dessert. Every one of the other kinds I named would be preferred to the Precoce de Tours if they ripened at the same period; and if the "Early Prolific" of Mr. Rivers is equal to it in earliness, and so superior in every other good quality as "R." represents, it is much to be regretted that Mr. R.'s seedling has not been made more generally known. It seems that I underrated the Reine Claude de Bavay, which in my ignorance I supposed to be little known in this country, and therefore thought that a notice of it by a disinterested person might be useful to fruit growers. Had I been aware that it had fruited so frequently in England, as to warrant "R." in stating so confidently, that "south of the Trent it ripens as nearly as possible, allowing for the variation of our seasons, from the middle to the end of September," I should not have noticed it. But is it not rather singular that a Plum which must have been gathered in the first week of October, in the vicinity of Paris, should generally ripen in England (we will suppose near Sawbridgeworth), a fortnight sooner, especially as the difference of climate in favour of Paris is, I understand, a week or ten days. With the view of clearing up this discrepancy, I have caused some inquiries to be made concerning the usual time of ripening of this Plum, from the person who sent the fruit to England, but have not yet received an answer. I beg to assure "R.," however, that I have no desire to disparage the Reine Claude de Bavay; and if, upon a better acquaintance with her Bavayan majesty, we find that her merits have not been exaggerated, then I shall say, "Long may she reign over us." The mere anticipation of a Plum superior in flavour to a Greengage makes one's mouth water. As to the Queen Mother Plum, the large kind I alluded to was not supposed by me to be that variety, but by the person from whom I received it, and I understand that it was obtained from a nursery under that evidently erroneous name. It is more in the way of the Red Magnum Bonum, but apparently quite distinct from that sort. I am promised grafts of both the large Plums I mentioned, and as "R." is evidently well informed in the matter of fruits, I will willingly send a shoot of each (provided I get them), for him to any place in London he will name. I cultivate Coe's Late Red against a wall (where also most of my Plums are grown), and find it useful on account of its extreme lateness; in other respects it is not worthy of being named in the same day as his Golden Drop. The "Zwetsche" (what an awful name!) I am unacquainted with. I have recurred to this subject, because I consider the Plum one of the most useful fruits cultivated in a gentleman's garden. In a fresh state it is valuable for dessert and for tarts; it makes an excellent confection when dried; and for jam, it is superior to either the Gooseberry or the Strawberry. Can as much be said in praise of the Peach? *J. B. W.*

Irish Peat Charcoal.—"H. P." complains (p. 741) of damage done to the leaves of his Cucumber plants by the exposure to heated air of charcoal steeped in urine. What other result could he have expected if he had reflected for a moment on the agent which he employed? It was known to our great grandfathers that urine is destructive to the leaves and stems of plants when poured upon them, and it must be evident that the gases of urine evolved by heat are alike injurious to vegetation. In proportion, however, to its evil influence on the foliage is it beneficial to the roots, if applied at proper seasons and diluted with 3½ gallons of water to half a gallon of urine. The peat charcoal had nothing more to do with the matter than a sponge used in a similar manner would have had; and I should advise "H. P." to place as much of the charcoal as possible on the surface of the mould, as a means of purifying the air, and thus assisting in restoring the injured foliage to health; but it must be unsteeped. *C. L., Hammersmith.*

Fuchsia spectabilis.—In addition to what was stated last week concerning this plant, I have thought it might be useful to give its treatment from the cutting state upwards. I strike my cuttings under a bell-glass in the coolest part of a greenhouse; the glass being taken off and wiped occasionally. When struck, they are potted off into three-inch pots. In the end of June they have a shift, and they receive another in the end of September, after which they grow all winter. In the beginning of March they have another shift, and receive the final one in the beginning of May. In the end of May they are placed out of doors in an east aspect, where they receive the morning sun till 10 or 11 o'clock, and afterwards stand in a half shade the remainder of the day. The soil which I use is half loam and half crushed bones, old Mushroom dung, and sand, using it in a finer state for cuttings than for older plants. I apply the same treatment to all my large Fuchsias. At the end of the season they are all thrown away, and a young stock is reared every spring; observe, however, that F. spectabilis makes a splendid winter plant for the conservatory, for which purpose shorten the side branches back in autumn, and do not expose it too much to the rays of the sun. In last week's number the word sand was misprinted soot. *D. Kidd, Garnstone Park.*

Cyrtoceras reflexum and multiflorum.—I beg to inform "T. B" that these plants are easily cultivated, and with good management flower a long time. Take a young healthy plant in January; if it requires cutting down, to make it bushy, do so; place it in a moist stove, and keep it rather dry at the root until it has broken well, then give it a liberal potting into three parts Wimbledon peat and one part leaf-mould, with a good mixture of white sand and plenty of drainage. After potting, give a good watering, and place your plant in a bottom-heat of 90°. Let your stove range from 80° to 90° by day and 70° at night, keeping it well charged with moisture in the daytime. When the plants have grown from a foot to 18 inches, gradually remove them from the bottom-heat and place them away from currents of air. Be cautious in not over-watering. If you follow these instructions your plants will reward you with a profusion of flowers and fine foliage. *A Subscriber.*

Grafting.—An ingenious young friend has grafted the following fruits on the Jargonelle Pear. I believe



they all bore fruit this year. *F. D., Pershore.*

Vines.—I have a greenhouse, in which all the Vines bore fruit last year, but this year five of them have not, and the leaves of these five are still green and flourishing, while on the others they have died off as usual. I shall be thankful for any advice that might enable me to remedy the evil next year. *H. M., near Worcester.* [It is impossible to give an opinion without knowing more of the circumstances. Where are the roots of these five luxuriating so late in the season?]

Vine Borders.—As to the condition necessary for the successful cultivation of Grape Vines, gardeners are almost unanimously agreed. According to Dr. Lindley, these conditions are a warm, light, dry, shallow border; or in other words (and which may perhaps allow of less latitude of construction), a well drained porous border so situated as to receive the full influence of the sun. But although nearly all gardeners agree on these points, yet the means employed to obtain them are almost as universally opposed to each other. To this fact your columns bear ample testimony. In making a border, the first object should be to obtain a dry bottom, or such as will carry off water as fast as it percolates through the superincumbent soil, and in some measure prevent the roots from going into the subsoil. In some situations this latter is a point of no small importance. My method, in all situations, would be to dig out the border to the depth of 1 foot, shovelling out the loose soil so as to leave a solid bottom. On this I would put 6 or 8 inches of fine gravel, ramming it well as it is put in, until it becomes quite hard. In front and parallel with the border, there should be a gravel walk the depth of the border, and having a drain in the middle lower than the latter, and, if circumstances admit of it, the border would be improved by the same provision being made at each end of it. By this arrangement perfect drainage, as well as the greatest amount of terrestrial warmth would be secured, at least as far as they could be without artificial heating, and the roots would not penetrate through such a bottom to any extent detrimental to them. Though to many my method may not appear different from the common practice of bottoming with loose rubble, such as broken bricks, lime rubbish, &c, yet its effects are very dissimilar; firm gravel equally resists the penetration of roots with concrete, whilst, unlike concrete, it offers no resistance to free drainage. The size of border will be determined by circumstances; but, in making a border, it should be borne in mind that some reciprocity between root and branch is to be maintained, consequently the size should be proportionate to the extent of surface to be covered by the branches of the Vines. The next thing to be considered is the soil; and as I have no faith in quackery of any description, more especially in the cooking of soils (if I may be allowed the term), I shall not trouble your readers with anything very elaborate on this point. Its mechanical texture and arrangement is, in my opinion, of far more importance than any other qualities it may possess. [Hear, hear.] Let turf be taken off some old pasture, 4 or 5 inches thick; but, if the land is very strong, it should only be about half that thickness. It should be procured in dry weather, two or three months before it is required for use, and stacked so as to throw off wet. I find this a much better plan than putting the turf in, in a green state. When used, it should be chopped with a sharp spade from the top to the bottom of the heap, each cutting being about 4 or 5 inches broad; by this practice the border will be more uniform in texture than if the turf was put in, in larger pieces. Add to this some good stable dung, mixing all well together in the operation of filling, and this will be all that is requisite. Even the latter I do not recommend for its fertilising properties (as I always prefer applying manure in a liquid state, for in that state only can it be applied discriminately to permanent things such as Vines), but to prevent the running together and baking of the soil. The border should be filled with from 18 inches to 2 feet of this compost, putting it in, in layers about 8 inches thick, and treading each layer as it is put in, so as to make the whole tolerably firm. If done in dry weather, where there is a difficulty in obtaining turf, common garden soil may be mixed with the latter, to the extent of one-half of the whole mass. *D. M.*

——The plan of managing Vine borders propounded by "T. W., Motherwell," p. 709, contains nothing new. It has been in use a much longer period than the system which he condemns. It was practised during my service under the late Mr. M'Donald, gardener at Dalkeith Palace (whose superior knowledge in these matters is well known), 15 years ago, with this addition, viz., there were always some rotten leaves and vegetable mould forked in to keep the top of the border porous, and to prevent the frost from injuring the roots. But the forking up of the borders was not only attended to in the autumn, but through the summer also, which is of more importance than merely stirring in autumn. Great advantage was also derived from the use of liquid manure and soap-suds, when the Vines were in a growing state, but we always avoided cold water from a sunk well. I have followed the above practice for many years, and with great success. I am of opinion that if the roots have not 6 inches of earth upon them, frost will hurt them, and tend more to induce shanking than the evils alluded to by "T. W. M." In early forcing it is essential to have the borders covered with warm dung, in order to assist the roots. Having formerly given a description of the plan I adopted in the formation of my Vineries and Vine borders, when residing at Tynemouth House Gardens (see p. 358, 1847), and having followed out the same system here, I will merely at present give some account of the kind of crops I have obtained, notwithstanding the severe check which the Vines received in their removal from Tynemouth to Pallinsburn House, three years ago. Last year the number of bunches amounted to 120, averaging in weight from 2 to 3 lbs. each; this year the bunches amounted to 250, from 3 to 4 lbs. each; and many of the Black Hamburgh berries measured from 2½ to 3 inches in circumference. Some of the white Muscats did not swell off so well as might have been wished, having allowed too many bunches to remain after thinning. I am convinced that if cutting away the bunches was as much attended to as thinning the berries, we would see better swelled Grapes and finer crops in future years. *Robert Greenfield, Pallinsburn Gardens, Northumberland.*——I have read with interest the judicious remarks on concreting Vine borders, and on badly-coloured Grapes, by Messrs. Fleming and Kidd; but in case some of your readers should imagine that an impenetrable bottom, artificial or natural, for the roots of Vines, is requisite to successful Grape growing, I can state from experience that a loose poor sandy subsoil will produce equally good Grapes. I also find that it is of little consequence whether the roots of Vines are higher than the common ground level or sunk below it, or whether the rays of the sun strike the surface where the roots are or not. What is absolutely necessary is a dry bottom. In regard to dull red or crimson-coloured Grapes making their appearance at times, I can venture to assert that they will do so in some instances, independent of concrete, loose sandy subsoil, or any other appliances, either at top or bottom, however skilfully applied. My opinion is, that red or crimson-coloured Grapes appearing one year, and black another, on the same Vines, is perfectly natural; the cause is cultivating indiscriminately a variety of the Black Hamburgh, called by some the Dutch Hamburgh, but generally named the Black Hamburgh, which, I have no doubt, is a misnomer. Do not, however, let me be misunderstood; unfavourable soil will often produce badly-coloured Grapes, and so will over-cropping, want of air, sometimes too much air, and various other mismanagements, which, probably, very few that have had Vines under their charge, have steered clear of, at some time or other. *G. M., Wetherby, Yorkshire.*

Rendle's Price Current.—There is one fault in

this publication, which is, that it is a "Price Current without the Prices." Excepting German flower seeds, four collections of kitchen-garden, and three of flower-garden seeds, not a word is said of what is to be the demand. Surely, this is an important omission, and a check to purchasing. *Sigma.*

To Protect early Peas from Mice and Birds.—A tenant of mine, who grows early Peas, informs me that, if he sows the seed in rows and covers it with the next spit of soil, as he digs the ground (after the garden method of planting Potatoes), instead of digging the whole and then drawing drills, neither mice nor birds ever discover the Peas. This method, he remarks, not only avoids betraying the position of seeds to the vermin, but also leaves the ground untrodden after digging. *Sigma.*

Water Pipes.—Your clerical correspondent will, I am afraid, find considerable difficulty in procuring the information he wishes, through the medium of your columns—unless he furnishes more data than he has yet given. Having had some experience in carrying out water-works, I, however, venture to offer him a few suggestions. In the first place I would recommend that samples of water be procured from all the sources of supply that are eligibly situated, that is within the shortest distance, and of suitable elevation. These samples should be tested by C. Clark's method of determining the degree of hardness, and those of the lowest number of degrees, denoting the softest water, preferred. Next, the amount yielded by these selected sources should be ascertained by gauging them, and sections taken to those that are sufficient in amount, due regard being paid to seasons of deficient supply. If the distance be considerable, the water should be brought in glazed earthenware pipes, from the spring to the nearest site eligible for a reservoir, and the water from thence laid on with iron pipes. If ample pressure can be obtained, the reservoir should be placed at such height as to render the water available in case of fire, by the insertion of fire plugs at suitable places. The additional cost this will occasion is trifling compared with the benefit of having the best protection from fire. If the supply be at all times adequate to the demand, the reservoir need only be small; if not so, it must be proportionately large, as the supply is liable to diminish. By conducting the water from the spring in earthenware pipes with cemented joints, the water will at all times be free from surface impurities. The actual size of pipe required can be ascertained only from a section of the ground showing the length, fall, and vertical undulation it may make in its course. The size will also be affected by any horizontal bends it may be necessary to give the pipe in laying. These, together with the amount of water required to be delivered in a given time, are requisite before its size can be determined. The smallest sized glazed earthenware pipes (those of 2 inches internal diameter) might be laid. I have used these in the manner recommended, for supplies similar in extent to those required by your correspondent, and found them not only perfectly efficient, but also economical. In laying these pipes a regular descent should be obtained, if practicable, in order that they may not have to sustain pressure. With regard to the selection of pipes, those of glazed earthenware and cast-iron are to be preferred. If inverted horse-shoe tiles are used, as suggested by one of your correspondents, the water will be muddy after showers. An instance recently came under my notice of earthenware pipes laid in puddle, but without cemented joints, having the water flowing through them fouled by surface water making its way through the joints. Suppose that $1\frac{1}{2}$-inch bore pipe is required, the cost will be about 1*s.* 10*d.* per yard, cast-iron, jointed; 3*s.* 3*d.*, glass, jointed; 3*s.* 3*d.*, gutta percha; 4*s.*, lead; and 1*s.* 3*d.*, glazed stoneware pipe, 2 inches diameter, with cemented joints. These prices will vary a little in different localities. Lead is not only objectionable on the score of expense, but is decidedly injurious where pure water has to be conveyed. The purer the water the greater the danger in the use of lead piping. Gutta percha, where expense is no object, may be used; it will bear a considerable pressure. A $\frac{3}{4}$-inch bore tube, $\frac{1}{8}$-inch thick, has been tested with about 750 feet pressure, without failing. Glass pipes will bear a pressure that is almost incredible. From experiments made at Nailsea, glass tubes, 3 feet long, varying from $1\frac{1}{8}$ to $2\frac{3}{4}$ inches internal diameter, with thicknesses of from $\frac{1}{11}$ to $\frac{3}{16}$ of an inch, bore pressures of from 1500 to 3600 feet. Hitherto there has been considerable difficulty in making a tight joint with glass tubes. In conclusion, the best advice I can offer your correspondent is, that he should call in the services of some civil engineer, by which means he will best secure efficiency without incurring needless expense. *J. M. L., Otley, Yorkshire.*

Mossy Walls.—Having some walls under repair that are covered with an ash-coloured hard moss, which it is desirable to remove, can any of your readers inform me if anything can be applied to destroy or loosen it, and cause it to sweep off effectually, thereby avoiding the labour and expense of scraping? *Durham.*

Societies.

Botanical of Edinburgh, *Nov.* 14.—The President in the chair. The Curator gave in a report on the state of the Herbarium, noticing that considerable progress had recently been made in the arrangement of the collections, and that four additional cases had been obtained. Several important additions of foreign plants were likewise noticed. The following papers were read:—

1. *On the British Species of Carex.* By J. M Laren.
2. *Notes of a Botanical Trip to England.* By J. T. Syme.
3. *Notice of the Discovery of Saxifraga Hirculus, in Boovland Moss, Walston, Lanarkshire, in September last.* By G. J. Blackie.

Dr. Balfour noticed the discovery by Mrs. Balfour, in August last, of Ginannia furcellata, of Turner, in Lamlash Bay, Arran. This is the first Scottish station for the plant. The Rev. Dr. Landsborough has subsequently received this species from the same station, dredged by Major Martin, Ardrossan. Specimens of the plant in fructification were shown both in the dry state, and preserved in creosote; and some were exhibited under the microscope. There was exhibited from Mr. C. Lawson a large plant of Tussac Grass, grown in Orkney. Some recently-received tufts of this Grass, when fresh, weighed about 1 cwt.—Dr. Balfour exhibited specimens illustrating the production of vinegar. No. 1 was the so-called Vinegar plant, with vinegar produced by it. 2. Syrup into which the plant had not been introduced, but which had been left for four months undisturbed. In it a peculiar fungus-like growth similar to the Vinegar plant was found, and the fluid had become vinegar. 3d. A specimen of vinegar produced by Vinegar plant which had been filtered, and then allowed to stand for several months, and in which a fungus similar to that called the Vinegar-plant had been formed. Dr. B. thought that the so-called Vinegar plant must be considered the mycelium of some fungus produced in a peculiar fluid, and which acted as a ferment. The addition of any ferment would probably cause a similar production of vinegar.—A peculiar forked variety of Lastrea Filix-mas was exhibited by Mr. Anderson, which he had picked in the neighbourhood of Clonmel.

Garden Memoranda.

Hatfield House.—The greenhouses and pits adjoin the reserve garden, and are principally employed for the propagation and preservation of bedding out stock, of which, as was stated last week, a large supply is required. The forcing garden is detached from all others, and is situated a few hundred yards to the north of the mansion. A considerable space of ground within the walls, independent of that occupied by glass structures, is appropriated to the cultivation of Strawberries, which are planted on broad beds, raised nearly 4 feet above the level of the garden—a method which increases the available space, and causes an earlier and equally abundant production of fruit.

The range of forcing-houses includes three large Vineries, and two Peach-houses. The Vines are planted within the houses, and grown on the rod and spur system; from these Vineries a regular supply of Grapes is obtained, from May until February of the following year. The sorts are black Hamburgh and Muscat of Alexandria, with a few rods of West's St. Peter's and Muscadine. Another instance is presented here of the efficacy of sulphur, applied in subjugating the attacks of mildew on Grapes; spots indicative of the pest were observed on several bunches, shortly before they began to colour. Flowers of sulphur were immediately dusted over every bunch in the house, and a further extension of the plague was effectually stopped. A large house apart from the range is devoted almost exclusively to the cultivation of Figs, the greater number of which are planted out in square bricked compartments. Three successive crops are annually ripened, the supply lasting from June until November. The houses are partially glazed with British sheet glass, 16 oz. to the foot, and no ill effects have ensued from burning; a large number of Strawberries are potted for forcing. Melons and Cucumbers are grown in pits. Pine-apples are not at present cultivated in this establishment.

An ancient and picturesque Oak stands near the garden entrance, measuring 30 feet in circumference; it has been preserved many years from the progress of decay, by the careful application, on every exposed wound and fracture, of a composition made of pitch and chalk, which effectually excludes the entrance of water into the decaying trunk of the tree.

Proceeding to visit the vineyard and kitchen gardens, distant nearly a mile from the house, we cross a broad open space of lawn (which the inhabitants of Hatfield are permitted, by the kindness of the Marquis, to use as a cricket-ground), and enter a noble avenue, "The true colonnade that should lead to a gentleman's mansion." "There is something august and solemn," the author from whom we have borrowed the quotation observes, "in the great avenues of stately Oaks that gather their branches together high in air, and seem to reduce the pedestrians beneath them to mere pigmies." The avenues of Hatfield-park might have suggested this beautiful description; few estates can boast of finer. The celebrated Oak called "Queen Elizabeth's" is included, like Herne's Oak in Windsor park, within the line of the avenue, and commemorates an interesting incident in the life of the Queen, whose name it bears. During the latter part of the reign of Queen Mary, the Princess Elizabeth was detained as a prisoner of state at the palace of Hatfield, but still permitted to wander within the precincts of the royal domain; she had availed herself of this privilege, and was resting at the foot of this ancient Oak, when a messenger who had sought her in vain at the palace, hastened to her here with the intelligence of the death of her sister Mary, and saluted her as Queen.

Pursuing our course from the Queen's Oak, and still enjoying the leafy shade of the stately avenue, we arrive at the vineyard. A castellated building, protected on each side by battlemented walls and flanking towers is the somewhat imposing entrance to this secluded spot. The supposition might be entertained that this formidable fortress guards precious Vines, and treasures their rich vintage; in that we are speedily undeceived. The vineyard exists no longer, but a sufficient compensation is presented in the existing garden, to quell any feelings of disappointment that may chance to arise. The picturesque site of the vineyard is on an abrupt declivity, sloping northwards to the valley of the river Lea, and terminating as it meets the waters of that river. The garden is in the style in fashion some hundreds of years ago, of which it is perhaps an unique example; we enter by a broad walk bounded by quaintly cut hedges of Juniper, and banks of Laurel, which extend along the summit, and running parallel with the wall and towers which protect the garden on the north side; from the centre of this walk, a flight of steps leads to a second walk, cut in the slope of the hill, similar in width to the upper walk, viz., 7 yards; successive flights of turf steps conduct to a third walk, and finally to a space of lawn which slopes gently to the river. The view from the upper walk, following the line of the descending steps, seen through an arch of Yew, springing from trees fashioned into architectural pillars is singularly effective; the river, which is here of considerable breadth, forming the most valuable feature. The second walk runs between a line of Arbor-vitæ and a looming wall of trained Yew trees.

The principal portion of the slope of the hill between the lower walks is occupied by ancient Yew trees, standing closely in formal rows. The long branches of the two external lines of trees have been, at a period comparatively recent, tastefully turned arching to the ground, forming delicious bowered walks. From beneath the central arch we see, right and left, radiating from a centre, avenues and arcades stretching away to the extent of the garden, meeting these bowered walks, which run parallel with the east and west boundary walls. Proceeding by one of the shady paths that lead slanting down the hill side, we gain the third terrace, which assumes here the semicircular form of the lower part of the garden. A row of Yew trees springs from the inferior slope, many amongst them being of great size and beauty. Their lower boughs are trained downwards, taking a broad circle round the stem, and forming vast buttresses; and other boughs interlacing, produce a lofty screen of foliage, pierced by windows, through which the lawn below, embellished with splendid specimens of Yew trees, dipping their branches into the river, is seen with peculiar effect. The banks and slopes, wherever exposed, are clothed with Laurels trained closely to the ground, and on other places with dwarf Yews treated in the same manner. The only deciduous tree in this garden of evergreens, is a noble Purple Beech, which occupies one of the slopes, and somewhat interferes with the general uniformity of the place.

Miscellaneous.

Underwood.—Scarcely any plant is equal to the Holly for undergrowth, since it will flourish under trees, and is not limited as to height, and is a thorough evergreen. Privet is superior as a rapid grower and of a denser habit, if not too much drawn up; but it is deficient in the size of the leaves, and in not being entirely evergreen. Rhododendrons thrive exceedingly well under shade; but require careful watering for a year or two. Portugal Laurels and common Laurels will endure some amount of it, but are injured by an excessive quantity. The Box tree and the Yew are more capable of withstanding its influence. And the evergreen Berberry, as a low-growing bush, is an admirable plant for placing beneath trees. All these are evergreen, and, of course, so much the more adapted for filling up permanently the space under trees. Elders, Dogwoods, the Norway Maple, Snowberries, and even Lilacs, as deciduous plants, will thrive beneath shade, though they cannot be expected to bloom much in that position. *Kemp on Small Gardens.*

Rise and Fall of Horticultural Enthusiasm.—Mrs. Dingley, on her part, consoled herself, and indulged her pride of housekeeping, by raising—thanks to Tisdal, and several large treatises on gardening—excellent tender vegetables, and Asparagus unequalled in size and flavour: that was her triumph. While Swift was at Moor Park, with Sir William Temple, he had learnt from William III. to cut them in the Dutch fashion, and had communicated the royal receipt to Mrs. Dingley. Tisdal had no prejudices in the matter of horticulture, and cut the Asparagus like a Dutchman. Moreover, Swift had told Mrs. Dingley that the King ate the white part of the Asparagus, as well as the head; and from that time forth, Mrs Dingley never saw Asparagus at table without repeating the anecdote, and urging her guests to follow the august example. Tisdal had an excellent set of teeth, and accordingly ate the whites of the Asparagus. But Swift, in his partiality for Stella, would not allow that the vegetable department was better conducted than the poultry-yard: he took delight in tormenting Dinglibus, and denying all her successes. The Asparagus, he said, was stringy; the green Peas too old; the French Beans tasted like Tares; the Artichokes were overgrown Thistles; in short, nothing escaped his censure. Mrs. Dingley was used to Swift's sarcasms, and a few jokes more or less would not have discouraged her, had she been really fond of gardening; but the fact was, that she was bored by all things, and in all places. She had been pleased by the notion of

living in the country only because she was tired of the town. She eagerly seized the first pretext for disgust; and as even the least ingenious persons are never at a loss how to gloss over their faults, she one fine morning found out the walls round her garden, and declared that such a place did not deserve to be called the country. From that moment the good Doctor's servitude was at an end. The garden was left to a hired labourer for two days in the month, and to Providence for the other 28; and the flowers got no more water, except what fell from heaven. Great indeed was the change in Dingley's kingdom. The Strawberries ran over the gravel-walks like mad; the humble Parsley shot up to the height of a couple of feet, and gave itself the airs of a shrub; the very Asparagus—the royal Asparagus—filled with guilty emulation, pointed towards the skies with their scarlet tops. Encouraged by the disorder, Thistles, Nettles, in short a whole host of parasites, took up their quarters in the beds. The rakes and spades were covered with rust—all was anarchy. The evil example of the poultry-yard had spread to the kitchen-garden; the vegetables also grew old and tough, and, like the fowls, were left to die a natural death. Luckily, Trim was a market town, and the cook well knew how to console herself. *Lady Duff Gordon's Stella and Vanessa.*

Calendar of Operations.

(For the ensuing week.)

PLANT DEPARTMENT.

Besides the usual ripening of Gloxinias, Achimenes, and other bulbous and tuberous rooted plants, there are many other stove plants which require placing in a cooler temperature during their season of rest. Under this head will be included Clerodendron squamatum and similar species, Allamanda, Aphelandras, Vincas, and various others which have done flowering; and which, as the late autumn and winter flowering plants go out of bloom, should be subjected to a cooler and drier treatment, until the proper season returns for their new growth; taking care that they are not allowed to become altogether dry—or loss of roots, and death, will be the consequence. If a stock of young plants has been reared, many of the older ones may be discarded, thus making room for others which it is more desirable to preserve. Let every exertion be made not only to keep in check, but also to eradicate insects, especially the "mealy bug," and those of the scale family. They breed more or less, all the year round, but more slowly at this season than during spring and summer. If, therefore, vigorous and persevering endeavours are made to destroy them, by examining the plants, if possible once a week, their numbers will be so much reduced in the spring, that sufficient time may be spared, even in that busy season, to cure effectually this worst of all garden nuisances. The best of all tools and materials for this purpose, are the sponge and syringe, with hot water (110° to 130°) and soft soap. Let every tie be unfastened, as these are their favourite hiding places during winter; and where wire trellises are used, they should also be thoroughly washed with hot water.

FORCING DEPARTMENT.

Peach-house.—Those who intend to have Peaches in their first house ripe by the middle of May, should commence forcing immediately. If the greater part of the roots are in the outside border, it should be covered with dry litter, Fern, or tree leaves, which in their turn should be kept in their places and nearly concealed by a slight sprinkling of earth. The interior temperature should be very moderate at first, commencing at 40° as night temperature, and increasing very gradually till the season is fairly turned; the day temperature may rise 10° by fire-heat, and 15° to 20° by sun-heat. Unless the weather is very damp a slight syringing may be given every day with tepid water; and when the weather turns out very fine, the operation may be repeated. It must, however, be distinctly understood that these syringings are not to be construed into delugings, but that the water is to fall on the plants like fine dew. The early Peach house or a pit under similar treatment will be excellently adapted for starting Strawberries to produce a very early crop; but the latter should if possible be plunged into a bed of leaves or some other material, to give a gentle bottom-heat; and if such can be introduced into the Peach house, the warmth and moisture therefrom will be beneficial to the Peaches also. The pit, however, is preferable for the Strawberries, as they can have the mild bottom-heat and still be near the glass. Fig-house.—Let the shoots be untied, and if any pruning is necessary it should be performed at the same time, but if proper attention has been paid to stopping the shoots during summer very little pruning with the knife will be required; in fact it will be confined to removing a few shoots where they are too crowded to admit of their being properly trained. The shoots should be cleaned and washed over with sulphur and soft-soap, taking care not to injure the buds when performing these operations. The walls, woodwork, and glass should be thoroughly cleaned; and any necessary paintings, colouring, or other repairs done forthwith. After these matters are duly attended to, and the trees neatly re-trained, the house will be in good winter order. There is a great advantage in getting this sort of work done as early as possible, as it allows of the houses being used for stowing away plants which merely require protection; and it leaves the hands clear in spring for the many and pressing operations which will then require attention.

FLOWER GARDEN AND SHRUBBERIES.

The flower garden being now cleared of all its summer occupants, the beds neatly forked up, and the turf, &c., put in order, let the walks have their share of attention, raising any low places, to give them an uniform shape, and to throw off the wet into the side drains. When they are dry, let the roller be frequently passed over them, as by making the surface of a well formed walk firm, the wet will pass off more freely, and it will consequently be in less danger of injury by the frost. The enjoyment of a garden during winter depends so much upon the state of the walks, as regards smoothness and dryness, that too much attention can scarcely be paid to them.

FLORISTS' FLOWERS.

Amongst the care and attentions bestowed on other favourites of the amateurs, such as storing Dahlias, planting Tulips, wintering (placing in frames) Carnations and Picotees, the Ranunculus must not be forgotten; the roots should be examined, and if sound and healthy, the bed may be prepared. We have seen first-rate blooms, the result of widely different systems, from beds prepared in the following manner. The first was simply as follows: the soil was excavated to the depth of 12 inches, and some turf sods or flag being pared from a neighbouring meadow, about two inches in thickness, this was laid in regular layers Grass side downward, trampling it firmly down, till the bed was filled, the upper sods remaining exposed to the action of frost, &c.; at the proper time of planting, a rake was drawn over it, just loosing the soil; the claws of the roots were pressed down, and then covered with two inches prepared vegetable compost. Ranunculuses like a firm subsoil, and the flowers produced by this system were superb. The other was by covering a bed, previously well dug, with a dressing of night-soil, an inch in thickness; this being exposed to frost and rain of winter, was washed into the soil. At planting time, the surface was slightly moved with a small fork, and the roots planted and covered as above: the bloom was abundant and fine; but we are bound to add, the roots suffered from the excessive stimulant.

HARDY FRUIT GARDEN.

Whenever the state of the weather will permit of the soil being worked, it is a great advantage to fork the ground about the fruit bushes lightly over, and at the same time to work in some well-rotted manure amongst the roots; the same operation buries the leaves, and gives to the whole a neat and orderly appearance. The requisite pruning, staking, and tying should be first performed, to prevent the necessity of treading upon the ground, after it has been forked. If the Raspberry canes were not thinned in the autumn, they should now be reduced to four of the strongest on each stool, rejecting any which may have been deteriorated, by producing fruit in autumn; and, as a matter of course, entirely removing all the old canes. The stakes should then be examined, and renewed, if necessary, fixing them perfectly upright in straight lines, and cutting them to one uniform height, that the whole may bear evidence of good workmanship. When forking in the top dressings, a little pains should be taken to destroy the embryo suckers which are visible on any of the roots.

State of the Weather near London, for the week ending Nov. 28, 1850, as observed at the Horticultural Garden, Chiswick.

Nov.	Moon's Age.	Barometer.		Temperature. Of the Air.			Of the Earth.		Wind.	Rain.
		Max.	Min.	Max.	Min.	Mean	1 foot deep.	2 feet deep.		
Friday.. 22	18	29.643	29.429	55	44	49.5	46	47½	S.	.22
Satur.. 23	19	29.551	29.337	53	39	46.0	48	48	S.W.	.26
Sunday . 24	20	29.305	29.018	56	43	49.5	47	48	S.W.	.46
Monday 25	21	29.317	29.093	52	31	41.5	47½	48	S.W.	.04
Tues. .. 26	((	29.411	29.358	45	34	39 5	46	48	S.W	.02
Wed. .. 27	23	29.904	29.591	44	26	35.0	45	47	N.	.01
Thurs .. 28	24	30.302	30.139	41	21	31.0	43	46	N.E.	.00
Average....		29.619	29.423	49.4	34.0	41.7	46 1	47.5		1.01

Nov. 22—Overcast; rain.
— 23—Rain; overcast; clear at night.
— 24—Very boisterous throughout, with heavy rain; clear at night.
— 25—Clear; cloudy; sunshine occasionally; clear; rain.
— 26—Hazy clouds; overcast; cloudy at night.
— 27—Cloudy; slight rain; clear and frosty.
— 28—Slight frost; clear and fine; frosty.
Mean temperature of the week equal to the average.

State of the Weather at Chiswick during the last 24 years, for the ensuing week, ending Dec. 7, 1850.

Dec.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds. N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 1	49.2	37.2	43.2	10	0.25 in.	1	2	2	2	2	6	7	2
Mon. 2	48.1	36.4	42.3	12	0.51	1	2	1	1	3	8	2	6
Tues 3	47.5	36.7	42.1	11	0.17	1	3	2	1	2	7	7	1
Wed. 4	46.8	36.2	41.5	10	0.28	4	2	—	2	4	7	4	1
Thurs. 5	47.0	35.0	41.0	13	0.12	—	1	1	1	2	8	7	4
Friday 6	46.7	37.2	42 0	14	0.14	1	1	1	1	4	9	6	1
Satur. 7	47.2	37.0	42.1	15	0.14	2	1	2	2	4	4	5	4

The highest temperature during the above period occurred on the 3d, 1847, and 6th, 1848—therm. 57 deg.; and the lowest on the 5th and 6th, 1844—therm. 14 deg.

Notices to Correspondents.

American Blight: *Sub.* Your trees are approaching the condition represented (by woodcut) and described at page 755, 1849. Wash the branches with spirits of tar, very strong vinegar, or oil. Apply them with a painter's brush.‡

Apple Pips: *Amateur.* Keep them in dry sand till March. Then choose a light dry place in your garden, and sow them half an inch deep. They will soon come up, and require no other care than to be kept clear of weeds. There is no more art in raising fruit trees from seed than in raising Radishes. They may all be treated in the manner above described; only stones should be planted deeper—say an inch.

Books: *H L.* Probably Meyen "On the Geographical Distribution of Plants" will suit you. The original is in German, but there is a translation published by the Ray Society.—*J J.* Designs in the Italian style may be found in Loudon's "Encyclopædia of Gardening."‡

Fruit Trees: *C S.* Besides a sufficient quantity of Morello Cherries, you may plant against a north aspect the Jargonelle Pear, Orleans Plum, and Dumelow's Seedling Apple.‖—*J S H.* For an east aspect wall, in an exposed situation, you may try the Ribston Pippin, Blenheim Pippin, and Scarlet Nonpareil; Knight's Monarch Pear; and the Royale Hâtive and Jefferson Plums.‖—*G S.* The following arrangement is adapted for the objects you have in view: for the south aspect of wall, along the north side of garden, Royale Hâtive, Green-gage, Purple-gage, and Washington Plums; May Duke Cherry; and Glout Morceau Pear. For the north aspect of same wall: three Morello and three Kentish Cherries, or you may substitute in part the Orleans Plum and Shropshire Damson. For the east wall: five Alderton Plums; two white Magnum Bonum do.; two Bigarreau Cherries; one Jargonelle Pear. For the west wall: two Marie Louise, one Passe Colmar; two Knight's Monarch Pears; two Jefferson, one Coe's Golden Drop, two Orleans Plums. You may plant the north aspect of the wall on south side with Dumelow's Seedling Apple. You state that you have a very free bearing and excellent Plum, under the name of Alderton, or Battle Plum. There are old trees of the sort in Sussex, and it is the same as Denyer's Victoria.‖

Glazing: *D C.* There is nothing like putty, if well made. Very likely your's contains chalk, as well as white-lead. It is the easiest to apply, the easiest to remove, dries fastest; only take care that the sashes are dry when they are puttied.

Grapes: *G R.* The Esperione is of a bluish black, and more acid than the black Hamburgh. There is an excellent drawing of it in the "Transactions of the Horticultural Society," 1st series, vol. iii., *p.* 93.‖

Heating: *Ballandyne.* No doubt brick flues will be the cheapest for your purpose.

Insects: *Reader.* The most effectual way of clearing Vines, Peaches, and Plums of scale, is to wash them with water at the temperature of from 150° to 160°.‡

Manure: *G T.* Undoubtedly hen manure will suit Vines perfectly; but it must be abundantly mixed with decayed vegetable matter, or some other neutral substance, or it will burn the roots. It is of the nature of guano, and quite as powerful.‡

Names of Fruits: *I E G.* The Blenheim Pippin.‖—*G F M., Limerick.* The Scarlet Crofton; much esteemed by many, others prefer a brisker flavoured Apple.‖—*Daniel Judd.* Not known.—*W W.* The Black Hamburgh.‖

Names of Plants: *J W G.* Eupatorium glandulosum.—*J P.* 1, Hypericum pulchrum; 2, Veronica officinalis; 3, Narthecium ossifragum; 4, Helianthemum vulgare; 5, Malva moschata; 6, Erythræa Centaurium; 7, Œnanthe fistulosa; 8, Epilobium angustifolium; 9, Cratægus sanguinea; 10, If this is a native of "shady banks" in Britain it is Blechnum boreale, and which has a representative in the southern hemisphere scarcely distinct. *S.*

Potatoes: *C J C.* The Ash-leaved Kidney is one of the best early Potatoes for a south border; but the Early Manley is nearly as early and more prolific; therefore you should plant some of both sorts.‖

Roses: *Tyro.* It might not do much harm to the inserted buds in Dog-roses that were budded in July and August last to remove the stocks just now; but we should certainly prefer permitting them to stand where they are till next autumn, in order to allow the buds to branch out before removal.‡

Schemes: *M B.* You will be very foolish if you invest your money in any such scheme. If you have a fancy for Californian risks, you had better go to the country yourself—if you are young, strong, bold, and hard-working.

Shallots: *Sigma.* Deficiency of warmth no doubt caused the rotting you mention. The soil *must* be as warm and dry as it can be in England.‡

Strawberries: *C J C.* The best and earliest for a south border, is the Keens' Seedling. The British Queen will succeed it; and still later, the Elton.‖

Turnips: *G S.* The "Teltower Rübe" is the small Berlin, or Teltow Turnip, used for *ragouts;* it requires a soft sandy soil.‖

Vines: *H P.* The new Black Hamburgh Grape, crossed with the Muscat of Alexandria, will probably succeed in any situation that would suit the Black Hamburgh. This much may at least be inferred from the statements received along with the specimens sent us. More than this, we cannot state of it at present. The Black Hamburgh, Royal Muscadine and Black Prince will succeed in a Vinery without early forcing.‖—*A Country Parson.* Better have two Black Hamburghs and a Black Prince. Your selection of white Grapes will do very well.‖—*W D F.* In a Vinery that has had the mildew so prevalent this year upon the Grapes it will do no harm to whitewash or otherwise dress the wood of the Vines and house generally now. The Pear will usually succeed by grafting on a Hawthorn.‡

Vine Borders: *J S H.* For these a clayey loam is not good, and what is generally called sandy loam is too poor. A loam that is rich and friable is to be preferred. When put into a garden pot, and frequently watered, it should still remain pervious to water: 2½ feet is a good depth, 6 inches of which may be cow-dung. By building up the turf so as to dry it, and then pen sheep upon it for some time, you can make sure of an excellent composition for a Vine border, with a less proportion of cow-dung than that above-mentioned; but, otherwise, let the turfy loam and fresh cow-dung be disposed in alternate layers, and after a few months turn and well mix the whole. Bone-dust and lime-rubbish may also be introduced.‖—*F H S.* As you are F. H. S., you must have the Society's Journal, in which, at p. 305, vol. ii., you will find a plan of warming Vine borders as much as they can be by merely natural means. You may, however, wish to apply artificial heat, in which case you cannot perhaps do better than adopt Fleming's plan, at p. 288 of our vol. for 1845. For depth of border, &c., see our Home Correspondence of to-day.‡

Vines in Pots: *An Amateur.* The Black Hamburgh and Royal Muscadine are the best sorts to grow in pots. Soil, rich turfy loam and bone-dust; guano in plenty of water may be supplied occasionally. The same plants will bear successively if always well managed. By these means you may easily grow the plants strong enough to bear fruit, and yet they may not be disposed to do so, unless you could contrive to train them on a similar principle to that adopted against walls by the Vine growers at Fontainebleau and Thomery. Such proposal is new; to many it will doubtless appear strange, but we are convinced the result would prove satisfactory. Instead of one upright shoot, train two horizontally; from each of these train two uprights for bearers; stop the latter when they have attained the height of 2 or 2½ feet, and cut them back at every winter pruning to the lowest eyes. You can safely remove Vines as you propose.‖

Walls. Nails should never be driven into the face of the bricks, and but very little way into the joints. Attention being paid to this, after many years, perhaps half a century, the joints may require fresh pointing; but then the wall will be nearly as good as new. Thin cement will effectually close up the nail-holes with which your bricks are already so much defaced; and you can in future either profit by the above remarks, or use studs, which any respectable ironmonger will be able to procure for you.‖

Misc: *L B S.* Plumbago Larpentæ will stand the winter in the neighbourhood of Dublin without protection. Christmas Roses like wet heavy land.‡—*W D C.* You can have the Number. Enclose six postage stamps.

SEEDLING FLOWERS.

Azalea: *G D.* Large and showy, but coarse.*

Chrysanthemums: *E M.* All good; but not better than kinds, possessing similar colours, already in cultivation. Of the Pompons, Criterion, L. Miellez, and La Gitana are the best. The yellows are too much alike.*

Hollyhock: *Reader.* Two finely-shaped blooms, full, and very free from "pockets."*

THE LONDON MANURE COMPANY beg to offer as under:
LONDON MANURE COMPANY'S WHEAT MANURE FOR AUTUMN SOWING.
CONCENTRATED URATE. SUPERPHOSPHATE OF LIME.
PERUVIAN GUANO. SULPHATE OF AMMONIA.
FISHERY AND AGRICULTURAL SALT, GYPSUM, and every artificial Manure; also a constant supply of English and Foreign LINSEED CAKE of the best quality.
The London Manure Company will guarantee the Guano they supply to be free from the slightest adulteration.
Bridge-street, Blackfriars. EDWARD PURSER, Secretary.

MANURES.—The following Manures are manufactured at Mr. LAWES's Factory, Deptford Creek:

Clover Manure, per ton	...£11 0 0
Turnip Manure, do.	... 7 0 0
Superphosphate of Lime	... 7 0 0
Sulphuric Acid and Coprolites ...	... 5 0 0

Office, 69, King William-street, City, London.
N.B. Peruvian Guano, guaranteed to contain 16 per cent. of Ammonia, 9*l.* 15*s.* per ton; and for 5 tons or more, 9*l.* 10*s.* per ton, in dock. Sulphate of Ammonia, &c.

ARTIFICIAL MANURES.—PRIVATE INSTRUCTIONS in Chemical Analysis and the most approved methods of making Artificial Manures are given by J. C. NESBIT, F.C.S., F.G.S., at the Laboratories, Scientific School, 38, Kennington-lane, London.
Analyses of Soils, Manures, Minerals, &c., performed as usual, on moderate terms.

BY HER MAJESTY'S ROYAL LETTERS PATENT.

PATENT HOTHOUSE WORKS, KING'S ROAD, CHELSEA.
EDENCH invites the attention of Gentlemen about to erect Hothouses, &c., to the vast superiority in every respect possessed by his PATENT HOUSES, which he will warrant superior in every respect to any others. Good Glass from 16 to 21 oz. per foot, 1 foot wide, 3 feet long, furnished, and the Houses, when completed, charged from 1*s.* 3*d.* to 1*s.* 6*d.* per superficial foot, according to size and quantity; on one principle the roof is formed without wood or putty, and on another principle with wood rafters, and the glass put in with putty. Patent Sashes, requiring no paint, from 7*d.* to 9*d.* per foot. HEATING BY HOT WATER.

THE CONICAL BOILERS INVENTED BY JOHN ROGERS, Esq., are supplied and fixed by JOHN SHEWEN, ironmonger, Sevenoaks. Also all kinds of Hot Water Apparatus. For Churches and Public Buildings, Mr. SHEWEN should be consulted, his Warm Air Apparatus being safer, more efficient, and more durable than any other.

IMPORTANT NOTICE—EMIGRANTS are informed MARY WEDLAKE and CO. have from time to time supplied the first settlers to Swan River, Port Natal, and all the Australian Colonies, with AGRICULTURAL IMPLEMENTS; they beg an inspection of their stock, at 118, Fenchurch-street, near the Blackwall Railway. N.B. Persons becoming purchasers may have the benefit of an introduction to parties known to the firm at either of the above-named places.

LAND DRAINING AND IMPROVEMENT COMPANY, 30, Parliament-street, London; and Bedford Circus, Exeter.
This Company having been in active operation for several years, is ready to undertake Works under the Government Loan, or by fixed or annual charges under its Act of Parliament.
Further particulars and references may be obtained at the offices. THOMAS MAY, Secretary.

MESSRS. NESBIT'S CHEMICAL AND AGRICULTURAL SCHOOL, 38, Kennington-lane, London.—A sound practical knowledge of Analytical and Agricultural Chemistry, Geology, Surveying, Levelling, Railway Engineering, &c., may be obtained in Messrs. NESBIT'S Academy, in addition to a good modern education.
Mr. NESBIT'S works on Arithmetic, Mensuration, Gauging, Land Surveying, English Parsing, &c., are published by LONGMAN and Co., and may be had of all Booksellers.

FURZE MACHINE.
COTTAM AND HALLEN have now brought to perfection FIRCHILD'S PATENT FURZE CUTTER AND BRUISER, for the preparing of Furze for Feeding Horses and Cattle. The Machine may be worked by horse-power, and will cut and bruise at the rate of 20 bushels per hour with one horse, a man, and boy; with two horses, 40 bushels per hour; if a steam-engine, in proportion to the power applied. The Machine is now on view at COTTAM and HALLEN's, No. 2, Winsley-street, Oxford-street, where every other description of Agricultural Machinery may be seen.

The Agricultural Gazette.
SATURDAY, NOVEMBER 30, 1850.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

WEDNESDAY,	Dec.	4—Agricultural Society of England.
THURSDAY,	—	5—Agricultural Imp. Society of Ireland.
WEDNESDAY,	—	10—Agricultural Society of England.
THURSDAY,	—	11—Agricultural Imp. Society of Ireland.

CONSIDERABLE discussion has been going on for some time amongst our correspondents respecting the proper state in which farm-yard manure should be applied to the soil. Some, on the one hand, recommending that it should be used tolerably fresh—others keeping it over two seasons. There is one portion of Mr. RIGDEN's practice, as described by Mr. MILNE* in his report of a visit to that gentleman's farm, which seems to offer a fair compromise between this diversity of opinion and practice, to which we think the attention of farmers may be usefully directed.

"The greater part of the manure," says Mr. MILNE, "is laid on in the autumn for crops which are to be sown in the spring, so that the soil has time to be thoroughly impregnated with the elements of fertility required for the particular crop."

We first observed this practice on some strong soils in Roxburghshire; it was there the usual plan to apply the farm-yard manure in the autumn fresh from the folds upon the stubble land intended for Turnips—nothing but bones or guano being used in the spring. This practice was followed by the best results. We also observe at the discussion on Mr. MILNE's report, which took place at a recent meeting of the East of Berwickshire Farmers' Club, that "a favourable opinion is entertained of Mr. RIGDEN's practice of autumn manuring to a certain extent." Some of the speakers also mentioned that they had tried it with advantage.

As we are anxious to recommend this practice, we gladly fortify our recommendation by thus quoting the opinion and practice of other farmers, as we feel assured that wherever this can be done there will be much less hesitation amongst our readers to adopt it, than if the advice had been founded merely on our own authority.

Some will object that by this plan a much greater amount of the valuable matter of the manure will be lost than by fermenting it in heaps. Independently of the unanswerable contradiction given to this objection by the excellent crops produced, we believe that other reasons can be brought forward to render it probable that actually less will go to waste. When manure is thrown up into heaps in the usual fashion, a violent fermentation immediately takes place, evolving so much heat as to drive off almost the whole of the ammonia produced. Such was actually the case with some manure we sent for analysis after being treated in this way; not a trace of ammonia could be found in it. The importance of this ingredient of our crops has been clearly proved, and though we would not agree with the French chemists when they propose to calculate the proportionate value of all manures by the relative quantity of ammonia they contain, we would yet admit that such a total loss as that analysis showed must be a serious deterioration of value. On the other hand, when the manure is spread on the land in a comparatively fresh state, and immediately ploughed in, a very slow fermentation takes place, and the ammonia, as fast as formed, is absorbed by the alumina, which occurs in large proportion in strong soils, and by the humus also existing there: and as the green crop is sown before the hot weather of summer comes on, when a more rapid fermentation would take place, there seems little doubt but that the greater part if not the whole of the ammonia will be saved by this plan.

The other ingredients required by plants, which are found in an insoluble state in the fresh manure, are also protected from the waste of the winter rains, by the extreme slowness with which the fermentation takes place when the manure is applied in the autumn, both because the weather is then cold, and because the material is spread over the land in such small quantities.

It is, however, necessary to guard our readers against indiscriminate adoption of this plan of autumn manuring for green crops. We think it best adapted to the strongest class of Turnip soils, because upon light porous soils we fear that the fermentation would take place too rapidly, in consequence of the free circulation of the air these soils admit. This is however not so much to be regretted, as one great advantage the autumn manuring is capable of affording to strong clay soils (should it be found to answer our expectations on further trial), will be the saving of time in early spring, which will be thus secured; the great difficulty which attends the cultivation of Turnips on these soils being the impossibility of commencing early in the spring. Upon light dry soils no difficulty in this respect is encountered. We would also advise that autumn manuring be confined to clean land, as any root weeds that exist in the soil will be sure to be greatly increased by the practice, and of course the land must be drained.

With these cautions we would recommend the trial of Mr. RIGDEN's plan of autumn manuring. Upon all situations where it is found to answer, it will be of great consequence, because the work will by this means be much forwarded, and a greater breadth of green crop consequently accomplished.

* Report of a Visit to the Farms of Mr. RIGDEN, &c.

ON THE CULTIVATION OF WHEAT.—No. III.

I NOW proceed to lay before your readers the result of a few more experiments. For some time past a difference of opinion has been expressed by our best farmers respecting hoeing Wheat in the spring of the year, when the crop is free from weeds; some maintain that the hoe injures the roots, and thereby causes or gives the plant a greater tendency to fall; also, that, as Wheat requires a firm, solid soil, the land should not be moved, except where it is necessary to clean it. Being myself of this opinion, which had not, however, been confirmed by facts, and as hoeing was very advantageous to many crops, I thought it might not be so prejudicial to Wheat as some imagined; accordingly, the following experiment was made by drilling in October, 1849, two plots of land of about a rood each, contiguous to each other, at intervals of 8 inches, with Girling's Hessingland Wheat, after a crop of good white Clover. Early in the spring of the present year one of the plots was well hand-hoed, although quite free from weeds, and the other plot left without having the soil in any way disturbed.

	Bush.	pks.
Wheat not hoed produced per acre	30	2
Wheat well hoed ditto	28	1

It appears from this trial that it is injurious to hoe Wheat where the land is free from weeds, and consequently it should not be harrowed, or the soil in any way made loose; but where weeds prevail, no doubt can be entertained, but that they ought to be eradicated. And the important point (in the minds of some persons) in growing of Wheat has engaged my attention—viz., the changing of seed, although I ever have been doubtful whether any advantage can be derived from the practice. In the month of October, 1844, one part of a field was drilled with Wheat, at intervals of 7 inches, of the Rattling Jack kind; about a rood from this was measured off, as the Wheat had been grown on my farm here three seasons without change; this I call No. 1. The other part of the field was also drilled in the same manner, on the same day, with the same kind of Wheat, and from the same stack as No. 1, but the year preceding it was sent to be grown on a farm I occupied in Rutland; about a rood, also, from this piece, No. 2, and adjoining No. 1, was measured off; both pieces were after red Clover, eaten on the land by sheep. The next harvest both pieces were reaped on the same day, and when threshed—

	Bush.	pks.
No. 1 produced per acre	39	0
No. 2 ditto ditto	38	1

It appears from this trial that no advantage arises from a change of seed, although the soils were very different, and the distance 40 miles apart (amounting almost to a change of climate) between the lands which produced the seed for this experiment.

The following trial was made many years ago to prove the relative value per acre of drilled and broadcast Wheat. In the month of October, 1823, part of a field was sown broadcast after Clover lea with Wheat, and the remaining part of the field drilled at 7 inches apart between the rows on the same day, with the same quantity of seed per acre, and the same sort of Wheat as the broadcast; 1 rood from each part adjoining was measured off, and produced as follows:

	Bush.	pks.
Drilled Wheat, per acre	34	
Broadcast ditto	33	3

The difference in yield being but little in favour of drilled Wheat, yet it confirms the general opinion that drilling is the best way to insure a plant, and consequently to get a good crop of Wheat; indeed, it appears to have many advantages over any other system of planting. Many excellent crops have been grown from dibbling Wheat, but the trouble, expense, and difficulty in getting it well done by hand has prevented it becoming more general in practice. My Wheat is invariably drilled now (at 8 inches), and deposited as deep in the land as circumstances will admit of, and has not failed in planting well; also, to retain the plant for more than 20 years, except once, when the Wheat was drilled on very light land, after a crop of Rye-grass or Bents, the plant from which was killed by a long and severe frost.

The smut in Wheat has been troublesome to some farmers, and more so on some soils than others. I have known Wheat sown on a farm dry, the seed not having received any preparation for years, and have sown many acres the same myself, without producing smut, until 1849, when a small piece of land was drilled with Wheat in the spring in a dry state, which proved very smutty. Various are the opinions respecting the causes, and many are the remedies applied. Farmers, however, have now a preventive offered to their notice—viz., "Down's Farmers' Friend," which is making its way into general use, the efficacy of which will be seen by the following trial. My practice is frequently to pick some of my best white Wheat for seed, to keep the sort pure and clean; this is done by selecting the whitest, longest, and best grains, and is a very tedious and expensive process. Some Wheat was picked in this way in 1848, and sown on a small plot of land; the produce, however, proved very smutty. This surprised me, as it was not very probable that the persons who picked the Wheat (and it all passed under the observation of two parties) could have selected any smut balls, and the more so as the bulk of the Wheat from which it was taken was apparently quite free from smut. I should at once have put this Wheat away had it not cost me much trouble to procure it; however, I determined on sowing it again, to try the efficacy of "Down's Farmers' Friend;" accordingly, this smutty seed was prepared by the directions given, and as I wished, if possible, that the produce should be clean, the seed received a double dressing, and was sown early in October, 1849. The desired effect was obtained, for I have not seen amongst the bulk grown from it a single smut-ball. Thus it appears that "Down's Farmers' Friend" certainly acts as a preventive against the smut. The way is cheap and easy in preparing the seed, and the Wheat drills much better than from any other method that I have tried. The Wheat can be sown or drilled an hour after preparation, and will keep, if required, any reasonable time without damage.

I must now for the present close this subject, trusting that these statements may be received in the same spirit as that in which they were written—having a tendency to do good. The experiments were made for my own information and advantage, on which I rely and intend to act; they are now before your readers, to use them as they think proper. *T. E. Pawlett, Beeston, Biggleswade, in Bell's Weekly Messenger.*

POULTRY MISCELLANIES.

6. *Remarkable Facts: a. Nests of Eggs, like nests of boxes.*—"I have been wishing I could send to you for some time, having a curiosity in the egg way. It is a perfect egg inclosed within another; the upper shell would not, it appears, bear the moving about in the nest after being laid, and so got crushed under the hen. Evidently it has had a yolk, as the inside is smeared with it; but the inner one is perfect apparently. What makes the montrosity the more remarkable, is that the hen continues to produce these abortions, but differing in form: sometimes they are like this (of which I had two, but broke one in bringing it home); sometimes they are quite small, having only white in them, I imagine, and then again flat-sided; in short, seldom alike. The hen belongs to the person who has reared some of my best chickens this season; she is part Cochin China and part Dorking—very little of either!—the other part unrecognisable. I hear to-day she is to die, but I have a great mind to send over, if I can, and save the dislocation of her neck. Would you like to have the creature, and see with your own eyes such things as you scarcely ever saw before? . . . . I have blown the double-shelled egg without shattering it, and it only waits an opportunity to become yours. *W. H. H.*" Having seen an abortive egg shaped like an hour-glass, with a contraction in the middle, and a bulging part at each end, which is perhaps as great a mis-shape in an egg as it is possible to conceive, the kind offer of being put into possession of this mother of monsters was declined, and the specimen alone accepted as sufficient to content our curiosity. But the other day we met with more "nests of eggs," in a letter from Sir Thomas Browne to his son Edward, July 4, 1679.—"The large egge with another lesser within it was a swann's egge which I sent divers yeares past unto the Royal Societie. I had before met with an egge within an egge, as in hennes' egges and turkeys' egges. I kept any I found in that kind, in a box inscribed *ovula in ovis*. At last I met with a swann's egge of that kind, which I presented to the Royal Societie, having never before nor since mett with another from a swanne."—These strange productions are almost as instructive in the morphology of *ova* in birds, as the unusual growth of leaves on various parts of a plant, are indicative of the plan upon which vegetables progress during their state of increase. The principle of the formation of *ova* in birds is *concentric*. There is the yolk within a mass of denser white, within another mass of thinner white, within a filmy skin, within an earthy shell. And if any agent of over-productiveness is at work in the bird's frame, *the same principle still goes on*; there are either two yolks, both inclosed within one film and one shell, which is the commoner case, or more rarely, as we have seen in the above instances, a complete egg is contained within another complete egg. The additional produce thrown off at one effort is still *concentric*.

b. Twin chicks from one egg.—"I have frequently had cases of double-yolked eggs producing chickens. Last year at S. F. W——I had four chickens in two eggs, and up to the day of their hatching they were alive. I had much faith in the chance of their coming out right, but Nature was exhausted. On a *post mortem* it appeared that they had not room to kick themselves out; the egg was excessively crowded. I regretted much that, on the first chipping of the egg, I had not gradually released them myself. They were all four nice healthy, full-grown, *separate* chickens; and, moreover white Dorkings. At Ebrington, in Gloucestershire, Mr. William Keyte had a black Bantam cock and hen hatched from one egg. They lived, did well, and bred, and I was going to buy them; but when Mr. K.'s poultry was done away with, the little pair of curiosities were killed. Beautiful indeed were they; and my only reason for not having them at first was, that not expecting such a sweeping measure to be adopted against them, I delayed, not knowing exactly where to place them, and being fearful of contaminating my silver birds. I often put double-yolked eggs under hens, but have not yet had one hatched to live. There are many specimens of monsters in that way in the Manchester School of Medicine. They have the egg there in every stage of incubation: that is, specimens most cleverly taken, and moulded in some sort of composition. I should say you will be quite at liberty to notice the two chickens from one egg. Mr. K. told me last week that his mother has one little hen now living from the twin parents. *W. H. H.*" *D.*

Home Correspondence.

A New Fence.—There are many situations in which the want of a good durable material for a protective fence is much felt; that I have to suggest is corrugated galvanised iron. I am not aware if it can be furnished at a price which would be suitable, but the material appears particularly well fitted for the purpose of fencing in many situations, as well as for divisions about farm buildings. It would be very durable, and, when painted, would have even a handsome appearance, from its irregular surface; it would take all curves and angles, and could be very quickly put up. I would propose that uprights of galvanised iron should be firmly fixed in the ground at proper distances; between them a course of bricks should be laid, on which the sheets should rest. The lengths should interlace each other, so that no joinings would be visible, and have some sort of loops through which the uprights would pass and secure the whole. Where the height is above 4 or 5 feet, it would add much to the strength and appearance to have an iron or wooden mould passing along the top, being fixed securely on the tops of the uprights, and thus forming a secure frame. The power of resisting the effects of temperature is now well ascertained of this material. It probably could be manufactured of a lighter quality than hitherto, and the cost would be reduced. I should have stated that the ridges should be upright, not horizontal. This suggestion is well worthy the attention of manufacturers, and you will be apt to suspect that I am in some way interested, which is in no way the case, except as in all rural improvements. *Forester.*

Modern Bread is worthless.—Firstly, it will be remembered, I stated that thousands of infants die in union workhouses, not so much from defective nursing as from the improper food with which they are fed. This statement, however, as I anticipated it would, has been received with some degree of surprise and scepticism by many humane and well meaning persons. I stated also, in reference to the food of infants, and, I may add, of persons whose sustenance is chiefly bread, that "modern bread was worthless." I proceed, therefore, to explain my meaning in reference to these points. But before I proceed, I must clear the way a little, and refer to what I advanced concerning the different properties and qualities of different kinds of Wheat. With reference to the quantity of gluten or azotised matter in different kinds of Wheat, and which is the subject of this inquiry, I have always admitted that the same kinds, in different years and grown on different soils, and under different kinds of cultivation, will yield different portions of azotised matter. This I have admitted, and I have no doubt of its correctness; but I maintain that there is a greater difference in the quantity of this substance in the different kinds of Wheat than exists in it from the different modes of their cultivation. Thus, I maintain, that bearded Wheats, and at the head of these is the Egyptian, under whatever mode of cultivation, or under whatever other circumstances, contain more azotised matter than polled or non-bearded kinds; and consequently that bread made from the Egyptian and other bearded kinds, is more nutritious than the bread made from any other kinds; but that from the Egyptian is the best. I also maintain that all kinds of red Wheats contain more azotised matter than white Wheats, even if grown side by side in the same field, and let the cultivation be whatever it may. [Will you favour us with references to the analyses on the authority of which you "maintain" these propositions?] From this statement it will appear that I consider the intrinsic value of the Egyptian to be above all other kinds, because it contains the most nutritive properties; and I consider, for the same reason, that the intrinsic value of all red Wheats is greater than that of all white kinds of Wheat. It is true that the marketable value of white Wheat is higher than that of red; but the inquiry is not into the marketable values of different kinds of Wheat, but into their real and intrinsic values, or, in other words, as to which, out of the numerous known kinds, contains the most azotised matter, called gluten, and consequently will make the most nutritious bread. But I add, also, that as well as its nutritive properties being the greatest, the Egyptian must likewise be classed among the white kinds of Wheat, and which is another singular property of it. Before quitting this part of my subject, let me also repeat that I have no personal interest whatever in recommending to the readers of your journal and the world this very interesting and beautiful kind of Wheat, except that I believe it is the most profitable to be grown, as well as the most nutritive of all the known kinds. But whoever cultivates it must do so on the principle which I have advocated for all kinds of Wheat, that is, he must seed it thinly, and by no means to exceed 2 pecks an acre, and every grain should be planted separately. I myself intend not to exceed 1 peck, and this year I shall plant it in land as poor as any in this neighbourhood; indeed, land can hardly be poorer, as I believe it has been cropped without manure for 20 or 30 years. Having so far cleared the way, I now explain why I consider modern bread to be worthless. It will be admitted, I believe, that the stamina of agricultural labourers in the parts of England where they feed chiefly on bleached bread, for many years has been, and still is, decreasing. The men have diminished in size, their bones are smaller; they are not strong and athletic, as formerly, and are subject to many more maladies, such as hernia, &c., which indicate a diminution of natural strength and vigour. All observant persons, who live among them, remark these facts; and, I believe, they cannot be refuted. It is a fact also, and admitting of easy proof, that notwithstanding the improved cleanliness of the population in general consequent on the cheapness of cotton and woollen manufactures, vast numbers of the human race still perish in infancy or whilst under two or three years old. Some years since, whilst discharging my official duties, this latter fact very frequently pressed itself upon my mind, and painfully affected it. I saw many fine and beautiful infants, and in all appearance as healthy as infants could be; they were also tenderly nursed, kept clean, and all reasonable care was taken of them; yet they did not grow; their size remained stationary for some time, till at length they put on a cadaverous and sickly hue, and gradually diminished in bulk, till they closed their eyes in the arms of death, their last nurse. Surely, said I to myself, those infants ought to have grown into men and women. Healthy and strong at their birth, they ought not to have perished so prematurely, like flowers nipped in the bud by frosts. With such thoughts as these pressing themselves on my mind, I determined to do all I could to discover the cause of so distressing an evil, and at length I fixed it upon the food with which the infants were fed, and all subsequent observation has confirmed that opinion. "What! find fault!" were the exclamations pressed upon me by all kinds of persons, "with nice pap, made of tea, and sugar, and beautifully fine white bread; look, examine, and taste how very nice it is. It was the will of God that the infants should die, and so nothing could save them; and, poor things, they could not go at a better time, and they are gone to rest." In this manner have I been often answered by men and women whom the world esteemed very good and nice people, and clever too; but they certainly ought to have known better. But what was the nice pap made of? An infusion of leaves, not equal to pure water; sugar and carbon, extracted from Wheat meal, the elements of which being the same as those of sugar. This was the food of those infants; for, be it remembered, that I am referring chiefly to such as, in union workhouses and other places, from some cause or other, had been deprived of their mothers' milk, their natural and best sustenance; I referred, be it always borne in mind, to those, and such children as those. But cannot a child live upon such food as that? Cannot a child live upon the finest wheaten bread, sugar, and tea? Certainly it cannot, nor could a dog; feed a dog upon such pap, and in a few weeks the poor animal, however strong and healthy before, would pine away and die exactly as infants will. But permit me to illustrate my meaning by an analogy, which, although not quite exact, will nevertheless suit my purpose well enough. To build a modern house we should require bricks, or stone, and timber, and lime as the chief materials; but suppose we attempted to raise the building, and expected it to be durable with any one of these materials only, leaving out the other two, all eyes would be upon us and our strange building; and perhaps we should be stopped proceeding with it by some humane friend taking out a statute of lunacy against us. Now, pursuing the same analogy, to build up a child to manhood, three principal materials are also as necessary, namely, carbon, azote, and lime, and without the whole of the three man can neither be built up nor exist, but for a very short time; but the children I am referring to were deprived of two of these requisites; how then could they live? It was impossible they could, and so their deaths were inevitable. But how deprived? let us examine. Wheat contains these three materials, viz., carbon, gluten, and lime. The Creator, in His mercy and wisdom, formed it of these three, intending it, no doubt, to be the food of man. But did the infant's pap contain them? Certainly not, or two of them so minutely as to render the pap worthless, *i. e.* a mere mockery of food; the lime and gluten having been extracted from the flour with which the bread was made in the dressing of it. The gluten, or azotised matter, was designed to build up the animal tissues with, but man extracts all this from his own food and feeds his pigs with them; animals which could the best of all others do without them. Some divines persuade themselves, and endeavour to persuade others, that man has no freedom of will; but if he have no freedom to act wisely, he shows too often that he certainly can act very ignorantly and foolishly. But, again, lime is made an ingredient in the grain of corn clearly for the purpose of forming the bones of animals which feed upon the corn; but man, again, extracts the lime from the ground meal of Wheat, since it exists in the bran and pollard almost alone, and no portion of which is suffered to remain in the dressed flour. With what food, therefore, should those infants deprived of their mothers' milk have been fed? for this is the important inquiry. Certainly in a great part with cow's-milk, for this contains in it, though in an inferior degree, all the substances of the other; but human milk is, of course, the best possible food for infants, the milk of the ass next, and then that of the mare; but each of these contain the three requisite substances I am contending for, namely, carbon, or, as it is also called, the life-supporting principle; casein, also—a substance analogous to the gluten in Wheat, and the fibrin in the flesh of animals, and with which all the tissues of the bodily frame are constructed and repaired; and lime, with which to form the solid parts of the body, namely, the bones. But the infants I am referring to, were fed upon carbon only; and as well, therefore, we might expect a house to stand against the pelting of the winds and storms, when built of bricks only, and with nothing to hold them together, as to expect children to grow up to manhood when fed with but one of the three absolutely requisite substances for their support. It is remarkable, as among the millions of other proofs of the wisdom and provident care of the Supreme Being, that the milk of a female, who has a a fractured limb, the lime in it is reduced in quantity until the fractured bone be again united. The eggs also of a fowl, which has a broken limb, are without shells until the broken parts are again united likewise. In referring again, as I wish briefly to do, to what has been advanced in reference to the diminished strength and size of agricultural labourers, whose food is chiefly bleached bread, as is now the case in many or most parts of England; I wish to add, that, were their bread made with undressed or slightly dressed wheaten meal, with a small portion of the meal of Lentils or Peas, or even Beans mixed with it, they would be much healthier, and, of course, stronger and more robust than they now are, and that their stamina would, consequently, gradually and perceptibly increase. Pulse, I add, contains more gluten than cereal grain. In conclusion, I add,

also, that the casein of milk, the gluten of cereal grain, the legumin of pulse, the fibrin of the flesh of animals, are all and each of them converted into one and the same substance, called albumen, analogous to the white of an egg, in the stomach; and that that substance, and phosphate of lime, are the raw materials, out of which all the various fabrics of the body are built up, and repaired. As these, therefore, are facts, capable of actual proof, I ask whether "modern bread, which is nearly carbon only, be not worthless" for the persons to whom I was referring, namely, infants deprived of mothers, and rustic labourers, who feed upon scarcely anything else than such bread, and whose beverage, in these refined times, is little else than an infusion of a few worthless leaves, which, were they grown at home in England and in their own gardens, would be suffered to be blown away by the winds, or ignominiously permitted to rot on the ground, or be thrown on the fire and burnt. *Geo. Wilkins.*

Societies.

MR. MECHI'S LECTURE.

Society of Arts, *Nov.* 27.—At a meeting of this Society, H. T. Hope, Esq., M P., in the Chair, Mr. Mechi read as follows:—In accepting the invitation of your Council to read a paper on Agriculture, I hope I shall be acquitted of presumption. I consider it to be the duty of every one to express, when called upon, his honest opinion of the present condition and future prospects of our national agriculture, with a view to its amendment. I therefore purpose, in this discourse, to take a general review of our agriculture, adverting to certain practical points of interest, and remarking on my own agricultural position.

I confess that I have a very mean opinion of the present state of our general agriculture (I say general, for there are many brilliant exceptions) as compared with our other industrial occupations, and contrasted with what it ultimately must and will become. It is true that great advances have been made, and that we stand high in comparison with the past, and also, relatively, with many other nations; but we must not forget that formerly, as now, the self-gratulation of supposed perfection has been annihilated by the necessity of providing food and employment for a trebled population. The prospect of a compound multiplication of mortal increase for the future, should warn and forearm us for the impending crisis.

The physical and mental powers of a nation form its original capital. It is labour, directed by the mind, that feeds and clothes us, and procures for our social adjustment, the metals which form the accepted standard of our currency. Therefore, the more numerous and concentrated the population, the more wealthy the nation, provided means are found for its employment. Can it be denied that we have yet, in this United Kingdom, a wide and untilled field for agricultural labour and investment? Look at our statistics of moor, bog, and waste. Oh, but I am asked, can these be profitably reclaimed?

Request the poor peasant squatter to show you his cottage garden or allotment on such soils, and conviction will at once reach you.

Carry your remembrance to the reclaimed rabbit-warrens and quadrupled rentals of Norfolk and Lincolnshire; to the once sedgy, swampy wilds and wastes of the great Bedford Level, drained by mighty steam, which even now is doomed to be superseded by a costly and enormous but profitable estuary. See the warps of Yorkshire and Lincolnshire; the irrigations of the Edinburgh meadows, with its annual rental of from 15*l* to 20*l*. the Scotch acre; the Portland Water meadows, and watered wastes of Teddesley. Take, for evidence, the Woburn Sands, Chat Moss, Dartmoor, and endless other proofs, and then can you doubt that human labour, well directed, is profitable in agricultural progression?

But I am bound to give reasons for my dissatisfaction with our present agriculture. Here they are:—The first and most direct evidence of the low scale of farming, is the gross acreable produce of the United Kingdom. I have good reason to believe that the very largest estimate per acre, taking into account the poor grass and arable lands, and leaving out market and other gardens, does not reach 4*l*. per acre. A reference to Spackman's Occupations of the People, to the agricultural reports of parliamentary committees, and other statistical works, will show that the rental of the United Kingdom (excluding towns), will certainly not reach 15*s*. per acre. Taking, therefore, as a gross return, 5 rents (4 would be nearer the truth), it is clear that 3*l*. 15*s*. worth of produce per acre, is far too liberal an estimate; 3*l*. 15*s*. from one whole acre of land in the nineteenth century!!!

What each acre might produce by the application of more drainage, more manure, more labour, and deeper cultivation, more live stock, and better buildings may be inferred by facts constantly obtruding themselves on our notice. As extreme cases, we may instance the production of 80 tons of Mangold Wurzel per acre, sold at 1*l*. per ton; of large productions of vegetables worth at least 100*l*. to 150*l*. per acre; of 6 to 9 quarters of Wheat per acre, worth, at only 40*s*. per quarter, from 14*l*. to 18*l*. Even this year, some acres of my own Potato land have yielded 15*l*. per acre, at the low price of 1*s*. per bushel; and the average of my 80 acres of Wheat will not be less (straw and chaff included) than 10*l*. per acre, on a very miserable soil.

We see by Spackman's tables, that there are in—

	Acres.	Rental per Acre.
England and Wales	36,995,000	21*s*. 8½*d*.
Scotland	18,944,000	5*s*. 1½*d*.
Ireland	20,177,446	13*s*. 5½*d*.

(This estimate includes the rent of towns, and also all the bog and waste lands.)

Now it is quite clear that the mere increase of labour and production to the extent of only 10*s*. per acre, would afford us all food and employment, without recourse to foreign imports. Is this so fearful and difficult an object to attain? I am quite aware that no act of Parliament can compel or control in this free country the application of capital to particular purposes. It must be done by the free will of a free people, and that free will must be inclined and stimulated by public discussion, comparison, and calculation. It is a good sign for agriculture that farming and landlordism are no longer secrets. It is a new but interesting feature that the discussions of our now numerous agricultural societies and farmers' clubs are submitted, through the mighty medium of the local and metropolitan press, to the test of public examination and criticism.

I am not one of those who think that scarcity and high prices are preferable to abundance and cheapness. I hold it as a principle that a nation that can supply itself abundantly with food and manufactures, and still have a large surplus of the necessaries and comforts of life to exchange with other nations for luxuries, is in a happy and prosperous condition. If you differ from me in opinion, test the proposition by its converse.

The multiplication of our industry by means of steam-power, machinery, and railway communication, is an important cause of the wealth of this country. It enables us to produce more than we require, and thus purchase with our surplusage, the silver and gold of the world, the cotton of the West, the silk, tea, and spices of the East, the ivory and gums of the South—and, to our shame be it said, the grain of the North.

It is a disgrace to our agriculture that it produces no superabundance—nay, not even abundance, but leaves us to the mercy of large foreign importations.

It is this that evidences and accounts for the poverty of agriculture. I venture to predict that agriculture will never be rich until it produces superabundantly. This *can* be done, and *will* be done, and must be done, for the concurrence of increased employment and food, with a multiplied population, can alone prevent anarchy and confusion. It is impossible to avoid seeing in every direction, the sluggishness, ignorance, and neglect of our national agriculture. Unlike our manufactures, she has neither availed itself of mighty steam or general science. Enshrouded by prejudice, ignorance, and self-sufficiency, isolated localism has been her curse, but better times are coming. She can no longer withstand the rays of intelligence, or facilities of intercourse, without passing an opinion as to the policy of the late free trade measures. It is quite clear that foreign competition is arousing us from our lethargy. Landlords and tenants, too, are aware that they must produce more food, and at a lower price. This can only be done by the removal of every impediment.

Our landlords will not permit the corn fields to be encumbered with miserable pollards and worthless timbers, which can be grown in the wastes of Canada, at one-tenth the cost of producing them here. They will no longer find tenants able or willing to pay high rents for undrained lands, on which there are no conveniences or buildings for the housing and maintenance of an abundance of live stock; there will be corn-rents, liberal covenants, a just valuation of tenants' improvements, and an encouragement to permanent occupation, by good and improving tenants. Tenants will have to keep more live stock, make and buy more manure, and take more care of what they do make. There will be more labour employed and less weeds grown. Deep and frequent cultivation, by improved implements, will combine the utility of a fallow with a growing crop.

I have been forcibly struck with the prejudices and inconsistencies of agriculture.

The railway hedges are neatly trimmed and annually cultivated, like a crop of Turnips. If it is profitable so to do, they are thus rendered effective as well as neat. The farm hedges, diverging at right angles from these, have never caught the pleasant infection They still exhibit their huge, irregular, and ungainly proportions; shading and robbing the land, for the mere purpose of growing bushes to stop the gaps caused by their untrimmed and neglected condition.

Farmers dig their gardens 2 feet deep, but only plough their land 5 inches. They take especial care of their nag horse in a good warm stable, but expose their farm horses and cattle to all weathers. They deny the utility of drainage in strong tenacious clays, but dare not dig an underground cellar in such soils, because the water would get in. They waste their liquid manure, but buy guano from Peru to repair the loss. I have known practical men seriously doubt the benefit of liquid manure, who are in ecstacies with the urine of the sheep-fold.

The excretiæ of the vast importations which take place to this country of food and consumable luxuries, ought, if properly economised, to increase annually the fertility of these islands. But when I suggest new buildings, steam engines, drainage, &c., I am asked, "Where is the capital to come from for all these improvements?" I reply, Where *does* the capital come from to make railways and docks; to build steam vessels; to erect a whole town of new squares and streets, and to carry out every other useful and profitable undertaking? I believe the surplus profits of the nation are estimated at fifty millions annually. Every 10 years this accumulated wealth has found vent in rash or dangerous speculations. Fortunately, foreign loans have been superseded by British railways; and I can perceive clearly that the surplus gains of the present times are destined to pass into agricultural improvement. I see, in mental review, a long list of bankers, merchants, shipowners, manufacturers, traders, and professionals, who have become owners or cultivators of our soil. These, not having the agricultural precedents or prejudices of their predecessors, are devoting their powerful means and energetic common-sense principles to the amendment of our agriculture, and the increase of employment and of food. If you see, arising on the ruins of our queer-shaped and antiquated farmeries, a pile of substantial and convenient erections; if you see the smoking shaft and irrigated meadow, depend upon it it is the work of some new possessor. It is a delightful reflection that there is abundant scope for such operations.

The establishment of public companies, with ample capital and sufficient legal powers to improve settled or encumbered states, is also a pleasing event.

It is very singular that we south countrymen let our cannie friends carry off nearly all the first Government Drainage Loan.

But there is one sad and most unjustifiable obstruction to landed investment and amendment. I mean the antiquated and semi-barbarous difficulty of transfer. In all properties possession is *primâ facie* evidence of ownership. It does appear to me a monstrous and intolerable nuisance that the same principles of possession and transfer are not applied to land as to the funds, or any other article of value. A public registry-office, with district maps, would at once obviate the difficulty. Land would then change hands 20 times for once now, and be subjected to a proportionably increased chance of improvements.

A painful question is often asked, "What is to become of the poor farmer?" I reply, what *has* become of the poor hand-loom weaver—of the four-horse-coach proprietor—of the roadside innkeeper—of the turnpike trusts—of the Gravesend sailing-boats—of the old hackney coaches?—even the poor old watchman, who called the hours all night, and cleaned boots and shoes half the day, have given way to the able, active, and efficient new police.

These are days of improvement and progression. Individual interests are no longer permitted to interfere with the public good. Mighty steam has worked, and will still work, great changes. Plenty and cheapness have superseded scarcity and monopoly. Agriculture can no longer withstand the common fate. The poor farmer and the poor landlord, or rather those who are in a wrong position, will necessarily make way for more useful members of society. It is a painful though national necessity.

I cannot concur in the lamentations of those who regret the large importations of human food. Is there any superfluity—any waste? No; it is all consumed, and therefore all required. With regard to the practice of agriculture, there are certain things on which, from experience, I am competent to pass a decided opinion, and recommend as economical and profitable.

The Agricultural Labourer.—The moral and physical condition of our labourers has, in my opinion, a most important influence on our successful cultivation of the soil. They should be the apt and polished tools with which we carry on our work. To me, one of the most delightful results of agricultural improvement has been its good effects in the immediate neighbourhood. I speak practically on this matter, and can testify that the expenditure of my money on a wild tract of bleak and barren heath has diminished crime and conduced greatly to the security of property, and to the moral condition of the hitherto irregular and insufficiently employed peasantry. The want of a better education is severely felt by the men themselves, especially when I have had occasion to send them as drainers to distant counties.

It seems marvellous that, with the example of America before us, we should still leave this great question to the mere chance of individual or local beneficence.

Our Scotch friends manage this matter better, and with economy, too; and, as a consequence, supply us with baliffs and gardeners. I find it advantageous to myself and to my labourers to let every job, task or piece-work. The work is more quickly and cheaply done; the men earn more money; are consequently in a better physical and social condition, and larger consumers of the farmers' and manufacturers' produce.

Every man who values the working condition of his horses, will naturally extend the same consideration to his labourers. It is impossible too strongly to condemn the miserable policy of allowing itinerant speculators to monopolise the housing of our labourers. The social and physical pestilences resulting from these wretched hovels should make us wiser in this respect. Honour be to his Grace the Duke of Bedford, and to others, who have set a brilliant example, by providing ample and convenient residences for the peasantry on their estates.

Good Farm and Parish Roads.—The necessity for facility of carriage is obvious. If you doubt it, I will refer you to a friend of mine, whose father, when a farmer in Surrey, had to send his Wheat to market 20 miles on pack horses, and sell it at 20*s*. per quarter. This was in the good old times, which I by no means desire to resuscitate.

Our parish and farm roads are, many of them, sadly managed. Having shoulders and dishes of water to soak and soften them. They should always be kept slightly rounding, so as to shoot the water, scraped, repaired, and farmed, and drained like our turnpike roads.

Farm Horses should be clipped early and gradually, piece by piece. If you doubt this, try on your plough one clipped and the other unclipped, and you will soon come to a conclusion.

I assume that you will never turn out your horses, but treat them exactly as you do your nag horses, taking especial care that there should be ventilation at the highest point in the stable;—this is well effected by iron air-bricks, worked in with the brickwork.

All their hay and straw should be cut up into chaff, the corn ground into meal, and mixed with it. Two-thirds hay chaff and one-third straw chaff is the right proportion; but cut hay alone does not answer, being apt to ball in the stomach. If their water were always warm, as at the London breweries, they might drink at any time; otherwise it would be as injurious to them as to ourselves to drink cold water when overheated by violent exertion.

Animals never do well under slated roofs, unless you interpose a lining of boards or woollen thick felt, such as is used in shipping. Slates conduct heat *to* the animal in summer and *from* it in winter. Thatching under slate is useful, though apt to encourage vermin.

Old horses do admirably well on cut food and in warm and well-ventilated stables.

We need never lose a horse by gripes, provided we administer, when first attacked, 1 oz. each of spirits of nitre and paregoric in a quart of warm water. I always keep a few doses ready.

Deep Cultivation after Drainage is essential to profitable farming on heavy lands. I effect this by removing the breast from a plough, and let it follow, drawn by a pair of horses, in the track of the first plough. We thus gain a greater depth. In summer, I use a very large plough with four horses to open the work, and follow with another plough and four horses in the same track. This brings up immense clods and blocks of the nasty undisturbed subsoil. When dried by the sun, the Crosskill roller, with 5 cwt. added, cracks them; the scarifier operates, and again the Crosskill renews the attack, all in dry, hot weather, until you have a perfect garden—yellow-looking it is true, but aerated, and deprived of many noxious properties, and ready for mixing with abundant manure and calcareous matter. You thus bid adieu to root weeds that have tormented you for years; you facilitate the percolation of water, air, manure, and roots. Your crops do not dry up in summer or freeze in winter; for it is the drying or freezing of the roots that destroys the plant.

I apprehend that if a pair of horses could plough 2 feet instead of 5 inches, that would have been our general depth of cultivation. This dry summer all the manure for our root crops being within 5 or 6 inches of the surface got dried, and the root crop failed. Not so where it was buried deeper, like garden cultivation, below the solar influences. Our root crops send down their roots many feet in summer, provided the manure is there, as I have proved by examination.

The Potato Question.—I suppose if I grow Potatoes I shall be told that I am not a farmer, but a market gardener. I shall be proud of the appellation; it implies superior cultivation. Surely it will not be objected that Potatoes are not food for man as much as bread and beef, and that a man may not grow what pays him best. The fact is, bad farmers, who do not keep much stock, or buy much manure, dare not grow Potatoes with the ordinary mode of farming. I have heard them say a Potato crop exhausts their land for years. For my own part, I like a heavy exhausting crop. It implies a heavy return, with means for restoring the deficiency occasioned by it. Miserable crops, occasioned by the save-all and cheese-paring principle, cause us to feel severely the pressure of our rent, tithes, and rates. They react on the landlord, labourer, tenant, and community at large.

Drainage.—Little need now be said on this point, as it is generally considered indispensable as an agricultural basis on all wet lands. I hope the prejudice against it amongst heavy land farmers is gradually giving way.

Steam Engines.—If we are to house-feed a large quantity of stock with cut food and ground meal, or ground oilcake, steam power is indispensable. If I stop mine at any time for repairs, I find I am involved in a daily expense of nearly 20*s*. No doubt they will be used to force water and liquid manure for irrigating the soil, as is done advantageously by Mr. Kennedy, of Myremill, Ayrshire.

Perhaps one of the most interesting questions of the present day is the system of Feeding on Open Boarded Floors.—Experience has taught me, and will teach others, that, in order to succeed in farming, we must produce a much larger quantity of meat on our farms than at present, and at less cost. In order to do this advantageously, it becomes necessary to consume a large portion of the straw of the farm, cut into chaff, and cook it with meal and ground oilcake. We are thus deprived of the usual cattle bedding, and must find a substitute. Having practised the system rather extensively, I will communicate to you the details; observing, that although attended, as every system must be, with certain disadvantages, the balance of benefit is sufficiently considerable to induce me to continue and extend it. The quantity of stock I now have on boards is—

100 lambs,	30 bullocks,
50 sheep,	10 cows,
60 calves,	200 pigs.

We are indebted to the worthy Rev. A. Huxable for the idea; but I found his space of three-quarters of an inch between the planks insufficient. I therefore, measured the hoofs of the various animals, and arranged my openings accordingly. Thus,

	Inches thick.	Inches wide.	Inches space.
For bullocks	2½ ...	4 ...	1⅝
„ sheep	1¼ ...	3 ...	1¼
„ pigs	1½ ...	3 ...	1½
„ small pigs and lambs .	1½ ...	3 ...	1
„ calves...	2 ...	3 ...	1⅝

For large Cotswold or Kent sheep, 1⅝ openings would not be too large. 1¼ openings do well for Hampshire Down lambs, but are rather too large for small Sussex Downs.

One cannot too highly appreciate the system on heavy lands, where animals cannot be profitably folded during winter. The area allowed for each animal and its feeding apparatus, is thus:

	Superficial feet.
Small sheep	8
Large ditto	10
Small bullocks	30 to 40
Large ditto	50 to 60
Small pigs	6 to 8
Large ditto	9 to 11

Very much depends on the season and weather. In cold weather, pigs and bullocks can scarcely be packed too close, so long as there is room for them to lie down comfortably. Sheep require a little more room, or ventilation. In fact, it requires a nice observation to adjust the ventilation and temperature. This is best done by a thermometer, because our own feelings are not always a sufficient criterion. Every cattle shed should feel as comfortably warm as a drawing-room. The opening for ventilation should be at the highest point.

Fine bred pigs, having little hair, must have a much warmer temperature than sheep. When pigs huddle together, it is a sure sign that they are not warm enough. Cold, stopping the circulation in the skin, drives the blood to the internal organs, and causes inflammation.

I have often been struck on seeing how soon my groom will get a horse into condition, by warmth, cleanliness, and food. The same remark applies to a lady's lap-dog. My bullocks are groomed daily by a boy, whose sole occupation it is. The cost is about one farthing per head per week, and I am sure it pays. Before I leave the open boards, I should say that the bars or planks may be either of straight yellow deals, or of straight-grained, hard woods. The latter are to be preferred for heavy animals, as they wear off the edges of the deals. The depth of the pits may be from two to four feet. It is necessary, once in a way, to level the manure, to prevent its touching the boards; it would soften them, and cause them to break. I should say that we never sweep the floor; but the animals are perfectly clean. Of course, the manure is taken at once from under the boards to the field, without the interventional expense of a double carting, shooting, or turning over of a dung-heap. The effect on the crops is unmistakeable.

In order to pay you 10 per cent. on your investment for the whole building and floor, complete with troughing, &c., you would charge your bullocks 1½*d*. per week; sheep and pigs, one farthing per week. The cost of erecting covered homestalls, complete with boarded floors, will not exceed 1*s*. to 1*s*. 3*d*. per superficial foot.

One man on my farm feeds, and entirely attends to 250 pigs. It would require two men on the old straw-bed system. Our pigs are never cramped now. Formerly they used to be, owing to the manure heating under them, and the cold air giving those parts rheumatism. One stout lad, at 3*s*. 6*d*. per week, will feed and attend to 30 bullocks; another attends to 60 growing calves.

I smile occasionally at the current belief, that Mr. Mechi is a reckless, extravagant fellow—not at all pinching or farmer-like. An inspection of my future published accounts will possibly show, that whilst my workmen are well paid, my work is cheaply done by the task; and that certain folks have been under a considerable delusion. Before I leave the boarded floors, I must confess that I never like the look of my animals so well on them as I do on a little mountain of clean straw, or a nice green pasture; but this is not a question of fancy, but profit, and I am quite sure that the system is very advantageous. It is true we like a soft bed, and so do the animals; but our medical advisers recommend a hard one.

There is a very powerful development of the muscles on boards—so much so, that with fattening pigs, not bred on the boards, I have found some of them get capped hocks. It is surprising how quickly you may fatten young pigs on these floors. They find it inconvenient to run about, so divide their time between eating and sleeping—a most agreeable operation for the account-book. I think the time is coming when farmers will consider the question of how much meat a ton of Turnips or hay will make under various circumstances. If so, the turning-out system will be given up. My old-fashioned bailiff admits that, on the turning-out system, two-thirds of my farm would be required to feed my animals. Now they make shift with one-third. If you desire a good appetite in your animals, turn them out for exercise in the cold. I tried the turning-out system with some calves. On asking the boy how they got on, he replied, "Oh Sir, they get on properly well now, they come in so hungry." This settled the question in my mind; but those who doubt the fact can make experiments.

There can be no doubt the animals are perfectly healthy on these boards. Considering the confinement and heat, this rather surprises me, especially with the pigs, fed entirely on meal; for the ammonia, or effluvia, from under them certainly is powerful enough to discolour the paint. The great difficulty I find is in getting a proper fixer for the ammonia. I have used sulphuric acid, ashes, and various matters, with a certain effect. I hope the Irish peat-charcoal will not be too dear. I have a ton coming on trial. After all, I am inclined to think common salt, or the common dried clay, are best and cheapest fixers, and I have used a great deal. I can buy the salt here for 30*s*. a ton, and, when mixed with the manure, it gives us muriate of ammonia and carbonate of soda—most valuable salts. I am also about to try Mr. Lawes's dissolved coprolites. To waste our ammonia is an act of agricultural insanity.

Another question connected with the boarded system, is the fly question. Where you have plenty of food, warmth, and stock, you will have abundance of flies. My bullocks could never lie down in the daytime, owing to their attacks; and, of course, the continued lifting of their feet prevented fattening. By darkening the feeding-houses, I entirely removed this nuisance, and had the gratification of putting my animals in a most profitable state of repose; for, if you have 10 millions of flies, not one will bite in the dark. I find that some of my friends, who value the condition of their horses, have long practised this system. It is essential to the successful house-feeding of green crops with bullocks during summer. Sheep are never struck by the fly on boards, and pigs do not seem much annoyed by them.

To those who consider me "too fast," and are not prepared to go with me in boarded floors, I would say, by all means then have covered homesteads, such as may be seen at the Rev. Mr. Cooke's, of Semer, near Hadleigh, Suffolk; and at Mr. James Beadel's, Broomfield Lodge, near Chelmsford, Essex. I believe either of these gentlemen would kindly show them; and I am quite sure they will bring home conviction to the most resolute defender of the old and unprofitable open yards.

I believe it is the great quantity of stock kept that enables the Lothian farmer to compete at so great a distance with the south country farmer; and I believe it is the still greater quantity of stock kept by Mr. M'Culloch, of Auchness, that enabled him to surpass the Lothian farmers. Mr. Lawes has shown most indisputably, in his admirable papers in the Royal Agricultural Society's Journals, that we can produce manure cheaper and better by feeding stock, than even by purchasing guano. I mean, not feeding on Turnips alone, but using the productions of the farm in conjunction with purchased food.

Whilst searching for facts to guide me to the most profitable mode, I met with the accounts of two farms, variously managed, which confirm, by comparison, my own impression, that on the quantity and management of our live stock depends much of our success in farming.

For your information, I annex a comparison of Mr. M'Culloch's Auchness farming, with a similar one in Suffolk.

Income and Expenditure of a good Average Mixed] Soil Farm in Suffolk.

Expenditure.	£	s.	d.
Rent, 28*s*.; Tithe, 7*s*.; Rates, 3*s*. 6*d*.	481	5	0
Income and Assessed Taxes	9	0	0
Labourers' Wages	319	14	0
Tradesmen's Bills, &c.	68	2	0
Seed corn, grasses, &c.	82	3	3
Miscellaneous expenses	15	10	0
Interest on floating capital, 2250*l*. at 5 per cent. ...	112	10	0
Losses of stock	25	0	0
Depreciation of horse-stock and implements ...	28	0	0
Loss to balance	14	10	0
	£1155	14	3

Income.			
47 Acres Wheat, 32 bushels per acre, 1504 at 5*s*. ...	376	0	0
47 „ Barley, 36 „ 1692 at 2*s*. 6*d*.	296	2	0
23½ „ Peas and Beans, 32 bushels per acre, 752 at 3*s*. 6*d*.	131	12	0
23½* „ Clover and mixed Grasses, cnt once for Hay			
10* „ Pasture, ditto			
34* „ Pasture marshes fed			
47* „ Mangold Wurzel and Turnips			
232			
18 „ waste fences, roads, &c.			
250			

* These 114½ acres kept 10 cart-horses and 1 nag horse, and in addition produced, in feeding:

20 Bullocks, at 7*l*. 10*s*. ...	£150		
120 Sheep, at 15*s*.	90		
6 Cows, at 9*l*. 10*s*.	57		
10 Young stock	25		
Swine	25		
Fowls	5		
	352	0	0
	£1155	14	0

EXPENDITURE AND INCOME OF THE FARM OF AUCHNESS FOR CROP 1849. Extent, 260 Imperial Acres.

Expenditure.	£	s.	d.	£	s.	d.
I. Rent ...				262	0	0
II. Purchased Manures:—Guano, 192*l*.; Bones, 138*l*.				330	0	0
III. Purchased Food, &c. For cattle and sheep (including 37*l*. 10*s*. for summering 23 cattle) ...	284	0	0			
Oats, &c., for servants and horses ...	105	0	0			
				389	0	0
IV. Labourers' and Tradesmen's Wages ...				510	0	0
V. Seeds *purchased* ...				25	0	0
(For seed of Wheat and Potatoes, see statement below).						
VI. Materials, casualties, sundries, &c. ...				86	0	0

VII. Public burdens, taxes, and poors' rates				24	10	0
VIII. Interest on sunk capital, 1000*l.* at 10 per cent.	100	0	0			
Do. floating capital, 2500*l.* at 5 per cent.	125	0	0			
				225	0	0
Sum chargeable against the farm				1851	10	0
TENANT'S REMUNERATION				718	6	0
				£2569	16	0

INCOME.		£	*s.*	*d.*
22 Acres Oats, 50 bushels p. acre, all consumed by the horses.	1100 bush.			
55 Acres Wheat, 38 bushels per acre	2090 do.			
Off seed	163			
Disposable	1922 at 5*s.*	480	10	0
92 Acres Potatoes, 400 tons, sound roots, at present worth 3*l.* per ton		1200	0	0
Besides small Potatoes for seed, sufficient to plant an equal breadth.				
91 { 1 Acre Italian Rye Grass reserved for seed		5	0	0
91 { 50 Acres Turnips.				
91 { 15 Do. grass cut green for house feeding.				
91 { 25 Do. pasture.				
For feeding the following STOCK, viz.:—				
44 Cattle which were bought in June, and have been already sold at an advance of 5*l.* 5*s.* per head on price paid for them	£231 0 0			
86 Cattle in course of feeding, at 5*l.* 5*s.* per head advance	451 10 0			
208 Wedders, at 9*s.* per head advance	93 12 0			
52 Hoggets, at 7*s.* do.	18 4 0			
6 Cows, produce	60 0 0			
4 Young horses, each 5*l.*	20 0 0			
6 Ewes	10 0 0			
Produce of 91 acres, besides manure		884	6	0
		£2569	16	0

N.B.—The large sum for purchased manures will be reduced next year by at least one-half, on account of the additional quantity of manure accumulated by the system of house-feeding in summer; and, it is believed, that by the further extension of the system, the farm will be able in a year or two to dispense altogether with the expenditure for purchased manures. It must also be noted, that no credit is taken for the increased bulk and richness of the dung arising from the consumption of the purchased food charged in the above account. The stock is not insured.

DAVID M'CULLOCH, Auchness, January 17, 1850.

An examination and comparison of the foregoing statements, afford some very striking and instructive conclusions. The Suffolk farm—of a superior quality, employing capital and labour equal to the Auchness farm—shows a considerable loss, whilst the latter produces an ample profit. Now it will be admitted, that neither Free Trade nor Protection can have anything to do with this comparison. Nor are there any "peculiar advantages" to object with; because, if the Auchness farm has superior and convenient buildings for stock, the Suffolk land was naturally superior, and in previous good cultivation, whilst the Auchness farm, much of it naturally poor, has had to be improved at the tenant's cost. In the Suffolk farm there is no purchased manure or imported food. On the Auchness farm, we have 719*l.* so expended. On the Auchness farm, the amount of meat made is 84*l.*—being the produce of 91 acres, and the purchased food. On the Suffolk farm only 352*l.* was received for meat, although 111 acres were used for that purpose.

On the Auchness farm 1680*l.* worth of corn and Potatoes was sold for the consumption of man. On the Suffolk farm only 793*l.* was the value of the grain crops for the horses. Here we have a clear explanation of the cause of success in one case and failure in the other. In one we see the animals housed, warmed, ventilated, groomed, their food cooked, and the utmost made of it, chemically and physiologically. In the other, the usual mode of turning out, and consequent waste and misapplication of food. Here we have a dependence on the natural production of the soil, unaided by imported food or manure, and consequently a minimum production with almost a maximum expense. There a constant addition to the productive powers of the soil, with a maximum produce, and consequent diminished per centage of expense. I need hardly say that I shall, in my own practice, follow the farmer who makes money, and not he who loses it. Our success as farmers evidently depends greatly on our making the most of our root and green crops.

The great question of the value of a ton of Turnips in its meat-making powers, can only be solved by the variety of modes in which it is applied to nutrition. The estimate of value by different persons is from 2*s.* 6*d.* to 12*s.* per ton. In Norfolk, where house-feeding with oilcake is extensively practised, its estimate is about 7*s.*, varying, of course, in some degree, according to the price paid for lean stock. In my neighbourhood they are frequently purchased for house feeding at 10*s.* to 12*s.* per ton; whilst for open or field feeding, they only command from 1*s.* to 3*s.* 6*d.*, and the manure left. I know frequent instances where large flocks of sheep have consumed whole fields of Turnips, coming from them absolutely leaner than before. Cold, wet, and comfortless, the frozen Turnips acted as a purgative, being unaided and unconnected by dry hay, oilcake, or warmth or shelter. The value of the Turnip crop was here absolutely nothing, and an enormous loss attended their production. I apprehend the average cost of producing Turnips, all charges included, is not less than 10*s.* to 15*s.* per ton;—quite that under the old Essex system of five to eight ploughings, although much cheaper plans are adopted in some districts. In a discussion I had some time since with the members of the Harleston Farmers' Club, I endeavoured to show and prove, that it was considerably cheaper and more advantageous to make meat with purchased corn, cake, and hay, than with Turnips alone, administered in the too usual slovenly and unprofitable way. Remember that by feeding animals at home with purchased food in conjunction with your own produce, you are constantly adding to the productive powers of your soil. The time is come when always selling off the farm without replacing, will not stand the external competition of a different and improved system. The poor heavy-land farmer, with his year's long fallow and two years' charge on one mediocre grain crop, must succumb; and his landlord will find that, without drainage and sufficient buildings for the house-feeding of an increased quantity of stock, his tenants on such soils cannot pay the old rents, or compete with the poor but better managed light lands of our Eastern districts.

I will now proceed to take a review of my own agricultural position. The publication of my agricultural proceedings has naturally exposed me to public criticism. All sorts of motives, good, bad, and indifferent, have been imputed to me. Of this I do not at all complain. I considered my farm, in its original state, neither creditable nor profitable. I expended my capital in its improvement. The result of that expenditure was a decided benefit to my fellow-creatures. My agricultural opponents say the money was thrown away, the property not improved, and that I am losing much money by farming. In order to test the correctness of these opinions, I have, under the advice and suggestion of my friends, submitted to a valuation by three eminent surveyors, whose character and capabilities are beyond cavil. I am informed (though I have not received the official document), that they have fixed my rent at 36*s.* per acre, adding another 7*s.* per acre for the use of my machinery, &c. Now, as plenty of land, such as mine was in its unimproved state, can be hired for 12*s.* per acre, it follows clearly that the fee-simple of my estate is more than trebled in value, leaving out of view altogether the extra expenditure for my own personal convenience. Whether I shall be able, with present prices, to pay a rental of 43*s.* per acre, besides tithes and all other charges, as well as a profit on my tenant-capital invested, remains to be proved. My incoming valuation as a new tenant was effected on the 30th of October, by the same gentlemen who set my rent. On the 30th of next October, and on all similar periods, so long as I continue to farm, my outgoing valuation will also take place. The much-desired balance-sheet will appear in the public prints, either for good or for evil, as the case may be. It will either be an example to follow or a beacon to avoid. It will be done in honesty and good faith; but it would be premature now to prejudice its results. I wish, for many reasons, that it may be satisfactory.

The fixing of the rental being *un fait accompli*, may be commented upon, and presents an encouraging feature to improving landlords. I have no doubt but the valuers naturally considered that drainage, good roads, open fields, unencumbered by useless fences and trees, deep cultivation, and good manure, all have a material influence on the business of farming; and that without good and ample buildings, abundance of water, and proper steam machinery, it would be impossible to accommodate and provide for so large a quantity of stock as I deem it necessary to keep. No doubt the means for economising their manure did not escape their observation.

I had hoped to have placed before you a complete model of my farm buildings, which is preparing for the great Exhibition. It is not, however, sufficiently advanced; I therefore merely produce a portion—showing the boarded floors. My valuation as a tenant-farmer has not yet been sent to me by the valuers, so I cannot at present produce it.

The facilities for acquiring agricultural science are now great. We have now the opportunity of rubbing mind against mind, and eliciting bright scintillations of intelligence. The priceless volumes of the Agricultural Society of England and Scotland, to which every farmer should belong, the agricultural press and periodicals teem with novelty and science, and bear unquestionable testimony that the agricultural community can no longer be a non-reading class. The Royal Agricultural College at Cirencester, and other similar but minor establishments, invite the juveniles of agriculture to excel their parents.

In conclusion, can it be possible that England, great in wealth, liberty, and industry, superabundant in capital and labour, and superlative in manufactures and machinery,—I say, again, can it be possible or permissible that Britain, with all these advantages, with merchant princes and baronial traders sweeping the seas, with her navy and merchant fleet, shall be humbly dependent for her daily bread on strange and foreign lands?

I will never believe it can continue. I will never believe that British enterprise cannot and will not compete with the ill-fed vassalage of mere corn-producing countries. Countries, whose people cannot afford to eat the Wheat they send us; and whose agricultural practice, tested by our own, ranks low in the scale of comparative perfection. I cannot believe that our wealthy and patriotic aristocracy will any longer permit such an anomaly to continue.

In conclusion, I commend to your especial regard the noble practice and improvement of agriculture, as beneficial to health, as conducive to longevity and mental repose, and as full of independence; presenting to your mind, through the charming and ever-varying face of Nature, the impress of Almighty Goodness and Wisdom. I commend it, not only on the low ground of individual profit, but by employing and feeding the people, as a means for promoting the moral, social, and political strength of this great and happy nation.

HIGHLAND AND AGRICULTURAL, *Nov.* 20.—*The Substances which can be most profitably employed as auxiliary for Turnips, in Fattening Cattle and Sheep.*—Mr. BRODIE, Abbey Mains, said: There are few questions in the economy of farm management of greater importance, or more intimately connected with the successful cultivation of the soil than this. I have to regret that the range to which I have conducted experiments is comparatively limited; nor has the subject in all its varied bearings received those careful experimentary trials which enable one to speak with confidence on any of the many questions which are involved in its discussion. The discussion to-day may possibly tend to elucidate the subject, but a complete and satisfactory solution of it can only be obtained by a series of varied and carefully conducted experiments, experiment being the best form by which our knowledge can be extended on a subject involving so many different considerations. The subject is one of the greatest importance to the community, as well as to the agriculturist; for, since the fall that has taken place in the price of grain, the capital which is thus employed must be very great—some farmers using extra keep at the rate of 1*l.* per acre over the whole extent of their holding. A few of the most celebrated of our farmers are of opinion the most profitable method of cultivation on some soils is to remove only the half of the Turnip crop to fatten cattle, and consume cake and corn equal to the other half, along with the Turnips; while the sheep stock folded upon the portion left, receive also a quantity of extra keep equal to the whole Turnip crop, and fattening at least double the quantity of stock that under ordinary circumstances they could be enabled to do; and if we take into consideration that in the cultivated districts, where the fattening of stock has become a regular part of farm management, the employment of extra keep, along with the Turnip crop, has to a degree also become a part of such management. The annual consumption of such substances must therefore amount to some millions, as there is scarcely a farmer, however small his holding, who does not use some substance along with his Turnip crop, either with the view of eking out that crop, or finally preparing his animals for the butcher. Some farmers resort to extra keep to avoid selling in dull or bad markets, calculating on a rise in price, to remunerate them for their risk and extra expenditure, while not a few consider this the cheapest and best method of enriching and maintaining in condition weak or naturally comparatively barren soils. Notwithstanding this, there are few farmers, who have adopted a peculiar system of feeding by extra keep, by either one or more substances, that have done so upon a decided conviction that the practice is really remunerative. We believe the majority satisfy themselves with a vague opinion rather than a definite conclusion; and this arising from the absence of that careful recording of expenses and returns, which in no department is more essentially necessary than in the feeding of stock. The fattening of stock with other substances, as auxiliary to Turnips, involves a number of important questions. What substances are most profitable for feeding, and what for manure? The importance of the latter question may be inferred from the fact that, in different parts of England, where compensation is allowed for unexhausted improvements, the value of the manure of oilcake-fed animals is estimated at about half the original cost of the cake, and in many of the best feeding districts of Scotland farmers are not unwilling to allow 30*s.* or 40*s.* per ton for the oilcake that may be consumed in eating off the Turnip crop. The increased value of the manure from stock so fed is thus acknowledged, but it is a matter of regret that not more information has been obtained with reference to the exact manurial value of the different substances thus employed. As proving this we may remark that during the discussion on Mr. Pusey's Tenant Right Bill, the question was discussed whether the value of the manure of grain-fed animals was equal to that of those fed on oilcake. On the second reading a clause to this effect was inserted, which was again rejected. We merely mention this circumstance to show the little exact information which is had on this important point. It is possible that too high a value has frequently been placed on the permanent and superior effects produced by the consumption of such substances in a manurial point of view. No subject is more deserving of the most careful set of experiments, and perhaps the Society may consider it deserving of an early place in their list of premiums. Before entering on the second question to which we have referred, namely, the fattening properties of the different substances employed as an auxiliary of the Turnip crop, it may be worth while mentioning the different substances thus employed; and the following, we think, almost exhaust the list: Linseed, the seed of Flax; Linseed-cake, now generally termed oilcake, the refuse of crushed Flax-seed, after the oil is extracted; Poppy-cake, the refuse of crushed Poppy-seed; Rape-cake, the refuse of crushed Rape-seed, hitherto used only as a manure. The above may be considered oleaginous substances. Oats, Barley, Beans, and Peas, white Peas (foreign), Tares generally foreign. The above may be termed farinaceous substances. *Distillery offals*—Hay is generally considered in Scotland as extra

food. Grains are generally given whole to sheep, but when given to cattle they are generally reduced to meal; and upon this we may remark, that every description of grain should be ground fine, particularly Beans, otherwise the cattle will not obtain the full benefit. Linseed should be either crushed or boiled into a jelly for cattle. But the use of this valuable substance is not yet so extensive as its value entitles it to be. There is often considerable trouble in preparing it. It is to be hoped that a more extended cultivation of Flax in this country, with the improved modes of preparing the stalk, and saving the seed, will obviate this, and also increase the supply. The usual quantity given to cattle as a mixture, is between 2 and 3 lbs. daily; to sheep ½ to 1 lb. In East Lothian, Linseed-cake was not much known till about 18 years ago, when it came more into notice as an auxiliary to Turnips, since that time the consumption of it has rapidly increased. Large importations have arrived from the Continent, particularly from the Baltic, within the last few years; cake of superior quality has come from America, and home-made cakes have been extensively manufactured to meet the increased demand. The price of foreign cake used to range about 8*l.*; home-made about 10*l.* per ton. Since the alteration of the import duties on grain, a great fall has taken place in its price. Home-made cake is generally about 30*s.* per ton higher. We consider, however, good foreign about equal to home-made, and have generally used it. It is now extensively used in almost every feeding district, and particularly in the best districts of England. From its relative high price, and the great demand, we believe it is much adulterated. We are also of opinion, that from the improved modes of extracting the oil, now in use, its value has also diminished and its fattening qualities lessened; the price and quality vary much according to the abundance and deficiency of Flax-seed, and the demand for oil, and therefore farmers should compare it with the price of grain at the time; this is the more necessary at present, the price of grain being so low, and the value of oil having been, for some time, rising considerably. We know several very intelligent farmers who consider the values of Linseed-cake and grain for fattening qualities to be equal, weight for weight. I am myself inclined to give the preference to Linseed-cake, particularly when of good quality, but not relatively to the present market prices of the articles. My opinion of the value of oilcake is higher than that of some of my most intelligent neighbours, but I shall mention in explanation that I uniformly use the highest priced foreign oilcake, and when I speak of its slight superiority to grain, it is only with reference to oilcake of the best quality. I am convinced that inferior oilcake is not superior, weight for weight, to farinaceous substances, particularly when mixed. I need scarcely remark what a saving this would give in the expenditure of the farm were this fully confirmed by experiment, as no less than about a million of tons of Linseed-cake are annually imported into Great Britian. In other words, something like five millions of money is expended by farmers on this substance. Poppy-cake, the refuse of crushed Poppy-seed, was introduced a few years ago for feeding purposes; its price is about 5*l.* per ton, at which there is a considerable demand. Rape-cake has been but little used as feeding; its relative price to Linseed makes it a matter for further inquiry. Owing to its bitterness, it should be given as a mixture; it generally sells from 3*l.* to 5*l.* per ton. Oats have hitherto been rather neglected in the feeding of cattle, but within the last year or two, their value for such purposes has been more fully appreciated, and will, in all probability, become more so. The present price is about 5*l.* 12*s.*

Beans and Peas.—Beans have been long esteemed the best article of the produce of the farm for fattening cattle, and are still extensively used. Present prices about 6*l.* 5*s.* The Tares generally used in East-Lothian are of foreign growth, and frequently much damaged. The price varies much. When they can be obtained at a low price, say about 4*l.* to 5*l.* per ton, they may be advantageously used. The same may be said of white Peas; much used in England for feeding. *Barley.*—Light and stained Barley can often be purchased at a low price; much of it is used in England, and there sometimes sprouted before using. As a mixture it is highly valuable; present value about 5*l.* 10*s.* Inferior samples of foreign Barley, Oats, &c., may occasionally be had at a very low figure. Indian Corn was expected, on its introduction, at the present duty of 1*s.* per quarter, to be made extensively available for feeding purposes; but hitherto its high price has prevented its adoption, except in a few cases of experiment, and these serve to show that, at present rates, it is considerably higher than the other substances mentioned above. Bran generally sells above its real value for fattening. Distillery offals are of varied quality, and from recent improvements in the manufacturing of spirits are now of much less value as an article of feeding; their weight is also a barrier to profitable and extended use. The most important part of the subject remains to be discussed, viz., the relative values of different substances employed in the fattening of cattle and sheep. An experiment which I made with the greatest care, and the results of which appear in the Transactions of the East Lothian Agricultural Society, may perhaps be regarded as contributing something to a settlement of this question. I may also state that, though I cannot give to the Society as full details of the experiments which I have made since that time, yet the whole of my experiments since have confirmed the results, and I have uniformly acted upon them in my general practice. In this view, the experiments, though made a good many years ago, may perhaps be regarded as on this account the more valuable.

(To be continued.)

Notices to Correspondents.

BORING INSTRUMENTS: *Sandy Soil.* Any large ironmonger will supply you or procure them for you; Mapplebeck and Lowe, of Birmingham, for instance.

BURNING CLAY: *Sandbach.* We have had no experience; but there has been ample experience of the advantage of the plan. See Journal of the Royal Agricultural Society: Vol. iii. 323; iv. 267; v. 12, 113; vii 142, 245, 297; viii 46, 77, 317.

CHALKING: *W C J.* Your question has unfortunately arrived too late for a detailed answer this week; but, in the meantime, we refer you to the Notice in column *a*, page 734, where you will see that your inquiry had already received attention.

FLAX: *Sub.* Read T. K. Short's sixpenny book; or wait till our next volume, and we will give you a paper on the culture of each of our farm crops in succession.

HORSES: *J K Lewis.* "Stable Economy," by J. Stuart, V.S.

MANGOLD WURZEL: *G H.* To use them instead of Swedes would, at this season, make the sheep fall back. If you give Beans with them, instead of Oats, the laxative tendency of the watery root might be more effectually checked.

MANURING: *Inquirer.* The constant use of quick-lime in compost with the earth of headlands—for use broadcast over Grass-land, cannot balance the loss which such lands, as ordinarily treated, sustain Probably the best way to ascertain if Grass-lands require lime is to try a small portion for a year or two, before the general dressing is intended.

MARL: *Mayo Sub.* The specimen sent contains much lime, and will doubtless prove a useful top-dressing. You may apply almost any quantity usefully on peat—100 cart-loads per acre.

POND-MUD: *L C K.* It may be used as the basis of composts. Mixed with salt, gypsum, guano, or dung, it may be used beneficially on Grass and arable lands. There is no need for leaving it longer than a single winter.

POOR CLAYS: *Cantab* We know no work specifically on this class of soils. See an article on the subject at page 603.

SALT: You may add salt to the dung-heap at the rate of 2 cwt. or 3 cwt. to the quantity intended for one acre of land. It is not injurious to the Potatoes. Skirving's Swede, Orange Globe Mangold Wurzel, Jersey Cattle Parsnip, are the best sorts of seed.—A bushel will weigh probably about 70 lbs. or 80 lbs. We speak from judgment of the weight of a cart-load. They may be put on frosty Turnips; they often are, but should have hay with them. Dorset sheep and lambs may be folded on Turnips so long as ordinary weather lasts.

SHEEP SEIZED WITH GIDDINESS: *Sub.* We are very much disposed to think there must be some connection between the Sow Thistles and the disease, although we cannot recollect any similar instance, and are unable to find any analysis of the Thistle that will assist our hypothesis. *W. C. S.*

*** Communications reaching town after Wednesday, cannot be answered till the following week.

Markets.

COVENT GARDEN, Nov. 30.

Vegetables are abundantly supplied. Hothouse Grapes and Pine-apples are quite equal to the demand. Oranges and Lemons are plentiful. Pears are still received from the Continent. Filberts are dearer. Carrots and Turnips are good in quality, and so are Potatoes. The latter are rather dearer. Lettuces and other salading are sufficient for the demand. Mushrooms are still scarce. Cut Flowers consist of Heaths, Pelargoniums, Camellias, Fuchsias, Mignonette, Tulips, Dahlias, Bignonia venusta, Chrysanthemums, and Roses.

FRUITS.

Pine-apples, per lb., 4*s* to 6*s*
Grapes, hothouse, p. lb., 3*s* to 6*s*
— Portugal, p. lb., 8*d* to 1*s*
Pears, per doz., 1*s* to 3*s*
— per half sieve, 6*s* to 15*s*
Apples, dessert, p. bsh, 3*s* 6*d* to 8*s*
— kitchen, do., 3*s* 6*d* to 6*s*
Oranges, per doz., 9*d* to 2*s*
— per 100, 6*s* to 10*s*
Lemons, per doz., 1*s* to 2*s*
Pommegranates, each, 3*d* to 6*d*
Almonds, per peck, 6*s*
— sweet, per lb., 2*s* to 3*s*
Walnuts, p. 100, 1*s* to 2*s*
— p. bush., 12*s* to 24*s*
Nuts, Barcelona, p. bush., 20*s* to 22*s*
— Brazil, p. bsh., 12*s* to 14*s*
Filberts, per 100 lbs., 60*s* to 65*s*

VEGETABLES.

Brussels Sprouts, per hf. sieve, 1*s* 6*d* to 2*s*
Cabbages, per doz., 6*d* to 1*s*
Greens, p. doz. bunches, 1*s* 6*d* to 2*s* 6*d*
Cauliflowers, p. doz., 1*s* to 4*s*
Broccoli, p. doz. bundl. 6*s* to 10*s*
Sorrel, p. hf. sieve, 6*d* to 9*d*
Potatoes, per ton, 60*s* to 100*s*
— per cwt., 3*s* to 5*s*
— per bush., 1*s* 6*d* to 2*s* 6*d*
Turnips, p. 12 bundles, 1*s* to 2*s*
Cucumbers, each, 6*d* to 1*s*
Radishes, per doz., 1*s* to 1*s* 6*d*
Leeks, per bunch, 1*d* to 2*d*
Celery, p. bundle, 9*d* to 1*s* 6*d*
Carrots, per doz., 2*s* to 5*s*
Spinach, p. half sieve, 6*d* to 1*s*
Onions, p. bunch, 4*d* to 6*d*
— Spanish, p. doz., 1*s* 6*d* to 4*s*
Shallots, per lb., 6*d* to 8*d*
Garlic, per lb., 4*d* to 8*d*
Artichokes, Jerusalem, p. half sieve, 1*s* 6*d* to 2*s*
Lettuce, Cabbage, p. score, 1*s*
— Cos, p. score, 1*s* to 1*s* 6*d*
Endive, per score, 1*s* to 1*s* 6*d*
Small Salads, p. punn, 2*d* to 3*d*
Horse Radish, p. bdl., 1*s* to 4*s*
Red Beet, per doz., 6*d* to 1*s*
Mushrooms, p. pot., 1*s* 3*d* to 1*s* 6*d*
Fennel, per bunch, 2*d* to 3*d*
Savory, per bunch, 2*d* to 3*d*
Thyme, per bunch, 2*d* to 3*d*
Parsley, p. doz. bun., 1*s* to 2*s*
— Roots, p. bdls., 9*d* to 1*s*
Marjoram, per bunch, 2*d* to 4*d*
Mint, per bunch, 2*d*
Watercress, p. 12 bunch., 6*d* to 9*d*

SMITHFIELD, MONDAY, Nov. 25.

We have a large supply of Beasts. Trade is dull, and lower prices are taken, although a fair clearance is effected, the weather being good. There is by no means a brisk sale for Sheep, but the number being small late quotations are maintained. Trade is hardly so good for Calves. Our foreign supply consists af 793 Beasts, 1080 Sheep, and 102 Calves.

Per st. of 8 lbs.—	s	d	s	d
Best Scots, Herefords, &c.	3	8	to 3	10
Best Short-horns	3	4	— 3	6
2d quality Beasts	2	6	— 3	0
Best Downs and Half-breds	3	10	— 4	2
Ditto Shorn	—	—	—	—

Per st. of 8 lbs.—	s	d	s	d
Best Long-wools	3	6	to 3	8
Ditto Shorn	—	—	—	—
Ewes & 2d quality	3	0	— 3	4
Ditto Shorn	—	—	—	—
Lambs	—	—	—	—
Calves	2	8	— 3	10
Pigs	3	0	— 4	0

Beasts, 4343; Sheep and Lambs, 21,420; Calves, 131; Pigs, 390.

FRIDAY, Nov. 29.

Trade is about the same as on Monday for choicest Beasts, but hardly so good for inferior kinds. Several of the latter remain unsold. The supply of Sheep exceeds the demand; prices are rather lower except for the best qualities. Calves are more plentiful, trade is slow at Monday's quotations. Our foreign supply consists of 310 Beasts, 2080 Sheep, 199 Calves, and 20 Pigs. We have 85 Milch Cows from the home counties.

Best Scots, Herefords, &c.	3	6	to 3	10
Best Short-horns	3	4	— 3	6
2d quality Beasts	2	4	— 3	0
Best Downs and Half-breds	3	10	— 4	2
Ditto Shorn	—	—	—	—

Best Long-wools	3	4	to 3	8
Ditto Shorn	—	—	—	—
Ewes & 2d quality	2	10	— 3	2
Ditto Shorn	—	—	—	—
Lambs	—	—	—	—
Calves	2	8	— 3	10
Pigs	3	0	— 4	0

Beasts, 1037; Sheep and Lambs, 5970; Calves, 318; Pigs, 510.

HOPS.—FRIDAY, Nov. 29.

Messrs. PATTENDEN and SMITH report that there is a steady trade doing in colourv Hops, and prices firm.

HAY.—Per Load of 36 Trusses.

SMITHFIELD, Nov. 28.

Prime Meadow Hay	70*s* to 75*s*		Clover	70*s* to 80*s*	
Inferior ditto	60	65	Second cut	60	70
Rowen	55	65	Straw	20	25
New Hay	—	—	J. COOPER.		

CUMBERLAND MARKET, Nov. 28.

Prime Meadow Hay	70*s* to 75*s*		Inferior	65*s* to 72*s*	
Inferior ditto	50	63	New Clover	—	—
New Hay	—	—	Straw	24	28
Old Clover	78	84	JOSHUA BAKER.		

COAL MARKET.—FRIDAY, Nov. 29.

Hollywell, 15*s.*; Eden Main, 14*s.* 6*d.*; Wallsend Heaton, 14*s.* 6*d.*; Wallsend Haswell, 15*s.* 9*d.* to 16*s.*; Wallsend Stewart's, 15*s.* 9*d.*; Wallsend Tees, 15*s.* 9*d.*—Ships at market, 256.

POTATOES.—SOUTHWARK, Nov. 25.

The Committee report that since the last report, owing to contrary winds, the arrivals have been limited, which enabled salesmen to realise the highest quotations Present prices:—York Regents, per ton, 80*s.* to 90*s.*; Scotch do., 55*s.* to 70*s.*; Wisbeach do., 65*s.* to 75*s.*; French, 65*s.* to 70*s.*

MARK LANE.

MONDAY, Nov. 25.—The supply of Wheat by land-carriage samples from Essex and Kent this morning was moderate; fine qualities obtained the rates of this day se'nnight, but some of the cold and inferior descriptions remained unsold at a late hour. Business in foreign was very limited, and its value remains unaltered.—The prices of Barley, Beans, Peas, and Oats are the same as last quoted, but the inquiry for either is less active.

PER IMPERIAL QUARTER.	s.	s.		s.	s.
Wheat, Essex, Kent, & Suffolk ...White	44	—47	Red	38	—45
— — fine selected runs ...ditto	43	—48	Red		—42
— — Talavera	46	—52			
— Norfolk, Lincoln, & York...White	—		Red		—
— Foreign	36	—50			
Barley, grind. & distil., 22*s* to 24*s*...Chev	28	—32	Malting	24	—28
— Foreign....Grinding and distilling	19	—24	Malting	20	—25
Oats, Essex and Suffolk	—				
— Scotch and Lincolnshire ...Potato	20	—24	Feed	17	—21
— Irish ...Potato	17	—21	Feed	16	—18
— Foreign.....Poland and Brew	18	—22	Feed	15	—19
Rye	25	—27	Foreign	—	
Rye-meal, foreign.....per ton	—				
Beans, Mazagan.....25*s* to 27*s*.....Tick	26	—28	Harrow	26	—28
— Pigeon .....27*s* — 32*s*...Wind-	38	—44	Longpod	28	—34
— Foreign ..... Small	24	—3	Egyptian	21	—22
Peas, white, Essex and Kent.....Boilers	27	—29	Suffolk	28	—31
— Maple.... 30*s* to 32*s* .....Grey	27	—29	Foreign	25	—33
Maize ..... White	—		Yellow	—	
Flour, best marks, delivered... per sack	36	—40			
— Suffolk ..... ditto	30	—36	Norfolk	30	—36
— Foreign .....per barrel	18	—24	Per sack	29	—34

ARRIVALS IN THE PORT OF LONDON LAST WEEK.

	Wheat.	Barley.	Malt.	Oats.	Beans.	Peas
Flour, 13175 sks — 5273 brls	Qrs.	Qrs.	Qrs.	Qrs.	Qrs.	Qrs.
English	3337	3890	3667	920	295	423
Irish	—	20	—	7349	—	—
Foreign	8684	5162	—	8926	40	3173

FRIDAY, Nov. 29. — The arrivals of all grain this week have been moderate. This morning's market was very thinly attended, and the English Wheat left over from Monday was only partly disposed of, the terms being barely equal to those of that day. Business in foreign was limited, but holders are very firm.—The middling qualities of English Barley are neglected, but other descriptions and foreign meet a fair sale. —Beans and Peas are unaltered in value.—Our quotations for Oats are fully supported.—Flour is in moderate demand only, but prices are unaltered.—A small business has been done in floating cargoes of Wheat at late rates; for Galatz Maize a trifling advance is insisted upon.

ARRIVALS THIS WEEK.

	Wheat. Qrs.	Barley. Qrs.	Oats. Qrs.	Flour.
English	2610	4990	530	2080 sacks
Irish	—	—	750	
Foreign	6970	3090	4410	— brls.

IMPERIAL AVERAGES.	WHEAT.	BARLEY.	OATS.	RYE.	BEANS.	PEAS.
Oct. 19	39*s* 10*d*	24*s* 2*d*	16*s* 7*d*	26*s* 7*d*	29*s* 7*d*	29*s* 5*d*
— 26	39 9	24 0	16 8	25 1	28 10	30 6
Nov. 2	40 2	24 1	17 3	28 6	29 1	29 2
— 9	40 5	24 4	17 0	26 7	29 0	29 11
— 16	39 11	24 1	17 2	24 2	28 9	29 0
— 23	39 11	24 1	17 3	29 6	28 9	29 4
Aggreg. Aver.	40 0	24 2	17 0	25 11	29 0	29 7
Duties on Foreign Grain	1 0	1 0	1 0	1 0	1 0	1 0

Fluctuations in the last six weeks' Corn Averages.

PRICES.	OCT. 19.	OCT. 26.	NOV. 2.	NOV. 9.	NOV. 16.	NOV. 23.
40*s* 5*d*	...	...	...	...	...	...
40 2	...	...	...	...	...	...
39 11	...	...	...	...	...	
39 11	...	...	...	...	...	...
39 10	...	...	...	...	...	...
39 9	...	...	...	...	...	...

SEEDS.—Nov 25.

Canary, per qr.	50*s* to 54*s*		Coriander, per cwt.	14*s*	— 21*s*
Caraway, per cwt.	29	— 33	Mustard, white, p. bush.	4	— 6
Hempseed, per qr.	34	— 35	— brown do.	7	— 10
Linseed, foreign, do.	37	— 44	Rape, per last	24*l.*	—26*l.*
Clover, red, p. cwt.	—	—	Cakes, Lindseed, p. 1000	8*l.*	15*s*
— — foreign, do.	—	—	— — foreign, p. ton,	6*l.*	15*s*
— white, do.	—	—	— Rape, foreign, do.,	3*l.*	17*s*
— — foreign, do.	—	—	Tares, per bush.	3*s*	0*d*—5*s* 6*d*

LIVERPOOL, FRIDAY, Nov. 22.—At our market to-day the tone of the Wheat trade disappointed in some degree the anticipations of holders, millers being on the reserve. Of course the transactions in any description of English, Irish, or foreign Wheat were upon a limited scale, and Tuesday's rates scarcely sustained. French Flour maintained late prices, but in Irish little business was done. Barley, Malt, Beans, and Peas appeared to remain as described on Tuesday. Oats and Oatmeal were in moderate request, the former fully supporting, but the latter hardly realising the extreme rates of Tuesday. Indian Corn commands a steady inquiry, American yellow realising 30*s.* per qr.——TUESDAY, Nov. 26.—The aspect of trade at our Corn Exchange this morning evinced no lively feature in any of its departments. With the exception of a few parcels of Wheat taken for Ireland, the transactions in any description were very limited in amount, and although we are scarcely warranted in reducing our quotations, prices were decidedly in favour of buyers. Malting Barley receded 1*s.* per qr.; grinding samples were the turn dearer. Malt steady. Beans and Peas in slow request, and the former easier to purchase. Oats were held at an advance of 1*d.* per 45 lbs., which was partially paid. Oatmeal firm, at late quotations. Present prices: Wheat, English red, per 70 lbs., 5*s.* 7*d.* to 6*s.* 3*d.*; white, 6*s.* 0*d.* to 6*s.* 6*d.* Barley, Scotch and Irish, per 60 lbs., 3*s.* 0*d.* to 3*s.* 3*d.* Malt, English, per qr. pale, 50*s.* to 55*s.* Oats, English and Scotch, per 45 lbs., 2*s.* 9*d.* to 3*s.* 0*d.* Beans, English, per qr., 27*s.* to 31*s.* Peas, do. do., 29*s.* to 31*s.*

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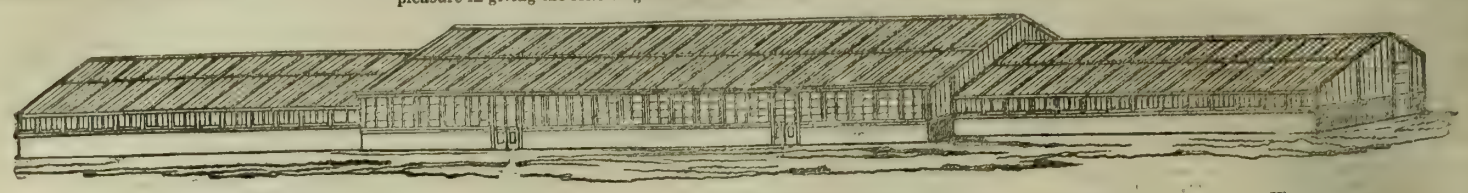
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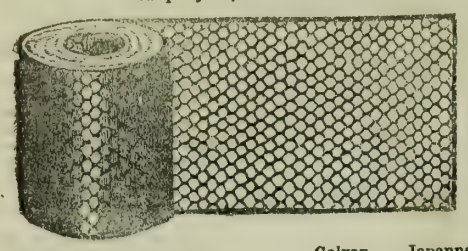
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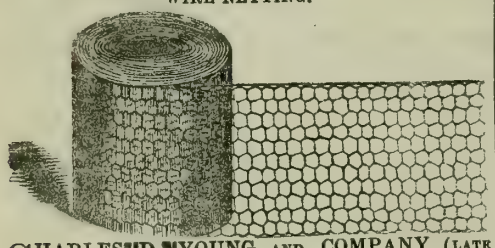


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AND
AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 49—1850.] SATURDAY, DECEMBER 7. [PRICE 6*d*.

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The whole of the above, with the exception of the two years seedlings, were planted into the open border last spring, are fine robust specimens, and fit for immediate planting.

CRYPTOMERIA JAPONICA, var. NANA, a very singular dwarf variety, 10*s*. 6*d*. to 21*s*.

CUPRESSUS FUNEBRIS, or WEEPING CYPRESS. (North of China.)

6 inches high, 10*s*. 6*d*. each; 12 to 15 inches, 21*s*. each.

These plants are from the open border—robust specimens fit for immediate planting.

15 ins. to 24 ins., 31*s*. 6*d*. each; 24 ins. to 30 ins., 42*s*. each.

CUPRESSUS GOVENIANA. (California.)

6 to 9 inches, 7*s*. 6*d*. each; 9 to 15 inches, 10*s*. 6*d*. each.
15 to 24 inches, 21*s*. each; 2 to 3 feet, 31*s*. 6*d*.

CUPRESSUS LAMBERTIANA, 2 feet, 3*s*. 6*d*. each.

CUPRESSUS THURIFERA, var. ELEGANS, perfectly hardy. 1 foot to 2 feet high, 3*s*. 6*d*. to 5*s*. each.

CEPHALOTAXUS FORTUNII, strong plants, 31*s*. 6*d*. each. For description, see "Botanical Magazine," by Sir W. Hooker.

FORSYTHIA VIRIDISSIMA.

1 foot 6 inches to 2 feet ... ... 1*s*. 6*d*. to 2*s*. 0*d*. each.
2 feet to 3 feet ... ... ,, 2*s*. 6*d*. ,,
3 feet to 4 feet ... ... 3*s*. 6*d*. ,, 5*s*. 0*d*. ,,

Fine bushy plants from open border fit for immediate planting.

JASMINUM NUDIFLORUM ... ... 1*s*. 0*d*. each.
Flowering plants ... ... 3*s*. 6*d*. ,,

This is a very desirable winter flowering hardy plant, producing a profusion of flowers of the richest yellow from December to February.

QUERCUS SCLEROPHYLLA. (North of China.) This is undoubtedly the most remarkable of all evergreen Oaks, having foliage as large as the Spanish Chestnut, and more than twice the substance. Strong seedling plants, 42*s*. each.

QUERCUS INVERSA. (North of China.) Also evergreen, with smooth entire leaves, having remarkably large male inflorescence. Seedlings, 42*s*.

FORTUNE'S YELLOW ROSE, a distinct species, admired by all who have seen it. It would be impossible to describe the combination or richness of the bronze and yellow tints which the flowers present. It is an excellent pillar Rose, and its foliage is distinct. It blooms freely, and in general habit resembles Rugs. Dwarfs, 5*s*.; Standards, 10*s*. 6*d*. each.

TAXODIUM SEMPERVIRENS.

1 foot to 1 foot 6 inches ... ... 2*s*. to 2*s*. 6*d*. each.
1 foot 6 inches to 2 feet 6 inches ... 3*s*. 6*d*. to 5*s*. ,,
3 to 4 feet ... ... 7*s*. 6*d*. to 10*s*. 6*d*. ,,

Larger in proportion.

VIBURNUM PLICATUM. (North of China). A noble shrub, producing in great profusion large globular heads of flowers of the purest white. Strong plants, 21*s*. each.

WEIGELA ROSEA.

6 inches high ... ... 1*s*. 0*d*. each.
1 foot to 1 foot 6 inches ... ... 1*s*. 6*d*. to 2*s*. 6*d*. each.
1 foot 6 inches to 2 feet ... ... 3*s*. 6*d*. to 5*s*. 0*d*. ,,

These last are fine bushy flowering plants.

Selections of the finest Autumnal Flowering Roses.

Standards ... ... 15*s*. 0*d*. per dozen.
Half Standards ... ... 12*s*. 0*d*. ,,

N.B.—We have a large quantity of very fine common Laurels, from 2 feet to 6 feet high; also Spruce Fir, from 2 feet to 4 feet high; which can be sold very cheap, particulars of which can be had on application.

Bagshot Nursery, Dec. 7.

GRAVESEND.—50,000 TREES AND SHRUBS ON SALE.—Arbor-vitæ, Berberis aquifolium, Cytisus, Cypress, Holly, Jasminums, Lilacs, Laurels, China Roses, &c., 2 to 4 feet, from 15*s*. to 40*s*. per hundred. Standard Roses, 4*l*. to 5*l*.

Aucuba japonica, Arbutus, Cotoneaster, 2 to 3 ft., 12*s*. per dozen; Irish Yews, 3 to 4 feet, 25*s*. Standard Roses, in sorts, 18*s*. to 30*s*.

Large ornamental Trees, for immediate effect, Greenhouse and Herbaceous Plants, in great variety, at low prices.

Apply at the Cemetery, Gravesend, Kent.

"CEDRUS DEODARA" AND "CUPRESSUS TORULOSA ELEGANTISSIMA."

WM. MAULE AND SONS are now prepared to offer, from their large supplies of CEDRUS DEODARA of various sizes, many thousands of fine specimen plants (grown from seed constantly in the open ground and in pots) measuring 3 feet and upwards, unusually fine and bushy, with good leaders, at 60*s*. per dozen; also many thousands of fine plants of CUPRESSUS TORULOSA; the hardy variety Elegantissima in pots, upwards of 2 and 3 feet, at 50*s*. and 75*s*. per hundred; they also abound with good supplies of the Himalaya Conifera generally, together with a large Stock of Scarlet Crimson Himalaya and other hardy Rhododendrons, prices for which will be forwarded on application.

N.B. W. M. and SONS' Lists of prices for Fruit, Forest, Evergreen, and other Trees and Shrubs required at the present planting season, are now ready for distribution, and will be forwarded on application.

References expected from unknown correspondents.

Stapleton-road Nurseries, Bristol.

MESSRS. JEYES AND CO. have a few hundreds of Moor-park Apricots and Green-gage Plums, all dwarf trained, to offer at cheap prices; also two years Seedling Berberis aquifolium. Wanted to purchase 2000 strong Gooseberry Plants of the following sorts—Warrington Reds, Crown Bobs, and Viper; also 50 Magnolia grandiflora.

Northampton, Dec. 7.

TO NURSERYMEN.

WANTED now, or at first open weather, 1000 first rate three-year-old, hardy sorts of APPLE TREES, and 1000 PEAR TREES, suitable for planting 20 acres of sound heavy corn land. To be delivered free, at Tilbury Fort, Romford, Rayleigh, or Billericay, in Essex. Address, lowest terms, to D. MORRIN, Esq., 2, Chapel-terrace, Bayswater. N.B. larger operations are intended next autumn, as it is all up with corn and protection.

THE BELGIAN GRAND NURSERY of AD. PAPELEU, IN WETTEREN, near Gand (Belgium).—The extensive choice and immense quantities of the beautiful Vegetation of every article from this Nursery, recommends it to all persons, proprietors of estates, gardens, nurseries, and to such who have trees to plant. Amongst the Fruit-trees of this large Establishment will be found the great varieties obtained by those grand Belgian Propagators—Count d'Hardenpont, Count Coloma, Dr. Van Mons, Major Esperen al Bivort, Bouvier, Gregoire, and others. An extensive Catalogue of the trees may be had, gratis, at Mr. THOMAS'S Universal Advertising and Publishing Offices, 19 to 21, Catherine-street, Strand; or on application, will be sent, post free, on receipt of four penny stamps.

CARTER'S CATALOGUE OF SEEDS.

J. CARTER, SEEDSMAN and FLORIST, 238, High Holborn, London, announces the speedy appearance of his new CATALOGUE FOR 1851, which will be forwarded, gratis and prepaid, on application by post or otherwise. He begs leave to state that the Floricultural section comprises, as usual, the Scientific and English Name of each plant, the Linnean Class and Order, and Natural Order to which it belongs; its hardiness, duration, time of flowering, and colour of the flowers, and other necessary information. The collection of Flower Seeds will comprise several splendid novelties.

H. LANE AND SON, Great Berkhamsted, Herts, will send their NEW CATALOGUE OF ROSES to applicants, by their inclosing two penny stamps. Those who are about Planting Pleasure Grounds, &c., should inspect H. L. and SON'S Nurseries (about 50 acres), as they have a fine healthy stock of some thousands of Cedrus Deodara, 2 to 4 feet; Araucaria, 2 to 3 feet; Abies Douglasii, from seed, 4 to 5 feet, with all the leading Pinus. Rhododendrons, all the hardy varieties, from white to crimson, growing in loam, from which they remove readily (also the hybrids of Sinensis—greenhouse varieties); Azaleas, best Ghent, with a general collection of Trees and Shrubs, both for the Pleasure Ground and Park; also of Fruits, Catalogues of which may be had by inclosing two penny stamps.

The Stock of Plants at these Nurseries are kept constantly removed, to ensure success, and not drawn up, to be sold at a price to deceive the public.

Double Camellias and greenhouse Azaleas 1 foot to 4 feet.

KNIGHT AND PERRY, EXOTIC NURSERY, King's-road, Chelsea, London, deeply grateful for the distinguished patronage so long conferred upon them, beg to intimate that their NEW CULINARY AND FLOWER SEEDS, all of the first quality, are now ready, and they most respectfully solicit a continuance of that support which has been extended to their house for the last 50 years.

For the above—as well as for their AGRICULTURAL SEEDS, to which they pay great attention, Stove, Greenhouse, and Herbaceous Plants, Bulbous Roots, imported annually by themselves from Holland, Conifers and other Hardy Ornamental Trees and Shrubs in great variety, and including many valuable novelties, Grape Vines of all the best sorts, from eyes, Fruit Trees of choice sorts, both trained and untrained, and which are this season of very fine growth—there are lists specially appropriated, and which they respectfully solicit permission to forward.

Exotic Nursery, King's-road, Chelsea, London.

CHOICE FRUITS, &c.—Planters are respectfully informed that YOUELL AND CO. possess an extensive stock of strong and healthy plants of the under-mentioned:

FASTOLFF RASPBERRRY (true), as originally sent out by Youell and Co., 15*s.* per 100.
Large White do., 24*s.* per 100.
Cornwall's Victoria, 8*s.* per 100.

CURRANTS.—Improved large White Dutch, 5*s.* per dozen.
Large Black Naples, 6*s.* per dozen.
Raby Castle, or Victoria (red), 6*s.* per dozen.
Knight's Sweet Red, 6*s.* per dozen.
Knight's Large Red, 6*s.* per dozen.
Red Grape, 4*s.* per dozen.

GOOSEBERRIES of the finest sorts, by name, selected for size, combined with flavour, 5*s.* per dozen.

RHUBARB.—Myatt's Linnæus, Mitchell's Royal Albert, and Myatt's Victoria, 12*s.* per dozen.
Youell's Tobolsk, fine, for forcing, 6*s.* to 9*s.* per dozen.

ASPARAGUS.—Giant, strong, 4 years old, for forcing, 5*s.* per 100.
Do. do. 2 and 3 years old, 2*s.* 6*d.* and 3*s.* 6*d.* per 100.

SEAKALE, strong, 1*s.* 6*d.* per dozen.

Apples, Pears, Cherries, Plums, Peaches, Nectarines, and Apricots, of the newest and most approved kinds, selected from the Garden of the London Horticultural Society, and warranted true to name, can be supplied in maiden and trained trees of the finest quality, and forward for bearing.

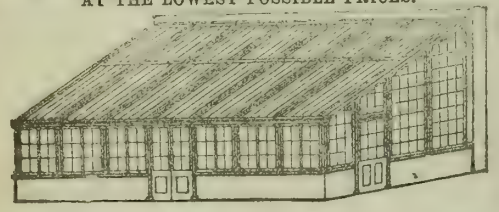
TO PLANTERS AND CONTRACTORS.—WHITETHORN, twice transplanted (very strong), 7*s.* 6*d.* per 1000.
Do. 1 and 2 years transplanted, 4*s.* 6*d.* and 5*s.* 6*d.* per 1000.
Do. 4 years, strong and fine, with an abundance of fibrous roots, as good as transplanted, 8*s.* per 1000, or 12*l.* 10*s.* per 100,000.
YOUELL & Co., Royal Nursery, Great Yarmouth.

BY HER MAJESTY'S ROYAL LETTERS PATENT.

PATENT HOTHOUSE WORKS, KING'S ROAD, CHELSEA.

TO BE SOLD, A GREAT BARGAIN, TWO PATENT SPAN-ROOF GOTHIC HOTHOUSES, with Ornamental Ridge, Pinnacles, and Stained Glass, and ends and sides between each Gothic head. Each House containing 1167 superficial feet, 28 ft. 6 in. long, 16 ft. 6 in. wide, and upright sashes; each side 6 ft. 3 in. high. Two ends and two Gothic doors in each house. The roofs 9 ft. each way. Sashes to run down each side of the span, and the price, in the regular way, 102*l.* each, but now can be had for the low price of 70*l.* Each House complete in every respect, and only wants a wall 2 ft. high to be placed on. One, the Roof without either wood or putty. The other, the Glass put in with putty.—E. DENCH, Patent Hothouse Works, King's Road, Chelsea, London.

HORTICULTURAL BUILDING AND HEATING BY HOT WATER.
WARRANTED BEST MATERIALS AND WORKMANSHIP AT THE LOWEST POSSIBLE PRICES.



J. WEEKS AND CO., King's-road, Chelsea, Horticultural Architects, Hothouse Builders, and Hot-water Apparatus Manufacturers. The Nobility and Gentry about to erect Horticultural buildings, or fix Hot-water Apparatus, will find at our Hothouse Works, King's-road, Chelsea, an extensive variety of Hothouses, Greenhouses, Conservatories, Pits, &c., erected, and in full operation, combining all modern improvements, so that a lady or gentleman can select the description of House best adapted for every required purpose.

THE HOT-WATER APPARATUSES (which are efficient and economical), are particularly worthy of attention, and are erected in all the Houses, Pits, &c., for both Top and Bottom Heat, and in constant operation in the Stoves.

The splendid collection of Stove and Greenhouse Plants are in the highest state of cultivation, and for sale at very low prices. Also a fine collection of Strong Grape Vines in pots from eyes, all the best sorts.

Plans, Models, and Estimates of Horticultural Buildings, also Catalogues of Plants, Vines, Seeds, &c., forwarded on application.—J. WEEKS and Co., King's-road, Chelsea, London.

GREEN AND HOTHOUSES, strong built, at the following low scale of prices:—Lean-to Roofs, 12 feet by 8, 10*l.*; 16 by 8, 15*l.*; 20 by 10, 20*l.*; 20 by 12, 24*l.*; 24 by 12, 28*l.*; and 28 by 12, 32*l.* Greenhouse Garden Lights, and Window Sashes, complete, painted three times, at 9*d.* per foot. A Greenhouse, ready built, for sale, 16 feet by 9.—Plans and particulars sent by addressing a letter to Mr. SMITH, 85, White Lion-street, Islington, London.
Estimates given for Hot-Water Apparatus.

DIXON'S NEW (REGISTERED) VENTILATOR.—This Ventilator is much neater and more simple than any hitherto invented, can be made of any shape or size, and can be as easily cleaned as any other part of a window. It does not interfere with the blinds, or opening of the windows, and if accidentally broken can be repaired by any glazier at the cost of a single pane of glass. Models can be seen, and every information obtained, by applying to the London agents, JAMES PHILLIPS and Co., 116, Bishopsgate-street Without.

Dixon v. *Bessell.—Alderman Wilson said,* "*It was a very clever invention, and he thought Mr. Dixon ought at least to have seven years' protection instead of three,*" *and fined the defendant* 60*l.*, *and* 10*l. costs, for an infringement of the Registered design.—Oct.* 1, 1850.

MAGNUS'S ENAMELLED SLATE is handsomer and more durable than the choicest Marbles, is less than half the cost of the commonest, and is PATRONISED by her MAJESTY and PRINCE ALBERT, the Nobility, Clergy, Architects of Eminence, Engineers, Builders, Railway Contractors, and the Public generally. It is suitable for Chimney-pieces, Pier-table tops, Vases, Ink-trays, and ornaments of various descriptions, Billiard-tables, Baths, Wash-stand, and Dressing-table Trays, Door Furniture, Candelabra, Columns, Monuments, Head Stones, Mural Tablets, Pilasters, Plinths, Fonts, Grand Staircases, Balusters, &c., and is made to represent not only the marbles in ordinary use but all the more costly descriptions, as Porphyry, Rose Granite, Broccatella, Brescia, Lapis Lazuli, Malachite, and Florentine Mosaics, and has obtained the Medal from the Society of Arts. Bured Chimney-pieces, from 25*s.* upwards. Price lists sent on application to Mr. MAGNUS, PIMLICO SLATE WORKS, 39 and 40, Upper Belgrave-place, London.

*** Roofing and Plain Slate work, of all descriptions, at low prices.

DRAINING TOOLS AND DIGGING FORKS.

E. H. KITCHEN, 533, Oxford-street, London, respectfully invite agriculturists to inspect their stock of DRAINING TOOLS, which will be found to comprise those suitable for every description of soil, and such as have received prizes at the principal agricultural meetings in Great Britain.

GLASS FOR CONSERVATORIES, GREENHOUSES, FRAMES, &c.

JAMES PHILLIPS AND Co., 116, Bishopsgate-street Without, are supplying SHEET GLASS, packed in 100 feet boxes, at the following *Reduced Prices*. A reduction on 1000 feet.

SMALL SQUARES.

Sizes.—Inches.	Per 100 feet.—£. *s.* *d.*
6 by 4, 6½ by 4½, 6 by 5, 6 by 5½	0 13 0
7 by 4, 7 by 4½, 8½ by 4, 8 by 4½, and not exceeding 8 by 6	0 15 0
9 by 7, 9½ by 7½, 10 by 8	0 17 6
12 by 9, 12 by 10...	1 0 0

LARGER SIZES, not exceeding 40 inches long.

16 oz. from 3*d.* to 3½*d.* per square foot, according to size.
21 oz. „ 3½*d.* 5*d.* „ „
26 oz. „ 3½*d.* 7½*d.* „ „

Packed in Crates of about 250 feet each, and in sizes of about 40 in. by 30.

HARTLEY'S PATENT ROUGH PLATE, packed in boxes of 50 feet each:

6 by 4 and 6½ by 4½ ...	12*s.* 0*d.*	8 by 6 and 8½ by 6½ ...	15*s.* 0*d.*
7 by 5 „ 7½ by 5½ ...	13 6	9 by 7 „ 10 by 8 ...	16 6

GLASS TILES.

Rough Plate.		Sheet.	
¼ in. thick, each ...	0*s.* 10*d.*	16 oz., each	0*s.* 6*d.*
⅜ „ „ ...	1 8	21 „	0 8
½ „ „ ...	1 7	26 „	0 10
¾ „ „ ...	2 0	32 „	1 0

GLASS SLATES.

Size.	ROUGH PLATE. ⅛ inch thick.	¼ inch thick.	⅜ inch thick.	½ inch thick.	SHEET. 16 oz.	21 oz.	26 oz.	32 oz.
	s. *d.*	*s.* *d.*	*s.* *d.*	*s.* *d.*	*s.* *d.*	*s.* *d.*	*s.* *d.*	*s.* *d.*
24 by 12	1 6	2 0	2 8	5 0	0 11	1 3	1 9	2 0
20 by 14	1 5½	1 11	2 7	4 10	0 10½	1 2½	1 8½	1 11
22 by 12	1 5	1 10	2 6	4 8	0 10	1 2	1 8	1 10
20 by 10	1 1½	1 6	2 0	3 8	0 8½	1 0	1 5	1 6

ROUGH PLATE GLASS.

	¼ in.	⅜ in.	½ in.	⅝ in.	1 in.	1¼	1½
	s. *d.*	*s.* *d.*	*s.* *d.*	*s.* *d.*	*s.* *d.*	*s.* *d.*	*s.* *d.*
Not above 15 inches long.....	0 11	1 0	1 6	3 0	4 6	5 3	6 0
Above 15 in. and not above 35	1 1	1 2	1 8	3 6	5 3	6 0	7 0
„ 35 „ „ 75	1 3	1 4	11 0	4 0	6 0	7 0	3 0

HALLIMAN'S REGISTERED FRUIT PROTECTORS, from 6*d.* to 1*s.* each.
MILK PANS, from 2*s.* to 6*s.* each.
PROPAGATING AND BEE GLASSES, from 2*d.* each.
WASP TRAPS, 3*s.* 6*d.* per dozen.
LACTOMETERS, for trying the quality of Milk, 7*s.* 6*d.* each.
STANDS, for Pianofortes, 1*s.* each.

Glass Shades for Ornaments. Parian Marble. Wax and Alabaster Ornaments. Lamp Shades and Glasses. Patent and British Plate. Ornamental and Stained Glass; and every article in the Trade.

N.B. All packages charged, but full price allowed if returned free of expense.

GLASS WATER PIPES.

MESSRS. COATHUPES AND Co., GLASS MANUFACTURERS, Bristol and Nailsea, Somerset, continue to supply GLASS PIPES for the conveyance of water, &c., in lengths of from 3 to 7 feet, and from ½ an inch to 4-inch bores; they provide also the necessary joints, which enable them to stand very considerable pressure.

GLASS FOR CONSERVATORIES, GREENHOUSES, PIT-FRAMES; AND PLATE GLASS FOR DWELLINGS.

THOMAS MILLINGTON begs to hand the sizes of a large quantity of SHEET GLASS, packed in 100 feet boxes.

6 by 4 ins., 6 by 4½ ins., 6½ by 4 ins., 6 by 5½ ins., 6½ by 5 ins., 12*s.* each.
6½ by 5½ ins., 6 by 6 ins., 6½ by 6 ins., and under 8 by 6 ins., 13*s.* each.
9 by 7 ins., 9½ by 7½ ins., and 10 by 8 ins., 15*s.* each.
Large sizes, 16 oz., 2*d.* and 2½*d.* per foot.
Large sheets, in 200 and 300 feet cases, 2½*d.* to 2⅝*d.* per foot.
16*s.* per box; or 2⅝*d.* per foot if less than one box be taken:

11 inches by 8 inches	13 inches by 9 inches
12 „ by 8 „	12 „ by 10 „
12 „ by 9 „	14 „ by 10 „

Boxes charged 1*s.* each extra.

T. M.'s Stock of small Glass is so large, that he thinks he can pledge himself to execute orders to any extent.

Glass cut to any other size required, in either 16 oz., 21 oz., 26 oz., or 32 oz.

ROUGH PLATE GLASS.

Rough Plate Cast, perfectly flat and uniform, the best manufactured. A small sample will be sent, upon application, to prove it.

Purchasers must be cautious, as some of the articles sold under this name are of the most inferior description, being full of fire-flaws, and the metal not properly united. We only recommend the best article, being sure that no other in the end can please. Some unprincipled vendors keep good samples to show, sending afterwards the inferior, described as above.

CUT TO ORDER IN PANES.

	¼ in. thick.	½ in. thick.
Not above 15 inches long	0*s.* 6*d.*	0*s.* 11*d.*
Above 15 inches and not above 35 ...	0 8	1 1
„ 35 „ „ 50 ...	0 9½	1 3
„ 50 „ „ 75 ...	1 0	1 3
„ 75 „ „ 100 ...	1 3	1 4
100 inches and above		1 6

SHEET GLASS TILES.

16 oz. sheet	0*s.* 5*d.*	26 oz. sheet	0*s.* 9*d.*
21 oz. „	0 7	32 oz. „	0 11

SUPERIOR ROUGH PLATE TILES.

⅛ inch	0*s.* 10*d.*	⅝ inch	1*s.* 7*d.*
¼ inch	1 3	½ inch	2 0

GLASS SHADES FOR ORNAMENTS.—Our price is 25 per cent. less than any house in the Trade, and the colour far superior, which must be preferable for ornaments.

LACTOMETERS for trying the quality of Milk: four tubes in frame, 6*s.* each. Wasp Traps, 3*s.* per dozen. Stands for Pianofortes, 9*d.* each.

MILK PANS 2*s.* to 6*s.* each, Hand-frames, Tiles, and Slates; Propagating and Bee Glasses from 2*d.* each; Cucumber Tubes, 1*d.* per inch; Peach Glasses, 10*d.* each; Pastry Slabs; Glass Plates, in wooden frames, for butter and pastry, &c.; Hyacinth Glasses and Dishes, Shades for Ornaments, Fish Globes, Plate and Window Glass of every description, and Lamp Shades. Self-registering Thermometers for Greenhouses, Horticultural Glass, &c.

N.B. The moderate charge of 1*s.* for each packing case will be made, which we think will be an inducement for parties to return them; but if sent back free of expense the whole will be allowed.

THOMAS MILLINGTON, GLASS, COLOUR, AND PAINT MANUFACTURER, 87, BISHOPSGATE-STREET WITHOUT, LONDON.

GLASS FOR CONSERVATORIES, GREENHOUSES, PIT FRAMES, &c.

HETLEY AND CO. are supplying 16-oz. Sheet Glass, of British Manufacture, packed in boxes containing 100 square feet each, at the following REDUCED PRICES for cash, A reduction made on 1800 feet.

Sizes. Inches.	Inches. Per foot.	Per 100 feet.
Under 6 by 4	at 1½*d.* is	£0 12 6
From 6 „ 4 „ 7 „ 5	„ 2*d.* „	0 16 8
7 „ 5 „ 8 „ 6	„ 2½*d.* „	0 18 9
8 „ 6 „ 10 „ 8	„ 2½*d.* „	1 0 10
10 „ 8 „ 12 „ 9	„ 2⅝*d.* „	1 2 11

Larger sizes, not exceeding 40 inches long.
16 oz. from 3*d.* to 3½*d.* per square foot, according to size.
21 oz. „ 3½*d.* 5*d.* „ „ „
26 oz. „ 3½*d.* 7½*d.* „ „ „

PATENT ROUGH PLATE, THICK CROWN GLASS, and PATENT PLATE GLASS for Horticultural purposes, at reduced prices, by the 100 square feet.
GLASS TILES AND SLATES made to any size or pattern, either in Sheet or Rough Plate Glass.
Propagating Glasses, Bee-hive Glasses, Cucumber Tubes, Glass Milk Pans, Glass Water Pipes, and various other articles not hitherto manufactured in glass.
PATENT PLATE GLASS.—The present extremely moderate price of this superior article should cause it to supersede every other inferior window glass in a gentleman's residence. No alteration connected with the sash is required.
GLASS SHADES, as ornamental to, and for the preservation of every description of goods susceptible of injury by exposure. Prices, since the removal of the Excise duty, reduced one-half. List of Prices and Estimates forwarded on application to JAMES HETLEY and Co., 35, Soho-square, London.

GREENHOUSE AND CONSERVATORY BUILDING ESTABLISHMENT, HOT-WATER APPARATUS MANUFACTORY, KENSALL-GREEN, HARROW-ROAD, LONDON.

JOHN TAYLOR begs most respectfully to call the attention of the Nobility, Gentry, and Gardeners, to the very superior manner in which he erects all kinds of Greenhouses, Conservatories, Forcing Pits, &c., and all other buildings for Horticultural purposes, combining all the most modern improvements with elegance and utility. His manner of heating Horticultural Buildings, Churches, Chapels, Public Buildings, Entrance Halls, &c., has received the greatest approbation from the Nobility and Gentry by whom he has been extensively engaged.

SMITHFIELD CATTLE SHOW.—MILK PANS, in stout Glass, of every size and variety of shape, will be exhibited as usual, Nos. 148, 149, 150, Bazaar, by Messrs. COGAN and Co., whose collections were honoured (among other Prizes) with the Silver Medal of the Dublin Society in April, as also with the Silver Medal of the Liverpool and Manchester Society, at their meeting, held at Warrington in September last.

NOBLEMEN, FARMERS, and the Public generally, are respectfully invited to notice the NEW GLASS CHURN. LORD CAMOY'S MILK SYPHONS for separating Milk from Cream, GLASS LACTOMETERS for ascertaining the quality of Milk, New Bee Glasses invented by Lord Keane, Glass Cream Pots and Pans, Glass Milk Trays, Glass Tiles and Slates, and every description of Dairy Glass.

Durable Farm Paints, Glass for Hothouses and Garden purposes, may be had (safely packed) for any part of the kingdom, or for exportation, on application at the Stands, 148, 149, and 150, or at the Warehouse, 48, Leicester Square, London.

Small Glass for Melon Pits of every size, from 10*s.* 6*d.* per 100 feet; Hartley's and Swinburne's PATENT ROUGH PLATE at the Manufacturer's prices,

Glass Ornamental Shades, Fern Shades, Lamp and Gas Glasses, Patent Glass Pens; Patent Texturalized, Silicated Marble, and other Ornamental Glass, supplied, as usual, at 48, Leicester-square; the Colour and Lead Department, at 5, Prince's-street, Coventry-street, London.

SMITHFIELD CLUB PRIZE CATTLE SHOW and EXHIBITION of IMPLEMENTS, SEEDS, ROOTS, &c., commences TUESDAY Morning, and closes FRIDAY Evening, 10th, 11th, 12th, and 13th December. Bazaar, King-street, Portman-square. The arrangements this year are upon a more extended scale, and marked by the usual attention to the comfort of Visitors, thereby enabling Ladies to view this National Exhibition with facility.

SMITHFIELD CATTLE SHOW.

W. SKIRVING, WALTON NURSERY, LIVERPOOL, begs to acquaint his Friends and the Public, that he will attend at the ensuing SMITHFIELD CATTLE SHOW, to exhibit Roots of his Improved Swede, and other Turnips, and to take orders for the Seed of them, and all other approved kinds of Agricultural Seeds. W. S. will also exhibit Specimens of these three new and highly interesting hardy Trees—Araucaria imbricata, Cedrus Deodara, and Cryptomeria japonica, of which he holds an extensive Stock, of various ages and sizes, all grown from seed in the open ground, and transplanted into beds or pots in the Nursery.

CAUTION.

NIGHT LIGHTS.—PATENT ALBERT NIGHT LIGHTS (Patented 30th January, 1844), CHILDS' NIGHT LIGHTS (Registered 20th September, 1849) are sold by all Grocers and Wax Chandlers throughout the country, at 6*d.* per box. The sale of the above, amounting at the present time to many tons weekly, shows that they meet with the approbation of the public; any description of them is therefore unnecessary. The object of this advertisement is, to request purchasers to *examine the name on the boxes*, so as to insure their getting what they intend.

Night Lights are liable not to last the time that they profess (frequently going out an hour or two after lighting); to be affected by the temperature of the room they are burnt in; to be injured by keeping any length of time, and to have an unpleasant smell. The manufacturers consider that, by use of materials secured to them by several patents, and by long experience in the manufacture, that they have overcome these difficulties; and they therefore beg, that should any attempted substitutes be recommended, they may be carefully compared as to all the above particulars.

N.B.—The wine-glass-shaped Lamp, on which is stamped "Clarke's Patent," is that recommended for the Albert Lights.
PRICE'S PATENT CANDLE COMPANY, Belmont, Vauxhall.

TOOTHACHE PERMANENTLY CURED by using BRANDE'S ENAMEL for filling decaying Teeth, and rendering them sound and painless. Price 1*s.* Enough for several Teeth. The only substance approved by the medical faculty, as being unattended with pain or danger, and the good effects of which are permanent.

Sold by all Chemists in the United Kingdom. Twenty really authorised Testimonials accompany each box, with full directions for use. Sent free by return of post by J. WILLIS, 24, EAST TEMPLE CHAMBERS, WHITEFRIARS, FLEET-STREET, LONDON, in return for thirteen penny stamps.

CAUTION.—The great success of this preparation has induced numerous unskilful persons to produce spurious imitations, and to copy BRANDE'S ENAMEL advertisements. It is needful, therefore, to guard against such impositions, by seeing that the name of JOHN WILLIS accompanies each packet.

TO GENTLEMEN ENGAGED IN PLANTING.

W. HEALE, NURSERYMAN, begs to call the attention of parties engaged in Planting to his very large Stock of FOREST TREES, at 50 per cent. lower than on former years. The subjoined List is worthy of notice:—

300,000 Spruce Fir	2 to 4 feet high.	
500,000 Larch do.	1 to 4	,,
100,000 Scotch do.	2 to 5	,,
30,000 Hazel	2 to 4	,,
20,000 Birch	3 to 6	,,
300,000 Beech	2 to 8	,,
10,000 Italian Poplars	4 to 6	,,
20,000 Hornbeams	3 to 8	,,
100,000 English Oak	2 to 6	,,
20,000 Wych or Scotch Elms ...	3 to 8	,,
20,000 Green Hollies.		

W. HEALE also has a fine stock of English and Chichester Elms, Horse Chesnut, Laburnums, Alder, Weymouth Pines, Silver Firs, Pinus astriacas, Pines of different sorts, Tree Box, Evergreen Privet, Yews, Laurels, Evergreens, and Flowering Shrubs of almost every description, Roses, &c., with a general collection of Standard and Dwarf Fruit Trees. White-Thorn or Quick for boundary.—Caine, Dec. 3, 1850.

MESSRS. J. AND H. BROWN offer the following desirable plants and Choice Fruit Trees.

	s	d
Fine Dwarf and Standard Trained Peaches, Nectarines, Apricots, Plums, Pears, and Cherries. The best and most approved sorts of these respective kinds, true to name, each, 2s. 6d., or per dozen	24	0
Untrained or Maiden Ditto, 1s. 6d. each, or per dozen ...	15	0
Apples, Dwarfs and Standards of best sorts, per dozen...	15	0
Fine Gooseberries, Currants, and Raspberries, per dozen	3	0
Fine Figs, Medlars, Walnuts, and Mulberries, each ...	2	0
Strong Vines from eyes and layers, in pots, per dozen ...	15	0
Filberts, new thin shelled and red skinned, per dozen...	3	0
Andromeda floribunda, fine blooming plants, per dozen	18	0
25 Azaleas, new hardy Belgian varieties, on their own roots, with flower-buds, one of a sort, by name ...	20	0
25 American Azaleas, ditto ditto	15	0
12 choice American Plants, with buds, for forcing ...	10	0
6 Kalmias and Ledums, one of a sort, by name ...	6	0
12 Hardy Heaths, of sorts, ditto	8	0
25 Hardy American Shrubs, one of a sort by name ...	10	6
12 Rhododendrons, including scarlet, white, and rose, hardy varieties	12	0
New Hardy Yellow Rhododendrons, each, 7s. 6d. to ...	10	6
Fine Hardy Scarlet Rhododendrons, 2 feet, per doz. ...	10	0
Fine Rhododendrons, 1 foot, hardy hybrid vars., per 100	20	0
Cryptomeria japonica and 6 choice Pinus for ...	10	0
Cedar of Lebanon, 3 feet, well grown in pots, per doz....	10	0
6 Fine Hardy Magnolias, one of a sort, by name ...	10	6
Glycine sinensis, extra fine, in pots, 15 to 30 feet each...	3	6
50 Dwarf Roses, on their own roots, by name ...	16	0
12 Choice tea-scented Roses, in pots, for forcing ...	9	0
Standard and half-standard Roses, per dozen, 12s. and	15	0
Moss and Provence Roses, for forcing, per doz. ...	5	0
New Crimson Moss Rose, per dozen	6	0
Scotch Roses, one of a sort, per dozen	6	0
Pæony arbores, with buds, for forcing, per doz. ...	12	0
12 Greenhouse Azaleas, one of a sort, blooming plants	25	0
12 Choice Camellias, by name, ditto ditto ...	30	0
50 Superior Greenhouse Plants, one of a sort, by name...	45	0
24 Choice Ericas, one of a sort, by name	15	0
12 Orchidaceous Plants, choice species, and good plants	30	0
New Camellia seeds, just imported from China, 24 for	2	6
Fine New Yellow Picotees and Carnations of best show sorts, with names, per pair	2	0
Violets: Arborea, Russian, and Neapolitan, per doz.	4	0
25 Choice Hardy Herbaceous Plants, named for	7	6

Rhubarb, Seakale, and new Giant Asparagus plants supplied.

Gardeners are especially invited to send us their list of seeds required, as they will be liberally treated.

Albion Nursery, Stoke Newington, London, Dec. 7.

The Gardeners' Chronicle.

SATURDAY, DECEMBER 7, 1850.

MEETINGS FOR THE ENSUING WEEK.

TUESDAY,	Dec. 10	Syro Egyptian	7½ P.M.
		Civil Engineers	8 P.M.
		Medical and Chirurgical	8½ P.M.
		Zoological	9 P.M.
WEDNESDAY,	— 11	Literary Fund	3 P.M.
		Society of Arts	8 P.M.
		Graphic	8 P.M.
		Microscopical	8 P.M.
		Ethnological	8 P.M.
		Pharmaceutical	9 P.M.
THURSDAY,	— 12	Royal Soc. of Literature	4 P.M.
		Antiquarian	8 P.M.
		Royal	8½ P.M.
FRIDAY,	— 13	Astronomical	8 P.M.
		Philological	8 P.M.
SATURDAY,	— 14	Medical	8 P.M.

MR. RIVERS, in the last Number of our excellent contemporary the *Florist*, has successfully stripped of its rags one of the idols which the folly of collectors has set up for the admiration of simple gardeners. "Nothing in floriculture," he says most truly, "has marched so rapidly and steadily onward as an improved and common-sense taste for Roses. It is only a few years since all the gardening world used to talk of the 2000 varieties of Roses grown by the Messrs. LODDIGES; and happy was the amateur who could beat his rival by a score or two of varieties; I mean varieties in name and not in fact. In this we had, with our usual national weakness, copied our neighbours the French, who will even now say to their English visitors, 'Ah, Monsieur! have you seen my new Rose?—*la voilà!*' and then you will have pointed out to you a seedling from La Reine, with an accidental stripe on each petal; or a seedling from Madame Laffay, with smaller flowers than its parent: then takes place the following dialogue:

"*English Florist.* These are of no use, Monsieur; they are not distinct enough.

"*French Florist.* Monsieur, distinct! they are *new*.

"*E. F.* New or old, they are of no use, I tell you: have you a scarlet La Reine, or a yellow one, or a white Madame Laffay?

"*F. F.* Monsieur, *c'est impossible;* but stop! I have fine new Roses from La Reine, all superb! *Voilà* Perpetuelle, Coupe d'Hébé.

"*E. F.* Why, your seedlings are all pretty, but they are not distinct enough. But at what charge do you propose to sell these seedlings? for although of nearly the same colour as their parent, I should like one or two, if not too dear.

"*F. F.* Monsieur, *they are new*. What a horrible word is that 'distinct' of yours; I pray you do not use it. But for my seedlings I must have a high price, as I will deliver to you all the property in them; let me see, for No. 1 you must give 100*l.*; for No. 2, 125*l.*; for No. 3, 150*l.*

"*E. F.* Stop, stop, Monsieur! I will not give you one hundred shillings for your 'propriété;' they are not *distinct* enough.

"*F. F.* Monsieur, what a horrible word! it kills me."

It is satisfactory to find a man like Mr. RIVERS joining us in an attempt, which we have so long been making, to persuade the world to distinguish between selection and collection. We accept him as a stout recruit, from whom good service may be expected. His trade experience tells him much that we know nothing of; we suspect that it tells him, among other things, how unprofitable it is to swamp a nursery with things which only a few curious people ever ask for. Let us add that he has to some extent carried out his principle in the last edition of his Sale Catalogue, by cutting down the varieties with no sparing hand. For instance, he now offers for sale only 67 Hybrid Perpetual Roses; while a neighbour enumerates 110.

But why keep 67 of these varieties? Can it be said that among them there are 67 distinct peculiarities—of growth for instance, or foliage, or colour, or form, or season. And, if there be, are the distinctions always of horticultural value? Assuredly not. No one who only regards the decoration of a garden can possibly want 67 sorts of Hybrid Perpetual Roses. A dozen of the best are worth all the remainder. The object of the gardener should be to obtain the finest possible result by the simplest and most unexpensive means. Let us suppose that he has space for 60 Roses; if he plants 60, so called, different sorts, he will produce an effect about as good as that of an old-fashioned patchwork quilt. No skill can combine such materials into a harmonious whole. But suppose he takes half-a-dozen of the finest growers, the longest bloomers, and the most distinct colours; with these he may really exercise what skill he possesses in creating a brilliant scene. Mr. RIVERS himself points this out:—"Amateurs are not now content with mixed beds of Roses; all our finer sorts are planted in masses: thus, in some Rose-gardens formed this season, the beds are made to contain from 50 to 60 plants each; in olden times, these would each have had 50 varieties, forming a patchwork of colour; now they are arranged so as to form masses of distinct colours. Thus, No. 1 is Baronne Prevost; No. 2, Doctor Marx; No. 3, Madame Aimée; No. 4, Géant des Batailles, and so on; now these crimson and blush and rose-coloured large groups must have a fine effect." Certainly they must: and an effect that not only cannot be rivalled, but cannot be even imitated by any higgledy-piggledy arrangement whatsoever. Let us hope, then, that the intelligent Rose-growers will combine to carry out this principle of selection, saving themselves much trouble and loss, and their customers endless vexation and annoyance. For who is to know what to select from a legion of queer names? or how to produce a beautiful effect with materials of whose quality he cannot possibly have any knowledge?

We have often urged this point upon the consideration of the trade, and we are glad to see that the force of our arguments is beginning to be felt. In the majority of the lists this year, issued by the most considerable nursery and seedsmen, a very appreciable reduction has been made in the names of varieties offered for sale. Men are beginning to see the impropriety of mystifying their customers, and we may add, the unprofitableness of it. But nothing like enough has yet been done. Annuals, hardy plants, greenhouse plants, hothouse plants, Orchids, all the race of florists' flowers, and fruit trees of every description, are quite as much in want of the weeder as Roses and kitchen garden stuff. Of what possible advantage, for instance, to any one in Great Britain can be the 1400 sorts of Apples, or 677 of Pears, or 89 of Figs, or 182 of Grapes, or 360 of Gooseberries, enumerated in the last edition of the Horticultural Society's "Catalogue of Fruits." Why, fifty Apples, five-and-twenty Pears, half-a-dozen Figs, a dozen Grapes, and as many Gooseberries, answer every purpose—except that of curiosity. The remainder may as well be consigned to the rubbish-heap.

We know how unpalateable these truths will prove to some of our enthusiastic friends, who cling to their collections with as much tenacity as a lawyer to old statutes, or a venerable lady to still more ancient china; but we entertain no doubt that they are becoming rapidly acknowledged as truths all over the country, and that the interest of every man consists in their recognition. In former days, the object was to have something *new;* the purpose of now-a-days is to obtain something BETTER; *variety* is not the present consideration, an anxious desire for IMPROVEMENT has taken its place; and long may its place be thus occupied. Time is rapidly proving that the fancies of our predecessors must give way before the utilitarianism of this age, and that to maintain the former has become as undesirable as it is impossible.

WE some time since called the attention of our readers to a pamphlet on the subject of "Adult Schools," by a COUNTRY CURATE. We commended it, and deservedly. But at that time we spoke only of what seemed to be a good theory, yet imperfectly carried out. We are now enabled to say more, from personal observation.

Not many weeks since we were present at the opening of these schools for the winter season. There is no reason for keeping secret the fact that Salhouse and Wroxham, in Norfolk, are the parishes to which the "Country Curate" refers: nor for concealing the other fact, that while the Rev. F. C. THOMPSON, the Curate, superintends the working of the system in both parishes, he has, in the person of Mr. CHARLES UTTING, a retired gentleman, a most disinterested and efficient aid for the school in Wroxham.

How is the system working? Admirably well. The numbers are increased; and we who write these lines never saw scholars assembled with more earnest determination to do good. We ourselves examined many of them, and allowing for previous deficiencies—seeing that some had undergone penalties for criminal offences, but were now in course of reclamation—looking at a school which contained the young as well as the mature, we could not but ask the founder, Mr. THOMPSON, on what principles he had acted. His answer was very clear. One object was to be attained; it was his duty, no matter what the opposition might be, to attain it. It was this. To provide for the young and for the adults, in both parishes, instruction which would make their future lives more holy and more happy. And we found this great principle to be carefully worked out. We entered a plain school-room one evening, in company with the founder. It was the village school-room; and we saw assembled, not only the scholars of all ages, but the farmers and the squire of the parish. On examination we ascertained that when the scheme was first started, there was much difficulty felt as to the classification of the young and the old. For a time they were kept separate; but another difficulty arose out of this; and it can be easily understood of a district purely rural. The seniors had no stimulus among themselves; while the juniors, to a certain extent much quicker, not merely despised their seniors, but were not altogether orderly. The "country curate" gained his point, however. He made one school of all, old and young; and thus he obtained two advantages. By placing boys in each class of the whole school, according to their respective merits, he furnished to the seniors a stimulus which they much needed; and the juniors, mixed among their seniors, had no choice but to behave well. The consequences we have ourselves witnessed. The released prisoner sat by the schoolboy. He sat there—knowing the past, but looking hopefully on for the future. He had been ignorant—he could now learn. He had broken the law—he could now know what the law really is; and the result gained is, that you have the great end attained, though in a small sphere, that men know their privileges, their duties, and their end.

A word upon the instruction given. It would be a mistake to suppose that it is mere clerical instruction, so called. It includes, besides spelling (which many want), and reading (which many more want), and arithmetic (which many more want still), instruction on matters which men, of whatever class, need for their true domestic happiness; and that which works well in two retired country villages cannot be wrong anywhere.

There is one other matter which we have to mention. This system is entirely *self-supporting*. At first they could not go on without a paid master; that is shaken off. Even in this short time, however, with the curate at the one school, and Mr. UTTING at the other, each exchanging duties with the other when the exchange is needful, and with monitors, it is found to work remarkably well. No credit is given for the weekly payments. And those payments are made with most gratifying accuracy. We ourselves saw them made. And what can be a stronger proof that the spirit raised is real and true?

There is one feature in the case which we had

almost forgotten. There is a drawing class. And it was impossible not to be pleased with some specimens which we witnessed. It was earnestly wished by Mr. Thompson that music should have formed one branch of the instruction given. And we quite agree with him that, by its attractiveness, it would have made the hold on the people's minds complete by offering pleasure which would have destroyed, to a great extent, the charms of the public-house. In a secluded village, however, this is not so easily accomplished. For the present, therefore, that part of the scheme is in abeyance.

From this rapid sketch it will be seen not only what can be done, but what is being successfully accomplished, in a rural district, by perseverance, energy and skill. No one can deny that such work is a good work indeed—that in the same proportion that the mind and heart are well taught the man himself must become a better member of society. Is not this an end which all ought to promote? Let each influential inhabitant of a parish only say to himself, "I'll try"—and it will be done.

ON NATURAL AND ARTIFICIAL VINE BORDERS.

On many descriptions of soils, the Vine grows with great vigour, and will bear large crops of fruit, with but little or no assistance in the way of manure—such appears to be the case with the one at Cumberland-lodge (noticed by your correspondent at p. 691), the Hampton Court Vine, and others in various places. Now, as large numbers of artificial borders are failures, it is surely worth the trouble to examine the difference between such natural Vine soils, and those compounds which, when thrown together, go to form, what may be termed, a modern Vine border.

Taking the two Vines named by your correspondent as exhibiting what the Vine will do unaided on a soil suitable to its wants, it will be found that both grow on shallow rich soils, the one at Cumberland-lodge being a light sandy loam resting on the gravel and clay of the London basin, while at Hampton Court, it is a finely divided alluvial soil resting on gravel, the subsoil in both cases being dry and compact. Such being the case, it matters little what the material consists of, for a clay bottom may be equally good with a gravel one if drained naturally by fissures, or other causes. In such situations the Vine finds all the elements it requires for its growth. The fertilising particles of matter are equally distributed through the soil. There is no disposition in any portion of such soils, to run together, or to become sour; every facility is afforded the roots to permeate the earth, while the finely divided state of the various ingredients composing them (and their perfect admixture) favours the production of those minute fibrous roots (never found on strong heavy soils) which are so essential an element of success in Grape growing. Here, then, is all the Vine requires to produce good and abundant crops, and to form for itself a constitution enabling it to supply generations with its generous produce. I am not aware of any peculiarity in the loams resting on the London clay (such are, however, much the best for all descriptions of potting) except it be in the finely divided state of the parts composing them, and the presence of rich calcareous matter; but I have seen the Vines growing on similar soils in Hampshire with much freedom, and ripening out of doors fruit in good perfection. Again, on the southern slopes of the hills near Bath the Vine grows vigorously in the natural soil, though the oolite rocks on which the surface soil rests is much colder than either a gravelly or a well-drained clay one. Many of these soils are rich in potash, from being more or less mixed with portions of the fuller's-earth beds. The best natural soils for the Vine are those formed by the decomposition of volcanic rocks, such being invariably of a dry, porous quality, and are rich in inorganic matter—a sure criterion, organic matter is present as well.

Such, then, being the nature of those soils on which the Vine thrives in the greatest perfection, it would be supposed that in the formation of borders expressly for its growth, some approximation would be made towards them by making the borders for the most part, if not all, of the same constituents; or in other words, forming "a warm, light, dry, shallow soil." In place of this, however, much labour and expense have been incurred in making borders, in which the Vine refuses to thrive at all.

What I may term artificial Vine borders are generally composed of various ingredients, of which loam, dung, and some dry material, as brickbats, mortar rubbish, &c., may be considered as the principal. To these some add carrion, or other similar substances. Now we will suppose these materials to be the best of their kind, that they have been properly mixed and prepared, and that the border has been made, and the Vines planted, in the usual way. There can be no question but that (if other things are favourable), on a border of this description, the Vine will grow vigorously, and mature fine crops of Grapes. But let us wait some eight or 10 years, when the fibre of the loam is rotted, and its elasticity destroyed, by which time the dung has become a sour pasty mass; while the rain during that period will have washed down the more soluble parts, and will have partially, if not totally, stopped the natural drainage. If at the same time the loam has been somewhat of a heavy texture, the evil will be increased. In fact, it will be found, on examination, that what was, for the first few years, a rich porous border, has become, through causes perfectly natural, unsuited for the growth of the Vine. Such, I know, has been the fate of numbers of Vine borders, made at great expense, and with one great prevailing idea, that to have fine Grapes, the border must be correspondingly rich. We hear, too, of gardeners who recommend covering Vine borders every autumn with one or two feet of rotten muck. I wonder what state a border must be in, both as regards porosity and dryness, which has been subjected to this treatment for a few years, in a climate, too, like ours.

I at once admit no artificial mixture can produce a soil so fitted to drain itself, as those natural deposits on which we find the Vine thrives best. Neither can the fertilising substances of a made border be so admirably mixed. Clots of black sour humus, mixed with lumps of loam, consolidated into a compact mass, are a poor substitute for that nicely balanced arrangement of parts found on rich natural soils. Even the same soils, when removed and mixed with other ingredients, have a tendency to become sour, and never drain themselves so perfectly, as when remaining on their original bed.

I consider that when healthy and permanent Vines are wished for, more loam, and that of a sandy nature, should enter into the composition of Vine borders, and that a large portion of the following should be intimately incorporated with it, viz., charcoal dust, charred matter, wood ashes, and soot. What manure is used should be perfectly rotten, and as dry as can be procured, and that road scrapings, or (what is better) the sweepings of large towns, well rotted, and mixed with the above, will be found one of the best materials for a sound healthy border.

In preference to concreting the bottom, I would recommend the border to rest on any description of rough paving stones, raised on rough walls, 1 foot or more, according to the situation, thus forming a series of air drains under the border, the outlet to which may either be in the house, or in some place enabling you to connect them with the external air. With a bottom of this description I would then certainly concrete the surface. I use gravel, lime, and coal ashes made into mortar, and spread 2 inches thick; in addition, when the above is dry, it gets a coat of gas tar over the surface; this forms a compact substance, treading firm underfoot, and effectually throwing off rain; common 3-inch draining pipes are placed upright in the border previously, which stand 1 inch above the surface, when the concrete is laid on. When it is necessary to water the border, it can be done to any extent by pouring water down the pipes. In winter, all agree the drier the border the better; and plugs are then placed in them. It will, however, be found that less water will be required than might be expected, arising from the obstruction to free evaporation by the concrete. In a small Vinery, planted in August, 1848, the border of which was concreted after planting, I have only watered the outside border once (the inside border being only 2 feet wide), and yet the Vines have never shown the least indications of having required more, irrespective of the advantage of having in our climate the roots of the Vine under control as respects moisture. Another point gained by concreting, is the additional heat the border gains by the absorption of solar heat. I have proved frequently, that a border concreted as I have described, obtains an increase, at 12 inches deep, of from 12 to 15 degrees, and even more during hot sunshine. This increase of heat on the surface of the border will have the effect of causing that part of the border to be the dampest, as it will be the warmest; the roots accordingly will be more numerous immediately under the concrete; and precisely in that position most favourable for their healthy developement. An additional advantage of the concrete is its preventing the border becoming compact, from walking over it, and consequently its porosity is preserved. I say nothing of the disadvantage ascribed to it, from its supposed prevention of atmospheric air to the border, because I believe the thing impossible; and on the principles described above, air has access at all times underneath the border, if it is required, which I believe it is not. It certainly looks somewhat unsightly during summer, but a few pots of flowering plants set on it during summer, and a slight coat of Fern or thatch during winter, will do away with its formal appearance. I am sanguine enough to hope that it will much simplify the culture of the Vine when practised. *John Spencer, Bowood Park.*

BRITISH SONG BIRDS.

No. VIII.—As many persons will have particular tastes of their own to gratify, and prefer some birds before others, my hints as to numbers and selections are, of course, merely suggestive—not arbitrary.

It would be advisable to have not fewer than four aberdevines, four chaffinches, four twites, and four yellowhammers. One thrush will be sufficient, and he must be put in when a young nestling. After the first or second year, these birds get spiteful; and they then commit awful havoc among the small fry, despatching them with a *coup de bouche*; still, however, they sing so well, and pipe so melodiously, that one is worth the venture.

I would not recommend more than one or two choice specimens of the black cap, and two or three cole-tits, blue-tits, and marsh-tits; two garden warblers, three hedge-sparrows, one nightingale, three redstarts, three reed-sparrows, two stone-chats, two whin-chats, two titlarks, two woodlarks, two larger and two lesser whitethroats, and one pair of wagtails, grey or yellow.

With the single exception of the last-named pair of wagtails, I recommend no hen birds whatever being introduced. With animals, as with the human race, a strict sense of propriety and moral rectitude must be observed; all conventional forms must be respected; and a *Codex morum* established from which there can be "no appeal."

Of the soft-billed birds last particularised, I must observe, that a close eye should be kept on the blue tits and the hedge-sparrows. The former are habitually spiteful if they cannot get an abundant supply of their most favourite food. Under such circumstances they will, sometimes, like our friend the ox-eye, take a too close survey of their neighbour's head; break it open; and swallow its contents.

The hedge-sparrow, although an object of just suspicion, is not uniformly quarrelsome; if, therefore, you observe in them no disposition to fight, you may give them the *entreé*. They are a sprightly bird, of a good presence, and have a rich mellow song.

The water-wagtail is another ferocious bird; first cousin in disposition to a robin. Two, therefore, of the male sex can never agree under any circumstances; if associated, *one* would speedily become disposed of. Try only one pair. They are beautiful, showy birds, and will run round the margin of the fountain with untiring activity. Being, like the titlark, of the genus *motacilla*, the constant vibration of their tails, and the bend of their graceful forms, become objects for unceasing admiration. They will nearly always be in, or on the fountain, running water being their delight.

The nightingale being a bird of truly singular habits, I have suggested the propriety of admitting one only. If there were more, the chances are that none of them would sing. This bird never allows himself to be surpassed, or outdone in song. If therefore his fellow sing louder than he, and more joyously, from that moment he would become dumb, mopish, and sulky. Alone, he will perhaps "awaken the groves" with his voice. The other "warblers" I need not here comment upon. I shall have "lots" to say of them at a proper season.

By the way, it may not be irrelevant to call attention at this time to the "blue tit," already noticed. He is a most diverting little creature. My readers will find, as I did, that whenever the thrush picks out any choice morsel of food from the pan on the floor, and flies upwards with it, Master Tom will cling closely round the thrush's neck, allow himself to soar upwards with him in flight; and finally, force by "high pressure" from his mouth, the said choice morsel of food! Master Tom has an infinite variety of these tricks; and as I "owe him one," for many hours of by-gone entertainment, I now discharge my obligation.

The next question is, how, when, and where, to procure your birds for the aviary. The best seasons for the hard-billed birds, are April and September. They are then in what is termed "Flight." During these months, they congregate in vast numbers; are trapped by the bird-catchers; and sold at very low prices by the London dealers. Great St. Andrew-street, Holborn, and the neighbourhood of the Seven Dials, are the grand depositories for the feathered choir.

The soft-billed birds of passage arrive about the 10th of April, and may be purchased in the same localities. They should be procured a week or so after they are trapped, or as soon as they are what is termed "fed off;" that is, able to feed themselves in confinement on the change of food provided for them. Many are sulky when caught, refuse every temptation to eat, and die before they can be "fed off."

How to select your birds, and discriminate the males from the females, I will explain under their classified heads. We will also give early consideration to the proper food to be placed in the aviary; and show how to adapt it to the peculiar appetites of each of the inmates.

With me, latterly, a death in the family was the exception, not the rule: my birds all lived—till the rats deprived me of them—to a "green old age." I loved them while they lived—oh, how fondly! Now, *nil nisi flere et meminisse relictum est. William Kidd, New Road, Hammersmith.*

GARDENS IN THE NORTH OF ENGLAND, SCOTLAND, AND IRELAND.—No. V.

Glasnevin.—These gardens were first established in 1790, and are supported by a parliamentary grant to the Royal Dublin Society; but, as this has lately been reduced, the resources of the garden are much diminished: very lately, however, a magnificent range of curvilinear wrought-iron conservatories, at a cost of 5000*l.*, have been built—4000*l.* being defrayed by the Government, and the other 1000*l.* supplied by the Royal Dublin Society, but chiefly raised by subscription. The Professor of Botany delivers two courses of lectures annually—the first at the Royal Dublin Society's house, the second at the gardens: besides furnishing the plants for the illustration of these lectures, the Professors of Botany at the Royal College of Surgeons and at the Apothecaries' Hall are supplied, and their students are admitted to study on private days, and the Government School of Design is furnished from these gardens with plants and flowers for the instruction of the pupils.

The public are admitted to the gardens two days in the week, on which days the conservatories are open, and

parties receiving orders from members of the Royal Dublin Society, and strangers not acquainted with the rules as to admission, are allowed on any day to see these gardens. The plants were in excellent order, and were interesting both for the many specimens of fine old plants, Palms, &c., not usually met with in modern collections, and the modern and rarer plants. One house is devoted to Orchidaceous plants and Ferns, and the collection of both was interesting and good, and on the whole, I should say these, and those at the College gardens, were better grown than any I have seen on my tour; and I may mention that some of the plants are grown well elevated above the tops of the pots, and the principal material used by Mr. Moore, in which the plants are grown, is the roots of Aspidium Filix-mas, and which appears to have nearly all the merits of the light fibrous peat obtained from Messrs. Veitch, Exeter. The skill and zeal of Mr. Moore, the curator, are too well known to make it necessary to say anything in his praise; nothing could be more kind and attentive than he was during the two visits I paid.

I do not attempt to enumerate the different plants which were the most remarkable; but I may mention the two newest sent to Mr. Moore, by Major Madden; viz., the fine new white Lily (Lilium Wallichianum, already noticed in the *Chronicle*), and a Cirtopera; and particularly the magnificent Pampas Grass, first raised from seed in this garden.

There is an excellent cheap hand-book to the gardens written by Mr. Moore, and its only fault is that its contents make one wish it were twice as long. Although these fine gardens are not to be compared for extent, nor for the rarity and size of the collection, to those at Kew, yet, when one considers that they are in actual use by the different classes of students—as many as 200 are sometimes seen pursuing their studies here—and that lectures are given on the spot, one cannot but feel that they are, for scientific purposes, more useful than those at Kew, which are, in fact, little else than beautiful show-gardens. I cannot but hope that, seeing the admitted utility of this establishment, and the zeal and intelligence with which it is conducted, some regulations might be made by which an equal share of all the seeds and plants obtained for the public should be sent here; and, I may add, I am somewhat surprised that more has not been done to obtain an equal share for this establishment, seeing that Irish members are not backward in putting in the claims of Ireland in respect of such matters. The site of the garden I may mention is classic ground; the demesne was that of Tickell the poet, who planted many of the trees, and the house in the grounds was that where he enjoyed the society of Addison when he acted as private secretary to the Earl of Sunderland. Steele and Parnell were also resident in the neighbourhood of Glasnevin; and near was Delville, the residence of Dr. Delany, the friend of Swift and Stella.

I may observe that, although the Orchidaceous plants are in some respects well grown and kept in the collections I have seen, yet their general appearance cannot be compared with those of the great collections near London, such as those of Mr. Rucker, Mr. Hanbury, and Mr. Warner. As far as I can judge, there does not appear to be any systematic arrangement as to the time of growth and the period of rest, and consequently plants in these collections do not blow with such certainty, nor so profusely as those where a different treatment is adopted. My conviction is, that with respect to almost all Orchidaceous plants, as early in the spring as there is sufficiency of light, every plant should be made to grow as vigorously as plenty of heat, moisture, and air will effect, so as to ensure an early completion of the summer's growth, and a long rest or dry season.

In making these few observations, I should observe that it can hardly be expected, either in private or public general collections, that there should be so successful a treatment of this one class of plants, as may reasonably be expected, when the attention of the cultivator is confined solely to Orchidaceous plants. *Dodman.*

THE CULTURE OF THE VINE A HELPMATE TO THE CULTURE OF THE MIND; OR, TWO BIRDS KILLED WITH ONE STONE.

[FOR COTTAGERS.]

"When seasons change, then lay before thine eyes
His wondrous method; mark the various scenes
In Heaven; Hail, Thunder, Rainbows, Snow, and Ice,
Calmes, Tempests, Light, and darkness; by His means
Thou canst not miss his praise; each tree, herb, flower
Are shadows of His wisdom, and His power."—*H. V.*

No. VI.—Calendarial register of the management of the Vine after it has once been brought into a right form.

CULTURE OF THE MIND.

The time will vary a little with aspect, place, and season.

No rule is absolute; and it exercises intelligence and observation to adapt general rules to particular cases. What is one man's food is another man's poison.

April 1*st*.—The buds will begin to swell; if hindered in their growth by their position, ease them. In dry weather, fork up the border 2 inches in depth, and keep it clean and open.

15*th*.—The smaller buds, which often shoot near the principal one, should be rubbed off.

22*d*.—Take care that the shoots have room and freedom to grow.

May 13*th*.—Every shoot should now be fastened as soon as it gets a foot long; this must be done carefully, as the young wood when full of sap is very liable to break off, even with the slightest touch. All shoots not wanted for future bearers, and that do not show fruit, must be rubbed off; but if foliage be wanted to cover fruit, pinch off the top at the second or third joint.

20*th*.—The fruit-bearing shoots may be brought as near to each other as to form one unbroken surface of foliage. The future bearers should have as much room as possible.

The old are content with a small corner. The world is hardly wide enough for the young.

27*th*.—If the future bearers are growing too rapidly and long-jointed, keep binding them constantly in a serpentine manner; this should be done gradually, else from their strong growth there is danger of breaking them. They cannot grow too slowly or short-jointed. On these rods and buds formed on them depend your fruit of the next year. The tendrils at the footstalk of the bunches should be pinched off now. The side shoots should have their tops pinched off with the thumb nail as soon as they are about 4 inches long, and should not be allowed to grow any longer the whole season.

A hasty temper, if not checked, will quickly run into evil.

June 3*d*.—Tendrils, as soon as they are about 6 inches long, pinch off to within about half an inch of the stem. Select for future bearers the largest and most vigorous shoots, round and short jointed; train them carefully, and cut out all others. Any old and useless wood may now be cut out. Make the wounded part quite smooth and even.

All vices grow rapidly, and soon entangle us; they should, as soon as they spring up, be constantly kept in check. Soft words, and spoken in kindness, heal a broken spirit sooner than a rough tongue and harsh treatment.

10*th*.—All shoots with fruit on them, and such as are not wanted as future bearers, must be shortened to about 1 inch beyond the first joint above the last bunch, and kept to that length. Except on old trees, one bunch only should be left on each shoot.

24*th*.—Do not disturb the Vine when in blossom.

What a disappointment would it be should there be no fruit, after such careful training; look to it, and take care that thou hast something to show for similar benefits. If the mountain will not come to Mahomet, Mahomet must go to the mountain.

July 15*th*.—When the berries are set, calculate the quantity of Grapes the Vine ought to bear, and cut off the excess.

22*d*.—If the fruit be not properly shaded, either bring the fruit under the leaves, or draw a branch closer, so that its foliage may cover the fruit.

29*th*.—As soon as the berries are well set, begin to thin them, and never let them touch each other till they have nearly acquired their full size. In thinning, keep those equal in size.

August 5*th*.—If the weather be hot, supply liquid manure to the border.

Character is like the Grape bloom, which must be delicately handled; for if rude fingers tamper with it, its beauty is impaired, never to be regained.

26*th*.—Bloom will now be appearing on the berries, therefore the bunches must be handled as little as possible. The berries will now be stoning or perfecting their seeds, and during some time will not appear to make any progress.

A million seeds from one small tree do spring,
And by the hidden wind are scattered here and there;
Countless good thoughts doth God's Holy Spirit bring,
But in man's stony heart find little room their fruit to bear.
H. V.

Sept. 2*d*.—Pinch off the top of the future bearing shoots.

Reformation should not, to be effectual, be left to old age.

9*th*.—As soon as the skin of the berries begins to be transparent, no reduction in the number of berries will increase the size of the remainder; therefore, all thinning should be completed before this takes place. After this, only cut out injured and decayed berries.

Protect fruit; destroy not birds; but rather let them enjoy a moderate feast, than kill such useful auxiliaries. Usefulness should plead for some; perfection of form some; perfection of motion some; perfection of song some. You may kill all others.

30*th*.—The Grapes must now be protected from all ravagers.

Oct. 7*th*.—The fruit should kept on the tree a considerable time after it appears to be ripe. It should be cut on dry and warm days, and when the dew is off the trees.

14*th*.—If the extremities of any bunches be not ripe, cut them off.

21*st*.—Cut out carefully all decayed berries.

Nov. 4*th*.—As soon as any shoots have been stripped of their fruit, they should be pruned back to their two lowest buds. Shorten the future bearers to their short and brown wood, or to the required length. Cutting back the shoots which have borne Grapes, and shortening the future bearers, are the only operations throughout the year that require the use of the knife. *C. A., Nov.* 21*st*.

See how easily and smoothly a well-ordered life goes on! and remember what trouble and severity must be used to those who will not be bound by law or reason!

Home Correspondence.

Stove Climbers.—Having the back wall of a Pine stove, 10 feet in height, bare, I determined to cover it with stove climbers, though there was no border, and the pathway was slate, jointed with cement. I planted in March last; and in each case I had to break a small hole in the flag just sufficient to admit the ball and about a pound weight of bog, leaf-mould, and sand, for the plants to grow in. The soil under the flags was common garden mould. I first planted Stephanotis floribunda, which was turned out of a 5-inch pot, and had one shoot about 3 feet in length. This now entirely covers a piece of wall 10 feet in height and the same in width. It commenced flowering in May, and has been in bloom ever since; at one time, in July, I counted 60 heads of flowers, varying from four to seven in number, all open at one time. The plant is now going out of bloom, and of course will be pruned in. It is a pity that this is not oftener met with; for it is decidedly one of the best stove climbers we possess. Next in order comes Manettia bicolor, which, when turned out, had one small shoot, about the length of the pen I am writing with. This was apportioned a piece of wall 8 feet wide by 10 feet high, which it entirely covers; and not content with that, it has entwined itself in all directions on its neighbours. For the last six weeks it has been covered with thousands of little scarlet and yellow blossoms, and it promises to continue so for months to come. This beautiful climber bears cutting for bouquets well, and is very suitable for twining round the stem of a flower-horn. Plumbago Larpentæ alba (!?) has also grown luxuriantly with me, and is covered with bloom; but the flowers soon look shabby. When out of blossom, I am going to supplant it with Combretum purpureum. Associated with these is a scarlet Passion-flower (P. racemosa), on which there is at the present time 30 spikes of bloom, the longest of which spikes measures 4 feet in length. This plant has been in flower for these three months. I have also Euphorbia jacquiniflora, which, when turned out, was about 4 inches in height. It has now shoots 10 feet in length, and is just coming into blossom. Passiflora Bonapartea has likewise been in bloom ever since May. On an average it has opened 15 blooms every day, since that time. To these I intend to add Clerodendron infortunatum. Since March last, the above have entirely covered the back wall of a house 45 feet in length, and 10 feet in height. I have also in one compartment of the house (for it is divided into two), Pine-apples, and this season I cut bunches of Black Hamburgh Grapes from the same house, several of 3 lbs. weight, and more than two of 4 lbs. weight. They were not, however, so well coloured as I could have wished; but this I attribute to over-cropping, and too much heat. *The Gardener to W. Edwardes, Esq., Sealey Ham, Haverfordwest.*

Sikkim Himalayan Rhododendrons.—These novelties are in everybody's hands, and none have anything to guide them as to their endurance of cold. Among some 18 or 20 species, of which I have plants, I find nothing indicative of their hardihood by name, or on the labels in which the seeds were received, except as respects one, No. 4—and another, No. 8, both labelled "Rhododendron species, 14,000 feet," both of which should certainly withstand any reasonable amount of frost they can be exposed to, even in Scotland. But there are manifestly others of a very questionable character in this particular. R. lanatum with me is looking doubtful; and I am fearful of others. Indeed, of all, of which nothing has been published, R. psulla (?) and R. cinnabarinum with me look so much one and the same thing, that I doubt much whether they are different. Again, "Shrubby Alpine" looks like R. calycatum, both with me having that indescribably elegant shade of bluish pink on the underside of the foliage, which I can detect nothing at all like on any of the others. All these, and the "R. glaucum," and "Dwarf R. glaucum," should be hardy, and so should R. palla (?), if external aspect may be relied on. But, who can say? Meantime, for variety's sake, I am keeping all these in a warm pit, beside R. Dalhousiæ, R. argenteum, and R. Wallichii, already stated to be tender. We are all anxiously waiting the forthcoming work on Sikkim Rhododendrons. Meantime, any hints about the hardihood of the various sorts would be a boon of a great value to me and others, equally in the dark about watering these precious gems, and would be highly estimated. *Amicus.* [You will be wise if you treat them all as greenhouse plants.]

Birds.—I had observed for a few days during the summer a great immigration of wagtails on the lawns; in fact there seemed to be some crusade determined on, but whether the lawn was only their gathering ground or their battle-field I could not at first determine. But their lively, quick, and graceful motions afforded great pleasure to the eye. Nor was it long before I also discovered the object of their visit, for I found the lawn had become recently covered with numberless small heaps of powdered soil, such as might have been turned up by a race of diminutive moles, out of which were constantly rising millions of flying ants, with whom I have sometimes seen the air quite thickened; and I believe they are the females in their flight to institute new colonies in unoccupied lands. Now the numbers that these quick-eyed, swift-winged light troops, during their few days of active skirmishing, must have massacred of these plagues would be beyond calculation. And by so doing they were doubtless preserving that admirable balance of acting and counteracting causes which we find an infinitely wise Providence hath established; and which, in another element, Mr. Warrington has so wonderfully exemplified by the necessary co-operation of each in the required presence of an aquatic plant known as the

Valisneria spiralis, six water snails, and two gold fish, in order to keep 12 gallons of water in a state of perfect purity (see "Quarterly Review," Sept., 1850). I can also bear witness to the destruction of a great number of weeds by our winged auxiliaries; for I have noticed large troops of the golden-coated goldfinch foraging among seed beds of Groundsel and Thistles (the farmers had better, first, never allow such to grow), running up the stems, and hanging in more graceful attitudes than the most accomplished danseuse ever assumed; and utterly destroying thus, by wholesale, what would, if allowed to grow, have taken a whole army, fully equipped with spuds, to effect. I should have been ashamed to have mentioned such common-place observations, unless I constantly saw notices of the continual and wholesale slaughter still carried on against the winged denizens of the air. Now, I do not wish to advocate their entire immunity (though I have no fears on this score), from man's attack, for many were doubtless given for his food—others, when he did their work, to be kept in check; and I think it may very well be doubted whether such as are still wild, and commonly called game, if not preserved to an extravagant extent in closely populated and well cultivated districts, do not obtain their subsistence and yield sustenance from what would be otherwise lost. Certainly who (if people would but look at both sides of the question, and not at their losses only), when observing the thousands of starlings and the persecuted race of rooks making their plentiful meals in the Grass meadows on mild and damp days, would doubt their usefulness, and wish their annihilation? While the wood-pigeon, from his instinctive sagacity, escapes, who probably eats more grain in the United Kingdom than all the pheasants, partridges, and rooks together; therefore, all I wish to prove is this, that as man can, owing to his superior reason, more completely diminish or destroy the inferior animals, so ought the same reason to guide him in a proper and restricted use of that power. *C. A.*

Colouring of Grapes.—It may be interesting to know that black Grapes, on the open wall, ripen and colour perfectly, enclosed in bags made of newspaper, from the day they are thinned. Shut up thus, they must be furnished with a very limited quantity of light and air, though the plants themselves are abundantly supplied with both. *J. G. Nelson, Yarmouth.* [Does any one imagine now-a-days that the Grapes themselves require much light? Why, Nature shades them most carefully, if you will let her alone.]——Having been much interested by Mr. Kidd's remarks on this subject, I send you the plan I have adopted, as soon as my Grapes showed signs of colouring, and with unfailing success. Now, instead of sinking them at once to a low temperature, I light my fires as soon as it is daylight in the morning, and keep them up until about 12 o'clock, giving air as soon as they are fairly set agoing, and increasing it by degrees as the temperature of the house and the heat of the sun increases, until every sash and door available is thrown open. As the house cools I shut up by degrees, recollecting always to maintain a slightly moist temperature combined with a cool atmosphere at night. Both moisture and fire heat ought to be gradually decreased as the bunches advance in colour, and when almost coloured they should be dispensed with altogether. By the above simple (yet often neglected method) I have for these 12 years, without the least variation, had most beautifully coloured bold sized berries covered with a thick bloom, and no shanking whatever has occurred. Under my treatment they receive no sudden check, which I presume they would experience were they, on the first sign of colouring, submitted to a very low and dry temperature during the day as well as at night. My method secures for me two other great advantages; first, finely flavoured fruit; secoudly, well ripened wood; and I assert fearlessly that without well ripened wood it is impossible to get good coloured well-flavoured fruit. Mr. Kidd asks the reason why we seldom see badly coloured Grapes on open walls? I presume it to be this. In all descriptions of soils they get heat with light, abundance of air, and a cool slightly moist temperature at night, which is gradually decreased as the fruit ripens; and whoever follows these great points will never complain of the "crimson tinge" and of sour fruit. The idea of getting finely coloured Grapes, with good flavour, in little air, and in a high temperature, is absurd, and in opposition to the common law of Nature. *John Woodcock, Wisbech.*

Water Pipes.—Your clerical correspondent may attain his object in a much cheaper way than any of the plans suggested by "J. M. L." in your last week's Paper. A labourer well conversant with land draining work, will be all that he requires, provided the fall is first correctly ascertained. Nor will it be necessary to cement the joints of socket pipes, if the cutting be free from the roots of trees, as there is no risk of the water being "fouled" from the percolation of rain water from the surface soil, if the drain or culvert be of sufficient depth. Three years ago I brought a supply of water to some cottages of mine, by cutting a drain into a landspring in an adjoining field. The supply continues abundant, and is always pure. The water is received into a bricked well, 4 feet in diameter, and 3 feet deeper than where the pipe enters. The drainer made the well, which required 300 or 400 bricks. The cost of the drain was as under:

Cutting the drain 4 feet deep, placing a 2-inch socketed pipe, and completing the work, at per rod of 5½ yards	0s. 6d.
Sixteen 2-inch socketed pipes, at ½d. each	0 8
	1 2

Cementing the joints of the pipes is only necessary where there is danger from the roots of trees, but if it be necessary the cost will be trifling. The best article that I have seen used for this purpose is marine glue; no doubt other cements would answer. A double line of 2-inch pipes would, I think, fully supply the 500 inhabitants of your correspondent's village. The well, or the receptacle for the water would of course be contrived so as to be suited to the convenience of the parties. Deep or spring draining has been extensively practised in this part of Essex, and in many instances valuable supplies of water for all purposes have been thus obtained of the purest kind. These drains (some of them 10 and 12 feet deep), are made with tiles doubled upon each other of a size in proportion to the quantity of water requiring to be discharged, and in no instance has cement of any kind been required; but, then, the roots of trees must be carefully avoided, or they must be removed. I have seen a large drain of this kind entirely filled for several feet in one year by the roots of a neighbouring Willow tree. It may also be well to suggest that great care should be taken to use the best well burnt tiles or pipes that can be procured. "A Country Curate" may address me personally, if he should wish it, for any further information. *Henry Dixon, Dorward's Hall, Witham.*

Seedling Fruits.—About 30 years ago, I raised from seed a large number of Apples and Pears, from the most select and finest varieties; these, in the course of 12 or 15 years, all bore fruit. Many of them were crab-like and worthless, and the rest were all of mediocre quality; in short, not one was found worthy of a name. Now, had I been a colonist, in a far country, should I not have said that our best Apples only produced Crabs, and should I not have lamented their degeneracy? Hence the origin of the report from our early colonists, in America. The interesting part of the matter is, how many generations were raised from this degenerated offspring before amelioration took place, and the present excellent American Apples came into existence? *Thomas Rivers, Sawbridgeworth.*

Ipomœa Michauxii.—This new and lovely climber is now covered with its brilliant scarlet blossoms. Being of a slender habit, it is admirably adapted for flowering in small pots; it blooms at every joint, and is invaluable for bouquets. The following is the treatment it requires:—Sow seed or strike cuttings about February; when large enough, pot them off into thumb-pots, use sandy peat with loam, and drain well. Shift them gradually into 5 or 6-inch pots, in either of which let them flower. This Ipomœa requires a warm house; and as it continues to flower all the winter, it will prove very ornamental during this dreary season. *J. R.* [The plant here mentioned, is the Ipomœa macrorhiza of Michaux, now called Batatas Jalapa, and supposed to yield the Mechoacan root, an inferior sort of Jalap; but its flowers are violet and white, not scarlet..]

Achimenes picta.—Many inquiries having been made to me respecting the treatment which we give this highly ornamental plant, in order to flower it well during the winter months, I think it necessary to make the following remarks, not with a view of bringing before your readers a new mode of cultivating this plant, but merely to describe the treatment it receives here, which suits it remarkably well. About the end of July, or beginning of August, the scaly tubers are planted in pans, and placed in the stove, in order to start them into growth; when the plants have attained the height of 6 or 7 inches, they are taken out of these pans, with a portion of soil adhering to their roots, and replanted in well-drained, large pans, or shallow pots; in doing this, the stems are carefully laid down, and covered about 1½ inch deep, their tops being beat upwards, so as to allow them to be a little above the surface of the soil. Nine plants are sufficient for a pan 18 inches in diameter. From the joints of the stems which are buried, new roots are soon emitted, and this causes the plant to start into vigorous growth; water is then given freely, avoiding the application of it over the leaves. The plants are placed in as light a situation as possible in the stove, where they have a moderately moist atmosphere, and a temperature ranging from 70° to 80°, until they begin to flower, when they are removed to a somewhat lower house. The compost employed here is a mixture of rough peat and leaf-mould in equal proportions, to which a little sand is added. When the stems have done flowering, they naturally die down; the roots are then stored away in the pots in a dry situation, until the season for planting them returns. Treated in the manner above described, there were plants here last winter which produced stems 4 feet high, and bearing from 50 to 60 expanded flowers at a time on one stem, and the present year's plants promise to be equally as fine. By forcing or delaying the growth of the tubers, plants may be had in flower throughout the year, but in summer they require to be shaded. Those who are desirous of decorating their stoves with showy flowers in winter, will find this Achimenes well adapted for the purpose; its beautiful foliage and gay coloured flowers form an enlivening contrast with the surrounding plants. *Walter Hill, Royal Gardens, Kew.*

Brugmansias suitable for Conservatory Beds.—In furnishing a conservatory, many, especially amateurs, are at a loss to know the most suitable plants for the space they have to occupy, hence the strongest growing subjects may often be seen in places where they have not room to show their individual beauty, and where they have to be cut back to give their neighbours room. My object at present, however, is to recommend to the notice of the lovers of conservatory plants, the genus Brugmansia, wherever there is space for them to display their beauty, especially the B. Knightii, which, on account of its magnificent habit, its elegantly-formed pendulous double flowers, the delicious fragrance which it sheds around, and its prolific blooming, is one of the most suitable plants for conservatory culture. The specimen here was a cutting in the spring of 1847; it was planted out in July of the same year, and it has now a stem 5 ft. high, with branches 10 ft. in diameter, and the plant altogether is 12 ft. in height. It is now loaded with blossoms, which have been produced in profusion without intermission ever since the beginning of September, 1849. On this day (Nov. 4) there are 60 fully expanded flowers on the plant, and during the time it has been in bloom, they have exceeded that number. B. suaveolens planted out at the same time has grown to a much larger size, and flowers profusely, but it requires shortening of the young wood, and a period of rest. B. sanguinea, 12 ft. high, and 9 ft. in diameter, is constantly loaded with blossoms; it requires little pruning, and has flowered about 9 months out of the 12. *J. Pringle, jun., Stoke Rochford Gardens.*

Chapman's "Prince of Wales" Plum.—In your Number, dated Dec. 13th, 1845, appeared a description of this somewhat remarkable Plum, which my own experience of it, in a midland elevated district, leads me to believe is true in every particular. Your correspondents' late articles on the Plum have induced me to advocate the cultivation of this one in particular, and to bear witness to one great merit which it possesses above all others that I have cultivated, which is its never failing and abundant produce, trained pyramid fashion.

No. 1 was budded in 1844, and has been twice root-pruned.
The produce in 1847 was about 15 Plums
" in 1848 " 20 "
" in 1849 was above 144 "
" in 1850 " 312 "
No. 2 was budded in 1846, and has been once root-pruned.
The produce in 1849 was 4 Plums
" in 1850 was more than 12 "

And at present it promises to bear hundreds next year. Next to No. 2, and treated in the same manner, stands Rivers' Early Favorite. It is about the age of No. 1, and has blossomed the last three seasons, but the fruit did not set. This Plum, which one of your correspondents recommends, may prove a good Plum in the southern counties; but for produce and early fruitfulness, I have never seen any that can bear comparison with the Prince of Wales; not even "Anon's" Magnum Bonum, at Grey's Court, Henley; and as regards flavour and appearance, should any of your readers require information on these points, it may be briefly described as "an improved Orleans." I am training a Prince of Wales as a standard, which promises to yield a good crop next year, considering its size, which is but small at present. *C. B., Rutland.*

Canadian Sunflowers.—I have seen a Sunflower grown hereabouts this year, whose flower measured 4 feet 1 inch in circumference. Its stem 13 feet 4 inches, and the circumference of its stem 6 inches. I thought it huge. *H. P. P. C., Toronto, Canada.*

Medlar Marmalade.—To those who have many Medlars, and cannot consume them before they get over ripe, it may be useful to know that they stew very agreeably in the following manner, even when gone too far to be nice eating uncooked:—Throw the Medlars into a basin of hot water, and then stone and skin them, scraping the pulp away and placing it on a dish by itself till all are finished, then boil gently up the pulp with a little white sugar for 10 minutes with some cream, and dish with a wall of sweetened rice round. The following are about the proportions:—To half a pound of pulp six table-spoonfuls of sifted sugar, and nearly half a pint of cream; also one teaspoonful of Lemon juice. To anyone not minding the time the stoning and skinning a large quantity would occupy, this would be a good method of making Medlar marmalade; by longer boiling, and omitting the cream and Lemon juice. The only drawback being that they must be cooked the day they are prepared, for if left a night they get mildewed and spoilt. *M. D., Dec. 4.*

Vines.—In reference to some of my Vines still continuing to keep in green leaf, while others apparently similarly circumstanced are ripe, some account of which was given last week at p. 758, I beg to state that they all occupy the same soil, which is a light gravelly one, and the roots of all must partially run under a Thorn hedge. The sort which has so failed with me is the Black Hamburgh. They were all late before they started, although the situation is a warm one. Would it be advisable to give them some manure? they had none last year. I have a tank of liquid manure from the drains of the house, would that answer for them? *H. M., Worcester.*

Rendle's Price Current.—We have received a letter from Mr. Rendle, in answer to the remark made last week by "Sigma;" and we will beg our correspondent to look again at the Price Current, where he will find that he is mistaken in saying that it has no prices. It is true that a price is not attached to every article, but there are general prices given, which answer every useful purpose.

Leeks.—In your last Number, I observe that some of your Cambrian correspondents are somewhat at fault about the cultivation of their ancient emblem, the Leek. Allow me, who have had some experience in that way, to state a simple mode by which I have seen some very superior crops produced. In a piece of ground richly manured, and deeply dug (trenched is better), transplant the young Leeks in the following manner:—let the rows be 1 foot apart, and the plants from 5 to 6

inches asunder, in the row ; plant with a blunt-pointed dibber, having first cut off the long ends of the leaves, make holes from 6 to 8 inches deep, and merely drop in the plant, without filling in the earth ; this is all that is required, except keeping the ground clear of weeds. *Quercus.*

Yuccas.—I remark that one of your correspondents has a Yucca gloriosa, throwing up its flower stem. I beg to inform him, that if he were to sacrifice the present flower of Y. gloriosa (if gloriosa), it will not blossom next year [We doubt], neither will letting the flower stem remain spoil next year's flowering, for in neither case will it blossom next season. I have a plant of Y. gloriosa throwing up its flower stem; I have had it carefully taken up and potted in a large pot, and put in the conservatory, watering it well with weak manure water, and I find that it is growing and doing well. I expect to have it in bloom about the end of the year ; I would advise your correspondent to do the same with his plant. *A. S., Slindon, Sussex.*

Societies.

Horticultural, *Dec.* 3.—E. Brande, Esq., in the chair. H. R. Sandbach, Esq., J. Smith, Esq., F. Barchard, Esq., and Mr. Davis, of the Grantchester Nurseries, Cambridge, were elected Fellows. Messrs. Veitch sent a great novelty in the shape of Vanda cœrulescens, which proves to be one of the most handsome of Orchids, vieing in beauty even with the lovely Phalænopsis itself. Like the latter, it appears to be very profuse in the production of blossoms ; for although the plant exhibited was small, and had but one flower-spike in perfection, many more were making their appearance. Although the spike in question was more than a foot in length, bending gracefully downwards, and had upwards of a dozen large sky-blue flowers arranged thinly upon it, it was remarked that it was not near so large as some of the dried spikes of this Vanda which have been received from India. Beautiful, therefore, as the plant in its present state is, it may be expected to be yet much more handsome when it shall have had time to acquire greater size and strength. A Large Silver Medal was awarded it.—Messrs. Henderson, of Pine-apple-place, had a white Ionopsis from Jamaica, resembling Ionopsis pallida.—Mr. Blake, gr. to J. H. Schröder, Esq., produced a nice collection of Orchids containing Dendrobium sanguinolentum, Zygopetalum crinitum, Angræcum bilobum, Sophronitis grandiflora, and two charmingly flowered plants of Epidendrum Skinneri. A Knightian Medal was awarded.—From Mr. Glendinning, of the Chiswick Nursery, came a large and well cultivated specimen of Hoya imperialis, which was stated to have been in flower all the summer.—Beautiful examples of Muscat of Alexandria (quite ripe), and black Hamburgh Grapes were shown by F. G. Nash, Esq., of Bishop's Stortford, to whom a Banksian Medal was awarded.—Mr. Hibbins, gr. to the Hon. J. Norton, Esq., Anningsley-park, Chertsey, also furnished Muscat of Alexandria Grapes ; but they did not appear to be quite ripe.—Mr. Mitchell, of Kemp-town, Brighton, had a small box of Black Hamburgh, fair-sized bunches, and well coloured, the produce of a second crop from the same Vines this year. The Vines, which were started early in November, ripened off the first crop between the 14th of March and 17th of April, after which they were rested till the 22d of May, when they were pruned and put in action for the second crop, which is ripe now; and Mr. M. stated that he would take a crop from the Vines again next June. Two crops were obtained in one season from the same Vines three years ago ; but Mr. M. is of opinion that double crops should only be ripened by the same Vines once in every four years. Examples of a seedling Grape, which did not appear to be different from West's St. Peter's, was exhibited by Mr. Seymour, of Ashridge-park, Great Berkhampstead, Herts.—Two brace of Cucumbers were shown by Mr. Parr, gr. to J. Jarrett, Esq., Camerton-court, Bath.—From the Garden of the Society came the cinnamon-brown and yellow Cymbidium giganteum, Maxillaria bractescens, Lycaste plana, and Brassavola venosa, together with the Holly-leaved Hovea, the useful winter blooming Selago distans, the Brazilian Barbacenia purpurea, four varieties of Epacris, and three of Cape Heath, Manettia bicolor, Justicia speciosa, the scarlet Sericographis Ghiesbreghtiana, and the following Pears : Forelle, or Trout Pear, Napoleon, and Vicar of Winkfield—all varieties remarkable for their excellence, to which the first adds great beauty of colour.

Linnean, *Dec.* 3.—R. Brown, Esq., in the chair. J. Hutchinson, Esq., and J. Stevens, Esq., were elected fellows. A collection of dried specimens of plants, made in Ceylon by J. Frazer, Esq., was presented by R. Heward, Esq. The remainder of Mr. Clarke's paper on the position of the carpels of Exogenous plants when one or two carpels were present, was read. Dr. Adolph Schlagenweit, at the request of the President, gave some account of the researches of his brother and himself on the influence of physical conditions on the vegetation of the Alps. In their researches they had separated the Northern, Middle, and Southern Alps. The plants requiring mild temperatures were found higher up the Southern than the Northern Alps, whilst the plants of cold latitudes were found higher up the Northern than the Southern Alps. The result of their researches had been published in a volume entitled "Untersuchungen über die Physikalische Geographie der Alpen," which they presented to the Society.

Entomological, *Dec.* 2.—G. R. Waterhouse, Esq., President, in the Chair. The President stated that a new Part of the Society's Transactions (N.S., Vol. I., Part 3) was ready for distribution ; also that the number of subscribers to the proposed "Entomologia Britannica," was sufficiently advanced to warrant the commencement of its publication early next season ; a few additional subscribers were, however, still required. Specimens of the new Cheimatobia boreata were exhibited by Mr. Cooke, from Warrington. Mr. Evans exhibited a species of Lampyris which abounds in Brazil, emitting a bright light on the wing in the month of November ; also a living specimen of the luminous British Geophilus electricus. He also read an extract from an Australian newspaper, giving an account of the first meeting of a Society for the cultivation of the natural sciences, at which a notice was read of the attacks of a species of grub upon the Vines of that country. Mr. S. Stevens exhibited specimens of both sexes of a beautiful small variety of Papilio Priamus, collected on the banks of Richmond River, New South Wales, by Mr. Leicester ; also of a curious moth from the Amazons, described by Mr. Newman in the last part of the "Zoologist" as new, under the name of Myrmecopsis Eumenides [but which had previously been described and figured by Hubner under the name of Pseudosphex Polistes]. Mr. Stainton exhibited five new British species of Tineidæ, several of them belonging to the genus Coleoptera. He also gave an account of the discovery of the larvæ of Goniodoma auroguttella by Mr. Mann, which inhabit cases exactly like the seeds of Atriplex, upon which plant it feeds, and stated that Mr. Jordan had found some larvæ feeding upon the flower-buds of Origanum vulgare, of which also they constructed moveable cases in which they reside. A note from Mr. Wilson was read, giving an account of a peculiarity in the atmosphere of the United States, which has the effect of destroying collections in a few years. This is caused by a white hoary deposit upon everything shut up in cases, which takes place in one or two days during the hottest parts of the summer, and by which Say's collections have been destroyed. It is also necessary for the cases in which preserved birds are confined to have holes for ventilation made in the top. The President also stated that, owing to the state of the climate, the collections of insects formed by the Asiatic Society at Calcutta had been destroyed. Mr. Westwood gave an account of M. Guerin's researches upon the insects which attack tobacco and cigars, when several of the members present dissented from his assertion that the country from which any particular case of cigars had arrived might be determined by the insects which are found to have attacked it, as it was liable to have been infested in the general stores of tobacco in Europe. Mr. W. W. Saunders read an extract from a letter received from Mr. Harrington, giving an account of various insects captured on board ship at great distances from land ; and Mr. F. Bond mentioned the fact of having recently noticed that a specimen of Sphinx Atropos in the pupa state had emitted the curious squeaking sound for which the species is so remarkable.

Garden Memoranda.

Hatfield House.—There is much in the aspect of this old garden, mentioned last week, to arrest the attention of the careless, and to delight the critical; we are not aware of the existence of a more perfect and pleasing example of the ancient style of landscape gardening, and it is satisfactory to reflect that as the vineyard has for ages past charmed our forefathers, so it may continue to delight generations to come ; there is nothing to invite a contrary supposition. Its walls of Yews are green and vigorous. The present noble proprietor of Hatfield House, with a just appreciation of the merits of the place, directed, a few years since, with admirable feeling, various restorations which neglect, rather than the inroads of time, had rendered necessary. The bowered walks and other embellishments are evidences of the judicious taste of the noble Marquis. To prove our assertion that "the vineyard has in its time charmed our forefathers," we may quote a passage from the learned Fuller's "Book of British Worthies," a work written 200 years ago, in which, after describing Hatfield House and the choice delights thereunto belonging, our author quaintly says, "Within a little mile thereof (Hatfield) lyeth a place called the vineyard, where Nature by the midwifery of Art is delivered of much pleasure ; so that the reader must be a seer before he can understand the perfection thereof; had this place been in Græcia or nigh Rome, where the luxuriant fancies of the poets, being subject bound, improve a tree into a grove, a grove into a forest, a brook into a river, and a pond into a lake ; I say, had this vineyard been there, it had disinherited Sempe of its honours, and hence the poets would have dated all their delights as from a little Paradise, and Staple-place of earthly pleasure."

The kitchen-garden is situated on the opposite side of the river—it anciently formed part of the "vineyard;" the bank fronting the river is occupied with a row of tall Lime and Chestnut trees. An arched opening is formed in the centre of the line corresponding with that existing on the opposite hill; the vista is thus continued through the garden, and terminates in a small tower. The walls of the kitchen-garden include about 4 acres ; there are two more under cultivation without the walls.

It has become one of the essential aims of gardening skill to prolong the periods of production of both fruits and vegetables. The attainment of double bearing fruits is a great step towards that object. This is appreciated here ; we find due attention given to that excellent autumn bearing variety of the Raspberry, of which a large quantity exists covered with fruit ; ample supplies of Currants are also secured at this same season. In a few years, may we not hope to have Strawberries in similar abundance at a late period of the year ? By securing proper varieties of Peaches, Apricots, Cherries, and Plums, the supplies from each may be continued for as many months as they were in weeks formerly. One recent example may be offered ; we may hope to enjoy that delicious fruit, the Green-gage, a month later by the cultivation of the recently introduced variety called "Reine Claude de Bavay ;" its cultivation is here pursued for that purpose. Amongst vegetables, with a little management, a great deal in the furtherance of the same object may be done. A prolongation of the supply of globe Artichokes is obtained in this garden by potting small plants in the autumn and planting out in May. The plants thus treated develope their flower heads later in the season. Peas are obtained up to November. The Green Marrow is found valuable for late crops. Horn Carrots are also successively sown ; the later crops standing in the ground through the winter furnish a valuable supply in the spring, and obviate the necessity of their early culture in pits. There exists no hot-water conveniences for forcing vegetables, but a very economical and efficient forcing-pit is employed, fermenting leaves producing the necessary excitement ; a pit 30 feet in length, 15 in width, and 4 in depth, has been sunk outside the garden, in a convenient position to receive the leaves direct from the carts. This is annually filled, a rough frame is placed over the mass, supported by slight piers to prevent its irregular subsidence with the leaves ; an early crop of Asparagus and Rhubarb is first obtained ; Potatoes succeed, and an invariable heavy crop is secured entirely without disease ; Melons or Cucumbers follow, the genial bottom-heat still supplied by the leaves materially assisting the progress of the last occupants of the bed. In November the pit is cleared, and affords a valuable supply of leaf-mould. In retracing our steps towards the Vineyard, on the hill-side we gain an excellent general view of the garden from the river's brink ; it is even more picturesque from this position than from the summit of the hill. The old author is perfectly right in saying that "the reader must be a seer before he can understand the perfection thereof." Our description most imperfectly conveys it.

Miscellaneous.

Winter Decoration of the Flower Garden.—Lest the occurrence of a number of empty beds on a lawn or in a flower garden, where the system of massing summer plants is adopted, should impart to a place a bare and desolate aspect during winter, a store of the lower kinds of evergreens should be kept in pots, and plunged in some part of the kitchen-garden, or in any reserved corner through the summer, to be transferred to the flower-beds directly their gayer furniture has been cleared away in autumn. Such a plan is less troublesome than it appears to be ; for if the plants be kept constantly in pots, summer and winter, and merely be plunged in the ground, a simple re-potting once a year, with an occasional watering in only the very driest summer-weather, will be all the attention they want for three or four years, when they will require renewing by propagation. The fittest kinds for the office will be several dwarf Heaths, particularly the Erica carnea, Cotoneaster microphylla, Berberis aquifolium, Menziesia polifolia, Andromeda floribunda, Pernettya mucronata, Arctostaphylos uva-ursi, Gaultheria Shallon, Ledum buxifolium, Rhododendrons ferrugineum and hirsutum, the common trailing Savin, and the varieties of the Minor Periwinkle. By a judicious choice and variation of these, putting one sort only to a bed, some amount of verdure and liveliness will be produced during winter, at a cost of labour and materials which are entirely insignificant in comparison with the effect realised. The intermixture of a few beds of variegated Ivy, or variegated Periwinkle or Savin, or even the variegated Hollies (especially the prickly), variegated Yew, and Aucuba, kept dwarf, would increase the variety. The plants should be potted in rather a poor soil, lest they grow too luxuriant, and send their roots too far beyond the pots. *Kemp, on Small Gardens.*

Distinction of Species among Plants.—"The Authors" (of Hooker and Arnott's British Flora), "are not inclined to believe that any one of the tests,"—that is, of difference of habit, however indefinable, or of microscopic difference accompanying identity of habit, or of permanence under cultivation,—"is sufficient :" they think that "a thousand years' cultivation cannot prove two supposed species distinct ;" that "there appears to be less violence done to nature's laws by combining too much, than by subdivision, unless where there is an anatomical or physiological distinction." Linnæus is asserted to have taken "nearly all his specific characters from conspicuous parts, especially from the stem and foliage," which are said to be "therefore natural :" and prophetic hints are given of a time "when what are now called genera or subgenera will alone be considered species :" finally, the

authors refuse to partake in the so-called "neomania" for splitting, due to "the too-refined ingenuity of the German, Swiss, and modern Swedish botanists." In these and the accompanying remarks, there appears to be a confusion between the actual distinctness of species in nature, and the outward differences by which we apprehend that distinctness: it is most true that a species "can neither for convenience be united with others, nor be split into several:" we should certainly seek, not convenience, but the very truth: but how are we to arrive at the truth? When we speak of one plant as distinct from another, we mean that it is distinct as a whole, not as a mere collection of distinct parts: the characters do not constitute the difference; they do but manifest it to our sight. No test can therefore be *à priori* declared sufficient: all may sometimes fail, and yet the plants may be really distinct. Science in such cases is not, as it might seem, impossible; for frequent observations under different circumstances by laborious and sagacious observers, aided by cultivation, will doubtless finally ascertain the truth. Of course many mistakes will be made; but we know of no other method which can really secure science from the rashness or vanity of species-mongers, and at the same time ensure its sound and permanent progress. "At the beginning of our studies," says Fries, "we are always hoping to circumscribe nature with absolute characters and limits, as if our hands held her in their grasp; but when we gain experience, we come to see the emptiness of our hopes and the futility of our efforts. For nature lives in integrity: and when we cannot take her in under this her true character, we tear her in pieces to adapt her to our own perceptions, and then patch her up again in any way we can." *Annals and Magazine of Natural History.*

Hints on the Cultivation of the Hollyhock, by William Chater.—In presenting these few brief remarks upon the cultivation of the Hollyhock, I beg to say, that another year's experience induces me to enforce the same routine as the previous one, feeling confident, after 25 years cultivating this ornamental plant, that purchasers following these directions may ensure success. The Hollyhock will grow best in good old garden soil, well trenched over to the depth of two feet, with plenty of thoroughly decomposed manure; such as old Cucumber beds, or night soil mixed with earth. Sandy loam they like, and if the subsoil is wet they will thrive remarkably well in the summer, but in the winter wet is very injurious to them; to prevent which, I remove, to the depth of one or two inches, the mould round the neck of the plant, and fill up with white sand, about 6 inches round the stem, level with the surface: it is simply to preserve them from wet, insects, and slugs, from which, in the winter, they are apt to suffer very much, if not killed. They may be propagated by single eyes in July and August, also by cuttings in the spring, placed on a slight bottom heat. Young plants raised from summer cuttings are best preserved by repotting them in October into large pots—the larger the better, in light rich sandy earth, and placed in a cold frame; thus they will grow during the winter. In March or April turn them out into the open ground and they will bloom as fine and as early as if planted in the autumn. Plant them not less than 4 feet from row to row, and 3 feet apart in the row. If grouped in beds, not nearer than 3 feet each way. They will grow well in the shade of distant trees, but by no means must the roots interfere. In May, when the spikes are grown about a foot high, thin them out according to the strength of the plant: if well established and very strong, leave four spikes: if weak, two or three, or only one, at the same time placing a stake to each one separately. The most robust grower does not require a stake higher than 3 feet from the ground. Stake them before they get too high, and secure them well by tying, and they will grow erect. If the weather is dry at this season of the year, they must be watered with a solution of guano, or any other liquid manure, poured carefully round the roots, avoiding pouring it on or too near the stems. To grow the flowers fine, cut off the lateral shoots, thin the flower buds, if crowded together, and take out the top of the spike, according to the height desired, paying attention to the usual height and habit of the plant. Observe, by topping it you may increase the size of the flower, but at the same time shorten its duration of flowering, and perhaps disfigure its appearance. *Nurseries, Saffron Walden, Essex, Sept.* 1850.

Calendar of Operations.

(For the ensuing week.)

PLANT DEPARTMENT.

As the season is approaching when every proprietor looks to home for enjoyment, let the gardener make it his particular business to contribute, as far as lies in his power, to the gratification and pleasure of his employers and their friends. The plant houses and their occupants will be of the first importance at this dull season; and, to be appreciated, they should be arranged in such a manner as to display themselves to the best advantage. Great care should be taken of plants now in flower, in order to preserve them in that state as long as possible; due attention should also be paid to bringing others forward, that a proper succession may be kept up. Let perfect order and neatness be evident in everything; for, if this point be attended to, it will compensate in a great measure for the absence of a more extensive floral display.

FORCING DEPARTMENT.

Pineries.—Care should be taken during the next few weeks to limit the application of exciting influences, or the plants will be induced to grow at a rate very disproportionate to the amount of light which they are at liberty to enjoy. The object to be aimed at in Pine growing is not the producing of a large plant with gross exuberant foliage, but rather the production of small yet healthy plants, with short sturdy leaves, while the roots are revelling in the rich compost. This end is not to be attained through starving the plants by an inadequate supply of water and soil, but by affording, along with a proportionate quantity of these requisites, a free circulation of air at all times. If this point, in connexion with a proper supply of water, be duly attended to, and if a healthy root action be secured, the plants, though small, will be filled with highly elaborated sap, and, as a natural consequence, will produce large well-swelled and highly-flavoured fruit. Vineries.—Let forcing be carried on with great caution at this dull season of the year; but take advantage of every fine day to allow the temperature to rise 15° or 20° higher than that which it is kept during the night. Where the buds are not yet broken, the rods may be syringed three times a day in fine clear weather, with water of which the temperature is about 70°; and, after the buds break, it should be used 10° to 15° warmer. Admit air on every favourable opportunity; and proportion the amount of moisture in the atmosphere to the strength of daylight. Be careful that the fermenting material over the roots does not get too hot—a moderate warmth, not exceeding 75° or 80° in the dung, is sufficient; but, at the same time, it should be frequently examined, that it does not fall too low during cold weather, or the check will injure the roots. Where the Grapes are still hanging, remove the faded leaves, which are no longer of any service to the Vines, and prune in at once all spurs on which no fruit is hanging.

FLOWER GARDEN AND SHRUBBERIES.

In this department also, let perfect neatness prevail, to compensate for the absence of more brilliant attractions. Let all the fallen leaves be carefully removed, and the surface of the soil in the borders and clumps forked over, or made clean with the rake. The walks should be put into perfect order, and receive a slight sprinkling of clean fine gravel where necessary. Let the drains and grids be examined and cleaned; and if in very rainy weather the water lies on any parts of the walks, let the defect be remedied by introducing a new drain, or by filling up the low places with new gravel; nothing interferes so much with the enjoyableness of any place, at this season, as damp dirty walks. If the turf is wet in any part of the pleasure-ground, this is an excellent time for remedying the defect, by cutting drains wherever they are required. In doing this, keep the drains at the greatest possible distance from trees, to prevent them being choked up by the roots; but in parts where the proximity of trees is unavoidable, let the drains be filled with broken rubble to within 12 or 15 inches of the surface, that a passage may be secured for the water, even if the roots do enter the drains. In filling the drains up with soil, let it be well rammed in, to prevent any after sinking of the surface.

FLORISTS' FLOWERS.

Every exertion should now be made for the coming year; composts of all descriptions should be made, for in this lays the great secret of success. Watering, ties, shading, care of every kind is comparatively useless, if the food (soil) of the plants is not carefully adapted to their necessities; therefore, turf sods, willow dust for Auriculas, cow manure for Ranunculuses, or stable manure for Carnations and Picotees, should be looked out for, and should all be of the best description, and, if possible, kept under cover; a very successful exhibitor of florists' flowers (a friend of ours) keeps the whole of his composts the year round under an open shed; as a matter of course, few have this convenience, still, when it can be done, the flowers, let them be of what kind they may, are all the better for the extra trouble in this particular. Dahlia roots should now be carefully examined, incipient mouldiness is thus often detected, and the root preserved. They may now be stored away in a moderate dry place. Moisture for Auriculas and Polyanthus is just now superfluous; damp is to be avoided; fresh air, and abundance of it, is highly desirable.

KITCHEN GARDEN.

To prevent any difficulty in digging up Celery or Cardoons, when the ground is frozen very hard, let a portion of each, about as much as will suffice for a couple of weeks, be always under protection, either by means of loose litter, Fern, or thatched hurdles, or some other convenient material which will exclude frost. These coverings should be put on while the ground is in an uncongealed state, as it would do harm rather than good, if put on while the ground is hard, by preventing the sun and air acting upon it in case of a change of weather. It must, however, be understood that the portion which is covered up is not to be left untouched till the arrival of frosty weather, but used in the regular rotation; and as the covering is taken off the part for present use, it is to be moved forward to a similar space beyond, so that a supply for the next ensuing fortnight shall always be under protection, excepting of course when the ground beyond is in a frozen state. If, by means of spare frames or other contrivance, a portion of such crops as Parsley, Spinach, Sorrel, &c., can be protected, they will be found very convenient, when the ground is covered with snow. Some Horse-radish, Jerusalem Artichokes, Parsnips, &c., should be got up and laid in moist soil for present use. It is a practice with many on the approach of severe weather, to take up a quantity of Celery and Cardoons, and remove them in-doors; but we never take up more than two or three days' supply, as we have invariably observed great waste to result from the opposite practice, besides which, the quality of the vegetable is deteriorated, being rendered tough and stringy, instead of being fresh and crisp.

State of the Weather near London, for the week ending Dec. 5, 1850, as observed at the Horticultural Garden, Chiswick.

Nov. and Dec.	Moon's Age.	Barometer. Max.	Barometer. Min.	Temperature. Of the Air. Max.	Of the Air. Min.	Of the Air. Mean	Of the Earth. 1 foot deep.	Of the Earth. 2 feet deep.	Wind.	Rain.
Friday.. 29	25	30.314	30.215	37	19	28.0	40½	45½	E.	.01
Satur.. 30	26	30.146	30.108	37	31	34.0	40	44	N.E.	.00
Sunday. 1	27	30.192	30.133	41	34	37.5	40	43	S.E.	.00
Monday 2	28	30.256	30.227	47	37	42.0	40	43	S.	.00
Tues. .. 3	●	30.121	30.081	48	26	37.0	42	43	S.	.00
Wed. .. 4	1	30.081	30.029	50	38	44.0	41	43	S.W.	.06
Thurs .. 5	2	30.307	30.243	54	31	42.5	43	43½	S.W.	.02
Average....		30.202	30.148	44.8	30.8	37.8	40.7	47.5		0.09

Nov. 29—Frosty; fine; clear and frosty.
— 30—Frosty; overcast throughout.
Dec. 1—Slight haze; overcast; slight drizzle.
— 2—Densely overcast; fine; overcast.
— 3—Uniformly overcast; slight frost at night.
— 4—Foggy; rain; foggy.
— 5—Foggy; hazy and mild; foggy.

Mean temperature of the week 4½ deg. below the average.

State of the Weather at Chiswick during the last 24 years, for the ensuing week, ending Dec. 14, 1850.

Dec.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds. N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 8	42.6	34.2	40.2	13	0.16 in.	1	3	2	—	2	7	7	2
Mon. 9	45.5	35.2	40.4	10	0.03	2	4	2	1	1	9	4	1
Tues 10	46.3	34.8	40.5	8	0.20	3	2	1	4	7	4	3	
Wed. 11	45.8	32.5	39.6	8	0.62	3	1	3	5	5	4	3	
Thurs. 12	46.5	34.7	40.6	7	0.26	2	2	2	1	5	7	5	1
Friday 13	47.0	32.1	39.5	7	0.13	1	3	2	1	7	7	2	1
Satur. 14	45.5	33.5	39.5	12	0.32	2	2	1	2	8	5	4	1

The highest temperature during the above period occurred on the 13th, 1842—therm. 51 deg.; and the lowest on the 13th, 1846—therm. 11 deg.

Notices to Correspondents.

Bird Stuffing: *Artist.* Arseniacal soap is a good compositio to apply to the skin of a bird, in order to preserve it, preparatory to stuffing.‡

Books: *Ignoramus.* Macintosh's "Flower Garden" will possibly answer your purpose.‡—*S H G.* Lyons's book on Orchids.—*A Z.* Macintosh's "Greenhouse, Hothouse, and Stove."‡

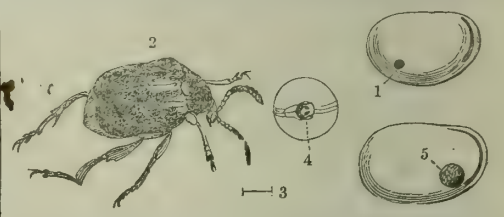
Crowea: *W E.* It will not flower well with you at this season, unless you give it a little heat. If you have an intermediate house, that would suit it perfectly.‡

Grafting: *A Z.* Junipers and Cypresses may be grafted on the Red Cedar. Use herbaceous or summer grafting. Rhododendrons should be "worked" in autumn (or it may be done in spring), and if you can place them in a slight bottom heat afterwards, so much the better.‡

Greenhouses: *W V C.* The frost must be kept out of your greenhouse, but whether this is to be effected by canvas curtains or by fire heat will depend on its severity. The less fire heat employed, however, the better; all you have to do is just to keep the temperature above freezing.‡

Greenhouse Plants: *O.* They should be watered *very* sparingly at this season; no more in fact than is required to keep the plants *damp.* Wetness, especially in cold weather, is avoided by all good gardeners. The object is to keep plants of that kind as dry in winter as is consistent with health.

Insects: *A H and Son.* The little beetles in the interior of the dry Beans are a species of weevil (Bruchus granarius), which lays its eggs in the Bean whilst the seeds are quite soft. In our woodcut 1 and 5 are holes in Beans; 4, portion of insect in a Pea; 2, beetle magnified; 3, natural length of ditto. The



wound in the Bean is quickly healed over, and the grub, when hatched, feeds in safety beneath the hard skin on the softer interior, not, however, without being subject to the destructive attacks of a parasitic ichneumon, as we found the cocoon of a small species of that tribe in one of the Beans. *W.*

Mosses: *Muga.* Hooker's Muscologia Britannica, or the 5th volume of "Smith's English Flora," will be your best English guides. "Gardiner's Lessons in British Mosses" (a very nice book), will also be useful to you.

Names of Plants: *Erzeroum.* 99, apparently Geum rivale.—*Ch M—l.* We do not see in what your plant differs from Epidendrum Hanburii. E. Martianum is a totally different species, with yellow flowers.

Nymphæa: *A H.* We will write to the author of the statement. It is so dark that we cannot judge of the leaves; but we think we recognise them, and will notice them again next week.

Sash bars: *N B.* An account of Mr. Paxton's machine for making sash bars may be found in our volume for 1841, page 216.‡

Seeds: *H Y A.* You must excuse our entering into such a detail as to tell a seedsman what seeds to sell. A tradesman is to be presumed to understand his trade, if not he should learn it. Besides, by consulting this and previous volumes, you will find all the information you seek.

Sikkim Rhododendra: *Amicus.* We are unable to give you any information on the subject beyond what is to be found in the advertisements.‡

Strawberry Tiles: *C A.* The idea of these was taken from a letter in our columns some years ago, and ruined by the ignorance of the maker or vendor. Our opinion of them is well known; it is that of all gardeners of common sense, and we can admit no further discussion upon their application. We will, however, add, that the material from which they are prepared is sometimes good, and that they are very useful for mending roads.

Transplanting: *American.* The best time for doing this is in September; but it may also be done in spring. The common and crimson China Roses are easily obtained and make excellent beds.‡

Victoria regia: *P E.* Mr. Gray having in part recalled the misrepresentations he made on this subject, we defer for the present the comments which they must some day receive at our hands. The name originally given to the plant by her Majesty's command is not to be lightly treated, even by those who are competent to determine disputed points of science.

Vine Walls: *Merseman.* Your plan of protection is actually in use so far as its main features are concerned; and it answers perfectly. Any coarse canvas of loose texture will do; the more open the better. A kind of thin canvas, employed by copper-plate printers to clean their plates, is good and cheap.

THE LONDON MANURE COMPANY beg to offer as under:
LONDON MANURE COMPANY'S WHEAT MANURE FOR AUTUMN SOWING.
CONCENTRATED URATE. SUPERPHOSPHATE OF LIME.
PERUVIAN GUANO. SULPHATE OF AMMONIA.
FISHERY AND AGRICULTURAL SALT, GYPSUM, and every artificial Manure; also a constant supply of English and Foreign LINSEED CAKE of the best quality.
The London Manure Company will guarantee the Guano they supply to be free from the slightest adulteration.
Bridge-street, Blackfriars. EDWARD PURSER, Secretary.

MR. J. C. NESBIT, F.C.S., F.G.S., Consulting and Analytical Chemist, Laboratories, 38, Kennington-lane, London.—PRIVATE INSTRUCTIONS in Chemical Analysis, and the most approved methods of making ARTIFICIAL MANURES. Analyses of Soils, Manures, Minerals, &c., performed as usual, on moderate terms.

MANURES.—The following Manures are manufactured at Mr. LAWES'S Factory, Deptford Creek:

Clover Manure, per ton	£11	0	0
Turnip Manure, do.	7	0	0
Superphosphate of Lime	7	0	0
Sulphuric Acid and Coprolites	5	0	0

Office, 69, King William-street, City, London.
N.B. Peruvian Guano, guaranteed to contain 16 per cent. of Ammonia, 9*l.* 15*s.* per ton; and for 5 tons or more, 9*l.* 10*s.* per ton, in dock. Sulphate of Ammonia, &c.

STEPHENSON AND Co., 61, Gracechurch-street, London, and 17, New Park-street, Southwark, Inventors and Manufacturers of the Improved CONICAL and DOUBLE CYLINDRICAL BOILERS, respectfully solicit the attention of scientific Horticulturists to their much improved method of applying the Tank System to Pineries, Propagating Houses, &c., by which atmospheric heat as well as bottom-heat is secured to any required degree, without the aid of pipes or flues. S. and Co. have also to state that at the request of numerous friends they are now making their Boilers of Iron, as well as Copper, by which the cost is reduced. These Boilers, which are now so well known, scarcely require description, but to those who have not seen them in operation, prospectuses will be forwarded, as well as reference of the highest authority; or they may be seen at most of the Nobility's seats and principal Nurseries throughout the kingdom.
S. and Co. beg to inform the Trade that at their Manufactory, 17, New Park-street, every article required for the construction of Horticultural Buildings, as well as for heating them, may be obtained upon the most advantageous terms.
Conservatories, &c., of Iron or Wood, erected upon the most ornamental designs. Balconies, Palisading, Field and Garden Fences, Wire-work, &c.

BY HER MAJESTY'S ROYAL LETTERS PATENT.

PATENT HOTHOUSE WORKS, KING'S ROAD, CHELSEA.
E. DENCH invites the attention of Gentlemen about to erect Hothouses, &c., to the vast superiority in every respect possessed by his PATENT HOUSES, which he will warrant superior in every respect to any others. Good Glass from 16 to 21 oz. per foot, 1 foot wide, 3 feet long, furnished, and the Houses, when completed, charged from 1*s.* 3*d.* to 1*s.* 6*d.* per superficial foot, according to size and quantity; on one principle the roof is formed without wood or putty, and on another principle with wood rafters, and the glass put in with putty. Patent Sashes, requiring no paint, from 7*d.* to 9*d.* per foot. HEATING BY HOT WATER.

FURZE MACHINE.
COTTAM AND HALLEN have now brought to perfection FIRCHILD'S PATENT FURZE CUTTER AND BRUISER, for the preparing of Furze for Feeding Horses and Cattle. The Machine may be worked by horse-power, and will cut and bruise at the rate of 20 bushels per hour with one horse, a man, and boy; with two horses, 40 bushels per hour; if a steam-engine, in proportion to the power applied. The Machine is now on view at COTTAM and HALLEN'S, No. 2, Winsley-street, Oxford-street, where every other description of Agricultural Machinery may be seen.

CHEAP AND DURABLE ROOFING.

BY HER MAJESTY'S ROYAL LETTERS PATENT.

F. M'NEILL AND Co., of Lamb's-buildings, Bunhill-row, London, the Manufacturers and only Patentees of THE ASPHALTED FELT FOR ROOFING Houses, Farm Buildings, Shedding, Workshops, and for Garden purposes, to protect Plants from Frost.
At the Great National Agricultural Shows, it is this Felt which has been exhibited and obtained TWO SILVER MEDAL PRIZES, and is the Felt SOLELY patronised and adopted by

HER MAJESTY'S WOODS AND FORESTS,
HONOURABLE BOARD OF ORDNANCE,
HONOURABLE EAST INDIA COMPANY,
HONOURABLE COMMISSIONERS OF CUSTOMS,
HER MAJESTY'S ESTATE, ISLE OF WIGHT,
ROYAL BOTANIC GARDENS, REGENT'S PARK,

And on the Estates of the Dukes of Sutherland, Norfolk, Rutland, Newcastle, Northumberland, Buccleuch (at Richmond), the late Earl Spencer, and most of the Nobility and Gentry, and at the ROYAL AGRICULTURAL SOCIETY'S HOUSE, Hanover-square.
It is half the price of any other description of Roofing, and effects a great saving of Timber in the construction of Roofs. Made to any length by 32 inches wide.

PRICE ONE PENNY PER SQUARE FOOT.
*** Samples, with Directions for its Use, and Testimonials of seven years' experience, with references to Noblemen, Gentlemen, Architects, and Builders, sent free to any part of the town or country, and orders by post executed.
☞ The Public is cautioned that the only Works in London or Great Britain where the above Roofing is made, are

F. M'NEILL AND CO.'S
Patent Felt Manufactory, Lamb's-buildings, Bunhill-row, London, where roofs covered with the Felt may be seen.
The new Vice-Chancellor's Courts, at the entrance to Westminster Hall, were roofed with F. M'NEILL and Co.'s Felt about two years since, under the Surveyorship of Chas. Barry, Esq., R.A. Her Majesty's Commissioners of Woods and Forests are so satisfied with the result that they have ordered the Committee Rooms at the Houses of Parliament to be roofed with their Felt. Quantity altogether used, 24,000 feet.
NOTE.—Consumers sending direct to the Factory can be supplied in lengths best suited to their Roofs, so that they pay for no more than they require.
Every information afforded on the construction of Roofs, or any proposed particular application of the Felt.

HOW TO KEEP A HORSE FOR LESS THAN ONE SHILLING PER DAY.
"Do you bruise the Oats you give your horses?" "No."
"Then you lose one bushel out of every three, and your cattle do not half so well."
MARY WEDLAKE AND CO.'S OAT-BRUISING MILLS. Superior Chaff Engines, simple in construction doing from 50 to 500 bushels daily, and more. Almost all brewers and coachmasters in London use these implements.
118, Fenchurch-street, London. A pamphlet on the above, by sending 12 postage stamps. Chaff-cutters, Linseed, Bean, and Malt Mills.

The Agricultural Gazette.
SATURDAY, DECEMBER 7, 1850.

MEETINGS FOR THE TWO FOLLOWING WEEKS.
WEDNESDAY, Dec. 11—Agricultural Society of England.
THURSDAY, — 12—Agricultural Imp. Society of Ireland.
WEDNESDAY, — 18—Agricultural Society of England.
THURSDAY, — 19—Agricultural Imp. Society of Ireland.

"HIGH FARMING" is farming *up to the mark*—up to that mark on the scale of expenditure at which the returns are largest in proportion to the outlay: and we call it *high* farming because we believe that, as generally conducted, agriculture at present is not nearly up to this mark. Of course it is quite possible to go beyond the mark—and excessive outlay has often enough before now met with insufficient returns.

Now, though this is a definition which silences all discussion about its object, simply by permitting every one to attach his own meaning to its words, yet the practice advocated may be well enunciated in these general terms, both because its details must in fact vary with the circumstances of localities, and because it would be a good thing if we could disarm the opposition of many, who seem to think themselves attacked by the advocates of high farming, whereas they are in reality the models whom these writers would hold up for imitation. Mr. HONEYMAN, for instance, in his able lecture before the Trafalgar Society, reported in another column, has a hit at those whom he calls "high farming humbugs," without thinking that his own energetic and intelligent practice is itself far beyond the limit that thousands in this country consider to be the utmost which the sober-minded "practical" rent-paying farmer can find it his interest to attempt. And our correspondent on this subject, at page 730, though he swells the cry of experienced men against the extravagant doctrines of "mere theorists," is well known beyond his own county as an agriculturist exhibiting all the energy and intelligence which any of these theorists ever desired to spread. It is not by any such particular, as the letter of Mr. BIGGS communicates, that the policy of "high farming" will ever be determined; all that these words can mean is energetic, able, and intelligent agricultural practice. It will exhibit itself in a dozen different ways in a dozen different places—all that it needs is the condition of mind which all men admire, and the condition of means which all men desire, the one to see and to will the utmost which circumstances permit, and the other to enable its attainment. High farming on the Lammermuirs and in the Lowlands, on the wold and in the vale, in the country and near the town, differs as much as any six things can, but it is one and the same as regards the character of the men by whom it has been developed. In every case a man having the mind to *perceive* the advantages of his circumstances, and the means to *take* advantage of his circumstances, has exhibited the energy and the resolution to develope these advantages to their utmost. And as such men are still a minority in the agricultural world, and their practice still far above the average cultivation of this country, so we are at liberty to call attention whether to the parts of which it consists, or to the spirit which animates the whole, under the words—HIGH FARMING.

A very rich highly manured soil, it appears, from the letter at page 730, is unfavourable, according to our climate, for the growth of Wheat: and we know that well enough—the difference between a wet and a dry July in our own case amounting to at least 1000 bushels of Wheat—but is high farming to be condemned on that account? We have yet to learn that such a condition of soil is not a most valuable property to any one who owns it. There is a way of turning it into gold, if not by means of Wheat, then by some other plant. Flax and Hemp, Mustard, Chicory, and many other crops hitherto little cultivated, might be tried: and the farmer, because the Wheat crop fails to remunerate him as it hitherto has done, either by excess of organic matter in the soil, or by excess of importation from other countries, ought not on that account to consider either that agriculture must be ruined, or that high farming is absurd; other means of turning a rich soil to account exist; if grain growing does not pay, meat making may.

It is difficult to write in any hopeful manner of the means within his own reach which the farmer has of bettering his circumstances, and yet avoid the suspicion of aiming at the maintenance of rents: and yet it is curious that the political means of bettering their position, in which so many yet have faith, rarely fall under a similar suspicion, to which, by rights, they are nevertheless most certainly quite as obnoxious. Rents, no doubt, must fall, on any injury done to agriculture, just as they must rise in proportion to any benefit it receives—leaving, in both the cases, just that profit on the business, for which the majority are content to labour: and they must do so, not as a necessary and natural consequence for which we may patiently and quietly look, but as a result of the outcry and complaint, in which we readily join, that are to *exact* the reduction. Landlords are not to be expected to come forward and for benevolence sake remit their overcharges to a grateful tenantry; they are to find their land less valuable in the market before their rents will fall; and just as greater competition, with every boon to farmers generally, will raise the price of land, so the diminished competition with every loss must lower rents. Those landowners certainly are wisest who foresee results of this description, and readily accommodate their demands upon a tenantry to altered markets, so as to avoid that loss of capital invested in cultivation on which their own rentals as well as farmers' livelihoods depend.

These are the two means which united will carry us through the difficulties that now surround us—energy and intelligence in tenantry to take them out of the established practice adapted to 7*s.* or 8*s.* a bushel for Wheat, and 6*d.* to 8*d.* per lb. for meat, and try in other crops or other ways for profit—and far-sighted fairness in our landlords to yield to present circumstances the reduction which, if neglected now, hereafter may be forced from them in a doubled amount by the necessities, of which their own narrow selfishness will have been in great measure the cause.

RURAL ECONOMY.

THERE is fortunately at present a spirit of inquiry into the details of farming and management of landed property, which cannot fail to lead to useful results, and among others, that regular farming cannot succeed, any more than any other business, without both skill and capital. It is worthy of investigation, however, whether the occupation of a small portion of land may not be made the means of economical management of an establishment, as well as of affording useful occupation to the owner, and enable him to do good to those about him. When we look to the many items which make up the whole of any one meal of a family, not one of the labouring class, it must be very doubtful if a few acres of land, even under good management, can be made to supply the requisites in this climate and state of society; on the other hand, we must not condemn farming a portion of land, because, under no proper control, proprietors declare that it is a ruinous business, for if managed with intelligence and care, a portion of land will be found to be a most useful adjunct to any family. We propose taking the instance of a person of moderate fortune in the upper class of society, having a house and garden in the country, and keeping a carriage and pair of horses, purchasing fodder, butter, and milk, and such vegetables as the garden does not afford. The following may be set down as the items which he has to pay:

Wages of gardener and coachman, with the tax	£72	0	0
Help in garden, &c.	25	0	0
Keep of 2 horses, with smith and tax ...	52	0	0
Butter and milk	30	0	0
Poultry, eggs, and pork	30	0	0
Carting coals, and hired horse-work ...	5	0	0
Potatoes to buy	5	0	0
	£219	0	0

Taking this as the sum which he has to pay for the things stated, the inquiry is, the cost at which he can procure them by farming. It is necessary to state here, that these notes are only applicable to those who are inclined to study the useful more than the ornamental, who can dispense with a good deal of that expensive article—style; not but that the system proposed would be marked by a great degree of tidiness and order. The establishment will have to be remodelled under the master; the gardener should be headman; the coachman is to work the horses on the farm, as well as all carting work that is required; a boy may be found necessary, and all extra work done at contract prices as far as possible by the people of the place. A little experience will enable the master to say what is a fair rate for the work to be done, and he will establish such an understanding with his labourers, that his statement will generally be taken as the proper rate. The golden rule of kindness, by giving a personal interest to the work, will get much more done than orders; and before long, it is not *the* crops, *the* cows, but *our* crops, *our* cows, and the interest taken by the man, appears even greater than that of the master; and by considerate treatment we find that such men are by no means rare. The establishment would be the gardener and coachman, a boy to help wherever required, a labourer who would attend the cows and do other work; a woman for the dairy seems more proper than a man, and if the family washing is done at home, she would also be laundry-maid, and feed the poultry. The different capacities of each would soon lead to the exact

duties; but for the out-of-doors people it should be understood that they are all to turn to whatever is required, whether garden, farm, or grounds. The expenses under this system may be stated as follows:—

	£	s.	d.
Gardener and coachman, wages and tax	72	0	0
Boy and labourer	20	0	0
Extra labour	25	0	0
Smith and tax on horses	11	0	0
Rent and taxes of 20 acres	30	0	0
Interest on capital (implements and stock) ...	8	0	0
	£166	0	0

The result is in favour of farming; but it will be observed that 20 acres is the quantity of land taken to supply the articles enumerated in the first table, and we have now to enter upon some detail as to the produce required and management of the land. There is required fodder for horses, cows, pigs, and poultry, sufficient of each to supply an average family of the kind supposed. There would be 2 horses, 3 cows, to supply butter and milk; 2 or 3 pigs, 20 or 30 hens. The following statement will show the quantities of produce required, and the number of acres of an average quality to grow it:—

	Acres.
200 Bushels of Oats, at 40 bushels per acre	5
40 ,, of Barley for pigs and poultry	1
700 Stones of hay, at 150 stones per acre	4
250 ,, of meadow hay ,, ...	2
5 Tons of straw, with Oats	0
Grass for grazing cows	6
12 Tons of Turnip, Mangold, and soiling—20 tons per acre	1
Potatoes	1
Total number of acres	20

It is not supposed that the owner would rest satisfied with such produce per acre, and by reference to your columns many examples will be found of much larger produce, and of one or more cows being kept on about one acre. A rotation would have therefore to be adapted to the local circumstances, and improvements would be suggested by experience. The general system should be that of a garden-farm, which implies most careful and complete cultivation of every bit of ground, with high manuring and double cropping, together with stall feeding all kinds of stock, a most careful collection of every particle of manure, liquid and solid, from the house and offices, as well as the making of composts, and a sort of shed laboratory for the preparation of manures. A kiln for burning all rubbish, and if possible some piece of land for irrigation, at any rate a liberal use of the liquid manure by cart or horse to the Grass crops. The thorough working of the soil and subsoil is indispensable, trusting more to the spade than the plough; and in such a limited space, that portion intended for green crop should be regularly gone over in the Flemish style, by dividing it into widths and taking out with the spade intermediate spaces, throwing the soil on the surfaces of the adjoining piece, and and then picking and forking the hollow space, which in its turn is filled up, and the former ridge is made the hollow. The effect of a deep soil is thus obtained in the best way, and the extra moisture filters to the drains, which it has been taken for granted were made in the first instance. A different return might reasonably be looked for after such treatment of the land, and a produce of 50 to 60 bushels of Oats, 48 to 50 of Barley, 200 stones of hay, much larger crops of green food and roots might be obtained. Instead of Oats, Wheat would be grown. The stock would be increased by more cows and sheep, or bullocks, not omitting pigs to add to the muck manufacture, and give a few sides of bacon for disposal. The addition of a third horse or a pony to the establishment would be found a great convenience, and would give more satisfaction in doors, while it enabled the out-door work to be carried on without interruption. The horses we have supposed already on hand, but if too fine for farm work, which is seldom the case if they are of good temper, they should be exchanged for short-legged, compact, active horses, not large, but of good substance, taking a trial of them in a cart. The working condition of the horses will be found to improve, and the visits of the veterinary will seldom be required. A tolerably complete set of implements, suitable for such an establishment, would cost about 62*l*. As to offices, it is supposed that there are some which would answer the purpose, either connected with the house or land. We may in conclusion again advert to the useful and interesting occupation such a system of management would give to the owner, the superior quality of the supplies, the blessings the employment would be to several worthy labourers, the opportunity of giving really charitable employment, as well as a few roots or a little milk, and more especially the great general advantage to the country of agricultural improvements carried on with intelligence, and on the best principles; and it is moreover believed that this can be accomplished along with a greater economy in the establishment. *Forester.*

ALLOTMENT TENANTS.

I was highly pleased with your excellent defence of "the allotment system," as it is often vulgarly called; more especially with the ground you took when you said that the question is not always to be, what will make the labourer better for his master, but what will make him better for himself. Acting on this principle, when I came to reside here, about 4 years ago, I at once put into action "the allotment system;" and with the best and happiest results, I am thankful to say, both as regards the material comfort of the working men, and their moral conduct. In drawing up my rules I went on the principle—contrary to the advice of certain counsellors—of treating the labourers as men, and not as children; and instead of appointing a paid manager to look after the concern, and collect the rents, I gave them the power to choose a manager for themselves out of their own body; who, with another, appointed by myself from among their number, have performed their parts in every way to my satisfaction, and, I believe, to that of all the tenants. So much pleased am I with "the allotment system," and the good it does, in encouraging the good labourer, and employing the bad, who otherwise would be idle and up to mischief, that I have extended it this year on a much larger scale. I have also this winter opened a reading-room for the allotment tenants (about 60 in number), giving them the power to elect other inhabitants of the place, if they think them desirable, to become members of the said reading-room. I shall be very anxious to see how this reading-room will work, and shall watch its progress with much interest, and perhaps tell you of the results on a future occasion. The plan of it is simply this: To open a room, in some respectable house, for certain hours on certain days in the week, with a good fire and comfortable furniture. The members elect a committee of six, who manage the concern. Each member pays a penny a week. Honorary members give what they choose. The woman of the house, where they meet, is to provide tea or coffee for those who are willing to pay for it, and want it. I lend them some newspapers and books, and they take in some themselves with the subscriptions, part of which goes to pay for the use of the room. We hope, in time, that some of the farmers will join us as honorary members, and help us to establish a library. One of the committee is always expected to be present, when and whilst the room is open, to keep order, and look after the books and papers. Perhaps the above may be useful to some of your readers. *R. Thorp, Benton Overy, near Leicester.* ——Why do you stop short at the beggarly allotment system? Why do you not go for cottages with the same quantity of land attached as you let in allotments? Those were the dwellings of the rural labourer before agricultural improvement and high prices took the land away from him. I cannot see one earthly benefit in the "allotment system," beyond the name, which the others do not possess. Nay, I would go beyond this, and advocate the cottage garden system with gardens on a larger scale for those occasional labourers whom the farmer now employs in harvest and Turnip hoeing, and then turns adrift on the parish. I would have a source of profitable self employment for them when not wanted by the farmer; but down, I say, with the "allotment system." It perpetuates the evil by finding a palliative instead of a remedy. *J. T.* —— In your Number for Saturday, Nov. 16, you have made more copious observations than heretofore on the "allotment system." With much you have written therein we fully agree; but the thought that at one swoop the statements of your correspondent, "A Practical Farmer," on the same subject are to be buried in oblivion, is too much for many—ourselves among the number [and for us as well]. We are not converts to his opinion of its being "an Irish system;" and we have no wish to obtrude our remarks on the public—retirement is more congenial with our feelings—yet, we think, if you were to invite correspondence on the subject, it will be found "facts" will go far with some of the statements of "A Practical Farmer" thereon. We therefore appeal to you, as the judge who decided the case, to permit further evidence to be produced; and we move for a new trial, conceiving the verdict to have been contrary to important evidence which may yet be produced. We do this more readily, having encouraged the "allotment system," and made some observations on the effects produced. That making men feel they have a stake possessing them with some property, and furnishing them with means for obtaining more and better food, is likely to make them more fit to do the work of their employers, we readily admit—it should be so, and in many cases doubtless is so; but until they are better educated and possessed with right principles, we doubt if it will be found the case to any large extent. Let us refer to facts; "C." is a man with a wife and nine children. "S." is a man unmarried, each receiving 10*s*. per week wages; and each a plot of ground. "C." is a man conscientious, and for many years has not been known to neglect his duty nor wrong his employer. "S." was frequently known to rise "forward" and work his ground—also the ground of another; and at 6 o'clock go to his regular place of work; but frequently so jaded as to be unfit for it; consequently he might, without difficulty, be found resting himself full length in the stable or loft on a comfortable bed of straw; and as you would expect, his duties were shamefully neglected. Who could give such a man a character for honesty and industry? The man who thus steals his employer's time is dishonest; and if in one thing, he would not be scrupulous in another. It is easy to say, discharge such a servant, it has been tried by many, and generally without success; thus many are induced to tolerate great offences lest they should "only get worse." We happen to know that where there is one of the "C.'s" there may be 100 of the "S.'s." Take another view. You have employed many, and at the cost of some hundreds per annum; but your work is "chiefly done by the piece." We happen also to have expended some hundreds per annum for labour; but only partially "piece-work;" and that part, only because of the dishonesty of labourers. Case No. 1. This man was receiving 10*s*. per week (the lowest rate we have paid; others have 11*s*., and up to 15*s*.) from last autumn till near spring; but, honestly valued, his wages would have been 5*s*. He is put to piece-work, and can earn from 12*s*. to 16*s*. weekly at draining, hedging, or felling timber. Case No. 2. This man was employed at hurdling, day work; he could manage to get four to five done in a day (12*s*. per week wages). "Put on piece-work he was another man; for, at 3*s*. per dozen (making only), he could 'alter the stroke now,' his own words, and make 10 and sometimes 12 per diem!" Thus we think we have shown that a new trial should be had, and that a "common jury" of correspondents should be summoned to give their verdict (after you have summed up) according to the facts produced; or, at least, that the advocates of this system should be called upon to show cause why the judgment of the court (hitherto in their favour) should not be reversed. *Justicia.* ["Take a rule to show cause."]

Home Correspondence.

Liquid Manure and Peat Charcoal.—In one of your recent numbers I read your very judicious suggestions as to the use of peat charcoal with liquid manure, than which few things could be more desirable. But, to my surprise, I subsequently find a letter from "Celt," in which he says he "is sure it would be ineffectual," and states as follows—"Charcoal has also the property of clarifying any liquor passed through it. It readily parts with the gas it absorbs—for instance, if it contain as much ammonia as it was capable of holding, and was in that state immersed in water, the ammonia would be dissolved out. If therefore liquid manure was passed through the charcoal, the ammonia it could condense would only be the portion that was dissolved in the small quantity of water retained in its pores. The liquid would be to some extent deprived of its colour by the removal of the colouring matter suspended, but not a fraction of the really valuable soluble matter would be removed. By immersing the charcoal, the only benefit would be the removal of that portion of the liquid retained in its pores, no difference would be made in what was left."—*Celt.* It is much to be regretted that "principles" should be allowed to be attacked by those who do not give their real names in support of their views—the more particularly when these views are so dogmatically laid down, whilst they are utterly fallacious, and contrary to the proved properties of peat charcoal. If intimate contact of peat charcoal take place with water charged with ammoniacal and other gases, the affinity is so strong, that within a certain time (depending upon the size and nature and preparation of the charcoal) the gases will take possession, and expel the water. So far from the quantity of ammonia condensed being "only" that contained in the water occupying the pores—the pores will draw in ammonia and drive out water—and by "immersing a sufficient quantity of peat charcoal in liquid manure," the water passing away, especially if allowed to filter upwards through it, will be divested of its gaseous contents, until the charcoal has become charged with gases. That such is the fact can be readily proved. Take a quantity of sewage water, place it in a glass vase; put into it even lumps of properly made peat charcoal, and let it lie for a period proportioned to the quantities. In a short time the water will become pure—I may say, perfectly pure, if the quantity of charcoal be in proper proportions. Although when the lumps of charcoal be first immersed the pores are of course filled with water till the immediate change takes place; still, within a given time, the impurities, it may be said, are seized by the charcoal, and taken from the water. Why or wherefore "Celt" assumes the contrary I cannot understand. Should you wish to try this experiment I shall be happy to send you a lump of peat charcoal for the purpose. *Jasper W. Rogers.*

Poultry, Diseases of.—Some two years since, there appeared in the *Gardeners' Chronicle* a number of very interesting articles, from able contributors, on the diseases to which poultry are liable, at the various seasons of the year. I was at that time a learner, and an attentive listener; and I profited in no small degree from the oft-continued discussions in your paper. I have since kept a large quantity (for an amateur) of domestic poultry, and have succeeded with them so well, for the last 18 months more particularly, that I feel it a pleasing duty to communicate, *pro bono*, my mode of treatment, which is simple but effective. I have had new-laid eggs nearly all the year round; and am at the present time in the daily receipt of some half dozen—nearly all the hens giving unmistakeable indications of speedily becoming members of the "lay-ity." I have had but one death in the family since January; and that was recently—during the "fall of the leaf"—from atrophy. My poultry-yard exhibits pleasing evidence of the most robust health and vigorous constitutions prevailing amongst all the inhabitants. I allude to the Sebright bantams, and the more choice varieties, as well as those of the more common kind. I have one Sebright gold spangle hen, weighing not more than six ounces. This little darling pet—for such she is, in the fullest meaning of the words—has not known an hour's sickness throughout the year. It has been the same with others equally tender. But to the subject matter in hand:—Round each of the poultry "walks," I have planted a complete hedge of Rue—the medicinal qualities of which, in combination with proper food, are remarkable. The heads of these plants are bent forwards, and introduced through the circular galvanised

iron wire holes, which form the front of the "walk." I find, from time to time, that much of the Rue is eaten, Nature evidently indicates the "why" and the "when." Of course the houses where the birds roost are thoroughly cleansed, thrice weekly—in summer, daily. They thus enjoy "sweet" sleep, and escape being poisoned by the foul and impure gases, which would, but for this precaution, necessarily arise immediately under their nostrils. Herein lies a grand secret, and the hint is worth picking up. A constant and liberal supply of fresh water should never be neglected under any circumstances. This is immensely important. I keep them well supplied with old mortar, pebbly gravel, red sand, and brick-rubbish—throw them in twice a week a quantity of raw, juicy Cabbage leaves, and long Grass; occasionaly some boiled Potato parings, rice, and fragments—feed them twice every day (at half-past 7, and half-past 1), with Oats and Barley, mixed; and turn up with a spade, twice a week, the raised ground which forms their "walk." By this last move, some scores of underground inhabitants become disturbed, and rise to the surface. The fowls by this, get an extra benefit. I have always christened this feast, "the Diet of Worms." The "walk" being thus frequently turned up, is kept perfectly sweet and wholesome; and the water, filtering through the earth, leaves the surface clean and dry. Hereby are the fowls preserved in a rude state of health. To enable them to get the full benefit of what little sunshine there is, at this season, I elevate their outside perches (square perches, of course) to the fullest admissible height. This supplies them with air and exercise, and, in my opinion, adds to their happiness in no small degree, by affording them an extended prospect. *William Kidd, New Road, Hammersmith.*

Irish Moss.—The enclosed was given to me this morning by a farmer as a specimen of Irish Moss, which he is buying for feeding purposes of a druggist, at the rate of 2½*d.* per lb. It is used thus:—1 lb. is boiled for a long time in 6 gallons of water, which forms a jelly much resembling that from linseed, and this is mixed with other food, such as meal; if for pigs, &c., chopped straw, or hay for beasts. The farmer who gave it me thinks well of it, as the animals eat it well; but as many agriculturists speak only from guess, and not from weighing or measuring, or even from comparative experiments, I wish to ask what your opinion of its feeding properties may be, and also whether it is not Sea-weed instead of Moss? and if so, whether it should not be procured at a less price than 2½*d.* per lb.? Also, if it should be found valuable for feeding purposes, how far it would be useful as an enricher of the dung-heap in comparison with Linseed-cake. *W. Squire Ward, Ollerton.* [The mucilage obtained is a kind of starch, and we should suppose it to be of comparatively low nutritious character; and the article to be not worth so much as Bean meal, which can be had for less than 1*d.* per lb.]

Wheat Growing.—I very cheerfully comply with the request of your correspondent, of the 16th, relating to 10 questions upon the growth of Wheat. I should be glad to add a little oil to the agricultural wheels, for they seem to travel rather slowly. I know but little about farming, and most of my neighbours think the same, for as of old, "A prophet has no honour at home." However, I think there is no harm in growing all the corn you can, nor yet in making all the employment you can, especially if they can both be done profitably. In answering the 10th question, I risk giving offence to many tenant farmers, who think, or pretend to think, that my cultivating a few acres of land in a way no one before ever thought of, raises the rent of land. It seems to me very preposterous, if they thus think, for not half a dozen farmers have tried the non-ploughing, thin sowing, clean hoeing, Wheat growing system. Now then for the answers to the questions:

Q. 1. The nature of the soil and subsoil on which the Wheat is grown?	*A.* Some part light, some hollow-bottom, or meadow soil, and part heavy. The subsoil, a tender loam, or sort of brick-earth.
Q. 2. The height above the sea?	*A.* I should think about 100 feet, and about 20 miles distant.
Q. 3. When is the corn dibbled in?	*A.* The usual time, or rather early, say fore-part of October.
Q. 4. What manure, and how much per acre put on?	*A.* Generally 60 bushels of soot per acre.
Q. 5. The cost of manure?	*A.* Two pounds, including carting and sowing.
Q. 6. Does he harrow the ground after sowing?	*A.* Yes.
Q. 7. Is the manure applied at seed time, or in spring, as top dressing?	*A.* Neither; I think, mostly in February.
Q. 8. How often is the Wheat hoed, after the Wheat is up, before harvest, and whether by horse or hand?	*A.* Twice well hoed, and once picked over, say in June; all done by hand.
Q. 9. How many acres does he plant in this way?	*A.* "Aye, there's the rub." Between one and two acres.
Q. 10. What has been the average of his crops up to last harvest?	*A.* Forty-two bushels. The ground is not suitable for Wheat, and has 55 trees to the acre.

In conclusion, I would say, I shall be happy to be catechised in any way, any of your correspondents think fit. *J. D. Piper, Colne Engaine.*

Farm Accounts—I have read with pleasure the letter of your correspondent, "W. F.," page 731, on this subject, and as he proposes going more minutely into detail on a future occasion, I would venture to suggest that he should strongly impress upon farmers the necessity of keeping their farm accounts entirely distinct from their housekeeping or family expenses. The farmer should debit himself and credit his farm with every Potato, egg, pint of milk, and pound of butter, &c., consumed in his family, and even with a portion of his rent, as house-rent, and he will then find that his farm pays better than he thought it did. This is nothing more than a fair mercantile system. *T. F., Birkenhead.* —Be pleased to convey my thanks to your correspondent, "W. F., Gay Bowers," for his opinion upon farm account-keeping. From his evident knowledge of the subject, he is an authority worthy of attention, and I shall read with great pleasure any other paper with which he may favour us. I presume that, in addition to the set of account books "W. F." mentions, it would be necessary to keep a stock book in which to enter the dead stock with the respective prices annexed. Your other correspondent, "J. R. Markly," would confer a favour by explaining what the alteration is which he recommends to be made in the labour account book of the Royal Agricultural Society. *E. T.*

"*No Business so ill conducted as Farming*," *No.* 2. —If the old grocer who said so, had not known where to find each article, when wanted by a customer; and if he had suffered his tea to get mouldy or fusty, and his sugar and salt to melt, from the dampness of the place where they were kept, he would not have been likely to have become a landowner. And yet that would only be parallel conduct with what has been, and still is, commonly practised on farms. How much seed, manure, and produce of crop and stock have been wasted from want of drainage! How recklessly have the virtues of manure been dissipated by exposure to air and water! How often has the farmer lost as many pounds because he thought he could not afford to spend as many shillings as would have prevented that loss! How commonly do we see weeds devouring the food of the crop, because the farmer will not be at the pains and expense of cleaning his land and keeping it clean, though in a few years the expense would be far less than the amount of the injury done by the weeds! It is painful to multiply instances of neglect or mismanagement, especially so to an old farmer who must candidly confess that he has himself been guilty in many such cases. He would not expose his own errors, or those of other farmers, if it were not from a desire that they may be avoided. The importance and necessity of drainage and other improvements has been repeatedly urged, and yet we can scarcely find a tenanted farm which can in all respects be exhibited as a model for imitation. What then is the inference? Surely we are constrained to confess that there is far too much truth in the apparent severity of the grocer's rebuke. Where, then, are we to seek for the remedy? Not merely in one or two improvements, but in rectifying all our errors, and following up all known improvements, and seeking eagerly for a further progress, in accordance with the age of invention in which we live. We must begin with a better system of hiring farms; that is the first step, without which we cannot hope for such perfect cultivation as these times demand. The next thing is to mind that no man occupies more land than he is capable of managing, not in the old heedless way, but according to the most perfect management. Still we cannot hope for the requisite improvement in the cultivation of the soil, unless the mind be cultivated also. If it be true that "knowledge is power," that power must be attained by education. The sort of education required by the sons of farmers and labourers is different from that which towns-people require. The village school should be industrial as well as intellectual. Some land should be attached to it, and the pupils should take their regular daily lessons in the field as well as the school; agricultural experiments and accounts should form a part of the tuition. When mental and manual teaching are practised daily, the one becomes a relief from the wearisomeness of the other, and the scholars make good progress in both at the same time; whereas, when taught at separate periods, they have each an injurious effect upon the other. I quite agree with your correspondent, "Falcon," in thinking that, for labouring people with only common intellectual powers, the education should be merely rudimental, consisting of reading, writing, and the first rules of arithmetic. But in all education, moral and religious principles should be inculcated; without these, it will only prove a crime instead of a blessing—the educated bad man is likely to be more injurious to society than he would have been without his education. The education of the farmers' and labourers' sons may very properly be carried on together, at a well-conducted industrial village school. From this, the farmer who can afford it may send his son to a higher kind of agricultural school, where he may be taught in company with the landlords' sons; and thence a few of the most intellectual of the richer farmers' sons may go to the Agricultural College, and there also the sons of landlords should be sent, that they may acquire such knowledge as will qualify them for those duties that will devolve upon them. Such intercourse with the different classes will, in various ways, have a beneficial influence. Education will drive away prejudice, which is a great bane to agricultural improvement; and it will enlighten the mind for the discovery of many more improvements at present unthought of, but which, in this age of invention, we are required to discover. *O. F.*

Animal Heat.—All contributors, whether to the amusement or the instruction of the public, seem impressed with the notion that they must provide a good deal for the money. We fancy this is a mistake, for we hear continual complaints that operas, concerts, and all dramatic performances are too long. Newspapers have become an awful tax upon the time and sight of this generation. They have grown from the small sheet to the broad sheet; from the latter to many sheets; from a readable type for the eyes of middle age, to one requiring the optician's aid; and you, Mr. Editor, have of late given us some of the most interesting portions of your *Gazette*—discussions at some of the farmers' clubs and meetings of agriculturists—in a type which we apprehend was invented at Laputa, for we have been obliged to apply a lens of considerable power to read it with any degree of comfort. As we have read nearly every number of your meritorious and instructive periodical in the horticultural as well as the agricultural department from the first to the last, allow us to suggest to you what has occurred to us and other readers of our acquaintance, that quality is infinitely more acceptable, and more highly appreciated, than quantity, and to "whisper in your lug," that there is ample space in your sheet for all really valuable matter in a type that would be acceptable even to eyes of a certain age. You must bear in mind that the oldest of your readers has yet much to learn, more especially in the science of agriculture. We venture to suggest, whether you do not carry your good nature somewhat too far in the admission of many contributions which evidently come from gentlemen who have recently awakened from a trance, or who, at any rate, must have been in a dormant state for some years past; and who now give us, as original and novel information, matter which was perhaps engaging their attention when they entered into their state of repose. An instance we may mention of a recent occurrence, under the title of "Animal heat," in which the writer, having noticed that much had been published on agricultural chemistry, farming operations, &c. &c., but that one of great importance had escaped the notice of those scientific men who had thrown so much light on such subjects, promised that he would illustrate this in as concise a manner as possible. Having, as a matter of taste and duty, kept ourselves *au courant* in horticultural and agricultural lore, our curiosity and appetite were greatly excited to discover and feed on this new light, which had escaped the observation of Liebig, Johnson, and other discoverers. We read paragraph after paragraph with increasing impatience at what we felt was a very long introduction, when at length we came to the end of the article, without meeting with an atom of information but what has been communicated years ago by the scientific men the author referred to at the outset, in a much more clear and intelligible manner, with one exception, which seems to have struck a contributor to your last Number. That we must admit to be quite original, and perfectly new to us. We studied Richeraud many years ago, who was esteemed a high authority on physiology, but we were not aware, prior to Nov. 2d, A.D. 1850, that the food, after being reduced to a pulp in the stomachs of us mortals, "was removed to the liver," and then passed through the lungs. Our notion was, that after undergoing the process of chylification, it passed elsewhere. *O. L.*

Poultry.—On the 28th of Nov., 1849, I had a cock and pullet of the Cochin China breed sent me; they were then each about five months old. The pullet commenced laying early in December, and has up to this time produced five broods of chickens. The first brood was hatched January 22, 1850; the second, April 6; the third, June 13; the fourth, Aug. 19; and the 5th, Nov 21. The hen is a good nurse, but as she commences laying eggs when the chickens are from 28 to 30 days old her young progeny are soon deprived of her care. When she has laid from 18 to 20 eggs, which she does in about 24 days, she incubates, in fact she has a constant succession of occupation—producing eggs—incubating and attending to the wants of her young broods. I have distributed most of the chickens of the early broods amongst my friends, but I have in my own flock one pullet of the first brood; she has reared seven chickens and is now laying. I have also one of the second brood; she is laying, and I am in daily expectation of having eggs from three pullets of the third brood. The fourth brood, which consists of 10 chickens, are fine healthy young birds, and as the winters here are generally very mild, I hope the fifth brood will do well. My fowls are always confined, but each compartment of the building has, attached to it, an open space fenced in. I keep the houses and yards clean, feed high, and always have my fowls in good health and condition. *R. H. Bowman, Penzance.*

The Deep Drainage of Clay Soils.—The money that has been uselessly expended in attempting to drain clay soils, with drains inserted only 2 or 3 feet from the surface, is so considerable, that all information is valuable which shall tend to give confidence in the system of deeper drainage, which experience and scientific reasoning show to be the more effectual and serviceable, even if the shallower drains, by their more frequent insertion, equally carried off the water from the surface. It is with a view to show the capability of the rankest clay being drained by drains of 4 and more feet in depth that I call attention to a most striking instance of the result of very deep drainage of a rank clay in the neighbourhood of Barnet, and where the London clay reaches the surface in its greatest purity and strength. The Great Northern Railway has tunnelled 37 feet under a garden, which for the last half century at least possessed a never-failing pond. Whilst the navigators were at work making the cutting, the proprietor, a skilful agriculturist, amused them by foretelling the loss of this to him most valuable supply of water, whenever the completion of the tunnel should

have admitted air through to sufficiently dry the bank of clay which lies between the top of the tunnel and the bottom of his pond. What then appeared so improbable has now happened. The tunnel has been completed above a year, the basin has been tapped, the water in suspension has evaporated, the clay has shrunk, the pond has cracked, and the water has all disappeared. The moor hens have lost their ancient home, and this autumn the Water-lily and Bulrush are dead. This curious fact was pointed out to me by the proprietor of the garden and of the surrounding land, much of which he has already drained by 4 feet drains, and what remains undrained he is about to do by means of a Government advance, so satisfied is he of the benefit from deep draining of clay land. *Hewitt Davis*, 3, *Frederick's-place, Old Jewry, Nov.* 11.

Covers for Dung-heaps.—I am particularly struck with the concluding passage of an article marked "C." in your Number of the 9th inst., treating of the management of liquid manure, &c., which runs thus: "The latest form which this search after novelties has taken, is the cover for the manure heaps. It would certainly be useful to provide such accommodation; but is a cover for the dung-heap the first requisite of the present day? For instance, before providing such a building, would it not be advisable to provide permanent sheds for corn and hay? The plain practical utility of such a suggestion has, we fear, little charms for the advocates of covered dung-hills. Plans of farm-buildings have already been published with the latter, duly marked; but we have never yet seen a hint of the former, though we certainly think that shelter for corn ricks is a much more important matter than a cover for the dung-hill." Perhaps "C.," although an occasional writer in your Paper, does not deign to read the contributions of less able persons than himself, or he certainly could not have penned the concluding lines of the passage to which I allude, inasmuch as in several of your Numbers, pointed notice and strong recommendations of its practically economical utility has been made by me of what "C." calls "permanent sheds for corn and hay." Should "C." ever honour this part of Cumberland with a visit, I would be glad to show him a permanently roofed stack or rick-yard of mine, which has been in existence for six years, and also some others which have since been erected on its plan. I could likewise show him my roofed dung-hills, which I as strongly advocate as roofed corn-stacks. Should "C." then not approve of these erections, I could only say he would be the only dissentient of the many distinguished agriculturists who have come from far and near to visit them. *Jas. Robertson Walker, Gilgarron, Whitehaven, Nov.* 12.

Hay-Chaff Cutters.—In a late Number, you say "The farmer was also provided with a hay-cutter." "This also we found had been disused." "The tenant reported favourably of the plan of crushing Oats for horses." I, too, have a hay-cutter, and an Oat-crusher, like everybody else, but, like your friend's hay-cutter, both are disused. But, unlike your friend, I doubt whether both are not positively wasteful, independent of the labour. I bought these implements, and have used them for some years, because everybody else did; however, the following circumstance has caused me to pause, and I shall be glad if I can provoke a discussion in your columns on the subject. I fear, in these days, agriculturists are too apt to seize hold of every novelty as useful, without sufficiently weighing the matter. Having a young horse, which I was getting into condition for sale as a harness horse, I watched his progress closely, and frequently took him out for exercise in my Whitechapel to the neighbouring towns. Having been for sometime dissatisfied with his slow improvement, I was one day, after feeding him at a livery stable, surprised by his increased gaiety, so much so as to determine me to observe him narrowly, whenever he was again fed (on uncrushed Oats) from home, and also to watch my stable man more closely in his feeding him. On several occasions afterwards I found him gayer after his feed from home than he was when coming out fresh from his own stable; and as I had satisfied myself that all was right at home, I ordered him to be fed on uncrushed Oats, and the change in the horse in one week was astonishing. Since that time I have ordered my cart horses to be fed on uncrushed Oats and unchopped hay, and I am satisfied that on the same work, with less feed, my horses are in as good, if not better condition, than they were this time last year on chopped hay and crushed Oats. I think the indiscriminate use of the hay-cutter and corn-crusher is bad. What will suit the constitution of one horse will be unsuitable for another. The saving time, the farmer says, in the horse's filling his belly is the great thing; but I say, if half a bellyful does him more good than a full one, let him go to his work with a half bellyful. If at dinner I fill my belly in 10 minutes, I am hungry again in an hour, whereas, if I take three-quarters of an hour to it, it lasts 3 or 4 hours. I am inclined to think that the horse finding his food chopped ready for him, does not chop it sufficiently for himself, but bolts it; and for want of the saliva, which accompanies the food into the stomach when masticated naturally, it passes through him ill-digested, and a greater quantity is consequently required to keep up his condition. If I am right in the above view, its publication may benefit somebody; if I am wrong, perhaps somebody will benefit me by exposing my error. *John Kay, Chorley, Cheshire.*

Roots in Drains.—I send a specimen of some fibrous substance which I found lately had stopped one of my drains, a pipe tile, 3 inches in diameter. The drain was a main drain 4 feet deep, running through the middle of a field, and at no place near any tree whatsoever. It is a curious circumstance, the small pipes 1½ inch bore running into it, were all clear, but this fibrous substance had penetrated the main drain in many places. It has only been laid down four months; subsoil clay, mixed with stone. I have done much pipe draining for the last three years, and have never seen such a thing before. The field is now in Wheat, Rape having previously been eaten off by sheep. Query, is it root of Rape? My drainer says it tastes bitter, like Rape. Can you enlighten me? *North Devon.* [It seems to be the root of Rape, by its taste.]

Drainage Act.—In answer to a remark by Mr. H. Davis in the *Agricultural Gazette*, I have to state that I borrowed 400*l.* under the Drainage Act which was all spent on actual drainage, and that the amount I received was only 365*l.* some few shillings, the balance of 34*l.* being absorbed in Government charges, and two visits of a surveyor. Moreover that the machinery of the Act, apparently so simple, was in my case, and that as simple a one as could be, excessively complex; letters passed without end, and the money not paid until some considerable time after completion. I borrowed merely as an experiment, to see if it would answer for small freeholders; but I am quite convinced the Government charges, the limitless correspondence and delay in repayment, render it perfectly unavailable—at least in its present arrangement. *J. T., Swansea.*

Growing Rape for Seed.—As I observe in yours of the 16th, some experiments respecting its management, I will give you the way it is grown here. The land intended for it, ought to be in good heart and ploughed immediately after harvest, and well harrowed, the weeds and stubble gathered together and burnt; it may then be ploughed again or scarified, it makes little difference how, so that it is got into fine tilth. This is absolutely necessary, as, from its being such small seed, it is difficult to plant well, unless the weather is favourable. The land must have a good dressing of dung, pretty well rotted, as it gets better mixed with the soil in working it than when it is long. It is the best way to drill the seed in about 1 foot apart, or 1½ on very good land. They will succeed well if transplanted, but this involves much labour and expense; and after paying much attention to it, I have always found the greatest quantity of seed from that sown where it is to stand; there is one advantage in sowing it in a seed bed, you can choose your own time in putting in the seed, when the ground and weather is suitable; for if the weather is very dry after harvest, it is almost impossible to get a plant; and it should be sown as soon after harvest as possible, as the plants then have time to gain strength before winter, and you may thin them out in the autumn when your people are not so fully employed as in the spring. We have not always thinned them out at all, only giving them a rough hoeing in the spring, but the last two years we have singled out part, and left part. That part thinned out has yielded nearly two quarters per acre more than that left, and the seed is of a finer quality, and it enables you to stir the ground well with the hoe, and keep it free from weeds. If transplanted it should be done with the first favourable opportunity, after the land is got into a fit state, and the weather suitable (that is, the ground moist, and showery weather); the plants may be either dibbed in, like Cabbage plants, or planted in the furrow, the plough covering them the next bout; but whichever way it is done, nothing but short bushy plants should be put in, as the long stalky ones never branch out like their stouter brethren, and they are liable to be killed by the frost; it is ripe about the latter end of July, and is reaped with the sickle, and laid in small heaps, just large enough to be turned readily; but if fine weather, it does not require turning much, as it readily shells out. We thresh it in the field, making a floor by clearing a square space about the middle, and raking the ground fine, then well watering it till like puddle; we then cover the space with about a foot thick of haulm or short straw, and set fire to it; when reduced to ashes, we roll with a heavy roll, and the floor is ready to thresh upon when dry. *E. X., near Braintree.*

On the Growth of Gorse or Furze.—Will you allow me, through the medium of your Paper, to give a few remarks upon the cultivation of this most valuable of plants, which has been proved for a long time to be a most excellent food for cattle and horses, as a substitute for hay. It is thought that there is much difficulty in growing Gorse. This idea Nature seems to contradict, by producing it upon all soils and situations, and upon which I have seen the crop equally good. I consider April, to the end of June, to be the best time for sowing. The soil should be cleansed and pulverised, as the seed is best put in with the drill, at 8 inch rows; and 20 pounds of seed to the acre. The plant thrives best, certainly, upon sharp sands. Having a deep sand, or rock, with a dry subsoil, I have seen 8 or 10 tons per acre produced on a soil not worth 5*s.* per acre, and for this reason, I would advise 20 bushels per acre of sand of the sharpest grit to be put in with the seed upon all soils not having sand in them abundantly. I collected from a bush 28 seeds, in March, and the same hour put them into the ground: that summer only three came up, and five more the following summer. This proved the opinion to be wrong, that such an occurrence was from old seed. I have no doubt all the remaining seeds would have come up at different periods, when it so happens. This gave me much assistance in growing the plant, being aware the slug is the greatest enemy when the plant just comes out of the ground, and only in its first two leaves, and at that time easily devoured by it; but, if it escape to the next leaf, it is then safe; this induced me, with perfect success, to save several crops, by carefully watching the plant from time to time; and, when the slug did appear, to apply 1½ cwt. of saltpetre per acre. A crop, by this means, will be easily secured; for, when the plant is past this stage, it is safe. Hares, rabbits, sheep, &c., being the only remaining enemies that will destroy it. Though I advise 20 lbs. of seed per acre should be sown, if a quarter of that seed come to maturity, it will produce plants enough for a full crop, which is 8 or 10 tons per acre. Eight tons will produce 1200 or 1300 bushels per acre, which is enough to keep two horses or cows 26 weeks. I have proved, by careful trial, with a cow fed upon Lucerne in July, and in November upon Gorse, that the cream and butter when the cow was fed upon Gorse to be quite equal, or rather exceed in quantity and quality the feeding upon Lucerne in July, and far exceeding all other Grasses, Clover, or Vetches, &c. *C. W. F.*

Thin Seeding.—Last year 6 pecks of seed Wheat drilled had a trifling advantage over one bushel of seed, some plants having been destroyed by slug. This year the bushel has a little the best of it, say one gallon per acre, besides the two pecks of seed saved (yield 36 bushels per acre); still, to make all safe, and guard against loss from casualties, I have drilled from 5 to 6 pecks per acre, which appears a safe average quantity on my land. I do not think we can lay down a general rule for all soils or climates. The higher the condition of the soil, and the earlier we sow, the less seed we should put in. Several years' trial has convinced me, that on *my* land one bushel of seed Wheat will produce more than will two bushels, by the rent of the land. Generally speaking a great deal too much seed is sown; every agriculturist should satisfy his own mind by altering the drill wheel on a few lands. The comparison would astonish some of the three-bushel men. Possibly experience may have taught the Cotswold-hill farmers, at 500 feet above the level of the sea, that they must get a thick and early plant to protect the *roots* from freezing, which would destroy the plant. The same cause may also operate with the light sand land farmers on the east coast of Norfolk. I have seen whole rows of Wheat destroyed by the *roots* getting frozen (especially when late sown), before the roots have got deep into the soil. The solidification of light soils by dibbling or heavy rolling will tend to prevent such casualties; 2 cwt. of salt per acre, mixed with 2 or 3 cwt. of guano, and harrowed in with the seed, tends to solidify and bind the land, and excludes atmospheric influence. I have seen Mr. Piper's, and other Wheats, from 1½ peck of seed, and a more abundant crop of corn or straw could not be produced. His system of not ploughing and dibbling the Wheat naturally excludes frost, slugs, and insects, and diminishes the chance of loss of plants. I know a large practical farmer in my parish, who rolls his heavy land after ploughing with a stone roller weighing two tons, and drills after the roll, generally sowing in November. His quantity of seed varies from 5 to 6 pecks, and he grows good crops. Most of his Wheats are after one year's Clover or Beans. Sowing guano and salt with the Wheat or any grain is a wonderful protection against all the insect tribe, wireworm included. They cannot stand ammoniacal salts. After Rye-grass I have a capital plant, so treated, although it looked very rough and unpromising, and every one condemned the field to fail. I am glad to see my friends Wilkins, Davis, and others practising and discussing the matter. It is quite clear there is nothing to be angry about. I always horse-hoe my Wheats with Garrett's horse-hoe. *J. J. Mechi, Tiptree-hall, Nov.* 26.

Societies.

ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

A Monthly Council was held at the Society's House in Hanover-square on Wednesday last, the 4th of December: present, His Grace the Duke of Richmond, K.G., President, in the Chair; Mr. Raymond Barker, Mr. S. Bennett, Mr. Brandreth, Mr. W. G. Cavendish, M.P., Colonel Challoner, Mr. Brandreth Gibbs, Mr. Grantham, Mr. Fisher Hobbs, Mr. Kinder, Professor Sewell, Mr. Shaw of London, Mr. W. Simpson, Mr. C. Hampden Turner, and Professor Way.

Andrew Arcedeckne, Esq., of Grosvenor-square, and Glevering Hall, Suffolk, was elected a Governor of the Society.

The following new Members were elected:

Peto, Samuel Morton, M.P., Somerleyton Hall, Suffolk
Clifford, William, Parliament-street, London
Watson, Henry, Londonthorpe, Grantham
Humphreys, Henry, Beaumanor Park Farm, Loughborough
Stewart, Arthur, Stafford-terrace, Heavitree, Exeter
Gosford, Vincent, Cheriton, Alresford, Hants.
Stuckey, Walter (Banker), Grove Cottage, Yeovil, Somerset.
Mahon, H. Sandford Pakenham, Strokestown, Roscommon
Morgan, Lewis, Hafod, Pont-y-Prydd, Glamorgan
Dalton, Thomas, Cardiff, Glamorganshire
Dashwood, Maitland, Scotsborough, Tenby, Pembrokeshire
Davis, Richard Francis, 34, Connaught-square, London
Lewis, Wyndham William, The Heath, Cardiff, Glamorganshire.
Parrington, Thomas, Marton, Cleveland, Durham
Bennet, R. G., Tresillian, Newlyn, Truro, Cornwall
Permewan, Nicholas, jun., Trevethow, Lelant, Hale, Cornw.
Smith, Parker, Caythorpe, Grantham, Lincolnshire
Randolph, James, Milverton, Somersetshire
Lloyd, Francis Edwardes, Kilybebil, Swansea, Glamorganshire.
Hymers, Robert, Marton, Stockton-on-Tees, Durham
Heath, R., Liverpool
Clark, Henry, Berkeley-square, Bristol
Badham, G. D., Sparrow's Nest, Ipswich, Suffolk
Strode, James Cranbourn, Hollington, Hastings, Sussex

Rutter, James, Roxwell, Chelmsford, Essex
Alexander, Horace, Surinam-terrace, Stratford, Essex
Goring, Rev. John, Wiston Park, Steyning, Sussex
Rowley, Hon. and Rev. Thomas, Rhydorddwy-Faur, Flintsh.
Simpson, William, Kirby-Grindalyth, Sledmere, Yorkshire
Easton, James, Grove, Southwark
Aytoun, Marriott, Coates's-crescent, Edinburgh
Aveling, Thomas, March, Cambridgeshire
Barrow, John James, West Burton, Gainsborough, Lincolnsh.
Summers, George, Stoke-Wake, Blandford, Dorset
Gadesden, James, Ewell Castle, Surrey
Piercy, Alfred, Hurley, Marlow, Bucks.
Price, John Robinson, Westfield Farm, Montrath, Ireland
Sims, Thomas, Downiehills, Peterhead, Aberdeenshire
Bolton, Thomas, Ballykisteen, Tipperary, Ireland
Midgley, W. H., Ercall Park, Wellington, Salop
James, John, Whitechapel-road and Leadenhall-st., London
Kelsall, Henry, jun., Rochdale, Lancashire
Ewbank, Charles W., Port Eliot, St. German's, Cornwall

The names of 10 candidates for election at the next Meeting were then read.

FINANCES.—COLONEL CHALLONER, Chairman of the Finance Committee, presented to the Council the monthly report of the accounts of the Society; from which it appeared, that, at the end of the previous month, the current cash-balance in the hands of the bankers was 769*l.*

GUANO.—Viscount PALMERSTON, her Majesty's Principal Secretary of State for the Foreign Department, transmitted to the Council, through Lord Stanley, of Alderley, important documents connected with the supply of Guano to this country, founded on a communication of facts resulting from inquiries instituted by Lord Palmerston's special instructions in reference to that important question. At the request of the Council, the Duke of Richmond, as the President of the Society, and as feeling anxious under any circumstances to promote measures by which a more abundant and a cheaper supply of valuable manure may be furnished to the practical farmers of this country, kindly undertook to confer with Lord Palmerston on the subject, and to report to the Council the result of such interview with his Lordship.

SHOW OF 1851.—The Council gave directions for the General London Committee of the Society to be summoned to meet on Wednesday next, for the consideration and despatch of business connected with the Society's arrangements for their show of breeding stock in Hyde-park next year.

The Council then appointed the standing Committees for the year 1851, and adjourned to their weekly Council on Wednesday, the 11th of December, at 12 o'clock, at which, as usual, all members of the Society would have the privilege of admission for the reading and discussion of papers connected with practical points in agriculture.

HIGHLAND AND AGRICULTURAL, *Nov.* 20, (*Mr. Moore's remarks continued from page* 766).—The following is the report of the experiments made in 1836.

A committee was appointed by the East-Lothian Agricultural Society to superintend the experiment. The cattle taken for the purpose of the experiment were 20 polled Aberdeenshire oxen, three-year-olds, which were purchased at Falkirk October Tryst, and were equally divided into four lots, five in each, on the 24th of that month, and immediately placed into separate courts, each of which had ample space and shelter from the weather by covered sheds. Each lot of cattle had a mixture of food allowed them along with Turnips, with the exception of lot No. 1, which was fed altogether upon Turnips and straw, and may on that account be designated the trial lot. No. 2 had half the quantity or weight of Turnips which was allowed to No. 1, with 30 lbs. oilcake, as a substitute for the less quantity of the Turnips. Lot No. 3 had the same weight of Turnips, which was given to No. 2, and had ground corn in place of the oilcake. The 4th lot got offal from a grain distillery, and a portion of bran-meal, which was mixed into their draff every morning. By following this arrangement we have ascertained the quantity of Turnips saved; the value of the Turnips in feeding by themselves, contrasted with that of the other substances; and their value as an auxiliary feeding when used with those richer substances, which, without some coarser food, will neither be an economical nor a beneficial food for cattle. All the lots had fresh straw given to them daily, but which was not weighed; and below is a statement of the food consumed, and the expense incurred in the fattening of each lot:

1836.	Lot No. 1, fed on Turnips.		
October 12.	To price of steers, at 11*l.*	£55	0 0
24.	10 days keep of do., on Turnips and straw, at 8*d.*	1	13 4
1837.			
January 1.	34 tons White Globe Turnips, at 8*s.* 4*d.* per ton, since 24th October, being at the rate of 3 cwt. to each, per day ...	14	3 4
April 7.	38 tons 16 cwt. Ruta Baga, at 12*s.* 6*d.*, since 1st January, being 8 cwt. per day	24	5 0
June 7.	21 tons 8 cwt. Ruta Baga, at 12*s.* 6*d.* since 7th April	13	8 2
		£108	9 10

The average expense of the keep of this lot is about 6*s.* 2*d.* per week, each beast.

1836.	Lot 2, fed on Turnips and Oilcake.		
October 12.	Price of five steers, at 11*l.*	£55	0 0
24.	10 days' keep on Turnips and straw, at 8*d.*	1	13 4
1837.			
January 1.	17 tons White Globe Turnips, at 8*s.* 4*d.*	7	1 8
April 7.	19 tons 8 cwt. Ruta Baga, at 12*s.* 6*d.* ...	12	2 6
	1 ton 18 cwt. foreign Linseed cake, at 7*l.* 15*s.* per ton, from 16th Nov. till this date	14	14 6
June 7.	10 tons 14½ cwt. Ruta Baga, at 12*s.* 6*d.*....	6	14 1
	16 cwt. 38 lbs. Linseed cake, at 8*l.* ...	6	10 8
		£103	16 9

The average expense of the keep of this lot is about 5*s.* 8*d.* per week, each.

1836.	Lot 3, fed on Turnips and ground corn.		
October 12.	Price of five cattle, at 11*l.*	£55	0 0
24.	10 days' keep on Turnips and straw, at 8*d.*	1	13 4
1837.			
January 1.	17 tons White Globe Turnips, at 8*s.* 4*d.*	7	1 8
April 7.	19 tons 8 cwt. Ruta Baga, at 12*s.* 6*d.* ...	12	2 6
	1 ton 14 cwt. 98 lbs. Bean-meal, or 63 bushels of Beans, at 5*s.*	15	15 0
	9 bushels bruised Oats, at 3*s.* 6*d.* ...	1	11 6
		£93	14 0
June 14.	10 tons 14½ cwt. Ruta Baga at 12*s.* 6*d.* ...	6	14 1
	1 ton 9 cwt. 100 lbs. of Bean meal, or 54 bushels of Beans, at 5*s.*	13	10 0
		£113	8 1

This lot had latterly the rough seeds of oatmeal, as a mixture to the Bean-meal, which are not charged, being worth the price as manure.

Lot No. 4, fed on Distillery Grains and Ground Beans.

October 12.	Price of five cattle	£55	0 0
24.	10 days' keep on Turnips and straw, at 8*d.*	1	13 4
Nov. 7.	3 tons 5 cwt. White Globe Turnip, at 8*s.* 4*d.*	1	7 1
April 7.	72 quarters draff, at 4*s.* 6*d.*	16	4 0
	60 puncheons dreg, at 2*s.* 6*d.*	7	10 9
	1 ton 14 cwt. 62 lbs. Bean-meal, or 62 bushels ground Beans, weighing 62 lbs. per bushel, at 5*s.*	15	10 0
		£96	1 2
	Estimated value at this date, 81*l.* 10*s.*		
June 14.	37½ quarters draff, at 4*s.* 6*d.*	8	8 9
	28 puncheons dreg, at 2*s.* 6*d.*	3	10 0
	19 cwt. 104 lbs. Bean-meal, or 36 bushels ground Beans, weighing 62 lbs. per bushel, at 5*s.*	9	0 0
		£118	3 2

The average expense of the keep of this lot is about 7*s.* 2*d.* per week each beast.

At the commencement of these experiments, the different divisions of cattle had each their places, as well as kinds of food, allotted to them; and those of the trial lot, No. 1, whose feeding was destined to be Turnips only, from being the kind of food which they were formerly accustomed to, made a more immediate improvement than the cattle of the other lots, so much so, indeed, that several of my friends who saw them during this period could not believe that a proper division of the cattle had been made, as this lot was then, about the end of November, 5*l.* better than any of the other lots. By the above statement, it will be observed that the feeding the lot upon half Turnips and oilcakes, was the least expensive mode which was adopted in making the experiments; and that these cattle made the greatest improvement (although, after 10 or 12 days' trial with oilcakes, they were so obstinate in refusing them, that it was necessary to take away their allowance of Turnips for some days, and give them water in their stead, before they were induced to begin.) This was sufficiently proved by the marked difference in value put upon them by the judges appointed to report upon the comparative value of each lot, at the Society's show in April. This continued in rather an increased degree during the remaining time they were here, particularly as contrasted with the trial lot, which was altogether fed upon Turnips, having been estimated by good judges, about the beginning of June, to be worth 40*s.* more each beast than those of the other lot. The improvement of the cattle in lot No. 3 was much retarded by one of their number being naturally of such an unsettled restless disposition, that he had neither time to eat himself, nor would he allow the others to do so, and, although the yard which they occupied was of sufficient size for a greater number, it was not until the turbulent ox was taken away and fed by himself, that the cattle made the improvement which they ought to have done; after that, however, a very perceptible improvement took place, and, by adding a little to their daily allowance of ground Beans, their value when killed, as it appears by the flesher's return, was very different from what it had been when valued comparatively with the other lots at the April show. This untoward circumstance caused a greater expense in the keeping of this lot than would have been otherwise necessary. In the charge against No. 4 it will be observed that keeping upon distillery offal is more expensive than the keeping of lots Nos. 2 and 3 upon half Turnips, these, however, were the produce of the farm, and the prices were fixed by the committee, and high as they are, I could not have purchased Turnips to carry here, unless by giving 4*s.* or 5*s.* advance upon the ton weight; therefore a part of the charge against the distillery offal will require to be set down for manure, and the same ought also to be deducted from the Beans, which are charged at rather a full price. Upon the whole, it is evident by these experiments that feeding with Turnips, as an auxiliary, has been the most advantageous mode of using Turnips, as by the state it is apparent that if the cattle of No. 1 had only been allowed half the quantity of Turnips which they consumed, and had got oilcakes in lieu of the other half, as was given to lot No. 2, the expense of their keeping would have been lessened 4*l.* 13*s.*, and from superior quality their value would have been increased 10*l.*, making together 14*l.* 13*s.*; thus, by bestowing the rest of the Turnips, with the addition of oilcakes, upon other five cattle, the realisation upon the Turnips eaten by lot No. 1 would have been 29*l.* 6*s.* additional to what it has been. These experiments were carried on for two months after the valuation was made at the show in April; as from an over supply in the market, caused by a scarcity of Turnips, these cattle would not then have paid for their keep; but by continuing till June, I have been amply remunerated for all my outlay and trouble, without taking into account the great advantage of the additional and enriched manure of 20 cattle fattening upon the farm, where 10 only could have been kept, had Turnips alone been used for that purpose; and to any person at all acquainted with agriculture, it must be evident that one cart-load of manure made by cattle thus fed, will be at least equal to two if the cattle had got only straw and water.

LIVE WEIGHT OF CATTLE BEFORE BEING TRAVELLED TO GLASGOW.

Lot 1. Fed on Turnips alone.	st.	Lot 2. Half Turnip and oilcakes.	st.	Lot 3. Half Turnip and ground corn.	st.	Lot 4. Draff, dreg, and ground corn.	st.
No. 1 weighed	118	No. 1 weighed	115	No. 1 weighed	95	No. 1 weighed	109
— 2 „	104	— 2 „	118	— 2 „	115	— 2 „	109
— 3 „	111	— 3 „	105	— 3 „	105	— 3 „	129
— 4 „	107	— 4 „	122	— 4 „	111	— 4 „	110
— 5 „	96	— 5 „	92	— 5 „	91	— 5 „	88
	536		552		517		545

FLESHER'S STATE OF THE WEIGHT OF BEEF, TALLOW, AND HIDES.

The Carcases in imperial stones; Tallow and Hides in lbs.

Lot 1. No....	Beef. st. lb.	Tallow. lb.	Hides lb.
1 ...	62 1	112	96
2 ...	57 2	104	83
3 ...	58 12	101	75
4 ...	54 4	98	68
5 ...	50 12	99	69
	283 3	514	391

Lot 2. No....	Beef. st. lb.	Tallow. bs.	Hides lb.
1 ...	61 11	103	86
2 ...	61 8	119	97
3 ...	55 12	115	77
4 ...	66 9	146	84
5 ...	49 12	97	68
	295 10	580	412

Lot 3. No....	Beef. st. lb.	Tallow. lb.	Hides lb.
1 ...	51 9	119	79
2 ...	63 0	84	85
3 ...	57 5	118	76
4 ..	59 12	115	75
5 ...	48 9	84	62
	280 7	520	377

Lot 4. No....	Beef. st. lb.	Tallow. lb.	Hides lb.
1 ...	57 6	119	72
2 ...	54 6	90	80
3 ...	66 1	112	77
4 ...	55 6	82	50
5 ...	46 9	112	78
	280 0	513	357

From the cattle having travelled to Glasgow, their weight has not turned out in the manner it would have done had they been slaughtered nearer home, besides, from a very great dulness taking place in the butcher market there, Mr. William Thomson, who purchased the cattle, found a great difficulty in disposing of the beef so quickly as the time of lifting required, therefore lot No. 1, which was first slaughtered, had an advantage by not being allowed to fall off from being kept after being driven such a distance. In conclusion, I may refer to the great change which has lately taken place in the department of fattening stock. About 50 years ago, the cattle were kept in yards, and had simply straw and water given them. Now, from furrow draining and portable manures, Turnips are almost everywhere grown; and, besides, in every district, other substances are given auxiliary to them. During the past 20 years, perhaps the amount of stock fed in East-Lothian has been quadrupled, and this not arising from the increase of population only or principally, but from a change in the habits of the people as regards the consumption of animal food. In this there is no doubt there may be still very great extension, as, within our knowledge, few of the hinds in East-Lothian taste animal food, except, perhaps, a little pork, and that from pigs fed by themselves. It is to meet the increasing consumption that the efforts of farmers should be directed, and everything ought to be attempted to supply such food at the lowest rate, whether by increasing the amount or improving the quality of Turnips, or by judicious combination of other substances. It is true that, within the past few years, the profits realised by farmers in feeding have not been so great as formerly, or as we had calculated on. There can be no doubt, however, that on this department of farm management much of the success of modern farming must necessarily depend. Hence the importance of our mutual communication of such facts as may tend to improve our present system of feeding stock.

Mr. KENNEDY, Myremill, said: The subject before the meeting for consideration is, "The substances which can be most profitably employed as auxiliary to Turnips in fattening cattle and sheep." I shall merely detain the Society by stating the system I have found most profitable, and which I have pursued for some years. I consider when cattle are put up to fatten on Turnips or any other green food, the first point to be attended to is to place them in stalls or boxes, where they will have sufficient warmth, with good ventilation, and a plentiful supply of pure fresh air, as their facility to fatten will depend very much on the temperature at which they are kept, irrespective of the quality and quantity of their food; if in a cold byre or box, a great amount of the food they consume will be wasted in keeping up the heat of the body, great loss being suffered annually by the tenantry of this country, for want of proper accommodation for their cattle. In all situations, their improvement will be greatly facilitated by giving them artificial food, the different kinds and quantities of which will depend very much on the relative price of the various articles in use, in comparison with their feeding properties. I have always found my cattle thrive better on a small quantity of Turnips than on a large, provided I gave them bulk of other food; a bullock of 7 cwt. would require to get from 60 to 70 lbs of cut Swedish Turnips per day, a larger quantity, in my

opinion, being only lost as bulk, and is not assimilated by the animal, bulk being necessary to enable the digestive process of herbivorous animals to proceed, as without it they cannot ruminate, and rumination is necessary to ensure their thriving and keeping in health. Entertaining this opinion, I have given my feeding stock at the homestead where I live, and where I have conveniences for the purpose, a cooked feed as auxiliary to Turnips, and which I have found a very great economy of them, and which has enabled me to convert a large quantity of the hay and straw of the farm into much more valuable manure, independent of its nutritive qualities, besides keeping an increased quantity of stock. The feed is composed generally of 1 lb. of Linseed, or 2 lbs. of oilcake-meal converted into mucilage, by boiling it in a given quantity of water in large coppers, which is then poured over a mixture of 2 lbs. Bean-meal, 2 lbs. bruised Barley or Oats, with from 10 lbs. to 12 lbs. of hay, and 1 stone of chaff, to which some salt is added, which I consider promotes digestion, and is conducive to health, which being all mixed together, on the floor of the steaming-house, and allowed to lie for two or three hours, when the dry chaff and meal absorb all the mucilage of the Linseed jelly, and the whole is converted into a fine mass, and of which from 16 lbs. to 20 lbs. is given to each animal per day, which they eat greedily, and which they can ruminate. I think I have always been paid in giving food prepared so as to be easily digested, besides preventing a loss in the food in passing through the animal unassimilated. Linseed or oilcake-meal as a source of the fat; and Bean or Pea-meal, Barley or Oats, as the flesh-forming food; with cut and washed Swedish Turnips, straw, or hay chaff, to give bulk, to enable the stomach to perform its functions. I have given oilcake for many years to cattle, on farms where I had no means of preparing food, from 3 lbs. to 10 lbs. per day, according to the size of the animal; until the last two years I had given half Rape-cake (having seen it recommended by Mr. Pusey), and in looking at the analysis, by Prof. Way, of oilcake and Rape-cake, I found the feeding proportions of the one about equal to the other, which induced me to give it a trial. My cattle very soon eat it half-and-half, that is, half oilcake and half Rape-cake, and I am satisfied they improved equally well, with considerably diminished cost of food. My experience in giving artificial food to cattle, is to begin early in the season, and rather give a small quantity the whole time the cattle are feeding than to give a large quantity during the last two or three months, to finish them, as is often done, because in giving a larger quantity of from 6 lbs. to 10 lbs. of any kind of auxiliary food to an animal at once, a great deal of it is lost by not being assimilated. In proof of this opinion it is generally found that cattle, long fed on a moderate allowance of artificial food, kill better than when given a large quantity in a short time. I only feed my cattle three times per day; in feeding oftener they are much disturbed, and do not thrive so well, being kept more on their feet; and, in confirmation of this opinion, it is well known that cows kept in dairies, when they never get out of the house, give more milk always in the morning than the evening, in consequence of being less disturbed during the night. In giving sheep auxiliary food with Turnips, a mixture of oilcake, Rape-cake, and corn, will be found to improve the land and diminish the quantity of Turnips consumed very considerably. A small lot I experimented on some years ago, with stored Turnips put down to them on a field, where they were consuming 12 cart-loads per day, when I commenced to give them ½ lb. of oilcake and corn each per day, which diminished the quantity of Turnips consumed by a half—six carts being quite sufficient for them. I am not disappointed at any time, although not fully paid for auxiliary food given feeding stock, having often, in these times of low prices, to be satisfied with the greatly increased value and amount of the manure made thereby. Before sitting down allow me to observe how much I think the farming interest is indebted to the researches of the chemist, in pointing out to them the amount of feeding properties contained in the different articles employed, a strict adherence to which I have always found to give corresponding results.

(To be continued.)

Miscellaneous.

Smithfield Club Cattle Show.—This popular exhibition will offer increased attraction for visitors this year. The entries of stock very far exceed any previously made in former years, in consequence of which the committee of the Smithfield Club have required the proprietor of the Bazaar to provide the necessary accommodation for nearly 50 more than the usual number of oxen, and a corresponding enlargement of the space occupied by sheep and pigs. The extent of the Bazaar premises has enabled this to be done without interfering with the convenient arrangement of the animals, while the extension will give greater facilities to the increased number of visitors who may fairly be expected to view the exhibition. The list of exhibitors in the cattle classes is again headed by his Royal Highness Prince Albert, the Duke of Rutland, the Earl Spencer, the Earl of Leicester, the Earl of Hardwicke, and several other noblemen entering the lists as competitors. The Duke of Richmond and Mr. Jonas Webb will contribute several pens of sheep, and Mr. Fisher Hobbs and the Earl of Radnor will again contend for [illegible] of excellence in the porcine tribe. In addition to the increased space to be occupied by animals, the agricultural implement galleries have also been greatly enlarged, in order to afford room for the many new and improved machines lately introduced to facilitate the science of husbandry. The committee of the club will meet on Monday next to award the prizes. The exhibition will be thrown open to the public on Tuesday morning, and finally close on the following Friday.—*Daily Paper.*

Notices to Correspondents.

Books: *A Subscriber.* Do you mean books relating to agricultural labour, or any books suitable for a lending library in the country? In the latter case, all Knight's Shilling Volumes, Effingham Wilson's little books on Emigration, Miss Martineau's Tales illustrative of Political Economy, a number of books published by the Christian Knowledge Society, &c., are suitable. A book just published, "J. Sillet on Fork Husbandry," is a capital book to put into the hands of labourers. It is the history of personal and successful labour as a small farmer.

Cochin China Fowls: *Elizabeth.* Mr. Baker is right in stating that the presence or absence of the fifth toe in these birds is quite immaterial.

Grass: *Este.* We would excavate the patches of loam and spread the produce. Guano on the poor part, and salt and lime on the rich, will correct both; 3 cwt. of the former per acre, sown in February; 100 bushels of the latter per acre, slaked with brine, spread now or in early spring.

Harlech: *R B.* We know the district well; and when the spot (probably the same as you name), was last seen, it occurred to us, that the best agricultural implement that could be applied was Fire. We would plough and burn, and plough and burn mercilessly, and if possible get some clay to dress the land with, and then plough before winter, and get Rape or Grass seed to grow on it.

Newly Broken Land subject to Worms: *Young Farmer.* We suppose the best mode of treating it is to keep it stirred at intervals during winter. A heavy dressing of lime might do good.—Sow Mustard and eat off with sheep. The trampling of the land is a method of destroying them.

Pigeons: *P T O.* For these you are, at present, referred to "The Dovecote and the Aviary," announced by Mr. Murray.

Pumps: *Agricola.* Judging from the exhibition yards of the English Agricultural Society, we should suppose Read's, of the Circus, Regent-street, to be the likeliest place.

Ruptured Stomach: *J P A.* The case in its early stage was probably distension of the stomach, either with gas or food, caused and attended with an interruption of the functions of this viscus. If flatulency was the cause there are many ways in which it might have been relieved; chioride of lime, sulphuric ether, water of ammonia, with tincture of opium, are suitable remedies. If food was the cause of distension, oily purgatives, with opium, as before, would be appropriate. Of course, after the rupture took place, no treatment could avail. We do not consider the "Bots" to have been the cause of the disorder; their presence is by no means uncommon. It was the violent action of the stomach in seeking to get relieved which caused the rupture. *W. C. S.*

Markets.

COVENT GARDEN, Dec. 7.

Vegetables are still abundantly supplied. Hothouse Grapes and Pine-apples are quite equal to the demand. Oranges and Lemons are plentiful. Pears are still received from the Continent. Filberts are dearer. Carrots and Turnips are good in quality, and so are Potatoes. The latter are rather dearer. Lettuces and other salading are sufficient for the demand. Mushrooms are scarce. Cut Flowers consist of Heaths, Pelargoniums, Camellias, Fuchsias, Mignonette, Tulips, Dahlias, Bignonia venusta, Chrysanthemums, and Roses.

FRUITS.

Pine-apples, per lb., 4s to 6s	Pommegranates, each, 3d to 6d
Grapes, hothouse, p. lb., 3s to 6s	Almonds, per peck, 6s
— Portugal, p. lb., 8d to 1s	— sweet, per lb., 2s to 3s
Pears, per doz., 1s to 3s	Walnuts, p. 100, 1s to 2s
— per half sieve, 6s to 15s	— p. bush., 12s to 24s
Apples, dessert, p. bsh, 3s 6d to 8s	Nuts, Barcelona, p. bush., 20s to 22s
— kitchen, do., 3s 6d to 6s	— Brazil, p. bsh., 12s to 14s
Oranges, per doz., 9d to 2s	Filberts, per 100 lbs., 60s to 65s
— per 100, 6s to 10s	
Lemons, per doz., 1s to 2s	

VEGETABLES.

Brussels Sprouts, per hf. sieve, 1s 6d to 2s	Shallots, per lb., 6d to 8d
Cabbages, per doz., 6d to 1s	Garlic, per lb., 4d to 8d
Greens, p. doz. bunches, 1s 6d to 2s 6d	Artichokes, Jerusalem, p. half sieve, 1s 6d to 2s
Cauliflowers, p. doz., 1s to 4s	Lettuce, Cabbage, p. score, 1s
Broccoli, p. doz. bundl. 6s to 10s	— Cos, p. score, 1s to 1s 6d
Sorrel, p. hf. sieve, 6d to 9d	Endive, per score, 1s to 1s 6d
Potatoes, per ton, 60s to 100s	Small Salads, p. punn, 2d to 3d
— per cwt., 2s to 5s	Horse Radish, p. bdl., 1s to 4s
— per bush., 1s 6d to 2s 6d	Red Beet, per doz., 6d to 1s
Turnips, p. 12 bundles, 1s to 2s	Mushrooms, p. pot., 1s 3d to 1s 6d
Cucumbers, each, 6d to 1s	Fennel, per bunch, 2d to 3d
Radishes, per doz., 1s to 1s 6d	Savory, per bunch, 2d to 3d
Leeks, per bunch, 1d to 2d	Thyme, per bunch, 2d to 3d
Celery, p. bundle, 9d to 1s 6d	Parsley, p. doz. bun., 1s to 2s
Carrots, per doz., 2s to 5s	— Roots, p. bdle., 9d to 1s
Spinach, p. half sieve, 6d to 1s	Marjoram, per bunch, 2d to 4d
Onions, p. bunch, 4d to 6d	Mint, per bunch, 2d
— Spanish, p. doz., 1s 6d to 4s	Watercress, p. 12 bunch., 6d to 9d

HOPS.—Friday, Dec. 6.

Messrs. Pattenden and Smith report that there is a steady trade doing in coloury Hops; low ones hang on hand.

HAY.—Per Load of 36 Trusses.

Smithfield, Dec. 5.

Prime Meadow Hay	72s to 80s		Clover	70s to 80s	
Inferior ditto... ...	60	68	Second cut	63	72
Rowen	55	65	Straw	20	24
New Hay	—	—		J. Cooper.	

Cumberland Market, Dec. 5.

Prime Meadow Hay	70s to 75s		Inferior	63s to 72s	
Inferior ditto... ...	50	65	New Clover	—	—
New Hay	—	—	Straw	24	28
Old Clover	78	84		Joshua Baker.	

Whitechapel, Dec. 5.

Fine Old Hay ...	65s to 72s		New Clover	—s to —s	
Inferior ditto ...	55	60	Inferior ditto... ...	63	65
New Hay	—	—	Straw	20	24
Old Clover	75	80			

COAL MARKET.—Friday, Dec. 6.

Hollywell, 15s. 6d.; Eden Main, 15s. 6d.; Wallsend Haswell, 17s.; Wallsend Hetton, 16s. 9d.; Wallsend Tees, 16s. 6d.—Ships at market, 30.

POTATOES.—Southwark, Dec. 2.

The Committee report that the supply coastwise during the last week has been again limited, which enabled salesmen in some few instances to realise a little more than our last week's quotations of Scotch. In other sorts there is no alteration. The following are this day's quotations:—York Regents, per ton, 80s. to 90s.; Scotch do., 60s. to 75s.; Wisbeach do., 65s. to 75s.; French whites, 65s. to 70s.

SMITHFIELD, Monday, Dec. 2.

We have a very large supply of Beasts, and although there is a more cheerful trade, yet, owing to the number being excessive, many remain unsold. However, the choice qualities are nearly all disposed of, and we are still enabled to quote 3s. 10d. for them; but some inferior descriptions are sold at late rates. The number of Sheep is small, and late prices are fully supported, indeed, in a few instances rather more money is obtained. Trade is brisk for Calves, owing to a shorter supply. From Holland and Germany we have 1178 Beasts, 2830 Sheep, and 152 Calves; from Scotland, 400 Beasts; from Norfolk and Suffolk, 100; and 3100 from the northern and midland counties.

Per st. of 8 lbs.—	s d	s d	Per st. of 8 lbs.—	s d	s d
Best Scots, Herefords, &c. ...	3 6	to 3 10	Best Long-wools .	3 6	to 3 8
Best Short-horns	3 4	— 3 8	Ditto Shorn	—	— ...
2d quality Beasts	2 4	— 2 10	Ewes & 2d quality	2 8	— 3 4
Best Downs and Half-breds ...	4 0	— 4 2	Ditto Shorn	—	...
Ditto Shorn	—	...	Lambs	—	...
			Calves	3 0	— 4 2
			Pigs	3 0	— 4 0

Beasts, 5058; Sheep and Lambs, 24,190; Calves, 180; Pigs, 410.

Friday, Dec. 6.

We have a large supply of Beasts and a very small demand; consequently, prices are lower; a great many remain unsold. The number of Sheep is considerable for the time of year; trade is very slow, at a reduction of fully 2d. per 8 lbs. Calves are more plentiful; prices are lower, and several foreign ones remain unsold. From Holland and Germany there are 377 Beasts, 520 Sheep, 214 Calves, and 20 Pigs; 80 Beasts from Scotland, and 90 Milch Cows from the home counties.

Best Scots, Herefords, &c. ...	3 6	to 3 8	Best Long-wools .	3 4	to 3 6
Best Short-horns	3 2	— 3 6	Ditto Shorn	—	— ...
2d quality Beasts	2 4	— 2 8	Ewes & 2d quality	2 8	— 3 0
Best Downs and Half-breds ...	3 10	— 4 0	Ditto Shorn	—	...
Ditto Shorn	—	...	Lambs	—	...
			Calves	2 8	— 3 8
			Pigs	2 8	— 3 8

Beasts, 1109; Sheep and Lambs, 4500; Calves, 352; Pigs, 425.

MARK LANE.

Monday, Dec. 2.—The supply of English Wheat to this morning's market was small, and disposed of on terms barely equal to those of this day se'nnight. Foreign was in more general demand, but holders being very firm the extent of sales was limited.—Fine malting and good distiller's Barley support our quotations, but secondary descriptions are difficult of disposal, even at rather lower prices.—Beans remain as last quoted.—White Peas must be written 1s. per qr. cheaper, in other qualities there is no alteration.—The demand for Oats is less active than last week, and the terms in favour of the buyers.

Per Imperial Quarter.	s. s.		s. s.
Wheat, Essex, Kent, & Suffolk ...White	44—47	Red	38—45
— — fine selected runs ...ditto	43—48	Red	—42
— — Talavera	46—52		
— Norfolk, Lincoln, & York...White	—	Red	—
— Foreign	36—50		
Barley, grind. & distil., 22s to 24s...Chev.	28—32	Malting	24—28
— Foreign....Grinding and distilling	19—24	Malting	20—25
Oats, Essex and Suffolk	—		
— Scotch and Lincolnshire ...Potato	20—22	Feed ...	17—21
— Irish .....Potato	17—21	Feed ...	16—18
— Foreign.....Poland and Brew	18—22	Feed ...	15—19
Rye	25—27	Foreign	—
Rye-meal, foreign.....per ton	—		
Beans, Mazagan .....25s to 27s.....Tick	26—28	Harrow	26—28
— Pigeon .....27s — 32s...Winds	38—44	Longpod	28—34
— Foreign ..... Small	24—3[illegible]	Egyptian	21—22
Peas, white, Essex and Kent.....Boilers	27—30	Suffolk...	30—32
— Maple.... .30s to 32s .....Grey	27—29	Foreign	25—33
Maize ..... White	—	Yellow ...	—
Flour, best marks, delivered... per sack	36—40		
— Suffolk ..... ditto	30—36	Norfolk	30—36
— Foreign .....per barrel	18—24	Per sack	29—34

Arrivals in the Port of London last Week.

	Wheat.	Barley.	Malt.	Oats.	Beans.	Peas
Flour, 17022sks	Qrs.	Qrs.	Qrs.	Qrs.	Qrs.	Qrs.
— 2072brls						
English	3867	8703	5402	504	936	413
Irish.....	—	—	29	1670	—	—
Foreign	12236	7939	—	15983	90	7296

Friday, Dec. 6.—The arrivals of all grain since Monday have been moderate, and that day's prices for Wheat are supported.—Barley is also fully as dear.—We observe no alteration in the value of Beans or Peas, but the latter are much neglected.—Oats are in good demand, and the turn dearer.—There has been a slow trade for French Flour during the week, and less money in some instances accepted, as also for some country marks.

Arrivals this week.

	Wheat.	Barley.	Oats.	Flour.
	Qrs.	Qrs.	Qrs.	
English ...	2220	2090	340	1030 sacks
Irish	—	—	800	
Foreign ...	6770	1220	5340	— brls.

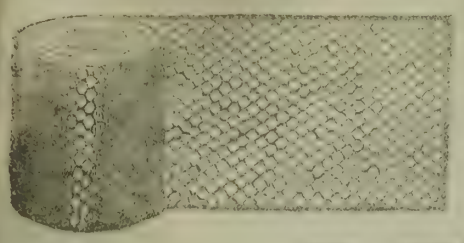
Imperial Averages.	Wheat.	Barley.	Oats.	Rye.	Beans.	Peas.
Oct. 26.....	39s 9d	24s 0d	16s 8d	25s 1d	28s 10d	30s 6d
Nov. 2.....	40 2	24 1	17 3	23 6	29 1	29 2
— 9.....	40 5	24 4	17 0	26 7	29 0	29 11
— 16.....	39 11	24 1	17 2	24 2	28 9	29 0
— 23.....	39 11	24 1	17 3	29 6	28 9	29 4
— 30.....	40 3	24 6	17 1	23 6	28 5	29 2
Aggreg. Aver.	40 1	24 2	17 1	25 5	28 10	29 6
Duties on Foreign Grain	1 0	1 0	1 0	1 0	1 0	1 0

Fluctuations in the last six weeks' Corn Averages.

Prices.	Oct. 26.	Nov. 2.	Nov. 9.	Nov. 16.	Nov. 23.	Nov. 30.
40s 5d	...	...	...	...	...	...
40 3	...	...	...	...	...	...
40 2	...	...	...	...	...	...
39 11	...	...	...	...	...	...
39 11	...	...	...	...	...	...
39 9	...	...	...	...	...	...

Liverpool, Friday, Nov. 29.—Owing to adverse winds, the fresh arrivals of grain from any quarter are altogether trivial. Although at our market to-day we experienced a slow languid sale for Wheat of all descriptions, holders remained firm, and steadily refusing to accept lower prices, our quotations of Tuesday remain unvaried. States and Canadian Flour met a fair inquiry. Malting Barley and Malt, upon a moderate demand, remained steady in value, and grinding Barley was a shade dearer. In Beans and Peas no change was apparent. Oats maintained the advance above stated, but sold less readily to-day. Oatmeal improved 3d. per load. Indian Corn was held with increasing confidence, and supported the preceding amendment.——Tuesday, Dec. 3.—At our market this morning millers were cautious and unwilling buyers, and the Wheat trade in all its bearings was dull and uninteresting, and English, Irish, and foreign Wheats were decidedly easier to purchase. Barley commanding more attention, malting as well as grinding samples improved 6d. to 1s. per qr. Beans and Peas, upon a moderate demand, remained stationary in value. Prime mealing Oats attracted a fair inquiry, and from actual scarcity were the turn dearer; other descriptions moving slowly at previous rates. Oatmeal maintained Friday's amendment. Indian Corn has fully supported the advance of last week, being 3d. to 6d. per qr. higher on this day se'nnight.

GALVANISED WIRE GAME NETTING.—
7*d.* per yard, 2 feet wide.

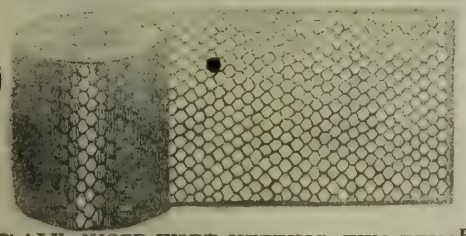


	Galvanised.	Japanned Iron.
2-inch mesh, light, 24-inch wide ...	7*d.* per yd.	5*d.* per yd.
2-inch „ strong „ ...	9 „	6½ „
2-inch „ extra strong „ ...	12 „	9 „
1½-inch „ light „ ...	8 „	6 „
1½-inch „ strong „ ...	10 „	8 „
1½-inch „ extra strong „ ...	14 „	11 „

All the above can be made any width at proportionate prices. If the upper half is a coarse mesh, it will reduce the price one-fourth. Galvanised sparrow-proof netting for pheasantries, 3*d.* per square foot. Patterns forwarded post-free.

Manufactured by BARNARD and BISHOP, Market-place, Norwich, and delivered free of expense in London, Peterborough, Hull, or Newcastle.

WIRE NETTING, ONE PENNY PER SQUARE FOOT.



GALVANISED WIRE NETTING, TWO-PENCE PER SQUARE FOOT.—This article requires no painting, the atmosphere not having the slightest action on it. It was exhibited at the late Metropolitan Cattle Show, and was highly eulogised both for its utility and pretty appearance, and acknowledged to be the cheapest and best article ever produced. It forms a light and durable fence against the depredations of hares, rabbits, and cats, and is peculiarly adapted for Aviaries, Pheasantries, and to secure poultry; and by the galvanised requiring no paint, it answers admirably for training all kinds of creeping plants. Large quantities always kept in stock, of 18, 24, 36, and 48 inches wide; it can, however, be made to any dimensions desired. Patterns forwarded free of expense.

9 inches wide	3*d.* per yard.	30 inches wide	7½*d.* per yard.
„ „	4½*d.* „	36 „ „	9*d.* „
14 „ „	6*d.* „	48 „ „	1*s.* „

Galvanised do., 1*d.* per foot extra.

Extra strong Imperial Wire Sheep Netting, 3 feet, 1*s.* 6*d.* per running yard; if galvanised, 2*s.* Also every description of Wire Nursery and Fireguards. Wire House-lanterns and Shades, Fly-proof Dish Covers, Meat Safes, &c.; Window Blinds, 1*s.* 10*d.* per square foot, with bolts complete, in mahogany frames; Gothic Garden Bordering, 6*d.* per running foot; Flower Trainers, from 3*d.* each; Garden Arches, 20*s.* each. Flower Stands, from 3*s.* 9*d.* each; Galvanised Tying Wire for plants and trees, Dahlia Rods, and every description of Wire-work; Weaving, for the use of paper-makers, millers, &c.—At the Manufactory of THOMAS HENRY FOX, 44, Skinner-street, Snow-hill, London.

TO NOBLEMEN and GENTLEMEN who require a plentiful and CONSTANT SUPPLY of PURE WATER to their Country Mansions.

Messrs. EASTON and AMOS beg to offer their improved PATENT HYDRAULIC RAM, which is perfectly self-acting, and without manual labour is capable of lifting water to 30 times the height of the waterfall by which it is worked.

THIS MACHINE CAN BE APPLIED WHEREVER A FALL OF WATER OF A FEW FEET CAN BE OBTAINED; and its cheapness and durability, with the fact that upwards of 500 of them erected in England and other countries by Messrs. EASTON and AMOS have now been at work many years, afford ample proof of its great value and efficiency.

Estimates of the expense of the Machine, Pipes for the conveyance of Water, Tanks, and Reservoirs, may be had on application to Messrs. EASTON and AMOS, CONSULTING ENGINEERS to the ROYAL AGRICULTURAL SOCIETY, at their office in Orange-street, Trafalgar-square, or at the Works in the Grove, Southwark, London.

SACRED HARMONIC SOCIETY — EXETER HALL — CONDUCTOR, Mr. COSTA. — On FRIDAY, December 13th, will be repeated Handel's Oratorio MESSIAH. Vocalists—Miss Birch, Miss Dolby, Mr. Lockey, and Mr. H. Phillips, with Orchestra (including 16 double basses) of upwards of 700 performers. Tickets 3*s.*, 5*s.*, and 10*s.* 6*d.* each, at the Society's sole Office, No. 6, Exeter Hall, or of Mr. BOWLEY, 58, Charing Cross.

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We are, dear Sir, yours truly,

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The STOVES may be obtained of the Sole Manufacturer, J. E. DOWSON, 123, Oxford-street (five doors west of Regent-circus), where a Stove is in constant operation. They may also be seen at Messrs. HITCHCOCK and ROGERS, St. Paul's Churchyard; and in the Model Room of the Society of Arts, Adelphi; from which Society Mr. CUNDY, on the 22d July, 1850, received their large SILVER MEDAL for the invention.

NEW WORK ON CATTLE, &c.

This day, price 8s. 6d., or by Post 4s. The

BREEDING AND ECONOMY OF LIVE STOCK, being the Results of Forty Years' Practical Experience in the Management and Disposal of Cattle, Horses, Sheep, and Pigs. By JAMES DICKSON, Cattle Dealer.

Edinburgh: A. C. BLACK. London: LONGMAN & Co.

Printed by WILLIAM BRADBURY, of No. 13 Upper Woburn-place, in the Parish of St. Pancras, and FREDERICK MULLETT EVANS, of No. 7, Church-row, Stoke Newington, both in the County of Middlesex, Printers, at their office in Lombard-street, in the Precinct of Whitefriars, in the City of London; and published by them at the Office, No. 5, Charles-street, in the parish of St. Paul's, Covent-garden, in the said county, where all Advertisements and Communications are to be ADDRESSED TO THE EDITOR.—

SATURDAY, DECEMBER 7.

THE GARDENERS' CHRONICLE
AND
AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 50—1850.] SATURDAY, DECEMBER 14. [PRICE 6*d.*

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WATERER'S DESCRIPTIVE CATALOGUE OF AMERICAN PLANTS, &c.

HOSEA WATERER begs to announce his new descriptive CATALOGUE OF AMERICAN PLANTS, CONIFERS, ROSES, &c., is just published, and may be had by enclosing two stamps for postage to HOSEA WATERER, Knap Hill Nursery, Woking, Surrey.

☞ Everybody who has any idea of planting the ensuing autumn should possess themselves of this Catalogue.

AMERICAN PLANTS.

JOHN WATERER'S CATALOGUE OF AMERICAN PLANTS, ROSES, CONIFERS, &c., is now published, and may be had gratis on application. It describes the colours of every Rhododendron worthy of cultivation, thus affording purchasers every facility in making selections.
American Nursery, Bagshot, Surrey.

MESSRS. STANDISH AND NOBLE'S new descriptive CATALOGUE OF SELECT HARDY ORNAMENTAL PLANTS is just published, and may be had for four postage stamps. Besides a Treatise on the cultivation of American Plants, it contains a Plate and Description of the Funebral Cypress, Notices of Cephalotaxis Fortunii, Cryptomeria japonica, Quercus sclerophylla and inversa, Viburnum plicatum and macrocephalum, with many recent introductions from the north of China, quite new to English gardens.
Messrs. S. and N. take this opportunity of stating that they give Designs for Laying out New Grounds and Plans for Improvements; also Estimates for all kinds of Planting, whether ornamental or economic.—Bagshot Nurseries, Dec. 14.

CARTER'S CATALOGUE OF SEEDS.

J. CARTER, SEEDSMAN and FLORIST, 238, High Holborn, London, announces the speedy appearance of his new CATALOGUE FOR 1851, which will be forwarded, gratis and prepaid, on application by post or otherwise. He begs leave to state that the Floricultural section comprises, as usual, the Scientific and English Name of each plant, the Linnean Class and Order, and Natural Order to which it belongs; its hardiness, duration, time of flowering, and colour of the flowers, and other necessary information. The collection of Flower Seeds will comprise several splendid novelties.

H. LANE AND SON, Great Berkhamsted, Herts, will send their NEW CATALOGUE OF ROSES to applicants, by their inclosing two penny stamps. Those who are about Planting Pleasure Grounds, &c., should inspect H. L. and Son's Nurseries (about 50 acres), as they have a fine healthy stock of some thousands of Cedrus Deodara, 2 to 4 feet; Araucaria, 2 to 3 feet; Abies Douglasii, from seed, 4 to 5 feet, with all the leading Pinus. Rhododendrons, all the hardy varieties, from white to crimson, growing in loam, from which they remove readily (also the hybrids of Sinensis—greenhouse varieties); Azaleas, best Ghent, with a general collection of Trees and Shrubs, both for the Pleasure Ground and Park; also of Fruits, Catalogues of which may be had by inclosing two penny stamps.
The Stock of Plants at these Nurseries are kept constantly removed, to ensure success, and not drawn up, to be sold at a price to deceive the public.
Double Camellias and greenhouse Azaleas 1 foot to 4 feet.

MITCHELL'S ROYAL ALBERT RHUBARB has proved itself to be the earliest, finest flavoured, and most productive kind, as well as the best for early forcing, ever yet grown. Strong roots, 12*s.* per dozen. Also Myatt's Linnæus, 12*s.* per dozen; and Victoria, 9*s.* per dozen; with usual allowance to the trade. Post-office orders are requested to be made payable to WILLIAM MITCHELL, Enfield Highway, Post-office, Enfield, Middlesex.

"CEDRUS DEODARA" AND "CUPRESSUS TORULOSA ELEGANTISSIMA."

WM. MAULE AND SONS are now prepared to offer, from their large supplies of CEDRUS DEODARA of various sizes, many thousands of fine specimen plants (grown from seed constantly in the open ground and in pots) measuring 3 feet and upwards, unusually fine and bushy, with good leaders, at 60*s.* per dozen; also many thousands of fine plants of CUPRESSUS TORULOSA; the hardy variety Elegantissima in pots, upwards of 2 and 3 feet, at 50*s.* and 75*s.* per hundred; they also abound with good supplies of the Himalaya Coniferæ generally, together with a large Stock of Scarlet Crimson Himalaya and other hardy Rhododendrons, prices for which will be forwarded on application.
N.B. W. M. and Sons' Lists of prices for Fruit, Forest, Evergreen, and other Trees and Shrubs required at the present planting season, are now ready for distribution, and will be forwarded on application.
References expected from unknown correspondents.
Stapleton-road Nurseries, Bristol.

NEW EARLY PEAS, &c.

BASS AND BROWN have a very fine Stock of the undermentioned early Seeds, which they are enabled to offer at the following low prices:—

	Per quart.—*s.*	*d.*
PEAS, Taylor's new Prolific, very early, hardy, and productive, sent out by Barnes	1	6
Essex Champion, hardy and very productive	0	9
Danecroft Rival, very early	1	3
Bishop's new Long-pod, great bearer	1	6
Early Warwick, Early Frame	0	6
Early Emperor, very early and hardy	0	10
Fairbeard's Champion of England	1	0
BEANS, Long-pod and Windsor	0	6
RADISH, early Short top Salmon	1	6
Wood's new early Scarlet	2	0

Their Wholesale List of Prices of the above and all other description of Seeds will be forwarded on application.
Seed and Horticultural Establishment, Sudbury, Suffolk.

NEW GARDEN SEEDS.

WILLIAM E. RENDLE AND CO., SEED MERCHANTS, Plymouth, are now prepared to execute orders for NEW PEAS, including the following excellent sorts.

NEW PEAS—GROWTH OF 1850.

Fairbeard's Champ. of England.	Warner's Early Emperor.
Rendle's First Early.	Prince Albert.
Burbridge's Eclipse.	Essex Champion.
Early Kent.	Early Warwick.
Fairbeard's Surprise.	Auvergne.
Bishop's New long-podded.	Isherwood's Railway.

Our "PRICE CURRENT AND GARDEN DIRECTORY" *is now ready, and contains a Descriptive Catalogue of all the best kinds of* KITCHEN GARDEN, AGRICULTURAL, *and* FLOWER SEEDS, *with a complete* CALENDAR OF OPERATIONS *for every month in the year, and a* GARDEN ALMANAC.
The present edition will be found to be very superior to the Catalogue sent out by us last year, and will be of much service to all who have gardens.
Price *Fivepence*, to be had of all Booksellers, or *Sixpence* stamped, to go free by post. To be obtained of every newsagent who supplies the *Gardeners' Chronicle;* through Messrs. Bradbury and Evans, Publishers, Whitefriars, London; or from WILLIAM E. RENDLE and CO., Seed Merchants, Plymouth.
Send six penny stamps, and a copy will be sent by return of post. This amount will be returned if desired to all purchasers.
*** *This Catalogue is stamped as a Newspaper, and contains 24 folio pages, being the same size as the* "Gardeners' Chronicle and Agricultural Gazette," *including the Newspaper portion.*

BASS AND BROWN'S AUTUMN CATALOGUE is now ready. It contains Descriptive Priced Lists of Superb Seedling and other Ranunculi, Gladioli, Early and Double Tulips; also Priced Assortments of Choice Imported Dutch Hyacinths, Narcissus, Iris, Jonquils, Crocus, the Lancifolium and other Lilies, with a great variety of other bulbs and dry roots. The latter part contains Descriptive Lists of Choice and Select Roses, a few New and other desirable Evergreen and Flowering Shrubs, Hardy Climbing and Hardy Herbaceous Plants, Prize Gooseberries, and other choice fruits, &c.
A separate List of Geraniums and other new and select plants at reduced prices. Catalogues forwarded, prepaid, for two penny stamps.
Our Foreign Bulbs have arrived in fine condition.
Seed and Horticultural Establishment, Sudbury, Suffolk.

KNIGHT AND PERRY, EXOTIC NURSERY, King's-road, Chelsea, London, deeply grateful for the distinguished patronage so long conferred upon them, beg to intimate that their NEW CULINARY AND FLOWER SEEDS, all of the first quality, are now ready, and they most respectfully solicit a continuance of that support which has been extended to their house for the last 50 years.
For the above—as well as for their AGRICULTURAL SEEDS, to which they pay great attention, Stove, Greenhouse, and Herbaceous Plants, Bulbous Roots, imported annually by themselves from Holland, Conifers and other Hardy Ornamental Trees and Shrubs in great variety, and including many valuable novelties, Grape Vines of all the best sorts, from eyes, Fruit Trees of choice sorts, both trained and untrained, and which are this season of very fine growth—there are lists specially appropriated, and which they respectfully solicit permission to forward.
Exotic Nursery, King's-road, Chelsea, London.

GRAVESEND.—50,000 TREES AND SHRUBS ON SALE.—Arbor-vitæ, Berberis aquifolium, Cytisus, Cypress, Holly, Jasminums, Lilacs, Laurels, China Roses, &c., 2 to 4 feet, from 15*s.* to 40*s.* per hundred. Standard Roses, 4*l.* to 5*l.*
Aucuba japonica, Arbutus, Cotoneaster, 2 to 3 ft., 12*s.* per dozen; Irish Yews, 3 to 4 feet, 25*s.*; Standard Roses, in sorts, 18*s.* to 30*s.*
Large ornamental Trees, for immediate effect, Greenhouse and Herbaceous Plants, in great variety, at low prices.
Apply at the Cemetery, Gravesend, Kent.

THE APPROACHING COLD WEATHER.

THERMOMETERS FOR REGISTERING THE EXTREMES OF HEAT AND COLD, of the best construction, 1*l.* 1*s.* and 18*s.*; of the common construction, 15*s.*, 12*s.* 6*d.*, 10*s.*, 7*s.* 6*d.* Night Thermometers for Registering Cold only, 10*s.*, 7*s.* 6*d.*, 5*s.*, to 2*s.* 6*d.* Thermometers for Baths or Brewing, 12*s.* 6*d.*, 10*s.*, 7*s.* 6*d.*, to 2*s.* 6*d.* Hotbed Thermometers to 4 feet long, 25*s.*, 20*s.*, 17*s.* 6*d.* Steam-pressure Gauges, 2*l.* 5*s.* and 2*l.* 2*s.* Rain Gauges, from 10*s.* Lactometers for showing the Quality of Milk, with instructions for use, 15*s.*, 12*s.* 6*d.*, 10*s.*, 7*s.* 6*d.*, 5*s.* Hydrometers for trying Sulphuric Acid, 10*s.*, 7*s.* 6*d.*, 5*s.* Barometers, Microscopes, Telescopes, Drawing Instruments, &c.
HENRY BAKER, Instrument Maker to the Board of Admiralty, 90, Hatton-garden, London.

GREAT SALE OF NURSERY PLANTS.

PETER BOOTH, NURSERYMAN, Falkirk, is selling off, at his extensive Nursery Grounds, a very large stock of transplanted LARCH, SCOTCH, and SPRUCE FIR, plants of strong and smaller sizes, including Seedlings, with a great variety of all the other kinds of Forest Trees, Shrubs, &c., generally grown in large Nurseries, of most excellent quality, and at prices much reduced.

TILEY'S VIOLA ARBOREA, OR PERPETUAL TREE VIOLET.—VIOLA ARBOREA, or the PERPETUAL TREE VIOLET (true).—In answer to numerous inquiries for the above, and great satisfaction given by the plants sent out last season by EDWARD TILEY, he begs to state that he has this year a fine stock of the above beautiful DOUBLE VIOLET now to dispose of, which he can highly recommend, this being the proper time for making beds or potting. They are beautifully scented; the blooms are as large as the double blue Hepatica; they bloom freely from August till the end of May, and are perfectly hardy. Twelve of these plants grown in pots will scent a large greenhouse; and a small bed, 9 feet long by 3 feet wide, will be sufficient to furnish a family with bouquets the whole of the winter and the spring. They should be planted in rather a dry situation and a loose soil, as the Violet will thrive and bloom finer than in wet or clay borders.
E. T. has been informed by the gentleman that introduced it into this country, that he has seen them growing in the thickets of Persia to the height of 4 feet, with large bushy heads to them, and hundreds of blooms on them at the same time. Large bushy plants, 6*s.* per dozen; smaller ditto, 3*s.* per dozen; or 1*l.* per hundred.
Also he has a fine stock of that splendid YELLOW VIOLET, or VIOLA LUTEA, which has been so much admired at the London exhibitions. In colour it is equal to the Crocus. Strong bushy plants 2*s.* 6*d.* each; or smaller ditto, 1*s.* 6*d.* each.
KITLEY'S GOLIAH STRAWBERRY.—Strong well-rooted plants at 3*s.* per dozen.
True BATH COS LETTUCE SEED, 1*s.* per packet.
Extra fine SWEET WILLIAM SEED, saved from 24 distinct varieties, 1*s.* per packet.
ANTIRRHINUM SEED from all the best varieties, 1*s.* per packet.
WINTER CUCUMBER.—Lord Kenyon's Favourite, 2*s.* 6*d.* per packet.
The whole or any quantity of the above will be sent, postage and package free, to any part, on receipt of a Post-office order, or the amount in penny postage stamps.
Sold by EDWARD TILEY, Nurseryman, Seedsman, and Florist, 14, Abbey Church-yard, Bath.

DIXON'S NEW (REGISTERED) VENTILATOR.—This Ventilator is much neater and more simple than any hitherto invented, can be made of any shape or size, and can be as easily cleaned as any other part of a window. It does not interfere with the blinds, or opening of the windows, and if accidentally broken can be repaired by any glazier at the cost of a single pane of glass. Models can be seen, and every information obtained, by applying to the London agents, JAMES PHILLIPS and Co., 116, Bishopsgate-street Without.
Dixon v. *Bessell.—Alderman Wilson said,* "*It was a very clever invention, and he thought Mr. Dixon ought at least to have seven years' protection instead of three,*" *and fined the defendant* 60*l.*, *and* 10*l. costs, for an infringement of the Registered design.—Oct.* 1, 1850.

PIMLICO SLATE WORKS.—Cisterns, Filters, Milk and Salting vessels, Corn and Flour Chests, Sinks, Dairy and Larder Shelves, Malting and other Flooring, Skirting, Refrigerators, Garden Edging, Flower Boxes, Pine pit Linings, Hot-bed Frames, moveable Cattle Sheds, Coping, Drain Stones and Traps, Steps and Risers, Balcony Landings, Roofing Slates, ridge roll and flap; Waste Slate for drains, Sun Dials, Fountains, and all descriptions of plain Slate Work in Town, or direct from Mr. MAGNUS'S Works in North Wales.
ENAMELLED SLATE Chimney-pieces, Billiard Tables, Console and other Table Tops, Mural Tablets, &c., in imitation of marble, surpassing the choicest marbles in beauty and durability, at less than half the cost of the commonest descriptions. Price Lists forwarded on application to Mr. MAGNUS, 39 and 40, Upper Belgrave-place, London.

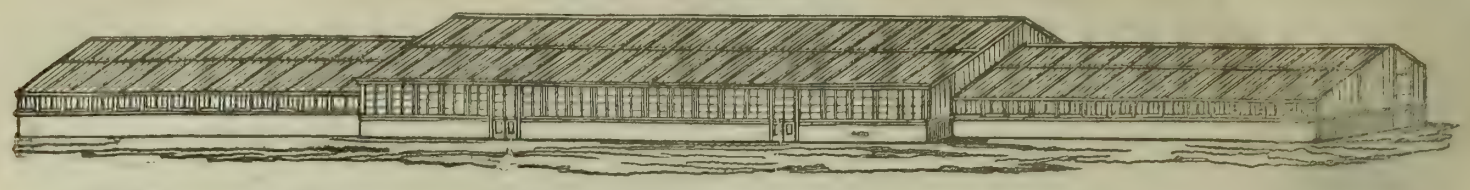
SMITHFIELD CATTLE SHOW.—MILK PANS, in stout Glass, of every size and variety of shape, were exhibited as usual, Nos. 148, 149, 150, Bazaar, by Messrs. COGAN and Co., whose collections were honoured (among other Prizes) with the Silver Medal of the Dublin Society in April, as also with the Silver Medal of the Liverpool and Manchester Society, at their meeting, held at Warrington in September last.
NOBLEMEN, FARMERS, and the Public generally, are respectfully invited to notice the NEW GLASS CHURN. LORD CAMOY'S MILK SYPHONS for separating Milk from Cream, GLASS LACTOMETERS for ascertaining the quality of Milk, New Bee Glasses invented by Lord Keane, Glass Cream Pots and Pans, Glass Milk Trays, Glass Tiles and Slates, and every description of Dairy Glass.
Durable Farm Paints, Glass for Hothouses and Garden purposes, may be had (safely packed) for any part of the kingdom, or for exportation, on application at the Stands, 148, 149, and 150, or at the Warehouse, 48, Leicester Square, London.
Small Glass for Melon Pits of every size, from 10*s.* 6*d.* per 100 feet; Hartley's and Swinburne's PATENT ROUGH PLATE at the Manufacturer's prices,
Glass Ornamental Shades, Fern Shades, Lamp and Gas Glasses, Patent Glass Pens; Patent Texturalized, Silicated Marble, and other Ornamental Glass, supplied, as usual, at 48, Leicester-square; the Colour and Lead Department, at 5, Prince's-street, Coventry-street, London.

BAKER'S PHEASANTRY, Beaufort-street, King's-road, Chelsea, by special appointment to her Majesty and H. R. H. Prince Albert.—ORNAMENTAL WATER FOWL, consisting of black and white swans, Egyptian, Canada, China, barnacle, brent, and laughing geese, shieldrakes, pintail, widgeon, summer and winter teal, gadwall, Labrador, shovellers, gold-eyed and dun divers, Carolina ducks, &c., domesticated and pinioned; also Spanish, Cochin China, Malay, Poland, Surrey, and Dorking fowls; white, Japan, pied, and common pea-fowl, and pure China pigs; and at 3, Half-moon-passage, Gracechurch-street, London.

GRAY, ORMSON, AND BROWN,

DANVERS STREET, CHELSEA,

Respectfully solicit the attention of the Nobility and Gentry to their superior manner of Erecting and Heating every description of Building connected with Horticulture. They have much pleasure in giving the following testimonial referring to the range of houses shown below.



Peach House, 30 by 16 feet. | Vinery, 30 by 16 feet. | Stove, 45 by 20 ft. | Greenhouse, 45 by 20 ft. | Vinery, 30 by 16 ft. | Vinery, 30 by 16 ft.

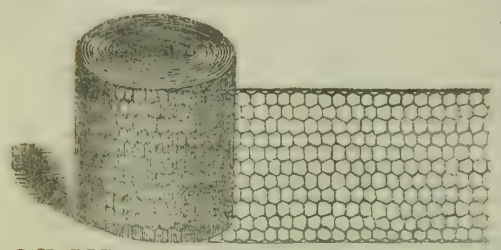
[Erected for John Shaw Leigh, Esq., Luton Hoo.]

Extract of a Letter from Mr. Fraser.—"I have much pleasure in expressing my entire satisfaction with the range of houses you erected here. I may also state that my honoured employer, John Shaw Leigh, Esq., is perfectly satisfied. I have no hesitation in stating, that to the best of my knowledge, there is not a more complete range of glass in the country, as regards both building and heating. I may add that they are admired by every Gardener who has seen them. I shall have much pleasure in answering any references you may please to direct.

(Signed.) "James Fraser, Gardener, Luton Hoo Park."

EASTERN COUNTIES RAILWAY. CHRISTMAS TICKETS.—Return Tickets issued on the 23d, 24th, and 25th inst., will be available for the Return Journey any day up to and including Sunday the 29th. The Trains will run on Christmas day as on Sundays. By Order, C. P. Roney, Secretary.—Bishopsgate Station, Dec. 6th, 1850.

STRONG PREMIUM HARE AND RABBIT PROOF WIRE NETTING.



CHARLES D. YOUNG and COMPANY (late W. and C. YOUNG),

MANUFACTURERS OF IRON AND WIRE WORK, &c.,
22, PARLIAMENT STREET, WESTMINSTER, LONDON;
48, NORTH BRIDGE, EDINBURGH;
32, ST. ENOCH SQUARE, GLASGOW;
1, CASTLE BUILDINGS, DERBY SQUARE, LIVERPOOL;

beg respectfully to call the attention of Landed Proprietors and others to their strong Wire-Net Fence, for excluding Hares and Rabbits from Gardens, young Plantations, Nurseries, &c.

This Net was exhibited at the Show of the Highland and Agricultural Society of Scotland, held lately at Inverness, where its Efficiency, Great Strength, and Exceeding Cheapness attracted general attention, and had awarded from the Judges the Society's Silver Medals, with high commendations.

The immense damage done by Hares and Rabbits in Gardens and Young Plantations is often so great, that in the course of a year or two it will amount to more than the entire cost of protecting them with this Net. It is so durable, that when Plantations are sufficiently advanced to be independent of its protection, it can be removed to other exposed situations with the greatest facility, by any labourer. As a Fence against Hares and Rabbits, it is of itself quite sufficient, having only to be unrolled and attached, with small wire sent for that purpose, to wooden stakes driven into the ground, about every six or seven feet apart. It is, besides, peculiarly adapted for rendering Hedges, Paling, or other existing Fences, *completely impervious* to such vermin; and by being cut up into small pieces of three or more feet, as required, it forms a most efficient guard, at little expense, for individual Plants and Shrubs.

Prices.—18 ins. high, 9*d.*; 24 ins., 1*s.*; 30 ins., 1*s.* 3*d.*; and 36 ins., 1*s.* 6*d.* per lineal yard.

Or a web of 100 yards, 18 ins. wide, will cost	..	£3 15	0
Do. of 100 yards, 24 ins. wide	.. ..	5 0	0
Do. of 100 yards, 30 ins. wide	.. ..	6 5	0
Do. of 100 yards, 36 ins. wide	.. ..	7 10	0

If more or less than a web is required, it would be charged at the same rate per yard.

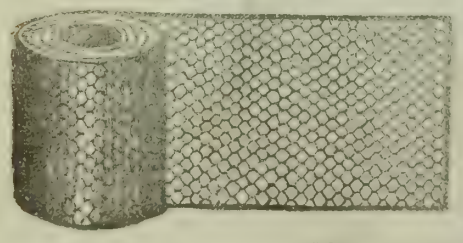
This Netting is also admirably adapted for Pheasantries and Poultry-yards, and is charged at the same rate. As carriage has, in many instances, been an obstacle to parties at a distance requiring this Net, C. D. Y. and Co. have made arrangements by which they will undertake to deliver it at any of the principal ports of Scotland, England, and Ireland, for One Halfpenny per lineal yard.

C. D. Young and Co. cannot give a better idea of the great strength of their Premium Wire Netting than by stating that the weight of one yard of their 24-inch at 1*s.* is equal to 2½ yards of another article in the market, the same width, at 9*d.* per yard. Samples for inspection sent free of expense.

C. D. Young & Co. manufacture every description of IRON and WIRE WORK required for this and foreign countries.

Workmen sent to all parts of Scotland, England, and Ireland.

GALVANISED WIRE GAME NETTING.—7*d.* per yard, 2 feet wide.



		Galvanised.	Japanned Iron.
2-inch mesh, light, 24-inch wide	...	7*d.* per yd.	5*d.* per yd.
2-inch ,, strong ,,	...	9 ,,	6½ ,,
2-inch ,, extra strong ,,	...	12 ,,	9 ,,
⅝-inch ,, light ,,	...	8 ,,	6 ,,
1⅛-inch ,, strong ,,	...	10 ,,	8 ,,
1⅛-inch ,, extra strong ,,	...	14 ,,	11 ,,

All the above can be made any width at proportionate prices. If the upper half is a coarse mesh, it will reduce the price one-fourth. Galvanised sparrow-proof netting for pheasantries, 3*d.* per square foot. Patterns forwarded post-free.

Manufactured by BARNARD and BISHOP, Market-place, Norwich, and delivered free of expense in London, Peterborough, Hull, or Newcastle.

RHODODENDRONS and AMERICAN PLANTS.—An unlimited supply always on sale, at the low scale of prices quoted, delivered in London, if ordered in quantity, free of carriage.

RHODODENDRON PONTICUM, 2 to 6 inches, 20*s.*, 40*s.*, and 80*s.* per 1000; 1 foot, single stems, fit for working, 10*s.* per 100; 1½ to 2 feet, very fine, fit for planting out for cover, 20*s.* to 40*s.* per 100; 4 to 6 feet, single stems, adapted for working the beautiful new scarlet and other rare species, 50*s.* per 100.

SCARLET RHODODENDRONS, of the finest varieties, 18*s.* per doz., on their own roots.

WHITE RHODODENDRONS, 18*s.* per doz.

KALMIA LATIFOLIA, 6 to 9 inches, 25*s.* per 100; 1½ to 2 feet, blooming, 12*s.* per doz.

Dwarf ROSE Stocks, fit for working, 8*s.* per 100.

Single CAMELLIA Stocks, fit for working, 42*s.* to 50*s.* p. 100.

PINUS (Abies) Douglasii (from seed), 60*s.* per doz., fine plants; 1½ foot Scotch Fir, 2 years seedling (very fine), 2*s.* per 1000.

ARBUTUS, 12 to 15 inches, fine, 25*s.* per 100; 6 inches, 8*s.* per 100.

LAURESTINE, two sorts, 8*s.* per 100, bedded, 1 foot.

TREE ROSES of the most esteemed kinds, 12*s.* to 18*s.* p. doz.

A large and fine Stock of the true "Durmast" English OAK, transplanted, 3 to 5 feet, 40*s.* to 60*s.* per 1000. With every description of Fruit and Ornamental Trees.—For Catalogues and prices apply to W. Rogers, Nurseryman and Contracting Planter, Red Lodge, near Southampton.

METROPOLITAN SEED WAREHOUSE, No. 107, St. John-street, West Smithfield, London,

JAMES G. RENWICK respectfully informs his Customers throughout the Country, that his Stocks of Culinary Vegetable Seeds, of this year's growth, have now been gathered in, and in prime condition.—Catalogues to be had as usual, on application. J. G. R. takes this opportunity of reminding those of his friends, who last year were too late in ordering HINE'S PARAGON EARLY PEAS, that the supply this season is still but limited, and would therefore recommend early applications. Price per bushel, 20*s.*; per peck, 6*s.*

STEPHENSON and Co., 61, Gracechurch-street, London, and 17, New Park-street, Southwark, Inventors and Manufacturers of the Improved CONICAL and DOUBLE CYLINDRICAL BOILERS, respectfully solicit the attention of scientific Horticulturists to their much improved method of applying the Tank System to Pineries, Propagating Houses, &c., by which atmospheric heat as well as bottom-heat is secured to any required degree, without the aid of pipes or flues. S. and Co. have also to state that at the request of numerous friends they are now making their Boilers of Iron, as well as Copper, by which the cost is reduced. These Boilers, which are now so well known, scarcely require description, but to those who have not seen them in operation, prospectuses will be forwarded, as well as reference of the highest authority; or they may be seen at most of the Nobility's seats and principal Nurseries throughout the kingdom.

S. and Co. beg to inform the Trade that at their Manufactory, 17, New Park-street, every article required for the construction of Horticultural Buildings, as well as for heating them, may be obtained upon the most advantageous terms.

Conservatories, &c., of Iron or Wood, erected upon the most ornamental designs. Balconies, Palisading, Field and Garden Fences, Wire-work, &c.

GLASS FOR CONSERVATORIES, &c.

HETLEY and Co. supply 16-oz. Sheet Glass of British Manufacture, at prices varying from 2*d.* to 3*d.* per square foot, for the usual sizes required, many thousand feet of which are kept ready packed for immediate delivery. Lists of Prices and estimates forwarded on application, for PATENT ROUGH PLATE, THICK CROWN GLASS, GLASS TILES and SLATES, WATER-PIPES, PROPAGATING GLASSES, GLASS MILK PANS, PATENT PLATE-GLASS, ORNAMENTAL WINDOW GLASS, and GLASS SHADES, to James Hetley and Co., 35, Soho-square, London.

See the *Gardeners' Chronicle* first Saturday in each month.

CHRISTMAS CATTLE SHOW, BAKER STREET.

READ'S IMPLEMENTS (STAND, No. 146), Patent Subsoil Pulverizer, Patent Injecting Instruments for Cattle &c., Improved hollow Probangs for relieving Hoven or Choked Bullocks, Sheep, Calves, &c. &c.; New Patent Garden Engines, Machines, and Syringes of every description, upon the most improved principles.—Manufactured only by the Patentee, 35, Regent Circus, London.

☞ Adams's Patent Steel Corn Mill, &c. &c.

CAUTION.

NIGHT LIGHTS.—PATENT ALBERT NIGHT LIGHTS (Patented 30th January, 1844), CHILDS' NIGHT LIGHTS (Registered 20th September, 1843) are sold by all Grocers and Wax Chandlers throughout the country, at 6*d.* per box. The sale of the above, amounting at the present time to many tons weekly, shows that they meet with the approbation of the public; any description of them is therefore unnecessary. The object of this advertisement is, to request purchasers to *examine the name on the boxes*, so as to insure their getting what they intend.

Night Lights are liable not to last the time that they profess (frequently going out an hour or two after lighting); to be affected by the temperature of the room they are burnt in; to be injured by keeping any length of time, and to have an unpleasant smell. The manufacturers consider that, by use of materials secured to them by several patents, and by long experience in the manufacture, that they have overcome these difficulties; and they therefore beg, that should any attempted substitutes be recommended, they may be carefully compared as to all the above particulars.

N.B.—The wine-glass-shaped Lamp, on which is stamped "Clarke's Patent," is that recommended for the Albert Lights.

Price's Patent Candle Company, Belmont, Vauxhall.

WIRE FENCING, PAINTED.—An effectual fence against hares, rabbits, sheep, cats, dogs, deer, &c., also for enclosing pheasants, fowls, &c., for heightening existing walls, fences, &c., as a protection against petty thieves;—15 inches high, 3*d.* per yard; 18 inches, 3½*d.*; 2 feet, 4½*d.*; 3 feet, 6¾*d.*; 4 feet, 9*d.*; and 6 feet, 1*s.* per yard; less than 2-inch mesh. Being worked in oil it will not rust when painted, and will last twice as long before it requires repainting than any other kind of wirework that is made. Also sparrow-proof wirework, 2*d.* per square foot; wirework, 4-inch mesh, ½*d.* per square foot. Wirework to order. Numerous testimonials of approval.—R. Richardson, 21, Tonbridge-place, New-road, London.

SUBSTITUTE FOR GARDEN MATS, TARPAULINGS, &c.—WATERPROOF TRANSPARENT SHEETING, for protecting from frost Greenhouses, Pits, Frames, Plants, &c., 1*s.* per yard, 2 yards wide; Ditto of Stout Canvas, 1*s.* per square yard; Patent Asphalte Felt, 1*d.* per square foot, for Roofing, &c.; Waggon and Cart Cloths, dressed with India-rubber, 2*s.* per square yard; Driving Aprons, 12*s.*; Horses' Loin Cloths, 7*s.*; very large Driving Capes, 3*s.*—R. Richardson, 21, Tonbridge-place, New-road. N.B. 3000 London Police Capes, 18*s.* per dozen, for Labourers and Farm-servants.

RABBIT NETS, SHEEP NETS, FISHING NETS.—Long Hare and Rabbit Nets, on Cords, 50 to 100 yards long, for catching Rabbits, shooting, &c, dipped in Kyan's Preparation to prevent decay. Strong New Zealand Cord, or Cocoa-nut fibre Sheep Nets, 4½*d.* per yard, 4 feet wide. All kinds of Fishing Nets, for Home Use or Exportation, made by Machinery,

R. Richardson, 21, Tonbridge-place, New-road, London.

WATERPROOF CAPES AND TARPAULINGS.—Large Capes, to effectually protect a man from wet while stooping down, 3*s.* each; Coats, 7*s.* 6*d.*; Driving Aprons, with straps, 12*s.*; Horses' Loin Cloths, 7*s.*; Tarpaulings, the size for a miller's cart, 20*s.*; for a miller's 4-wheeled waggon, 26*s.* 8*d.*, or made up any size at 2*s.* per square yard.—R. Richardson, 21, Tonbridge-place, New-road, London.

N.B. Three Thousand London Police Capes, fresh dressed, 18*s.* per dozen, for farm servants and labourers.

GEORGE BASSIL'S PHEASANTRY, Wood Farm, Hemel Hempstead, Herts, within one mile of the Boxmoor Station, on the London and North-Western Railway. G. B. respectfully invites inspection and early orders. His stock this year consists of upwards of 500, so that he will be able to supply almost any quantity of Tame Bred Pheasants or Pheasants' Eggs in the spring.

APPETITE AND DIGESTION IMPROVED.

LEA AND PERRINS' WORCESTERSHIRE SAUCE imparts the most exquisite relish to Steaks, Chops, and all Roast Meat Gravies, Fish, Game, Soup, Curries, and Salad, and by its tonic and invigorating properties enables the stomach to perfectly digest the food.

The daily use of this aromatic and delicious Sauce is the best safeguard to health.

Sold by the Proprietors, Lea and Perrins, 6, Vere-street, Oxford-street, London, and 68, Broad-street, Worcester; also by Messrs. Barclay and Sons, Messrs. Crosse and Blackwell, and other Oilmen and Merchants, London; and generally by the principal dealers in sauce.

N.B.—To guard against imitations, see that the names of "Lea and Perrins" are upon the label and patent cap of the bottle.

TOOTHACHE PERMANENTLY CURED by using BRANDE'S ENAMEL for filling decaying Teeth, and rendering them sound and painless. Price 1*s.* Enough for several Teeth. The only substance approved by the medical faculty, as being unattended with pain or danger, and the good effects of which are permanent.

Sold by all Chemists in the United Kingdom. Twenty really authorised Testimonials accompany each box, with full directions for use. Sent free by return of post by J. WILLIS, 24, EAST TEMPLE CHAMBERS, WHITEFRIARS, FLEET-STREET, LONDON, in return for thirteen penny stamps.

CAUTION.—The great success of this preparation has induced numerous unskilful persons to produce spurious imitations, and to copy BRANDE'S ENAMEL advertisements. It is needful, therefore, to guard against such impositions, by seeing that the name of John Willis accompanies each packet.

THE HUMAN HAIR.—Of the numerous compounds constantly announced for promoting the growth or reproduction of the human hair, few survive, even in name, beyond a very limited period, whilst ROWLAND'S MACASSAR OIL, with a reputation unparalleled, is still on the increase in public estimation. The unprecedented success of this discovery, either in preserving the Hair in its original strength and beauty, or restoring it when lost, is universally known and appreciated; and is recorded by testimonials most numerous in themselves, and certified by the highest authorities. It has obtained the exclusive patronage of Royalty, not only as regards our own Court, but those of the whole of Europe. From its exquisite purity and delicacy, it is admirably adapted for the hair of children, even of the most tender age, and is in constant use in the nursery of Royalty, and by the families of the Nobility and Aristocracy. It is alike suited for either sex, and, whether employed to embellish the tresses of female beauty, or to add to the attractions of manly grace and aspect, will be found an indispensable auxiliary to the toilet, both of ladies and gentlemen. Price 3*s.* 6*d.* and 7*s.*; or family bottles (equal to four small), at 10*s.* 6*d.*; and double that size, 21*s.*

CAUTION.—On the wrapper of each bottle of the genuine article are these words, in two lines, "ROWLAND'S MACASSAR OIL." Sold by A. Rowland and Sons, 20, Hatton Garden, London, and by all chemists and perfumers.

GREAT WESTERN, SOUTH-WESTERN, AND SOUTH-EASTERN SEED ESTABLISHMENT,

For Supplying Genuine Home-Grown Seeds Carriage Free.

JOHN SUTTON AND SONS, SEED GROWERS, Reading, Berks, having many Customers in the Southern, Midland, and Western Counties of England, and in South Wales, have made arrangements with the several Railway Companies, which will enable them to deliver all goods (excepting parcels under 10*s.* value), FREE OF CARRIAGE, to any Station on the Great Western, South-Western, South-Eastern, or Berks and Hants Railways (which Lines converge at Reading), or to any Railway or Packet Office in London or Bristol.

The rapidly increasing connexion and distinguished patronage enjoyed by J. S. and SONS, is entirely owing to the superior quality of their HOME-GROWN SEEDS, and the low prices charged for the newest and best kinds in cultivation.

N.B.—Descriptive Catalogues, with *Prices of every Article* required for the Kitchen-Garden, Flower-Garden, and Farm, may be had on applications addressed

JOHN SUTTON AND SONS, SEED GROWERS, READING, BERKS,

Enclosing Two Penny Stamps for Postage.

J. G. WAITE'S CATALOGUE OF VEGETABLE SEEDS is now Ready, with Prices to suit the times, and can be had on application.

J. G. WAITE'S CATALOGUE OF FLOWER SEEDS is also ready, and can be had on application.
181, High Holborn.

FINE PURPLE-TOP SWEDISH TURNIP SEEDS FOR SALE.—200 Bushels, pure, and of excellent Stock, raised by one of the first Agriculturists of Berwickshire, who has for many years paid great attention to the raising of Turnip Seeds.—Apply to W. KINGHORN, Dunse, N.B.

CHELSEA NURSERY, KING'S-ROAD, CHELSEA.

A FINE STOCK OF STANDARD APPLES, PEARS, PLUMS, Dwarf-trained Peaches, Nectarines and Cherries, all of the best varieties in cultivation. Large Green Hollies, Lilacs, Aucubas, Laurels, &c., to be sold at very low prices for cash, the ground being required immediately for building.—Apply to MR. LITTLE, Nurseryman, King's-road, Chelsea, Florist to her Majesty.

MITCHELL'S MATCHLESS WINTER PARSLEY, Extra Superior for Garnishing.—J. M. having a quantity of new Seed to dispose of, can highly recommend it to Market and Gentlemen's Gardeners as the hardiest and best winter sort ever produced. Retail price, 2*s.* 6*d.* per lb. Also, his superior dark-green Savoy, 1*s.* 6*d.* per lb. A liberal allowance made to Seedsmen.—Post-Office Orders made payable to JOHN MITCHELL, Ponder's End, Enfield, Middlesex.
December 14.

FLORISTS' FLOWERS, 1851.

CAREY TYSO'S NEW CATALOGUE, for 1851, is now ready for delivery to applicants enclosing two postage stamps. New Treatise on "THE ANEMONE," price 3*d.*, or sent post free for four labels. Ditto on "THE RANUNCULUS," price 6*d.* of any Bookseller or sent post free, for eight labels.

*Ranunculuses, 100 splendid named sorts, 40*s.* to	£4	0*s.*	0*d.*
*Double Anemones, 50 fine ditto, 12*s.* 6*d.* to ...	1	0	0
Carnations and Picotees, 25 show flowers, 35*s.* to	3	0	0
Pinks and Pansies, 25 do., 15*s.* to	1	10	0
*Ranunculus Seed, from best seedlings, per paper, 5*s.* to	0	10	0

* These articles can be safely forwarded by post.
Wallingford, Berks.

FOR SALE, THREE MILLION THORN QUICKS, &c.—The Subscriber will deliver free in London or any port in England which has direct steam communication with Belfast.

Strong transplanted Thorns, 4 years old ...	5*s.* 0*d.*	per 1000
Twice transplanted do., 6 years old, very strong	7 6	,,
Two years seedling do., ...	1 3	,,
Three years seedling do., ...	1 6	,,
Irish Yews, 15 to 18 inches	20 0	per 100
Do., 2 to 3½ feet	40 0	,,

All well-grown, finely-rooted plants.
53, High-street, Belfast, CHARLES HOWDEN,
Dec. 14. Nursery and Seedsman.

TO BE LET, near Battersea Bridge, a productive walled GARDEN, with Gardener's Residence, two large Hothouses, Pine Pit, Frames, Tank, and Water laid on in four places; Pigstye, and Poultry-yard. Also extensive Stabling adjoining for six horses, loose box, coach-house, harness-room, man's sleeping-room, and loft. The latter would be let separately, or the whole for 50*l.* a year, rates and taxes included.—Apply to Mr. Lloyd, on the spot, Beaufort-street, King's-road, Chelsea, near London.

THE BEST AND MOST PROLIFIC EARLY KIDNEY POTATO GROWN.

"Eglinton Castle Gardens, Ayrshire, Oct. 23, 1850.

"DEAR SIRS,—Having grown a quantity of your improved Kidney Potato here, and at Pitfour Castle, Perthshire, I have in both cases found it to be earlier and a superior flavoured Potato to any other I know. Its dwarf habit makes it a most excellent variety for Frame Forcing, which I proved here last spring.—I am, dear Sir, yours truly, "WILLIAM SHARPE."

"To Messrs. Jackson and Son,
"The Nurseries, Kingston, Surrey."

THOMAS JACKSON and SON have much pleasure in quoting the above testimonial, from a well-known authority, of the merits of their Improved Kidney Potato, and they are happy to say they have now to offer fine healthy sets at 7*s.* 6*d.* per bushel. T. J. and Son have also to offer, at 5*s.* 6*d.* per bushel, good healthy sets of the Early Prolific round Potato Golden Dwarf. To be obtained of T. J. and Son, and from most of the Wholesale Seed Firms in London.

T. J. and SON have a large Stock of Fruiting and Succession Providence, Queen, and other Pine Plants, strong, healthy, and warranted clean. Price, according to quantity required, may be obtained upon application.
Nursery, Kingston, Surrey, and Royal Gardens, Hampton-court.

PURE WATER raised to any height from a small stream, where a fall can be obtained, by FREEMAN ROE and HANSON'S IMPROVED RAM; less waste, by two-thirds, than those ordinarily in use. Portable Steam Engines for Agricultural purposes, Threshing Machines, Deep-well Pumps, Water-wheels, Baths, Hot-water Apparatus, and Fountains. Towns supplied with Gas or Water. Drawings and Estimates made.—FREEMAN ROE and HANSON, Hydraulic and Gas Engineers; Office, 70, Strand, London.

THE CONICAL BOILERS INVENTED BY JOHN ROGERS, Esq., are supplied and fixed by JOHN SHEWEN, ironmonger, Sevenoaks. Also all kinds of Hot Water Apparatus. For Churches and Public Buildings, Mr. SHEWEN should be consulted, his Warm Air Apparatus being safer, more efficient, and more durable than any other.

GREEN AND HOTHOUSES, strong built, at the following low scale of prices:—Lean-to Roofs, 12 feet by 8, 10*l.*; 16 by 8, 15*l.*; 20 by 10, 20*l.*; 20 by 12, 24*l.*; 24 by 12, 28*l.*; and 28 by 12, 32*l.* Greenhouse Garden Lights, and Window Sashes, complete, painted three times, at 9*d.* per foot. A Greenhouse, ready built, for sale, 16 feet by 9.—Plans and particulars sent by addressing a letter to Mr. SMITH, 85, White Lion-street, Islington, London.
Estimates given for Hot-Water Apparatus.

CHRISTMAS HOLIDAYS.

THE GARDENS OF THE ZOOLOGICAL SOCIETY, in the Regent's Park, will be open to VISITORS, on payment of SIXPENCE each, EVERY DAY except Sunday, from Christmas Eve to January 6th inclusive.

The HIPPOPOTAMUS is exhibited from 11 to 4 o'clock.

The Gardeners' Chronicle.

SATURDAY, DECEMBER 14, 1850.

MEETINGS FOR THE ENSUING WEEK.

MONDAY,	Dec.	16	Chemical ..... 8 P.M.	
			Statistical ..... 8 P.M.	
			British Architects ..... 8 P.M.	
TUESDAY,	—	17	Linnean ..... 8 P.M.	
			Pathological ..... 8 P.M.	
			Civil Engineers (Anniversary) .. 8 P.M.	
WEDNESDAY,	—	18	Society of Arts ..... 8 P.M.	
			Geological ..... 8½ P.M.	
THURSDAY,	—	19	Antiquarian ..... 8 P.M.	
			Royal ..... 8½ P.M.	
SATURDAY,	—	21	Medical ..... 8 P.M.	

THE remarks in our last Number on concreting VINE BORDERS, by Mr. SPENCER, gardener to Lord LANSDOWNE, will have been read by some with entire acquiescence, by others with doubt or incredulity. As it is to be feared that the latter will prove the greater number, we venture thus early to express our entire concurrence in everything which that very intelligent writer has expressed.

The use of concrete for the *bottom* of Vine borders is no novelty; it has been frequently used to prevent the roots coming in contact with dense, sour subsoil, or to keep down the damp which in low situations will find its way to the surface during winter and spring. Such a contrivance has great value; it answers the purpose far better than any permeable substratum, and if well executed, places the Vine roots in the same condition as if they were in a huge basin, or shallow flower-pan. It has, however, its disadvantages; it permits no warmth to enter from below, and it is apt to detain too long the floods which sometimes suddenly inundate it. It is also subject to becoming injuriously dry in hot summers. As a perfect contrivance it cannot then be recognised; all that can be said about it is, that it is infinitely better than to leave the soil in its natural ill condition.

The use of concrete for the *surface* of Vine borders is, on the other hand, a very recent invention, concerning which there is little experience. It must be owned that to cover a Vine border with a hard impenetrable casing of gravel, lime, coal ashes, and gas tar, seems to be so opposed to all known principles, that at first sight the mind absolutely rejects the proposition. It prevents rain reaching the Vine roots; it cuts off all access of air; it must be too cold in winter, and too hot in summer: these are among the first objections that would be taken to it. Nevertheless, we quite agree with Mr. SPENCER in regarding all such objections as unfounded or unimportant; and the method itself—*with proper accompaniments*—to be of the greatest advantage in our cold damp climate. "What!" it may be asked, "are we to understand that you advise us to concrete our borders above and below, and all round?" No, good folks, not quite that; what we say is, that it is judicious to concrete the surface of Vine borders, if you accompany that operation by certain other processes essential to its successful action. The advantages of the plan are well explained by Mr. SPENCER; it detains moisture when it is wanted, and it excludes it when it is not wanted; it causes heat to be absorbed abundantly when earth-heat is most essential to the Vine; it maintains a congenial temperature at other seasons, and its hardness prevents the earth below it from becoming too compact, in consequence of persons walking over it.

But in order to secure the advantages of surface concrete, without any disadvantages, it seems to be essential that the border should rest upon rough materials, so put together that air can readily find its way upward through them into the border. Mr. SPENCER's border rests on rough paving-stones raised on rough walls, and is then connected with the external air or with that of the Vinery itself, which we imagine to be better. Under such circumstances, air will find its way to the roots more readily than by any other known method; and thus the conditions demanded in a perfect Vine border, viz., warmth, dryness in winter, and damp in summer, with permeability at all seasons, are perfectly fulfilled.

That the raising the border on a vaulted bottom is of very great value, concrete or no concrete, is admitted by the best Grape growers. Mr. HUTCHINSON's borders at Castle Malgwyn are so managed; the early houses at Trentham, built under Mr. FLEMING's direction, have borders of the same kind, and we now have the declaration made by Mr. SPENCER, that he too finds their great utility. We would not, however, be understood to say that these contrivances are at all times necessary in order to secure fine Grapes. On the contrary, when soil and situation are naturally suitable to the Vine, very fine Grapes are obtained without any such aids. The important point is, how to deal with this valuable fruit tree when, as so often happens in Great Britain, the soil and situation are *unfavourable*; and we submit that that problem is now sufficiently solved.

VICTORIA PARK has found a champion. A man has come forward to make an attempt at defending what is notoriously indefensible. We seldom notice such follies, and most certainly should not have altered our practice on the present occasion, if an irresistible opportunity had not occurred of showing up the peculiar manner in which the writer to whom we allude conducts an argument.

We said—1, that this park consists of 290 acres; 2, that it has cost 44,000*l.*; 3, that the manner in which the money had been expended is a national disgrace; 4, that the miserable shrubs and trees with which it has been planted were evidently the sweepings of some neglected nursery ground; 5, that it is furnished with a frightful island carrying a frightful pagoda, and accessible by a few rotten planks; 6, that one of the lodges is as ugly as the objects contained within the park; 7, that one of the main roads is unfinished and overgrown with Grass; and that this is what the country had paid 44,000*l.* for.

The manner in which we are corrected is amusing. In the first place the advocate says that Mr. MAJOR, of Leeds, was formerly criticised in our columns for what he did in the Manchester Park; and that a Mr. CURTIS, who is, it seems, answerable for some part of the offences charged against the contrivers of this park, is now treated with harshness, everything being omitted except the points upon which ridicule can be heaped. It therefore appears that there *are* some ridiculous points in the plan; not that we intended to cast mere ridicule on them; they demand a much more serious treatment. Oddly enough, however, the writer in the next breath acquaints his readers that he *does not* know *enough of the park to form a correct opinion* of it; that he means to go and see it some day! and then (as if foreseeing what the consequences of a visit must be), he coolly declares that he is no apologist "for anything which may have been done there!!" But he thinks he can rely upon a correspondent who undertakes to grapple with the alleged facts.

This correspondent says—1. That the park consists of 240, not 290, acres; but the Act of 4 and 5 Vic., cap. 27, declares that it contains "about 290 acres;" and we prefer the evidence of an Act of Parliament. 2. He says that the cost of making this park amounted to less than a quarter of 44,000*l.*; but there again Parliamentary evidence is against him; for the statement we made was taken, as we explained, from the official reports of the Commissioners of Woods and Forests. Mr. KNIGHT, in his "Cyclopædia of London," says the cost was rather more than 50,000*l.* 3. He admits that in matters of taste there will be differences of opinion, and triumphantly expresses his satisfaction at knowing that men of taste have expressed their astonishment how this eastern "Paradise!!" could have been made out of exhausted brick fields. We submit that 44,000*l.* ought to perform a somewhat greater feat than that. 4. He avers that the trees and shrubs were selected with great care, and he is quite certain that there are few situations where so healthy and vigorous a growth can be shown. Surely the writer must be some Bethnal-green weaver, in whose eyes any piece of Grass is Paradise, and every scrubby bush a picture. Only look at the wretched things! There they are; and there we hope they will remain, till after the meeting of Parliament. And what does Mr. KNIGHT, at least an unprejudiced observer, say, "The shrubs that have been planted do not in some parts seem to be *at all settled in their new habitation.* . . . . The smoke of London threatens to be very injurious to the Pine, *many of which have been planted.*" 5. As to the frightful island and frightful pagoda, we are told that there are three islands, that tastes differ, and that "all must regret that the pagoda and bridge, nay, even the water itself, are left unfinished,"——after spend-

ing 44,000*l*. 6. Concerning the lodge, the writer has only this to say, that some people admire it; but for himself he thinks the taste questionable, and that the thing would have looked better had it been bigger. 7. Finally, as to the Grass-grown road, which 44,000*l*. did not enable the perpetrators of the park to finish—why, as to that, this writer wisely holds his tongue. Perhaps it would have been more discreet if he had held his peace about the whole business.

As a specimen of *reasoning and argument* these extracts are unique, and they will do to raise a laugh at the present dreary season. But the design and condition of our public parks, especially of new ones, is not to be treated thus lightly; for their state concerns not only the expenditure of public money, but our national credit for good taste and intelligence. Regarded in this point of view we feel persuaded that Victoria-park deserves much more than we have said about it. Let us hope that members of Parliament will visit it and judge for themselves, whether it will be possible to allow the formation of Battersea-park to be entrusted to the incompetent hands of men like those who have rendered Victoria-park a public disgrace.

SEEDLING FRUITS.

Having had opportunities of examining many of these, I beg to remark, that some of the seedlings from the most approved varieties were found to partake more or less of the properties of their respective parent trees; whilst the majority were of a wild and very inferior description, and totally different in form, colour, nature of juice, and time of ripening. Such, we are informed by various authors, is likewise the case in America and the colonies. Thatcher, in his "American Orchardist," states, that "a hundred seeds of the Golden Pippin will produce large-leaved apple trees (the Golden Pippin itself has a small leaf), bearing fruit of a considerable size; but the tastes and colours of each will be different, and none will be the same in kind with the Pippin. Some will be sweet, some bitter, some sour, some mawkish, some aromatic; some yellow, others green, red, or streaked."

Seedlings from the same tree not only differ widely from each other, but even those from pips, taken from the same apple, produce fruit possessing qualities entirely different. For example, the excellence of the Ribston Pippin need only be mentioned; but the "Sister Ribston Pippin" was a white, semi-transparent, sour-fleshed Apple, or rather a large crab. It therefore appears that the same fruit may contain the germs of good and bad, both protected by the same pulp and nourished by the same juice. Whether the fruit of the parent tree of these possessed intrinsic merit has not been ascertained; but this we know, the many seeds from the Ribston Pippin have been raised; yet none of its progeny are known to inherit its peculiar flavour and excellence. The same remark applies to the Old Nonpareil.

From these facts, it must be admitted that there is a strong tendency in plants from *seeds of cultivated fruit-trees of high quality to revert immediately to the state of wildings.* We cannot suppose that the seeds taken out from this country to Virginia would have formed an exception to the above tendency had they been sown in England; and wherever sown, the nature of their produce must have been essentially the same, however much it may have been modified by circumstances of soil and climate. How far these circumstances would affect the next and succeeding generations of these seedlings, is a different question. That of the greatest importance, especially to colonists, is to know how to proceed to raise orchards of good kinds of fruits from seeds. The following extracts may prove advantageous to those interested in the subject:

Considerations on the processes employed by Nurserymen for obtaining better sorts of Fruits, and on the means by which Nature appears to accomplish the same result. By M. Poiteau. Originally published in the Annales Soc. de Hort. de Paris.

The author observes, it is but rarely that improved varieties of our cultivated fruits originate with nurserymen; they are generally the productions of chance found in the woods or hedges, or from distant corners of provinces, where the finer sorts are scarcely known, and where the sorts they have are mismanaged or neglected. That "like begets or produces like," has long been considered as a law of nature among animals and some vegetables; but this law is not always uniform, especially among domesticated animals or highly cultivated plants. Yet, on this principle, our nurserymen have acted in their endeavours to obtain better kinds of fruit, by sowing seeds of the best, in the hope that they would raise something still better. It is well known that in this process they have failed. The celebrated Duhamel and his contemporaries failed in the same way. From these and other instances the author concludes that cultivators are wrong in their expectations of obtaining at once what can only be the result of time. He seems to infer that seedlings—Apples or pears, for example, require some years and some cultivation, while they are passing from one stage of their infancy to another, before they can show their inherent qualities.

As proof of this conjecture, he instances the case of the fruit trees in the United States of America at this time. There, it appears, they have little trouble in procuring superior fruits from seeds; and that they have many excellent new kinds, their lists sufficiently testify. The cause of this he conceives to be, that the first imported fruits which the colonists received from Europe 300 years ago, were, amidst the bustle of establishing and securing themselves in a new country, lost, from neglect or ignorance of the art of grafting; and that they only had recourse to seeds for perpetuating the kinds. These seedlings have passed through several generations, and are now arrived at that period of their existence in which their inherent qualities are fully developed.

The Americans, M. Poiteau adds, attribute this to another cause, namely, that in proportion as their newly broken-up lands are ameliorated by cultivation, &c., so, in like proportion, are the qualities of the fruit. It is a common saying in Virginia, that the fruits of such or such an orchard "begin to change for the better." But this can hardly be admitted; for though such circumstances may improve the quality, it cannot change the physical characters of the fruit.

After noticing the fact proved by Mr. Knight, that a crab, fertilised by the pollen of a good fruit, produces better kinds from seed than can be had from seeds of improved fruit, he proceeds to describe the method used by the Flemish orchardists to obtain new sorts. This, on the authority of M. van Mons, may be briefly explained as follows: They sow the seeds of cultivated varieties, or, preferably, the seeds of wildings that have sprung from cultivated varieties. They rear and fruit the plants from this sowing as quickly as possible, and raise another generation from their seeds; and thus they go on, always sowing the seeds of the last raised generation as soon as they can obtain them. Good new sorts are sometimes thus obtained amongst those of the second or third generation; but each successive generation is characterised by a more general amelioration than that of its predecessor, till at last a high degree of excellence is obtained. Of some kinds of fruits, good varieties are obtained chiefly from the third sowing; in others it may be the fourth or fifth; and in Pears the sixth or seventh. This process, concludes M. Poiteau, is only an imitation of that of nature exemplified in America. *R. Thompson.*

BRITISH SONG BIRDS.

No. IX.—Our little tenants having now taken quiet possession of their freehold, we will try yet again to devise some additional means of adding to their domestic happiness.

In enumerating the particular tribes by name, it will be seen there are some which I have purposely omitted; such as, amongst others, the greenfinch, bramblefinch, the hawfinch, and the starling. The first of these is a large ugly "gawky;" with a harsh, wiry voice, painful to listen to. He will eat, too, thrice more than he is worth, in a single week. The other three are maliciously spiteful, and must be also among the rejected. They would destroy the entire colony in an incredibly short space of time, if they once gained admission.

When giving, last week, my reasons for excluding hen birds from the aviary, I left, of necessity, much for conjecture. Intelligible, however, as my "hints" were, and quite sufficient for the purpose, yet there are others; of a different nature indeed, but equally stringent.

With a view to the regular increase of my stock, I provided, when first "colonising," a number of square mahogany nest-boxes, which were fixed against the wall; also nest-bags, and such other materials as were necessary for the purpose of "building." In these boxes, from time to time, a number of nests were formed; eggs were laid; and the process of incubation went forward. I anticipated much amusement and much delight from the young progeny when hatched; but, alas! my anticipations of pleasure were doomed never to be realised. There were such "awful goings on," as I shall presently relate, among the various "settlers," that I was obliged within the first three months to commit an act of ejectment. The sex, called "gentle," was banished for ever. "'Tis true, 'tis pity; pity 'tis, 'tis true!"

Had I succeeded in establishing a peaceful colony on so grand a scale, I should have accomplished, I understand, what has never yet been done. No sooner were any eggs laid by a canary, or a siskin (aberdevine), than a rival hen goldfinch would alight on the nest box, seize the egg, and, dropping it from above on the ground beneath, listen with maniacal ecstacy to the music of its destructive fall.

The thrush, too, known universally as an "imitative" bird, would oftentimes amuse himself in the accomplishment of a similar exploit. He was ready at a moment's notice to "assist" any of the rival malcontents in a crusade against the eggs and young. No sooner were the latter born—I succeeded in getting a few broods hatched—than the conspirators went to work with an energy, and a unity of purpose, worthy of a better cause. Despite the vigorous resistance of the parent-birds, "thrice armed by Nature's powerful wand," their infant offspring were remorselessly dragged, "callow" as they were, from their cradles; suspended in mid-air, like Mahomet's coffin; and then, with deadly hate, dashed forcibly to the ground. There were a number of offenders in this way, all of whom were tried and condemned; their sentence—banishment—being carried into immediate effect.

Canaries, alone, will pair and breed excellently well in an aviary; but the admixture of a number of other tribes, for breeding purposes, is evidently a "mistake." A little calm reflection will show good reason for this, seeing how very dissimilar are the taste and habits of some birds compared with others—these courting retirement, and feeling annoyed when disturbed; those rejoicing in mischief, and never so happy as when up to their ears in excitement.

As your little friends will try every possible mode of amusing themselves at your expense, you must take special care to nail your floor-cloth, and paste your paper, evenly on the wall or ceiling. If they can only find one end that they can unravel, one projection that they can peck at, they will go to work with such artistic skill, that they will soon disfigure the room. Be careful, therefore, to give them no opportunity for the exercise of their ingenuity in this matter.

Keep the windows constantly open, and admit a free current of air, closing them, in winter only, at night. The room will always be sufficiently warm. If, however, there be any fog or continuous rainy or damp weather, *then*, of course, the windows should *not* be opened.

You will find that the birds will soon get into a habit of perching on, or rather clinging to, the ledges of the windows. To obviate this, which is very objectionable, seeing how the windows become thereby soiled, have some narrow, say 1½ inch, slips of deal, planed down, just the width of the window. Let these be "bevelled" off on one side, and carefully adapted to the bottom of every pane of glass in the room in a slanting position. By using this precaution, the birds will slide off, and soon find you are "just one too many for them."

It will take your birds some little time to get into each other's ways; but this they will do, eventually. Many and divers will be the quarrels, disagreements, animosities, and battles; but these will terminate. War will cease, and peace ultimately become proclaimed.

If any of your birds die, as fresh-caught birds often do, replace them at the earliest moment. Never turn in many at once; let one or two in, mysteriously, early in the morning. This will prevent any unusual fluttering; and the "wonder" at seeing a few new faces will gradually subside.

Whenever you purchase a quantity of "flight" birds (already described), for stock, always place them for a day or two in a large cage by themselves. It would be desirable to have two or three for this purpose. These birds are so excessively wild and impatient of confinement, that, if turned into the aviary immediately after being caught, they would not only dash frantically against the windows, thereby severely injuring their nervous system, but they would spread fearful consternation and bewilderment amongst the inhabitants. In such a case, the restoration of order would be difficult, and a work of much time.

The soft-billed birds, when first purchased, must be kept quietly, in separate cages, for a fortnight at least after being "fed off." They may then be turned into the aviary, one at a time. Being insectivorous, food must be given them which assimilates as closely as possible with their natural diet—spiders, small red garden worms, meal-worms, earwigs, &c. These should be supplied only occasionally, just to keep the birds healthy; they will, meantime, "take" to the general food, of which we are soon to speak more fully.

When the glorious sun streams into the aviary, and gilds the variegated colours of these little feathered beauties, their antics, frolics, and devotion to fun, can be but faintly imagined. The fountain, with its rippling stream; the mirrors, with their truthful reflection and multiplying powers; the harmonious concert of well-tuned voices,—cause the inhabitants as much harmless pleasure as was ever known by our first innocent parents in Paradise.

Hard must be the heart of that man, or that woman, who could witness such scenes of happiness as these, without participating in the general enjoyment. For my own part, I disclaim all wish to "fraternise" with such people. *William Kidd, New-road, Hammersmith.*

ON THE PRODUCTION OF SUGAR IN PLANTS.

Extracts from a Paper by M. Gaudichand in the "Comptes Rendus."

It is well known that the root of Beet often grows to a very large size, and that its height, varying with the soil, is often 4, 5, or even 8 inches above the surface of the ground. It naturally occurred to us to try and discover the relative proportions of sugar in the upper and lower parts of these fleshy roots, and we found that not only is sugar more abundant in the lower than in the upper part, but that it is also purer and more easily extracted.

As we were at this time almost wholly occupied with chemistry, and we had besides every facility for experimenting, we did not suffer our enquiries to stop here. In a botanic garden that we had made we cultivated Beet, and the soil being suitable, some very large specimens were obtained.

Having previously discovered that the lower and under-ground portions of the root contained more sugar than the upper portions that were exposed to the air, and attributing this difference to the action of the air and of light, or, in other words, to the formation, in the tops of the roots, of different principles, we covered the upper parts of a certain number of roots with earth; and on examination three weeks or a month afterwards, these were found to contain much more sugar in their upper extremities than those of the roots which were not covered up.

All the observations that we have made on plants containing sugar (excepting those which only contain that principle when blanched), show that the quantity of saccharine matter is directly proportional to the degree of ripeness of the plant or part of the plant con-

taining it. Beet-root, fruits, the Sugar-cane, &c., show this completely.

We have already spoken of the Sugar-cane, and our present subject leads us to refer to it again to prove the truth of our assertions, and to support them by still stronger testimony. Every one knows that this plant is a Grass whose phytons developing the one above, after and within the other, form a slender articulated stem, each node of which carries a leaf. New experiments clearly show that in the Sugar-cane saccharification begins at the bottom and proceeds very gradually to the top of the stem, joint by joint, or, to speak more properly, phyton by phyton, and that the lower internodes are quite ripe and sweet, while the upper ones are still herbaceous, and more and more acrid as they get nearer the top. This important fact has been determined in a still more direct manner by M. A. Vinson, sen., of the Isle of Bourbon, who has derived from it great practical advantages.

The following is the substance of a communication on this subject received from this gentleman on the 24th of October, 1842 :—"I received the copies of your new memoirs, &c. With regard to the Sugar-cane, a fact of the greatest practical importance for my establishment has been ascertained by experiment. It is at complete variance with all ideas hitherto received. Science comes to the aid of practice, and that is its greatest triumph. This is what I refer to.

"We buy at our factory Sugar-cane juice. The Sugar-cane planters, myself among the number, thought that the green canes gave more syrup than those which were ripe, and which, according to them, ought to be left in the ground to dry. They knew very well that the juice of the green cane contained less sugar than that of the ripe cane ; but, looking only at the quantity and not at all at the quality, we were induced to use their canes before they were ripe, and thus suffer considerable losses.

"The syrup of the green cane marks, on Baumé's areometer, from 8° to 10° ; and in proportion as the juice is elaborated, it marks from 10° to 13°, generally 12° 30′. Now, experiment has shown me that the quantity of syrup is greater in the ripe than in the green cane. It is then advantageous, both with respect to quantity and to quality, to allow the canes to ripen.

"In the green cane the bark is thick and hard, the longitudinal threads are confused, the cells are not distinct, their partitions are thick and without empty spaces ; whence it results that the parenchyma forms a compact opaque mass, which, when strongly pressed, gives a liquid that is albuminous, mucilaginous, starchy, and scarcely sweet. The cane, when it comes from the cylinders, assumes, after the most violent pressure, its original shape.

"In the ripe cane, on the contrary, the bark is thin, the longitudinal threads are quite distinct ; the parenchyma, as seen under a microscope, is composed of thin expanded partitions, and full of juice, which is the more abundant and sweet as the plant is riper. The cane, when it comes from the cylinders, is completely crushed."

The letter from which the above is taken contains the following table, which, from its evident utility, deserves, I think, to be laid before the public :

Physical state of the Canes.	Months of work.	Conveyed by two Mules, mean size.	Quantity obtained from a mill of 12 horses.	Degree marked by Baumé's areometer.	State of the Season.
Green Canes...	July...	1	1 cask 45 c.	9,00°	Cold and rainy.
Do. do. ...	Aug.	1	56 c.	9,45°	Ditto.
Yellowish do.	Sept.	1	68 c.	10,30°	A little warmer, but rainy.
Nearly ripe do.	Oct....	1	89 c.	11.30°	Hot and dry.

It is not the leaves, which in the Beet, Maize, Palm-trees, Sugar-canes, &c., secrete the saccharine matters ; but the tissues of the stem, of the root, or concentric layers, and particularly the oldest and lowest, as in the Sugar-cane, or of the centre of the lower portions, as in the Beet, Palm-trees, &c.

VILLA AND SUBURBAN GARDENING.

If our memories require jogging in the ornamental department of gardening, they also need it in the useful. We often forget that a little forethought would enable us to enjoy many little luxuries at little trouble and less expense than sending to market for them, when we might gather them in our own gardens.

There are few persons who do not enjoy a spring Radish, a young Horn Carrot, and an early Dutch Turnip. Yet even by the possessors of gardens these are seldom thought of, until they are observed in the greengrocers' windows. Immediate preparations then are made to get them sown ; when we ought, in fact, to be gathering them. To accomplish this successfully, first procure some stable-dung, this should be laid up in a ridge and turned two or three times until the heat begins to subside, when it will be in a fit condition for use. Those who have the opportunity of collecting leaves, and laying them up until they become warm, will, of course, avoid the expense of manure, as the leaves answer equally well. The expense of the manure, however, is only apparent, for it can be afterwards applied to the ground. When the heating material is ready for use, a space of such dimensions as may be considered sufficient for the requirements of the family should be marked out on a sheltered south border. In ordinary cases, a space 5 feet by 10 will be ample. The soil should be taken out and ridged round the edges, until the bed exhibits a cavity 18 or 20 inches deep. The heated manure should be placed in this excavation, and regularly beaten down firmly with a three-pronged fork, until the bed is rather more than brimful. There must previously have been secured some light loamy soil, moderately rich, and in a dry friable state. Six inches of this prepared soil should be placed on the bed. The seeds may then be immediately sown. If the dung has been properly prepared no danger will arise from overheating. One end of the bed may be sown with Carrots, the other with Turnips, and a sprinkling of Radishes may be cast over the whole. The latter will be gathered before they injure the other crops.

The next point is to protect the bed from frost and heavy rains, which may be expected if these things are sown in January or February. The bed can either be hooped over and covered with mats in the usual way, or a very effective covering might be made with asphalte, stretched on a few rods, giving it a slight inclination, to throw off the rain. In very severe weather, a more secure protection will be required. When the bed is first made, and the seeds sown, the covering should be put on at once, and it may remain on until the seed germinates, when the bed should be exposed in all genial weather. *Pharo.*

THE CULTURE OF THE VINE A HELPMATE TO THE CULTURE OF THE MIND ; OR, TWO BIRDS KILLED WITH ONE STONE.

[FOR COTTAGERS.]

No. VII.—Odds and Ends.—

Culture of the Mind.

height of stem before the principal arms or arms are permitted to branch off, must, of course, first depend on your wall ; next it will be necessary to measure it by the height that children's fingers can reach before they can be trusted, which measure will be found usually to vary, as that quality does in their parents, and according to the method of education pursued by them.

The measure of children's trustworthiness.

Of Muslin Bags.—To protect the fruit from wasps and birds, muslin bags will be necessary. And the making of these will afford useful employment to the good wife during the winter months, instead of losing her health, destroying her clothes, neglecting her home and children, and sending her husband to the public, by working in the fields during that season of the year.

—For nothing lovelier can be found
In woman, than to study household good.
Milton.

Thinning the Berries.—To obtain perfectly ripened, large and sweet-flavoured Grapes, thinning the berries is absolutely necessary. This operation should commence as soon as the berries are well set, and should continue till the bloom appears ; up to which time no berry should be allowed to touch its neighbour. It should be done by sharp-pointed scissors, which might be put into the hands of well-trained children, only agreeing that they should not too often try whether the Grapes were ripe, and that they should have a share promised and given them when really ripe. The half-ripe berries would probably make good vinegar. Do not pull off the leaves to expose the fruit to the sun's rays, which are much more beneficial to the Grapes after passing through and becoming tempered by them. There should be, as nearly as possible, one uniform covering, of a single leaf in thickness, over the whole space of wall.

Wyse men always
Affyrm and say,
That best is for a man,
Diligently
For to apply
The business that he can :
And in no wyse
To enterpryse
Another faculte.
—*By one Maister Thomas More.*

It is very important also that each bunch should hang as near the wall as possible, yet not so close as to crush any of the berries.

Crowded houses and close air produce infectious corruption, both of body and mind.

I have not treated of the diseases of the plant, as, since I have pursued the system herein set forth, I have had no experience in anything of the kind.—*C. A.*

Temptation to be overcome by promised reward.

The happiness of life, like the light of day consists not in one brilliant flash, but in a series of mild and chastened rays.

Modesty is a becoming veil to a fair woman, but a forward and impudent look entails sour fruit.

Culture of the Body.

And, if reasonable man would as carefully reject all things hurtful to his body, there would be less need of physicians.

PINETUMS.

As Coniferous plants, and their allies, either in selections or collections, are becoming indispensable addenda to the grounds of all lovers of the beautiful forms presented in the vegetable kingdom, it may not be an inappropriate season to discuss a few points in the arrangement of the Pinetum.

It is painful to witness, in many instances, large and valuable collections of Pines scattered about the nooks and corners of parks and pleasure grounds, without regard to the future space which the individuals are likely to occupy, with utter disregard to appropriation of situation, and with no eye to the character ultimately to be given to the scenery of which they are to form a part. In some instances we see a fine specimen struggling in the precincts of the flower garden, beneath the overshadowing branches of some giant Oak or other tree, which cannot, or, at least, would be next to sacrilege to remove. The Pine, doubtlessly, had been planted there when a minute plant, with no prospective recognition of its capabilities, and now, like a "blot on the 'scutcheon," a constant source of regret to its owner ; deformed in its habit, stunted in its energies, when it might have been a "thing of beauty," with all its attendant influences. Again, a portion of land is pointed out to you in which it is asserted that Pines are planted extensively, due space having been given to allow for the development of all their natural capabilities. In your progress to the spot several fine specimens may be seen peeping, like land-marks, above the tangled mass of Brake and Briars, Gorse and rubbish, in which vainly you seek the smaller members of the fraternity. In another domain portions of the park are fenced off and devoted to Pines. Here they are planted literally pell-mell, jostling each other even in their infancy. P. Hartwegii is smothering Pinsapo, macrocarpa deforming Lambertiana, Deodars mingling their branches with Araucarias ; in fact, the results of a liberal outlay becoming a deformity rather than a beautiful feature. A few rods from this you will probably see some "crates" protecting detached plants, which, if they have succeeded, are damaged from confined space or overtopped by Nettles and rank herbage. It is but justice to observe that such conditions are entirely to the charge of the proprietors, and not to those who have them in care.

In almost every instance Pines are planted too thick ; and this state of things is not, and, in many instances, will not be fully recognised, till the individual plants have attained a magnitude that will render their transplantation hazardous or totally impossible, if their future well-being is to be recognised, leaving out of the question the deformity which the remaining trees must suffer from being crowded. It is doubtless possible to group Pines with an ultimate good effect in particular scenery and localities ;* but a perfect knowledge of the adult characters of each species must be known to the planter before he commences operations. But it is doubtful if such an arrangement, where picturesque effect is sought, can be carried to any great extent beyond allowing each group to be formed of one species. Such a system may be departed from by employing only the true Pines ; but the Abies and Pinus, possessing such an individuality of character, would be more suitably located in detached spots, several trees forming in the distance a group, of which each individual should form a part of a whole. With the true Pines, such as macrocarpa, ponderosa, &c., several in a mass would doubtless, in an adult state, form highly picturesque objects. Some idea of such may be formed by viewing a group of several old Scotch Firs mingling together ; nothing in the way of trees can be more attractive. I have seen a collection in which there are some points worthy of consideration. They are arranged on either side of a rambling pathway, accessible at all seasons by being gravelled ; but the uniformity is too great in the disposition of the individual specimens, and a too great proximity will ultimately be observed and regretted.

It surely would be well for those who so liberally purchase valuable plants to have an eye when planting them to their future appearance. There is something worthy of observance in the old adage, which asserts that every man may do what he wills with his own ; but I doubt if we can wholly recognise its truth where a future generation is to participate in the results. And in the development of the newly introduced, or newly planted species of Pines, although it would be uncharitable as well as unjust to infer that the planters will not derive a large share of enjoyment, yet we must confess that posterity will behold their greater beauty. Witness the magnificent Cedars of Lebanon, adding a nobleness, a dignity which cannot be described, to so many of England's mansions and demesnes. In conclusion, I would intreat those who possess collections of this noble family to set about arranging them during the following planting season, now at its advent ; and to those about to form a Pinetum, I would say—consider, and form some suitable design before you commence. *G. L.*

* I mean grouping such as will allow the branches of each to commingle with the other.

TRADE MEMORANDA.

The enquiries respecting a person of the name of Beale, or Bean, of Nailsworth, near Stroud, can be answered by some of the London dealers in Turnip seed, to whom application should be made. A firm on Cornhill can probably give the required information.

Home Correspondence.

Effect of Climate on Plants.—Since reading your remarks on the manner in which races of plants are affected by climate, it has occurred to me that the following extracts have a bearing on the subject. The first is from a letter received from a friend in Port Philip, for whom, when leaving this country some nine or ten years ago, I prepared and packed some Apple-trees, with the view of testing the possibility of sending our cultivated fruits to that colony. He also took a quantity of seeds with him, including Apple-pips : he says, "I managed to get the seeds over quite fresh and good, but only three of the Apple-trees lived ; I have them planted in a corner of my little garden, and although they have turned out to be worthless sorts, I cherish them as remembrances of dear old England. They are not much better than Crabs. I have a good many young trees from my seeds, but they do not seem to do so well here as in England. The leaves are not like the leaves of the Apples at home ; they are so

small and crumply, almost like those of the old Crab we used to pelt on our way to school." Now, I know that even in this country it is difficult to get good fruits from seed, and I have seen some nearly as bad as Crabs from seeds taken from first-rate sorts. But I was unable to account for the trees taken over turning out badly, as I packed nothing but first-rate varieties. I imagine, however, that my friend had only got the stocks alive (they were Crab stocks); not being much of a gardener, he might have cut quite down to the stock in removing the dead parts; but it may have been otherwise. The next extract is from a relation who went out a few years since, and for whom I also packed seeds and trees. He says, "All the Apple-trees died, but it may have been my fault, as I opened the box two or three times, to see how they were getting on, though you told me not to do so. All my seeds, however, were good, so I have a fair supply of everything that I brought out with me; but the Apple-trees do not seem to succeed well here (in the neighbourhood of Geelong). I have got plenty of seedlings, but their leaves are not much larger than those of Sloes." After reading Mr. Henfrey's remarks in the "Botanical Gazette," I wrote to my friend to take care of all the young trees, and let me know if they fruited, so that I hope to hear something more of them. *John Middlemiss, Gardener to Arthur Pott, Esq., Bentham Hill, Tonbridge Wells.*

Capability of Thrift (Statice armeria) to withstand Drought.—We are informed in botanical works that Thrift is common on the muddy shores of the sea in salt marshes, and upon the tops of the highest mountains; perhaps the following notice of it may be new to some of your readers. Last summer a friend visited the island of Arran, and during his stay there collected a number of native plants that grew upon the coast, and also picked up a few that he met with upon Goatfell. He had no way of preserving them in good condition either for the herbarium or the garden, so they were all bundled up in brown paper, and remained in that state for several days. Among the collection there was a hemispherical tuft of Thrift, about 6 inches in diameter at the base. It appeared quite dry and withered, and any one that might have seen it in that state would have pronounced it dead. It remained some days longer in my possession before I thought of steeping it in water. It remained in the water a few hours, and was afterwards placed upon a flat stone on the top of a wall, about 4 feet from the ground, without any earth near it. The weather being hot at the time, the tuft did not show any signs of life for some time; however, it began gradually to revive, and is now in a green, and to all appearance in a healthy state, without receiving any nourishment but what it gets from the atmosphere; for after the first steeping it never got any more moisture, except that of rain and dew when they fell upon it. There is a hollow in the inside, and in it a number of new roots are forming. I examine them from time to time, in order to witness their progress; and before closing this notice I went to see how they were getting on, but the tuft was firmly fixed to the stone by a cement of ice. *P. Mackenzie, West Plean, Stirling.*

Aphelandra cristata.—The following is my method of managing this showy Acanthad. I cut the plants back to the first joint, about the middle of February; I then shake them well out, and carefully repot them in as small pots as I can get them into. The soil which I use is turfy loam, rotten cow-dung, a little peat, and rough charcoal. I plunge in a little bottom heat, and place the plants as near the glass as possible. As the roots fill the pots, I keep shifting into larger ones until they are into the same size in which I intend to flower them. When the blossoming is past, I place them in a warm greenhouse till the following February, and then I proceed as before. *E. T.*

Vine Culture.—It has been hinted that if you have your Vine-roots in a good border, you cannot fail to have fine Grapes; but a Yorkshire friend tells us that we may always expect at times ill-flavoured and badly-coloured berries, with the best made borders, and under the very best management. If my employer were to walk through his Vineries, and ask me if this house contained black Grapes, and I said that it did, I should not like to send crimson ones to his table in their place. If any Grape will not come up to its flavour and colour with me by one means, it must by another. Of the whole Vines with which I am acquainted, hardly two kinds require the same treatment, and yet many plant a collection in one house. Under such circumstances some must fail. For instance, if Hamburghs and Muscats are planted in one house, to have the Hamburgh well flavoured and coloured, you must shank the half of the Muscats, because the latter will not admit of the same treatment as the Hamburghs; and then, if you try to have your Muscats fine, you must be contented to have your Hamburghs badly coloured and ill-flavoured. Some may get good Grapes in this mixed way, and so do I by means of scheming and contriving; but I believe this to be one of the causes of so many complaints that are continually being made about failure in Grapes. I am of opinion that we have not gained anything on our forefathers in Grape-growing. Some of them knew the nature of every Vine they grew; we seldom see fine Grapes shown early in the season at any of our great exhibitions; there was hardly a fine dish of Grapes at Chiswick in May last. If they were swelled, they were badly coloured, and not what might have been expected at such a place. It was very evident, however, from the size of the berries, that the roots have done their part, and I venture to assert that more of the evil lies in mismanagement than in the borders. In conclusion, let me strongly recommend front Vinery walls to be arched, and to have divisions inside, each division only to contain one kind of Vine, which should be planted 2 feet inside the arch; and, above all, make yourself well acquainted with the nature of the kind of Vine you plant. Let your borders be made according to previous directions given in this Paper, maintain good management, and you will not fail. Let no one imagine that I allow any very sudden change of temperature to take place at any stage of the growth of the Grapes. *D. Kidd, Garnstone-park.*

Timber Seasoning and Sawing.—Amongst the various ways in which wood may be artificially and expeditiously seasoned, one of the most efficacious modes appears to be the exposing it to the vapours of water in a boiling state, and as many agriculturists possess means of steaming food for cattle, the same apparatus might with little, if any addition, be applicable to the seasoning of all the wood required for farm buildings, repairs, and implements. Where the steam vessels for food were too small for the reception of timber, they might easily be enlarged by putting together a few rough boards, so as to make a steam chamber of sufficient capacity. This chamber need not to be accurately steam-tight, since it appears, by an article in the "Mechanics' Magazine" (numbers 1415 and 1416), that the vapour of water for seasoning wood ought not to be dry steam, consequently a small escape of it through imperfect junctures would be advantageous rather than otherwise. In the case of large timber, as for beams, the steam chamber must of course be made sufficiently capacious to receive the entire beam; otherwise wood previously to steaming should be cut into small scantlings, or even roughly brought nearly to its destined shape; thus, besides avoiding the need or large steam chambers, the operation of seasoning would be expedited. Steaming of timber has lately been had recourse to in the royal dockyards for checking the ravages of the Lymexylon navale; the economy of this insect does not seem to be known, therefore it may be doubtful whether steaming of the wood may merely destroy the pests already existing in it, or whether by closing its pores, or by decomposing the natural juices of timber, if the food of these insects, the wood may be permanently protected. Besides the increased durability obtainable by the due seasoning of wood, there is a farther great advantage when this is done before putting the parts of a work together, namely, that junctures of all descriptions remain permanently as perfect as when first put together, and slender parts are not liable to warp. Greenhouse sashes and lights, for example, even when made of what is called seasoned wood, that is naturally seasoned by keeping it in store a year or two, are frequently found after a short time to become more or less disconnected by the shrinkage of the material. Such defects, it is true, are usually concealed and slightly remedied by filling up vacuities with putty, and covering the smaller ones with paint; but work cannot be called sound where such expedients are had recourse to. On this account it may, perhaps, be to be regretted that wood for the lights of the "crystal palace" has not been artificially seasoned; it might have been done either by means of steam, or in Mr. W. Strutt's mode by warm air, without occasioning delay; possibly Mr. Paxton was not acquainted with the facility afforded by both of these modes for the seasoning of wood. Speaking of this magnificent structure brings to mind another circumstance that shows how little a knowledge of what has been done in the useful arts has been disseminated. Mr. Paxton, when giving an account of the origin of his plan, said that in the year 1837 he visited all the great workshops in London, and in several of the great manufacturing towns, to see whether any machinery had been invented for facilitating the working of wood, but found only a grooving machine; that he improved upon it so as to make the sash bars complete, and that the Society of Arts in 1841 awarded him their medal for this machine. The tardiness of manufacturers in adapting useful inventions is well known; but it seems remarkable that a society, such as that of "Arts and Manufactures," should have been ignorant that extensive machinery had been long in use for performing a great variety of operations for the working of wood-machinery, for which patents had been taken by the late Sir Samuel Bentham in the years 1791 and 1793, and which, as they were published in the "Repertory of Arts," might doubtless be found in the Society's library. Much of the machinery therein described was actually in working order in the year 1794, particularly "apparatus for preparing all the parts of a highly finished sash frame." That machinery had been the subject of eulogium in the House of Commons, and early in this century a considerable number of these identical machines was taken to Portsmouth dockyard, and there, under Sir Samuel's management, were brought into constant use; particularly, besides various saws, "machinery for rebating, cutting dove-tails and tenons, boring and cutting mortices, and for forming mouldings." That machinery was productive of important savings in workmanship, as for instance small deal tables—1000 a year for the fleet—that before had cost 20*s.* each, were, by the use of his machinery, furnished at little more than half the price, namely, 10*s.* 6*d.* each. This machinery was seen in use for many years by the multitude of visitors to the wood mills in that dockyard; it seems unaccountable that amongst those visitors there should not have been some from the Society of Arts and Manufactures, though none of those gentlemen might have read the patents or any of the published accounts of Sir Samuel's machinery. The extensive scale on which machinery is now employed, excites the idea that it is only applicable in large manufactories; on the contrary, much of that in question is equally suitable for the working of wood for a large farm, or by the village carpenter. A considerable part of it was at first contrived for the express purpose of giving beneficial employment to untaught hands; by the use of such machinery no dexterity or skill is necessary, excepting for the putting the several component parts of joinery together, that any labourer is competent to do the greater part of the work; at the same time, as the machines are brought into action by simply turning an axis, they are capable of being advantageously connected with a steam-engine. One little engine that was in use 56 years ago would be particularly useful for working on a small scale; it was put in motion by the foot, and besides cutting straight work, the apparatus by simple means could be adjusted to cut wood at any desired angle, and at any desired depth. Ere long it may be expected that engines for working wood will form part of the ordinary stock of dealers in horticultural and agricultural machines and implements. *M. S. B.*

Successive Vegetation.—We often hear from time to time that when one crop of vegetables is destroyed or worn out, another somewhat different soon makes its appearance. I saw an example of this lately on a small scale. It is well known that many building stones imbibe water more readily than others, and that when moisture abounds in stone it is soon covered with a coat of vegetation commonly beginning with some species of Cryptogam. Stones that were used to set pots with greenhouse plants in them on, soon got covered with a green substance, probably the Chlorococcus murorum; and although often well rubbed off with sandstone and water, another crop soon made its appearance. Last summer, when the stones were pretty dry, they were painted with what painters call a stone colour; the paint certainly had the effect of preventing the green substance from making its appearance; but then another crop of vegetable, lower in the scale of existence, has appeared in abundance. *P. Mackenzie, West Plean, Stirling.*

Royal Botanic Garden Edinburgh.—It's no fair o' that cheil "Todman," to speak sae lightly o' our pra Potanic Garden thats peen the wunner o' a' braid Scotland, for by a' folks that cam frae ayont the sea. We hae a Curatar an' a Professor whilk nae garden in a' the lan' can boast o', exceping Glasgo', an' thats nae great things to blaw about; altho, our organ has peen playing a spring on its wonderments, the last three ookes, an te' haf o' thats a' lees. Theres nae garden put this that has a curater, the Duukes' man's but a gardener, and sae's a' the rest o' them. The pody "Todman" says he gat his nase flattened, faith 'gin her-nain-sell Dougall McIvor had na been thrang creashing te' muckle wheel o' te' steam-poiler, she wad hae flattened his hale pody, the ettercap creatur. Him, feuch', to crack apout our pra plants as he did, an' you to put a' his tan'tidd tale in print, shame fa' ye baith; gin ye ever come ta' Embro, tak tent an' bide up abut the new toon, an' no venture oe'r Canna mills prig, in case ye gan' awa' wie' mair holes ie' yer skin than ye hae at present. The pody "Todman" kent na a single plant by its right potanic name, sae Sandy Mactagart tellt me hisseli, an' hee's our foresman, an gaen tae a gran' place i' the sooth, to be a curatar himsell. Gin I'se be spaired i' life an' limb to come up wie sum o' oe'r farlies frae the Potanic to atorn Mr. Paxton's muckle glass house, whilke belike is no muckle gran'ner than our ain winter garden in the experimental, whilk is considered by a' canny Scotsmen wha' like dooce decent men pid at hame, an' dinna run our the world like lan'loupers an' neer-do-weels, to be ain o' the seven wunners o' the warld, i'll gae "Todman" his pakes, an' aboon a', as muckle o' my mind, gin I forgather we him, as will keep him wreetin to the *Gardeners' Kronikle*, for twa years tae come. Our Curatars a shentleman an' no gaun to be testurbed at his kail, nor pe at the pidding o' a' the "Todmans" frae the south that ever was porn. Gin he had only stapped into the experimental he wad hae got something like sence stapped into him. Man, we hae there trees stan'ing on three legs, like three legged creepies—an' we hae five or sax different kinds o' trees a' growing out o' ae' stem. Besides, we hae two deed men, made out o' stane, an' cut our by the waist, sitting in our gran' ha', an' for fear they should tak cauld there is a white sheet thrown our them ilka night, whilk I hae thocht should hae been taen awa, an' twa blue aprons put o'er them, as mair pecoming ti auld an' nople craft o' free gardeners. *A much offended an' ill-pleased person, Dougall McIvor.*

How to enlarge Vegetables and induce early Maturity.—A great increase of food might be obtained, and that of a superior kind, by systematically carrying out for a time the principle of increase. Take, for instance, a Pea; plant it in very rich ground; allow it to bear the first year half-a-dozen pods only, and let these be from the main stem, which always ripens seed first. Sow only the largest single Pea the following year, and of the produce retain three pods, sow the largest seed the next year, and retain one pod; select the largest Pea, sow it next year, and the sort will have trebled its size and weight. Ever afterwards sow the finest seed, and by these means you will get Peas, or

anything else, of a bulk of which we have at present no conception. *An Old Subscriber.* [May we be permitted to ask for some *evidence* on this subject ?]

Sweet-scented Gnaphalium.—I read a review lately, of a work entitled "El dorado" by Mr. Taylor, an American, describing the adventures of himself and others in California. In describing his journey from San Francisco to Sacramento, or Monterey, extensive arid wastes that he passed over, he says, "the Grass is quite withered, or burnt up, but the air was perfumed by a sweet-scented species of Gnaphalium!" Now, I am curious to know if any species of that genus is known in this country, possessing such desirable qualities, and if so, which is it? Whatever qualities the tribe are distinguished for, as "Immortelles," &c., they are not remarkable for their sweetness; at least, if any are, I was not aware of it. *Quercus.*

Vine Borders.—I imagine it will be found on trial, under certain conditions, that the most economical and convenient situation for the roots to ramble in is the ground-floor of the structure in which the Vines are grown. And now for the "conditions:" heat is indispensable; but it must be applied to the surface, and not under the roots; concrete in any shape is not required; neither is it requisite that the borders should rest on paving stones, supported by walls of masonry. By applying heat to the surface, this is rendered unnecessary. With me the roots penetrate through bricks and mortar, in order to obtain heat, and with heat I could lead them anywhere; therefore there need be no fear of their descending into unfavourable soil; deep and rich borders must be avoided, as must also carrion or other nostrums of the day; the natural soil of the Vine should be imitated as far as is practicable; and tepid soft water, and clear liquid manure, applied freely, when necessary. For supplying heat, leaves or tan answer very well; and if hot water or hot air is used, then all may be covered permanently with gravel, or anything most convenient, for the border will never afterwards want to be disturbed. Something similar to what I have attempted to describe has been in practice for the last 16 or 18 years; and the plan has produced fine crops every year, and at all seasons of the year; two crops of Grapes could easily be taken from the same Vines in one year; but for permanent Vines, that should not be put into practice. *G. M., Wetherby, Yorkshire.*

Vegetable Instinct.—In the course of my reading I find that there are those who maintain that there is such a thing as vegetable instinct or sensation in vegetables, and they tell us that instinct is a peculiar disposition or tendency in a living being to embrace, without deliberation or reflection, the means of self-preservation, and to perform, on particular occasions, such other actions as are required by its economy, without having any perception for what end or purpose it acts, or any idea of the utility and advantage of its own operations. Climbing plants, they state, afford a curious instance of this instinctive economy. Some of these having very slender stems cannot, like most other plants, grow of themselves in a perpendicular direction; but in order to compensate for this incapacity, Nature has given them the power of moving or twining their branches and tendrils in different ways, until they generally meet with a tree or some other body on which to climb or attach themselves; and when a tendril has laid hold of a support, it coils up and draws the stem after it. Knight, on the other hand, while treating "On the Causes which influence the direction of the Growth of Roots," says, "In all the preceding arrangements the wisdom of Nature, and the admirable simplicity of the means it employs, are conspicuously displayed, but I am wholly unable to trace the existence of anything like sensation or intellect in plants, and I therefore venture to conclude that their roots are influenced by the immediate operation and contact of surrounding bodies, and not by any degrees of sensation and passion analogous to those of animal life; and I reject the latter hypothesis, not only because it is founded upon assumption which cannot be granted, but because it is insufficient to explain the preceding phenomena, unless seedling plants be admitted to possess more extensive intellectual powers than are given to the offspring of the most acute animal. A young wild duck or partridge, when it first sees the insect upon which Nature intends it to feed, instinctively pursues and catches it, but Nature has given to the young bird an appropriate organisation. The plant, on the contrary, if it could feel and perceive the object of its wants, and will the possession of them, has still to contrive and form the organ by which these are to be approached. The writers who have contended for the existence of sensation in plants, appear to have been sensible of the preceding and other obstacles, and have all betrayed the weakness of their hypothesis in adducing a few facts only that are favourable to it, and waving wholly the investigation of others." Has anything new appeared on this subject since Knight wrote the remarks that I have just quoted? *C. Mackenzie, West Plean, Stirling.*

The Polyanthus.—This is a very charming winter flower, and particularly in places where there is little or no glass. If such plants as are showing bloom are taken up now out of the borders and potted, they will soon make a very pretty display, by being simply protected, either in a frame, cold house, or in the window of the dwelling-house, giving them all the air and light possible. Under this treatment, they will present a delightful realisation of the coming spring, during these next two months, and they will require very little care. From the circumstance of this season having been so mild, there are plenty of plants suitable for immediate potting; but to have these in all seasons, seedlings should be raised immediately the seed becomes ripe, and the plants, therefore, will mostly show flower the autumn succeeding. *Wissingham.*

Superphosphate of Lime.—Having a packet of superphosphate of lime, I am disposed to use it on Geraniums and other flowers in my conservatory; but, not knowing its effects, I should feel obliged by your informing me—Is it a good manure? what would be its effects? how to use it? and if the addition of sulphate of ammonia would improve its properties as a manure, with the relative proportion to be mixed with the superphosphate? *An Admirer of Fine Flowers.* [Perhaps some correspondent who has used the superphosphate in the manner described would favour the writer with his experience.]

Reviews.

Gardiner's Twenty Lessons on British Mosses, second series (Longmans), is one of the nicest little books for young people beginning to study botany. It contains just as much science as renders it useful, without a word to make it tedious. It furnishes beautifully dried specimens of a good many Mosses, and thus becomes a much better aid to the learner than plates of any kind, however well executed, possibly can be. The fault of the book is its supersaturation with poetical extracts, having no obvious relation to the matters with which they are connected. We observe that Mr. Gardiner undertakes to name collections of plants, for a small fee, and that he also prepares volumes of dried Ferns, Grasses, Mosses, Seaweeds, &c.

Tyso on the Anemone (Jackson and Walford). Who should teach the cultivation of plants like those who cultivate them best? Mr. Tyso's fame as a grower is known to everybody; let everybody therefore read his little pamphlet, of which the following is a sample:

"*Soil.*—The soil should be a friable loam, in which gritty particles abound. Decayed turves form an excellent basis for compost. The manure to be added should be vegetable, in preference to animal, and be incorporated with the soil, rather than deposited in a layer below the tubers.

"*Time of Planting.*—There are two seasons for planting, viz., the middle of October, and the end of January. The early vegetation of such roots as are left in the ground, would intimate that the former is the most *natural* season; and undoubtedly October planted tubers make stronger plants, throw up more flower buds, flower earlier, and when the season is favourable, mature finer blossoms than those that are planted in spring. The main drawback is, that the blossoms expand before frosts have ceased, and hence a larger amount of care and protection is requisite. A bed planted the first week in October, 1849, was in beautiful bloom the 12th of May, 1850; and on the 16th of that month, the thermometer only a few yards distant, registered 25°, which would have ruined the blossoms had they not been sheltered.

"*Planting, &c.*—Make a bed of your prepared compost in a sheltered spot in the garden, where the subsoil is pretty well drained. Three feet four inches will be found a convenient width, and at least 15 inches in depth. Protect it from heavy rains, so that it be tolerably dry when required for planting. Rake the surface level, and mark the bed in cross rows. Plant five roots in a row, which will allow six or seven inches apart. As the tubers are varied in form and size, the hand or a trowel should be used to make the holes, two inches deep, and large enough to admit the root to rest evenly on the soil; avoiding much pressure, as the limbs of the tubers are often slenderly attached to the crown, and are easily broken off.

"Anemone tubers are formed of irregular fleshy bunches, having a number of small protuberances called crowns; these crowns are distinguishable as tufted apices, or obtuse points, often a shade darker in colour than the surrounding skin. They are frequently found in clusters, near the centre, and sometimes singly at the extremities of the projecting limbs. They are easily recognised by the practised eye, but as amateurs have frequently been known to plant them upside down, some attention to this matter is needful. The base or lower part of the tuber is known by the remaining fragments of the fibrous roots of the former year, unless indeed they have been very carefully cleaned away. The direction to plant the *right side upwards* seems very trite, but is not in this case altogether superfluous."

Miscellaneous.

On the Resuscitation of Frozen Fish. By Prof. O. P. Hubbard.—For a number of years, during my residence in New Hampshire, I have received from numerous sources, the statement that fish taken in the cold of winter from our ponds and thrown out upon the ice and freezing quite hard, have been restored to their usual activity when thrown again into cold water. That they would ever have moved again if left alone is incredible; and how far and for what time a fish may be frozen and yet be restored is not shown by experiment. I have good reasons, from the character of my informers, for believing that the facts are as stated, though when repeated they are hardly credible to others; and I am much gratified in obtaining for publication the following authentic account of a satisfactory instance. "Some time in the winter of 1838 or 1839—living near a stream abounding with fish, which emptied into a pond near by—I was in the habit, daily, of catching them (as they passed down stream), by means of an eel-pot. This was so constructed as to receive and retain them without injury, if taken out soon, and on one occasion, the pot having remained longer than usual, so many were caught as nearly to fill the pot, and numbers perished from pressure or want of air. It was the custom to examine the pot in the morning. On one occasion, a severe cold morning, in January I think, I took up the pot and found a considerable number were taken. These I emptied upon the snow, which was deep and so crusted with ice as nearly or quite to bear me up. I then replaced the eel-pot in its proper bed for another draught, which took me about 20 minutes, and then gathered up my fish, exposed on the snow, into a pail or basket, and found them frozen as stiff as icicles. I carried them home to the shop, where they remained frozen, according to my recollection, for the space of an hour and a half longer, and so stiff and inflexible that they could not be bent without cracking, as did some of their tails and fins in pulling them apart when they were congealed together. I then put them into a tub of water drawn from the well, to thaw them for dressing, and I think added a small quantity of warm water that stood upon the stove, but am not certain whether it was before or after scaling them. After some little time, how long I cannot now say, I examined them to see if they were thawed sufficiently for dressing, and to my surprise, I found some of them as lively as when sporting in their native brooks. I called on others to view them, who had seen them while they were frozen. To them also it appeared almost incredible, but we were constrained to believe our own eyes and senses. I think those fish were perch that came to life after (I cannot say death, but) freezing. In the spring, I remark, we set the eel-pot with its mouth down stream, as then the fish are running from the pond up stream."—*Silliman's American Journal for July* 1850. *Annals and Magazine of Natural History.*

Rockwork.—Persons who have a fancy for a rock or Fern garden, will do well to keep it somewhere in the back-ground, and not in sight from the windows of the house or the principal parts of the lawn. It may be made very interesting if thus secluded, and be approached from the main walk of the garden, through a rustic arch, mantled with climbers, or by a kind of narrow winding passage, canopied and darkened with evergreens. Masses of rockery may even be placed fronting the chief line of walk, at some distance from the house, where a good dense screen of planting can be interposed between them and the lawn. Or they can be employed as a sort of rustic basement to a building. To grow Ferns upon them, the shade of trees, or some other objects, will be indispensable; but many rock plants prefer an open sunny situation, so that rockeries should not be entirely shaded. If accompanied with a small pool of water, having a broken rocky margin, a few of the smaller aquatics may be grown, and gold fish can be cherished. The moisture exhaled from such a piece of water would be very beneficial to many rock plants; and the jutting pieces of stone, or overhanging shrubs, would afford shelter, and privacy, and shade, to the fish. Rockeries should be formed as much as possible of natural materials. All the products of art, such as fused bricks, scoriæ, and the far more vulgar constituents with which such ornaments are often constructed about towns, are nearly if not quite incompatible with any amount of rusticity. And this last should be the distinguishing element of all rockeries. As in the material employed, so also in the mode of construction followed, rockeries should be conspicuous for a natural character. No appearance of art, and no approach to the regularity or smoothness proper to works of art, will be at all in place here. On the contrary, the surface of the whole cannot be too irregular, or too variedly indented or prominent. An additional projection must be given to some of the parts by moderate-sized bushes, or short-stemmed weeping trees. Evergreen shrubs or low trees will be particularly useful. Provision will therefore have to be made, in the placing of the stones, for planting a few shrubs, and a greater number of herbaceous rock plants in their interstices, which should be left broader or smaller according to the size of the plant that may be required in them. No rockery will ever be interesting unless well supplied with all such fittings. For ordinary practice, the materials of which a rockery, however small, is formed, should lie on their broadest or flat sides, and not be set on edge, much less be placed with their points upwards. Little deviations may occasionally be allowed, for variety; but the mass will have more appearance of solidity and strength, and be more accordant with Nature's teachings, if each piece be laid flat, with the outer edge shading a little downwards rather than upwards. A rock garden may, if its size demands it, be traversed or made more generally accessible by very narrow walks, just capable of admitting one person. These need not be of any uniform width, and should have no regular margin. They may be made of some quiet-coloured material, and not covered with dressed gravel. Any great elevation should never be sought in small rockeries. This would both be inconsistent with their breadth, and would render them too prominent and artificial. They should not be carried higher than the point at which they can be well supported and backed with a broad mass of earth and vegetation. Additional

height may sometimes be given, if desired, by excavating into a hollow the base from which they spring. An old quarry will supply the foundation of an excellent rockery, in which considerable height, relatively to the bottom, may be attained, and much of boldness. It should be seen, however, that in working it, masses of rock be merely wrenched or blasted off, in the most irregular manner, and no sawing or cutting to an even face be anywhere permitted. Extreme ruggedness of surface is what would be most characteristic in such a situation. Shrubs with trailing habits, evergreens, and a few of the less delicately branched weeping kinds, and those which assume a wild, and ragged, and picturesque character, are most congenial to rockeries. The first class, especially, includiug the Ivy, the Savin, Cotoneaster microphylla, Berberis empetrifolia, Periwinkles, common Heaths, &c., always seem in place and at home. And the more decided climbers, such as Clematis, the Hop plant, Wistaria sinensis, some of the better sorts of Bramble, the Ayrshire Roses, and several others, would, if suffered to scramble over ther bolder parts of rockeries, and duly pruned and regulated so as not to smother things of more value, be most important and engaging accessories. Grass never harmonises well with rocks, if brought into immediate contact with them. They demand the adjunct of a rougher and less polished vegetation, such as attends them in a state of nature. Common moor Heath, Whortleberry, &c., cut into sods, and laid with a broken line along the margin of rocks, and interspersed, in parts, with the dwarfest trailing evergreens, will give a beautiful rustic finish, and may be particularly valuable in connecting the rocks with any dressed Grass beyond. Everything like a perceptible or continued line (much more a curved line) must be distinctly avoided in the appropriation of such materials. They should join the Grass in the most jagged and inartificial manner. Rockeries can be made to answer one or two simple purposes, which will impart meaning and spirit to them, and prevent them from becoming the expressionless and pointless things which they usually are. Where there are raised banks between one part of a garden and another, rocks can be employed to face the more private side of them, and will contribute to their solidity, at the same time that they increase their propriety and interest. If, again, a walk be cut through a bank, rocks may be used to hold up the sides of the opening, when steep. Or where a walk travels along a narrow hollow between two banks, the slopes of the banks can be partially covered with masses of rock. In both these last cases, a miniature and imperfect imitation of a small defile will be produced, and may be made very consistent and natural. The plan will be particularly serviceable where the hollow has to be made as narrow as possible, and the banks have, consequently, to be kept pretty upright. At any rate, such an arrangement will be infinitely preferable to having mere heaps of stones, thrown together without any apparent object beyond the simple creation of the mass. *Kemp, on Small Gardens.*

New Artichokes.—Some years ago M. Cochet, of Suines, in the department of the Seine and Marne, wishing to renew his stock of Artichokes, bought some seeds in Paris, which he sowed. The first two years he merely picked out of what he raised those plants which seemed to him to be the most remarkable, and these he propagated by their eyes. Last year he obtained some splendid Artichokes, one of them being much larger than that hereafter distinguished by No. 4. On the 23d of June last, I saw these plants at M. Cochet's establishment, where I also had the opportunity of tasting them; and I may truly say that I never before saw any Artichokes with so thick a bottom, and so much flesh at the base of their scales. I obtained from M. Cochet five varieties of his Artichokes, and of these I sent to the Societé d'Horticulture two specimens, one of which I consider very fine, and the other nothing extraordinary. The following account of these two plants may perhaps be interesting to your readers. No. 4 measured three quarters of a yard round, and weighed more than 2 lbs. The first three or four rows of scales were pretty open; the scales themselves very large, thick, pointed, mucronate, or slightly spiny; some of them had on their outside and near their base a violet tinge. The interior scales were more and more violet coloured, pointed, and spiny at their apex. No. 2 measured a little more than half a yard in circumference, and weighed more than a pound. Its external scales much less open and much closer to each other, gave this Artichoke a conical appearance; in other respects it resembled the first, and like it terminated in spines at its centre. Of the other varieties No. 3 measured nearly three quarters of a yard round, and weighed a little more than a pound. Its scales were not, even in the centre, very spiny. It was not very unlike the common Artichoke. No. 1 resembled No. 4, but the first four or five rows of scales were more open, and the scales themselves less obtuse and less sloping at the top. It measured more than three quarters of a yard in circumference, and weighed exactly 2 lbs. No. 5 was a small head, with scales almost imbricate, violet and spiny only near the centre. It weighed less than half a pound, and was decidedly inferior to the preceding. It may be as well to state that these plants do not grow so high as the Laon Artichokes, their average height being about three quarters of a yard. *Jacques, formerly chief gardener at Neuilly.*

Iron and Glass Buildings.—Permit me to suggest that an exhibition of designs for *ferrivitreous* edifices (to coin a word) in the Exhibition of 1851 would be appropriate. There can, I think, be little difference of opinion as to the effect the great exhibition will have in giving impetus to the construction of buildings of a like character. I think it probable that Russia, at least, will desire to possess something like, if not more extensive than, our glass building. The Emperor intends to visit it (it is said) in person. It is not beyond the compass of possibility that a structure of glass and iron will one day exhibit to the beholder the Flora of the universe, as the great glass case will the works of art of the whole world. Perhaps, too, it will share, on the opposite side of the river, the attention, the admiration, and the wonder of the visitor to the new Houses of Parliament. Raised on lofty arches, and towering higher than any glass-iron edifice yet constructed, such a building might be appropriately reared in the locality named. Be this as it may, I am desirous to impress the builder, and English architects in glass and iron with the "great fact," that there is wide scope for the display of artistic taste, skill, and genius, in this new kind of edification. *Builder.*

Calendar of Operations.

(For the ensuing week.)

PLANT DEPARTMENT.

If our advice, given in February, with regard to striking a few cuttings of the charming little Otaheite Orange-trees, was attended to, the plants will now be set with buds, and perhaps a fruit or two may have set upon them during the season. Their flowering should be assisted by placing them in a very slight heat, as, by so doing, they will be very useful about Christmas for drawing-room decoration. A collection of dwarf Oranges in small pots is very ornamental at all times, but these are doubtless valuable at this season, when flowers are scarce. Ardisia crenulata and A. acuminata, are very much prized by us for the beauty of their berries. When there are many ornamental vases in the dwelling-rooms, to be filled with plants, things so easily grown make a very pretty variety, and help well to make out the required number. Dracæna terminalis is another useful plant for rooms, or for a warm conservatory, as its fine purpled crimson leaves are always admired; and by candlelight they are very beautiful. We also find that handsome specimens of tropical Ferns are greatly appreciated when placed in suitable vases. These are easily grown in the more shady parts of the plant-houses, where few other things would succeed; and they are really worth the small amount of attention they require.

FORCING DEPARTMENT.

Pineries.—It will be a trying task just now to manage these structures with no other heating material than fermenting litter. Every favourable opportunity should be taken to turn the linings, and add to them if required. Let them at least be protected by some kind of covering from the rain and snow; and if possible let them be entirely inclosed, that they may of themselves supply a sufficient amount of heat to do away with the necessity of keeping the pits covered during any portion of these very short days. Young Pines are frequently much drawn during winter, and the mischief is not noticed until they are taken out in the spring to be repotted or planted; and then it is that the gardener repents not having given more air, and more light, by keeping the glass clean. We have felt this ourselves, and no doubt others have done the same. If the bottom-heat is 80°, the top may be as low as 55° without the plants suffering; and particular care should be taken that no injury occurs from excessive dampness at the root from any cause. We seldom see plants suffering from being too dry during winter, unless the roots are too near a flue.

FLOWER GARDEN AND SHRUBBERIES.

The flowering of all the choicer kinds of Roses being now over, it will be well to place some light warm material, such as half decayed leaves, or sphagnum where plentiful, round their stems. Besides this, we stick in among the Tea Roses some short Yew branches to check the cold cutting winds, which do more harm in the early spring than even very severe frosts. The pruning and tying of creepers upon walls and trellises should be proceeded with. Take advantage of frosty weather, when the walks are hard, to convey fresh soil to the flower-beds; or for doing any kind of work in the flower garden and shrubbery which would damage the walks when not in a frozen state. In extensive gardens there is generally much heavy wheeling to do every winter, and no time is more favourable than during sharp frost. All plants of which any doubts are entertained as to their perfect hardiness, should have some kind of protection afforded them; but in doing this, care should be taken not to go into the opposite extreme.

HARDY FRUIT GARDEN.

If it be intended to graft any more young Apples or Pears, the scions should be gathered before the trees are pruned, and laid into the moist soil behind a north wall till they are required. They should of course be selected from the varieties which are found useful and best suited to the local peculiarities of soil or climate. Above all things, let the scions be taken from trees which are perfectly free from disease, and are not infested with the American blight or other similar pests, which are liable to be thus communicated to the young trees. Cuttings of Gooseberries and Currants should also be planted in nursery rows. Before the cuttings are inserted, all the embryo buds should be carefully picked away from the part which is to be placed in the ground. Proceed actively with the retraining of the fruit trees against the walls; and as soon as any portion is completed, let the covering be immediately applied; for it is not less necessary for the purposes of shade during the next two months, than it will be afterwards as a shelter.

FLORISTS' FLOWERS.

After the frosts we have lately had, it will be absolutely necessary to go over all beds where Pinks, Pansies, or Carnations have been recently planted. If they have not had time to establish themselves, most likely they will be loosened by the action of the frost; and if neglected till severe weather again takes place, they undoubtedly will be seriously injured. We prefer placing a small quantity of any soil round each plant, previous to fastening them again. Seedling Auriculas and Polyanthuses also should be carefully looked to in this particular; strong two years' seedlings of the former will often flower at this time of the year. On the expansion of the first pip, if they have no pretensions to beauty, or excellency of any kind, they may be pulled up; but if there is any sign or chance of amendment (as appearances are deceitful at this time of the year), pull the buds off, in order to give the plant a chance of strengthening itself, and producing a better truss the ensuing season.

State of the Weather near London, for the week ending Dec. 12, 1850, as observed at the Horticultural Garden, Chiswick.

Dec.	Moon's Age	Barometer. Max.	Barometer. Min.	Temperature. Of the Air. Max.	Of the Air. Min.	Of the Air. Mean	Of the Earth. 1 foot deep.	Of the Earth. 2 feet deep.	Wind.	Rain.
Friday.. 6	2	30.377	30.345	45	32	38.5	43	43½	S.W.	.00
Satur.. 7	3	30.328	30.323	46	26	36.0	43	44	E.	.00
Sunday . 8	4	30.346	30.322	37	28	32.5	42	44	S.E.	.00
Monday 9	5	30.319	30.293	38	29	33.5	42	43	N.E.	.00
Tues. .. 10	6	30.240	30.146	42	28	35.0	41	43½	S.	.00
Wed. .. 11	D	30.014	29.926	45	40	42.5	41	43	S.W.	.00
Thurs .. 12	8	29.944	29.932	50	30	40.0	41½	43	S.W.	.02
Average....		30.224	30.183	43.3	30.4	36.8	41.9	43.4		0.02

Dec. 6—Foggy; fine; slight fog; foggy.
— 7—Foggy; fine; dense fog.
— 8—Foggy throughout; dense fog at night; frosty.
— 9—Foggy, with slight frost; cold, with dense fog at noon; not so cold, with less fog at night.
— 10—Foggy throughout.
— 11—Foggy; overcast; drizzly.
— 12—Foggy with rain; cloudy and fine.
Mean temperature of the week 4 deg. below the average.

State of the Weather at Chiswick during the last 24 years, for the ensuing week, ending Dec. 14, 1850.

Dec.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds. N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 15	46.6	36.0	41.3	13	0.50 in.	1	2	1	3	7	5	3	1
Mon. 16	46.5	36.4	41.5	13	0.68	1	3	2	2	4	4	4	5
Tues 17	46.8	35.1	40.9	13	0.37	3	2	1	2	3	7	4	2
Wed. 18	45.6	35.6	40.1	11	0.33	2	6	1	1	4	6	5	1
Thurs. 19	45.9	36.9	41.4	12	0.38	1	4	2	1	3	8	3	1
Friday 20	44.5	34.4	39.4	9	0.75	1	6	1	2	8	4	1	2
Satur. 21	43.2	34.0	38.6	8	0.20	1	6	2	1	2	7	3	3

The highest temperature during the above period occurred on the 17th, 1827 and 1832—therm. 57 deg.; and the lowest on the 15th, 1846—therm. 13 deg.

Notices to Correspondents.

Books: *G H.* "James's Gardening."

Carbonic Acid: *C A A L.* Plants will bear 5 per cent. of this air, in addition to what is natural; but they then require exposure to very bright light. Probably 1 or 2 per cent. is as much as it is safe to use. There is little more carbonic acid in a well ventilated sitting-room, with a chimney to it, than in the open air. Joyce's stove may be used in a greenhouse: but its action is so feeble that you will derive little benefit from it. As for carbonic acid, it evolves it in large quantities, as you may easily see if you hold a piece of lighted paper at the mouth of the chimney; the flame is immediately extinguished if there is much combustion; and without much combustion there can be little heat.

Conifers: *A Z.* Araucarias and Deodars seem indifferent to soil. We see them growing well in thin heathy soil on a burning gravel, and in the deep heavy London clay. They will probably be found to prefer a somewhat sandy soil. Give them no manure; but as much rotten leaf-mould as you like.

Fruit-room: *J A.* 40° is ample.

Insects: *George.* The leaves sent are covered with Oak spangles, some account of which will be found in our former volumes.

Luculia. *Inquirer.* Give it a *little* more heat, and it will flower with you. It blossoms beautifully, planted out in the bed of a conservatory; but, when in a pot, it likes a little more warmth than that of an ordinary greenhouse.‡

Names of Fruits: *W S.* The Chaumontel is in some cases ripe at this time; but the Jargonelle never keeps till now. Of the varieties you sent, the two not named were unknown.‖—*W S.* 1, Scarlet Pearmain; 2, 3, Dutch Mignonne; 8, King of the Pippins; 9, Reinette du Canada; 10, Scarlet Nonpareil; 11, Easter Pippin or French Crab; 11, Rhode Island Greening.‖—*J B Warren.* Napoléon.‖—*W P, St. Helen's.* Minchall Crab.‖

Names of Plants: *R H, Hall.* It is Geissomeria longiflora.—*Erzeroum.* 84, Hyoscyamus niger; 85, Hyosc. pinnatifidus.—*D S.* It is Victoria Regia.‡—*Inquirer.* Cacalia pinnata.‡—*A Well Wisher.* Celandine is Chelidonium majus; in Lindley's "Medical and Œconomical Botany" it is described as being "strong smelling, acrid, narcotic, emetic, poisonous. The juice used against warts and opacities of the cornea."—*W Parr.* Is it different from Miltonia Russelliana?

Pruning Fruit Trees: *C M S.* We believe there is no better book on the *practice* than the late Mr. Lindley's "Guide to the Orchard," &c. As to the theory of the matter, you will do well to consult D'Albret *Cours théorique et pratique de la taille des Arbres Fruitiers*, edit. 6, 1846.

Strawberries: *J H.* Cuthill's Black Prince is the earliest; if you want large fruit, then plant Keens' Seedling.‡

Trees: *Greenhorn.* Hardy trees will bear to have their roots frozen.

Misc. *A Subscriber's* suggestion will be taken into consideration, but we fear it is not practicable.—*Dymvio.* In order to have Grapes ripe in June, commence forcing about the middle of this month. Figs may be struck from cuttings, in heat, in January.‖

SEEDLING FLOWERS.

Chinese Primulas: *Cymro.* Being unprotected in any way, your blooms were quite spoiled in coming through the post.

BY HER MAJESTY'S ROYAL LETTERS PATENT.

PATENT HOTHOUSE WORKS, KING'S ROAD, CHELSEA.

EDENCH invites the attention of Gentlemen about to erect Hothouses, &c., to the vast superiority in every respect possessed by his PATENT HOUSES, which he will warrant superior in every respect to any others. Good Glass from 16 to 21 oz. per foot, 1 foot wide, 3 feet long, furnished, and the Houses, when completed, charged from 1*s.* 3*d.* to 1*s.* 6*d.* per superficial foot, according to size and quantity; on one principle the roof is formed without wood or putty, and on another principle with wood rafters, and the glass put in with putty. Patent Sashes, requiring no paint, from 7*d.* to 9*d.* per foot. HEATING BY HOT WATER.

THE LONDON MANURE COMPANY beg to offer as under:
LONDON MANURE COMPANY'S WHEAT MANURE FOR AUTUMN SOWING.
CONCENTRATED URATE. SUPERPHOSPHATE OF LIME.
PERUVIAN GUANO. SULPHATE OF AMMONIA.
FISHERY AND AGRICULTURAL SALT, GYPSUM, and every artificial Manure; also a constant supply of English and Foreign LINSEED CAKE of the best quality.
The London Manure Company will guarantee the Guano they supply to be free from the slightest adulteration.
Bridge-street, Blackfriars. EDWARD PURSER, Secretary.

MANURES.—The following Manures are manufactured at Mr. LAWES'S Factory, Deptford Creek:

Clover Manure, per ton	£11	0	0
Turnip Manure, do.	7	0	0
Superphosphate of Lime	7	0	0
Sulphuric Acid and Coprolites	5	0	0

Office, 69, King William-street, City, London.
N.B. Peruvian Guano, guaranteed to contain 16 per cent. of Ammonia, 9*l.* 15*s.* per ton; and for 5 tons or more, 9*l.* 10*s.* per ton, in dock. Sulphate of Ammonia, &c.

FURZE MACHINE.

COTTAM AND HALLEN have now brought to perfection FIRCHILD'S PATENT FURZE CUTTER AND BRUISER, for the preparing of Furze for Feeding Horses and Cattle. The Machine may be worked by horse-power, and will cut and bruise at the rate of 20 bushels per hour with one horse, a man, and boy; with two horses, 40 bushels per hour; if a steam-engine, in proportion to the power applied. The Machine is now on view at COTTAM AND HALLEN'S, No. 2, Winsley-street, Oxford-street, where every other description of Agricultural Machinery may be seen.

ARTIFICIAL MANURES.—PRIVATE INSTRUCTIONS in Chemical Analysis and the most approved methods of making Artificial Manures are given by J. C. NESBIT, F.C.S., F.G.S., at the Laboratories, Scientific School, 38, Kennington-lane, London.
Analyses of Soils, Manures, Minerals, &c., performed as usual, on moderate terms.

IMPORTANT NOTICE.—EMIGRANTS are informed MARY WEDLAKE and CO. have from time to time supplied the first settlers to Swan River, Port Natal, and all the Australian Colonies, with AGRICULTURAL IMPLEMENTS; they beg an inspection of their stock, at 118, Fenchurch-street, near the Blackwall Railway. N.B. Persons becoming purchasers may have the benefit of an introduction to carties known to the firm at either of the above-named places.

The Agricultural Gazette.

SATURDAY, DECEMBER 14, 1850.

MEETINGS FOR THE TWO FOLLOWING WEEKS.
WEDNESDAY, Dec. 18—Agricultural Society of England.
THURSDAY, — 19—Agricultural Imp. Society of Ireland.
THURSDAY, — 26—Agricultural Imp. Society of Ireland.

A LARGE portion of our space is this day occupied with reports of the great CATTLE SHOWS of the past week; and, having obtained measurements of all the cattle exhibited at each, from which some useful inferences may be drawn, we shall devote our leading column to a similar purpose. It is not so much the relative merits of the Smithfield and Midland Counties' clubs—though that is no doubt a point of some interest—as the relative merits of the different breeds of cattle, which each has exhibited, that we wish to bring out. The prize lists, in some measure, indicate this point, more especially in the case of the Smithfield club, where all breeds compete with one another, the classes being according to age; not so much in the case of the Birmingham show, where all ages compete with one another, the Classes being according to breed. We retain the opinion expressed on a previous occasion that the former is the more useful method of classification for a show of fat stock, and that the positive unfairness to an exhibitor of pitting his three years old ox against animals of the same breed four and five years of age, is at least as unfortunate a result of the one mode of arrangement, as the *chance* of unfairness which he incurs under the other, by the partialities or prejudices of the judges, when his animal is pitted against others of the same age, but of different breeds. On this point, however, we need not now insist; it is, perhaps, well that each Association should, for individuality's sake, retain its peculiar mode of classification, so that exhibitors may choose which kind of risk they shall incur. Certainly, the result of this year's shows has not in any degree determined the relative popularity of the two, for both Societies have prospered far beyond the experience of former years.

The prizes of the Smithfield Club were awarded as follows:—Three *first* prizes, besides medals; five *second* prizes; two *third* prizes, and the gold medal for the best cow in the yard, were won by the short-horns: two *first* prizes, besides medals; one *second*, and one *third* prize, with the gold medal for the best ox in the yard, were received by the Herefords; two, *first*, and one *second* prizes were awarded to the Devons; and one *first* prize was gained by one of the Scotch breeds. In all, it appears that 160*l.*, besides medals, were awarded to short-horns; 65*l.* to Herefords, 50*l.* to Devon, and 10*l.* to one of the Scotch breeds; but, then, excluding extra stock, 75 short-horns were shown, and only 26 Herefords, and 29 Devons. The prizes awarded would, therefore, average 2*l.* 2*s.* per head for the short-horns; 2*l.* 8*s.* for the Herefords, and 1*l.* 15*s.* for the Devons—thus somewhat altering the order of merit in which the breeds might at first appear to have stood. The following table gives the dimensions and weight of the prize animals according to Carey's cattle guage, which is understood to indicate weights below the truth in the case of very fat cattle.

DIMENSIONS AND WEIGHTS OF THE PRIZE ANIMALS.—* GOLD MEDALS.

KINDS OF STOCK.		SHORT-HORNS.						HEREFORDS.						DEVONS.						SCOTCH.						CROSS-BREEDS.					
		Smithfield.			Birmingham.			Smithfield.			Birmingham.			Smithfield.			Birmingham.			Smithfield.			Birmingham.			Smithfield.			Birmingham.		
	Prize.	Length.	Girth.	Weight.	Length.	Girth.	Weight.	Length.	Girth.	Weight.	Length.	Girth.	Weight.	Length.	Girth.	Weight.	Length.	Girth.	Weight.	Length.	Girth.	Weight.	Length.	Girth.	Weight.	Length.	Girth.	Weight.	Length.	Girth.	Weight.
		ft.in	ft.in	st.	ft.in	ft.in	st.	ft.in	ft.in	st.	ft.in	ft.in	st.	ft.in	ft.in	st.	ft.in	ft.in	st.	ft.in	ft.in	st.	ft.in	ft.in	st.	ft.in	ft.in	st.	ft.in	ft.in	st.
Oxen, 4 to 5 years old	1st	...	...	...	...	...	...	...	...	...	5 6	8 11	105	5 7	9 2	113	5 3	7 9	75	...	...	...	4 9	7 3	60	...	...	...	...	...	...
Do. do.	2d	...	...	...	5 4	8 7	94	5 6	8 6	97	...	...	...	...	...	...	5 1	8 0	78	...	...	...	...	...	...	...	...	...	6 0	8 3	81
Do. do.	3d	...	...	...	...	...	...	5 0	8 10	93	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	4 10	7 4	62
Oxen, 3 to 4 years old	1st	5 6	8 9	101	5 4	8 4	89	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Do. do.	2d	5 9	8 10	107	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	5 2	7 6	70	...	...	...	...	...	...
Do. do.	3d	5 0	8 8	90	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Oxen, 2 to 3 years old	1st	...	...	...	...	...	..	5* 6	8 9	101																					
Do. do.	2d	5 9	8 9	105	...	...	...	...	...	...	5* 5	8 6	95																		
Do. do.	3d	5 4	8 4	89	...	...	...	...	...	...	4 11	7 10	72																		
Oxen, any age, under 90 stone	1st	...	...	...	...	...	...	5 8	8 6	98																					
Do. do. do.	2d	5 0	8 4	83																											
Oxen, any age, under 80 stone	1st	...	...	...	...	...	...	...	...	...	...	...	...	5 6	8 5	94															
Do. do. do.	2d	...	...	...	...	...	...	...	...	...	...	...	...	5 3	7 7	72															
Scotch Oxen	1st	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	5 6	8 6	95									
Cows over 5 years old	1st	6* 0	8 4	100	5 5	8 3	88	...	...	...	5 3	8 10	98	...	...	...	5 0	7 3	63	...	...	...	...	...	...	...	...	...	5 0	8 1	78
Do. do.	2d	6 0	9 2	120	5 0	8 2	79	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	5 3	7 11	79
Cows under 5 years old	1st	6 0	8 4	99	5 2	7 11	78	...	...	...	5 1	7 9	73	...	...	...	5 0	7 2	61	...	...	...	...	...	...	...	...	...	5 1	8 0	78
Do. do.	2d	5 6	8 3	90	5 0	7 7	69	...	...	...	4 7	7 4	59	...	...	...	4 9	6 10	53	...	...	..	...	...	...	...	...	...	5 3	7 9	75
																													4 9	7 0	56

There are one or two other points which this table teaches: thus, as regards the Birmingham show, it appears that in the case of short-horns, one of the younger oxen carried off the first prize in its class; in the Herefords the first was carried off by one of the older, and the second by one of the younger oxen; and in the Devons both the first and second were won by animals of full age—thus keeping true to what is generally understood to be the order of the breeds as regards early attainment of maturity. We learn from it, too, that the classification of cattle according to weight which obtains in certain cases at Smithfield, cannot be well carried out—the first prizes in both those cases being carried off by animals which, according to the measurements and the terms in which the classes are described, would appear to have been disqualified for competition. And lastly, on comparing it with the next tables, which give the average weights and dimensions of the different classes at each show,* we learn the effect of mere bulk and weight as compared with symmetry on the minds of the judges. Thus, as any one who will examine these tables may find for himself, it appears that at Smithfield one *first* prize, four *second* prizes, and two *third* prizes, were awarded to animals whose weight was *below* the average of their respective classes; and in three different classes the first prize was awarded to animals of less weight than those which carried off the second; and it may, perhaps, interest some of our readers to examine these tables in search of further proof which they will readily find, and which any one who may have witnessed the exhibition itself, whether at Birmingham or London, must at once have seen that *mere* size and weight is not regarded a property of any value in an enlightened judgment of the merits of our different breeds of cattle.

There are many other particulars which may be drawn from these tables; as, for instance, when numbers were shown sufficient to give trustworthy averages, the relative rapidity of growth in the different breeds, the average increase of weight in the 3d, 4th, and 5th years of the short-horned, Hereford, and Devon breeds respectively. And at p. 137 of our this year's volume, an attempt will be found to

* The cattle of the Midland Counties' Show had to be rearranged according to the Smithfield mode, which was done from the particulars of age, &c., given in the Catalogue.

ANALYSIS OF THE SMITHFIELD CLUB CATTLE SHOW—DECEMBER, 1850.

KINDS OF STOCK.	SHORT-HORNS.				HEREFORDS.				DEVONS.				SCOTCH.				CROSS BREEDS.			
	No.	Length.	Girth.	Weight.	No.	Length.	Girth.	Weight.	No.	Length.	Girth.	Weight.	No.	Length.	Girth.	Weight	No.	Length.	Girth.	Weight.
		ft. in.	ft. in.	stones.		ft. in.	ft. in.	stones.		ft. in.	ft. in.	stones.		ft. in.	ft. in.	stones.		ft. in.	ft. in.	stones.
OXEN between 4 and 5 years old	8	5 10	8 9	107	5	5 8	8 10	106	2	5 6	8 9	101	0	...	...	...	2	6 0	9 4	116
„ „ 3 and 4 „	12	5 8	8 8	102	3	5 8	8 3	92	3	5 6	8 1	86	0	...	...	...	3	5 8	8 6	100
„ „ 2 and 3 „	15	5 4	8 0	82	2	5 5	8 1	85	2	5 3	7 7	72	0	...	...	...	1	5 2	7 4	66
„ any age, between 80 & 90 st.	3	5 4	8 2	86	9	5 6	8 3	90	8	5 2	7 10	76	0	...	...	...	1	6 0	8 0	92
„ „ under 80 stone ...	0	...	...	...	3	5 2	7 4	67	7	5 2	7 9	75	1	5 2	7 0	61	2	5 3	8 0	80
of Scotch, Welsh, or Irish breeds	...	...	...	...	...	...	...	...	...	...	...	...	9	5 3	7 10	77	...	...	...	...
Cows over 5 years old	27	5 8	8 3	92	2	5 5	8 1	85	7	5 5	7 11	81	0	...	...	...	0	...	...	...
„ under 5 „	10	5 9	8 3	94	2	5 6	8 3	90	0	...	...	...	0	...	...	...	7	5 3	8 1	82

ANALYSIS OF THE MIDLAND COUNTIES CATTLE SHOW—DECEMBER, 1850.

KINDS OF STOCK.	SHORT-HORNS.				HEREFORDS.				DEVONS.				SCOTCH.				CROSS BREEDS.			
	No.	Length.	Girth.	Weight.	No.	Length.	Girth.	Weight.	No.	Length.	Girth.	Weight.	No.	Length.	Girth.	Weight.	No.	Length.	Girth.	Weight.
		ft. in.	ft. in.	stones.		ft. in.	ft. in.	stones.		ft. in.	ft. in.	stones.		ft. in.	ft. in.	stones.		ft. in.	ft. in.	stones.
OXEN over 4 years old	4	5 5	8 8	97	8	5 4	8 7	94	4	5 2	8 1	81	6	5 0	7 0	59	4	5 4	8 3	87
„ between 3 and 4 years old	2	5 3	8 3	86	4	5 5	8 5	92	1	5 0	7 9	72	1	5 2	7 6	70	2	5 1	7 7	70
„ „ 2 and 3 „	3	5 0	7 10	74	4	4 11	7 7	68	0	...	...	...	0	...	...	...	0	...	...	...
Cows over 5 years old	3	5 4	8 4	88	8	5 0	8 0	77	1	5 0	7 3	63	0	...	...	...	5	5 1	7 7	70
„ under 5 years old ...	15	5 2	7 11	78	8	4 11	7 6	67	2	4 10	7 0	57	0	...	...	...	13	5 2	7 11	78

bring a similar set of figures to bear upon this point. And those who choose to subject the figures given in these tables to a similar analysis, will find that they will yield very similar results. The short-horns appear to attain an earlier maturity than the others; their growth is more rapid at an earlier stage, and less rapid at a later stage, than that of the Herefords or Devons; but we refrain from pushing our criticism any farther at present. The tables will enable any one who may desire it, to do so for himself.

The relative merits of the two exhibitions will also appear in these figures, as any one may see; but we need not carry the examination into this particular. The old Metropolitan Society has, of course, far higher *prestige* on its side than the young Country Association, and its superiority for many years to come is to be expected. We think both Mr. Gibbs, of the Smithfield Club, and Mr. Wright, of the Midland Counties Association, have ample claims on our thanks, and ample grounds for self-gratulation, in the success of their respective efforts.

FEEDING ON OPEN BOARDED FLOORS.

Experience ought to make us all wise. In any case it is useful, so I communicate mine on the above subject. In my last communication I said my arrangements as regards the boarding were—

	Wide. Inches.	Thick. Inches.	Opening. Inches.
For bullocks	3	2	2
For sheep and pigs	3	1½	1½
For small down lambs and pigs ...	3	1½	1

Those arrangements are still satisfactory, except for heavy bullocks; when they arrive at 700 to 1000 lbs. butcher's weight, the boards are not thick or strong enough. They have occasionally broken one, without injury, however, to the animal. I also find that they wear the edges of the boards rounding; I would, therefore, recommend straight grained hard wood, 4 inches wide, 3 inches thick, the openings to be 17 eighths, or full 2 inches. My original boards still answer, but it is better to make all safe. Nothing seems to answer better as a bearer than 4½ inch brick-work with a lentil, at intervals of about 5 feet. The pits under the bullocks should be at least 4 feet deep, otherwise they get full before you want the manure. The manure should never be allowed to stand level with the boards; it softens and weakens them. If the bullocks are tied up, the manure will want levelling occasionally. Pig and sheep pits need not be more than 2 feet deep; they will scarcely fill in six months.

There is nothing offensive in the beef pudding, for if I do not use fixers, still there is no disagreeable smell, *until you empty it*. This is more than I can say for the pigs. Of course I recommend and use fixers.

I have just got a ton of Irish peat charcoal kindly sent me by a friend of the cause; no doubt it will be useful, if not too expensive. I am also trying Lawes's dissolved coprolites. I have used gypsum with advantage, but am more particularly attached to common salt, which I have used extensively. We buy it in the neighbourhood at 30*s*. per ton. I believe it gives us in decomposition muriate of ammonia and carbonate of soda, both most valuable salts. It is certainly a great purifier. By the bye, I always give my bullocks and other animals salt, about 2 oz. per diem; sheep and calves in proportion. It loosens their skins.

I am perfectly satisfied that the open floor system answers well, and is a great boon to a heavy land farmer, who wishes to keep much stock and not have to buy straw. There is an immense economy in labour; the animals are always clean without any sweeping of the floors, and they are very healthy. I really think I shall soon convert even my friend the Rev. G. Wilkins. It is such a compost to take out—a nice lot of pudding without the intervention of a dunghill or second carting, and apply it forthwith to the growth of plants; they are all truly grateful for it. I have at present on boards:

200 pigs—one man at 9*s*. per week attends to them.
30 bullocks—one lad at 3*s*. 6*d*. per week attends to them.
10 cows } one lad at 3*s*. per week attends to them, and par-
150 sheep } tially by bailiff.
60 calves—one boy at 4*s*. per week.
Another lad at 3*s*. 6*d*. cuts Turnips half the day, and grooms the bullocks and cows every morning.

It is quite clear that if these animals were to be littered with straw, much more labour would be required, and more manure to move.

Slated roofs do not answer, unless boarded under the rafters. Mine are so done. Slates conduct heat to the animals in summer, and from them in winter.

Animals on boarded floors, during winter, require to be kept warm. I pack them rather close; if Herefords two in a box, 9 feet by 8. I mean clear of the feeding trough and passage. Smaller polled Scots three in a box; in fact, about 30 to 40 superficial feet to each bullock; 8 to 10 feet for sheep and pigs. Beware and have good supports for fat hogs. A score of them in a corner are no light weight. Taking the balance of advantage, I give my vote to open-boarded floors. Some of my cows have calved on them, and done well. Still I am not advocating them for breeding animals. Young pigs soon fat on them; they cannot run about. Heavy pigs get capped hocks occasionally. Perhaps I may revert to the subject when time permits. My straw is now set free for cooking, mixed with meal or ground cake into a pudding, and given, as Mr. M'Culloch does, to bullocks, &c., eating Turnips. *J. J. Mechi, Nov.* 16.

Home Correspondence.

Inclination of Drains.—A late correspondent of the *Gardeners' Chronicle* inquires what is the smallest declivity admissible? I am enabled to tell him that I succeeded in the perfect drainage, 7 years ago, of a 9 acre field of extremely flat clay-land, with a declivity of ⅛ of an inch to each 4 yards (or length of the parallel level rule). It was, of course, conducted with the greatest care and accuracy, and the constant application of the levels. The levels of the surface were first taken. The depths of the main row below the surface of the ground, at each 40 yards, were calculated to test the accuracy of the execution. A bit of wood ⅛ inch thick being nailed on the edge of the "long rule" at the *lower* end, the spirit level, laid on the "rule" in the bottom of the drain as each stretch was cleared out, indicated at once the accuracy of the incline. That of the small drains, 18 feet apart, was executed at the same rate and in the same manner, and the drainage, as I have said, is perfect. The material was horse-shoe tile on soles, covered with 4 inches of small broken stones blinded with a slight covering of fallen Oak leaves, over which 4 inches of the stiffest of the soil was shovelled in, levelled, broken fine, and trodden by the man working forwards. These operations being done quickly and consecutively, the remainder of the earth was at leisure returned in successive layers of 8 or 10 inches slightly trodden. *J. S. H.*

Liquid Manure.—Your remarks in a recent *Gazette*, in reference to the prevailing epidemic of liquid manure, anticipated similar observations which we had contemplated offering to the notice of your readers from week to week. The notions promulgated on this subject, and the enormous expense incurred in some instances within our knowledge, are almost as mischievous as the waste in which they originated. It does not follow, from some careless farmers having allowed the fluid from their yards to poison their ponds, or run to waste in ditches, that it is either necessary or profitable to form conduits to expensive tanks, and to convey them by expensive means to the fields. In the course of a journey some months ago a huge brick tower, apparently about 60 feet high, arrested our attention; and on inquiry we found it was a portion of farm buildings on which a great outlay was going on. We could not conceive to what agricultural purposes such a structure could be applicable, and accordingly went to gratify our curiosity. We found abundance of accommodation of stock of all descriptions; but, fortunately, no stock in them, though at the period of the year in which such buildings are usually full, for cattle must have been thoroughly starved from the currents of wind which penetrated in all directions from which there was very insufficient shelter. Matters were so contrived that, instead of permitting any absorption of the fluids made by the animals, they were conducted to large tanks. From these the contents were pumped by a steam-engine into a large iron reservoir, placed on the top of the brick tower, from which we were informed it was to be conveyed by pipes over the estate. The quantity of machinery involved in the collection and hoisting to the reservoir was perfectly perplexing. We observed to the bailiff, we presumed there was a resident engineer on the establishment, and he replied there was generally one about. We were assured the owner was a very rich man, but that he did not personally interest himself much about farming. We fancied that if one year's interest on the outlay we saw had been applied to converting the stalls into boxes, and inclosing them, these fluids would have become infinitely more productive than they will ever be practically made with all this outlay. What can be more simple, effective, and economical than the box system, whether as respects feeding or manuring, so long as the excretæ of animals shall be devoted to the latter purpose? Everything is preserved in intimate union, and removed without any intermediate conduits, tanks, or machinery, direct to the field when required, or to a heap, to be covered with earth till it is required. We consider the crops thus obtain their liquid manure in the best form possible; for by means of the moisture in the land, the solution is gradual, and a moderate supply of food is thus provided to the roots of plants for a long continuance. We cannot too strongly urge forming the heaps when the manure is not immediately wanted for the land in a triangular shape, to facilitate the entire coating of them with earth as soon as found; for we find that materially checks, if it do not actually stop fermentation. We have just carted a heap that was put together after we had finished Turnip sowing in June, and which was carefully covered; and a short depth from the surface it appeared exactly in the same state as when removed from the boxes. We are quite aware that different opinions exist as to the value of fermented and decomposed manure, as compared with that which has been decomposed prior to its deposit in the land. We apprehend these doubts can have arisen only with reference to the immediate influence on the particular crop; roots for instance which feed heartily on carbonaceous food; but surely these doubts have no foundation when the wants of the succeeding crops in the rotation are borne in mind, and which require all the elements of nutrition which are disengaged in the process of decomposition, and which we now learn from the interesting experiments of Professor Way are appropriated by the soil when disengaged within it, and these safely detained. This discovery removes the objections previously held to autumnal manuring for the spring crops; and as it would seem nothing would be thereby lost, this course would be judicious, inasmuch as the intermediate decomposition would render the manure applicable to the root crop more readily available—without any resulting loss of elements which supply food to the succeeding crops. *C. L., Cirencester, Dec.* 3.

Manure.—Fresh manure may be preferable in some instances, for dressing land, in comparison to that which has been fermented in the dung heap. But how is it possible, where a great extent of arable requires immediate manuring, and ploughing in for a crop, to use nothing but soil taken direct from the stables or cow-sheds? Let us imagine a Wheat stubble of some 30 acres, ready to receive muck over its whole surface, preparatory to being turned over, and converted into a fine tilth for the reception of seed; how could any farmer keeping the largest stock have sufficient fresh manure to cover such an extent? requiring 700 or 800 loads to do it properly. Great attention is necessary in making a manure heap, and by a little foresight many of the valuable properties of dung may be preserved. On every holding, whether large or small, road-scrapings, sand, charred materials, and ashes, should be collected in all seasons, and when the cattle sheds and buildings are cleaned out, the tops of the refuse should be covered 6 inches deep with the dry stuff, to prevent the escape of valuable plant food, which goes off during fermentation. Whenever an additional supply is received from the animals fatting, it should be smothered in the same manner. A tank should be built near at hand to catch the liquid, which may be poured upon the heaps three or four days before carting it on to the land. In this way manure might be much improved, without any great increase of labour. Economy in farming must be the order of the day. Ingenuity, contrivance, and industry should be called in, instead of expensive buildings, which swallow up the profits of many years. Agriculturists must gradually feel their way, and not jump at conclusions, without experimenting first on a small scale. A man may be over-housed, and a farmer ruined by costly out-houses, and new inventions. *Falcon.*

Smithfield Market.—The evils connected with Smithfield market are many and various, and sufficient in themselves to condemn the place, as a school for every species of profligacy and vice—apart from the brutal usage of the poor animals doomed to provide food for the metropolis. To youths it offers a dangerous excitement; they experience pleasure in witnessing the violent exertions of the drovers to keep their flocks together, not by gentle and kind treatment, but by curses loud and deep, followed by blows upon the bodies of the unfortunate beasts, whose strenuous efforts to escape the bludgeons of their ferocious torturers afford amusement to the ignorant and uneducated, many of whom, mere children, do not lose sight of their victims till they fall under the butcher's knife. The repetition of such sights can only harden the feelings of the young, and accustom them to scenes of barbarity. Can anything be more disgusting, or tend more to demoralise the lower orders, than the common occurrences which take place in the neighbourhood of Smithfield market? Worthy persons expatiate upon the necessity of converting heathen nations, and the duty incumbent upon a Christian country to send missionaries to our possessions abroad. But, really, if we look at home, we shall find we require as much assistance and instruction as the most benighted quarters of the globe. To prove the truth of this assertion, let any one visit Smithfield, at stated times, when business is going on, and he will be horrified to witness the rioting, drunkenness, and debauchery prevailing; to the destruction of every right principle, and to the everlasting disgrace of the richest city in the world, the capital of Christianity. To make matters worse, there is no necessity for continuing this Pandemonium, but its removal to a more salubrious and open locality would be a gain to the community at large in point of health, money, and common decency. No wonder salesmen cannot afford to give farmers a fair price for stock driven into Smithfield market, when the casualties are so great, many animals being injured after entering the streets of London. Neither can we be surprised at the difference in value, between meat sold in the carcase, and that retailed in the shops, when we recollect the bruises the sheep and oxen receive before they reach the slaughter-house. Smithfield should, and must be erased from the map of London, before many months elapse, for the following reasons: It causes the destruction of much valuable food; it promotes disease, by encouraging the sale of bad meat; it depreciates the value of farming stock, and is opposed to the golden rule, "The merciful man is merciful to his beast." *Falcon.*

Societies.

SHOW OF THE SMITHFIELD FAT CATTLE CLUB.

The pleasure is sincere, and the satisfaction unmingled with which we make a yearly notice of the above-named exhibition of fat animals, that has now been established for half a century, and which has most unquestionably proved a very powerful stimulus in advancing the animal branch of rural economy. It has been most justly observed, that nearly all improvements in the advancing progress of the human race have proceeded from congregations of men, that were temporary or permanent, where traffic and freedom exert their legitimate influence in producing the mild

tone of manners, and in dispelling the boastful air of superiority, and the arrogance of conceit. The footing of equality makes known the mutual possessions and wants which attend every stage and condition of existence, and produces the interchange and adoption, which promote the mutual benefit. It also tends very powerfully to remove the animosity of rival classes, and lays open the mutual dependence and reciprocal affection of every grade of the community. The towns are the stimulus and support of every practical art—the two branches of commerce and agriculture must wax and wane together—it cannot be well with the one, and ill with the other, nor can either be flourishing and the other retrograding. Commerce being the market of agricultural produce, must of necessity be thriving, in order to stimulate the cultivation of the land, in order to supply its wants. Knowledge acquired at such general exhibitions is not worn out by use, as are clothes or material substances — but is rather augmented and perfected, and is corrected by passing through the minds of millions. The elements being made acceptable to all, will be more thoroughly examined, and more effectually developed in the consequences, and receive that ductile and plastic quality which the action of minds constantly moulding them to their own purposes can alone bestow.

These remarks apply with much force to the present exhibition, which brings together practitioners in many arts, and the votaries of many callings, and where they can indulge their curiosity in numberless observations, and obtain ample materials for reflection. General prejudices are thus removed, which have separated nations and people much more effectually than the broadest rivers, and the loftiest mountains, which nature has formed. Intercourse is one of the most powerful links that cement society.

The show of this year was opened on the usual day of the week and month, beginning on Tuesday, the 10th, and ending on Friday, 13th, of the present month, and in the same place of the western metropolis. It was a good alteration of last year, to end on Friday instead of Saturday, as it prevents any encroachments on the Sunday, in removing the cattle to their destinations. The interior arrangement was very much improved by the enlargement of the space allowed for the sheep and pigs, and a double row of beasts occupied the front part of the standing usually given to the sheep. The general view was very much improved, and the sheep and pigs were seen to greater advantage than in former years. The lighting by gas was bright as usual, and even exceeds the light of day in the showing the various articles exhibited. The reporters of the press were favoured with a ticket of admission for a private view on the evening of Monday, after the judges had finally concluded their labours. This kindness would be very much enhanced by the ticket admitting the reporters during the four days of the show without charge. But the private view on Monday evening is very commodious, as a leisure is given for examination, free of the bustle and crowd of the public days.

The prizes were awarded as follows :—

CLASS I.

Oxen or Steers, of any breed, above 4 and not exceeding 5 years old, without restrictions as to feeding; yet the kind or kinds of food must be certified.—1st prize of 30*l.*, and Silver Medal to the breeder. To Mr. John Tucker, of Staplegrove, near Taunton, Somerset, for a 4 years and 9 months old Devon ox, bred by Mr. Priscott, of Staplegrove, and fed on Grass, hay, Turnips, Barley, and Peas.—2d, 15*l.*, to Mr. Joseph Philips, of Ardington, near Wantage, Berks, for a 4 years and 1 month old Hereford ox, bred by Mr. J. S. Edwards, of Stanton Lacy, near Ludlow, and fed on meal, Swedes, and hay.—3d, 5*l.*, to his Grace the Duke of Richmond, Goodwood, near Chichester, Sussex, for a 4 years and 1 month old Hereford ox, bred by Mr. Rogers, of Ledicot, and fed on oilcake, Carrots, Turnips, Swedes, hay, and Grass.

CLASS II.

Oxen or Steers, of any breed, above 3 and not exceeding 4 years old, without restrictions as to feeding; yet the kind or kinds of food must be certified.—1st prize of 30*l.*, and Silver Medal to the breeder. To the Right Hon. the Earl of Hardwicke, of Wimpole, near Arrington, Cambridge, for a 3 years and 10 months old Durham ox, bred by his lordship, and fed on Beans, and Barley-meal, and hay.—2d, 15*l.*, to Mr. Henry Frampton, of Farringdon-road, Farringdon, Berks, for a 3 years and 9 months old Durham steer, bred by Mr. Thomas Eeles, of Cottage Farm, near Northleach, Gloucestershire, and fed on oil-cake, Barley-meal, steamed Turnips, Mangold Wurzel, and hay.—3d, 5*l.*, to the most Hon. the Marquis of Northampton, of Castle Ashby, near Northampton, for a 3 years and 10 months old short-horned steer, bred by his lordship, and fed on Grass, hay, Turnips, Beet, Cabbages, Carrots, cake, and meal.

CLASS III.

Oxen or Steers of any breed, above 2 years, and not exceeding 3 years old, without restrictions as to feeding; yet the kind or kinds of food must be certified.—1st prize of 25*l.*, and Silver Medal to the breeder, and the Gold Medal, being the best beast in the 1st, 2d, 3d, 4th, 5th, and 6th classes, to Mr. Wm. Heath, of Ludham, near Norwich, Norfolk, for a 2 years and 10 months old Hereford ox, bred by Mr. James Bill, of Whitaway Head, near Ludlow, Salop, and fed on Grass, hay, Turnips, oil-cake, Oat and Pea-meal.—2d, 15*l.*, to Mr. J. L. Bult, of Dodhill, Kingston, near Taunton, Somerset, for a 3 years old improved short-horn steer, bred by himself, and fed on hay, Grass, roots, Barley, and Bean-meal.—3d, 5*l.*, to Mr. James Clover, of Creeting St. Mary, near Needham-market, Suffolk, for a 2 years and 11 months old short-horned ox, bred by himself, and fed on Clover, hay, Turnips, Carrots, Cabbages, oil-cake, and Bean-meal.

CLASS IV.

Oxen and Steers of any breed and age, above 80 stones, and under 95 stones in weight, without restrictions as to feeding, yet the kind or kinds of food must be certified.—1st prize of 20*l.* and Silver Medal to the breeder. To his Royal Highness Prince Albert, for a 3 years and 9 months old Hereford ox, bred by Mr. Thomas Sheriff, of Buckton, near Ludlow, Hereford, and fed on cake, meal, hay, and roots.—2d, 10*l.*, to Mr. James S. Bult, of Dodhill, Kingston, near Taunton, Somerset, for a 3 years old improved short-horned steer, bred by himself, from the stock of the Rev. Henry Berry, and fed on hay, Grass, roots, and Barley and Bean-meal.

CLASS V.

Oxen or Steers of any breed or age, not exceeding 80 stones in weight, without restrictions as to feeding, yet the kind or kinds of food must be certified.—1st prize of 15*l.*, and Silver Medal to the breeder. To the Right Hon. the Earl of Aylesford, of Packington, near Coventry, Warwick, for a 3 years and 11 months old North Devon ox, bred by his lordship, and fed on Grass, Vetches, Clover, hay, Turnips, Beet, cake, Barley, Beans, Pea-meal, and Linseed.—2d, 5*l.*, to Mr. Thomas Bond, of Bishop's Lydeard, near Taunton, Somerset, for a 3 years and 8 months old Devon steer, bred by himself, and fed on hay, Grass, roots, Beans, Barley-meal, and Flax seed.

CLASS VI.

Oxen or Steers of the Scotch, Welch, or Irish (Kerry) breed, of any age, without restrictions as to feeding, yet the kind or kinds of food must be certified.—The prize of 10*l.*, to Mr. William Heath, of Ludham, near Norwich, Norfolk, for a Galloway Scotch ox, about 4 years old, breeder unknown, and fed on Grass, hay, Turnips, oilcake, Oat and Pea-meal.

CLASS VII.

Cows or Heifers under 5 years old, without restrictions as to feeding, yet the kind or kinds of food must be certified. Spayed heifers are not qualified.—1st prize of 20*l.*, and the Silver Medal to the breeder. To the Right Hon. Lord Feversham, of Duncombe-park, near Helmsley, York, for a 3 years and 3 months old pure short-horned heifer, bred by his lordship, and fed on hay, Turnips, Bean-meal, and oilcake.—2d, 10*l.*, to Mr. Stephen Gooch, of Honingham, near Norwich, Norfolk, for a 3 years and 10 months old short-horned heifer, bred by Mr. Charles Brookes, of Leake, Boston, and fed on Linseed and Barley-meal, hay, Turnips, and Mangold Wurzel.—3d, 5*l.*, to his Royal Highness Prince Albert, for a 4 years and 6 months old short-horned cow, bred by Mr. Thomas Garne, of Broadmoor, near Northleach, Gloucester, and fed on cake, meal, roots, and hay.

CLASS VIII.

Fattened Cows, of 5 years old and upwards, without restructions as to feeding, yet the kind or kinds of food must be certified. Freemartins and spayed heifers are not qualified.—1st prize of 20*l.*, and Silver Medal to the breeder, and Gold Medal as the best Cow or Heifer in the 7th, 8th, and 9th Classes. To Mr. Stephen Gooch, of Honingham, near Norwich, Norfolk, for a 5 years and 3 months old short-horned cow, bred by Mr. Nathaniel Cartwright, of Hougham, near Louth, Lincoln, and fed on Linseed-cake, Linseed and Barley-meal, Mangold Wurzel, Turnips, and hay.—2d, 10*l.*, to Mr. John Henry Gurney, of Easton, near Norwich, Norfolk, for a 5 years and 7 months old short-horned cow, bred by John Emmerson, of Evyholme, near Darlington, York, and fed on Linseed-cake, Bean-meal, hay, Swedes, Beet, and Barley-meal.

CLASS IX.

Fattened Cows, of 5 years old and upwards, that shall have had at least two live calves at separate births, without restrictions as to feeding, yet the kind or kinds of food must be certified.—First prize of 20*l.*, and the Silver Medal to the breeder. To Mr. Thomas Aveling, of March, Isle of Ely, Cambridge, for a 5 years and 2 months old Durham cow, bred by himself, and fed on Linseed-cake, hay, and Mangold Wurzel.—2d, 10*l.*, to Mr. William Woodward, of Bredon's Norton, near Tewkesbury, for a 6 years and 8 months old improved short-horned cow, bred by himself, and fed on Grass, hay, green Clover, Barley, and Pea-meal.

EXTRA STOCK.—CATTLE.

The Silver Medal to Mr. W. Gooch, of Honingham, near Norwich, for a 5 years and 3 months old short-horned ox, bred by Mr. Charles Brookes, of Boothby, near Spilsby, Lincoln, and fed on Linseed-cake and Barley-meal, Mangold Wurzel, Turnips, and hay.

CLASS X.—SHEEP.

Fat Wether Sheep, of any long-woolled breed, 1 year old, without restrictions as to feeding.—1st prize of 20*l.*, and Silver Medal to the breeder, and the Gold Medal as the best pen of long-woolled sheep in the 10th, 11th, and 12th Classes. To Mr. G. S. Foljambe, of Osberton Hall, near Worksop, Nottingham, for a pen of three 20 months old Leicester wethers, bred by himself.—2d, 10*l.*, to the Most Noble the Marquis of Exeter, of Burleigh House, near Stamford, Lincoln, for a pen of three 21 months old long-woolled Leicester wethers, bred by his lordship from the stock of the Earl of Talbot and the Marquis of Exeter.—3d, 5*l.*, to Mr. John Shepherd Cranfield, of Harrowden, in Bedfordshire, for a pen of three 20 months old long-woolled Leicester wethers, bred by himself, from the stock of Mr. Ebenezer Peacock, of Wilhamstead.

CLASS XI.

Fat Wether Sheep, of any long-woolled breed, 1 year old, without restrictions as to feeding; each sheep not to exceed 220 lbs. live weight.—1st prize of 20*l.*, and Silver Medal to the breeder. To the Most Noble the Marquis of Exeter, K.G., of Burleigh House, near Stamford, Lincoln, for a pen of three 21 months old long-wolled Leicester wethers, bred by his lordship, from the stock of Earl Talbot and the Marquis of Exeter.—2d, 10*l.*, to Mr. Thomas Twitchell, of Wellington, near Bedford, for a pen of three 21 months old Leicester wethers, bred by himself, from the stock of Mr. S. Bennett, of Bickerings Park, Beds.—3d, 5*l.*, to Mr. Richard Newman, of Harrowden, near Bedford, for a pen of three 21 months old long-woolled Leicester wethers, bred by himself, from the stock of Mr. S. Bennett, of Bickering Park, near Woburn.

CLASS XII.

Fat Wether Sheep, of any long-woolled breed (not Leicesters), 1 year old, without restrictions as to feeding.—Prize, 10*l.*; and the Silver Medal to the breeder. To Mr. Robert Beman, of Moreton-in-the-Marsh, Gloucester, for a pen of three 21 months old Cotswold wethers, bred by himself.

Extra Sheep: Long-woolled Sheep.—Silver Medal. To the Most Noble the Marquis of Exeter, K.G., of Burleigh-house, near Stamford, Lincoln, for a 33 months old long-woolled Leicester ewe, bred by his Lordship from the stock of Mr. Sanday.

CLASS XIII.

Long and Short-woolled, Cross-bred, Fat Wether Sheep, 1 year old, without restrictions as to feeding.—1st prize of 20*l.*, and Silver Medal to the breeder. To Mr. John Robert Overman, of Burnham-Sutton, near Burnham-market, Norfolk, for a pen of three 20 months old Down and Leicester wethers, bred by himself from the stock of Mr. H. Aylmer, of West Dereham, Norfolk.—2d, 5*l.* To Mr. John Hitcham, of Little Milton, near Wheatley, Oxford, for a pen of three 21½ months old long and short-woolled wethers, bred by himself.

CLASS XIV.

Long and Short-woolled, Cross-bred, Fat Wether Sheep, 1 year old, without restrictions as to feeding. Each Sheep not to exceed 220 lbs. live weight.—Prize, 10*l.*; and the Silver Medal to the breeder. To Mr. J. R. Overman, of Burnham-Sutton, near Burnham-market, Norfolk, for a pen of three 20 months old Down and Leicester wethers, bred by himself from the stock of Mr. H. Aylmer.

CLASS XV.

Fat Wether Sheep, of any short-woolled breed, 1 year old, without restrictions as to feeding.—1st prize of 20*l.*, and Silver Medal to the breeder, and Gold Medal, as the best pen of short-woolled sheep, in the 15th, 16th, and 18th Classes. To Mr. John Williams, of Bucklaud, near Farringdon, Berks, for a pen of three 20 months old Southdown wethers, bred by himself.—2d, 10*l.*, to His Grace the Duke of Richmond, of Goodwood, near Chichester, Sussex, for a pen of three 21 months old Southdown wethers, bred by his Grace.

CLASS XVI.

Fat Wether Sheep, of any short-woolled breed, 1 year old, without restrictions as to feeding, each sheep not to exceed 200 lbs. live weight.—Prize, 10*l.*, and the Silver Medal to the breeder. To His Grace the Duke of Richmond, of Goodwood, near Chichester, Sussex, for a pen of three 21 months old Southdown wethers, bred by his Grace.

CLASS XVII.

Fat Wether Sheep, of any short-woolled breed, 2 years old, without restrictions as to feeding.—1st prize of 20*l.*, and Silver Medal to the breeder. To Mr. John Villiers Shelley, of Maresfield-park, near Maresfield, Sussex, for a pen of three 32 months old Southdown wethers, bred by himself.—2d, 5*l.*, to His Grace the Duke of Richmond, of Goodwood, near Chichester, Sussex, for a pen of three 33 months old Southdown wethers, bred by his Grace.

CLASS XVIII.

Fat Wether Sheep, of any short-woolled breed (not Southdowns), 1 year old, without restrictions as to feeding. Prize withheld.

Extra Stock: Short-woolled Sheep.—Silver Medal to his Grace the Duke of Richmond, of Goodwood, near Chichester, Sussex, for a 21 months old Southdown wether, bred by his Grace.

CLASS XIX.—PIGS.

Pigs of any breed, above 13 and not exceeding 26 weeks old.—1st Prize of 10*l.*, and Silver Medal to the breeder. To Mr. William Fisher Hobbs, of Boxted Lodge, near Colchester, Essex, for a pen of three 19 weeks and 6 days old improved Essex pigs, bred by himself, and fed on Cabbages, Potatoes, Mangold Wurzel, corn, meal, and milk.—2d, 5*l.*, to Mr. William Barber, of Langley Broom, near Slough, Bucks, for a pen of three 21 weeks and 2 days old improved Middlesex pigs, bred by himself, and fed on middlings, Barley, Pea-meal, and Potatoes.

CLASS XX.

Pigs of any breed, above 26 and not exceeding 52 weeks old.—1st Prize of 10*l.*, and Silver Medal to the breeder, and Gold Medal, as the best pen of pigs in the 19th, 20th, and 21st Classes. To Mr. John Coate, of Hammoon, near Blandford, Dorset, for a pen of three 28 weeks and 6 days old improved Dorset pigs, bred by himself, and fed on whey, Grass, and Barley-meal.—2d, 5*l.*, to his Royal Highness Prince Albert, for a pen of three 38 weeks and 6 days old Yorkshire pigs, bred by his Royal Highness, and fed on meal and milk.

CLASS XXI.

Pigs of any breed, above 12 and under 18 months old.—The Prize of 5*l.*, and the Silver Medal to the breeder. To the Right Hon. the Earl of Radnor, of Coleshill, near Coleshill, Berks, for a pen of three 52 weeks and 3 days old Coleshill pigs, bred by his Lordship, and fed on Barley-meal, Pollard, Potatoes, and whey.

Extra Stock: Pigs.—The Silver Medal. To Mr. William Barber, of Langley Broom, near Slough, Bucks, for a 45 weeks and 4 days old improved Middlesex pig, bred by himself, and fed on middlings, Barley, Pea and Rye-meal, and Potatoes.

The winner of the gold medal in the cattle department was an ox of the new Hereford breed, which attracted much attention, and obtained a very justly placed approbation. The carcase was most symmetrical, of the medium size, level, and well spread. The ribs were very beautifully covered with usefully fattened flesh, and no oily secretions. The shoulder has been seen covered more evenly—the point was bare, and the fault extended upwards. The buttocks were deep and wide, the flank protuberant, and the hook bones well covered with flesh. The twist wide, legs well set, and the bone of proper strength. The countenance very placid, muzzle wide and short, and horns of the medium length. The tail hung very perpendicular, being, in the fineness of it, a very sure mark of the organisation being refined. The back was very level, the shoulder well rounded on the top, and the set of the tail level with the back.

During the 20 years of our attendance at this show of fat cattle, we do not recollect seeing any animal of the same weight in the comparatively small compass. And we believe this opinion was universal. The carcase suited the proper feeding of animals—the whole flesh inspissated and traversed by fat, without forming useless bumps and secretions. With the exception of the bareness on the low fore point of the shoulder, a fault was invisible.

The first prize of the short-horned breed went to Earl Hardwicke, in an ox bred and fed by his lordship, and an animal of very superior merit. The carcase was heavy and fleshy, low, and hanging downwards, rather than cylindrical. The horn was unusually long for the breed, and the legs coarse in the bone. The back was very level, and the shoulders well covered with flesh. The fault lay in the slackness behind the shoulders, and the width from the short rib to the hook-bone. The deep belly showed an undue proportion of offal. Withal, the specimen was very good.

The first prize in Class I. went to a Devon ox of very superior merit. The size was beyond the usual bulk of these animals, and compensated the almost only fault of that most symmetrical breed of British cattle. Such a depth of carcase is seldom seen, and over the whole body the covering of the flesh was uniform and level. The hind-quarters fail in width when compared with the short-horns, and the buttocks are projecting rather than upright. In the large development of the hind-quarters the short-horns have no equals. This Devon animal was rather low in the back, and hung downwards in the belly, wide between the ribs and hook-bones, and deep in the chine. The animal showed a specimen of Devons such as is seldom seen, and may not soon occur.—The second prize was a Hereford ox of much merit. The length of the body exceeded the proportion of girth, and the shoulder was not well covered. The fore-ribs were uncommonly fleshy, and the thighs deep. The back and the set of the tail formed a continuous level, and the whole animal was one of the best that were shown. It showed the value of the stock of the Rev. Henry Berry.—The third prize went to the Duke of Richmond for a Hereford ox, of small size, but much merit. The body was more evenly fleshy than the higher prizes, the back more level, and the shoulders better covered. General opinion reckoned him one of the best beasts in the show.

The second prize in Class II., below Lord Hardwicke, was gained by a Durham ox of the middling quality. No single point showed any noticeable superiority, yet the carcase was very useful. The head and its provisions were coarse.—The third prize went

to a Durham ox of much weight, but not remarkable in any point.

The second prize in Class III., next the Gold Medal, went to a short-horned ox, of very superior merit. The size was small, but the quality of all points was much above mediocrity. Our own opinion reckons it the best short-horn that was exhibited.—The third prize also went to a short-horned ox, more bulky than the last animal, but much coarser in every point.

In Class IV., the first prize went to his Royal Highness Prince Albert, for a Hereford ox. The animal formed a choice specimen on every point, but lost much width in the hind quarters, a not uncommon case in the Hereford cattle. It was a most choice little beast.—The second prize was gained by a short-horned ox of great merit. No animal in the exhibition showed a more level back, better covered ribs, deeper thighs, or a wider twist. The head was coarse and heavy, and the colour unfashionable; but no more useful carcase was shown.

The first prize in Class V. went to the Earl of Aylesford, for a Devon ox. The fore parts were very good, as is usual with the Devon cattle, but the posteriors fall off very much in a lean flank, thin hind-quarters, a narrow rump, and widened short rib. This beast struck us as being very inferior in the due comparison.—The second prize went to a small Devon ox, of a quality superior to the last in every point of excellence.

In Class VI., the prize went to a Scotch polled ox of the Galloway breed, a beast of no common merit. The carcase of that breed is cylindrical beyond all others, and the flesh is deep and early in maturity; but the twist is narrow, and the neck shaggy and coarse. The head is large and elephant-like, and forms a great deformity to an otherwise well constructed animal frame. The present specimen was one of the first of the kind.

In Class VII., the prize cow was a short-horn of no common excellence. The back and hind quarters were unexceptionable, but the shoulder was bare, and the fore quarters generally coarse, a property very adherent to the short-horns. The general form of the body showed a very superior symmetry; back straight, loins wide, and chest very capacious.—The second prize went to a short-horned cow, more protuberantly fleshy than the former animal, but inferior in the general symmetry and level points. The two prizes contained a very large excellence.—The third prize went to a short-horned cow, belonging to His Royal Higness Prince Albert; a very fine animal, of fashionable colour, an evenly fleshy carcase, and very good general symmetry. General opinion allowed much merit to this animal.

In Class VIII., the prize Silver and Gold Medal for cows, went to a short-horned animal, which eclipses, in our opinion, every beast of the kind in the show, and of any other show in our recollection. The colour was, of all others, the most fashionable in a strawberry roan; the head, eyes, ears, and horns, faultless beyond comparison, and the whole carcase level, compact, and cylindrical, without any approach to equality in any animal of the exhibition. No specimen of a cow ever struck us so forcibly as a prominent type of the necessary character. The touch was soft but not silky, and fleshy without being placed in lumps. Our pleasure is truly sincere in giving this opinion of the animal.—The second prize went to a short-horned cow, of very good points, but completely shaded by the fore-mentioned animal.

In Class IX., the prize and Silver Medal went to a Durham cow of very good qualities. The general properties did not attract much notice.—The second prize went to a short-horned cow, of properties very like to the last mentioned.

Our examination of the cattle department of the show of this year, comes to the conclusion that the Gold Medals were never more meritoriously disposed—the Hereford ox of Mr. Heath, and the Durham cow of Mr. Gooch, being, in our opinion, the most proper specimens that may ever have been shown of the two kinds of animals; at least our recollection does not furnish the memory with any image of similar productions, and we believe this judgment is supported by the most valuable general opinion. We think that the short-horns decline, and the Herefords are confessedly improving; and are glad to see, in the prize Devon ox of Class I., our only fault to that breed being begun to be removed—in the size being too small—the ox of this year being very much beyond the usual dimensions of Devon cattle. In all other points they form the most symmetrical breed of cattle in Britain.

The general character of the cattle exhibited was very superior. The extra stock showed some large carcases, but nothing deserving particular notice except a cross animal between an Indian bull and Scotch kyloe, belonging to the Duke of Wellington, and only remarkable for an inveterate hostility to any approach.

In the Sheep department the long-woolled division gave the first prize, Silver and Gold Medals, to a well known breeder, Mr. Foljambe, in Nottinghamshire. This award, we think, is as well adjudged as the Gold Medals for cattle, the animals being, in universal opinion, of the very highest class of excellence. The wool is fine, open, and abundant, and the body deep, fleshy, and very symmetrical. The prominence and tightness of the fore flank, and the lightness of the posterior offal, were very remarkable. The Leicester breed of sheep have shown no superiors, if any equals. The second prize went to the Marquis of Exeter, who showed an excellent specimen of his lordship's well known breed of long-woolled animals. Many opinions, and those of some weight, would prefer them to Mr. Foljambe's sheep, in being shorter in the body, more compact, better clad with wool, and showing a general hardier constitution. For general use, this opinion would prevail. The third prize was given to Mr. Cranfield, of Bedfordshire, for three animals of much merit. From among the three lots, much difficulty would arise in settling points of preference.

The Leicester sheep were never better exhibited.—In Class XI., the prize and Silver Medal went to Lord Exeter, and we think most justly, for the long-woolled breed. The thick coat of wool evinces the proper hardihood, and the compact fleshy body promises the necessary furniture both in the outer and inner provisions.—The second prize went to Mr. Twitchell, of Bedfordshire, who is well known as a breeder. The three prizes formed a merit seldom equalled in the special section of sheep. We still give our opinion in favour of Lord Exeter's.—The third prize also went to Bedfordshire, and formed a good companion to the two first prizes, and in some respects would be reckoned superior, especially in the wool.

In Class XII., the prize and Silver Medal went to Mr. Beman, for his Cotswold sheep. They were heavy animals, and reckoned excellent of the kind.

In Class XIII., the first prize was for Leicester cross sheep with the Southdown. The animals showed well-formed carcases, much weight of body, and a large coat of wool. This cross is a most excellent animal for the butcher, but it is not beneficially prosecuted any further. The second prize was for a similar cross of very useful animals.

In Class XIV., the prize went to sheep of the Down and Leicester cross. The animals showed a most useful appearance, and were much noticed.

In Class XV., being the Southdown sheep, the prize and Gold Medal were gained by a new competitor, in Mr. William Buckland, Farringdon, Berks; at least we do not remember his name in former shows as a winner. If it be the first start, he has done the thing most thoroughly. We have not seen any animals of that breed any way like them in every general property, without exception. The Duke of Richmond's sheep and Mr. Rigden's stood contiguous, but were completely shaded, and not in our own single idea, but in the universal opinion which looked at the animals. The Duke of Richmond got the second prize for sheep of the well-known quality of the Goodwood stock.

In Class XVI., the prize and Silver Medal went to the Duke of Richmond, for sheep of 21 months old. No very remarkable quality was to be observed in this lot.

In Class XVII., the first prize was for aged sheep of 32 months, which formed one of the best specimens of the show; and the adjoining pen of the Duke of Richmond's, which got the second prize. Both pens very fully supported the character of the Southdown sheep.

In Class XVIII., no prize was given. The extra stock of sheep showed some good specimens of single animals; but nothing of very transcendent merit. Our examination of sheep concludes that they were never better shown by Messrs. Foljambe, Twitchell, and Lord Exeter, and that the winner of the Southdown medal has fairly eclipsed all precedence. The general show of Downs was well sustained. In every award of cattle and sheep, our own opinion fully coincided with the judges.

In Class XIX., being pigs, the prize was given to improved Essex pigs of Mr. Fisher Hobbs. No finer specimens could be seen of fresh pork and small bacon. The second prize was given to the Middlesex breed of Mr. Barber. The size is larger than the last, and more generally useful.

In Class XX., the prize, Silver and Gold Medals, was given to the Dorset breed of pigs, in three black animals. The useful form was unquestionable, and judgment of the prize undeniable.—The second prize was given to Prince Albert, for pigs of the York breed, possessing much merit. The last pen, and the present, might give much room for discussion, and the result might be very doubtful. Both are equally useful in yielding fresh pork in the small size, and hams and bacon in the older age. The judges must have seen superior excellence, but it must be small. The coat of hair on the Prince's pigs showed a vigour that is very necessary to all animal life.

In Class XXI., the prize was given to Lord Radnor, for pigs of the large breed. The animals were white, large, and handsome, and known as the Coleshill breed, and have no equals of the kind. The coat of hair on these pigs is very suitable. Several excellent pens were shown of large pigs, black and white, which exceeded the quality of some former years.

The extra stock showed many valuable animals, both large and small, but chiefly the former. Among them we noticed particularly an improved Middlesex pig, belonging to Mr. Barber, which deservedly attracted much notice. It gained a prize at Exeter show, and will gain more, if used for that purpose. Mr. Barber's pigs possess very much merit.

Our inquiry among the pigs observes that these animals never were better exhibited—more especially in the larger sort. The specimens were not so very heavy as in former years, and we think are improved thereby—as the pig, being naturally stupid and drowsy, requires some vivacity and length of leg to take exercise, to promote the animal functions. The animals of the present year suited this idea.

The implements were deficient in the number of former years, but the practical utility may not be much diminished on that account. The drill machines were exhibited by the well-known names of Smyth, Hornsby, Garrett, and Howard, and were of the commonly known kinds, with little or no addition. Mrs. Wedlake's business supports the well-established fame, especially in chaff-cutters, which implements were well exhibited in the show of this year. Draining-tile making machines were not so numerous as formerly, and draining tools were less abundant. Weighing machines were numerous, and seemed to work well. Grinders and crushers were plentiful, and gave satisfaction. The improved harness for horses by Deane deserves much notice, being neat and strong, and moderate in price.

Travelling machines for threshing grain were of the usual kind, and the steam engines accompanying. Winnowing machines were not very numerous—the best by Smith, of Kettering, to which the Yorkshire Society gave a prize; it revolves with much care. Dr. Newington's dibble gets into estimation. The ploughs and harrows of iron showed nothing new. Mr. Edgington's stack-cloths and M'Neill's asphalted felt con-tinue advancing in use; also the milk dishes of glass. Tiles of glass may soon cover all our farmeries. Mr. Crosskill's improved prize cart is much admired. Messrs. Cogan, 48, Leicester-square, show the dairy utensils of glass, tiles, and writing pens of glass. A cylindrical glass churn is very commodious in showing the condition of the contents at any time. The milk is removed from the glass dishes and the cream left in the bottom by the common syphon, through which a leather bucket is drawn by a wire to produce a vacuum, after which the milk runs till exhausted. This forms a simple skimming process. Messrs. Phillips also showed glass dishes and tiles of the same kind and use.

The roots were exhibited in the usual kinds by Messrs. Gibbs of London, and Skirving of Liverpool. The Turnips, Beet, Cabbages, and Potatoes, were very fine, but nothing beyond common years, and not so numerous. We particularly noticed the Stubble Swede Turnips of Mr. Rivers, of Sawbridgeworth, being a hybrid of Early Stone variety, and the Green-topped Swede. It promises to be a valuable substitute for the White Stone, as it grows as rapidly, and better withstands severity of weather.

The general remarks on this show must convey an unqualified approval of every department of the business. The gold medals never have been more justly awarded in every case, and never have the prizes given more general satisfaction in public opinion. The general notice fixes upon the very unusually large size of the Devon ox, which got the first prize in Class I., even at the age of 4 years and 3 months. It is the beginning to raise that handsome breed to an equality with others, in the only point in which they do not excel every breed of cattle in Britain. The number of cattle much exceeded former years, and certainly did not fail in quality. The notion gains ground to produce evenly-covered fleshy carcases of prime meat, and not as formerly, accumulations of fat and oily secretions. The practice has a most universal approbation.

MIDLAND COUNTIES CATTLE SHOW AT BIRMINGHAM.

The exhibition, a great improvement in every respect upon last year's, except perhaps in the pigs, and that could not easily be surpassed, was held in the New Bingley Exhibition Hall, which is admirably adapted for the purpose. The cattle, though not equal to the Smithfield exhibition either as to quality or number, were a very excellent show, far exceeding that of last year, being altogether superior both in the character of individual specimens and in the evenness of the show generally. The sheep were not a very striking feature of the exhibition, though here, too, there were pens of excellent quality to be seen. The pigs were equal to last year, both in number and quality, and that is speaking high in their praise. But the poultry department of the exhibition was decidedly the finest and most attractive of the whole. A finer collection of specimens never before were seen; but we must delay for a week our report on that part of the show. The following is the prize list of cattle, sheep, and pigs:

FAT CATTLE.

Herefords: Oxen or Steers.

1st prize, 10*l*. Exhibitor, Mr. Richard Allin, Long Itchington, Warwickshire. Breeder unknown.—2d, 5*l*. Exhibitor, Prince Albert. Breeder, Mr. Thomas Sheriff, Buckton, near Ludlow.

Highly commended.—Exhibitor and breeder, Sir Francis Lawley, Bart., of Middleton-hall.

Highly commended.—Exhibitor and breeder, Lord Hatherton, Teddesley-park.

Prize of 5*l*., and the Gold Medal, for the best ox or steer of any breed. Exhibitor and breeder, Lord Hatherton, Teddesley-park.

Herefords: Cows.

1st prize, 10*l*., and Silver Medal, as breeder. Exhibitor and breeder, Mr. James Williams, Culmington, near Ludlow, Salop.—2d, 5*l*. Exhibitor, Mr. John Thomas, Cholstrey, near Leominster. Breeder, Mr John Muscott, Westonbury, Herefordshire.

Highly commended.—Exhibitor, Mr. Matthew Ingle, Wigginton, Tamworth, Staffordshire. Breeder, Mr. W. Phillips, Ledbury, near Bishop's Castle, Salop.

Commended.—Exhibitor, Mr. Charles Wilson, the Hill Farm, Claines, Worcestershire. Breeder, Mr. Richard Mason, Prior's-court, Ledbury, Herefordshire.

Herefords: Heifers.

1st prize, 10*l*. Exhibitor, the Earl of Warwick, Warwick. Breeder, Mr. John Stephens, Sheephouse, near Hay, Breconshire.—2d, 5*l*. Exhibitor, Mr. Joseph Moore, Noverton, Stanford, Worcestershire. Breeder, Mr. John Perry, Much Cowan.

Short-Horns: Oxen or Steers.

1st prize, 10*l*. Exhibitor, Prince Albert. Breeder, Mr. John Henry Lees, Bacon's End, Coleshill, Warwickshire.—2d, 5*l*. Exhibitor and breeder, Mr. Isaac Pearson Evans, Griff, near Coventry.

Prize of 5*l*. Exhibitor and breeder, Mr. John Henry Lees, Bacon's End, Coleshill.

Highly commended. — Exhibitor and breeder, Mr. John Henry Lees, Bacon's End, Coleshill.

SHORT-HORNS: COWS.

1st prize, 10*l*. Exhibitor, Thomas Dilke, Esq., R.N., Maxstoke Castle. Breeder, Sir Charles Knightley, Bart., Fawsley-park.—2d, 5*l*. Exhibitor, Mr. Edward Bird Guest, Broadwas, Worcestershire. Breeder, the late Sir Anthony Lechmere, Bart, The Rhydd, near Worcester.

Highly commended.—Exhibitor, Mr. Joseph L. Hassall, Packington, near Ashby-de-la-Zouch. Breeder, Mr. John C. Hancock, Mattersey, near Blythe.

SHORT-HORNS: HEIFERS.

1st prize, 10*l*., and the Gold Medal, for the best cow or heifer of any breed; also the Silver Medal, as breeder. Exhibitor and breeder, Mr. Henry Roberts, Paxford.—2d, 5*l*. Exhibitor and breeder, Mr. Henry Roberts, Paxford.

Highly commended. — Exhibitors, Messrs. William and Richard Timms, Grandborough, near Southam. Breeder, Mr. William Goode, Grandborough.

DEVONS: OXEN OR STEERS.

1st prize, 10*l*., and the Silver Medal, as breeder. Exhibitor and breeder, the Earl of Leicester, Holkham-hall, Norfolk.—2d, 5*l*. Exhibitor and breeder, the Earl of Aylesford, Packington, Warwickshire.

Commended.—Exhibitor, Lord Hatherton, Teddesley-park.

DEVONS: COWS.

1st prize, 10*l*., and the Silver Medal as breeder. Exhibitor and breeder, the Earl of Aylesford, Packington, Warwickshire.

DEVONS: HEIFERS.

1st prize, 10*l*. Exhibitor, Mr. George Worth, Newnham, Warwickshire. Breeder, the late Mr. Thomas Umbers, Wappenbury.—2d, 5*l*. Exhibitor and breeder, the Earl of Aylesford, Packington, Warwickshire.

EXTRA: OXEN OR STEERS.

1st prize, 10*l*. Exhibitor, Mr. Joseph D. Rob, Catton, near Thirsk, Yorkshire. Breeder unknown.—2d, 5*l*. Exhibitor, Mr. John Thomas Robinson, Leckby-palace, Topcliffe, Thirsk, Yorkshire. Breeder, Mr. Beavly, Norton, near Stockton.

Commended. — Exhibitor, Mr. William Rogers, Martley-court, Worcestershire. Breeder, Mr. John Hill, Worcester.

EXTRA CLASS: COWS.

1st prize, 10*l*. Exhibitor and breeder, Lord Bagot, Blithfield, Staffordshire. Age, about six years.—2d, 5*l*. Exhibitor and breeder, Mr. H. Chamberlain, Desford, Leicestershire.

Commended.—Exhibitors and breeders, Messrs. William and Richard Timms, Grandborough, near Southam.

EXTRA CLASS: HEIFERS.

1st prize, 10*l*. Exhibitor, Mr. John Carwardine, The Weignalls, near Leominster. Breeder, Mr. John Addis Hill, Weston-under-Pedyard. — 2d, 5*l*. Exhibitor nnd breeder, Mr. Henry Roberts, Paxford.

Highly commended. — Exhibitor, Mr. Joseph L. Hassall, Packington, near Ashby-de-la-Zouch. Breeder, Mr. Carter, Stivichall, near Coventry. The whole of this class commended.

SCOTCH OR WELSH: OXEN OR STEERS.

1st prize, 10*l*. Mr. Joseph D Rob, Catton, near Thirsk, Yorkshire. Breeder unknown.—2d, 5*l*. Exhibitor, Mr. Joseph D. Rob, Catton, near Thirsk, Yorkshire. Breeder unknown.

Highly commended.—Exhibitor, the Right Hon. the Earl of Dartmouth, Sandwell; exhibitor Prince Albert (breeder and age unknown); exhibitor, Lord Leigh, Stoneleigh Abbey.

SCOTCH OR WELSH: HEIFERS.

Prize of 5*l*. Exhibitor, John Pickthall, Esq., Mint-house, near Kendall, Westmoreland.

The judges also awarded a Silver Medal to 10 steers exhibited in the yard as extra stock, by Sir Francis Lawley, Bart.

SHEEP.

For the best three wethers under 22 months' old.

LEICESTERS.

5*l*. to Mr. John Henry Lees, Bacon's End, Coleshill.

3*l*. to the same.

LONG-WOOLLED SHEEP, NOT LEICESTER.—5*l*. to Mr. Robert Beman, Moreton-in-the-Marsh.

SOUTHDOWNS.

5*l*. to the Right Honourable the Earl of Leicester, Holkham Hall, Norfolk.

3*l*. to Darwin Galton, Esq., Edstone, near Stratford-upon-Avon.

SHORT-WOOLLED SHEEP, NOT SOUTHDOWNS.—5*l*. to the Right Honourable Earl Howe, Gopsall Farm.

3*l*. to the Right Honourable the Earl of Aylesford, Packington, Warwickshire.

CROSS-BRED SHEEP.

5*l*. to Mr. John Benjamin Twitchell, Wilby, Northamptonshire.

3*l*. to Mr. A. Nurse, Ashby Parva, for the best 3 wethers under 34 months.

LONG-WOOLLED SHEEP.

3*l*. to Mr. John Henry Lees, Bacon's End, Coleshill.

2*l*. to the same.

SHORT-WOOLLED SHEEP.

5*l*. to the Right Hon. the Earl of Aylesford, Packington, Warwickshire.

3*l*. to the Right Hon. the Earl Howe, Gopsall Farm.

PIGS.

FAT PIGS, NOT EXCEEDING 9 MONTHS OLD.

5*l*. to Mr. Thomas Padmore, Persham-street, Birmingham. Breeder, Mr. Gordon, Swan Inn, West Bromwich.

3*l*. to Mr. W. Adams, Leighton Cottage, Spring-street West, Edgbaston, near Birmingham. Breeder, Mr. Bates, Digbetts, Birmingham.

2*l*. to Mr. John Mist, Great Barr, Staffordshire.

FAT PIGS, BETWEEN 9 AND 14 MONTHS OLD.

5*l*. to Mr. A. Nurse, Ashby Parva, Lutterworth. Breeder, Mr. B. Burrows, High Cross.

3*l*. to Mr. S. Wilkins, Peddemore Hall, Sutton Coldfield.

2*l*. to Mr. H. Hewitt, Clifton Mill, Warwickshire.

FAT PIGS, BETWEEN 14 AND 20 MONTHS OLD.

5*l*. to Mr. Arthur Perks, Kingsbury House, Kingsbury.

3*l*. to Mr. Thomas Studholme Wilkins, Peddemore Hall, Sutton Coldfield.

2*l*. to Mr. John Henry Lees, Bacon's End, Coleshill.

FAT PIGS, EXCEEDING 20 MONTHS OLD.

5*l*. to Mr. James Baldwin, King's Norton. Breeder, Mr. Docker.

3*l*. to Mr. Thomas Padmore, Pershore-street, Birmingham. Breeder, Mr. Charles Thorneley, Marston Hall.

2*l*. to Mr. David Mace, Chatteris, Isle of Ely.

SOWS OF A LARGE BREED.

5*l*. to Mr. M. Cartwright, Stanton (Tamworth Breed).

3*l*. to Mr. Simon Lucas, Bottley Mill, Warwickshire.

2*l*. to Mr. Moses Cartwright, Stanton (Cumberland).

SOWS OF A SMALL BREED.

5*l*. to Mr. Jonathan Brown, the Height, near Wigton, Cumberland.

3*l*. to Mr. Wright, 60, Bromsgrove-street, Birmingham. Breeder: Mr. Nathaniel Stilgoe, Chapel Ascott, Warwickshire.

2*l*. to Mr. George Vincent, Sherlock-street, Birmingham.

PENS OF FIVE PIGS OF ONE LITTER UNDER 6 MONTHS.

5*l*. to Mr. Jonathan Brown, the Height, near Wigton, Cumberland.

3*l*. to Mr. Matthew Pemberton, Gibraltar Works, Leeds.

2*l*. to Mr. M. Cartwright, Stanton.

PEN OF FIVE PIGS UNDER 3 MONTHS.

3*l*. to Mr. A. Perks, Kingsbury.

BRAWN OF LARGE BREED UNDER 12 MONTHS.

3*l*. to Mr. Moses Cartwright, Stanton, Cumberland.

2*l*. to Mr. Joseph Tuley, Keighley. Breeder, Mr. John Rhodes, Hainworth, Keighley.

5*l*. to Mr. Jonathan Brown, The Height, near Wigton, Cumberland. Breeder, Mr. Joseph Bell, Scale-hill, Lazonby, Penrith.

BRAWN OF SMALL BREED UNDER 12 MONTHS.

5*l*. to Mr. Matthew Pemberton, Gibraltar Works, Leeds.

3*l*. to Mr. R. Ashiom, Aldington, Worcestershire. Breeder, Mr. C. Marshall, Snow-hill, Gloucestershire.

2*l*. to Mr. J. B. Twitchell, Wilby, Northamptonshire.

Farmers' Clubs.

OXFORD: *The Blight of Wheat.*—Mr. Thompson, of Culham, said, speaking from his own experience, the black blight [mildew?] developed itself soonest, and in the most virulent form, on the finest land and on that which was in the highest state of cultivation. Wherever the haulm or straw was rankly luxuriant, there did the blight most certainly appear; rankness of vegetation, then, it would seem, was one cause of this disease, and this, favoured by a moist season, or by a low and dull exposure, was generally recognised as all that was necessary to produce the disease. It appeared to him, that this blight was a consequence of the deposition of the seed of a fungus, favoured by the state of the plant. They were all aware that the atmosphere held in suspension, at all times, myriads of the seeds of this class of plants; nothing indeed, of any kind, ever appeared to become fitted for their vegetation that was not instantly supplied with the seeds in quantity and variety almost beyond conception. As a general rule, all kinds of manure which excited a rapid and luxuriant growth, assisted by a moist warm atmosphere, when the plant was in a certain stage, favoured the attacks of blight.—Mr. John Harris, of Hinton, stated that he had found, from 30 years' experience, that the blight was most severe where there were Berberry bushes in the hedge-rows, and mentioned several instances in his own neighbourhood in support of that opinion. He also stated that he knew cases where the Berberry bushes had been grubbed where the blight prevailed, and that after that it had not developed itself, and he mentioned, as a further illustration, that his friend, Mr. Edmons, made a wager that he would cut a barberry bush, and place it among the Wheat, and that blight would follow, which was the case.—Mr. Joseph Gillett, of Haseley, was of opinion that there were many causes of blight, such as the cultivation of the land, want of solidity, and draining. There was no question that the cultivation of the land was an important feature in it, because if they made the land as rich as a dung mine, they would produce blight, and attract blight. In highly cultivated land, and where the Wheat was the most luxuriant, the blight was most likely to develope itself; and this was an answer to those theorists who preached high farming, for they who practised it found they obtained less produce. Where the land was the least cultivated, there they oftentimes found the kindest Wheat; and he had observed in the neighbourhood of Wycombe, where the land was in an inferior state of cultivation, they were free from blight. He believed, too, that porous land was more subject to the blight, because it produced the fungus, and was more susceptible of blight than land which was more solid. On a porous soil he had ploughed bean stubble with horses, and afterwards found the blight, and he fancied that a corrective, with a view to obtain solidity, would be by breast-ploughing; in consequence of that he had not since then put a horse-plough on bean stubble, but had used the breast-plough, which he found corrected the blight. If people would adopt the system of breast-ploughing, and good draining, he was satisfied in his own mind that they might obviate the blight in many seasons. It was true that blight might arise from atmospheric causes, but he was satisfied, from his own experience, that the solidity of the land had a great deal to do with it. He also attributed the blight to thin sowing, and to overgrown timber and hedge-rows, which should be done away with, for he knew the advantage of so doing, having about 480 acres, which were thrown open, and without a hedge-row or timber upon the whole. If they wished to cultivate land successfully, they should first ascertain what the land was capable of bearing, and be guided by their own judgment, and that of their neighbours, instead of listening to a parcel of theorists, who knew nothing of the locality, or the peculiarities of the soil. It was necessary, also, that the farmer should consider well what he was about, and not get his land into too high a state of cultivation, if he desired to obtain good crops. He gave the President great credit for bringing this subject before the club, but, at the same time, he thought they would do little good, even if they could correct the blight in Wheat, unless at the same time they could correct the blight in prices; and he thought that the subject to which they should all turn their attention was, how they could obtain a fair remunerating price for their produce. (Loud cheers.)—Mr. Watson, of Garsington, remarked that he knew nothing of the blight until it came into this neighbourhood. He had farmed in the counties of Nottingham and Leicester for 20 years, and during the whole of that time he never knew what blight was, but before he had been in this county two years he had not only found out what it was, but also felt the consequences of it. He thought that it originated from the mode of cultivating the land, and that there were other causes, such as atmospheric causes, over-cultivating, over-ploughing, and getting the land into too light a state. In other counties, where they did not pay so much attention to farming and feeding off sheep, they knew nothing of the blight, but here the best cultivated land was the most subject to it.—Mr. Long, of Farm Moor, observed that he had noticed a great deficiency in the yield of Wheat where there was no blight visible. He had one-third deficiency of yield, and attributed it to the high winds, and made the remark at the time that he feared it would be so. He had a piece of Wheat in which there had been the blight, and he attributed it to the Wheat not suiting the soil. There was a great difference in the soils, and some Wheats were more subject to blight than others, and therefore it was the duty of every one to select such Wheats as were not subject to it, and he did not hesitate to say that he had, from experience, found the Spalding Wheat freer from it than any other.—Mr. J. Orpwood, of Waterperry, said he had suffered both from blight and a deficiency of crop; but the Wheat which suffered from blight was sown the last, and he attributed it to its being late planted.—The President moved the following resolution, which embraced the views of those who had spoken on the question:—"That a proper cultivation of the land, and obtaining solidity, draining, sufficiency of seed, removal of the hedge-rows and hedge-row timber, thus admitting a free circulation of air, would contribute materially to prevent blight." The resolution was carried unanimously. *Abridged from the Oxford Journal.*

Calendar of Operations.

NOVEMBER.

CENTRAL YORKSHIRE, *Nov.* 30.—This month commenced with dry weather, but towards the middle the atmosphere thickened, and heavy rains, which were much needed, were the result, tending to replenish the ponds and springs, which were almost dry. During the fine weather, we availed ourselves of the opportunity of clearing and storing a good breadth of Swede Turnips for winter use, and of ploughing the stubbles for next year's green and root crops. These (with occasional days of threshing Barley) have been our principal operations. Our whole stock—farm horses, young horses, 36 stall-fed cattle, and 40 store cattle in the yards, pigs, &c., require a constant supply of straw. During three days of frost, we have carted 150 loads of earth upon fallow for admixture of soils. The young Wheats are looking most luxuriant, and apparently too thick in the plant, the seed having all vegetated—rare news for the thin seeders. Sheep upon cut Turnips are doing well. The prices in the meat markets have not made like progress; but we have been obliged to submit to them, in order to get rid of our latter Grass-fed beasts. The general remark has been, that autumn Grass this season has been anything but feeding; consequently, beasts have gone to market in second-rate condition—one cause of the flatness of the market. Some of our stall-fed cattle are ripe for Christmas. Our continual experience in the yield of grain, tends to confirm the shortness in the produce of our white crops generally. Our Barley, both in quantity and quality, is proving better than the Wheat, and we are making from 27*s*. to 30*s*. per qr. to the maltsters for it. The samples shown in the market generally are lean, and the lower qualities bad to sell. *J. S.—K. D.*

LAMMERMUIR SHEEP FARM, *Nov.* 30.—November is always a busy month on sheep farms, the shepherds, during the greater part of it, being closely occupied with the dirty but indispensable operations of bathing or smearing. In a late Number of the *Gazette* we gave the mixtures in common use here, so that it is unnecessary to repeat them now. We were fortunate in getting this business over before the recent heavy rains, which, in the case of recently bathed sheep, renders the work in a great measure useless, from washing off any mixture which is not of an oily nature; besides being injurious to the animals, from opening up the "sheds" in the fleece along which the liquid is poured, and which, in the case of close-woolled sheep especially, have not had sufficient time to reunite. The hoggs were all jacketed or "bratted," as it is provincially termed, about 10 days ago. From the experience we have had we are quite satisfied of the great benefit of such winter coverings to young sheep. We find, upon examining our mortality tables for the last 12 months, that out of 600 Cheviot and black-faced ewe hogs, the number of deaths has been but 16. Be it remembered also, that with the exception of about a score none of these ever tasted a Turnip, but fared with the ewes on the hill. Since we commenced the use of jackets, we have especially noticed an extraordinary diminution in the number of cases of "sturdy," or water in the head. Hydatids in the brain are generally understood to be induced by long continued heavy rains, cold winds, and general privation. Those who are acquainted with the Lammermuirs will readily admit that our flocks must have their full share of all these evils. Hence may arise the prevalence of this disease in the district; the actual loss from this alone amounting to at least one per cent., besides those which are cured by wiring. Our loss from sturdy during the past year is about one-eighth per cent. Any one conversant with sheep must have observed that during very wet weather the wool along the back parts in such a way as fully to expose the skin. The connection between the spine and the brain is obvious, and it cannot be wondered that hydatids should form in the brains of sheep which are much exposed to severe storms without due shelter. Hence the advantage of covering their backs with some material, which will protect them in a great measure from the chilling effects of wind and rain. The material in use is woollen, the size being 23 inches by 15. We lately purchased some coarse blankets, which made excellent covers, each jacket costing 4*d*. The rams were put to the ewes on the 22d. We allow about 45 ewes to each sheep. The young cattle are receiving a feed of Turnips morning and evening, with as much Oat-straw as they can eat. The cows are receiving straw at night, in addition to what they can pick up on the pastures during the day. In case of hard weather, they will be kept in the byres and yard, those which calve early getting a few Turnips. The ploughing of Oat stubble for Turnips is completed, except a few acres, which we intend manuring previously, which will be done whenever the ground is sufficiently dry or hard to prevent the carts doing any damage. We had begun to earth up the Turnips with the common plough, when a severe frost on the night of the 26th put a stop to all such operations. At present we are spreading a compost of lime and peat upon a piece of lea, to be ploughed up for Oats. During the continuance of frost, this, and carting out manure for Turnips, will constitute the work on the arable portion of the farm. During fresh weather ploughing and storing Turnips will occupy our attention. We have a considerable quantity of Green-topped Yellow stored. *A Lammermuir Farmer.*

Notices to Correspondents.

BOOKS: *A H F C.* We do not know any periodical that fully describes new implements, as an essential part of its plan. Blackie's Cyclopedia is pretty full upon it.—*W K W.* Strachan's Ready Reckoner.

CARROTS: *E D.* They are by no means a "faint" thing for a working horse. We give our horses ½ cwt. a day apiece or more, of clean roots uncut, placed in their manger at noon and night; they have, however, been long accustomed to them. They are a diuretic to unaccustomed cattle.

CATTLE FEEDING: *A Cattle Feeder.* The date of a *truth* does not at all affect its usefulness, and Mr. Brodie's (misprinted "Moore's") speech well deserved the same attention from

our readers as it actually received from his hearers; to many of both it was to a great extent repeated matter, but for neither is it useless occasionally to represent facts which have already been brought under their attention. These discussions before the Highland Society are the most useful things of the kind that have ever taken place, and it is a pity not to give them completely in readable type. It was not carelessness on our part that has occasioned your criticism; but a difference of judgment, which we still retain.

Cream. Add a dilute solution of chloride of lime to the milk. To every gallon of the latter a table-spoonful of the solution of half an ounce of the chloride in a gallon of water.

Drop Drills: *W B R.* There are many contrivances for converting drills into drop drills. Are you disposed to explain yours?

Farm Accounts: *E F., &c.* We are happy to say that "W. F.," of Gay Bowers, Essex, is to give us a series of papers on this subject in our next year's volume.

Flax: *Worth.* You had better manure the Barley stubble well now, and get it rotted in the soil and mixed with it before April. Flax will flourish better after Swedes fed on the land than after almost anything else, provided you can get a good tilth early enough. Mr. Dickson has written a work on Flax, and a still cheaper one is written by T. Keir Short.

Gorse: *M C S.* We must refer you to a forthcoming number of Blackie's "Cyclopedia of Agriculture," or to Mr. Firchild, of 21, Frederick-place, Hampstead-road.

Grass: *P S.* Try 1 cwt. of nitrate of soda and 2 cwt. of guano per acre, sown broadcast in February or March.

Hay Seeds: *T Clod.* You mistake. The "ignorance" chargeable on the question consists, not in not knowing the botanical names of hay seeds, but in supposing anyone knows them. They are a hodge-podge of all sorts. Tell us any particular plant by its common name, and if we know it by that name, we shall be happy to tell you any other name, scientific or otherwise, that it may happen to have.

Linseed: *A Sub.* We have applied for the experience of a cold water man. Our own plan is to boil, as heretofore; but they *say* that to soak the ground Linseed in cold water for 36 hours answers well.

Mr. Mechi's Lecture: *W G D.* Your critique, *or* an explanation of the mistake, shall appear directly.

Name and Address: Will "*E. X., Braintree,*" be kind enough to forward *his*.

Pigeons: *P T O.* See page 782, col. *b*.

Potatoes: *J T.* We do now know the "mealy" Potato. The "cup" is well known all over Ireland, from whence it is to be easily had.

Rabbits: *A Constant Reader* asks if any one has had experience of rabbits, kept for the sale of their produce, as a profitable speculation.

Rats: *B W.* Procure the pamphlet entitled "Rat! Rat!! Rat!!!"

Roe Deer: *A S.* Probably too good living and want of sufficient exercise might have been the cause of death, unless the food was different from what they had been accustomed to, or contained deleterious properties. We would recommend bruised Linseed to be given in a mash as a preventive; and, by way of medicine, protochloride of mercury, 5 grains; tartarised antimony, 5 drachms, to be given in the mash daily for several days. *W. C. S,*

Errata.—Mr. Honeyman's speech, referred to at page 777, will be published next week; it was accidentally omitted in our last number, and we have no room for it in this.—Mr. Wilkins wishes us to correct a mistake in one of his letters on thin seeding. He *has* put in 2 pecks of seed Wheat per acre, but has not exceeded 2 pecks. He has put in ½ a peck, and will back that against the 2 pecks, though it was put in on the 6th of this month. He himself considers 1 peck sufficient, and 2 pecks as a maximum.

Markets.

COVENT GARDEN, Dec. 14.

Hothouse Grapes and Pine-apples are quite equal to the demand. Oranges and Lemons are plentiful. Pears are still received from the Continent. Nuts have not altered since our last account. A few examples of forced English Strawberries have made their appearance, but they do not meet with a ready sale. Among Vegetables, there has been some excellent Seakale, and a little Rhubarb has been supplied. French Beans are more plentiful. Carrots and Turnips are good in quality, and so are Potatoes. The latter are getting dearer. Lettuces and other salading are sufficient for the demand. Mushrooms are cheaper. Cut Flowers consist of Heaths, Pelargoniums, Camellias, Fuchsias, Mignonette, Tulips, Double Primroses, Gardenias, Bignonia venusta, Chrysanthemums, and Roses.

FRUITS.

Pine-apples, per lb., 4s to 6s	Pommegranates, each, 3d to 6d
Grapes, hothouse, p. lb., 4s to 6s	Almonds, per peck, 6s
— Portugal, p. lb., 8d to 1s	— sweet, per lb., 2s to 3s
Pears, per doz., 1s to 3s	Walnuts, p. 100, 1s to 2s
— per half sieve, 6s to 15s	— p. bush., 12s to 24s
Apples, dessert, p. bsh, 3s 6d to 8s	Nuts, Barcelona, p. bush., 20s to 22s
— kitchen, do., 3s 6d to 6s	— Brazil, p. bsh., 12s to 14s
Oranges, per doz., 9d to 2s	Filberts, per 100 lbs., 60s to 65s
— per 100, 6s to 10s	
Lemons, per doz., 1s to 2s	

VEGETABLES.

Brussels Sprouts, per hf. sieve, 1s 6d to 2s	Leeks, per bunch, 1d to 2d
Cabbages, per doz., 6d to 1s	Shallots, per lb., 6d to 8d
Greens, p. doz. bun., 1s 6d to 2s 6d	Garlic, per lb., 4d to 8d
Cauliflowers, p. doz., 4s to 6s	Artichokes, Jerusalem, p. half sieve, 1s 6d to 2s
Broccoli, p. doz. bndl., 10s to 12s	Lettuce, Cabbage, p. score, 1s
French Beans, per 100, 2s to 3s	— Cos, p. score, 1s to 1s 6d
Seakale, per punnet, 3s 6d to 4s	Endive, per score, 1s to 1s 6d
Sorrel, p. hf. sieve, 6d to 9d	Small Salads, p. punn, 2d to 3d
Potatoes, per ton, 60s to 100s	Horse Radish, p. bdl., 1s to 4s
— per cwt., 3s to 5s	Red Beet, per doz., 6d to 1s
— per bush., 1s 6d to 2s 6d	Mushrooms, p. pot., 1s 0d to 1s 3d
Turnips, p. 12 bundles, 1s to 2s	Fennel, per bunch, 2d to 3d
Cucumbers, each, 6d to 1s	Savory, per bunch, 2d to 3d
Radishes, per doz., 1s to 1s 6d	Thyme, per bunch, 2d to 3d
Celery, p. bundle, 9d to 1s 6d	Parsley, p. doz. bun., 1s to 3s
Carrots, per doz., 2s to 5s	— Roots, p. bdle., 9d to 1s
Spinach, p. half sieve, 6d to 1s	Marjoram, per bunch, 2d to 4d
Onions, p. bunch, 4d to 6d	Mint, per bunch, 2d
— Spanish, p. doz., 1s 6d to 4s	Watercress, p. 12 bunch., 6d to 9d

HOPS.—Friday, Dec. 13.

Messrs. Pattenden and Smith report that the demand for fine new Hops continues good, whilst low and inferior are offered at less prices.

HAY.—Per Load of 36 Trusses.

Cumberland Market, Dec. 12.

Prime Meadow Hay	70s	to 75s	Inferior	60s	to 68s
Inferior ditto... ...	50	63	New Clover	—	—
New Hay	—	—	Straw	24	28
Old Clover	75	80			

Joshua Baker.

Whitechapel, Dec. 12.

Fine Old Hay ...	68s	to 72s	New Clover	—s	to —s
Inferior ditto ...	55	66	Inferior ditto... ...	63	68
New Hay	—	—	Straw	21	24
Old Clover	75	80			

COAL MARKET.—Friday, Dec. 13.

Hartley, 15s.; Eden Main, 15s. 9d.; Wallsend Hetton, 17s.; Wallsend Lambton, 16s. 6d.; Wallsend Stewarts, 17s.; Wallsend Tees, 17s.—Ships at market, 32.

POTATOES.—Southwark, Dec. 9.

The Committee report that owing to the continued S.E. wind, our market has been supplied principally during the last week by rail, which has been very considerable. The very few Yorks and Scotch that have arrived have realised our extreme quotations; those by rail being of such various qualities, we are obliged to give a large range of prices. There have been a few cargoes from France, which met a ready sale. The following are this day's quotations:—York Regents, per ton, 90s. to 100s.; Scotch do., 65s. to 80s.; Wisbeach do., 70s. to 90s.; French whites, 70s. to 80s.

SMITHFIELD, Monday, Dec. 9.

We have a large supply of Beasts, but not so many as were expected. Trade is nearly as good as of late for the best qualities, but several second-rate cannot be sold, although there is a disposition to take lower prices. There are a few more Sheep, and the demand is smaller, consequently trade is very heavy at less money. Trade is dull for Calves; inferior quality is sold very low. From Holland and Germany we have 957 Beasts, 2090 Sheep, and 136 Calves; from Scotland, 500 Beasts; and 3200 from the northern and midland counties.

Per st. of 8 lbs.—	s	d	s	d
Best Scots, Herefords, &c. ...	3	8	to 3	10
Best Short-horns	3	4	— 3	8
2d quality Beasts	2	4	— 3	0
Best Downs and Half-breds ...	3	8	— 4	0
Ditto Shorn	—		—	

Per st. of 8 lbs.—	s	d	s	d
Best Long-wools .	3	6	to 3	8
Ditto Shorn	—		—	
Ewes & 2d quality	2	10	— 3	2
Ditto Shorn	—		—	
Lambs	—		—	
Calves	2	4	— 3	8
Pigs	2	8	— 3	8

Beasts, 4867; Sheep and Lambs, 25,210; Calves, 178; Pigs, 329.

Friday, Dec. 13.

The supply of Beasts is very large, even taking into consideration that it is near Christmas; some of the best qualities find purchasers at about Monday's quotations, but there is scarcely any inquiry for inferior kinds; several remain unsold. The number of Sheep is also large and the demand small. Trade is exceedingly dull, at rather lower prices than on Monday. We have not got many good Calves on offer, consequently this description are sold readily; but trade is very dull for middling kinds. From Holland and Germany there are 402 Beasts, 3000 Sheep, and 148 Calves; from Scotland, 240 Beasts; from Sussex, 80; from Norfolk and Suffolk, 200; from West Country, 200; 1000 from the northern and midland, and 82 Milch Cows from the home counties.

Best Scots, Herefords, &c. ...	3	8	to 3	10
Best Short-horns	3	4	— 3	8
2d quality Beasts	2	4	— 3	0
Best Downs and Half-breds ...	3	10	— 4	0
Ditto Shorn	—		—	

Best Long-wools .	3	4	to 3	6
Ditto Shorn	—		—	
Ewes & 2d quality	2	8	— 3	0
Ditto Shorn	—		—	
Lambs	—		—	
Calves	2	4	— 4	0
Pigs	2	8	— 3	8

Beasts, 2336; Sheep and Lambs, 6470; Calves, 239; Pigs, 385

MARK LANE.

Monday, Dec. 9.—There was a fair supply of English Wheat by land carriage samples to this morning's market, the bulk of which was disposed of on the terms of this day se'nnight, but a few of the finest samples remained unsold at the close. Foreign met a limited demand; on the sales effected late prices were barely supported.—Fine English and foreign Barley commands its previous value, secondary English is very unsaleable even at a decline of 1s. per qr.—The prices of Beans and Peas are unaltered.—Oats meet a good demand at an advance of 6d. per qr.—The Flour trade is heavy.

Per Imperial Quarter.	s.	s.		s.	s.
Wheat, Essex, Kent, & Suffolk ... White	44	—47	Red	38	—45
— — fine selected runs ... ditto	43	—48	Red		—42
— — Talavera	46	—52			
— Norfolk, Lincoln, & York... White	—		Red	—	
— Foreign	36	—50			
Barley, grind. & distil., 22s to 24s... Chev.	28	—32	Malting	24	—28
— Foreign... Grinding and distilling	19	—24	Malting	20	—25
Oats, Essex and Suffolk	—				
— Scotch and Lincolnsbire ... Potato	20	—23	Feed ...	17	—21
— Irish ..... Potato	17	—21	Feed ...	16	—18
— Foreign..... Poland and Brew	18	—22	Feed ...	15	—19
Rye	25	—27	Foreign	—	
Rye-meal, foreign..... per ton	—				
Beans, Mazagan ..... 25s to 27s..... Tick	26	—28	Harrow	26	—28
— Pigeon ..... 27s — 32s... Winds	38	—44	Longpod	28	—34
— Foreign ..... Small	24	—3	Egyptian	21	—22
Peas, white, Essex and Kent..... Boilers	26	—28	Suffolk...	27	—30
— Maple.... 30s to 32s ..... Grey	27	—29	Foreign	25	—33
Maize ..... White	—		Yellow...	—	
Flour, best marks, delivered... per sack	36	—40			
— Suffolk ..... ditto	30	—36	Norfolk	30	—36
— Foreign ..... per barrel	18	—24	Per sack	29	—34

Friday, Dec. 13.—The arrivals of all grain since Monday have been small, and that day's prices may be considered nominally the same, transactions in Wheat, Beans, and Peas being quite in retail.—Fine English and Foreign Barley is held at our quotations: secondary sorts are unsaleable, although offered at a further reduction of 1s. per qr.—The Oat trade is firm, but the enhanced prices restrict business.—We observe no reduction in the price of Flour; trade is heavy.

Imperial Avebages.	Wheat.	Barley.	Oats.	Rye.	Beans.	Peas.
Nov. 2.....	40s 2d	24s 1d	17s 3d	23s 6d	29s 1d	29s 2d
— 9.....	40 5	24 4	17 0	26 7	29 0	29 11
— 16.....	39 11	24 1	17 2	24 2	28 9	29 0
— 23.....	39 11	24 1	17 3	29 6	28 9	29 4
— 30.....	40 3	24 6	17 1	23 6	28 5	29 2
Dec. 7.....	40 2	24 7	17 7	24 3	28 9	29 0
Aggreg. Aver.	40 2	24 3	17 3	25 3	28 9	29 3
Duties on Foreign Grain	1 0	1 0	1 0	1 0	1 0	1 0

Fluctuations in the last six weeks' Corn Averages.

Prices.	Nov. 2.	Nov. 9.	Nov. 16.	Nov. 23.	Nov. 30.	Dec. 7.
40s 5d	...		...	...	...	...
40 3	...	...	...	...		...
40 2		...	...	...	...	
40 2	...	...	...	...		
39 11	...	...		...	...	...
39 11	...	...	...		...	...

Liverpool, Friday, Dec. 6.—The arrivals into this port of grain, Flour, and Oatmeal, coastwise and from Ireland, since Monday last, are unusually small; from the American States, however, we have a tolerable supply of Wheat and Flour, and from France a moderate quantity of Wheat, Barley, and Beans, with 10,451 sacks of Flour. At our corn exchange to-day we experienced a very dull and stupid market for all the leading articles of trade, even upon a retail scale; it was therefore difficult to effect the sale of any description of Wheat without submitting to such terms as holders refused to concede, and the trade closed at prices rather under those of Tuesday. Barley and Malt supported late rates. Beans and Peas in limited request, but not cheaper. Good Oats were quite as dear as on Tuesday.——Tuesday, Dec. 10.—At our market this morning a tolerable quantity of Wheat was disposed of for Irish account, but having no speculative demand, and millers continuing to act with the same caution as for some time past, the best qualities of Wheat receded 1d., and middle and inferior 2d. per 70 lbs. from the rates of this day se'nnight. Malting Barley remained stationary in value, and grinding samples were 1d. per bushel dearer. In Malt, Beans, and Peas no variation was apparent. Oats being extremely scarce, a small cargo of prime Irish mealers just arrived, realised 2s. 9d., being 1d. per 45 lbs. over the currency of last week; Oatmeal at the same time moving slowly at an abatement of 3d. per load.

HARTLEY'S PATENT ROUGH PLATE GLASS.

James Phillips and Co., 116, Bishopsgate-street Without, beg to hand their list of Prices of the above description of Glass. Cut to order in panes of

8 by 6	and under	10 by 8	at 4½d. per foot.
10 by 8	,,	14 by 10	at 5d. ,,
14 by 10	,,	1½ foot, or sizes not exceeding 20 inches long	at 5½d. ,,
1½ foot	,,	3 feet, or sizes not exceeding 30 inches long ...	at 6d. ,,

PACKED IN BOXES of 50 feet each.

6 by 4 and 6½ by 4½.....12s. 0d.	8 by 6 and 8½ by 6½.....15s. 0d.
7 by 5 and 7½ by 5½.....13 6	9 by 7 and 9½ by 7½ and 10 by 8.....16 6

Well worth the attention of Nurserymen and Market Gardeners.

ROUGH PLATE GLASS.

	¼	⅜	½	⅝	¾	1 in.	1¼	1½
	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
Not above 15 in. long	0 11	1 0	1 6	3 0	4 6	5 3	6 0	
Above 15 in. and not above 35	1 1	1 2	1 8	3 6	5 3	6 0	7 0	8 0
,, 34 ,, ,, 75	1 3	1 4	1 10	4 0	6 0	7 0	8 0	

GLASS TILES AND SLATES made to any size or pattern.

HALLIMAN'S REGISTERED FRUIT PROTECTORS, from 6d. to 1s. each.

MILK PANS, from 2s. to 6s. each.

PROPAGATING AND BEE GLASSES, from 2d. each.

WASP TRAPS, 3s. 6d. per dozen.

LACTOMETERS, for trying the quality of Milk, 7s. 6d. each.

STANDS, for Pianofortes, 1s. each.

Glass Shades for Ornaments. Parian Marble. Wax and Alabaster Ornaments. Lamp Shades and Glasses. Patent and British Plate. Ornamental and Stained Glass; and every article in the Trade.

From the *Gardeners' Chronicle*, December 8, 1849:

"As for the article substituted for Rough Plate, and which is actually in the market for the purpose of imposing upon gardeners, it is wholly unfit for any horticultural purpose. The best samples of it which we have yet seen is sold by Mr. JAMES PHILLIPS, 116, BISHOPSGATE STREET, LONDON."

GLASS FOR CONSERVATORIES, GREENHOUSES, PIT-FRAMES; AND PLATE GLASS FOR DWELLINGS.

Thomas Millington begs to hand the sizes of a large quantity of SHEET GLASS, packed in 100 feet boxes.

6 by 4 ins., 6 by 4½ ins., 6½ by 4 ins., 6 by 5½ ins., 6½ by 5 ins., 12s. each.

6½ by 5½ ins., 6 by 6 ins., 6½ by 6 ins., and under 8 by 6 ins., 13s. each.

9 by 7 ins., 9½ by 7½ ins., and 10 by 8 ins., 15s. each.

Large sizes, 16 oz., 2d. and 2½d. per foot.

Large sheets, in 200 and 300 feet cases, 2½d. to 2¾d. per foot.

16s. per box; or 2¾d. per foot if less than one box be taken:

11	inches by 8 inches	13 inches by 9 inches	
12	,, by 8 ,,	12 ,, by 10	,,
12	,, by 9 ,,	14 ,, by 10	,,

Boxes charged 1s. each extra.

T. M.'s Stock of small Glass is so large, that he thinks he can pledge himself to execute orders to any extent.

Glass cut to any other size required, in either 16 oz., 21 oz., 26 oz., or 32 oz.

ROUGH PLATE GLASS.

Rough Plate Cast, perfectly flat and uniform, the best manufactured. A small sample will be sent, upon application, to prove it.

Purchasers must be cautious, as some of the articles sold under this name are of the most inferior description, being full of fire-flaws, and the metal not properly united. We only recommend the best article, being sure that no other in the end can please. Some unprincipled vendors keep good samples to show, sending afterwards the inferior, described as above.

CUT TO ORDER IN PANES.

	⅛ in. thick.	¼ in. thick.
	0s. 6d.	0s. 11d.
Not above 15 inches long	0 8	1 1
Above 15 inches and not above 35 ...	0 9½	1 3
,, 35 ,, ,, 50 ...	1 0	1 3
,, 50 ,, ,, 75 ...	1 3	1 4
,, 75 ,, ,, 100 ...	...	1 6
100 inches and above	...	

SHEET GLASS TILES.

16 oz. sheet ... ... 0s. 5d.	26 oz. sheet ... ... 0s. 9d.
21 oz. ,, ... 0 7	32 oz. ,, ... 0 11

SUPERIOR ROUGH PLATE TILES.

¼ inch ... ... 0s. 10d.	⅜ inch ... ... 1s. 7d.
½ inch 1 3	⅝ inch 2 0

GLASS SHADES FOR ORNAMENTS.—Our price is 25 per cent. less than any house in the Trade, and the colour far superior, which must be preferable for ornaments.

LACTOMETERS for trying the quality of Milk: four tubes in frame, 6s. each. Wasp Traps, 3s. per dozen. Stands for Pianofortes, 9d. each.

MILK PANS 2s. to 6s. each, Hand-frames, Tiles, and Slates; Propagating and Bee Glasses from 2d. each; Cucumber Tubes, 1d. per inch; Peach Glasses, 10d. each; Pastry Slabs; Glass Plates, in wooden frames, for butter and pastry, &c.; Hyacinth Glasses and Dishes, Shades for Ornaments, Fish Globes, Plate and Window Glass of every description, and Lamp Shades. Self-registering Thermometers for Greenhouses, Horticultural Glass, &c.

N.B. The moderate charge of 1s. for each packing case will be made, which we think will be an inducement for parties to retain them; but if sent back free of expense the whole will be allowed.

THOMAS MILLINGTON, GLASS, COLOUR, AND PAINT MANUFACTURER, 87, BISHOPSGATE-STREET WITHOUT, LONDON.

GREEN and HOTHOUSES made by Machinery, warranted best materials, glazed 16-oz. sheet glass, of a large size, with glass at both ends and one door, painted three coats of best oil-colour, and delivered to any Railway or Wharf in London.

Lean-to.			Unglazed.			Span-roofed, glass all round. Glazed.			Unglazed.			
ft.	ft.		£	s	d	£	s	d	£	s	d	Height in front, 3 feet 6 in., wood and glass; 3 feet 6 in., brickwork.
12	by 8	...	15	10	0	10	0	0	18	6	0	11 15 0
15	— 10	...	22	10	0	14	5	0	25	10	0	16 9 0
18	— 12	...	28	10	0	18	0	0	32	14	0	20 12 6
21	— 12	...	32	10	0	20	0	0	37	8	0	23 2 0
24	— 13	...	44	0	0	25	12	6	49	12	0	29 2 0
27	— 14	...	51	4	0	29	17	0	58	5	0	33 15 0
30	— 15	...	61	17	0	36	2	0	69	14	0	40 9 0
35	— 16	...	73	4	0	42	14	0	82	7	0	47 15 0
40	— 17	...	85	7	0	49	15	9	95	17	0	55 12 0
45	— 17	...	93	15	0	54	13	9	105	10	0	61 12 0
50	— 18	...	108	10	0	63	6	0	121	13	0	70 19 0
55	— 18	...	115	16	0	67	11	0	130	4	0	75 19 0
60	— 18	...	124	13	0	72	14	3	140	8	0	82 8 0

These Greenhouses are prepared in such a manner that any country carpenter can fix them with ease. A plan is sent free for the brickwork, &c.

Estimates for erecting and heating the above, on application. Lists of prices for Sash-doors, &c., post-free on application.

J. Lewis, Horticultural Works, Stamford-hill, Middlesex.

Just published, considerably enlarged, price 5s. 6d., the Third Edition of

RURAL CHEMISTRY:

AN ELEMENTARY INTRODUCTION TO THE STUDY OF THE SCIENCE IN ITS RELATION TO AGRICULTURE.

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Honorary Member of the Royal Agricultural Society of England, Professor of Chemistry to the Horticultural Society of London, Lecturer on Chemistry in the Honourable East India Company's Military Seminary at Addiscombe, &c., &c.

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"In accordance with numerous suggestions, very considerable additions have been made to this little book, in preparing it for a new edition; several important practical matters, not treated of in any former editions, having been introduced. Brief descriptions of the more important of the domestic arts, such as Wine and Vinegar Making, Brewing, the Manufacture of Spirits, Baking, Cheese-making, Cookery, &c., have been added, together with some account of the Scientific Principles involved in those arts. Numerous recent analyses of agricultural crops have likewise been given, and the whole has been carefully revised and corrected."

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Dec. 14.

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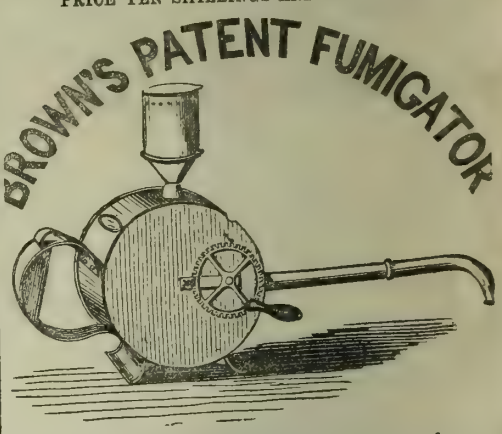
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THE GARDENERS' CHRONICLE
AND
AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 51—1850.] SATURDAY, DECEMBER 21. [PRICE 6*d.*

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N.B. W. M. and SONS' Lists of prices for Fruit, Forest, Evergreen, and other Trees and Shrubs required at the present planting season, are now ready for distribution, and will be forwarded on application.

References expected from unknown correspondents.

Stapleton-road Nurseries, Bristol.

KNIGHT AND PERRY, EXOTIC NURSERY, King's-road, Chelsea, London, deeply grateful for the distinguished patronage so long conferred upon them, beg to intimate that their NEW CULINARY AND FLOWER SEEDS all of the first quality, are now ready, and they most respectfully solicit a continuance of that support which has been extended to their house for the last 50 years.

For the above—as well as for their AGRICULTURAL SEEDS, to which they pay great attention, Stove, Greenhouse, and Herbaceous Plants, Bulbous Roots, imported annually by themselves from Holland, Conifers and other Hardy Ornamental Trees and Shrubs in great variety, and including many valuable novelties, Grape Vines of all the best sorts, from eyes, Fruit Trees of choice sorts, both trained and untrained, and which are this season of very fine growth—there are lists specially appropriated, and which they respectfully solicit permission to forward.

Exotic Nursery, King's-road, Chelsea, London.

FINE PURPLE TOP SWEDISH TURNIP SEEDS FOR SALE.—200 Bushels, pure, and of excellent Stock, raised by one of the first Agriculturists of Berwickshire, who has for many years paid great attention to the raising of Turnip Seeds.—Apply to W. KINGHORN, Dunse, N.B.

GRAVESEND.—50,000 TREES AND SHRUBS ON SALE.—Arbor-vitæ, Berberis aquifolium, Cytisus, Cypress, Holly, Jasminums, Lilacs, Laurels, China Roses, &c., 2 to 4 feet, from 15*s.* to 40*s.* per hundred. Standard Roses, 4*l.* to 5*l.*

Aucuba japonica, Arbutus, Cotoneaster, 2 to 3 ft., 12*s.* per dozen; Irish Yews, 3 to 4 feet, 25*s.*; Standard Roses, in sorts, 18*s.* to 30*s.*

Large ornamental Trees, for immediate effect, Greenhouse and Herbaceous Plants, in great variety, at low prices.

Apply at the Cemetery, Gravesend, Kent.

NEW EARLY PEAS, &c.

BASS AND BROWN have a very fine Stock of the undermentioned early Seeds, which they are enabled to offer at the following low prices:—

	Per quart.—*s.*	*d.*
PEAS, Taylor's new Prolific, very early, hardy, and productive, sent out by Barnes	1	6
Essex Champion, hardy and very productive	0	8
Danecroft Rival, very early	1	3
Bishop's new Long-pod, great bearer	1	0
Early Warwick, Early Frame	0	6
Early Emperor, very early and hardy	0	10
Fairbeard's Champion of England	1	0
BEANS, Long-pod and Windsor	0	6
RADISH, early Short top Salmon	1	6
Wood's new early Scarlet	2	0

Their Wholesale List of Prices of the above and all other description of Seeds will be forwarded on application.

Seed and Horticultural Establishment, Sudbury, Suffolk.

COCHIN CHINA FOWLS.

A FEW THOROUGH-BRED COCKS FOR SALE. Apply to "W. O." at Mr. MacLachlan's, 6, Birchin-lane, Lombard-street, London.

CARTER'S CATALOGUE OF SEEDS.

J. CARTER, SEEDSMAN and FLORIST, 238, High Holborn, London, announces the speedy appearance of his new CATALOGUE FOR 1851, which will be forwarded, gratis and prepaid, on application by post or otherwise. He begs leave to state that the Floricultural section comprises, as usual, the Scientific and English Name of each plant, the Linnean Class and Order, and Natural Order to which it belongs; its hardiness, duration, time of flowering, and colour of the flowers, and other necessary information. The collection of Flower Seeds will comprise several splendid novelties.

THE BEST AND MOST PROLIFIC EARLY KIDNEY POTATO GROWN.

"Eglinton Castle Gardens, Ayrshire, Oct. 23, 1850.

"DEAR SIRS,—Having grown a quantity of your improved Kidney Potato here, and at Pitfour Castle, Perthshire, I have in both cases found it to be earlier and a superior flavoured Potato to any other I know. Its dwarf habit makes it a most excellent variety for Frame Forcing, which I proved here last spring.—I am, dear Sir, yours truly, WILLIAM SHARPE."

"To Messrs. Jackson and Son,

"The Nurseries, Kingston, Surrey."

THOMAS JACKSON and SON have much pleasure in quoting the above testimonial, from a well-known authority, of the merits of their Improved Kidney Potato, and they are happy to say they have now to offer fine healthy sets at 7*s.* 6*d.* per bushel. T. J. and Son have also to offer, at 5*s.* 6*d.* per bushel, good healthy sets of the Early Prolific round Potato Golden Dwarf. To be obtained of T. J. and Son, and from most of the Wholesale Seed Firms in London.

T. J. and SON have a large Stock of Fruiting and Succession Providence, Queen, and other Pine Plants, strong, healthy, and warranted clean. Price, according to quantity required, may be obtained upon application.

Nursery, Kingston, Surrey, and Royal Gardens, Hampton-court.

TO NURSERYMEN, FLORISTS, & MARKET GARDENERS.

TO BE LET, AT NORTH-END, FULHAM, Five Acres of Walled Garden, with immediate possession. Ground well Stocked with Fruit Trees and Bushes, and Moss and China Roses. The Land in excellent condition, and has thereon a good Forcing House, between 68 and 70 feet long.

For particulars, apply to Mr. ATWOOD, Auctioneer and Land Agent, Mortlake, Surrey; or at the "Rainbow," King-street, Covent-garden.

MITCHELL'S MATCHLESS WINTER PARSLEY, Extra Superior for Garnishing.—J. M. having a quantity of new Seed to dispose of, can highly recommend it to Market and Gentlemen's Gardeners as the hardiest and best winter sort ever produced. Retail price, 2*s.* 6*d.* per lb. Also, his superior dark-green Savoy, 1*s.* 6*d.* per lb. A liberal allowance made to Seedsmen.—Post-Office Orders made payable to JOHN MITCHELL, Ponder's End, Enfield, Middlesex.

December 21.

RHODODENDRONS AND AMERICAN PLANTS.—An unlimited supply always on sale, at the low scale of prices quoted, delivered in London, if ordered in quantity, free of carriage.

RHODODENDRON PONTICUM, 2 to 6 inches, 20*s.*, 40*s.*, and 80*s.* per 1000; 1 foot, single stems, fit for working, 10*s.* per 100; 1½ to 2 feet, very fine, fit for planting out for cover, 20*s.* to 40*s.* per 100; 4 to 6 feet, single stems, adapted for working the beautiful new scarlet and other rare species, 50*s.* per 100.

SCARLET RHODODENDRONS, of the finest varieties, 18*s.* to 30*s.* per doz., on their own roots.

WHITE RHODODENDRONS, 18*s.* per doz.

KALMIA LATIFOLIA, 6 to 9 inches, 25*s.* per 100; 1½ to 2 feet, blooming, 12*s.* per doz.

Dwarf ROSE Stocks, fit for working, 8*s.* per 100.

Single CAMELLIA Stocks, fit for working, 42*s.* to 50*s.* p. 100.

ABIES (Pinus) Douglasii (from seed), 1½ to 2 feet, fine plants, 60*s.* per doz., 7*s.* 6*d.* to 42*s.* each; 1½ foot Scotch Fir, 2 years seedling (very fine), 2*s.* per 1000.

SCOTCH LARCH and PINEASTER FIR (very stout), 10*s.*, 15*s.*, 25*s.* per 1000, 1 to 3 feet.

ARBUTUS, 12 to 15 inches, fine, 25*s.* per 100; 6 inches, 8*s.* per 100.

LAURESTINE, two sorts, 8*s.* per 100, bedded, 1 foot.

TREE ROSES of the most esteemed kinds, 12*s.* to 18*s.* p. doz.

A large and fine Stock of the true "Durmast" English OAK, transplanted, 3 to 5 feet, 40*s.* to 60*s.* per 1000. With every description of Fruit and Ornamental Trees.—For Catalogues and prices apply to W. ROGERS, Nurseryman and Contracting Planter, Red Lodge, near Southampton.

TILEY'S VIOLA ARBOREA, OR PERPETUAL TREE VIOLET.—VIOLA ARBOREA, or the PERPETUAL TREE VIOLET (true).—In answer to numerous inquiries for the above, and great satisfaction given by the plants sent out last season by EDWARD TILEY, he begs to state that he has this year a fine stock of the above beautiful DOUBLE VIOLET now to dispose of, which he can highly recommend, this being the proper time for making beds or potting. They are beautifully scented; the blooms are as large as the double blue Hepatica; they bloom freely from August till the end of May, and are perfectly hardy. Twelve of these plants grown in pots will scent a large greenhouse; and a small bed, 9 feet long by 3 feet wide, will be sufficient to furnish a family with bouquets the whole of the winter and the spring. They should be planted in rather a dry situation and a loose soil, as the Violet will thrive and bloom finer than in wet or clay borders.

E. T. has been informed by the gentleman that introduced it into this country, that he has seen them growing in the thickets of Persia to the height of 4 feet, with large bushy heads to them, and hundreds of blooms on them at the same time. Large bushy plants, 6*s.* per dozen; smaller ditto, 3*s.* per dozen; or 1*l.* per hundred.

Also he has a fine stock of that splendid YELLOW VIOLET, or VIOLA LUTEA, which has been so much admired at the London exhibitions. In colour it is equal to the Crocus. Strong bushy plants 2*s.* 6*d.* each; or smaller ditto, 1*s.* 6*d.* each.

KITLEY'S GOLIAH STRAWBERRY.—Strong well-rooted plants at 3*s.* per dozen.

True BATH COS LETTUCE SEED, 1*s.* per packet.

Extra fine SWEET WILLIAM SEED, saved from 24 distinct varieties, 1*s.* per packet.

ANTIRRHINUM SEED from all the best varieties, 1*s.* per packet.

WINTER CUCUMBER.—Lord Kenyon's Favourite, 2*s.* 6*d.* per packet.

The whole or any quantity of the above will be sent, postage and package free, to any part, on receipt of a Post-office order, or the amount in penny postage stamps.

Sold by EDWARD TILEY, Nurseryman, Seedsman, and Florist, 14, Abbey Church-yard, Bath.

SMITHFIELD CATTLE SHOW.—MILK PANS, in stout Glass, of every size and variety of shape, were exhibited as usual, Nos. 148, 149, 150, Bazaar, by Messrs. COGAN and Co., whose collections were honoured (among other Prizes) with the Silver Medal of the Dublin Society in April, as also with the Silver Medal of the Liverpool and Manchester Society, at their meeting, held at Warrington in September last.

NOBLEMEN, FARMERS, and the Public generally, are respectfully invited to notice the NEW GLASS CHURN, LORD CAMOY'S MILK SYPHONS for separating Milk from Cream, GLASS LACTOMETERS for ascertaining the quality of Milk, New Bee Glasses invented by Lord Keane, Glass Cream Pots and Pans, Glass Milk Trays, Glass Tiles and Slates, and every description of Dairy Glass.

Durable Farm Paints, Glass for Hothouses and Garden purposes, may be had (safely packed) for any part of the kingdom, or for exportation, on application at the Stands, 148, 149, and 150, or at the Warehouse, 48, Leicester Square, London.

Small Glass for Melon Pits of every size, from 10*s.* 6*d.* per 100 feet; Hartley's and Swinburne's PATENT ROUGH PLATE at the Manufacturer's prices,

Glass Ornamental Shades, Fern Shades, Lamp and Gas Glasses, Patent Glass Pens; Patent Texturalized, Silicated Marble, and other Ornamental Glass, supplied, as usual, at 48, Leicester-square; the Colour and Lead Department, at 5, Prince's-street, Coventry-street, London.

Just published, considerably enlarged, price 5s. 6d., the Third Edition of

RURAL CHEMISTRY:

AN ELEMENTARY INTRODUCTION TO THE STUDY OF THE SCIENCE IN ITS RELATION TO AGRICULTURE.

BY EDWARD SOLLY, F.R.S, F.L.S., F.G.S.,

Honorary Member of the Royal Agricultural Society of England, Professor of Chemistry to the Horticultural Society of London, Lecturer on Chemistry in the Honourable East India Company's Military Seminary at Addiscombe, &c., &c.

PREFACE TO THE THIRD EDITION.

"In accordance with numerous suggestions, very considerable additions have been made to this little book, in preparing it for a new edition; several important practical matters, not treated of in any former editions, having been introduced. Brief descriptions of the more important of the domestic arts, such as Wine and Vinegar Making, Brewing, the Manufacture of Spirits, Baking, Cheese-making, Cookery, &c., have been added, together with some account of the Scientific Principles involved in those arts. Numerous recent analyses of agricultural crops have likewise been given, and the whole has been carefully revised and corrected."

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Silicates
Silicic acid
Silicon
Silk dyeing
Silver
Silver, chloride of
Silver, nitrate of
Silver, oxide of
Silver, salts of
Silver, sulphuret of
Size
Size, resin
Skimmed milk
Skin
Slaking of lime
Slag
Smells, foul
Smoke
Straw ashes
Straw of barley
Straw of buckwheat
Straw of lentils
Straw of maize
Straw of oats
Straw of rye
Straw of vetch
Straw of wheat
Strong manures
Sub-salts
Subsoil
Subsoil ploughing
Substratum
Suffocation from
Sugar [charcoal
Sugar, barley
Sugar, candy
Sugar, formation of
Sugar of lead
Sugar of milk
Sugar, refining
Sugar refiners' waste
Sulphates
Sulphur
Sulphur in plants
Suphuret of iron
Sulphuret of lead
Sulphuret of silver
Sulphurets
Smelting
Soap
Soap-boiling
Soap, decomposi-
Soap, soft [tion of
Soap, transparent
Soap, yellow
Soapmaker's ash
Soda
Soda, carbonate of
Soda in rocks
Soda in plants
Soda in soils
Soda, muriate of
Soda, nitrate of
Soda, silicate of
Soda, sulphate of
Sodium
Sodium, chloride of
Soft water
Soil
Soils, analysis of
Soil, colour of
Soils, composition of
Soils, exhaustion of
Soils, formation of
Soils, mixture of
Soils, nature of
Solder
Soot
Sorrel
Soup
Specific gravity
Spices
Spirit proof
Spirit, pyroxylic
Spirit of salt
Spirit of wine
Sponge
Spring water
Springs
Stall feeding
Starch
Steam
Stearic acid
Stearine
Still
Stilton cheese
Sulphuret of tin
Sulphuretted hydrogen
Sulphuric acid
Sulphurous acid
Sulphurous acid checks fermenta-
Sunflower [tion
Sunflower seed
Super-salts [lime
Super-phosphate of
Super-tartrate of
Swedes [potash
Tabasheer
Tannin
Tanning
Tapioca
Tar
Tarnish on silver
Tartar
Tartaric acid
Tartrates
Teeth
Ternary compounds
Tests, vegetable
Thermometer
Thunderbolt
Tiles
Tin
Tin, oxide of
Tin plate
Tin, sulphuret of
Toast
Toasted cheese
Tobacco
Toddy
Treacle
Tropical countries
Tubers
Turf-ashes
Turmeric
Turnips
Turpentine
Turpentine, oil of
Urats of ammonia
Urea
Uric acid
Urine
Use of leaves
Use of plants
Usquebaugh
Vapour condensed by cold
Vapour in the air
Vegetable alkalies
Vegetable manure
Vegetables, boiling
Veins [of
Vermilion
Vetch
Vinegar
Vinegar distilled
Vinous fermenta-
Vitriol, blue [tion
Vitriol, green
Vitriol, oil of
Vitriol, white
Volatile alkali
Volatile oil
Walnuts
Wash, distillers'
Water
Water, action on
Water, air in [lead
Water, composition of
Water, freezing of
Water, hard
Water, impurities in
Water, mineral
Water necessary to plants
Water, New River
Water, phosphoric acid in
Water, pure
Water, rain
Water, sea
Water, soft
Water, spring
Water, Thames
Water, well
Wax
Weed-ash
Weeds,
Weeds, burning of
Weeds, putrefaction
Weeds, spread of [of
Wheat grain
Wheat straw
Wheat starch
Whey
Whiskey
White lead
White of egg
Wine
Wine, brandy
Wine, domestic
Wine, fermentation
Wine, fining of [of
Wine, pricked
Wine, ripening of
Wine, vinegar
Wood ashes
Wood spirit
Woody fibre
Wool
Wool dyeing
Wool, mill refuse
Wool rags
Wool soap
Wort
Wort, foxiness of
Xyloidine
Yeast
Yeast as manure
Yeast, artificial
Yeast, bad
Yeast, dry
Zinc
Zinc, chloride of
Zinc, oxide of
Zinc, sulphate of

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Dixon v. *Bessell.*—*Alderman Wilson said, "It was a very clever invention, and he thought Mr. Dixon ought at least to have seven years' protection instead of three," and fined the defendant* 60*l.*, *and* 10*l. costs, for an infringement of the Registered design.*—*Oct.* 1, 1850.

GLASS WATER PIPES.

MESSRS. COATHUPES AND Co., GLASS MANUFACTURERS, Bristol and Nailsea, Somerset, continue to supply GLASS PIPES for the conveyance of water, &c., in lengths of from 3 to 7 feet, and from ¼ an inch to 4-inch bores; they provide also the necessary joints, which enable them to stand very considerable pressure.

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See the *Gardeners' Chronicle* first Saturday in each month.

CHRISTMAS HOLIDAYS.

THE GARDENS OF THE ZOOLOGICAL SOCIETY, in the Regent's Park, will be open to VISITORS, on payment of SIXPENCE each, EVERY DAY except Sunday, from Christmas Eve to January 6th inclusive.

The HIPPOPOTAMUS is exhibited from 11 to 4 o'clock.

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The Gardeners' Chronicle.

SATURDAY, DECEMBER 21, 1850.

MEETINGS FOR THE ENSUING WEEK.

TUESDAY, Dec. 24—Zoological ..... 9 P.M.
SATURDAY, 28—Medical ..... 8 P.M.

A LEGAL friend of ours inquires whether gardening implements and contrivances are as good as they might be. And if not, why not? These questions are of some moment; they interest the public at large, and to that part of the community which is specially occupied in the cultivation of plants, the answers which must be given to them are of considerable importance. That the first question must be answered in the negative is too clear to admit of doubt. The scythe is much what it was centuries ago, and no really good means have been yet discovered by which Grass can be kept in order, without breaking the backs of those employed for that purpose. A good label, which shall be cheap, durable, and always legible, is continually asked for, but does not appear. Something has long been wanted to replace the old and shabby Thrift and Box-edgings; and yet, in these days of taste and invention, nothing has been found which is at once elegant, inexpensive, easy of application, and lasting in quality. Why is this? Is it that those who are most interested in these matters, have less ingenuity and brain than men of the same station in life, but of different occupation? We think not; we don't for a moment believe that gardeners are so much inferior in these respects to other people; nor do we believe that they are so well satisfied with what they have got, that they wish for nothing better. The causes of this apparent listlessness are to be found elsewhere; and from what quarter they proceed, we shall now endeavour to show.

Let us ask what inducement there is for any man, with limited means, to expend his time in endeavouring to supply such wants as these? Suppose some ingenious gardener were to invent an instrument to replace the scythe, a good label, or a durable and cheap edging, what would he get by it? We shall be answered, he can take out a PATENT for it, and so be remunerated. That is no doubt exactly what he ought to be able to do, but he cannot. A patent for the most simple thing cannot be obtained in this country under 99*l.* 7*s.* 2*d.*! and if the inventor wishes to have his right secured to him throughout England, Scotland, and Ireland, he must pay no less a sum than 300*l.*! If any of our readers doubt the accuracy of these statements, we refer them to the inimitable "Poor Man's Tale of a Patent," given in a late number of Mr. DICKENS' "Household Words," and to the "First Report from the Committee on Legislative Recognition of the Rights of Inventors." Here is the true secret of the want of improvement; it is because a poor man cannot afford to pay the tax on his invention that he does not endeavour to invent. "No man in this country," to borrow the words of the above-mentioned *Report*, "is in any position to claim any right whatever for his invention until he has passed through 35 official stages of cost and delay. By passing through a series of formulas, so antiquated that the origin of them is lost in the obscurity of past centuries—so empty and frivolous that common sense revolts at them — so numerous that they can hardly be reckoned accurately — so intricate, that every one seems a pitfall to discourage scientific invention to the utmost — so inexplicable, that the greatest diversity of opinion obtains in interpreting them—so costly, as to place scientific intelligence wholly within the powers of capital; an inventor may at last obtain a mere recognition of his right, which he *is then at liberty to protect as he may be best able.*" Let our readers mark these last words. After all the expense, useless forms, endless trouble, vexatious delay, and almost insuperable difficulties have been borne and overcome by an inventor, he is rewarded with—what? A Parliamentary title to his invention which is declared good against all the world? A right to his invention similar to that which a lucky finder has in any valuable article he may have found? Not at all; he is rewarded with a license to enforce, *if he can*, a right not before recognised by the laws of his country, but which is nevertheless founded upon every principle of natural and moral justice. That is all he gets, and for this precious license he has to pay the enormous sum of 300*l.*

The iniquities of the Palace Court brought upon it a righteous judgment not long since, and it has disappeared from the tribunals of this country. The iniquities of the system of English patents have been exposed in all their deformity by the author of the article in the "Household Words," and we sincerely hope, and most assuredly expect, soon to see the doom of the present patent absurdities. Will it be believed that no inventor can obtain even the license before referred to without the permission of the Attorney or Solicitor-General, who can grant or withhold such permission at their pleasure, and from whose whim there is no appeal? These high legal functionaries have far too much to do to inquire into the merits of any invention submitted to them for approval; and even if they had the time, their previous studies are not such as to enable them to come to any satisfactory conclusion upon the subject. As it is, the whole proceedings are a farce, which amuse those who take the fees, at the expense, and often ruin, of the inventor. Is this right? In the firm conviction that the evil has only to be more extensively known to cease altogether, and that its abolition would materially benefit the condition of those whose interests this Journal is ever ready to protect, we have thought it our duty to take some notice of the present state of patent law.

The reform of these abuses has been taken up by the Society of Arts. A report, already referred to, has been published by a committee appointed by them, embodying the principles upon which the reform is to be conducted, and the alterations proposed to be made. These principles are: "1. That inventors, &c., ought not to be subjected to any other expenses than such as may be absolutely necessary to secure to them the protection of their invention. 2. That the difficulties and anomalies experienced in connection with patents should be removed. 3. That there should be penalties for using the title of 'patent,' or 'registration,' where none has ever existed."

So far so good. No doubt the true principle is, that no inventor should be compelled to pay anything more than is absolutely essential to secure his right. No doubt the difficulties and anomalies of the present system should be swept away. No doubt there should be a penalty for using the title of "patent" or the catch word "registered." This we look upon as a most important point. How many people not alive to the tricks and audacity of less honest persons than themselves are taken in by the high sounding words "by Her Majesty's Royal Letters Patent;" "registered according to Act of Parliament," &c., &c., which are as often assumed by those who are not, as by those who are entitled to use them.

The 4th and 5th principles laid down by the committee are as follows. "4. That registration of inventions shall be obtainable for a period of one year, on payment of 5*l.*, and shall be renewable for four periods of five years each, on payment of 10*l.* at first renewal, of 20*l.* at second renewal, of 50*l.* at third renewal, and of 100*l.* at fourth renewal. 5. That the surplus profits, after paying office expenses and compensation, shall be directly applied to some public purpose connected with invention, but not carried to the Consolidated Fund." With the first three principles we have, as we have said, no fault to find; but we confess that we are at a loss to know on what principle of justice the fourth is founded. On what ground is a person whose invention turns out to be really worth renewal to be fined 10, 20, 50, 100 pounds for the benefit which, thanks to his labours, the public enjoy? According to this plan, the better the invention, the more beneficial it is to the public, the more heavily is its author fined. Why is a man to be taxed 185*l.* for the enjoyment, for 21 years, of a right called into existence by his own labour and ingenuity? Were it not for the high character of the gentlemen who drew up this report, we should be inclined to think that they were interested in the maintenance of the fee payable to the "deputy chaff wax." It is ridiculous to suppose that 185*l.* is necessary to secure to a man the protection of his invention. It is rather too bad to recommend such a confiscation of property. A person who writes a book has not to pay 185*l.* for a copyright, and on what ground is an inventor to be compelled to pay this enormous sum for a patent? The committee does not propose to give the patentee any greater right than he has at present; for his 185*l.*, he is to have the very same license of which we have already said sufficient. He is to enjoy his right, *if he can maintain it against all the chicanery of adverse claimants.* A man who takes out a patent should be called upon to pay nothing whatever, or at all events no more than some small fee, which should be applied for the purpose of defraying the expenses of an annual authentic list of patents and the salaries of the clerks who arrange and take care of the specifications. An inventor should be able to take his invention to a patent office, deposit an accurate description of what he wishes to have patented, be compelled to swear that he believes himself to be the true inventor, pay some small fee, say a guinea, on the deposit of his specification, and depart with as much as he gets now for 300*l.*, or as he would get under the proposed alteration for 185*l.*, namely, a right to make the best use he can of what he has invented.

What need is there of more? Such a fee, added to some small payment to be made by every one who wishes to examine any document, &c., in the Patent Office, would be amply sufficient to defray the expenses of the establishment; and nothing more should be aimed at. An inventor would then in reality pay for no more than is absolutely essential to his own protection. And until some such plan be adopted, until a stimulus be really given to invention, until an inventor can by the very act of invention acquire a right to what he has invented, the patent laws of this country, however they may be patched up, will always be so great a clog on ingenuity and such a bar to improvement that, for ourselves, we would as lief see them continue to remain what they now are.

CIRCUMSTANCES have rendered it necessary to modify the intentions expressed at p. 676 respecting the STANWICK NECTARINE. Upon examining the young plants in Mr. RIVERS's hands, it turns out that the number fit for sale is much smaller than was anticipated, and that there is a considerable difference in their quality. Applicants are moreover anxious to obtain their plants without loss of time, and without waiting for the chance of an auction which cannot take place, to the advantage of the charity, sooner than next spring. It has therefore been resolved to set aside the finest plants for sale at from 4 to 5 guineas each, and to dispose of others at 3 guineas each. Such as are unsold in the spring, if there should be any left, will be brought to the hammer as at first proposed.

Of the selected specimens, some are beautiful plants in pots, budded on the Peach stock, and covered with blossom-buds, so that they will fruit next year if repotted; for these 5 guineas will be charged. The remainder are very fine maiden plants in the open quarter, budded on Plum stocks, and without blossom-buds; for these 4 guineas are required. Gentlemen desirous of aiding the excellent charity to whose funds the produce of the sale of these plants will be applied, by order of his Grace the Duke of NORTHUMBERLAND, are requested to apply to Mr. WILLIAM BRAILSFORD, 21, Regent-street, London, giving their exact addresses, and stating by what conveyance the plants are to be transmitted from the station at Harlow, on the Cambridge line of the Eastern Counties Railway,

where they will be delivered without further charge. It is requested that Post-office orders may be made payable to Mr. William Brailsford, who, upon their receipt, will return an order upon Mr. Rivers for the transmission of the plants.

Applications will be complied with in the *exact order* in which they are received, and due notice will be given when the five guinea and four guinea plants are exhausted.

May we be permitted to express a hope that although no pecuniary profit can be derived by nurserymen from a sale whose proceeds go to a charitable use; yet that they will, nevertheless, endeavour to make known, within the circle of their customers, the terms on which the Stanwick Nectarine may now be procured.

N THE ASSIMILATION OF NITROGEN FROM THE AIR BY PLANTS, AND ON THE INFLUENCE OF AMMONIA IN VEGETATION.

By M. Ville.

Many years ago, M. Th. de Saussure remarked that a solution of sulphate of alumina became, if exposed to the air for a sufficient length of time, converted into ammoniacal alum. This observation, made in the year 1804, demonstrated the existence of ammonia in the atmosphere. Since the time of M. Th. de Saussure many chemists have endeavoured to ascertain the quantity of ammonia that exists in the air by more expeditious and more exact methods. The importance attributed by physiologists to ammoniacal compounds in the development of plants was the cause of these endeavours made by the chemists. It is the general opinion that the source from which plants derive their nitrogen is ammonia existing either in the soil itself, or in the manure laid upon it, or in the atmosphere.

After having satisfied myself, by a long series of experiments made on much larger quantities of air than have been analysed by my predecessors, that the quantity of ammonia in the atmosphere is scarcely appreciable, if pains be taken to avoid sources of error which may be caused by accidental emanations of the gas, I was led to doubt the reality of the influence attributed to ammonia in vegetation.

To clear up these doubts I sowed a certain number of seeds in a mixture of equal quantities of white sand and brick-dust, which had been previously calcined, for many days, in a porcelain furnace, in order that all organic matter in them might be utterly destroyed. This mixture was placed in a certain number of pots, and to it was added 5 per cent. of ashes obtained by the combustion of the plants with the seeds of which I was experimenting. The pots were placed under a bell-glass, hermetically sealed. The air inside the glass was renewed every day by means of a very large aspirator (containing 631 litres at zero, under a pressure of 760). But as this quantity of air, though large, did not contain sufficient carbonic acid for the purposes of vegetation, 5 and afterwards 7 per cent. of this gas was added by means of an apparatus from which the gas escaped bubble by bubble, during the whole of the time occupied by the renewing of the air. The air which came out from the bell-glass was conducted into an apparatus in which all the ammonia present in the air was separated from it.

Thus two experiments went on at the same time; in the first I dosed the ammonia with a certain quantity of pure air; and in the second the ammonia with a nearly equal quantity of air, which had nourished the plants under the bell-glass. By comparing the results of these two analyses, I was enabled to see whether the ammonia of the air had taken any part in the development of the plants. On the other hand, by previously analysing a certain number of seeds similar to those with which I was experimenting, I ascertained how much nitrogen was introduced under the bell-glass in the seeds. When the experiment is finished, I shall be able to ascertain, by similar analyses, the quantity of nitrogen contained in the full-grown plants, and consequently the quantity of nitrogen assimilated during the experiment; and from that again, whether this nitrogen was derived from the ammonia or the nitrogen of the air. [This is an exact translation of the original; but its meaning is very obscure.]

Although the plants have not yet been taken out of the apparatus, the question may be considered as determined. It is quite clear that a certain quantity of nitrogen has been assimilated by the plants, and this nitrogen was derived from that of the air; for the plants, under the glass, have become developed in a remarkable degree, and the air on coming out of the bell-glass contains just as much ammonia as it did on its entry. Moreover, had the ammonia of the air been wholly assimilated by the plants, this conclusion would not be invalidated, since the quantity of ammonia introduced by the air, during the four months the experiment has been going on, does not exceed ·75 or 1·15 grains, a quantity too small to have had any considerable influence.

So that the consequence to be deduced from the mere inspection of the bell-glass is that the nitrogen of the air has been directly assimilated by the plants, and that the ammonia in the air has had no sensible influence. This being ascertained, I next proceeded to determine the influence that a given quantity of ammonia, added to the air, would in its turn have on vegetation.

For this purpose I got more of the seeds on which the first experiment was made, and put them in pots under a bell-glass as before. The air inside the glass was renewed, and 5 and afterwards 7 per cent. of carbonic acid was added as before. In short, the only difference was that in this new experiment a certain quantity of ammonia was daily introduced under the bell-glass.

From the very first day, the influence of the addition was manifested. The leaves of the plants became tinged with a fresher and brighter green; the stems rose higher, the branches more numerous, had more leaves; all the plants however were not affected to the same degree, the greatest change being observed in the cereals.

In pure air the cereals were sickly, blanched, their stems laid down instead of growing upright; in air containing ammonia, they were strong, straight, and from their upright stems sprung numerous leaves. So that a second conclusion may be drawn from the mere inspection of the apparatus, viz., that ammonia is favourable to the development of plants, and more especially to that of cereals. *Comptes Rendus.*

AN IDEA FOR A WINTER GARDEN.

Everybody complains of the barren and uninteresting appearance of the flower garden in winter and early spring. The gay parterre, which in summer boasts of every hue, is tended with the greatest care, the "observed of all observers," becomes, after a few short weeks, a barren waste; and, as far as its real object is concerned, a sinecure. Its epitaph might with propriety be written, "flat, stale, and unprofitable."

At various times, and in various periodicals treating on gardening matters, suggestions for obviating this have been thrown out; but the thing never appears to have been taken up with spirit. Surely it offers a wide field for inquiry, and one on which the results cannot but be profitable to all concerned. A winter garden is a desideratum. We cannot hope to make

"Winter wear a wreath of summer flowers,"

but we have at least the means of binding about his barren temples a garland of evergreens, gemmed with a few stray florets, pale though they may be. Appropriateness in garden scenery is one of the first matters claiming attention. Gay flowers and dripping fountains would be out of place in winter, even if we could command them in the open air; but a collection of such attractive plants as put on their gayest dresses at that season, must be to all lovers of gardens a thing to hope for, and to admire when obtained.

There can be no reason why a garden establishment should not have its reserve garden for such plants, equally complete and equally cared for with the frames and pits of Verbenas, Pelargoniums, and the thousand and one kinds of tender exotics destined to exhibit their beauties beneath a July sun. And why should we not prepare for bedding out in November with equal alacrity as in June? In a list which I shall append is an array of names, the representatives of such plants as appear to me suitable for a winter garden. Others will suggest themselves to the readers of the *Chronicle* more *au fait* in such matters than myself, and if the thing was once warmly taken up by some of our best flower-gardeners, we should not long have to complain of barren flower gardens in winter. In removing the plant from the reserve garden to the flower garden, and *vice versa*, season need not be considered as offering an objection. Plants constantly being removed never, under the most ordinary circumstances, suffer from the treatment. And a bed vacated to-night by frost-bitten Heliotropes may, ere the inmates of the mansion look upon the spot to-morrow, be occupied with Gaultheria procumbens, or some other evergreen appropriate to the situation. It would be impossible to offer any practical hints as to the proper situation for any given evergreen in arranging a winter garden. Situation, circumstance, and individual taste, will determine that. My principal object on this occasion is to draw attention to the subject. That once obtained the thing is done. One or two general observations may, however, be given in introducing such flowering herbaceous plants and bulbs as may be considered necessary, or taste suggest. I imagine that by interspersing them amongst the dwarf young evergreens, or on the margin of the beds of the tall ones, a more pleasing effect will be produced than by massing them, unless perhaps exception be allowed in Anemones, Hellebore, and a few other such plants. Gayness, however, should not be the object aimed at. An interesting assemblage of plants is all that can be hoped for: to attempt beyond this would probably lead to effects which must, from the very nature of things, prove abortive. Under any circumstance a change in the winter aspect of our flower-gardens, as they are usually found, must be for the better, with perhaps one exception, that of sticking the beds full of branches of shrubs, in lieu of the living plant. In the subjoined list some slight arrangement is preserved. But any of the taller growing plants could easily be kept dwarf, without formality, by a judicious application of the pruning-knife. In an article, by Messrs. Standish and Noble, of Bagshot, which appeared in a recent Part of the "Journal of the Horticultural Society," allusion is made to a remarkably dwarf section of Rhododendrons, some of which have variegated foliage, and all a very compact habit. I have seen some of them in the nurseries alluded to, and think they would form excellent auxiliaries in forming a winter garden. They are of various colours, and the greater part of them are in bloom in April. They can be removed as soon as the flowers are faded, or where circumstances may require. As they would not remain, to complete their growth, beds of peat need not be provided for them. In the parterre they would only develop, in the form of flowers, matters stored up during the previous season's growth. In the reserve garden, of course every facility would be afforded them for growth, and to meet the requirement of the ensuing flowering season.

Subjoined is the list previously alluded to:

Dwarf Evergreens.	
Variegated Ivies	Gaultheria Shallon
Polygala Chamæbuxus	Epigæa repens
Erica carnea	Juniperus tamariscifolia
Pernettya mucronata	„ squamata
Daphne hybrida	Arbutus pilosa
„ japonica	„ sibirica.
Taller Plants, which may be grown to suit various heights.	
Andromeda floribunda	Arbutus unedo
Berberis fasciculata	Ilex (variegated)
„ Aquifolium	„ latifolia, &c.
Aucuba japonica	Quercus Ilex
Laurus nobilis	Ruscus aculeatus
Juniperus virginiana	„ ramosissimus
Thuja Warreana	Rosmarinus officinalis fol. argenteis
„ aurea	Do. do. aureus
Vaccinium ovatum	Rhododendron dauricum atro-virens
Taxus baccata variegata	Euonymus japonica
Buxus vulgaris	„ „ variegata.
Gaultheria Shallon	Daphne collina
Cotoneaster microphylla	Cydonia japonica.
Jasminum nudiflorum, for its early flowers	
Herbaceous Plants, &c.	
Alyssum saxatile variegatum	Aconitum hyemale
Helleborus viridus	Anemone hortensis
„ nigricans	„ nemorosa
Galanthus nivalis	„ in varieties.
Scilla verna	Crocus sativus
Saxifraga oppositifolia	Hyacinths
Gentiana acaulis	Narcissi
„ verna	Jonquils
Hepaticas	Daisies
Polyanthus	Cardamine pratensis flore pleno
Primulas	Cyclamen europæum.
Auriculas	
Tussilago Farfara	

G. L.

BRITISH SONG BIRDS.

No. X.—The "flight" birds, when first purchased, should be classified—linnets together, in one very large cage; goldfinches, in another of the same size; and so on with any others. The reason for placing them in large cages is—to prevent their soiling each others' plumage, while dashing about in their new prison. Every prisoner when first confined is so truly "unhappy in his mind," that it is in vain to attempt to soothe him. Grief, however, having exhausted itself, and Nature having at length induced an appetite for food, he becomes by degrees more reasonable, and finds discretion to be by far "the better part of valour."

The "flight" birds, when fresh caught, must have a mixture thrown into the bottom of their cages of Canary, Flax, Rape, and bruised Hemp-seed, the floor being covered with dry, gravelly sand. Their cages, for a few days, should be kept partially darkened; and during this time the birds should be as little disturbed as possible.

It is always desirable to keep newly-caught birds very scantily supplied with food, giving it them only at stated intervals. They then get accustomed to look for it. They must however have plenty of clean water at all times. By this mode of treatment they will become reconciled to their fate. They should then be introduced into the commonwealth, one or two at a time, early in the morning, and when the others are feeding. In Number VIII. of the present series of Papers, I recommended the introduction of only one pair of birds—wagtails. I now bethink me of an almost unpardonable oversight in this matter—I mean, with respect to not having recommended the addition of a pair of Java sparrows. They are so quiet, so innocent in their nature, so totally different and retired in their habits from all other birds, and so hardy withal, that I again repeat,—by all means try a pair of them. They are granivorous, but will eat freely of the universal mixture. I had a pair of Java sparrows in my aviary four years. Their symmetrical proportions were exquisitely beautiful. At the end of the fourth year the hen died; the widower from that moment became inconsolable. His grief was lasting, and excessive. Such constancy won my best sympathies. I procured another hen, equally beautiful, and gave her the *entrée*. Singular to relate, her ladyship intuitively seconded my views. My lord "proposed," at an early day, and was "accepted;" and the twain lived with me, in uninterrupted felicity, until they were devoured by the rats. The "habits" of this bird will receive ample notice.

As the larger proportion of number will always be in favour of linnets and goldfinches, I need not say anything about the introduction of other kinds of birds. In this matter, everybody will of course consult their own particular fancy. It will be desirable, however, to confine new comers of every sort, for a day or two, in a separate cage; they may then be turned in with the rest. It sometimes happens that a bird gets one of his legs injured, and he is thereby prevented rising on the wing, and seating himself on a perch. To accommodate him in his sickness, let a perch be fixed across the skirting board at every corner of the aviary. On these he can hop, and on one of them he will roost at night. It is highly desirable for every bird to perch when at roost. They do so when in a state of Nature. It prevents their little feet becoming clogged with any foul matter, and they awaken refreshed by their night's rest.

Sometimes, in the moulting season, when a bird does not moult "kindly," there will be several "cripples" trotting about the floor, quite unable to soar aloft,

Under such circumstances you must place clean water within their reach, and plenty of food—the latter in as great a variety as possible. What this variety consists of, we will discuss anon. I must here caution my readers against the sudden introduction of a lighted candle, into or near an aviary, at night. It has so alarming an effect upon the inmates, that they will precipitate themselves headlong from their perches, and fall about the room in an agony of fear. I have known many legs and wings to be broken in this manner, and have been obliged to sacrifice the lives of many of the sufferers by putting them to a premature death. The birds usually roost up aloft; so that, with only moderate care, the evil complained of can be remedied.

Another terrible annoyance and cause of alarm to your birds, on moonlight nights particularly, will be the CATS, which will, and do, always prowl about an aviary; assembling in numbers to try and procure a savory meal. *Apropos* to this subject. On one particular occasion, coming down early in the morning, I found a pane of glass in the aviary, broken. There was a circular hole through it, made as if it had been "drilled." Round it was a quantity of grey hair, *not* human; through it, something alive, also not human, had evidently passed. How many of my feathered family had escaped through this aperture, I had no means of ascertaining; but I heard many ill-suppressed whispers of some splendid mules and canaries having suddenly made their appearance in cages in the neighbourhood, and of the welkin ringing with their song. It being an invariable rule with me to live "out of debt," I proceeded at once to discharge this last outstanding obligation. I was plainly indebted to one of the feline tribe for the unsolicited honour of a visit. Too well bred not to acknowledge the civility at an early moment, I that same night prepared a *petit souper* for the visitor, dressed *à la Soyer*, the paragon of all human excellence.* The cloth was laid for a dozen at least; for I thought it probable that a friend or two might drop in. I was not "out" in this my calculation. My polite neighbours, the cats, *did* arrive, and with good appetites; nor were they dainty. Partaking *avec gout* of all that I had provided for them, they cleared the course. No "remove" was needed! Contrary to all good manners, I must remark, the party, before breaking up, had actually licked their plates.

Next morning, there was a rumour that "14 cats had been mysteriously seized with sudden and alarming illness."—"*Is* it possible?" replied I to my informant, with the interesting gravity of a Janus.

Two days subsequently—a most "remarkable" circumstance—I was apprised of the very same number of equally mysterious "deaths."—*William Kidd, New Road, Hammersmith.*

VILLA AND SUBURBAN GARDENING.

WINTER Rhubarb, when produced in perfection, is a delicacy which most people enjoy; much, however, of that which is forced for Covent-garden Market, under the influence of strong fermenting beds of stable litter, is anything but finely flavoured. A strong taste of the fermenting material is obviously perceptible to the palate. The obtaining the fine taste which distinguishes clean forced Rhubarb from that just alluded to, is a thing that eminently deserves the attention of all who cultivate what is required for their own private use.

To produce Rhubarb in perfection a deep rich loamy soil is to be preferred. The ground should be well and deeply trenched, and the plants put out in March. The system of planting should be in rows, at least 4 feet apart, and the plants should be placed 3 feet from each other in the rows. An early variety should be preferred for forcing. I have proved Wilmot's Early or Mitchell's Royal Albert to be excellent kinds for winter use, and, if the soil is in high tilth, one season will produce them sufficiently strong for the purpose. The roots should be carefully taken up; the less injury inflicted upon them in this operation the better; therefore a deep trench should be first taken out all round each crown, and the root carefully undermined. I have for some years had an ample and regular supply, the produce of a few roots placed under the front stage of an intermediate house. They are placed close to each other, and are merely covered with a little light dry soil, no other care being requisite. The first planting takes place in November, and this is succeeded by a second in February. These two plantings usually afford sufficient for a small family, and in the highest perfection, with the least possible trouble.

Seakale is also grown in a similar manner; but this requires a deeper covering, in order that the stalks may be blanched. The importance of such places is not sufficiently appreciated; if fully taken advantage of, a regular supply of Salads, Mushrooms, &c., might be kept up throughout the winter and spring months at little trouble or expense. The space under a plant stage can be of little other use, and if thus taken advantage of, it is quite astonishing what positive luxuries may be raised there. I always look upon the under part of my stages as being, during winter, quite as important as the top. Now, such places are usually either left unoccupied or kept as a kind of rubbish hole, whereas at the present time all behind my hot-water pipes are rising quantities of Seakale and Rhubarb, which generally maintain a supply until it comes in naturally. I never force either of the above in the open air under dung coverings, having an impression that the flavour is thereby very much deteriorated. Seakale, if covered with dry sand about a foot, and allowed to grow with the natural season, will always be infinitely superior to that produced under the steaming influence of stable dung. *Pharo.*

* The *carte*, or bill of fare, was too choice not to be preserved. I have a "copy" of it, and it will appear in a future chapter, under the head "Vermin." It should be, and no doubt will be, highly prized; for many a receipt, of not one-quarter its value, is usually charged a guinea.

THE CULTURE OF THE VINE A HELPMATE TO THE CULTURE OF THE MIND;

OR, TWO BIRDS KILLED WITH ONE STONE.

[FOR COTTAGERS.]

CULTURE OF THE MIND.

No. VIII.—CONCLUSION.—Some one, perhaps, will say, "This is all very well, but it is a great deal more trouble than it is worth; besides, I have not time. A very pretty amusement for those who have nothing better to do; so there's an end to the matter." Not so fast, my friend; first be pleased to recollect that what is here put down, though it may seem a good deal in a lump, is to be spread over a good many years of 365 days each; a good deal of time to do a good deal in.

The lazy man exerteth himself to find excuses. Who are they? The compiler answereth in eight propositions.

2*dly*. When it is well done, the greater part is done for life; more, it will be a living memorial of industry and worth, more useful and lasting than a tombstone.

To everything there is a season, and a time to every purpose under the sun. Well begun, half done. A type of a well-spent life, the older, the more and better fruit does it bear.

3*dly*. Nothing good is given to man without labour.

An old saw that is not too rusty, but that it will still cut.

4*thly*. Labour makes a man; idleness fattens a pig.

"O Lord my God, how many and how rare
Are Thy great works! in wisdom hast thou made
Them all; and this the earth and every blade
Of Grass we tread declares."—*H. V.*

5*thly*. It will give a higher standard of general cultivation, a greater interest in all the works of Nature; increase observation; teach the wonderful laws by which God is working at all times, and in all things, and in all places; and induce a habit of thankfulness for His Gifts.

Idleness is hard work for those who are not used to it; dull work for those that are.

"But let us ever praise Him, and extol
His bounty, following our delightful task,
To prune these growing plants and tend these flowers,
Which, were it toilsome, yet with thee were sweet."
Paradise Lost.

6*thly*. The labour is at home, it may be, with the assistance of wife and children.

7*thly*. It makes home look cheerful and comfortable.

The argument toucheth the lazy man more nearly; he yieldeth; he taketh a spade; he planteth a Vine.

Lastly. Grapes are very pleasant things to eat; are very wholesome; can be made into wine, or turned into money; all or either of which are worth some labour.

But every man to his own taste: the sow to the mire, the dog to his vomit.

If you now think it too much labour, then go and eat (but not Grapes), drink (but not wine), sleep (if you can, without labour), and be miserable.

"Let us then be up, and doing,
With a heart for any fate;
Still achieving, still pursuing,
Learn to labour, and to wait."—*Longfellow.*

The compiler maketh a clean breast.

A few parting words. The compiler (for he does not aspire to the dignity of authorship, seeing that the main treatise is taken mostly from one, the marginal remarks from any man) is desirous of showing his honesty, both for the pleasure such an honourable feeling naturally produces, and also by following an old proverb, to be beforehand with any would-be sharp-sighted and benevolent person; and therefore readily confesses that the instructions herein contained are not the offspring of, though proved by his own experience; but that they are the gleanings of two excellent books on the Grape Vine.

He recogniseth the proverb that, Honesty is the best policy. And, moreover, acteth accordingly.

He believeth that though stolen fruit be sweet, yet that it doth oftener engender an indigestion in the stomach and a vomit.

The compiler's work is now finished, and he will feel perfectly satisfied with the result, should it be found generally useful. His readers have his good wishes, that they also may receive the fruit of their labours in the long enjoyment of more plentiful, finer, and sweeter Grapes.

To his honesty is added generosity.

"To meales when thou dost come, give Him the praise
Whose arm supply'd thee; take what may suffice,
And then be thankful; O, admire his ways
Who fills the world's unempty'd granaries!
A thankless feeder is a thief—his feast
A very robbery, and himself no guest."—*H. V.*

Thus in mutual satisfaction he wishes to part good friends, with a hope that, should occasion arise, their chat may some day be renewed; in the meantime he bids them all God speed. *C. A.*

He thinketh that good words cost nothing, but may gain him friends.

Home Correspondence.

Dendrobium nobile.—A handsome plant in bloom of this fine Orchid is at all times a desirable object to those who are fond of flowers, but much more so when it is made to produce its hundreds of blossoms at this time of the year, when it has but few rivals. Many imagine that this Dendrobe will soon become very common; but when they are told that it requires three years to bring a small plant into anything like a flowering state, perhaps they may be induced to alter their opinion. My method of cultivating it is as follows:—Let us suppose that we begin with a plant obtained from a nursery or elsewhere in January. I place it at once in the warmest end of the Orchid-house or stove, and give it every encouragement by means of liberal waterings and shiftings. When the young roots grow over the rim of the pot, I crock another pot well, and use nothing but peat for the roots to grow in, beating out the greater part of the earthy matter before using it. I keep the plant growing in this way for about 20 months, when it ought to have from 12 to 20 shoots or pseudo bulbs, about 2 feet long. When it has attained this size, my practice is to remove it in September from the Orchid-house to a cool dry Vinery. If wanted in bloom at Christmas, it is kept there for two months quite dry, by which time flower buds make their appearance. It is then (November) taken back to the house from which it was brought, care being taken not to give water until the flower-buds are distinctly apparent. Afterwards it receives a plentiful supply of moisture, and in about a month from this time, the care and attention bestowed on it are rewarded by the expanding of nearly 200 beautiful blossoms, after which the same treatment is again pursued. The temperature I grow it in is from 55° to 70° in winter, and 70° to 90° in summer. *Rusticus.*

Victoria Park.—Allow me to offer a few remarks upon the system which appears to have been carried out in producing the meanly planted ground called Victoria Park, which from the name it bears should have equalled, if not excelled all other parks; but instead of this it is quite in keeping with the miserable ground which approaches and surrounds it. The consideration of the large sum expended in forming this so-called park reminds me of what I saw when visiting a nursery near London, about the latter end of October, or the beginning of November last; this was, four men carrying one ordinary sized evergreen, slung to two poles, the ends being placed upon each of their shoulders. I considered this an expensive mode of removing a *number* of evergreens, and it naturally excited my curiosity to know where the said tree was intended to be planted. I was informed in the Victoria Park. Upon my next visit to the same ground, the same process of removing evergreens was being carried out, and I found it had been continued nearly a fortnight. The cost for removal must have doubled the purchase-money. At that time I bought 12 trees of the description of that in question; I had them removed by a cart, a distance rather more than that to the park, and the cost was only 2*s*. 6*d*., including toll; the time therefore occupied by four men in conveying one tree must have caused it to cost quite as much as my twelve. Such is the system in which public affairs are generally managed, and what is everybody's business is no one's business; if it were otherwise things would be better done, and at less expense. I should not have troubled you with the above had I not considered your complaint made against the appearance of the park quite justifiable. *Wm. Statham, De Beauvoir Town, Dec.* 18.

Garden Gossip.—Does any correspondent, or reader of the *Chronicle*, bloom Bignonia Tweediana freely? If so, will the successful cultivator give his mode of treatment? For several years, a plant has been rambling over the arches of my conservatory, and among the branches of its neighbours, without producing more than one solitary flower when, last spring, early in the season, my gardener vigorously root pruned it, which, during the past summer, caused it to bloom a little more freely, but not so as to render it a desirable conservatory climber. Did it flower abundantly, it would be a truly valuable plant, as its blossoms are of the richest golden yellow, a hue uncommon in creepers of its class. Two of my flowers have produced seed-pods, in shape like a slender French Bean, one of them about 15 inches long, which is not yet ripe. Among conservatory climbers, I should think Tacsonia manicata, which is so well figured in "Paxton's Flower Garden," will take a prominent position, if it does not prove too tender for the majority of such structures. I am led to make this remark, from the plant I received from the Horticultural Society, exhibiting a very unsatisfactory appearance, in the same house, and against the same pillars, where Tacsonia mollissima and pinnatistipula grew in wild luxuriance, both of which I discarded, from the determination of one species not to bloom at all, and the other to produce flowers too sparingly for my satisfaction. In this conservatory, T. manicata has dropped its leaves, and gives evident tokens of not being in a genial climate. Has this been noticed elsewhere? In speaking of climate, I am led to make a passing remark on that of South Devon; at the present time we are experiencing tremendously stormy weather; the squalls of wind, accompanied by rain, thunder, and lightning, are carrying off slates and thatch, blowing down trees, living and dead, and making nervous invalids tremble; yet we have scarcely had any frost, such as to injure tender plants in sheltered situations. Against my own house, Ipomœa Learii is as fresh and green as when first planted, though it has disappointed my hopes in not flowering; and my gardener brought me a bouquet a few days since, to send to a relation at a distance, such as would have been com-

mended three months ago; it consisted of Carnations, Tea and China Roses, rose-scented Geranium, scarlet Geraniums, Heliotropes, Cupheas, Verbenas, and Calceolarias, all from the open ground, while from a wall, protected by a straw frame, he added huge bunches of Habrothamnus elegans. To these the gay Jasminum nudiflorum was a good addition, and the whole was rendered gorgeous by many flowers of Rhododendron Nobelianum, of which several plants are blooming luxuriantly. *Devonian, Dec.* 16.

Conifers.—I am very glad to find that the Horticultural Society has issued, in its Journal, a catalogue of Coniferous plants, with their synonymes. Such a catalogue has been sadly wanted for a long time; and although this may not, in the present state of our ignorance of Coniferæ, prove wholly free from error, it does come before us with a satisfactory degree of authority, and cannot fail of doing great service, and proving a generally safe standard of reference to both buyers and sellers, and, in fact, useful to all who take delight in this most interesting tribe of plants. To show the want of some such authoritative catalogue, I have now before me a catalogue of Coniferæ, sent out by a very respectable nurseryman; in that catalogue I find Pinus Pallasiana, grafted, price from 15*s.* to 21*s.*; a little lower down, Pinus taurica, 3*s.* 6*d.* Now, if the Horticultural Society's catalogue be correct (as I for one believe it is), these two are identical; and surely, no lover of Pines would care to give from 15*s.* to 21*s.* for a worthless grafted plant (and grafted Pines are always absolutely worthless in comparison with seedlings), when for 3*s.* 6*d.* he could procure a healthy seedling of the very same species, without any really permanent difference; and even if there be any trifling difference, so slight as to be of no real account or value, for use or ornament. Loudon makes P. taurica a mere variety of Pinus Laricio, but so he does P. pyrenaica; but more is known about species now than when he compiled his very useful Arboretum. I see Messrs. Lawson, in their list for 1850, sell their P. Pallasiana grafted at 21*s.*, and taurica at 2*s.* 6*d.*, so that I imagine the real identity of the two is not sufficiently known; but I trust the Society's catalogue will now set this matter at rest. *D.*

Public Parks.—Every one having a feeling for his country must be thankful to those who will keep in view the abominable bad taste everywhere bearing evidence of the hand of our irresponsible boards, but most especially shown in the works of the Woods and Forests. When at the Tuileries gardens, every one laughs at the unhappy swans in their wash-hand basin and "green" room; but few Englishmen can laugh at an Austen and Seely tazza fountain in the midst of a pond, as at St. James's, or at the curious collection of things on the Serpentine. First of all a gothic bridge, then an Italian, then a Swisso-gothic boat-house, a cold brick Italian receiving-house, and lastly an iron railing over an Alpine cascade!! The lodges to Kensington Gardens are also exquisite specimens of good taste—rough-bark pillars to smooth white walls, rough variegated tiles with lead hips!! something very like the Ashantee's top-boots and cocked hat—*et prætera nihil.* Now St. James' and Kensington Gardens are much frequented by foreigners, who naturally form their ideas of our taste by our public walks and buildings, nor can any one persuade them that the idleness of irresponsible magnifico allows the toadies and vulgar people always about such persons to show their bad taste, and expose us to such unjust criticism. Do pray preserve the new park from such desecration. You have evidently moved the northern to shame, try the same on the south. *A Disciple of Gilpin, Winscombe, Dec.* 16.

Bulbs in Water.—In a leading article in the autumn of 1844, you give instructions for the cultivation of the above; one essential being, that the water should not be within an inch of the bulbs. I tried three Hyacinths according to the plan laid down. I looked at them in three weeks' time; one had made roots half an inch long, one about a quarter of an inch, the other had not started at all; all were mouldy. I wiped them carefully, and put them in their cupboard again; in three weeks more I looked again. The roots that had shown themselves previously were rotting off, and the bulbs themselves were beginning to go also. Where is the mistake? for I followed the instructions closely. Should I not have filled up water to meet the descending roots, though not so far as to touch the bulb? *S. R. F.*—[It was not meant that water should always be kept at a distance from the bulb, but that it should not touch the bulb until roots had formed. At that time the points of the roots should be allowed to dip into the water. A little warmth much facilitates the rooting process. Our correspondent is doubtless aware that under all circumstances some bulbs will become mouldy, whatever be the treatment they receive. The best way to deal with them is to put them in damp charcoal powder, as soon as the mouldy tendency is ascertained.]

Royal Botanic Garden, Edinburgh.—Your Celtic correspondent, Dougall Mac Ivor, appears to be very much offended at "Dodman's" remarks respecting this Botanic Garden. Although a North Briton, and probably having as much national pride as Dougall, I feel rather pleased with the notice in question, and I hope that it may induce a more liberal spirit in those who have the management of its affairs. I have called there on several occasions during the late Mr. MacNab's time, and I never was refused admittance when I named the place in which I was employed. Being in Edinburgh in September, 1849, I called at the Botanic one Saturday morning, between 10 and 11 o'clock. Not being aware that the public was admitted, I asked permission of Mr. MacNab to look over the Garden; he told me he could not grant it, but that any one would be admitted at 1 o'clock, when I might come in. He said if he made any exception in my favour, the public might expect the same. I have been informed that if a gardener applies at Kew, under similar circumstances, he is not refused admittance; but not having had occasion to try, I cannot speak with certainty as to the truth of the information. I would advise Dougall, however, to put his house to rights, in case "Dodman" might call again, when, instead of getting holes made in his skin, he might tell the public of some he found in Dougall's. Perhaps it might be acceptable to some of your readers, if the latter would send you a description of the winter garden, of which he thinks so much, and let us know what good things he may have in flower there at this season. As the majority of people, however, do not understand his dialect, he had better use plain English, and I have no doubt he is as well versed in the one as the other. *G., Hammersmith.*

Cultivation of the Gooseberry in Lancashire.—I am told that it is the practice of the market gardeners in Lancashire, to plant their Gooseberry-trees as follows: they tread the ground and plant on the surface; put one inch or two of soil over the roots, stake the plants, and give a little more covering in summer. After they have taken root, in November or so, they uncover the roots, or nearly so, exposing them to the frost, and covering them again in spring; by this treatment they consider they obtain larger fruit, and less unnecessary wood. Have the goodness to inform me of the philosophy of this treatment. *A Reader.* [We must refer this to the Lancashire gentlemen themselves.]

Comparative Temperatures of Holkham, Norfolk, and Chiswick.—The following is a comparative table, showing the minimum thermometer readings at Chiswick and this place, taking the former from the last four weeks' register in the *Chronicle.* The discrepancy in the two series of observations is so considerable, that I am quite at a loss to account for it by any difference of position or locality; and my object in laying the statement before you is, to learn if you can assist me in solving the difficulty. Our instruments are first-rate, having passed the ordeal of an examination at the Royal Observatory, and I pledge myself that the observations of them are strictly correct. The temperatures in our return upon each day, are those observed at 9 A.M. on that day, as the lowest in the preceding 24 hours (the lowest temperature of a day being found to occur just previous to sunrise), whereas I imagine that the figures inserted in your return are those observed on the following morning, as the lowest in the 24 hours; as, for instance, the temperature inserted on 8th November, was not observed until the morning of the 9th. This will bring the two returns to a near approximation, but there will still remain the remarkable differences of the 8th, 12th, 13th, 14th, 16th Nov. and 3d Dec., while in the other case there would also be those of 9th, 18th, 21st, 22d, 25th, 28th, 29th Nov., and 5th Dec., to explain away. Subjoined is the table alluded to.

	Chiswick.	Holkham.	
	In the Air.	In the Air, protected from Radiation.	On Grass, exposed.
November 8th	29	42.7	37.5
„ 9th	50	40.8	35.8
„ 10th	46	44.3	42.0
„ 11th	48	47.8	42.8
„ 12th	26	46.6	40.4
„ 13th	24	37.2	30.2
„ 14th	19	38.0	29.6
„ 15th	31	31.8	25.5
„ 16th	29	35.7	30.2
„ 17th	35	40.2	34.0
„ 18th	45	37.7	30 0
„ 19th	42	39.9	38.2
„ 20th	43	44.8	40.3
„ 21st	30	43.8	39.3
„ 22d	44	32.2	26.4
„ 23d	39	39.2	35.4
„ 24th	43	40.2	35.2
„ 25th	31	44 0	39.2
„ 26th	34	36.2	31.2
„ 27th	26	32.6	25.8
„ 28th	21	33.2	26.7
„ 29th	19	23.8	19.0
„ 30th	31	23.7	17.3
December 1st	34	33.0	30.0
„ 2d	37	35.3	33.4
„ 3d	26	37.6	34.6
„ 4th	38	35.6	31.6
„ 5th	31	40.6	34.0
„ 6th	32	39.6	29.3

—*S. S.* [On examining the above table, we find that the temperature placed against the respective days of the month cannot be directly compared; for at Chiswick, on the 1st of December, for example, the *highest* temperature that occurred during that first day, and the *lowest* during the first night, are placed in the respective columns as the maximum and minimum temperature of December 1st, and so for all other days, in accordance with the practice of Howard, Daniell, and other meteorologists. But our correspondent, presuming that the coldest time of the *natural night of Dec. 1st* occurs towards morning, registers the indication of that cold against Dec. 2d; therefore the minimum of any particular day in the Chiswick tables must be compared with that of the following day in those of Holkham, as has been done in the annexed table. The minimum thermometer at Chiswick is placed about a foot above the surface of the lawn, and exposed to the open sky, and may be compared with that exposed at Holkham on Grass, but of course not with the other.

Difference between exposed thermometers at Chiswick and Holkham. The sign (+) prefixed denotes a higher temperature at Holkham than at Chiswick; and (—) a lower.

Nov. 8	+6.8	Nov. 22	—8.6
9	—8.0	23	—3.8
10	—3.2	24	—3.8
11	—7.6	25	+0.2
12	+4.2	26	—8.2
13	+5.6	27	+0.7
14	+6.5	28	—2.0
15	—0 8	29	—1.7
16	+5.0	30	—1.0
17	—5 0	Dec. 1	—0.6
18	—6.8	2	—2.4
19	—1.7	3	+5 6
20	—2.7	4	—4.0
21	—3.6	5	—1.2

On balancing these + and — differences, it appears from them that Chiswick averages for the period 1½° warmer than Holkham, which is very likely to be truly the case; and we conclude that both thermometers are correct. The most suspicious registration in the Chiswick column is that of the 9th Nov., where 50 appears as the lowest at night, whilst the highest during the day was only 53; but the observation proves quite correct, having been verified from a register kept by a gentleman in the vicinity, in which the entry, from the indications of first-rate thermometers, of the minimum temperature for that night, is exactly 50°. We have no doubt our correspondent will find many such discrepancies, which may be fairly ascribed to the variableness of climate.]

Greenwich Mean Temperature.—The difference of temperature between different places is a most interesting subject of inquiry; and not only I, but probably most of your readers, would feel pleased at seeing, in juxtaposition, tables indicating the mean monthly temperatures of Greenwich and Chiswick. The latter you have ready at hand; but, as you may not have the former, I subjoin them as extracted from "Belville on the Thermometer:" *G. S.*

Chiswick Mean Temperature from 1826 to 1849; and Greenwich Mean Temperature from 1815 to 1849.

Chiswick.	Degrees.	Greenwich.	Degrees.
January	36.60	January	36.46
February	39.56	February	38.80
March	42.81	March	42.04
April	47.53	April	46.78
May	54.22	May	53.74
June	60.85	June	59.74
July	63.23	July	62.47
August	62.18	August	61.90
September	57.23	September	57.30
October	50.51	October	50.41
November	43.41	November	43.62
December	39.85	December	39.41
The Year	49.83	The Year	49.39

[It appears from the above that the

Annual Mean Temperature of Chiswick is ... 49.83 degrees
Ditto ditto of Greenwich ... 49.39 „

Difference ... 0.44 „

or less than half a degree, probably owing to the difference of elevation.]

Vine Culture.—I find that Mr. Kidd has misquoted what I said about crimson-coloured Grapes; a little explanation, therefore, may be useful. Several years ago, some young Vines were procured from a nursery, under the name of Black Hamburgh; they were planted, and when they commenced bearing, the result was fine bunches and berries, which were well flavoured, but of a dull red colour. Black Hamburghs being what were wanted, on some of the red variety I grafted Hamburghs, which did invariably get black, and the result was that as long as the two sorts were allowed to grow on the same Vine, each kept their respective characteristics. I never, therefore, entertained the notion "that we may always expect at times ill-flavoured and badly-coloured fruit, with the best made borders, and under the very best management." Your correspondent remarks, that if he told his employer his Vine-house contained black Grapes, he should not like to send crimson ones to his table instead. I can believe that statement to be correct; it appears, however, from what he next unwittingly advances, that he does at times, under his present management or mismanagement, produce ill-flavoured and badly coloured fruit; for he says, "if any Grape will not come up to its flavour and colour by one means it must by another." He then informs your readers, "that of the whole Vines that he is acquainted with, hardly two kinds require the same treatment." He must therefore have a tolerably fair share of methods of managing Vines, and perhaps he will favour us with the peculiar treatment which each sort requires. I may add, however, that I find one sort of management to suit all my Vines, the only difference being that some sorts ripen earlier than others. Although Hamburghs will do with less heat than Muscats, it does not follow that Hamburghs cannot be properly ripened in a temperature that suits Muscats; but there is no doubt that the early and late sorts are best separate. *G. M., Wetherby, Yorkshire.*—The following thoughts, arranged in the shape of questions, have for some time baffled my mind and experience to answer satisfactorily. If your numerous and intelligent correspondents will give their experience in the matter, I anticipate that hints will be furnished that will prove interesting and useful to many. 1. Do Grapes improve in colour with the age of the Vine? 2. If so, why, or to what cause is this improvement attributable? 3. To what extent do you stop your Vines throughout the season? 4. Have you experienced any difference between stopping them closely

and allowing them to ramble? 5. Do you supply them abundantly with liquid manure at this, the ripening season, or keep them dry? 6. What difference do you make in the temperature as they approach ripeness? 7. Why should a bunch on a Vine which flowered only since the crop was ripe, become perfectly black in colour, with a good bloom, whereas the main crop was not so? *W. C. E.*

Societies.

Royal South London Floricultural.—At the last annual meeting, held (Dec. 11) at the Horns Tavern, Kennington, the chairman (M. Sangster, Esq.) read the following report from the committee.

"In presenting this our 15th report, we congratulate the subscribers on the steady progress and prosperity of the Society. In spite of a most unfavourable season, their shows, especially the Dahlia show in September, at which upwards of 10,000 persons were present, have fully equalled, if not exceeded, those of former years. The number of members who have paid their subscriptions during the past year amount to 209, of whom 42 have joined during the year. The Society has had five shows during the year, and the prizes given on these occasions amount to 292*l.* 15*s.*, in addition to 50*l.* 10*s.* given by members and others, making the total amount of prizes so awarded 342*l.* The auditors have made their report, of which the following is a copy.

Robert Seldon, Esq., as Treasurer, in Account with the Royal South London Floricultural Society

March 6, 1850. Dr.					
To balance in the Treasurer's hands ...	£ 6	2	8		
Medals in hand	1	10	0		
April.				£7	12 8
Admissions at the Show held at the Horns Tavern	9	18	0		
Sale of tickets at ditto	3	3	0		
				13	1 0
Subscriptions				209	0 0
Cash of the proprietors of the Royal Surrey Zoological Gardens for 1849 ...	40	0	0		
Ditto ditto ditto for 1850 ...	150	0	0		
				190	0 0
Entries and fines				17	4 6
Prizes unclaimed by exhibitors				1	15 0
Amount of extra prizes offered by members in cash	38	15	0		
Silver cup by committee	5	5	0		
Hine medal	0	10	0		
Mr. R. J. Lawrence, value in Tulips ...	5	0	0		
				49	10 0
Mr. H. Chapman, prizes returned as a gift				1	10 0
Balance of subscription cup				1	0 0
Balance due to the treasurer				1	14 10
				£492	8 0

Dec. 10, 1850. Cr.					
By amount of Prizes awarded at the several exhibitions	£336	5	0		
Subscription cup	5	5	0		
Hine Medal	0	10	0		
				£342	0 0
Outstanding accounts of 1849, viz.:					
Postages, &c....	5	2	3		
Printing, &c....	23	16	0		
Advertisements	13	3	0		
Mr. Briant, for show and committee rooms	11	15	6		
Outstanding prizes	6	13	4		
				60	10 1
Disbursements, viz.:					
Printing	5	16	0		
Advertisements	17	8	0		
Stamps, postages, &c.	19	8	10		
Expenses at flower shows	9	15	1		
Music at April show...	4	10	0		
Secretary's salary	20	0	0		
Collector's poundage	10	10	0		
				87	7 11
Medals in hand				2	10 0
				£492	8 0

Dec. 10.					
By balance brought down, due to the treasurer	£1	14	10		
Prizes outstanding	1	15	0		
Printing, ditto	20	16	6		
Mr. Briant for show and committee rooms	11	19	0		
	£36	5	4		
Less, due from the proprietor of the Royal Surrey Zoological Gardens £10 0 0					
Medals in hand 2 10 0					
	12	10	0		
				£23	15 4

We, the undersigned, have duly examined the accounts, books, vouchers, &c., of the Society, from which we find that the balance due by the Society amounts to 23*l.* 15*s.* 4*d.*

(Signed) J. Davidson, Joseph Venables, W. Hodgson } Auditors.

Horns Tavern, Kennington, Dec. 10, 1850.

"We (the Committee) regret that we are unable to come before the subscribers with a clear balance sheet. In our endeavour to apply all available resources to the prizes of the Society (having in the past year given 24*l.* 5*s.* more than in the preceding), we have relied upon the subscriptions of certain members which have not been realised; but whilst we have thus striven to uphold the credit of the Society, we feel, and we say so in a kindly spirit, that we are not sufficiently supported by some of the classes, viz., the nurserymen and florists, who derive from it the greatest advantage. It is evident that while to the private amateur the Society is a source of amusement and pleasure, to the nurseryman especially it is of almost vital importance; and yet we observe, with regret, that sums of money, far exceeding their subscriptions to the Society, are annually given by nurserymen and others to support smaller societies, to be there frittered away in preliminary and other expenses, when the same amount brought into this Society, and applied as prizes would contribute much to the efficiency of the Society and more effectually promote the object of the subscribers. We desire now especially to impress this upon the nurserymen. The ensuing year will bring thousands of foreigners to England, and it is not to be doubted but among them will be many of the best florists from all parts of the continent. We hope, for the credit, not only of this Society, but of our country at large, that the shows of the year 1851 will be such as to excite the admiration of our foreign rivals; and to this end we intreat the nurserymen and others, instead of inviting competitors to isolated shows of an inferior character, to strengthen our hands, not only by the increased excellence of their specimens, but by concentrating their subscriptions for prizes, to create a degree of emulation among their brethren, which must redound to the credit and profit of the English nurserymen and gardeners."

The above report having been adopted, the Society then proceeded to elect officers for the ensuing year, when R. Seldon, Esq., was appointed Treasurer; T. C. Wildman, Esq., J. Davidson, Esq., and J. Venables, Esq., Auditors; and Mr. J. T. Neville, Secretary.

Reviews.

Episodes of Insect Life. By Acheta Domestica. Third Series. 8vo. pp. 434. London: Reeve and Benham.

At last this quaint and amusing piece of entomological gossip has been brought to a close, in a volume superior to its predecessors in illustration, style, and matter. As a book conducive to healthy inquiry, or as an inducement to more serious study, it deserves all that a friendly critic could be expected to say; but it will hardly meet with the approval of formalists, or of the rigid systematist, who value things only as they can be made to dovetail into some favourite classification. Not being written for the learned, it is scarcely within their province to examine it; but it must fall into the ranks of the best kind of "popular" natural history, that is to say, of elementary books, written in the hope of making science popular. The writer has no love for the incorporation of Greek and Latin with every day matters; but his book is in plain English, as it should be, for English folk. The fault of it is the fantastic way in which insects are grotesqued, till one can hardly recognise them; this, however, will, we doubt not, be a recommendation to many readers of all ages. The concluding words of the author may be well taken as a fresh specimen of his peculiar style and manner of thinking.

"If none, like the Spitalfield weaver, knows the delight of insect-collecting, none, like the city clerk, can tell the delight of insect observation caught by snatches upon summer holidays. Such, for many a year, was ours; and now, that our working-day of life is over, right pleasant have we found it to take our evening flight away for ever from its weary scenes, and to indulge without restraint in the manifold pleasures of our loved pursuit. Joyous to the bee and butterfly the exercise of their wings and senses amidst the sweets which fill the atmosphere they always live in; but yet more joyous to our prototype, the cricket, must be a flight like his, when he exchanges for summer air and sunshine the contracted pleasures of house and hearth; and of this description is our enjoyment now. And then—the correspondent boon—boon above a cricket's need or cricket's ken—our escape also from a moral atmosphere (hot, glaring, and heart-oppressive; sickly with the incense offered to Mammon by his servile worshippers) to an air, not alas! of heavenly purity, but in which the lungs of the spirit may breathe comparatively free. Oh! this is a privilege which calls loudly for our evening hymn of praise, and to bear our part in concert with that graduated band descending from angel even into insect choirs. And ill should we read that 'second Bible'—the Book of Nature, with all its actual displays and typical revealments, if we read not this—that He who, in every episode of insect life, is seen to conduct to good the humbler creatures of His care, cannot by us be doing less in all the dispensations, be they sorrowful or joyous, which form the episodes of our human, and, while here, most insect-like existence."

Another extract is still more illustrative.

"This proceeding of Mother Wasp reminds us of the trick of Maître Hibou, in La Fontaine's fable of 'Les Souris et le Chat-huant,' which, according to an appended note, is no fable at all, only a fabulized fact.* The story, familiar probably to many of our readers, runs briefly thus:—'An owl had made his palace in the hollow of an old Fir tree. The tree was felled, and in its cavity what should be discovered but a brood of mice as fat as butter, but without a single foot left amongst them. The bird of wisdom had discovered, it would seem, that little quadrupeds could manage to give the slip occasionally to winged bipeds, and had therefore employed his beak to annihilate the trotters of the furry brood. With a foresight reaching further still, even to the length of what we exclusively call human, he had there fattened them on pilfered grain, to keep them in good condition for future consumption at leisure and at pleasure.' Hereon, exclaims our poet, as well he may, admitting his fable to be fable but in name:

"'"Puis, qu'un Cartésien s'obstine
A traiter ce hibou de montre et de machine!
Quelle lui pouvoit donner
Le conseil de tromper un peuple mis en mue?
Si ce n'est pas là raisonner
La raison m'est chose inconnue.'"

"It is not so much to draw a parallel as to point out a difference between the owl, as mutilator of his mice, and the wasp, as disabler of her caterpillars, that we have quoted the above relation, assuming it, as affirmed, to be *plus vrai que vraisemblable*. The owl's measure of precaution was one which owls do not usually adopt; and if, as this would imply, resorted to on experience, it proved him most undoubtedly a *reasoning* owl. The wasp, in a proceeding somewhat similar, only does that which all wasps of the same species have done before and will do after her, and that on the very first occasion which calls for their maternal care in the furnishing of their nursery larders. In this, therefore, we can only look upon her as a wasp *instinct*-guided."

Let us add, in conclusion, that the present volume contains a good index to the whole work.

* "Ceci n'est point une fable; et la chose, quoique merveilleuse et presque incroyable, est véritablement arrivée."—*Author's Note.*

Miscellaneous.

Pruning Roses.—The following remarks on pruning will, I trust, prove instructive to the young Rose-grower. As regards the time for pruning, some recommend autumn or winter, while others advise its being done in the beginning of March. I, as well as most Rose-growers, like the latter season best. By winter-pruning the buds break in the latter part of the winter, and are almost sure to be cut off by late frosts in March. Pruning effects two objects: it makes compact handsome trees, free from weak shoots and dead wood, and it increases the amount of floral beauty throughout the summer and autumn. It is susceptible of three divisions: first long, second moderate, and third close pruning. Long pruning is employed for all strong, vigorous, free-growing kinds. The consequence of a vigorous-growing Rose being close pruned is, that it will make a quantity of strong shoots, generally springing from the crown close to the stock, and very likely no flower during the whole year; at all events, not until late in autumn. The proper plan is, to leave from five to eight strong shoots, placed as regularly as possible, to cut them back, so as to leave four or five buds of last year's wood, and then carefully to prune away all weak and dead branches. Roses do not flower well in the centre of the bush, and therefore that part should be well thinned out, leaving the branches as free of each other as possible. As a general rule, it is not right to cut into the bush below the preceding year's wood; but when the trees become old, it is necessary now and then to cut away a portion of the old wood, which becomes clubbed; and this applies more or less to all Rose-trees. It should be removed with a nice small saw, and the wound afterwards smoothed over with the pruning-knife. These remarks apply to most of the Hybrid Chinas and Hybrid Bourbons, also to some of the Hybrid Provence, Hybrid Perpetuals, and Bourbons. Moderate pruning consists in using the knife more freely than in the former case, in leaving but two eyes of last year's wood, and in carefully training the branches, so as to make the head round and compact. As Roses that require moderate pruning have a greater natural tendency to flower than those in the last-mentioned class, a little inattention is not so injurious to them. Under this head may be enumerated the greater part of our newest and best Roses, including the Moss, Gallica, Damask, Hybrid Damask Perpetual, and a great portion of the best Hybrid Perpetuals and Bourbons. The third method, or close-pruning system, is used for those Roses which are termed dwarf growers, or that make but little wood. This class is not numerous in comparison with the others, but it contains many of the brightest gems of the rosery. They succeed better on dwarf stocks than on those of four or five feet in height. In some cases they are shy growers, and apt to overflower their strength. This is obviated by close pruning, as the strongest shoots come from the crown; and as it is the interest of the grower to get wood in this class, the last year's shoots should be cut away pretty freely. Under this head may be classed a few of the best Moss Roses, and many Hybrid Perpetuals, Damask Perpetuals, and some of the Bourbon tribe. A few words on Yellow-brier Roses, and I have done. Roses of this class are peculiar in their flowering, and therefore require peculiar pruning. They are very early bloomers, and make no wood previous to flowering. They generally put forth the leaf and bud about the same time; it is therefore necessary that as much as possible of last year's wood be retained, particularly the ends of the branches, from whence most of the flowers proceed. The method that must be pursued in order to get as much flowering wood as possible, is not to prune them when other Roses are pruned, but shortly after they have done flowering, leaving three or four branches a little shortened. The rest must be cut well back, when they will make good flowering wood the remainder of the season, and ripen it well. *J. M'Ardell, in Beck's Florist and Garden Miscellany.*

Edgings for Walks may be exceedingly various; but there are a very few indeed that will give lasting satisfaction. Grass is almost the only one that can be altogether commended for pleasure-gardens; and it is one which, if carefully laid, and diligently kept, will be sure to please, for it has a good colour, smoothness, regularity, durableness when not under trees, and harmony with both the architectural and the vegetable constituents of a garden. It furnishes, likewise, the best ground-tint for setting off the colours of flowers, as in a flower-garden. As an edging, it should invariably be flat, and at an equal height (not more than half an inch) above the surface of the walk at its margin, with about an inch or even two in depth along the inner line, next the bed or border, to allow for the washing

down of the soil towards it. It must not be too narrow, or it will be difficult to keep cut, and the sides will be likely to crumble away. Box edgings are troublesome, liable to great irregularities, apt to harbour insects, and suitable merely for quaint figures and old-fashioned geometrical designs. They are the proper accompaniments of parterres and small flower-gardens that are laid out with numerous narrow gravel-walks; though near the house, in a truly architectural garden, neatly dressed stone edgings will be still better. Rougher stone, bricks, and tiles may make strong and durable edgings for kitchen-gardens. Thrift edgings, in connexion with cottages, are very pretty when perfect. They want replanting, however, every three years, and parts of them frequently perish, leaving the ugliest gaps, where they have been long grown in the same spot, though the plants should be ever so punctually divided and re-set. The dwarf Gentian (Gentiana acaulis), if planted in double rows, sometimes, in soil that suits it, makes a neat edging. Heaths, also, particularly the common Lyng (Calluna vulgaris) may, when promptly trimmed, produce an excellent edging for a Heath garden, or bed of American plants. The smaller Periwinkle, kept in due limits, is useful as an edging under trees; as is the common Ivy. Arctostaphylos uva-ursi will be appropriate in the same position as Heaths, and many varieties of rock and sun Rose, though a little too straggling, will supply a novel and consistent edging to a border in which masses of stone and rock plants are freely mingled. The most valuable requisites in an edging are evenness, diminutiveness or capability of being regularly trimmed, quietness of appearance or harmony with whatever is behind it, and permanence. In each of these respects, Grass will, in nearly all circumstances, have the advantage. Where it is least in character is immediately alongside of any rocky surface. There, the common Heath, undressed, would be most expressive and characteristic. *Kemp, on Small Gardens.*

Calendar of Operations.

(For the ensuing week.)

PLANT DEPARTMENT.

Of all things, watering requires most careful attention at this season. Adhere strictly to the simple directions we have so frequently given, never to water till the soil immediately below the surface is sufficiently dry to warrant a full supply. Have a sharp eye to detect on the first appearance anything like sourness in the surface of the soil, and let it be immediately examined and rectified; worms frequently render this necessary, and if the pots were not carefully drained in the first instance, the frequent waterings will have washed down particles of soil, which will have sealed up cavities so necessary to secure a free passage for the water. Stagnation is certain death to tender rooted plants at this season, and if water be altogether withheld, or if the dribbling system be tried, the result in most cases will be the same. Keep the houses as dry as the external atmosphere will admit of; not by the excessive use of fire-heat, but by avoiding as much as possible the creation of unnecessary moisture by spilling water, &c., and by admitting such a quantity of fresh air as shall, in connection with moderate firing, remove any superabundant moisture unavoidably created by watering, &c.

FORCING DEPARTMENT.

Peaches in pots that are in a condition for forcing, being well established in pots of a suitable size, which they were shifted into last season, with plenty of fresh turfy loam, and the wood being well ripened and well supplied with fruit buds, may be introduced into a mild temperature, and plunged into a bed of tan, leaves, or some other material which will supply them with a gentle bottom heat. Great care must be taken not to hasten too rapidly the swelling of the buds, as they will either drop off, or be so weakly when they expand, that not 1 in 10 will set. At the first commencement 45° will be high enough for the night temperature, and during the day a rise of 10° or 12°, if the weather be fine and clear; 60° of bottom heat will be sufficient to commence with, and after the buds show signs of growth, a very slight increase of top and bottom heat may take place. Vines in pots may, on their introduction, be treated in the same manner, giving gentle syringings twice or thrice a day, according to the state of the weather. The same treatment will apply to the starting of Figs, Cherries, and Apricots, for the first few weeks, but after that the Cherries will require to be kept much cooler than the other kinds of fruits. The advantage of growing these fruits in pots is, that an early supply can be obtained, and even a succession kept up in the early season, without starting an entire house of established trees at a period of the year which is unfavourable for their growth, and thus reserving the energies of these more valuable plants till a season more favourable for their development.

FLOWER GARDEN.

Advantage should be taken of frosty weather to do any rough work in the principal part of the pleasure-ground, such as pruning trees and shrubs, the doing of which involves a considerable mess, which can be more easily removed in such weather. A similar opportunity should be taken to wheel old exhausted soil from the flower-beds, and to replace it with fresh material, as this kind of work can be done in a frost in half the time that it would take if done when the ground and walks were soft, and with a tithe of the injury to both which would be inevitable in the latter case. When large evergreens move with good balls we have frequently taken advantage of such weather for the operation, and we never had a single failure in a shrub thus shifted. When the soil has been loose we have even prepared the trees in the afternoon previous, that by morning the balls might be frozen hard enough to hold together. We do not however recommend exposing the roots of smaller plants to frost, nor is there any necessity for it.

FLORISTS' FLOWERS.

At this time of the year, it often happens that severe frost follows heavy wet. When plants are overdone with moisture, they are more susceptible of frost than when moderately dry. It is therefore good policy for the amateur to guard against extremes of either one or the other. A double mat will be advisable over the Auricula frame at night, but should it be possible, even in severe weather, to give air, by all means let it be done; nevertheless, severe frost is not so ruinous at this season as many imagine; for we well recollect an extensive grower, in consequence of absence from home, leaving his frame open to a very heavy fall of rain, which was succeeded by as severe a frost; plants, soil, and everything else were completely frozen; but by covering up, excluding from the rays of the sun, and thawing them gradually, not the slightest injury was apparent. Tulip Beds will be more safe covered than exposed; and Ranunculus and Anemone beds had better be thrown up, in order to sweeten and insure the destruction of insects, &c. Should any one have Carnation layers unrooted at this season, they must be examined after a frost, and again pegged down. The directions given last week for the other departments will hold good during the few next coming weeks.

KITCHEN GARDEN.

Before the general manuring and trenching of vacant ground, it is necessary to decide on the rotation of crops which are to be cultivated upon it during the ensuing summer, that these operations may be ordered with special reference thereto. This arrangement should be made, not for one year only, but for a series or cycle of years. One of the first principles to be attended to is, that no annual crop be grown for two successive years in the same plot of ground. Another variation should be made by taking care that those crops which immediately succeed each other are not such as are liable to be preyed upon by the same kind of insects; as their increase is encouraged to a fearful extent by thus putting into their way the species of food which they are most fond of. It is important that both the manuring and the depth of the trenching be regulated by the requirements of the crops; and their rotation should be so arranged that the ground be not trenched to the same depth for two successive seasons, but so that different portions of the soil be brought to the surface in turns. The perennial or permanent crops will, of course, form a class by themselves, as they do not require a change of situation for many years; but when this is necessary with any portion of them, the ground from which they are removed will fall into the ordinary rotation in the way of a regular exchange. But we will take a future opportunity of recurring to this part of the subject, and confine ourselves for the present to the annual crops. By cultivating the Celery and Cardoon on the Scotch or wide bed system, a large ridge of soil is thrown up between the trenches, the surface of which is excellently adapted for the cultivation of dwarf Peas, Beans, Spinach, Turnips, and similar vegetables; observing, however, that only the earlier sowings of these several crops should be made on these ridges, that they may be removed in due course, before the ground is required for earthing up the principal crop. As a matter of course this arrangement must not interfere with the very earliest crops of Peas, &c., which are generally allowed a place on the side borders near the walls. For the latest crops of Peas, &c., a portion of ground must be allotted, which, with that occupied by the Celery and Cardoon ridges, will generally amount to about one-third of the ground occupied by annual vegetables. The extenive turning over which the Celery and Cardoon soil undergoes, acts admirably in preparing the ground for deep rooting plants, such as Turnips, Carrots, Onions, &c., and in the following year may be devoted to the cultivation of the Cabbage family, whose roots are confined more nearly to the surface. If the vegetable garden is so large as to allow of the cultivation of a portion of the general Potato crop within the walls, it will form a fourth course in the rotation, and will come in after the Brassica tribe. Working upon this system, Cabbages have been planted during the autumn on ground which had been occupied by late summer Turnips; and the ground which now requires trenching is that from which the later Turnips, Onions, Carrots, Beet, &c., have been removed, and which will next spring be planted with Cauliflower, Broccoli, &c. Preparation for these should be made by trenching in a very heavy dressing of manure, which shall serve for that and the succeeding crop; as the last few years have fully convinced us of the impropriety of planting Potatoes on ground recently manured.

State of the Weather near London, for the week ending Dec. 19, 1850, as observed at the Horticultural Garden, Chiswick.

Dec.	Moon's Age.	Barometer. Max.	Barometer. Min.	Temperature. Of the Air. Max.	Of the Air. Min.	Of the Air. Mean	Of the Earth. 1 foot deep.	Of the Earth. 2 feet deep.	Wind.	Rain.
Friday.. 13	9	29.817	29.717	50	36	43.0	42	43½	S.W.	.05
Satur.. 14	10	29.724	29.418	54	36	45.0	43	44	S.W.	.21
Sunday. 15	11	29.453	28.934	55	36	45.5	43	44	S.W.	.30
Monday 16	12	29.224	29.015	48	32	40.0	44½	44	S.W	.06
Tues. .. 17	13	29.276	29.103	44	27	35.5	43	44	S.W.	.02
Wed. .. 18	14	29.424	29.165	44	25	35.0	41	44	S.W.	.19
Thurs .. 19	0	29.841	29.244	39	26	32.5	40	43	N.	.00
Average....		29.537	29.228	47.7	31 3	39.5	42 3	43.8		0.83

Dec. 13—Very dense fog; cloudy and fine.
— 14—Clear; densely clouded; clear; boisterous with rain in the evening; squally at night.
— 15—Overcast; rain; warmer at night than at noon.
— 16—Clear; very fine in forenoon; overcast; boisterous with showers.
— 17—Clear; rain; slightly clouded; slight frost.
— 18—Frosty; fine with sun; rain.
— 19—Foggy; fine with sun at noon; overcast, rain; clear and frosty at night.
Mean temperature of the week 1 deg. below the average.

State of the Weather at Chiswick during the last 24 years, for the ensuing week, ending Dec. 28, 1850.

Dec.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds. N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 22	45.3	34.3	39.8	12	0.38 in.	2	4	2	1	2	6	5	2
Mon. 23	44.3	32.6	38.4	12	0.25	4	6	1	1	1	7	1	3
Tues 24	42.9	31.8	37.3	9	0.36	3	3	2	1	1	8	1	4
Wed. 25	42.6	29.0	35.8	5	0.22	2	4	3	—	2	5	4	3
Thurs. 26	42.3	32.0	37.1	9	0.39	1	4	2	3	4	7	—	3
Friday 27	42.2	30.3	36.3	8	0.40	3	4	1	—	5	3	6	2
Satur. 28	41.0	29.8	35.4	8	0.16	3	3	2	3	2	1	6	4

The highest temperature during the above period occurred on the 25th, 1827—therm. 58 deg: and the lowest on the 24th, 1830—therm. 10 deg.
On the average of 24 years, the night of the 25th of December is colder than any other night throughout the year.

Notices to Correspondents.

Anemones: *J Walton.* Such flowers are common. They are merely such as from some unknown cause expand prematurely, before their colouring matter has had time to form.—*A S W.* Plant in spring, in nice light soil, moderately enriched with leaf-mould or other well decomposed manure. For directions on general management, you cannot do better than consult Tyso's little "Treatise on the Anemone.‡"

Camellias: *H H.* Dropping of the buds occurs through many causes; but in your case it may be occasioned by over heating. 58° during the day, and 50° at night, are too much for Camellias; 40° are ample.‡

Clubbing: *Cavanensis.* It is caused by an insect, and may be prevented by putting wood-ashes in the holes along with the plants at transplanting time.‡

Grafting: *Devonian.* Rhododendrons may be grafted early in spring, keeping the plants in the bark bed of a warm greenhouse. Tacsonia manicata will possibly succeed on Passiflora Buonapartea.‡

Heating: *A C B.* If you wish to have trees in front you must have pipes in the middle of the house; but the front is their proper place. Take care that in sinking them you do not let your heat be absorbed by the surrounding soil. Use 4-inch pipes.

Insects: *S W B.* Put some soft bits of wood and sawdust into the flower-pot with the mould, as wood is the ordinary food of the caterpi lar of the goat moth, and it forms its cocoon with the sawdust. *W.—Reader.* The most effectual way of clearing your Pear-trees of scale, is to wash them with water at the temperature of from 150° to 160°.‡—*A. B. C.* Next week.

Moss on Lawns: *S R F.* If your lawn is devoured by Moss and Daisies, you will be right in giving it a dressing of ammoniacal lime from the gas works, and in spring a dressing of soil. It will be worth your while to fetch ammoniacal liquor some three miles, as you can have it for nothing, to mix with leaves, burnt earth, &c.? The Moss will disappear; and perhaps Daisies also, if the Grass becomes strong enough to smother them.

Names of Fruits: *J R.* 1, King of the Pippins; 2, Paradise Pippin; 3, Sweeney Nonpareil; 4, Easter Pippin, or French Crab; 5, Downton; 6, Norfolk Beaufin; 7, Dumelow's Seedling.‖

Names of Plants: *A H.* Your plant appears to be the "Daphne Mezereum foliis atropurpureis" of continental gardens. Its history is unknown. It is not a Mezereum. Mr. Van Houtte, who figured it, suggests that it may be Wallich's D. papyracea, a plant with which we are unacquainted. To us it looks like a mule between D. Laureola and D. Mezereum.—*Reader.* Adiantum æthiopicum. *S.—Erzeroum.* 638, Delphinium Oliverianum.—*P P Celle.* It is not possible to determine the Oncidium, the flower having been smashed by the letter-stampers; it is near O. suave and Suttoni. The Epidendrum is a very curious species from Xalapa, called antenniferum. The Cœlygyne is C. trisaccata of Griffith, a species we did not before know to be alive in Europe.

Netting: *S R F.* Dip bird netting in a tan pit. Stockholm tar, quite hot, will also do. Caoutchouc, dissolved in naphtha, is much too expensive.

Peach trees: *Gardener.* There can be no doubt that they will be injured by Laurels which grow within 6 feet of them, and which are higher than the Peach trees, keeping the border in which the latter grow in perpetual shade.‡

Planting: *Arborisauctor.* Will Cryptomeria thrive in N.W.? For upright growing plants take Cupressus torulosa or Goveniana; the latter being the smaller may go nearest the house. Add *there* Abies Pinsapo, a charming tree; and Douglasii for the larger spaces. If variety is an object, Juniperus flaccida might mix or contrast with Cupressus torulosa. Abies Webbiana might very well contrast with Douglasii.

Portable Greenhouses: *Reader.* We do not know.‡

Rafflesia: *Ajax.* The flowers are cinnamon-coloured, speckled with yellow, when expanded. It is a parasite, and not cultivable. There are many tastes to consult, and editors must attend to them. We are always much obliged to the correspondents who favour us with communications of horticultural *interest.*

Rockwork: *A Reader.* Nothing thrives under the shade of trees so much as elsewhere. You may try Periwinkle, Wood-sorrel, Ivy-leaved Toad-flax, Arabis grandiflora, spring bulbs, and Ferns.

Rhododendrons: *E A C.* If ladies will take the same care of these as of their lap-dogs, they may be grown even in London. What Rhododendrons want is to be kept clean by frequent washing, and to be *well* supplied with water. Periploca græca does not emit any poisonous odour; very few plants do; but some do, such as the species of Rhus or Sumac.

Russian Superb Violets: *R Shackell.* We have received these safely; and very sweet and very fine they are; certainly an improvement upon the Russian.

Taxidermy: *W J.* We will inquire.

Verbena Seed: *A M.* Sow it in spring in nice light soil. Verbena plants may be bedded out as soon as all danger of frost is over; say about the middle of May. The roots *may* be kept alive over winter; but the best plan is to take cuttings and strike them in autumn.‡

Victoria Park: *P F W.* We do not know; but it is so said.

Vines: *A Constant Reader.* Oldaker's St. Peter's is the best black Grape, and the White Muscat of Alexandria the highest flavoured white one for a late supply; these, with the Black Morocco and Calabrian Raisin, will answer your purpose.‖—*R A C B, Chesterfield.* As you intend to plant Nectarines and Peaches inside your Vinery, it will be advisable to plant your Vines outside, and protect their roots as you propose. Instead of stones lay drain-pipes across your border at every 4 feet, sloping of course to a main drain. If you make a good border 12 or 15 feet wide, that will be sufficient for the roots; you may let them extend beyond this if they will.‖—*Harold.* For your proposed selection for a greenhouse, substitute the Royal Muscadine, Black Frontignan, and Black Prince, for the White Muscat of Alexandria, Purple Constantia, and West's St. Peter's.‖

Water Filters: *Clerious.* Possibly the plan described at page 549 of the present year's volume may answer your purpose.‡

Just ready, price 10s., with Maps and Woodcuts,

THE JOURNAL OF THE ROYAL AGRICULTURAL SOCIETY OF ENGLAND, Volume XI., Part 2 (No. XXVI.)

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London, Dec. 18, 1850. JAMES HUDSON, Sec.

ROYAL AGRICULTURAL COLLEGE, CIRENCESTER.—The Council of the Royal Agricultural College, at Cirencester, propose, after the ensuing Christmas Vacation, to receive within the walls of the College Students who, at the date of their admission, do not exceed 16 years of age, though they will not necessarily be removed on reaching that age.

Students between the ages of 16 and 20 may be received in a commodious Boarding House, in Cirencester, under the superintendence of a resident Professor or Master. Out-Students above the age of 20 will be admitted on the same footing as heretofore.

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Pupils in the Boarding House	80	,,
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Excepting in the case of Out-Students, these terms will include everything but medical attendance, books, and writing materials.

The Religious instruction and moral discipline of the whole of the Students will be most carefully attended to, as the groundwork of all education.

The Lectures in Chemistry—the Veterinary Art—Geology—Botany and Zoology, hitherto so ably presided over and conducted, will be continued, for the especial benefit of the elder Students.

Instruction—by competent Masters—in Arithmetic, Algebra, Mathematics, and Natural Philosophy, Surveying and Mensuration, in History and Geography—will be offered to every Student; while those, whose Parents desire it, will be instructed in Modern Languages and Classics.

Agriculture will be taught on the Farm—where the Students will be led to compare what they have learnt in the Lecture Room with the practical system of cultivation which they will see carried out.

They will also have the opportunity of becoming thoroughly acquainted with the breeding, rearing, feeding, and general management of all kinds of Stock—with the preparation of Corn for the market—and with the application of Steam Machinery to Farming purposes—and also with the best system of Farm Accounts.

It will be seen from the above that the Royal Agricultural College offers decided advantages to those who wish to qualify their Sons, either for the pursuit of Agriculture as a profession, or for becoming Land Agents or Stewards; also to persons of any age, who, intending to emigrate, desire to obtain some knowledge of Agriculture before leaving England; moreover, no slight inducements are held out to all parents, who are desirous of procuring for their Sons such an Education as will qualify them for any calling or profession, at as moderate a cost as is compatible with the advantages offered, and with the liberal scale on which the comfort of Students will be attended to and promoted in every particular.

For further information, &c., application may be made to the Principal, The Rev. JOHN SAYER HAIGARTH,
Dec. 21. Rodmarton, Cirencester.

The Agricultural Gazette.

SATURDAY, DECEMBER 21, 1850.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

THURSDAY, Dec. 26—Agricultural Imp. Society of Ireland.
THURSDAY, Jan. 2—Agricultural Imp. Society of Ireland.

THE insufficient education provided by the great proportion of the farmers in this kingdom for their sons intended for their own occupation, has been a subject of common observation. It is a remarkable feature in our agricultural policy. We may add, that under the great changes now in progress, this is a real misfortune, and will place the youth destined to follow this occupation under grievous disadvantages. In time to come, agriculture will rank amongst the sciences, and must seek the aid of many of them, if it is to be cultivated successfully; and a more or less intimate acquaintance with sciences essentially connected with it, chemistry, geology, mechanics, and vegetable physiology, will be indispensable. We are nevertheless informed, on authority on which we can rely, that there are farmers at this moment availing themselves of the village schools, provided for the gratuitous education of the children of the poor, for the teaching of their children.

It was under the conviction that suitable instruction for farmers' sons was *the* great want of the age, that we rejoiced at the efforts made some few years ago to found an agricultural College, and the promise of success afforded by the fine institution erected near Cirencester. We hoped and believed there never would have been an empty bed in it, but we have regretted to hear from time to time that the number of pupils was insufficient to clear the expenses. From inquiries we have made, we believe the main cause of difficulty has arisen from the founders having overlooked the point with which we commenced our remarks; and that, with some exceptions, the lads sent there had been by no means previously educated up to the mark, and were therefore not in a position to avail themselves of the advantages provided for them. We are fortified in this opinion by knowing that some of the better qualified, who therefore were capable of appreciating these advantages, have since filled responsible situations with credit to themselves, and some of them have contributed usefully to our agricultural literature.

The Council of the College, after much consideration, have, we understand, come to the resolution to remodel the College, to meet the practical difficulty to which we have adverted; and we think they have judiciously determined to provide, on the foundation, a school for younger boys under 16 years of age, in which a good general education will be given, in connexion with agricultural training, which will gradually enable the pupils to understand and appreciate the lectures and demonstrations of the scientific professors. While the education given will be mainly directed to the pursuit of agriculture, we are informed it will be such as will qualify lads for any useful pursuit in which circumstances may place them, whether as bailiffs, land-agents, or emigrants, or in any commercial occupation.

The College system of education will be preserved for older students resident out of the College in an establishment under the superintendence of one of the Professors.

Another alteration in the administration of this Institution has been determined on, which we also consider judicious; which is, that the attention of the Principal will be devoted exclusively to the teaching and superintendence of the school and College, and that the farm will be placed under the management of a practical farmer fully sensible of the advantages yet to be derived from the alliance of science with practice, who will avail himself of all well established improvements in the conduct of the farm. Up to the present time the Principal has not only had the entire superintendence of the students, an ample occupation in itself, but also of the farm, containing about 700 acres, which in these times would well engage another mind.

We learn that upwards of 30,000*l.* have been expended in providing every requisite for the successful advance of this highly useful and important Institution, in which we see by the prospectus a boy under 14 years of age may be boarded and educated, in the most efficient manner, at the moderate cost of 45 guineas per annum. We earnestly hope that fathers will avail themselves of these advantages, and we would anxiously impress upon the sons the many difficulties which at present beset their path, and the absolute necessity of their assiduously and zealously availing themselves of the various sources of knowledge provided by this Institution.

THE MIDLAND COUNTIES EXHIBITION OF POULTRY, which hitherto had been an occupant of temporary resting places, has at length, on its third anniversary, been fixed in a permanent building worthy of the grand object for which it has, with astonishing rapidity, been erected. In one portion of this noble room, such a collection of fowls has just been exhibited as never were congregated before; and if the rate of advancement of the Show, during the short interval from its first establishment, may be considered as any guide to estimate its future progress, we are rather startled in attempting to anticipate what these assemblages of men, beasts, and birds may come to hereafter.

The new Bingley Exhibition Hall has two handsome façades, duplicates of each other, at either end, of a good solid utilitarian character, yet far from inelegant. The building covers a superficial area of about *an acre and a quarter*, all inclosed and roofed in with solid materials. With the exception of a small portion set aside as offices and other conveniences, the whole of this can be used as one vast room. It is capable, however, of being divided into five compartments, the largest being in the centre. All of these may be used for a separate purpose at one time, if required; and on the late occasion, the compartment to the extreme left on entering was devoted to the poultry, the others being allotted to the cattle, sheep, and pigs. The roofs which cover these five contiguous compartments are supported by cast-iron columns, which also serve another useful purpose, by conveying the rain-water from the gutters down to the drains beneath. The building is all but entirely lighted from above by parallelograms in the roof of sheet-glass reaching from end to end. Outside, one expects to find the interior dark; but it is by no means so; and the privacy of the place is much increased by this arrangement, to the disappointment of all impertinent PAUL PRYS, and unauthorised PEEPING TOMS. Little boys cannot here lift up the canvas, and get a sight of the show gratis. We may suggest that it would have been a great improvement in an edifice of so permanent and public a character, had the portico for exit and entrance been brought only a few feet further over the roadway, so as to allow a carriage to drive *under* it, and set down company under shelter, instead of being obliged to draw up outside in all weathers. Some special accommodation might be made for visitors coming on foot.

The number of birds here displayed *for competition* last week, was 2000, half-a-dozen head more or less, in 556 pens; besides which there were a good number of dealer's pens, making altogether nearly 600. The amount given away in prizes was about 70*l.*, and the nearest possible calculation that can as yet be made of *bonâ fide* sales of poultry, amounts to nearly 400*l.*; besides which, a great number of sales were made by private contract, and not registered in the office; doubtless, to save the 5 per cent. charged by the Society on all registered sales. The total number of visitors during the four days that the Exhibition was open, amounts to 30,000! And it is not too much to say, that the poultry department was, throughout, the most attractive, and most densely crowded portion of the show.

As to the quality of the specimens, it is difficult to speak too highly. In every class there were creditable samples; in some supremely beautiful and good. Not that there were not here and there a few lots that might as well have been kept back at home. In such a multitude, all cannot be first-rate; the wonder was that there were so few low-caste bipeds. But even these had their lesson assigned them to teach. In early youth we remember to have copied and re-copied the maxim, "By others' faults, wise men correct their own," and the few shabby specimens of poultry in the Bingley Hall, hinted to the fancier where to weed and how to breed his stock. One lot of chickens (214) appeared to us instructive in this way. We are informed that the Judges, on first catching sight of these little creatures, burst into a simultaneous fit of laughter: on recovering the gravity proper to their position, they discovered that these birds were "Hatched by exhibitor out of CANTELO's Patent Incubator, August 12, 1850." Our resolve is confirmed to stick to the hens in future, unless we either take up our residence in Egypt, or can import the Egyptian sun and climate into Great Britain.

Exactly as last year, so now, the same practical utilitarian spirit pervaded the exhibition. Cocks and hens, turkeys, ducks, and geese were the prime favourites, although several real zoological curiosities were present. There were three veritable hybrids between the pheasant and the common fowl; a couple shown by Lord GUERNSEY, and a single bird, a remarkably fine specimen, between the pheasant and the Spanish fowl, by Mr. BUCKNILL, of Exminster. There was also a jungle fowl of somewhat more than half wild blood; but they attracted no great notice. Very healthy and well-plumaged gold and silver pheasants were regarded with much the same indifference; in spite of which, we hope never to see such things entirely absent from the show. The rumkins were sadly, and we think undeservedly despised. There were, besides, a pair of very beautiful white Persian doves, which would be liable to be called albinos from the common collared turtle, did not the absence of all trace of the ring round the neck lead one to suspect that they might be specifically distinct. A pair of ring-doves or wood-pigeons, reared from the nest, were so handsome, healthy, and well-behaved, as to do great credit to their exhibitor, Mr. EDWARD HEWITT, of Sparkbrook; we only quarrel with that gentleman because in the catalogue he calls them the "usual wild breed *domesticated*." As well might Mr. WOMBWELL have called any of the lions and tigers reared in his menagerie the "usual wild breed domesticated." If either bird or beast were suffered to go at large on reaching the third or fourth anniversary of its birthday, the one would prove as domestic as the other would innocent. We should not thus cavil at terms, did they not convey very erroneous ideas.

The prices actually realised confirm, in the surest way, the higher estimation in which useful birds are held above those which are merely ornamental, and which have no better claim on our favour than that of being luxurious appendages to the pleasure-ground. We do not state this from what appears in the catalogue; many of the prices there set down are intended by the exhibitors to be *prohibitory*, and to prevent the possibility of the specimens passing out of their possession. This we may suppose to be the case with No. 407, pair of English carriers, 20*l.*; 409, Antwerp carriers, 15*l.* 15*s.*; 43, Cochin-China cock and three hens, 50*l.*; 55, cock and three hens of the Worcestershire pile game, 20*l.*; and 534, three white guinea-fowl (anything but rare), 5*l.* But, in several instances, the prohibitory price put

on was insufficient to secure the return of the birds to their owner; and the committee have very properly laid down the rule, that, *if* the price marked against each lot *is* offered, the transfer must imperatively take place. We may mention the couple of birds that occupied the pen 184, instead of the half dozen chickens that ought to have appeared there; they were large white birds of the Cochin China family, and marked 5*l.* 5*s.* They were sold at an early period of the show, and the buyer was soon offered 7*l.* 7*s.* for them, which he refused. The exhibitor had not intended to sell them at all, and so had to submit to the inevitable misfortune of parting with a cock and hen for the small sum of five guineas. The remembrance that he had more at home, aided, we believe, in affording a little consolation. Lord Hill's Dorking cock and three hens (No. 13), gaining the first prize, and an extra medal, were marked at 2*l.* 2*s.*, and were very soon bought up; had the price been treble that sum, they would have been sold. No. 132, Mrs. Hasier Williams's black Polish cock and three hens, also gaining a first prize, and an extra medal; and, in our opinion, decidedly the cream of the exhibition, although marked at 4*l.*, were quickly snapped up; had their price been half as much again, or twice as much, they would still have been secured by some admiring amateur. The poultry sold on this occasion amounts to several hundred pounds. An extract from the catalogue will best show the reader in what a serious business-like way the value of each specimen is estimated.

"197. Exhibitor: Thomas Henry Travis, Esq., York. (Six Cochin China chickens.) Yellow cockerel, hatched April 11th, price 10*l.* 10*s.*; dark cockerel, hatched April 11th, price 10*l.* 10*s.*; brown pullet, with clean legs, hatched April 9th, price 1*l.* 5*s.*; speckled pullet, with clean legs, hatched April 16th, price 1*l.* 5*s.*; brown and red feather-legged pullet, hatched April 27th, price 1*l.* 10*s.*; yellow feather-legged pullet, hatched May 11th, price 1*l.* 5*s.* Total 26*l.* 5*s.*"!!

In contrast to this, some beautiful gold and silver pheasants (542 and 543) were offered at the reasonable price of 2*l.* each the pair. A gentleman, on being invited to secure a choice fowl or two, was overheard to exclaim, "No! No! it's the price of a pig!" In short, symptoms are apparent that a national cock-and-hen mania is coming on. It will not prove so dangerous a disease as the railway fever.

Guinea-fowl never seem at home in a Poultry Show; they turn out either sulky or shy. Lady Charlotte Gough's prize pair (531) were handsome, normally-coloured specimens. The pied birds are, to our eye, the ugliest of the ugly, and the white ones not much better—at least, in an exhibition. The geese were glorious. Lord Howe's white gander and two geese (454) taking the *second* prize, would be pre-eminent almost anywhere; but yet they were surpassed by the portly presence of the grey birds, in No. 465. The Catalogue tells us that they were sent by "Mr. Thomas T. Parker, Sutton Grange, near St. Helen's, Lancashire, and were bred this year, 1850. (Breed unknown). Price 5*l.* 5*s.*" They were Toulouse geese, of due colossal amplitude and magnitude. Of the livers of these birds are made the famous Perigord pies, so pleasant to those who can digest, after eating them. The ducks, too, were admirable; the Aylesbury all very good, from various exhibitors, who might well be jealous of each other. Some specially beautiful half-bred wild ducks were sent by Lord Howe. Some pretty top-knotted ducks (509) attracted great notice, and they seem to be appreciated by their owner, who has secured them to himself by the golden fetters of 52*l.* 10*s.* We do not call them *tufted* ducks, as does the catalogue, because that title is appropriated by a wild species. Good Muscovy and Buenos Ayres birds were also present. A better collection of turkeys in their varieties can hardly be brought together. Lord Hill's Americans (519), were super-eminent, and were young birds; but all the others were extremely good. The stags are the most showy birds on these occasions, but they are apt to be ferocious. Lord Hatherton's copper-coloured cock killed one of the hens penned with him before the public were admitted to view.

The bantams were superior to what they were last year, but still *they* by no means reached the *beau ideal* which our own imagination pictures. There were no black bantams for competition, though they are about the purest of their family. One white bantam cock (395) by his air and carriage gave dignity to the whole group. The Nankin bantams just indicated, to those who can see, the native beauty possessed by this tribe of fowls. The silver-laced Sebrights were all much too yellow; and, among the gold-laced, several hens were suspected to be chickens—an error which, however pleasant on a supper table, is not fair in a poultry show. We should much like to see a few good lots of the true old-fashioned, speckled, feather-legged bantams another year. They are really of very ancient pedigree and high caste, which the Sebrights, we are assured, are not. But the middle classes are not in great possession of them just now. They are to be found either in a few aristocratic, perhaps royal, families, or amongst a few artizans who are as nice about the creatures they keep as the Arab is touching the pedigree of his mare. Are not such fanciers as these last, better and more happily employed than they would be in devising new threadbare schemes for the regeneration of society?

The class of six chickens of various breeds was both as numerously and as respectably attended as it was last year. But under this head, we must protest against the introduction of six cockerels into one pen another season. What should any amateur, farmer, hen-wife, or dealer, do with six cockerels of any breed, however choice, except condemn them to the fatting-coop. It would be of no use stocking colonies with consignments such as those. Capons would do as well, or better. Perhaps the committee will think fit to limit the proportion of the sexes in this class, and prevent the cocks from swamping the hens altogether. No. 231, chitteprats, from Keighley, was in much better taste in its association of five hens to one cock.

Messrs. Baker, of Chelsea, sent some specimens for sale; amongst others a very nice pair of young shieldrakes, which were enviable by whoever has a pond in his pleasure-ground.—Mr. Baily, of Mount-street, Grosvenor-square, *openly* displayed model Spanish, Dorking, Cochin China, and other fowls for sale, besides the above-mentioned jungle-fowl, and the neatest little white call-ducks we ever saw. We say *openly*, because what secret resources Mr. Baily may have, nobody but himself can tell. We suspect, that like Robert Houdin, or Mr. Jacobs, the conjuror, he can produce *any* known fowl from one of his magic hampers. He has been of great assistance to the Exhibition in its infant state; and we are assured that the Association, in its maturity, gratefully appreciates his services.

Besides the poultry medal figured above, a large extra medal has been liberally provided by the Committee, as an additional prize this season. It represents a group of a cock and three hens of the silver Hamburgh fowls. The design is by Mr. James Bissell, the die by Mr. Thomas Ottley, a happy combination of talent which ensures both accurate portraiture and finished workmanship. The medal, we foresee, will be as much admired as it deserves. It is in contemplation by the Committee every year to give a fresh extra medal, representing a group of some *one* breed of poultry. The idea is a happy one; for at the end of the series, whoever is possessed of it entire, will have a complete set of imperishable illustrations of this very interesting branch of natural history, which will be of inestimable value long after *our* frames have crumbled into dust. Such a series, struck during the Augustan age, could it be discovered amongst the hidden treasures of ancient Rome, would now be priceless, were it only as faithful in its delineations as are the metallic portraits of which the first now makes its appearance.

Our limited space is filled, and we must conclude; but not without offering our congratulations and thanks to Mr. J. B. Wright and his able coadjutors. Any compliments we might wish to pay them may be summed up in one short sentence. *They have opened an amusing and instructive spectacle to* thirty thousand spectators.

ECONOMY OF FOOD.

Two papers of considerable importance, on this subject, appear to have much escaped the attention of agricultural periodicals; although the subject itself is of vital interest to the depressed and oppressed agriculture of the country.

Whilst the corn grower is unable to compete with the foreigner, we need some articles of culture for food, less liable to competition, and not less nutritive and palatable. The green crops, which well suit our climate, produce more nourishment per acre, and are protected by the greater proportionate cost of freight, and perishableness on shipboard, suffer under other difficulties. The precious Potato (however despised) is still subject to the putrid disease; the Turnip is too juicy and soft for human food, alone; and in that objection all the other largely grown edible roots and greens more or less participate. And the conversion of these into beef and mutton, taking an average of 150 lbs. to make 1 lb. of flesh, is a waste, regarding both as human food, which must limit its practice in a densely peopled country.

The papers in question do not directly meet this dilemma, but they appear to establish two principles, which expand the restriction of our choice of agricultural plants, and of the modes of their preparation for food, by considerations at present overlooked or disallowed.

1. The first relates to the incorrectness of nitrogen as a measure of nutritive power in different articles of food.

2. The second to the increase of nourishing power of the same food, by presenting it to the digestive organs in different conditions.

The first of these papers was read at the British Association, entitled "On the per-centage of nitrogen as an index to the nutritive value of food," by Dr. A. Voelker. This goes to show the inaccuracy of the rule, inferred from Liebig's analogy between the vegetable and animal protein compounds, that "the nutritive (or rather the fleshening and strengthening) property of food is proportionate to the nitrogen it contains." So generally has this rule been received, that in several of the recent tables of the comparative value of food, the proportion of nitrogen has been taken as the basis, or even as a correction of actual experiments, in feeding; and the cultivation of different plants has been recommended according to their relative contents of this ingredient. But Dr. Voelker shows, that in many cases much of this nitrogen is not in the composition of protein (the fleshening principle); and contributes little or nothing to the formation of flesh. The discussion which followed also went to infer that there was yet much to be learned respecting the assimilation of nitrogen, and the relation of food to the formation of the blood (and consequently to nutrition). Under these circumstances, agricultural improvers will, for the present, not be restricted by the proportion of nitrogen, as a guide to practical feeding; but will put more trust in their established tables, esteeming Leibig's above quoted analogy, for occasional reference and reasoning, whilst the further progress of chemical (as well as practical) investigations are rendering it a surer guide to their broad acres: and productive plants, at present rejected for deficiency in nitrogen, may be found valuable in mixture, or even alone.

The most comprehensive table of reference, for this purpose, that I have met with, is given by the Rev. M. J. Berkeley, in the *Agricultural Gazette (Gardeners' Chronicle)*, 1845, p. 649; where the theoretical nutritive power, computed by Boussaingault from the nitrogen of no less than 76 plants, and parts of plants, cultivated for food, &c., is given; in contrast with 16 other tables, drawn from practice and experiment: the republication of that table, with an additional column for that compiled by the Rev. W. Rham, would be very appropriate to the suggestions from this paper of Dr. Voelker.

The other paper goes a step farther; it is entitled "Alimentary Regimen," by M. Gasparin, read before the French Academy of Science, and unnoticed in any other English publication that I have met with, than "Chambers's Edinburgh Journal." It relates chiefly to the diet of working-people: and establishes a remarkable difference in the strengthening power of the same material (bread) according to the mode in which it is presented to the digestive organs.

He finds that the mining population about Charleroi (on the border of Belgium) nourish themselves fully, preserve health and great vigour of muscular strength, upon a diet with less than half the nutritive principles found requisite for hard-working men in the rest of Europe. The distinction appears to be the habitual use of coffee at every meal. Their coffee is a very weak infusion of equal parts, coffee and chicory, with about one-tenth milk. Of this the miner takes about four pints daily; and little or no other drink. His food is white bread and butter, with a supper of Potatoes and greens. He eats 2 lbs. of bread, 2oz. of butter, and 1½lb. mixed Potatoes and greens daily; and uses 1 oz. each of the coffee and chicory. No meat except Sundays and feast days; when he also drinks four pints of beer. This is less in nutritive quality than the diet of the monks of La Trappe, or of the prisoners in the French jails: and yet these Belgian miners are energetic workmen; so that the French miners, with a more nutritious diet, are unable to compete with them. This efficacy of the coffee is not attributable to the nourishment contained in itself, which is very small; but indirectly to its co-operation with the other food; or to its action on the vital organs of digestion and secretion.

M. Gasparin also instances the efficacy of coffee in enabling soldiers and others to endure fatigue; and adds that the miner, with his wife and six children, lives on 1*s.* 7*d.* a day, without getting in debt.

Coffee, then, though very little nourishing in itself, seems to deserve more attention than it receives, as an article of diet and economy, for its influence on other articles of nourishment. Coffee we cannot grow in this climate, though we get it abundantly from our colonies; but the other ingredient, chicory (or succory), grows wild in this country, is of easy cultivation, a heavy bearer, stands the frost; the leaves are an excellent and early fodder, and no contemptible dish for the table; and the root not only mixes well with coffee, but when roasted forms a very respectable substitute for it. After long keeping, roasted and ground, it gets flat; but the root may be kept dry, and baked weekly in a pretty quick farm or cottage oven, brown all through like coffee, not black. For this it is best cut up, not larger than hazel nuts; and it is full as likely to increase the nourishing and strengthening power of other vegetable food, as of bread and Potatoes. Even our succulent roots, as Turnips, Carrots, &c., mashed or grated, and boiled or baked with meal of any kind, may be made as solid as desired; to substitute for, and improve on, the precious Potato, or may be mixed when dressed and hot, with chopped or crumbled bread, to pretty near the same purpose;

and with this drink of chicory (for coffee), might make a hearty working diet, very cheap, and chiefly home grown, even whilst Potatoes are dear.

But this paper of M. Gasparin's, we may hope, is only the enunciation of a *principle*, capable of much wider application than merely to coffee and succory for drink, and bread and greens, or our present grown roots for food. Extending to the feeding of other animals as well as man, in suggesting improvements in the cooked and uncooked mixtures for that purpose. The converse is curiously illustrated in the case of carnivorous animals, which M. Majendie found to require as much weight of dried meat as of meat in its raw state; though the latter is at least seven-eighths water; *i.e.* 1lb. will contain only 2 oz. of dry; so great is the effect of its state of preparation for the stomach.

These two papers, then, taken together, seem to prove that the nutritive power does not depend upon the elementary ingredients of the food only, but is much affected by their state of natural composition in the plant, and may be still further influenced by artificial adaption to the digestive organs; thus opening suggestions for more effective and, consequently, more general employment for our home products, cheaper and heartier feeding for our own labourers, and more economical production of animal food. *J. Prideaux.*

Home Correspondence.

Iron and Green Sands.—Sandstones form a very important series of strata among the geological deposits. The old red sandstone succeeds and encompasses the primary ranges of mountains, exhibiting almost the first vestiges of life, wholly in the marine form. It forms a very large step towards a habitable state of the globe, from the high temperature during the deposition of the primary strata, and is mixed with and supports the limestone, the grand support of life, before which means being provided, it would appear that no animal had lived; but, as it increases, life of every kind becomes numerous and prolific. The next sandstone is the "new red," or variegated kind, which rests upon the magnesian limestone, and is covered by the oolites. It contains the rich depository of salt, and to it England owes much of her commercial prosperity. The uppermost sandstone rests upon the upper oolite, and is covered by the chalk. It has been laid bare in South Britain, where it chiefly abounds by the denudation of the cretaceous deposit, which had extended over the whole range of the Wealden formation. The rock is divided into the lower and upper beds, or the "iron and green" sands by the gault clay, or the argillaceous member of the green sand group. The upper stratification of it is laminar rather than seamed throughout the formation, as frequent interruptions occur in irony plates and shells in various directions, which render it nearly impossible to find any seams passing throughout the mass parallel to the bounding surfaces. A stratum being formed by seams that are parallel throughout the entire mass, according to Professor Playfair, in many cases, requires several hundred feet of irregularly laminated sand to constitute a definite formation of that kind. The gault or golt beds are generally laminated, as other argillaceous deposits. The third sandstone formation of Jamieson, which contains the iron and green sands, with the intervening gault, must be reckoned a very considerable step from the very regular stratification of the flat rocks rising to the earthy formation of the surface of the globe, and losing the parallelism of the seams of deposits by the frequent interruptions of other substances. The sandstone having been acted upon by marine water, which tore from its surface the cretaceous deposit, may have derived from the aqueous sediment the ferruginous nature, which almost universally adheres to the sands of the now mentioned formation. Being placed immediately below the chalk, which is generally an earthy and a feebly aggregated mass, it becomes in many instances so cretaceous as to be hardly distinguished from the chalk itself. The upper or green sand is often wholly lost in the chalk-marl above, and the gault on which it lies, as in Oxfordshire, producing siliceous chalky stones, with evident marks of the upper green sand series. It abounds in the green silicate of iron, and reaches to the depth of 600 feet, through the gault and the iron sand, or under stratum. The deposit is abundant in Wilts, Dorset, Sussex, Devon, Surrey, Oxford, and in the Isle of Wight, and it encircles the whole of the Wealden formation of Kent and Sussex. It is most generally a highly ferruginous sand, with spheroidal or nearly irregular concretions of oxide of iron, frequently enclosing a coarse brown ochre. Fuller's earth and yellow ochre correspond in it, and also fossil wood. The depth in Bedfordshire is stated at 100 feet, and in Wiltshire at 30. The sands at Woburn, in Bedfordshire, exhibit the best specimen in Britain of the upper or green sand, and the whole formation, with the intervening gault, is beautiful shown near Reigate, in Surrey, at the Redhill cut of the mail road from London to Brighton. This spot is much visited by amateurs in geology, as in no other place in Britain can the whole stratum be so clearly examined. The upper stratum lies high on the Redhill; on the lower grounds the gault is seen near Godstone, and is called "black land," while eastwards into Kent, running by Limpsfield and Westerham, the iron sand in the form of Chertsey rocks forms a bold encampment to the South, overlooking the formation of Wealden clay. The stones are much used in building, and are shaped into troughs and chimney-pieces. The soils that strictly belong to this formation of sandstone are very worthless, and frequently pass into utter barrenness. It requires a very large mixture with loamy earth to form a land of tolerable productiveness. In wet weather it forms into hardened cakes, which impede vegetation, and during hot weather it passes into a crumbly meal of dried incoherent particles. The crops of Barley are often a total failure, by reason of the land being exposed to drought with the seed furrow. Sometimes the ears are never formed from the extended shot blade. The action of artificial manures is generally indulged on these lands, and sheep feeding of Turnips is much to be approved. Rye is the most useful cereal crop, as being sown in autumn; the land is not moved in the spring, and the winter moisture is retained by the shade of the vegetable foliage. Seed-bearing crops should be few in number, about one to three or four of the feeding crops, thus: 1. Turnips; 2. Barley; 3. Winter Tares, consumed on the land; 4. Rape, also eaten on the land; 5. Spring Vetches, also consumed on the ground; 6. Rye for seed crop, being four feeding crops to two of grain; or, 1. Turnips; 2. Spring Vetches; 3. Rye for seed crop; 4. Winter Tares; 5. Rape; 6. Barley; each grain crop having thus the benefit derived from two crops consumed on the ground. One crop of seed Rye may be joined with four feeding plants: 1. Turnips; 2. Barley or Oats; 3. Clover; 4. Tares; 5. Coles. Thus Rye, winter Vetches, Turnips, spring Vetches, and Rye for seed, can be followed by Turnip, Barley, and Clovers, and the land may be successively cropped by these plants, and kept in good condition. The present value of the land may be doubled by using the above directions. *J.D.*

Drainage Acts.—Your correspondent, "J. T., Swansea," has certainly very great reason to complain. That anything like so preposterous a sum, for expenses, as 34*l.* out of 400*l.*, should be deducted by the Board is "too bad." What upon earth is it for? The two visits of the Assistant-Commissioner could not take more than about 8*l.* of the 34*l.*; and what, I should like to know, is the other 26*l.* absorbed in. At this rate the office expenses upon the 2,000,000*l.* will turn a very pretty penny for somebody or other; and if the landed interest do not think it worth their while to inquire a little into these matters, perhaps the tax-paying portion of the community may wish to learn something about them. But there are other matters touching the administration of affairs at the Drainage-office which, if not amended, will require to be looked into. What, for example, can be said in justification of the proviso of appointing the stewards of applicants for advances as assistant-commissioners, and of which we know of at least one instance. What confidence would the public have in the faithful conducting of such a public grant for a special purpose, and for the right application of which money the assistant-commissioner is practically the responsible party, if that responsibility is to be entrusted either to the stewards of the applicants or to any one that the applicants may think proper to nominate? Would such a mode of conducting public business be tolerated in any other department? If the charge of 34*l.*, for the instance in question, could be incurred at all by fair means, it would have been in the inspection of the work during progress (a most necessary part of the business) by the surveyor, who is required to certify to the perfect execution of the drainage. One instance has been mentioned to the writer, where, on the surveyor coming to inspect works after completion, he was induced to have some of the drains opened, to see their true depth, when, to his amazement, he found there were no pipes laid in them. We say, then, the administration of this drainage grant requires to have the public eye upon it. *An Assistant Commissioner, under the Acts.*

Societies.

ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

A WEEKLY COUNCIL was held at the Society's House, in Hanover-square, on Wednesday, the 11th of December; present, His Grace the Duke of RICHMOND, K.G., President, in the chair; Lord Portman, Lord Ashburton, Hon. Dudley Pelham, M.P., Mr. Dyke Acland, Mr. Barugh Almack, Colonel Austen, Mr. Raymond Barker, Mr. Biddulph, Mr. Bosanquet, Mr. Bramston, M.P., Mr. Brandreth, Mr. T. Brown, Mr. W. Brown, Capt. Wentworth Buller, R.N., Mr. French Burke, Mr. Catherall, Colonel Challoner, Mr. Cox, Mr. Evelyn Denison, M.P., Mr. Dyer, Mr. Garrett, Mr. Brandreth Gibbs, Mr. Grantham, Mr. Hamond, Mr. Fisher Hobbs, Mr. C. Wren Hoskyns, Mr. Hudson (Castleacre), Rev. A. Huxtable, Mr. Cuthbert W. Johnson, Mr. Jonas, Mr. Kinder, Mr. Lawes, Col. M'Douall, Captain Moorsom, R.N., Mr. Mainwaring Paine, Mr. Pusey, M.P., Mr. Shaw (London), Mr. Shelley, Mr. R. Smith, Rev. J. R. Smythies, Mr. Thompson (Moat Hall), Mr. G. D. Trotter, Mr. C. Hampden Turner, Mr. Turner (Barton), Prof. Way, and Jonas Webb.

The following new members were elected:

Ward, G. B., Great Bentley, Colchester, Essex
Gamble, David, Gerard's-bridge, St. Helen's, Lancashire
Simpson, George, Marton, Bridlington, Yorkshire
Clunes, Major John, Woodfield, Pembroke
Simpson, John, Field House, Hunmanby, York
Green, John, Knipton, Grantham, Lincolnshire
Tredwell, John, Leigham-court, Streatham, Surrey
Leach, John, Pembroke
Tredwell, Thomas, St. John's Lodge, Upper Norwood, Surrey
Barber, William Mills, Langley Broom, Colnbrook, Bucks

GUANO.—CAPTAIN WENTWORTH BULLER, R. N. adverted to the communication lately made by Lord Palmerston to the Council relative to the supply of guano from Peru at a reasonable rate. In proof of the vast importance of guano he instanced the example of a farm in his own hands, consisting of 80 acres of poor land, for the most part lately reclaimed from heath, and rented at 6*s.* per acre. For six years past the whole of the corn and hay together, with about 30 tons a-year of Mangold Wurzel, Carrots, or Potatoes had been removed from this ground, and not a particle of any kind of manure restored or used, except guano and a little marl applied to the lightest ground, and 10 loads of dung per acre, applied in one of the six years to three acres of Potatoes. The White Turnips have been always been fed upon the ground, but everything else has been taken to a farm two miles distant. During the whole of these six years the crops upon this land have been steadily increasing. Land, which six years ago was not in itself capable of producing 10 bushels of Barley per acre will now produce from 30 to 40.

In answer to various questions, Captain Buller stated that he applied guano to all the root crops, at the rate of about 5 cwt. per acre for Mangold Wurzel or Carrots, which were to be taken off, and at the rate of 3 cwt. for white Turnips. That he took five crops in four years, and that he considered he had grown this year 140 tons of Mangold Wurzel and Carrots from seven acres of land. In reference to the supply of guano he stated various particulars as to the discovery of the Island of Ichaboe, and urged upon the Council the expediency of entering into communication with the Admiralty and the Royal Geographical Society, and endeavouring with their assistance to ascertain whether supplies of guano could not be obtained from other quarters besides Peru. It appears that the supply of good guano is limited to those regions of the globe in which little or no rain falls. These rainless regions are only found for two or three degrees on either side of the tropics, and are generally distinguished by deserts or that sterility which follows the absence of rain. Thus the Great Sahara under the northern tropic in Africa, and the Little Desert under the southern tropic, where the Island of Ichaboe was discovered. It was from the prevalence of deserts that these parts of the world were so little known. Ships rarely visited such coasts, and much of the coast of Africa under the northern tropic was, for this reason, still very imperfectly known. It was stated in several of the voyages of the Portuguese and other of the early discoverers who had visited this coast, that sea-fowl abounded in various parts, and it was especially mentioned that in the Bay of Arquin, near Cape Bor, they were so abundant that the crews had filled two boats with the eggs, and as this was a rainless region, there were strong grounds for supposing that guano in considerable quantities existed in the Bay of Arquin. If this were so, it would be so much more valuable, in consequence of being within so short a distance of this country.

A few years ago a merchant in London had been induced by a statement of these facts and the evidence taken from various old voyages, to send three ships for the purpose of exploring, and if possible loading with guano from Arquin; but on the arrival of the first ship, a boat having been incautiously sent on shore; the crew had been attacked by the Arabs, and the whole either killed or taken prisoners. Upon this disaster, the ships had all sailed away, and loaded elsewhere, while the existence of guano in this spot still remains doubtful. Shortly after this occurrence, he believed that the Admiralty had dispatched a vessel of war to Arquin to endeavour, if possible, to rescue some of the boat's crew; and it was possible they might have made some inquiries, and have some information to give respecting guano. There were many other places, as parts of the Red Sea, and the Gulf of Persia, which were known to be rainless, and which were scarcely ever visited on that account; and he thought it would be very easy and very desirable for the Admiralty to give general instructions to the captains of all ships employed in or near those stations to make inquiries, and report to the Admiralty as to supplies of guano. The existence of a large number of sea birds (especially the penguin) in a rainless region were indications which could scarcely be mistaken.

The thanks of the Council were voted to Captain Buller for his kindness in making this communication.

Captain Moorsom and Mr. Robert Smith then favoured the Council with important information connected with the supply of guano to this country.

Mr. Hudson, of Castleacre, stated a case in which an analysis by Professor Way, of manure offered to him for sale, had proved of the highest value in determining the value of the manure, and the price at which it ought to be supplied.

The Chairman, Mr. Shaw, Mr. Turner, Colonel Macdouall, Mr. Jona, Mr. Acland, and Mr. Paine, detailed to the Council their experience in the purchase of guano.

NIPAL BARLEY.—Capt. C. R. DRINKWATER BETHUNE, R.N., C.B., of the Harbour Department in the Admiralty, transmitted to the Council a small supply of skinless Barley, weighing about 200 grains, and marked "Nipál, 1850," received from his brother, a member of the Society, at present residing in India. The Council ordered their best thanks to be conveyed to Capt. Bethune, for this attention to the objects of the Society; and at their request, Mr. Shelley and Mr. George Turner undertook to try the cultivation of this Barley on their respective farms in Sussex and Devonshire.

CREOSOTED-FISH MANURE.—MR. BETHELL, of 8, Parliament-street, transmitted to the Council the following statement of the trial of empyreumatic fish-oil manure on the growth and preservation of Potatoes,

addressed to him on the 29th of November last by the manager of the Orphanage establishment, near Hounslow.

"Nov. 29, 1850.

"Dear Sir,—I am glad to be able to inform you that the boys of the Orphanage have dug up all the Potatoes, and that they are all entirely free from any symptom of the disease, which I believe is due entirely to the creosoted fish, as almost all the crops in this neighbourhood were more or less struck with the blight or disease, whilst our plants remained green and perfectly untouched. The 20 acres of ground which we planted were of a very poor and gravelly soil, so poor, that the previous occupier declared that nothing would make that land produce Potatoes. We planted in it Regents and Forty-folds, with about 8 cwt. of your creosoted fish per acre, and without any other manure whatever. In planting, the boys dropped a piece of the fish in the furrow near the Potato set, and the plough following earthed them over. The crop is, as near as we can estimate it, about 100 tons, and the Potatoes are all of excellent quality, and without a speck of a disease: I hope to plant with Potatoes a much larger extent of land next year, to all of which I will apply the fish; but as the land is very poor, I intend putting 10 or 12 cwt. of fish per acre, as we found that where by accident the boys had put more fish, there the crop was much heavier, and the Potatoes larger. I had the curiosity to weigh some of the largest Potatoes, amongst those that had by accident had an increased quantity of the fish manure, and I found some of them to weigh 1½ lb. each, and one, 1¾ lb. I have kept them as extraordinarily large. I anticipate an extraordinary crop next year, and I shall astonish my neighbours even more than they have already been."

Mr. Bethell also favoured the Council with specimens of the Potatoes themselves, which were of healthy appearance, and of large size, being found on boiling to be of excellent quality, without the slightest taint of fishy flavour.

Animal Carcase Manure.—Mr. R. M. Gillies, of Mark-lane, one of the Governors of the Society, favoured the Council with specimens, in stopped glass bottles, and in various states of preparation, of the new South-American manure, obtained from the flesh and bones of the large herds of wild cattle in that continent, slaughtered for the sake of their hides, after the tallow has been extracted from their carcases by steaming. This residue was formerly thrown aside as useless; but being well known to possess powerful manuring properties, it has attracted the attention of the South-American merchants, and being well dried previously to shipping, it is about to be imported largely into this country, on account of the great demand and exorbitant price of Peruvian guano. This manure has been analysed by Professors Anderson and Way, and by Mr. Teschemacher, and found, as might be expected, to contain a large amount of fertilising matter. It has been applied with great success to the Turnip crops and Grass lands on Colonel Long's farm at Bromley Hill, in Kent.

Ventilation.—Mr. Septimus Braithwaite, of Wareham, Dorsetshire, exhibited to the Council an apparatus used with great success for the last 18 months in France, for the purpose of ventilating stables and farm-buildings generally, by spiral vanes, allowing by their rotation the fresh air to gain an entrance in one direction, and to pass out in another.

Farm-Accounts.—Mr. Hudson, of Castleacre, presented to the Council a printed form of accounts he had employed for many years with the most satisfactory results; and which admitted of being separated, and forwarded leaf by leaf to the various parties employed by him on his several farms, returned to him filled up at stated times as he might direct.—Mr. French Burke also forwarded to the Council a copy of his new work, entitled, "An Improved System of Farm Book-keeping."

The Council ordered their best thanks for the favour of these communications.

Lord Stanley, of Alderley, transmitted, by direction of Viscount Palmerston, for the information of the Council, a work, received from her Majesty's Consul at Boulogne, on the prevention of Potato disease, by autumn-planting, founded on the six years' observation of M. Le Roy-Mabille, of that port.—Mr. Strafford, of 3, Camden-villas, Camden-town, presented a copy of the 9th volume of his continuation of "Coates's Herd Book;" containing pedigrees of improved short-horned cattle, illustrated by 11 original lithographic portraits of celebrated animals of that breed.—Dr. Plomley transmitted a copy of his work on the natural history of the Hop-fly and its enemies.—Mr. vom Hof sent for inspection various specimens of Wheat grown on very poor land in Kent from seed prepared by Bickes's steeping liquor.—Messrs. Dean and Son presented a copy of their work on Prize Model Cottages; and Mr. Tidd, copies of plans of the Islington cattle market, with the proposed additions.—Mr. Dyke Acland presented a copy of his printed letter to Mr. Miles, M.P., containing a proposal for the establishment of annual agricultural meetings, consequent on the meeting of the Royal Agricultural Society at Exeter, to be held successively in different towns of the West of England.—Mr. H. Mayhew transmitted a copy of his report connected with "Labour and the Poor." For these presents, and others made to the Society, including numerous periodical agricultural works, published in this country and abroad, the Council ordered their best thanks to be returned.

A Special Council was held on Thursday, the 12th of December, for deciding, agreeably with the terms of the bye-laws, on the prizes to be offered for live stock next year: present, his Grace the Duke of Richmond, K.G., President, Lord Portman, Hon. Dudley Pelham, M.P., Mr. Raymond Barker, Mr. S. Bennet, Mr. H. Blanshard, Mr. Brandreth, Mr. W. G. Cavendish, M.P., Mr. Walbanke Childers, M.P., Mr. Fisher Hobbs, Mr. Hudson of Castleacre, Mr. Shaw of London, Mr. Shelley, Mr. Robert Smith, Mr. Turner of Barton, and Mr. Jonas Webb.

The Council decided on the details and classification of the prize-sheet to be adopted for next year, of which the following schedule represents summarily the divisions and their respective amount of prizes assigned to each:—

Short horns	£215	Brought forward	£1165
Herefords	215	Leicester sheep	170
Devons	215	Southdowns, and other short-woolled sheep	170
Long-horns	40	Long-woolled sheep (excluding Leicesters)	85
Channel Islands breed	40	Sheep best adapted to a mountain district (excluding Southdowns)	50
Sussex breed	40	Pigs	130
Scotch horned cattle	45		£1770
Scotch polled cattle	45		
Welsh, Irish, and other pure breeds	40		
Horses	270		
	£1165		

The Council decided that no "extra stock" should be allowed to be shown next year. They also agreed that the rules and regulations of the Show should be taken into consideration at the monthly Council in February next.

A Special Council was held on Friday, the 13th of December; present, His Grace the Duke of Richmond, K.G., President, in the chair; Lord Camoys, Mr. Raymond Barker, Mr. Brandreth, Colonel Challoner, and Professor Sewell. The report to be made by the Council to the ensuing General Meeting of the Society, was arranged and agreed to.

General Meeting.—The half-yearly General Meeting of the Society was held at the Society's House, in Hanover-square, on Saturday last, the 14th of December. His Grace the Duke of Richmond, K.G., President, in the chair.

Mr. Hudson, the Secretary, read the following report from the Council:—

REPORT.

The Council have again the satisfaction of reporting favourably of the progress made by the Society in the attainment of its practical and useful objects. The number of its members at the present time differs by only 18 from its amount at the date of the last general meeting, 174 names having been removed by death or otherwise from the list, while 156 new members have, during the same period, been elected into the Society, which now consists of 90 Life Governors, 167 Annual Governors, 648 Life Members, 4315 Annual Members, and 19 Hon. Members, making a total of 5239.

Among the Governors lost to the Society by death, the Council have to record a name illustrious from its connection with the Royal Family of England, and endeared to the nation as borne by a Prince distinguished by so many virtues as his Royal Highness the Duke of Cambridge—a name, too, familiar and friendly in an especial manner to the Royal Agricultural Society of England, on account of the deep interest taken by his Royal Highness in the formation and welfare of the Society, and his participation in the promotion of its country meetings.

The Council have to report favourably on the state of the Finances of the Society; and to submit to the Members the Half-yearly Balance-sheet of the General Account, and the Special Balance-sheet of the Country Meeting at Exeter, along with the quarterly statements of income and expenditure, assets and liabilities, funded property, and current cash account, laid before the Council by the Finance Committee and Auditors.

The Journal of the Society, transmitted postage-free to the Members in August last, will have borne to them in its own pages the best evidence of its intrinsic value. The succeeding part, now on the eve of publication, will no less, the Council believe, sustain the high character of its predecessor, and still further evince to the Society the high privilege its Members enjoy in being favoured with so large an amount of the devoted attention of Mr. Pusey, who, in his capacity of Chairman of the Journal Committee, effects that selection, arrangement, and elaboration of matter for its pages, which results in so valuable a collection of data for immediate application in given cases, and for the further advancement of agricultural knowledge. "Books," it is true, as Mr. Pusey himself remarks, "will not teach farming; but," he adds, "if they describe the practices of the best farmers, they will make men think, and show where to learn it. If our farmers will inquire what is done by the foremost of them, they will themselves write such a book of agricultural improvement as never was written elsewhere, in legible characters, with good straight furrows, on the broad page of England." The Council trust that the best practice, whether obtained from the pages of the Journal or from personal inspection of the best farming, will be thus transferred to the hitherto-neglected lands of the kingdom, and lead to results alike satisfactory to all parties connected with them. The Council are gratified to find, that of all the Journals sent to the Members by post, amounting in number to nearly 30,000 copies, only one case has been made known to them in which a Journal has not eventually reached its destination: they regard this fact as both important to the Society and as reflecting the highest credit on the postal establishment of the country.

The Council have only to refer to the Country Meeting of the Society, held at the City of Exeter in July last, with the liveliest satisfaction, and to pronounce it as complete in all its details as the Council could desire; the excellence of that meeting having been witnessed by all who had the pleasure of being present at it, and made known by public report to all others interested in its success, who were from various causes unavoidably absent. Those only, however, that were present on that occasion could be impressed with an adequate idea of the demonstrations of hearty welcome given to the Society by the inhabitants of that "ancient and loyal city;" an expression of respect only equalled by their disinterestedness and genuine hospitality. The mayor and corporation, and the local committee, anticipated by their prompt and judicious measures every wish of the Society during the preparations for the meeting, and the period of holding it. Sir Thomas Acland at Killerton, and Mr. Turner at Barton, each gave a kind and friendly reception to the Members, and submitted to their inspection their respective Water and Catch Meadows, which created a lively interest in all who witnessed them. The principal Railway Companies, with their usual liberality, conveyed the live stock free along their respective lines to and from the Show, and the implements at half the ordinary rates. The Members were indebted to Prof. Simonds for a valuable Lecture on the Diseases of the Liver in Domesticated Animals. Messrs. Tuxford, of Boston, and Messrs. Barrett and Co., of Reading, kindly placed at the disposal of the Stewards and Judges their respective steam-engines, for driving the machinery under trial in the Show-yard. The Society conveyed to all these respective parties at the time their grateful acknowledgments for the valuable services they had rendered to the Society by their cordial co-operation. The Exeter Meeting was also distinguished by a still further improvement introduced into the dynamometrical testing of the agricultural machinery, by which new results, of great importance in guiding the Judges in their decisions, were obtained; and the rival exhibitors of implements enabled themselves to judge of the actual power and working of their machines, by simple inspection of the mechanical registration of results. Colonel Challoner, the Senior Steward of Implements on that occasion, has made to the Society his report of the exhibition and trial of implements at the Exeter Meeting, including a description of the testing apparatus employed, and diagrams illustrating the momentary variation of the actual power either possessed by the steam-engines as prime movers, or required to work the various agricultural machines submitted to the test of trial. If anything further were required to prove the excellence of the Exeter Meeting, it would be the occurrence, for the first time in the records of the Society, of the receipts being equal to, or exceeding the payments on account of, a Country Meeting, independently of the Prizes awarded on the occasion; the Exeter Balance Sheet now laid before the Members showing a balance of 96*l.* 2*s.* 9*d.* in favour of the Society.

The Council, agreeably with the Bye-laws of the Society, prepared, on Thursday last, a List of the Prizes for Breeding Stock, to be offered for competition next year. This list having been printed, copies of it are now laid on the table for the information of the members.

The Council have appointed a Special Committee to take into consideration the whole question of nominating, selecting, and appointing the Judges for the Country Meetings, with a request that they will favour the Council with their report on the subject in February next. They have also appointed a certain number of their members to meet the Governors of the Royal Veterinary College, for the purpose of conferring with them on the best mode of carrying out the common object of the two bodies, namely, the application of veterinary science to the diseases of cattle, sheep, and pigs; with a request that they will report the result of their conference at the same date. Professor Simonds, the Veterinary Inspector of the Society, has reported to the Council the result of his inquiry into the occurrence of several important cases of disease amongst the stock of members in different parts of the country. These reports, when fully completed by further results of direct experiments in the feeding and treatment of the animals, will be placed in the hands of the Journal Committee.

Professor Way, the Consulting-Chemist to the Society, has continued to prosecute his interesting researches on the chemical constitution of plants and substances of agricultural use, the results of which are in the course of publication in the Journal of the Society. Professor Way has also favoured the Society since the last General Meeting with a Lecture on the Chemical Character of Water as connected with its agricultural uses.

The Council have decided, since the last General Meeting, to give Prizes for Essays on the following subjects, to be sent in by the 1st of March next:—

Farming of Shropshire	£50
Farming of Northampton	50
Diseases from mismanagement of Horses	20
Diseases of Cattle after parturition	20
Agricultural Geology of England and Wales	50
Production of Butter	10
Any Subject in Agricultural Chemistry	20

The Council have been favoured by Viscount Palmerston with important communications on the subject of the supply of Guano; and the Duke of Richmond, feeling the great importance to the farmers of this country, that so valuable a manure should if possible be supplied, not only in its genuine state, but in abundance, and at a cheaper rate, has kindly undertaken, at the request of the Council, to confer with Lord Palmerston on the subject. By order of the Council, James Hudson, Secretary.—London, Dec. 14th, 1850.

On the motion of the Rev. James Linton, seconded by Mr. Love, this report was received unanimously by the meeting.—Mr. Wingate expressed the satisfaction it gave him to find that the country meeting of the Society, so successfully held this year at Exeter, had paid its own expenses.

Colonel Challoner, chairman of the Finance Committee, having laid before the meeting the various balance-sheets connected with the accounts, it was moved by Mr. Warsop, seconded by Mr. Mark Sandford, and carried unanimously, that the best thanks of the Society should be given to the Auditors, for their care and attention in examining its accounts.

Mr. Knight, Mr. Beman, and Mr. George J. Raymond Barker, were elected Auditors for the year ensuing.

Thanks were passed to Professor Way for his Lecture on Water delivered before the members in June last.

On the motion of Sir Robert Price, Bart., M.P., seconded by Mr. Mark Phillips, the cordial thanks of the meeting were carried by acclamation to the noble Duke for his conduct in the chair on that occasion, and for the devoted interest he had so constantly evinced towards the Society, and the promotion of its most useful and patriotic objects.

The meeting then adjourned.

TRAFALGAR.—The annual meeting of the Trafalgar Agricultural Society took place on Monday, the 21st October. About 40 tenant-farmers sat down to dinner in the inn; GEORGE DUN, Esq., tenant, Grange, in the chair. The Secretary read the awards of the judges, and distributed the sum of 70*l.* of sweepstakes to the successful competitors.—Mr. HONEYMAN read an essay on "the Present Position of the British Farmer considered in relation to his Landlord:" The wealth and glory of the nation have at all times kept pace with agricultural improvement and prosperity. And it cannot be otherwise; for it is from the exertions and industry of the husbandman that all riches are derived—food, clothing, and many other of the necessaries and conveniences of life, being the productions of his labour and ingenuity. His intelligence is brought to bear upon the bleak and barren soil, and fertile fields and golden harvests are the rewards of his prowess. The tenantry entered on their present engagements on the faith of the laws of the country remaining nearly the same. They dreamed not of being under the necessity of contending with the difficulties which now surround them. Under this conviction the capital at their command was mostly invested in the soil; a great proportion in permanent improvements, being thus issued among the tradesmen and peasantry in the shape of wages. These were not expected to be immediately remunerative; still it was considered they would ultimately pay. At the end of the lease the proprietor would have come in for a share of these improvements, they being, as it were, fixtures, adding materially to the intrinsic value of the subjects. The capital required in stock for carrying on improved husbandry is triple, and in some cases quadruple, to what it was in former times. The very interest of the capital in many cases would enable the farmers to live comfortably (in retirement), even with their money invested at bank interest, apart from all the anxieties and risks incident to farm management. Farming being reduced to the present low ebb, stock will again be converted into cash (so far as practicable), and the farmer will be under the necessity of turning his attention to more remunerative investment. Land will thus necessarily fall in value. The landlord's rent-roll will exhibit a much lower figure, or farther enterprise on the part of the farmer must cease. Into whatever district we turn our eyes, improvements of every possible kind have been successfully carried on, and in no age has agriculture advanced so far as that in which we live. The fertility of the soil has been amazingly promoted, and the wages of tradesmen have been raised at least to double their former amount, and the proprietor has had a corresponding increase in the value of his land. But legislative enactments have recently been carried, which are producing material changes in the condition and prospects of the British agriculturist. Mr. Honeyman then proceeded to argue the mischief of free trade in its influence on the relations of landlord and tenant. Through the instrumentality of the aristocracy, as being at the head of affairs, the tenant farmer has been deprived of one-third of his property; and yet they stand coolly by, demanding the last farthing of rent. It is therefore in vain for them to hold out delusive hopes, or to concoct fantastic schemes in order to endeavour to raise the depressed spirits of their suffering tenantry, who are now awake to the sad realities of their condition. High farming is confidently recommended by certain landlords as the infallible panacea for all the evils consequent on free trade. It is the *ignis fatuus* of the proprietor, by the meretricious glare of which he tries to deceive the husbandman and mislead the public. The old prejudiced farmer, who has had the *dis*-advantage of becoming acquainted with the capabilities and peculiarities of the soil in nearly a lifetime's experience, is gravely advised (by my Lord Kinnaird) to rescind his old vulgar notions of cultivation, and to bring his farm to some mighty modern professor of chemistry, who will put his subject—rocks, bogs, and altogether—into his capacious alembic, and by the sublime process of alchemy increase its fertility to a double or even triple extent. I have visited the localities of some of these "high farming humbugs," where the process was being carried on in the best style of the art, and, as stated in public documents, with most astonishingly remunerative results. On minutely examining into the merits of the case, and carefully collecting and comparing every available fact, although I rank amongst the humblest, I was among the first who publicly exposed and denounced the interested, the mischievous, the monstrous calculations which certain parties were palming on the public. My talented neighbour, Mr. Ross, came forward, armed with an unconquerable array of facts, and clear common sense views, and nobly did his part in dispelling the delusion. The formidable Peter Plough next came into the lists; possessing acute perception, a clear judgment, and a refined but caustic wit, he struck the hydra a mortal wound, and it fell, never more to rise. Proprietors may try to blink the question as they may; by ingenious and specious devices they may palm their quackish nostrums on the public—justifying their conduct in exacting their former rents, blaming the farmer for want of skill and exertion in the cultivation of his land; and farther, declaring that things are yet in a state of transition, and that all will soon be well again. The farmer is not to be hoodwinked; to him it is quite apparent that one of three cases must happen—that some important alteration in the present laws be made, or landlords must make a proper adjustment of rent; or else the farmer himself must be subjected to deep and inevitable ruin.—The gains and profits from farming (even in past times) are far inferior to those arising from manufacture and commerce. Now by investing the same amount of capital in manufacturing or commercial speculation, quicker and more extensive profits are procured. The trader can turn over his capital three or four times a year, while it is impossible for the farmer to procure a full return even at 12 months' sight; and where extensive improvements are being carried on, it is only at a yet more distant day that he can hope for a return. None of these delays lies in the way of the trader. When his purchase is consummated, he can convert his commodity into money, and again commence fresh speculation. It is thus apparent that much less capital is sufficient to carry on a more extensive business than if employed in farming; and from the shortness in the period of the trader's outlay, he can avail himself of more extended credit than it is possible for the farmer to enjoy. The articles required for farm stock can never be had unless for cash—the farmer need not go to the market without the money in his pocket. This is not felt by the trader. The present system of banking refuses none of them credit, unless they are unknown, or not known to be deserving of confidence; but it possesses certain features unpropitious to the husbandman. Might not a system of banking be established exclusively for agriculturists, constructed so as to obviate his wants more readily? But without insisting upon a point which may be considered alien to the subject, it is indisputable that greater amounts of capital have been attained by manufacturers and commercialists than have been realised by agriculturists. Admitting that the remuneration for outlay in farming is so very low, that bank interest on the capital would be preferable, the question very naturally arises—How is it that a farm lease is scarcely in the market when a greater number of candidates appear, offering an equal, and in some cases a higher rent than that previously given? Among a number of reasons, I may state, in the first place—a farmer already in possession of a farm becomes a candidate on the grounds that, his own farm lying contiguous, he is enabled to work the lands upon a cheaper scale than if he were a resident. He can carry on the various operations of farming with more facilities than if on a small scale, and particularly if the nature of the soil differ in quality from that he already possesses. As an instance let us suppose that the one is composed of strong land: being well adapted for Wheat, he is enabled to proceed with double force at the critical seasons of Wheat sowing—thus, in many instances, almost securing his crop, compared with the slow process he would otherwise have had to adopt, the weather at these seasons being very variable. Secondly, the land being of a lighter and cheaper description, he can raise a far greater weight of Turnips (on such land) for his money, and enriching both subjects by a greater quantity of litter in the one case, and an extra quantity of Turnips in the other, consequently enabling him to maintain a greater quantity of live stock. It is thus supposed that both belong to one landlord; and although they do not, the advantages, particularly in sheep husbandry, are very great. Another reason may be, that individuals habituated to agricultural avocations, and having spent the better portion of their time and energies in acquiring a knowledge of the science, it is almost impossible for them to turn their attention to other pursuits; consequently they bid to the last possible farthing they consider they can draw from the soil (of course after paying incidental expenses). Again, many are possessed with perhaps a foolish notion that they have a superior knowledge of cultivation to their predecessor. And, lastly, I shall mention a numerous class whom we may denominate amateurs, having little or no knowledge of agriculture, and labouring under a false impression that to be a practical farmer they have to get a lease granted them, and say unto the fields, "Bring forth for the harvest."—Mr. HONEYMAN read the following resolutions, which he moved the adoption of: Resolved that, 1st, Although this Society fully appreciates the value of a knowledge of the principles of science in its applications to practical agriculture, yet it has no sympathy with those who are continually holding up Scotch farmers as examples of industry, and famous for paying high rents, but who commonly turn round and taunt them with want of skill and science in cultivation. 2d, The amount of capital now required to carry on the operations of husbandry is so much increased that the security and safe investment of it in the soil must become a matter of paramount importance in the advancement of agriculture. 3d, If a higher standard of farming be now considered necessary to meet the change of circumstances under which farmers are at present placed by the depreciated value of agricultural produce, such high farming can only be attained by a right appreciation of its requirements on the part of the landlord, whereby mutual confidence between him and the tenant may be secured, so that such conditions of fertility as ought to be regarded as necessary fixtures, and as adding materially and permanently to the value of a farm, may be maintained to the termination of a lease, without prejudice to the interests of the outgoing tenant.—Mr. CARSWELL, of Rathillet, in proposing a vote of thanks to Mr. Honeyman, said that while he was very far from agreeing with the spirit and manner in which many of the topics had been discussed, he thought they were under great obligations to him in coming forward when requested by the Society, and in freely putting forward his sentiments in the talented manner he had done; he thought that the members would do well to avoid the political aspect of the question, and keep as closely by the resolutions as possible. A vote of thanks was heartily responded to.—Mr. RUSSELL, tenant, Kilwhiss: I differ widely from Mr. Honeyman, in many of the conclusions which he has come to, but have much pleasure in seconding the first resolution, which has been put to the meeting, and in giving my assent. I beg to state my reasons and grounds. We all readily admit that a true knowledge of the principles, upon which the art of culture depends, will assuredly lead to economical results in the details of husbandry. The rapid strides which chemistry and the kindred sciences have made within the present century, have thrown much light on the *rationale* of many of our practices. The deep researches of the genius of Liebig afforded him materials to link together the disjointed and fragmentary labours of other hard workers in the same field; and the seeds which Tull, Young, Davy, and others had sown, are now beginning to burst into luxuriance. Liebig's beautiful theories of vegetable and animal nutrition took the world by surprise. Great expectations were formed from the truths which were revealed in the laboratory of Giessen, but they have only laid the foundations for a superstructure which later generations will have to rear. Some men of sanguine temperament seem actually to have believed that the exhausted ground was to have its virtues renewed, and to be fertilised as by the wand of a magician. But, alas, the old antidote still stares us in the face, and ever will do so, that the grateful earth will only yield her riches, through the hard and unremitting toil of her sons. Science can only shorten the way. I cannot omit this opportunity of referring to the Agricultural Chemistry Association of Scotland, in its present efficiency, as scientific progress in the right direction. If its merits could not be defended on far higher grounds than as a terror to those who would carry on extensive adulterations of artificial manures, it is worth more than triple the money that is spent upon it. The introduction of the scientific element has, however, had its disadvantages; for straightway there arose a host of interpreters, who took great delight in disputing the experience of the practical men, and who looked with contempt upon the past, and wholly became the worshippers of the untried and the fanciful. A crisis has arrived, which all admit. The cultivator would fain have the recipient of his toils bear part of a burden which must be borne; but, no, science would interfere, and tell him he must carry it all himself. The whole island is ransacked for his behoof. There never was a period when so many physicians prescribed for agriculture, without knowing or studying her organic and local maladies. Some cry out, "plough less, and graze more;" others the reverse. Each nostrum, however, serves its day, and time flies on. We, Scotch farmers, have stupidly lost our renown; or doings, which were formally boasted over the whole world, are now treated with contempt, and all because we want science. Petty writers shelter themselves under great names, and join in the common hue and cry. The following isolated sentence appeared in a "Scotch Magazine" of last month:—"The agricultural produce of our island might be doubled, by a more perfect application of the principles of botany and chemistry." I need not add to this. Who are the modern guiding stars that we are directed to look to? Mr. Huxtable, amid all his scientific bravery, has scarcely faith in the new order of things. Statesmen are, however, directed by him in his recent pamphlet, if need be, to the proper objects for taxation. What comfort do we Scotch farmers obtain from his definition of an "agriculturist." Hear him—"For myself, as an agriculturist, that is, a producer of Wheat, beef, mutton, and pork, I should deprecate the reimposition of any duty whatever upon lean cattle, Beans, Oats, Barley, Lentils, and oilcake." We are allowed to shiver in our ungenial climate, that science (!!) has given out to the forest zone, and placed on the verge of that territory, beyond which Wheat will not ripen. This proposition in Mr. Huxtable, for a good price of Wheat, has its

root in the same circumstances which prompted the Herts farmers in 1810 to maintain that a quarter of Wheat should be four times the price of a quarter of Oats. Mr. Huxtable is exceedingly happy and courageous, when he imagines he is in possession of the real chemistry of agriculture, the principles of which he has taken upon him to enunciate to the unchemical reader. He breaks out into the following raptures in regard to Mr. Lawes', of Rothamsted, experiments on Wheat and Turnips:—"Experiments," he exclaims, "so admirably arranged and philosophically interpreted, that they have revealed what lay all concealed through the dark ages of mere practice, the laws which govern cereal growth, and have reduced the conditions of Wheat and Turnip growing within the cognizance of fixed principles." Mr. Lawes deserves much praise for the labour he has bestowed in arranging the experiments in question. In this respect they are the best extant. But the refined distinctions which have been drawn between the requirements of the two classes of plants have no existence whatever in nature. Mr. Huxtable does not act upon them. The whole spirit and practice of the Scotch system of farming are directly opposed to such doctrines. We are surprised that the Royal Agricultural Society, under the guardianship of a consulting chemist, has not seen through the fallacy. We do not despise nor underrate Mr. Huxtable's labours. His theory may be erroneous, but his practice might still command attention, if he could boast of results, just as any one may do who has no pretensions to science at all. Whoever thinks he possesses the true secret, although it may be a mere delusion, yet it will fortify him in his pursuits, and with industry and common sense to carry out the maxim of no want, no waste, he may accomplish wonders. And by all means give science the credit if he still desires it. The alchemists were cheered and invigorated with their *caput mortuum*. Most unfortunately for us agriculturists, we are making too many discoveries to be all genuine. We cannot be expected to come up to Mr. Mechi in his ever-hopeful ever-brilliant anticipations. Those who have a wish to see the encroachments of the Wheat on the heather, should by all means pay him a visit—he is a true farmer's friend in every respect. We have no wish to see his balance-sheet. It must be so far a caricature on Nature, as well as art. What are the grand results? Good heavens! were the ghost of Jethro Tull to pick up a statement of what Mr. Huxtable calls the "rural sums" of this celebrated Essex farm, he would exclaim—"A mountain in labour—the beast's ordure from 1000 qrs. of corn and hundreds of tons of Turnips to raise 500 qrs. of Wheat! Where is my hoe plough? have the plants lost their mouths?" No, we might be tempted to reply, nor have the "ungrateful bullocks" lost their stomachs. Modern science has shown that there is no pasture for the "King of Grains" here. Tiptree-heath is 5 quarters per acre, below zero. But if we descend and notice other enunciations of the "great principles," how painful does it become to the lover of pure science when we see agricultural chemistry personified in an astro-meteorologist—a disciple of Zadkiel—holding a Carse landlord and his tenantry in gaping wonder and amazement at an unmeaning lecture on the science of farming, and, as usual, give them scientific flattery as a prologue to scientific censure—the one being as undeserved and useless as the other. Who was it that lowered science in the eyes of the practical men in this neighbourhood, but he who, enjoying a great reputation, stoutly demanded that a field should be thoroughly and artificially drained, which was naturally capable of swallowing every drop of water which falls in the district for a mile around it. Must we actually humble science with her own doings, before she will know her true office? The modern agricultural tourists would afford ample materials for illustrating the quackery of science, from the "Thunderer" downwards. It may be amusement to them, but it is not so to us. Influential parties think all can be done without any effort on their part, and no doubt they have high authorities to quote for their backwardness. They are not inclined to view our position as the result of circumstances, by which we have been moulded to the peculiar pressure that we have been subjected to from within and without. Every system of agriculture in its infinitely varying relations, tends to shape itself into such forms as will present the least resistance to those elements over which she has no control, and, like the vane, will veer as the wind blows. Mr. Milne, of Milne-graden, after a residence of some months in England, sees many strange practices, and his faith becomes shaken in the "intelligence and zeal" of the Scottish farmers. But he is sadly puzzled with results, for he says, "In Scotland, if the husbandry is not superior to that in England, at all events, more is made of the land, and higher rents are paid for it." It would furnish interesting matter for illustration, why the two extremes of high and low farming meet so closely in one important item, that of rental. Take Ireland on the one hand and Norfolk on the other. Norfolk fortunately had a more sterile soil, and a less fertile climate, which unfitted her for the Irish rotation. Barbarian cultivation was at once overthrown towards the end of last century, as soon as the more refined wants of a rising commercial nation had to be supplied. Ireland's bounties have been turned into a curse. Human nature is the same everywhere—why be so fond of gilding the distance? A good example, and the encouragement of industry and capital, will as certainly produce satisfactory results at home as abroad. With what comparative complacency must our Aberdeens, Richmonds, and Leicesters view the present writhings of agriculture, when they have the satisfaction of having done their duty? It is not science or climate which has effected this. There is no country in Europe which is more favourable for a system of large farms than Britain. Much has been done; and notwithstanding our difficulties, I still think that we have a good field before us, if mutual and intelligent relations are maintained between landlord and tenant. This is, however, the real difficulty. For I must confess, that if a system should exist in which it is the interest of any party that the first part of a long lease is spent in bringing a farm into condition, and a certain period is required to bring down the standard of fertility before its termination, such must have within itself the elements of decay. Government grants for particular ends only show that the relation between landlords and tenants is defective. An old established art should lay her own foundation out of her sweats and toils, instead of being pampered up by mistaken friends who will do her no real good, but will only more surely lower her status. Such being my opinions, I heartily second the resolution.—Mr. Dingwall, tenant, Ramornie, in seconding the next resolution, gave an interesting review of the progress which farming had made, and contrasted the present attainments with the past; in every stride which had been, or was likely to be taken, the necessity of capital to develop the resources of the soil was only more prominently brought out; he was sure that the resolution would commend itself to every one.

Mr. Haxton, tenant, Drumnod, said: I cannot agree with Mr. Honeyman in his wholesale condemnation of high-farming and its advocates. I do not stand here as the apologist or defender of Lord Kinnaird's doings and sayings, but, while allowing every credit to Mr. Honeyman for disinterested and honest motives in his statements to-night, I would also claim from him the same liberal interpretation of the motives of those whom he has thought fit to censure so unreservedly. Such expressions as "high-farming humbugs" are neither edifying nor argumentative, and although excusable in the heat of unpremeditated discussion, are altogether unpardonable in the pages of a written essay. High farming has doubtless suffered in the estimation of the agricultural public from the indiscreet zeal of some of its advocates; still this does not affect the principle sought to be established, that high farming, intelligently and skilfully carried out, is preferable to low farming, even in a money point of view. Mr. Caird was perhaps unfortunate in selecting as a successful and profitable instance of high farming a farm altogether *sui generis*, and consequently his arguments failed to produce conviction in the minds of the great majority of farmers, simply because they were based upon an exceptional case; still, notwithstanding this mistake, the principle which Mr. Caird has assumed in the title of his much spoken about and much written about pamphlet is unassailable, viz.:—that high farming under liberal covenants is the best substitute for protection. This statement cuts both ways, and is equally instructive and admonitory to the landlord as to the tenant. It seems palpable to the meanest comprehension that if a substitute must be found for protection the best is surely that which increases the produce of the soil, with a corresponding rate of profit both to owner and occupier. But this assuredly can never be the case so long as the landlord stands aloof, and leaves the tenant to struggle as he best may with the difficulties of his new and untoward position; neither will it do for him to say to his tenant, "Farm higher, and raise more corn and stock, to meet the depression of markets." No, we must have something more than this. If there be no diminution of rent there must be an equivalent. There must be security that capital sunk in permanent improvements, and as such unrealisable during an ordinary lease, shall stand to the tenant's credit, for whatever it may be worth, and be paid to him on leaving his farm. What is the reason why the value of land is still rising, and that in the face of falling prices? Principally, I believe, because many improved farms have come into the market, and upon which the former tenants have spent and lost their capital. Under such circumstances it is not surprising that land should still keep its value, seeing that both the landlords and the new tenants have so much of the old tenant's capital in the shape of unrealised outlay, to divide between them. What we want from our landlords, and what it is their duty to give us, is the adjuncts and accessories of high farming; suitable farm offices, good fences where these were necessary, protection from game, liberal leases, rents at least one-half in grain, and a reasonable tenant right. It is for these reasons that I support Mr. Honeyman's third resolution.—Mr. Mitchell, tenant, Lordscairnie, expressed himself as much gratified with the proceedings of the evening. He stated that he laid out a great sum of money in improving his farm, and he would ask the meeting to tell him how he could best take it out towards the close of his lease; he was told that they rather wished him to devise means to have it kept in, and be compensated for it.—Mr. Honeyman said that a most important privilege devolved on him, in selecting a member to read a paper for next year. He begged to name Mr. Landale, East Hall, and would take no denial, as it was an old watchword at "Trafalgar" that "every man must do his duty."—Mr. Landale accordingly consented.

Notices to Correspondents.

Analysis: *E.G.* The relative proportions of the earths will determine the texture of the soil, and the proportion present of vegetable matter, alkalies, ammonia, and the phosphates, will determine the fertility of a soil or the fertilizing influence of a manure.—If you have any friend a member, he can take you to the lectures of the society.

Potatoes: *To-morrow.* We intend waiting till February ourselves; but if we had the manure we might be tempted to plant now. Farming in the west of England, where Axbridge Kidneys, Prolifics, Scotch, and Noblows are the standard sorts, we do not know Regents. They are well known in Covent-garden. If you plant now, set them 6 to 8 inches deep by the spade.

Poultry Houses: I much wish that your correspondents "William Kidd," and "R. H. Bowman," would give the dimensions of their poultry houses and walks. I was glad to see the advertisement of the Birmingham Poultry Show in your columns. It will be well if this example is followed. *W. H.*

Railways: *An Old Sub.* Mr. Neilson, of Harewood, near Liverpool, has used them to some extent, we believe.

Salt: *G S.* In dairy countries it is customary to put a peck of salt in the rick with a ton of hay. In feeding we use a very salt liquor to throw over chaff, so as to wet it all, and make it taste a little salt. A handful of salt to a bucketful of water; we have no more definite proportion at hand. But the best way is to keep a lump in the manger and let the cattle lick it when they please. About rats—see a pamphlet entitled "Rat! Rat!! Rat!!!"

Errata: Roe Deer: In the reply to query relating to disease in roe deer, 5 drachms is stated instead of 5 grains of tartarised antimony. The former dose would kill the animal. *W. C. S.*—Boarded Floors: The opening should be full 1 inch and ⅞, not 17-8ths. *J. Mechi.*

*** Communications reaching town after Wednesday cannot be answered till the following week.

Markets.

COVENT GARDEN, Dec. 21.

Hothouse Grapes and Pine-apples are quite equal to the demand, and the same thing may be said of Apples and Pears. Oranges and Lemons are plentiful. Nuts have not altered since our last account. Forced English Strawberries have made their appearance in small quantites. Among Vegetables, there has been some excellent Seakale, and a little Rhubarb has been supplied. French Beans are cheaper. Carrots and Turnips are good in quality, and so are Potatoes. The latter are getting dearer. Lettuces and other salading are sufficient for the demand. Mushrooms arecheaper. Cut Flowers consist of Heaths, Pelargoniums, Camellias, Mignonette, Tulips, Double Primroses, Gardenias, Bignonia venusta, Chrysanthemums, and Roses.

FRUITS.

Pine-apples, per lb., 4s to 6s	Pommegranates, each, 3d to 6d
Grapes, hothouse, p. lb., 4s to 6s	Almonds, per peck, 6s
— Portugal, p. lb., 8d to 1s	— sweet, per lb., 2s to 3s
Pears, per doz., 1s to 3s	Chestnuts, per peck, 2s to 5s
— per half sieve, 6s to 15s	— per 100, 9d to 1s 6d
Apples, dessert, p. bsh, 3s 6d to 8s	Nuts, Barcelona, p. bush., 20s to 22s
— kitchen, do., 3s 6d to 6s	— Brazil, p. bsh., 12s to 14s
Oranges, per doz., 9d to 2s	Filberts, per 100 lbs., 60s to 65s
— per 100, 6s to 10s	
Lemons, per doz., 1s to 2s	

VEGETABLES.

Brussels Sprouts, per hf. sieve, 1s 6d to 2s	Leeks, per bunch, 1d to 2d
Cabbages, per doz., 6d to 1s	Shallots, per lb., 6d to 8d
Greens, p. doz. bun., 1s 6d to 2s 6d	Garlic, per lb., 4d to 8d
Cauliflowers, p. doz., 4s to 6s	Artichokes, Jerusalem, p. half sieve, 1s 6d to 2s
Broccoli, p. doz. bndl., 10s to 12s	Lettuce, Cabbage, p. score, 1s
French Beans, per 100, 2s to 3s	— Cos, p. score, 1s to 1s 6d
Seakale, per punnet, 2s 6d to 3s	Endive, per score, 1s to 1s 6d
Rhubarb, p. bundle, 1s 6d to 2s	Small Salads, p. punn, 2d to 3d
Sorrel, p. hf. sieve, 6d to 9d	Horse Radish, p. bdl., 1s to 4s
Potatoes, per ton, 60s to 100s	Red Beet, per doz., 6d to 1s
— per cwt., 3s to 5s	Mushrooms, p. pot., 1s 0d to 1s 3d
— per bush., 1s 6d to 2s 6d	Fennel, per bunch, 2d to 3d
Turnips, p. 12 bundles, 1s to 2s	Savory, per bunch, 2d to 3d
Cucumbers, each, 6d to 1s	Thyme, per bunch, 2d to 3d
Radishes, per doz., 1s to 1s 6d	Parsley, p. doz. bun., 1s to 3s
Celery, p. bundle, 9d to 1s 6d	— Roots, p. bdle., 9d to 1s
Carrots, per doz., 2s to 5s	Marjoram, per bunch, 2d to 4d
Spinach, p. half sieve, 6d to 1s	Mint, per bunch, 2d
Onions, p. bunch, 4d to 6d	Watercress, p. 12 bunch., 6d to 9d
— Spanish, p. doz., 1s 6d to 4s	

HOPS.—Friday, Dec. 20.

Messrs. Pattenden and Smith report that the demand continues steady for all descriptions of Hops with a fair share of colour: prices firm.

HAY.—Per Load of 36 Trusses.

Smithfield, Dec. 19.

Prime Meadow Hay	72s	to 80s	Clover	70s	to 80s
Inferior ditto... ...	60	68	Second cut	60	70
Rowen	60	65	Straw	20	24
New Hay	—	—		J. Cooper.	

Very little doing.

Cumberland Market, Dec. 19.

Prime Meadow Hay	70s	to 76s	Inferior	60s	to 72s
Inferior ditto... ...	50	63	New Clover	—	—
New Hay	—	—	Straw	24	28
Old Clover	78	84		Joshua Baker.	

Whitechapel, Dec. 19.

Fine Old Hay ...	68s	to 72s	New Clover	—s	to —s
Inferior ditto ...	55	60	Inferior ditto... ...	60	68
New Hay	—	—	Straw	21	24
Old Clover	75	80			

COAL MARKET.—Friday, Dec. 20.

Hollywell, 15s. 6d.; Eden Main, 16s.; Hartley, 14s.; Wallsend Riddell, 15s. 3d.; Wallsend Haswell, 17s.; Wallsend Hetton, 17s.; Wallsend Lambton, 16s. 9d.; Wallsend Stewarts, 17s.; Wallsend Tees, 17s.—Ships at market, 498.

POTATOES.—Southwark, Dec. 16.

The Committee report that there have been but three or four cargoes arrived since our last week's report, but the arrivals by rail have been so unprecedented that we have no alteration to quote in prices. The following are this day's quotations:—York Regents, per ton, 90s. to 100s.; Scotch do., 70s. to 80s.; Wisbeach do., 70s. to 90s.; French whites, 70s. to 80s.

SMITHFIELD, Monday, Dec. 16.

This being the annual great market, we have a large supply of very fine Oxen. The number is larger than can be remembered on any former occasion. A great many cannot be sold, and we cannot quote more than four shillings for the choicest kinds. The supply of Sheep is not very large, nor is the average quality as good as usual. Our general quotations are improved, and in some instances Sheep have made more than we state. Good Calves are not plentiful; prices are rather better. From Holland and Germany there are 450 Beasts, 2560 Sheep, and 117 Calves; from Norfolk and Suffolk, 500 Beasts; from the West Country, 900; from Scotland, 600; and 3500 from the northern and midland counties.

Per st. of 8 lbs.—	s	d	s	d
Best Scots, Herefords, &c.	3	10 to 4	0	
Best Short-horns	3	6 — 3	8	
2d quality Beasts	2	8 — 3	4	
Best Downs and Half-breds	4	0 — 4	2	
Ditto Shorn	...	... —	...	

Per st. of 8 lbs.—	s	d	s	d
Best Long-wools	3	6 to 3	8	
Ditto Shorn	...	... —	...	
Ewes & 2d quality	2	10 — 3	4	
Ditto Shorn	...	... —	...	
Lambs	...	... —	...	
Calves	...	 3	0 — 4	4
Pigs	...	 3	0 — 4	0

Beasts, 6341; Sheep and Lambs, 26,030; Calves, 180; Pigs, 290.

FRIDAY, Dec. 20.

The number of Beasts is large, and the butchers having for the most part provided for Christmas, the trade is very slow, and Monday's quotations can scarcely be obtained. Although the supply of Sheep is great, a considerable proportion are foreign and middling quality, consequently the best descriptions sold as well as on Monday. Calves are plentiful; trade is slow; prices are with difficulty supported. From Holland and Germany we have 495 Beasts, 2040 Sheep, 198 Calves, and 10 Pigs; and 85 Milch Cows from the home counties.

Best Scots, Herefords, &c.	3	8 to 4	0	Best Long-wools	3	6 to 3	8
Best Short-horns	3	6 — 3	8	Ditto Shorn	...	... —	...
2d quality Beasts	2	10 — 3	4	Ewes & 2d quality	3	0 — 3	4
Best Downs and Half-breds	4	0 — 4	2	Ditto Shorn	...	... —	...
Ditto Shorn	...	... —	...	Lambs	...	... —	...
				Calves	...	... 3	6 — 4 0
				Pigs	...	... 3	6 — 4 0

Beasts, 1625; Sheep and Lambs, 5720; Calves, 335; Pigs, 392

MARK LANE.

MONDAY, Dec. 16.—The supply of English Wheat to this morning's market was moderate: fine dry samples were sold on the terms of this day se'nnight, but a large quantity being much out of condition, could only be disposed of in proportion to the same, and a part remained on hand at the close. Foreign met but a retail inquiry, which was chiefly confined to the finest white or inferior qualities; prices are unaltered. Barley must be written 1s. per qr. cheaper, excepting a few picked English samples. Beans are also 1s. per qr. lower. The value of Peas is unaltered. Oats are in good demand, and 6d. per quarter dearer. The Flour trade is dull; foreign and country marks barely maintain our quotations.

PER IMPERIAL QUARTER.	s.	s.		s.	s.
Wheat, Essex, Kent, & Suffolk ...White	44	—47	Red	38	—45
— — fine selected runs ...ditto	43	—48	Red		—42
— — Talavera	46	—52			
— Norfolk, Lincoln, & York...White	—		Red	—	
— Foreign	36	—50			
Barley, grind. & distil., 21s to 24s...Chev.	27	—32	Malting	24	—27
— Foreign....Grinding and distilling	19	—24	Malting	20	—25
Oats, Essex and Suffolk	—				
— Scotch and Lincolnshire ...Potato	20	—24	Feed ...	17	—21
— Irish .....Potato	18	—22	Feed ...	17	—19
— Foreign.....Poland and Brew	18	—23	Feed ...	16	—20
Rye	25	—27	Foreign	—	
Rye-meal, foreign.....per ton	—				
Beans, Mazagan .....24s to 27s.....Tick	26	—28	Harrow	26	—28
— Pigeon .....27s — 32s...Winds	38	—44	Longpod	28	—34
— Foreign ..... Small	24	—3[illegible]	Egyptian	21	—22
Peas, white, Essex and Kent.....Boilers	26	—28	Suffolk...	27	—30
— Maple.....30s to 32s .....Grey	27	—29	Foreign	25	—33
Maize ..... White	—		Yellow...	—	
Flour, best marks, delivered... per sack	36	—40			
— Suffolk..... ditto	30	—36	Norfolk	30	—36
— Foreign ..... per barrel	18	—24	Per sack	29	—34

FRIDAY, Dec. 20.—The arrivals of Wheat, English and foreign, during this week, have been good, but moderate of other articles. To-day's market was thinly attended; the Wheat left over from Monday could not be disposed of at 1s. per qr. decline; but in the few transactions that occurred in foreign, that day's prices were obtained.—Barley is a heavy sale.—We observe no alteration in the value of Beans, Peas, or Oats.—Flour is a dull sale at late rates. Floating cargoes of Wheat are obtainable, at a decline of 1s. to 2s. per qr.

ARRIVALS THIS WEEK.

	Wheat. Qrs.	Barley. Qrs.	Oats. Qrs.	Flour.
English ...	3770	4590	3560	1250 sacks
Irish	—	—	2390	
Foreign ...	11410	1310	2240	— brls.

IMPERIAL AVERAGES.	WHEAT.	BARLEY.	OATS.	RYE.	BEANS.	PEAS.
Nov. 9.....	40s 5d	24s 4d	17s 0d	26s 7d	29s 0d	29s 11d
— 16.....	39 11	24 1	17 2	24 2	28 9	29 0
— 23.....	39 11	24 1	17 3	29 6	28 9	29 4
— 30.....	40 3	24 6	17 1	28 6	28 5	29 2
Dec. 7.....	40 2	24 7	17 7	24 3	28 9	29 0
— 14.....	39 9	24 3	17 1	25 11	27 11	29 5
Aggreg. Aver.	40 1	24 4	17 2	25 8	28 7	29 4
Duties on Foreign Grain	1 0	1 0	1 0	1 0	1 0	1 0

Fluctuations in the last six weeks' Corn Averages.

PRICES.	Nov. 9.	Nov. 16.	Nov. 23.	Nov. 30	DEC. 7.	DEC. 14
40s 5d	—	...	...	...	...	...
40 3	...	...	...	...	...	...
40 2	...	...	...	...	...	...
39 11	...	...	...	...	...	...
39 11	...	...	...	...	...	...
39 9	...	...	...	...	...	...

SEEDS.—Dec. 16.

Canary, per qr.....46s to 56s	Coriander, per cwt. ...14s— 21s		
Caraway, per cwt. ...29 — 33	Mustard, white, p. bush. 4 — 6		
Hempseed, per qr. ...34 — 35	— brown do. ..... 7 — 10		
Linseed, foreign, do. 37 — 44	Rape, per last .....24l.—26l.		
Clover, red, p. cwt....— —	Cakes, Lindseed, p.1000...8l.15s		
— — foreign, do. — —	— — foreign, p.ton, 6l.15s		
— white, do. .....— —	— Rape, foreign, do., 3l.17s		
— — foreign, do. — —	Tares, per bush... 3s 0d—5s 6d		

LIVERPOOL, FRIDAY, DEC. 13.—The arrivals into this port of English and Irish grain are still scanty; we have, however, a moderate import of Wheat and Flour from the United States, and a large supply of Flour from France. At our market today we have few country buyers, and our home millers are still on the reserve, and but few parcels of Wheat taken for Ireland; the transactions in any description of that grain have been upon a very limited scale, and late quotations barely supported. Malting Barley 1s. per qr. lower, grinding samples steady in value. Egyptian Beans are offered at a decline of 6d. per qr., and a moderate amount of sales effected; other kinds, as well as Peas, moving slowly at late prices. Oats are fully as dear as of late.——TUESDAY, Dec. 17.—At our Corn market this morning Wheat of all descriptions declined 1d. to 2d per 70 lbs. Prime malting Barley and Malt were steady and in moderate request: grinding Barley, as well as Beans and Peas, appearing to meet little notice. Oats, of which we had a few small cargoes fresh in to-day from Ireland, were in slow demand, on the terms last noted; and Oats moved very sparingly at Friday's abatement. Indian Corn, for which we had very few Irish inquiries this morning, was in limited request, but not cheaper.

GLASS FOR CONSERVATORIES,
GREENHOUSES, FRAMES, &c.

JAMES PHILLIPS AND Co., 116, Bishopsgate-street Without, are supplying SHEET GLASS, packed in 100 feet boxes, at the following *Reduced Prices*. A reduction on 1000 feet.

SMALL SQUARES.

Sizes.—Inches.	Per 100 feet.—£.	s.	d.
6 by 4, 6½ by 4½, 6 by 5, 6 by 5½	0	13	0
7 by 4, 7 by 4½, 8½ by 4, 8 by 4½, and not exceeding 8 by 6	0	15	0
9 by 7, 9½ by 7½, 10 by 8	0	17	6
12 by 9, 12 by 10...	1	0	0

LARGER SIZES, not exceeding 40 inches long.

16 oz. from 3*d.* to 3½*d.* per square foot, according to size.
21 oz. „ 3½*d.* 5*d.* „ „ „
26 oz. „ 3½*d.* 7½*d.* „ „ „
Packed in Crates of about 250 feet each, and in sizes of about 40 in. by 30.

HARTLEY'S PATENT ROUGH PLATE, packed in boxes of 50 feet each:

6 by 4 and 6½ by 4½ ...	12*s.*	0*d.*	
7 by 5 „ 7½ by 5½ ...	13	6	
8 by 6 and 8½ by 6½ ...	15*s.*	0*d.*	
9 by 7 „ 10 by 8 ...	16	6	

GLASS TILES.

Rough Plate.			Sheet.		
⅛ in. thick, each ...	0*s.*	10*d.*	16 oz., each	0*s.*	6*d.*
¼ „ „ ...	1	3	21 „	0	8
⅜ „ „ ...	1	7	26 „	0	10
½ „ „ ...	2	0	32 „	1	0

GLASS SLATES.

Size.	ROUGH PLATE. ⅛ inch thick.	¼ inch thick.	⅜ inch thick.	½ inch thick.	SHEET. 16 oz.	21 oz.	26 oz.	32 oz.
	s. d.	*s. d.*	*s. d.*	*s. d.*	*s. d.*	*s. d.*	*s. d.*	*s. d.*
24 by 12	1 6	2 0	2 8	5 0	0 11	1 3	1 9	2 0
20 by 14	1 5½	1 11	2 7	4 10	0 10½	1 2½	1 8½	1 11
22 by 12	1 5	1 10	2 6	4 8	0 10	1 2	1 8	1 10
20 by 10	1 1½	1 6	2 0	3 8	0 8½	1 0	1 5	1 6

ROUGH PLATE GLASS.

	¼ in.	⅜ in.	½ in.	⅝ in.	1 in.	1¼	1½
	s. d.	*s. d.*	*s. d.*	*s. d.*	*s. d.*	*s. d.*	*s. d.*
Not above 15 inches long.....	0 11	1 0	1 6	3 0	4 6	5 3	6 0
Above 15 in. and not above 35	1 1	2 1	3 6	5 3	6 0	7 0	8 0
„ 35 „ „ 75	1 3	2 4	4 0	6 0	7 0	8 0	9 0

HALLIMAN'S REGISTERED FRUIT PROTECTORS, from 6*d.* to 1*s.* each.
MILK PANS, from 2*s.* to 6*s.* each.
PROPAGATING AND BEE GLASSES, from 2*d.* each.
WASP TRAPS, 3*s.* 6*d.* per dozen.
LACTOMETERS, for trying the quality of Milk, 7*s.* 6*d.* each.
STANDS, for Pianofortes, 1*s.* each.

Glass Shades for Ornaments. Parian Marble. Wax and Alabaster Ornaments. Lamp Shades and Glasses. Patent and British Plate. Ornamental and Stained Glass; and every article in the Trade.

N.B. All packages charged, but full price allowed if returned free of expense.

GLASS FOR CONSERVATORIES, GREENHOUSES, PIT-FRAMES; AND PLATE GLASS FOR DWELLINGS.

THOMAS MILLINGTON begs to hand the sizes of a large quantity of SHEET GLASS, packed in 100 feet boxes.

6 by 4 ins., 6 by 4½ ins., 6½ by 4 ins., 6 by 5½ ins., 6½ by 5 ins., 12*s.* each.

6½ by 5½ ins., 6 by 6 ins., 6½ by 6 ins., and under 8 by 6 ins., 13*s.* each.

9 by 7 ins., 9½ by 7½ ins., and 10 by 8 ins., 15*s.* each.

Large sizes, 16 oz., 2*d.* and 2½*d.* per foot.

Large sheets, in 200 and 300 feet cases, 2½*d.* to 2¾*d.* per foot.

16*s.* per box; or 2¾*d.* per foot if less than one box be taken:

11	inches by 8	inches	13	inches by 9	inches
12	„ by 8	„	12	„ by 10	„
12	„ by 9	„	14	„ by 10	„

Boxes charged 1*s.* each extra.

T. M.'s Stock of small Glass is so large, that he thinks he can pledge himself to execute orders to any extent.

Glass cut to any other size required, in either 16 oz., 21 oz., 26 oz., or 32 oz.

ROUGH PLATE GLASS.

Rough Plate Cast, perfectly flat and uniform, the best manufactured. A small sample will be sent, upon application, to prove it.

Purchasers must be cautious, as some of the articles sold under this name are of the most inferior description, being full of fire-flaws, and the metal not properly united. We only recommend the best article, being sure that no other in the end can please. Some unprincipled vendors keep good samples to show, sending afterwards the inferior, described as above.

CUT TO ORDER IN PANES.

	⅛ in. thick.	¼ in. thick.
	0*s.* 6*d.*	0*s.* 11*d.*
Not above 15 inches long		
Above 15 inches and not above 35 ...	0 8	1 1
„ 35 „ „ 50 ...	0 9½	1 3
„ 50 „ „ 75 ...	1 0	1 3
„ 75 „ „ 100 ...	1 3	1 4
100 inches and above	...	1 6

SHEET GLASS TILES.

16 oz. sheet	0*s.* 5*d.*	26 oz. sheet	0*s.* 9*d.*
21 oz. „	0 7	32 oz. „	0 11

SUPERIOR ROUGH PLATE TILES.

⅛ inch	0*s.* 10*d.*	⅜ inch	1*s.* 7*d.*
¼ inch	1 3	½ inch	2 0

GLASS SHADES FOR ORNAMENTS.—Our price is 25 per cent. less than any house in the Trade, and the colour far superior, which must be preferable for ornaments.

LACTOMETERS for trying the quality of Milk: four tubes in frame, 6*s.* each. Wasp Traps, 3*s.* per dozen. Stands for Pianofortes, 9*d.* each.

MILK PANS 2*s.* to 6*s.* each, Hand-frames, Tiles, and Slates; Propagating and Bee Glasses from 2*d.* each; Cucumber Tubes, 1*d.* per inch; Peach Glasses, 10*d.* each; Pastry Slabs; Glass Plates, in wooden frames, for butter and pastry, &c.; Hyacinth Glasses and Dishes, Shades for Ornaments, Fish Globes, Plate and Window Glass of every description, and Lamp Shades. Self-registering Thermometers for Greenhouses, Horticultural Glass, &c.

N.B. The moderate charge of 1*s.* for each packing case will be made, which we think will be an inducement for parties to retain them; but if sent back free of expense the whole will be allowed.

THOMAS MILLINGTON, GLASS, COLOUR, AND PAINT MANUFACTURER, 87, BISHOPSGATE-STREET WITHOUT, LONDON.

FURZE MACHINE.

COTTAM AND HALLEN have now brought to perfection FIRCHILD'S PATENT FURZE CUTTER AND BRUISER, for the preparing of Furze for Feeding Horses and Cattle. The Machine may be worked by horse-power, and will cut and bruise at the rate of 20 bushels per hour with one horse, a man, and boy; with two horses, 40 bushels per hour; if a steam-engine, in proportion to the power applied. The Machine is now on view at COTTAM and HALLEN'S, No. 2, Winsley-street, Oxford-street, where every other description of Agricultural Machinery may be seen.

STEPHENSON AND Co., 61, Gracechurch-street, London, and 17, New Park-street, Southwark, Inventors and Manufacturers of the Improved CONICAL and DOUBLE CYLINDRICAL BOILERS, respectfully solicit the attention of scientific Horticulturists to their much improved method of applying the Tank System to Pineries, Propagating Houses, &c., by which atmospheric heat as well as bottom-heat is secured to any required degree, without the aid of pipes or flues. S. and Co. have also to state that at the request of numerous friends they are now making their Boilers of Iron, as well as Copper, by which the cost is reduced. These Boilers, which are now so well known, scarcely require description, but to those who have not seen them in operation, prospectuses will be forwarded, as well as reference of the highest authority; or they may be seen at most of the Nobility's seats and principal Nurseries throughout the kingdom.

S. and Co. beg to inform the Trade that at their Manufactory, 17, New Park-street, every article required for the construction of Horticultural Buildings, as well as for heating them, may be obtained upon the most advantageous terms.

Conservatories, &c., of Iron or Wood, erected upon the most ornamental designs. Balconies, Palisading, Field and Garden Fences, Wire-work, &c.

TO NOBLEMEN and GENTLEMEN who require a plentiful and CONSTANT SUPPLY of PURE WATER to their Country Mansions.

Messrs. EASTON and AMOS beg to offer their improved PATENT HYDRAULIC RAM, which is perfectly self-acting, and without manual labour, is capable of lifting water to 30 times the height of the waterfall by which it is worked.

THIS MACHINE CAN BE APPLIED WHEREVER A FALL OF WATER OF A FEW FEET CAN BE OBTAINED; and its cheapness and durability, with the fact that upwards of 500 of them erected in England and other countries by Messrs. EASTON and AMOS have now been at work many years, afford ample proof of its great value and efficiency.

Estimates of the expense of the Machine, Pipes for the conveyance of Water, Tanks, and Reservoirs, may be had on application to Messrs. EASTON and AMOS, CONSULTING ENGINEERS to the ROYAL AGRICULTURAL SOCIETY, at their office in Orange-street, Trafalgar-square, or at the Works in the Grove, Southwark, London.

CHEAP AND DURABLE ROOFING.

BY HER MAJESTY'S ROYAL LETTERS PATENT.

F. M'NEILL AND Co., of Lamb's-buildings, Bunhill-row, London, the Manufacturers and only Patentees of THE ASPHALTED FELT FOR ROOFING

Houses, Farm Buildings, Shedding, Workshops, and for Garden purposes, to protect Plants from Frost.

At the Great National Agricultural Shows, it is this Felt which has been exhibited and obtained TWO SILVER MEDAL PRIZES, and is the Felt SOLELY patronised and adopted by

HER MAJESTY'S WOODS AND FORESTS,
HONOURABLE BOARD OF ORDNANCE,
HONOURABLE EAST INDIA COMPANY,
HONOURABLE COMMISSIONERS OF CUSTOMS,
HER MAJESTY'S ESTATE, ISLE OF WIGHT,
ROYAL BOTANIC GARDENS, REGENT'S PARK,

And on the Estates of the Dukes of Sutherland, Norfolk, Rutland, Newcastle, Northumberland, Buccleuch (at Richmond), the late Earl Spencer, and most of the Nobility and Gentry, and at the ROYAL AGRICULTURAL SOCIETY'S HOUSE, Hanover-square.

It is half the price of any other description of Roofing, and effects a great saving of Timber in the construction of Roofs. Made to any length by 32 inches wide.

PRICE ONE PENNY PER SQUARE FOOT.

*** Samples, with Directions for its Use, and Testimonials of seven years experience, with references to Noblemen, Gentlemen, Architects, and Builders, sent free to any part of the town or country, and orders by post executed.

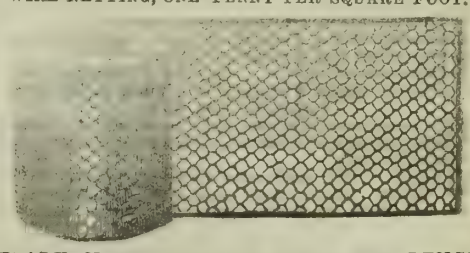
☞ The Public is cautioned that the only Works in London or Great Britain where the above Roofing is made, are F. M'NEILL AND CO.'S Patent Felt Manufactory, Lamb's-buildings, Bunhill-row, London, where roofs covered with the Felt may be seen.

The new Vice-Chancellor's Courts, at the entrance to Westminster Hall, were roofed with F. M'NEILL and Co.'s Felt about two years since, under the Surveyorship of Chas. Barry, Esq., R.A. Her Majesty's Commissioners of Woods and Forests are so satisfied with the result that they have ordered the Committee Rooms at the Houses of Parliament to be roofed with their Felt. Quantity altogether used, 24,000 feet.

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The following letter has just been received from Mr. James Barnes, the celebrated and well-known Gardener at Lady Rolle's, Bicton Gardens, Sidmouth, Devon :—

"Bicton Gardens, Sidmouth, Nov. 30, 1850.

"Gentlemen,—I beg to acknowledge the receipt of your 'PRICE CURRENT AND GARDEN DIRECTORY,' for which I beg to return you my best thanks. I have read it with much interest, and am of opinion that it will be found not only interesting, but very useful to a large majority of the gardening world.—I am, Gentlemen, respectfully, your obedient servant,

"To Messrs. W. E. Rendle & Co. "JAMES BARNES."

The following letter has also been received from Mr. Robert Errington, Gardener to Sir P. Egerton, Bart., Oulton Park :—

"Oulton Park, Tarporley, Nov. 21, 1850.

"Gentlemen,—I am much obliged by the receipt of your very interesting and useful annual—'PRICE CURRENT AND GARDEN DIRECTORY.' This is just how things should be. I have long anticipated the period when such things must take place, for we may rest assured that it is at once the duty and interest of the tradesmen to do all in his power to please his customer, and in no profession is this more requisite than in that of the Nursery and Seedsman. I have looked carefully over it, and think it does you great credit, both in the general arrangements and the very creditable degree of accuracy to be found in the details.

"I remain, Gentlemen, your most obedient servant,
"ROBERT ERRINGTON."

The PRICE CURRENT has also been reviewed in the following newspapers and magazines, in the whole of which it has been spoken very favourably of :—

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The West Briton.
Plymouth, Devonport, and Stonehouse Herald.
Woolmer's Exeter Gazette.
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THE GARDENERS' CHRONICLE
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AGRICULTURAL GAZETTE.

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No. 52—1850.] SATURDAY, DECEMBER 28. [PRICE 6*d.*

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Price *Fivepence*, to be had of all Booksellers, or *Sixpence* stamped, to go free by post. To be obtained of every newsagent who supplies the *Gardeners' Chronicle*; through Messrs. Bradbury and Evans, Publishers, Whitefriars, London; or from WILLIAM E. RENDLE and CO., Seed Merchants, Plymouth.

Send six penny stamps, and a copy will be sent by return of post. This amount will be returned if desired to all purchasers.

*** *This Catalogue is stamped as a Newspaper, and contains* 24 *folio pages, being the same size as the* "Gardeners' Chronicle and Agricultural Gazette," *including the Newspaper portion.*

GARDENERS' BENEVOLENT INSTITUTION.—Notice is hereby given, that the ANNUAL GENERAL MEETING of the Subscribers to this Institution will take place at the LONDON COFFEE HOUSE, Ludgate Hill, on WEDNESDAY, the 15th January next, for the purpose of electing Officers for the ensuing year, and receiving the Accounts of the Charity for the past year. Also, for receiving a Report from the Committee on the Rules referred back to them at the last General Meeting.—The Chair to be taken at 12 o'clock precisely.

By Order. EDWARD ROGER CUTLER, Secretary.

97, Farringdon-street, Dec. 27, 1850.

SUTTON'S PRICED CATALOGUE OF HOME-GROWN GARDEN SEEDS, containing the description and *price of every article* required for the Kitchen Garden, Flower-Garden, and Farm, may be had on application, addressed JOHN SUTTON and SONS, Seed Growers, Reading, Berks, enclosing two postage stamps.

N.B.—Goods delivered Carriage Free.

MESSRS. J. AND J. FRASER'S PRICED CATALOGUE OF STOVE AND GREENHOUSE PLANTS is ready, and will be forwarded, gratis, to all applications. They also beg to observe that most of the fine specimens shown at the Chiswick and Royal Botanic Exhibitions are grown from plants supplied from their collection. The great attention paid to the plants while in a young state (without which they never make good specimens) renders this Nursery a most desirable market for purchasers.—Lea-bridge-road, Essex, Dec. 28.

CARTER'S CATALOGUE OF SEEDS.

J. CARTER, SEEDSMAN and FLORIST, 238, High Holborn, London, announces the appearance of his new CATALOGUE FOR 1851, which will be forwarded, gratis and prepaid, on application by post or otherwise. He begs leave to state that the Floricultural section comprises, as usual, the Scientific and English Name of each plant, the Linnean Class and Order, and Natural Order to which it belongs; its hardiness, duration, time of flowering, and colour of the flowers, and other necessary information. The collection of Flower Seeds will comprise several splendid novelties.

GREAT WESTERN, SOUTH-WESTERN, AND SOUTH-EASTERN SEED ESTABLISHMENT, FOR SUPPLYING GENUINE HOME-GROWN SEEDS CARRIAGE FREE.

JOHN SUTTON AND SONS, SEED GROWERS, Reading, Berks, having many Customers in the Southern, Midland, and Western Counties of England, and in South Wales, have made arrangements with the several Railway Companies, which will enable them to deliver all goods (excepting parcels under 10*s.* value), FREE OF CARRIAGE, to any Station on the Great Western, South-Western, South-Eastern, or Berks and Hants Railways (which Lines converge at Reading), or to any Railway or Packet Office in London or Bristol.

The rapidly increasing connexion and distinguished patronage enjoyed by J. S. and SONS, is entirely owing to the superior quality of their HOME-GROWN SEEDS, and the low prices charged for the newest and best kinds in cultivation.

SUTTON'S NEW PRICED CATALOGUE OF HOME-GROWN SEEDS being a careful selection of only the very best kinds of KITCHEN GARDEN, AGRICULTURAL, and FLOWER SEEDS, *with prices affixed to each article*, will, it is presumed, be found the *most useful* and convenient of any yet presented to the public.

All purchasers of Seeds would do well to peruse this Catalogue, as the low prices therein quoted will enable them to effect a great saving in their expenditure. It will be sent gratis on the receipt of two penny stamps for postage.

The undermentioned excellent sorts of Potatoes are quite free from disease, and are confidently recommended as the best sorts in cultivation, and perfectly true to their kinds.

BEST EARLY POTATOES *all* 2*s.* 6*d.* *per peck, or* 9*s.* *per bushel, carriage free, as see above.*

Jackson's Early Kidney.	Old Ash-leaf Kidney.
Soden's Early Oxford.	New Red Ash-leaf.
Lawson's Early Frame.	Grigor's Early Round.
,, Early Globe.	Miller's Flour Ball.
Fortyfold (excellent).	Early Cockney.
Early Manley.	Walnut-leaf Kidney.
Early Tenweeks.	

Bishop's new Long-podded Dwarf, Champion of England, Burbage's Eclipse, Sutton's Early Champion, Warner's Emperor, Sutton's Early Goliah and other Peas; Selected Short-Horn Carrots; Beck's superb Short-top Radish, and all other Seeds of superior quality at very low prices.

N.B.—For Catalogues and further particulars, address JOHN SUTTON AND SONS, SEED-GROWERS, READING, BERKS, Enclosing Two Penny Stamps for Postage.

DOUBLE LILY OF THE VALLEY.—In answer to numerous inquiries for the above, and the great satisfaction given by the plants sent out by J. REID last season, he begs to state he has this year a few strong Flowering Roots to dispose of. The graceful habit, delicate appearance, and delicious perfume which the flower possesses, render it equally suitable for the Lady's Posey or the Drawing-room Bouquet. By enclosing 24 penny postage stamps, 12 strong Roots will be sent free to any part of the United Kingdom.—J. REID, Nurseryman and Seedsman, Richmond-street, Weston-Super-Mare, Somerset.

TO NURSERYMEN AND OTHERS ENGAGED IN PLANTING.

A FEW THOUSAND FOUR YEARS OLD RED CURRANT TREES FOR SALE.

Apply to Mr. BATES, Market Gardener, East Moulsey, Surrey.

BAKER'S PHEASANTRY, Beaufort-street, King's-road, Chelsea, by special appointment to her Majesty and H. R. H. Prince Albert.—ORNAMENTAL WATER FOWL, consisting of black and white swans, Egyptian, Canada, China, barnacle, brent, and laughing geese, shieldrakes, pintail, widgeon, summer and winter teal, gadwall, Labrador, shovellers, gold-eyed and dun divers, Carolina ducks, &c., domesticated and pinioned; also Spanish, Cochin China, Malay, Poland, Surrey, and Dorking fowls; white, Japan, pied, and common pea-fowl, and pure China pigs; and at 3, Half-moon-passage, Gracechurch-street, London.

GLASS FOR CONSERVATORIES.

JAMES PHILLIPS and Co. have the pleasure to hand their New List of Prices of GLASS for cash.

CUT TO SIZE.

16 oz. from 2d. to 3½d. per foot.
21 oz. „ 3½d. 5d. „
26 oz. „ 3½d. 7½d. „
32 oz. „ 4d. 9½d. „

SHEET SQUARES.

In boxes of 100 feet.	£.	s.	d.
Under 6 by 4	0	12	6
6 by 4 and 6½ by 4½ ...	0	13	0
7 by 5 and 7½ by 5½ ...	0	15	0
8 by 6 and 8½ by 6½ ...	0	17	6
9 by 7 and 10 by 8 ...	1	0	0

Warranted of British manufacture, and 16 ounces to the foot. Superior in every respect to Foreign, both in substance and quality.

Packed in Crates of about 250 feet each, and in sizes of about 40 in. by 30, at 2½d. per foot.

HARTLEY'S PATENT ROUGH PLATE,

packed in boxes of 50 feet each:

6 by 4 and 6½ by 4½ ... 12s. 0d. | 8 by 6 and 8½ by 6½ ... 15s. 0d.
7 by 5 „ 7½ by 5½ ... 13 6 | 9 by 7 „ 10 by 8 ... 16 6

MILK PANS, from 2s. to 6s. each; METAL HAND-FRAMES, Glass Tiles and Slates, Propagating and Bee Glasses from 2d. each; Grape Glasses; Cucumber Tubes, 1d. per inch; Peach Glasses, Wasp Traps, Pastry Slabs, Hyacinth Glasses and Dishes, Fish Globes, Plate and Window Glass, Lamp Shades. Lactometers for trying the quality of Milk, 4 tubes, 5s.; 6 tubes, 7s. 6d. GLASS SHADES.—Estimates and List of Prices forwarded on application

TO THEIR WAREHOUSE, 116, BISHOPSGATE-STREET WITHOUT, LONDON.

GLASS FOR CONSERVATORIES, &c.

HETLEY and Co. supply 16-oz. Sheet Glass of British Manufacture, at prices varying from 2d. to 3d. per square foot, for the usual sizes required, many thousand feet of which are kept ready packed for immediate delivery. Lists of Prices and estimates forwarded on application, for PATENT ROUGH PLATE, THICK CROWN GLASS, GLASS TILES and SLATES, WATER-PIPES, PROPAGATING GLASSES, GLASS MILK PANS, PATENT PLATE-GLASS, ORNAMENTAL WINDOW GLASS, and GLASS SHADES, to James Hetley and Co., 35, Soho-square, London.

See the *Gardeners' Chronicle* first Saturday in each month.

GLASS FOR CONSERVATORIES, GREENHOUSES, PIT-FRAMES; AND PLATE GLASS FOR DWELLINGS.

THOMAS MILLINGTON begs to hand the sizes of a large quantity of SHEET GLASS, packed in 100 feet boxes.

6 by 4 ins., 6 by 4½ ins., 6½ by 4 ins., 6 by 5½ ins., 6½ by 5 ins., 12s. each.

6½ by 5½ ins., 6 by 6 ins., 6½ by 6 ins., and under 8 by 6 ins., 13s. each.

9 by 7 ins., 9½ by 7½ ins., and 10 by 8 ins., 15s. each.

Large sizes, 16 oz., 2d. and 2½d. per foot.

Large sheets, in 200 and 300 feet cases, 2½d. to 2¾d. per foot.

16s. per box; or 2¾d. per foot if less than one box be taken:

11 inches by 8 inches | 13 inches by 9 inches
12 „ by 8 „ | 12 „ by 10 „
12 „ by 9 „ | 14 „ by 10 „

Boxes charged 1s. each extra.

T. M.'s Stock of small Glass is so large, that he thinks he can pledge himself to execute orders to any extent.

Glass cut to any other size required, in either 16 oz., 21 oz., 26 oz., or 32 oz.

ROUGH PLATE GLASS.

Rough Plate Cast, perfectly flat and uniform, the best manufactured. A small sample will be sent, upon application, to prove it.

Purchasers must be cautious, as some of the articles sold under this name are of the most inferior description, being full of fire-flaws, and the metal not properly united. We only recommend the best article, being sure that no other in the end can please. Some unprincipled vendors keep good samples to show, sending afterwards the inferior, described as above.

CUT TO ORDER IN PANES.

	⅛ in. thick.	¼ in. thick.
Not above 15 inches long	0s. 6d.	0s. 11d.
Above 15 inches and not above 35 ...	0 8	1 1
„ 35 „ „ 50 ...	0 9½	1 3
„ 50 „ „ 75 ...	1 0	1 3
„ 75 „ „ 100 ...	1 3	1 4
100 inches and above	...	1 6

SHEET GLASS TILES.

16 oz. sheet ... ... 0s. 5d. | 26 oz. sheet ... ... 0s. 9d.
21 oz. „ ... ... 0 7 | 32 oz. „ 0 11

SUPERIOR ROUGH PLATE TILES.

⅜ inch ... ... 0s. 10d. | ⅝ inch ... ... 1s. 7d.
½ inch ... ... 1 3 | ½ inch 2 0

GLASS SHADES FOR ORNAMENTS.—Our price is 25 per cent. less than any house in the Trade, and the colour far superior, which must be preferable for ornaments.

LACTOMETERS for trying the quality of Milk: four tubes in frame, 6s. each. Wasp Traps, 3s. per dozen. Stands for Pianofortes, 9d. each.

MILK PANS 2s. to 6s. each, Hand-frames, Tiles, and Slates; Propagating and Bee Glasses from 2d. each; Cucumber Tubes, 1d. per inch; Peach Glasses, 10d. each; Pastry Slabs; Glass Plates, in wooden frames, for butter and pastry, &c.; Hyacinth Glasses and Dishes, Shades for Ornaments, Fish Globes, Plate and Window Glass of every description, and Lamp Shades. Self-registering Thermometers for Greenhouses, Horticultural Glass, &c.

N.B. The moderate charge of 1s. for each packing case will be made, which we think will be an inducement for parties to retain them; but if sent back free of expense the whole will be allowed.

THOMAS MILLINGTON, GLASS, COLOUR, AND PAINT MANUFACTURER, 87, BISHOPSGATE-STREET WITHOUT, LONDON.

SMITHFIELD CATTLE SHOW.—MILK PANS, in stout Glass, of every size and variety of shape, were exhibited as usual, Nos. 148, 149, 150, Bazaar, by Messrs. Cogan and Co., whose collections were honoured (among other Prizes) with the Silver Medal of the Dublin Society in April, as also with the Silver Medal of the Liverpool and Manchester Society, at their meeting, held at Warrington in September last.

NOBLEMEN, FARMERS, and the Public generally, are respectfully invited to notice the NEW GLASS CHURN. LORD CAMOY'S MILK SYPHONS for separating Milk from Cream, GLASS LACTOMETERS for ascertaining the quality of Milk, New Bee Glasses invented by Lord Keane, Glass Cream Pots and Pans, Glass Milk Trays, Glass Tiles and Slates, and every description of Dairy Glass.

Durable Farm Paints, Glass for Hothouses and Garden purposes, may be had (safely packed) for any part of the kingdom, or for exportation, on application at the Stands, 148, 149, and 150, or at the Warehouse, 48, Leicester Square, London.

Small Glass for Melon Pits of every size, from 10s. 6d. per 100 feet; Hartley's and Swinburne's PATENT ROUGH PLATE at the Manufacturer's prices,

Glass Ornamental Shades, Fern Shades, Lamp and Gas Glasses, Patent Glass Pens; Patent Texturalized, Silicated Marble, and other Ornamental Glass, supplied, as usual, at 48, Leicester-square; the Colour and Lead Department, at 5, Prince's-street, Coventry-street, London.

TO MARKET GARDENERS AND NURSERYMEN.

TO BE SOLD OR LET, on very low terms, "THE GARDENS" at Newmarket, formerly belonging to the late "Crockford Esquire," and stocked with the choicest varieties of Fruit Trees regardless of expense. They contain 4 acres of the richest garden soil, sloping to a southern aspect, walled in on all sides, and include a Gardener's House and Yard, an extensive Vinery 160 feet in length, containing 3000 feet of glass, and replete with the best varieties of Frontignan, Muscat, Hamburgh, Muscadine, and other equally excellent kinds of Grapes in first-rate bearing condition. A second Vinery, 45 feet in length, equally well stocked with choice Grapes, and contains 1000 feet of glass. A third Vinery, 45 feet in length, stocked with Vines as others, together with a large quantity of hard and soft-wooded plants, and containing 1300 feet of glass. The whole are provided with Potting and Store Houses, and are heated on an approved plan. There is also a range of 15 light Melon and Cucumber frames, and another of 12 light do. Any quantity of Land will be let with the Gardens for Nursery purposes.

The Gardens are situated close to the Newmarket and London Railway, equidistant 13 miles from the populous towns of Cambridge, Bury and Ely, and afford an excellent opening to any one desirous of meeting with a first-rate Market Garden and Nursery Grounds.—For Terms, apply to Mr. J. F. Clark, Architect, Newmarket.

FARM WANTED AT MICHAELMAS NEXT.—Wanted to Rent, by an active and experienced Agriculturist of Devonshire, of 45 years of age, from 300 to 500 acres of good sound Land, in any County. The nearer London, the better it would be preferred, and near a railway station. The Advertiser is a man of good capital, having several Farms of his own, and is now living in one of them, where he has always lived, and his father before him. He also would take a situation as Land Steward if desired.—Direct to A. B., Post-office, Moreton Hamstead, near Exeter.

P.S.—To view, half the second class travelling expenses paid.

CHRISTMAS HOLIDAYS.

THE GARDENS OF THE ZOOLOGICAL SOCIETY, in the Regent's Park, will be open to VISITORS, on payment of SIXPENCE each, EVERY DAY except Sunday, from Christmas Eve to January 6th inclusive

The HIPPOPOTAMUS is exhibited from 11 to 4 o'clock.

STEPHENSON and Co., 61, Gracechurch-street, London, and 17, New Park-street, Southwark, Inventors and Manufacturers of the Improved CONICAL and DOUBLE CYLINDRICAL BOILERS, respectfully solicit the attention of scientific Horticulturists to their much improved method of applying the Tank System to Pineries, Propagating Houses, &c., by which atmospheric heat as well as bottom-heat is secured to any required degree, without the aid of pipes or flues. S. and Co. have also to state that at the request of numerous friends they are now making their Boilers of Iron, as well as Copper, by which the cost is reduced. These Boilers, which are now so well known, scarcely require description, but to those who have not seen them in operation, prospectuses will be forwarded, as well as reference of the highest authority; or they may be seen at most of the Nobility's seats and principal Nurseries throughout the kingdom.

S. and Co. beg to inform the Trade that at their Manufactory, 17, New Park-street, every article required for the construction of Horticultural Buildings, as well as for heating them, may be obtained upon the most advantageous terms.

Conservatories, &c., of Iron or Wood, erected upon the most ornamental designs. Balconies, Palisading, Field and Garden Fences, Wire-work, &c.

PURE WATER raised to any height from a small stream, where a fall can be obtained, by FREEMAN ROE and HANSON'S IMPROVED RAM; less waste, by two-thirds, than those ordinarily in use. Portable Steam Engines for Agricultural purposes, Threshing Machines, Deep-well Pumps, Water-wheels, Baths, Hot-water Apparatus, and Fountains. Towns supplied with Gas or Water. Drawings and Estimates made.—Freeman Roe and Hanson, Hydraulic and Gas Engineers: Office, 70, Strand, London.

METCALFE and Co's NEW PATENT TOOTH-BRUSH and SMYRNA SPONGES.—The Tooth-Brush has the important advantage of searching thoroughly into the divisions of the teeth, and cleaning them in the most extraordinary manner, and is famous for the hairs not coming loose.—1s. An Improved Clothes-Brush, that cleans in a third part of the usual time, and incapable of injuring the finest nap. Penetrating Hair-Brushes, with the durable unbleached Russian bristles, which do not soften like common hair. Flesh-Brushes of improved, graduated, and powerful friction. Velvet-Brushes, which act in the most surprising and successful manner. The genuine Smyrna Sponge, with its preserved valuable properties of absorption, vitality, and durability, by means of direct importations, dispensing with all intermediate parties' profits and destructive bleaching, and securing the luxury of a genuine Smyrna Sponge. Only at Metcalfe, Bingley, and Co's, Sole Establishment, 130 B, Oxford-street, one door from Holles-street.

METCALFE'S ALKALINE TOOTH POWDER, 2s. per box.

Caution.—Beware of the words "From Metcalfe's," adopted by some houses.

CAUTION.

NIGHT LIGHTS.—PATENT ALBERT NIGHT LIGHTS (Patented 30th January, 1844), CHILDS' NIGHT LIGHTS (Registered 20th September, 1843) are sold by all Grocers and Wax Chandlers throughout the country, at 6d. per box. The sale of the above, amounting at the present time to many tons weekly, shows that they meet with the approbation of the public; any description of them is therefore unnecessary. The object of this advertisement is, to request purchasers to *examine the name on the boxes*, so as to insure their getting what they intend.

Night Lights are liable not to last the time that they profess (frequently going out an hour or two after lighting); to be affected by the temperature of the room they are burnt in; to be injured by keeping any length of time, and to have an unpleasant smell. The manufacturers consider that, by use of materials secured to them by several patents, and by long experience in the manufacture, that they have overcome these difficulties; and they therefore beg, that should any attempted substitutes be recommended, they may be carefully compared as to all the above particulars.

N.B.—The wine-glass-shaped Lamp, on which is stamped "Clarke's Patent," is that recommended for the Albert Lights.

Price's Patent Candle Company, Belmont, Vauxhall.

APPETITE AND DIGESTION IMPROVED.

LEA AND PERRINS' WORCESTERSHIRE SAUCE imparts the most exquisite relish to Steaks, Chops, and all Roast Meat Gravies, Fish, Game, Soup, Curries, and Salad, and by its tonic and invigorating properties enables the stomach to perfectly digest the food.

The daily use of this aromatic and delicious Sauce is the best safeguard to health.

Sold by the Proprietors, Lea and Perrins, 6, Vere-street, Oxford-street, London, and 68, Broad-street, Worcester; also by Messrs. Barclay and Sons, Messrs. Crosse and Blackwell, and other Oilmen and Merchants, London; and generally by the principal dealers in sauce.

N.B.—To guard against imitations, see that the names of "Lea and Perrins" are upon the label and patent cap of the bottle.

TO LANDED PROPRIETORS.—WOOD AGENCY.

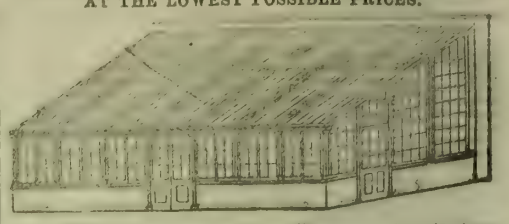
JAMES MATHIES, Forester, is at liberty to superintend or report upon such improvements or valuations of Wood as he may be honoured with; and trusts, from his knowledge of the suitableness of soils and situations for the healthy growth of Forest Trees, his extensive practice in Planting, Thinning, Pruning, Draining, Valuations, &c., he will be enabled to give satisfaction as a general Wood Agent, especially by the adoption of a practical, economical, and natural cultivation.—J. M. has been employed upon the Estates of Sir William Worsley, Bart., Hovingham Hall, Yorkshire, for the last 20 years as his Woodman, and is kindly permitted to refer to him.—Terms Moderate

Communications may be addressed to James Mathies, Forester, Craigs, Stirling.

N.B.—Workmen carefully instructed.

HORTICULTURAL BUILDING AND HEATING BY HOT WATER.

WARRANTED BEST MATERIALS AND WORKMANSHIP AT THE LOWEST POSSIBLE PRICES.



J. WEEKS and CO., King's-road, Chelsea, Horticultural Architects, Hothouse Builders, and Hot-water Apparatus Manufacturers. The Nobility and Gentry about to erect Horticultural buildings, or fix Hot-water Apparatus, will find at our Hothouse Works, King's-road, Chelsea, an extensive variety of Hothouses, Greenhouses, Conservatories, Pits, &c., erected, and in full operation, combining all modern improvements, so that a lady or gentleman can select the description of House best adapted for every required purpose.

THE HOT-WATER APPARATUSES (which are efficient and economical), are particularly worthy of attention, and are erected in all the Houses, Pits, &c., for both Top and Bottom Heat, and in constant operation in the Stoves.

The splendid collection of Stove and Greenhouse Plants are in the highest state of cultivation, and for sale at very low prices. Also a fine collection of strong Grape Vines in pots from eyes, all the best sorts.

Plans, Models, and Estimates of Horticultural Buildings, also Catalogues of Plants, Vines, Seeds, &c., forwarded on application.—J. Weeks and Co., King's-road, Chelsea, London.

TOOTHACHE PERMANENTLY CURED by using BRANDE'S ENAMEL for filling decaying Teeth, and rendering them sound and painless. Price 1s. Enough for several Teeth. The only substance approved by the medical faculty, as being unattended with pain or danger, and the good effects of which are permanent.

Sold by all Chemists in the United Kingdom. Twenty really authorised Testimonials accompany each box, with full directions for use. Sent free by return of post by J. WILLIS, 34, EAST TEMPLE CHAMBERS, WHITEFRIARS, FLEET-STREET, LONDON, in return for thirteen penny stamps.

CAUTION.—The great success of this preparation has induced numerous unskilful persons to produce spurious imitations, and to copy BRANDE'S ENAMEL advertisements. It is needful, therefore, to guard against such impositions, by seeing that the name of John Willis accompanies each packet.

SEASONABLE PRESENTS.—At this festive period of the year, friends and lovers are more than usually desirous of shining in PERSONAL ATTRACTION, and the following unrivalled discoveries for the Toilet are called into increased requisition, namely—

ROWLANDS' MACASSAR OIL,

for creating and sustaining a luxuriant head of hair;

ROWLANDS' KALYDOR,

for rendering the Skin soft, fair, and blooming; and

ROWLAND'S ODONTO,

OR PEARL DENTIFRICE,

for imparting a pearl-like whiteness to the Teeth.

The patronage of Royalty throughout Europe, and the high appreciation by Rank and Fashion, with the well-known infallible efficacy of these articles, give them a celebrity unparalleled, and render them a peculiarly

ELEGANT AND SEASONABLE PRESENT.

Beware of Spurious Imitations.—The only Genuine of each bears the name of "ROWLANDS'" preceding that of the article on the wrapper or label, with their signature at the foot, in *red ink*, thus—

A. ROWLAND AND SONS.

Sold by them at 20, Hatton-garden, London; and by respectable Chemists and Perfumers.

PRICE FOURPENCE, OF ANY BOOKSELLER.

CONTENTS OF THE NUMBER FOR SATURDAY LAST, DECEMBER 21, OF

THE ATHENÆUM,

JOURNAL OF ENGLISH AND FOREIGN LITERATURE, SCIENCE, AND THE FINE ARTS.

Thirty-two large Quarto Pages.

Reviews OF, WITH EXTRACTS FROM

Christianity in Ceylon. By Sir J. E. Tennent.
Collegiate Education in Ireland. By Sir R. Kane.
Encumbered Estates of Ireland.
Narratives of Shipwrecks. By W. O. Gilly.
New Serials.
Christmas Tales.
Goethe's Works.
Selections from French Poets. By R. F. Hodgson.
Shakespeare's Heroines. By Mrs. Cowden Clarke.

Original Papers.—Memoir of Mr. William Sturgeon—Expedition to Central Africa.

Our Weekly Gossip.—Dwellings of the Poor—English Dramatic Literature—Auctioneers' Catalogues—Modern Aërostation—Discovery of an Ancient Brooch—Exploration of Southern Africa—Restrictions on the Press in Germany—Judicial Reform in America.

Societies.—Proceedings of the Royal Antiquaries—Statistical—Botanical—Syro-Egyptian—Civil Engineers—British Architects.

Fine Arts.—Mr. Owen Jones "On the Decoration of Interior of the Great Exhibition Building"—New Method of producing Plates for Printing Ferns, &c.

Fine Art Gossip.—Burford's Panoramas—Death of Mr. Ritchie—Monument to Lord Jeffrey—Restoration of the Augustine Vase in the Vatican.

Music and the Drama.—Princess's Theatre (Henry IV.)—Sadler's Wells.

Musical and Dramatic Gossip.—The Grand National Concerts—York Choral Society—Auber's new Opera—Musical enthusiasm in America.

Miscellanea.—Quantification of the Predicate—Origin of Ragged Dormitories—The Serpentine and the Exhibition.

Order the Athenæum of any Bookseller.

TILEY'S VIOLA ARBOREA, OR PERPETUAL TREE VIOLET.—VIOLA ARBOREA, or the PERPETUAL TREE VIOLET (true).—In answer to numerous inquiries for the above, and great satisfaction given by the plants sent out last season by EDWARD TILEY, he begs to state that he has this year a fine stock of the above beautiful DOUBLE VIOLET now to dispose of, which he can highly recommend, this being the proper time for making beds or potting. They are beautifully scented; the blooms are as large as the double blue Hepatica; they bloom freely from August till the end of May, and are perfectly hardy. Twelve of these plants grown in pots will scent a large greenhouse; and a small bed, 9 feet long by 3 feet wide, will be sufficient to furnish a family with bouquets the whole of the winter and the spring. They should be planted in rather a dry situation and a loose soil, as the Violet will thrive and bloom finer than in wet or clay borders.

E. T. has been informed by the gentleman that introduced it into this country, that he has seen them growing in the thickets of Persia to the height of 4 feet, with large bushy heads to them, and hundreds of blooms on them at the same time. Large bushy plants, 6*s.* per dozen; smaller ditto, 3*s.* per dozen; or 1*l.* per hundred.

Also he has a fine stock of that splendid YELLOW VIOLET, or VIOLA LUTEA, which has been so much admired at the London exhibitions. In colour it is equal to the Crocus. Strong bushy plants 2*s.* 6*d.* each; or smaller ditto, 1*s.* 6*d.* each.

KITLEY'S GOLIAH STRAWBERRY.—Strong well-rooted plants at 3*s.* per dozen.

True BATH COS LETTUCE SEED, 1*s.* per packet.

Extra fine SWEET WILLIAM SEED, saved from 24 distinct varieties, 1*s.* per packet.

ANTIRRHINUM SEED from all the best varieties, 1*s.* per packet.

WINTER CUCUMBER.—Lord Kenyon's Favourite, 2*s.* 6*d.* per packet.

The whole or any quantity of the above will be sent, postage and package free, to any part, on receipt of a Post-office order, or the amount in penny postage stamps.

Sold by EDWARD TILEY, Nurseryman, Seedsman, and Florist, 14, Abbey Church-yard, Bath.

The Gardeners' Chronicle.

SATURDAY, DECEMBER 28, 1850.

MEETINGS FOR THE ENSUING WEEK.

THURSDAY,	Jan.	2—Zoological	3 P.M.
FRIDAY,	—	3—Botanical	8 P.M.
SATURDAY,	—	4 { Asiatic	2 P.M.
		{ Medical	8 P.M.

In DE CANDOLLE'S Vegetable Physiology an attempt is made to show, by the examination of various aged trees, that the rate of formation of TIMBER diminishes rapidly after a given period, varying with the species, but tolerably limited in each species; from which it might be inferred that it is more profitable to fell it at the time when decrease commences, than to let it stand to a later period. In a country like England this is, or at least has been, so much a question affecting the value of landed property that it might have been expected to have met with a strict examination. Nevertheless the statement to which we allude, made about 18 years since, remains to this day, as far as we know, uninvestigated: and yet what more important? for if DE CANDOLLE'S results were exact, it is clear that timber should be felled while still comparatively young; or if inexact the practice would be attended with great loss. It is in the hope that some inquiry may now at least be made into the matter, that we draw attention to the subject.

The French physiologist assumed that the age of an European forest tree could be determined by the number of its rings of wood; an assumption which, although not strictly true, may nevertheless be taken as sufficiently exact for common purposes. Examining by this rule such old trees as he met with, he was led to infer that the period of quickest growth in the Oak lasted 60 years, followed by another period when the growth is slower but more regular. In the Larch the vigour of growth appeared to diminish after 40 years, the Elm after 50 years, the Beech after 30 years, the Spruce Fir after 40 years, the Yew after 60 years. This resulted from a comparison of the rate of increase in semi-diameter every 10 years, in the following and other cases. For example:

Oak A, aged 98 *years,* grew thus: in the first 10 years 4 lines; in the second 10 years 3 lines; then $3\frac{1}{2}$, 6, 7, $7\frac{1}{4}$, $6\frac{3}{4}$, $7\frac{1}{4}$, 8, 7, 6.

Oak B, aged 130 *years:* 27, 31, 27, 30, 24, 22, 28, 22, 16, 16, 15, 16, 15.

Oak C, aged 210 *years:* 5, 8, $11\frac{1}{2}$, 6, $6\frac{3}{4}$, 7, $5\frac{1}{2}$, $5\frac{1}{2}$, $4\frac{3}{4}$, $4\frac{3}{4}$, $4\frac{3}{4}$, $4\frac{1}{2}$, $4\frac{1}{2}$, $4\frac{3}{4}$, 5, $4\frac{1}{4}$, $4\frac{1}{2}$, 5, $4\frac{1}{2}$, $4\frac{1}{2}$, $4\frac{1}{2}$.

Larch, aged 255 *years:* 24, $30\frac{1}{2}$, 29, 36, 23, $28\frac{1}{2}$, 23, $14\frac{1}{4}$, 15, 12, 16, 13, $10\frac{1}{4}$, 11, $11\frac{1}{2}$, $10\frac{1}{2}$, 10, $9\frac{1}{2}$, 9, $10\frac{1}{2}$, 11, $11\frac{1}{4}$, $10\frac{1}{2}$, 11, $10\frac{1}{4}$.

Elm, aged 335 *years:* 8, 22, $29\frac{1}{4}$, 36, 44, 37, $39\frac{1}{4}$, 33, $29\frac{1}{2}$, $22\frac{1}{2}$, 15, 15, 12, 12, 9, $9\frac{1}{2}$, $8\frac{3}{4}$, $11\frac{1}{2}$, 15, 17, 17, 13, 18, 14, 13, 12, $8\frac{3}{4}$, 13, 14, $14\frac{1}{2}$, 8, $8\frac{1}{4}$, $10\frac{1}{2}$.

Beech, aged 48 *years:* 8, $6\frac{1}{2}$, $7\frac{1}{4}$, 5, 5.

Spruce Fir, aged 130 *years:* $20\frac{1}{2}$, 27, 26, $22\frac{1}{2}$, $7\frac{3}{4}$, 18, 9, $8\frac{1}{2}$, $6\frac{1}{2}$, $6\frac{1}{2}$, 11, 11.

Yew, aged 74 *years:* 4, $5\frac{3}{4}$, 6, $5\frac{1}{4}$, $3\frac{1}{2}$, $6\frac{1}{4}$, 4.

We quote these numbers rather for the purpose of showing on what kind of evidence DE CANDOLLE'S speculation was founded, than because we think they support his view. On the contrary, they are far too few in number to deserve much attention; and they do not in fact always confirm his opinion; but he intimates that, taken with other evidence, they do seem to confirm it.

Yet he himself suggests that the diminution which he found in the rate of growth might be owing to exterior causes, and not to any decay in the vital forces of the trees; and, among other things, he remarks that variable rates of increase may depend upon whether the roots meet with good or bad soil as they advance, or perhaps whether they grow more freely in consequence of being rid of neighbouring trees.

We have already said that this question remains without an English answer. To a certain extent it has been replied to by Messrs. BRAVAIS and MARTINS. These philosophers give the following as the result of their examination of the rate of growth of the Scotch Fir in different localities; partly derived from personal examination of numerous examples, and partly from information communicated to them.

PLACE.	No. of cases examined.	MEAN THICKNESSES OF THE ANNUAL LAYERS.							
		0–50 yrs.	50–100	100–150	150–200	200–250	250–300	300–350	350–400
		MM.	MM.	MM.	MM.	MM.	MM.	MM.	MM.
Kaafiord, in Finmark, Lat. 69° 57′ N. ...	20	1.00	0.84	0.69	0.50	0.44	0.39	0.29	
Pello, Lat. 66° 48′ N.	20	1.43	0.85	0.65	0.52				
Geffle, Lat. 60° 40′ N.	27	2.00	1.47	1.05	0.79	0.64	0.53	0.48	0.43
Halle, Lat. 51° 30′ N.	13	2.46	1.23						
Haguenau (Lower Rhine)	30	3.28	3.19	1.80?					

This seems not merely to confirm DE CANDOLLE'S theory of gradual decrease in vigour, after a certain age, but to give it additional probability; for every succeeding 50 years exhibits a lower rate of growth than took place in the previous 50 years. It is true, according to BRAVAIS and MARTINS, that in all these cases one year may indicate a quicker growth than the preceding one; but such anomalies disappear when we take the mean of a great number of years—the only admissible manner of stating such cases. But in all probability a fallacy lurks under these results, such as was suggested by DE CANDOLLE; for in another place (Annales des Sciences III., ser. 3, p. 373) these authors refer the progressive diminution of growth to the interlacing of the Fir roots, which gradually exhaust the soil in which they grow.

When trees grow singly, unaffected by neighbouring trees, age seems to bring no diminution in vigour, as is shown in the following table of Oak-growth at Geffle, the mean northern limit of the tree in Scandinavia.

The columns of the following Table contain the age of the tree, the length of the radius, the thicknesses of each set of 25 layers, reckoned from the centre to the circumference. The ends of the radii, containing less than 25 layers, are indicated by the prefix + and their length for each period is placed in the line, headed "Additional increase."

OAKS MEASURED AT GEFFLE.—Lat. 60° 40′ N., Long. 14° 58′ E.

Number.	Observer.	Age.	Semi-Diameter.	THICKNESS OF THE LAYERS, IN MILLIMETRES.									
				0–25	25–50	50–75	75–100	100–125	125–150	150–175	175–200	200–225	225–250	250–275
			MM.											
1	B	113	226.4	66.4	56.3	46.6	37.6	+19.5						
2	B	157	372.4	39.9	48.7	39.4	60.8	94.3	68.1	+21.1				
3	B	236	359.3	31.2	35.9	49 8	39.9	33.3	30.8	39.4	43.4	40.4	+15.0	
4	M	243	426.4	„	42.4	43.0	51.8	51.8	40.0	48.0	59.8	57.6	+32.0	
5	B	267	300.2	32.8	41.0	31.2	22.7	24.5	36 2	29.8	26.2	23.0	20.4	+12.4
Additional increase				0.0	0.0	0.0	0.0	+19.5	0.0	+21.1	0.0	0.0	+47.0	„
Total ...				170.3	224.3	210.9	212.8	223.4	175.1	138.3	129.4	121.0	67.4	
Divisors ...				5.0	5.0	5.0	5.0	4.52	4.0	3.28	3.0	3.0	2.16	
Mean Thickness...				42. 5	44 9	42.0	42.6	49 4	43.8	42.2	43.1	40.3	31 2	

Here it is seen that Oaks of considerable age showed, even in a bad climate, no sign of decrepitude, except No. 4, the centre of which had begun to decay. And that signs of decrepitude are attributable, in the Oak, to external rather than constitutional causes, seems proved by some observations of M. POIRSON, inspector of royal forests in France, who furnished BRAVAIS and MARTINS with the following statement of the average of growth of Oaks in the forest of Compiègne:—

OAKS MEASURED IN THE FOREST OF COMPIEGNE.
Lat. 49° 25′ N., Long. 0° 30′ E.
THICKNESS OF THE LAYERS, IN MILLIMETRES, EVERY 25 YEARS.

0–25	25–50	50–75	75–100	100–125	125–150	150–175	175–200
82.0	46.0	45.0	64.0	58.0	70.0	20.0	12.5

This table shows, as the authors observe, that the formation of timber in the Oak has no uniformity like that of the single Oaks at Geffle. "At the age of 30 years, vegetation languished; it recovered at about 80, diminished again at the end of a century, to be renewed at the age of 130; but after 150 years, it declined rapidly, up to 200 years. So that there were three maxima and three minima in the life of these trees. M. POIRSON reckons, among the causes of such alterations, the clearings that were made around the trees that were left. Thus a hard-wooded tree which has been choked up in its youth, by fast-growing white-wooded short-lived trees, and which, after their disappearance, takes up the space they occupied, will vary in its rate of growth, according to the confinement or freedom in which it has been successively placed. A tree cooped up in a clump for a certain number of years, will gain in bulk only the fourth or the eighth of what it would have acquired, if left at perfect liberty."

On the other hand the Ash seems really to decline at the end of 75 years. M. POIRSON furnished BRAVAIS and MARTINS with the following rate of growth of an Ash tree at Compiègne, uprooted in the wet soil of the summit of a sugar-loaf hill on the Côte Saint Pierre.

ASH MEASURED AT COMPIEGNE.
Lat. 49° 25′ N., Long. 0° 30′ E.
THICKNESS OF LAYERS, IN MILLIMETRES, EVERY 25 YEARS.

0–25	25–50	50–75	75–100	100–125	125–150	150–175	175–200
88.0	98.0	106.0	48.0	12.5	25.0	20.0	8.0

This is so like what was found to be the fact with some Ash trees examined by the above mentioned authors, near Upsal, that the two cases seem to point to a common law.

ASH TREES MEASURED AT UPSAL.—Lat. 59° 62′ N., Long. 15° 19′ E.

Number.	Observers.	Age.	Semi-Diameter.	THICKNESS IN MILLIMETRES.						
				0–25	25–50	50–75	75–100	100–125	125–150	150–175
			MM.							
1	M	147	256.6	52.4	66 8	47.0	35.0	29.4	+26.0	
2	M	148	265.4	56.0	66.1	54.8	40.7	26.2	+21.6	
3	M	156	326.6	64.5	91.1	63.6	42.0	34.5	24 5	+6.4
Additional increase ...				0	0	0	0	0	+47.6	
Total				172.9	224.0	165.4	117.7	90.1	72.1	
Divisors				3.0	3.0	3.0	3.0	3.0	2.8	
Mean thicknesses ...				57.6	74.7	55.1	39.2	30.0	25.7	

In these instances, BRAVAIS and MARTINS remark that the trees grew up to 50 years at a gradually increasing rate; and then quite as rapidly declined.

Such are the best facts with which we are acquainted concerning the rate of growth in forest trees; and we lay them before our readers in the

hope that they will excite the attention which they certainly merit, especially since they show how far we are from having any sufficient evidence concerning one of the most important questions in the art of foresting.

The manner in which cold acts upon plants is one of the problems which have never yet been solved, and probably never will be. We see its effects, but all attempts at investigating their causes have proved eminently unsuccessful. That a low temperature, or frost, acts differently upon different plants very nearly allied to each other is notorious; and this even where they are mere varieties of each other. The China Rose, for instance, resists any amount of English cold; the variety called the Tea-scented perishes, or suffers severely, in every ordinary winter. The gay-flowered Senecios of the Canaries, known in gardens under the name of Cinerarias, shrink from the mere approach of frost, and perish upon its first arrival; yet the Ragworts and Mugworts, and Groundsels, all equally Senecios, can bear a Russian winter. In like manner Oaks, Chestnuts, Conifers, exhibit similar differences in their power of resisting frost. How to account for this is the question.

It has been suggested that the fluids contained in different species of plants may themselves act differently in the presence of cold; just as oil of turpentine requires a temperature of 14° to freeze, while oil of Bergamot freezes at 23°, and Olive oil at 36°. But although this may be true to a limited extent, yet it by no means explains the phenomenon in question. The plant *x*, for instance, perishes from frost, while another, identical with it in nature, lives with impunity within 2 yards of it, both having been exposed to the same temperature. In this case the fluids of the two will be chemically the same, and yet the results are opposite. Again, the Long-leaved Pine (*P. longifolia*) is quite tender, while the Gerard Pine, exceedingly like it, is hardy; in this case there is no ground for supposing that the fluids contained in these species are different. In fact, except that all plants suffer from cold in proportion to the quantity of water they contain, we have no kind of evidence to show that the quality of their fluids has any material influence upon their power of resisting cold; for it is by no means true, as some too hastily assert, that resinous trees, like Conifers, are rendered hardy by the resin they contain; the Norfolk Island Pine, and the Malay Dammar are tender, although both resinous and Coniferous.

In this, as in so many other horticultural questions, the difficulty of the subject vanishes when we desist from a vain search after undiscoverables. It is by attempting to explain every phenomenon of life by the known laws of chemistry, electricity, and similar agencies, that we plunge into a labyrinth of perplexity—

"And find no end, in wandering mazes lost."

But the moment we admit the presence everywhere among plants of a *vital principle*, or of *vitality*, and thus recognise a direct analogy between plants and animals, the principle of life in the two kingdoms being identical, but differently manifested, then we tread on the firm ground consolidated by the march of ages, and find, in the experience of animal physiology, the elucidation of what is obscure in that of vegetables. It is true that we then abandon the pursuit of first causes, and confess the vanity of that curiosity which nothing can satisfy; but we exchange rationalism for materialism, and we learn how to apply experience to daily uses.

It is an axiom in animal physiology, that "the general effect of cold on living bodies, is a diminution of vital activity, which terminates, if the cold be intense, and its application continued, in death." (*Pereira.*) Hence it is to be inferred, that all living things whatsoever must finally perish beneath the influence of cold, provided it is severe enough, and prolonged enough. But living things have each their separate constitutional vitality, the power of which in resisting cold differs between species and species, or variety and variety, and even between individual and individual. It is a peculiarity derived from the great source of all things; a reality; inexplicable but indisputable; like light, and heat, and electricity. We see it manifested among plants between the yellow and the spider Ophrys, and the Tea Rose and the China Rose; as among animals between the ass and the zebra, the Negro and the Esquimaux, the terrier and the Italian greyhound. The moment we admit this principle, the mode of dealing with cold in gardens becomes analogous to that which experience tells us is effectual in the animal world. When a man is frozen, if he is suddenly thawed, he dies, or his limbs drop off; and so of frozen plants; nothing brings them such certain death as a sudden elevation of temperature. When the French retreated from Moscow, frozen noses and limbs were common, but immediate rubbing them *with snow* removed the tendency to congelation, and hence it became a practice for the unhappy men to look narrowly after each others noses; for each could see his neighbour's, although he could neither feel nor see his own. As long ago as the days of Hippocrates it was known that a man who had had his feet frozen, lost them if plunged into warm water. It is exactly the same among plants; it is certain that a frozen plant, though tender, will not perish if it is gradually thawed, by being watered plentifully with cold water. Thus early Peas, Kidney Beans, and the like, are often saved by merely giving them a good watering the first thing in the morning before the sun is on them. It is asserted, and we doubt not with perfect truth, that wall trees, whose blossoms have been frozen, have had their crop saved by copiously syringing before sunrise.

In all these cases it is, however, indispensable that the artificial thawing be practised before the solar rays can fall upon the object frozen; the sudden elevation of temperature necessarily produced by morning sunbeams, renders all after applications useless. And hence it is that the need of artificial thawing is altogether removed by planting tender things at the back of north or west walls, or behind screens. In such situations, sudden changes of temperature will not occur; but the natural thawing must of necessity be very gradual. An instructive example of this is now before us. In the summer of 1849, an evergreen New Zealand Beech, well known to be tender, was planted experimentally on the north of a ruined wall. In the succeeding winter it was remarked that the upper part of it was not screened from the sun; but about three-fourths of it next the ground was perfectly screened. On the approach of spring it was found that the part exposed to the sun was killed to the level of the wall; while the parts below the level were unchanged even in colour. The plant grew vigorously in 1850, and remains where it was originally planted, and we have no doubt will undergo the same fate as before. When we add this to the cases of Fuchsias, Camellias, Tree Pæonies, &c., now becoming so generally well known, it seems impossible to doubt that, the vitality of plants and animals being the same, the same methods of treatment which are known to be requisite in the one case are equally effectual in the other. Let us hope that this great truth will not be forgotten by any of our readers during the winter and cold spring that lie before us.

ON MAKING AND CONCRETING VINE BORDERS.

I have been much interested in reading Mr. Spencer's excellent remarks, at p. 772, on this subject; and having made two borders for early Vineries here, eight years ago, very similar in principle to those now recommended by Mr. Spencer, I am led to imagine that a brief account of my experience in the matter may possibly prove acceptable to some of your readers.

The old border, which was fully 4½ feet deep, without drainage, its soil rich, heavy, and very adhesive, was cleared out altogether, shaping the sub-soil (a mixture of clay and limestone), so as to slope well from the houses. We began forming the new border by building two loose dry stone walls (without mortar) from 9 to 12 inches wide; one close along the side of the front wall of the houses, and rising to within a few inches of the ground level, the other along the opposite, or south side of the border, and rising quite to the ground level, side drainage, and the admittance of air to the under part of the border, were the object of these walls, which extended the entire length of the border. The next step was filling up between the walls. This was effected by placing, as loosely as possible, very large stones in such a way as to form innumerable cavities, large enough for a good-sized dog to traverse the drainage in all directions. A depth of 2 feet of these larger stones was covered by 6 inches of smaller stones, lessening in size, as the top of the drainage was approached, which was nothing more than *clean* very coarse gravel; on this was put a layer of sandy loam turfs, the grassy side downwards. And then we wheeled in the compost, which consisted of two-thirds poor sandy loam, obtained in very thick turfs, from a paddock, and one-third of lime rubble, leaf soil, and rotten cow-dung, in about equal parts. The whole had been roughly chopped, and well mixed together a few weeks only before using it. When about half the compost had been wheeled into the border, we strewed on it some three or four bushels of unbroken bones, of various sizes, which were covered with another foot of soil, and the border was finished, its entire depth being 4½ feet—*i. e.*, 2 feet of soil, and 2½ feet of drainage.

The young Vines, which were planted in May, grew with great vigour. We took a slight crop from them the second year after planting, and every year since they have produced an increasing quantity of Grapes.

In forcing the Vines, my practice, until last season, was to cover the border with from 12 to 18 inches of leaves, adding a little long dung on the top, in order to prevent the leaves from being blown away; but this covering was never very satisfactory, owing to our inability to keep a steady, continuous heat in it; and on examining the border, during the forcing season, I have often been surprized at its wetness, though drained, bottom and sides made of very loose materials, and only 2 feet deep in soil. It was evident, two years ago, that its texture was every year becoming more adhesive and unsatisfactory, and, on seeing Mr. Fleming's mode of concreting the surface, as detailed in the *Chronicle* of last year, I was led to adopt it on the border of the largest and earliest forced of the two houses. I put the concrete on in September, 1849, and after it became dry and hard, covered it with a few inches of litter, as a protection from frost. This was the only covering the border had all through the season. I regarded it as an experiment, and it proved a successful one; for, last season, we cut, from this house, the heaviest crop of the best and blackest Grapes the Vines have ever produced, and the new wood for the coming year is strong and well ripened. In putting on the concrete, provision was made for subsequent watering; and during the last swelling of the Grapes, the border received two rather copious waterings with weak liquid manure, and also two more during the summer months, after the Grapes were cut. I have lately examined the soil under the concrete, in different parts, and find it in good condition. We are just now starting the Vines, with every prospect of success; and should another season's experience prove as favourable for concreting as that of the past has done, I purpose extending it to the border of the other early Vinery. In our late houses I do not think it necessary, though in very low wet localities it may possibly be useful. *William Loader, gardener at Blaise Castle, near Bristol, December* 16.

BRITISH SONG BIRDS.

No. XI.—Having now made a somewhat formidable collection of the feathered tribe, say about 100, and confined them all in one room—it behoves us to pay marked attention to their peculiarities and habits; the more so, as perhaps in the first instance, no two of them will be found alike in disposition. By studying their likes and dislikes, there will be little difficulty in making them a "united happy family." If any "incorrigible varlet" appears among them, out with him at once, by way of "example."

We may get a good hint or two on the subject of colonisation from the "Happy Families" confined in large locomotive cages, which are now being exhibited in three different quarters of London, daily.

In these cages, we find living together in perfect amity—cats, mice, rats, pigeons, crows, sparrows, hawks, owls, starlings, ferrets, monkeys, rabbits, weazels, young foxes, and leverets; *cum multis aliis*. The extreme natural opposites seem, in all these animals, to have become annihilated. Thus, we see the sparrow and the hawk doing the loving and the amiable with the most sympathetic affection; the rat revelling luxuriously in the warm embraces of Grimalkin; the ferret and weazel frolicking with the rabbit; the monkey carefully handling the pigeon's eggs, as he replaces them (after first satiating his prying curiosity), under the sitting mother; and, among other eccentricities, the leveret "polk"-ing with the fox.

I am not at this moment prepared—but I hope ere long to be so—to state "how" this naturally-savage colony has been brought to so complete a state of civilisation. There is no doubt that the "eye" of the master is the great talisman; for it visibly acts as an all-powerful agent on the nerves of every one of the animals. They understand, beyond all dispute, and with a very little drilling, *what* is intended by their master's movements, and peculiar expression of countenance; for they instantly obey him. I believe "the stick" *is*, on some occasions, introduced in the background. "It enters," no doubt, "into combination" with the other "effects;" but I never tried it.

The next grand step, with a view to establish harmony in the colony, is to see that each and every animal has, provided for it, its own natural food. If the pangs of hunger were to come on cruelly sharp, and the hour of breakfast, dinner, and supper, were to be lost sight of, and the regular supplies stopped,—we should have a realisation of the old nursery tale, "The cat began to eat the rat—the rat began, &c. &c." A few hours, or less, would devastate the colony. I can almost imagine I hear the bones of the bounding leveret being crunched beneath the jaws of the salacious fox.

Speaking of the leveret, it is worthy of remark that this animal, being *feræ naturæ*, is one of the most difficult to tame, permanently, of all creatures. The late Sir John Sebright called on me, some years ago, to see my collection of Robins, of which he had heard so much; and during a lengthened conversation of great interest to both of us, he put me in possession of many singular facts with respect to animals "by nature wild." To mention only two:—Sir John told me he had procured some eggs of the wild duck, and placed them under a domestic hen. They were hatched in due course, fed, and brought up with the other chickens, ducks, &c., in the poultry-yard. Still, they gave early signs of the wildness of their nature. They were "pinioned," and thus made "apparently" tame; but when the wing-feathers reappeared, the birds one day, on a slight alarm, took flight, and disappeared altogether.

The second instance of natural wildness being indomitable, presented itself in the case of some half-dozen wild rabbits, taken from the nest soon after they were kindled. Sir John lavished on them much of his attention; tried every means to tame them; all in vain. The animals gave early evidence of the instinct of their

nature, and were ultimately let loose to run riot in a warren.

I have been led to pursue this discussion, in order to show how necessary it is to study the habits and dispositions of all birds domiciled in an aviary. This brings us to the grand and all-important question of Proper Food. *William Kidd, New-road, Hammersmith.*

VILLA AND SUBURBAN GARDENING.

WHETHER should Pears be planted as Espaliers or as standards? This is a very important question, and one not sufficiently considered even by good gardeners. The French are more politic; where standards are planted they take measures to secure them against the effects of violent winds. Such fruits, for example, as Duchesse d'Angoulême and Beurré Diel have no chance on standards of maintaining their hold during a heavy gale, consequently, they get blown down at the very period when of all others it is most important for their perfect maturity that they should remain upon the trees. Autumn gales are uncertain as to the period of their arrival, but we never escape them; and hence the necessity of guarding against them. How often do we not find Pears condemned as gritty, tasteless, and sugarless, when the variety is not at fault at all, but when the evil lies in the treatment they have received. Such is most frequently the case with the larger kinds, which will hang on the trees very well when the branches are perfectly secured, but which are not able to sustain their position during high winds, when the boughs are at liberty to be blown about. On this account experience is decidedly against planting heavy Pears as standards, unless the whole tree is firmly fastened, and numerous schemes have been suggested for this purpose. The French use a central stake of wood or iron the height of the tree; they then fasten strong wire to the top, bringing it out at the bottom, and securing it to the ground at five or six points, and at a similar distance from the bole of the tree, so as to cause it to exhibit the appearance of a cone. Wires are then fastened to the centre stake and brought out to the exterior lines of wire in a horizontal direction, as the branches may indicate. The latter are then firmly tied to these horizontal lines. It will be observed that the power of resistance is equal to the force of pressure from whatever point the latter may come, and the numerous ligatures employed in fastening the branches in every part, protect the whole tree in the most perfect manner. I have also observed large and fine specimens of fruit secured individually. The French place more value upon Pears than we usually do. Their Pears are thinned with as much exactness as we employ in regard to our Peaches, consequently their specimens are much finer, and the flavour is superior; but the latter is no doubt in some measure attributable to the climate. They do not permit their trees to grow into a thicket, consequently sun and air can penetrate every part, a matter worth the attention of gardeners who live in less sunny climes. *Pharo.*

NOTES OF A TRAVELLER.—No. XIV.

MOUTAN GARDENS, NEAR SHANGHAE.— Leaving the south garden described in my last letter, I walked onwards to the Moutan Nurseries. They are situated near the village of Fa-who, about 5 or 6 miles west of Shanghae, and in the midst of an extensive Cotton country. On the road I met a number of Coolies, each carrying two baskets filled with Moutans in full flower, which were on their way to the markets for sale. When I reached the gardens I found many of the plants in full bloom, and certainly extremely handsome. The purple and lilac-coloured kinds were particularly striking. One, a very dwarf kind, and apparently a distinct species, had finely cut leaves, and flowers of a dark velvety purple, like the Tuscany Rose of our gardens. This the Chinese call the "black" Moutan, and I believe it is the same which Dr. Lindley has described in the Journal of the Horticultural Society, and named P. atrosanguinea. Another kind called the "tse," or purple, has double flowers of a large size: this is probably the variety reported to have 1000 petals, and which is said to exist only in the garden of the Emperor. The third is called the "lan," or blue: this is a lilac variety, with flowers of the colour of Glycine sinensis. There are others of various shades of purple, perfectly distinct from these, and equally fine.

The double whites are also numerous and handsome. The largest of these Dr. Lindley has named P. globosa, but there are four or five others nearly as large and double. Some of them have a slight lilac tinge, which gives a richness to the colour. The most expensive is one called "wang," or yellow, by the Chinese: it is a straw-coloured variety, rather pretty, but not so handsome as some of the others.

The reds (Hong) are also numerous. Curious enough, those kinds which are common in Canton and England are rare here. There are about half-a-dozen of new varieties of reds in these gardens: one of them, called "Van-yang-hong" by the Chinese, is the finest flower I ever saw. The flowers are of a clear red colour, unlike any of the others, perfectly double, and each measures about 10 inches across. Altogether I numbered about 30 distinct varieties in these gardens.

Nearly all these fine varieties of the Moutan are quite unknown in Canton. This may seem strange in a country where the people are proverbially fond of flowers, but the Chinese are so machine-like in all their movements, that after a little acquaintance with them, we cease to wonder at the apparent anomaly. The fact is, the Canton gardens are supplied with Moutans by another district, which lies much further to the west than Shanghae. From time immemorial the same gardens have supplied these flowers; they came always by the same road and at the same time of the year. Shanghae, until the close of the last war, never seems to have had any connection with Canton, in so far as flowers were concerned, consequently these fine varieties of the tree Pæony never found their way to the south and from thence to Europe.

The Moutan gardens are numerous, but each is upon a very small scale. They look more like cottage gardens than anything else, and are managed in the same way as gardens of this description generally are, namely, by the members of the family. The female part of the community seem to take as much interest in the business as the males, and are very avaricious and fond of money. I invariably found I had to pay higher prices for the plants when they were consulted on the matter. The soil of these gardens is a rich loam, well manured, and thus rendered lighter in texture than that of the surrounding country in which the Cotton grows.

The propagation and management of the Moutan seems to be perfectly understood by the Chinese at Shanghae, much better than it is in England. Our nurserymen always complain that they cannot propagate it with facility, and consequently this fine flower is invariably high in price. I will tell you how the Chinese manage the business, in order that your nursery readers may give the system a trial.

In the beginning of October large quantities of the roots of a herbaceous Pæony* are seen heaped up in sheds and other outhouses, and are intended to be used as stocks for the Moutan. The bundle of tubers which forms the root of a herbaceous Pæony is pulled to pieces, and each of the finger-like rootlets forms a stock upon which the Moutan is destined to be grafted. Having thrown a large number of these rootlets upon the potting bench, the scions are then brought from the plants which it is desirable to increase. Each scion used is not more than 1½ inch or 2 inches in length, and is the point of a shoot formed during the bygone summer. Its base is cut in the form of a wedge, and inserted in the crown of the finger-like tuber just noticed. This is tied up or clayed round in the usual way, and the operation is completed. When a large number of plants have been prepared in this manner they are taken to the nursery, where they are planted in rows about a foot and a half apart, and the same distance between the rows. In planting, the bud or point of the scion is the only part which is left above ground; the point between the stock and scion, where the union is destined to take place, is always buried beneath the surface. Kæmpfer states that the Chinese propagate the Moutan by budding; but this must have been a mistake, as budding is never practised in the country, and is not understood. He was probably deceived by the small portion of scion which is employed, and which generally has only a single bud at its apex.

Many thousands of plants are grafted in this manner every autumn, and the few vacant spaces which one sees in the rows attests the success which attends the system; indeed it is rare that a graft fails to grow. In about a fortnight the union between the root and the scion is complete, and in the following spring the plants are well-established and strong. They frequently bloom the first spring, and are rarely later than the second, when they are dug up and taken to the markets for sale in the manner I have described. When each has only one stem and one flower bud, it is of more value in the eyes of the Shanghae nurseryman than when it becomes larger. In this state it is more saleable, it produces a very large flower, and it is easily dug up and carried to the market. I could always buy large plants at a cheaper rate than small ones, owing to these circumstances.

In the gardens of the Mandarins it is not unusual to meet with the tree Pæony of great size. There was one plant near Shanghae which produced between 300 and 400 blooms every year. The proprietor was as careful of it as the Tulip fancier is of his bed of Tulips. When in bloom it was carefully shaded from the bright rays of the sun by a canvas awning, and a seat was placed in front on which the visitor could sit down and enjoy the sight of its gorgeous flowers. On this seat the old gentleman himself used to sit for hours every day, smoking pipe after pipe of tobacco, and drinking cup after cup of tea, while all the time he was gazing on the beauties of his favourite "Moutan wha." It was certainly a noble plant, and well worthy of the old man's admiration; long may he live to sit under his awning and enjoy such a sight. *R. F.*

* A variety with small single flowers.

Home Correspondence.

Epiphyllum truncatum and its varieties. — I consider that these ought to be brought more into notice than they are at present. If we take into consideration their time of flowering, along with the beauty of the blossoms and the graceful appearance of the plants, we must come to the conclusion that, as a whole, we have little to equal them during the dark days of winter. What have we better for decorating our conservatories and drawing-rooms throughout November, December, and January? By exciting some, and retarding others, I can have a prolongation of bloom during these comparatively flowerless months. But, alas! how often do we meet with plants, all but annihilated with scarcely a leg to stand upon except a wooden one, of a pale sickly appearance, either soddened with water, or starved for pot-room, pent up in a dark corner of a stove or forcing-house, when they ought to be in the open air ripening their wood for a future display of flowers. The method I adopt to insure success, as regards their treatment, is as follows: I grow none on their own bottoms; they are all grafted on Cereus speciosissimus, which I consider a better stock than Pereskia aculeata, as the grafts are not so liable to be outgrown by the stock on the former as on the latter. Select some clean healthy plants that have been struck from cuttings the previous year for stocks. In March introduce them into a stove or pit where there is a heat of from 50° to 70°. When they show signs of growing, with a sharp knife make incisions in the angles alternately all round from 4 to 6 inches apart, and place one graft on the top, fastening it with a spine of the stock, and proceed in the same manner with the sides. I prefer the grafts from one-year-old shoots, they require nothing farther than shading, and keeping rather close for a month or six weeks. In the course of two months they will begin to show signs of growing, then give them more air and light, and keep the stocks divested of all suckers as they appear. As regards height, they may be from 1 foot to 6, that all depends upon taste and convenience. A plant grafted 1 foot high will form a handsome bush, 2 or 3 feet across, hanging over the sides of the pot, and supported with a wire trellis underneath; cylindrical trellises are the best for showing tall plants to advantage. As regards culture, presuming the plants have done flowering, and are stored away on a shelf in the greenhouse, or any other convenient place, free from damp, and kept rather dry at the roots, they will require nothing more till about the middle of March. Then they must be brought to the potting-shed and repotted; this operation requires to be performed very carefully, as the shoots are easily broken. The soil that I find best suited for them is, two parts decayed turf, one decomposed cow-dung, and one river sand, or, what is better, the grit that is washed by the rain on the sides of turnpike roads. These well incorporated, together with a little leaf-mould and some pieces of charcoal, make a suitable compost; the pots must be well drained, 3 inches at least for large plants. Then proceed to shift them very carefully, by rubbing part of the old mould away, and pressing the new rather firmly among the roots; readjust the trellises, and the work is completed. Afterwards place them in a gentle bottom heat, either in a stove or pit, and give a good watering, allowing the thermometer to range from 50° to 70°; giving them a syringe in the morning when there is an appearance of a fine day, and they will soon start into growth. Then, light, air, and moisture are beneficial to them at this stage, frequently turning the plants, so as to balance them on all sides; give manure water once a week when they are in a growing state, and regulate the young shoots; pinch some out where they are coming too numerously, in order that the plants may be equal on all sides. After they have made their growth, or towards the end of July, remove them to a greenhouse, or cold pit, for a short time, preparatory to placing them out of doors; withhold manure water at this stage, and keep them rather dry, in order that the wood may get thoroughly ripened; they will require protection from wind and rain; place them on coal ashes in a south aspect, at the bottom of a wall or hedge, till they have set their flower-buds. Towards the middle of September, remove them to a light airy place in the greenhouse, and introduce them into the stove or forcing-pit, in succession, as the demands of the family may require. I have proved by this management that there is no difficulty in getting them to bloom freely. By paying attention to a few minor points, as regards their rest and growth, they will more than amply repay the little labour bestowed upon them. Before the bloom expands, remove them to a cool place, in order to prolong it, and enrich its colour. *D. H., Cirencester.*

Vine Pillars.—I beg to call the attention of all who are incredulous of the success of Mr. Clement Hoare's pillars to the following fact related by Mr. Thomas Hitt, in his treatise on fruit trees, Chapter IV., page 10: "At Belvoir Castle, a seat belonging to his Grace the Duke of Rutland, there was a Vine which bore a white Muscadine Grape, growing out of the stony foundation of a wall, without any other roots than what were fixed therein; for the border was taken away from the wall many years before I saw it, and this Vine produced better fruit, and earlier ripe, than any of the same kind in these gardens, except those planted against the stove walls." Hitt on fruit trees is an old book,* and many may not have seen the extract I have taken from it. I took up a branch of a Vine this winter, which I had buried in the summer, and I found the branch had sent many roots into the wall's foundations. The Yew tree will grow upon a wall, the Mountain Ash will do the same; and as the Vine will do so, why should it not grow in Clement Hoare's composition, and in time do better than Vines out of doors in common circumstances, seeing the Belvoir Castle Vine did so under more trying conditions? *C. A. A. Lloyd.* P.S. Ash trees, Sycamore, Elder, and Witch Elm, are now growing upon the tops of the walls and towers of Whittington Castle. A Yew tree is growing out of the side of the wall of my coal yard, and a Mountain Ash on the top

* The title page stands thus:—A Treatise of Fruit Trees. By Thomas Hitt, Gardener to the Right Honourable Lord Robert Manners, at Bloxholm, in Lincolnshire. London: Printed for the Author, and sold by T. Osborne, in Gray's-Inn, 1755.

of a wall in my garden. Gooseberry and Currant trees will also grow upon the tops of walls. *Dec.* 23.

Fixed Filters in Wells.—Observing that you have referred a correspondent to my former communication on this subject, at p. 549 of the present year's volume, I am desirous to correct an error and to suggest two very material improvements on the apparatus there described, which an experience of its working effects during the last 6 months has afforded. The error alluded to relates to the effect of the filter on the taste of a strong chalybeate; probably the daily use of the water familiarising our palates with its flavour, may have created the belief that this was changed: be that as it may, it is certain that the filter I have employed has *not* had this imaginary effect, but it is by no means improbable that the taste, caused by the more oxidising of the iron contained in the mineral through which the water percolates, may be neutralised or improved by a filter composed of the proper chemical ingredients for this purpose. I should feel very much indebted to any one of your scientific correspondents who would communicate or suggest the materials of a filter by which so desirable an effect could be produced. The improvements I would suggest relate to the occasional cleansing, renewing, or changing the materials of the filter and of the well. By using the barrel (which was chosen simply as the implement most easily preserved for such experiments) it is difficult, if not impossible, from its shape and construction, to arrange the apparatus so as to allow the filter to be cleansed or changed without taking the whole out of the well, bodily—this would be a very cumbrous proceeding. It was also impossible to pump the water lower than the top of the filter, which would leave some five feet of water in the bottom of the well, unless some additional arrangement is made for this purpose. To effect the first of these objects, in place of a barrel it would be much better to use a square wooden box of the necessary dimensions, and having the filter to slide out and in on one side, like a drawer. Were it made so, the filter alone might be drawn out and then pulled up to be cleansed, removed, or changed at pleasure, leaving all the rest of the apparatus standing. This, however, it will be observed, could not be done without pumping the well dry, when it too might be cleaned. To effect the latter object, instead of carrying the pipe of the pump direct into the head of the barrel or box, without any joining, it would be necessary to cut the pipe a few inches above the top of the barrel. Each of the ends so cut must then be furnished with a screw or worm, over which a moveable coupling screw plays, similar to those used in coupling and uncoupling the flexible water-pipes of a locomotive engine with its tender. When these ends are disunited, a small hose of gutta percha tube, having a similar screw or worm at its upper end, and some holes, forming the snore of a pump at its lower end, could be attached to the pipe of the pump, and if of sufficient length to reach the bottom of the well, it will effectually and easily empty it whenever required. With these two small alterations I consider the apparatus to be in as effective a working state as it is susceptible of. If your correspondent wishes a fixed filter for a cistern instead of a well, he will see a description of one which I have found to be very suitable, in a former volume. *R. S., Edinburgh.*

How to keep Cucumbers fresh after they are cut.—On the 15th inst. I had three brace of Cucumbers more than I wanted for present use, and I have contrived to keep them fresh in the following manner. I placed them in my Cucumber box, covered them with dry paper, buried them in silver sand, and I have them now as good as when I cut them, and to all appearance they will keep for 10 days longer. The sort is Mills' Jewess. *H. Stilwell, Frogmore, St. Alban's, Herts.*

Rearing of Silkworms in England.—Your correspondents upon this subject do not seem to have had much personal experience in the management of silkworms. I believe a Mr. Buckworth, a merchant, tried to introduce silkworms into England, but abandoned the attempt. For several years myself and others (a family party), used to rear a large number for amusement; we fed, watched, and tended them; spun the silk, and all *et cæteras*, amongst us. As soon as the eggs were hatched, we commenced feeding the young worms with Lettuce leaves; and when Mulberry leaves were abundant, we then changed their diet for these. We had a very fine quantity of silk, of various shades. To produce silk enough for trade purposes, or rather for commerce, it must be conducted upon a factory system. There is no secret in the art of rearing silkworms, nor in their management; the great difficulty lies in getting a sufficiency of food, and, this consisting principally or altogether of the leaves of the Mulberry tree, till such time as these are cultivated in sufficient numbers to provide these interesting creatures with support, there is no hope of an English silk trade. *X. Y. Z., Hants.*

Vine Borders.—We have had the large Vines at Hampton-court and at Cumberland-lodge pointed out to us as examples of good Vine growing. The former has been produced in a sandy alluvial soil resting on a gravelly bottom, and the latter in sandy loam, also on gravel. We may therefore infer that good drainage is necessary. The next thing recommended is rich soil, because the Vine must be well fed; but in the gardens at Nettlescombe, Somersetshire, a black Hamburgh Vine was planted, I should say about 18 years ago, on a rock, and on the south side of the gardener's house: it grew with such rapidity that I was induced to make some inquiries as to the nature of the material it was planted in. I found that two barrow loads of stones had been taken out of the rock, and that the hole had been filled up with soil, over which flat stones were laid in mortar, making the surface as firm as the rock. The soil must have been exhausted of its nourishment in two years, and the top had no more protection than Nature provided for it. I spent seven years in the garden at Nettlescombe, and was eye-witness to the amount of its produce, which was sometimes enormous. If the bunches had had the assistance of a frame in the process of swelling, they would have weighed on an average 1 lb. each. They were always well coloured, and, in favourable seasons, excellent in flavour. I never saw half the quantity of Grapes on a single Vine as were on this one, except the one at Hampton Court (the Cumberland-lodge one I never saw). It has a straight stem about 8 feet in height, where it branches out horizontally, carrying a leader to the roof on either side of the stem. The branches are about 20 inches apart, and well trained. In October, 1845 (the last time I saw this Vine), it was completely loaded with fruit, although Grapes had been taken from it to supply the table for a long time. In the previous year it furnished the house with fruit up to the time the frost set in, when the remainder was removed to the fruit-room. Although no assistance could be given it in the shape of nourishment, I have taken shoots from the points of the branches 15 feet in length, and of no ordinary circumference. The rock out of which it grew consists of a red gritstone, belonging to the slate formation. This kind of material is excellent for retaining just sufficient moisture to support a healthy vegetation and no more. I am afraid that many will find Mr. Spencer's remarks too true, viz., that in the course of ten years or more, undrained rich compost Vine borders will become a heavy sour mass. I saw one lately that had been made about that time, and which appeared to consist of a rich mixture of soils; the Vines had done well in it for some time, but ultimately the fibrous roots gradually decayed, until at last the Vines had hardly strength to make a shoot. The whole was remade, and it was then ascertained that the old border had been formed six feet deep, without stone or rough material of any kind being placed in the bottom for carrying off the stagnant water. The situation was naturally damp, which aggravated the evil. *W. Culverwell, Thorp Perrow.*

Phaius grandifolius.—Perhaps no plant, either in the Orchid-house or stove, better repays a little extra care and attention than this Phaius, and if induced to put forth its blossoms at this season of the year, it is sure to be greatly admired. A plant of it here, at the present time, is sending up 12 flower-spikes, each about 5 feet high, and having from 12 to 17 blossoms, and the leaves are from 3 to 4 feet in length, giving the plant altogether a noble, Palm-like appearance. In describing the method of cultivating it, we will begin with a young plant in February. I then place it at once in the warmest part of the stove or Orchid-house, and give it every encouragement in the way of plenty of root room, heat, air, and moisture. The soil which I employ for it is peat and loam, using plenty of crocks, and I never on any account allow the roots to become pot-bound, as it is next to impossible to grow a large plant in a small pot. My largest specimen occupies a tub 20 inches wide and 15 inches deep. I keep my plant growing on in this way for about 12 months, at the expiration of which it generally shows symptoms of blooming. At all events it will flower as soon as it has strength enough, and the higher the culture the stronger and finer will the bloom be. After blossoming, the same treatment is again pursued. The temperature I grow it in is from 57° to 75° in winter, and from 65° to 90° in summer. *J. Rust, Dec.* 24.

Vines.—Seeing that a little renewal of discussion on Vines and Vine culture has been invited, I forward a slight sketch of my experience with a young plant of white Muscat of Alexandria, which was introduced into my Vinery on the 1st of June last year, being planted in the front border outside, in a growing state, the roots being thoroughly opened out, deprived of soil, and carefully diffused in planting *secundum artem*. I believe the stem at that time was not $\frac{3}{8}$ of an inch diameter in the thickest part. About 17 months after, I cut from this Vine three bunches of Grapes weighing $2\frac{1}{4}$ lbs., $2\frac{1}{2}$ lbs., and 2 lbs. 14 oz., respectively; some berries of these bunches were somewhat shrivelled when cut; having been left to the last, for inspection, on account of their size and beauty; otherwise, had they been cut when in perfection, the weight would of course have been greater. I am not sure there is anything extraordinary in these weights, but on referring to records of weights of similar kinds of Grapes in former volumes of the *Gardeners' Chronicle*, I find those grown at Eshton-hall (5 miles hence), by J. Roberts, in 1847, and which took first prizes at the Exhibitions both of London and York, weighed only 2 lbs. 5 oz.; and, subsequently, those grown at Castle Malgwyn 2 lbs. 9 oz. The quality of my fruit was, in the opinion of competent judges, first-rate; the berries large, uniformly ripe, and full flavoured. The Vine bore in all seven bunches, and although those previously cut were not weighed, yet, by comparison, the total weight of fruit from this plant could not be less than 16 lbs. on 4 feet 6 inches of stem on the rafter, to which length it was cut back at last winter's pruning. I suppose most Vine growers would pronounce this an excessive crop for so young a Vine to be allowed to bear. Time only can show whether it will prove to have been an injurious one. I do not anticipate any after bad effects from it; the luxuriance of this Vine being such, that after going to the top of the rafter, *i. e.* 19 feet from front sill stone, the leader ramified right and left on the back of the house, making 19 or 20 feet more, besides many strong lateral branches, which were with difficulty kept within any reasonable bounds by stopping; and after this growth, and during the maturation of the before-named quantity of fruit, a second bloom of 8 or 10 bunches showed themselves from the newly formed wood, but these were of course removed. *T. W., Thorton-in-Craven, near Skipton, Yorkshire.*—In reading the remarks of Mr. Kidd, at page 790, I was astonished with one observation, viz., that the obtaining good Muscat and Black Hamburgh Grapes in one house was all chance work, unless by scheming and contriving. For my own part I find no difficulty in producing excellent Grapes of both kinds in one house under the ordinary treatment of Muscats, allowing abundance of air on all favourable occasions, after the fruit is well set, as it is my belief that one of the principal causes of bad coloured Grapes is too close an atmosphere. Mr. "K.'s" strictures respecting the last May exhibition at Chiswick are quite true; there was scarcely a good dish of Grapes there, at least not well coloured, nor yet well bloomed, which confirms my opinion that airing well is one of the most essential things to be attended to in Vine culture. I regret that I had not the privilege of exhibiting a dish of Muscat and Black Hamburgh, both grown in one house, at the exhibition just alluded to. *W. T. B.*

Chiswick Temperature, versus Holkham.—The explanation as to the position of your thermometer, does not appear sufficiently to account for the difference in the two readings, for I find that on one night, Nov. 16th, when the sky was perfectly cloudless, and our temperature should be low, it was 5° in excess, while on several nights, including the 9th and 22d Nov., and 4th Dec., on which the sky was completely overcast, and radiation consequently small, the temperature was below that at Chiswick. I do not, however, feel by any means certain that the readings upon which your comparisons are based are at all comparable with each other; observations under precisely similar circumstances are required for this purpose, which I will endeavour to supply, and then the mean temperature at Holkham will, I think, be found to approximate much more closely to yours than you appear to suppose. Most, if not all, meteorologists of the present day, record the readings of their instruments (placed at the height of 4 feet from the ground, and protected from radiation) at stated hours, with the words "*max.* or *min.* in the previous 24 hours," as a heading to the column, and in taking the mean temperature of a given day, use the highest and lowest readings recorded in that natural day, *i. e.* from midnight to midnight. That the lowest temperature of a day occurs about half an hour or an hour before sun-rise, and the highest about 2 P.M., as a rule—to which of course there are exceptions, from various causes—has been too often proved from series of hourly observations to admit of a doubt. You do not name the hour at which your observations are taken, and this seems to be an important point; for if it should be about or previous to 7.30 A.M. you would have the same lowest temperature recorded on each day as we should, at this period of the year, while in the summer months your lowest of the 24th would be ours of the 25th day. *S. S.* [The indications of the self-registering thermometer at Chiswick are usually read off between 10 and 11 A.M.; unless the temperature before that time is likely to rise higher than the maximum of the preceding day, and in that case the registration is noted earlier. In short, the observations are taken so as to obtain the extreme maximum and minimum of each day and night; and no stated time will ensure this.]

Gutta Percha Piping.—As it is well known that persons have been much injured in their health by drinking water which had passed through, and particularly rested in, leaden pipes, I wish to ask if any of your correspondents can, from experience, inform me if gutta percha piping communicates any injurious qualities to water passing through it! or, if any chemist has reason to believe that such would be the case! or, whether rats are likely or able to gnaw such piping! *L. L., Clevedon, Dec.* 23. [There is no reason to suppose that the gutta percha will injure the water. But, as for the rats—that is a different question.]

Societies.

Caledonian Horticultural, *December* 5.—Lord Murray in the chair.—On this occasion office-bearers were chosen for the ensuing year, and several new members elected. Prizes for subjects of exhibition were awarded as follows:—1st, three sorts of Pears, fit for the dessert, and exclusive of Marie Louise, Mr. Bell, gr. to Lord Mackenzie, for Easter Beurré, Beurré Diel, and Beurré d' Aremberg. Four Marie Louise Pears: 1st, Mr. Hamilton, gr. to Sir D. Kinloch. Six Table Apples: 1st, Mr. Calder, Seacliff, for Ribston Pippin, Old Nonpareil, Cambusnethen, Cornish Aromatic, and Seacliff; 2d, Mr. Addison, gr. to the Earl of Wemyss, for Crofton Pippin, Blenheim Orange, Ribston Pippin, King of the Pippins, Borsdörffer, and Scarlet Nonpareil. Bunch of retarded Grapes: 1st, Mr. Lees, gr. to the Earl of Haddington, for Muscat of Alexandria; 2d, Mr. Addison, for Black Hamburgh. 12 finest-flowered single clusters of Chinese Chrysanthemums: 1st, Mr. Young, gr. to Mrs. H. N. Ferguson, with the following varieties:—Superb Clustered Yellow, Comte de Rautzen, Queen of Gipsies, Marquis, Incomparable, Minerva, Duc de Nemours, Fleur de Marie, Salter's Annie, General Morceau, and Queen of Yellows. Best

two Chinese Primroses: 1st, Mr. Henderson, gr. to C. K. Sivewright, Esq., for well-grown plants of double white and a fine variety of single red. Two stalks of Brussels Sprouts: 1st, Mr. Thompson, gr. to R. S. Wilson, Esq., the variety being Hunter's Dwarf. Four Leeks: 1st, Mr. Lees, Tyninghame, for Improved Musselburgh. Four stalks of solid Celery: 1st, Mr. Sinclair, gr., Tillichewan Castle, with Goodall's Broad White and Cole's Superb Red. Three sorts of Onions: 1st, Mr. Henderson, gr., Alderston, for Blood Red, James' Keeping, and Strasburg; 2d, Mr. Pousty, for Globe, James' Keeping, and Strasburg. Two heads of Endive: 1st, Mr. J. Renny, Inch House. For the Silver Medal offered by the Society for the best collection of dried specimens of British Plants, including Filices: two competitors appeared, both of whose collections were excellent. The prize was awarded to Mr. Anderson, journeyman, Edinburgh Botanic Garden, his collection containing 640 species correctly named, and arranged according to the natural system. A second prize, with Certificate of Merit, was voted to Mr. Smith, journeyman, Experimental Garden, for a collection containing about 520 species and varieties, likewise arranged according to the natural system. The prize of two guineas offered by Messrs. P. Lawson and Son, for the best collection of dried specimens of Hardy Perennial Herbaceous Plants, was awarded to Mr. Fairley, journeyman, Edinburgh Botanic Garden, who produced a most excellent collection, containing 1859 species and varieties, arranged according to the natural system of Lindley, as given in the last edition of the "Vegetable Kingdom." As usual, there were likewise various productions sent for exhibition only, for which extra awards were made, or thanks voted according to circumstances. Amongst the fruits, may be noticed a large and fine collection of named Pears from M. Rene Langelier, Jersey; Sweet Water Grapes from Mr. Renny, Inch House; two dishes of seedling Filberts from the garden of Lady Harris, Seacliff,—a certificate of merit being granted for one of the sorts; 18 varieties of Dessert Pears from the garden of Sir W. Gibson-Craig, Bart.; Gloria Mundi Apples from W. Crawfurd, Esq.; Nonpareil Apples from Mr. M'Farlane; Alfriston Apples from Mr. Lauder; Grapes ripened on the open wall (with the protection of a glazed sash from 1st October), from Mr. Sanderson, Monkton Hall; and fruit of Saracha viscosa, with a sample of jam made from it, from S. B. Hare, Esq., Lochvin House. There were likewise exhibited, from Messrs. J. Dickson and Sons, a large plant of Pinus longifolia; from the garden of Dr. Neill, a beautifully flowered plant of Oncidium ornithorynchum, and two fine Chrysanthemums; beautiful Heaths and Cinerarias from Mr. Anderson, gr., Corstorphine-hill; well grown plants of tree Mignonette and Cinerarias from Mr. Laing, gr. to the Earl of Rosslyn; a seedling Cineraria from Mr. Young, Newington-lodge; a box of superior Chrysanthemum blooms from Mr. Stark, Edgehill Nursery; a beautiful bouquet and Chrysanthemums from Mr. Reid, Edmonstone House; and collections of Chrysanthemums from Mr. Young, Archerfield, and Mr. Addison, Gosford; a plant of Cupressus torulosa from Mr. Wilkie, gr., Garvald House, accompanied by a communication mentioning its hardiness at Garvald, at an elevation of 1200 feet; and a large coloured drawing of Victoria Regia by Mr. Jaffrey, Warriston-lodge. Some excellent vegetables were sent for exhibition. Specimens of the Glen Dwarf Drumhead Cabbage—stated to be a valuable variety for agricultural as well as garden purposes—from Mr. Handasyde, Musselburgh; two large Savoys from Mrs. Dr. Brown, Primrose-bank; fine Cauliflower, Mushrooms, and Seakale, from Mr. Pender Moredun; improved German Greens from Mr. M'Lean; Red Cabbage from Mr. Blair; Brussels Sprouts, Beet-root, and Cauliflower, from Mr. Kerr; Lettuce and Endive from Mr. Renny; and a basket of Tomatoes from Mr. Bell.

Glasgow Royal Botanic Institution.—At the annual general meeting held Dec. 9, the Vice-President in the chair, the Secretary read a report from the Directors for the past year, by which it appeared that the total revenue amounts to 861*l.* 8*s.* 11*d.*, including the 108*l.* 13*s.* 8*d.* of annual feu-duties belonging to the Institution, which, with 76*l.* 16*s.* 6½*d.*, the balance of the revenue account for the previous year, makes a total of 938*l.* 5*s.* 5½*d.*; the total annual expenditure, exclusive of interest, being 908*l.* 18*s.* 5½*d.*

	1849.	1850.	Decrease.	Increase.
	£. s. d.	£. s. d.	£. s. d.	£. s. d.
Annual Subscriptions	209 12 9	271 7 6	...	61 14 9
Do. from Members of Athenæum	26 15 6	20 2 0	3 13 6	
Mechanics, &c. &c., tickets	21 1 6	10 12 0	10 9 6	
Admission to public promenades	74 1 0	63 12 6	10 8 6	
Do. on ordinary days	91 11 0	77 2 6	14 8 6	
Sale of plants, cut flowers, &c.	137 11 6	219 7 9	...	81 16 3
Rent of Tent	15 0 0	11 13 0	3 7 0	
Curling Pond	40 0 0	40 0 0		
Physicians and Surgeons	37 16 0	37 16 0		
Transfers	4 8 0	1 2 0	3 6 0	
Fire Works	37 10 0	...	37 10 0	
	692 7 3	752 15 3	83 3 0	143 11 0
Increase in 1850	...	...	60 8 0	
			143 11 0	143 11 0

The preceding is a comparative statement of the receipts for last year, as compared with those of the previous year. From this it will be seen that there is a considerable increase on the two most important sources of revenue, viz., 61*l.* 14*s.* 9*d.* on annual subscriptions, and 81*l.* 16*s.* 3*d.* on the sale of cut flowers, plants, &c. The decrease on the receipts for mechanics' tickets, and for admission on ordinary days, may principally be attributed to the arrangement entered into with the Magistrates and Town Council, whereby the working classes have now, in addition to five days in the Fair week, free access to the Garden on the first Monday and Tuesday of the months of April, May, June, August, September, and October. The Garden itself is reported to be now in a higher state of cultivation than it has been in for several years. The hot-houses and other buildings are also in good order, and since the beginning of spring one-half of the hot-houses has been painted. Greater abundance and variety of ornamental plants exist both out of doors and in the hot-houses, than have been for a number of years past. During some previous years the imperative necessity of raising revenue from any source led to the ruthless and indiscriminate cutting down of even the rarest specimen plants in the stoves, but the injurious practice has been stopped, and the houses are gradually resuming the appearance which, in a Botanic Garden, they ought to have. Considerable improvements are being made in the Garden, by increasing the stock of evergreens, and extending them in groups over the higher parts of the grounds, as well as skirting certain parts of the wooded river bank. A Lecture Room for the Professor of Botany has been erected in the Garden during the course of the summer, the total cost of which, including the architect and measurer's fees, was 275*l.* 10*s.* 11*d.* It is stated that the working classes continue to appreciate the free days' admission to the Garden, granted to them through the liberality of Mr. Campbell, and the arrangement with the City Corporation. On Mr. Campbell's five days upwards of 55,000 persons visited the Garden, and on the other free days secured to them by the city nearly 24,000.

Reviews.

Voices from the Woodlands, by Mary Roberts; and a *Popular History of Mammalia*, by Adam White; are two charming books for presents to young people. They are written with taste and talent, and decorated with numerous coloured plates, got up with Mr. Lovell Reeves' well-known skill. The first tells of the Lichens and Mosses of winter, and reminds us of the sweet days of summer by its stories of the old Oak trees of England, and the graceful Ash, and the shady Beech, and the Elms, and all the rest of the old aristocracy of the forest. The authoress, by happily employing the first person singular in her narrative, has compelled these ancient princes, each to tell his own story in his own way. The Spanish Chestnut, for example, speaks thus:

"Men call me the old Chestnut of Tortworth. That aged tree, say they, stood there when King John came to the throne, and must have been at least 540 years old. One of their scribes relate that I even then was called by the name which I now bear, and which attaches to me, though little more than a venerable ruin.

"Some of you, young trees, have been planted within a comparatively short period; standing singly, or in groups, you embellish homes which had no existence in my young days. Far as the eye could reach, extended a wild forest, or wide common, covered with Ferns or Rushes; and deer came in troops, to feed upon my nuts in autumn. I have seen the wild boar, with his long tusks and shaggy mane, ranging where now sheep pasture; and wild cattle, such as no one could have met unharmed.

"I remember the time yonder Yew first arose from the earth, a small tufted plant, with nothing that indicated its future greatness. Some wandering bird must have brought the berry, which, on account of its glutinous nature, readily adheres; or else the wind, rising in his might, bore it from some distant forest; for none grew within sight. I watched the progress of that young tree, and saw how gradually it advanced from one season to another, till at length its giant arms were nobly tossed on high, and valorously resisted the fierce winds of winter. But now its strength begins to fail, and Oaks, beneath which the Druids walked, are failing also.

"Time was, when such noble trees were wrested from their right uses; when the Osiers that grew beside the river were wreathed into hideous baskets, wherein innocent persons suffered; when trees, rising in umbrageous majesty, concealed within their deep recesses abhorrent rites, concerning which no one dared to speak; when men saw only in the trees, which God had planted for beauty and for use, the abode of mysterious or fearful beings, demons whom many ignorantly worshipped; or viewed them as useful merely for the common purposes of life.

"Since then, naturalists have arisen, who have made known the properties of vegetable matter; poets have derived their choicest inspirations from trees; and artists have dwelt beneath them, watchful to transfer to canvas the effect produced by their foliage, or their graceful and magnificent proportions.

"But the Chestnut, as wrote one who loved our tribe, is the most stately of European trees, exceeding the Oak in height, and equalling it in bulk. The foliage exhibits a more decided character; it is glossy and formed into clusters, which are peculiarly elegant when surrounded with florescent catkins. This is the tree which graces the landscapes of Salvator Rosa. He studied it among the mountains of Calabria in every form and attitude, breaking and disposing it in a thousand different shapes, as the exigencies of his compositions required. And, truly, no other tree affords such continual variety—at one time rising in all its leafy majesty, in some shady recess or rock-encircled nook, safe from the war of winds; at another, broken and distorted on some high rock, or half-way down a steep and rugged declivity, beneath which might roll an impetuous torrent; for my wood is naturally brittle, and liable to be shattered by fierce winds.

"Some have ascribed to me the honour of being indigenous to Britain; others maintain that Cæsar transported Chestnut trees from Sardis into Italy, on account of the excellence of their nuts, from whence they passed into France and Britain. True it is that none of our tribe ever prevailed in North Britain, nor have they been observed in the southern portion of the island, except in parks, and avenues leading to country mansions; but those who visit the banks of the Tamar, in Cornwall, may find the Chestnut in many a lone spot, as also in the woods and hedges of Kent and Surrey. Anglesey is another of our favourite habitats; and Chestnuts were so numerous at one time in the forest of Dean, that Henry II. gave the tithe of all their fruits to Flaxley Abbey. Those noble trees were, doubtless, planted and protected in that royal preserve."

Mr. Adam White's Book is of a more formal character, but not a whit less interesting. He tells of lions and tigers and jaguars, of baboons, mandrils, and marimondas, dogs and opossums, whales, dolphins, seals, antelopes, and dassies. His style is clear, and his matter anecdotical; but he does not sacrifice science for the sake of catching a little ignorant applause, nor, on the other hand, can it be said that he annoys the reader with misplaced injudicious technicalities. With access to the best kind of information, and with skill to use it, he has produced a book which people of all ages will read with pleasure and profit. As an elementary work on mammals, it stands without an English rival. We select his account of the Bandicoots.

"The tribe of Bandicoots (*Peramelina*) is distinguished by the number of the incisors; there are ten of these teeth in the upper, and six in the lower jaw. Their molars are of two kinds, some being compressed and pointed, while the others are tubercular—a structure which, as in the Insectivorous order of quadrupeds, particularly suits an insect diet. The head is for the most part sharp and elongated; the legs are unequal in length, the fore ones being shorter than the posterior. The tail is generally short, and partially covered with short hairs; in one or two species, however, it is long, and furnished with lengthened hairs.

"The tribe acquires its name from the typical genus, *Perameles*, which contains the Bandicoots of Australia—quadrupeds generally of small size, which seem to represent in that continent-island the hedgehogs, shrews, and other insectivorous mammalia. All the species have five toes to the fore foot, the two outside being rudimentary and nailless, and the middle three with large strong nails, so that at first sight they seem to have but three toes to the foot; in the hind foot there are five toes, the innermost of which is rudimentary, the second and third are slender, while the fourth and fifth are large, and provided with long nails: all these nails are well suited to the burrowing habits of the bandicoots. The ears are generally of moderate size; but in one species, *Perameles lagotis*, the 'native rabbit' of the colonists of Western Australia, these organs are very long. This species, as ascertained by Mr. Goold, is tolerably abundant in the grassy districts of the Swan River colony. It generally selects spots where, the soil being loose, it can easily form its burrows, and to these, when pursued, it has recourse. Its food consists of insects and grubs. The flesh is eaten, and said to resemble that of the rabbit. Mr. Waterhouse, in his 'Marsupialia' (p. 36), tells us that a specimen kept in the Zoological Gardens was very active at night, but sleepy during the day; when at rest it sat on its haunches, with its head thrust between its hind legs, and then had the appearance of a large ball of fur. When walking, the hind legs only were used, and these were very widely separated. In confinement it was very savage, and bit severely.

"Mr. Gray has described a very pretty species from Van Diemen's Land, the *Perameles Gunnii*, called in that island the *Bandicoot*. Both the tail and ears are short; the hinder part of the back is black, with several white cross-bands. It is an abundant species, and, according to Mr. Gunn's account, burrows in the ground, and lives chiefly on roots. This animal seems particularly partial to bulbs; Mr. Gunn knew of an entire collection of Cape bulbs being eaten by them, and he himself lost many valuable specimens in his garden from their attacks.

"Some of the species of bandicoots make nests of sticks and grasses, so closely resembling the colour and appearance of the situation where they are placed as to be very difficult of detection.

"To this family belongs the singular genus *Chœropas*, discovered by Sir Thomas Mitchell on the banks of the Murray River, in Australia. The first specimen found was tailless, but subsequent individuals have been met with possessing this member; the fore legs somewhat resemble those of a pig, from which circumstance the generic name is derived. The marsupial opening is downwards, and not upwards; Sir Thomas says it was seen first on the ground, but on being pursued took to a tree, in which it was caught."

Garden Memoranda.

Ealing Park.—It may be interesting to know that the Amherstia nobilis at Ealing Park is in a most flourishing condition. It measures 14 feet across at the base, tapers gracefully upwards rather more than 15 feet, is covered with *perfect* foliage, and is at the present time showing 73 spikes of flowers, some of them *already* more than a foot in length. Another botanical curiosity also exists here in the shape of a striped Cattleya. As regards the collection of plants generally (even the Orchids and Heaths), it may safely be said that it is in a state of vigour and beauty, such as it has seldom appeared in before.

Miscellaneous.

Testimonial to Mr. Munro.—The other day, at a dinner provided by a few friends, Mr. Munro was presented with a handsome gold watch and chain, the proceeds of the subscriptions of 260 persons, who thus testified their respect for him on his retirement from the service of the Horticultural Society.

New Method of Engraving Plates for Printing Ferns, Sea Weeds, &c.—At a recent meeting of the Sheffield Literary and Philosophical Society, Dr. Branson read a paper describing this process.—His mode of operation is to place a frond of Fern, Algæ, or similar flat vegetable form, on a thick piece of glass, or polished marble; then taking and softening a piece of gutta percha, of proper size, and placing on the leaf and carefully pressing it down, it will receive a sharp and accurate impression from the plant. The gutta percha retained level and allowed to harden by cooling, is then handed to a brass caster, who reproduces it in metal from his moulding vase. This, it will be obvious, is the most delicate and difficult part of the process, and one which, a few years ago, would not, we suspect, have been executed in Sheffield. As it is, Dr. Branson has had many brass plates thus produced from sand-casting, which only required a little surface dressing to yield, at once, under the copper-plate printing press, most beautiful as well as faithful impressions of the original leaves: indeed, many of the exhibited specimens of Ferns, printed in green colour, and slightly embossed, as they must needs be by the printing, were such perfect fac-similes of the natural pattern, that they might easily be taken for it. Besides these matters, the Doctor exhibited a large variety of patterns of embossed leather, which had been produced by a somewhat analogous operation. As, however, this latter invention is not so much for copying designs as for creating them, and, at the same time, saving all the expense of die-cutting, the following is the course pursued:—The operator takes a piece of common hard white soap of the required size and surface, and upon that executes any design, whether of the depth and boldness of ordinary embossing, or in the delicate lines of an etching; in either case the work is executed with the greatest ease. From this soap-model or engraving, an impression is taken in gutta percha; from that a secondary one, which on being cast in brass, as before, may be used for printing or embossing in the ordinary way. The reader stated that his main difficulty was in getting the last gutta percha coat to separate from the mould of the same substance into which it was pressed. He had found, however, that by powdering both the surfaces with common bronze dust, before taking the impression, they did not adhere. *Athenæum.*

Lawn Grasses.—Where good turf can be had without much trouble or expense, it will be more immediately beautiful and satisfying than sowing down a lawn with fresh seeds. And even if it be too serious an item under any circumstances, the edgings of walks, and the outlines of beds, should be everywhere defined by a strip of old turf, at least a foot in width. This will prevent the seeds from being scattered on the walks or borders, and make the edgings firmer and less ragged for several years. For sowing down Grass seeds, the ground should be lightly dug over about the last week in March or August, and the seeds sown immediately after. It will be advisable to scatter them rather thickly, and then tread and rake them well in, and give the ground a thorough rolling. Care must be exercised to make up the ground, by the edgings already laid, to the level of the top of those edgings; in order that, when the young Grass springs up, all may be on the same level, and there may not be a break or dip between the old and the new. After the Grass has vegetated, it will simply require to be kept free from weeds until it is strong enough to be mown. A dry day, in a showery season, will of course be best for sowing Grass, as it is for all other seeds. And it ought not to be forgotten that, on the evenness with which the ground is dug, levelled, and raked, will, hereafter, be the beauty and smoothness of the lawn. Some of the fittest seeds for a lawn are Poa pratensis and triviale, Festuca ovina, Cynosurus cristatus, Avena flavescens, Trifolium minus, and white Dutch Clover. Other and coarser kinds are usually added; and many good nurserymen have mixtures of their own, adapted to particular soils. But the smaller the proportion of the stronger growing kinds that is admitted, the finer, and smoother, and softer will be the Grass, and the less mowing will it require. Any sort of Rye-grass, some variety of which is too commonly introduced into mixtures, will be especially unsuitable. *Kemp, on Small Gardens.*

Calendar of Operations.

(For the ensuing week.)

FORCING DEPARTMENT.

Let the fermenting material upon borders which are already in motion be examined, to see that it does not get either too hot or too cold; the former state of things will render it necessary to open it out or remove a portion of it; but in the latter case it should be turned over and a fresh portion be mixed up along with it. When the flowers are just expanding, a drier atmosphere must be maintained, and syringing must be carefully avoided until the fruit is fairly set. Avoid a high temperature at night, and admit air freely in fine weather, but using the side ventilators only when it is showery. When the weather is unfit for out of doors work concentrate your force within and proceed with the cleansing and painting of the house and plants according to the directions previously given. Only one house should be in hand at a time, and that the various operations may be carried on systematically, all the moveable plants should be quartered amongst the other houses, pits, frames, &c.; and after the house is finished it may be filled with the plants from the house which it is next intended to treat in a similar manner.

FLOWER GARDEN.

When the ground is too frosty to admit of the transplanting of the trees and shrubs being proceeded with, everything should be done which forethought can suggest, in making such preparations as will facilitate the work to the greatest extent, when the weather is more favourable. To this end the stations for the plants may be prepared by conveying suitable soil, &c., to the spot, and by making holes or raising mounds for their reception. The value of the mowing machine is now becoming so well known as to be in little need of praise. During mild weather, any turf that is sunk and so uneven as to prevent its being easily mown by that most useful of all garden implements, "Shanks's Mowing Machine," should be made perfectly even, by removing the turf and levelling the surface beneath it. If it is infested with worms, which render a pleasure-ground so unsightly, a layer of fine coal ashes should be spread over the soil and well rolled in before the turf is replaced. This is a simple but effectual remedy for the nuisance, and in addition much improves the quality of the turf; as the latter becomes finer and denser, and cuts "sweeter" than when the ground is clayey or damp beneath it. Seeds of Rhododendrons and Azaleas should now be watched, and gathered as soon as the capsules begin to burst.

FLORISTS' FLOWERS.

At this season, the routine culture, which we have lately enforced, must be strictly attended to; but Polyanthuses will, perhaps, claim an extra notice in these our last directions for the year. Those on beds, if parted at the usual time, will often have the collar exposed too much, and the roots completely bare; independent of this, earth-worms will have drawn leaves, &c., into their holes, which, with their castings, give the beds an untidy appearance. Our plan is, to carefully fork the soil, with an instrument purposely made, so as to disturb the fibres of the plants as little as possible, removing the decayed or broken leaves. We then, with a mixture of decayed leaves, and cow-manure, which we have had prepared, and under cover some time previously, go carefully over the bed, filling up all inequalities, placing a couple of handfuls round each plant; in fact, giving them a complete top dressing. This operation, we are confident, will prove highly satisfactory, when completed; and the effects will be perceived by a strong and vigorous start in the spring. We may here mention, that one of the best Polyanthuses that has come under our notice during the past year, is Addis's King-fisher, a red flower; but of most excellent properties. Should severe frost, or heavy rains, prevail, it will be highly proper to protect the most valuable Tulip beds from their effects. The result will well repay the trouble. Recollect the advice of abundance of air, when not too cutting or severe, to all plants in frames.

HARDY FRUIT DEPARTMENT.

Fruit-room.—When this place is not furnished with a stove or a coil of hot-water pipes, considerable difficulty is experienced at this season in excluding the cold and damp. Of the two, perhaps, the latter is the greater enemy. It may, however, be remedied by spreading some unslaked lime in wide pans or drawers, exposing as much as possible of its surface to the atmosphere, and exchanging it for fresh as soon as its absorbing powers are somewhat satisfied. Frost should be excluded if possible; but if this is to be effected by the aid of artificial heat, the latter should always be used in connection with ventilation, that the moisture evaporated may be allowed to escape. But if there are no such conveniences, the simple means of matting up the doors and windows must be adopted; and if, in spite of these precautions, the internal temperature falls below the freezing point, care must be taken to prevent a sudden thaw, by keeping the room close and shaded for a short period after the return of warmer weather. This points out the advantage of constructing such places on the north side of a wall, as they are thereby preserved from extreme heat in summer, and from sudden variations in winter. Many of the finest dessert Pears require placing in a temperature of 60° for a few days previous to use, thence they will become quite ripe and will attain to their full richness of flavour, while they would lay in the cool fruit-room shrivelling till useless. We have ourselves thrown away Pears which the experience of after years has told us would have been most useful, if they had been simply rolled in paper and placed for a few days in a Pine-pit.

KITCHEN GARDEN.

Let trenching of vacant ground be done with all convenient despatch, unless when it is frozen; as the clods, if turned under in that state, will remain a long time ere they thaw; the loosening of the soil, by creating non-conducting cavities, checks the progress of heat either upwards or downwards. Instances have been recorded of ground being trenched during severe frost, and of the clods being found only partially thawed at Midsummer. In mentioning the protection of kitchen garden crops, we omitted to recommend the branches of Spruce Fir, Yew, or other evergreens. These are quite as effectual, if used in sufficient abundance, as litter and other matters, which are too untidy to be seen in a well-kept kitchen garden. Attend to the forcing of Rhubarb, Seakale, Asparagus, Chicory, &c., and keep up a supply, if possible, equal to the demand. Let Cauliflowers, Endive, and Lettuce, in frames, be frequently examined, and divested of decaying foliage; and protect from the ravages of slugs, by carefully sprinkling a little lime and soot upon the surface of the soil.

State of the Weather near London, for the week ending Dec. 26, 1850, as observed at the Horticultural Garden, Chiswick.

Dec.	Moon's Age	Barometer. Max.	Barometer. Min.	Temperature. Of the Air. Max.	Of the Air. Min.	Of the Air. Mean	Of the Earth. 1 foot deep.	Of the Earth. 2 feet deep.	Wind.	Rain.
Friday .. 20	16	30.219	30.100	40	19	43.0	39	42	N.	.00
Satur. .. 21	17	30.273	30.231	40	22	45.0	38	41	S.W.	.02
Sunday . 22	18	30.524	30.429	41	22	45.5	37	40½	N.	.00
Monday 23	19	30.586	30.524	38	25	40.0	37	40	N.W.	.00
Tues. .. 24	20	30.155	30.172	43	31	35 5	37	40	S.W.	.00
Wed. .. 25	(	30.030	29.995	45	27	35.0	37	39	W.	.00
Thurs .. 26	22	30.155	30.150	46	39	32.5	37	39	W.	.00
Average....		30.324	30.227	41.8	28.4	34.1	37.4	40.2		0.02

Dec. 20—Frosty; fine; sharp frost at night.
— 21—Frosty and foggy; slight rain; frosty.
— 22—Frosty; fine; frosty and foggy.
— 23—Frosty and foggy; hazy; foggy; slight frost.
— 24—Hazy; foggy; overcast.
— 25—Clear and fine; very fine throughout.
— 26—Hazy; rainbow at 1 P.M.; hazy; overcast.

Mean temperature of the week 4 deg. below the average.

State of the Weather at Chiswick during the last 24-25 years, for the ensuing week, ending Jan. 4, 1851.

Dec. and Jan.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds. N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 29	42.5	31.6	37.0	11	0.17 in.	2	3	1	3	4	2	5	4
Mon. 30	44.3	32.9	38.6	9	0.30	1	—	2	—	2	5	6	1
Tues 31	43.6	32.3	37.9	6	0.42	—	6	—	1	4	6	4	3
Wed. 1	42.1	29.8	35.9	8	0.70	4	4	2	4	3	2	2	3
Thurs. 2	41.1	29.1	35.1	8	0.21	3	1	5	—	3	4	3	6
Friday 3	42.2	30.8	36.5	13	0.30	1	1	5	—	5	5	3	5
Satur. 4	41.9	31.3	36.6	9	0.45	3	3	3	4	1	7	2	2

The highest temperature during the above period occurred on the 30th 1833—therm. 56 deg.; and the lowest on the 1st, 1837—therm. 12 deg.

Notices to Correspondents.

Elms: *Gallicus.* The Chichester Elm, alias the Huntingdon, is a variety of Ulmus campestris. It grows faster than any other equally good Elm, except the Witch.

Grafting: *W Nichols.* We have in preparation a complete set of drawings illustrative of every one of the methods of grafting, fanciful as well as essential, which are known. If the cuts are ready, we shall commence next week.

Insects: *A B C.* Your Cineraria leaves are attacked by the larvæ of a small two-winged fly (Musca) which eat the substance of the leaves, leaving the two surfaces entire. We know no other remedy than to press the leaves gently between the thumb and finger as soon as the pale marks appear, as the larvæ are then young and tender. At present all the mischief seems to have been done, as we found the insect in the brown chrysalis state. *W.*

Mistletoe: *F B.* It may be propagated from seeds or by grafting. The seeds should be put in in February or March. Slit the bark on the under side of the branch, say of an Apple or Hawthorn tree, making the cut quite down to the wood; raise the bark up a little, then insert the seeds freshly squeezed from the berry, press down the bark again, and the operation is finished. It may be grafted any time in May. Make an incision, and insert a thin slice of Mistletoe, having a bud and one leaf at the end. You will, however, we imagine, be most successful with seeds. The Mistletoe will grow upon the Hawthorn, Apple, Black Italian Poplar, Lime, Sycamore, Acacia, Laurel, Willow, and with difficulty on Oak.‡

Names of Fruits: *T W.* 1, Pearson's Plate; 3, Barcelona Pearmain; 4, Beauty of Kent; 6, Herefordshire Pearmain; 7, Fearn's Pippin; 8, French Crab; 9, Court of Wick; 10, 14, Reinette du Canada; 15, Syke House Russet; 17, Golden Reinette; 19, New Golden Pippin; 1, Passe Colmar; 2, Decayed, but appears to be the Doyenné Gris. ‖—*T H S.* The Beurré d'Aremberg. ‖

Names of Plants: *Reader.* Adiantum assimile. *S.*—*H D.* Pekea tuberculosa. The Saouri nut.—*H Stillwell.* Fuchsia microphylla.

Nurserymen's Orders: *W Francis.* The Darlington case is under enquiry.

Oils: *Dido.* Walnuts yield a drying oil, employed by painters in oil-colour, and called Nut-oil. Hazel nuts yield a sweet oil like that of Almonds.

Paint used for Iron-work at Trentham: *D F.* One-third Stockholm tar, and two-thirds gas tar, laid on while quite hot, with a brush, and spread as thinly as possible.‡

Seeds: *J H N.* Sow your seeds from Jamaica in heat, and treat them as stove plants.‡

Taxidermy: *W J.* You will find Lee's work on this subject a good one.

Vine Borders: *J A, Limerick.* Certainly it will be advantageous to your border to put it in communication with the inside of your house, by removing a few bricks; four to a yard would be enough. The zinc tube would, we think, be superfluous. Musa Cavendishii will not thrive in a cool house. Probably Hood on Warming may contain what you want. There is nothing good on ventilating hothouses.

Water: *Yorkshire.* If spring water is received into a large cistern, exposing a surface of 2 feet by 6 feet to the influence of the atmosphere, such water will be suitable to water plants with, but not so good as rain-water.

Worm-Eaten Wood: *R W P.* Steep your carvings in a solution of corrosive sublimate; and if you can, apply a little heat. You will hear no more of insects, and the existing holes you can fill with putty or any other cement. It is necessary that the sublimate should enter the holes, and this will be most readily secured by the application of heat. If you are unable to do this, then you had better employ corrosive sublimate dissolved in spirit, which will enter the holes more readily.

Misc: *A Friend* is thanked for his suggestion, but there are difficulties in the way. The index is repeated in full at the end of the year.

*** As usual many communications have been received too late, and others are unavoidably detained till the necessary inquiries can be made. We must also beg for the indulgence of those numerous correspondents, the insertion of whose interesting contributions is still delayed.

This day is published,

THE JOURNAL OF THE ROYAL AGRICULTURAL SOCIETY OF ENGLAND, No. XXVI.

The Progress of Agricultural Knowledge during the last Eight Years. Mr. Pusey, M.P.
The Potato Disease. Mr. Graham.
Implement Report. Col. Challoner.
Kohl Rabi. Mr. Towers.
Ashes of Plants, Analyses of. Messrs. Way and Ogden.
Diseases of Stock from Mismanagement. Mr. Karkeek.
Agricultural Buildings. Mr. Dean.
Management of Pigs. Mr. Rowlandson.
Irrigation in Switzerland. Mr. Jenkinson.
Rape-cake as Food for Stock. Mr. Charnock.
Climate of the British Islands. Mr. Simpson.
Farming of Somersetshire. Mr. Acland.
Results from the Laboratory. Mr. Way.

JOHN MURRAY, Albemarle-street.

ARTIFICIAL MANURES.—PRIVATE INSTRUCTIONS in Chemical Analysis and the most approved methods of making Artificial Manures are given by J. C. NESBIT, F.C.S., F.G.S., at the Laboratories, Scientific School, 38, Kennington-lane, London.

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IMPORTANT NOTICE.—EMIGRANTS are informed MARY WEDLAKE and CO. have from time to time supplied the first settlers to Swan River, Port Natal, and all the Australian Colonies, with AGRICULTURAL IMPLEMENTS; they beg an inspection of their stock, at 118, Fenchurch-street, near the Blackwall Railway. N.B. Persons becoming purchasers may have the benefit of an introduction to parties known to the firm at either of the above-named places.

The Agricultural Gazette.

SATURDAY, DECEMBER 28, 1850.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

WEDNESDAY, Jan.	1	Agricultural Society of England.
THURSDAY, —	2	Agricultural Imp. Society of Ireland.
WEDNESDAY, —	8	Agricultural Society of England.
THURSDAY, —	9	Agricultural Imp. Society of Ireland.

Now that the various local committees and officials connected with the Great Exhibition of 1851 have been able to sum up the applications for space, it appears that the total demands far exceed any amount of supply which Her Majesty's Commissioners can give; for although they have lately agreed to grant an additional gallery of 45,000 superficial feet, making a total of 220,000 superficial feet of floor and counter space, yet the amount demanded by exhibitors, who number, we may observe, about 8200, is 420,000 superficial feet of floor and counter, so that we have a deficiency of 200,000 superficial feet. This defalcation, however, may be counterbalanced to a certain extent, for the space demanded of wall for hanging articles on is only 200,000 superficial feet, and we believe considerably more than this amount can be given, so that many things for which counter-room has been demanded may be exhibited to little less advantage probably on the wall.

The above deficiency of space certainly indicates more than favourably for the great enterprise, and the manner in which it is to be supported by the spirited emulation of all nations. This was to be anticipated, although not perhaps to the extent now described. Intending exhibitors themselves were sensible that disappointments to a certain extent would be realised when they made their application; still, although this is true, yet in this case, as in all others, the evil hour is invariably postponed to the last for consideration; and, now that results are known, and the work of selection and rejection about to commence, many grave questions insinuate themselves upon the mind by no means quietly to be disposed of. Inventors are generally fond of their own offspring, manufacturers of their handiwork, and merchants of their purchases, but by all, sacrifices obviously must now be made. The work of selection therefore is a very important and responsible one—doubly so in the case of unpatented inventions; so that complaints may be expected, groundless, no doubt, in many instances, but too well founded probably in some.

Our object in introducing this subject at present before our readers is not to discuss the individual interests of exhibitors, but to confine our remarks as much as possible to the general interests of agriculture. The question which we wish answered is this—such being the deficiency of space in the immense building now being erected in Hyde Park—How is the interest of the farmer likely to be affected by it? Of all classes of the community, at present, he stands the most in need of chemical and mechanical inventions to assist him, for his difficulties are of more than ordinary character. Indeed, the vast majority are now agreed, that it is worse than useless and chimerical for him to look anywhere else than to energetic personal efforts for assistance; and he may therefore look with some interest on what the whole represented industry of the human family, as collected in Hyde Park, 1851, shall be able to do for him. Now, if the wants of the farmer are greater than those of the other classes, it is but reasonable to suppose that his demands for space in this exhibition have also been greater—a conclusion which we apprehend will be found a true one, although we have been unable as yet to ascertain it as a fact. We have no reason however to suppose anything to the contrary, for agricultural chemistry and mechanics, of late years have been making long strides in the march of improvement, and will require ample opportunity to develop their full proportions. As regards the heavy machinery for threshing and other agricultural operations, though these may exhibit much sameness in contrivance, yet it cannot be denied that very inferior articles sometimes occasion important discoveries by mechanical minds, and that the best judges, exercising the work of selection and rejection, are liable to error, especially when the articles to be compared are miles asunder from each other, so that losses may be sustained, and justice done unintentionally to intending exhibitors and the farmer.

Under such circumstances, therefore, is it possible to suggest any scheme which will secure individually and collectively the interests of all parties connected with agriculture? We think a practical scheme readily offers itself, for there is an abundance of space in the Park, immediately adjoining the upper end of the building, sufficient to accommodate every article connected with either home or foreign agriculture, which may be rejected, and if an additional 6*d.* or 1*s.* were demanded for admission into this department, it would defray the expense of erecting a temporary building, such as that used at the Royal Agricultural Society's summer exhibitions. All, therefore, that is necessary towards the organisation of such a scheme, is for the Agricultural Society to enter into the proper arrangements with Her Majesty's Commissioners, when we have no doubt the ground could be got, and all the privileges enjoyed by exhibitors in this department which are enjoyed in the building itself; or, if the Park is objected to, a thousand other places offer themselves for the pence at the gate on such an occasion. There is Islington cattle market almost empty and perfectly suitable. The whole could easily be placed under the control of the royal commission during the period of the Exhibition. There are no doubt objections to such a proposition, but at the same time we think that these are not worthy of comparison with the many benefits to be gained. And we hope that some such scheme will be acted upon with energy—if the interests of the *farmer* are not kept fully and strongly in mind, by those who have the work of wholesale rejection to perform, before the immense crowd of articles applying for space can be brought down to the number and dimension for which the building is calculated. *B.*

THE AGRICULTURAL LABOURERS.

THE condition of the English farm labourers has formed the subject of many admirable communications in the *Agricultural Gazette*, yet I venture to reopen it; not in the vain expectation that I can add anything new to the matter, but in the hope that some of the intelligent correspondents of this journal will revert to the question, and elaborate some practical scheme for bettering the condition of the rural poor.

In considering the present, it is natural to view the past state of the labourer in the prosperous times of farming, in order to judge by the comparison whether it is better or worse now than formerly. Assuming, according to the old rule, that a peck of Wheat in England is equivalent to the day's work of a labourer, it would at first view appear evident that—when a peck of Wheat cost two-thirds of its present price, and tea and sugar were double their present prices, and many other articles of cottage domestic economy much dearer, and wages were but one-third more than they now are—the labourer must have been in worse circumstances than he is at the present time. But it is to be borne in mind, as a counterbalancing consideration, that, when the price of bread was three-fold higher than now, the labourer, though able bodied and employed, received through the agency of poor-rates an allowance of bread for every individual in his family over the minimum number for which his wages were supposed to be adequate. The more mouths the more loaves; and thus he was enabled to support his family; yet many families were obliged to eat bread sparingly, to substitute Barley for wheaten bread, and to mix a considerable proportion of toppings and pollard with their wheaten flour, and to subsist on two meals a day.

I believe the fact to be, that a labourer with a large family, unless some of them are able to assist him in earning wages, is in worse circumstances now than a man with the same number of children was under the former high rates of wages and food; but that he who has only two or three mouths to supply with bread possesses more advantages than one in similar circumstances experienced formerly. Besides abundance of the best bread, a regular labourer has generally the produce of a garden or field allotment, which assists in the support of his family in a considerable degree. And it is to be supposed that he is now charged reduced rent for his cottage and patch of ground.

The condition of a labourer with a large family of young children is decidedly very bad at the present day in many parts of England; and in the part of the agricultural county in which I reside, where labourers' wages are only from 7*s.* to 8*s.* a week, without any privileges, he must find it difficult to live in anything like a state of comfort. His weekly accounts stands thus:—

5 gallons of flour, or equivalents	4*s.*	2*d.*
Fuel, salt, soap, and candles	1	6
Rent	1	6
Tea and sugar	0	10
Total	8*s.*	0*d.*

Where the maximum of regular wages is but 8*s.*, it is plain that a family consisting of many individuals, unless they earn extra sums at harvest work, to meet the charges for clothing, schooling, and contingencies, must be in a very distressed condition, yet a small family consuming perhaps but half the quantity of bread I have estimated, may enjoy the luxuries of tea and sugar, and a little meat occasionally, and butter with their bread. And the Potato, where it has not failed, is at this moment an important article in the support of the cottager's family. When corn was very dear, and land therefore highly prized by the farmer, the cottager was seldom privileged to have, as at present, from 20 to 40 roods for the supply of Potatoes, &c. Where labour wages are 10*s.* a week, with constant employment, as is stated to be the case in some counties almost generally, the position of the labourer must be positively comfortable, and decidedly better than "in the most high and palmy state of agriculture." Why wages are so much lower in some counties than in others, is a problem upon which it is unnecessary to enter, and which I am unable to solve.

Even under the most generally favourable circumstances, however, the labourer cannot maintain himself in his old age. In the days of failing strength he must have recourse to parochial aid—a melancholy conclusion to a life of hard and honest industry. Under existing circumstances, farmers, the employing class, are more or less under the necessity of economising labour in the culture of their fields, or, through a mistaken principle, they will not drain, or execute any of those permanent improvements which would increase the quantity and value of their agricultural productions to a degree at least commensurate with the amount of expenditure. If, however, the land could be relieved of its burdens, the farmers would have it in their power to employ labourers on terms more favourable to both parties than at present. This may appear a truism, yet it may require some illustration.

According to the present operation of the Poor-law, both as regards the employed and the employing classes of agriculturists, the latter are under the alternative of providing work for a certain number of labourers, or of contributing towards their support in the workhouse, therefore they think it expedient to employ old and feeble labourers with large families, who would otherwise be employed to take refuge in the house, in preference to able-bodied active men whose services they could hire at the same wages—nay, employers may find it their interest to pay more to the former than to the latter class of workmen. There is palpable injustice to one party, and disadvantage to the other. The farmer thus pays a higher price for less labour; the pressure of the Poor-law, as it now stands, leads him to act thus, in a manner evidently opposed to the ordinary, common-sense mode of dealings between man and man: and on the other side, the able-bodied man, whose muscle, and sinew, and energy are his capital, does not receive an equitable remuneration for the exertion of those physical powers with which Providence has gifted him. It is no satisfactory reply to say that charity prompts to the employment of those persons who are encumbered with families, however inefficient workmen they may be, in preference to young unmarried men; but justice, and proper economy, as exercised in labour transactions between master manufacturers and their operatives, in which payments are regulated according to the quantity and quality of work, demand that an analogous system should be pursued between the farmer and his labourers.

Your correspondent, "S." (June 23d, 1849) has stated this point in very forcible language. I beg permission to reintroduce here a few paragraphs from that gentleman's communication. "Suppose a labourer marries and has a family of some half-dozen children, he gets 9*s.* a week, with some other privileges, such as

a cottage and garden, with an allowance of fuel, and all this little enough to support him with any degree of comfort*; but then he is a slow and careless workman, requires constant looking after and keeping at his work: and another works on the same farm, is not married, requires no cottage, and is not supposed to require so much wages; he is an active and industrious young man, wishes to prove himself superior to his fellow labourers (an ambition that ought to be stimulated); but the system is too general of not paying according to merit, but according to the necessity of the person, and those who would render themselves active and trustworthy, are not rewarded as they deserve. It may be said, 'this is an evil that, under present circumstances, cannot be overcome, because the married labourer must be supported some way or other, and as well give it to him in the shape of wages as otherwise.' But this degrades the labourer from the condition of a free and independent being, disposing of goods (his services) on honourable terms, to that of a mean and despicable serf, dependent on the alms of those who employ him; and for these he is bound to render, not value for value, but what he can, or what he may be compelled to do. But not only is such a system a barrier to exertion among the labouring class, but it is positively productive of evil; for, small as it may be in the eyes of the acute and the intelligent, yet it is in too many cases an inducement to young men to contract improvident marriages; for they know that they must be kept from actual starvation whichever state they live in, and they are certain that no exertion on their part can raise them above their present condition, or, at least, from the view they take, no chance is perceptible."

Now, "this evil which, under present circumstances, cannot be overcome," would, I am disposed to think, give way, if farmers were exonerated from the heavy pressure of land rates; for, in such case, they would be free to select the best workmen, and pay them by piece-work, in all convenient cases, which would be the most convenient mode; and under improved circumstances they would find it their interest to employ a greater amount of labour on their farms, while, on the other hand, competition for labour would render the labourers more expert and industrious; and failing or almost worn out labourers, though not selected for hard days' work, would have at least equal claims in competition for piece-work suited to their strength and skill. It would be no injustice to them that other men, who could execute more work in a given time, should receive more wages.

A preliminary as regards the correction of the present irregularity in dealing, in this respect of remuneration with labourers, is to lighten the pressure of poor rates upon the land. Instead of generalising on this point I shall adduce some parochial statistics, from which I think I can show how the rates may be lessened throughout the kingdom.

The agricultural parish in which I reside contains 7000 rateable acres, of which the rental is valued at 9000*l.* To this is added 2176*l.*, the estimated yearly value of houses, land, and railway making, the total rateable property 11,176*l.* To this parish belong 670 acres of unrated commons, in different localities. The population by the last census was nearly 2700, but it is actually more, having received an additional impulse from the influx of families evicted from neighbouring parishes. The parochial poor reports show that during the week ending October 25th of the present year—and this has not been a period of local distress—there were in the district union house 75 individuals at the weekly cost of something under 2*s.* 6*d.* each.

This amounts in the year to	£487	10*s.*
256 received out-door relief at an average of 1*s.* 6*d.* each per week for the year ...	998	8
	£1485	18

The indispensable charges for medical attendance, relieving officer, collection, &c., have raised the amount of rate to 4*s.* 6*d.* in the pound.

Now I think that in this parish (and *ex uno disce omnes*) the above sum might be considerably reduced.

I have already stated that there are 670 acres of commons in different parts of the parish. Of these a portion is about to be enclosed and appropriated according to the several rights and interests of the proprietors and occupants of the adjacent farms; and this land, which has hitherto been of little value to the poor neighbouring labourers, who have neither cows, nor sheep, nor horses, nor donkey, nor always even swine to graze upon them, and to whom the advantage of a little fuel in the form of peat sods stripped from the surface, to the injury of the staple soil, or stunted Whins, has not been equivalent to the benefit they will derive from employment in enclosing and cultivating the new land, will afford a constant source of additional employment. Some acres of it, too, are to be let out in allotments to the local poor, who will still have the liberty of ranging over a large unappropriated tract, and denuding it of its surface, if they be so disposed, until the extravagance of leaving it—even though it be of gravelly soil and shallow soil—shall have become apparent to the public. These allotments (with others let out at rents near the populous village already referred to) will have some effect in relieving the pressure of rates, though they will be insufficient to cause much perceptible diminution of them.

I would first suggest, then, as a certain means of lessening the poor-rates, an enlargement of the allotment system, and a different modification of it. As affects the labouring poor chargeable on parish rates, I would have a certain quantity of land—and this would be a favourable period for obtaining it on lease—rented for labourers in different localities of this parish, which I have taken as an illustrative case.

Suppose 20 acres to be taken, at 2*l.* per acre, for our purpose. Of the 75 individuals in the poor-house, maintained at the expense above stated, 20 would be able to cultivate from half a rood to two roods. Supposing these persons to leave the union-house, and receive out-of-door weekly relief to the amount of 1*s.* 6*d.*, and a quarter of an acre on an average each, there would be an annual saving on this account of 52*l.*; there would remain 15 acres to be appropriated. These might be divided into portions, from 1 to 4 roods (according to the means which they might possess of cultivating them), among such of the 256 recipients of out-of-door relief, or others likely to become heavily chargeable without timely succour. By thus aiding them I calculate that one-third of the sums now given to each individual for maintenance would be cheerfully surrendered for the possession of a free allotment. The saving on this head would be, on an average, 6*d.* a week from each of the 256 individuals, which would amount to 332*l.* 16*s.* per annum. The account, then, so far, would stand thus:

Saving on 20 paupers	£ 52	0*s.*	0*d.*
Saving on 256 paupers	332	16	0
	£384	16	0
Deduct rent of 20 acres	40	0	0
	£344	16	0

This sum of 344*l.* 16*s.*, deducted from 1485*l.* 18*s.*, leaves 1141*l.* 2*s.*

Some very deserving families ought to have prize portions in addition to the ordinary lots, in order to reward them and stimulate others to the exercise of skill, economy, and good conduct. And in the annual apportionment of these free allotments (subject, however, to nominal rent, for obvious reasons) which I believe would be eagerly sought, certificates of good character signed by a clergyman, the relieving officer, and a magistrate, should be required from the applicants.

To the difficulty which naturally presents itself, viz., that the recipients of parish relief in its present form would not voluntarily exchange 6*d.* a week for a portion of land of much less value in the market, I reply that the facility which the occupation of even half a rood of land of the ultimate value of 10*s.* would afford for keeping a pig and some poultry, would be an important element in the estimation of those persons, and would render the allotments equivalent at least to the money surrendered on obtaining them. The pleasure, too, of having a healthful mode of employment would have great influence on many minds; and liberation from the union-house would decidedly be considered cheaply purchased by the proposed substitution. The quantity of productions which a well conducted rood or two of prime land would yield, would go far towards the support of a single man, or of even one with a wife and child. The moral benefit gained by such a system, if generally acted on, would be incalculably great.

We have already reduced our amount of parochial taxation from 1485*l.* 18*s.* to 1141*l.* 2*s.* But this sum is, I think, capable of farther diminution.

A parish heavily burthened like this in question, for the support of poor persons living in a populous village, while other rural parishes are very lightly taxed, because thinly peopled, should be relieved of the unequal pressure. A remodification of the present system of rating, so as to equalise the pressure of it, would probably reduce the sum of 1141*l.* 2*s.* by one-third, viz., to a fraction over 761*l.* And if this sum were expended in additional labour, or higher wages, the relief thereby afforded to labourers would be very considerable.

The arrangement of suitable machinery for a new system, framed on the principle of equalisation of rates through very extended districts would be simple. A district treasurer, suppose a collector of inland revenue, might receive and transmit half-yearly to the treasury the sums collected for him, and the treasury should, in such case, issue the sums necessary for the maintenance of the poor.

But I have not concluded the calculation yet. There are several hundred acres of commons within a radius of four miles from the village in which I live, which might be turned to profit. Any one competent to judge of the qualities and capabilities of land, and who may have seen what the industry and economy of the Belgians have effected in some parts of their country, where sandy heaths (in which vegetable mould was first generated by sowing Fir seed, which, becoming trees, furnished, through the deposition of leaves, sufficient soil to induce cultivation) have been rendered fertile, would at once perceive that the commons to which I have been adverting are much more capable of culture even in the worst portions. The social good which would result from enclosing commons throughout England, according to local requirements, would, in a moral point of view, be still more important than the pecuniary advantages that might ensue. The profit, I readily admit, is too problematical, especially under the present depression of agriculture, to induce their culture by private enterprise. But if commons generally were connected with large district poor-houses, they would afford a valuable field for the application of that labour which is now so frequent a wasted or unapplied power. A well organised system of field-labour might not only be made a means of social benefit, by drawing forth the latent productions of cultivable, but unworked lands, and making them experimental and model farms, and also by training juvenile paupers to habits of the best agricultural practice. Judging from what I have seen respecting families who have squatted on commons, apart from a church and school, and effective control of any kind, I believe that commons have proved to be an evil of great magnitude. A population springs up there, of whom a large portion live without God, desecrate the sabbath, absent themselves from the parish church, or regular dissenting chapel; or if they have religious impression, assemble in congregations as Latter-day Saints or Ranters. The poor colonies in Holland show to what an extent lands cultivated by the poor may be rendered self-supporting.

But the culture of the best land procurable in the neighbourhood of the present poor-houses, would be the most directly beneficial; and I am within bounds when I estimate that the saving which might be effected by the annexation to them, would reduce the rates, and thereby relieve the farmer, so that he might give his labourers more employment, and on more favourable terms than it is in his power to afford at present.

I must, in conclusion, advert to a matter in which many farmers act ungenerously to their cottagers. They selfishly refuse them the privilege of keeping pigs or poultry, lest they might be tempted to pilfer corn and Turnips to maintain them. This is a cruel restriction, and unworthy of any benevolent man. In truth, it is an unwise and profitless economy to limit the means of the labourer too strictly.

I cannot conclude these hasty and, I fear, ill-arranged and otherwise also imperfect observations, better than in the words of your correspondent "Falcon," relative to the last point on which I have treated:—"The screwing system is bad policy, and such parsimony brings its own punishment. In my limited experience, I have always found it advisable not to cut down wages to the lowest figure for able-bodied men. The addition of 2*s.* per week is amply repaid by the energy and spirit it infuses into the frame of the labourer. He appears to dig and delve with pleasure, compared to the man who is continually pulling against the stream, and knows that at the end of the day his task has neither been profitable to himself, nor to his master."

"Blessed is the man that considereth the poor."

M. D.

* No such privileges in my neighbourhood.

ON THE CULTIVATION OF OATS.

No plant of the cultivated sorts is adapted to a greater variety of soil than the Oat; the crop is raised with much ease on almost every kind of land, from the heaviest loam to the lightest sand, and consequently a place has been occupied by it in almost every rotation of crops. Before agriculture had been subjected to general rules, the result of long experience, and the land was often sown as long as any return could be obtained, before any means of recruiting it with manure were thought of, the last crop was generally Oats, as it returned an increase of the seed, beyond any other cereal plant. Then as the land did not any longer repay the labour of ploughing and sowing, the cultivation was abandoned, till some renewed fertility was produced by the time in rest, and by the decomposition of roots and weeds. It is supposed that the Oat draws much nourishment from the soil, and consequently very much exhausts the land, and many farmers are induced by this consideration to buy, rather than grow the Oats for the use of the farm. This plan may be judicious where the soil is very rich, and adapted for the production of Wheat and Barley, but a general rule directs the home consumption of Oats to be raised on the farm, rather than trust to a fluctuating market. With proper management, a crop of Oats will give as great a profit on the best land as any other crop, when it is considered that it requires less manure, and produces an abundance of straw, which is very fit for the winter food of horses and cattle, especially when aided by roots or other succulent food.

The success of a crop of Oats depends, as every other crop, on the preparation and manuring of the land. The sowing of culmiferous plants in succession is now universally and justly exploded from every improved and economical system of cultivating land. The soil is rendered hard by such a course, and exsiccated by constant exposure to the influence of heat and drought. Universal practice has placed the Oat in the first place of the rotation of crops, beginning the course from the state of Grass, whether it be of short or long duration. Several varieties of Oat are cultivated in Britain, of which the qualities are so similar as to make no difference in the necessary cultivation.

The common white Oat is most suitable where the inhabitants live much upon Oaten cakes.

The red Oat is hardy, gives good increase, but the straw and the grain are coarser than the white varieties.

The blue and grey Oats are weak and unproductive.

The Poland Oat is plump in the grain, but very thick in the skin. The grains are mostly single, have no awn, and the straw is short; it answers best on dry warm soils and situations.

The Friesland or Dutch Oat affords more straw, and is thinner skinned than the above mentioned variety. The grains are mostly double, the larger one sometimes awned, with the awn placed high. It is now little used.

The Siberian or Tartarian Oat has been reckoned a distinct species, each flower frequently containing three perfect florets, never less than two, with a pedicelled rudiment of a third; the panicle is unilateral, and differs from all other varieties; the grains are thin and small, the largest awned, the small ones awnless, the

straw is tall and reedy, and of course not so valuable as fodder. This Oat gives much the largest produce on inferior clay lands, but the quality is inferior.

The Essex short Oat is very plump, and is gifty in the produce—the straw is short and thick.

The Potato Oat is very heavy and yields largely; the straw is strong and reedy, and is generally preferred in all tolerably mild situations, as it stands upright and does not fall down and lodge so readily as the weaker stems, and the reedy nature of the culms suits as an open bed for Grass seed when sown on a green crop fallow. The meal of the grain, though more abundant, is not so fine in quality, as that of some other varieties of Oats. The plump grain is very apt to be shaken from the husks by the violence of sunny winds in high and boisterous latitudes.

Universal practice has now fixed the Oat as the first crop of the rotation, or the plant that is used on the Grass furrow of any age, whether of a permanent pasture, or of one or two years in duration. Green crops thrive better when cultivated from an Oat stubble than after any other culmiferous crop—and from whatever cause it may arise, the fact is certain. The land to be sown with Oats must be ploughed in the early winter, and best in the months of November and December. To grow abundantly, Oats require a rich adhesive soil—but they also yield fair crops on inferior lands that are judiciously cultivated. All lands are benefited by early ploughing; tenacious soils are mellowed by the action of frosts and thaws, and light lands are compressed by lying during winter for a considerable time before being sown. This compression is very necessary, in order to exclude the drought, and a firmness is required in which the roots of plants will be fixed. This very necessary property in all fertile lands is much promoted, in the case of light soils, by means of the land being ploughed in the early winter, so that the furrow slices sink and become firm from the state of rest. Moisture is also acquired and retained by reason of the quiescent state of the land in the spring.

The month of March is the general season of sowing Oats over the greater part of the British Isles. Some situations are earlier, and admit sowing in February; and others are later, and protract the season over the month of April. The light brown colour of the land gives the indication of the proper state of the soil, when the seed is sown broadcast on the surface by hand, and covered by the harrowing of the surface. The seed in bags is laid in a row across the fields, and at distances between the bags as the quantity of land may require. When the field is of much length, two rows of bags will be convenient and necessary, and laid at equal distances between the rows, and from the ends of the field. The wheels of the carts that convey the seed to the field will make ruts in the passage across the land, into which the seed will fall, and form an unsightly row of the braird. It is therefore preferable to carry to the field the seed as it is wanted to be sown, on the back of a horse guided by a lad, who lays down the full bag in advance of the sowers, and picks up the empty ones behind them. For this purpose, the seed in bags may be placed in carts outside the gate of the field, and hence carried to be sown on the back of horses. The sowers walk abreast, and receive a supply of seed in passing the bags, which is given them by the person appointed for the purpose. Two pairs of common harrows follow the sower, and cover the seed by a double tine, or by passing twice over the same ground. This operation is called "breaking in" the surface, and is followed after the sowers, till the field is all seeded. A double tine of the harrows is next applied in a straight line across the field, which effectually breaks down the crown of the furrows, and completely covers the seed. The finishing process is done by a double tine lengthwise, or along the plough furrows, which suits and pleases the longitudinal direction of the eye rather than the cross harrowing. On fine lands, a single tine done longitudinally will often be sufficient. In some cases, the water furrows are drawn by a one-horse plough, and the headlands are cut by gaws or open passages for the water to escape into the ditches.

In order that the cross harrowing of the land may produce the greatest possible quantity of alluvium, or of finely comminuted particles, being the matrix in which plants of every kind are seen to grow with the greatest readiness and vigour, the furrow-slices must be very sharply cut by the coulter and share of the plough, and laid over at such angle as will place the comb in a thoroughly perpendicular position.

The seeds being regularly scattered by the hand over the ploughed surface lying in the above form of furrows, the cavities receive the whole quantity, which is prevented from sinking to the bottom of the furrows by means of the slices being closely pressed together by the mould-board of the plough, when laid over by the turning power of that appendage. The height and narrowness of the combs of the furrow slices form the chief excellence of the land that is ploughed for Lent crops, and the depth of the interstices becomes a secure bed for the seed in the hollowness against damage from frosts, and from the winged vermin that infest the newly-sown grain fields. An easy action is presented to the harrows in breaking the narrow combs by the process of cross harrowing, which fills the cavities, and covers the seed with a quantity of fine alluvium, that receives and retains moisture in the proper quantity and degree, and also affords a matrix of intimately comminuted particles, which gives to all young and tender germinations the necessary pabulum both in kind and quality, until the organs of the plant become stronger for the reception of proper substances. It is this preparation of alluvium which yields as good a braird of Oats on poor lands as on rich soils, and which continues until the necessary supply of food fails to be supplied by the former, and is given in more abundance by the latter. In either case of soils it is essentially necessary that the alluvium be produced by the above mentioned modes of ploughing and harrowing the land. The alluvium supports the tender germination of the seed till the roots penetrate the firm furrows that underlie the surface, where they find the very agreeable products of the decomposing herbage of Grass, than which no materials can yield better food for plants; consequently the abundance of a crop of Oats will mainly depend on the quantity of Grassy herbage that clothes the surface of the ground, and which is prone to decay. Early ploughing of the land favours this decomposition, which will be partially commenced by the time of sowing the Oats, and will thus be ready to afford a prompt and effectual aliment to the young and tender germinations.

About the time of the Oats being fully brairded, but not grown strong, the land must be rolled with a weight of one ton, and done across the field, as the sides of the furrows are completely hit by this method; and by rolling longitudinally, the roll will reach over the furrows or not strike the sides at all. And as the breadth of the ridges may not be an exact multiple of the width of the roll, time will be lost in going along without the full breadth of land being covered and rolled. The cross direction of the work removes these objections. This rolling is beneficial in closing the surface of the ground against the attacks of drought—in fixing the roots of the plants firmly in the ground, and in levelling the cloddy surface for the action of the scythe that may be employed in mowing the crop. On dry soils a repetition of the operation will be attended with useful effects, when the weather proves very dry, or insects are seen to vex the plants. In many cases the land cannot be too much rolled.

Before the second growth of the Oat plants overshadows the surface so completely that no objects can be seen, persons provided with clippers walk in the furrows, and cut or pull all tall weeds that may appear, as Docks and Thistles, or they walk at distances that are within the reach of the arm to stretch over the width. By this means no weeds can escape being seen and cut.

In cold latitudes, and under wet and late climates, Oats are sown on the green crop fallows in the place of Barley, after the Turnips are removed. The land is ploughed with one furrow in March or early in April; the seed is sown in broadcast, and covered by three or four single tines of harrowing. The rolling is then done across; the Grass seeds are sown on the level surface, and covered by a single tine of the light harrows. The water-furrows are carefully drawn by the double mould-board plough, and open cuts are made to conduct the water through the headlands into the side ditches. When the plants are rising into the second growth, the weeds that have appeared must be pulled or cut in the way that has now been mentioned. As the Grass seeds that are sown will in some part be allowed to rise into hay, the extirpation of tall weeds becomes doubly imperative, that no deformities appear among the Clovers, which form the finished result of the labours of fallowing.

So soon as the husk of the Oat grain is wholly filled, and when the straw in the neck of the stem, on the slender part immediately below the head, has become white or strongly inclined to that colour, the crop may be cut with advantage, without waiting the ulterior stages of maturation. When cut in that state, the meal hardens gradually in the husk, and becomes whiter in colour and finer in quality than if the dead ripeness was allowed to communicate from the root to the stem the incipient decay that happens in every vegetable growth after maturity has been attained. A coarseness is attached to the deadening relaxation of the enlivening juices, and as the stagnation first takes place at the root, there is time to cut the crop before the communication reaches the head of the stem. The mealy quality of the seeds of every culmiferous plant is improved by the early cutting, and there may not be any diminution in the size or weight of the pickles, merely by allowing the husks to be wholly filled, so that a hardening of the meal takes place after the crop is cut, but no shrivelling or shrinking of the size of the kernels.

The cutting of the crops of Oats is done in two ways—by the sickle and by the scythe. Bands are made by twisting together two handfuls of the stems, which are laid on the ground and fitted to the size of a sheaf by placing in them the successive cuttings done by the sickle in the right hand. The sheaves are then tied, and set into shocks of 12 sheaves, and very commonly with two placed on the top as "hood" sheaves. These sheaves are so placed for the purpose of keeping dry from rain the heads of the sheaves that stand upright and form the shock. In this state, the crop remains on the field till the sheaves are sufficiently dried to be carried to the farm, built into ricks, and afterwards thatched with straw.

When the crop is cut by the scythe, the swathes lie for some few days exposed to the drying effects of the rays of the sun, and are then turned over in order to make both sides alike in dryness and state of tendency to become ready for being stacked. After both sides have been equally exposed, the swathes are tied into sheaves, set into shocks, carried to the farm-yard, and treated as above-mentioned when cut by the sickle. This method supposes dry lands and early climates.

The grain of Oats is very easily separated from the straw, and the process is at once accomplished by the scutchers of the common threshing-machine. The awnless grain falls into the wire-hopper of the farming-machine that is driven by the threshing power, and comes to the floor of the barn in a half cleaned state. The straw is carried over two revolving rakes into the straw barn, in which it is stored for use. The grain is passed through another farming-machine that is driven by hand, which separates the sound and the light grain, and is then ready for sale and other purposes. Oats are also threshed by flails on wooden floors, parted from the straw, and winnowed for use as above-mentioned.

The chief use of Oats in Britain is for feeding horses, and often with a small mixture of Beans. For this purpose no equal substance has yet been found. An average quantity to be given weekly to a farm horse may be stated at 2 bushels. In Scotland and the northern counties of England, the meal of Oats is very largely used as human food in two ways—in being made into porridge or hasty pudding with water and milk, and baked into thin cakes on a flat iron girdle. Both these preparations are very nutritious as food, as is very amply shown by the ruddy complexions and the robust and healthy bodies of these northern people. Probably the coolness of the climate may have very considerable influence in modifying and correcting the commonly understood heating property of the Oat grain, and the force of habit will very much help to continue any old-established custom. The most recent analysis of Oats, by Dr. Christison, of Edinburgh College, gave in 100 parts—72.8 of starch, 5.8 of saccharo (mucilaginous extract), 3.2 of albumen, 11.3 of lignin (bran), a trace of oily resinous matter, and 6.6 of moisture.* From these constituents it would appear that Oats are much less nutritious than Wheat, though, according to Boussingault, the difference is but small. Whatever may be the chemical merits, experience proves that Oatmeal forms a very substantial diet to the inhabitants of North Britain, and that no inconvenience is experienced with good digestive organs, and a proper amount of vigorous exercise, from the supposed tendency of the food to become ascescent on the stomach. A very common character of Oats is in being the food of horses in England and of men in Scotland, and the rejoinder has been made that nowhere can there be seen such horses and such men.

The best quality of Oats is produced in Scotland and in Friesland, where the soils are loamy and partially adhesive, and the climate cool or moderately warm. There is no doubt that climate exerts a most powerful influence on every form of vegetable growth, probably more than the soil in which the roots are fixed. Oats require a very considerable amount of moisture, and a protracted season of growth; consequently they are not grown in hot countries; and even in South Britain the straw is short, and the pickles are puny, and the produce is small, by reason of the early climate hastening the premature maturation. But very much of the success of the cultivation of Oats in Scotland arises from the rotation, which is almost universally adopted, in the land being laid two or three years in pasture after the crop of hay has been got in the first year from the Grass seeding of the ground. During this period of rest in pasturage, the land is consolidated, and is further bound together by the numerous fibres of the roots of the Grass plants, which are very thickly interlaced, and serve to bind the natural looseness of any soil. The leaves of the Grasses fall upon the ground and are decomposed in the undergrowth, which the mouths of the grazing animals do not catch. When the land is ploughed and sown with Oats, the leaves and the roots are decomposed, and afford food to the growing plants; and experience has most fully shown, by the ample evidence of daily proof, that no manure yet known can be compared with decomposing vegetable matter, both for the property of quickness of action, and for the durable effects. The soluble parts are quickly available, and the earthy substances remain for gradual decomposition, to add to the staple of the soil. It is wholly undeniable that the splendid crops of Oats and Turnips in Scotland are very mainly owing to this vegetable freshness, arising from the rest of the land in the pasturage of Grasses by animals. At the same time it must be freely admitted that both the soil and the climate of that country are peculiarly favourable to the growth of Oats, and more so in the middle northern parts than in the southern counties, except where the soil is rich enough to outstrip the influence of circumstances; if not wholly, in a very considerable degree. On the other hand, it may be stated to be quite certain that the introduction of the rotation into the southern counties of England, by which the land is pastured for two years, would very much increase the success of the cultivation of Oats, and also convey much benefit to the following crop of Turnips, in the way that has been mentioned. This allusion more specially comprehends the inferior soils, as the richest lands will produce a crop of Oats by the intrinsic qualities without the adventitious aid of the vegetable sward. But even in these cases one year of pasture will much increase the chance of success. For this purpose all permanent pastures of the best secondary quality and downwards must be put under arable cultivation and subjected to the rotation that has now been mentioned.

* On this subject, a Report by Professor Norton, in the Highland Society's Transactions, should be studied.

The quantity of the seed of Oats sown on an acre of land may be averaged at from 3 to 5 bushels, and the produce varies from 5 to 10 quarters per acre, exceeding the latter figure in some very particular cases.

In France and Germany the practice gains ground of baking the meal of Oats and Rye into loaves for horses' food, and is said to be a very evident saving of provender. In dry hot climates the straw becomes very dry, from the early ripening that is forced by the climates; but in the northern parts of Britain, where the Oats are the chief crop, the straw retains a greater quantity of juice, and in many cases it becomes of much value as fodder for horses and cattle. This is the effect of climate, and is often much assisted by setting the crop in single sheaves that are tied loosely, and when they are dried and seasoned by the sun and wind, the sheaves are tied firmly in the usual way, and placed in shocks. In late harvests, and where the crops are unequally ripened, very much advantage is derived from this method; the crop is sooner ready for the rick-yard, and the straw retains much of the natural sap, to improve the quality as fodder for the animals of the farm.

The Oat is a hardy grain, and is suited to high latitudes and exposed situations, more than any other culmiferous plant that is known. It is less affected by the frosts of spring, and less damaged by the rains of autumn, than Barley; the bulk of straw is much larger, and the return in grain is more valuable, as the greater quantity of the article compensates the difference in the price, that of Barley being generally one-half more than of Oats. Except for the purpose of thatch, the straw of Oats is the most valuable of the culms of the farm, and the harvesting is always the least expensive.

Oat straw contains in 100 parts.		Oats contain in 100 parts.	
Carbon	50.1	Carbon	50.7
Hydrogen	5 4	Hydrogen	6.4
Oxygen	39.0	Oxygen	36.7
Nitrogen	0.4	Nitrogen	2.2
Ashes	5.1	Ashes	4.0
	100.0		100.0

The ashes of Oats contain in 100 parts.

Potash	6.00	Silica	76.50
Soda	5 00	Sulphuric acid ...	1.50
Lime	3.00	Phosphoric acid ...	3.00
Magnesia	2.50	Chlorine	0.50
Alumina	0.50		

J. D.

Home Correspondence.

Mr. Mechi's Lecture.—Mr. Mechi states that he has a boy at his farm, whose *sole* occupation it is to groom 30 bullocks, and that it only costs one farthing a bullock, per week. In this part of the world we are not fortunate enough to find a boy, of any capacity at all, at 7½*d.* a week. Surely the great empiric has made a *lapsus linguæ* here. Perhaps he meant to say that the boy groomed the 30 bullocks, 60 calves, and 10 cows, and that it only cost one farthing a head, per week, to give each of them a rub down. One hundred farthings are two shillings and one penny. If the boy worked hard for 10 hours a day, he would be able to devote about six minutes to each of the 100 animals. Now, considering that these lie upon boards, without any straw, I will leave it to any practical man to say what good a six minutes' rub, from a boy worth only 2*s.* 1*d.* a week, is likely to do either cow, calf, or bullock. If the rest of Mr. Mechi's "sure it pays" are worth no more than this, God help the people that pin their faith upon him. *W. G. D.*—I would recommend your correspondent to have each bullock curry-combed and brushed along the back and sides for *five minutes* daily, by a stout lad, and he will arrive at a sufficient conclusion as to my meaning and calculation. The animals are always clean on the open boarded floors; the brushing is merely to stimulate the action of the skin, and remove its natural exudations—there is no dirt to remove. *J. J. Mechi.*

Allotments.—In the correspondence on the allotment system in your last Number, there is in one of the communications an error in the wages received by the two individuals represented as "C." and "S.;" they each had 16*s.* a week wages; it is misprinted 10*s.*, which makes a serious difference. I am truly glad to find one of your correspondents advocating gardens to the cottages. I am in the same boat with him. My cottages for the workmen have each a good-sized piece of ground to them, which I consider better than having the same quantity more or less at a distance. Your indulgence has also exhibited another important fact, viz., that the same correspondent is, at the same time, trying to elevate the men in the scale of being. He is endeavouring to educate them, and if right principles are inculcated, no doubt he will reap a harvest of good, and others also will enter into his labours. *Justitia.*

Smithfield Club.—I send you an extract from Lord Hardwicke's speech, which seems to me to deserve a place in your columns, as it criticises the mode in which the prizes of this club are awarded. His lordship said:—"I have been an exhibitor, and have had the good fortune to have a medal awarded to me. I thank the society for it, though I should have been better pleased had I received that medal more in conformity with my own views relative to the experimental fattening of cattle, than the system which is generally adopted in this country. The plan which I would adopt should be of a different character, though it is one more difficult, perhaps, to carry into operation. I consider that in bringing up animals to compete for a prize, the intention is to show that race and that breed which is the easiest to fatten; and that the present method does not show that at all. You do not really know how the animal has been fed, although it is stated so and so. You do not know how long it has been fattening; whether from infancy, for the previous six months, or any other period. You do not know its positive quality nor its age for a certainty. If you are to run a race of this description, it is my opinion that the animals to be fatted for exhibition should be inspected in their lean state, that their condition and breed should be made known, and that the fattening process should begin from the same date, and the animals be shown at the same period of time. You would thus early discover which has the best blood. At present, manage it as well as you can, I deny that the result is satisfactory, or that the contest is just or perfect."

Chaff Cutting and Oat Bruising.—In your number for December 7th, a correspondent at Chorley has given his experience of "Chaff Cutters and Oat Bruisers." He "bought those implements and used them some years because everybody else did;" and he "doubts whether both are not positively wasteful." He will "be glad if he can provoke discussion in your columns." Permit me to say my experience of those implements is altogether the reverse of his. He has not stated the number of "years" he tried them, nor the way by which he arrived at his astounding conclusions except the increased "gaiety of a young horse." He "watched the horse and the stable man more closely." It not unfrequently happens that the parties having the care of cattle are much opposed to any innovations upon their system, and they can generally thwart the efforts of those who introduce them; thus showing the necessity of parties who wish to introduce anything new, taking care to superintend very closely for a short time the conduct of any experiments they wish to make; better still if conducted by themselves. I have, Sir, been using the "Oat bruiser and chaff cutter" for nearly 30 years, and I know full well that if anything is wrong with either of them, my pocket at once suffers an increased draught to the extent of one-half at the least. I will explain. The hopper of the bruiser holds a bushel of corn (whole), the rollers are set to work, and in a few minutes that same bushel is re-measured; it is found to have increased in bulk at least one-half, but if the corn is well crushed, it will measure three-fourths more in bulk than when first put into the hopper. This of course applies to quarters, or hundreds of quarters in the same ratio. And after many close experiments with the crusher, either by my own hands, or under my inspection and direction, I conclude, the least saving in the consumption of corn is one-half; because, by giving the animals (not horses merely) the same quantity in measure of crushed corn they were accustomed to receive of uncrushed (the work being equal), they will keep in better condition—their fæces will not be composed of one half of whole corn, sufficient to fat all the poultry or sparrows, if they abound, in the yards. But Sir, to speak with confidence, there must be personal inspection of these things; and if your correspondent continues incredulous I would request him to have collected some of his horses' droppings, to dry and sift them, nnd then sow the corn that remains, and he will find in a short time a luxuriant green crop on his land. What I wish to impress is the fact, that all that the various animals swallow of corn that is unbroken is worse than useless to them; they do not derive the smallest nutriment from it, and have wasted their saliva and gastric juice in merely swelling and softening the grain. If cattle should ever be found with gizzards, then give them whole corn, and spare the time employed and expense incurred in crushing it for them. I have tried it with cows, beasts, and pigs as well as horses, and with the same results from any grain—Beans, Peas, Barley, Rye, and Wheat, as well as Oats; it must be so; reason and facts settle the question, where the practice is fairly tried; but to do this requires more attention and labour than many will give. Let not the implements have an ill name. Perhaps some may imagine I have an interest in the manufacture of these implements, I beg to assure any such I have not, either directly or indirectly. The cutting of hay and straw I am of opinion effects a saving to nearly the same extent as crushing of Oats; and I must, ere I close, refer to the great difficulty there is in overcoming prejudices when early imbibed. I was in London a short time since, and called at stables where I had put up for many years. I enquired of the proprietor how his stock went on (I had, after several years' attempts, induced him to put up power and crush his Oats and cut his chaff). He replied, "Very well indeed." "You have now found what a great saving it is, said I." Mark the reply. "No, it is no saving, but my horses look a great deal better, and do their work better." "Well then that is a saving; but I fear you have not calculated?" "No, it is no saving, but they work much better and do more of it. Why, I have been able to take upwards of 1500*l.* more job work than I did; but I do not see that is any saving." He could not see with my eyes, and I left right glad that I had persuaded him to try the practice; and in 3 or 4 years such was the result. I can understand the party consumes nearly as many quarters of corn as he did before; but if in a year he can do "upwards of 1500*l.* worth more work," it appears to me he has just saved the 1500*l.* without an increased outlay. If I am mistaken some of your correspondents will correct me. I apologise for the length of this; yet would endeavour to induce proprietors of live stock to give themselves no rest until they have in use "Oat crushers," and "Chaff-cutters." The owner of a single horse can save the expense of the hand machines in a few months. They cannot possibly be too strongly recommended. I beg to add, that wherever the crushers are purchased, the makers should spare no pains to instruct the parties in their proper use and means of adjustment. I have been surprised to see how little acquainted some persons are with the right use of implements; I have seen the rollers screwed up close at one end and open a quarter of an inch at the other, or open altogether wide enough to permit Peas to pass through uninjured, and the complaint was, "the Oats were not better after they had been put through, nor was their bulk increased." Very wonderful, indeed! Let the practice be fairly tried, and the results will be most satisfactory. *Baddow Park.*

Societies.

Highland and Agricultural, *Nov.* 20.—(*Concluded from p.* 782.)—*Substances which can be most profitably employed as Auxiliary for Turnips, in fattening Cattle and Sheep.*—Mr. Russell, Kilwhiss, Fifeshire, said: In complying with the request of the Directors to give my experience as to the substances which can be most profitably employed as auxiliary to Turnips in fattening cattle or sheep, I think the subject will be best treated by considering it, in both the objects I have in view, in consuming the Turnip crop upon my farm. On the one hand, I would endeavour to realise the greatest return from the Turnip crop, when fed on the farm, independent of the manure. I have often heard it maintained that more will be made from the Turnip crop per acre, when nothing else is given to the cattle or sheep but straw, and that the use of oilcake or grain will leave less return, after their cost is deducted. I must say that I have arrived at a different conclusion; but the experience of individuals will, no doubt, vary as much on this head as in most other matters of farm practice; for Turnips, like the Grasses, are the best tests of the stamina of the soil, as their nutritious qualities are well known to be so dependent on the character of the land on which they grow. A given weight of roots will produce much greater results in one case than in another. The quality of roots is very inferior on my own farm, and I very rarely give Turnips to any kind of stock without [a little cake or corn. But, on the other hand, as I am far from any town to obtain manure, enriching the farm-yard dung through the addition of extra feeding stuffs, has an important bearing on the subject which has been chosen for this day's discussion. It is one of the most firmly established principles in the whole system of agriculture, that the more nutritious the food of animals is, the more valuable will the manure be. In Fifeshire, artificial food has hitherto, in general, been given, rather with the view of obtaining a greater return from the green crop, by using it during the last stages of feeding, than with the intent of relying on the increased value of the manure, and trusting to be compensated indirectly. At present there are no grounds to believe that much increase in the produce of our fields will be profitably or permanently maintained without an increased herd of stock being kept. Notwithstanding the great benefits which have resulted from the introduction of a vast variety of artificial manures, which often produce extraordinary effects in the first steps of agricultural improvement, the home-made will always be the sheet anchor upon which we must rely for success. In the one case, you will more likely have the main elements of nutrition, upon which the healthy growth and maturing of plants are dependent, than in the other, where an undue development of certain organs is often not followed with anticipated results. The after condition of the land, when large crops have been forced under the different systems, is a most important matter, and becomes very marked where the soil is of weak staple. At the present time might be distinctly seen on my farm the great advantages of rich, box-made manure, which was applied to the root crop in 1847, when contrasted with what was only dressed with superphosphate of lime and guano, although the land has been two years in pasture; these facts, and many others which might be adduced, are not to be lost sight of. It becomes a matter of primary importance to many of us in the rural districts to endeavour to consume as much extraneous food, or the less valuable grains on our farms, as possible, in conjunction with the Turnip crop, without realizing less money for it per acre. I think we ought all to aim at this point at least. As I increase the extent of my autumn crops, or sow the spring crops earlier, the more is this necessity impressed upon me. How far it may be economical to trench on the profits of the green crops, by giving large allowances of extra food, having the mere object of enriching the manure, is a question upon which I am not satisfied. I am aware that circumstances do exist where it may be the most profitable way to obtain manure to sink the whole value of the Turnip crop, by giving large allowances of extra feed. But in my own experience I have found that special manures, given in small quantities, can be advantageously applied to all kinds of crops, in consequence of the mere habits of the plants, forming an important element towards greater certainty of results, independent of the capable condition of the soil. I have thought the previous remarks not out of place, in order that the two-fold object of consuming the Turnip crop may be appreciated, where it is the main reliance for keeping our farms in heart. When an ox or sheep is grazing in a meadow, the complicated function of rumination is most perfectly performed. Nature being complete in all her parts, we cannot doubt but that the more capacious organs of the ox are as capable of extracting as much nutriment from the Grass as that

of the sheep, but we all know that an ox will allow a much larger quantity of nutriment to pass through its organism when fed on unground grain, than the sheep; the preparation of the food of the former is therefore an important matter to be attended to. The digestive organs of the ox and sheep are designed rather to extract nutriment in a diluted and bulky state, than to assimilate it when in too concentrated a form; these animals generally prove grateful when moderate quantities of highly nutritive food are given in such forms as physiologists point out, while they will prove the reverse when it is given in excessive quantities. When lean cattle are put on Turnips in yards or boxes in autumn, and obtain an unlimited supply of Turnips (which is necessary to obtain the regular feeding of the lot, whatever the numbers may be), they will eat a very large quantity; in fact, from the watery nature of the food, more than the system can profitably assimilate. As the season advances they will consume a smaller quantity of roots. I have found cattle of 50 stones imperial, when first put up to feed, eat daily 220 lbs. of cut Swedes, with Oat straw in the racks, and 5 lbs. of oilcake besides. It is a well recognised fact amongst cattle feeders, that it is very unprofitable to give cake or corn to cattle for the first two months they are put on Turnips, which is undoubtedly a weak part of the system when rapid ripeness is required. At this juncture prepared straw can be used in conjunction with cake or grain, as an important auxiliary towards economical results. Mr. Warnes, of Trimingham, in Norfolk, I believe, was the first to bring prominently before the public, the importance of having the extra food thoroughly incorporated with chaff, whereby the latter is rendered palatable, and the extra food is fully subjected to the important process of rumination. The utility of this system is now beginning to be pretty widely acknowledged, and it has been variously wrought out in details. I have followed a modified system of it, for five years, in feeding annually about 40 lean cattle on Turnips with advantage." Instead of giving my cattle an unlimited supply of Turnips in boxes or in stalls, I gave each beast about 1 lb. of cake and 1 lb. ground grain, at 6 A.M., well mixed up with 5 lbs. of 1-inch chaff, the latter having been well wetted with cold water before the cake and grain are thrown in amongst it; by 8 o'clock they have an allowance of 50 lbs. of cut Turnips, and are again fed at noon, and in the afternoon with the same quantities of food. I may here mention that I have found it of great importance to give the mixture before the Turnips in the morning, for, when this has been reversed, the cattle in boxes are sometimes very apt to hoove, when cut Turnips are rapidly swallowed; but when the other is adopted, I have never had a single case of hoove. Besides the quantity of food specified, the cattle have straw in racks, of which they consume very little. I have found this allowance and mode of feeding answer well; and with a little attention and tempering, you may have all the troughs clean swept-out by night-fall, and the animals prepared to rest for the night the most perfect pictures of content imaginable. I do not know how far a more perfect preparation or cooking of the artificial food, having the effect of rendering it more soluble, would compensate for the extra expense involved in the process. By this mode of feeding, 4 or 5 lbs of cake and grain become a substitute for 100 lbs. of Turnips, and it is not putting a high value on the latter when you have the assurance that you are feeding your cattle at as little expense as when they have nothing but Turnips and straw. The comparative rapidity with which cattle will take on flesh, under the different methods, more especially during the first months they are put up to feed, will be apparent to those who will give the two a fair trial. By mixing the artificial food with the more bulky material of chaff, any specified quantity can be more regularly divided amongst a lot of cattle in yards or in boxes, for the stronger soon lose the capacity of cheating their weaker neighbours of their due quota. I think this system holds out an inducement to increase the quantity of stock on farms where Turnips can only be raised over a small part of the occupation; and thus by obtaining a market for the inferior grain (by consuming it on the farm), will, in the end, prove the most economical way of obtaining a better supply of manure, at least it has been so in my own experience. I have never been in the practice of giving more than 4 to 5 lbs. daily, of extra food, in fattening cattle. In regard to the materials used as auxiliary to Turnips in feeding cattle, I am always inclined to keep by oilcake, to the extent of one-half of the whole quantity given, as it tends to make them softer in the skin, and more kindly to handle, than when grain alone is used. I prefer Bean-meal to that of any other kind of corn, but as to this I am not so particular, as the relative prices of grains for the time being determine which can be most economically given. In feeding sheep, the same principles will be found to apply as in the case of cattle; by substituting a portion of grain and straw, the Turnips can be economised, but not to the same extent perhaps as in the case of cattle, as you have less control over the process in the fields. By giving an allowance of palatable and dry fodder to sheep in Turnips in conjunction with the extra food, the per centage of deaths is greatly reduced. When grain was high in price, I certainly did prefer a mixture of oilcake or good rape-cake and grain for sheep, but for three years I have used neither of the former. In 1848 I used chaff, bran, and Oats; last year nothing but Oats cut half-inch out of the sheaf; and at present I am using the same, with the addition of a little inferior Barley for nearly 1000 sheep. I have not kept so rigidly to any substance for feeding as with cattle, for the produce of the farm is always preferred when its value in the market would indicate that other feeding stuffs cannot replace it with advantage, after paying for the extra expense incurred in selling the one and buying the other. The valuable experiments of Mr. Bruce, at Waughton, as detailed in the Highland Society's Transactions (July No., 1846), showed that there was a very small amount of loss in giving sheep Linseed uncrushed, which has been satisfactory to my mind that there is no use in crushing grain, and I therefore always allow them to grind it themselves. I have now gone over the chief points of the system of feeding which I adopt, and it would be out of place to go into further details. The same necessity of circumstances may not exist in others in pursuing a similar mode, for the elements of success in farming are presented to us in such variety, that they will ever give unbounded scope for skill and experience to develope, but he must be a good or bad farmer in the extreme who will not profit by freely discussing agricultural topics with his fellow-labourers, an excellent opportunity for which the directors of the Highland Society, under their zealous secretary, are now affording to the country; and, for my own part, while I always shrink from dictating to any one in practical matters, I have no scruple whatever in arguing the general principles involved in any subject, for their bearings and relations under other conditions are appreciated, and the bounds of our knowledge are extended.—Mr. WILSON, Eddington Mains, Berwickshire, said: The directors of this Society, in their laudable desire to increase the interest and usefulness of their monthly meetings, having adopted the practice of inviting parties from a distance to take part in them, I shall now, in compliance with their request, and as in some sort representing Berwickshire, offer some remarks on the subject under discussion. In endeavouring to answer the inquiry, "What are the substances that can be most profitably employed as auxiliaries to Turnips, in fattening cattle and sheep?" I think it needful to remark, at the outset, that the need for such auxiliaries, as well as the kind and the amount of them, depends mainly upon the amount of nutritive power possessed by the Turnips themselves, and that this is just as various as the soils on which they are grown. The overlooking of this fact has long appeared to me to render nearly worthless the results of those comparative trials which are frequently communicated to the public. In such statements we are, it may be, told how so many animals were fed on specified rations of Turnips alone, and so many more on other substances in addition. Now, although this may be quite conclusive as regards the particular farm, or rather the particular field of the farm, on which the trial is conducted, it determines nothing for the country at large. I know, for example, that Grass or Turnips produced on the best parts of the farm which I occupy, will fatten a bullock better, *per se*, than that from the worst parts, even with a large addition of farinaceous food. The same thing holds good of every product of the soil, so that even the cake or meal used in one case, may differ very greatly in inherent quality, from what is compared with it in another. But not to dwell upon this important consideration, and the fallacies arising from the disregard of it, I may say in the general, that I have not found it profitable to give large quantities of cake or meal per head, to fattening cattle. No doubt the animals improved more rapidly with such food than without it; but then the additional price obtained for them was not in proportion to the extra expense at which they are fattened. The manure, I have reason to think, was greatly enriched by the use of such food; but I must say, that I consider this an expensive way of purchasing foreign manure, and that if much of the return from the fattening of cattle has to be looked for from this source, it is cheaper to buy guano at once. There are, however, circumstances in which I think that it is judicious to add a portion of farinaceous matter to the food of cattle, and I shall specify some of these. I have already hinted, that part of the farm which I occupy is a poor soil. The Turnips grown upon this part I endeavour to consume by sheep, as largely as possible, but to get the straw of the farm made into dung it is necessary to carry a portion of the Turnip crop to the homestead, and that portion I apply chiefly to the rearing of young cattle. Now, as such Turnips are deficient in nutritive power, I think it advisable to add something better, that the young animals fed upon them may not be stunted in their growth. But, independent of this, I have learned, by dear-bought experience, that in rearing calves, I must use Linseed-cake on another account. I need not remind this meeting of the exceeding liability of these young animals to that malignant disease, called *blackleg*. Having kept a memorandum of my own losses, by it I found that in the first 14 years of my farming, they amounted in the aggregate to a number equal to my average annual stock; in other words, that out of 14 crops of calves, I had lost one entire crop by this disease alone. During that period I tried most of the nostrums then in vogue, without any success. I then, however, began to give a daily allowance of oilcake, say 1 to 2 lbs., and ever since my loss has been trifling, with some most instructive exceptions. Having that season a good deal of inferior grain, and having had no blackleg for several years, I thought that a daily feed of meal might be as good for my calves as oilcake, and much cheaper; but, alas! for ill-judged economy, I, that year, lost eight calves in the course of a very few days. I need scarcely say that I have not again ventured to dispense with the use of cake; and I am happy to add that my belief in its efficacy, as an antidote to this disease, has been confirmed by each additional year's experience. Here, then, is one instance in which the economy of using cake, as an auxiliary to Turnips, is clear and indisputable, and all the more that this disease is more prevalent on fertile soils. The cake, in this instance, is *medicine* as well as food, and the economy of the practice rests mainly upon this circumstance. In pursuing such an investigation as we have now in hand, it is necessary to keep in view that Grass or hay constitutes the natural food of the ox, and that his digestive organs are formed with a manifest adaptation to a moderately nutritive and very bulky food. We see that it is indispensable to his comfort that his capacious paunch be kept constantly full, so that even when supplied with food greatly more nourishing than the richest pasturage, he must have his fill before he will go to rest, and proceed with his rumination and digestion. But while he can *eat* nearly as much bulk of the more nutritious food as of other, his power of assimilation is not correspondingly expansive, and hence it happens that enormous waste ensues whenever this law of his physical constitution is disregarded. There is not only a waste of food, but the unassimilated surplus produces disturbance and irritation, issuing very usually in continued diarrhœa, and sometimes in more serious disease. This excessive purging is especially observed when cattle are first put on Turnips, and the poorer their condition the longer does it continue. Several plans have been adopted for avoiding this evil. One is to give them a limited supply of Turnips for some weeks at first, and thus compel them to appease their appetite by eating straw more largely than they would otherwise do. An East Lothian farmer has recently informed me that he has tried this plan with decided success. Something added to the straw to make it palatable, so that the animals will eat it freely, without being starved into compliance, is, I think, an improvement on this plan; for when a considerable bulk of good straw is eaten daily, this injurious purging will not only be avoided, but during the whole process of fattening, a much less quantity of Turnips will suffice than is found necessary in the customary practice. I do not give this as a mere opinion, for—as I recently mentioned to our local club—I have been convinced of it by a rather extensive experiment, which an anticipated scarcity of Turnips induced me to make in the spring of the present year. My cattle at that time were getting as many Swedish Turnips as they could eat, and, in addition, 4 lbs. of Bean and Barley meal, with ½ lb. of bruised Linseed mixed in it, as the daily ration of each animal. This meal was given to them dry every morning. Seeing, however, that my Turnips were to run short before the cattle were ready for market, I was induced by some statements which I met with in the *Agricultural Gazette*, to purchase a straw-cutter, and to add a considerable quantity of chopped straw to their daily fare. To induce them to eat this chopped straw, it was moistened with a soup prepared by soaking the bruised Linseed for 24 hours in cold water, and then sifting the meal over it. When these ingredients had been well stirred, and allowed to lie for a short time, about a bushel of the mixture was served out to each bullock. They all eat it readily on the very first trial, and the effects were, that they made more rapid progress, and were quite satisfied with just half their former allowance of Turnips. In confirmation of what I have now stated, I may mention that a friend of mine, who is a very successful Beet grower, tells me that by giving his cattle a daily feed of grey-dust (the refuse from Oatmeal grinding), they are benefited, and a considerable saving of Turnips effected. Those who have read the Rev. Mr. Huxtable's pamphlet, are aware of the success with which he has carried out this principle. If I have rightly understood his statement, it would appear that by passing Turnips or Mangold Wurzel through a machine which rasps and crushes rather than cuts them, and then mixing chopped straw with the roots thus prepared, that he gets his cattle to eat a sufficient quantity of the chaff, without having recourse to Linseed or other meal at all. If this is the case, I regard it as the most important improvement yet made in cattle feeding; as on really good soils, the process might thus be conducted without using the farinaceous food, until the animal had nearly reached maturity. A small allowance of cake or meal for a few weeks before selling might, I think, still be advantageous; but to use these costly substances during the whole process of fattening, unless in the manner and for the object which I have endeavoured to describe, cannot, I think, be profitable. On weak soils it may be impossible to fatten a bullock without them; but this just suggests the inquiry, whether the occupiers of such soils would not do better by restricting themselves to such departments of cattle husbandry, as seem more suitable to their circumstances. We know in regard to sheep, that the occupiers of high lying or poor soil invariably part with their lambs as soon as weaned; that is to say, when they have brought them to the point at which they would cease to improve in their own hands, they sell them to those who can carry them forward to maturity. When we consider the advanced ages to which parties similarly circumstanced usually keep their cattle, and the state of gaunt leanness in which they come into the hands of the low country grazier, to the manifest loss of both parties, it will appear how desirable it is that the same principle now so generally adopted in regard to sheep,

should be applied also to cattle. For a few years past, I have with great satisfaction observed, that this more rational practice is decidedly on the increase. Large numbers of young stock are now brought to market either as weaned calves, yearlings, or year-and-half olds, as best suits the circumstances of the respective breeders; but all acting on the common principle of bringing their stock to market in good condition, and of parting with their annual cast at the age when the natural produce of their farms would no longer keep them improving. To such an audience as I now address, I need not insist on the difference to the ultimate fatteners—and I might add to the consumers—betwixt cattle that have been steadily improving from their birth, and such as have at some stage been starved and hunger-bitten. I have hitherto confined my remarks to the treatment of cattle, but the same principles apply in good measure to sheep. The consuming of Turnips on the land where they grow by these invaluable animals, has now of a long time been fully established as the best way of enriching and improving all dry poor soils, as in fact the key to the profitable cultivation of such lands. I have not hitherto made a regular practice of giving cake or grain to my sheep, but have had recourse to it on occasional emergencies, as when Turnips have run short in spring before Grass was ready; when Grass has failed from untoward weather; or when it has been necessary to graze them on pasture inferior in nourishing power to what they have previously had. By giving a small daily allowance of grain or cake, a larger head of stock can with safety be grazed on a given area, than would otherwise be the case, and a poor soil may in this way be much improved for the future crops. The quiet way in which sheep feed together, and the facility with which their feeding troughs can be shifted, render it practicable to distribute the extra manure thus applied equally over the area of a field. I think that a portion of the inferior grain of the farm may be profitably disposed of in this way, and that if used in small quantities, Linseed-cake will, upon the whole, yield a better return when eaten by sheep than by cattle. I believe that in England it is a common practice to give chopped hay to sheep when on Turnips, either with or without an admixture of cake or grain, and it is one which we might, perhaps, imitate with advantage. In the case of hoggets in particular, it might, perhaps, be a means of preventing the serious mortality which often occurs when they are first put on Turnips. In giving grain to our domestic animals, and especially to ruminants, I think it of great importance to have it bruised or ground. For cattle, in particular, it cannot be too finely ground, as, when this is not done, I am persuaded that much of it passes through them undigested. Let me say, in conclusion, that I think much caution should be exercised in giving farinaceous food to fattening cattle, as I am convinced that beyond what is necessary for securing the indirect advantages which I have endeavoured to describe, we shall find it more profitable to sell our grain *as grain*, than by first converting it into beef or mutton.—Dr. Anderson said: After the extremely valuable observations which had been brought before the meeting by the gentlemen who had preceded him, it would scarcely be expected, nor indeed was it necessary, that he should occupy the time of the meeting at any great length. The subject, however, was of peculiar interest, as it was one on which science and practice could meet together on a common field; and it was very gratifying to find, from the observations of the gentlemen who had spoken, that those plans which they had found by experience to be best fitted for fattening stock were exactly those which were consistent with the principles of science. He would not, of course, attempt to enter there into the whole question of feeding stock, which would be very much out of place, and would occupy by far too much of their time; but there were some subjects touched, which he thought worthy of observation. It was remarked by the first speaker (Mr. Brodie) that the subject was one on which they had, as yet, comparatively little definite experiment. This was to a certain extent true; there still remained a great deal to be done. Experiments, however, of a certain kind had been made, but the result had just been—as, indeed, in most similar cases—to show them that something more was required. Having made one class of experiments, they found that more precise experiments were necessary to decide the question. They had already a large amount of valuable experience; but the time, he thought, was now come when they must proceed to much more definite experiments, in order fully to exhaust the subject of the feeding of stock. He had himself been engaged for some time past, in the laboratory, on a series of investigations, which touched to a considerable extent on this subject, in endeavouring to determine, as far as possible, the comparative value of different sorts of food, on chemical principles. This had been done by determining the quantities of nitrogen and oil entering as constituents into the different substances employed as food, and he had got a table from which he would quote some points, as containing facts of considerable interest. From what they had heard to-day, the universal experience seemed to be in favour of oilcake and Bean-meal; and he believed these were the substances which possessed the highest feeding value upon scientific analysis. He had determined, in the table he held in his hand, the amount of nitrogen and of oil or fatty matter in each of the substances experimented upon; and he found that in a ton weight of Beans, there were 99 lbs. of nitrogen, and 32 lbs. of oil—these being the most valuable substances; but in purchasing a ton of oilcake, the purchaser got 103 lbs. of nitrogen, and 224 lbs. of oil. The value of Rape-cake was quite equal to that of oilcake on chemical principles. There were, however, some important questions to be considered in addition to the quantities of nitrogen and oil, for the fact was that the whole of these substances given to cattle was not converted into flesh and fat, and the question arises—How much of the nitrogen present in the different sort of food was converted into flesh and fat? This was a question which could not be determined by laboratory experiments, or, at least, only to a certain extent. They must experiment upon the cattle. Suppose that they gave a certain quantity of nitrogen to cattle in the shape of oilcake, Beans, or any other kind of food, the question to be determined was—What proportion of the whole nitrogen given was converted by the cattle into flesh? That was a point on which the comparative value of different substances very much depended. He thought that cattle could be shown to convert into flesh the largest amount of nitrogen, where it was in the most digestible condition, or where it was in a state to be taken up by the organs with the greatest possible rapidity. He found, in the nitrogen of oilcake, about nine-tenths was soluble in water, and of Turnips about three-fourths; and he apprehended that whatever might be the exact amount of difference, this was a thing which could be determined by experiment, and that which was soluble was more likely to pass into the system, than that which was insoluble. That, however, was a subject on which they knew almost nothing. He would not attempt to enter into further detail on this subject, except to notice one point in the discussion. One of the gentlemen who had spoken (Mr. Wilson) stated that he found his calves did not thrive without the use of a certain quantity of oilcake. He (Dr. A.) presumed the calves were, in this case, newly weaned, the food being different from that to which they had been accustomed. The milk contained a very large quantity of fatty matter, essential to the sustenance of the young animal, but when it came to be fed on Turnips or Grass it got food containing a comparatively small quantity of oil, and the consequence was that it could not digest this sort of food in the same way as that which nature had provided for it. He was able to confirm the statement made by one of the speakers, that the value of Turnips differed very much in different circumstances—to a greater extent, he found, than was generally imagined; and it was to be remarked that the difference was in some sort connected with the soil. He had analysed Turnips from the Carse of Gowrie, grown on what was called the black land in that neighbourhood, and he found them of a very superior description; and, indeed, a heavy clay land appeared to be unsuited for their proper cultivation. The introduction and extended use of beneficial foods was of very great importance, and deserving of attention from other quarters besides the agriculturist. There must exist many other substances which might be usefully employed for feeding cattle. He had analysed the cake of a considerable number of seeds, and he found that Poppy-cake was rather more valuable than the average of Linseed-cake in nitrogen, but the oil was only about one-half. He found Hemp-cake to be about the value of oilcake in nitrogen, and rather less in oil. Cotton-cake was somewhat inferior in point of nitrogen and oil. He had also recently analysed a cake imported under the name of Cramboline cake, which nobody could make anything of, but which he found near oilcake in value.—Mr. Melvin, Bonnington, said: That as the system of feeding which had been recommended to the meeting was very different from what had been generally adopted in the Lothians, perhaps Mr. Kennedy or some other gentleman would be able to state whether they had made any comparative experiments on the different systems, so that the actual results were determined in such a way as to warrant farmers to adopt the plan recommended. These were not days when farmers could afford to conduct experiments, without being somewhat sure of the results.—Mr. Kennedy said: The system he had recommended had been followed by him for a great number of years, and he was satisfied it was the most profitable one.—The noble Chairman suggested that Mr. Melvin might state to the meeting the system he adopted.—Mr. Melvin, said: The food he gave to his stock depended very much on their condition. At first, when the animal was put up, if he was lean, the digestive system having been accustomed to very innutritious food—the strong properties having gone out of the Grass towards the close, of the year, he gave him fully more than 2 cwt. of Turnips; and as the season advanced, and the digestive system became suited to digest food more thoroughly, he found the quantity of Turnips consumed decreased, and as the animal progressed to a state of fatness, he found 1¼, or 1½ cwt. of Turnips sufficient.—The noble Chairman said: There could be no doubt that Mr. Kennedy and the other gentlemen who had read papers were able to verify their statements by their own experience, and were satisfied of their truth by the experiments they had made themselves; and he could not help taking that opportunity of remarking the great merit of all the papers which had been read to the Society. The greatest merit of each and all of these papers was their thorough practical nature, and the statements were brought forward in a manner which did these gentlemen the greatest honour. They were highly valuable to the public, and to those to whom they had been addressed; and being based both on practical and scientific experience, would no doubt lead to very important consequences in regard to the subject which had been discussed.—Mr. C. Stevenson explained that Mr. Howden, of Lawhead, who had been long before the public as one of the leading agriculturists of East Lothian, and whose experience embraced a practice of 60 years, had intended sending a paper on this important subject, but had been prevented by domestic circumstances. He begged to state, as the general results of Mr. H.'s experiments on feeding, that prepared food for cattle was unprofitable, the results of which experiments appeared in the Society's Transactions—that grains, especially when mixed, are of equal value, weight for weight, with cake—and that other substances can be profitably employed as auxiliary to Turnips.

Notices to Correspondents.

Books: *Subscriber.* Can any one recommend a book upon the manufacture of malt?

Bone-Dust: *Novice.* Apply 16 bushels per acre now on your Grass land, broadcast.

Carey's Cattle Gauge: *C A S.* Any philosophical instrument-maker will procure it. A few shillings, with the tape.

Clover: *Ackham.* Cart over the farm manure as a compost with earth during the last frosts of winter. It should be made into a compost with earth, and turned once or twice before reading it.

Compost: *An Old Subscriber.* You would injure the compost by adding lime to peat and rotten fish. Get gypsum to dry it up with. You can get it for 30s. a ton.

Flax: *C F.* There are many good books. Read T. Keir Short's sixpenny pamphlet.

Gas Lime: *Kent.* It contains sulphuretted hydrogen, and is therefore poisonous to insects. In that state it is also poisonous to plants; you should therefore apply it fresh only on bare lands. If you wish to use it as a top-dressing for crops, it must be exposed to the air for a long time first, and it will become a mixture of gypsum and chalk. You may apply one to two tons per acre.

Grass for Land Shaded with Trees: *Tristram.* Agrostis vulgaris, 2 lbs.; Anthoxanthum odoratum, 1; Dactylis glomerata, 7; Festuca sylvatica, 1½; Lolium perenne, 8; Poa nemoralis, 4; P. trivialis, 4; Trifolium repens, 3; total 32 lbs. and 1 bushel of Barley per acre.

Pigs: *J D.* Mangold Wurzel is the most profitable crop to plant for them. We do not know anything about house and window, or any other taxes here. Your question must be addressed to one learned in the law. You should "pound" the geese and detain them for damage. Leave the clay land once ploughed till spring.

Rats: *Cliftonian.* The pamphlet recommends a particular breed of terrier, as the best preventive. Any bookseller will obtain it. We do not know the publisher.—*Subscriber.* You must apply to your bookseller. We have not a copy, and do not know the publisher.

The most Economical Fence: *Rurigola.* We should suppose a post and rail fence put up cheaply; but it is impossible to say, because the question of cheapness depends altogether upon the nature and products of the locality.

Unfeathered Chickens: *H B, Monkton.* There are several breeds, all large fowls, the chickens of which feather as slowly as you describe; we cannot, therefore, answer your question without a sight of the birds, or a much more precise description. You should get some good treatise on poultry, and study it.

Markets.

COVENT GARDEN, Dec. 28.

Notwithstanding the increased trade which has taken place during the week, hothouse Grapes and Pine-apples are quite equal to the demand, and the same thing may be said of Apples and Pears. Oranges and Lemons are plentiful. Nuts have not altered since our last account. Amongst Vegetables, there have been some excellent Seakale, Asparagus, and Rhubarb. French Beans are cheaper. Carrots and Turnips are good in quality, and so are Potatoes. The latter are getting dearer. Lettuces and other salading are sufficient for the demand. Mushrooms are cheaper. Cut Flowers consist of Heaths, Pelargoniums, Camellias, Mignonette, Tulips, Double Primroses, Gardenias, Bignonia venusta, Chrysanthemums, and Roses.

FRUITS.

Pine-apples, per lb., 4s to 6s	Pommegranates, each, 3d to 6d
Grapes, hothouse, p. lb., 4s to 6s	Almonds, per peck, 6s
— Portugal, p. lb., 8d to 1s	— sweet, per lb., 2s to 3s
Pears, per doz., 1s to 3s	Chest nuts, per peck, 2s to 5s
— per half sieve, 6s to 15s	— per 100, 9d to 1s 6d
Apples, dessert, p. bsh, 3s 6d to 8s	Nuts, Barcelona, p. bush., 20s to 22s
— kitchen, do., 3s 6d to 6s	— Brazil, p. bsh., 12s to 14s
Oranges, per doz., 9d to 2s	Filberts, per 100 lbs., 60s to 65s
— per 100, 6s to 10s	
Lemons, per doz., 1s to 2s	

VEGETABLES.

Brussels Sprouts, per hf. sieve, 1s 6d to 2s	Leeks, per bunch, 1d to 2d
Cabbages, per doz., 6d to 1s	Shallots, per lb., 6d to 8d
Greens, p. doz. bun., 1s 6d to 2s 6d	Garlic, per lb., 4d to 6d
Cauliflowers, p. doz., 4s to 6s	Artichokes, Jerusalem, p. half sieve, 1s 6d to 2s
Broccoli, p. doz. bndl., 10s to 12s	Lettuce, Cabbage, p. score, 1s
French Beans, per 100, 2s to 3s	— Cos, p. score, 1s to 1s 6d
Seakale, per punnet, 2s 6d to 3s	Endive, per score, 1s to 1s 6d
Asparagus, per 100, 3s to 8s	Small Salads, p. punn, 2d to 3d
Rhubarb, p. bundle, 1s 6d to 2s	Horse Radish, p. bdl., 1s to 4s
Potatoes, per ton, 60s to 100s	Red Beet, per doz., 6d to 1s
— per cwt., 3s to 5s	Mushrooms, p. pot., 1s 6d to 1s 8d
— per bush., 1s 6d to 2s 6d	Sorrel, p. hf. sieve, 6d to 9d
Turnips, p. 12 bundles, 1s to 2s	Fennel, per bunch, 2d to 3d
Cucumbers, each, 1s 6d to 4s	Savory, per bunch, 2d to 3d
Radishes, per doz., 1s to 1s 6d	Thyme, per bunch, 2d to 3d
Celery, p. bundle, 9d to 1s 6d	Parsley, p. doz. bun., 1s to 3s
Carrots, per doz., 2s to 5s	— Roots, p. bdle., 9d to 1s
Spinach, p. half sieve, 6d to 1s	Marjoram, per bunch, 2d to 4d
Onions, p. bunch, 4d to 6d	Mint, per bunch, 2d
— Spanish, p. doz., 1s 6d to 4s	Watercress, p. 12 bunch., 4d to 9d

HOPS.—Friday, Dec. 27.

Messrs. Pattenden and Smith report that there is a steady and firm trade for all Hops with a fair share of colour; very little doing in anything else.

HAY.—Per Load of 36 Trusses.

Smithfield, Dec. 26.

Prime Meadow Hay	72s	to 80s	Clover	70s	to 80s
Inferior ditto... ...	60	66	Second cut	60	70
Rowen	56	65	Straw	22	25
New Hay	—	—		J. Cooper.	

Cumberland Market, Dec. 26.

Prime Meadow Hay	75s	to 80s	Inferior	60s	to 70s
Inferior ditto... ...	50	65	New Clover	—	—
New Hay	—	—	Straw	24	28
Old Clover	75	80		Joshua Baker.	

Whitechapel, Dec. 26.

Fine Old Hay ...	68s	to 72s	New Clover	—s	to —s
Inferior ditto ...	55	60	Inferior ditto... ...	62	68
New Hay	—	—	Straw	20	24
Old Clover	75	80			

COAL MARKET.—FRIDAY, Dec. 27.

Hollywell, 15s. 6d.; Carr's Hartley, 14s.; Eden Main, 15s. 9d.; Tanfield Moor, 14s.; West Hartley, 14s. 6d.; Wallsend Haswell, 17s.; Wallsend Stewart's, 17s.; Wallsend Tees, 17s.—Ships at market, 303.

POTATOES.—SOUTHWARK, Dec. 23.

The Committee report that there have been very large arrivals from Yorkshire and Scotland during the last three days. As this large fleet has so recently arrived, it is impossible to give an opinion as to what prices they will go at. The following are this day's quotations:—York Regents, per ton, 90s. to 100s.; Scotch do., 65s. to 80s.; ditto Cups, 65s. to 70s.; Wisbeach Regents, 70s. to 90s.; French whites, 70s. to 80s.

SMITHFIELD, MONDAY, Dec. 23.

As is usual on the Monday following the "Great Market," our supply, both of Beasts and Sheep is small to-day, so also is the demand. We have a cheerful trade for good qualities that are not too big, but for those descriptions of things it is very heavy, the butchers generally having already procured sufficient of this kind. Very good Calves are in demand, at a small advance. Our foreign supply consists of 212 Beasts, 1930 Sheep, and 91 Calves.

Per st. of 8 lbs.—s	d	s	d	Per st. of 8 lbs.—s	d	s	d
Best Scots, Herefords, &c. ...	3	8 to 4	0	Best Long-wools .	3	6 to 3	8
Best Short-horns	3	6 — 3	8	Ditto Shorn	—	...	
2d quality Beasts	2	8 — 3	4	Ewes & 2d quality	2	10 — 3	4
Best Downs and Half-breds ...	4	0 — 4	2	Ditto Shorn	—	...	
Ditto Shorn	—	...		Lambs	—	...	
				Calves	3	0 — 4	2
				Pigs	3	0 — 4	0

Beasts, 996; Sheep and Lambs, 9110; Calves, 115; Pigs, 280.

FRIDAY, Dec. 27.

This may be termed a holiday market. The Christmas abundance not being yet cleared off there is a very small demand, and fortunately also a small supply here to-day. For Beasts and Sheep our quotations remain unaltered, but for choice Calves trade is brisk, at an advance of fully 2d. per 8 lbs. The foreign supply consists of 17 Beasts, 370 Sheep, and 94 Calves; there are 70 milch cows from the home counties.

Per st. of 8 lbs.—s	d	s	d	Per st. of 8 lbs.—s	d	s	d
Best Scots, Herefords, &c. ...	3	8 to 4	0	Best Long-wools .	3	6 to 3	8
Best Short-horns	3	6 — 3	8	Ditto Shorn	—	...	
2d quality Beasts	2	8 — 3	4	Ewes & 2d quality	2	10 — 3	4
Best Downs and Half-breds ...	4	0 — 4	2	Ditto Shorn	—	...	
Ditto Shorn	—	...		Lambs	—	...	
				Calves	3	4 — 4	4
				Pigs	3	0 — 4	0

Beasts, 325; Sheep and Lambs, 1980; Calves, 118; Pigs, 140

MARK LANE.

MONDAY, Dec. 23.—The supply of Wheat both English and foreign last week was much larger than of late; this morning the show by land carriage samples from the neighbouring counties was moderate, fine dry samples barely obtained late rates: out of conditioned and secondary descriptions were a slow sale at a reduction of 1s. to 2s. per qr.; business in foreign was exceedingly limited, but we do not alter our quotations.—With the exception of foreign grinding, all sorts of Barley must be written 1s. per qr. cheaper.—Beans and Peas are 1s. per qr. lower.—Oats were in less demand this morning, and Scotch, of which the arrival was unusually large, are obtainable at a reduction of 6d. per qr.

PER IMPERIAL QUARTER.	s.	s.		s.	s.
Wheat, Essex, Kent, & Suffolk ...White	44	47	Red	38	45
— — fine selected runs ...ditto	43	48	Red		42
— — Talavera	46	52			
— Norfolk, Lincoln, & York...White	—		Red	—	
— Foreign	36	50			
Barley, grind. & distil., 21s to 24s...Chev.	27	32	Malting	24	27
— Foreign....Grinding and distilling	19	24	Malting	20	25
Oats, Essex and Suffolk	—				
— Scotch and Lincolnshire ...Potato	20	24	Feed ...	17	21
— Irish .....Potato	18	22	Feed ...	17	19
— Foreign.....Poland and Brew	18	23	Feed ...	16	20
Rye	25	27	Foreign	—	
Rye-meal, foreign.....per ton	—				
Beans, Mazagan .....24s to 27s.....Tick	26	28	Harrow	26	28
— Pigeon .....27s — 32s...Winds	38	44	Longpod	28	34
— Foreign ..... Small	24	3	Egyptian	21	22
Peas, white, Essex and Kent.....Boilers	26	28	Suffolk...	27	30
— Maple.... .30s to 32s .....Grey	27	29	Foreign	25	33
Maize ..... White	—		Yellow...	—	
Flour, best marks, delivered... per sack	36	40			
— Suffolk ..... ditto	30	36	Norfolk	30	36
— Foreign .....per barrel	18	24	Per sack	29	34

FRIDAY, Dec. 27.—The arrivals of all articles, both English and foreign, since Monday, have been moderate; this morning's market was very thinly attended, and Wheat of all kinds was held nominally at late rates, at which only a few retail sales could be effected.—Barley of all descriptions must be written 6d. to 1s. per qr. cheaper.—In Beans or Peas no alteration. Oats are the turn lower, more especially Scotch, which the supply continues large.

Imperial Averages.	Wheat.	Barley.	Oats.	Rye.	Beans.	Peas
Av...16.....	39s 11d	24s 1d	17s 2d	24s 2d	28s 9d	29s 0d
Nov. 2.....	39 11	24 1	17 3	29 6	28 9	29 4
— 9.....	40 3	24 6	17 1	23 6	28 5	29 2
— 30.....	40 2	24 7	17 7	24 3	28 9	29 0
Dec. 7.....	39 9	24 3	17 1	25 11	27 11	29 5
— 14.....	39 5	28 10	17 1	23 1	27 8	28 2
— 21.....						
Aggreg. Aver.	39 11	24 3	17 3	25 1	28 4	29 0
Duties on Foreign Grain	1 0	1 0	1 0	1 0	1 0	1 0

Fluctuations in the last six weeks' Corn Averages.

Prices.	Nov. 16.	Nov. 23.	Nov. 30.	Dec. 7.	Dec. 14.	Dec. 21.
40s 3d	...	...	...	...	...	...
40 2	...	...	...	...	...	...
39 11	...	...	...	...	...	...
39 11	...	...	...	...	...	...
39 9	...	...	...	...	...	...
39 5	...	...	...	...	...	...

LIVERPOOL, FRIDAY, DEC. 20.—At our market this morning no lively features were visible in any of its departments. The millers and dealers remained exceedingly inactive, and very few sales of Wheat were made for consumption; importers, however, firmly resisting any further decline, the reduced rates of Tuesday were obtained. Barley, Malt, Beans, and Peas, appeared to attract little notice, and barely sustained less prices. Oats being in slow request, declined 1d. to 1d. per 45 lbs.; and Oatmeal, upon a limited demand, merely supported its previous value. Indian Corn, meeting few inquiries to-day for Ireland, receded 6d. per qr., which, on the part of holders, was not generally complied with. —— TUESDAY, Dec. 24.—Although a tolerable number of buyers appeared at our market to-day, the downward tendency in London yesterday, and a good display of samples on the stands here, discouraged any active proceedings, and for all descriptions of Wheat we have to note a limited sale, on terms scarcely equal to those of last week, holders still resisting any material abatement. Malting Barley and Malt, upon a fair demand, were steady in value; grinding Barley unvaried. Beans and Peas, meeting little inquiry, were the turn cheaper. Owing to the abundant supply of Oatmeal, new Oats moved sparingly at a decline of 1d. to 2d. per 45 lbs. from the rates of this day se'nnight, and the former receded 6d. per load. The trade for Indian Corn was firm.

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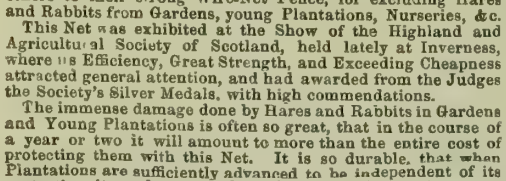
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The immense damage done by Hares and Rabbits in Gardens and Young Plantations is often so great, that in the course of a year or two it will amount to more than the entire cost of protecting them with this Net. It is so durable, that when Plantations are sufficiently advanced to be independent of its protection, it can be removed to other exposed situations with the greatest facility, by any labourer. As a Fence against Hares and Rabbits, it is of itself quite sufficient, having only to be unrolled and attached, with small wire sent for that purpose, to wooden stakes driven into the ground, about every six or seven feet apart. It is, besides, peculiarly adapted for rendering Hedges, Paling, or other existing Fences, *completely impervious* to such vermin; and by being cut up into small pieces of three or more feet, as required, it forms a most efficient guard, at little expense, for individual Plants and Shrubs.

PRICES.—18 ins. high, 9*d.*; 24 ins., 1*s.*; 30 ins., 1*s.* 3*d.*; and 36 ins., 1*s.* 6*d.* per lineal yard.

Or a web of 100 yards, 18 ins. wide, will cost	..	£3 15 0
Do. of 100 yards, 24 ins. wide	.. ..	5 0 0
Do. of 100 yards, 30 ins. wide	.. ..	6 5 0
Do. of 100 yards, 36 ins. wide	.. ..	7 10 0

If more or less than a web is required, it would be charged at the same rate per yard.

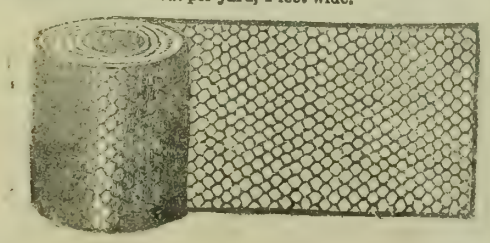
This Netting is also admirably adapted for Pheasantries and Poultry-yards, and is charged at the same rate. As carriage has, in many instances, been an obstacle to parties at a distance requiring this Net, C. D. Y. and Co. have made arrangements by which they will undertake to deliver it at any of the principal ports of Scotland, England, and Ireland, for One Halfpenny per lineal yard.

C. D. YOUNG and Co. cannot give a better idea of the great strength of their Premium Wire Netting than by stating that the weight of one yard of their 24-inch at 1*s.* is equal to 2½ yards of another article in the market, the same width, at 9*d.* per yard. Samples for inspection sent free of expense.

C. D. YOUNG & Co. manufacture every description of IRON and WIRE WORK required for this and foreign countries.

Workmen sent to all parts of Scotland, England, and Ireland.

GALVANISED WIRE GAME NETTING.—
7*d.* per yard, 2 feet wide.



	Galvanised.	Japanned Iron.
2-inch mesh, light, 24-inch wide ...	7*d.* per yd.	5*d.* per yd.
2-inch " strong " ...	9 "	6½ "
2-inch " extra strong " ...	12 "	9 "
¾-inch " light " ...	8 "	6 "
1¾-inch " strong " ...	10 "	8 "
1¾-inch " extra strong " ...	14 "	11 "

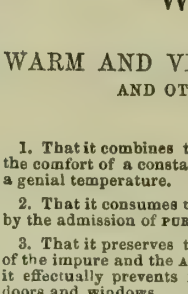
All the above can be made any width at proportionate prices. If the upper half is a coarse mesh, it will reduce the price one-fourth. Galvanised sparrow-proof netting for pheasantries, 3*d.* per square foot. Patterns forwarded post-free.

Manufactured by BARNARD and BISHOP, Market-place, Norwich, and delivered free of expense in London, Peterborough, Hull, or Newcastle.

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PRIZE STOVE OF 1850,

Now Exhibiting in the Model Room of

THE SOCIETY OF ARTS,

John-street, Adelphi, London;

AND IS UNQUESTIONABLY THE

CHEAPEST STOVE IN THE MARKET.

IT HAS ALREADY BEEN EXTENSIVELY ADOPTED, AND IS KNOWN AS

CUNDY'S PATENT IMPROVED OPEN FIRE-PLACE, WARM AIR, VENTILATING STOVE.

IT IS ADMIRABLY ADAPTED TO

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AND OTHER PUBLIC PLACES, HALLS, DINING-ROOMS, LIBRARIES, CLUB-ROOMS, &c.

THE ADVANTAGES OF THIS STOVE ARE—

1. That it combines the CHEERFULNESS of an open fire with the comfort of a constant supply of Fresh Atmospheric Air of a genial temperature.

2. That it consumes the IMPURE air of a room and replaces it by the admission of PURE air from without.

3. That it preserves the BALANCE between the CONSUMPTION of the impure and the ADMISSION of pure air so accurately that it effectually prevents BLASTS of cold air through crevices in doors and windows.

4. That it never raises the temperature of the air, which is warmed by passing through the stove, so high as to burn it, or impart to it any UNPLEASANT SMELL or INJURIOUS PROPERTIES.

5. That it imparts so large a proportion of its heat to the air in its passage into the room through it, that the SMOKE FLUE can never get so heated as to endanger the building, or to add to the risk in insuring.

6. That as nearly all the heat produced by the fire passes with the air into the room, and very little up the flue, it obviously economises the fuel.

The ADVANTAGES of CUNDY'S PATENT STOVES, therefore, are CHEERFULNESS and COMFORT, PURITY and WARMTH of the Air, the Absence of any Noxious Properties, FREEDOM from DANGER, and ECONOMY of FUEL.

Letter from the Rev. MATTHEW O'BRIEN (Professor of Natural Philosophy and Astronomy), M.A., F.R.S., &c., King's College.

I beg to certify that one of Mr. Cundy's Patent Stoves was put up in my Lecture Room, at King's College, last year, in place of a Common Stove (of Arnott's construction I believe). I have no hesitation in saying, from actual experience, that Mr. Cundy's Stove is far superior both in producing warmth over the whole room, and in promoting ventilation, without disagreeable currents of air, or close smell.

MATTHEW O'BRIEN.

From GEORGE HITCHCOCK and ROGERS, St. Paul's Churchyard.

St. Paul's Churchyard, March 7, 1850.

Dear Sir,—We have never had occasion to regret the substitution of your excellent Stoves for the hot-water apparatus with which our establishment was previously heated; all our customers seem delighted with the change.

The improved ventilation produced by them—the entire freedom from that smell of iron so common to most other stoves, and the agreeable sight of the fire—render them most desirable for such establishments as ours.

We are, dear Sir, yours truly,

GEORGE HITCHCOCK AND Co.

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